



PENRITH DEVELOPMENT CONTROL PLAN 2014

VOLUME 2

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PENRITH
CITY COUNCIL

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Appendix F1: Definitions

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E Key Precincts

A number of areas within the City of Penrith have unique characteristics or development potential that warrant the development of specific controls. These areas have been identified as key precincts and are included in this section.

This section includes only those controls which respond to specific issues in key precincts. All other relevant controls contained within this Plan still apply. This section must therefore be read in conjunction with all the other sections in this Plan.

In the event of an inconsistency between the controls contained in Section E and other sections of the DCP, the controls contained in Section E will prevail.

Key precincts included in this section are:

- E1 Caddens
- E2 Claremont Meadows Stage 2
- E3 Cranebrook
 - Part A Waterside
 - Waterside Residential
 - Waterside Corporate
 - Part B Cranebrook Neighbourhood Centre
 - Part C Cranebrook Rural Residential Development
- E4 Emu Heights – Blue Mountains Escarpment Siting, Design and Management
- E5 Emu Plains
 - Part A Commercial Area
- E6 Erskine Business Park
- E7 Glenmore Park
 - Part A Glenmore Park Stage 1
 - Part B Glenmore Park Stage 2
- E8 Kingswood
 - Part A Land Fronting Morley avenue and the Great Western Highway, Kingswood
 - Part B The Knoll
- E9 Mulgoa Valley

- E10 Orchard Hills
- E11 Penrith
 - Part A Penrith City Centre
 - Part B Walkways
 - Part C North Penrith Urban Area
- E12 Penrith Health and Education Precinct
 - Part A Hospital Precinct
 - Part B Business Park Precinct
 - Part C South Werrington Urban Village Precinct
 - Part D – Werrington Mixed-Use Area
- E13 Riverlink Precinct
 - Part A Riverlink excluding Panthers
 - Part B Panthers Penrith Precinct
- E14 St Clair
- E15 St Marys / St Marys North
 - Part A St Marys Town Centre

In most cases, the controls in this section will supplement other general development of this Plan; however, in some cases, they will override them.

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E1 Caddens

A. Background

Caddens is located within the Werrington Enterprise Living and Learning (WELL) Precinct. The key elements of the WELL Precinct Vision which apply to Caddens include 'a model for sustainable urban development that captures its potential arising from proximity to transport linkages and tertiary educational facilities', and 'an internationally renowned destination of choice for business, residents and students. The synergies arising from the collective presence of these groups will energise the Precinct in attracting and accommodating a diverse range of land use activities and people' and offering 'seamless integration of those people and activities and the cosmopolitan lifestyle choices it subsequently generates and offers'.

1.1 About this Section

1.1.1 Land to which this Section applies

This section applies to development on land within the Caddens Release Area, as shown in Figure E1.1.

1.1.2 Aims of this Section

The aims of this Section are to:

- a) support the objectives of Penrith Local Environmental Plan 2010 ; and
- b) facilitate the sustainable development of the residential, mixed use, retail, open space and conservation areas of the Caddens Release Areas (Caddens).

1.1.3 General Objectives

- a) To facilitate and promote the objectives of the Werrington Living and Learning Precinct (WELL Precinct Vision).
- b) To create a viable and vital community energised by the interactions of, and synergies with, adjacent education and employment activities.
- c) To enable a diverse range of housing forms and densities to meet the needs of diverse age groups, family types and income levels.
- d) To demonstrate a high standard of residential amenity and a high standard of urban and architectural design quality.
- e) To ensure all development achieves a high standard of environmental and social sustainability.
- f) To provide a Precinct Centre serving residents of Caddens and surrounding areas, as well as the WELL Precinct.
- g) To protect existing vegetation and views from hilltops and ridges.
- h) To ensure development is sensitive to, and facilitates connections with, land and development adjoining Caddens.
- i) To integrate all available modes of transport including walking, cycling and use of buses, and to ensure there are efficient links within and between open spaces, the Precinct Centre and adjacent residential areas.

Figure E1.1 – Land to which this plan applies



1.1.4 Other Relevant Parts of this DCP

In the event of any inconsistency between this section of the plan and the rest of the DCP, the requirements of this section prevail.

Where a specific issue is not addressed in this Section of the Plan, reference should be made to the remaining provisions of this Plan.

1.1.5 Other Relevant Sources of Information

People seeking further information on Caddens or preparing a development application may wish to refer to the following:

- Caddens Land Release Noise & Air Quality Impact Assessment (September 2007, Version G)
- Caddens Release Area Bush fire Assessment (August, 2007)
- Caddens Release Area Combined Heritage Assessment (November, 2007)
- Caddens Release Area Ecological Assessment (November, 2007)
- Caddens Release Area Transport Management and Accessibility Plan (March, 2008)
- Caddens Release Area Open Space Strategy Report (January, 2007)
- Caddens Release Area Catchment Management, Hydrology and Water Quality Report (November 2007)
- Caddens Release Area Infrastructure Planning Report for Rezoning (December, 2007)
- Caddens Release Public Domain Strategy and Landscape Masterplan Report (March 2008)

These documents are available for reference from Council.

1.1.6 Concept Plans

A Concept Plan setting out a proposal for the development of the Precinct Centre is required to be lodged prior to, or with, the first subdivision development application for the Precinct. The Concept Plan must meet the objectives and controls of this section and demonstrate:

- Proposed urban structure and public domain elements, including proposed land uses.
- Delivery of required dwelling yield set out in this Section.
- The road network, sections and details.
- The location and design of open space, stormwater facilities and community facilities, including a Landscape Plan.
- The location of pedestrian and cycle paths.
- Development Staging.
- Infrastructure Delivery Strategy.

1.2 Structure Plan

1.2.1 Urban Structure

The Caddens Release Area Structure Plan establishes the urban structure and form for the planning and future development of the subject land. The Structure Plan is illustrated at Figure E1.2 with the main elements being described in more detail in the following sections.

Figure E1.2 – Structure plan



The design principles underpinning the Structure Plan are as follows. These principles must be addressed at subdivision stage.

- 1) The principal land use at Caddens will be residential. The residential areas will be located on either side of a linear riparian corridor and around open space areas on hilltops and ridges.
- 2) The location of the Precinct Centre, riparian corridor and active open space will provide focal points for the new community.

- 3) The Precinct Centre will form the hub of the WELL Precinct and serve the residential community, the university and TAFE community, and future employment areas.
- 4) Active and passive open spaces will be distributed throughout Caddens and integrate with the natural features of the Werrington Creek riparian corridor.
- 5) The area will be legible and highly accessible and incorporate a bus route, cycle routes and walking tracks.
- 6) Higher density forms of housing will be located in close proximity to the Precinct Centre and other areas of higher amenity.
- 7) Caddens Road is to function as a rural road segmented by strategic closures.
- 8) Development facing and accessing Caddens Road will contain larger, wider lots that provide a transition between the new urban area and the rural landscape to the south.
- 9) Views to and vistas from the hilltops will be protected by way of lower rise development and revegetated open space.

1.2.2 Character Area Design Principles

This section outlines the design principles relating to the Special Character Areas at Caddens shown in Figure E1.3.

The principles for the Special Character Areas must be addressed at both the subdivision and detailed design stages.

Caddens Road Interface

Residential development interfacing with Caddens Road will be characterised by generally larger lots that respond, through sensitive lot layout, building height limitation and landscaping, to the rural character of adjacent semi-rural areas.

Development is to:

- 1) Respond to the characteristics of the semi-rural edge.
- 2) Provide appropriate residential amenity, particularly with respect to visual privacy and the relationship between dwellings.
- 3) Maintain, where possible, the character of Caddens Road as a rural road.
- 4) Address the street and comprise wider lots.
- 5) Provide larger front setbacks, fencing and landscaping in keeping with the semi rural locality.

Figure E1.3 – Character Areas



Hilltops

The hilltops will be characterised by open space and sensitively designed residential development on generally larger lots that respond to the undulating landform while creating an opportunity for visual connections to the ridge line and hilltop parks.

Development is to:

- 1) Respond to the topographical constraints.
- 2) Provide, where possible, opportunities for views to hilltops and ridges.
- 3) Minimise the height, bulk and scale of dwellings on steep slopes when viewed individually and collectively both from within and outside the locality.
- 4) Provide appropriate residential amenity, particularly with respect to visual privacy and the relationship between dwellings.
- 5) Provide pedestrian and cyclist links to public open space.

Precinct Centre

The Precinct Centre is intended to form the hub of the WELL Precinct. The Centre is

intended to be local in scale, with a retail and commercial limit of 10,000m² and a maximum height of 15m (4 storeys plus roof element). The Precinct Centre will be characterised by a mix of retail, community, commercial and residential uses that serve the needs of, and integrate with, adjacent residential development and employment areas, as well as the campuses of TAFE and the University of Western Sydney (UWS). University and TAFE facilities could be located in the Precinct Centre.

Development is to:

- 1) Create an attractive, lively and inviting pedestrian friendly environment with seating, shading, active tree-lined footpaths and pedestrian links that connect activities and spaces.
- 2) Reduce conflict between pedestrian and vehicular activity.
- 3) Create a rectilinear road pattern connecting nearby residential, employment, university and conservation land.
- 4) Incorporate opportunities for passive security and surveillance at ground level and above.
- 5) Incorporate shop top housing and other dwelling forms that facilitate home based employment.
- 6) Ensure active uses at street level.
- 7) Provide opportunities for the location of UWS and TAFE facilities.
- 8) Be built to the front property boundary and incorporate full width awnings along street edges.

1.2.3 Dwelling Yield and Diversity

A. Objectives

- a) To provide a diverse range of housing forms and densities as shown in Figure E1.4.
- b) To promote a range of dwelling types to meet the needs of diverse age groups and family types.
- c) To provide a range of residential densities that respond to the topographical and other characteristics of Caddens.
- d) To deliver 15 dwellings per hectare of net developable area.
- e) To provide opportunities for affordable housing.
- f) To optimise relative proximity to urban services.

B. Controls

- 1) A minimum of 1,247 dwellings is to be delivered.
- 2) For each precinct the minimum dwelling yield outlined in Table E1.1 is to be achieved.
- 3) As part of a subdivision application, an applicant is to demonstrate to Council how the objective of 15 dwellings per hectare is to be achieved for that development so that the overall precinct minimum dwelling yields will be achieved.
- 4) The creation of a super lot or residue parcel is to specify the minimum dwelling yield which that lot will be required to deliver.

Table E1.1 – Dwelling yield

Sub precinct	Minimum dwelling yield
A	377
B	634
C	102
D	134
Total	1247

Figure E1.4 – Dwelling Yield Targets



- 5) A diverse range of housing types is to be provided in accordance with Figure E1.5.
- 6) Where topography permits, higher density development, such as attached dwellings, multi unit dwellings and residential flat buildings, should be located adjacent or near areas of higher amenity like the Precinct Centre, the riparian corridor and parks.
- 7) Development must provide a variety of lot sizes, dwelling types and dwelling sizes to create opportunities for a wide range of housing needs to be met.

Figure E1.5 – Indicative Dwelling Type Location



1.3 The Public Domain

1.3.1 Street Network and Design

A. Objectives

- a) To provide a hierarchy of interconnected streets that gives safe, convenient and legible access within and beyond Caddens.
- b) To ensure that the hierarchy of the streets is clearly discernible through variations in road width, on-street parking and street tree planting.
- c) To provide a safe and convenient public transport, vehicular, pedestrian and cycleway network.

B. Controls

- 1) The street network is to be provided generally in accordance with Figure E1.6 and must incorporate a new collector road to by-pass Caddens Road.
- 2) Where any variation to the residential street network indicated at Figure E1.6 is proposed, the alternative street network is to be designed to achieve the following principles:
 - a) establish a direct and open network that is based on a modified grid system;
 - b) encourage walking and cycling and reduce travel distances;
 - c) maximise connectivity between residential areas, open space and the Precinct Centre;
 - d) take account of topography and accommodate significant vegetation;
 - e) provide frontage to and maximise surveillance of open space and the riparian corridor;
 - f) provide views and vistas to landscape features; and
 - g) minimise the use of cul-de-sacs. If required, the maximum number of dwellings to be served by the head of a cul-de-sac is six.

Figure E1.6 – Street Hierarchy



- 3) Streets are to be provided in accordance with the cross-sections at Figure E1.7. The dimensions shown on these typical diagrams are minimums only. Alternative street designs may be permitted on a case by case basis if they preserve the functional objectives and requirements of the design standards.
- 4) Except where otherwise provided for in this DCP, all streets and roundabouts are to be designed and constructed in accordance with the minimum requirements set out in the Penrith Council Engineering Design Specifications.
- 5) Where roads are adjacent to public reserves or riparian corridors, the verge widths may be reduced to a minimum of 1m, subject to footpaths, public utilities, bollards and fencing being adequately provided for, and riparian corridors requirements being addressed.
- 6) Where possible and practicable, the verge width is to be increased to 4.8m in front of dwellings where the front setback is less than 4.5m.
- 7) Street trees are required on all streets. Street planting is to:
 - a) minimise risk to utilities and services;

- b) be durable and suited to the street environment and include endemic species;
- c) maintain adequate lines of sight for vehicles and pedestrians, especially around driveways and street corners;
- d) provide appropriate shade;
- e) provide an attractive and interesting landscape character without blocking the potential for street surveillance; and
- f) be sited to minimise interference with street lighting.

All streets will incorporate landscaping in the verge.



Figure E1.7a – Collector Road 1

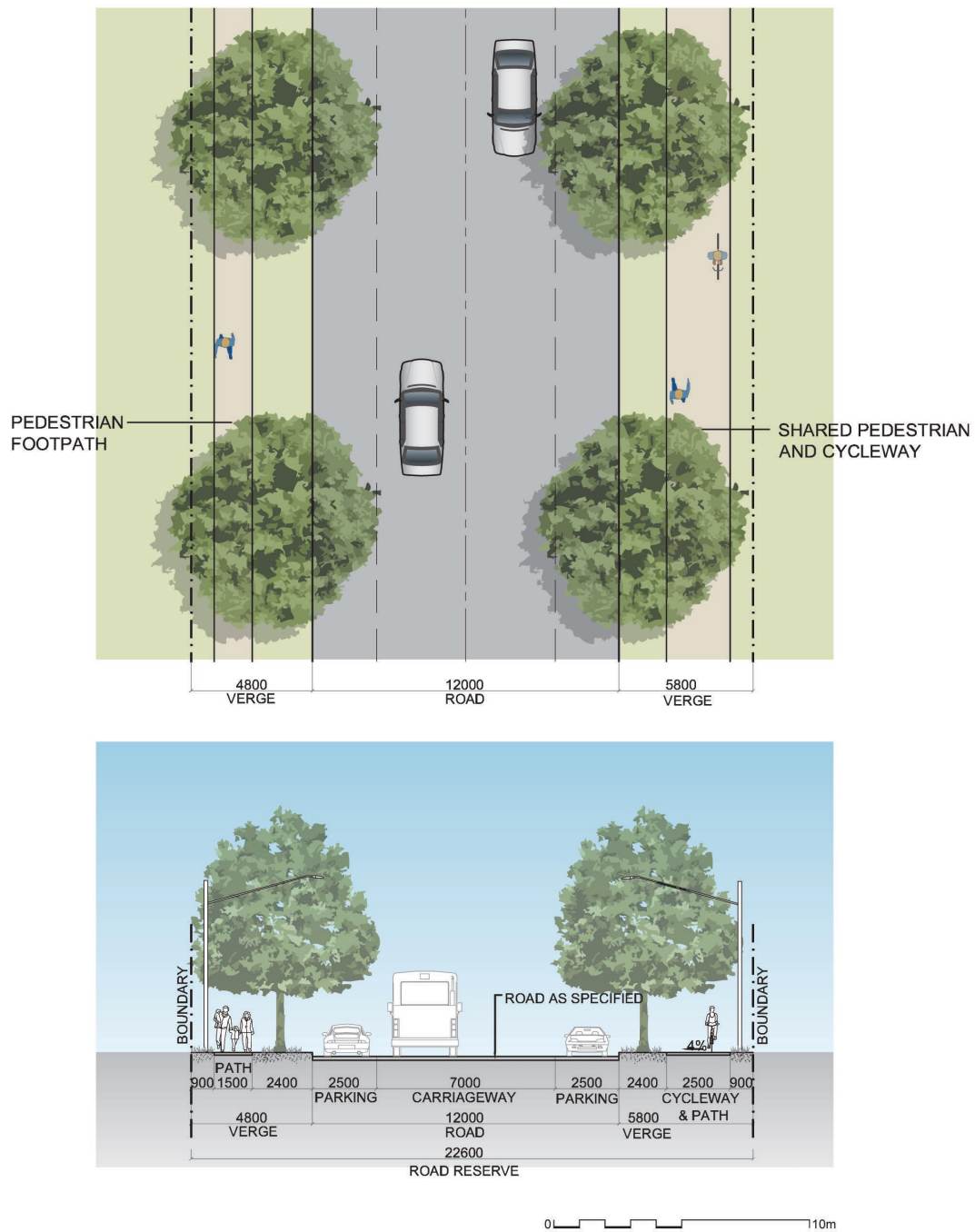


Figure E1.7b – Collector Road 2

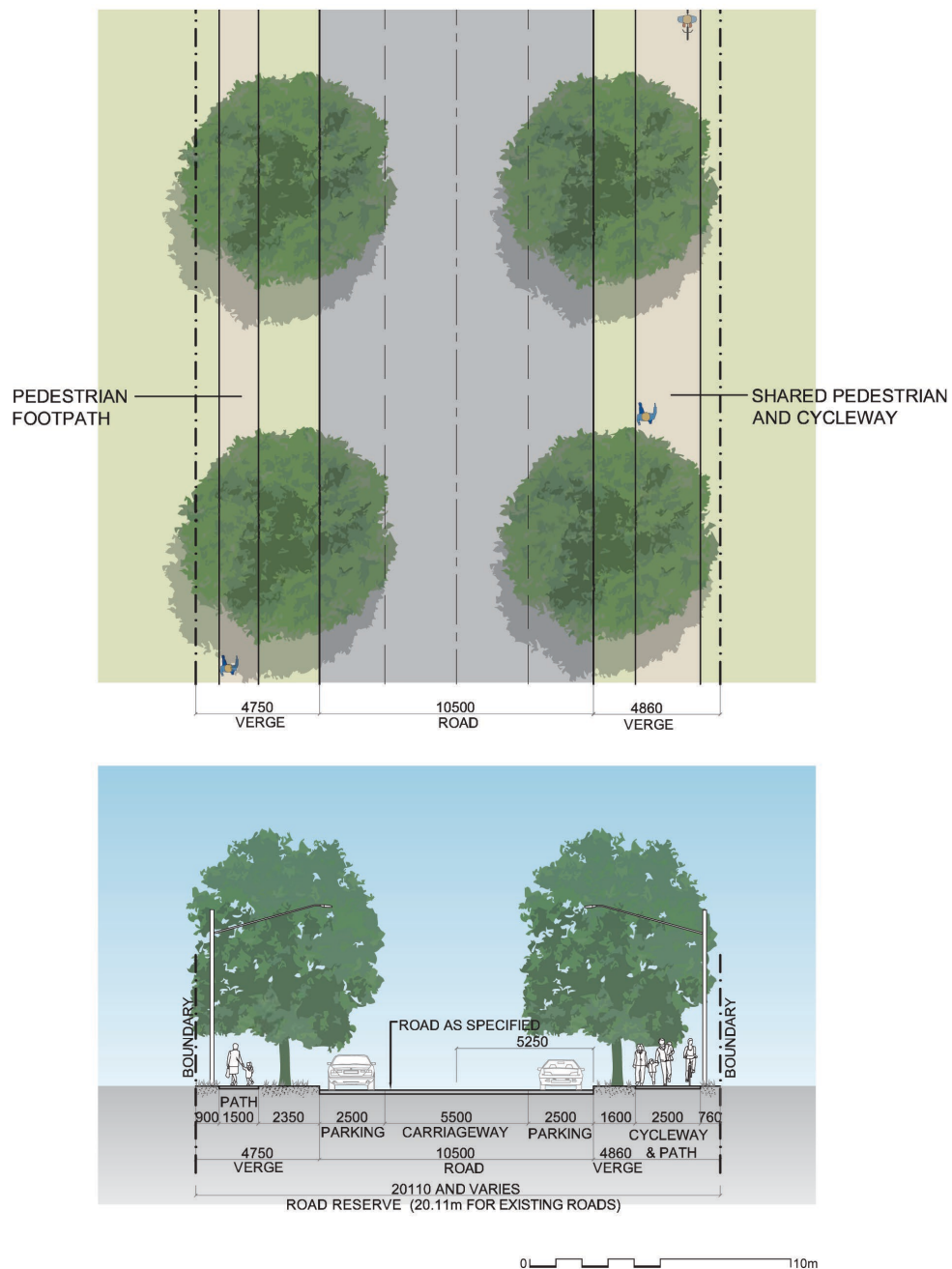


Figure E1.7c – Collector Road 3

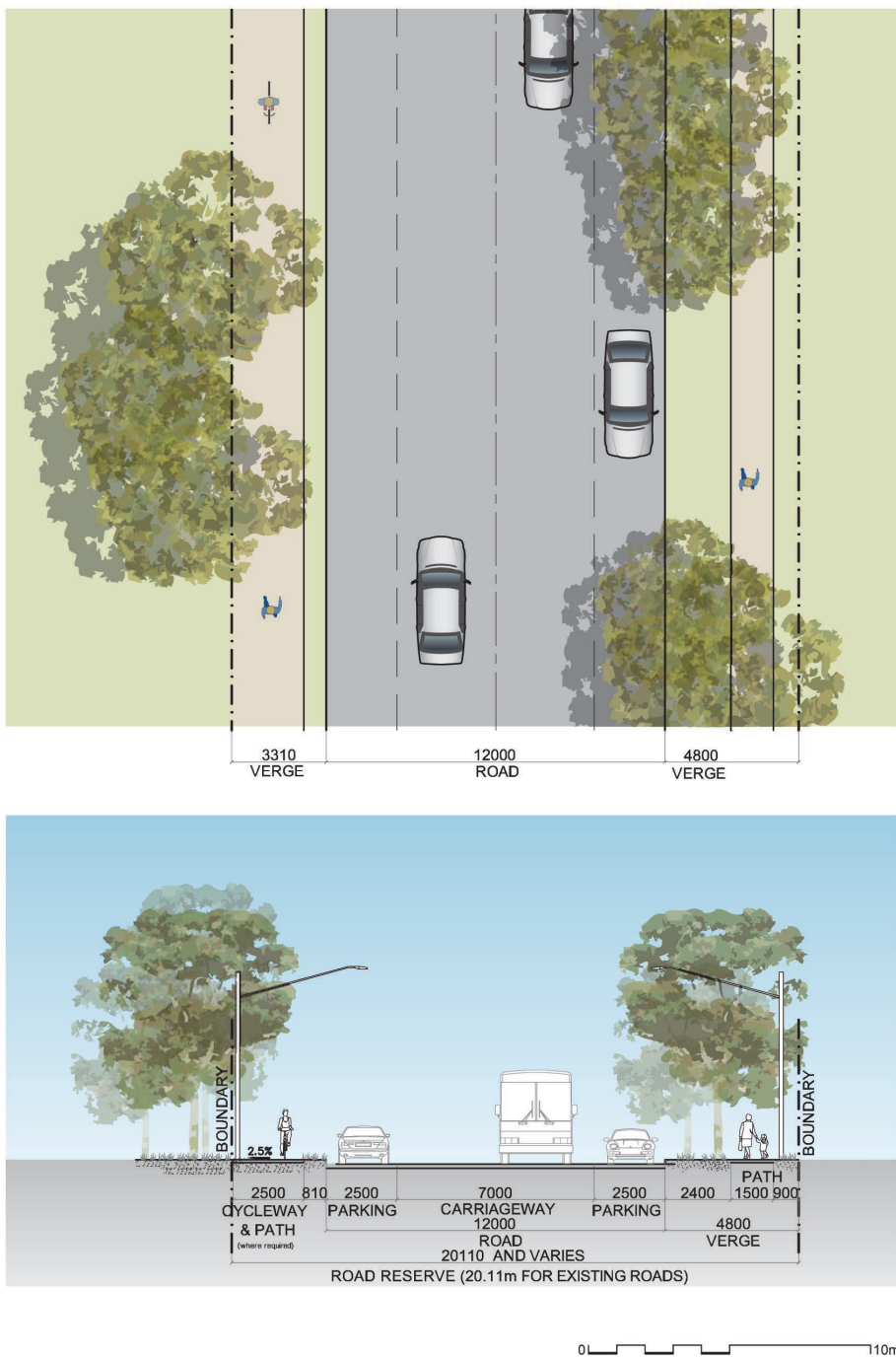


Figure E1.7d – Avenue

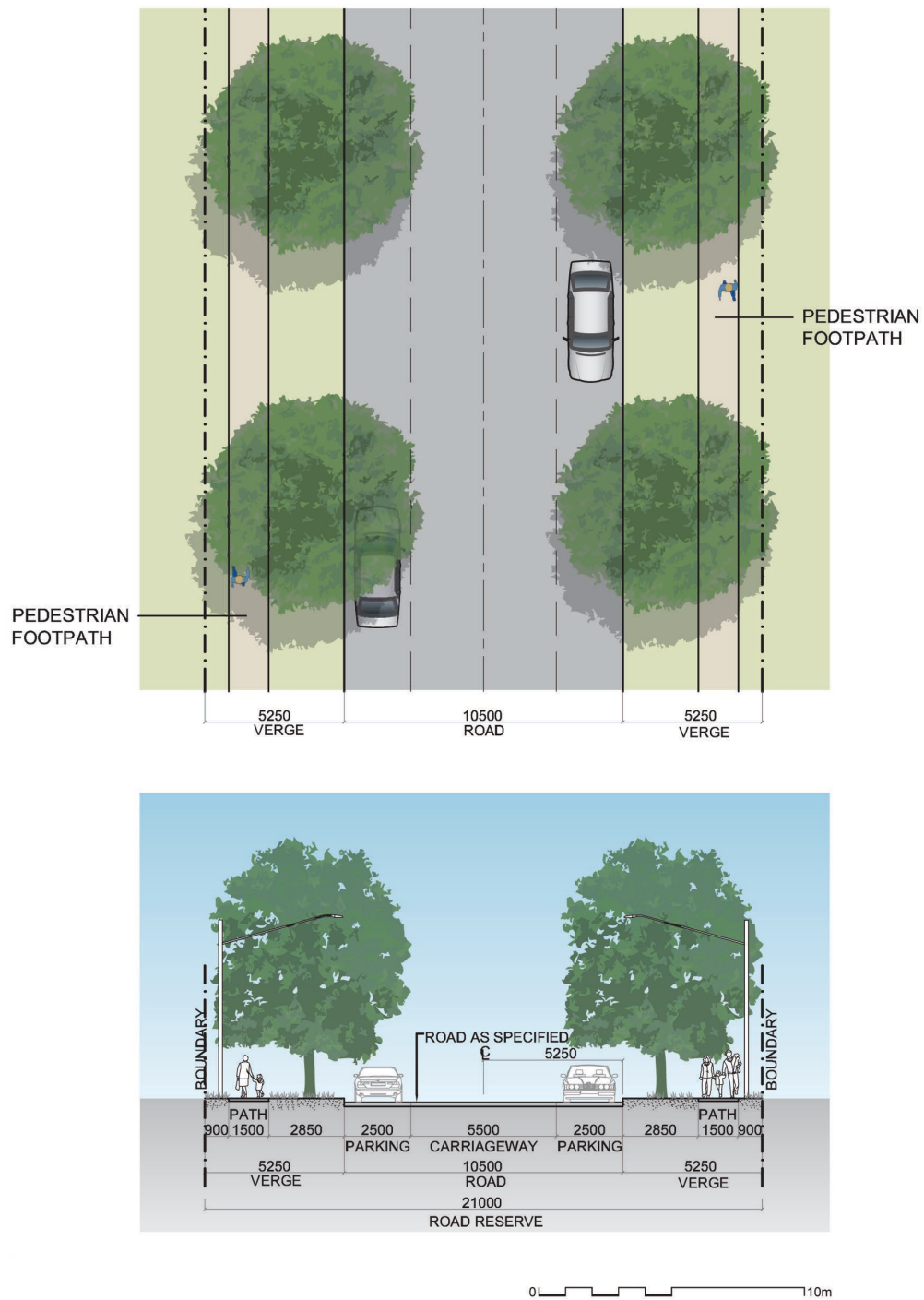


Figure E1.7e – Hilltop Avenue

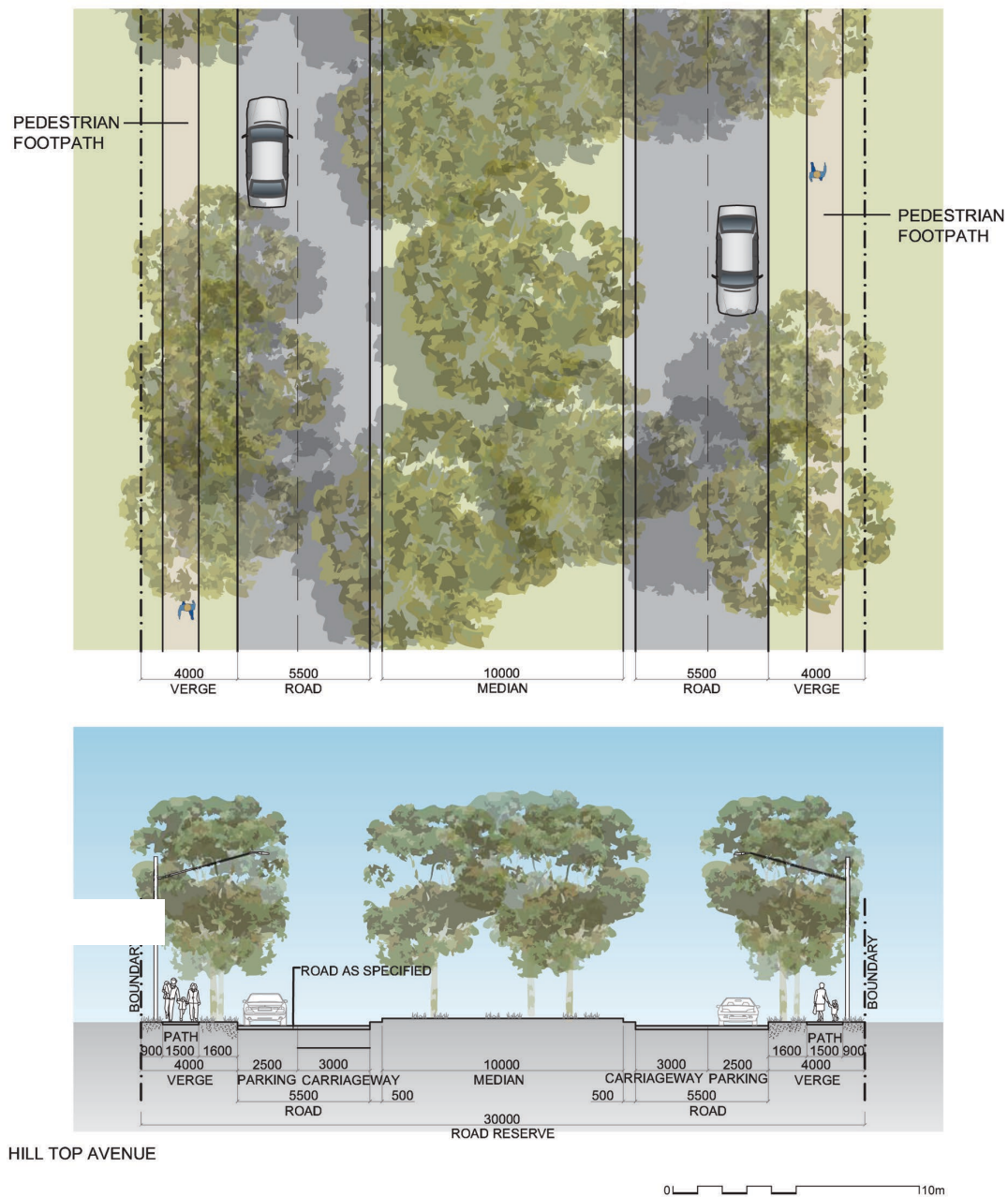


Figure E1.7f – Minor Road

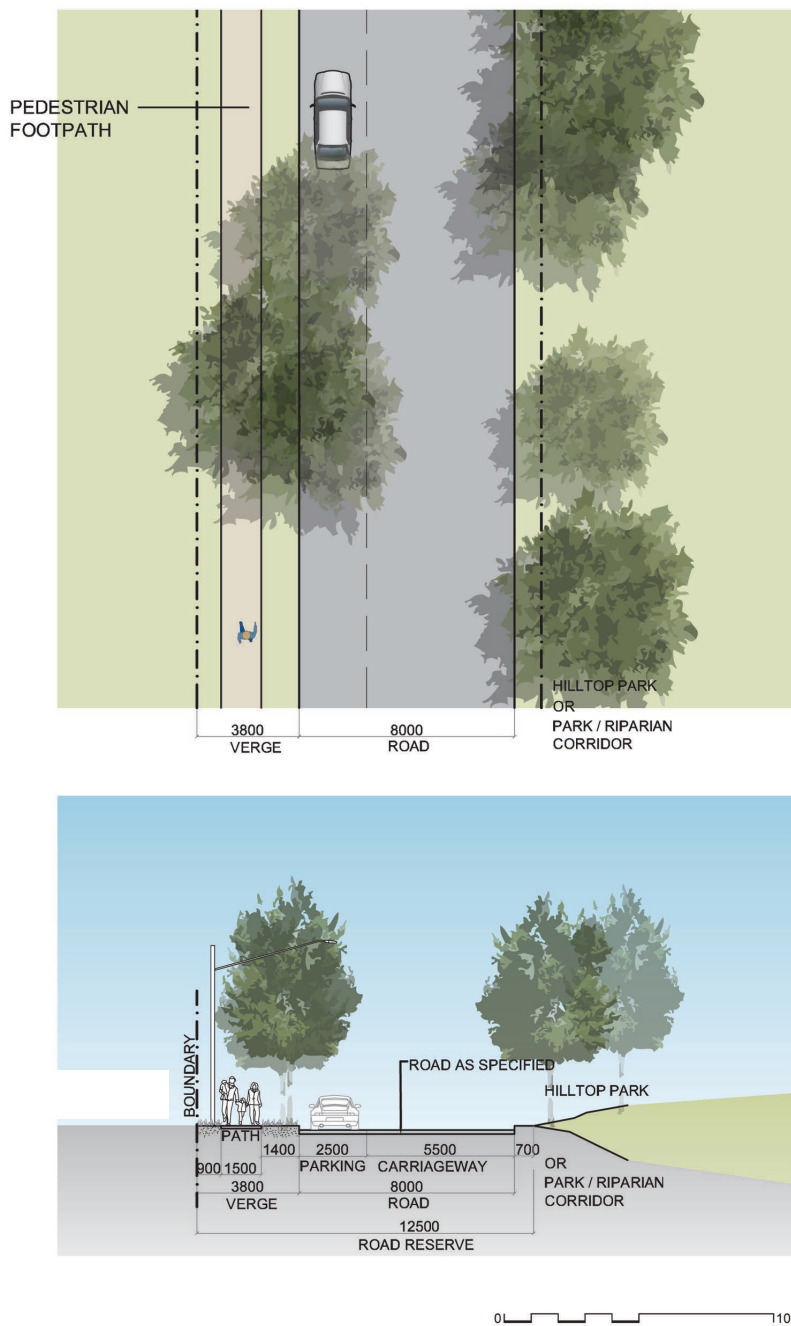


Figure E1.7g – Pedestrian / Cycleway

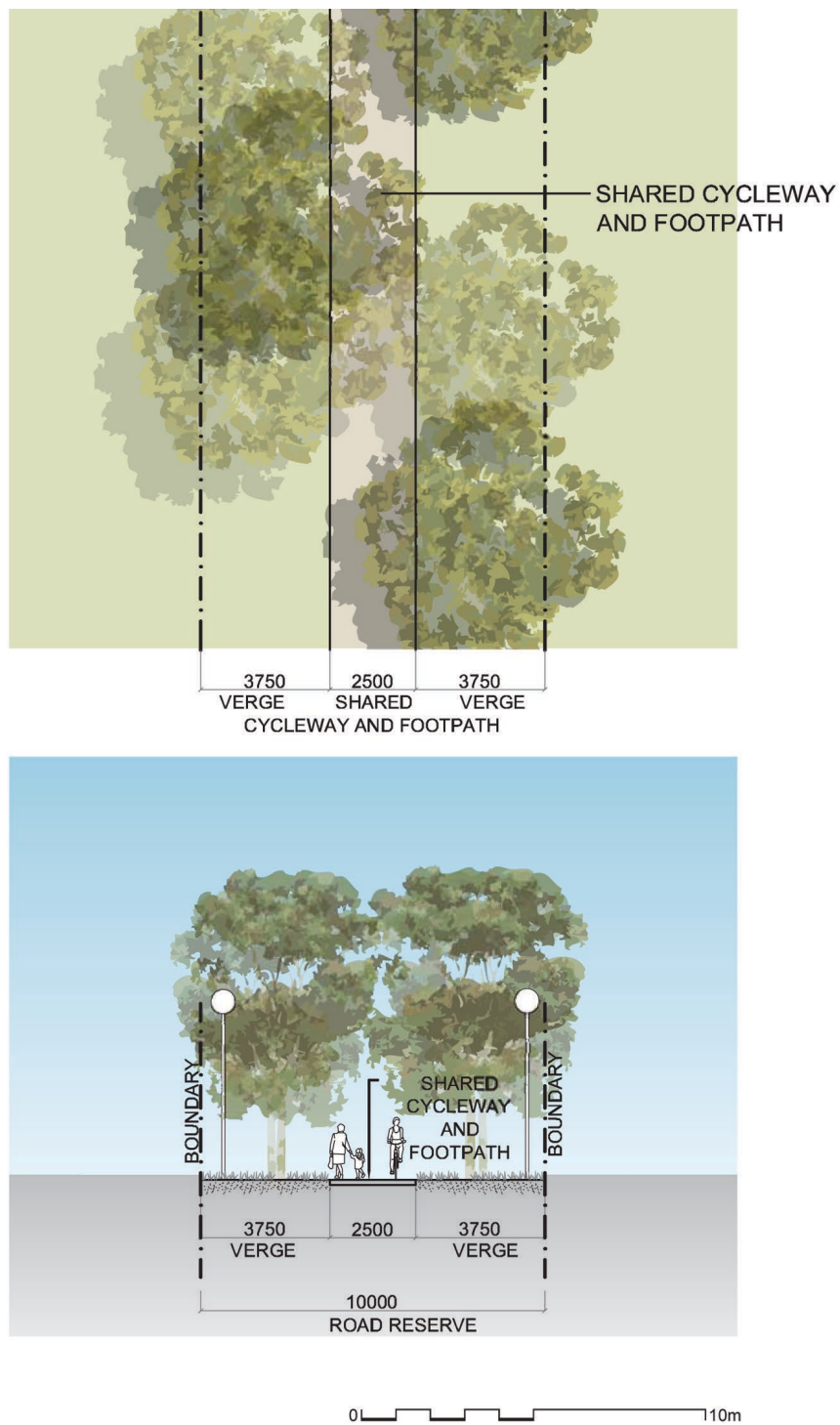
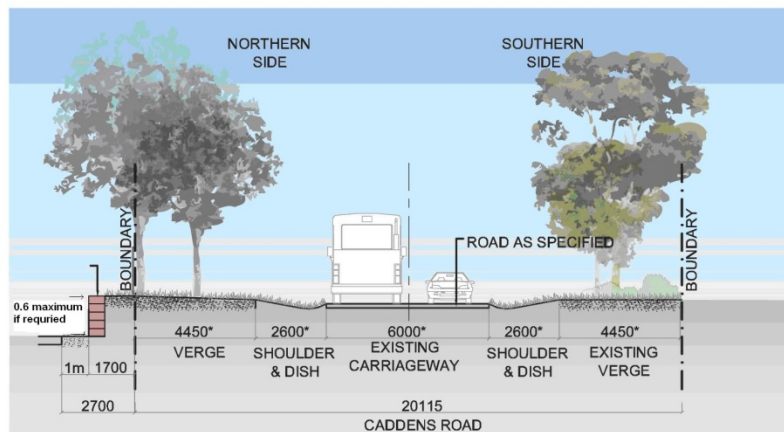
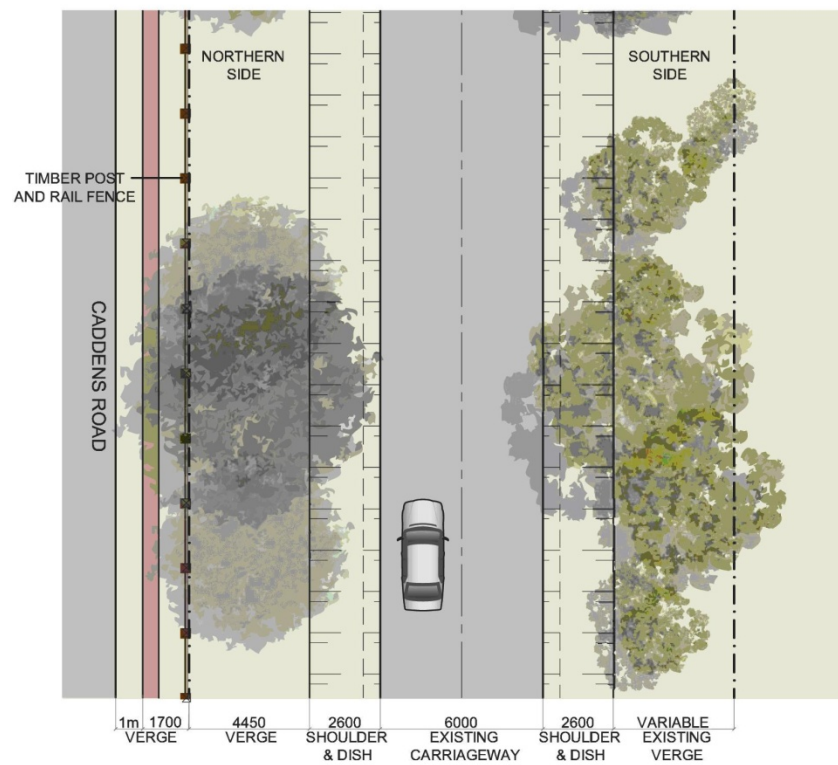


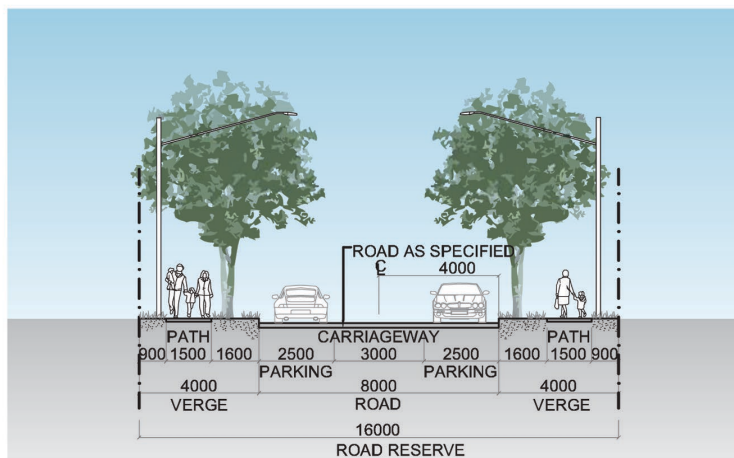
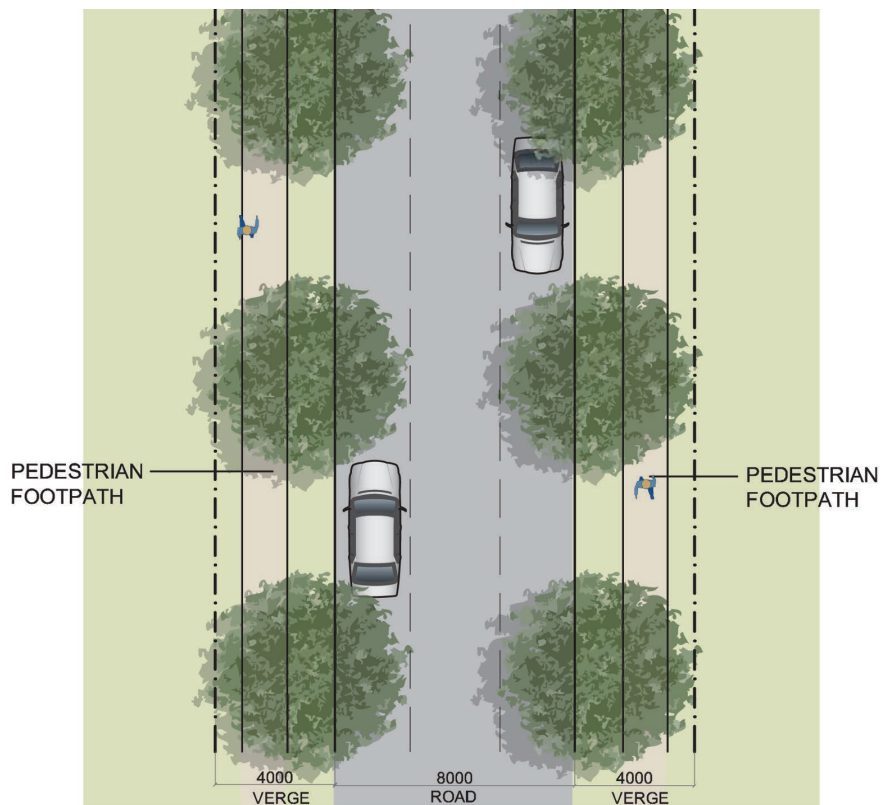
Figure E1.7h – Rural Road



* DIMENSIONS VARIABLE & SUBJECT
TO EXISTING CONDITIONS & ALIGNMENT

0 110m

Figure E1.7i – Local Road



0 110m

Figure E1.7j – Loop Road



1.3.2 Street Furniture and Public Art

A. Objectives

- a) To visually define and promote attractive public spaces.
- b) To enhance public spaces so that they are vibrant, safe and welcoming.
- c) To create a sense of identity for Caddens by creating distinctive places which reflect local heritage and the local environment.
- d) To facilitate cultural identity through art and design in public places and through engagement of the local community.

B. Controls

- 1) Public art may be freestanding art objects or works integrated into building facades, other built edges, water courses and landscaping adjoining public spaces.
- 2) Street furniture is to enhance pedestrian comfort, convenience and amenity and to form an integral element of the streetscape.
- 3) The provision of street furniture in public spaces must include, as appropriate:
 - a) Seats.
 - b) Litter bins.
 - c) Drinking fountains.
 - d) Lighting.
 - e) Information signs.
 - f) Bicycle racks.
 - g) Planter boxes.
 - h) Other items suitable to the function of each public space.
- 4) Street furniture throughout precincts should be consistent in design and style.
- 5) Street furniture is to be located so as not to impede mobility, in accordance with A51428:1-4.
- 6) Location and detailing of all proposed street furniture and public art is to be indicated on the Landscape Plans submitted with Development Applications.

1.3.3 Pedestrian and Cycle network

A. Objectives

- a) To provide an attractive, convenient, efficient and safe network of pedestrian and cycleway paths for the use of the community, within and beyond the site.
- b) To encourage residents to walk or cycle, in preference to using motor vehicles, as a way of gaining access to schools, shops, and local community and recreation facilities.
- c) To promote the efficient use of land by allowing pedestrian pathways and cycleways to be located within parks and corridors wherever practical.

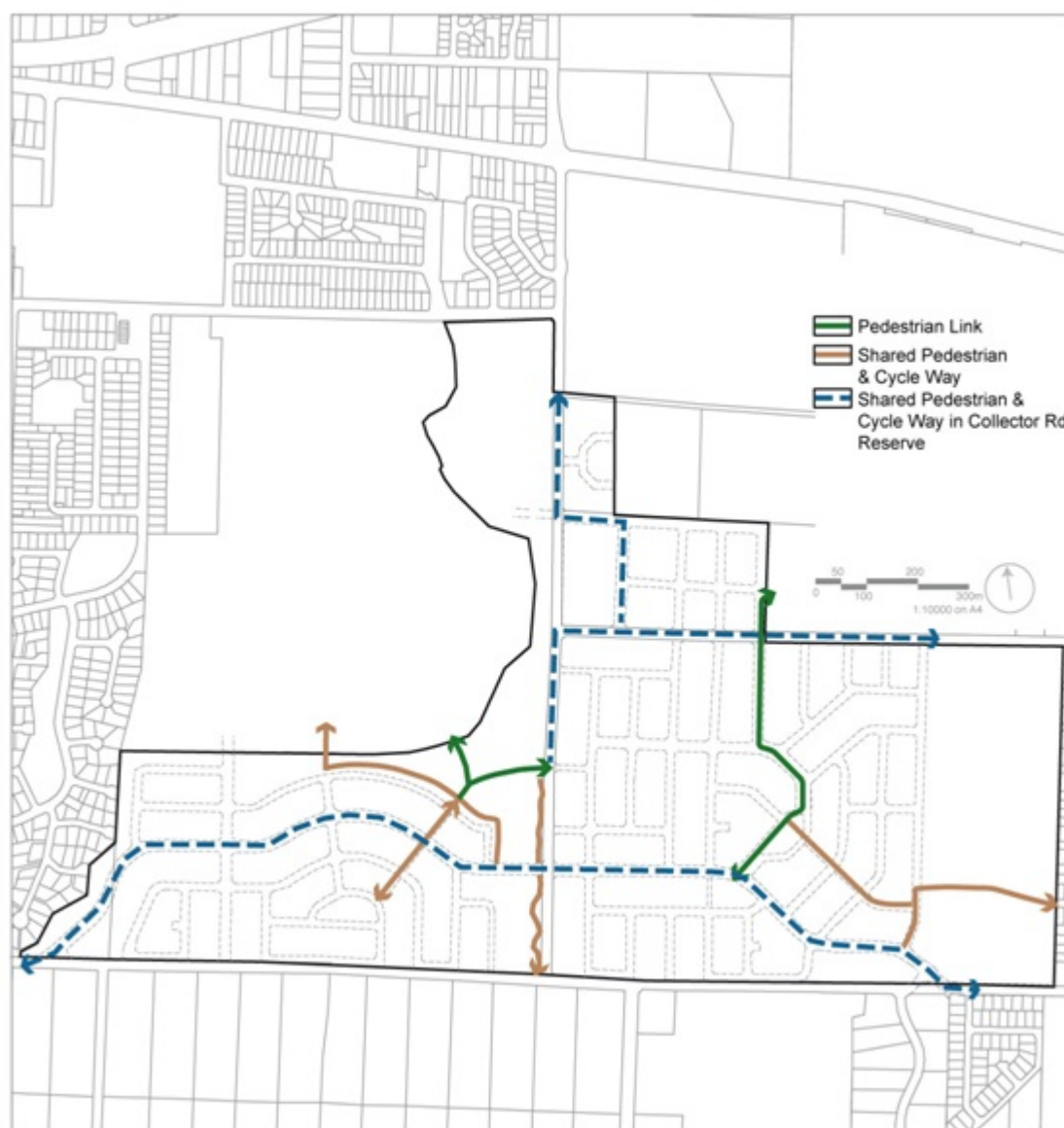
B. Controls

- 1) Key pedestrian and cycleway routes are to be provided generally in accordance with

Figure E1.8.

- 2) The design of cycleways located within the road reserve is to be in accordance with Figure E1.7.
- 3) The minimum width of off-street shared cycle and pedestrian pathways is to be 2.5m (as shown in Figure E1.7g).
- 4) The minimum width of pedestrian footpaths is 1.5m.
- 5) All pedestrian and cycleway routes and facilities are to be consistent with the Planning Guidelines for Walking and Cycling (DOP & RTA 2004).
- 6) Pedestrian and cycle routes and facilities in public spaces are to be safe, well lit, clearly defined, functional and accessible to all.
- 7) Pedestrian and cycle pathways, and pedestrian refuge islands are to be designed to be fully accessible by all in terms of access points and gradients, generally in accordance with Australian Standard 1428:1-4.
- 8) Pedestrian and cycle pathways are to be constructed as part of road infrastructure works with detailed designs to be submitted with DAs.

Figure E1.8 – Pedestrian & Cycle Routes



1.3.4 Public Transport

A. Objectives

- a) To encourage the use of public transport.
- b) To enable the efficient operation of buses on designated streets.
- c) To enable the majority of residential lots to be within a walking distance of 400m from a bus stop.

B. Controls:

- 1) Bus routes are to be provided generally in accordance with the requirements of Transport for NSW. Figure E1.9 provides an indicative concept plan of the route and bus stops.
- 2) Roundabouts on bus routes are to be designed to accommodate bus manoeuvrability.
- 3) Bus stops (where known) are to be provided on-street and not within indented bays. Bus shelters are to be provided at key stops and installed at the subdivision construction stage.

Bus shelters will be provided along the bus route.



Figure E1.9 – Public Transport Network



1.3.5 Open Space, Environmental Conservation and Landscape Network

A. Objectives

- a) To provide for the public open space and recreational needs of residents.
- b) To ensure quality design and embellishment of all public open space.
- c) To ensure that the development of elevated, visually sensitive land contributes positively to, and enhances, the landscape character of Caddens.
- d) To protect significant views and viewsapes.
- e) To enhance the character of environmental conservation areas through revegetation.
- f) To reinforce the rural character of Caddens Road through appropriate landscaping and fencing.
- g) To ensure that landscaping utilises robust and low maintenance materials and species, that landscaped areas are accessible by all, and that design meets Crime Prevention Through Environmental Design (CPTED) principles.

B. Controls

- 1) The open space network, consisting of active and passive open space, together with the riparian corridor and other areas of conservation value are to be provided generally in accordance with Figure E1.10.
- 2) The design and embellishment of public open space must satisfy the principles of high quality, robust, low maintenance design and address the vision for Caddens.

Figure E1.10 – Open Space and Environmental Conservation Network



- 3) The provision of open space and facilities including embellishment is to be consistent with the WELL Precinct Section 94 Contributions Plan.
- 4) Passive open space should generally be bordered on all sides by streets and houses should be oriented towards the open space for passive surveillance.
- 5) The detailed design of public open space areas is to incorporate the following elements, where appropriate, in accordance with the Open Space Strategy and the WELL Precinct Section 94 Contributions Plan:
 - a) play and other spaces to cater for a range of ages;
 - b) adequate car and bicycle parking, lighting and waste management facilities;
 - c) amenities such as seating and shade structures, drinking fountains, lighting, information signs, feature fencing and the like; and
 - d) linkages with the broader pedestrian and cycle network.
- 6) The hilltop parks should be designed generally in accordance with the Caddens Public

Domain Strategy and the design requirements described in this section of the Plan. Figures E1.11 and E1.12 provide indicative concept plans for these hilltop parks.

- 7) The 0.35 hectare Eastern Hilltop Park located on the ridgeline to the east of the site is to present as natural woodland. It is to incorporate the following elements as illustrated in Figure E1.11:
- a) heritage interpretation of the ruins of the 19th century farmhouse and re-use of materials where appropriate;
 - b) viewing platforms to other vantage points within Caddens and beyond;
 - c) an informal kick about space on the flatter land;
 - d) accessible paths where possible;
 - e) seating areas and shade structures;
 - f) canopy trees;
 - g) existing trees, Cumberland Plain Woodland species as well as other endemic robust native plant species and where necessary saline-tolerant species; and
 - h) low maintenance and robust finishes.

Figure E1.11 – Eastern Hilltop Park Concept



- 8) The 0.5 hectare Western Hilltop Park is to function as a neighbourhood park. Detailed design is to incorporate the following elements as illustrated in Figure E1.12:
- a) children's play spaces on soft-fall including high quality interactive play structures and equipment;
 - b) terraced lawns to increase usability of passive spaces in sloped areas, including a potential look-out space;
 - c) accessible paths where possible
 - d) seating areas and shade structures;
 - e) a north-south path to connect to the surrounding streets and the riparian corridor;
 - f) semi-open canopy trees;
 - g) endemic native and other robust plant species; and
 - h) low-maintenance and robust finishes.

Figure E1.12 – Western Hilltop Park Concept



- 9) The 1.38 hectare Western Linear Park is to function as passive open space and act as an acoustic and visual barrier between Collector Road 1 and the residential areas of Kingswood to the west. The park is to include earth mounding and canopy trees. Detailed design is to incorporate the following elements as illustrated in Figure E1.13:
- a) areas of passive open space;
 - b) a shared pedestrian and cycle path;
 - c) natural and/or organic forms for noise and visual screening of Collector Road 1;
 - d) canopy trees for shade; and
 - e) planting of endemic native and other robust plant species.

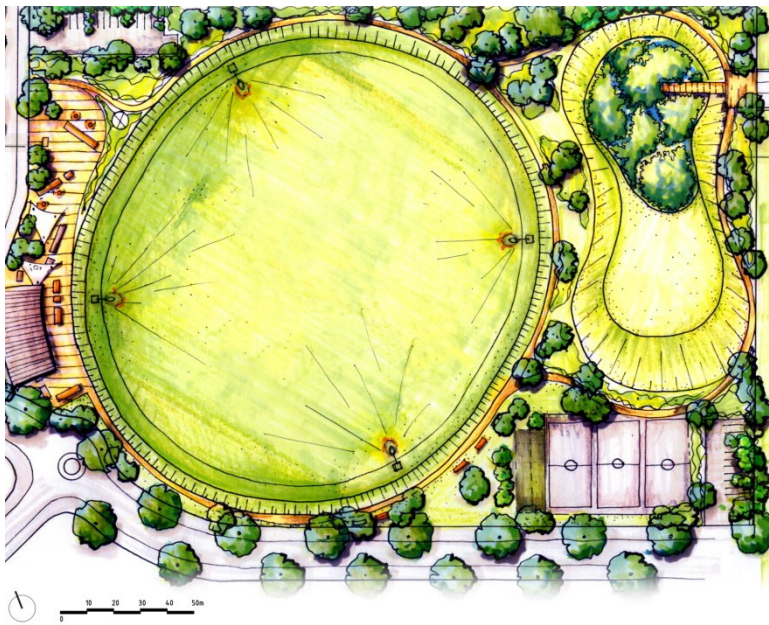
Figure E1.13 – Western Linear Park Concept



- 10) The 5.1 hectare combined area of active open space (3.9 hectares) and detention basin (1.2 hectares) is to provide a local community focus and be designed generally in accordance with the Caddens Public Domain Strategy and Figure E1.14. It is to incorporate the following elements consistent with the Open Space Strategy and the WELL Precinct Section 94 Contributions Plan:
- a) connections to the shared pedestrian and cycle path;
 - b) an amenities block;
 - c) a children's playground;

- d) seating areas;
- e) a large level area suitable for future playing field(s) with flood lights;
- f) potential courts such as hard courts/tennis courts, bocce courts, netball courts and large chess board;
- g) canopy trees and structures to provide shade and amenity;
- h) planting of robust endemic native species; and
- i) car parking.

Figure E1.14 – Active open space concept

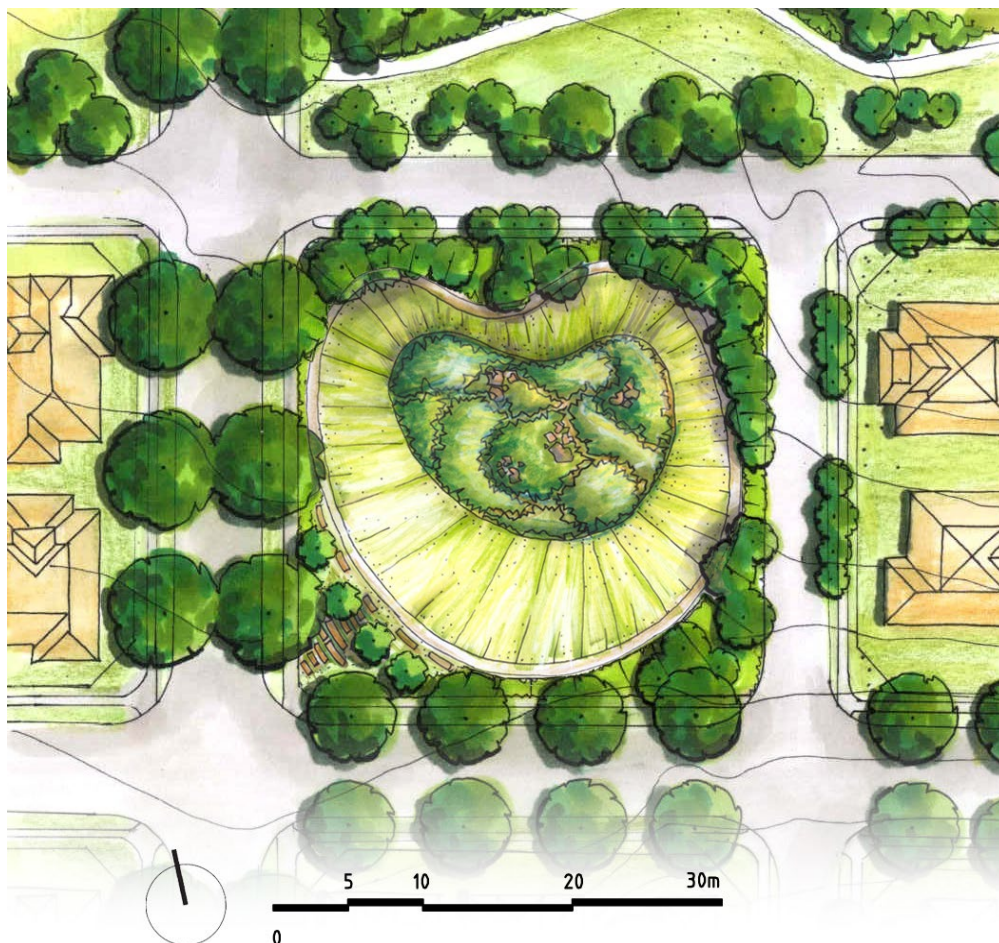


- 11) The detention basins are to be landscaped so that they appear as natural rather than engineered features and sit harmoniously in their surroundings. They are to be designed and treated to satisfy the requirements of this section of the Plan and to accord with the Caddens Public Domain Strategy. Figure E1.15 provides an indicative concept plan for their design which is to typically incorporate the following elements as appropriate:
 - a) a natural/organic basin form with steeper slopes facing east to avoid the hot westerly winds and exposure to afternoon sun;
 - b) a rain garden at the base of the basin with sloped embankments (capable of being mowed);
 - c) a 1.5m path informally planted with native trees with low level under planting to define the top of the detention basin;
 - d) passive open space; and
 - e) seating areas along flatter slopes where possible to allow views across the rain gardens.

Detention basins are intended to be natural elements.



Figure E1.15 – Detention Basins Concept



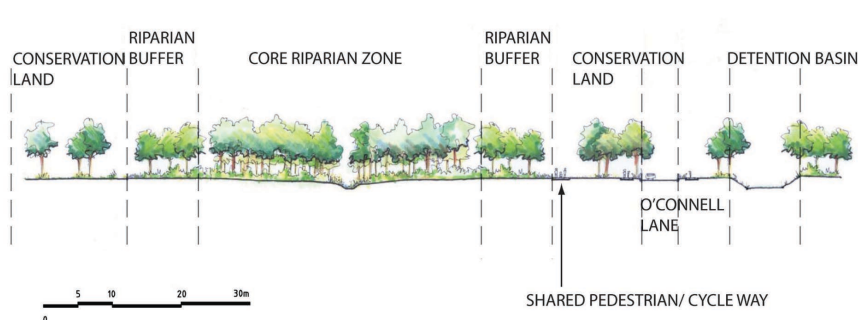
- 12) The environmental conservation area is to accord with the Riparian Corridor Management Plan and the requirements set out in Sections 3.5 and 3.8 of this section, and is to be designed generally in accordance with Figures E1.16 and E1.17.

- 13) The environmental conservation area is to include a pedestrian and cycle path, seating and picnic shelters and areas for informal passive recreation in a manner that maintains the environmental significance of the area.
- 14) Interpretative material in relation to Aboriginal heritage and the physical environment should be sensitively placed along pathways within the riparian/conservation corridor.

Figure E1.18 – Riparian Corridor (plan)- A pedestrian path/cycleway will extend along the edge of the riparian corridor



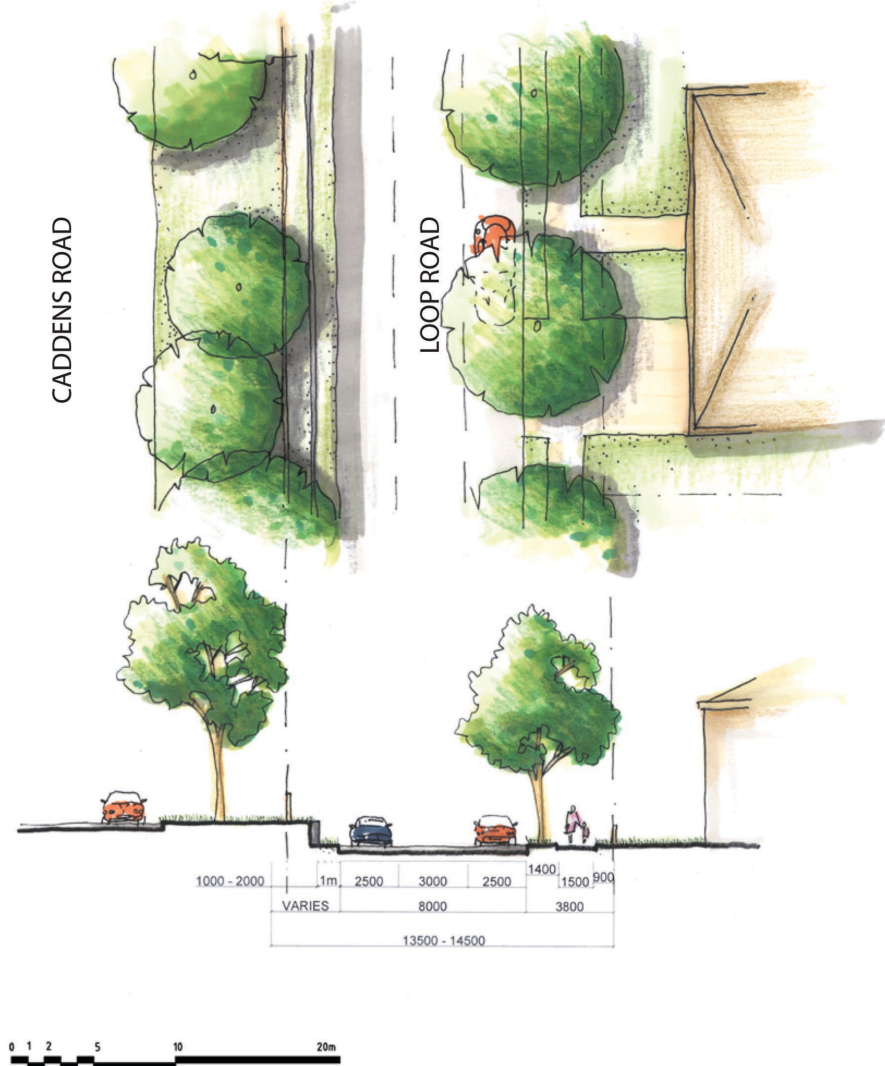
Figure E1.17 – Riparian Corridor (section)



Where an area of open space adjoins a residential area, a Landscape Plan for that open space is to be submitted to Council at the time of subdivision of the adjoining residential area. The Plan is to provide details on elements such as:

- a) earthworks, including existing and proposed levels;
 - b) erosion control measures;
 - c) drainage and stormwater control measures;
 - d) assessment of visual impact;
 - e) measures to address salinity;
 - f) fencing and walls;
 - g) signage, including any heritage or environmental interpretation;
 - h) plant species and sizes (including street trees);
 - i) hard and soft landscaping treatments;
 - j) lighting;
 - k) seating;
 - l) public art;
 - m) waste facilities;
 - n) play equipment; and
 - o) site specific maintenance specifications.
- 15) The design of public art elements must consider longevity of materials; ease and cost effectiveness of maintenance; and use of sustainable materials.
- 16) The selection of public art elements must fit within the context of a public art theme for Caddens and reflect appropriate consultation with the community.
- 17) The verges between the 'loop roads' and Caddens Road (as shown in Figure E1.3) are to be landscaped in accordance with Figure E1.18. Trees should be endemic and Cumberland Plain woodland species and groupings of trees should be informal to reflect the rural character of the street.
- 18) Fencing along Caddens Road boundary is to be a rural style solid timber post and rail fence. The northern verge of Caddens Road is to be landscaped in accordance with the Caddens Public Domain Strategy.
- 19) Fencing of the Caddens Road boundary and landscaping of the northern verge of Caddens Road is to be undertaken at the time of subdivision.
- 20) Fences along Caddens Road must incorporate gaps to enable pedestrian and cycle access, but not access for motor vehicles.

Figure E1.18 – Landscaping of Loop Road / Caddens Road verge



Landscape treatment similar to that proposed along the loop road as a transition to Orchard Hills rural area.



1.3.6 Biodiversity

A. Objectives

- a) To ensure the protection and enhancement of existing significant vegetation and improve or maintain biodiversity values.
- b) To retain areas of high conservation significance.
- c) To protect habitat for significant fauna species.
- d) To protect, restore and enhance the environmental qualities of Werrington Creek and its buffers.
- e) To allow the riparian corridor buffers to be used primarily for conservation and drainage, along with incidental recreational activities such as walking and cycling.
- f) To prevent the spread of weeds during and after construction.

B. Controls

- 1) A Flora and Fauna Management Plan (FFMP) is to be prepared by a suitably qualified ecologist for the areas of high conservation significance along the Werrington Creek riparian corridor. The FFMP should include a Vegetation Management Plan and a Riparian Corridor Management Plan.
- 2) The FFMP is to be submitted as part of any subdivision of land adjoining the Werrington Creek riparian corridor and should detail weed removal, revegetation and rehabilitation, rubbish removal, habitat enhancement and ongoing protection and management measures.

- 3) All subdivision design and bulk earthworks are to consider the need to minimise weed dispersion and eradication.
- 4) Existing native vegetation in the riparian corridor is to be conserved and enhanced, and where required revegetated with endemic species as set out in the Vegetation Management Plan.

1.3.7 Aboriginal and European Heritage

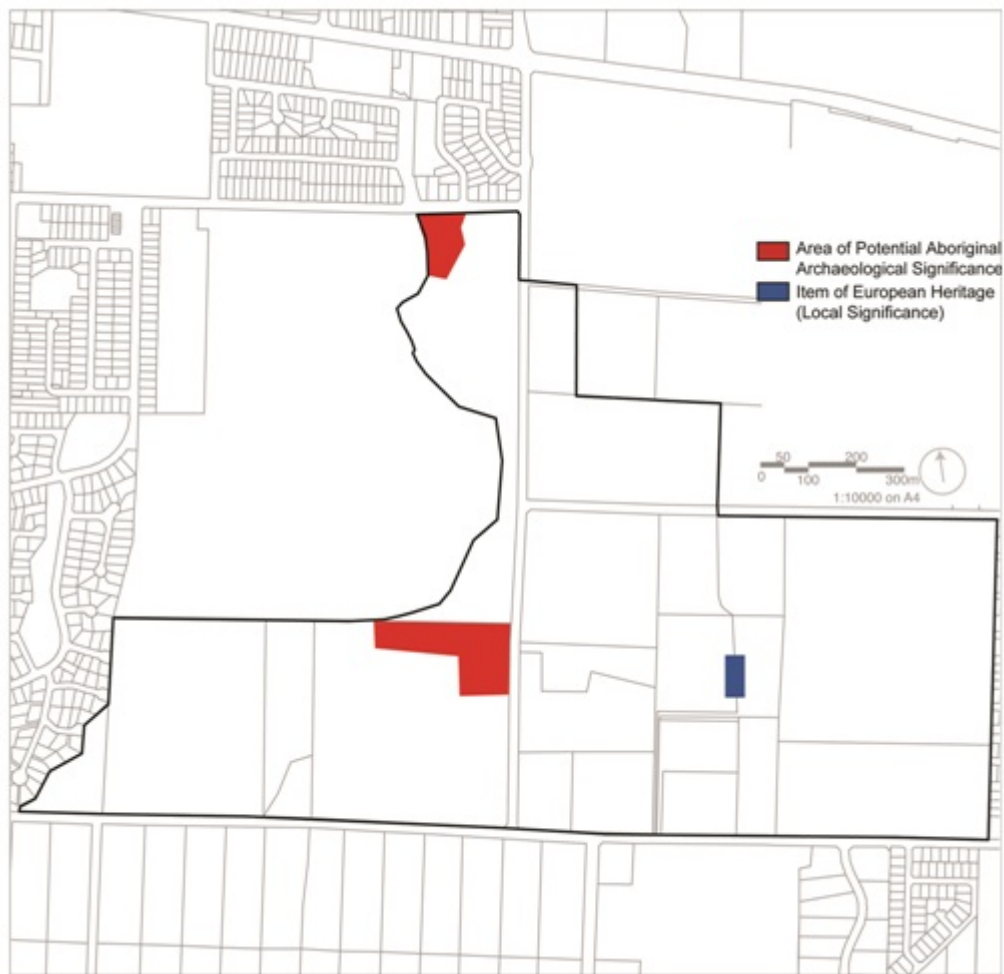
A. Objectives

- a) To protect and manage areas and elements of identified Aboriginal and European archaeological heritage.
- b) To interpret, where appropriate, elements of Aboriginal and European heritage.

B. Controls

- 1) Areas of Aboriginal archaeological conservation value are identified at Figure E1.19. No development is to occur in this area without appropriate investigation, consent under Section 90 of the *National Parks and Wildlife Act 1974* and consultation with the relevant local Aboriginal groups.
- 2) Any construction work that has the potential to encroach on the conservation area is to be fenced off during construction works.
- 3) Any development that encroaches on the conservation area is to be subject to archaeological salvage excavation following consultation with relevant local Aboriginal groups.
- 4) Archaeological test excavations are to be undertaken in accordance with Section 87 of the *National Parks and Wildlife Act 1974* to determine the significance of areas with potential Aboriginal heritage value shown in Figure E1.19.
- 5) An item of European heritage significance (the ruins of a 19th century house located in the area of the proposed eastern hilltop park) is shown at Figure E1.19. Prior to demolition archival recording of the archaeological features is to be undertaken and a permit under Section 139 of the *Heritage Act 1977* obtained. Demolition is to be monitored.
- 6) Interpretive signage that provides information on the Aboriginal and European history and heritage significance of the locality is to be provided within public domain areas. Street names should reflect the history of the land.

Figure E1.19 – Areas of Aboriginal & European Cultural Heritage



1.3.8 Bushfire Hazard Management

A. Objectives

- a) To encourage sound management of areas potentially prone to bushfire.

B. Controls

- 1) Subject to detailed design at subdivision stage, a 20m precautionary bushfire setback is to be provided from the vegetation in the core riparian zone (see Figure E1.17).
The setback:
 - a) may incorporate roads;
 - b) is to be located wholly outside of a core riparian zone; and
 - c) may be used for open space and recreation subject to appropriate fuel management.
- 2) Vegetation within the area of public open space in the south eastern corner of Caddens is to be managed as a 'fuel reduced area'.

1.3.9 Water Cycle Management

A. Objectives

- a) To preserve the quality of the riparian corridor along Werrington Creek.
- b) To promote sustainable and integrated management of water resources through best practice stormwater management, water conservation and environmental protection.
- c) To ensure the quality and quantity of water leaving the urban area does not impact adversely on the health of Werrington Creek.
- d) To mitigate the impacts of urban development on stormwater quality.
- e) To ensure that there is no increase in the peak run-off rate at key locations within and around the Caddens Release Area as a result of development for the 20%, 5% and 1% Annual Exceedance Probability (AEP) flood level.

B. Controls

- 1) A riparian corridor 20m in width plus a 10m wide buffer zone is to be provided along both sides of Werrington Creek in accordance with Figures E1.16 and E1.17.
- 2) No residential allotment is to be located at a level lower than the 1% AEP flood level plus a freeboard of 500mm. Pedestrian and cycle pathways and open space may extend within the 1% AEP flood level, provided that the safe access criteria contained in the NSW Floodplain Manual are met.
- 3) Stormwater management plans are to be prepared for the catchments covering Caddens and are to demonstrate how the quantity and quality of urban run-off as a result of development will be managed.
- 4) Stormwater detention is to reduce post development flows to pre development levels.
- 5) All development is to incorporate water sensitive urban design (WSUD). A WSUD Strategy is to be submitted as part of any subdivision DA in accordance with Council's *Sustainability Blueprint for Urban Release Areas* (June 2005).
- 6) Erosion control and bank stabilisation measures are to be incorporated within the waterway where required.

1.3.10 Contamination Management

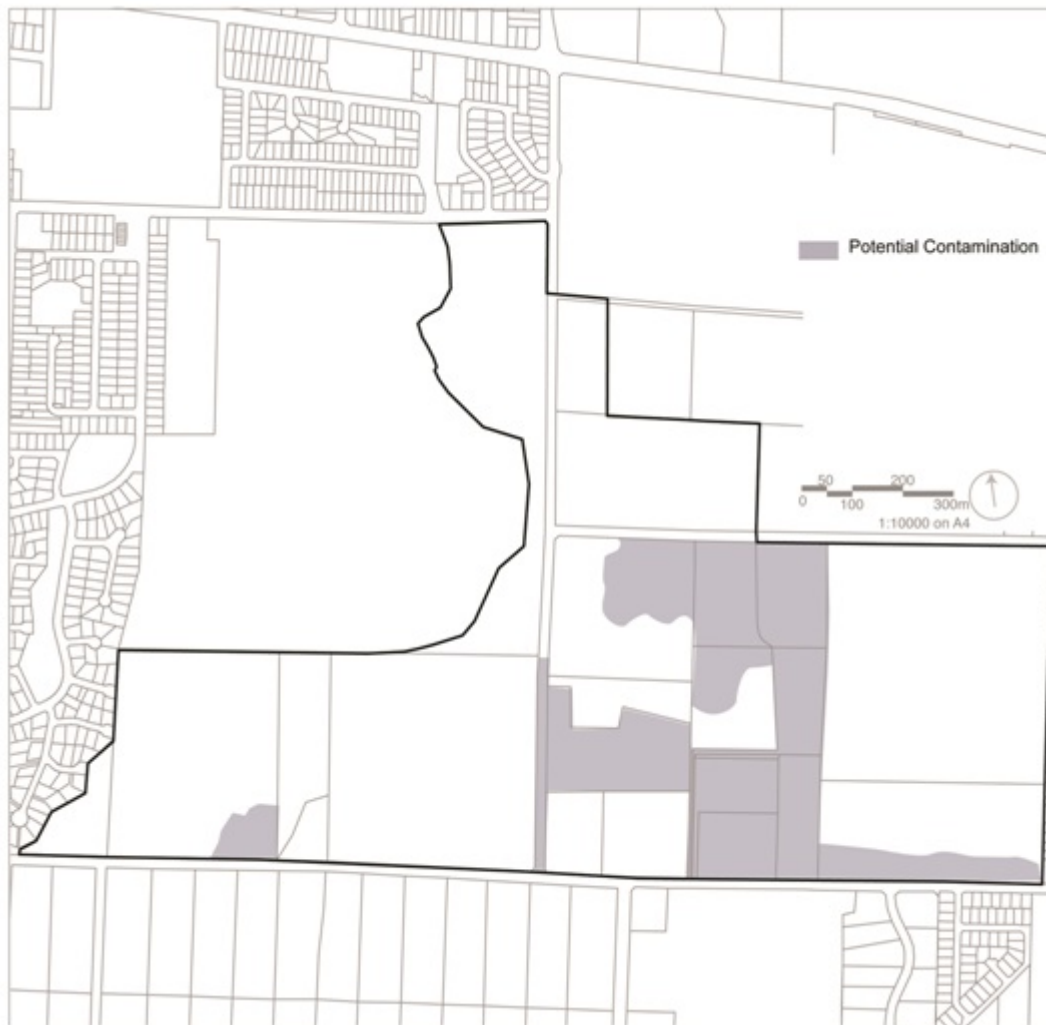
A. Objectives

- a) To minimise the risks to human health and the environment from the development of potentially contaminated land.
- b) To ensure that potential site contamination issues are adequately addressed at the time of subdivision.

B. Controls

- 1) DAs for development in areas of potential contamination as identified at Figure E1.20 shall be accompanied by a Phase 2 Environmental Site Assessment in accordance with Council's policies and requirements.
- 2) A hazardous materials assessment is required as part of the demolition of any building.

Figure E1.20 – Potentially Contaminated Land



1.3.11 Salinity Management

A. Objectives

- 1) To minimise the damage to property and vegetation caused by existing saline soils or processes that may create saline soils.
- 2) To ensure development will not significantly increase the salt load in any watercourses.
- 3) To prevent degradation of the existing soil and groundwater environment, and to minimise erosion and sediment loss and water pollution due to siltation and sedimentation.

B. Controls

- 1) DAs for subdivision of land identified in Figure E1.21 as being constrained by salinity are to be accompanied by a salinity report prepared by a suitably qualified consultant. The report is to include comprehensive sampling and cover the conditions of the site, the impact of the proposed subdivision on the saline land and the mitigation measures that will be required during the course of construction. Investigations and sampling for salinity are to be conducted in accordance with the requirements of *Site Investigations for Urban Salinity* (DNR). All works are to conform to the *Western Sydney Salinity Code of Practice*, June 2003 (WSROC) and Council's policies.

- 2) Groundwater recharge is to be minimised by:
 - a) directing runoff from paved areas into lined stormwater drains rather than along grassed channels as necessary;
 - b) lining or locating any pondages higher in the landscape to avoid recharge where proximity to the water table is likely to create groundwater mounding;
 - c) encouraging use of low water demanding plants and tree planting especially adjacent to watercourses.
- 3) For road works within areas identified as a salinity hazard:
 - a) disturbance of subsoil should be minimised;
 - b) engineering designs should consider salinity impacts; and
 - c) subsoil drainage is to be installed along both sides of all roads.
- 4) All development must incorporate soil conservation measures to minimise soil erosion and siltation during construction and following completion of development. A Soil and Water Management Plan, prepared in accordance with Council policies is to be submitted with any subdivision DA.
- 5) Land at the base of slopes near creeks may require saline tolerant species

Figure E1.21 - Salinity Constraints



1.4 Residential Development

1.4.1 Subdivision and Neighbourhood Design

A. Objectives

- a) To provide a diverse range of housing forms and densities that respond to community needs for different dwelling sizes and to different household types.
- b) To establish a clear urban structure that maximises the sense of neighbourhood and encourages walking and cycling.
- c) To establish a subdivision layout that provides for efficient residential development and maximises the natural attributes of the land.
- d) To ensure that all residential lots are afforded a high level of amenity in terms of solar access, views/outlook and/or proximity to public open space.
- e) To provide a range of densities, lot sizes and house types to foster a diverse community and interesting streetscapes.

B. Controls

- 1) Subdivision layout should generally be in accordance with Figure E1.2 and is to create a recognisable, open and networked street hierarchy that responds to natural topography, the location of existing significant trees and solar design principles.
- 2) Pedestrian connectivity is to be provided between residential development and public open space areas, public transport nodes, and community facilities and services.
- 3) Lot orientation and configuration is to be generally consistent with the subdivision principles shown at Figure E1.22. Preferred lot orientation is either on a north-south or east-west axis as per Figure E1.22. Where there are other forms of amenity available, such as views or an outlook over open space, an alternative lot orientation can be considered.

Lots orientated for solar access (Source: Amcord)

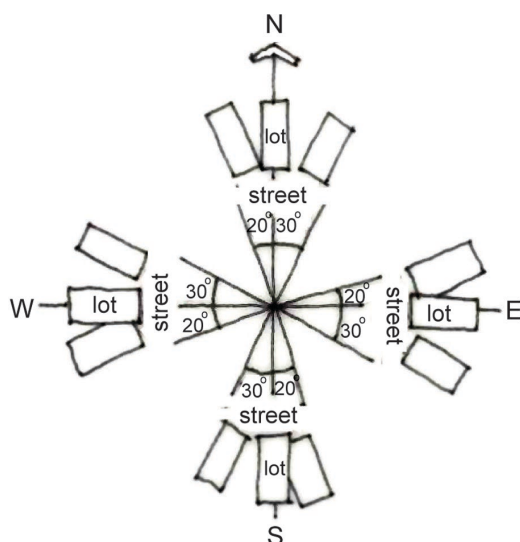
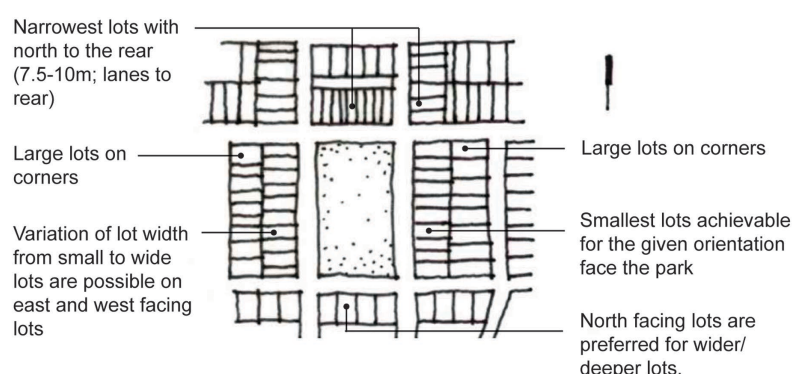


Figure E1.22 – Lot Design Principles



Example of subdivision pattern likely after applying the principles

- 4) A diverse range of lot types and frontages should be provided in each street. The repetition of lots with the same frontage along a street is to be avoided. For lots 12.5m wide and above, no more than five lots in a row should have the same frontage.
- 5) The minimum area for corner lots is 450m².
- 6) The minimum lot dimensions for all dwelling types at Caddens are set out in Table E1.2.

Table E1.2: Minimum lot dimensions

Dwelling type	Lot area (m ²)	Lot width (m)
Residential flat buildings	1000	30
Detached – contiguous (sharing a common border) with Caddens Road*	600	18
Detached - hilltops*	450	15
Detached	450	15
Detached	350	12.5
Built to boundary	350	10 -15
Semi-detached	225	7.5 -10
Attached	195	7.5 -9.5

*** See Figure E1.3**

- 7) All applications for subdivision proposing residential allotments with a site area of less than 350m² are to be accompanied by development plans for the proposed dwellings on those lots. Council may waive this requirement where an application for subdivision creates no more than 2 lots with a site area less than 350m² per dwelling and it is satisfied that the subdivision application demonstrates (through use of restrictions such as building envelopes, preferred locations for garages and open space and the like) that an appropriate built form that complies with the relevant provisions of this DCP can be

delivered on the lot. These restrictions will be approved as part of the subdivision application and will be required to be complied with by any future application proposing a dwelling on that lot.

- 8) On lots greater than or equal to 350m² in size where a built to boundary (zero lot line) dwelling is permitted, the side of the allotment that may have a zero lot alignment shall be shown on the approved subdivision plan. The Section 88B instrument for the subject lot and the adjoining lot shall include a note identifying the potential for a building to have a zero lot line.

1.4.2 Streetscape, Feature Elements and Roof Design

A. Objectives

- a) To ensure that buildings are designed to enhance the desired built form and character of the neighbourhood by encouraging quality designs that fit harmoniously with their surroundings.
- b) To ensure equitable access to natural light and ventilation for the occupants of all residential buildings.
- c) To provide a clear distinction between private and public space and to encourage casual surveillance of the street.
- d) To create an attractive and cohesive streetscape through the provision of simple and articulated building and roof forms in a contemporary style.
- e) To ensure that eaves provide sun shading and weather protection to windows and doors and contribute to aesthetic interest.

B. Controls

- 1) The primary street facade of a dwelling must incorporate an entry feature or portico and at least two of the following design features:
 - a) balcony to any first floor element;
 - b) a variation in scale to adjoining properties;
 - c) architectural elements which recess or project by at least 600mm;
 - d) open verandah;
 - e) mix of building materials or finishes;
 - f) bay windows or similar features;
 - g) pergola or similar feature above garage doors.

Good streetscape design principles are illustrated at Figure E1.23.

- 2) The secondary street facade on a dwelling on a corner lot must incorporate a window from a habitable room and at least two of the following design features:
 - a) verandah;
 - b) vertical architectural elements to reduce the horizontal emphasis of the façade;
 - c) balcony;
 - d) an architectural element which recesses or projects from the façade by at least 600mm.
 - e) landscaping and/or fencing compatible with the treatments that have or will occur on neighbouring sites.

- 3) Except on built to boundary (zero lot line) dwellings, eaves are to be provided on all roofs and should have a minimum overhang of 450mm (measured to the fascia board). Where practical, 600mm should be considered to achieve an increased degree of shading to windows. Council will consider alternative solutions to eaves as long as they provide appropriate sun shading to windows and display a high level of architectural merit.
- 4) Water tanks, air conditioning units, solar hot water tanks and roof clutter such as satellite dishes should not be prominent when viewed from any street.
- 5) Proposed colours, materials and finishes are to be from a predominantly neutral palette of colours and varied across the front elevations of buildings. Bright colours are to be avoided, except for architectural features.
- 6) Exact mirror-imaging of semi-detached dwelling facades is not permitted. However, symmetrical design is permitted where each dwelling can satisfy two different design features (as listed under the controls for primary street facades above) and where the overall design of the dwellings are compatible with the streetscape in terms of design, built form, scale and bulk (see Figure E1.23).
- 7) The repetition of identical housing designs in a group of dwellings, other than for attached dwellings, will not be permitted.

Figure E1.23 – Streetscape Design Principles. Source: DKO



1.4.3 Dwelling Height, Massing and Siting

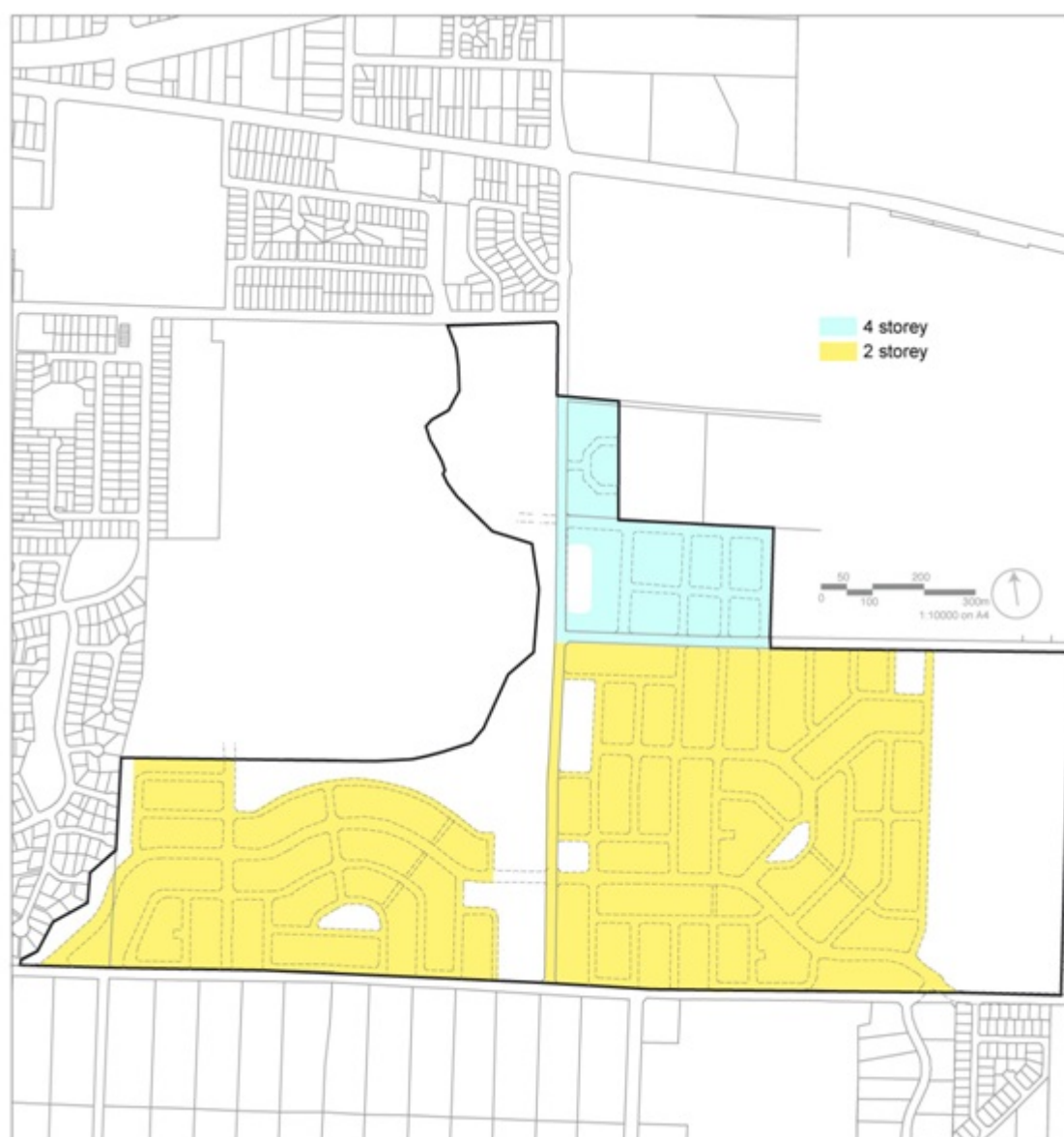
A. Objectives

- a) To ensure development is appropriately scaled to suit the dwelling's local context.
- b) To ensure building heights achieve built form outcomes that reinforce quality urban and building design.
- c) To create attractive and cohesive streetscapes.
- d) To protect residential amenity in relation to solar access and privacy.
- e) To encourage efficient and sustainable use of land.

B. Controls

- 1) The maximum number of storeys, measured from existing ground level, must be in accordance with those shown in Figure E1.24.
- 2) Single and attached housing is generally to be 2 storeys in height. Council may permit a third storey if it is satisfied that it is located:
 - a) on a prominent street corner; or
 - b) on the lower side of land with a finished ground level slope equal to or more than 15%; and
 - c) is not likely to impact adversely on the existing or future amenity of any adjoining land in terms of overshadowing and visual privacy.
- 3) Buildings should be designed to ensure that 50% of the area of the required Principal Private Open Space of both the proposed development and the adjoining properties receive at least 3 hours of sunlight between 9am and 3pm on the 21 June.
- 4) For lots equal to, or greater than, 450m², the upper (second) level of a dwelling is to be no more than 30% of the lot area.

Figure E1.24 - Height Map



1.4.4 Building Setbacks

A. Objectives

- a) To provide a variety of streetscapes that reflect the character of different precincts, the diversity of edge conditions, house types and road hierarchies.
- b) To reduce the dominance of garages on the streetscape.
- c) To encourage eaves, verandahs, balconies and other feature elements on the front facades of dwellings.
- d) To minimise the impacts of development on neighbouring properties in relation to views, privacy, and overshadowing.
- e) To provide 'breathing space' between buildings.
- f) To ensure that development on corner lots is visually significant and promotes a strong

and legible character.

- g) To provide deeper front setbacks for dwellings that front or access Caddens Road to encourage dense landscaping.

B. Controls

- 1) Dwellings are to be consistent with the minimum front, side and rear setback controls in Table E1.3 and the front setback principles diagram at Figure E1.25.

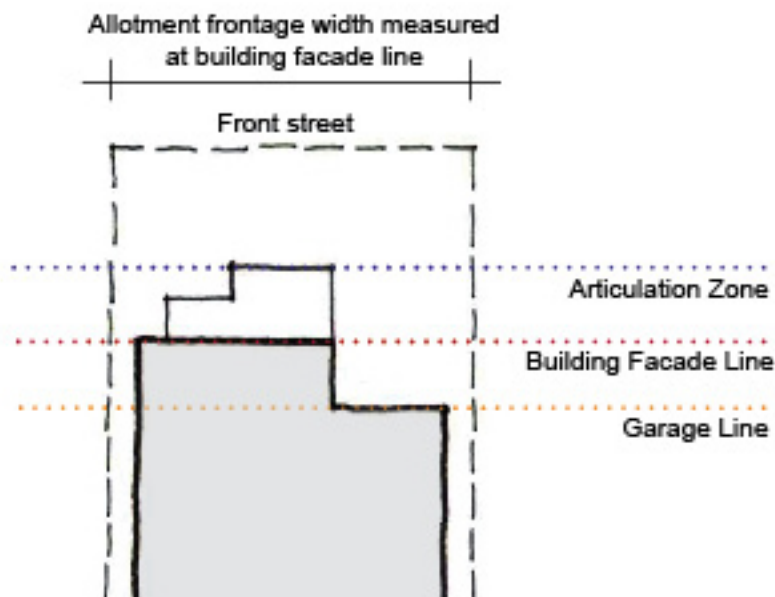
Table E1.3: Building setbacks

Dwelling type	Front *	Side	2 nd storey side	Rear
Detached contiguous (sharing a common border) with Caddens Rd (min. frontage: 18m)	6m	2m	2m	6m
Detached (frontage: 18m & greater)	4.5m	1.5m	1.5m	6m
Detached (frontage: 15m to less than 18m)	4.5m	0.9m	1.2m	6m
Detached (frontage: 12.5m to less than 15m)	4.5m	0.9m	1.2m	4m
Built to boundary	4.5m	0.9m & zero	2.4m from the adjoining built to boundary side boundary	4m**
Semi-detached	3m	0.9m & zero	1.2m on the unattached side	4m**
Attached	3m	zero	zero	4m**
Corner		See requirements in text below		

* measured from the front boundary to the building façade line

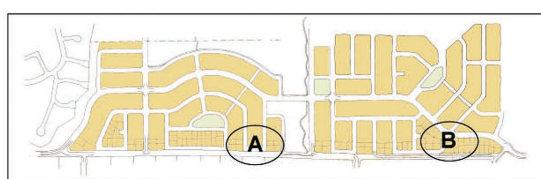
** excluding garage

Figure E1.25 – Front Setback Principles



- 2) On corner lots the setback for a secondary frontage is to be as follows:
 - a) 2m for all detached and semi detached dwellings on lots less than 18m wide; and
 - b) 3m for dwellings on lots 18m and wider.
- 3) Corner lots are to be splayed with the indent on both the primary and secondary street to be generally 5m. The building setback from the splayed corner boundary is to be a minimum of 2m.
- 4) Any building contiguous (sharing a common border) with Caddens Road is to be set back 6m from the boundary to Caddens Road.
- 5) Dwellings contiguous (sharing a common border) with Caddens Road are to be orientated and accessed in accordance with Figure E1.26.
- 6) Garages are to be set back a minimum of 1m behind the front building facade line as shown in Figure E1.26.
- 7) Garages on secondary streets are to be set back 1m behind the dwelling façade on the secondary street.
- 8) No setback is required for rear lane garages.

Figure E1.26 – Caddens Road Lot Layout



Location A



Location B

- 9) Dwellings are to be consistent with the side and rear setback controls at Table E1.3. Projections permitted into side and rear setback areas include eaves, sun hoods, gutters, down pipes, flues, light fittings and electricity or gas meters, rainwater tanks and hot water units.
- 10) The side setbacks of second storeys are to have regard to dwelling design, lot orientation and adjoining dwellings and are to comply with the following minimum dimensions:
 - a) detached dwelling – 1.2m on both sides;

- b) semi-detached dwelling – 1.2m on the unattached side;
 - c) built to boundary lots – 2.4m from the adjoining built to boundary side boundary.
- 11) Architectural elements which address the street frontage should be incorporated in the 'articulation zone' (see Figure E1.25). These may extend beyond the front façade by a maximum of 1m. The following elements are permitted:
- a) entry features or porticos;
 - b) awnings or other features over windows;
 - c) eaves and sun shading;
 - d) balcony or window box to any first floor element;
 - e) projecting architectural elements;
 - f) open verandahs;
 - g) bay windows or similar features.
- 12) Side walls should be staggered/ indented to avoid an excessive long and blank appearance.

1.4.5 Development Forms

Built to Boundary Dwellings

The general form and style of 'built to boundary' dwellings is illustrated in Figure E1.27.

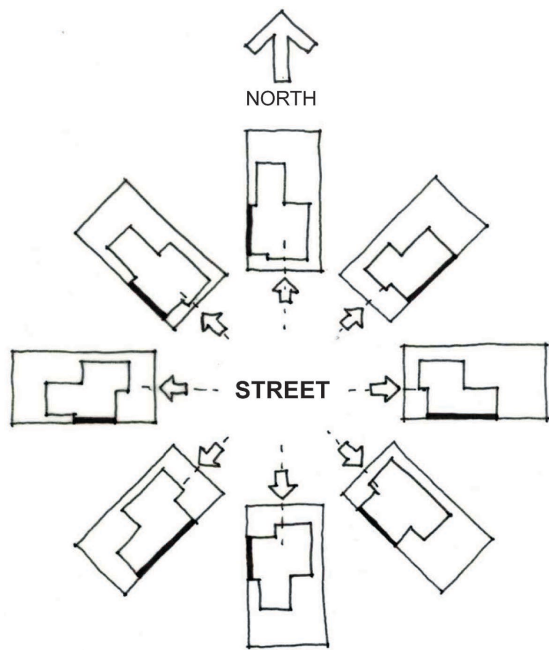
A. Objectives

- a) To create an attractive and cohesive streetscape and facilitate the efficient use of land.
- b) To ensure appropriate amenity between dwellings.

B. Controls

- 1) Built to boundary development must demonstrate that the use of a 'zero lot line setback' will not adversely affect the privacy and solar access of an adjoining property.
- 2) The location of built to boundary development is to be determined with regard to dwelling design, allotment orientation, adjoining dwellings, landscape features, topography and the built to boundary location principles at Figure E1.27.
- 3) An easement for maintenance of the built to boundary wall (and any services along the side of the dwelling) is to be provided on the adjoining property. A Section 88B instrument supporting the maintenance easement is to be provided.
- 4) The setbacks for built to boundary development must comply with the requirements of Section 4.4.

Figure E1.30 – General form of Built to Boundary dwellings



Secondary Dwellings

This Section includes controls for Secondary Dwellings. The term 'secondary dwelling' is defined in LEP 2010. Generally, secondary dwelling development in Caddens should be in the form of "Studio Lofts", the general form and style of which is illustrated in Figure E1.31.

A. Objectives

- a) To encourage a diversity of affordable housing product.
- b) To provide housing and accommodation options for a range of family types and age groups.
- c) To promote innovative housing solutions compatible with the surrounding residential environment.
- d) To provide passive surveillance of rear lanes and shared driveways.

B. Controls

- 1) The maximum floor space for a secondary dwelling is 60m².
- 2) The secondary dwelling is to be located above the garage, carport or similar structure of the principal dwelling or be part of a corner lot development.
- 3) A secondary dwelling must incorporate design and construction features, finishes, materials and colours similar to, or complementary with, the principal dwelling.
- 4) An application for a secondary dwelling development is to have regard to its suitability in the context of neighbouring dwellings and local character.
- 5) Windows and private open spaces must not overlook the private space of any adjacent dwelling. Windows to common boundaries must either have obscured glazing, be screened or have a minimum sill height of 1.7m above floor level.
- 6) Design is to generally maximise solar access to internal living areas and minimise overshadowing of outdoor areas of the principal and adjacent dwellings.
- 7) Private open space in the form of a balcony should preferably be provided in addition to the private open space area requirements for the principal dwelling.
- 8) Access to the secondary dwelling is to be separate from the principal dwelling and is to front a public street, lane or shared private accessway, either at or above ground level.
- 9) Strata title subdivision into a separate allotment will be permissible only where the following are provided:
 - a) The secondary dwelling is located substantially above the other dwelling; or
 - b) The secondary dwelling has a floor area that does not exceed 60m² and is located above the garage, carport or similar structure of the principal dwelling; and
 - c) private open space of 8m² with a minimum dimension of 2m; and
 - d) separate access; and
 - e) one separate on-site car parking space; and
 - f) separate services for mail delivery and waste collection, and an on-site garbage storage area which is not visible from a public street; and
 - g) separate connections and metering for utilities (electricity, water, gas, telecommunications etc).

Figure E1.28 – General form of “Secondary Dwellings”



Mixed Use and Medium Density Housing

The general forms and styles of mixed use and medium density dwellings are illustrated in Figure E1.29.

A. Objectives

- a) To establish a high quality medium density housing environment where all dwellings have a good level of amenity.
- b) To encourage a variety and choice of housing forms.
- c) To encourage active street frontages and activate streets.

Figure E1.29 – General form of Mixed Use Development



B. Controls

- 1) Mixed use and residential flat buildings are to be located generally within the Precinct Centre (B2 zone) and the Residential R3 Zone and are to:
 - a) have a minimum lot size of 1,000m² and a minimum street frontage of 30m; and
 - b) not adversely impact upon the existing or future amenity of any adjoining land upon which residential development is permitted with respect to overshadowing, privacy or

visual impact.

- 2) All mixed use and residential flat development is to be consistent with:
- a) the guidelines and principles outlined in SEPP 65 – Residential Flat Development; and
 - b) the primary controls set out at Table E1.4.

Table E1.4: Controls for Residential Flat Buildings

Element	Control
Principal private open space (min)	Ground level - 20m ² per apartment (min width 2.5m) Upper level - 10m ² per apartment (min width 2.m)
Storeys (max)	4
Front setback (min)	3m
Secondary street setback (min)	3m
Side and rear setbacks (min)	In accordance with the Residential Flat Design Code or on merit
Adaptable dwellings (min)	10%

- 3) To provide visual interests and reduce building bulk, facades are to be articulated (via balconies, blade walls, stepped facades and the like).
- 4) Balconies can intrude into the front setback by a maximum of 2m.
- 5) Buildings with a length greater than 15m are to incorporate multiple entries and circulation cores.
- 6) The design of residential flat buildings and mixed use development must meet the visual and acoustic amenity requirements set out in Part 5.1 of this section.
- 7) Buildings with mixed use development, that is a mix of residential and commercial and/or retail, must incorporate the following:
- a) retail/commercial uses at ground floor level;
 - b) floor to ceiling heights of at least 3.5m at ground level;
 - c) separate commercial and residential pedestrian access;
 - d) separate provision for commercial and residential waste.

Development on Sloping Land

A. Objectives

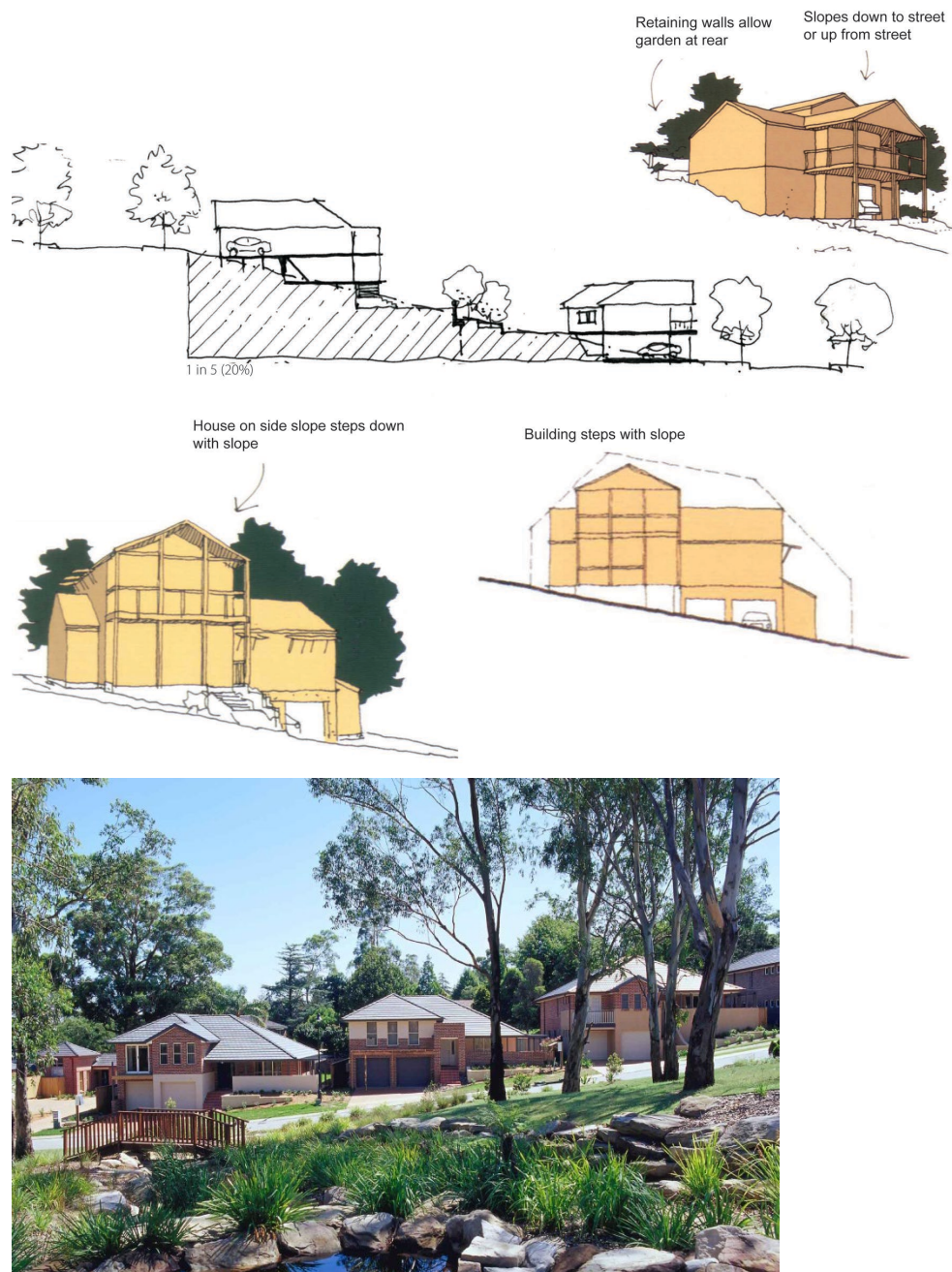
- a) To ensure that development responds to topographical constraints.
- b) To provide opportunities for views to and from hilltop areas.
- c) To minimise the bulk and scale of dwellings on steep slopes.

d) To minimise the potential impact of on-site salinity.

B. Controls

- 1) Development on sloping land should generally be accordance with Figures E1.30.
- 2) The subdivision layout on cross slopes should incorporate wider/larger lots on steeper land.
- 3) Preliminary building pads on lots with a front to back slope should provide a minimum floor level split of 1m or as appropriate to facilitate split level house designs.
- 4) The side boundary retaining walls for development on cross slopes should retain a cut no higher than 1m.
- 5) All retaining walls forward of the garage line must be constructed with masonry materials and finished to complement the house design.
- 6) On front to back slopes, rear boundary retaining walls should be a maximum 1.8m in height and retain a maximum cut of 1.5m in height, provided that there is a minimum 1m wide terrace between the face of the wall and the fence line.
- 7) With the exception of corner lots, where slopes exceed 10%, retaining walls may exceed 1m in height for a side boundary and 1.8m in height for a rear boundary, if comprehensive site benching is undertaken at the time of subdivision to produce a whole of site solution.
- 8) Lots with a side cross slope exceeding 5%, must respond to the slope of the land with either split level, drop edge beam, or bearer and joist design (or a combination of these).
- 9) Where front to back slopes are steep (i.e. approximately greater than 9%) house designs must respond to the topography of the land with either split level, dropped edge beam, or timber frame floor (bearer and joist) design - or a combination of these.
- 10) Garden retaining walls within lots are not to exceed 0.9m in height. Any remaining slope is to be graded out.
- 11) On lots sloping downhill to the street, dwellings shall be designed and constructed to achieve driveway and access gradients of no greater than 20% slope. This may be achieved by cutting the garage space into the slope within the building footprint. Dwellings should be terraced down the slope with activating features such as decks or balconies facing the street.
- 12) On lots sloping downhill from the street, dwellings shall be designed and constructed to optimise filling to achieve driveway and access gradients of no greater than 20% slope. This may be achieved by elevating garage and entry features within the building footprint. Dwellings should be terraced down the slope with features such as decks and balconies located towards the rear of the dwelling.
- 13) On lots sloping downhill from the street, the privacy of adjoining dwellings down slope should be preserved by providing screening vegetation between observable platforms and adjoining private open space areas, or integrating features such as timber screens to decks, or partially opaque windows where privacy is essential and screening vegetation is impractical.

Figure E1.30 – Housing on Sloping Land



1.4.6 Private Open Space

Private open space (POS) means the portion of private land which serves as an extension of the dwelling to provide space for relaxation, dining, entertainment and recreation. It may include an 'alfresco room'.

Principal private open space (PPOS) means the portion of private open space which is conveniently accessible from a living zone of the dwelling, and which receives the required amount of solar access.

A. Objectives

- a) To provide a high level of residential amenity with the opportunity for outdoor recreation and relaxation within the property.
- b) To enhance the spatial quality, outlook and useability of private open space.
- c) To enhance and contribute to streetscape amenity.
- d) To optimise solar access to the living areas and private open spaces of dwellings.
- e) To ensure that dwellings are designed to minimise overshadowing of adjacent properties and to protect minimum standard sunlight access to private outdoor living space of adjacent dwellings.

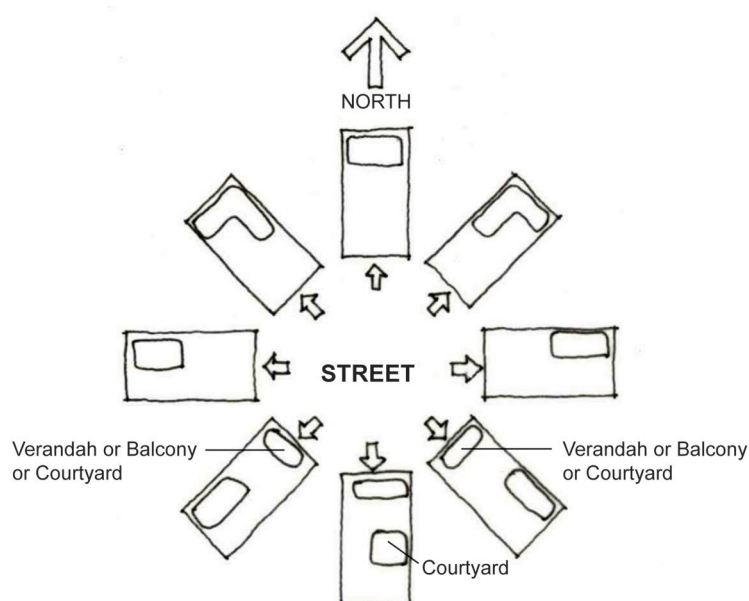
B. Controls

- 1) All dwellings are to be provided with an area of Private Open Space (POS) and Principal Private Open Space (PPOS) consistent with Table E1.5.
- 2) The location of PPOS is to have regard to dwelling design, allotment orientation, adjoining dwellings, landscape features, topography and the preferred locations of PPOS illustrated at Figure E1.31.
- 3) 50% of the area of the required PPOS (of both the proposed development and the adjoining properties) must receive at least 3 hours of sunlight between 9am and 3pm at the winter solstice (21 June).
- 4) The PPOS must interface directly with the main living area of a dwelling or alfresco room. Where the PPOS is a semi-private patio, balcony or roof top area, it must be provided with a fence or landscaped screen at least 1m in height, and be directly accessible from a living area.
- 5) For a secondary dwelling that incorporates one dwelling substantially above the other, the ground level dwelling is to comply with the controls in Table E1.5. The upper level dwelling is to have a balcony accessed directly off the living space with a minimum area of 8m² plus a minimum 5m² at the ground level with space for clothes drying.

Table 5 – Private Open Space

Lot width	Private Open Space	Principal Private Open Space
7.5 -10 m	Min. 20% of lot area Min. dimension – 2 m	Min. 16m ² in area Min. dimension - 3m
>10-15m	Min. 20% of lot area Min. dimension – 2 m	24m ² in area Min. dimension - 4m
>15-17.5m	Min. 20% of lot area Min. dimension – 2.5m	30m ² in area Min. dimension - 4m
> 17.5m	Min. 20% of lot area Min dimension – 3m	40m ² in area Min dimension – 4m

Figure E1.31 – Principal Private Open Space Principles



1.4.7 Site Cover and Landscaped Areas

A. Objectives

- To provide solar access to both residents and neighbours.
- To provide permeability and limit stormwater runoff.
- To enhance the landscape character of the area.

B. Controls

- Dwellings on lots 450m² and greater are to comply with the following maximum site cover:
 - 50% of total lot area; with

- b) 60% for single storey dwellings.
- 2) Site coverage on lots smaller than 450m² will be treated on merit but is to be no greater than 70% and is to demonstrate compliance with the private open space and solar access requirements of this Plan.
- 3) Site coverage for residential flat buildings will be treated on merit but is generally to be no greater than 70%
- 4) Landscaped area is any part of a site, at ground level, that is permeable and consists of features such as soft landscaping, turf and planted areas. The following minimum landscaped area must be provided:
 - a) lots less than 450m² – 35% of the lot area ;
 - b) lots 450m² and greater - 35% of the lot area.
- 5) A Landscape Plan is to be submitted with all DAs for residential development. The DA plans must indicate the extent of hard and soft landscaped areas, tree sizes and locations and other requirements for landscaped plans contained in the other relevant sections of this DCP.
- 6) The front setback area of a dwelling is to be landscaped with the treatment to clearly delineate between the private and public domain. The front setback is to incorporate two trees. The rear garden must include at least one tree that will achieve a height of 6m at maturity. These may include existing trees that are to be retained.
- 7) To prevent accumulation of water and concentration of salts, subsoil drains are to be installed around the perimeter of residences and connected to the stormwater system.
- 8) Low water demand drought resistant vegetation is to be used in common landscaped areas, including native salt tolerant trees.
- 9) Garbage bin storage and clothes drying areas are to be concealed from view and shown on site plans.

1.4.8 Fencing

A. Objectives

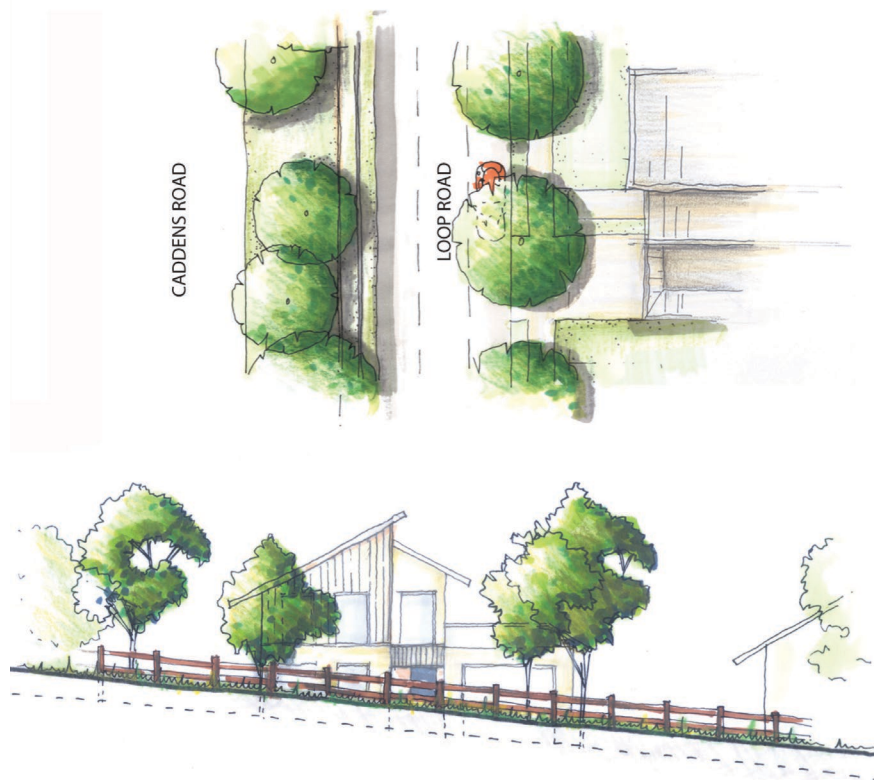
- a) To provide privacy to both residents and neighbours.
- b) To ensure boundary fencing is of a high quality and does not detract from the streetscape.
- c) To ensure that fencing is consistent with the street and the design and style of the dwelling.
- d) To permit casual surveillance of open space.
- e) To reinforce, through landscape treatments, the rural character of development along Caddens Road.

B. Controls

- 1) Except for dwellings contiguous (sharing a common border) with Caddens Road, front and side fencing must be constructed with masonry piers that complement the streetscape and dwelling finish. Infill panels are to consist of open slats, palisades or pickets.
- 2) The fencing on the secondary street of a lot with a frontage 17.5m or greater must be set back 0.9m from the secondary street boundary and must incorporate landscaped vegetation between the fence and the boundary.

- 3) Metal sheet style fencing is not permitted anywhere.
- 4) Where a dwelling is located adjacent to open space, boundary fencing is to be of a high quality material and finish and the design is to permit casual surveillance of the open space. Fencing adjoining rear access ways is to permit casual surveillance.
- 5) Dwellings contiguous (sharing a common border) with Caddens Road, as shown in Figure E1.3, are to be fenced with a rural style solid timber post and rail fence generally in accordance with Figure E1.32.

Figure E1.32 – Landscaping along Caddens Road



1.4.9 Garages and Access

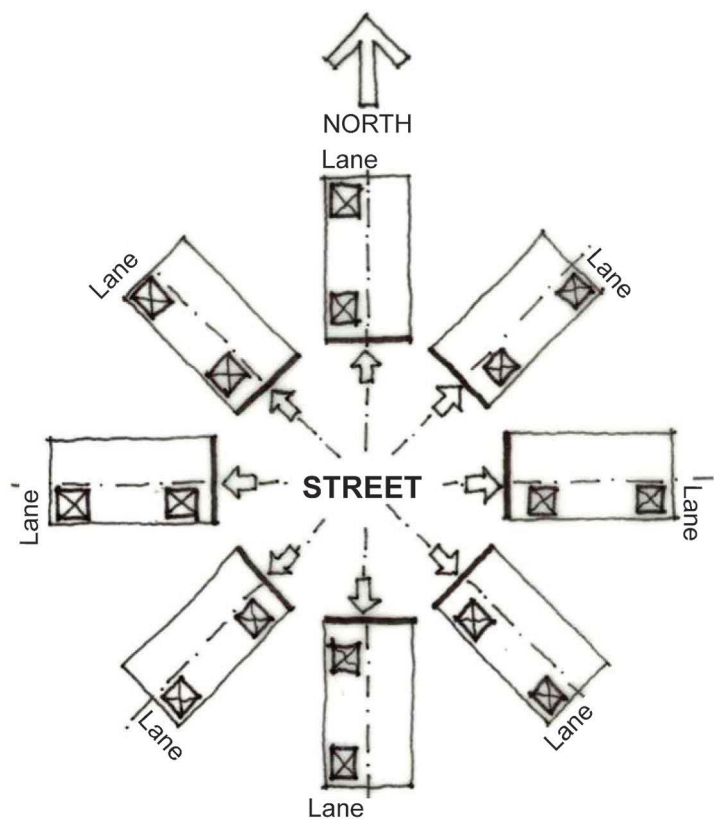
A. Objectives

- a) To provide sufficient, safe and secure parking for residents and visitors.
- b) To reduce the visual impact of garages, carports and parking areas on the streetscape and improve dwelling presentation.
- c) To ensure that garages do not dominate the frontage of the house.
- d) To encourage the use of secondary dwelling over garages to facilitate surveillance, and opportunities to work from home and for residential accommodation.

B. Controls

- 1) Garages are to be sited as per the preferred siting diagram at Figure E1.33.
- 2) Where a carport or garage entry forms part of the front façade of a dwelling, it is to be set back a minimum of 5.5m from the front boundary and at least 1m behind the building façade.
- 3) Front loaded double garages are only permissible on lots with a frontage width equal to or greater than 12.5m.
- 4) The maximum dimension for garage doors is to be less than 50% of the front façade, 6m in width and 2.4m in height. Triple fronted garages are not permitted.
- 5) Carports and garages are to be treated as an important element of the dwelling facade and are to be integrated with, and complementary to, the dwelling design in terms of design and materials. Garage doors are to be visually recessed through use of materials, colours, and overhangs.
- 6) The maximum number of dwellings to be serviced from a shared driveway is 10.
- 7) Garages are to comply with AS 2890.1 Off Street parking, including:
 - a) minimum internal width between main walls of 3m for a single garage;
 - b) minimum internal width between main walls of 5.5m for a double garage.
- 8) Driveway access to garages on steep land must comply with AS 2890.1. Stencil-crete on driveways is not permitted.
- 9) Driveways are to be no wider than 4.5m at the front boundary and should be a minimum of 1.5m from street trees.
- 10) Where possible, the garage for a corner lot should be accessed from the secondary street, unless the secondary street is Caddens Road.
- 11) At grade car parking for residential and commercial buildings must be appropriately screened from view.

Figure E1.33 – Garage Location Principles



1.5 Environmental and Residential Amenity

1.5.1 Visual Privacy and Acoustic Amenity

A. Objectives

- a) To minimise the impacts of development on the visual privacy and acoustic amenity of adjoining properties, the streetscape and public domain.
- b) To protect the acoustic amenity of dwellings on collector roads.

B. Controls

- 1) Direct overlooking of main habitable areas and private open spaces of adjacent dwellings should be minimised through building layout, window and balcony location and design, and the use of screening devices, including landscaping.
- 2) Habitable room windows with a direct sightline to the habitable room windows in an adjacent dwelling within 3m are to:
 - a) be obscured by fencing, screens or appropriate landscaping; or
 - b) be offset from the edge of one window to the edge of the other by a distance sufficient to limit views into the adjacent window; or
 - c) have sill height of 1.7m above floor level; or
 - d) have fixed opaque glazing in any part of the window below 1.7m above floor level.
- 3) The design of dwellings must minimise the opportunity for sound transmission through the building structure, with particular attention given to protecting bedrooms and living areas.
- 4) In attached dwellings, bedrooms of one dwelling are not to share walls with living spaces or garages of adjoining dwellings, unless it is demonstrated that the shared walls and floors meet the noise transmission and insulation requirements of the Building Code of Australia.
- 5) The internal layout of residential buildings, window openings, the location and design of outdoor living areas and elements (i.e. courtyards, balconies and retaining walls), and building plant equipment should be designed to minimise noise impact and transmission and enhance visual amenity.
- 6) Residential subdivision and development must be designed to comply with the NSW Road Noise Policy criteria and must be consistent with the following controls:
 - a) To mitigate the effects of noise on existing residential development to the west of the Caddens Road By-pass, appropriately designed acoustic treatments such as low height walls or other methods/treatments which will achieve NSW Road Noise Policy criteria are to be provided where required along Collector Road 1.

Note: Mounding along the linear park is not considered appropriate due to resulting safety and practicality issues.

- b) To mitigate the impacts of traffic noise from the Caddens Road By-pass 1 on new development a combination of the following measures is to be used;
 - i) dwelling setbacks;
 - ii) internal dwelling layouts designed to minimise noise in living and sleeping areas;
 - iii) fencing constructed with a suitably solid mass, and
 - iv) locating courtyards and principal private open space areas away from the noise

source in order to comply with the NSW Road Noise Policy.

- 7) For new residential development along the Caddens Road By-pass, where external traffic noise levels cannot be met at the nearest facade of the dwelling to the noise source, dwellings must be designed to meet the following internal noise levels:

- a) In a naturally ventilated - windows open condition (i.e, windows open up to 5% of the floor area, or attenuated natural ventilation open to 5% of the floor area), or mechanically ventilated windows closed condition:

Sleeping areas	LAeq 1 hour, Day	40dB
	LAeq 1 hour, Night	35dB
Living areas	LAeq 1 hour, Day	45dB
	LAeq 1 hour, Night	40dB

- b) Where a naturally ventilated - windows open condition cannot be achieved, it will be necessary to incorporate mechanical ventilation compliant with AS1668 and the Building Code of Australia. The noise levels above shall be met with mechanical ventilation or air-conditioning systems not operating. The following LAeq noise levels shall not be exceeded when doors and windows are shut and mechanical ventilation or air conditioning is operating:

Sleeping areas	LAeq 1 hour, Day	43dB
	LAeq 1 hour, Night	38dB
Living areas	LAeq 1 hour, Day	46dB
	LAeq 1 hour, Night	43dB

Note: These levels correspond to the combined measured level of external sources and the ventilation system operating normally

Note: LAeq 1 hour noise levels shall be determined by taking as the second highest LAeq 1 hour over the day and night period for each day and arithmetically averaging the results over a week for each period (5 or 7 day week, whichever is highest)

1.5.2 Safety and Surveillance

A. Objectives

- To promote public safety and security through passive surveillance of public spaces.
- To ensure that, through casual surveillance, the siting and design of buildings and spaces reduces the opportunity for crime.
- To ensure that development encourages people to use streets, parks, cycleways, footpaths, the hilltop avenue and other public places without fear of personal risk.

B. Controls

- Dwellings should be designed to overlook streets, lanes and other public or communal areas to provide casual surveillance.
- For passive surveillance, at least one living area of a dwelling should overlook the street or public open space. In the case of corner lots habitable windows are also be oriented to overlook the secondary street or any cycleway or pedestrian path.
- Opportunities for casual surveillance from dwellings/studios are to be incorporated into the design of shared driveways and, where rear access is proposed, from laneways.
- Developments, including open space, are to avoid creating areas for concealment and

blank walls facing the street.

- 5) Pedestrian and communal areas are to have sufficient lighting to ensure a high level of safety and must be designed to minimise opportunities for concealment.
- 6) DAs for subdivision, public open space and community facilities are to incorporate the principles of Crime Prevention Through Environmental Design (CPTED).

1.5.3 Sustainable Building Design

A. Objectives

- a) To increase the sense of space within homes and provide well proportioned rooms.
- b) To promote the penetration of daylight deep into rooms.
- c) To ensure that developments are environmentally sustainable in terms of energy and water use.
- d) To maximise opportunities for natural ventilation in residential development.

B. Controls

- 1) Minimum dwelling floor to ceiling heights shall be as follows:
 - a) ground floor habitable rooms of two storey single dwellings - 2.65m;
 - b) upper floors and all non-habitable rooms – 2.4m;
 - c) single storey dwellings – 2.65m;
 - d) attics – 1.5m wall height at edge of room with a 30 degree minimum ceiling slope;
 - e) all floors of multi-unit dwellings – 2.4m.
- 2) The building envelope, depth, location of doors and windows, and internal layout of all residential development is to facilitate cross -ventilation.
- 3) The main living area of all dwellings is to open directly onto the private open space via either glazed sliding bi-fold or French doors, or similar, to allow for adequate solar access.
- 4) North and west facing windows are to be provided with appropriate external shading.
- 5) All dwellings are to incorporate an outdoor clothes line/drying area in a sunny location not visible from a street or public place.

1.6 The Precinct Centre

A. Objectives

- a) To ensure that urban design and landscaping encourages pedestrian amenity and community activity.
- b) To provide an attractive, accessible and lively community focal and gathering point for Caddens and the wider Werrington Enterprise, Living and Learning Precinct and its residents, employees and students.
- c) To provide active uses at street level which facilitate safety and passive surveillance.
- d) To provide a mix of retail, residential and commercial land uses.
- e) To create a retail centre based on traditional 'main street' shopping.
- f) To encourage housing forms which provide opportunities for home-based employment and businesses.
- g) To provide a rectilinear road pattern that connects the Precinct Centre to the UWS campus and surrounding residential conservation and employment areas.
- h) To provide opportunities for the location of UWS and TAFE-related facilities such as student services, libraries, meeting rooms, etc.

B. Controls

- 1) The Indicative Concept Plan shown at Figure E1.34 provides an example of how the Precinct Centre might be developed to satisfy controls in this section.
- 2) Detailed design and planning of the Precinct Centre shall be subject to the formulation of a concept plan as part of a staged development.
- 3) The road layout should generally be rectilinear in pattern with clear and legible street and pedestrian connections to UWS, TAFE and surrounding residential, employment and open space areas.
- 4) Development applications for the Precinct Centre are to demonstrate how potential conflicts between uses and activities are to be managed and minimised.
- 5) Streets are to be activated and, where possible and appropriate, developments are to incorporate active uses at street level.
- 6) Public art is to be incorporated at key focal points to promote community identity.
- 7) Buildings are generally to be built to the street edge and provide a continuous street frontage and continuous non-glazed awning along the street edge.
- 8) The total maximum gross floor area for retail and commercial development in the Precinct Centre is 12,500m².
- 9) The above floor area may only be exceeded if the building and uses relate to activities directly associated with UWS and/or TAFE.
- 10) No one shop (retail premises) is to be greater than 4,000m².
- 11) The maximum height of any development in the Precinct Centre is 4 storeys.
- 12) Where appropriate the design of medium density housing is to incorporate opportunities for home based employment.
- 13) Any supermarket should be located on the southern/wider section of the Precinct Centre and supporting commercial services should be located in the northern section.

The Precinct Centre is intended to be an attractive community focal point incorporating mixed use (i.e. shops, commercial and housing).



Figure E1.34 – Precinct Centre Concept Plan



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E2 Claremont Meadows Stage 2

2.1. Introduction

2.1.1. Area Covered by this Section

The Claremont Meadows Stage 2 (Figure E2.1) area covers land bounded by:

- The M4 Motorway to the south;
- The South Creek Corridor to the east;
- The Caddens Release Area and Orchard Hills to the west; and
- The existing Claremont Meadows Estate (Figure E2.1) and the Great Western Highway to the north.

Claremont Meadows Stage 2 is separated into two distinct precincts and a Gateway Site:

a) Eastern Precinct (Figure E2.2), which covers land bounded by:

- The M4 Motorway to the south;
- The South Creek Corridor to the east;
- Gipps Street to the west; and
- The former Council tip site to the north.

b) South Western Precinct (Figure E2.3), which covers land bounded by:

- The M4 Motorway to the south;
- Gipps Street to the east;
- Existing rural residential development to the west; and
- Caddens Road (and the existing Claremont Meadows estate) to the north.

c) The Gateway Site (Figure E2.1) is located on the corner of Gipps Street and the Great Western Highway.

Figure E2.1 – Land to which this Section applies



Figure E2.2 – Eastern Precinct

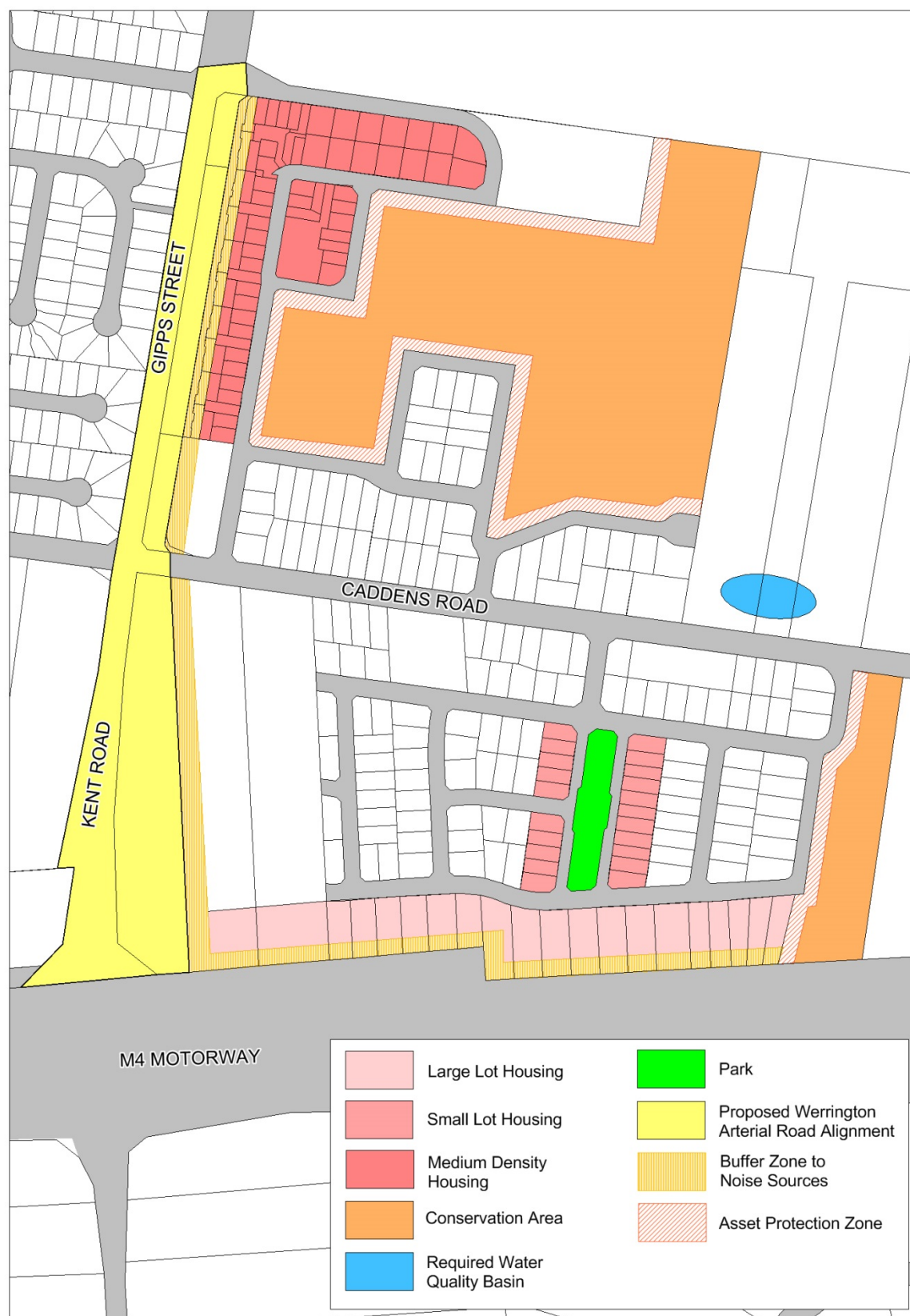
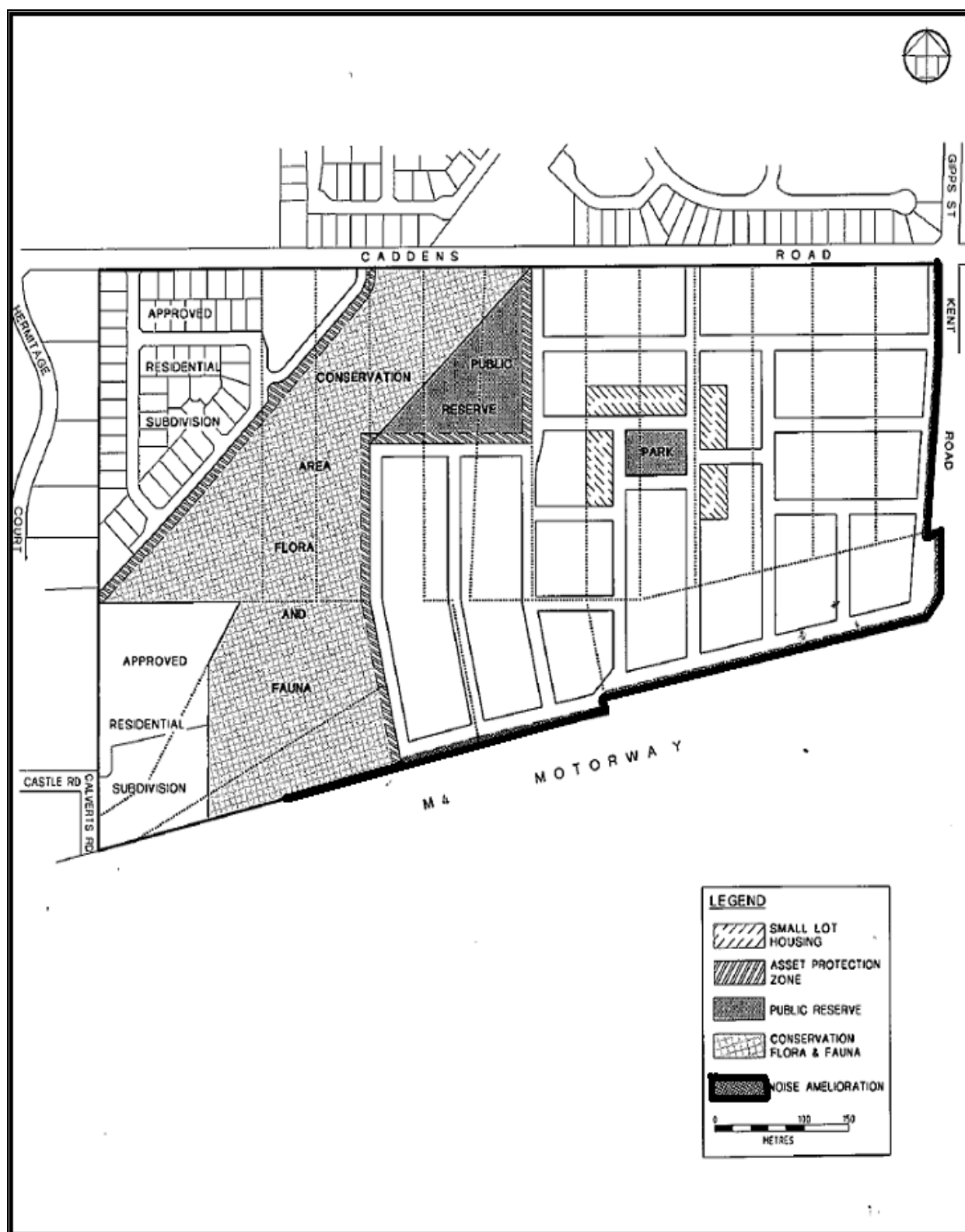


Figure E2.3 – South Western Precinct



2.1.2 Aims of this Section

- a) To provide specific guidelines for the preparation and assessment of applications for development in Claremont Meadows Stage 2.
- b) To provide opportunity for a range of housing sizes and types to provide housing choice for future residents;
- c) To ensure buildings have a high level of environmental performance consistent with Penrith City Council requirements, particularly with regard to energy efficiency, water management and the control of noise;
- d) To retain, protect and rehabilitate areas of high conservation value;
- e) To promote development that achieves best practice in ecologically sustainable development and enhances the natural values of the site;
- f) To require the consideration of social and economic aspects of sustainable development;
- g) To provide a public domain with landscaping which contribute to biodiversity by using local native species wherever possible and which has high aesthetic quality and is appropriate for its use and location;
- h) To mitigate the potential impact of the M4 Motorway, Gipps Street and the Great Western Highway on the proposed development;
- i) To mitigate the visual impact of the development on the M4 Motorway;
- j) To ensure that the Gateway site on the corner of the Great Western Highway and the current alignment of Gipps Street is developed appropriately as an entrance to Claremont Meadows;
- k) To ensure that surrounding land uses are given due attention in the planning and design of Stage 2, including the:
 - i) South Creek corridor;
 - ii) Former tip site;
 - iii) Adjacent rural residential development;
 - iv) Claremont Creek and the riparian corridor; and
 - v) Conservation areas.

2.2 Residential Development

2.2.1 Multi Dwelling Housing

This section applies to the eastern precinct only on land zoned R3 Medium Density Residential under the LEP. This is to:

- a) Take advantage of the proximity to Sunflower Drive, which provides access to the existing estate and associated facilities;
- b) Recognise that the form of the developable area has been designed to conserve remnant Cumberland Plain Woodland in the east of the precinct; and
- c) Recognise that the impact of the proposed Werrington Arterial and the limited dimensions of the developable area requires additional attention to design to obtain a high residential amenity.

A. Objectives

- a) To ensure that the areas set aside for multi dwelling housing achieve a substantially higher density than 'traditional' residential areas;
- b) To ensure that multi dwelling housing is well designed, energy efficient and takes account of surrounding land uses; and
- c) To protect the amenity and quality of life of future residents.

B. Controls – Eastern Precinct

- 1) Development applications must demonstrate that:
 - a) Multi dwelling housing incorporates the principles of water sensitive urban design, including measures to conserve rainwater and measures to minimise the need for potable water;
 - b) Development has been designed to maximize the number of dwellings with north facing living areas and private open space areas;
 - c) Communal outdoor recreation areas are north facing; and
 - d) Development in the north of the precinct recognises the former tip site as a future recreational resource (both passive and active).

2.2.2 Traditional Residential

This section applies to land zoned R2 Low Density Residential under the LEP which is **not** within 50m of the road reserve for the M4 Motorway.

A. Objectives

- a) To ensure that a variety of lot sizes are provided.
- b) To ensure that traditional lots provide opportunity for well designed, energy efficient housing.
- c) To ensure that dual occupancy development is designed cognisant of the amenity of adjacent blocks.

B. Controls

General

- 1) These provisions will encourage a variety of lot sizes, while still protecting residential amenity.
- 2) Smaller lots around an area of public open space must:
 - a) Clearly indicate both the proposed public reserve and the area to be developed with smaller lot sizes; and
 - b) Locate and size the public reserve so that it provides utility and amenity to the entire precinct. Public reserves shall have a minimum site area of 2,500m².
- 3) Development applications submitted for smaller lot housing around an area of public open space must be integrated (subdivision and building development considered and lodged concurrently);
- 4) Residential Development adjacent to Gipps Street/Kent Road shall provide articulation to building facades and varying setbacks;
- 5) All other residential development applications will be assessed against the standards specified in the Residential Development section of this Plan.

Eastern Precinct

- 1) Residential development in this precinct must be set out in accordance with the indicative layout illustrated in Figure E2.2.
 - a) Medium density housing (e.g. multi dwelling housing) in the land zoned R3 Medium Density Residential on Gipps St, near the intersection with Sunflower Drive;
 - b) 550m² – 800 m² – provided in the bulk of the precinct;
 - c) Small lot housing (250m² – 400m²) – provided immediately around the proposed neighbourhood park; and
 - d) Large lot housing (over 1,000m²) – provided adjacent to the M4 Motorway.
- 2) The controls specified in the Residential Development section of this Plan apply.

South Western Precinct

- 1) Residential development in this precinct must be set out in accordance with the indicative layout illustrated in Figure E2.3.
- 2) In general:
 - a) Small lot housing around the central park with lot sizes ranging from 250m² – 400m² (to be submitted as integrated housing for development application purposes);
 - b) Conventional lots with a minimum area of 550m² and minimum width of 15m; and
 - c) Large lot residential to the south west off Castle Road; and
 - d) The controls specified in the Residential Development section of this Plan apply for all other requirements.

2.2.3 Large Lot Residential Adjacent to the M4 Motorway

This section applies to land zoned R2 Low Density Residential under the LEP and which is **within 50m** of the M4 Motorway road reserve.

A. Objectives

- a) To ensure that there remains a visual buffer between residential development associated with Claremont Meadows Stage 2 and the M4 Motorway; and
- b) To provide opportunity for a vegetated link between bushland on Claremont Creek and bushland in the South Creek corridor. Such a link will have both biodiversity and habitat value.

B. Controls

- 1) Development Applications will be assessed against the standards specified in the Residential Development section of this Plan.
- 2) That vegetated buffer of 20m depth shall:
 - a) be maintained along the boundary of lots parallel to the M4 Motorway and be vegetated with regard to the requirements for an Asset Protection Zone;
 - b) be planted with species appropriate to the area given the presence of Cumberland Plain Woodland; and
 - c) remain free of all structures including garages, carports, swimming pools, tennis courts, gazebos and the like.
- 3) Lot layouts within the 20m buffer area shall allow for a sufficient building envelope clear. It is expected that to achieve this lots will generally require a minimum depth of 50m; and
- 4) Building setbacks from the street in this area may be reduced to recognise the impact that the buffer may have on private open space to the rear of the dwelling, which can accommodate recreational structures.

2.2.4 Gateway Site on the Great Western Highway

This section applies to the site on the south eastern corner of the Great Western Highway and Gipps Street; and as indicated in Figure E2.1.

A. Objective

- a) To ensure that this high profile site that will act as a gateway to Claremont Meadows is appropriately developed.

B. Controls

- 1) Development on this site shall recognise its visual prominence to the Great Western Highway and role as an entry point to Claremont Meadows.
- 2) Residential development shall be in accordance with the Residential Development section of this Plan.

2.2.5 Home-Based Business Activities

A. Objective

- a) To maximise opportunities for residents to establish and operate small-scale business activities from home.

B. Controls

- 1) Development Applications for dwellings with home based businesses shall give consideration to the site planning, housing designs and other physical measures which support home-based business activities, consideration may include:
 - a) Dedicated rooms for business activities;
 - b) Separate entrances for the residences and for business rooms;
 - c) Flexible parking and vehicle access for visitors and/or residents – subject to the scale of activity;
 - d) Buildings designed according to traditional residential scale and appearance when viewed from the street; and
 - e) ‘Smart wiring’ of homes to enable consumers to access multi telecommunications facilities (broadband capacity internet, e-commerce, cable TV, lighting, audio, security), and
 - f) Building orientation.

2.3 Areas of Ecological Sensitivity

Claremont Meadows Stage 2 has two major areas of ecological sensitivity:

- 1) The remnant Cumberland Plain Woodland (endangered ecological community) in the eastern precinct, immediately adjacent to the South Creek corridor, and
- 2) The bushland surrounding Claremont Creek in the south western precinct. Claremont Creek and the riparian corridor in the south western precinct is also considered to be an area of ecological sensitivity.

It is important that development in the vicinity of these areas recognises and minimises the potential for impact on their biodiversity values and ecological integrity. Respect for the ecological sensitivity of these areas is a key part of an overall sustainable development outcome for Claremont Meadows Stage 2.

2.3.1 Remnant Bushland

A. Objectives

- a) To conserve wildlife habitat and indigenous plant species;
- b) To ensure that development adjacent to areas of existing vegetation identified for preservation is designed to minimise impact;
- c) To ensure appropriate buffer zone edge treatment between development and any adjacent Cumberland Plain Woodland and associated large land snails; and
- d) To ensure that the local community is provided with information about the value of the bushland, to help foster a spirit of caring for it.

B. Controls

- 1) The proposal shall demonstrate compliance with the Vegetation Management Plan for the specific precinct area;
- 2) A Biodiversity Management Plan, which includes an interpretation strategy shall be prepared for the proposed development. Examples of items which could be included in a Biodiversity Management Plan and Interpretation Strategy include (and not limited to):

- a) Signage;
 - b) Fencing
 - c) Walking tracks;
 - d) Street layout; and
 - e) Street names.
- 3) Development Applications shall demonstrate that the Biodiversity Management Plan and its principles have been addressed.

2.3.2 Watercourse and Riparian Corridors

Claremont Meadows Stage 2 is part of the Claremont Creek and South Creek Catchments, so it is important to ensure that these catchments and also the riparian corridor of Claremont Creek traversing the south western precinct are protected, enhanced and managed adequately.

A. Objectives

- a) To protect and rehabilitate Claremont Creek as a natural system;
- b) To protect and rehabilitate a minimum 20m wide riparian corridor along either side of Claremont Creek;
- c) To provide a vegetated link between bushland on Claremont Creek and bushland in the South Creek corridor;
- d) To ensure that the local community is provided with information about the value of Claremont Creek, South Creek and riparian corridors to help foster a need to care for these environmentally sensitive areas.

B. Controls

- 1) Development Applications shall:
- a) Ensure that remnant native vegetation within the riparian corridor is protected and rehabilitated with local provenance species at a density that would occur naturally;
 - b) Ensure there is to be no development within the riparian corridor unless works include:
 - i) The rehabilitation of aquatic and riparian vegetation and habitat;
 - ii) Demolition and removal of existing structures or works;
 - iii) Crossings for roads, pedestrian pathways, easement services, sewer, utility installation;
 - iv) Stormwater outlets.

Such development should be designed and constructed so that ecological connectivity values are not compromised. All other development is to be excluded from within the riparian corridor.

- c) Treat all stormwater discharge outside of the riparian corridor before it enters the watercourse.

2.3.3 Water Cycle

The eastern precinct of Claremont Meadows Stage 2 drains directly to South Creek, while the south western precinct drains to Claremont Creek. The water quality in both of these watercourses is significantly impacted by urban runoff, making it vital that development in

Stage 2 employ best practice in water sensitive urban design. Minimising the pollution contained in urban runoff from this site will have a beneficial impact on the water quality in South Creek and ultimately the Hawkesbury River.

A. Objectives

- a) To achieve an integrated approach to water cycle management on the site;
- b) To control the quantity and quality of runoff from the site to maximise the improvements to downstream receiving waters and minimise the impact on the downstream catchment;
- c) To investigate innovative approaches to water supply to minimise water wastage and reduce the demand for potable water; and
- d) To maximise the ecological and visual benefits gained from Claremont Creek.

B. Controls

1) Development Applications shall:

- a) Demonstrate that future development will not generate undesirable environmental impacts on receiving waters, in terms of quantity and quality. Modelling shall be done on a catchment basis, rather than lot by lot;
- b) Identify and incorporate best management practices to control runoff quantity and quality;
- c) Include a stormwater management plan which conforms with the EPA guidelines – ‘Managing Urban Stormwater’, applicable development guidelines from Penrith City Council and the Storm Water Management Plans for South Creek;
- d) Adopt an integrated approach to the management of wastewater, consistent with:
 - i) Water-sensitive urban design practices, including options for the reuse of stormwater;
 - ii) Capacity of site soils to absorb run-off;
 - iii) Existing levels of soil salinity and minimises extent and frequency of perched watertable; and
 - iv) Local climate and likely rates of evaporation from open ponds.
- e) Demonstrate drainage solutions that shall embody appropriate catchment management principles;
- f) Include a surface drainage design which:
 - i) Includes any runoff detention and water quality control ponds, swales and channels;
 - ii) Minimises land-take;
 - iii) Minimises potential breeding areas for mosquitoes;
 - iv) Limits disturbance to the ground whenever possible;
 - v) Utilises landscaped, open space and passive recreational features which contributes to the local amenity;
 - vi) Ensures engineered structures are integrated with the configuration and character of the wider development and its public domain; and
 - vii) In the case of Claremont Creek, takes the form of a planted banks with water on the surface and incorporates ecological habitats in a minimum 20m wide riparian corridor (measured from top of bank) either side of the creek;

- g) Take account of the influence of the former tip site, including the possibility of subsurface water movement;
- h) Shall evaluate opportunities for the integration of water supply and re-use of stormwater, grey water and treated effluent:
 - i) In consultation with authorities such as Sydney Water, NSW Office of Environment and Heritage, NSW Ministry of Health and Penrith City Council;
 - ii) Through investigation of opportunities for the reuse on-site of grey water and treated effluent and recycled stormwater, noting:
 - Rainfall patterns and the assimilative capacity of the site's soils;
 - Landscaped areas available for irrigation with treated effluent; and
 - Impacts of irrigation volumes and salt loads on existing salinity.
- 2) A water quality plan and maintenance plan shall be submitted to Council with applications for subdivision. This plan shall cover all elements of the proposed drainage system that will ultimately be transferred to Council, and shall outline the maintenance schedule to ensure that the system operates at the required standard.

2.3.4 Salinity

Urban development in salinity prone environments must consider the potential for salt damage. Salt is soluble in water and if water gains access to buildings and infrastructure salt can be carried with it.

The entire Penrith LGA landform is subject to areas of either:

- a) Known salinity;
- b) High salinity potential;
- c) Moderate potential; and / or
- d) Associated with drainage lines identified as having high salinity potential.

A. Objectives

- a) To ensure that saline soils, groundwater levels and salinity processes are identified, prior to finalisation of development form; and
- b) To ensure that appropriate measures are taken to protect buildings, infrastructure and the natural environment from deterioration associated with salt attack.

B. Controls

- 1) Development Applications for subdivision shall include a preliminary site investigation, which identifies areas of potential salinity;
- 2) A Salinity Site Investigation must include:
 - a) Initial site walkover, observations and field tests as well as a desktop review;
 - b) Site specific soil and groundwater investigations;
 - c) Clear presentation and Interpretation of all results in terms of the impact of the site salinity processes on the proposed development and, the impact of the development on salinity processes on the site and in the catchment; and
 - d) Management options to be undertaken by the developer to minimise these onsite and offsite, present and future impacts.

- 3) A remedial action plan must be submitted with any Development Application on land where there is an identified salinity hazard. The plan must contain the following information:
 - a) Remedial objectives;
 - b) Details of the process and standards by which the land will be remediate;
 - c) Specific measures that will be undertaken to reduce the risk of salinity to property and structures, vegetation and the environment; and
 - d) A statement that the implementation of these specific measures will ensure minimal salinity risk to man-made and natural environment in the short and long term on and off the site.
- 4) In identified salinity hazard areas the following measures must be used for house slabs and other concrete work:
 - a) A layer of sand at least 50mm deep under the slab must be provided;
 - b) A damp proof membrane (rather than vapour proof membrane) must be laid under the slab;
 - c) Normal Class 32 Mpa (N32) concrete or sulphate resisting Type SR cement with a water cement ratio of 0.5 must be used;
 - d) The minimum cover to reinforcement must be 30mm from a membrane in contact with the ground;
 - e) The minimum cover to reinforcement must be 20mm from an internal surface;
 - f) The minimum cover to reinforcement must be 50mm for strip footings and beams irrespective of whether a damp proof membrane is used; and
 - g) Admixtures for waterproofing and/or corrosion prevention may be used.
- 5) In identified salinity hazard areas the following measures must be used for brickwork:
 - a) The damp proof course must be correctly placed to prevent moisture movement;
 - b) The use of 'exposure clast bricks';
 - c) Manufacturer's recommendations regarding suitability for use in saline environments for all bricks and concrete blocks should be followed; and
 - d) Appropriate mortar must be used and waterproofing may be added below the damp proof course
- 6) Salt and drought tolerant plant species must be used in the landscaping within the site and should be identified in any landscape plans for the site. This also includes appropriate hard landscaping materials and practice.

2.3.5 Contaminated Land

Although the majority of Claremont Meadows Stage 2 has been used for rural purposes, there is still the possibility that some areas may be contaminated.

A. Objectives

- a) To ensure that contaminated land is identified, prior to finalisation of development form; and
- b) To ensure that a remedial action plan is prepared for any identified areas of contamination.

B. Controls

- 1) Development Applications for subdivision shall include an assessment of possible contamination prepared by a suitably qualified person, which covers the following:
 - a) Likelihood of contamination over the subject area, based on previous land uses; and
 - b) Assessment of the nature and extent of contamination in areas identified as likely to be contaminated.
- 2) For those areas not yet tested, Development Applications shall include a contamination assessment and remedial action plan. This plan shall conform to the provisions of State Environmental Planning Policy No. 55 – Contaminated Land;
- 3) All identified works in the remedial action plan shall be completed and certified prior to linen plan release;
- 4) Sydney Water has advised that infrastructure cannot be permitted in contaminated ground or in ground that may become contaminated by groundwater or contaminant vapour migration because of possible:
 - a) Breaches of Work, Health and Safety (WHS) obligations to employees during maintenance excavation;
 - b) Breaches of WHS obligations to employees during maintenance of sewers containing contaminated flows;
 - c) Contaminant degradation of sewage treatment processes, particularly biological processes;
 - d) Contamination of the drinking water supply from contaminants diffusing through plastic water mains;
 - e) Contamination of the drinking water supply from contaminants being sucked through rubber ring pipe joints during passage of low pressure transients;
 - f) Contaminant corrosion or weakening of concrete infrastructure; and
 - g) Contaminant corrosion of rubber rings in pipe joints effecting joint tightness.

Hence, Sydney Water requests that arrangements to investigate, remediate and audit infrastructure trench soils both within and beyond development boundaries and to prevent recontamination be put in place before and during infrastructure installation.

2.3.6 Bushfire Hazard

The remnant bushland in both the eastern and south western precinct presents a bushfire hazard, as does the M4 Motorway road reserve. Applicants should refer to relevant documents when preparing Development Applications. These include the NSW Rural Fire Service requirements in '*Planning for Bushfire Protection*', which is available on the NSW Rural Fire Service website (www.bushfire.nsw.gov.au) and Australian Standard 3959.

A. Objective

- a) To ensure that dwellings are adequately protected from bushfire risk.

B. Controls

General

- 1) Development applications shall clearly identify all bush fire prone land and shall include a bushfire hazard assessment, prepared by a suitably experienced person;

- 2) Development applications shall demonstrate how bushfire hazard assessment has been taken into account. This may include design features, asset protection zones or similar. This may include hazard presented by adjacent undeveloped lots;
- 3) Development applications are to be consistent with '*Planning for Bushfire Protection*' and Australian Standard 3959.
- 4) Some level of bushfire protection must also be provided between residential dwellings and the M4 Motorway reserve. This may be incorporated into the vegetated buffer required to attenuate noise and visual impact, however this buffer will need to be managed to minimise bushfire risk. Details shall be provided in the subdivision application;
- 5) Roads are to separate all vegetated areas from houses;
- 6) Main through and perimeter roads to have minimum 8m sealed surface plus footpaths, other roads to have minimum 7m wide sealed surface;
- 7) Roads beside significant vegetation to be set within a 20m wide road reserve, located within the APZ; and
- 8) Fire hydrants to be provided to normal urban standards, without on-site supplementary water storage;

Eastern Precinct

- 1) An Asset Protection Zone shall be provided between remnant bushland and residential buildings. There may also be a need to consider hazard presented by adjacent undeveloped lots;
- 2) The Asset Protection Zone is likely to be required to be 35m wide. There may, however, be circumstances in which the Rural Fire Service will reduce the Asset Protection Zone to 30 m. All applications for subdivision will be referred to the Rural Fire Service and applicants should NOT assume that 30m will be sufficient. Reference should be made to '*Planning for Bushfire Protection*' when proposing an appropriate width for the Asset Protection Zone; and
- 3) This Asset Protection Zone may include:
 - a) A 10m fuel reduced zone within the Conservation Area;
 - b) The width of the adjacent road reserve; and
 - c) Front setbacks to dwellings.

South Western precinct

- 1) The creation of Outer Protection Areas 10m in width within the Flora and Fauna Conservation Areas;
- 2) Inner Protection Areas 25m in width be maintained within residential areas adjoining the Flora and Fauna Conservation areas; and
- 3) The creation of Inner Protection Areas 20m in width beside the M4 Motorway and the Public Recreation area adjoining the Flora and Fauna Conservation area and be maintained by property owners.

2.3.7 Air Quality

A. Objectives

- a) To ensure that development does not have an undue adverse effect on air quality; and

- b) To identify appropriate compensatory measures that can be taken to help improve air quality in general.

B. Controls

- 1) Use of solid fuel heaters is prohibited; and
- 2) The area of land available for soft landscaping should be maximised.

2.4 Community Services and Recreation

2.4.1 Neighbourhood Parks

A. Objective

- a) To ensure that parks are adequately sized, located and equipped to meet the needs of the anticipated population of the precinct.

B. Controls

- 1) Each precinct shall provide an appropriate area for a neighbourhood park; and
- 2) Neighbourhood parks shall have the following features:
 - a) A minimum area 2,500 m²;
 - b) A central location, accessible to the majority of the population of the precinct;
 - c) Surrounded by a logical road pattern, which provides a safe direct and legible route to the neighbourhood park from the majority of the precinct;
 - d) Suitable embellishment with play equipment, seating, lighting, landscaping and pathways (details to be provided at Development Application stage); and
 - e) Shall not be used as detention basins.

2.5 Recognition of Surrounding Land Uses

2.5.1 Major Roads (Werrington Arterial, Great Western Highway and the M4 Motorway)

A number of major roads surround and intersect Claremont Meadows Stage 2:

- 1) The M4 Motorway provides a boundary to the south;
- 2) The new alignment for the Werrington Arterial along Gipps St separates the eastern and south western precincts; and
- 3) The Great Western Highway adjoins the gateway site in the north.

These roads will have an acoustic, visual and social impact on development and must be considered in all stages of planning.

A. Objectives

- a) To ensure that the negative impact of the roads surrounding and transecting Claremont Meadows Stage 2 is minimised;
- b) To ensure that planning for Claremont Meadows Stage 2 takes account of the noise and vibration associated with major roads; and

- c) To ensure that the visual impact of Claremont Meadows Stage 2 from major roads, particularly the M4 Motorway, is minimised.

B. Controls

General

- 1) Residential development affected by traffic noise associated with Gipps Street, Kent Road, the M4 Motorway, or the Great Western Highway must comply with the NSW Road Noise Policy (Environment Protection Authority);
- 2) A visual and acoustic protection zone shall be provided along the southern boundary of Stage 2, where it adjoins the M4 Motorway. This protection is to be provided within a 20m landscaped buffer zone and may also include a road, and designed such that it does not have a visual impact on the M4 motorway;
- 3) Noise solutions must have appropriate regard for urban design outcomes. It is considered that a combination of distance, landscaped mounding/barriers, and dwelling treatment should be used to obtain appropriate protection from noise. Noise solutions shall be developed in conjunction with the Roads and Maritime Services (RMS). The treatment of all interfaces with major roads shall be negotiated with the RMS as part of the preparation of applications for development;
- 4) Development applications for residential development within 50m of Gipps Street, Kent Road, the M4 Motorway or the Great Western Highway shall include a noise study to demonstrate that the relevant noise standards can be complied with;
- 5) Development applications, which include creation of lots adjoining the M4 Motorway, shall include details of the visual and acoustic barrier, which is to be provided along the southern boundary of Claremont Meadows Stage 2, where it adjoins the M4 Motorway. This barrier is to be provided within a landscaped buffer zone and screened from view from the M4 Motorway (Refer Figure E2.8a and E2.8b), Noise barriers shall demonstrate visual consistency with other noise barriers along the M4 within the Penrith LGA;
- 6) Development applications for residential development along Gipps Street and Kent Road shall include details of the noise treatment along Gipps Street and Kent Road (Refer Figures E2.5 and E2.6). Noise attenuation measures shall integrate with and compliment the design and siting of the proposed residential development; and
- 7) Full details of construction type, colours, materials and maintenance requirements for any acoustic barriers must be submitted to Council.

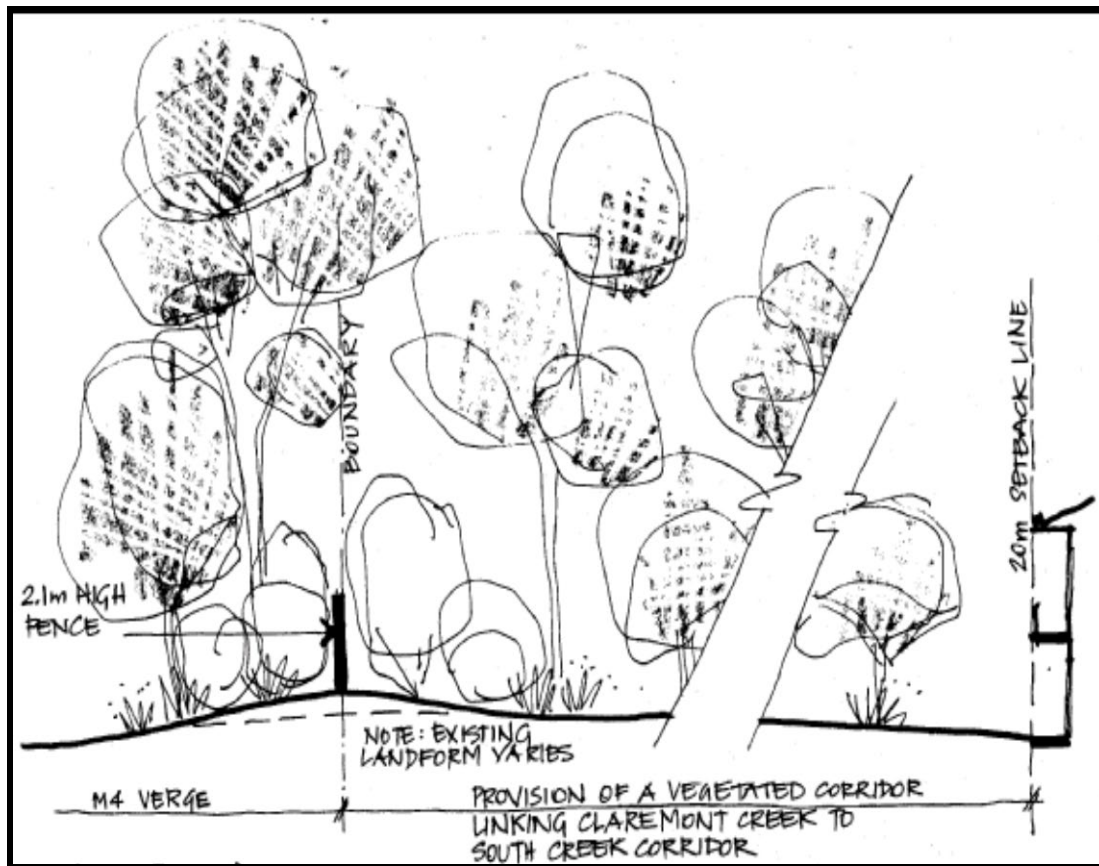
Eastern Precinct

- 1) A 15m wide buffer is required along Gipps St (north of Caddens Road) and as detailed in Figure E2.5. The purpose of this buffer is to minimise the impact of the adjacent road on residential development, and to ensure that acoustic barriers do not dominate the residential character of this road. This buffer will be in addition to the road reserve and will provide the opportunity for landscaping, access and acoustic protection. Landscaping is to be undertaken in such a manner that it can accommodate future road widening, consultation with RMS is required to determine the most current road widening map. Council may consider a reduced buffer area if it can be demonstrated that these objectives can be achieved in a lesser area;
- 2) A minimum 20m buffer is required along Kent Road (south of Caddens Road) as detailed in Figure E2.6. This buffer shall include, but is not limited to, a landscaped verge, road reserve, footpath and building setback. This measurement is to be taken from the noise wall. In addition to this buffer a minimum 5m landscape strip is required on the other side of the noise wall in accordance with Control (4) below.

- 3) Any application received for subdivision shall include details in relation to the acoustic treatment and should include:
- a) Cross-sections of the acoustic treatment including landscaping and shall include one section for each different condition.
 - b) A View Analysis of the acoustic treatment including landscaping looking from the road (both internal and external road), this should include a photo montage of any acoustic barriers and proposed development in the background;
 - c) Details of the construction type, colours, materials (minimum masonry) and maintenance of acoustic treatment;
 - d) Landscaping plan including location of acoustic treatment and maintenance schedule; and
 - e) Stepping and variation in the location of the acoustic barrier with opportunity to provide design elements.
- 4) A minimum 5m landscape strip is required along the eastern side of Kent Road in front of any acoustic barriers; this landscape strip is exclusive of any pedestrian/cycleways and the road reserve. The purpose of this landscape strip is to minimise the visual impact of the acoustic barrier on residential development, and to ensure that acoustic barriers do not dominate the residential landscape along this road.

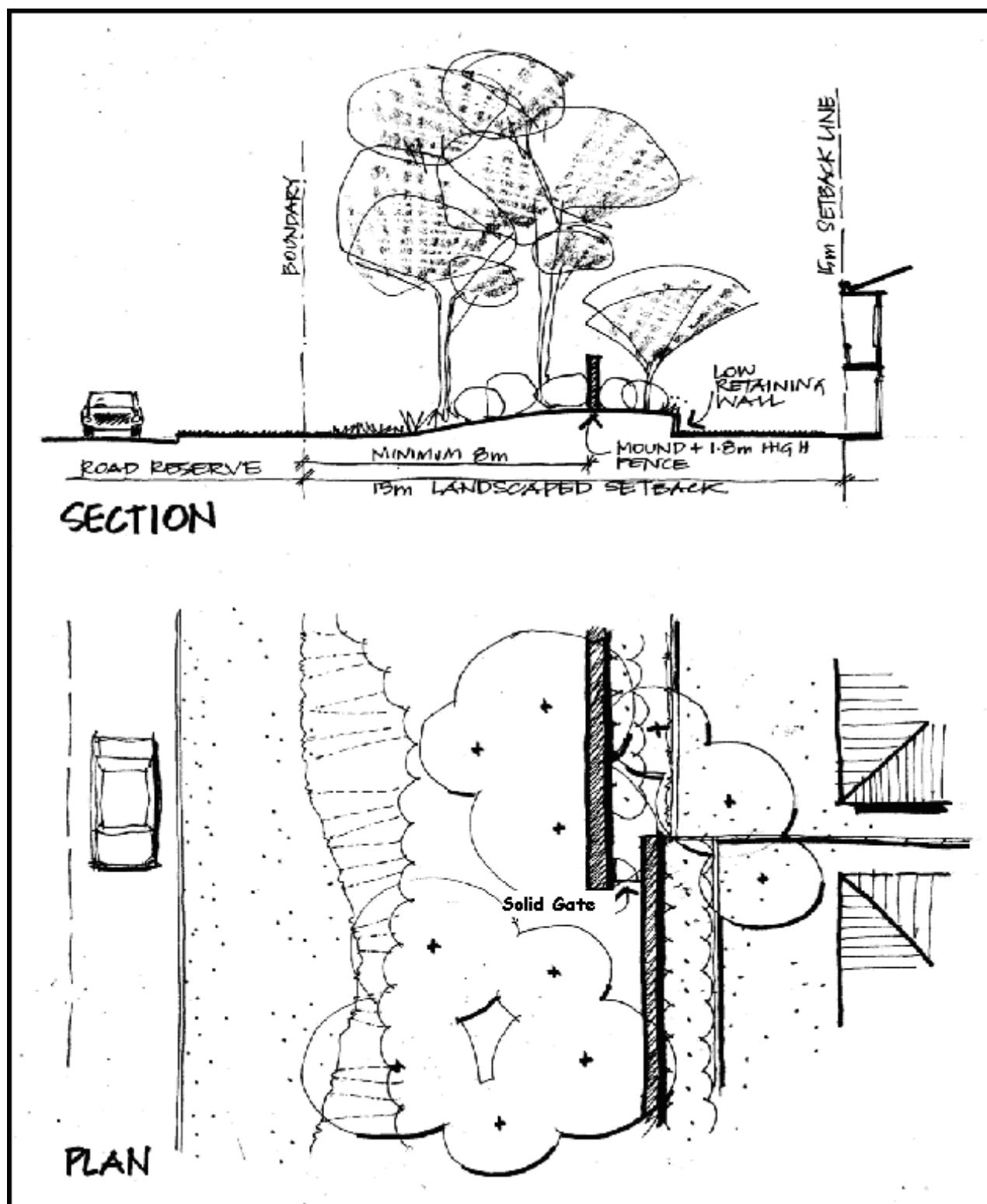
Eastern Precinct – M4 Streetscape

Figure E2.4 – Typical M4 frontage cross-section within the south eastern precinct



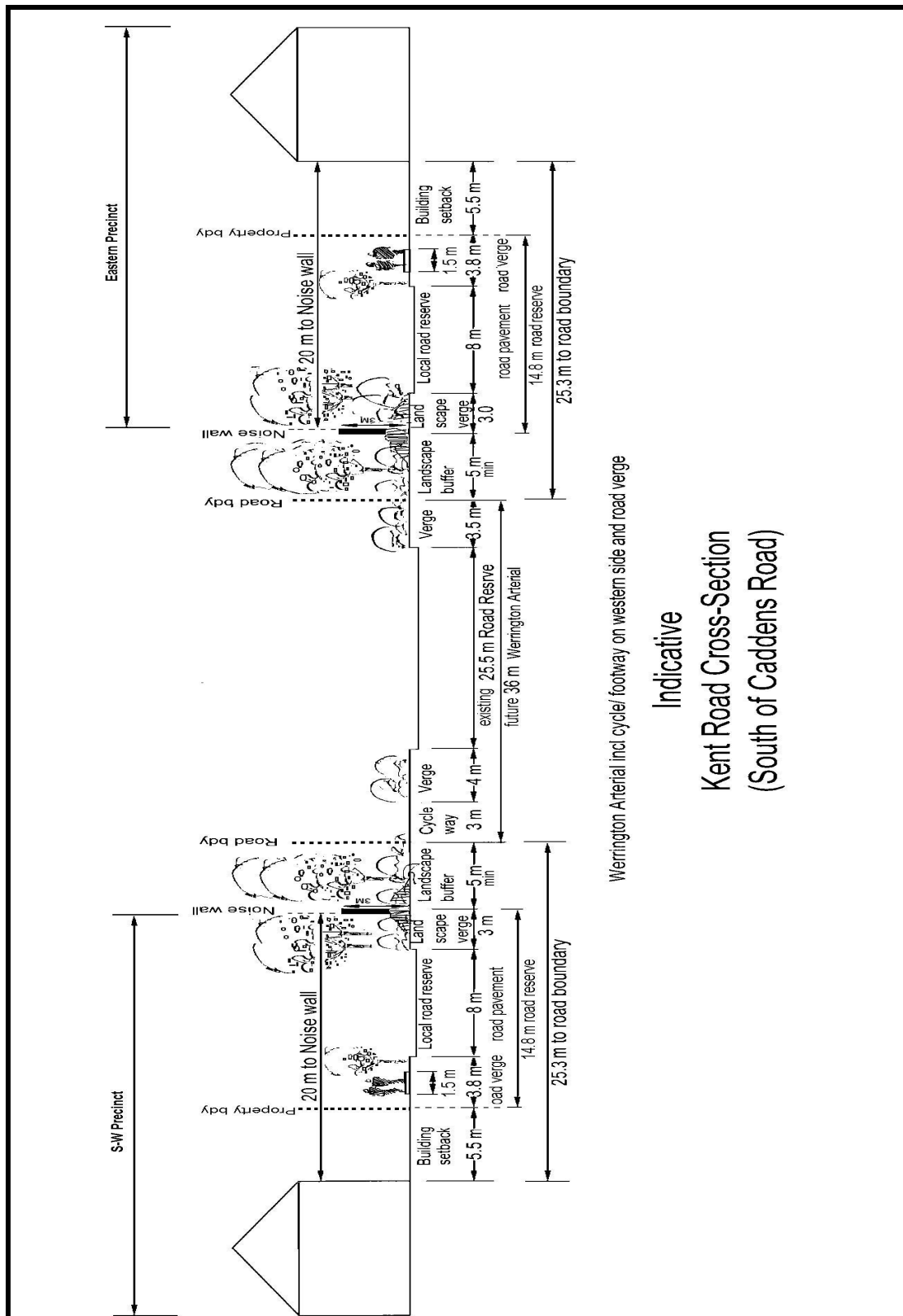
Gipps Street Streetscape

Figure E2.5 – Cross-Section Gipps Street Eastern Precinct North of Caddens Road



Kent Road Streetscape (South of Caddens Road)

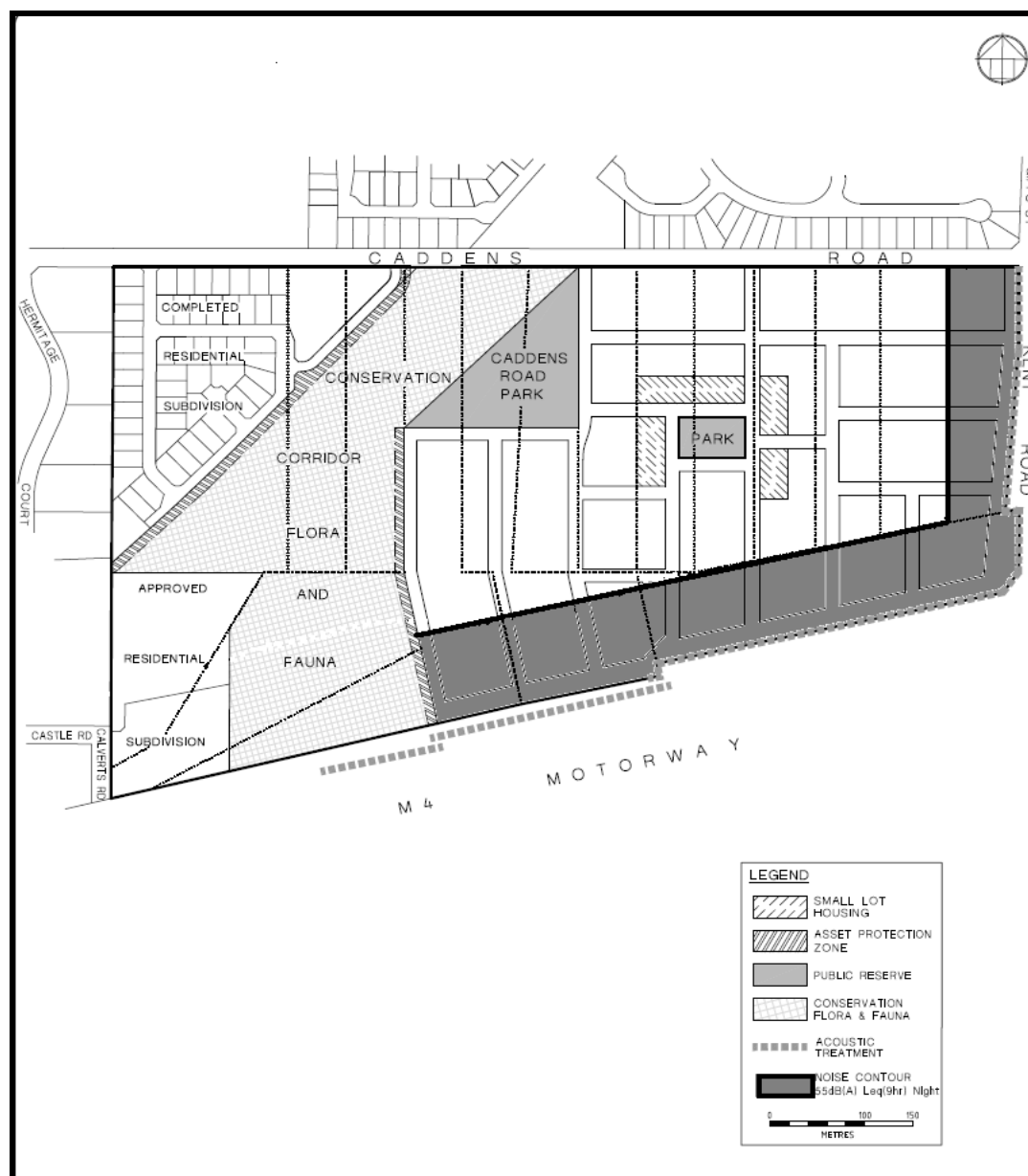
Figure E2.6 – Typical Cross-Section Kent Road South of Caddens Road



South Western Precinct

- 1) Acoustic barriers/treatment including landscaping along the M4 and Kent Road within the south western precinct shall be constructed prior to subdivision commencing on land within the shaded area as indicated on the map (Figure E2.7) below:

Figure E2.7 – Area of Restricted Development due to traffic noise

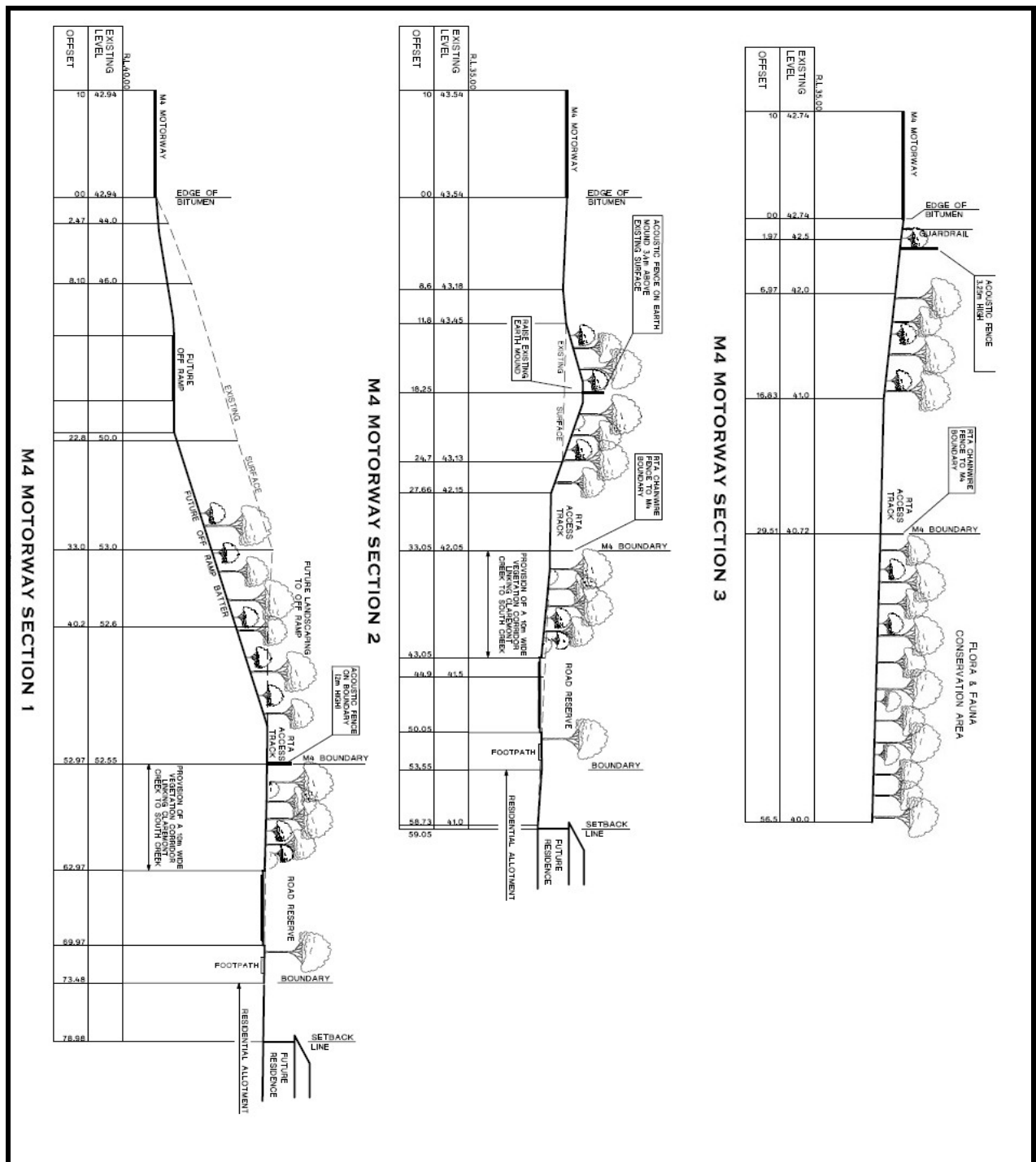


- 2) A minimum 20m buffer is required along Kent Road as detailed in Figure E2.6. This buffer shall include, but is not limited to, a landscaped verge, road reserve, footpath and building setback. This measurement is to be taken from the noise wall. In addition to this buffer, a minimum 5m landscape strip is required on the other side of the noise wall in accordance with Control (4) below; and

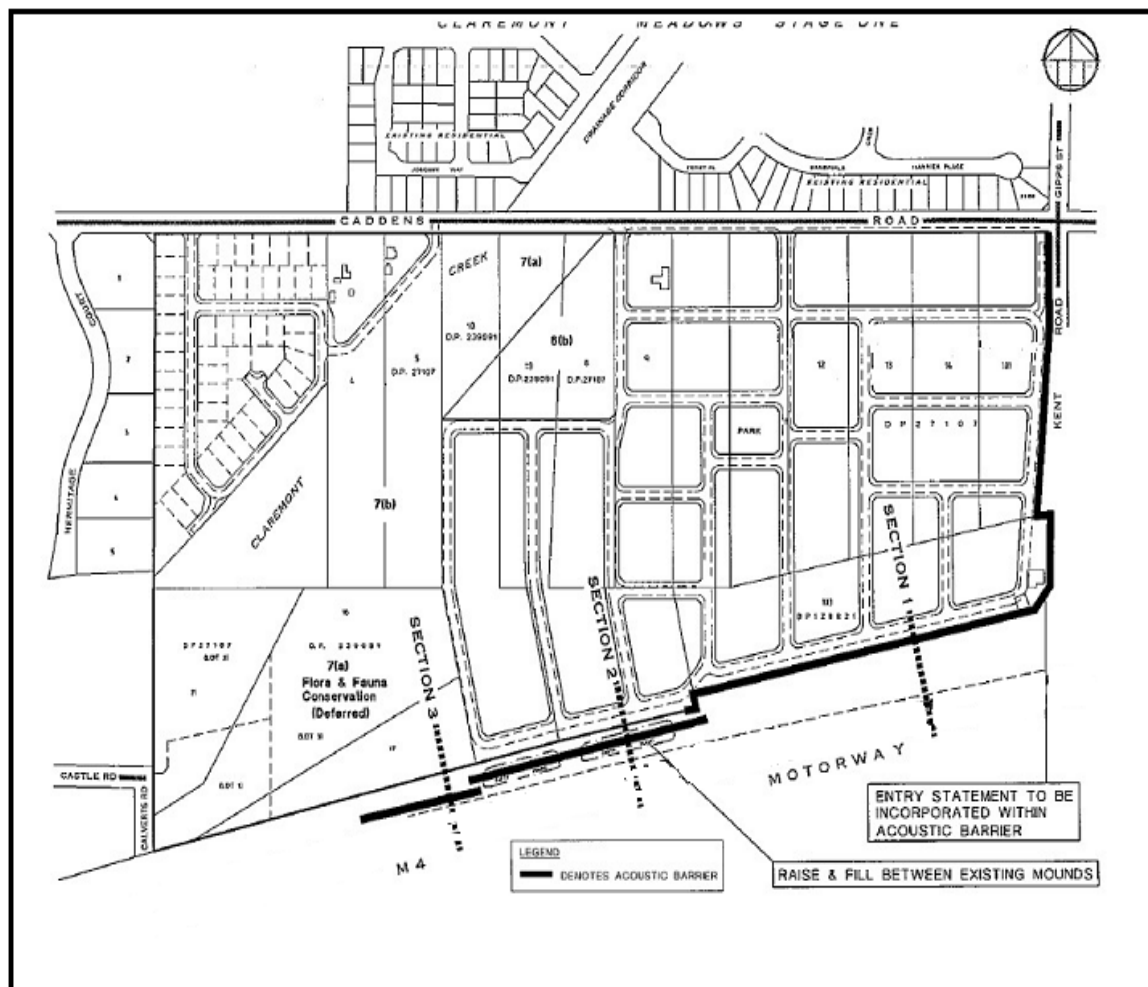
- 3) Any application received for subdivision within the area shaded in Figure E2.7 shall include details in relation to the acoustic treatment and shall include:
 - a) Cross-sections of the acoustic treatment including landscaping and shall include one section for each different condition.
 - b) A View Analysis of the acoustic treatment including landscaping looking from the road (internal and external road), this should include a photo montage of any acoustic barriers and proposed development in the background
 - c) Details of the construction type, colours, materials (minimum masonry) and maintenance of acoustic treatment;
 - d) Landscaping plan including location of acoustic treatment and maintenance schedule; and
 - e) Stepping and variation in the location of the acoustic barrier with opportunity to provide design motif treatment.
- 4) A minimum 5m wide landscape strip is required along the western side of Kent Road in front of any acoustic barrier; this landscape strip is to be exclusive of any pedestrian/cycleways and the road reserve. The purpose of this landscape strip is to minimise the visual impact of the acoustic barrier on residential development, and to ensure that acoustic barriers do not dominate the residential landscape along this road;
- 5) Noise Walls shall be constructed in accordance with the traffic noise assessment prepared by PKA Acoustic Consulting dated June 2006 submitted for the south west precinct.

South Western Precinct

Figure E2.8a – Interface Treatment with M4 and Kent Road South Western Precinct



Penrith Development Control Plan 2014
E2 Claremont Meadows Stage 2



2.5.2 Integration with Claremont Meadows Stage 1

Integration on Stage 2 with Stage 1 is essential to allow future residents adequate access to services located in the existing estate. As a result it is important that adequate pedestrian, cycle, public transport and motor vehicle access is provided.

A. Objectives

- a) To ensure that adequate pedestrian and cycle linkages are provided between Claremont Meadows Stage 2 and the existing estate; and
- b) To ensure that planning for Claremont Meadows Stage 2 maximises the benefit of those locations closest to accessing the services in the existing estate.

B. Controls

- 1) The area immediately south of the former tip site should be developed to an appropriate density given its location and zone;
- 2) Development applications shall demonstrate an appropriate road layout for public transport, by ensuring that there is a loop road within the proposed subdivision layout capable of acting as a bus route;
- 3) Development applications shall indicate location for a cycle way which connects to existing facilities outside the precinct, including shops, schools and community facilities in the existing Claremont Meadows Stage 1; and
- 4) Development Applications shall make provision for a pedestrian / cycle link in the south western precinct to link with the open space / drainage corridor in the existing estate.

2.5.3 South Creek Corridor

A. Objective

- a) To ensure that there is recognition of the South Creek corridor as an environmental asset.

B. Controls – Eastern Precinct

- 1) Development Applications for subdivision for the Eastern Precinct shall take account of the presence of the South Creek Corridor as the eastern boundary of Claremont Meadows Stage 2. Particular consideration shall be given when preparing information in the following areas:
 - a) Drainage, particularly water quality and the treatment of all stormwater discharge outside of the riparian corridor before it enters South Creek;
 - b) Appropriate edge treatments are in place and that pedestrian pathway systems are located outside the riparian corridor;
 - c) Biodiversity management and the linkage of remnant vegetation to the riparian corridors;
 - d) Views and vistas; and
 - e) The locating of water quality treatment measures outside the riparian corridor.

2.5.4 Former Gipps Street Landfill Site

A. Objective

- a) To ensure that development takes account of the recreational opportunities of the former Gipps St Landfill site, as well as minimising any negative impacts this site may have.

B. Controls – Eastern Precinct

- 1) Drainage solutions for the eastern precinct shall take account of the possibility of sub surface water movement associated with the former tip site; and
- 2) Development of sites immediately to the north and south of the former tip site should be designed to maximise opportunities for access to future recreational areas and provide appropriately landscaped edges and footpath treatment.

2.6 Public Domain

Council aims to establish a high quality and vibrant urban environment, creating a high level of amenity, convenient access to facilities and services and a feeling of safety and wellbeing for the community.

The public domain is to incorporate design and management requirements for streets, open spaces and parks, drainage and water quality infrastructure, and is to include design and character statements, a schedule of works, delivery timeframes and maintenance requirements for each element.

2.6.1 Management of the Public Domain

A. Objectives

- a) To ensure that facilities provided in the public domain can be effectively managed and maintained.

B. Controls

- 1) The nature of facilities to be provided in the public domain shall be shall include but not limited to:
 - a) Seating;
 - b) Bins;
 - c) Lighting;
 - d) Signage;
 - e) Drainage facilities;
 - f) Shade Structures;
 - g) Public Art; and
 - h) Fencing.
- 2) Development Applications shall include detailed designs and a management and maintenance plan for all facilities proposed for the public domain. This plan shall include a suggested maintenance schedule, outlining the nature and frequency of works required. The purpose of the maintenance plan is to enable Council to properly assess the future maintenance burden of proposed public domain infrastructure.

2.6.2 Landscape Design

A. Objectives

- a) To integrate landscaping in the planning and design of buildings; and
- b) To enhance biodiversity within the precinct by using a diversity of appropriate local native plant species in landscaping design.

B. Controls

- 1) Landscape strategies and design shall be prepared by a suitably qualified person for each precinct;
- 2) Landscapes shall be designed to achieve the amenity, environmental, recreational and townscape objectives of this section and the Landscape Design section of this DCP;
- 3) Design of landscapes shall use a diversity of local native species to minimise need for water and nutrients;
- 4) Mature vegetation that has habitat, civic or heritage values shall be conserved;
- 5) Plant species to take account of remnant Cumberland Plain Woodland in the conservation areas;
- 6) Paving material, lighting, signage and street furniture shall be in accordance with Council guidelines;
- 7) Existing habitat shall be expanded with new plantings configured to provide continuous corridors;
- 8) The design of public streets and parks shall:
 - a) Facilitate multiple uses;
 - b) Be consistent with Council's current management policies and practices;
 - c) Ensure that landmark locations, key thoroughfares and vistas are complemented and reinforced;
 - d) Ensure that drainage reserves are embellished as attractive components within the public domain, as effective adjuncts to wastewater management and as habitat for bird life;
 - e) Provide for the identification of individual neighbourhoods and precincts; and
 - f) Incorporate appropriate local native plant species in the street tree planting.
- 9) Shelter and shade should be provided for buildings and open spaces, moderating the site's natural microclimate.

2.7 Infrastructure

Council has a long term goal of delivering quality assets which meet the needs of the community in a sustainable manner. Infrastructure shall comply with the provisions of Australian Standard 1428 – Design for Access and Mobility, wherever relevant.

2.7.1 Streets and Access

Streets perform a number of functions, including transport, service corridors, and contribution to energy efficiency (through lot orientation) and neighbourhood legibility and amenity. It is important that a proposed road layout take these multiple functions into consideration.

A. Objectives

- a) To provide a street network that is appropriate to environmental design objectives and is economically efficient; and
- b) To provide safe and effective access to individual properties which contribute to a distinctive neighbourhood character and provide high standards of amenity.

B. Controls

- 1) Refer to the Transport, Access and Parking section of this Plan for the various road types.
- 2) The road network shall be designed to accommodate multiple purposes, including:
 - a) Safe and efficient access for pedestrians (including alternative forms of pedestrian activity), cyclists and vehicles which links existing and new infrastructure, public transport services, shopping centres, community facilities and recreation areas. Footpath gradient, safety and surface material must be considered when developing the street pattern;
 - b) Underground routing of service infrastructure;
 - c) Appropriate access for emergency vehicles;
 - d) Contribution to traditional townscape character via street tree amenity including shade to footpaths;
 - e) Provision of vistas to landmarks within the precinct and beyond; and
 - f) Establishment of appropriate solar access for lots, open spaces and buildings.
- 3) Roads shall be designed:
 - a) In accordance with relevant Council policy and design standards and be based on forecast traffic flows (refer to the Transport, Access and Parking section of this Plan);
 - b) To facilitate a configuration of neighbourhood streets appropriate to the desired solar orientation of dwellings;
 - c) To provide safe pedestrian access, and vistas towards landmarks and central destinations within the precinct and beyond, including identification of possible future pedestrian facilities;
 - d) To limit the number of four-way intersections and where they occur, indicate their management;
 - e) To control traffic speeds, incorporating safe pedestrian crossings to central destinations; and
 - f) To incorporate designated pedestrian footpaths, dimensioned and finished to service each precinct according to its desired function and character.
- 4) The streets around the conservation areas and the proposed neighbourhood parks within each sub precinct shall be two way low speed environments. Development Applications shall include details on the measures proposed to achieve this;
- 5) Development Applications shall include cross sections for each type of road proposed in the master plan, including:
 - a) Residential streets;
 - b) The possible future bus route;
 - c) The low speed environment surrounding the park; and

- d) Perimeter roads adjacent to conservation areas and the incorporation of the Asset Protection Zones in the perimeter road.

Cross sections shall indicate overall road reserve, carriageway width, footpath width, location of parking, proposed street tree planting and lighting;

- 6) Road widths shall comply with relevant Council policy;
- 7) A physical barrier is to be provided along the edge of the conservation areas and the proposed neighbourhood park to prevent vehicle access;
- 8) Street trees shall not be planted in the road carriageway. Street tree species selected shall respect the scale and development in the street and not compromise services including lighting; and
- 9) Provision shall be made for any road features (including pedestrian crossings, traffic calming, bus shelters and intersection treatment) anticipated to be needed in the future, when Claremont Meadows Stage 2 has been fully developed.

2.7.2 Sewer and Water

A. Objective

- a) To ensure that development is adequately supplied with sewer and water services.

B. Controls

- 1) Evidence that the precinct can be adequately serviced shall be provided;
- 2) Services shall be planned and designed in conjunction with Sydney Water, including:
 - a) A Section 73 Certificate be obtained from Sydney Water; and
 - b) Compliance with build-over easement restrictions.
- 3) Consultation with the Office of Environment and Heritage is required prior to locating sewer and water utilities in and adjoining riparian corridors for their requirements.

2.7.3 Energy Supplies

A. Objective

- a) To ensure that the site is adequately supplied with energy.

B. Controls

- 1) Evidence that the precinct can be adequately serviced;
- 2) Prior to the submission of an application for development of the site, the owner / applicant shall negotiate the planning and design of services with relevant gas and electricity service providers; and
- 3) Consultation with the Department of Environment and Heritage is required prior to locating gas and electricity utilities in and adjoining riparian corridors for their requirements.

2.7.4 Telecommunications

A. Objective

- a) To incorporate contemporary telecommunications infrastructure that provides access to broadband services to residents and facilitate home businesses.

B. Controls

- 1) Demonstrate that the precinct can be adequately serviced with telecommunications infrastructure;
- 2) Information on contemporary telecommunications services shall be provided, including availability and location of service corridors. Shared service corridors shall have the capacity to accommodate technology advances and any increases in demand;
- 3) Modern telecommunications infrastructure shall be provided with the capacity to support multiple telecommunications services, such as high speed internet (including broad band); voice and data systems; and community intranet; and
- 4) Prior to the submission of a development application, the developer shall negotiate the planning and design of services with Telstra and any other key providers.
- 5) Consultation with the Department of Environment and Heritage is required prior to locating telecommunications infrastructure in and adjoining riparian corridors for their requirements.

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Part A Waterside

A. Background

This section of the DCP applies to Waterside, which includes both the employment and residential components as identified in Figure E3.1.

Waterside is a 54 hectare residential and employment precinct located approximately 2km north of Penrith City Centre and adjacent to the Penrith Lakes Scheme.

The locality is characterised by a mix of residential, industrial and recreational uses. Large industrial activities are located to the south on the opposite side of Andrews Road. Grey Gums Reserve is located immediately to the east of the site with the residential suburb of Cranebrook located further to the east. The Penrith Lakes Scheme, including the Sydney International Regatta Centre and the White Water Stadium, are located to the west on the opposite side of Castlereagh Road.

3.1 Waterside Corporate

3.1.1 Preliminary

3.1.1.1 Purpose of this Section

The purpose of this Section is to guide development of the Waterside Corporate Precinct.

3.1.1.2 Land to which this Section Applies

This section applies to the land shown on Figure E3.1 below.

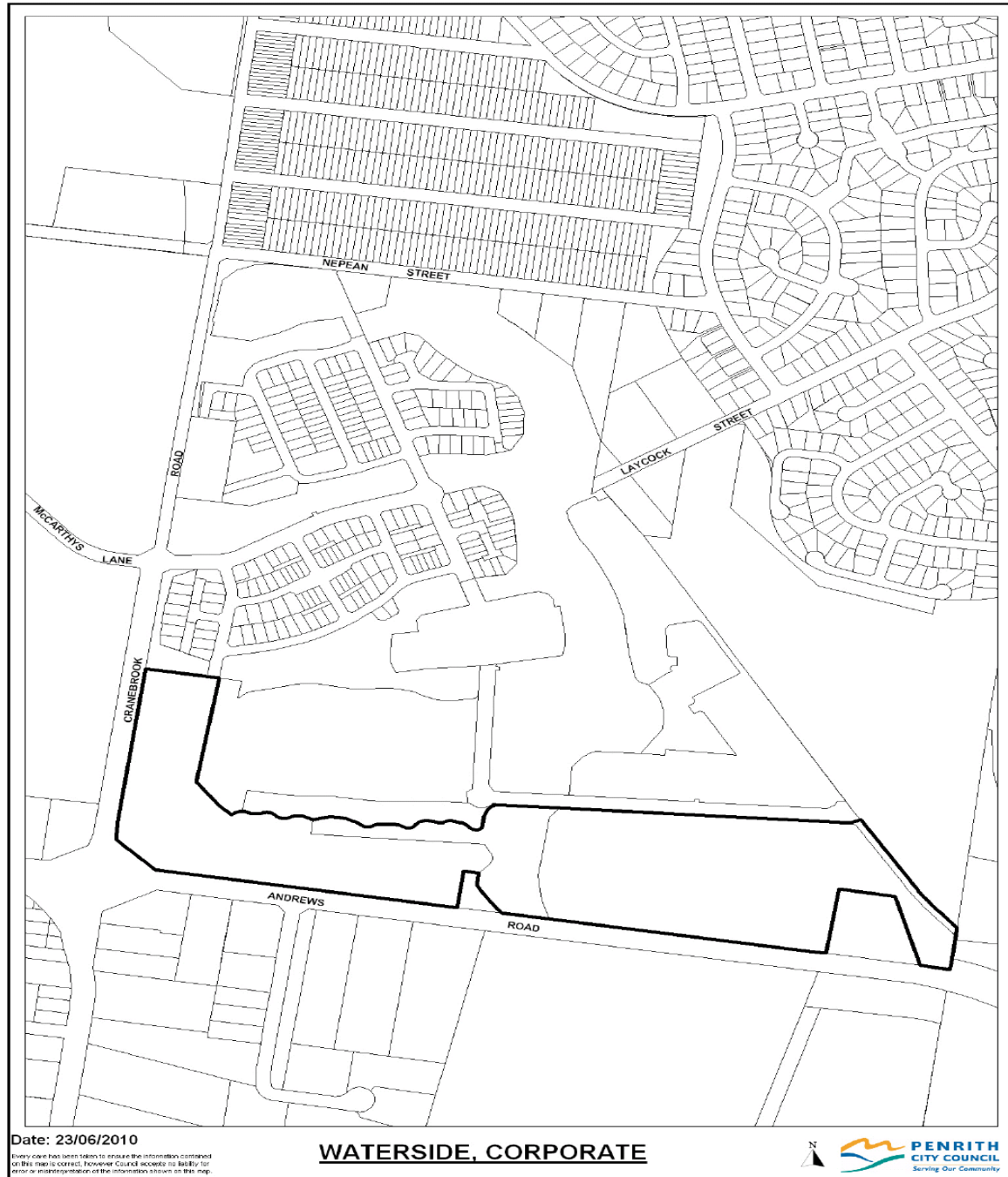
3.1.2.3 General Objectives

A. General Objectives

- a) To provide a clear planning framework for development of the site;
- b) To maintain and enhance the views through and across the subject land to the Penrith Lakes, the Nepean River and the Mountains;
- c) To encourage development that enhances the area's gateway location to Penrith and Penrith Lakes;
- d) To minimise any adverse impact to residential development from noise as a result of industrial development;
- e) To manage stormwater runoff, water quality and flooding in a safe, effective and environmentally responsible manner;
- f) To provide opportunities for employment, visitor accommodation, child care facilities, neighbourhood shops and community facilities; and

- g) To ensure the visual quality and the operating function of Waterside Corporate and the lakes system complement future development in the adjoining residential zone and achieve an appropriate and suitable interface between the two zones.

Figure E3.1: Land to which the 'Waterside Corporate' Part applies.

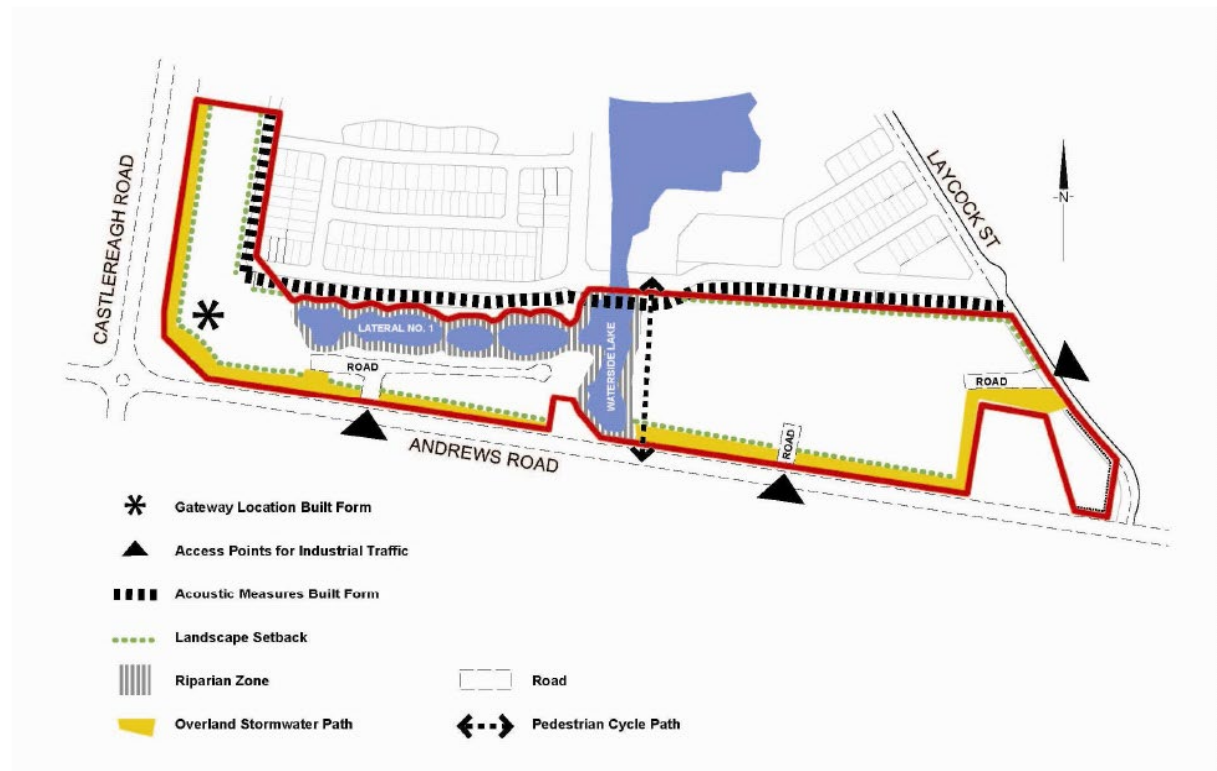


3.1.2 Site layout

The site is to be developed generally in accordance with the Key Design Elements shown in Figure E3.2: Key design Elements (Waterside Corporate). Council will consider variations to

this layout where it can be demonstrated that the objectives of this section of the DCP can be met.

Figure E3.2: Key Design Elements (Waterside Corporate)



3.1.3 Site development controls

3.1.3.1 Floodway and lake system

A. Objectives

- To ensure development of the site is compatible with the flooding characteristics of the locality;
- To ensure no adverse impact from flooding is experienced upstream and downstream as a result of development of this land; and
- To ensure that development is appropriately protected from flood inundation.

B. Controls

- The floodway and lake system shall be located generally in accordance with Figure E3.2: Key Design Elements (Waterside Corporate).

- 2) The floodway/main lake system shall have a width no less than that determined by Council having considered both flood conveyance requirements and modelled pre/post development flood impacts/variances for the 1% AEP (Annual Exceedance Probability), 0.5% AEP and 0.2% AEP local catchment and Nepean River flood events.
- 3) The lakes and lake foreshores (particularly the depth and grading) shall be designed to maximise safety.
- 4) Habitats, including islands, shall be constructed in each of the major lakes generally as indicated in Figure E3.2: Key Design Elements (Waterside Corporate) to provide habitat for local flora and fauna.
- 5) The floodway and lake system and their habitats are to be constructed and operated so as not to be conducive to mosquito breeding.
- 6) A recirculation system for the lakes shall be provided. The system must comprise components which will:
 - a) Minimise the likelihood of stratification of lakes, if this is necessary due to lake depth; and
 - b) Allow for full or partial draining of the lakes for maintenance purposes.

3.1.3.2 Catchment water quality

A. Objectives

- a) To ensure that an adequate and environmentally sustainable method of controlling surface water and storm water is implemented;
- b) To ensure appropriate water quality standards are maintained throughout the system and that post development water quality is an improvement on pre development water quality;
- c) To maintain adequate water quality levels throughout the lakes system at all times; and
- d) To ensure that water quality standards are not compromised for the lakes system.

B. Controls

- 1) Water quality is to be improved and maintained by every proposed development.
- 2) Adequate velocity and the controlled flow of water through the system shall be maintained at all times, to ensure the quality of the water and to reduce mosquito populations.
- 3) Water quality shall be enhanced by trapping and removing all debris. Gross pollutant traps are to be provided where the floodway enters the property at the Andrews Road boundary and where drainage from the south western corner of the public reserve enters the property at its eastern boundary.
- 4) Macrophyte planting is to be provided around the perimeter of the lakes to assist in the filtering of nutrients.

- 5) The use of fertilisers and other sources of nutrients may adversely impact on water quality and shall be minimised.
- 6) A process for monitoring the quality of discharges from this land is required to ensure system performance is maintained. This process, and agreed outcomes, shall be established through negotiation with the Penrith Lakes Development Corporation, Council, Department of Environment, Climate Change and Water. The monitoring process shall include maintenance of nutrient levels, and shall be undertaken on a regular basis. Details of the program shall be submitted with the development application/s for the construction of the lakes system.

3.1.3.3 Water quantity

A. Objectives

- a) To ensure adequate circulation and stable water levels through the lake system and branch waterways.

B. Controls

- 1) A permanent water level shall be maintained within the lakes and lateral waterways.
- 2) An internal pumping system must be installed to enable the pumping of water between lakes, and the maintenance of water quality.
- 3) The pump system shall be enclosed, or provided with acoustic treatment or barriers, to ensure residents are not affected by the noise generated by its operation.
- 4) Water levels in the lakes and all laterals shall comply with the approved Water Management Plan (see 3.1.3.4 control (3)(c)).

3.1.3.4 Management of the lakes system

A. Objectives

- a) To ensure the maintenance of the water management system (floodway, lakes, lateral waterways and stormwater drainage) to appropriate design and environmental standards; and
- b) To encourage innovative design solutions to complement the management of water within the catchment.

B. Controls

- 1) A management plan for the regular maintenance of the lakes system shall be established and enforced. This shall include regular mowing and maintenance of the verges, pruning, structural and operational maintenance of the system, dewatering and desilting the lakes and ponds, and removal and replanting of the macrophytes as required.

- 2) Council shall not issue development consent for a proposal to subdivide or develop the site unless satisfactory arrangements have been made with Council for the ongoing maintenance and management of the lakes system.
- 3) As part of a development application submitted for construction of the lakes system, the following issues must be addressed:
 - a) A proposal, which outlines the agreed responsibilities of all relevant parties, for the ownership and management of the lakes system. Satisfactory arrangements regarding this matter must be achieved prior to granting development consent for construction of the lakes system or subdivision of land;
 - b) Means of improving water quality compared with existing water quality (at the time of submission), and the proposed water quality monitoring regime; and
 - c) A Water Management Plan for the maintenance of the lakes system, including a schedule of proposed maintenance activities, annualized operational costs, and capital replacement costs. The Water Management Plan should also address:
 - i) The water quality and quantity discharge details, including expected changes in water quality and quantity to the existing system due to development (low flows, high flows, total over average rainfall year);
 - ii) A plan for monitoring the quality of water discharge from the site;
 - iii) The management of pollutants, such as oils, grass clippings, etc;
 - iv) The control of exotic flora and fauna;
 - v) Stormwater controls;
 - vi) Groundwater effects (including any plans to draw from the groundwater for supply);
 - vii) Sewer requirements (impact on existing sewer system and lake system);
 - viii) Emergency controls;
 - ix) The handling of water during the various stages of construction, as well as the final system (including site water management plan and sediment and erosion control measures);
 - x) The incorporation of water management facilities;
 - xi) The process of handling contaminated fill, if required;
 - xii) Wastewater reuse and its impact on outflow (quality and quantity);
 - xiii) Internal pumping and the impact on outflow;
 - xiv) A Construction Management Plan in relation to leaching or deposition of materials into the lakes system and control of runoff;
 - xv) A program for mosquito control; and

xvi) Any other relevant matter identified in this section.

3.1.4 Built form controls

3.1.4.1 Site and building works

A. Objectives

- a) To ensure that development meets sound environmental and flood planning practices and standards;
- b) To make adequate provision for stormwater runoff in and through Waterside; and
- c) To ensure that any contaminated land found on the site is properly managed and remediated to a level appropriate for the subject development.

B. Controls

- 1) All buildings on the site shall be designed and built such that their structural integrity can withstand flood flows generated by a flood equivalent to the Nepean River 'Flood of Record'- equating to the 0.5% AEP Flood Event. Damage potential is to be determined considering flood duration, flood depth and flow velocity such that buildings do not sustain structural damage or loss of load bearing capacity following immersion. Council will be guided by reference to available documentation provided in the 'Nepean Floodplain Management Strategy' in its determination as to whether flood compatible building design and material selection have been adequately considered. Appropriate modelling and mapping is to be undertaken to determine those areas of the site, which when fully developed, would present landform/development characteristics where special flood compatible building design is required.
- 2) All lots should have their finished surface at least 0.5m above the 1% AEP flood level generated by local catchment or Nepean River flood flows, whichever generates the higher flood levels.
- 3) Where finished ground levels are not 0.5m above the 1% AEP flood event level, all floor levels shall be constructed a minimum of 0.5m above the flood level.
- 4) Finished surface and ground levels shall fall to property boundaries and along roads to achieve adequate drainage.
- 5) Stormwater from individual lots shall be captured and stored, where feasible, for future use in landscape maintenance. Dispersed points of discharge to the waterway system (using roads, paths or open spaces) shall be provided. This may include a piped drainage system and grassed swales through open space areas.
- 6) Roof and surface water not reused on each lot is to be discharged into the lake system in a controlled manner.
- 7) All stormwater being discharged into the lake system is to be free of harmful pollutants, contaminants, grass litter and biodegradable matter.

- 8) The stormwater system shall be designed and constructed in accordance with Council's engineering standards.
- 9) A Stage 2 Environmental Site Assessment must be submitted to Council as part of any development application for bulk earthworks.
- 10) Any contaminated land must be remediated in accordance with the land management requirements of this DCP.

3.1.4.2 Access and parking

A. Objectives

- a) To ensure safe and functional vehicle access and parking arrangements;
- b) To prevent direct vehicular access to or from any development and Castlereagh Road and/or Andrews Road;
- c) To provide a functional link between Waterside Residential and Waterside Corporate but to discourage unnecessary commercial traffic movements through the residential zone; and
- d) To ensure safe, accessible and functional pedestrian and bicycle movement.

B. Controls

- 1) The significant entries to Waterside Corporate shall be located generally in accordance with Figure E3.2: Key Design Elements (Waterside Corporate). The type, size and specific location of the entry must be supported by a detailed traffic analysis prepared by an appropriately qualified professional.
- 2) Roads within Waterside Corporate shall be constructed above the 1% AEP flood level.
- 3) Access to or from Andrews and Castlereagh Roads shall only be permitted via an approved road. Individual driveways for site-specific developments will not be permitted.
- 4) Access to or from the neighbourhood facilities will be via Road 3 as shown in Figure E3.2: Key Design Elements.
- 5) Bus bays/shelters are to be provided to specifications and at locations to be determined by Council.
- 6) An evacuation plan for Waterside Corporate shall be developed in conjunction with the State Emergency Service. Details of this plan shall be submitted to Council prior to occupation of any building.
- 7) Below ground parking is not permitted.
- 8) Parking within the front building setback may be considered where it can be shown that the objectives of Section 3.1.4.9 Landscaping and Open Space will be achieved.
- 9) Publicly accessible bicycle/pedestrian paths are to be provided as indicated in Figure E3.2: Key Design Elements (Waterside Corporate).

- 10) Pedestrian pathways and cycleways shall be linked to provide a safe, integrated and continuous pedestrian/cycle network around the lake system and within the site.

3.1.4.3 Acoustic requirements

A. Objectives

- a) To minimise any adverse impact to residential development of noise from nearby industrial development; and
- b) To ensure that the design of any acoustic measures contribute to the visual amenity of Waterside and are suitably integrated with the built form and landscaping of the site.

B. Controls

- 1) All development applications are to be accompanied by an acoustic report or noise impact statement prepared by a qualified acoustic consultant as follows:
 - a) Where development is to provide the principal acoustic buffer between residential and industrial development, an acoustic report is required to demonstrate the development will satisfy the noise criteria of Waterside Clause of Penrith LEP 2010; and
 - b) All other development proposals are to be accompanied by a noise impact statement prepared in accordance with and demonstrating compliance with the noise and vibration requirements of this DCP.
- 2) All acoustic measures must be designed to:
 - a) be compatible with the flood characteristics of the estate;
 - b) integrate with adjoining buildings;
 - c) be aesthetically and visually pleasing;
 - d) be compatible with the locality when viewed from both the residential and industrial areas of the estate;
 - e) be constructed of robust and readily maintained materials that also minimise opportunities for vandalism;
 - f) integrate with and accommodate the pedestrian/cycle network, riparian areas and landscaping within the estate; and
 - g) creatively respond to site characteristics and constructed with visually permeable elements where they cross water bodies.

3.1.4.4 Streetscape

A. Objectives

- a) To enable flexibility in building height and design to provide variety in facades and external appearance;

- b) To ensure that development creates a varied streetscape consistent with the envisaged built form scale in the locality;
- c) To ensure the design and appearance of buildings and/or development, particularly when viewed from the waterways, other public places and Cranebrook is of a high standard; and
- d) To coordinate lighting design and solutions across Waterside Corporate.

B. Controls

- 1) Buildings adjacent to the residential zone are to be of a scale and design sympathetic to nearby residential dwellings.
- 2) Development adjacent to residential houses should reflect the change in both detailing and massing and should not overlook private open spaces.
- 3) Architectural design along Andrews Road should be of a high standard, utilising quality materials and finishes.
- 4) Development is to provide a general image of buildings within a green setting, through the combination of appropriate setbacks and landscaping.
- 5) The aesthetic appeal of the street is to be maintained while providing a primary service role for vehicular and pedestrian access.
- 6) Roof plant must be effectively screened from view.
- 7) To soften the effect of development, landscaping must be of an appropriate scale and size consistent with the bulk and scale of buildings.
- 8) Service areas are to be placed to the rear or side of buildings, unless it can be established that they will not impact adversely on visual amenity or the acoustic requirements of this Section.
- 9) An integrated design for lighting is to be implemented throughout the site that is also complementary to the Waterside Residential lands.

3.1.4.5 Building envelopes

A. Objectives

- a) To provide a visual and supplementary acoustic barrier between residential and industrial development;
- b) To enhance the views through and across the subject land to Penrith Lakes, the Nepean River and the Blue Mountains;
- c) To provide quality urban design at an appropriate scale;
- d) To provide appropriately landscaped setbacks to roads and along boundaries adjoining residential and riparian areas; and

- e) To provide building envelopes consistent with the scale of adjoining development, the desired streetscape and future amenity of the locality.

B. Controls

- 1) The setbacks of buildings from the boundary are to be in accordance with Table E3.1: Building Setbacks below.
- 2) Minor variations in setbacks will be considered where they will contribute to a varied and attractive streetscape and do not compromise relevant objectives.

Table E3.1: Building setbacks

Location	Minimum setback
Andrews Road	10m
Castlereagh Road	10m
Laycock Street	9m
Buildings fronting secondary and internal roads	5m
Buildings on lots adjoining residential land and riparian corridors	5m

3.1.4.6 Built form – corner of Andrews and Castlereagh Roads

A. Objectives

- a) To enhance the gateway location at the intersection of Andrews Road and Castlereagh Road through strong built forms;
- b) To reflect the gateway location with well-designed buildings incorporating a strong corner element;
- c) To provide built form with additional architectural emphasis, such as varied building height, distinctive roof forms, articulated wall elements and bold use of materials;
- d) To provide a suitable acoustic barrier to residential development to the north; and
- e) To ensure that car parking is not visually intrusive.

B. Controls

- 1) Buildings are to address Andrews and Castlereagh Roads.
- 2) Front facades are to provide visual interest through articulation and the use of architectural treatments such as projections, indentations and roof elements.

- 3) Elevations are to display a variety of different materials and textures but endeavour to have a cohesive outcome.
- 4) Parking is to be visually unobtrusive and blend in and respect the overall character of the built form.
- 5) Any multi-storey car parking is to be integrated into the built form and screened from public view by appropriate landscaping and creative use of materials, e.g. perforated screens.

3.1.4.7 Built form – Lateral 1

A. Objectives

- a) To provide access arrangements, building orientation and building design that address the riparian corridor.

B. Controls

- 1) Buildings are to front Lateral 1.
- 2) The front and rear elevations of buildings are to provide visual interest through articulation and architectural treatments, such as projections, indentations and roof elements.
- 3) The Andrews Road frontage of this section of the site is to be densely planted to enhance the presentation of development.

3.1.4.8 Built form - neighbourhood facilities

A. Objectives

- a) To provide a neighbourhood shop, cafes, restaurants and related facilities and services for the local residential community and workers in the locality;
- b) To provide a destination and gathering point for the residential and worker community;
- c) To provide a high level of connectivity for pedestrians and cyclists between the facilities and residential development and employment lands;
- d) To provide active street frontages and consolidate activity around a central area; and
- e) To ensure that parking is unobtrusive and suitably landscaped.

B. Controls

- 1) Any views to the lakes and riparian areas are to be maximised.
- 2) The neighbourhood facilities are to be linked into the broader cycle/pedestrian network.
- 3) Parking areas are to be interspersed with areas of landscaping to soften the visual expanse of hard paving.

3.1.4.9 Landscaping and open space

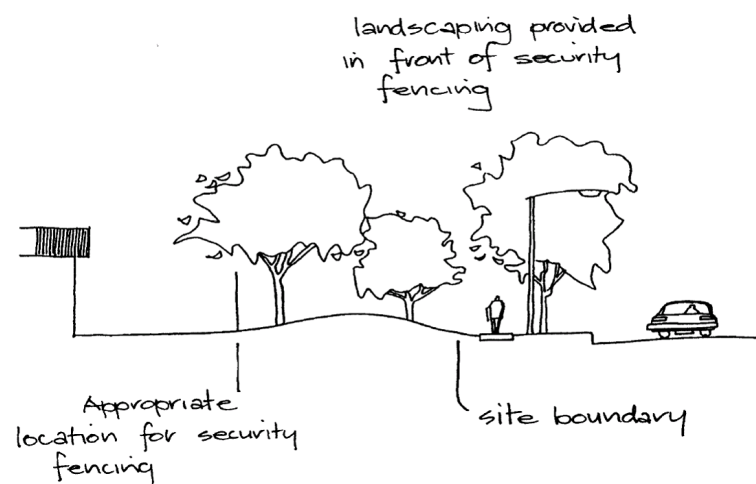
A. Objectives

- a) To provide landscaping which screens and softens building mass and roof form, particularly when viewed from adjoining roads and surrounding areas;
- b) To provide open spaces which are safe and inviting to use;
- c) To ensure the grouping of landscaped areas between adjoining developments, consolidate open space areas and allow a greater density of tree planting; and
- d) To provide high quality and consistent themed landscaping to Castlereagh Road and Andrews Road frontages of the site.

B. Controls

- 1) The design of open space areas and buildings shall enhance existing views and create opportunities for additional views within and through the site.
- 2) The front building setback and setbacks to all public areas must be landscaped to soften building mass and roof forms.
- 3) The building setback adjoining residential development must be landscaped and used for that purpose only.
- 4) Landscaping must comprise canopy trees under planted with suitable shrubs and/or groundcover.
- 5) Landscaping along the Castlereagh Road and Andrews Road frontages of the site is to be of a consistent theme, comprised predominantly of native species.

Figure E3.3: Example of preferred landscaping design



3.1.5 Ownership and management

Waterside Corporate will be subdivided under the community scheme legislation. This will enable the creation of individual lots under Torrens Title, Strata Schemes and Community Property for the shared rights and responsibilities of the Community Association, and the dedication of land to Council. It also ensures that the lakes system can be properly managed without unreasonable demands on Council resources. Under the proposed system, the Community Association will be able to maintain and embellish publicly accessible land to a higher standard than is readily achievable with Council resources.

3.1.5.1 Management principles

- 1) The lake system within Waterside is owned and managed by the Community Association. The lake system consists of:
 - a) The 5 main lakes, the lateral lakes, and the water contained within the lakes;
 - b) The open space surrounding the lakes and below the 1% AEP;
 - c) The culverts and weirs that are not within the road reserves;
 - d) The pump system to maintain water levels and water quality; and
 - e) The water quality devices, such as gross pollutant traps, macrophyte planting and grass swales.
- 2) Arrangements for the maintenance of areas within the development, including the lake system, the internal road system and any other publicly accessible areas shall be made prior to the granting of development consent for construction of the lakes system or subdivision of land and are indicated in Table E3.2: Management Designation below.
- 3) The road system for the development, except the private accessways, shall be dedicated to Council.
- 4) Public access shall be provided and maintained at all times to the parks and bicycle/pedestrian pathways identified in Figure E3.2: Key Design Elements (Waterside Corporate).
- 5) The Community Association shall maintain the lake system, open space areas around the lakes and all bicycle/pedestrian pathways. The Community Association must remove litter that may collect among the macrophyte planting.
- 6) The Community Association shall maintain landscaped areas within the median strips, roundabouts and footpaths.
- 7) The access ways are to be created as restricted neighbourhood property to ensure that the restricted neighbourhood property users will pay for the maintenance and upkeep of those areas.

Table E3.2: Management Designation

Element	Owned By	Maintained By	Cleaned By
Road System	Penrith City Council	Penrith City Council	Community Association
Utility Services	Service Provider	Service Provider	Service Provider
Garbage Services	Penrith City Council	Penrith City Council	Penrith City Council
Acoustic Barrier	Community Association	Community Association	Community Association
Community Facilities ¹	Community Association	Community Association	Community Association
Community Property ²	Community Association	Community Association	Community Association
Landscaping ³	Penrith City Council, Community Association and Neighbourhood Association	Community Association	Community Association
Road Bridges	Penrith City Council	Penrith City Council	Community Association
Road Retaining Wall	Penrith City Council	Penrith City Council	Community Association
Pedestrian Bridges	Community Association	Community Association	Community Association
Main Weirs	Community Association	Community Association	Community Association
Road Culverts	Penrith City Council	Penrith City Council	Penrith City Council
Low Flow Weirs	Community Association	Community Association	Community Association
Road Stormwater Pipelines and Pits	Penrith City Council	Penrith City Council	Community Association
Road Pit Socks	Penrith City Council	Penrith City Council	Community Association
Gross Pollutant Traps	Penrith City Council	Penrith City Council	Penrith City Council
Recirculation	Community Association	Community	Community

Element	Owned By	Maintained By	Cleaned By
System		Association	Association
Macrophyte Planting	Community Association	Community Association	Community Association
Grass Swales	Penrith City Council	Penrith City Council	Community Association
Lake Warning Signs and Fences	Community Association	Community Association	Community Association

Table Notes:

1. *The Community facilities are defined as facilities for the use of proprietors and occupiers of the community scheme.*
2. *The Community property is defined as property owned and maintained by the Community Association.*
3. *The Landscaping on the site is owned by different parties, yet all of it is maintained by the Community Association. Penrith City Council owns the public roads, medians, footpaths in public roads, roundabouts and woodland reserve. The Community Association owns all open space areas associated with the lakes and community property. The Neighbourhood Association owns all neighbourhood property.*

3.2 Waterside Residential

3.2.1 Preliminary

3.2.1.1 Purpose of the Section

The purpose of this Section is to guide residential development of the Waterside area.

3.2.1.2 Land to which the Section applies

This section applies to the land shown on Figure E3.4 below.

Figure E3.4: Land to which the ‘Waterside Residential’ Part applies.



3.2.1.3 Vision for Waterside

The development at Waterside has evolved in response to on-site and surrounding physical characteristics. The majority of residential traffic will access the site via Castlereagh Road and Laycock Street.

The development is to deliver a broad range of dwelling types that have high levels of amenity and good access to on-site open space areas and facilities.

Landscaping will separate the buildings in the Corporate and Residential zones. The proposed residential development will be separated from the light industrial buildings by dense landscaping to be contained in building setbacks, roadway verges and median strips. This landscaping will provide a transition between the different land uses and building types.

Development of Waterside is to:

- 1) utilise and enhance the natural characteristics of the land to create a unique community identity and special residential environment.
- 2) meet sound environmental planning practices and standards and satisfy ecologically sustainable design principles.
- 3) maintain and enhance the views through and across the subject land to the Penrith Lakes, the Nepean River and the Mountains.
- 4) minimise any adverse impact on residential development from noise on adjacent roads and nearby industrial development.
- 5) manage the collection, storage, disposal and impacts of stormwater in an environmentally sustainable and responsible manner.
- 6) Retain and enhance the existing wetlands adjacent to Nepean Street.
- 7) Enable a diverse range of housing forms and densities to meet the needs of different age groups and family compositions.
- 8) Demonstrate a high standard of residential amenity and urban and architectural design quality.

3.2.1.4 Aims and Principles of this Section

A. Aims of this Section

- a) To provide a clear planning framework for development in the area;
- b) To ensure that development meets sound environmental planning practices and standards and encourage development which satisfies ecologically sustainable design principles;
- c) To protect the environmental heritage of the area, whether it is of historic, aesthetic, architectural, archaeological, natural, cultural, Aboriginal or other significance;
- d) To utilise and enhance the natural characteristics of the land to provide opportunities for a unique community identity and special residential environment;

- e) To supplement and enhance the landscape character of the area;
- f) To maintain and enhance the views through and across the subject land to the Penrith Lakes, the Nepean River and the Mountains;
- g) To encourage development which enhances the area's gateway location to Penrith and Penrith Lakes;
- h) To minimise any adverse impact, to residential development, of noise from traffic on adjacent roads and nearby industrial development;
- i) To responsibly manage drainage, water management and flooding;
- j) To retain and enhance the existing wetlands adjacent to Nepean Street;
- k) To provide opportunities for visitor accommodation;
- l) To ensure that development occurs in an orderly and economic way; and

B. Development Principles

- 1) The management of the lake system will be determined by agreement between all major parties, and will be kept within the ownership of the Community Association. The lake system consists of:
 - a) The 5 main lakes, the lateral lakes, and the water contained within the lakes;
 - b) The open space surrounding the lakes and below the 1% AEP;
 - c) The culverts and weirs that are not within the road reserves;
 - d) The pump system to maintain water levels and water quality; and
 - e) The water quality devices, such as gross pollutant traps, macrophyte planting, and grass swales.
- 2) Arrangements for the maintenance of areas within the development, including the lake system, the internal road system and any other publicly accessible areas shall be made prior to the granting of development consent for construction of the lakes system or subdivision of land and are indicated in Table E3.3: Management Designation under Community Management Statement.
- 3) The road system for the development, except the private accessways, shall be dedicated to Council.
- 4) Public access shall be provided and maintained at all times to the parks and bicycle/ pedestrian pathways identified in Figure E3.11 – Land Accessible to the Public.
- 5) The Community Association shall own and manage all open space with the exception of the Woodland Reserve, which is to be rehabilitated and dedicated as public reserve.
- 6) The Community Association shall maintain the lake system, open space areas around the lakes and all bicycle/pedestrian pathways. The Community Association must remove litter that may collect among the macrophyte planting.

- 7) The Community Association shall maintain landscaped areas within the median strips, roundabouts and footpaths.
- 8) The access ways are to be created as restricted neighbourhood property, to ensure that the restricted neighbourhood property users will pay for the maintenance and upkeep of those areas.
- 9) Dwellings are to be designed to accommodate home-based telecommunications facilities, with shared antenna/television aerials (if necessary) for dwellings on each residential 'island'.

Table E3.3 - Management Designation under Community Management Statement

Element	Owned By	Maintained By	Cleaned By
Road System	Penrith City Council	Penrith City Council	Community Association.
Utility Services	Service Provider	Service Provider	Service Provider
Garbage Services	Penrith City Council	Penrith City Council	Penrith City Council
Acoustic Barrier	Community Association	Community Association	Community Association
Community Facilities ¹	Community Association	Community Association	Community Association
Community Property ²	Community Association	Community Association	Community Association
Landscaping ³	Penrith City Council, Community Association & Neighbourhood Association	Community Association	Community Association
Road Bridges	Penrith City Council	Penrith City Council	Community Association
Road Retaining Wall	Penrith City Council	Penrith City Council	Community Association
Pedestrian Bridges	Community Association	Community Association	Community Association
Main Weirs	Community Association	Community Association	Community Association
Road Culverts	Penrith City Council	Penrith City Council	Penrith City Council

Element	Owned By	Maintained By	Cleaned By
Low Flow Weirs	Community Association	Community Association	Community Association
Road Stormwater Pipelines and pits	Penrith City Council	Penrith City Council	Community Association
Road Pit Socks	Penrith City Council.	Penrith City Council.	Community Association
Gross Pollutant Traps	Penrith City Council	Penrith City Council	Penrith City Council
Recirculation System	Community Association	Community Association	Community Association
Macrophyte Planting	Community Association	Community Association	Community Association
Grass Swales	Penrith City Council.	Penrith City Council.	Community Association
Lake Warning Signs and fences	Community Association	Community Association	Community Association

- (1) *The community facilities are defined as facilities for the use of proprietors and occupiers of the community scheme.*
- (2) *The Community property is defined as property owned and maintained by the community Association.*
- (3) *The Landscaping on the site is owned by different parties, yet all of it is maintained by the Community Association. The PCC owns the public roads medians, footpaths in public roads, roundabouts and woodland reserve. The Community Association owns all open space areas associated with the lakes and community property. While the Neighbourhood Association owns all neighbourhood property.*

3.2.1.5 Urban Structure and Staging

The Waterside Residential Master Plan establishes the urban structure for the planning and development of the subject land. The Plan is illustrated at Figure E3.5: Waterside Residential Masterplan.

Figure E3.5: Waterside Residential Master Plan



The following design principles underpinning the Master Plan must be addressed at subdivision stage:

- 1) Development will be located around the lakes system, community centre and open space areas which will provide focal points for the new community.
- 2) Housing type and density will be provided and located as indicated in Figure E3.8: Residential Densities.
- 3) The development is to deliver a broad range of dwelling types that have high levels of amenity and good access to on-site open space areas and facilities.

- 4) The area will be legible and accessible to the general public. It will incorporate a bus route, cycle routes and walking tracks as indicated in Figure E3.11 – Land Accessible to the Public.
- 5) Dense landscaping contained in setbacks and road reserves will separate the buildings in the Corporate and Residential zones.
- 6) The road layout will accord with Figure E3.10 – Road Hierarchy to minimise traffic movements, with the majority of residential traffic to access the site via Castlereagh Road.
- 7) The staging of the development within the R1 General Residential zone is proposed to generally progress southward and eastward towards the Laycock Street extension. This progressive delivery of the residential development is to accord with the recommendations of the approved Acoustic Strategy as adopted in Council's Meeting dated 8 March 2010.

3.2.1.6 Approval Process

- 1) A Concept Plan shall be submitted for Council's consideration prior to submission of specific applications for development. Separate Concept Plans for each zone may be submitted if, in the opinion of the Council, an appropriate and suitable interface between the zones is demonstrated.
- 2) Each Concept Plan will be reported to Council and, if adopted, will establish in more detail the character, density and built form for development in each zone.
- 3) Each Concept Plan shall demonstrate that the development will satisfy the quantitative and qualitative controls of this section, and shall include:
 - a) An indicative site plan for the lakes, floodway, waterways, development and subdivision (including a provisional staging plan), which provides sufficient detail to enable assessment against the provisions of the LEP and this section;
 - b) A plan of existing significant trees (identifying those which will be retained);
 - c) A plan for the management and maintenance of the water system, including any relevant documentary evidence of agreement/s with relevant authorities/bodies;
 - d) A report assessing the significance of identified Aboriginal sites (including those already known to exist) and a plan detailing the location of any Aboriginal sites;
 - e) A report assessing the significance of existing and potential heritage items, and a statement assessing the impact of the proposed development on those items, and the curtilage and vicinity of those items; and
 - f) An acoustic report in accordance with the provisions of Table E3.5: Acoustic Reports, which:
 - i) Identifies the noise environment of the subject land (including a plan of existing noise contours);
 - ii) Provides an assessment of the impact of external noise sources (in particular, industrial and traffic noise); and

- iii) Proposes acoustic measures to mitigate any noise impacts.
- 4) Any subsequent application for development shall include:
 - a) Details of the proposed development;
 - b) Detailed excavation plans for the relevant land, showing the location of all cut and fill works and finished ground levels;
 - c) An acoustic report detailing any necessary site-specific acoustic measures in accordance with the provisions of Table E3.5 – Acoustic Requirements;
 - d) Information which demonstrates the proposal complies with the relevant LEP and the provisions contained in this section (including any approved Concept Plan); and
 - e) A written description (and samples) of external materials and colours for proposed buildings, fencing, pavements, roads, landscape planting, and special treatments or features.

3.2.1.7 Specific information relating to the R1 General Residential and E2 Environmental Conservation zones

- 1) Master Plans have been submitted to Council for the Waterside Precinct for the subject lands. They were placed on public exhibition and adopted by Council as amendments to this Part.
- 2) Specific requirements for these zones are generally listed under separate headings, except where it was more appropriate to fully incorporate the specific requirements without the use of a separate heading.
- 3) Applications for development in the R1 General Residential and the E2 Environmental Conservation zones must generally comply with both the specific requirements listed for that area and the general provisions of this Section, where relevant.

3.2.1.8 Wetlands Protection

The area of the site north of Nepean Street is zoned E2 Environmental Conservation under the provisions of the Penrith LEP 2010. The wetlands area is also identified as 'Mapped Wetland 156' under the provisions of the *Sydney Region Environmental Plan No. 20 - Hawkesbury Nepean River*. Wetland 156 is mapped as a perennial wetland despite areas of the wetland being dry at various times of the year.

The wetlands cover a total area of approximately 8.2ha in three sections, fragmented by Nepean Street and an existing drainage channel. For the purposes of discussion, the three 3 fragmented areas of Wetland 156 are labelled as A, B and C (refer Figures E3.6 and E3.7). Wetland Area A is the largest, comprising approximately 7.5ha, or 91.5% of the overall area. Wetland Area A is located to the north of Nepean Street, and will not be disturbed. Wetland Areas B and C comprise the remaining 0.7ha, or 8.5%. These two areas are located within the proposed residential area and will be disturbed.

It is proposed to enlarge Area A by closing Nepean Street to through traffic; removing the carriageway of the closed section of Nepean Street; and extending Wetland Area A from the north of Nepean Street to the R1 General Residential zone. The rehabilitation will form one

large wetland rather than three fragmented parts (refer to Figure E3.7). The loss of wetland remnant Areas B and C will be compensated by the enlargement of wetland Area A and the construction of the lake system.

The development of the lake system, in conjunction with the rehabilitation of the wetland, will increase the amount of habitat available for native fauna by approximately 222m². The wetland rehabilitation will maintain and or potentially improve ecological biodiversity.

Figure E3.6 - Existing Conditions of Mapped Wetland 156

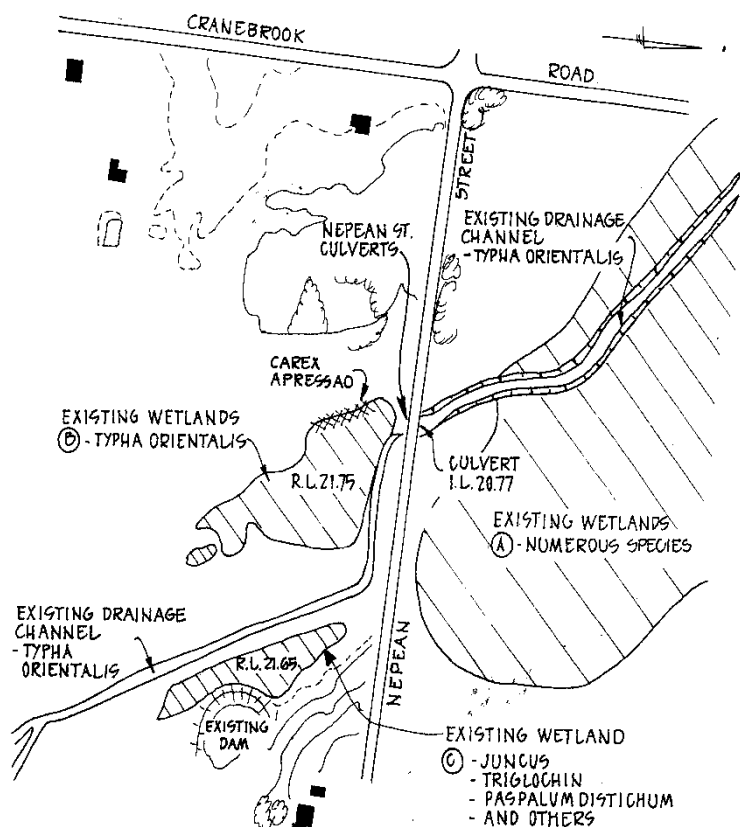
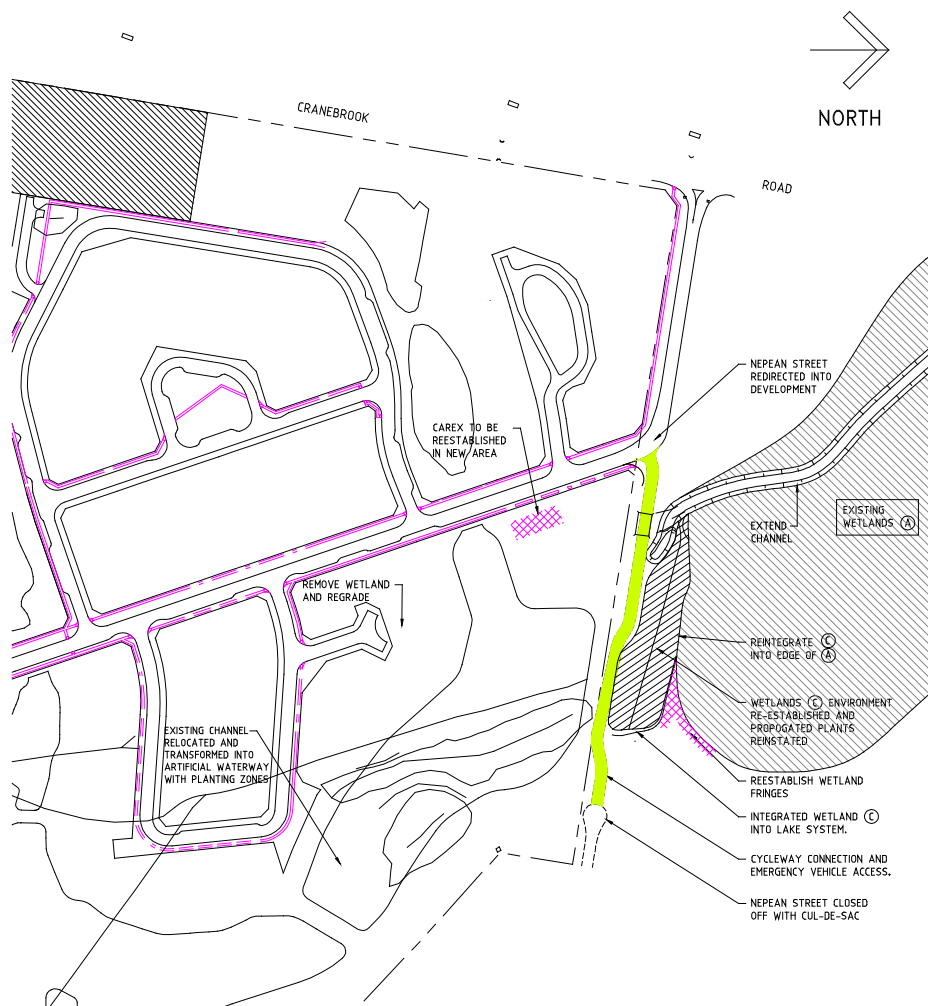


Figure E3.7: Proposed Wetlands Rehabilitation



3.2.1.9 Ownership and Management under the Community Scheme Legislation

The R1 General Residential zone will be subdivided under the community scheme legislation. This will enable the creation of individual lots under Torrens Title, Strata Schemes, and Community Property for the shared rights and responsibilities of the Community Association, and the dedication of land to the Council. It also ensures that the lakes system can be properly managed without unreasonable demands on Council resources.

Under the proposed system, the Community Association will be able to maintain and embellish publicly accessible land to a higher standard than is readily achievable with Council resources. The ongoing management and maintenance of the R1 General Residential zoned land will be the subject of a Community Management Statement. The E2 Environmental Conservation zone will not form part of the Community Scheme. This area will remain under separate title.

3.2.2 Development Requirements

The objectives and specific requirements for elements of any development of the subject land are detailed in the following sections.

3.2.2.1 Floodway, Drainage and Site Works

A. Objectives

General Objectives

- a) To encourage the enhancement of the natural characteristics of the land to provide opportunities for a unique community identity and special residential environment.
- b) To protect the environmental heritage of the area, whether it is of historic, aesthetic, architectural, archaeological, natural, cultural, Aboriginal or other significance.
- c) To maintain biodiversity by providing and increasing habitat for native fauna.

Floodway and Lake System Objectives

- a) To ensure no adverse impact from flooding is experienced upstream and downstream as a result of development of this land by the incorporation of a floodway into the lakes system,
- b) To ensure that development is appropriately protected from flood inundation.

Catchment Water Quality Objectives

- a) To ensure that an adequate and environmentally acceptable method of controlling surface water and storm water is implemented.
- b) To ensure appropriate water quality standards are maintained throughout the system and that post development water quality is an improvement on pre development water quality.
- c) To maintain adequate water quality levels throughout the lakes system at all times.
- d) To ensure that water quality standards are not compromised for the Lakes system.

Water Quantity Objectives

- a) To ensure adequate circulation and stable levels of water through the lake system and branch waterways.

Management of the Lakes System Objectives

- a) To ensure the maintenance of the water management system (floodway, lakes, lateral waterways and stormwater drainage) to appropriate design and environmental standards.
- b) To ensure the maintenance of the water management system to appropriate design and environmental standards.
- c) To encourage innovative design solutions to complement the management of water within the catchment,

Wetland Protection Objectives

- a) To maintain the quantity of water reaching the Nepean Street wetland.
- b) To ensure the retention and enhancement of the existing wetlands adjacent to Nepean Street.

Stormwater Drainage Objectives

- a) To make adequate provision for stormwater runoff in and through the estate.
- b) To ensure the drainage system adequately protects road pavements.
- c) To encourage use of water-permeable paving such as hollow blocks with gravel centres.

Earthworks Objectives

- a) To ensure appropriate erosion and sedimentation control of bulk earthworks construction.

Contaminated Land Objectives

- a) To ensure that any contaminated land found on the site is properly managed and remediated to a level appropriate for the subject development.

Aboriginal Cultural Heritage and Non-Aboriginal Heritage Objectives

- a) To appropriately manage the Aboriginal cultural heritage of Waterside.
- b) To protect and preserve items of local heritage significance.
- c) To ensure that identified items of local heritage significance are adequately recorded by archival means as part of this development, if demolition is deemed necessary.

B. Controls

1) Floodway and Lake System

- a) The floodway and lake system shall be located generally in accordance with this sections relevant map/s.
- b) The floodway/main lake system shall have a width no less than that determined by Council having considered both flood conveyance requirements and modelled pre/post development flood impacts/variances for the 1% AEP, 0.5% AEP and 0.2%AEP local catchment and Nepean River flood events.
- c) The lakes and lake foreshores (particularly the depth and grading) shall be designed to maximise safety.
- d) Additional habitats, including islands, shall be constructed in each of the major lakes generally as indicated on the E3.12: Key Design Elements (Waterside Residential) to provide a habitat for local flora and fauna.
- e) A recirculation system for the lakes shall be provided. The system must comprise components which will:

- i) Minimise the likelihood of stratification of lakes, if this is necessary due to lake depth;
- ii) Allow for full or partial draining of the lakes for maintenance purposes; and
- iii) Prevent the formation of habitat conducive to mosquito breeding.

2) Catchment Water Quality

- a) Water quality shall be improved and maintained by each proposed development.
- b) Adequate velocity and the controlled flow of water through the system shall be maintained at all times, to ensure the quality of the water and to reduce mosquito populations.
- c) Water quality shall be enhanced by trapping and removing all debris. Gross pollutant traps are to be provided where the floodway enters the property at the Andrews Rd boundary and where drainage from the south western corner of the public reserve enters the property at its eastern boundary.
- d) Macrophyte planting is to be provided around the perimeter of lakes edges to assist in the filtering of nutrients.
- e) The use of fertilisers and other sources of nutrients may adversely impact on water quality and shall be minimised.
- f) A process for monitoring the quality of discharges from this land is required to ensure system performance is maintained. This process, and agreed outcomes, shall be established through negotiation with the Penrith Lakes Development Corporation, Council and NSW Office of Environment and Heritage. The monitoring process shall include maintenance of nutrient levels, and shall be undertaken on a regular basis. Details of the program shall be submitted with development application/s for the construction of the lakes system.
- g) A management plan for the regular maintenance of the lakes system shall be established and enforced. This shall include regular mowing and maintenance of the verges, pruning, structural and operational maintenance of the system, dewatering and de-silting the lakes and ponds, and removal and replanting of the macrophytes as required.
- h) A draft management plan shall be submitted with development application/s for the construction of the lakes system.

3) Water Quantity

- a) A permanent water level shall be maintained within the lateral waterways.
- b) An internal pumping system must be installed to enable the pumping of water between lakes, and the maintenance of water quality.
- c) The pump system shall be enclosed, or provided with acoustic treatment or barriers, to ensure residents are not affected by the noise generated by its operation.
- d) Water levels in the Lakes and all laterals shall comply with the approved water management plan.

4) Management of the Lakes System

- a) Council shall not issue development consent for a proposal to subdivide or develop the site unless satisfactory arrangements have been made with the Council for the ongoing maintenance and management of the lakes system.
- b) As part of a development application submitted for construction of the lakes system, the following issues must be addressed:
 - i) A proposal which outlines the agreed responsibilities, of all relevant parties, for the ownership and management of the lakes system. Satisfactory arrangements regarding this matter must be achieved prior to granting development consent for construction of the lakes system or subdivision of land;
 - ii) Means of improving water quality compared with existing water quality (at the time of submission), and the proposed water quality monitoring regime;
 - iii) A Water Management Plan for the maintenance of the lakes system, including a schedule of proposed maintenance activities, annualized operational costs, and capital replacement costs. The Water Management Plan should also address:
 - The water quality and quantity discharge details, including expected changes in water quality and quantity to the existing system due to development (low flows, high flows, total over average rainfall year);
 - A plan for monitoring the quality of water discharge from the site;
 - The management of pollutants such as oils, grass clippings etc.;
 - The control of exotic flora and fauna;
 - Stormwater controls;
 - Groundwater effects (including any plans to draw from the groundwater for supply);
 - Sewer requirements (impact on existing sewer system and lake system);
 - Emergency controls;
 - The handling of water during the various stages of construction, as well as the final system (including site water management plan and sediment and erosion control measures);
 - The incorporation of water management facilities;
 - The process of handling contaminated fill, if required;
 - Wastewater re-use and its impact on outflow (quality and quantity); and
 - Internal pumping and the impact on outflow;
 - A Construction Management Plan in relation to leaching or deposition of materials into the lakes system and control of runoff; and

- A program for mosquito control and any other relevant matter identified in this section.

5) Wetland Protection

- An Environmental Impact Statement (EIS), in accordance with the provisions of the *Environmental Planning and Assessment Act 1979*, must be submitted for any works which will impact on Mapped Wetland No.156.
- The rehabilitation of Mapped Wetland No. 156 shall be generally be in accordance with the concept plan shown in Figure E3.7: Proposed Wetlands Rehabilitation, unless this is varied by the EIS process described above.
- Appropriate erosion and sedimentation control measures must be provided for any development in Waterside, to ensure no sediment from that development enters the wetland system.
- Plantings for the rehabilitated wetland area must be consistent with existing natural species to blend both natural and made elements.

6) Stormwater Drainage

- All components of the drainage system shall be designed to convey the 1% AEP flow. Pipe networks within roads shall convey the 20% AEP with the road carriageway containing additional flows up to the 1% AEP. Requirements set out in the subdivision section of this DCP must be complied with.
- Dispersed points of discharge to the waterway system (using roads, paths or open spaces) shall be provided. This may include a piped drainage system and grassed swales through open space areas.
- Ground waters shall be protected from the impacts of any surface waters.
- Innovative design solutions for stormwater management are encouraged. On-site stormwater detention, dual water supply and / or reuse shall be considered, and details provided for Council's consideration.
- Any proposed drainage system shall be designed to protect road pavements.
- The stormwater drainage system shall be designed to facilitate maintenance of footpath and road reserve areas.
- Roof and surface water not reused on each lot is to be discharged into the lake system in a controlled manner.
- All stormwater being discharged into the lake system is to be free of harmful pollutants, contaminants, grass litter and biodegradable matter.
- The stormwater system shall be designed and constructed in accordance with the requirements of the Engineering Works requirements in Appendix F3 – Submission Requirements of this DCP and the accompanying guidelines.

7) Earthworks

- a) All earthworks shall be undertaken in accordance with the NSW Government's "*Managing Urban Stormwater: Soils and Construction Manual*" (Volume 2A, January 2008) and shall minimise the potential for soil loss and pollution.
- b) Full details of soil erosion and sediment control measures shall be submitted with all subdivision or development applications which will involve soil disturbance.

8) Contaminated Land

- a) Geotechnique Pty Ltd. undertook a Preliminary Environmental Site Assessment in February 1999. The assessment involved:
 - i) A desktop study of all available information from the NSW Environmental Protection Authority, Lands Title Office and Land Information Centre;
 - ii) Review of soils and geological maps; and
 - iii) Site reconnaissance to identify the presence of potential contaminants.

The report concluded that the site should be suitable for the proposed development, subject to further contamination investigation and subsequent remediation, if required.

- b) A Stage 2 Environmental Site Assessment must be submitted to Council as part of any development application for bulk earthworks;
- c) Contaminated land must be remediated to an acceptable level prior to commencement of any earthworks in the affected area; and
- d) Remediation shall involve the treating and / or mitigating of the contaminants to the satisfaction of an EPA qualified auditor, and in accordance with Land Management section of this Plan).

9) Aboriginal Cultural Heritage

- a) A fully comprehensive archaeological survey of the subject land is to be undertaken to identify surface remains and areas of potential artefact bearing deposit.
- b) Archaeological and cultural sensitivity maps are to be prepared.
- c) A program of subsurface testing is to be undertaken in the areas of archaeological or cultural sensitivity or subsurface potential to determine the presence or absence of sites and their archaeological or cultural significance.
- d) If any sites are found, an Aboriginal Cultural Heritage Management Plan may be required.
- e) If an Aboriginal Cultural Heritage Management Plan is required, that plan must be submitted prior to commencement of construction of the lake system. Should it be deemed that any aspect of that construction will compromise any aboriginal cultural material, prior consultation with the National Parks and Wildlife Service and the Deerubbin Local Aboriginal Land Council (DLALC) is required.

- f) Proposed earthworks shall be assessed by members of the DLALC. Onsite monitoring by the DLALC during excavation in the vicinity of identified or potentially significant sites may be required.
- g) All Aboriginal cultural heritage assessment and archaeological investigation should be conducted in consultation with the DLALC.

3.2.2.2 Urban Design

A. Objectives

General Objectives

- a) To recognise the unique setting of the site, and to express Penrith's role as a regional city, in the development of essential design elements for buildings within the estate.
- b) To protect the environmental heritage of the area, whether it is of historic, aesthetic, architectural, archaeological, natural, cultural, Aboriginal or other significance.

Design Elements Objectives

- a) To encourage development which satisfies principles of Environmentally Sustainable Development.
- b) To enhance views through and across the subject land to Penrith Lakes, the Nepean River and the Blue Mountains.
- c) To achieve a range of housing forms and densities.
- d) To provide opportunities for visitor accommodation,
- e) To provide a level of development that complements and enhances the waterways system.
- f) To maintain adequate building envelopes to achieve appropriate levels of scale consistent with landscaping, the desired streetscape, and the desired future amenity.

External Materials and Finishes Objectives

- a) To ensure that external materials and finishes complement the landscaping and urban design of the development.
- b) To enhance the streetscape and roofscape through the use of a diverse range of materials and finishes.
- c) To encourage the use of high quality external materials and finishes.

Energy Efficiency Objective

- a) To promote energy efficient development and minimise the need for artificial lighting, heating or cooling.

Site and Building Works Objectives

- a) To ensure that development meets sound environmental planning practices and standards.
- b) To provide a satisfactory and appropriate level of landscaping.
- c) To ensure that the design and establishment of development, community facilities, open space and waterways is undertaken in an integrated fashion.
- d) To encourage the most effective, orderly and economic provision of service infrastructure for the area.
- e) To ensure that site facilities are effectively integrated into the development, and that they are contemporary, practical, attractive and easily maintained.

Advertising Objectives

- a) To prevent the proliferation of advertising signs.
- b) To allow signage and advertising which is complementary to the R1 General Residential built form, and does not detract from a high quality urban environment.

B. Specific Objectives for the R1 General Residential zone

- a) To provide a suitable interface between R1 General Residential and the E2 Environmental Conservation zones.
- b) To encourage the use of the open space areas by providing an interconnected pathway system through the entire estate.

Residential Diversity

- a) To deliver a broad range of dwelling types that have high levels of amenity and good access to on-site open space areas and facilities.

Building Envelopes

- a) To maintain views of Penrith Lakes, the Nepean River and the Blue Mountains for the residents of Cranebrook.
- b) To provide a variety of facades and external appearances, to create a distinctive image for the estate.

External Materials and Finishes Objectives

- a) To maximise the use of recycled materials, or components in which recycled materials have been used.

Privacy

- a) To ensure visual privacy between dwellings.
- b) To avoid overlooking of living spaces in buildings and private open spaces.

Energy Efficiency

- a) To minimise the need for artificial lighting, heating or cooling.
- b) To ensure reasonable access to sunlight for living spaces within buildings and open spaces around buildings.
- c) To encourage the siting, design and construction of dwellings that will receive the maximum benefit from solar energy and provide for energy conservation measures.
- d) To allow for active solar energy devices such as domestic water heaters and / or use of solar energy for all household power requirements,

Fencing

- a) To ensure fencing complements development style.
- b) To ensure fencing does not contribute to problems relating to safety and overlooking.

B. Controls

1) Design Elements

- a) The design and appearance of each building and/or development, particularly when viewed from the waterways, other public places and Cranebrook must be of a high standard which meets the design requirements of the section.
- b) The design of each building and/or development must satisfy ecologically sustainable design principles.
- c) An integrated design for lighting and signage is to be implemented throughout the estate.
- d) The wetlands at the northern end of the estate shall not be adversely affected by any development.

2) External Materials and Finishes

- a) The external finishes of all development are to be:
 - i) Durable, high quality, low maintenance materials.
 - ii) Compatible with the overall design and form of the estate.
 - iii) Considered in association with proposed planting and landscape treatment; and
 - iv) Considered in the context of their ability to mitigate acoustic impact.
- b) Roof materials shall not be highly glazed or reflective.
- c) Large areas of reflective materials will not be accepted.
- d) Fencing must integrate with the built form and landscape character, with a continuity and consistency to its design (form, material and colour).

3) Energy Efficiency

- a) Winter solar penetration should be maximised and summer solar penetration minimised.
- b) Natural ventilation opportunities should be maximised.

4) Site and Building Works

- a) All buildings on the site shall be designed and built such that their structural integrity can withstand flood flows generated by a flood equivalent to the Nepean River 'Flood of Record'- equating to the 0.5% AEP Flood Event. Damage potential is to be determined considering flood duration, flood depth and flow velocity such that buildings do not sustain structural damage or loss of load bearing capacity following immersion. Council will be guided by reference to available documentation provided in the 'Nepean Floodplain Management Strategy' in its determination as to whether flood compatible building design and material selection have been adequately considered. Appropriate modelling and mapping is to be undertaken to determine those areas of the site which when fully developed would present development characteristics where special flood compatible building design is required.
- b) All lots should have their finished surface at least 500mm above the 1% AEP flood level generated by local catchment or Nepean River flood flows, which ever generates the higher flood levels.
- c) Where finished ground levels are not 0.5m above the 1% AEP flood event level, dwellings shall be constructed with habitable floor levels a minimum of 0.5m above the flood level.
- d) Water quality, downstream of any proposed development, shall be improved and maintained throughout any construction and/or development works.
- e) Stormwater on each lot shall be captured and stored, where feasible, for future use in landscape maintenance.
- f) Recycling of stormwater for garden irrigation shall be implemented by the provision of on-site stormwater detention to standards specified by Council.
- g) Finished surface and ground levels shall fall to property boundaries and along roads to achieve adequate drainage.
- h) Soil erosion and sediment control measures shall be in accordance with the NSW Governments' *"Managing Urban Stormwater: Soils and Construction Manual 2004"* (Landcom, 2004). Details shall be submitted to Council with each development application.

5) Site Facilities

- a) Waste and recycling facilities are to be provided in accordance with the Waste Management Section of this Plan.
- b) A Waste Management Plan is required to be submitted with any development application for demolition, construction and or use of residential, commercial and industrial development.

6) Advertising

- a) All advertising is to comply with the advertising and signage requirements of this plan and be:
 - i) Constructed of high quality durable materials;
 - ii) Considered in conjunction with the design and construction of buildings; and
 - iii) Contained wholly within the site.
- b) Hoardings may be displayed during construction, subject to Council's approval, and must be removed upon completion of the relevant building/s.
- c) Real Estate signs may be displayed during periods of sale, providing the signs are located within the relevant property boundaries, and not located on footpaths and other pedestrian areas.
- d) The Community Association shall be responsible for the cleaning of any graffiti that occurs within the estate.

7) Residential Densities

- a) Development shall establish a range of housing densities and forms across the estate:
- b) Subdivision may be in the form of 'A' type lots, 'B' type lots, 'C' type lots, 'D' type lots and 'E' type lots (Refer to the Residential Development part of this Section).
- c) A mix of housing lots and types shall be generally consistent with the residential densities and lot layout shown in Figure E3.8: Residential Densities; and
 - i) The notional yield for each of the 'dwelling types' are outlined in Table E3.4 General Residential Design Elements.
- d) The location of the 'dwelling types' shall comply with the requirements of the section except where it can be demonstrated that:
 - i) the overall density of the proposed development parcel will still be achieved, and
 - ii) the proposed densities, range of lot sizes, and built form/designs still achieve the aims, objectives and requirements of the section.

8) Streetscape and Amenity

- a) A mixture of housing designs shall be provided, to create attractive and varied streetscapes.
- b) Dwellings adjoining pathways and access ways should be designed, through placement of living spaces and windows, in such a way that the public areas can be observed from the dwellings. This is to increase security and to encourage a sense of ownership by the occupants.
- c) Buildings, materials and fencing should be articulated and designed to integrate pathways and access ways. This is intended to increase security and create a sense of ownership.

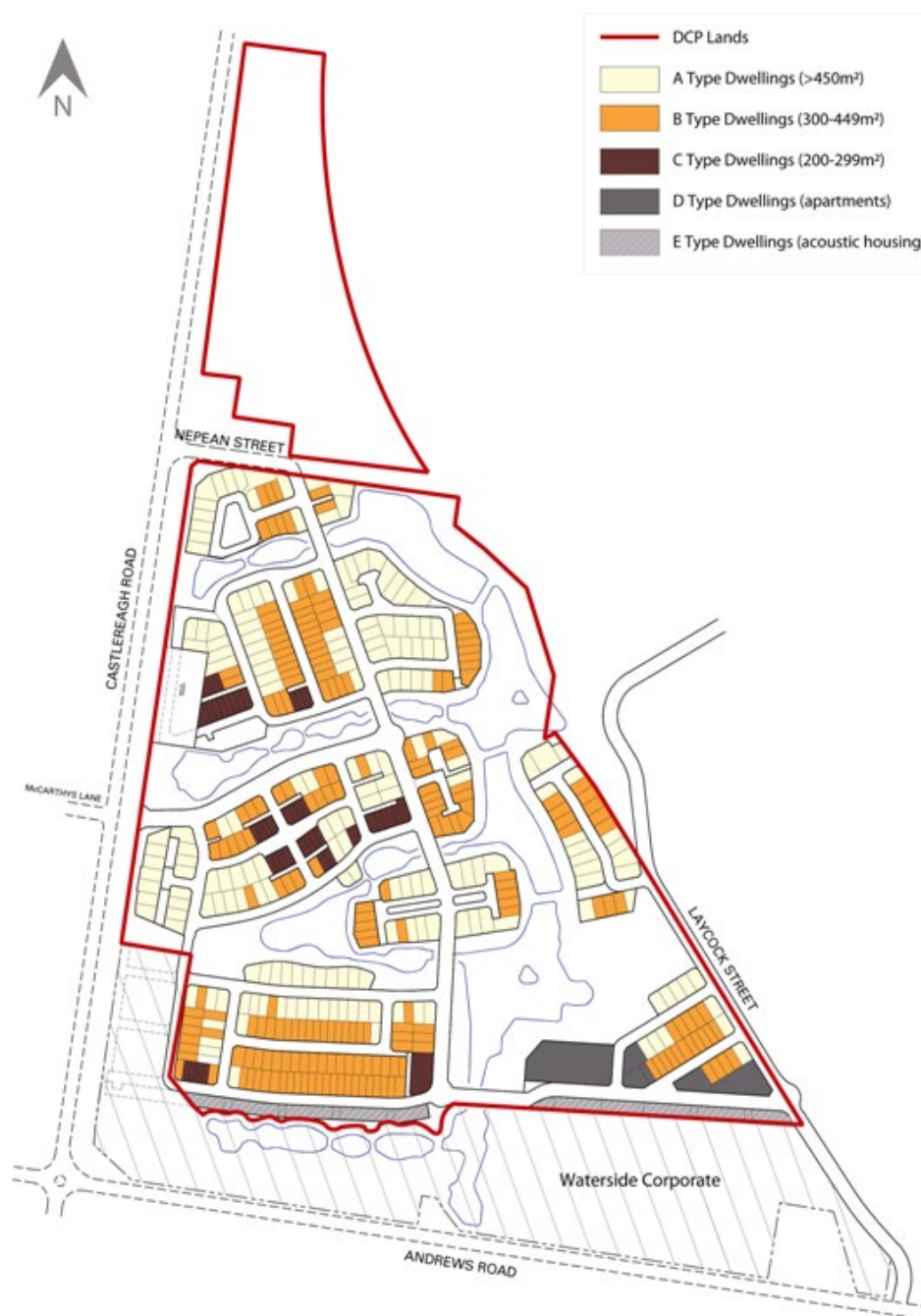
- d) Dwellings adjoining public open spaces, pathways and waterways shall be provided with outdoor spaces in which privacy can be ensured without obstructing the important public views.
- e) The streetscape, dwelling designs and site layouts should generally reflect the indicative concept site plans in Section 3.2.2.6.1 Dwelling Types.

Table E3.4: R1 General Residential Design Elements

Design Elements	'A' Type Dwellings	'B' Type Dwellings	'C' Type Dwellings	'D' Type Dwellings	'E' Type Dwellings
% of notional yield	34%	38%	7%	5%	16%

Note: Percentages based on yield, not developable area.

Figure E3.8: Residential Densities



9) Building Envelopes

- Variations in setbacks and building heights may be considered where they will not compromise the objectives of this section, and will contribute to a varied and attractive streetscape.
- Any changes in scale of 'D' type dwellings, adjacent to lower density residential housing, should reflect the change in both detailing and mass.

- c) Design and built form of 'D' Type dwellings are to be considered in accordance with relevant principles of *State Environmental Planning Policy 65 – Design Quality of Residential Flat Development*.
- d) 'E' type dwellings are to be designed to be groups of interconnecting dwellings made up of approximately 7 to 11 dwellings.
- e) Each group of 'E' type dwellings are collectively not to have site coverage of more than 60% of the total site area.
- f) Parking under buildings shall be considered to be a storey if it is more than 1.5m above finished ground level.
- g) Projections permitted into the setback areas include eaves, sun hoods, gutters, down pipes, flues, light fittings, electricity or gas meters. Any of these elements may project a maximum of 1.0m.

10) External Materials and Finishes

- a) Material selection must take into account the life cycle effect of their manufacture, use and disposal to minimise the effect on the environment. The following environmental factors shall be considered in such analysis:
 - i) environmental impact throughout their life cycle;
 - ii) energy use throughout their life cycle;
 - iii) carbon dioxide emission during manufacture, use and disposal;
 - iv) toxicity content and toxin production during manufacture, use and disposal;
 - v) reactive organic compound content;
 - vi) rare and non-renewable material content;
 - vii) potential for re-use or recycling;
 - viii) re-use or recycled material content;
 - ix) transport and distribution requirements;
 - x) thermal comfort;
 - xi) maintenance;
 - xii) durability; and
 - xiii) cost.
- b) No materials or construction techniques are to be used which may in some way leach or deposit pollutants into the ecological system of the lakes. A Construction Management Plan must be submitted to Council for approval prior to commencement of construction. The Construction Management Plan must address:
 - i) the type of the staging and timing of construction;

- ii) building materials used;
- iii) the measures to prevent any leaching or deposition of materials into the lake system;
- iv) the method of sorting waste for recycling, e.g. separation of metal, concrete and timber in individual containers prior to transportation from the site, and (v) control of stormwater runoff; and placement and storage of building related elements.

11) Privacy

- a) Visual privacy shall be achieved by:
 - i) using windows that are narrow, translucent or have distorted glass,
 - ii) ensuring windows do not face directly onto the windows, balconies or courtyards of adjoining dwellings, and
 - iii) screening opposing windows, balconies and courtyards.
- b) Windows, doors and balconies, particularly those above ground level, shall be designed or placed to minimize overlooking of neighbouring outdoor open spaces.

12) Energy Efficiency

- a) Any development or buildings for residential purposes shall:
 - i) Be designed to ensure that the northern facade of new dwellings, and 50% of their private and / or landscaped open space (including the main area), receive a minimum of 3 hours direct sunlight between the hours of 9am and 3pm on 21 June each year;
 - ii) Be designed and located to ensure that adjoining residential buildings and 50% of their private and / or landscaped open space (including the main area), receive a minimum of 3 hours direct sunlight between the hours of 9am and 3pm on 21 June each year;
 - iii) Include ceiling insulation to an equivalent thermal rating of at least R2.0 and wall insulation to an equivalent thermal rating of at least R1.5; and
 - iv) Include protection from the entry of summer sunlight by shading devices on external openings to habitable rooms.
- b) All dwellings shall be designed to achieve relevant BASIX requirements.

13) Site Facilities

- a) Outdoor clothes-drying areas for multiunit housing (other than for 'D' type dwellings) shall be provided in separate enclosures, to maximise security. These drying areas should be screened from the public view.
- b) A central reception aerial / master antenna shall be provided for any proposed development of more than two dwellings. Satellite dishes shall be screened from any public place. Details of any proposed aerial, antenna or dish shall be submitted with the development application.

- c) Dwellings are to be designed to accommodate home-based telecommunications facilities and information technologies, by allowing for:
 - i) Additional telephone lines and outlets;
 - ii) Additional electrical outlets; and
 - iii) Satellite or cable-based reception.

14) Fencing

- a) The type, style and design of the fencing must complement surrounding buildings and the landscape design.
- b) The following types of fencing are prohibited:
 - i) Colorbond; and
 - ii) Mesh wire fencing; and
 - iii) Chain link fencing.
- c) Fences bounding the edge of the lake system shall have a maximum height of 1.5m.
- d) Fences bounding pathways and access ways shall be no higher than 1.8m.
- e) Fencing and courtyard walls forward of the building line shall be a maximum of 1.2m, with exception of 'E' type dwellings.
- f) Side fences (to the rear of the building line) and rear fences shall not exceed 1.8m.

3.2.2.3 Acoustic Requirements

A. Objectives

General Objectives

- a) To ensure that development meets sound environmental planning practices and standards.
- b) To minimise any adverse impact, to residential development, of noise from traffic on adjacent roads and nearby industrial development.
- c) To ensure that the residential uses of this site do not restrict, by way of additional noise controls or requirements, future development or expansion of adjacent industrial activities.
- d) To ensure that the design of any acoustic measures contribute to the visual amenity of Waterside and are suitably integrated with the built form and landscaping of the site.

B. Specific Objectives for the R1 General Residential zone

- a) To facilitate residential development by requiring acoustic barriers along Castlereagh Road.
- b) To facilitate residential development by ensuring appropriate acoustic measures along Andrews Road.
- c) To require acoustic barriers that are aesthetically appealing.

Table E3.5: Acoustic Reports

Submission	Details
Acoustic Report with each Concept Plan	Proposed acoustic measures for the estate
Acoustic Report with each Development Application	Site-specific acoustic measures for each proposed development.
Certificate Of Compliance when the lake system and waterways have been completed.	Compliance required with outdoor noise criteria in residential areas.
Certificate Of Compliance when any relevant acoustic barrier/s or buildings have been completed.	Compliance required with outdoor noise criteria in affected areas prior to proceeding with residential development.
Certificate of Compliance prior to occupancy of each residential building.	Compliance required with internal noise criteria in affected areas.

B. Controls

1) Acoustic Requirements

- a) An acoustic report, prepared by an accredited acoustic consultant approved by Council, shall be submitted at each relevant stage of development, as specified in Table E3.5: Acoustic Requirements.
- b) A certificate of compliance, prepared by an accredited acoustic consultant approved by Council, shall be submitted at each relevant stage of development, as specified in Table E3.5: Acoustic Requirements.
- c) If Council considers that an acoustic report or certificate of compliance does not adequately address all relevant issues, or provide all relevant information, Council may require additional acoustic surveys to be undertaken or the submission of additional information.
- d) Noise attenuation measures along Andrews Road and Castlereagh Road shall be designed to be consistent with the landscape setting of the estate.
- e) Noise attenuation measures shall consist of a range of treatments such as (but not limited to) landscaped mounds, varied setbacks, appropriate building designs, acoustic treatments (such as double glazing) and acoustic barriers.

- f) Noise attenuation measures shall integrate with and complement the design and siting of the proposed residential development.
- g) Landscape planting in any acoustic measures shall comply with the Landscape Design section of this Plan.

2) Noise Measurement Criteria

- a) A minimum of 2 weeks' measurement of ambient noise levels, which provides a minimum of 150 valid data samples.
- b) A minimum of 1 week's measurement of traffic noise.
- c) A minimum of 2 weeks measurement of industrial noise, which provides a minimum of 150 valid data samples, for each of the specified time periods, being:
 - i) noon to 4.00pm (day time)
 - ii) midnight to 4.00am (night time).
- d) A minimum of 4 logger points, at the worst affected locations as specified by Council, within the Waterside site.
- e) A minimum of 2 logger points for control monitoring, at relevant locations specified by Council, outside the Waterside site (e.g. Graham Close and Echo Place).

3) Noise Prediction Criteria

- a) The acoustic report is to include, where relevant, predictions using a recognized calculation procedure, such as the Calculation of Road Traffic Noise (CORTN) or the FHWA method and the latest available annual average daily traffic volume figures supplied by the Roads and Maritime Services (RMS) or Council.
- b) The acoustic report is to recognise, where relevant, future traffic noise levels, given anticipated changes in usage.

4) Report & Certificate Information

- a) The following information, where relevant, shall be provided with each acoustic report or certificate:
 - i) Details of local topography, existing and proposed buildings, and exposed or shielded situations which may affect the results (*and any relevant allowances made*);
 - ii) Details of meteorological conditions during the periods of acoustic measurement;
 - iii) The measured noise levels for all noise sources in (2)(b), 2(c) and 2(d) above;
 - iv) The predicted traffic noise levels at specified locations, being the midpoint of each site boundary and, where relevant, 1m from the external facade walls of each floor of any building;
 - v) Details of outdoor noise levels relevant to the calculated interior noise levels for each building;

- vi) The sound insulation performance ratings of external facade walls in terms of individual components and composite construction (*test result data may be required*);
- vii) Plans and sections of the site detailing buildings, logger locations and other relevant details; and
- viii) A statement of opinion confirming compliance with the relevant acoustic criteria.

5) Acoustic Requirements – R1 General Residential zone

- a) Dwellings in the R1 General Residential zone shall not be occupied unless the indoor and outdoor noise levels comply with the provisions of the Waterside Clause in Penrith LEP 2010.
- b) Acoustic barriers shall be provided along the site's Castlereagh Road frontage. The acoustic barriers must be designed to achieve compliance with the provisions of the Waterside Clause in Penrith LEP 2010.
- c) The acoustic barriers may comprise a combination of earth mounding, timber, steel, bricks, concrete and transparent acrylic and may be integrated with residential development such as in the case of 'E' type dwellings.
- d) Dense landscaping shall be provided between the acoustic barriers and Castlereagh Road to maintain aesthetic appeal.
- e) Where the 'Building Interior Noise Criteria' outlined in the LEP are exceeded, after construction of the acoustic barrier along Castlereagh Road, additional sound-rated glazing for affected rooms may be required.
- f) An acoustic report, prepared by an accredited acoustic consultant approved by Council, shall be submitted with any development application for a dwelling, which verifies compliance with the relevant provisions of the Waterside Clause in Penrith LEP 2010.

3.2.2.4 Landscape Planting and Open Space

A. General Objectives

- a) To ensure that development meets sound environmental planning practices and standards.
- b) To enhance the landscape character of the area.
- c) To enhance the views through and across the subject land to Penrith Lakes, the Nepean River and the Blue Mountains.
- d) To ensure that the design and establishment of development, community facilities, open space and waterways is undertaken in an integrated fashion.
- e) To provide open spaces which are safe and inviting to use.
- f) To encourage the most effective, orderly and economic provision of service infrastructure for the area.

- g) To preserve the natural landscape where feasible and provide habitat for native fauna.
- h) To encourage planting of species appropriate to both the development and the locality.
- i) To retain significant trees wherever possible.
- j) To provide landscaping which screens and softens building mass and roof form, particularly when viewed from surrounding areas.
- k) To encourage the grouping of landscaped areas between adjoining development to consolidate open space areas and allow a greater density of tree planting.
- l) To encourage landscaping that is suitably integrated with acoustic treatment, particularly along the boundaries of the site.

B. Specific Objectives for the R1 General Industrial zone

Tree Preservation

- a) To preserve the natural landscape where feasible, and provide habitat for native fauna.

Landscaping

- a) To embellish the site through quality landscaping.
- b) To encourage the planting of species consistent with the overall estate development and surrounding locality.

Planting

- a) To encourage the planting of species consistent with the overall estate development and surrounding locality.
- b) To encourage the planting of trees that when mature are similar in scale to the specific developments.
- c) To provide screening where required and to 'soften' building masses through appropriate tree planting layout and species selection.
- d) To encourage the grouping of landscaped areas between adjoining developments to consolidate open space areas that allow a greater density of tree planting.

Landscaped Open Space

- a) To ensure that adequate landscaped open space is provided for residential development, and

Private Open Space

- a) To ensure that adequate private open space is provided for residential development.

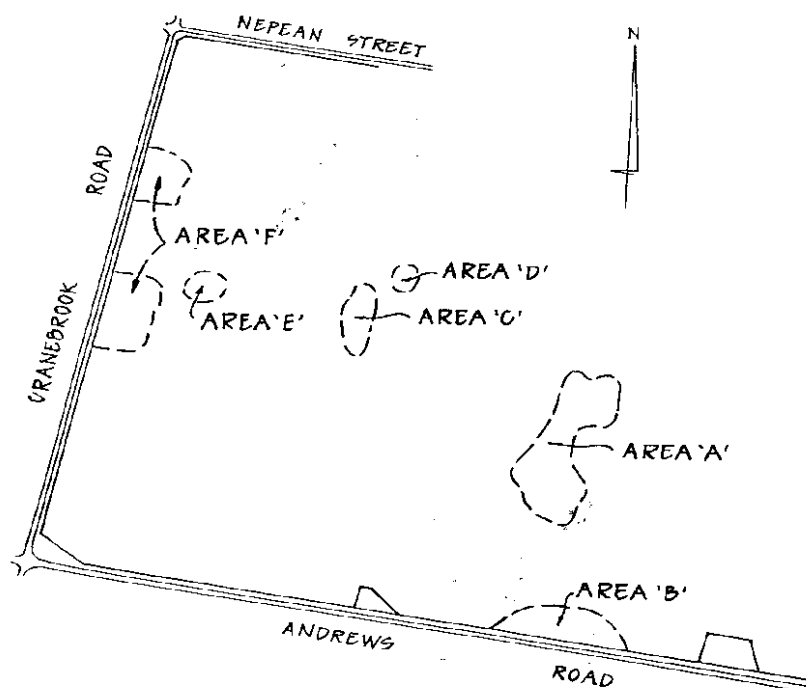
B. Controls

1) Design Elements

- a) Design of open space areas and buildings shall enhance existing views and create opportunities for additional views within and through Waterside.
- b) Dwellings shall face towards streets, open spaces, footpaths and cycleways to provide for visual surveillance of public spaces.
- c) A minimum 40m separation shall be provided between dwellings and/or other buildings on opposite edges of a lake or lateral waterway.
- d) Existing trees are to be preserved when possible, and supplemented by additional landscape planting.
- e) Pedestrian pathways and cycleways shall be linked to provide a safe, integrated and continuous pedestrian/cycle network around the lake system and within the development.
- f) Pathways must not be fenced from view, except where they are short straight paths between properties, with both ends visually open.
- g) Evergreen and flowering hedges are encouraged as a strong visual component of all streetscapes.
- h) Super-advanced tree planting shall be planted along all roadways, and fast-growing species are encouraged.
- i) Large canopy native trees which are common to this region, including those species currently present, shall be planted along the major roads and throughout the open space areas and shall consist of species such as:
 - i) *Casuarina cunninghamiana*
 - ii) *Casuarina glauca*
 - iii) *Eucalyptus amplifolia*
 - iv) *Eucalyptus moluccana*
 - v) *Eucalyptus tereticornis*
 - vi) *Melaleuca linariifolia*
 - vii) *Schinus areira*
- j) Planting along avenues, and feature planting in the open space areas shall consist of species such as:
 - i) *Acer negundo*
 - ii) *Celtis australi*
 - iii) *Gleditsia 'sunburst'*

- iv) *Lagerstroemia indica*
 - v) *Populus deltoids*
 - vi) *Populus yunnanensis*
- k) Landscape planting in shareways and access ways shall consist of small scale plantings such as:
- i) *Callistemon citrinus*
 - ii) *Callistemon viminalis*
 - iii) *Camellia sasanqua*
 - iv) *Lagerstroemia indica*
 - v) *Magnolia grandiflora*
 - vi) *Melaleuca linarifolia*
 - vii) *Melaleuca styphelioides*
 - viii) *Robinia psuedoacacia* "Frisia"
- l) Water edge treatment is subject to Council being satisfied that public safety and maintenance have been adequately addressed.

Figure E3.9 - Existing vegetation on site (Plan courtesy of Bowdens Group)



2) Tree Preservation

- a) The 7 factors in Section 5A of the *Environmental Planning and Assessment Act 1979* must be taken in account and be addressed in any development application that may impact on vegetation within mapped 'Area A' in Figure E3.9 Existing vegetation on site.
- b) A rehabilitation and management plan shall be prepared for the stand of trees mapped as Area A, which includes a requirement for the removal of the weeds that currently exist on the site, and to ensure its future use as a public reserve. A planting regime will be required in conjunction with a management regime to suppress further weed growth.
- c) Care should be taken to ensure that the Grey Box E. *Moluccana* is not affected or impacted upon by altering the existing hydrological processes in the course of earthworks or any other works.

3) Landscaping

- a) Plant species shall generally be chosen from the suggested species list provided in Table E3.6: Suggested Species List.
- b) The Castlereagh Road, Nepean Street and Laycock Street frontages are to be densely planted between the boundary alignment and the carriageway.
- c) Sydney Water and Integral Energy are to be consulted with regard to the location of landscape planting along Castlereagh Road, to prevent any conflict with service provision.
- d) No imported topsoil is to be used. All existing topsoil must be stockpiled and rehabilitated on the site.

4) Planting

- a) Landscape planting and built elements shall be used to provide internal privacy without obstructing views from dwellings.
- b) Property owners are encouraged to plant species from the suggested species list provided in Table E3.6: Suggested Species List in this Section.
- c) The planting of *Typha orientalis* - *Cumbungi* is prohibited due to the adverse impact that species has on waterway systems.
- d) 2m wide landscaped areas are to be provided between car parking aisles.
- e) In car parking areas, trees should be planted every 10 spaces in defined planting nibs a minimum of 2m wide.

5) Landscaped Open Space

- a) The following minimum landscaped open space requirements apply for each dwelling type:
 - i) A' type dwellings 50% of site area

- ii) B' type dwellings 40% of site area
- iii) C' type dwellings 35% of site area
- iv) D' type dwellings 35% of site area
- v) E' type dwellings 20% of site area
- b) Any landscaped area having a dimension less than 2.0m shall not be included in the calculation of landscaped open space for A, B and C Type dwellings only.
- c) Private open space is included in the calculation of landscaped open space.
- d) Notwithstanding Control 5(a), where single story dwellings are proposed, the minimum landscaped open space requirements are as follows for A and B Type dwellings:
 - i) A' type dwellings 50% of site area (where allotments are >550m²)
 - ii) A' type dwellings 40% of site area (where allotments are 450-550m²)
 - iii) B' type dwellings 30% of site area

6) Private Open Space

- a) An area of usable private open space, at ground level as a garden or courtyard, or as a balcony, shall be provided for each dwelling
- b) 'A' 'B' 'C' and 'E' type dwellings are to have a minimum of 20% of the lot area allocated as private open space which is to include:
 - i) A principal area of 24m² with a minimum dimension of 4m, directly accessible from a major living area of the dwelling; and
 - ii) At least 65% of the private open space is to be unroofed soft landscaping excluding swimming pools and outdoor rooms.
- c) Upper storey 'E' type dwellings are to have a minimum of 20% of the lot area allocated as private open space which is to include a principal area of 24m² with a minimum dimension of 4m, directly accessible from a major living area of the dwelling.
- d) Private Open space for 'D' type dwellings is to be determined by design.
- e) The principal area of private open space shall be located to:
 - i) have direct access from the living room(s),
 - ii) to receive at least 3 hours of sunlight between 9am – 3pm on June 21 each year,
 - iii) maximise privacy for the residents and neighbours, and
 - iv) minimise overshadowing from adjoining properties.
- f) Private open space can be made up of more than 1 courtyard provided that 1 area has a minimum area of 24m² and a minimum width of 4.0m.

- g) Where the siting and location of 'D' type dwellings prevents adequate solar access to private open space, an alternative building design providing private open space in the form of roof terraces, may be considered.

Table E3.6 - Suggested Species List

Native Trees	
Angophora floribunda	Rough-barked Apple
Casuarina cunninghamiana	River Oak
Casuarina glauca	Swamp Oak
Eucalyptus amplifolia	Cabbage Gum
Eucalyptus crebra	Narrow-leaved Ironbark
Eucalyptus elata	Peppermint
Eucalyptus globoidea	White Stringybark
Eucalyptus maculata	Spotted Gum
Eucalyptus moluccana	Grey Box
Eucalyptus sideroxylon	Pink Flowered Iron Bark
Eucalyptus tereticornus	Forest Red Gum
Ficus hillii	Hills Weeping Fig
Lophostemon confertus	Brush Box
Melaleuca decora	Paperbark
Melaleuca linariifolia	Snow in Summer
Melaleuca quinquenervia	Broad-leaved Paperbark
Melaleuca styphelioides	Prickly-leaved Paperbark
Tristaniopsis laurina	Water Gum
Native Shrubs	
Acacia implexa	Hickory
Acacia decurrens	Sydney Green Wattle
Acacia parramattensis	Parramatta Green Wattle
Callistemon sp.	Bottle Brush
Daviesia ulicifolia	Gorse Bitter-pea

Dillwynia juniperina	Prickly Parrot-pea
Dodonaea viscosa purpurea	Hop Bush
Grevillea 'Honey Gem'	Grevillea
Indigofera australis	Native Indigo
Native Aquatic Plants	
Carex appressa	Tall Sedge
Cyperus gunnii	Spike
Elaeocharis acuta	Rush
Elaeocharis sphacelata	Common Rush
Juncus usitatus	Tassel Cord-rush
Resteo tetraphyllus	
Scirpus validus	
Exotic Street Trees	
Fraxinus oxycarpa	Claret Ash
Gleditsia "Sunburst"	Honey Locust
Lagerstroemia indica	Crepe Myrtle
Pistacia chinensis	Chinese Pistacia
Prunus sp	Cherry
Sapium sebiferum	Chinese Tallowood
Ulmus parvifolia	Chinese Elm
Zelkova serrata	Japanese Elm
Grasses and Accents	
Agrostis avenacea	Blown Grass
Cymbopogan refractus	Barbed Wire Grass
Carex appressa	Tussock Sedge
Cyperus exaltatus	Tall Flat-sedge
Cyperus polystachyos	

Dianella revoluta	Spreading Flax Lily
Danthonia sp	Wallaby Grass
Dichelachne micrantha	Short-hair Plume Grass
Echinopogon caespitosus	Tufted Hedgehog Grass
Eragrostis elongata	Lavender Grass
Gahnia sieberiana	Red-fruited Saw-sedge
Hermarthriz uncinata	Matgrass
Lomandra longifolia	Spiny-headed Mat-rush
Microlaena stipoides var stipoides	Weeping meadow Grass
Phragmites australis	Common Reed
Poa labillardieri Eskdale	Tussock Grass
Themeda australis	Kangaroo Grass

3.2.2.5 Roads and Car parking

A. Objectives

General Objectives

- a) To ensure the road network is designed and constructed to provide long term performance with minimal maintenance.
- b) To ensure that development meets sound environmental planning practices and standards.
- c) To ensure a safe and efficient internal road system, and a safe and secure environment for pedestrians and cyclists.
- d) To prevent direct vehicular access to or from any development from designated roads (Castlereagh Road).
- e) To ensure the provision of safe, convenient and attractive car parking areas throughout the estate for the use of residents and visitors.
- f) To encourage the most effective, orderly and economic provision of service infrastructure for the area.
- g) To provide distinct, functional and attractive entrances to the development.
- h) To avoid disruptions to through traffic travelling along Castlereagh and Andrews Roads.
- i) To clearly define road hierarchies through effective planting.

- j) To provide convenient and functional public transport routes.
- k) To ensure that adequate on-site parking is provided to meet the needs of each development.
- l) To ensure parking area layout enhances the function and appearance of the development.
- m) To screen parking areas from public view.
- n) To ensure that underground parking entrances and loading docks do not dominate building facades and do not detract from the streetscape.

Road Network Objectives

- a) To provide distinct, functional and attractive entrances to the site.
- b) To avoid disruptions to through traffic travelling on the main thoroughfares of Castlereagh Road and Andrews Road.
- c) To delineate road hierarchies through effective road planting.
- d) To provide convenient, safe and publicly accessible bicycle/pedestrian paths.
- e) To provide convenient and functional public transport routes.

On-Site Parking and Pedestrian Access Objectives

- a) To ensure each development provides adequate parking on site to accommodate all parking demands generated by the development.
- b) To encourage the development of a parking layout which enhances the function and appearance of the development.
- c) To ensure that garage doors and entrances to underground car parking areas do not dominate building facades and do not detract from the desired streetscape.
- d) To ensure safe and functional pedestrian movement.

B. Controls

1) Road Network and Design

- a) All roads shall be generally designed and constructed in accordance with the road widths outlined in the Transport, Access and Parking Section of this Plan and the Road Hierarchy shown at Figure E3.10 – Road Hierarchy.
- b) The significant entries to the estate shall be located generally in accordance with Figure E3.12: Key Design Elements (Waterside Residential).
- c) All roads into and within the estate shall be landscaped with super-advanced trees and plants.
- d) Roads within the estate shall be constructed above the 1% AEP flood level.

- e) Direct vehicular access from any designated road shall not be permitted, other than access for existing dwellings, or access via the defined entries to the estate.
- f) Access for developments, from Castlereagh Road or the 'Entry Avenue' off Laycock Street, shall only be permitted via an approved road. Individual driveways for site-specific developments will not be permitted.
- g) Roads within the estate shall be designed to minimise traffic speeds, maximise traffic and pedestrian safety and provide visual reinforcement for different functions by the use of a variety of surface materials and colours.
- h) Roundabouts shall be constructed to specifications, and at locations, to be determined by Council. Specifically roundabouts or similar control mechanisms will be required at the intersections of:
 - i) McCarthy's Lane and Castlereagh Road.
 - ii) Andrews Road and Laycock Street.
- i) All roads are to be sign posted at their design speed.
- j) On completion of the Laycock Street extension, Nepean Street shall be closed and rehabilitated.
- k) Bus bays/shelters are to be provided to specifications, and at locations, to be determined by Council.
- l) The bus shelters must be constructed from high quality materials and designed to complement the surrounding streetscape.
- m) Traffic calming devices shall be provided to specifications, and at locations, to be determined by Council.
- n) An evacuation plan for the residents and visitors of the estate shall be developed in conjunction with the State Emergency Service. Details of this plan shall be submitted to Council prior to occupation of any residential development.

2) Pedestrian / Cycleway Network

- a) Publicly accessible bicycle / pedestrian paths are to be provided in the locations shown on the map at Figure E3.11: Land Accessible to the Public.
- b) A physical barrier and median strip refuge must be provided where the bicycle / pedestrian paths intersect with a roadway.
- c) Parking areas are to be designed to minimise vehicular / pedestrian conflict. A pedestrian pathway connection between the car parking areas and the building access points shall be provided.

Figure E3.10 – Road Hierarchy

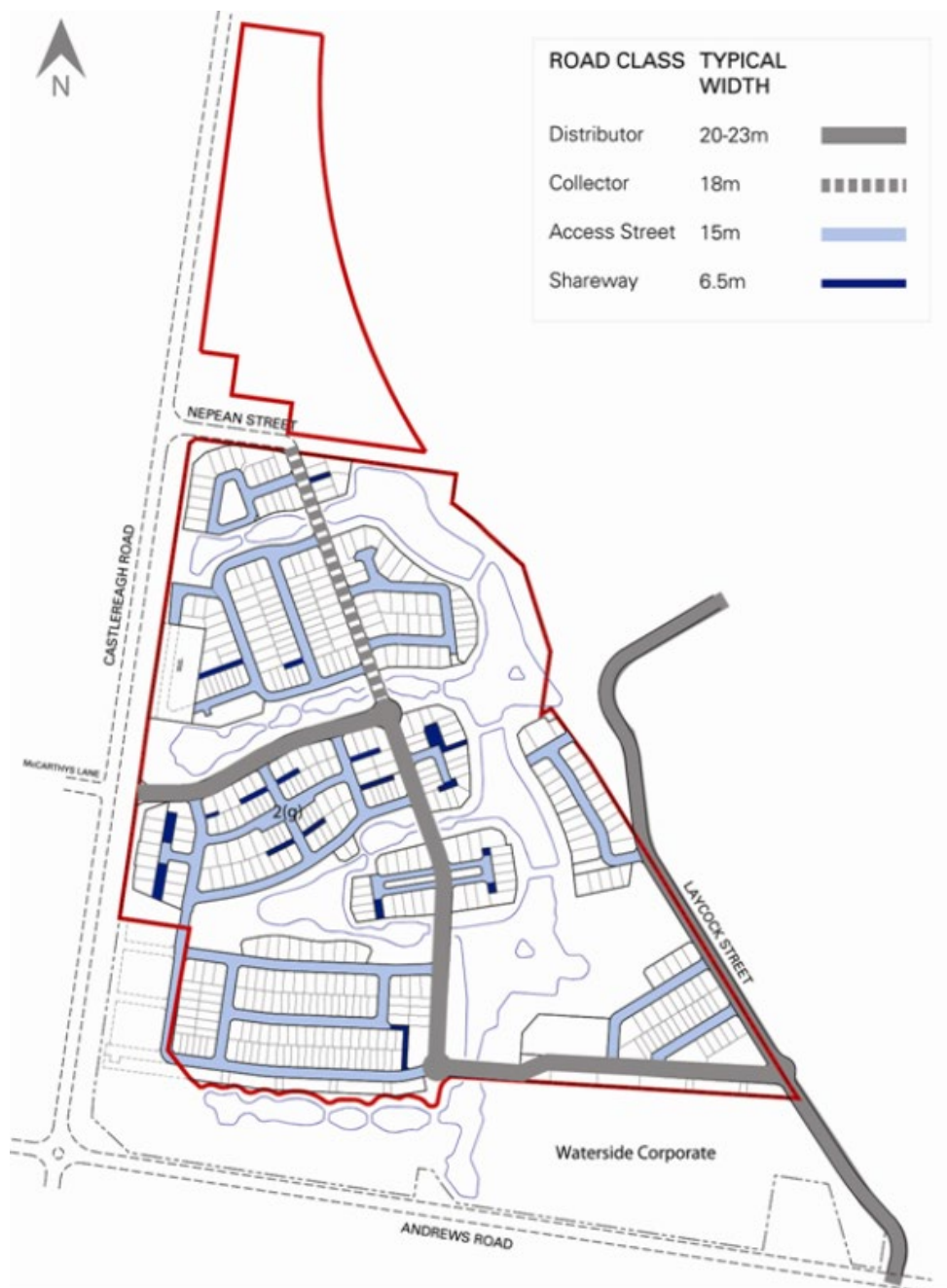


Figure E3.11 – Land Accessible to the Public



3) Garage Requirements

- a) Garages must not dominate the streetscape.
- b) Where an access way is provided to a lot, garages are to be at the rear of the site.
- c) Where there are no access ways, garages should be carefully integrated with the built form of the dwelling.
- d) Garages facing rear access ways should be positioned to create a private open space for the dwelling while allowing for views from the dwelling to the access way.
- e) To maintain access way security, habitable rooms over garages are encouraged.

Figure E3.12: Key Design Elements (Waterside Residential)



3.2.2.6 Residential Development

This Part provides more detail objectives and performance criteria for a variety of typical development forms.

A. Objectives

Residential development in Waterside shall be designed to:

- a) Provide specific controls for residential development in Waterside.
- b) Be compatible in scale with the mass and character of adjacent building types.
- c) To ensure development is appropriately scaled to suit the dwelling's local context.

3.2.2.6.1 Dwelling Types

The dwelling types which reflect the controls in the next section are described as follows:

'A' type Dwelling – Custom House Lots

Lots 450m² or greater, sold as land upon which housing, constructed by any builder, may be constructed provided the design complies with this section and any adopted Design Guidelines. The house will generally be detached, in single or two storey form. Lot modules are *generally* a 15m or greater frontage and a 30m or greater depth.

Figure E3.13: Type 'A' Dwelling example

TYPE A DWELLING



'B' type Dwelling – Designer Lots

Lots 300m² or greater, but less than 450m², sold as land to the public, upon which, housing, constructed by one of only three pre-selected builders, using pre-approved designs (complying with this section and any adopted Design Guidelines) may only be constructed. The house may be either attached or detached, single, part single and part two storeys (to avoid overshadowing of solar courts) or two storeys. Lot modules are *generally* 10m x 30m (with zero lot line) or 12.5m x 30m. Garages may be on the lot boundary.

Figure E4.14: Type 'B' dwelling example (1)

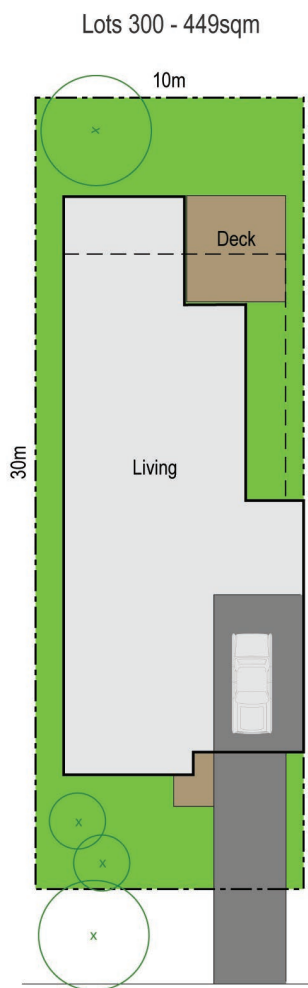
TYPE B DWELLING



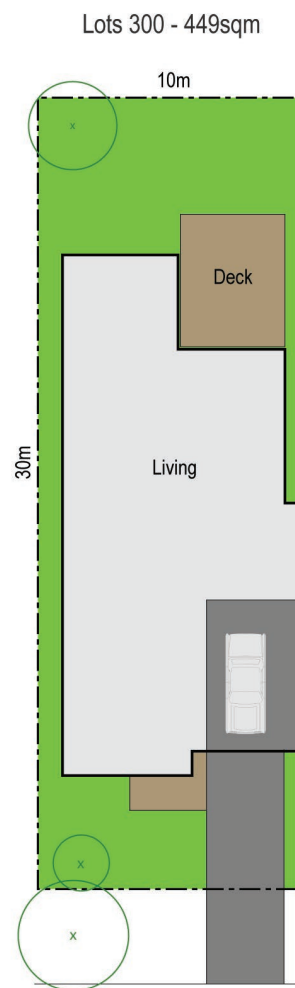
Figure E3.15: Type 'B' dwelling example (2)

TYPE B DWELLING

Single Storey



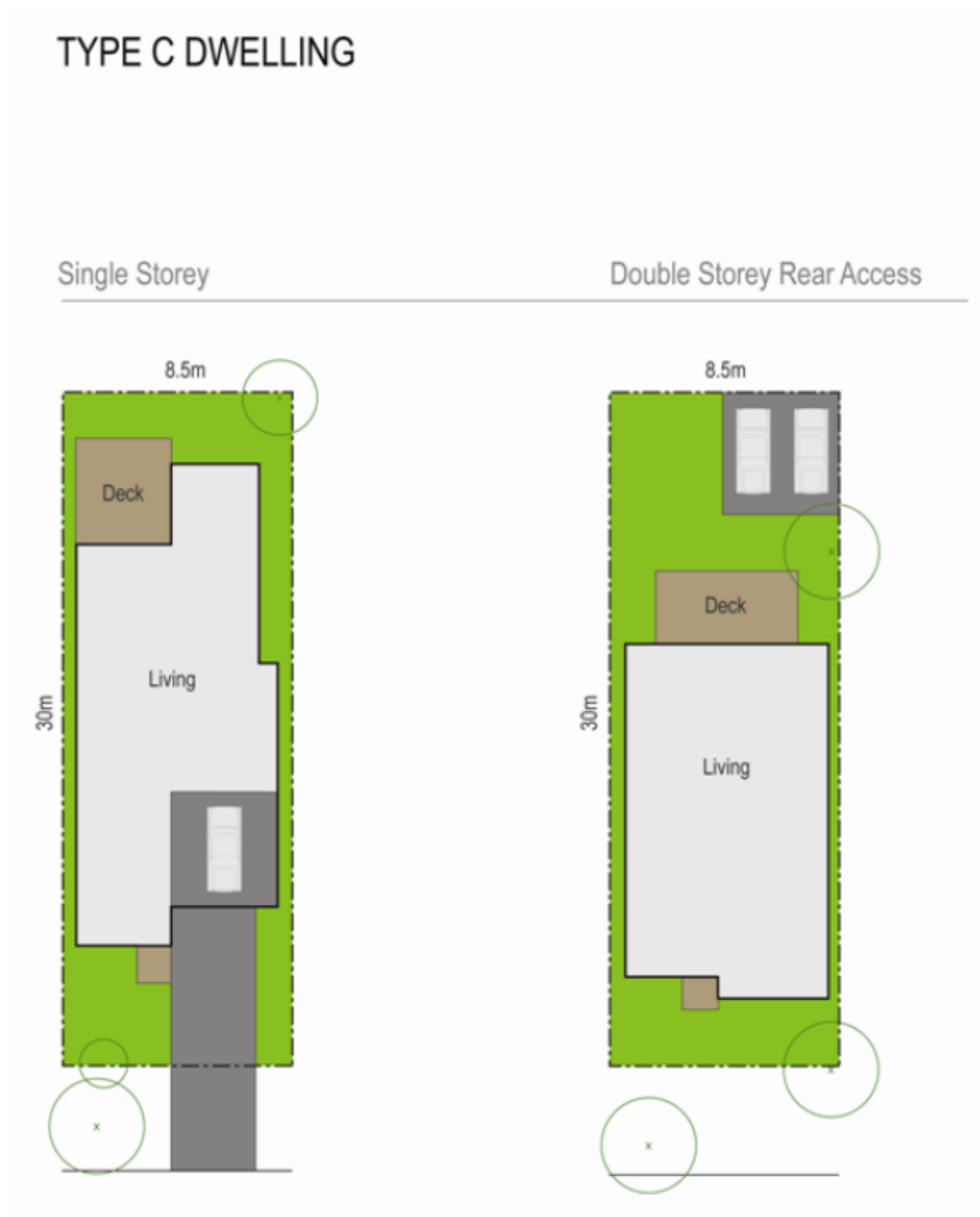
Double Storey



‘C’ type Dwelling – Terrace & Courtyard Lots

Lots 200m² or greater, but less than 300m², which have had the final house design submitted and approved at the subdivision stage. The house will be either attached (i.e. one of two terraces) or detached on a zero lot line with a courtyard.

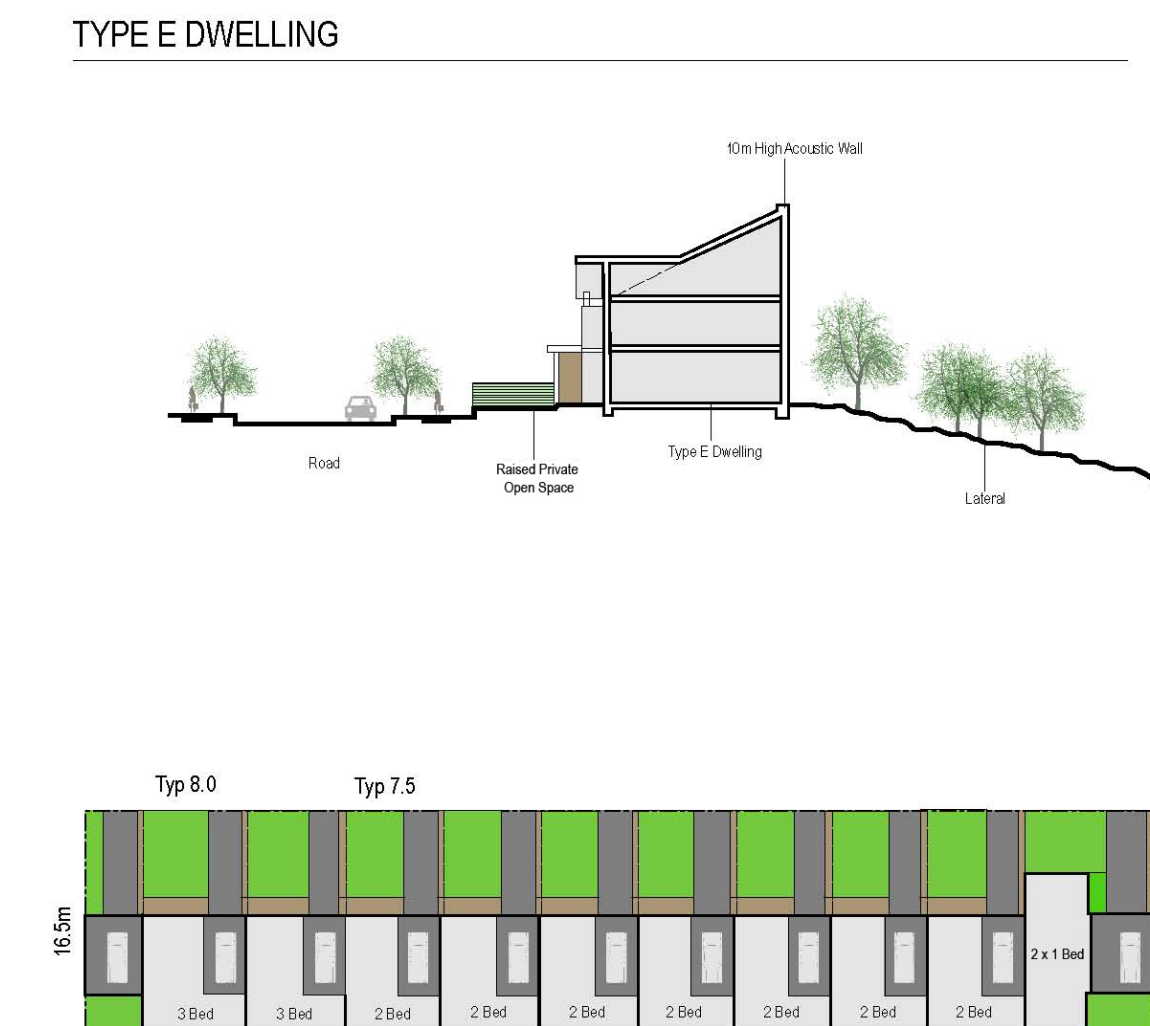
Figure E3.16: Type ‘C’ dwelling example



‘D’ type Dwelling means three (3) storey multi-unit housing.

‘E’ type Dwelling - these dwellings are designed to provide acoustic attenuation for parts of the R1 General Residential zoned land to ensure compliance with the Waterside Clause of Penrith LEP 2010. They are to be constructed as interconnected terraces comprising of two to three storeys with single garages. Each dwelling is to be integrated into the design of an acoustic wall, which will form the rear wall of the dwellings and will not have any openings. A principle private open space area for each dwelling is to be located to the front of the dwelling, which is to be sufficiently separated from the adjacent street and ensures adequate privacy for occupants. These dwellings may be Torrens or Strata titled.

Figure E3.17: Type ‘E’ dwelling example



3.2.2.6.2 Residential Development Controls

Design Element	'A' Type Dwellings	'B' Type Dwellings	'C' Type Dwellings	'D' Type Dwellings	'E' Type Dwellings
Height (max)	2 storeys	2 Storeys	2 Storeys	3 Storeys	3 Storeys
Front Setback (min)	4.5m	4.5m	3.5m	4.5m setback or see State Government's <i>"Residential Flat Design Code"</i> for guidance	4.5m
Front setback – Porches and verandahs (min)	3m	3m	2.5m		2.5m
Side Setbacks (min)	0.9m	0m on one side, single storey only	0m on one side, single storey only	Refer to State Government's <i>"Residential Flat Design Code"</i> for guidance	0m on both sides
	2.5m to secondary street for corner lots	0.9m alternate side and for upper floor	0.9m alternate side and for upper floor		2.5m to secondary street for corner lots
		2.5m to secondary street for corner lots	2.5m to secondary street for corner lots		
Rear Setbacks (min)	4m for single storey	4m for single storey	4m for single storey	Refer to State Government's <i>"Residential Flat Design Code"</i> for guidance	0m
	6m for upper floor	6m for upper floors (2m incursion for 20%)	6m for upper floors (2m incursion for 20%)		
		0m for rear garage	0m for rear garage		
Landscaped Open Space Area (min)	50% of site area	40% of site area	30% of site area	35% of site area	20% of site area
Landscaped Open Space – Single Storey Dwellings (min)	40% of site area where lot is < 550m ²	30% of site area	30% of site area	N/A	N/A

Design Element	'A' Type Dwellings	'B' Type Dwellings	'C' Type Dwellings	'D' Type Dwellings	'E' Type Dwellings
Private Open Space Area (min)	20% of lot area	20% of lot area	20% of lot area	Refer to State Government's <i>"Residential Flat Design Code"</i> for guidance	20% of lot area, or an area of 24m ² for upper floor dwellings

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Part B – Cranebrook Neighbourhood Centre

3.3 Community Land / Group Neighbourhood Centre Cranebrook

- 1) Development in the Cranebrook Neighbourhood Centre, as shown in Figure E3.18, should be consistent with Figure E3.18 below.

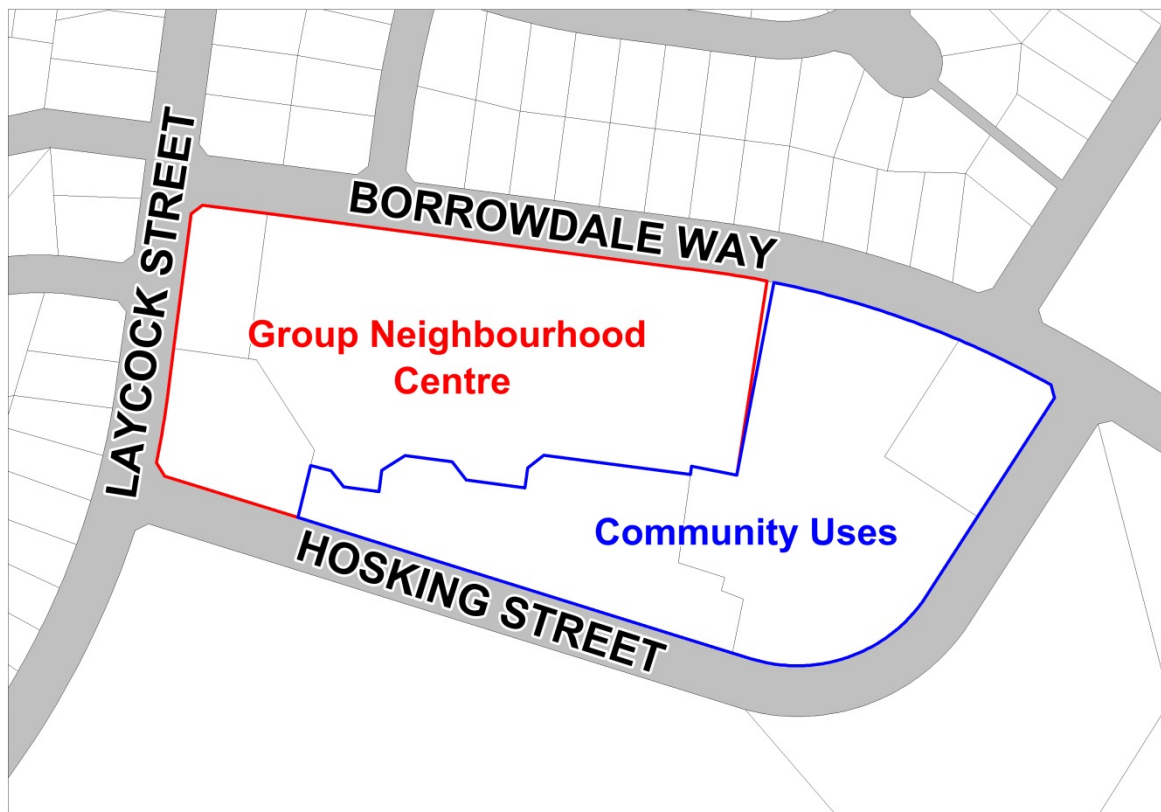


Figure E3.18: Cranebrook Community Land/Group Neighbourhood Centre

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Part C Cranebrook Rural Residential Development

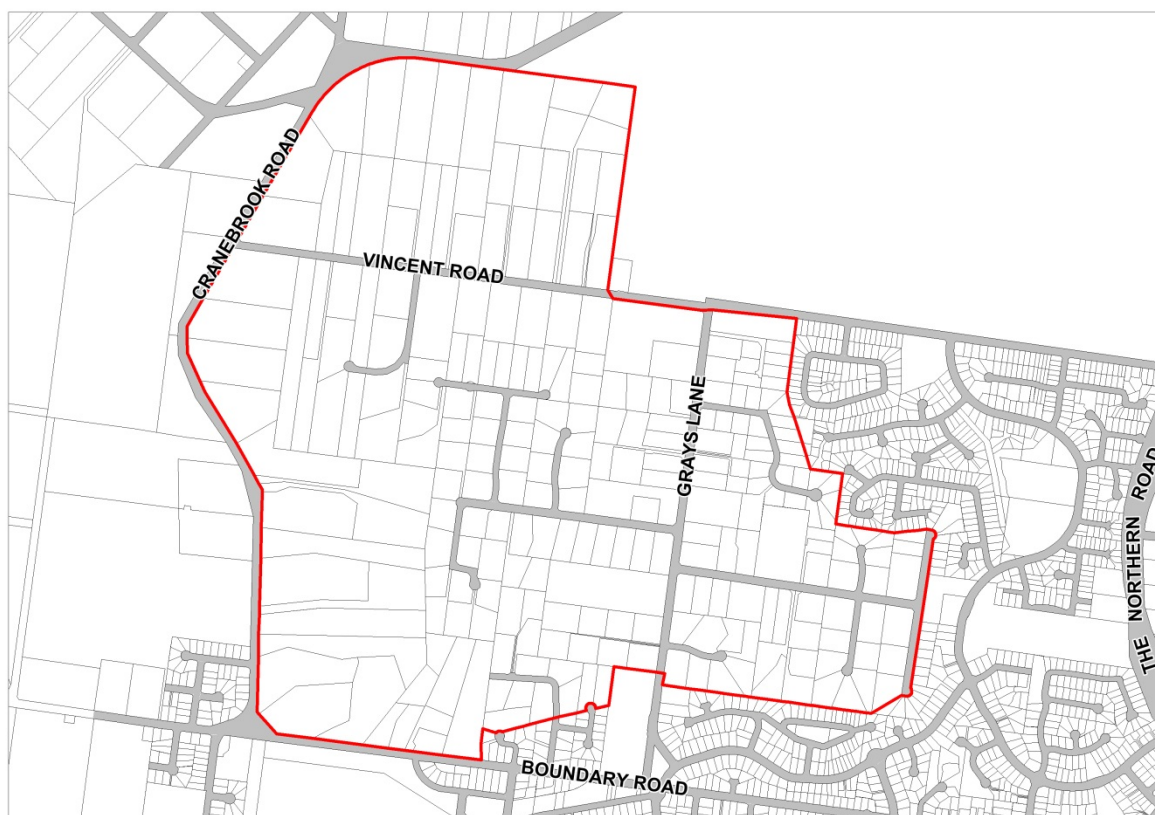
3.4 Cranebrook Rural Residential Development

3.4.1 Introduction

3.4.1.1 Land to which this Part Applies

This section applies to land located in the vicinity of Cranebrook Road, Boundary Road and Vincent Road, Cranebrook as shown in Figure E3.19 below.

Figure E3.19: Land to which this Part applies



3.4.1.2 General Objectives

- a) To maintain a flexible, objectives-based approach to future detailed planning and development in the area;
- b) To recognise and respect the environmental quality, rural character and existing lifestyle characteristics of the area, whilst enabling further development opportunities; and
- c) To encourage development in a manner that assists the establishment of a community with its own identity, which is integrated with its surroundings;

Further detailed objectives are provided for specific aspects of development.

3.4.2 Specific Objectives and Policies

3.4.2.1 Access and Roads

Rural residential development in Cranebrook will necessitate the construction of new roads, and result in an increase in traffic using existing roads.

A. Objectives

- a) To preserve the rural character and streetscape of existing roads in the area;
- b) To encourage a standard of road design for new roads which:
 - i) Complements the rural character and streetscape of existing roads in the area; and
 - ii) Reflects the function of the road.
- c) To minimise encroachment of urban area traffic, and particularly to the denial of through-vehicular access from the residential release area to Linden Crescent;
- d) To encourage the provision of internal roads;
- e) To make provision for upgrading existing roads;
- f) To encourage the shared use of roads and road reserves by pedestrians and cyclists;
- g) To encourage identity for the rural community
- h) To enhance opportunities for further subdivision if required in the future; and
- i) To encourage direct road access and the minimisation of battle-axe lots; as found in traditional rural subdivision and development.

B. Controls

- 1) The road reservation requirements in this Section override those outlined in the Transport, Access and Parking section of this Plan where they are inconsistent.
- 2) All new roads and access ways are to be constructed to the following requirements:
 - a) Road reservation – 20m;
 - b) Road construction – 6m centre seal, to be constructed in accordance with Council's standard for rural roads;
 - c) Grass table drains to be provided in all circumstances, except for steep areas where concrete drainage will be required;
 - d) One way cross falls may be considered in appropriate circumstances; and
 - e) Battle axe access – 20m, to provide for road reservation potential with 3m sealed driveway.
- 3) Council may agree to a narrower road reservation where the Developer can satisfactorily demonstrate that:
 - a) The objectives of the Local Environmental Plan and this DCP can still be achieved;
 - b) All services can be adequately accommodated within the road reservation, together with landscaping;
 - c) Rural style fencing is provided; and
 - d) The engineering requirements can be satisfied.

- 4) All roads and accessways should complement the rural character and streetscape of the existing streets in the area;
- 5) A low density of development is maintained along the Vincent Street frontage;
- 6) No through vehicular access shall be permitted between the Cranebrook residential release and Linden Crescent;
- 7) On-street parking is discouraged. Parking demand from new development should be accommodated on-site;
- 8) All new roads should be designed for low traffic volumes. Road reservation treatments should provide for safe access by pedestrians and cyclists;
- 9) A programme of landscaping and street planting will be undertaken along;
 - a) Existing roads; and
 - b) Proposed roads.
- 10) Landscaped threshold treatment should be given at the entrance to all new roads;
- 11) All access roads and driveways should follow the natural contours where possible;
- 12) Existing sealed roads in the area may need to be upgraded in some areas to satisfy the likely traffic increases. This may be achieved by:
 - a) Section 94 contributions, where the total cost of significant works is divided proportionately by the number of new lots to be created; or
 - b) Conditions of development consent, where each subdivision provides for specialised work adjacent to their property.
- 13) The following figures (Figures E3.21 – E3.26) show some road concepts, access layout and landscaping.
- 14) In general, subdivision should provide public road frontage to new lots. Battle-axe frontage for new lots is discouraged.

Figure E3.20: Roadside Treatment and Layout on Slope

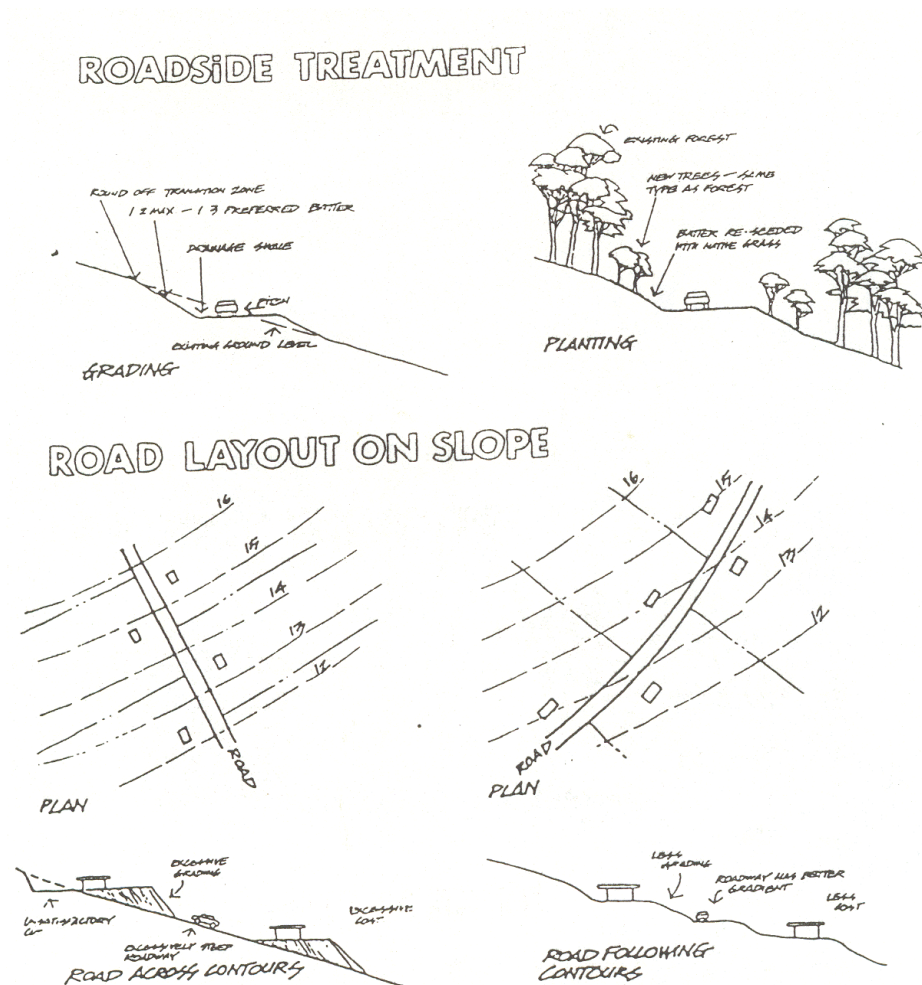
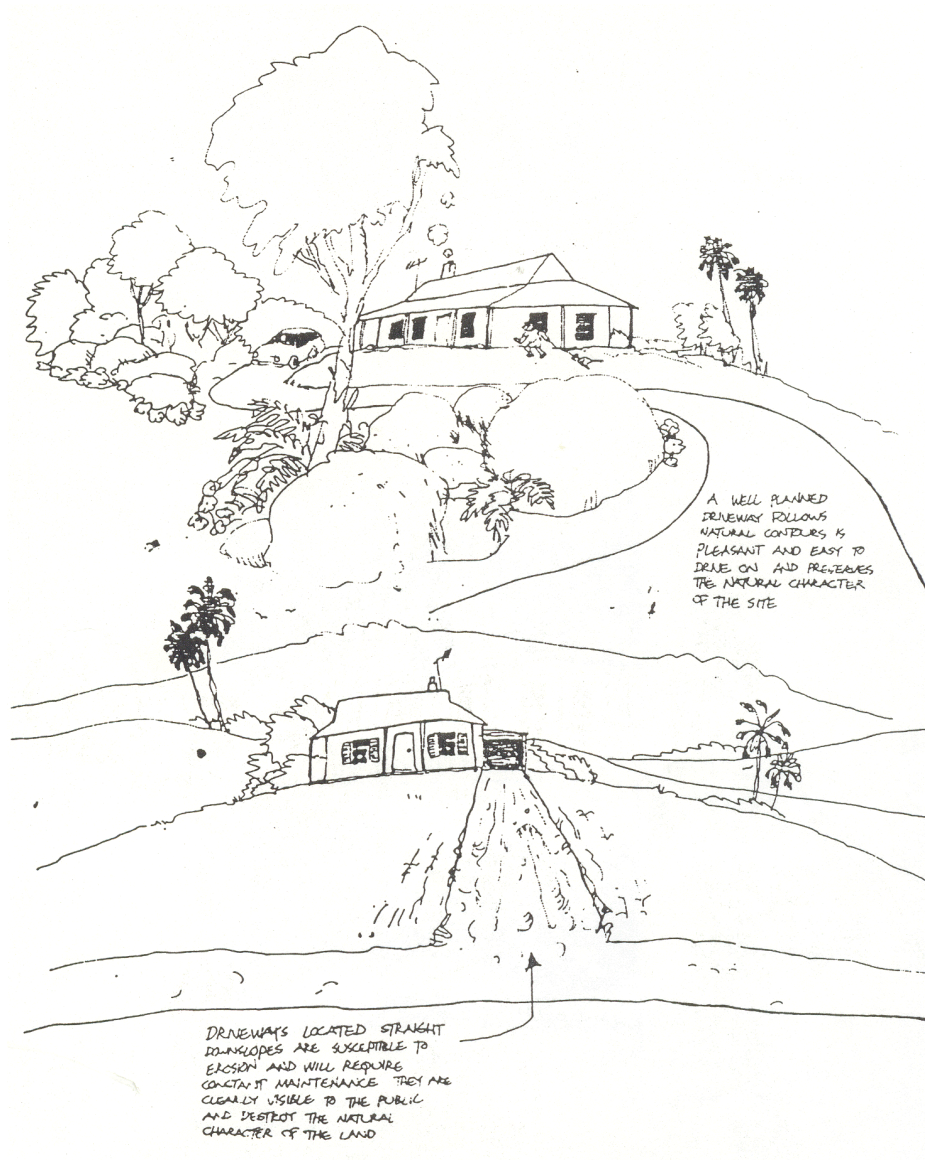
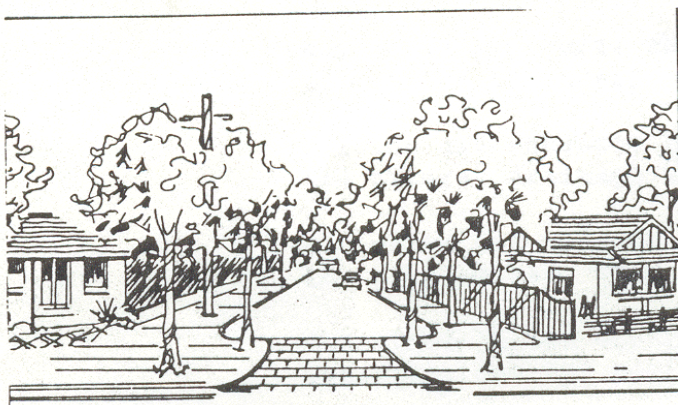
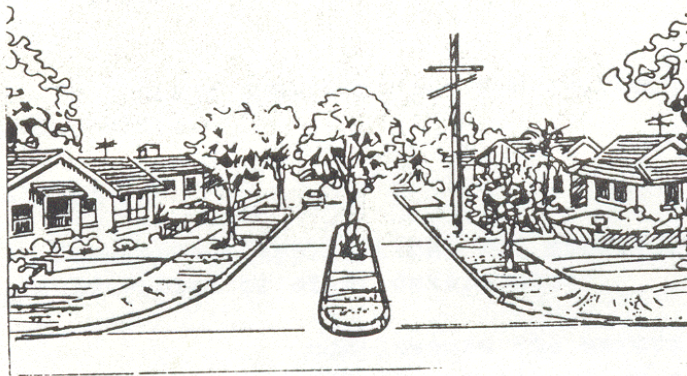
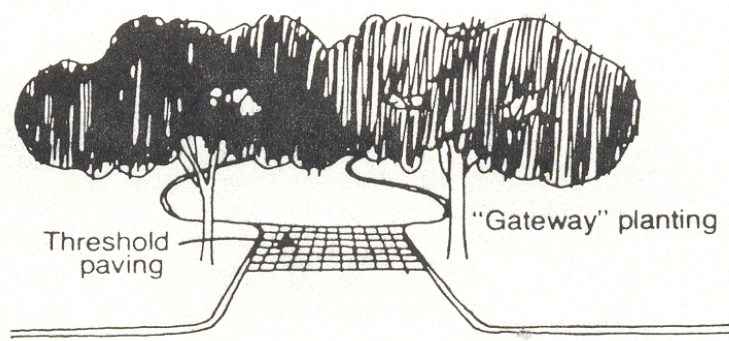


Figure E3.21: Example of access layout and landscaping (1)



E3.22: Example of access layout and landscaping (2)



3.4.2.2 Subdivision and Layout

The minimum lot sizes in Cranebrook are to be in accordance with the LEP. The following provisions provide additional objectives and controls for subdivision in the Cranebrook rural area.

A. Objectives

- a) To ensure that any subdivision, or likely subsequent development, achieves a scheme that recognises and maximises the opportunities offered by the physical attributes and rural character of the area.
- b) To encourage direct road access and the minimisation of battle-axe lots, as found in traditional rural subdivision and development.
- c) To achieve adequate protection of valuable items of heritage significance.
- d) To provide a gradual transition of density controls between the Cranebrook urban and rural areas, running generally east to west.
- e) To enhance opportunities for further subdivision if required in the future.

B. Controls

- 1) Development applications for subdivision should ensure that any subdivision or other development:
 - a) Complements the natural features of slope, aspect and elevation of the land;
 - b) Maintains the strong landscape presence along the ridgelines;
 - c) Maintains the rural character and visual quality of the area;
 - d) Retains and enhances the existing vegetation and natural drainage courses;
 - e) Minimises the effects of intrusive elements in the landscape (e.g. overhead utilities);
 - f) Maximises in lot design valuable opportunities for sunlight and views;
 - g) Retain existing dams wherever possible.
- 2) In general, subdivision should provide public road frontage to new lots;
- 3) Battle-axe frontage for new lots is discouraged.
- 4) Subdivided lots of a simple shape will be encouraged, with boundaries responsive to physical features. Applicants should refer to Figure E11.8 on the following page for examples. Awkward irregular lots and long thin lots will be discouraged. A maximum depth to width ratio of 1:4 is generally to be applied.
- 5) In that land within the E4 Environmental Living zone where there is discretion for further subdivision, applications for subdivision should also;
 - a) Nominate future dwelling locations (Once approved, future dwelling locations will be identified by means of a restriction on the property title.); and
 - b) Address the impact on existing vegetation and landscape and provide supporting landscape proposals.
- 6) All subdivision in the vicinity of an item of Environmental Heritage shall maintain a suitable curtilage.

3.4.2.3 Built Structures

A. Objectives

- a) To ensure that all improvements are complementary to the natural features such as landscape, ridgelines, topography.
- b) To ensure that all development achieves a scheme that recognises and maximises the opportunities offered by the rural character and physical attributes of the area.
- c) To encourage consideration of all the rural components of development such as fencing, outbuildings, driveways and landscaping, in the design of proposed development.

B. Controls

- 1) All development for dwellings, outbuildings, and other buildings should:
 - a) Complement the natural features of slope, aspect and elevation of the land;
 - b) Maintain the strong landscape presence along the ridgelines;
 - c) Maintain the rural character and visual quality of the area;
 - d) Retain and enhance the existing vegetation and natural drainage courses;
 - e) Minimise the effects of intrusive elements in the landscape (e.g. overhead utilities).
- 2) All development for residential purposes should maximise opportunities for sunlight and consider the effect of the development on adjoining properties.
- 3) All built structures should be designed to complement and enhance the rural environment. This includes consideration of the: -
 - a) Height
 - b) Location
 - c) Setback
 - d) Shape
 - e) Building materials
 - f) External features of all proposed buildings.
- 4) Increased development along ridgelines is discouraged.
- 5) Landscape plans will be required with development applications for built structures.
- 6) Boundary fencing should be of an open, rural character, in line with that normally found in rural areas. No objections are raised to internal courtyard fencing, or entry fencing provided such fencing is sensitive to the rural environment.

Figure E3.23: Design Approaches to the Site

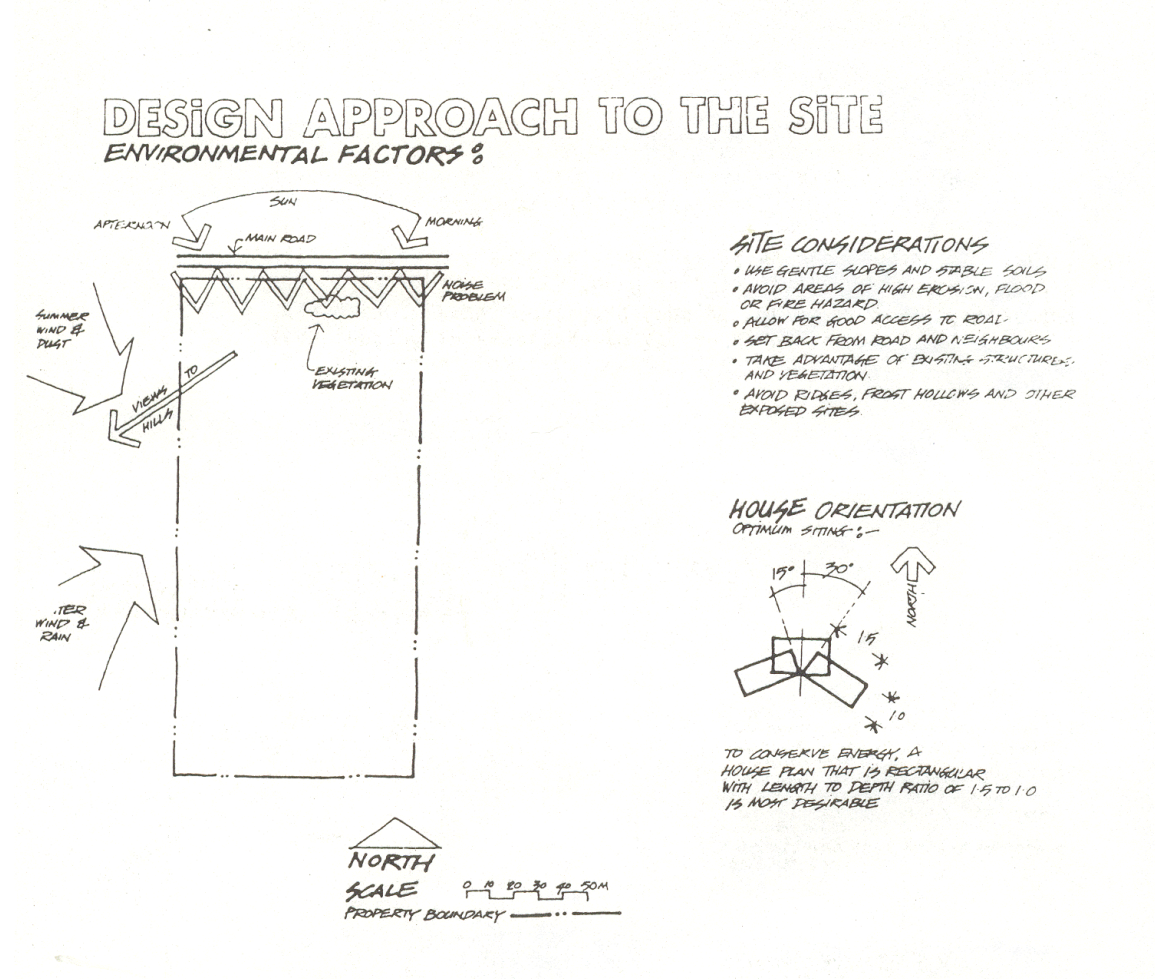


Figure E3.24: Example of a Design Approach

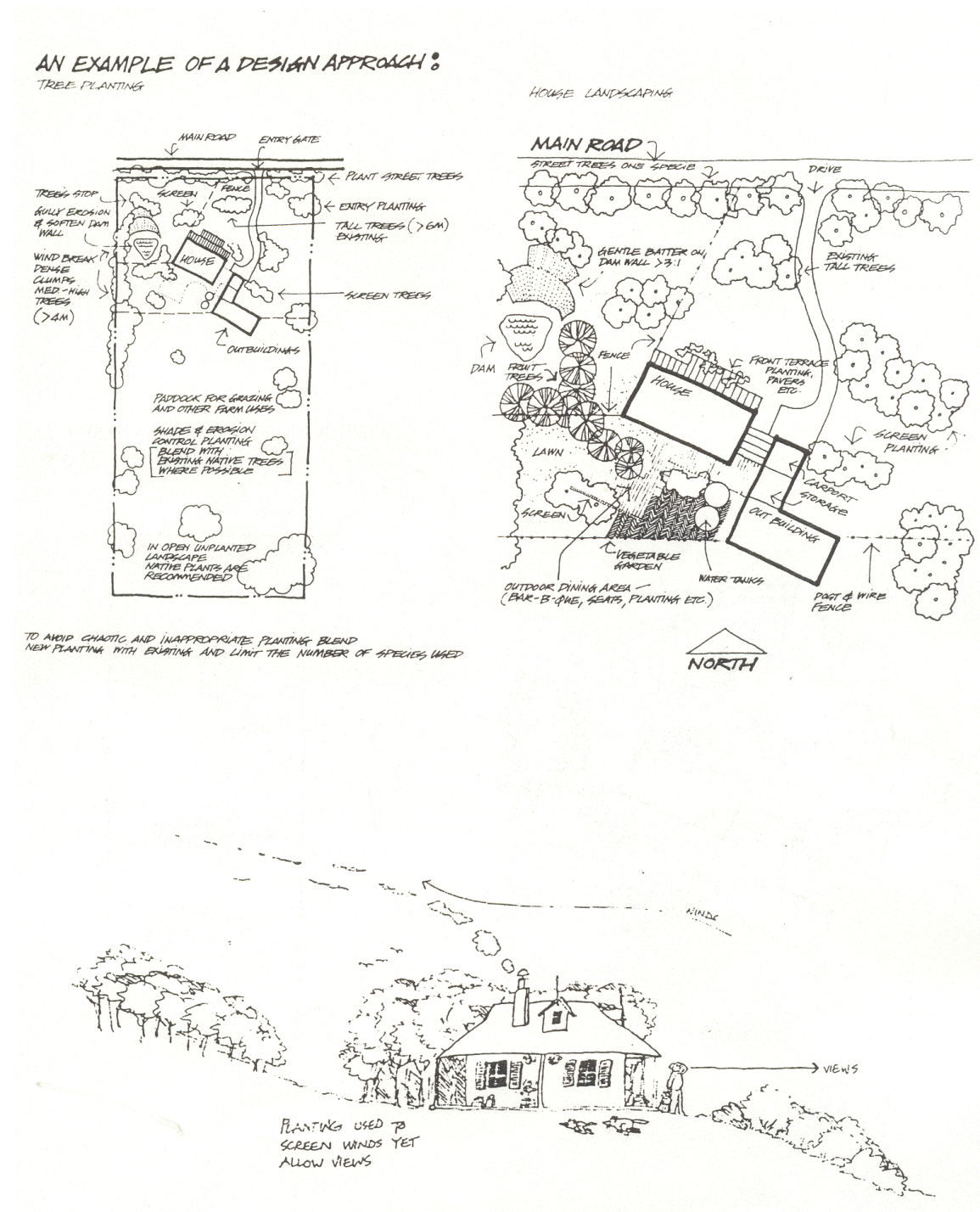


Figure E3.25: Example of design approach on slope

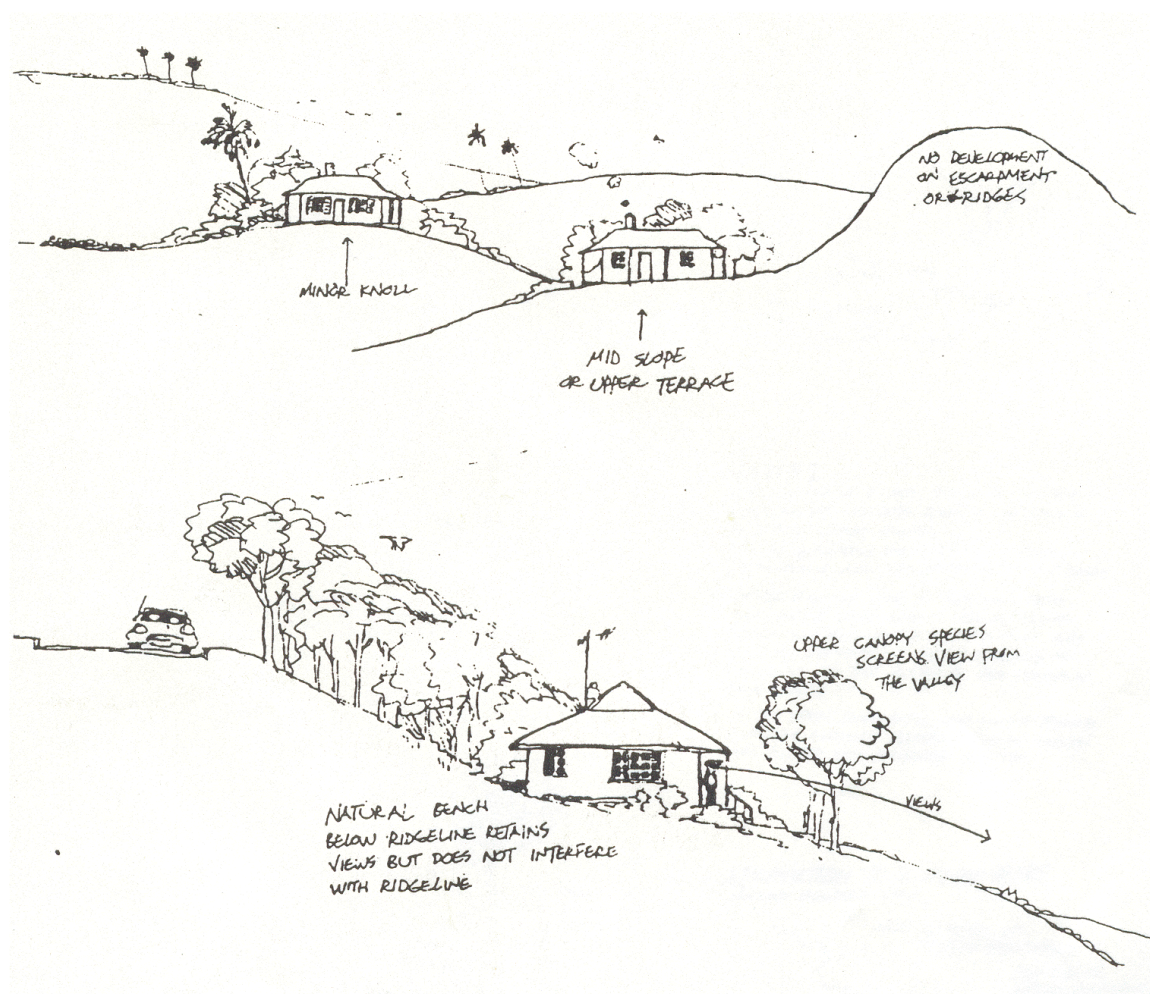
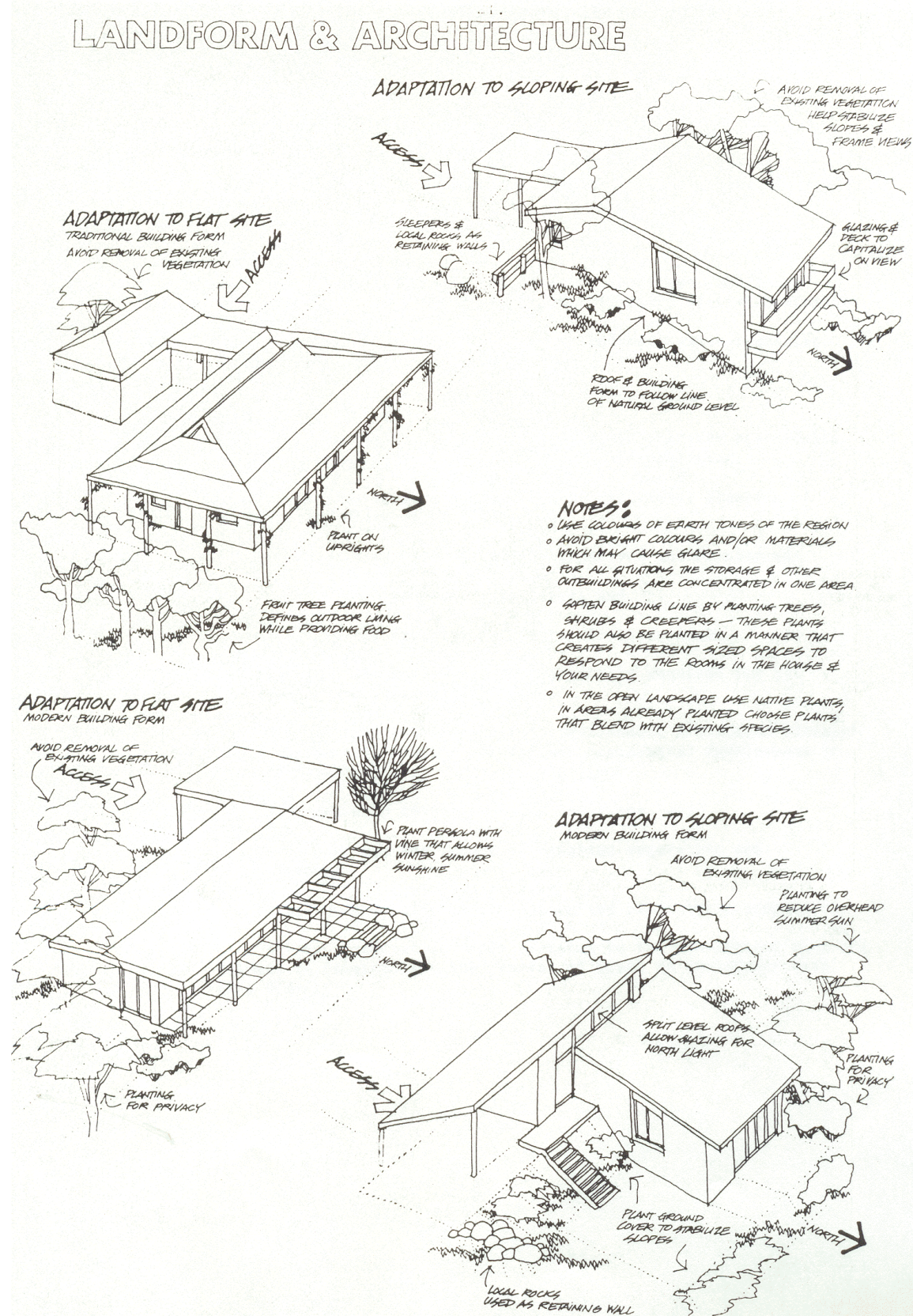


Figure E3.26: Landform and Architecture



3.4.2.4 Landscape

A. Objectives

- a) To retain and enhance the existing landscape, and where disruption is necessary, to minimise the impact of that disruption; and
- b) To identify areas of particular landscape value requiring specialised treatment.

B. Controls

- 1) Existing vegetation should be retained wherever practicable, particularly significant groups of natural vegetation;
- 2) Where vegetation must be removed, additional planting of native species may be required;
- 3) Existing vegetation should be preserved and reinforced;
 - a) Along important ridgelines; and
 - b) In the vicinity of natural drainage lines.
- 4) Plans of landscaping will be generally required for all development applications;
- 5) In that land within the E4 Environmental Living zone where there is discretion for further residential development it will be necessary to:
 - a) Nominate future dwelling locations;
 - b) Address the impact of existing vegetation and landscape; and
 - c) Provide alternative supporting landscaping proposals.
- 6) The removal of trees shall be in accordance with the Vegetation Management Section.

3.4.2.5 Community Facilities

A. Objectives

- a) To provide for the reasonable demand for community facilities and playing fields created by future residents; and
- b) To encourage social integration with adjacent residential areas by shared use, and contribution towards the development of community facilities and playing fields.

B. Controls

- 1) To assess and monitor community needs for the area;
- 2) To provide details on the provision of community facilities and playing fields for the use of residents; and
- 3) To require contribution towards community facilities and playing fields in accordance with the assessed needs with any new development.

3.4.2.6 Services

A. Objective

- a) To ensure the provision of suitable services to the area in a manner that is cost effective and complementary to the overall objectives for the area.

3.4.2.6.1 Water Supply/Effluent Disposal

A. Controls

- 1) Prior to the issue of development consent on any land, satisfactory arrangements must be made with Sydney Water and Council (within their respective areas of responsibility) for:
 - a) Amplification and reticulation of water services to the land to which the application relates (unless Sydney Water certifies that the carrying out of development in accordance with that consent will not require the making of any such arrangement);
 - b) Amplification and reticulation of sewerage services in the case of development creating lots less than 4,000m² in area;
 - c) On-site disposal of effluent for development not requiring sewerage reticulation. Landowners are encouraged to install aerated disposal systems to minimise environmental impact.

3.4.2.6.2 Drainage

A. Objectives

- a) To preserve and upgrade the existing drainage system, and to minimise major engineering works; and
- b) To maintain the quality of stormwater discharge into the downstream drainage system.

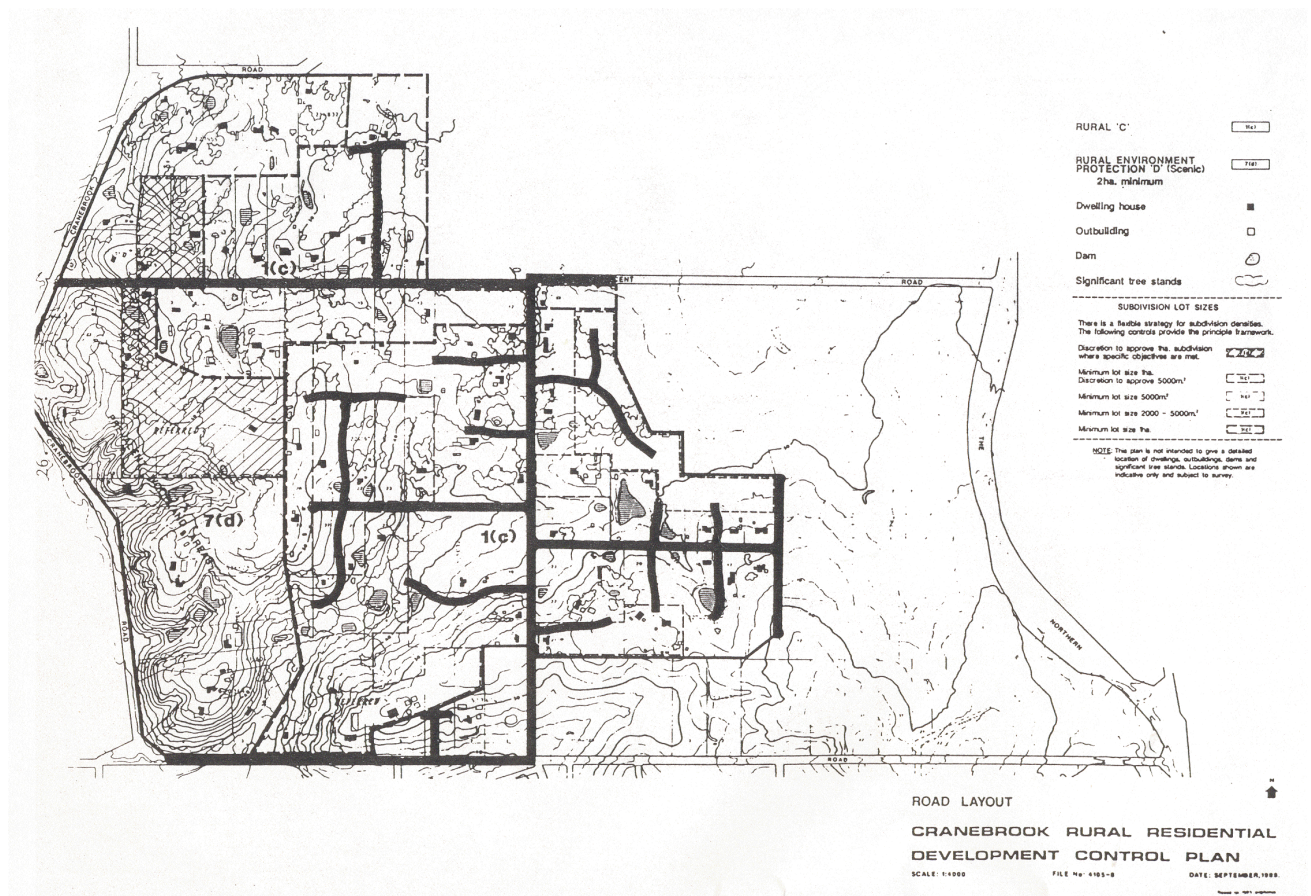
B. Controls

- 1) The existing drainage system is to be retained;
- 2) Engineered drainage channels are to be provided only in exceptional circumstances;
- 3) Grass-swale drainage is to be provided, except in steeper areas where concrete lined inverts may be necessary;
- 4) All development should minimise runoff and related pollution, particularly in the vicinity of natural drainage lines;
- 5) A monetary contribution will be required to upgrade road drainage. This contribution will be imposed under Section 94 of the Environmental Planning and Assessment Act; and
- 6) Dams should be retained wherever possible.

3.4.3 Maps

The following maps illustrate the road layouts of Cranebrook, as well as the various amendments to the DCP which apply to the subject land.

Figure E3.27: Road Layouts in Cranebrook



ADOPTED AMENDMENT

TO

DEVELOPMENT CONTROL PLAN.

C-021

The map displays a topographic area with Vincent Road at the top and Kenilworth Crescent at the bottom. Grays Lane runs vertically on the right side. A thick black rectangular border highlights a central area. Within this border, a shaded, irregular shape is shown, with a '40' contour line passing through it. Lot numbers 23 and 24 are located within the highlighted area. Other lot numbers (2, 13, 14, 15, 17, 20, 21, 22, 25, 26, 27, 28, 3, 7, 8, 9, 10, 11, 12, 18, 19) are scattered throughout the map. Contour lines are labeled with values such as 50, 40, 30, 20, 10, and 5. A north arrow is located in the top right corner. The text 'AMENDMENT TO DEVELOPMENT CONTROL PLAN' is faintly visible in the background.

Lots 23 & 24 DP 224197 KENILWORTH CRES. CRANE BROOK

Figure E3.29: Amendment to DCP (2)

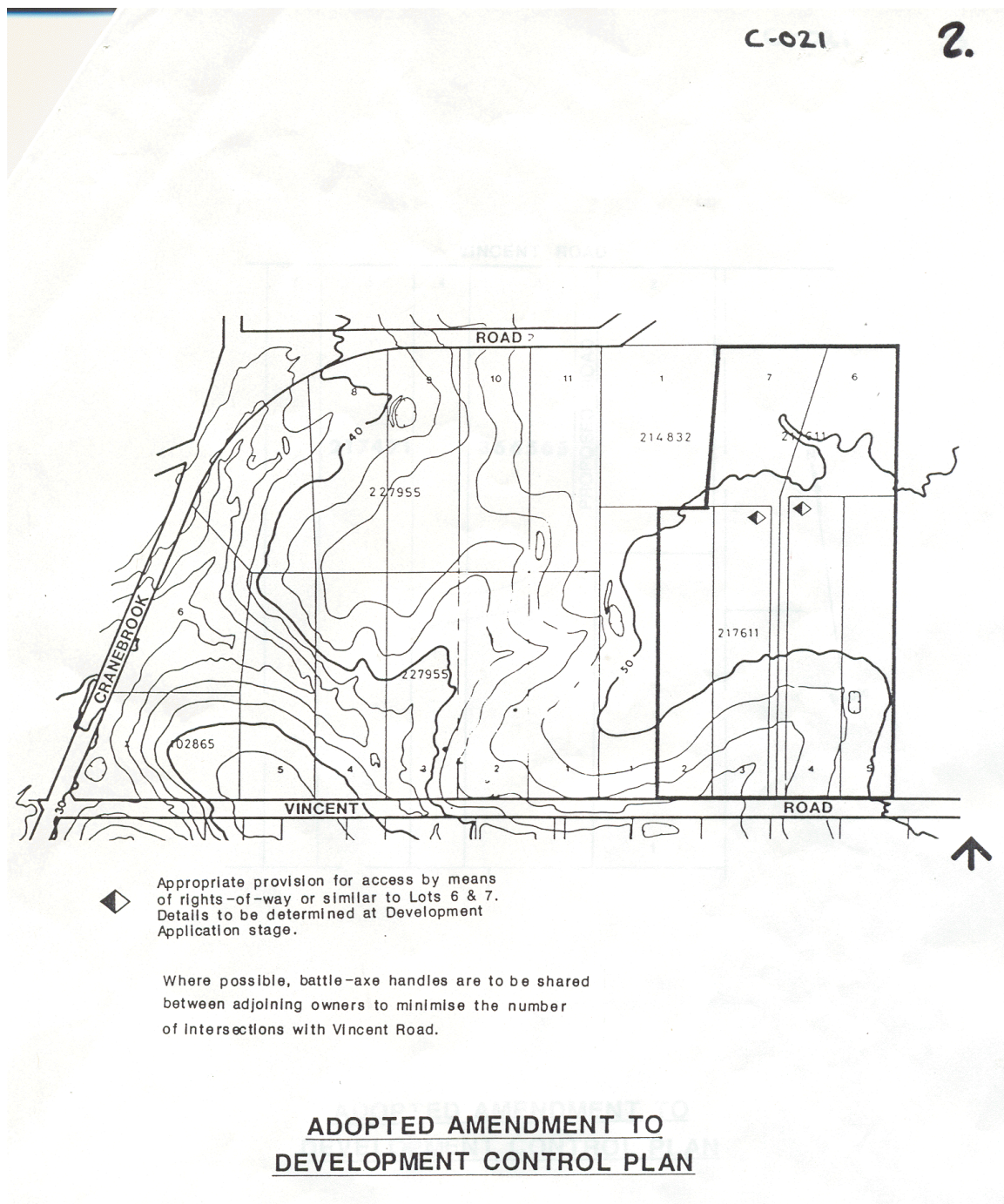


Figure E3.30: Amendment to DCP (3)

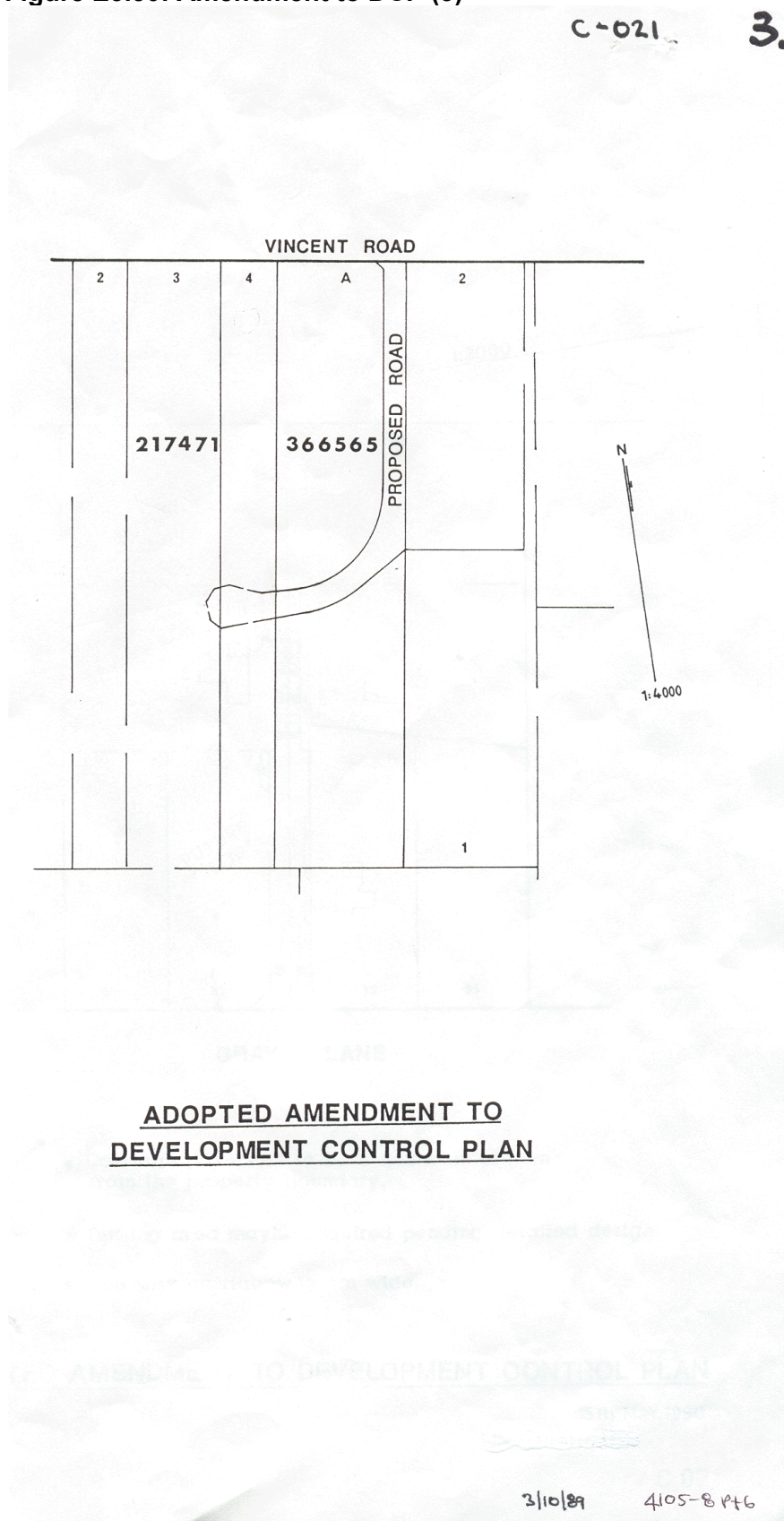


Figure E3.31: Amendment to DCP (4)

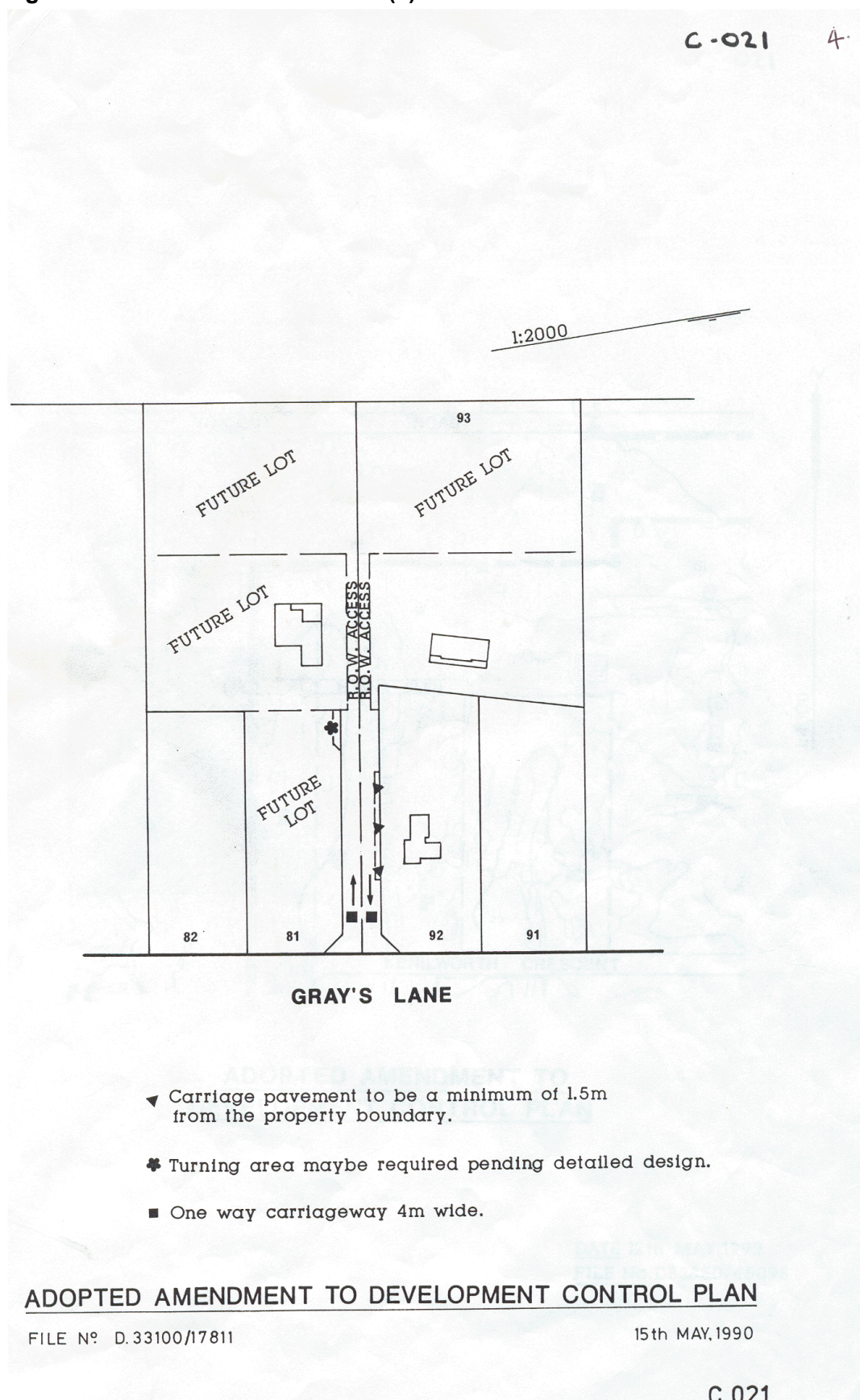
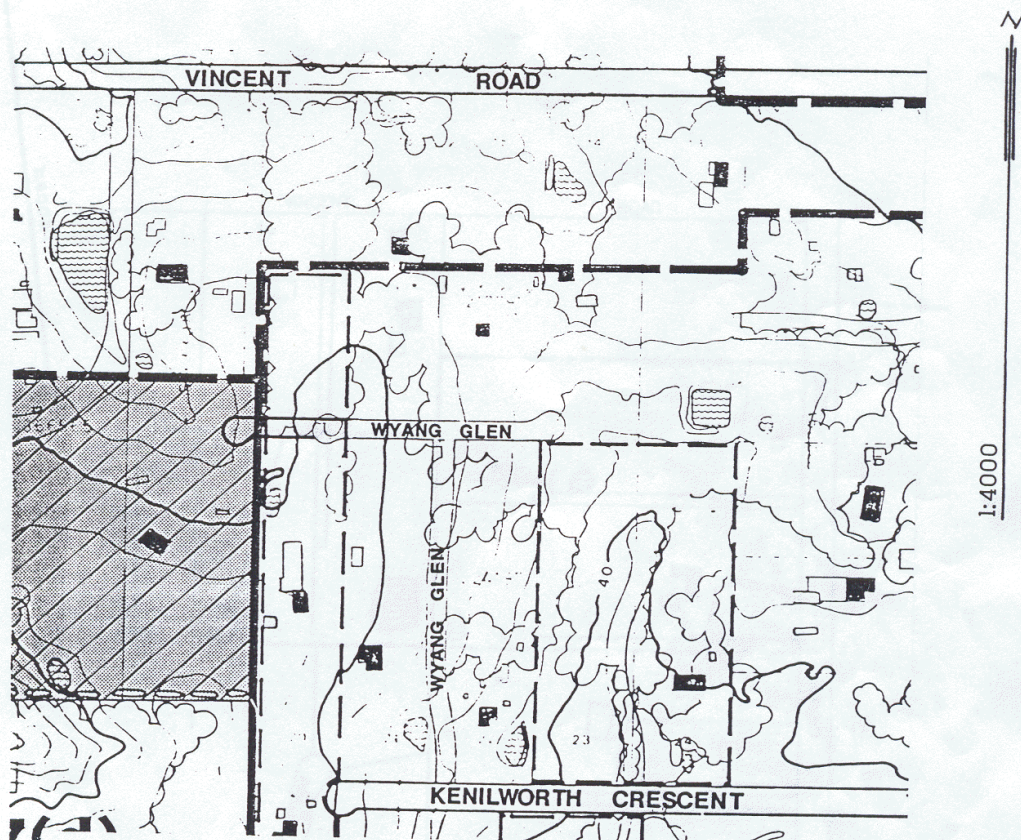


Figure E3.32: Amendment to DCP (5)

C-021

5



**ADOPTED AMENDMENT TO
DEVELOPMENT CONTROL PLAN**

DATE 12th MAY, 1992
FILE No. D82850/45098

Figure E3.33: Amendment to DCP (6)

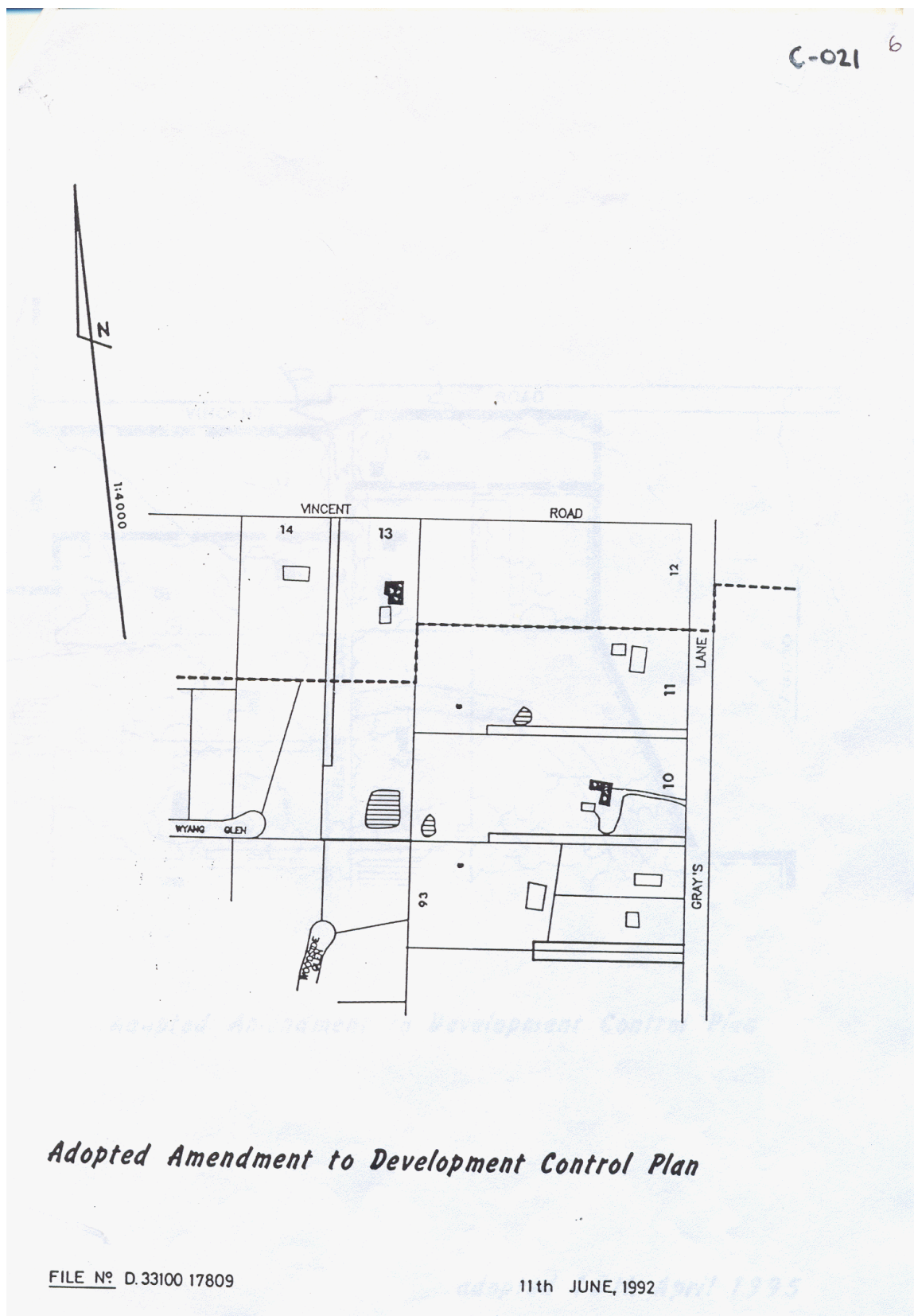
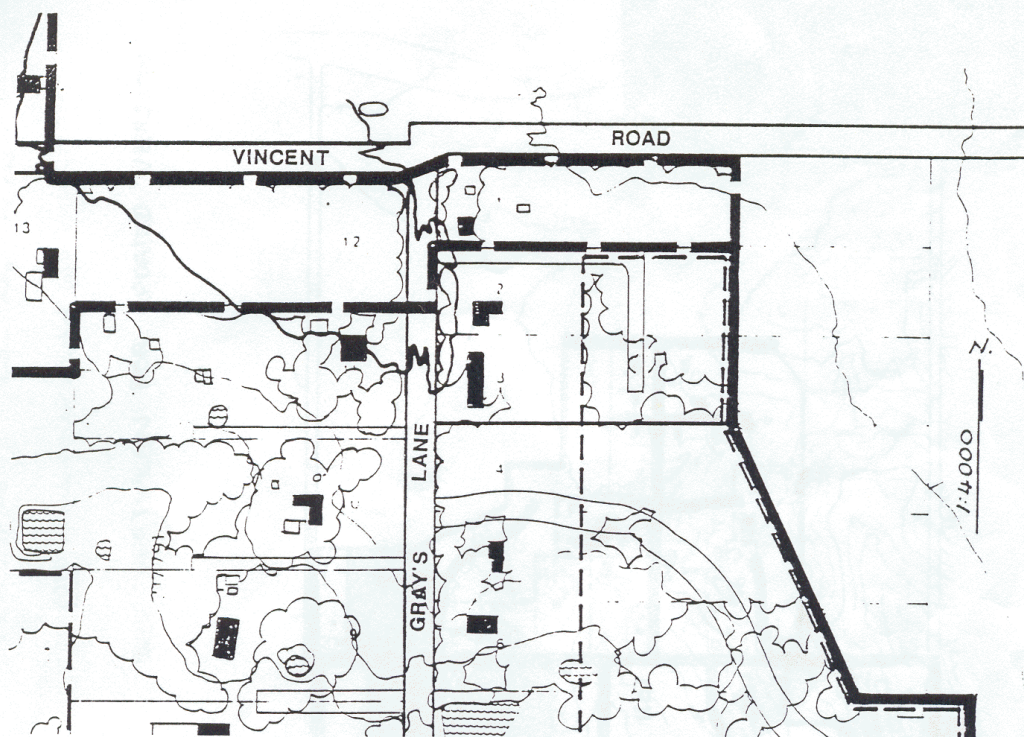


Figure E3.34: Amendment to DCP (7)



Adopted Amendment to Development Control Plan

adopted 18th April 1995

C.021

E4 Emu Heights – Blue Mountains Eastern Escarpment

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E4 Emu Heights – Blue Mountains Eastern Escarpment

Part A – Preliminary

4.1 Introduction

In an area as sensitive as the Blue Mountains Eastern Escarpment, development proposals must be responsive to a wide range of concerns regarding the preservation of the natural and cultural environment.

The following Siting, Design and Management section sets out in full the type of development which is acceptable with respect to the preservation of the visual, topographic, vegetative and cultural features which make the Escarpment unique. All applications to Council must respond to these guidelines and development shall be allowed to proceed only if it is in accordance with the requirements set out in the guidelines.

In areas of moderate and moderate to high bushfire hazard, all development proposals will be required to comply with the section relating to bushfire hazard. In these situations an acceptable compromise between controls relating to visual amenity and those relating to fire hazard must be reached.

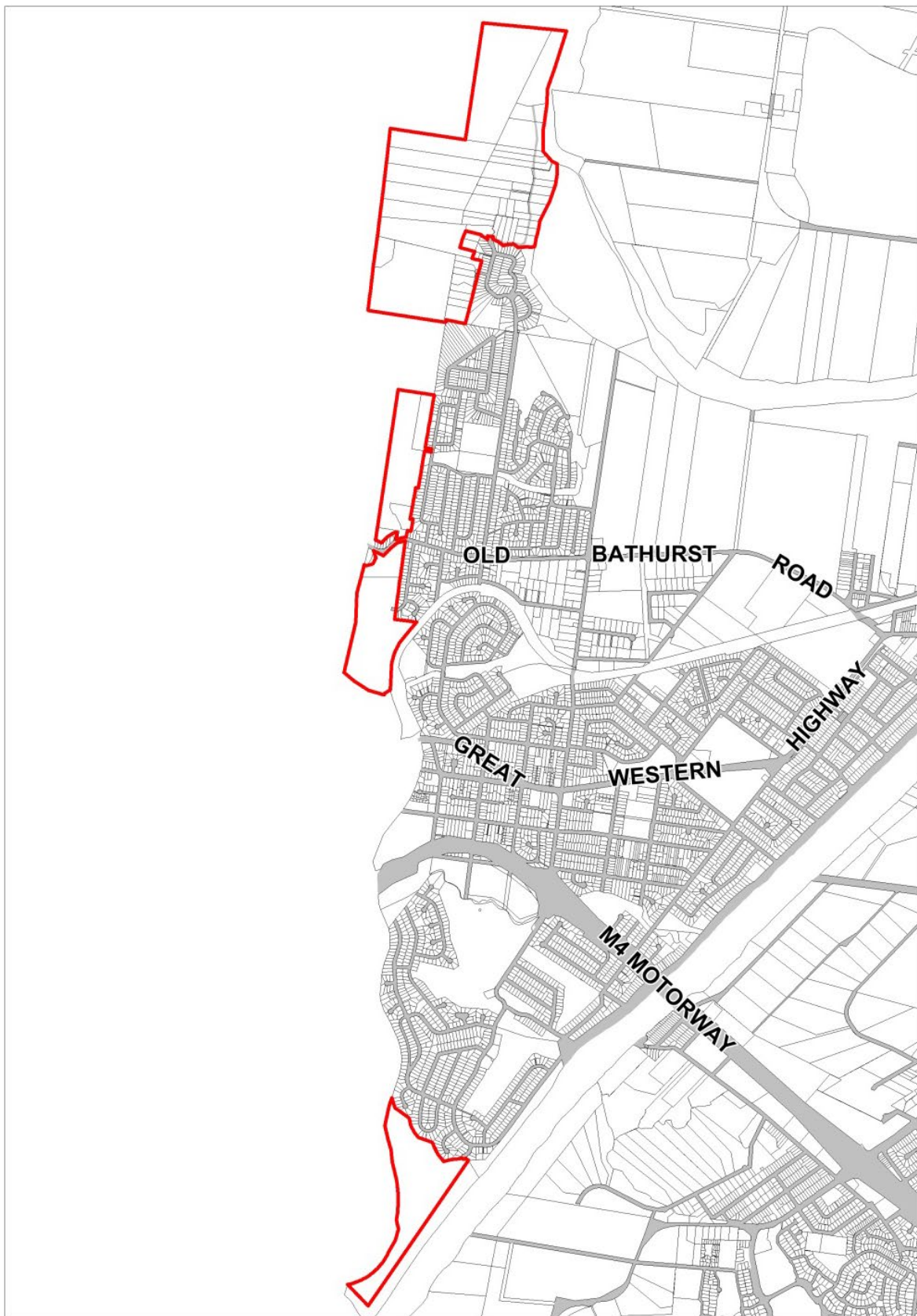
Any application must satisfactorily address development principles, objectives and policies, and must justify any variation, as well as address how the development complies with this section.

Subdivision Applications must be in accordance with the allotment layout contained in the plans accompanying this Section, as shown in Figures E4.4 – E4.8.

4.1.1 Land to which this Section applies

This section applies to the land shown in Figure E4.1.

Figure E4.1: Land to which this Section applies



4.1.2 Purpose of the Section

The purpose of this section is to give detailed guidance to people wishing to carry out development on the Blue Mountains Eastern Escarpment, and to provide Council's policies and controls with respect to development.

4.1.3 Aims and Objectives of this Section

- a) To provide detailed guidelines and controls for development on the Blue Mountains Eastern Escarpment lands.
- b) To provide Council's policies to assist those people wishing to carry out development on the Blue Mountains Eastern Escarpment lands.
- c) To ensure that such development does not compromise the environmental qualities of the Blue Mountains Eastern Escarpment.
- d) To identify lands for environment protection and to strictly control development within these lands.
- e) To ensure that the tree covered natural appearance of the escarpment is retained.
- f) To ensure that in any development of the land, regard is had to physical constraints including bushfire hazard, slopes, soil erosion hazards, flooding and access difficulties, as well as archaeological issues.
- g) To ensure that in any development of the land, regard is had to the visual prominence of the area.
- h) To ensure that in any development of the land, provision is made for an adequate water supply and environmentally acceptable waste water disposal system, drainage systems and electricity supply systems.

4.1.4 Special Requirements

- 1) Easements and Rights-of-Way:** Where indicated on accompanying Figure E4.4 – Map 3, all easements and rights-of-way are to be formally negotiated and registered. A formal fire fighting easement is to be provided in accordance with the accompanying Figure E4.4 – Map 3. It is to be 5m in width, with turning bays in some cases, and is to involve the removal of undergrowth and, where necessary, the removal of trees to allow for the passage of fire fighting vehicles. The fire fighting easement must be grassed and appropriately drained to prevent erosion.
- 2) Plantings:** Replanting is to be carried out using suitable species. On lots so marked on accompanying Figure E4.4 – Map 3, as 'lots marked as such to be planted with fire resistant species', fire resistant species are to be used. This requirement does not imply the removal of all trees on site and replacement with fire resistant species, it relates only to replanting following completion of works on site.
- 3) Protected Lands:** Some of the lands may be subject to the Protected Lands provisions of the *Soil Conservation Act 1938*. Applicants are required to check with the Office of Environment and Heritage about the applicability of those provisions to their proposal. If relevant, Council is required to be notified.
- 4) Siting, Design and Management Guidelines:** The following guidelines set out the detailed controls on development in the area covered by this Section. They aim to minimise impacts on the natural environment of the Escarpment and all development proposals must address the provisions contained within them.

Part B – Controls

4.2 Siting

A. Background

Visual impact, energy efficiency, and access to views and privacy are largely dependent upon where a building is located and how it is oriented. In environmentally sensitive areas particularly, the site selection process must involve consideration of the orientation, direction of views and slopes, relationship to the landscape and retention of existing vegetation.

Building forms must stay below the ridge lines so as to retain the visual character of the escarpment.

B. Controls

- 1) A position on a mid-slope bench where the topography provides a natural enclosure, and where existing vegetation can provide screening, is preferable.
- 2) Buildings must be on slopes less than 1:5 (vertical: horizontal).
- 3) Where possible, and having due regard for the bushfire hazard, orientation of buildings is to be towards the north.
- 4) Generally, a setback minimum of 15m from roads is required. Parking areas are not permitted within this setback.
- 5) A setback of 80m from the Nepean River bank is required.

4.3 Construction and Earthworks

A. Background

On steeper slopes, earthworks will be highly visible and there may be stability problems. Thus, site disturbance is to be minimised so as to retain the visual character of the escarpment.

Details of erosion and sediment control are required for inclusion in a subdivision and development application when site disturbance is proposed.

B. Controls

- 1) Where relevant, proposals for the following erosion control measures must be included in any application:
 - a) Effective sediment traps in drainage courses prior to construction.
 - b) Provision of overland flow diversions above and below development sites.
 - c) Vehicular traffic to be confined to sealed roads or parking bays.
 - d) Suitable ground and/or shrub cover to be established in all landscaped areas as soon as construction is completed.
 - e) Site and excavation works is to be limited to the immediate building envelope.
 - f) Maintenance of control measures.
 - g) Rehabilitation techniques.

These proposals are to be included in an erosion and sediment control plan.

- 2) Surplus excavated material is to be removed from the site.
- 3) Restoration of all site disturbances is required prior to occupation of buildings.
- 4) Cut and fill depth is to be minimised.
- 5) Slab on ground construction is inappropriate on slopes steeper than 1:10. Elevated floors are required on these slopes. Caution must be taken here in areas of bushfire risk.

4.4 Building Design

A. Introduction

Thorough site analysis and planning is essential to ensure that the building responds to the site rather than trying to modify the site to fit the building. This will ensure that the bushland character of the Escarpment is maintained.

Particular attention should be paid to the visual prominence of the buildings. Buildings which have their main lines at right angles to the natural ground slope appear obtrusive. The strong triangular geometry, of for instance an A-frame or a gable, gives an unacceptable vertical emphasis to the building.

B. Controls

- 1) Facades and roof lines should be broken into small elements. No single plane or element is to exceed 10m in any dimension. Walls can be relieved in elevation by use of bays and recesses.
- 2) The longer facades of the building are to be parallel to the contours.
- 3) Horizontal emphasis is to be given to the composition of building elements such as wall panels, windows, roof and verandah lines.
- 4) Verandahs, wide eaves, pergolas and trellises serve to relate structures to natural ground level and to vegetation.
- 5) Split level buildings, which step up and down the slopes, will avoid cutting and filling, and will avoid the need for high walls.
- 6) To avoid piers, stilts and poles, build load bearing structures directly from the ground.
- 7) Tanks, sheds, carports and garages are to be screened by vegetation and walls, and are to be built to link to the main buildings or form part of a group of buildings and should be of similar colours to the dwelling house.
- 8) Round or curved buildings (either in plan or elevation) can be compatible with the landscape.
- 9) Dual occupancy development must be designed in accordance with the provisions of this Section and those of the Residential Development Section of this Plan.

4.4.1 Roof form

A. Background

Roof forms which bring the roof line down towards the earth, blend better with the landscape. Steeply pitched roofs usually appear obtrusive because their slopes are greatly in excess of the natural slope of the ground.

However, in hill country, it is most unusual to see a flat or low pitched roof that reflects and blends with the landform. Hipped roofs are very effective in leading the eye back down to ground level and hence are preferred.

B. Controls

- 1) The roofline is to be below tree canopy level.
- 2) Roof pitch is to be generally parallel to the surrounding ground slope with a minimum pitch of 10 degrees and a maximum of 30 degrees.
- 3) No single plane or element of a pitched roof should exceed 10m in any direction.
- 4) Top edges of roofs are to return at the same pitch rather than terminate in a skillion form.
- 5) It is preferable to finish the roof with wide eaves or verandahs and bring the roof edge as close to the ground as possible.
- 6) Solar energy collector panels are to be non-reflective.

4.4.2 Building Height

A. Background

Height restrictions apply in order to avoid loss of the visual qualities of the area. Generally, a height of more than one level is considered unsuitable.

B. Controls

- 1) Building heights are limited to one level (including garage) except in cases where unacceptable site disturbance will result. Split level development is preferable in such cases.
- 2) Where height is limited to one level, enclosed under house storage will be permitted. In moderate and moderate to high bushfire risk areas, this storage area must be enclosed.

4.4.3 Doors and Windows

A. Controls

To minimise undesirable impacts caused by the use of reflective materials, the following guidelines are appropriate:

- 1) Doors and window openings are to be vertical in proportion.
- 2) Timber construction is appropriate, subject to acceptable treatment to reduce the bushfire hazard potential.
- 3) Aluminium windows and doors are acceptable, provided that the frames are of acceptable colours (brown, green, cream etc.).

4.4.4 Fences

A. Background

To minimise impact on the bushland character of the area, minimal or no fencing may be appropriate in some locations. However, appropriate fencing will be required to assist with bushland management.

B. Controls

- 1) In general, fences are to be unpretentious and simple. Timber post and rail style is appropriate.
- 2) Masonry, brick block work, stone, and light colours, are inappropriate for fences.
- 3) Natural colours are to be used. Natural timber, colours in the green range (excepting bright greens), and grey to light browns are appropriate for fencing.
- 4) Fences are to avoid the “No Development” areas, as identified in Figure E4.4 (Map 3).
- 5) Fences along the boundary of the E2 Environmental Conservation and E3 Environmental Management zones should be of the type which does not allow the passage of domestic animals.

4.5 Building Materials

A. Background

Natural textures and materials are less obtrusive in a bushland setting and are therefore more appropriate. Generally, those which most closely resemble the natural materials in colour and texture are the most appropriate.

Large, flat expanses of reflective materials are best avoided, as are highly textured, variegated or brightly coloured bricks. Consideration must also be given however to the types of materials most suitable in bushfire prone areas.

B. Controls

- 1) Suitable wall materials, subject to bushfire hazard rating, are:
 - a) timber (treated or stained);
 - b) weatherboard;
 - c) treated concrete blocks;
 - d) brick / brick veneer;
 - e) stone;
 - f) steel.
- 2) For rooves, :
 - a) Tile;
 - b) corrugated steel, and
 - c) painted steel deckingare appropriate.
- 3) Large flat areas of glass and sheet metal are not permitted, particularly on eastern elevations.
- 4) Stained and other treated timber materials are to be regularly maintained to reduce the bushfire hazard potential.

4.6 Building Colours

A. Background

The situation and setting of buildings should be considered when selecting materials and colours. Hence, recessive colours which are derived from, and blend with, the landscape and which are natural earthy tones of low reflective quality should be used. Particular care must be taken when the development can be viewed from public places.

B. Controls

- 1) Roof colours – Colours in the green range, except bright greens are acceptable; as are any of the ochre range, and the grey to brown colours.
- 2) Walls and other external surfaces - Natural timber and stone and bricks of the light brown colour range are appropriate. Large facades of dark bricks, even brown, accentuate the size of the structure and are inappropriate. Dark surfaces are permitted only as a plane or element which does not exceed 5m in any direction.
- 3) Minor features - Colour detail is appropriate on minor features such as window frames and doors.
- 4) Fences – Natural timber, colours in the green range (excepting bright greens), grey to light browns are appropriate for fencing.

4.7 Services

A. Controls

- 1) Locate electricity and telephone wires underground.
- 2) Services to be screened by walls and vegetation.
- 3) An easement for access to the transmission lines will need to be created on some allotments.
- 4) All necessary easements shall be created in favour of the relevant servicing authority at no cost to Council or the servicing authority.
- 5) Provisions for subdivisional drainage are to be devised in consultation with, and to the satisfaction of, Council's Engineering Services Manager. Proposals which would result in the pollution of the Nepean River will not be approved. On-site detention of stormwater may be required.
- 6) All cabling and excavations for services are to be undertaken in a manner which will allow bushland rehabilitation.
- 7) All dwellings and other buildings containing toilets are to be connected to the Water Board sewerage system when capacity exists within the system. In the interim, applications are required to stipulate the means of treating and disposing of effluent. This must occur in a manner that does not lead to pollution of the river.

4.8 Access

A. Background

Driveways should follow natural contours or run gently across steep slopes. Drainage lines and areas requiring extensive cut and fill should be avoided for access construction. Informal access can be more appropriate in sensitive areas.

B. Controls

- 1) Roads and rights-of-way are to be constructed in accordance with the plans accompanying this section and to Council's standards in consultation with, and to the satisfaction of, Council's Engineering Services Manager.
- 2) New roads and rights-of-way shall be created at no cost to Council.
- 3) Driveways are to follow natural contours and to avoid damming gullies and streams. Driveways are to be located to retain as much natural vegetation as practicable.
- 4) Slopes and banks of roads and driveways must be stabilised during construction.
- 5) To maintain a 'low key' feeling, narrow roads and driveways are to be constructed.
- 6) Gravel or crushed sandstone surfaces are preferable on low slope driveways. On steeply sloping land, paving or sealing is to be in a dark colour to give a more natural effect.
- 7) Access tracks may be constructed in 'No Development' areas, but only in accordance with the plans accompanying these guidelines.
- 8) It will be necessary for the method of treating and minimising runoff from roads, driveways and sediment control and restoration of all earthworks to be addressed as part of any development application.
- 9) The location of the road pavement within the reservation is subject to detailed survey.
- 10) All accessways, roads, tracks and driveways are to be constructed in such a manner that the disturbance of adjacent areas is to be minimised. This is particularly critical where access is through areas of bushland and across and adjacent to creeks and drainage lines.

4.9 Landscaping

A. Background

It is vitally important that the tree canopy and bushland vistas remain. Species chosen for landscaping purposes should be chosen with the following criteria in mind:

- a) Appropriateness for location
- b) Suitability for purpose e.g. for screening
- c) Fire and drought resistance
- d) Ease of maintenance
- e) Attractiveness

Weeds should be eradicated from natural vegetation, using proven bush regeneration techniques.

A comprehensive list of suitable species is available on Council's website or by contacting Council.

B. Controls

- 1) Permission will not be given to remove natural vegetation from the areas marked as 'No Development' zones. Through the application of these controls, existing indigenous vegetation will be retained wherever possible.
- 2) Local native plant species are preferred.
- 3) The use of fire resistant local native species is appropriate for all allotments, but must be used on certain specified allotments.
- 4) Existing low plants and leaf litter are to be retained as groundcover, except where subject to specific controls in areas of moderate and moderate to high bushfire hazard areas.
- 5) Native grasses are more appropriate than bright green lawns.
- 6) Natural rock features are to be retained.
- 7) Random planting and groups of trees are more in keeping with the natural landscape than formal plantings.
- 8) Landscaping plans, to be prepared in accordance with plans included within this section, are required for all developments.
- 9) Bushland regeneration, using approved bushland regeneration techniques, is to be incorporated where necessary as part of a landscaping plan, and is to be carried out to the satisfaction of Council's Engineering Services Manager.
- 10) All mulching material is to originate from clean native vegetation from the site, to avoid the introduction of exotic species.
- 11) Retain/add habitat for fauna, e.g. logs for reptiles.

4.10 Bushfire Hazard

A. Background

Bushfire risks in bushland settings can be lessened by both safety measures and management measures. The aim is to reduce the use of environmentally unacceptable hazard reduction methods such as controlled burning, by paying attention to building design and siting.

B. Controls

- 1) All allotments must comply with the requirements of *Planning for Bush Fire Protection 2006* and the Australian Standard for the Construction of bush-fire prone areas AS3959-2009 and the guidelines as identified on Figure E4.4 – Map 3. Advice from Council's Development Services Department should be sought prior to lodging an application with Council.
- 2) In order to maintain the firebreak and fuel reduced zones, a 5m wide access-way for fire fighters is to be provided within allotments and registered as fire prevention easements. The final location is to be subject to survey. This access-way is to provide for vehicular movement and may require removal of trees and undergrowth. In all cases, the access-way is to be grassed and appropriately drained to prevent erosion.

- 3) Preferably, houses are to be located on, or at the base of, gentle south or south east facing slopes. These slopes are more damp and usually on the downslope side of a fire.
- 4) When building on slopes, it is safer to build the house on a 'cut in' bench rather than have it perched on the slope on stilts.
- 5) Ensure that there are at least 2 ways out from the site, with one preferably to the south east, so that in the event of fire, escape is away from the primary fire danger zone.
- 6) When siting buildings, consideration should be given to possible uses of existing trees for wind break protection. Eucalypts are preferable for windbreaks as they are capable of regeneration. Firebreak trees should be cleared of branches to a height of 2m above ground level to prevent ground fires climbing the trees.
- 7) Most fire resistant vegetation is that with high leaf moisture content, low resin content and minimal dead matter during the fire danger period. When choosing appropriate species consider:
 - a) The amount of water the trees will receive;
 - b) How trees burn once set alight; and
 - c) Likely regeneration or recovery rate after fire.
- 8) Trees should not touch walls and roofs. Plantings nearer buildings should be of the low hazard type. Fruit trees and vegetable gardens can serve as fire breaks on the fire approach side. Low ground covers should be planted and kept well watered in summer.
- 9) A well protected property still requires annual maintenance to maximise safety in the event of fire.

Appendix 1: Maps of Blue Mountains Escarpment Area

Figure E4.2: Map 1 – Landscape Context

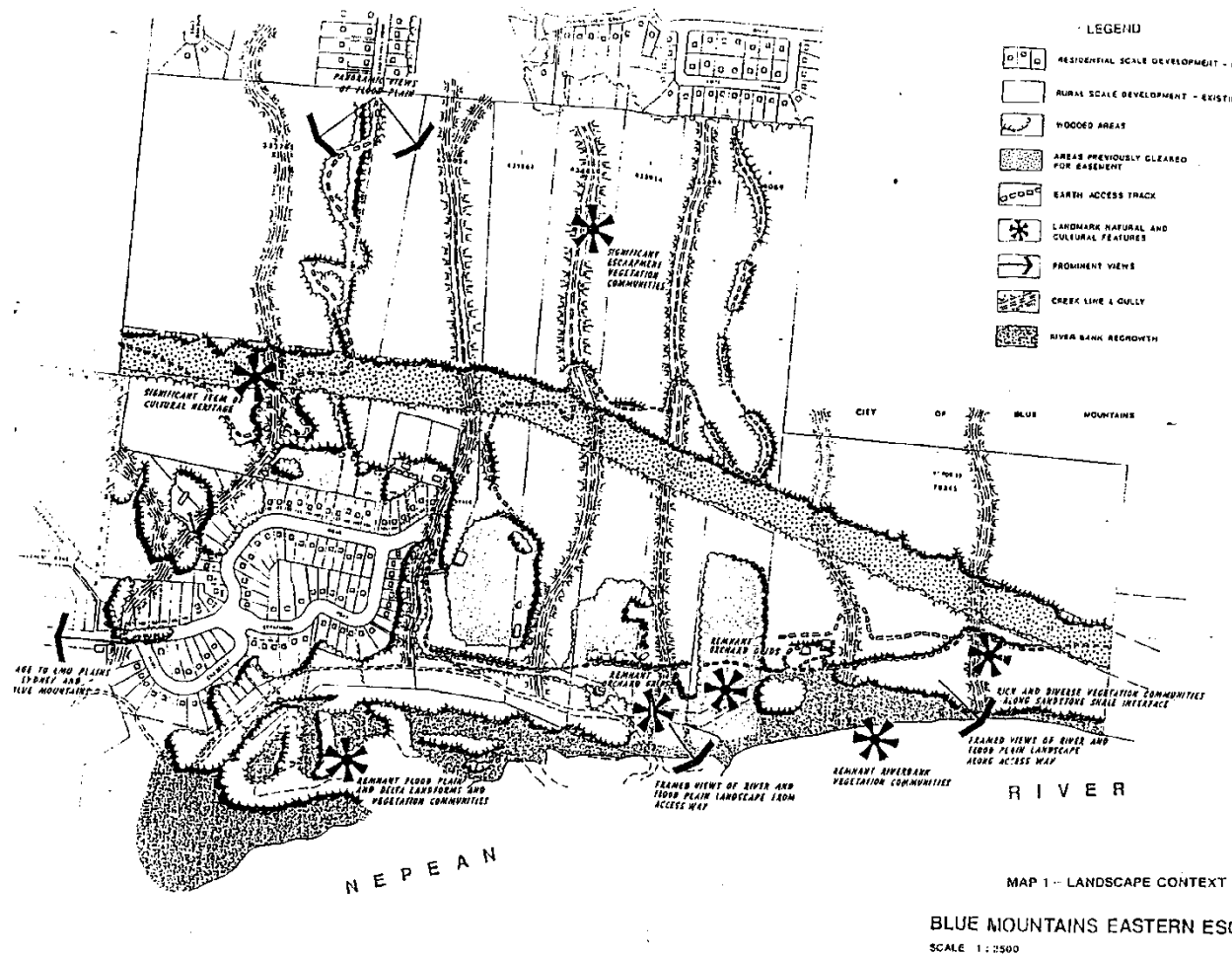


Figure E4.3: Map 2 – Physical Constraints

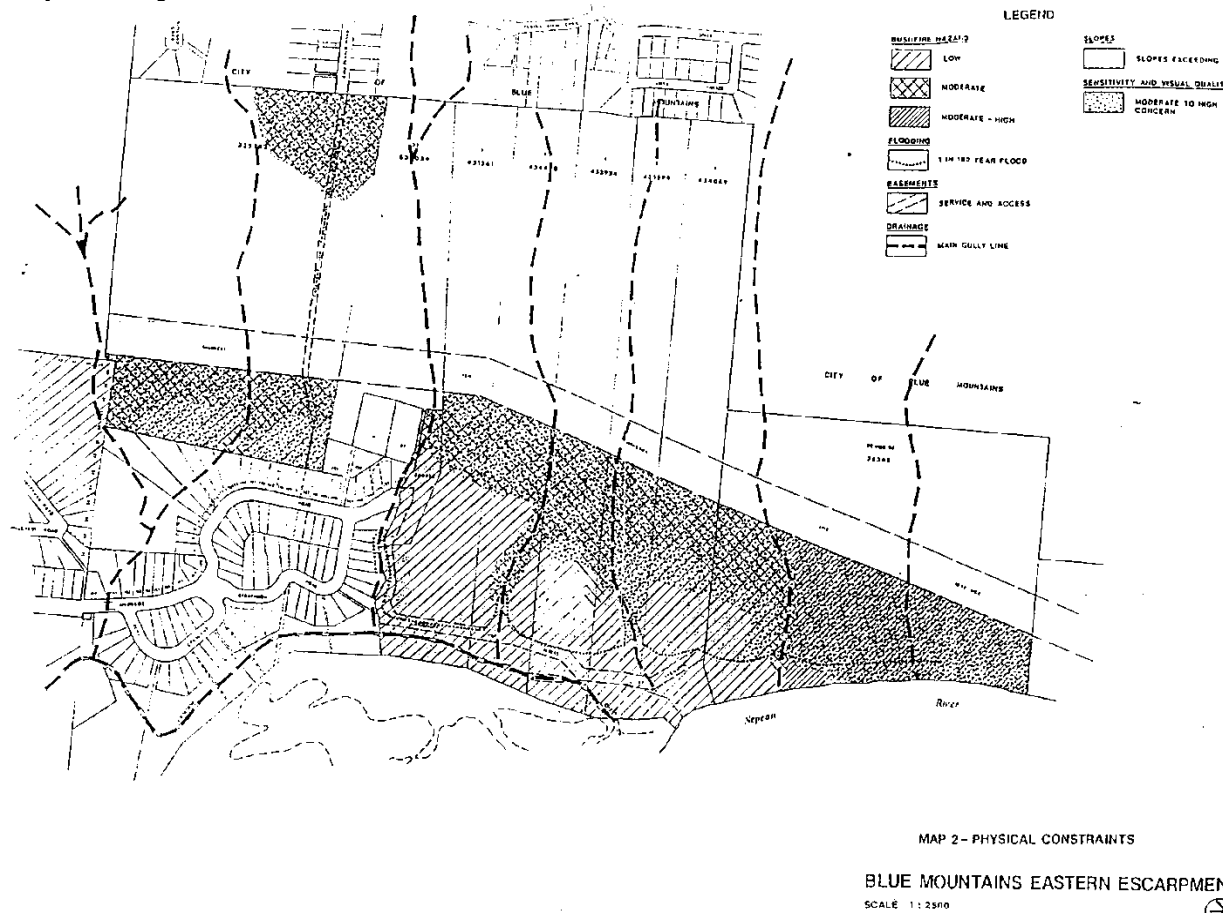
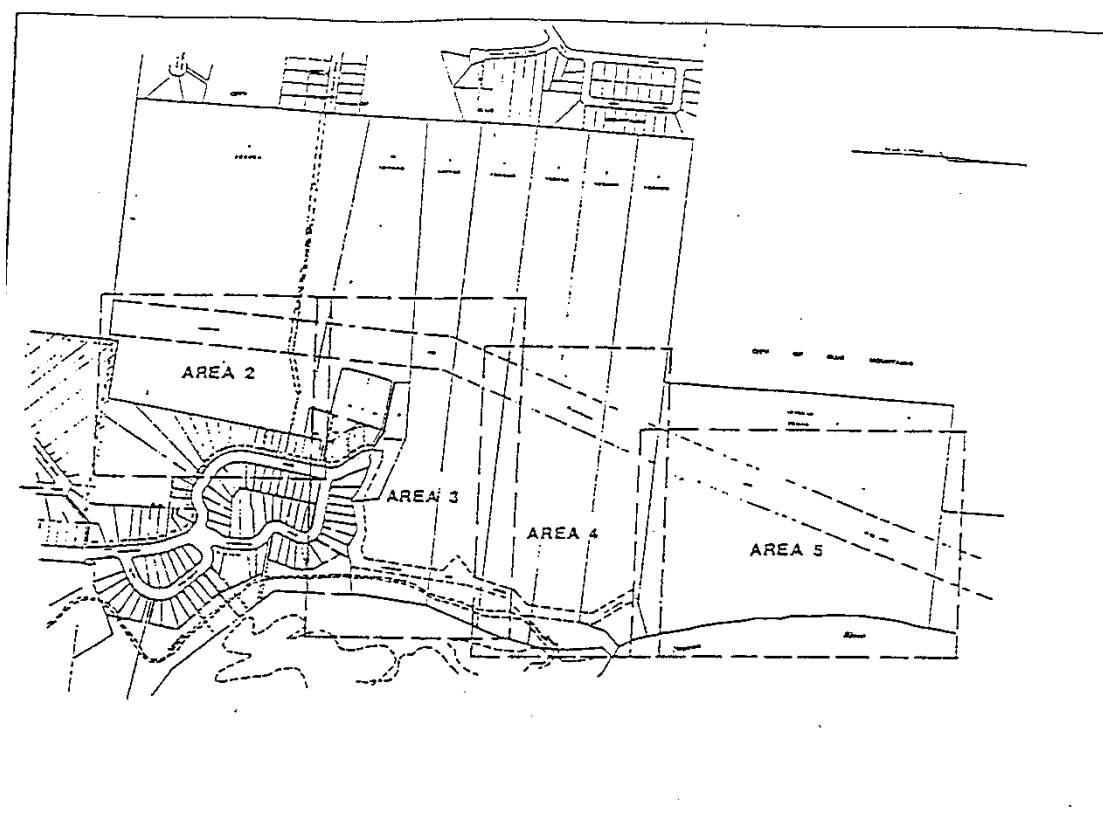









Figure E4.4: Map 3 – Subdivision Pattern and Development Controls



LEGEND

-  FIRE FIGHTING EASEMENT 5m WIDE TO BE CREATED
-  RESTRICTION TO USE (NO DEVELOPMENT)
-  DEVELOPMENT PERMITTED (SUBJECT TO PROVISIONS OF SITING DESIGN & MANAGEMENT GUIDELINES D.C.P.)
- * LOTS MARKED AS SUCH TO BE PLANTED WITH FIRE RESISTANT SPECIES
-  TRACK
-  RIGHT OF CARRIAGEWAY AND EASEMENT FOR SERVICES
-  BRIDGE
-  EXISTING BUILDINGS

MAP 3 - SUBDIVISION PATTERN AND
DEVELOPMENT CONTROLS

BLUE MOUNTAINS EASTERN ESCARPMENT

Figure E4.5: Area 2

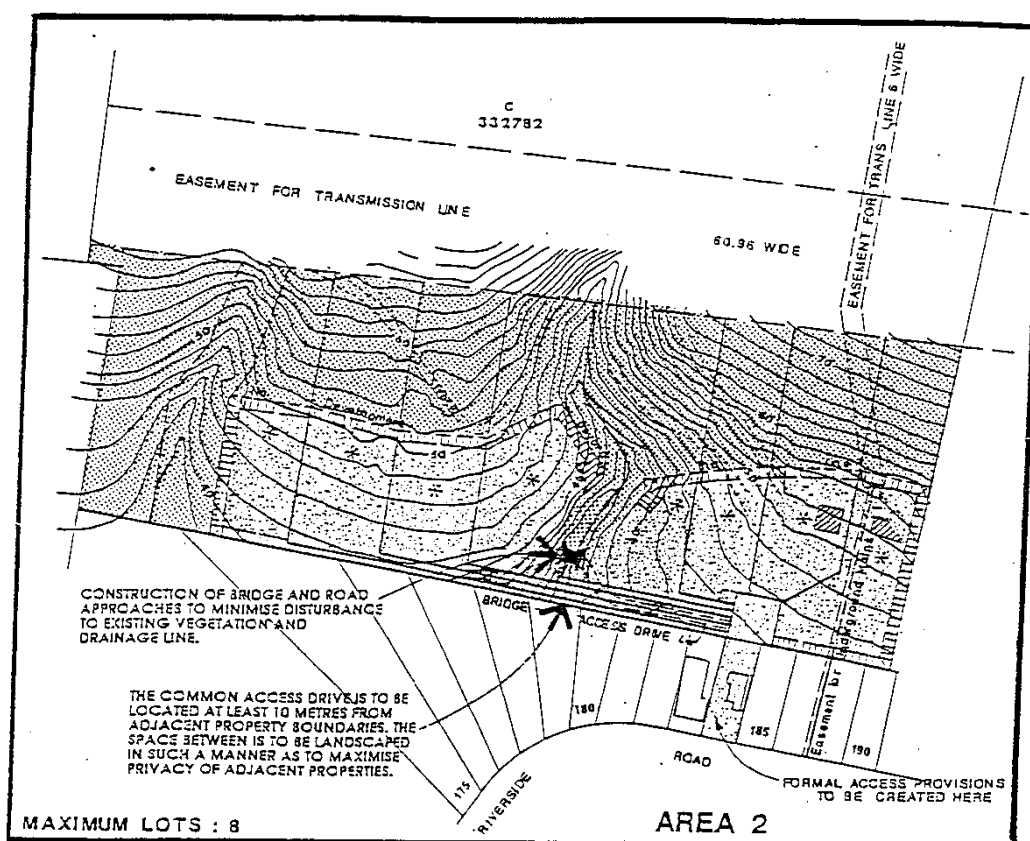


Figure E4.6: Area 3

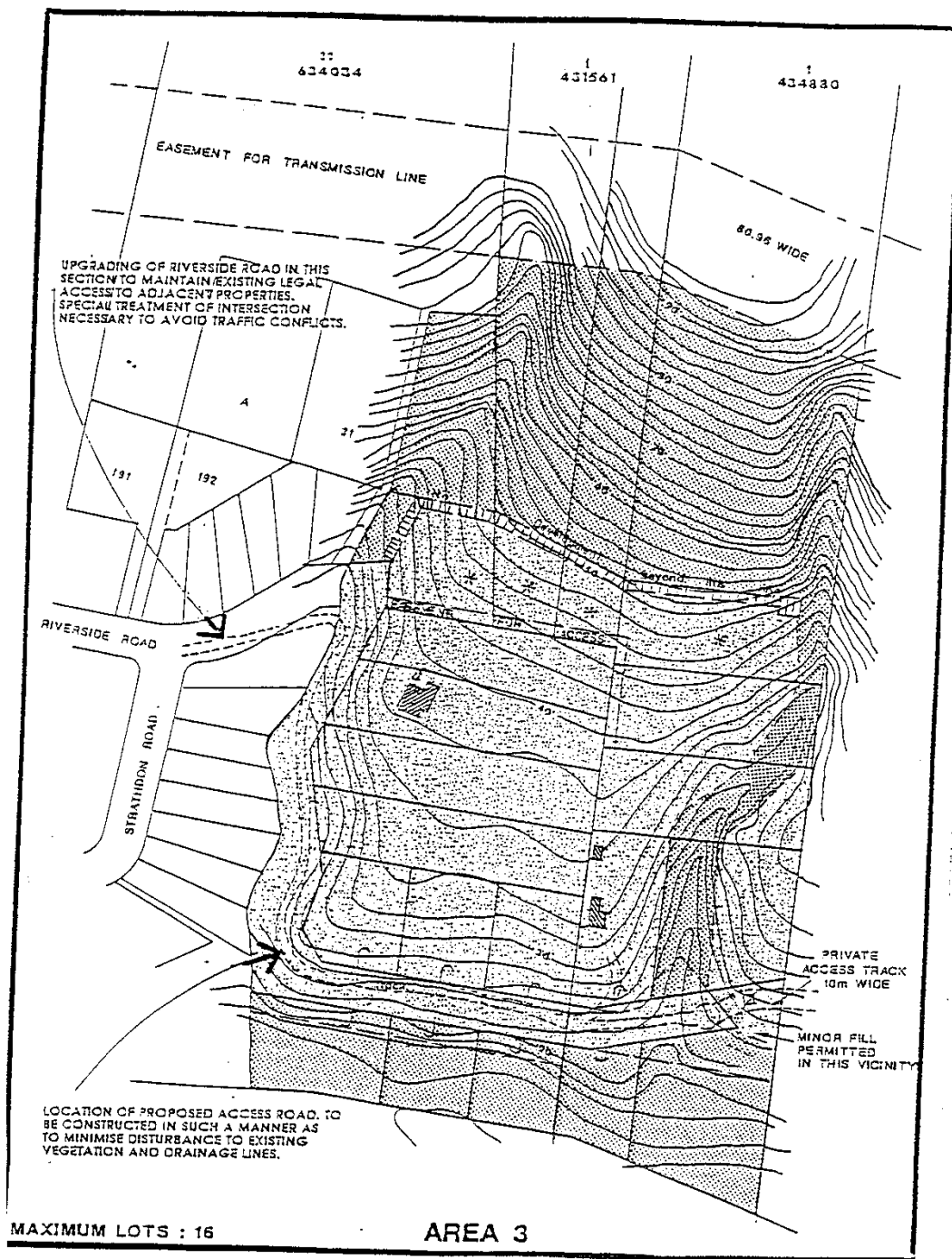
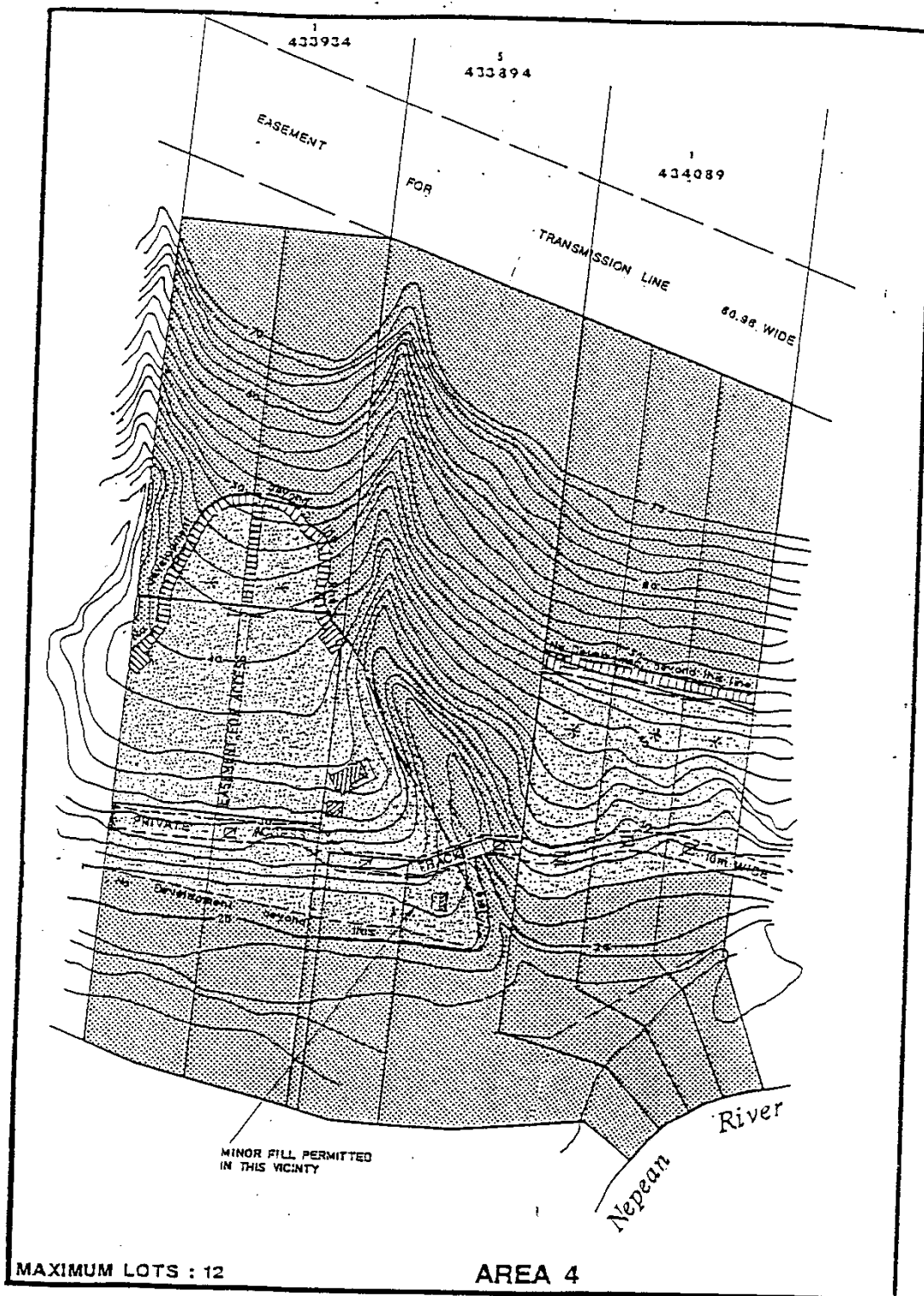


Figure E4.7: Area 4



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Figure E4.8: Area 5

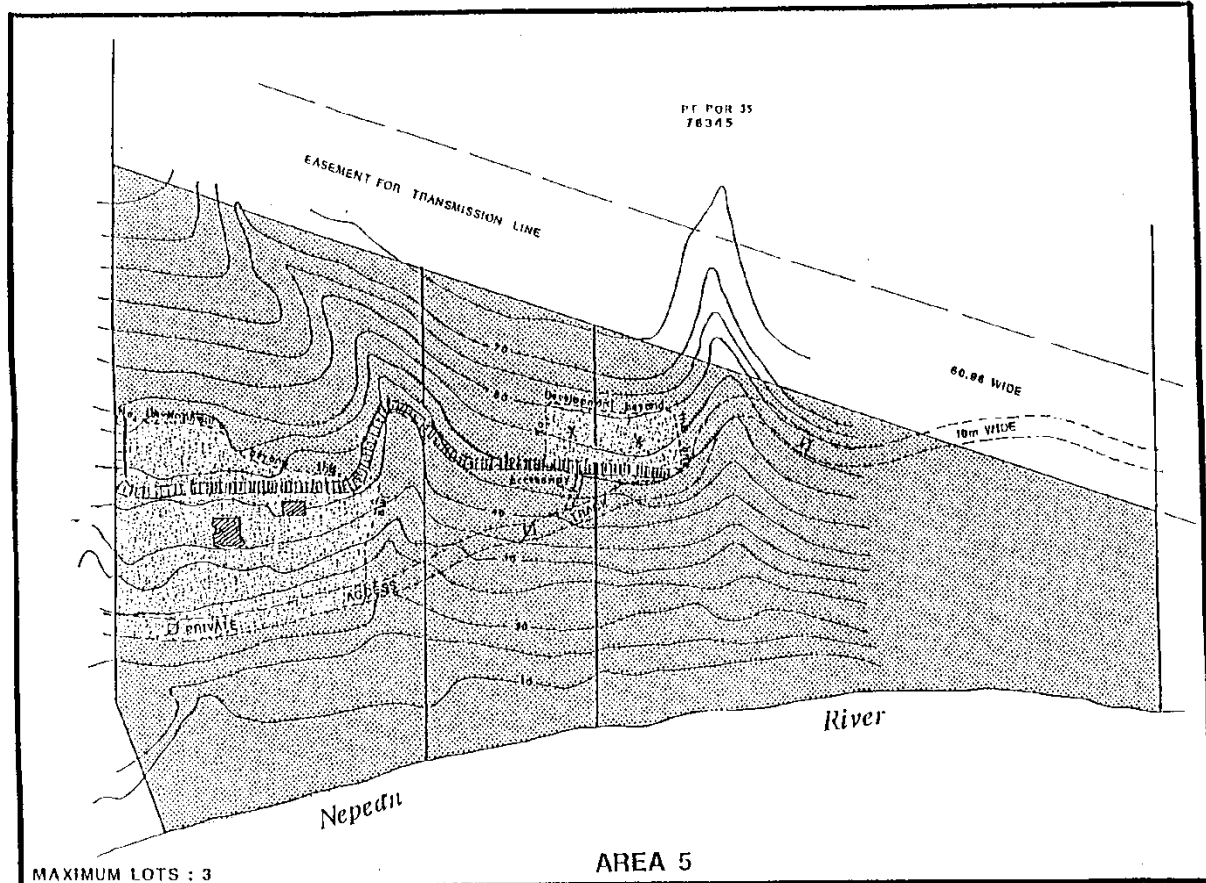


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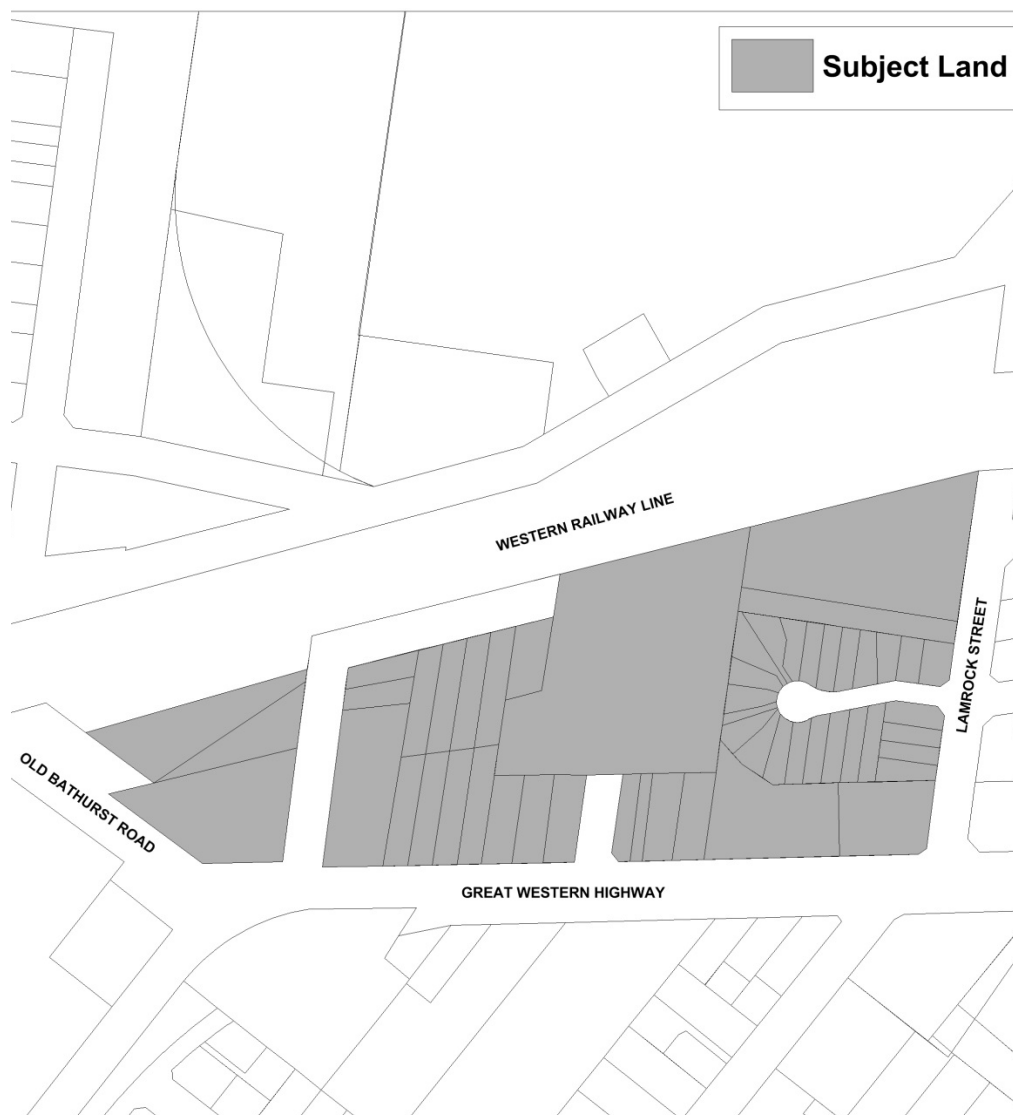
Part A – Emu Plains Commercial Area

5.1 Introduction

5.1.1 Land to which this Part applies

This section applies to land at Emu Plains, bounded by Old Bathurst Road, the Great Western Highway, Lamrock Street and the Western Railway line as shown in Figure E5.1.

Figure E5.1: Land to which this Part applies



5.1.2 Aims of this Part

- a) To provide urban design guidelines for commercial and residential development within the area;
- b) To reflect current traffic management conditions and to guide future traffic management and parking within the area;
- c) To ensure the enhancement of pedestrian access within the area and between surrounding areas; and
- d) To ensure the physical enhancement of the area through the provision of landscaping, street tree planting and good quality urban design.

5.2 Controls

5.2.1 Commercial Development

- 1) To enhance the landscape character of the area, street tree planting of advanced trees shall be provided:
 - a) along the street frontages of land in conjunction with any new development on that land. The street trees are to be consistent with Council's street planting requirements for the area; and
 - b) along the frontage of land to Council's car parking area in conjunction with any new development on that land.
- 2) Land fronting the Great Western Highway, and located between the existing shops and Lamrock Street, has potential for commercial development consistent with the land use zone. As such, development proposals on this land shall be designed:
 - a) to take account of the amenity of any adjacent residential development by providing:
 - i) Attractive external design and site planning to maintain residential privacy and minimise noise generation; and
 - ii) Buildings/s of maximum two storeys in height and designed to complement the existing one – and two- storey residential mix in the surrounding area.
 - b) to provide a staggered building setback which provides a visual link between the existing buildings adjacent to the land.

5.2.2 Traffic Management

- 1) Vehicular access to the precinct is provided via:
 - a) Station Street (left in, left out); and
 - b) Billington Place (signalised intersection); and
 - c) Lamrock Street (limited only to development fronting Lamrock Street, with no direct vehicular connection between Lamrock Street and Railway Row South).
- 2) All new development within the precinct shall be designed to provide satisfactory service vehicle access in accordance with the Plan.
- 3) All new development within the precinct shall contribute towards the cost of traffic management and pedestrian facilities identified within the Plan.

5.2.3 Parking

- 1) Development within the precinct shall provide on-site car parking in accordance with the parking section of this plan.

5.2.4 Residential Development

- 1) To enhance the landscape character of the area street tree planting of advanced trees shall be provided:
 - a) Along the street frontages of land in conjunction with any new development on that land. The street trees are to be consistent with Council's street planting requirements for the area; and
 - b) Along the frontage of land to Council's car parking area in conjunction with any new development on that land.
- 2) Development proposals for land adjacent to the western side of Lamrock Street which has potential for residential development shall incorporate:
 - a) measures to minimise the impact of noise on residents from the Western Railway line and Great Western Highway through appropriate design features, the use of suitable external materials, landscaping and site design;
 - b) dwellings of a scale and character which complement those existing in the surrounding area;
 - c) high-quality fencing of a scale, design and materials which does not present long, unbroken expanses to public view (e.g. lapped-and-capped paling fence, or masonry construction, with spacing for tree and shrub planting);
 - d) landscaping which complements the character of the area, and enhances both the amenity of the residents and views from public places. Landscaping must be implemented to provide privacy and shade for the residents.

5.2.5 Pedestrian Access

- 1) To enhance pedestrian access within the area and between surrounding areas foot paving shall be provided along the street frontages of land in conjunction with any new development on that land.
- 2) Foot paving treatment shall be consistent with Council's foot paving requirements for the area.

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E6 Erskine Business Park

6.1 Preliminary

6.1.1 Aims and Objectives of this Section

- a) To enable a diversity of employment generating development to locate within the Erskine Business Park;
- b) To ensure that the standard of development does not detract from or unduly impact upon the existing built environment in adjoining rural and residential areas; and
- c) To ensure that development occurs in an environmentally responsible manner and future development limits adverse impacts upon significant biodiversity.
- d) To provide a framework that will lead to a high standard of development by encouraging local employment and creating an area which is pleasant, safe and efficient to work in;
- e) To ensure that development takes account of the physical nature of the local environment, particularly Ropes Creek, ridgelines and the natural landscape;
- f) To ensure that development does not result in pollution of waterways and in particular of Ropes Creek and South Creek;
- g) To promote the development of a visually attractive physical environment where the form, scale, colour, shape and texture of urban elements are managed in a way which will achieve an aesthetically pleasing balance which does not adversely affect the amenity of the existing residential areas;
- h) To identify and provide for public amenities and service infrastructure to accommodate development;
- i) To promote the creation of a landscaped area within the electricity transmission easement to act as a buffer between the employment zones and the residential communities;
- j) To establish environmental criteria and controls for development within the area to ensure that the environmental quality of adjoining areas is not compromised;
- k) To ensure that development is consistent with the objectives of the Threatened Species Conservation Act with particular regard to the endangered ecological communities, flora and fauna present on the site;
- l) To facilitate conservation of urban bushland; and
- m) To protect, restore and enhance riparian corridors within Erskine Business Park.

6.1.2 Land to which this Section Applies

Erskine Business Park is part of the Western Sydney Employment Area (WSEA) which applies to land identified in the *State Environmental Planning Policy (Western Sydney Employment Area) 2009* (WSEA SEPP). The WSEA is located within the vicinity of the intersection of the M4 and M7 Motorways. The WSEA straddles four local government areas (Penrith, Blacktown, Fairfield and Holroyd) covering an area of approximately 2,450 hectares.

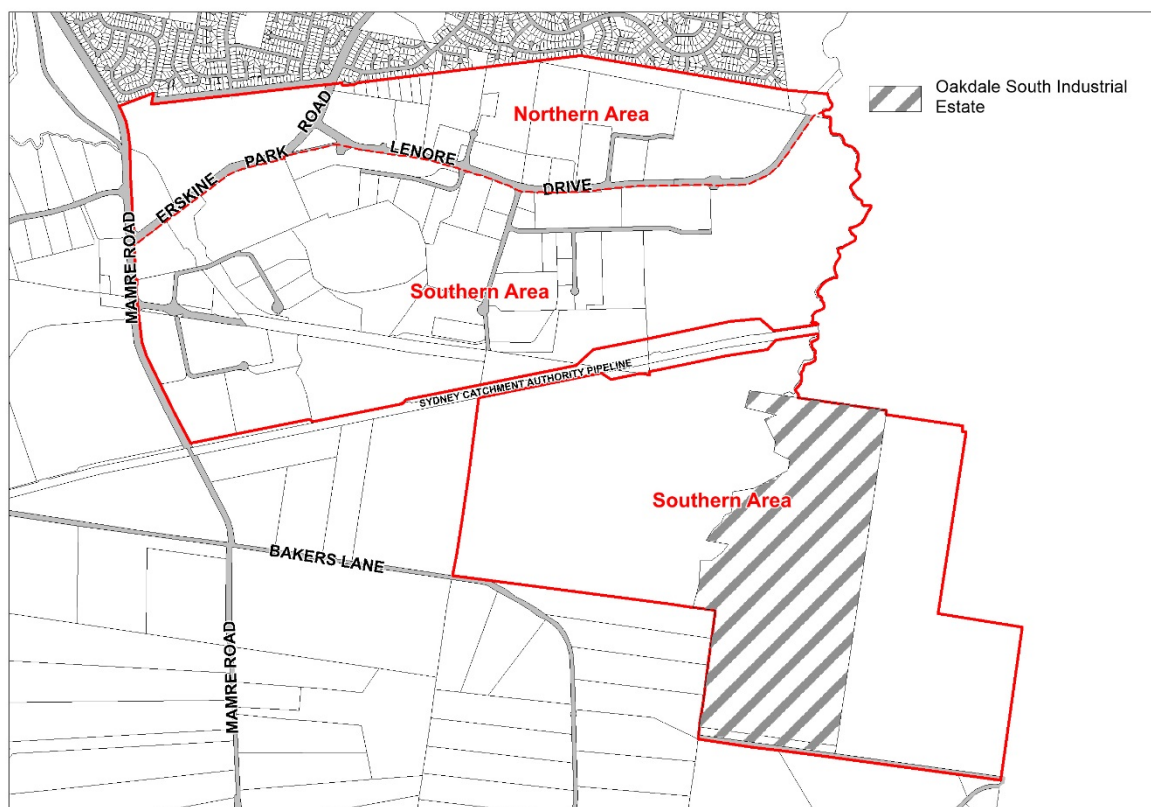
This Section applies to those WSEA lands within the Penrith LGA known as Erskine Business Park (as identified in Figure E6.1) and includes:

- a) The existing Erskine Business Park (divided into two precincts being the Northern Area and the Southern Area as shown in Figure E6.1); and

- b) An area also shown in Figure E6.1 which includes those lands south of the Sydney Catchment Authority (SCA).

This Section also provides more detailed provisions than are included in the WSEA SEPP in regard to development standards, the provision of public amenities and service infrastructure, and biodiversity conservation.

Figure E6.1: Land to which this Section applies



6.2 Subdivision

A. Objectives

- To achieve maximum flexibility for siting and location of buildings and to achieve an appropriate density of development;
- To provide opportunities for parcels of land of varying size and dimensions to satisfy market demand and the needs of the development industry;
- To ensure that subdivision design takes into account biodiversity considerations and facilitates minimum impact development to protect remnant native vegetation on the site and on adjoining land;
- To preserve the natural topography and physical characteristics of the land;
- To provide opportunities for large lot subdivision;
- To ensure that development occurs in a logical and staged manner;
- To minimise the number of road entry points to designated roads and the northern access road, thereby allowing more efficient traffic management;

- h) To create the opportunity for "individual" design solutions and innovative and efficient subdivision layout;
- i) To create opportunities for large land parcels to be developed in a co-ordinated, unified manner, featuring elements such as a common landscape theme/treatment, similar architectural treatments, and where possible, shared parking areas; and
- j) To protect, restore and enhance riparian corridors.

B. Controls

- 1) Lots fronting biodiversity areas or corridors are required to have on-site drainage controls in accordance with this section to prevent nutrient and erosion impacts on the bushland.
- 2) Lot design should maximise the conservation of the natural features of the site including important fauna habitats, rare or threatened plant habitats, and designated biodiversity areas.
- 3) Lots adjoining or containing watercourses are required to maintain or establish native vegetation riparian zones.
- 4) Perimeter roads are desirable from the point of view of bushfire control but may not be feasible if site disturbance is to be minimised.
- 5) The subdivision controls are:

Table E6.1: Subdivision Controls in Erskine Business Park

	Area	Control
Minimum Allotment Size	Northern Area (Refer to Figure E6.1)	20,000m ²
	Southern Area – excluding Oakdale South Industrial Estate (Refer to Figure E6.1)	10,000m ²
	E2 Environmental Conservation along the Ropes Creek Corridor.	40 hectares
	Land known as the Oakdale South Industrial Estate, Erskine Park (Refer Figure E6.1)	5,000m ²
Minimum Frontage	Northern and Southern Area (Refer to Figure E6.1)	60m
	E2 Environmental Conservation along the Ropes Creek Corridor	Not Applicable
	Land known as the Oakdale South Industrial Estate, Erskine Park (Refer Figure E6.1)	40m (excluding cul-de-sacs) 35m minimum lot width at building line

- 6) Council will consider a variation to the above allotment size and frontage for lots created for either “utility installations” or “utility undertakings” (e.g. electricity substation).

6.3 Site Development and Urban Design

6.3.1 Height

A. Objectives

- To encourage building forms that respond to the topography of the site and the relative position of the allotment to other allotments and the street;
- To ensure a scale of buildings which minimises the impact of development on adjoining residential areas; and
- To minimise the impact of development on views from adjoining residential areas.

B. Controls

- The maximum height for buildings and structures in the Northern Area shown in Figure E6.1 shall not exceed 12m.
- The maximum height for buildings and structures in the Southern Area shown in Figure E6.1 shall not exceed 15m, unless otherwise specified below.
- Generally, buildings should be sited on mid-slope to avoid visual impact on ridges and to be in harmony with the existing landscape.
- On sloping sites, the building or buildings should be designed, where possible, so as to "step" physically up or down the site to avoid visual impact on ridges.
- Within the Oakdale South Industrial Estate, no warehouse buildings in Precinct 4, 5 or 6 shall exceed a ridgeline height of 13.7m. Refer to Figure E6.2 Oakdale South Industrial Estate – Precinct Plan.

Figure E6.2 Oakdale South Industrial Estate – Precinct Plan



6.3.2 Site Coverage

A. Objectives

- a) To limit the density of development; and
- b) To encourage the provision of open space and landscaping on development sites, consistent with the landscape objectives in the Landscape Design of this Plan.

B. Controls

- 1) Site coverage shall not exceed 50%, unless otherwise specified below
- 2) Site coverage within the Oakdale South Estate shall not exceed 65% (excluding building awnings).
- 3) Where land is included in Biodiversity Conservation Areas or Electricity Transmission Line Easements, that land can be included in site coverage calculations.

6.3.3 Setbacks

A. Objectives

- a) To provide an open streetscape with substantial areas for landscaping; and
- b) To enhance the visual quality of development and the urban landscape.

B. Controls

- 1) The setback standards are outlined in the table below. Where the property has frontage to more than one road, Council will consider a variation to setbacks on the secondary road frontage, as shown in Table E6.2 below.

Table E6.2 Setback Requirements

Setback Type	Setback
Designated Road (Mamre Road and Erskine Park Road)	20m
Northern Access Road (Lenore Drive and Erskine Park Link Road to Westlink M7)	20m
Southern Link Road	20m
Western Access Road (Trunk Collector)	20m
Other Road Frontages	15m
Estate roads within the Oakdale South Industrial Estate	7.5m
Rear and Side Boundaries (unless otherwise specified elsewhere in this table)	5m
Side Boundaries within the Oakdale South Industrial Estate	0m subject to compliance with fire rating requirements

Setback Type	Setback
Rear and side boundary setbacks to development adjacent to the Oakdale South Industrial Estate, excluding the southern property boundary and the eastern property boundary.	5m
Boundary setbacks along the southern property boundary of the Oakdale South Industrial Estate	30m
Boundary setbacks along the eastern property boundary of the Oakdale South Industrial Estate	10m
Transmission Line Easement	8m
Water Supply Pipeline	5m
Boundaries Adjacent E2 Environmental Conservation zone along the Ropes Creek Corridor.	10m

2) Notwithstanding Control (1) above, no development other than the following development is permitted within the defined setback for any road, other than Lenore Drive, Mamre Road and Erskine Park Road:

- a) Car parking
- b) landscaping in accordance with the provisions of the Landscape Design Section of this Plan;
- c) maintenance/rehabilitation of biodiversity corridors or areas in accordance with the provisions of the Vegetation Management Section of this Plan;
- d) utility services installation;
- e) accessways and driveways (not permitted in setbacks to designated roads);
- f) approved signage;
- g) street furniture; and
- h) drainage works.

Figure E6.3: Building setbacks (1)

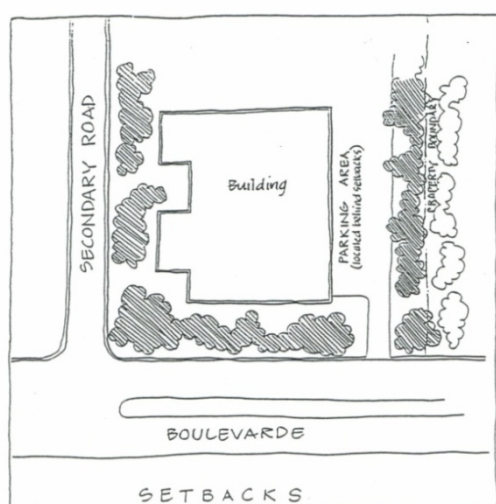
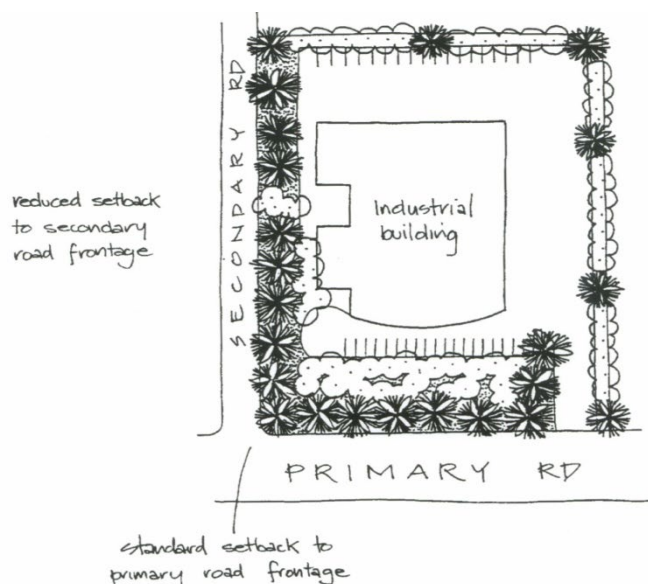


Figure E6.4: Building setbacks (2)



- 3) Notwithstanding Control (2) above, Council may consider a variation to permit car parking within part of the setbacks to Erskine Park Road and Lenore Drive for 1 – 23 Lenore Drive, Erskine Park (Lot 1, DP 1071114), which is the site on the corner of Erskine Park Road and Lenore Drive. Council shall consider the type and scale of the development when assessing any such request for variation to either building or car parking setbacks.
- 4) Existing remnant vegetation within front, rear and side setback areas shall be retained and enhanced as an integral part of the landscaping proposals for each development.
- 5) Where sites back onto designated roads or the main access roads, those setback areas shall be provided with mounded landscape screens. Existing remnant vegetation shall be retained and enhanced as part of those landscaping proposals.

6.3.4 Urban Design

A. Objectives

- a) To encourage a high standard of architectural design, utilising quality materials and finishes;
- b) To establish varied and articulated frontages facing or visible from public roads;
- c) To minimise perceived scale and mass and to prevent monotonous building forms resulting from poor design of walls or rooflines; and
- d) To ensure that new development contributes to the creation of a visually cohesive urban environment.

B. Controls

Architectural/Design

- 1) In assessing development proposals, Council will have regard to the quality of building design and materials (type and colour).
- 2) Prominent elevations, such as those with a frontage to the street or public reserves or those that are visible from public areas, must present a building form of significant architectural and design merit. The construction of large, blank wall surfaces is not permitted.
- 3) Large unrelieved expanses of wall or building mass will not be supported by Council, and as such should be broken up by the use of suitable building articulation, fenestration or alternative architectural enhancements.
- 4) The use of large, uninterrupted areas of metal cladding or untreated concrete surfaces for wall construction is not supported. Applicants shall vary materials or finishes for external walls to provide attractive streetscapes and quality building designs. Council may limit the use of a single construction material to 50% of a wall surface area.
- 5) All loading areas should be located towards the rear of allotments. Where possible, loading areas should be screened from the view of main road frontages through physical and/or vegetation screening.
- 6) Details of samples of external materials and finishes shall be submitted with the Development Application.
- 7) External materials should not have an index of reflectivity above 20%.
- 8) Energy efficient design principles should be employed in all building designs.
- 9) Walls shall be articulated to provide more varied streetscapes, where visible from public roads or adjacent residential areas.
- 10) Part of the cross-section of buildings shall be projected to reduce apparent height and scale of external walls, including:
 - a) awnings and/or upper storeys that project above footpaths;
 - b) roofs with eaves that project beyond external walls;
 - c) colonnades.
- 11) Entrances to buildings must be highlighted by architectural features consistent with the overall design of the building.
- 12) Particular care should also be taken in:
 - a) designing roof elements; and

- b) locating plant and mechanical equipment including exhausts, so as to reduce their visual impact from elevated locations.
- 13) External material colours to be consistent with the following palette of colours developed for Erskine Business Park:
 - a) Earth Tones - stone colours, browns, muted greens, sand, dark red/ plums; and
 - b) Cool Tones - soft greys, grey/blues.

Siting/Building Orientation

- 1) Building elevations oriented towards residential areas shall be minimised. Where site constraints create difficulties in complying in this regard, elevations shall be appropriately detailed using windows, broken building planes and other architectural devices.
- 2) Design and layout of buildings shall give consideration to local climatic conditions. For example:
 - a) where possible, buildings should take advantage of a north or north easterly aspect;
 - b) western orientations should be avoided;
 - c) trees should be planted around the building to create shade, screening and wind breaks.
- 3) Development should not seriously impede the access of solar radiation to surrounding land and development.

Figure E6.5: Pedestrian friendly urban design

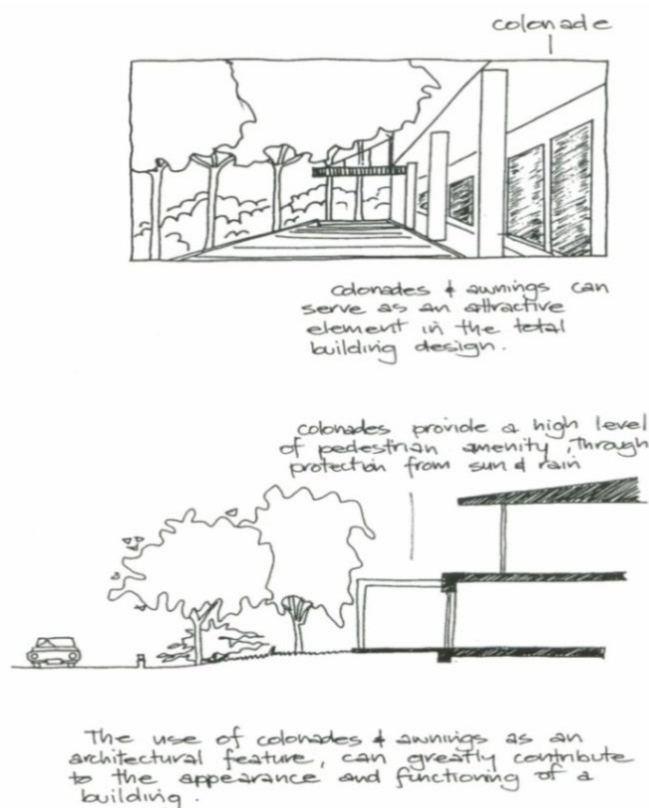
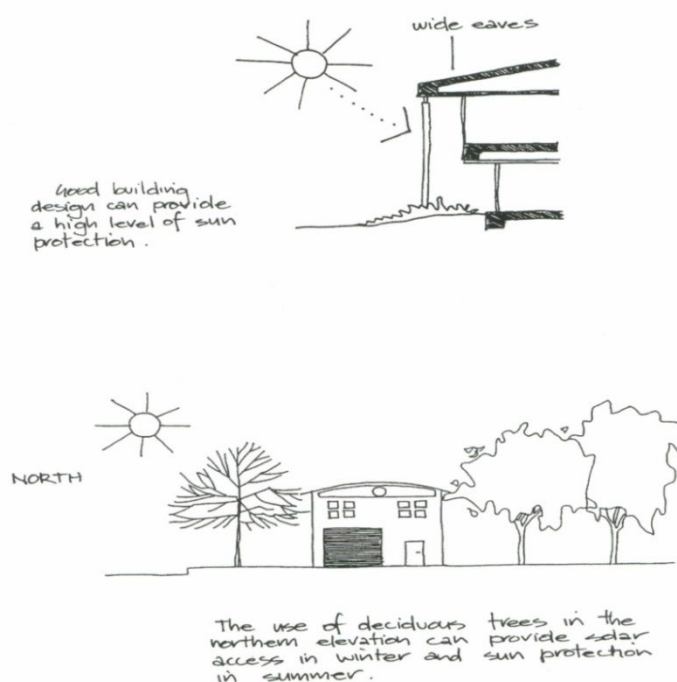


Figure E6.6: Energy efficient design



6.3.5 Signage and Estate Entrance Walls

A. Objectives

- a) To promote an integrated design approach to all signage in character with the locality and its architectural and landscape features;
- b) To provide a quality entrance statement and signage at each of the entrance points to the Estate;
- c) To prevent the proliferation of signs;
- d) To minimise the visual impact of signage;
- e) To prevent distraction to motorists and minimise the potential for traffic conflicts;
- f) To permit the adequate display of information concerning the identification of premises, the name of the occupier and the activity conducted on the land; and
- g) To encourage a coordinated approach to advertising where multiple occupancy of sites occur.

B. Controls

- 1) Signage on individual allotments will be required to comply with the provisions of the Advertising and Signage Section of this Plan.
- 2) In addition, all advertising is required to be:
 - a) constructed of high quality, durable materials;
 - b) considered in conjunction with the design and construction of buildings;
 - c) restricted generally to one sign identifying the name of the occupants and/or products manufactured or produced on the site; and

- d) contained wholly within the site.
- 3) Decorative masonry entrance walls and high quality Estate signage (indicating the name of the Estate) shall be provided, as shown on Figure E6.11 – Erskine Business Park Traffic Works, at the following entrance points to Erskine Business Park:
- a) the intersections of Mamre Road and Erskine Park Road;
 - b) on Erskine Park Road for south-bound traffic leaving the Erskine Park residential area;
 - c) the intersection of Mamre Road and the proposed Western Access Road; and
 - d) on Lenore Drive at the future eastern entrance to the estate at Ropes creek when the link to the Western Sydney Orbital is constructed.
- 4) The entrance walls and signage referred to in Control (3) above are to be funded by contributions levied under the Contributions Plan for Erskine Business Park.
- The proposed works for the Ropes Creek entrance to the estate will, however, be funded by a separate, second account within the Contributions Plan for this Estate.
- 5) Any business directory signage installed by developers shall be of a high quality and shall have a consistent design throughout the Estate.
- 6) The official name of the Estate shall be determined by Council in conjunction with the landowners/developers and shall be utilised in a marketing/promotions campaign for the Estate.
- 7) For buildings within the Oakdale South Industrial Estate, a maximum of one illuminated sign is permitted on each elevation of each of each warehouse building. All illuminated signage shall be oriented away from residential receivers.

Figure E6.7: Acceptable signage



6.3.6 Lighting

A. Objectives

- a) To provide adequate security lighting for business establishments, whilst ensuring there is no adverse impact upon the use and enjoyment of adjoining premises and surrounding areas, particularly residential and rural areas; and
- b) To provide suitable lighting along the road network to enhance landscaping.

B. Controls

- 1) Lighting details shall be provided as part of any relevant Development Application.
- 2) Lighting design should address the principles of Crime Prevention through Environmental Design (CPTED), where there is significant pedestrian activity, late night work-shifts or safety and security issues. These principles are outlined in the Site Planning and Design Principles Section of this Plan.
- 3) Adequate lighting should be provided to meet security requirements without excessive energy consumption. Lighting powered by solar batteries or other renewable energy sources is encouraged. The use of sensor lighting, both internally and externally, should be considered.

6.3.7 Fencing

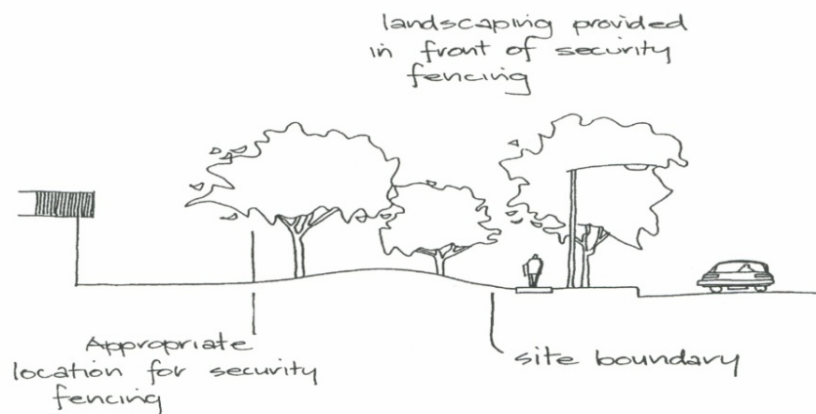
A. Objectives

- a) To ensure that the security needs of the development are satisfied in a manner which complements the surrounding landscape design and streetscape quality; and
- b) To ensure that fencing is consistently located behind the landscaped front setback and is of a consistent high quality.

B. Controls

- 1) No fencing other than a low ornamental type may be erected at the front site boundary. Should an applicant elect to use high security fencing, such fencing must be located either behind the landscape setback or alternatively within the landscaped area midway between the site front boundary and the building line.
- 2) Security fencing shall generally be of an "open" nature and of a dark colour, such as green or black plastic coated mesh fencing, which blend better with screening vegetation than galvanised wire.

Figure E6.8: Appropriate location for security fencing.



6.3.8 Services

A. Objectives

- a) To ensure that adequate services are available to facilitate development; and
- b) To ensure the co-location of services where possible.

B. Controls

- 1) Council shall require as conditions of any development consent that arrangements satisfactory to:
 - a) Sydney Water will be made for the provision of water and sewerage services;
 - b) Integral Energy have been made for the supply of electricity;
 - c) arrangements satisfactory to the relevant telecommunications authority will be made for the provision of telecommunications services;
 - d) Council have been made for the drainage of the land.
- 2) Council will require, as a condition of consent, that electricity and telecommunication mains be placed underground. Council also requires the co-location of services where this is technically feasible.
- 3) Council will require that all new premises within the Erskine Business Park be provided with state of the art telecommunications infrastructure utilising optic fibre or DSL technology to enable companies to access broad band services using high speed, high reliability telecommunications.

6.3.9 Transmission Line Easement

A. Objectives

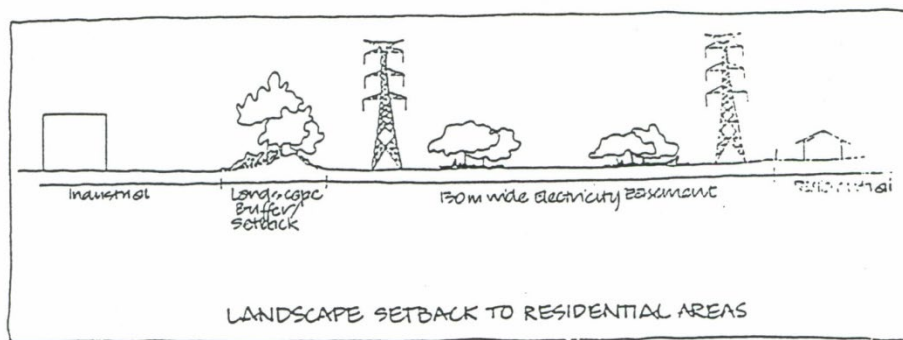
- a) To create a physical buffer between the Erskine Business Park and adjoining residential communities;
- b) To provide landscaped treatment which creates:

- i) an attractive outlook for adjoining residential properties; and
- ii) linkages between the residential areas and Erskine Business Park; and
- c) To provide limited opportunities for development of the land affected by the transmission line easement for landscaping, and/or maintenance/ rehabilitation of biodiversity conservation areas.

B. Controls

- 1) Council does not support the carrying out of development on land affected by the Transgrid Electricity Transmission Line Easement.
- 2) Approved landscape treatment (refer to the Landscape Design of this Plan), and/or maintenance/rehabilitation of biodiversity corridors or areas (refer Part 8 Biodiversity of this Section) shall be carried out on land affected by the transmission line easement.
- 3) Existing vegetation within this easement shall be retained and enhanced as part of any proposal by applicants to provide a landscape screen between a proposed development and adjacent residential areas.

Figure E6.9: Transmission easement



6.4 Environmental Quality

6.4.1 Noise Pollution

A. Objectives

- a) To establish design criteria for noise emissions from industrial or other employment-generating development;
- b) To establish acoustic environmental goals for existing and future adjacent residential areas; and
- c) To establish noise contributions for individual allotments within the employment zones when related to residential boundaries.

B. Controls

- 1) Any machinery or activity considered to produce noise emissions from a premise shall be adequately sound-proofed so that noise emissions are in accordance with the provisions of the *Protection of the Environment Operations Act 1997*.

- 2) The use of mechanical plant and equipment may be restricted in the Northern Area (Figure E6.1). Developers in all areas should ensure through design of their development that no offensive noise is emitted.
- 3) Where it is considered likely that a development may cause an adverse impact on nearby rural or residential areas, a noise impact statement from a qualified acoustical engineer will be required to be submitted to Council for consideration with the Development Application. A noise impact statement will need to demonstrate that the proposed development will not create any adverse impact.
- 4) All development shall comply with the requirements of relevant Australian Standards and State Government policies and guidelines relating to Noise.
- 5) The acoustic criteria adopted by this section will be implemented in the following manner:

Erection of Buildings

- 1) An acoustic design report shall be required for developments that are likely to generate high noise levels and for development in the area immediately adjoining residential areas. The acoustic design report should refer to the relevant Australian Standards and State Government policies and guidelines relating to Noise.
- 2) If an acoustic design report is not required at the Development Application stage, conditions will be imposed as part of the development consent which requires compliance with the relevant Australian Standards and State Government policies and guidelines relating to noise. Applicants must have regard to the criteria and demonstrate a standard of acoustic treatment for the building to comply with such criteria.
- 3) It is essential that potential developers investigate noise amelioration features to be included in building design, which will assist in achieving compliance with Council's acoustic criteria. Having regard to the surrounding topography, it is critical that the roof element of all buildings be acoustically capable of controlling potential breakout noise.

6.4.2 Air Pollution

A. Objectives

- a) To maintain existing air quality and improve local air quality where possible; and
- b) To ensure future development does not adversely affect existing air quality.

B. Controls

- 1) The emission of air impurities is to be controlled and limited to the standards allowed by the *Protection of the Environment Operations Act 1997*, to the satisfaction of Council and the Environmental Protection Authority at all times.
- 2) Applicants may be required to provide information detailing the potential impact of their development on air quality in the region.
- 3) An assessment of the merits of the proposal will be made at the Development Application stage. However, applicants should be able to demonstrate that the most efficient means of minimising emissions are being utilised.

6.4.3 Storage, Transportation and/or Processing of Chemical Substances

A. Objectives

- a) To ensure that the use, storage or transportation of any chemical substance/s do not have any detrimental impact on the environmental quality of the surrounding area; and
- b) To ensure any proposed development involving the storage, transportation and processing of chemical substances shall have regard to the requirements of State Environmental Planning Policy No. 33 - Hazardous and Offensive Development.

B. Controls

The following information is to be submitted with any Development Application which involves the storage, transportation and/or processing of chemical substances:

- 1) External storage of goods must be avoided wherever possible. Where the nature of the activity or the materials means that internal storage is impractical, all external storage areas must be located behind the front building setback. In addition, when assessing development applications involving external storage of goods, Council will take into consideration:
 - a) The proposed height and on-site arrangement of stored goods;
 - b) Visual impact of the storage area, and how this is proposed to be minimised (orientation, screening with landscaping and/or solid fencing etc.);
 - c) Access arrangements; and
 - d) Safety issues.
- 2) Detailed description of the use and all methods/procedures associated with the use, including flow diagrams.
- 3) A floor plan of the subject premises depicting the dimensions of the building and indicating the internal layout of all equipment, storage and display areas.
- 4) A comprehensive list of all chemicals/goods and quantities proposed to be utilised in the activity and actually stored on the subject premises.
- 5) A description of the method of storage of chemicals/goods on the premises, and the type of containment or packaging to be used.
- 6) A description of the method of transportation of chemicals/goods to/from the premises (include the size and nature of vehicles, proposed routes and frequency of delivery to and from the site).
- 7) Details regarding the number of vehicles likely to be involved with the use at any one time and the provision and allocation of storage/standing areas for such vehicles.
- 8) Details of onsite water quality control.
- 9) Details of waste treatment and transportation.

6.4.4 Energy Conservation

A. Objectives

- a) To encourage development designed to minimise energy usage; and

- b) To encourage development to consider the application of energy efficient technology and systems.

B. Controls

- 1) Development must demonstrate that the following have been taken into account in the design process:-
 - a) Potential for effluent re-use
 - b) Water minimisation techniques, including water recycling
 - c) Waste minimisation techniques, including recycling.

6.4.5 Trading/Operating Hours of Premises

A. Objectives

- a) To ensure the amenity of adjoining residential and rural areas is preserved; and
- b) To ensure development is provided the flexibility in trading/operating hours to ensure it is competitive and productive.

B. Controls

- 1) Construction works (all development) shall generally be restricted to the following hours:
 - a) Monday to Friday, 7.00 a.m. to 6.00 p.m.
 - b) Saturday, 7.00 a.m. to 1.00 p.m.
 - c) No work on Sundays or Public Holidays
- 2) The hours of operation for premises involved in any type of employment generating activity shall be dealt with on a merits basis. Council appreciates that because of the nature of certain activities shift work may be essential to the viability of the development.
- 3) In considering applications Council shall have regard to the likely impact of the trading hours of a particular activity on the amenity of adjoining residential and rural areas.

6.5 Drainage

6.5.1 Introduction

The provision of a drainage system is necessary to ensure that urban development is adequately serviced, occurs in an orderly manner and that best practice is applied to stormwater management solutions.

Council has determined that the most effective method to facilitate development is to encourage at-source pollution controls and promote the maintenance of predevelopment flow regimes from all developed land. In considering all Development Applications, Council will assess the adequacy of the trunk drainage system, downstream of the proposed development and its ability to meet the objectives listed below.

A. Objectives

- a) To ensure that an adequate and environmentally acceptable method of removing surface water and stormwater is implemented;
- b) To ensure that development does not result in the pollution of waterways and that the transportation of pollutants is minimised;

- c) To ensure that development does not create or exacerbate problems relating to saline or highly erodible soils;
- d) To protect, restore and maintain the physical and biological integrity of the waterways; and
- e) To ensure the overall drainage system is designed to minimise, to acceptable levels, the risk of local flooding.

B. Controls

- 1) The provision of drainage shall be in accordance with the Water Management Section of this Plan.
- 2) Council's preferred drainage/flooding/water quality control option for the Erskine Business Park is shown in Figure E6.10 - Erskine Business Park Drainage Works. Whole of life costs and ease of maintenance will be critical considerations in determining the form of the final drainage option.
- 3) There are two distinct sub-catchments within Erskine Business Park, identified generally as the "Western" catchment discharging into South Creek and the "Eastern" catchment discharging into Ropes Creek, both of which discharge into the greater South Creek Catchment.
- 4) The greater South Creek Catchment is subject to the criteria contained within *Sydney Regional Environmental Plan No. 20 – Hawkesbury – Nepean River (No. 2 – 1997)* and the Water Management Section of this Plan.

6.5.2 Western Catchment – South Creek

The western portion of the release area drains under Mamre Road, to the north of the Erskine Park Road intersection, and into South Creek. It is dominated by an old quarry site, which splits the catchment into northern and southern sub-catchments.

A. Controls

- 1) The Warragamba-Prospect Water Supply Pipeline traverses the southern sub-catchment from west to east and further subdivides it into two distinct catchments north and south of the pipeline.
- 2) The catchment south of the pipeline is located outside the boundary of Erskine Business Park. There are a number of partly formalised natural drainage lines, which drain this southern external catchment under the Water Supply Pipeline and into the Erskine Business Park. Existing flows entering from this southern external catchment are to be accommodated within the stormwater drainage infrastructure elements provided within the Erskine Business Park lands.
- 3) The crossings under the Water Supply Pipeline shall not be modified without prior approval from Penrith City Council and the Sydney Catchment Authority.
- 4) Major trunk drainage elements proposed for this western catchment are shown in Figure E6.10 – Erskine Business Park Drainage Works of this Section. Additional drainage infrastructure will be required to be provided upstream of these identified elements in conjunction with development of individual sites to achieve the desired stormwater management objectives.
- 5) This additional drainage infrastructure is to be constructed by the developer of the land concerned. Existing creek lines within areas of significant vegetation also form major trunk drainage functional elements and are not expected to be modified by development.

- 6) A proportion of flows from the land to the north of Erskine Park Road are to be directed into the proposed detention basin facility on the southern side of Erskine Park Road to ensure compliance with the appropriate stormwater management outcomes.
- 7) Should any development occur within the “south western” sub-catchment then all developments, within the sub-catchment, shall treat and attenuate their discharges on site to Council’s requirements.
- 8) The resultant flows shall be directed towards the north, along the eastern side of Mamre Road, into the detention basin/wetland treatment systems located adjacent to Erskine Park Road.
- 9) Only environmental flows, of appropriate quality, from any future development of the “south western” catchment, shall be directed across Mamre Road into the rural lands to the west.
- 10) All land identified by Council as performing a significant drainage function and where not specifically identified in the Contributions Plan, is to be covered by an appropriate “restriction as to user” as deemed applicable by Council, and created free of cost to Council.

6.5.3 Eastern Catchment – Ropes Creek

A. Background

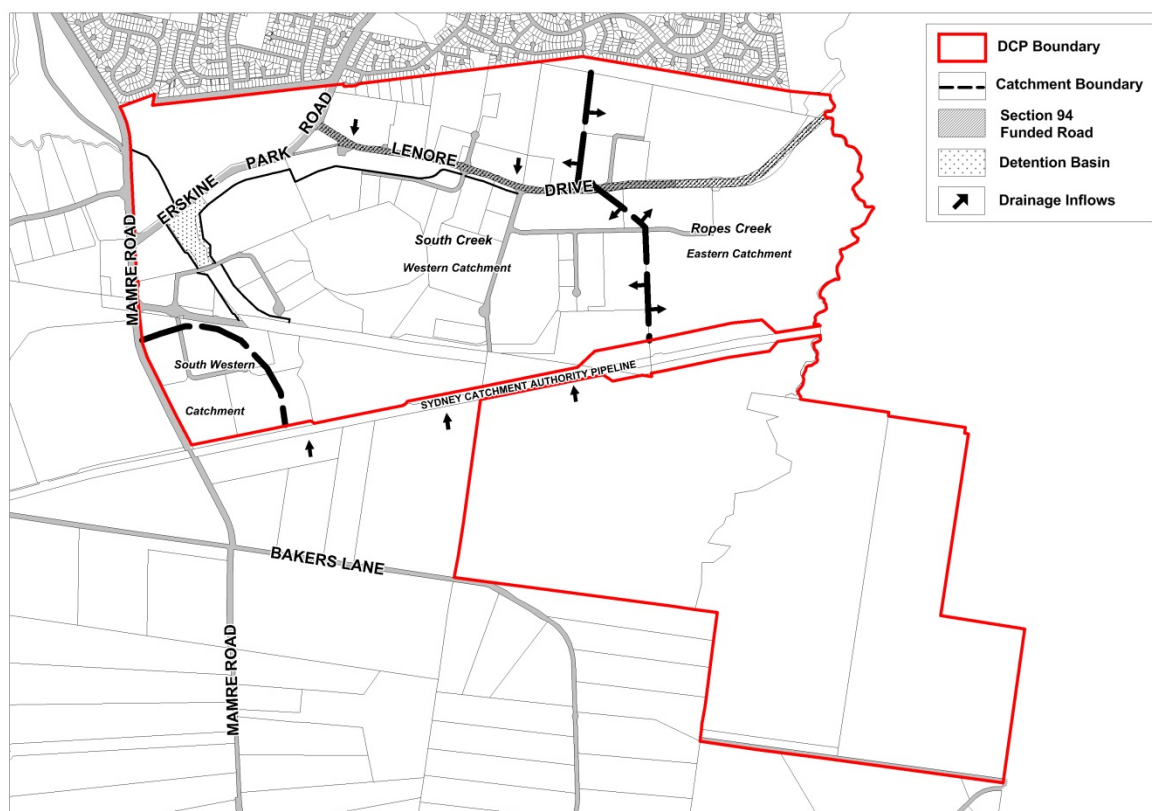
The eastern portion of the release area drains into Ropes Creek. A small section of this portion drains directly into Ropes Creek via a number of local swales, whilst the remainder of the catchment drains to an existing channel system located along the eastern side of the Erskine Park residential estate.

No trunk drainage channel elements have been identified in this catchment.

B. Controls

- 1) Development within the sub-catchment, which drains directly into Ropes Creek, will be required to direct its stormwater runoff into a detention basin facility. Special attention will need to be given to this aspect of the development during the subdivision design process.
- 2) Developments in this area will be required to design environmentally sensitive stormwater management solutions consistent with the constraints specific to the site.
- 3) All drainage infrastructure required in this catchment, shall be provided with the development of the land, at the developer’s cost.
- 4) Management of stormwater quantity and quality close to its source has the potential to limit the impact of major drainage works on the endangered vegetation throughout this area. Consequently, at-source, on-site controls are the preferred treatment strategy in this catchment and their implementation will be encouraged.
- 5) No regional water quality or water quantity controls have been identified in this Plan, however there will be a requirement for the runoff from the Eastern Catchment to conform to Council’s standard. This will be the responsibility of individual developers in that part of the estate. It is envisaged that these facilities will be provided near the Ropes Creek interface. There will be no levies associated with this Eastern Catchment.
- 6) The drainage solution shall include provision for water quality and quantity for all roads. This water quality/quantity system shall be clear of the 1 in 100 year flood line and biodiversity corridor.
- 7) Land identified by Council as performing a significant drainage function and where not specifically identified in that plan is to be covered by an appropriate “restriction as to user” as deemed by Council.

Figure E6.10: Erskine Business Park Drainage Works



6.6 Transport Network

A. Objectives

- To create a road network which enables a safe and efficient access for all users, while minimising through traffic on minor roads;
- To incorporate sustainable landscape and drainage opportunities in the design of the transport network;
- To encourage the use of efficient alternate transport, including public transport, bicycles, and pedestrians;
- To provide traffic facilities to give safe and efficient access to Mamre Road and Erskine Park Road;
- To provide for a future road link to the Westlink M7 and to provide all properties within this estate a direct connection to this link road;
- To minimise the number of road entry points to designated roads and the northern access road thereby allowing more efficient traffic management;
- To maintain the capacity of the State Arterial Roads (Erskine Park and Mamre) by minimising the number of access points; and
- To provide better connectivity between Erskine Business Park and other parts of WSEA.

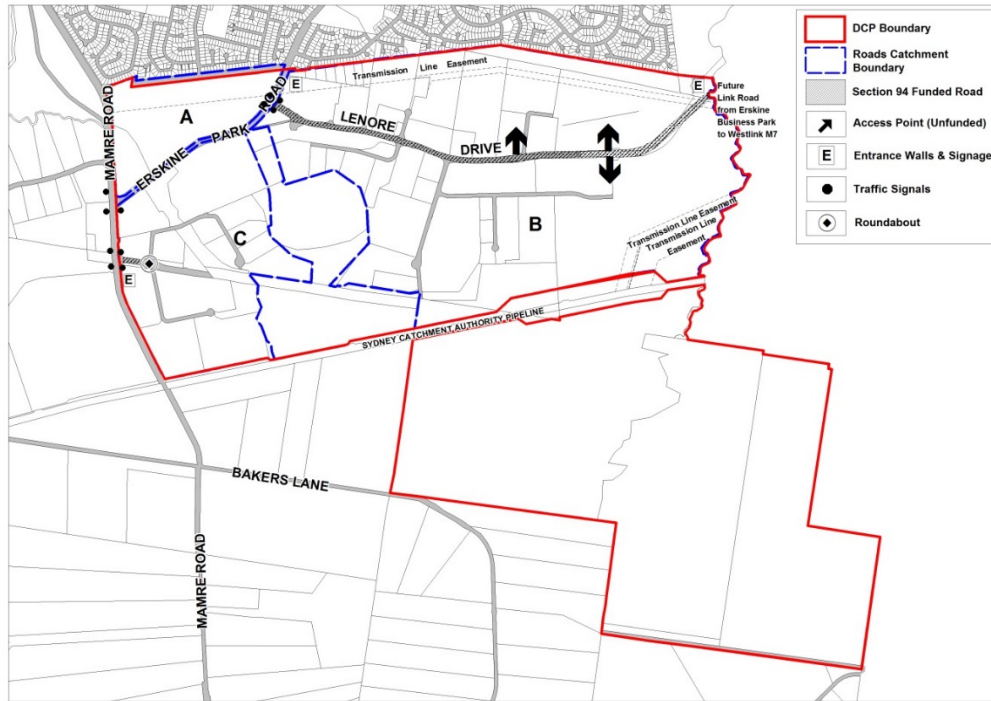
B. Controls

Internal Road System

- 1) The two main access roads to Erskine Business Park indicated in Figure E6.11 are:
 - a) Lenore Drive (Northern Access Road)
 - b) James Erskine Drive (Western Access Road)
- 2) Access Road.
- 3) The internal road system shall be provided in accordance with the principles and requirements set out below.
- 4) Access points shall be located so as to optimise safety, traffic flow and landscape opportunity. The Northern Access Road shall be access controlled such that:
 - a) **North of Northern Access Road (existing location of Lenore Drive):** Access to Lenore Drive will be limited to one access point per lot. Upon redevelopment, the access point for Lot 5A, DP162129 shall be combined with one of the adjoining lots.
 - b) **South of Northern Access Road:** Access to Lenore Drive shall be limited to the three points as shown on Figure E6.11 of this Section.
- 5) All parking shall be provided either on site or in centralised off-road locations.
- 6) Upgrading of Erskine Park Road and Mamre Road shall be undertaken to accommodate the increases in traffic generated by this development.
- 7) Direct vehicular access to Mamre Road shall only be permitted at the signalised intersections with Erskine Park Road and the James Erskine Drive. Direct vehicular access to Erskine Park Road shall only be permitted at the signalised intersection to Lenore Drive and at one combined intersection for the property north of Erskine Park Road and the eastern block for Lot 16 DP259146. No other direct vehicular access to these designated roads will be permitted.
- 8) All intersections within the internal road network shall incorporate traffic facilities, which promote safe and efficient traffic movement.
- 9) The proponent shall have regard to "Guide for Traffic Generating Development", Roads and Traffic Authority of NSW, October 2002.
- 10) Development shall, where appropriate, be designed to:
 - a) Allow all vehicles to either leave or enter the site in a forward direction;
 - b) Accommodate heavy vehicle parking and manoeuvring areas;
 - c) Avoid conflict with staff, customer and visitor vehicular movements; and
 - d) Ensure satisfactory and safe operation with the adjacent road system.
- 11) Full details of the volume, frequency and type of vehicle movements shall be submitted with the development application.
- 12) In general:
 - a) Turning circles will be required to be provided to accommodate the largest type of truck which could reasonably be expected to service the site.
 - b) All developments must be designed and operated so that a standard truck may complete a 3-point or semi-circular turn on the site without interfering with parked vehicles, buildings, landscaping or outdoor storage and work areas; and
 - c) Large-scale developments shall be designed to accommodate semi-trailers. In the case of the conversion of an existing development, should it appear that a truck turning circle may prove difficult; a practical demonstration may be required.

- 13) Council will assess the suitability of manoeuvring areas provided for large vehicles by reference to Australian Standard 2890 series.
- 14) Adequate space is to be provided within the site for the loading, unloading and fuelling (if applicable) of vehicles. These areas shall be screened from the road.

Figure E6.11: Erskine Business Park Traffic Works



6.7 Biodiversity

The Biodiversity Management Plan Erskine Park Employment Area, which identifies the Biodiversity Conservation Area, was devised by Council, Department of Planning and the Landowners to deliver a genuine balance between development and conservation to deliver dual outcomes of environmental protection and employment generation.

6.7.1 Biodiversity Conservation Area and Landscape Buffer

Figure E6.12 nominates the extent of the biodiversity conservation area/corridor to be conserved or managed for biodiversity purposes and the extent of the landscape buffer on Lot 11 DP229784, 576b Mamre Road, Erskine Park which has been replaced by a Landscape Buffer in accordance with a Major Project Approval issued by the Minister for Planning on 28 October 2009.

A. Objectives

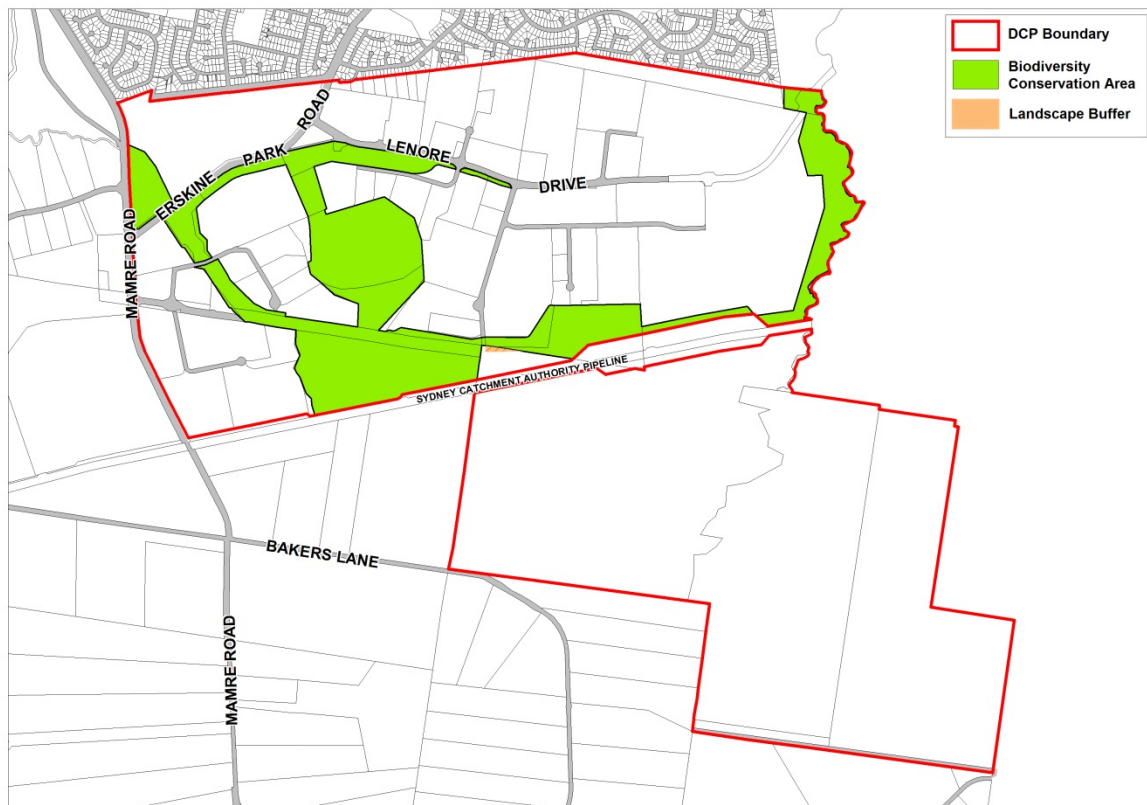
- a) To promote the conservation of urban bushland;
- b) To protect and preserve native vegetation and biological diversity in accordance with the principles of ecologically sustainable development;
- c) To retain native vegetation in parcels of a size and configuration which will enable the existing plant and animal communities to survive in the long term;
- d) To protect and enhance habitat for threatened species and endangered ecological communities;

- e) To provide a biodiversity corridor linking system linking remnant native vegetation across the site with the riparian biodiversity system within South Creek, the remnant native vegetation in Erskine Business Park and the Ropes Creek Riparian Biodiversity system; and
- f) To provide funding and management arrangements to enable the establishment of a biodiversity corridor and its ongoing maintenance.

B. Controls

- 1) No clearing of native vegetation shall occur within the Erskine Business Park Biodiversity Conservation Area and Landscape Buffer as outlined by Figure E6.12 – Biodiversity Conservation Area and Landscape Buffer.
- 2) No clearing of native vegetation shall occur within Erskine Business Park without the consent of Council.
- 3) Land located within the Biodiversity Conservation Area shall be managed in accordance with the endorsed Biodiversity Management Plan by Greening Australia or the land manager appointed by the Department of Planning and Environment.
- 4) A Landscape Management Plan is to be prepared to the satisfaction of Council for land located within the Landscape Buffer Area.

Figure E6.12: Biodiversity Conservation Area and Landscape Buffer



6.8 Landscaping

This section should be read in conjunction with the Landscape Design Section of this Plan.

6.8.1 Objectives

- a) To retain and enhance locally and regionally significant cultural and ecological values;
- b) To create a landscape character and amenity that is appropriate to the scale and nature of the development; and
- c) To develop an overall landscape character that is derived from natural and cultural landscape features contained within the site and immediate environs.

6.8.2 Controls

Removal of existing vegetation can result in a lower take up of water contributing to a rising ground water table and potential problems with salinity. Saline soils can damage roads, parking areas and buildings as well as ultimately causing scouring and effecting vegetation growth. Once soils have become saline it is virtually impossible to reverse the effects. Preservation of existing vegetation, particularly larger trees on ridgelines can help reduce or delay the impact of salinity. Existing trees are to be preserved wherever possible. The siting and layout of a development at the initial concept stage must consider the location of trees with a view to their preservation. Existing trees shall not be removed prior to the written consent of Council being obtained.

The existing vegetation to be retained must be protected from soil compaction, root, trunk and limb damage, soil contamination and changes in surface level that will affect the health of the specimen. Protection measures are to be installed prior to the commencement of any earthworks. A man-proof, sturdy and durable chain-wire fence of sufficient height shall be erected 1m beyond the dripline of each specimen for the full circumference of all vegetation to be protected.

6.9 Landscape Areas

6.9.1 Objectives

- a) To provide functional areas of planting that enhance the presentation of a building;
- b) To screen undesirable views;
- c) To reduce building energy consumption;
- d) To provide outdoor staff amenity facilities;
- e) To select tree species that are “low maintenance” planting to reduce the impact of green waste;
- f) To provide wildlife habitats; and
- g) To contribute to the overall character of the locality.

6.9.2 Controls

Selection and Use of Planting Material

- 1) A framework planting of endemic canopy and shrub species is to be established for all developments. This will enhance the sense of place for each development site. Consideration to be given to features such as bird attracting qualities, aromatic foliage and flowers, and habitat value as well as visual qualities, site suitability, and proximity to biodiversity corridors or areas. Habitat value is to be given high priority.
- 2) Smaller scale and less visually prominent planting may include species other than those endemic to the area. This will produce variety and interest in the landscape at this scale. This does not apply to development adjoining Biodiversity Areas or within or adjoining Biodiversity Corridors.
- 3) Property entrances may be highlighted with feature planting, and need not be limited to native or endemic species. No plant species shall be used on site that could become a weed within remnant bushland areas or creek lines.
- 4) Plant species should be carefully selected to meet service authority requirements in easement locations.
- 5) Plant material in car parks should be used to provide shade, ameliorate views of large expanses of paved areas and cars, and to identify entrances to car parks.
- 6) Trees providing shade in car parks should be given sufficient area for root development.
- 7) Narrow strips of landscaped area between an allotment boundary and building, or between parking areas and a building should be avoided.
- 8) Island planting beds should be interspersed throughout large parking areas. Planting should consist of ground covers, shrubs to 1m, shade producing and canopy species.
- 9) Plant material shall be a mix of super-advanced, advanced and normal nursery stock that will provide a quick effect especially in visually prominent areas. Larger plant sizes would be appropriate in some locations.

- 10) Groundcovers should be considered as a grass alternative in areas not specifically designed for pedestrian use.
- 11) Presentation of a building facade to the street should be complemented with appropriate enframing or screening vegetation. The visual impact of large expanses of wall should be reduced in scale by architectural treatment as well as by dense grove planting or other landscape design solutions.
- 12) Consideration should be given to solar access and energy conservation, with the appropriate use of deciduous trees.

6.9.3 Requirements

Hard Landscape Materials

- 1) Paving, structures and wall materials should complement the architectural style of buildings on the site and be of local origin where possible.
- 2) Materials should cause minimal detrimental visual impact, and the use of subtle coloured materials and block or brick paving is encouraged.

6.9.4 Requirements

Performance Standards and Maintenance

- 1) Landscape works are generally constructed at the completion of building works.
- 2) However, Council may require by way of conditions of development consent, that tree bonds be placed over existing significant trees on a proposed development site. Any such existing trees and all landscape works from the approved development should be maintained throughout the duration of the construction works and in perpetuity for the life of the development. The onus for satisfactory maintenance is on the applicant until the development has been completed and on the owner thereafter.
- 3) These requirements should be read in conjunction with the Landscape Design Section of this Plan.

6.9.5 Landscape Area Requirements

Landscape Setbacks for the Oakdale South Estate

- 1) The following minimum landscaped setbacks shall be applied at the Oakdale South Estate:

- (a) Southern Link Road: Average of 20m depth along the site frontage. 20m setback / 10m landscape.
- (b) Collector Road: 7.5m, or average of 50% of setback along the frontage
- (c) Local Estate Road: Average of 50% of setback along the frontage.
- (d) Side boundary: No minimum requirement.
- (e) Rear boundary: 2.5m
- f) Southern property boundary: perimeter landscape treatments along the 30m earth bund wall on the southern boundary of the OSE; and,

g) Eastern property boundary: a 10m wide landscape setback along the entire length of the eastern property boundary.

Figure E6.13: Landscaping for a large industrial site.

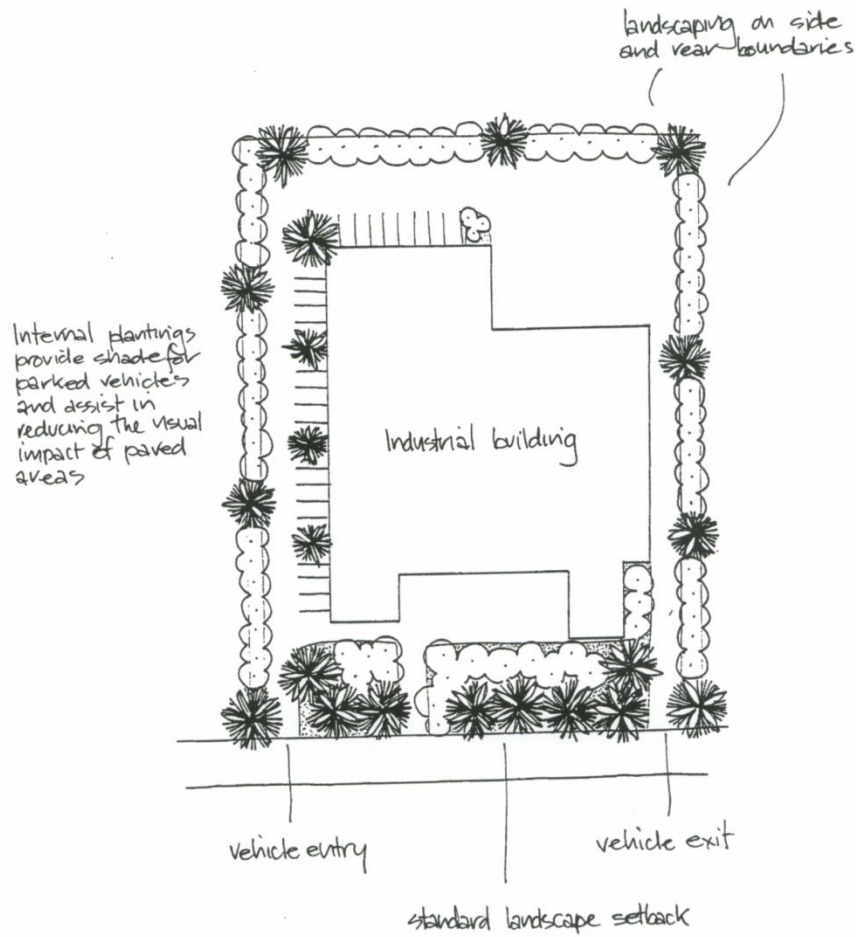
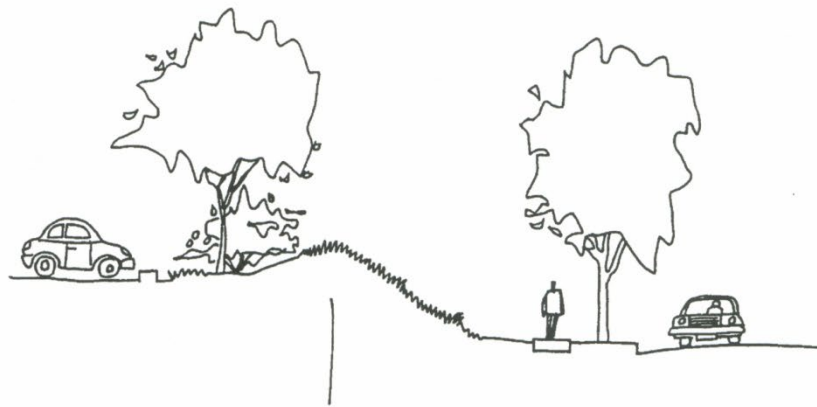
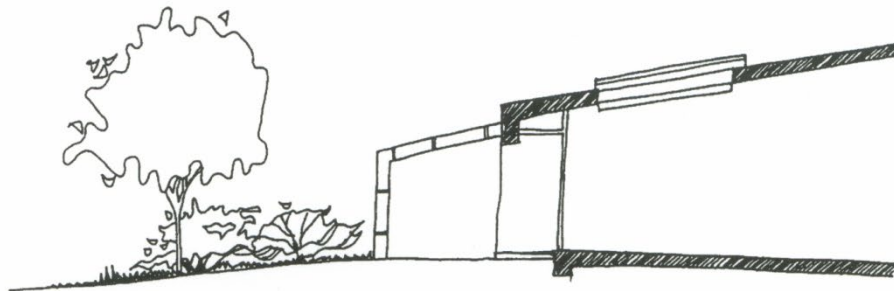


Figure E6.14: Landscaping concepts



The use of a landscaped mound provides a good visual screen for parking and outdoor storage areas.



Integration of built forms and landscaping can be achieved through the use of groundcovers & colonades

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Part A – Glenmore Park Stage 1

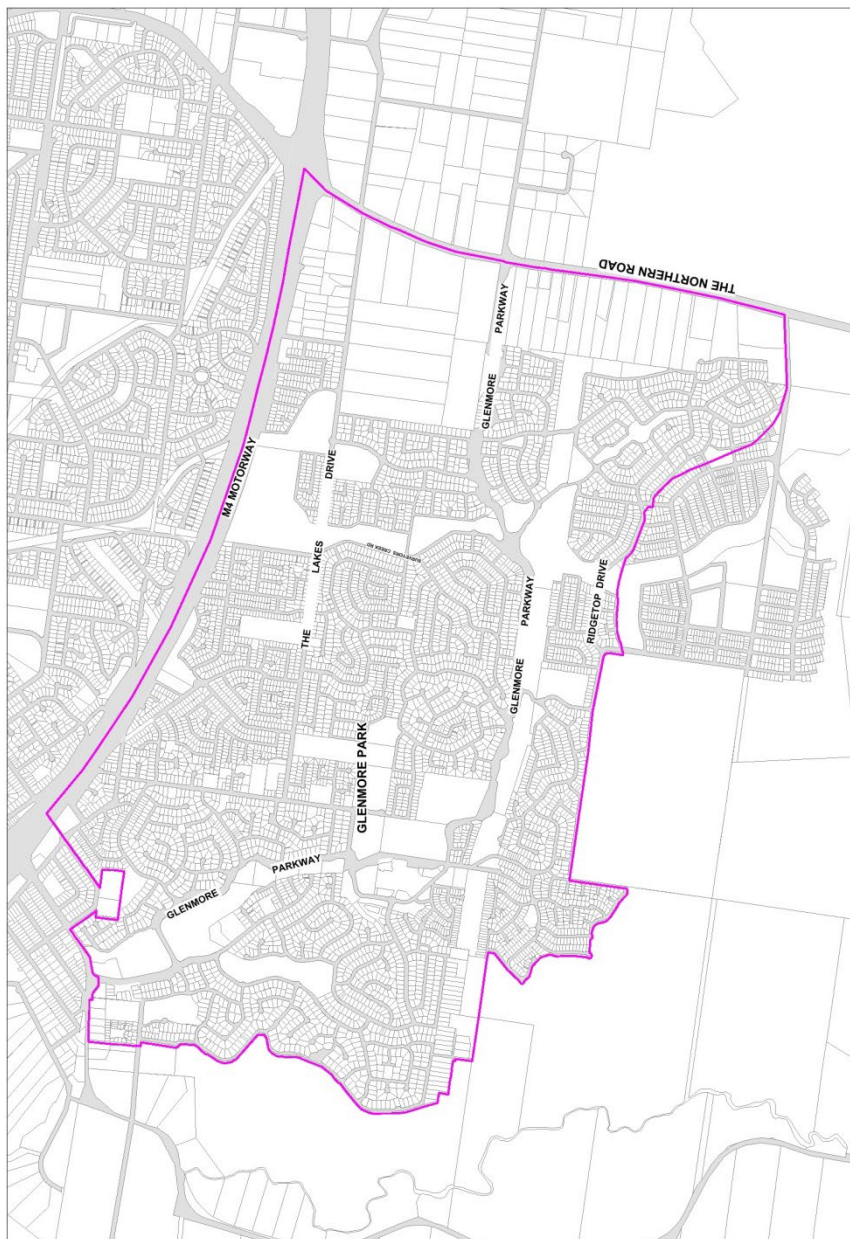
7.1 Preliminary

This Section relates to site specific controls within the Glenmore Park Area Stage 1 area to supplement the provisions of the Penrith LEP 2010.

7.1.1 Land to which this Part Applies

This Part applies to the land as shown on Figure E7.1 below.

Figure E7.1 Glenmore Park Stage 1



g) Protect and enhance the public domain.

The objectives of the controls for GPLC, in addition to the general objectives of the plan and other sections, are to create a community focus and to facilitate development that will:

- a) Provide for a range of retailing and community activities to primarily serve the Glenmore Park community's needs.
- b) Provide accessibility within the GPLC, connecting to activity nodes, public open space and surrounding residential areas.
- c) Encourage quality urban design and architectural excellence development within GPLC that creates an attractive, vibrant and distinctive centre.
- d) Encourage pedestrian and bicycle access and public transport through improved linkages and accessibility to the centre.
- e) Provide flexibility in the future planning of the centre to ensure that future development can be responsive to changes in market, consumer and planning considerations.
- f) Achieve an attractive and sustainable GPLC.
- g) Ensure the development of the GPLC is consistent with the desired future character as described in the following section.

7.2.2 Character of the Glenmore Park Local Centre

The main principles of the Glenmore Park Town Centre are:

- a) The desire for a Town Centre with a "heart".
- b) The Town Centre needs to have its own identity.
- c) The Town Centre is the hub or focus for the local Glenmore Park community
- d) Desire for a distinctive and proportioned, attractive, safe 'main street' character.
- e) Provide facilities sufficient to serve its residents.
- f) The Town Centre is a place to serve the entire community of Glenmore Park.

Importantly, however, the form and location of the development will change over time in response to changing needs. This Part of the Section responds to the growth and changing demands of Glenmore Park and its community over time.

While the centre is referred to as a "Local Centre" in the DCP, it is known as a "Town Centre" by the local community.

Town Terrace East/West Spine Road

Town Terrace east/west spine road is to provide an active shopping street. It will function as the town centre's "Main Street" providing a convenience to shoppers, in a setting that provides for both retail/commercial services.

Town Terrace East West Spine Road will be abbreviated *Main Street* within this part of this Section and should be treated as a pedestrian priority zone.

Town Square

The Town Square is to be the primary urban public focal point of the GPLC. It is to be a vibrant, active town square with links to both business as well as community facilities. The Town Square should be a pedestrian zone characterised by activity around its perimeter, pleasant micro climate including weather protection at its edges, comfortable seating with distinctive landscaping and public artwork, access to food and toilets and be conveniently located for as many people as possible. Its design needs to be flexible enough to

accommodate special community events with or without closing the vehicular traffic or disrupting the dominant existing pedestrian flows and paths.

Existing Community Centre

The existing community centre is to be integrated into the GPLC through improved pedestrian amenity along the east/west Main Street and by improving entry points to the Community Centre.

The treatment of the interim space between the Community Centre and future development adjacent to it is to be an attractive area that may incorporate landscaping with good active surveillance. Vehicular car parking either undercroft or at grade will not be allowed.

Demarcating Public and Private Spaces

Planning for the development of the Local Centre needs to clearly differentiate between “public spaces” and “publicly accessible private spaces”. Future development of the centre is to provide a public street or Main Street which is open to the public at all times. Conversely, the centre is also expected to incorporate internal malls (including the existing mall) that will be publicly accessible at times when the centre is operating.

Arcades, laneways and terraces though privately owned are to be perceived as part of the public network. Redevelopment is to ensure good accessibility, connectivity and design continuity within the GPLC and reinforce the sense of these spaces being part of the perceived public realm.

Gateways

The current GPLC lacks identifiable gateways. Redevelopment will need to address this aspect of the GPLC by providing welcoming, visually interesting and unique responses at the entrances by a combination of landscape, built form and artwork. Additionally, the gateways will be designed to calm traffic movements, allow safe pedestrian or cyclist movement and provide necessary systems of *way finding* graphics in order to make sense of accessing and parking within the centre.

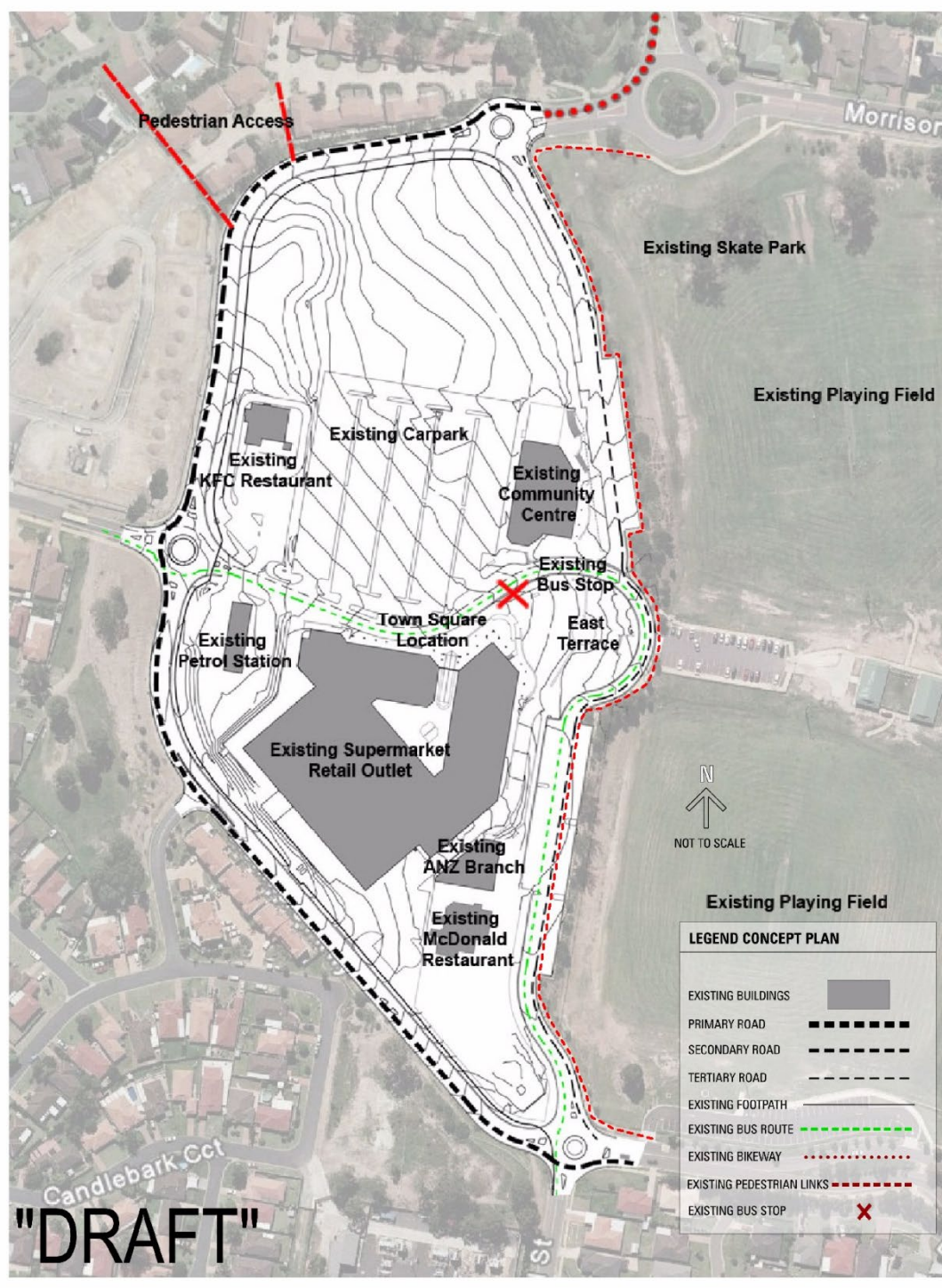
7.2.3 Urban Context

The GPLC represents an important focal point in the local community. Key characteristics include:

- a) The site connects to Glenmore Parkway, the primary arterial vehicle route through the precinct.
- b) Glenmore Parkway also provides a bus route through the local area with a bus stop located on the western side of the centre.
- c) Luttrell Street provides a secondary road adjacent to the playing fields linking into the Main Street.
- d) Urban residential development surrounds the GPLC to the south, west and north, with the playing fields and a school overlooking the GPLC to the east.
- e) There are existing points of pedestrian paths and connections from the residential precincts as well as from the reserve to the east. A pedestrian path exists to the north east across Glenmore Parkway.

Some of these characteristics are shown in Figure E7.3: The Context Plan.

Figure E7.3 Context Plan



7.2.4 Land Use Controls

A. Background

A Concept Plan, providing a vision for the future evolution of the centre has been prepared. The Concept Plan is shown in Figure E7.4. The main features of the GPLC include:

- a) An east/west spinal Main street connection to Luttrell Street/Town Terrace and Glenmore Parkway.
- b) A Town Square in the centre of the east / west Main Street.
- c) An extension of the existing arcade axis to the north of Main street/Town Square within any proposed development.
- d) Two to three storey developments in key locations in the centre.
- e) A mix of retail, commercial and community uses supermarkets, speciality retail, service retail, office premises and community centre.
- f) Provide opportunity for office premises and residential above ground level.
- g) Designated at grade and underground parking areas.

B. Objectives

- a) To encourage a variety of uses in the GPLC;
- b) To create lively streets and public spaces in the Town Centre; and
- c) To enhance public safety by increasing activity in the public domain on week nights and weekends.

C. Controls

- 1) This section allows flexibility for the location of uses, except as follows:
 - a) Development along the Main Street and the Town Square should have active retail premises on the ground floor such as café, restaurants and shop fronts.
 - b) Development along the Luttrell Street frontage should, where possible, be used for community services, offices and retail purposes to activate Luttrell Street.
 - c) Future land uses on the site are to complement and extend the range of the existing activities within the centre.
 - d) The Main street is to be primarily a high quality vibrant pedestrian oriented street, which allows for local access to both public transport options, taxis, cyclists as well as a limited amount of short term parking for shoppers on both sides of the street.

Figure E7.4 – Concept Plan for site



7.2.5 Built Form Controls

7.2.5.1 Background

The GPLC will continue to evolve and expand over time to provide retail services to the whole of the Glenmore Park community. The development provisions in this Section of the DCP are intended to encourage high quality design for not just new development, but to encourage improvements to the existing town centre. The resulting built form and character

of new development should contribute to an attractive public domain and produce a desirable setting for its intended uses.

Future development should aim to retain the local atmosphere that is characterised by:

- a) A diversity of retail, commercial and community services.
- b) A small scale, safe, compact environment.
- c) An attractive social focus.
- d) Convenient and safe access for pedestrian, cyclists, public transport/taxis and motor vehicles.

7.2.5.2 Objectives

In addition to the general objectives of this Part, the controls in this section aim to:

- a) Establish an appropriate scale, bulk and form of buildings.
- b) Achieve active street frontages where appropriate.
- c) Provide for pedestrian comfort and protection from weather conditions.
- d) Define the public domain area and make these accessible.
- e) Ensure that new development makes a positive contribution to the streetscape or public domain.
- f) Encourage high quality architectural and innovative design for all buildings and ensure that there is a comprehensive suite of street furniture elements to compliment the architecture.
- g) Encourage use of quality and durable materials.
- h) Provide for quality public domain to contribute to the amenity of the town centre and a sustainable urban environment.
- i) Ensure the design of buildings considers the surrounding residential amenity and responds accordingly to the amenity of the surrounding residential precinct without reducing the quality of that existing amenity.

7.2.5.3 Street Setbacks and Building Alignment

A. Background

Street setbacks and building alignments establish the front building line and reinforce the spatial definition of streets. They contribute to the public domain by enhancing streetscape character and the continuity of street facades. Setbacks also allow for improved ventilation, daylight and solar access and increased privacy.

B. Objectives

- a) To achieve a consistent definition of the public domain and street edge.
- b) To provide street setbacks appropriate to building function and character.
- c) To locate active uses closer to pedestrian activity areas.
- d) To maintain solar access to the public domain, particularly during the critical mid-winter lunch time periods of 12pm to 2pm.
- e) To ensure an appropriate interface with adjoining land uses.

- f) Allow for and assist in defining street landscape character where appropriate.
- g) Ensure any new development provides building separation to achieve the above objectives.
- h) Reduce the apparent bulk and scale of buildings by breaking up expanses of building facades with modulation of form, variation of setback, modulation of window and a range of other architectural design means.

C. Controls

- 1) Setbacks are to be generally consistent with those shown in Figure E7.5. Architectural features and other projections such as car park ramps which may encroach into this setback area are subject to appropriate design guidance by council officers and assessment.
- 2) Glenmore Parkway should have a minimum 3m setback to be consistent with the existing setback with a minimum average setback of 6m.
- 3) Luttrell Street should have a variable setback with a minimum zero setback to create an active edge, where appropriate.
- 4) Buildings along the Main Street and in the Town Square should be constructed to the front street alignment to create an active edge.
- 5) Long continuous walls and facades are to be avoided. All walls, particularly those addressing the peripheral road boundary, are to incorporate architectural design treatments to reduce the visual mass and bulk.
- 6) Development must demonstrate that it does not adversely impact on the adjoining community centre. Figure E7.6 illustrates the relationship of new buildings located to the rear of the community centre.

Figure E7.5 – Specific Street alignment and building setback diagram(s)

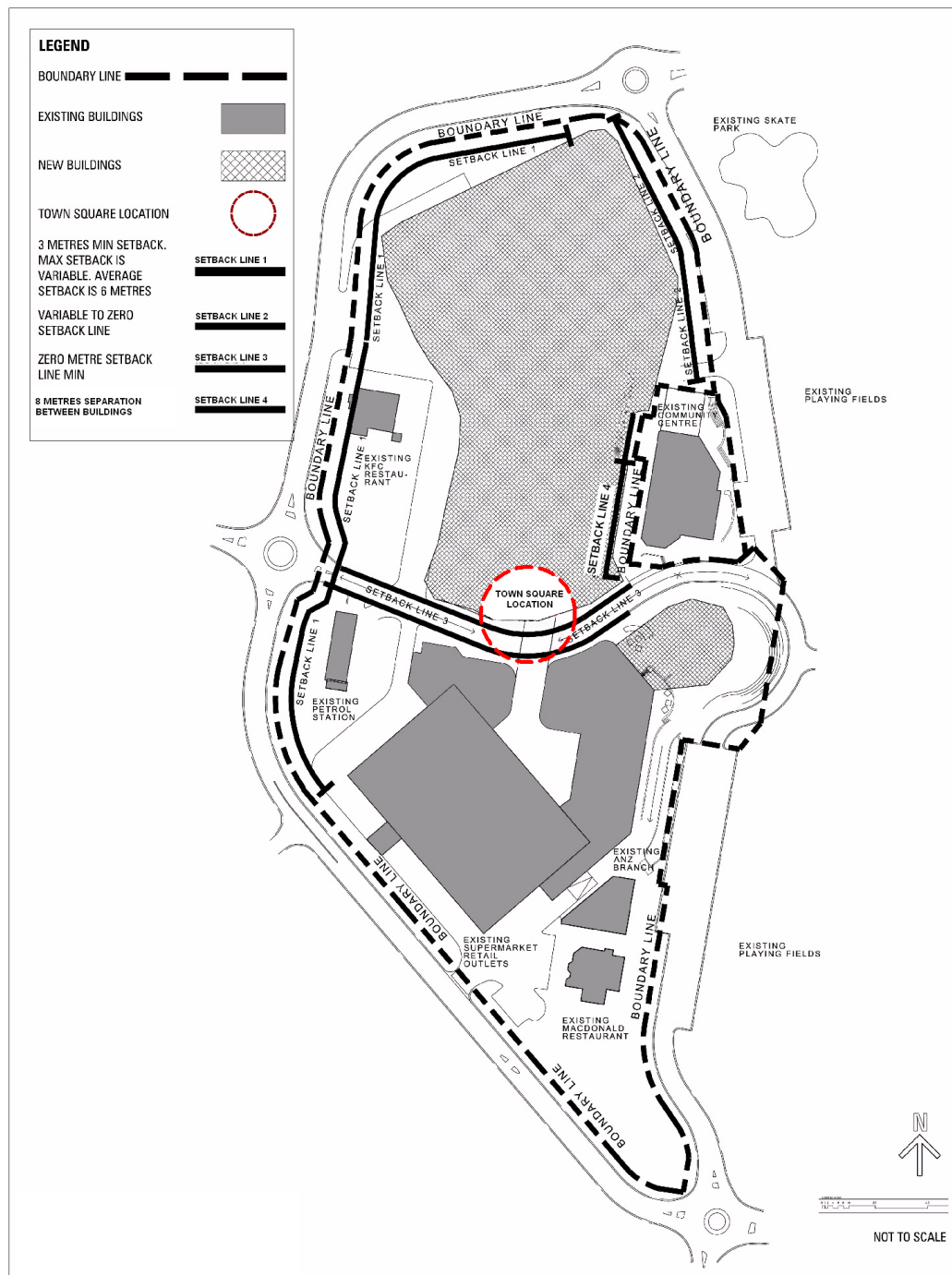
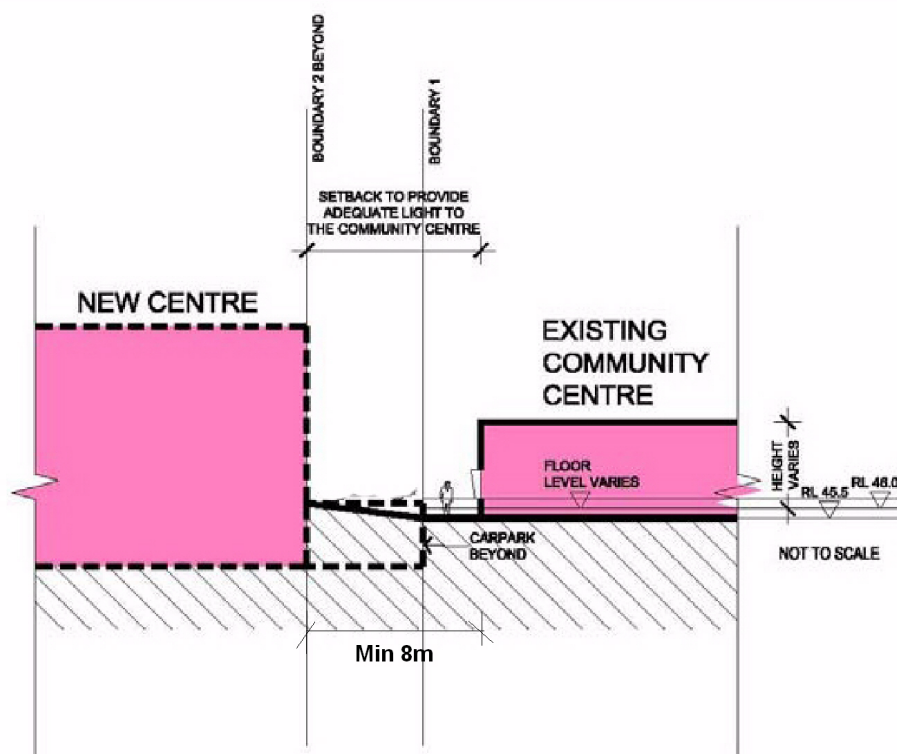


Figure E7.6 – Section between rear of community centre and development



7.2.5.4 Building Height Controls

A. Background

Building heights is an important characteristic of a town centre. Heights specified in this section will ensure future development will create a sense of place, streetscapes that respond positively to human proportions and will reflect the role of the GPLC.

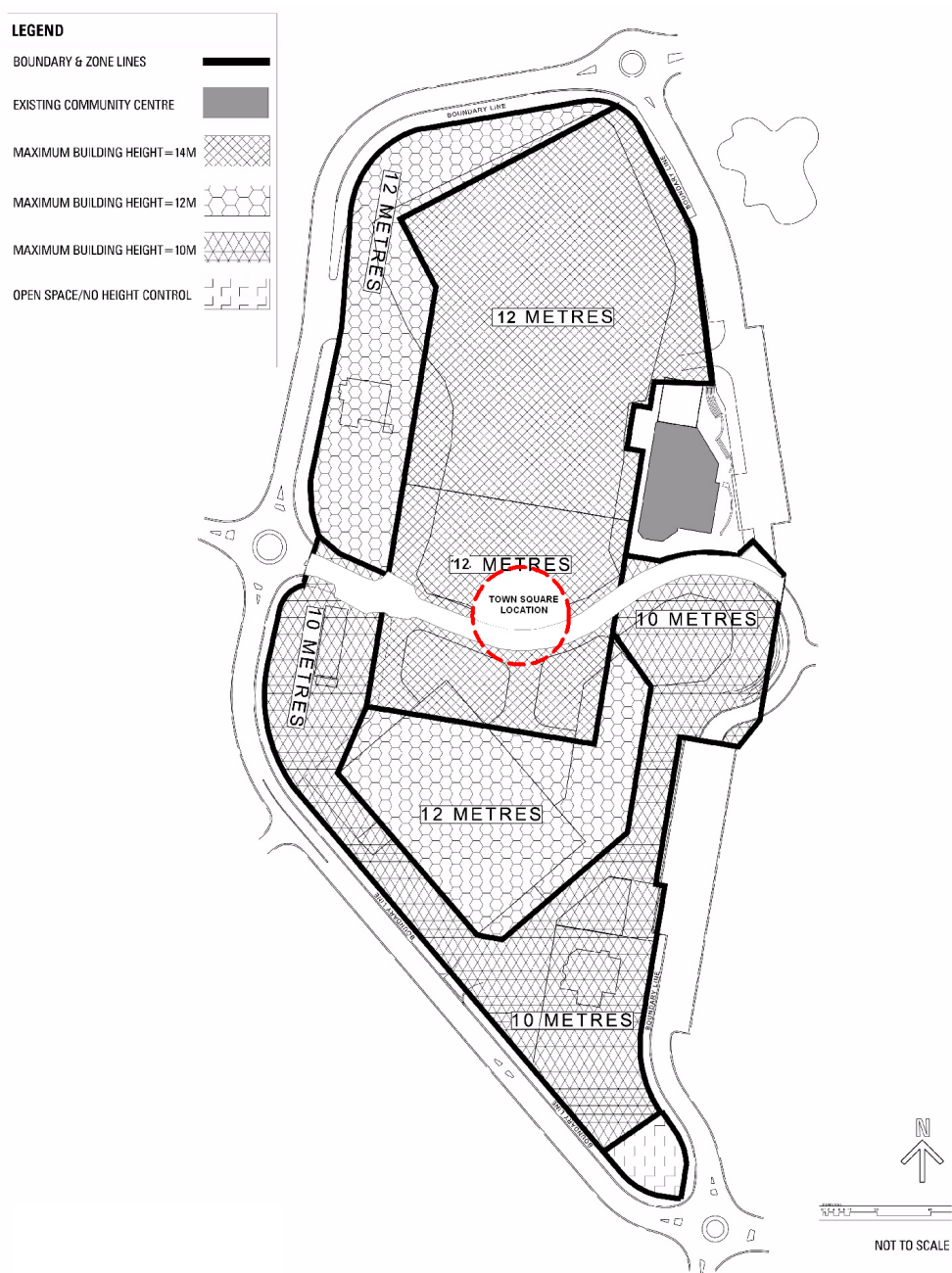
B. Objectives

- To provide for maximum height controls acknowledging the varying site topography, orientation and surrounding land uses.
- To ensure an appropriate scale relationship between new development and street width, local context, adjacent building and public domain.
- To achieve comfortable street environments for pedestrians in terms of daylight, solar penetration, scale, sense of enclosure and wind mitigation as well as a healthy environment for street trees and/or other landscape elements together with public art work, where appropriate.
- To allow sunlight to significant public spaces in the town centre particularly during critical times.
- To ensure appropriate management of overshadowing, access to sunlight and privacy.

C. Controls

- 1) New buildings should comply with the relevant maximum heights as shown on Figure E7.7.
- 2) Other building elements including plant or roof top treatment, may exceed the height controls provided that the consent authority is satisfied that the specific elements either represents a positive addition to the streetscape or the element won't be visible from the public realm and/or is generally screened from view from the street level within the public domain.
- 3) Proposals for buildings that exceed the specified heights must demonstrate through an urban design analysis that the built form outcomes will be consistent with the built form objectives of this Section of the DCP.

Figure E7.7 – Height diagram



7.2.5.5 Building Exteriors

A. Background

The character of GPLC is defined by the massing and articulation of building forms and its streetscapes. The surrounding topography accommodates views and vistas to the centre particularly from the adjoining eastern ridge. As such the visual character of the centre needs to present a varied harmonic address at ground level as well its roofscape. Building exteriors contribute to the character and quality of the public domain. Furthermore, building exteriors are able to accommodate active uses and displays usually at street/ground level that directly contribute to a healthy visually stimulating, vibrant urban setting.

B. Objectives

- a) To ensure that new development buildings make a positive contribution to the streetscape or public domain.
- b) To encourage quality architectural design for all buildings.
- c) To encourage use of quality and durable materials.
- d) Clearly define the adjoining streets, street corners and public spaces and avoid ambiguous external spaces with poor pedestrian amenity and security.
- e) Maintain a pedestrian scale in the articulation and detailing of the lower levels of the building.
- f) Provide appropriate design responses to nearby development.
- g) Achieve an articulation and finish of building exteriors that contribute to design excellence.
- h) Ensure that the roofscape is considered as a design element and its appearance and form is of a high standard and does not distract from the visual amenity within the GPLC.

C. Controls

- 1) Articulate exterior facades to provide visual interest.
- 2) External walls should be constructed of high quality and durable materials and finishes.
- 3) To assist articulation and visual interest, avoid large expanses of any single material.
- 4) Maximise glazing for retail uses but break glazing into modulated rhythmic sections to avoid long expanses of glass.
- 5) Ensure that reflections from building materials that may negatively impact on the surrounding residential precinct's amenity are avoided.
- 6) Encourage the use of display windows that are regularly rearranged/ designed during afterhours and evening time.
- 7) Long continuous walls are to incorporate design treatments to reduce the visual mass and bulk by a variety of architectural and design treatments including landscaping.
- 8) Rooftop plant and equipment are to be integrated into building/roof forms or screened in a manner compatible with the building design and to minimise visual and acoustic impacts.
- 9) Roof forms are to be visually interesting, well-proportioned and consist of good quality, non-reflective, neutral toned and coloured material.

7.2.5.6 Interface with Residential Areas

A. Background

To the north and west of the GPLC are residential areas, requiring visual, acoustic and amenity consideration.

B. Objectives

- a) To ensure that the design of development acknowledges the amenity of surrounding residential properties.
- b) To ensure that vehicular services areas (including loading/unloading areas) and vehicular accessways are integrated within the development.
- c) To avoid vehicular egresses that have an impact on existing vehicular traffic flows and impact negatively on the pedestrian amenity of the public realm.
- d) To effectively manage the visual and acoustic impact of loading dock and back of house activities.

C. Controls

- 1) New development of the site must not significantly diminish the amenity of residents on Glenmore Parkway.
- 2) Loading/unloading areas and access to underground parking should be designed to minimise noise and amenity impacts on adjacent residents.
- 3) Loading/unloading areas are to be integrated into the design of the development with consideration of visual and landscaping screening as appropriate.
- 4) Provide quality architectural treatment to all external sides of the site.
- 5) Where vehicular service areas are above ground, implement noise reducing design elements, e.g. solid berm earth walls and /or acoustic wall panels.

7.2.5.7 Landscape Design

A. Background

Good landscaping provides breathing space, passive and active recreational opportunities and enhances air quality along with other environmental benefits.

GPLC has limited opportunity for landscaped open spaces. However, its main street, town square, laneways retail arcades need to respond positively in adding appropriate landscape elements. The design of public spaces in the centre should incorporate landscape elements and street furniture, contributing to the overall public amenity within the town centre.

Placement and species of tree types within the public realm will need to respond to seasonal solar penetration.

B. Objectives

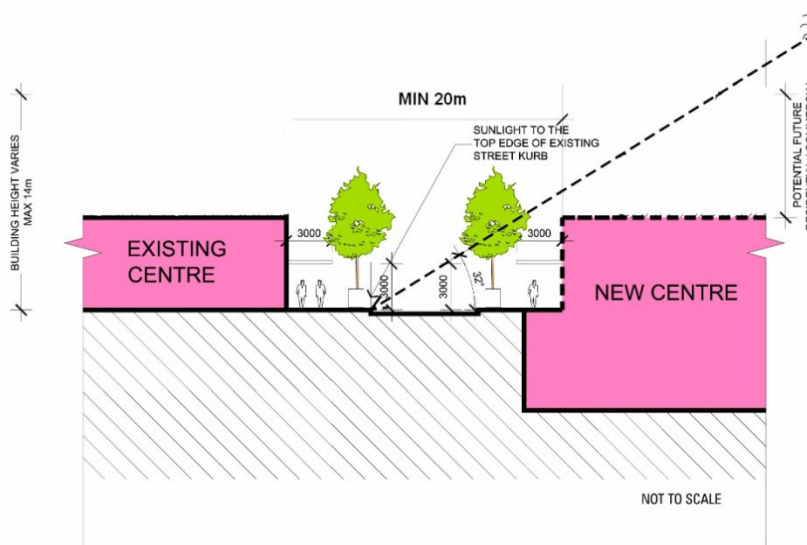
- a) To introduce landscaping and trees around perimeter to soften views to the site and reduce scale.
- b) To ensure that the use of potable water for landscaping irrigation is minimised.
- c) To ensure landscaping is integrated into the whole Glenmore Park Local Centre.

- d) To visually define and promote attractive public spaces by use of landscaping association with other design elements, street furniture, artwork etc.

C. Controls

- 1) New development along all external boundaries shall incorporate landscaping that screens or softens building elements and spaces from the surrounding residential precincts.
- 2) Landscaping treatments along with improved pedestrian amenity shall be integrated into the design of new entry points and gateways from the surrounding street network to the town centre.
- 3) Recycled and re-used water should, where possible, be used to irrigate new landscaped areas.
- 4) The use of plants with low water consumption characteristics is encouraged.
- 5) Street furniture and other public domain elements are integrated into the design of all public spaces and may include:
 - a) Seats
 - b) Litter bins
 - c) Lighting
 - d) Street and information signs
 - e) Bicycle racks
 - f) Planter boxes
 - g) Other items suitable to the function of each public space
 - h) Shade structures
 - i) Awnings
 - j) Water features
 - k) Public art
- 6) Provide deep soil zones for landscape areas.
- 7) Landscape is integrated with public and street lighting to not diminish the effectiveness of existing lighting.
- 8) Minimise changes in level and enhance access for those who may be disabled.
- 9) Embrace Universal design initiatives.
- 10) Ensure landscape enhances views and vistas to and from the town centre's open spaces contributing to passive surveillance and providing visual vitality to the overall streetscape.
- 11) The width of the main street (east-west link) is to be in accordance with Figure E7.8.

Figure E7.8 – Streetscape East/West Link



7.2.5.8 Public Domain

Pedestrian amenity incorporates all elements of individual developments that directly affect the quality and character of the public domain. The pedestrian amenity provisions are intended to achieve quality urban design and pedestrian comfort in the public spaces of the centre. The public gather spaces/places within the town centre must be attractive to all ages including both the very young as well as the elderly residents/visitors.

The controls in this section aim to increase vitality, safety, security, attractiveness and amenity of the public domain.

1) Pedestrian Amenity and Weather Protection

A. Background

Awnings and weather protection elements increases the suitability and amenity of public footpaths by protecting pedestrians from all weather conditions. They encourage pedestrian activity along streets and in conjunction with active edges such as retail frontages (cafes etc.), support and enhance the vibrancy of the local area. Awnings also provide architectural continuity and contribute to the streetscape.

Connecting the shoppers/retail visitors of the centre to the underground concealed car parking needs careful design consideration. It is envisaged that there will be alternative routes both covered and partially covered that allow shoppers to access underground car parking from either side of the Main Street. The Main Street will remain uncovered.

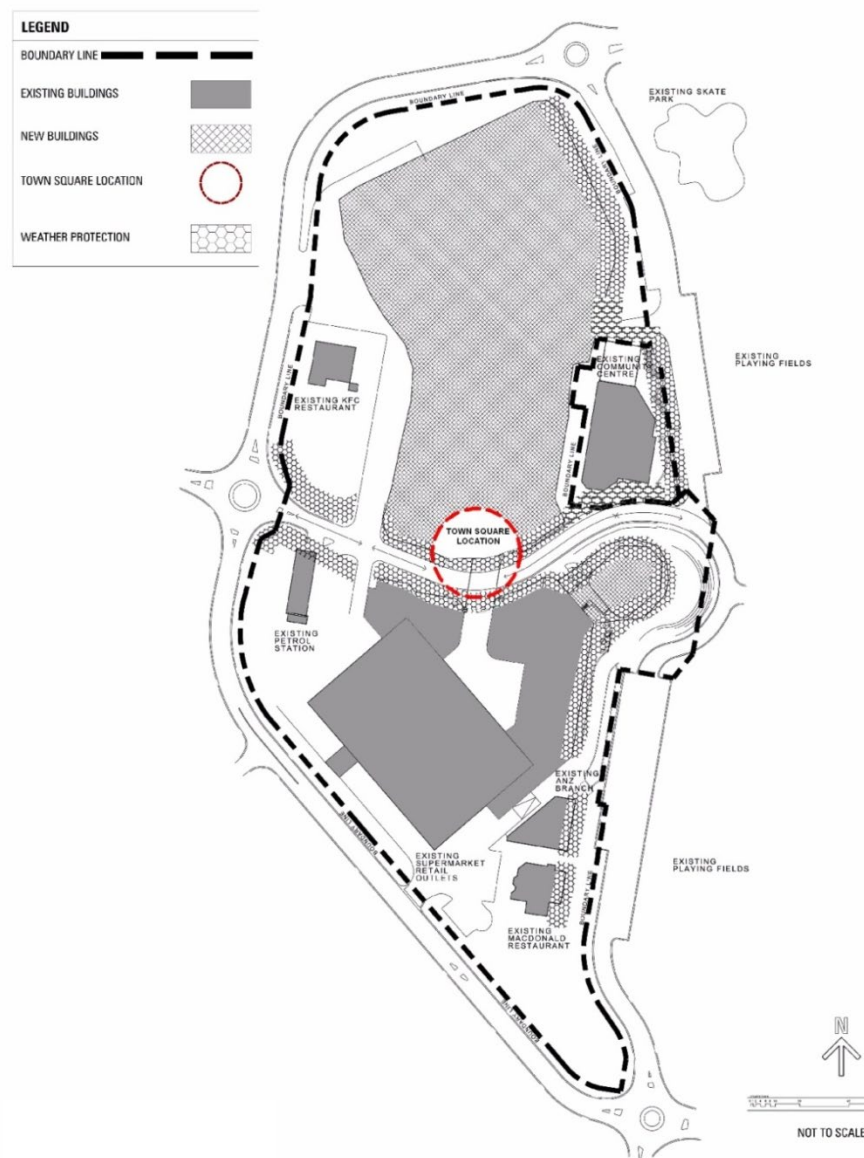
B. Objectives

- To provide shelter from wind, rain and sun for streets where most pedestrian activity occurs.
- To provide a visually integrated streetscape.
- To provide pedestrian convenience and amenity from existing centre to new centre via alternative covered routes to connect to the underground parking area without covering or roofing over the Main street.

C. Controls

- 1) Weather protection is to be provided for all new development as indicated in Figure E7.9.
- 2) The design of new development should consider where practical, the ability to incorporate weather protection measures from the existing centre to new centre and underground parking.
- 3) Weather protection must be consistent in appearance and relate to new or existing building facades.
- 4) Provide under awning lighting to facilitate night use and to improve public safety.

Figure E7.9 Weather Protection East West Link



2) Pedestrian Access and Mobility

A. Background

Any new development must be designed to ensure that safe and accessible access is provided to all people. Additionally, pathways are to have clear sightlines and be flanked, where possible, by active uses.

B. Objectives

- a) To ensure that people who visit the centre are able to access and use all spaces, services and facilities through the creation of barrier free environment in all public spaces, in particular the Main Street as well as arcades and retail streets.
- b) To provide a safe and easy access to buildings to enable better use and enjoyment by people regardless of age and physical condition, whilst also contributing to the vitality, diversity and vibrancy of the public domain.
- c) To maintain and enhance, where possible, connections to the centre by public transport, as shown in Figure E7.3.
- d) To provide services that support the needs of mobility impaired persons.

C. Controls

- 1) The design and provisions of facilities for accessibility including car parking must comply with Australian Standards AS1428.
- 2) The development is to provide at least one main pedestrian entrance with convenient barrier free access to the ground floor and/or street level.
- 3) The development must provide visually distinctive accessible internal access, linking to building entry points and the public domain.
- 4) Pedestrian access ways, entry paths and lobbies must use durable materials commensurate with the standard of the adjoining public domain (street) with appropriate slip resistant materials, tactile surfaces and contrasting colours and comply with the relevant Australian Standard.
- 5) Pedestrian pathways are to accommodate adequate lighting and consistent style of way finding signage/graphics.
- 6) Future development must maintain safe and unimpeded paths of travel from bus stops and existing pedestrian links and crossovers to the site.
- 7) Any new development proposing basement car park shall make provision to connect the proposed and existing development.

Permeability

A. Background

Through site links provide access connections between the long sides of street blocks for pedestrian and vehicular access at street level. These links provide an important permeability function in form of shared zone, arcades and pedestrian ways.

The town centre through site links should form an integrated pedestrian network providing choice of routes at ground level for pedestrians. Where level change is unavoidable, ramps and/or mechanised access such as lifts, travelators etc. connecting to basement car parks, need to be considered.

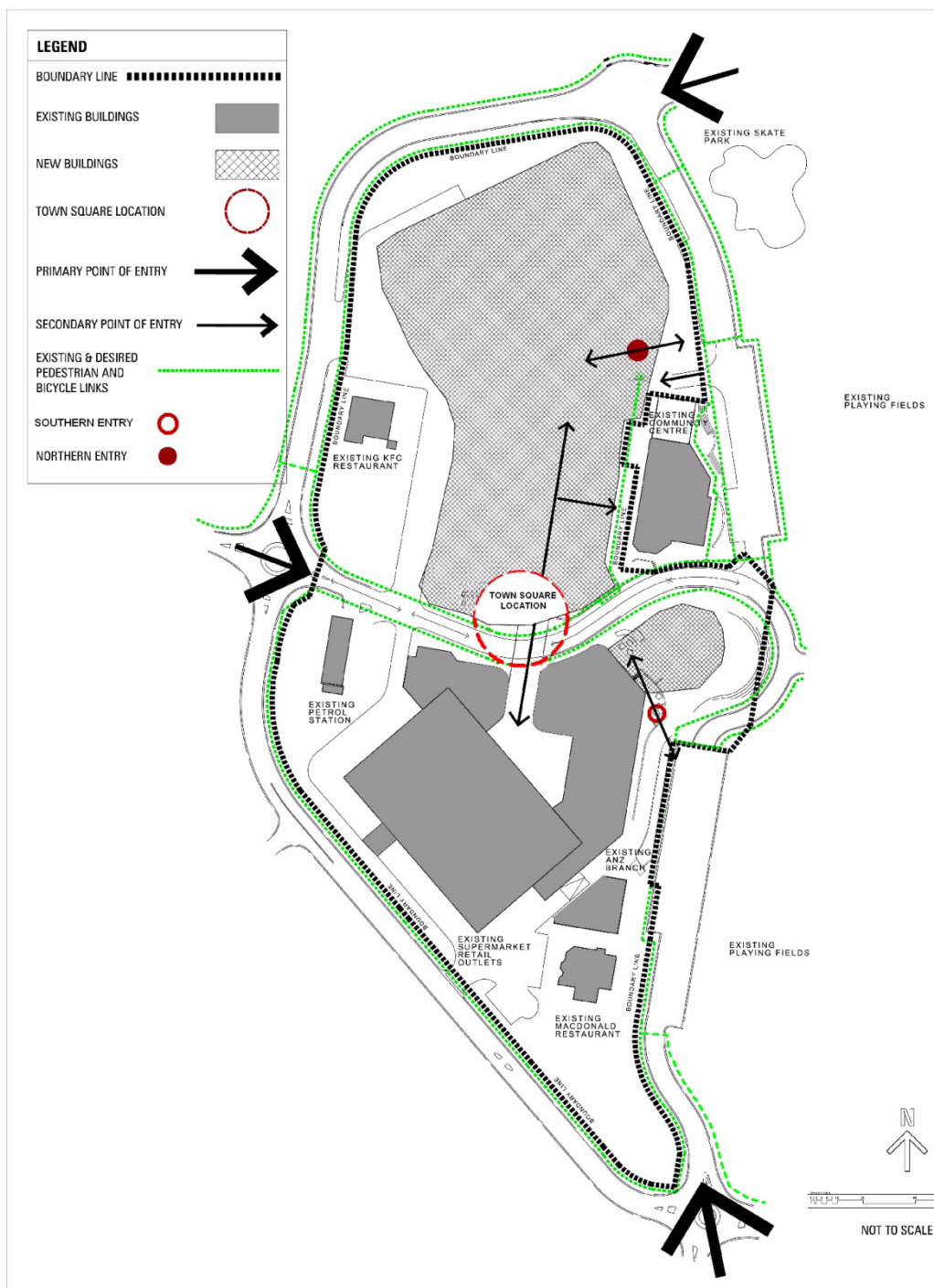
B. Objectives

- a) To maximise accessibility and permeability through the site within the constraints of the new development and the operational requirements of the centre.
- b) To maintain current access to and from the centre or create new links as redevelopment occurs.
- c) Use opportunities to improve existing links for better connectivity to the town centre.
- d) To encourage active street format, where appropriate, along the length of the Main street.
- e) To provide for pedestrian amenity and safety.
- f) To connect the internal mall to key entrance points to those clearly identified.
- g) To create a new northern address that activates and creates an arrival point for the centre to draw people along Luttrell Street.
- h) To retain unrestricted access to both the Main Street spine road and town square at all times except for agreed community events.

C. Controls

- 1) Through site links are to be provided as indicated in Figure E7.10.
- 2) New through site links should connect to existing through site links, arcades and pedestrian ways, where possible.
- 3) Comprehensive way finding signage is to be provided throughout the site.
- 4) Designated pedestrian routes are to be well designed incorporating the following elements, natural and artificial lighting, seating and other street furniture appropriate for public use.
- 5) All entry points should be clearly visible from primary street frontages and enhanced as appropriate with awnings, building signage or high quality architectural features that improve clarity of building address and contribute to visitor and occupant amenity.
- 6) Provide safe and legible pedestrian access to and from car park.
- 7) Future development is to provide safe pedestrian movement through the car park to the centre.
- 8) New development along Luttrell Street (eastern) frontage to incorporate pedestrian links to the site in accordance with Figure E7.10.
- 9) Improve existing links along the eastern terrace south of Main Street through to Luttrell Street.

Figure E7.10 – Existing and Desired Pedestrian Links



3) Active Street Frontages and Address

A. Background

Active street frontages promote an interesting and safe pedestrian environment. Busy pedestrian areas (such as shops, cafes, offices, etc.) that offer direct physical engagement with the public space create the most active street frontage.

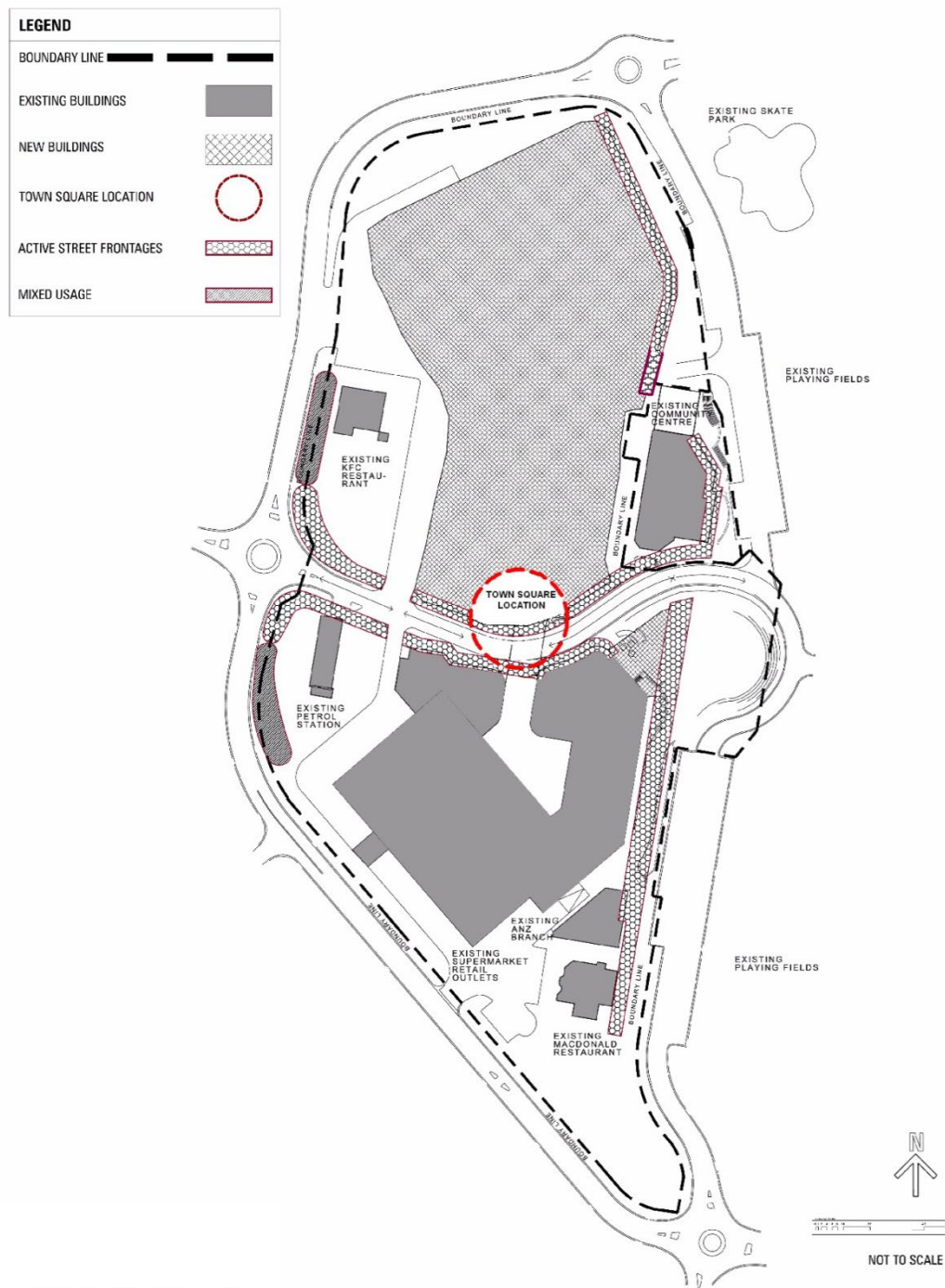
B. Objectives

- a) To promote pedestrian activity and safety in the public domain.
- b) To maximise active street frontages to the site.
- c) Promote shop front displays or encourage outdoor dining that externalise the buildings both night and day.

C. Controls

- 1) Active frontage uses are defined as one or a combination of the following at street level:
 - a) Entrance to a retail premises.
 - b) Shop front.
 - c) Glazed entrance to an active commercial premises located on the ground floor, such as reception.
 - d) Café or restaurant if accompanied by an entry from the street
- 2) Active street frontages are to be located at the ground level of all buildings located in those areas shown in Figure E7.11.
- 3) Only open grill or transparent security shutters are permitted to retail frontages or approved innovation.
- 4) Restaurants, cafes and the like are to consider providing operable shop fronts.

Figure E7.11 – Active street frontages



4) Internal Building Circulation Space

A. Background

Internal pedestrian retail paths/arcades are an integral part of the public space network. Although they are privately owned they are perceived as “public spaces” during centre operating hours. As these spaces form a significant part of the internal urban structure of the site, it is desirable for them to achieve a high level of environmental performance including thermal comfort, natural ventilation and good daylight access. Furthermore, these accessways should be connectors to the public domain.

B. Objectives

- a) Pedestrian retail access paths should connect to external through site links and pedestrian ways, where possible.
- b) Provide pedestrian convenience and amenity.
- c) Promote pedestrian activity and safety.

C. Controls

- 1) Pedestrian retail access paths are to:
 - a) Be direct and publicly accessible during business trading hours.
 - b) Be designed as an accessible path for all persons.
 - c) Have active frontage on either side by the full length.
 - d) Have, where possible, access to natural light for part of their length and at all openings.
 - e) Where air conditioned, have clear glazed doors to at least 50% of the entrance.

7.2.6 Car Parking and Access

This section contains detailed objectives and controls on vehicular access and site facilities.

7.2.6.1 Vehicle Footpath Crossings and Driveways

A. Background

GPLC benefits from having access from a number of streets including Glenmore Parkway, Luttrell Street and Town Terrace. Vehicle crossings over footpaths disrupt pedestrian movement and raise safety implications. The design and location of vehicle access to buildings also influences the quality of the streetscape, building facade and the active use of street frontages. The design and location of vehicle access to developments should minimise conflicts between vehicles and pedestrians on footpaths, particularly in pedestrian priority places such as the spine road as well as Luttrell Street.

B. Objectives

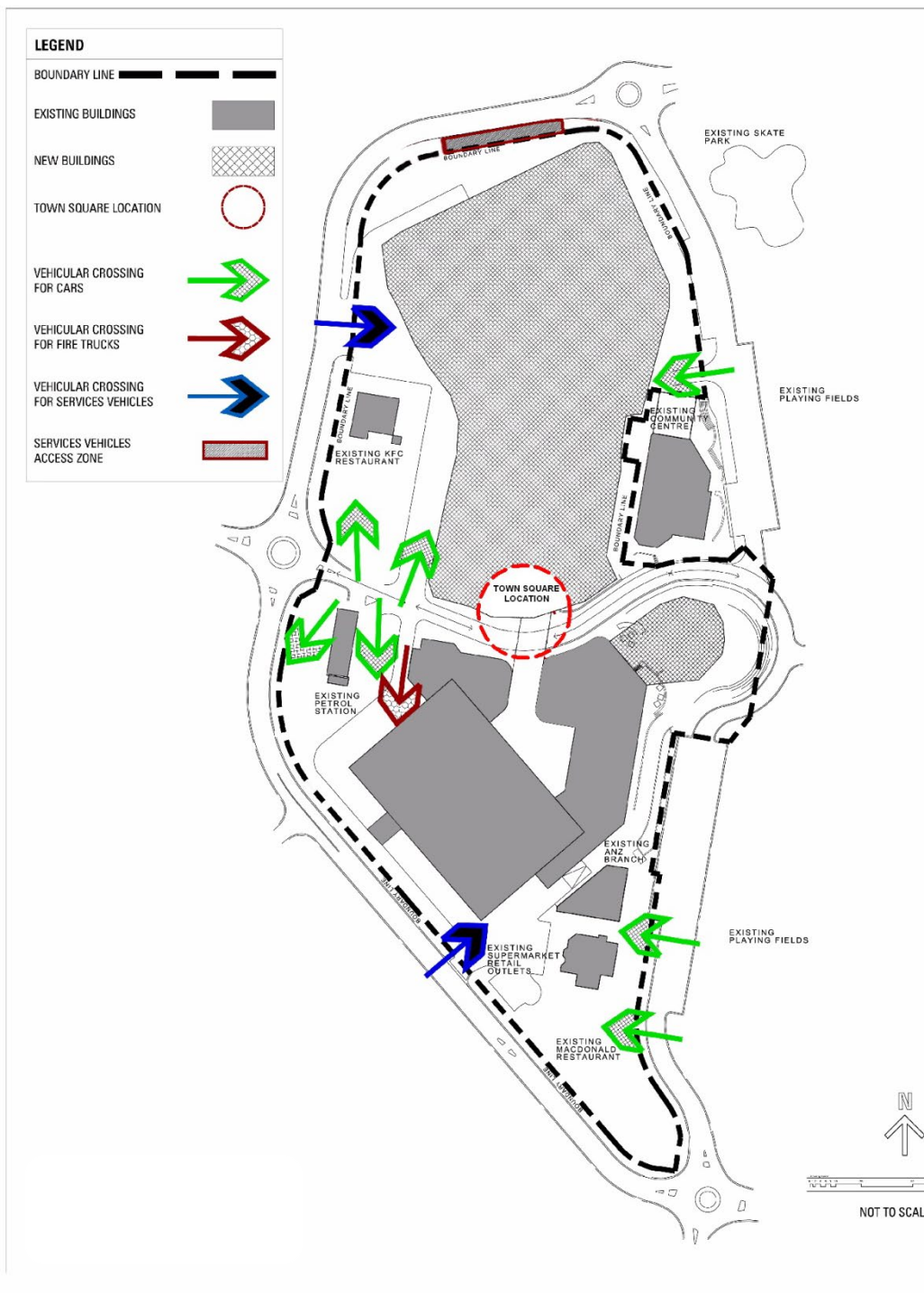
- a) To facilitate efficient and convenient access to and from the site.
- b) To avoid conflict between pedestrian/cyclists and vehicles, particularly in high priority pedestrian locations.
- c) To minimise the impact of vehicular access points on the quality of the public domain.
- d) To ensure vehicle entry points are integrated into building design.

- e) To minimise stormwater runoff from uncovered driveways and parking areas.

B. Controls

- 1) Vehicle access points to the centre shall be provided generally in accordance with the Access Plan, shown on Figure E7.12.
- 2) Vehicle access widths and grades are to comply with the Australian Standards.
- 3) Design of driveway crossings must be in accordance with Council specifications for Vehicle crossovers.
- 4) The driveway threshold is to be designed to prevent ingress of stormwater.
- 5) Vehicle entries are to have high quality finishes to walls and ceilings as well as high standard detailing.
- 6) Vehicular driveways should be located wherever practical as follows:
 - a) Setback a minimum of 6m from the tangent point in the kerb.
 - b) Located taking into account any services within the road reserve, such as power poles, drainage inlet pits and existing street trees.

Figure E7.12 – Vehicle entry/crossing diagram



7.2.6.2 Access, Servicing and Manoeuvring

A. Background

Adequate on-site provision for delivery and service vehicle access should be made to facilitate the efficiency of the commercial, retail and other functions.

B. Objectives

- a) To ensure the appropriate on-site provision for parking of service vehicles.
- b) To provide for efficient service vehicle movements and access within the site.
- c) Establish appropriate access and location requirements for servicing.
- d) Ensure that servicing routes and egress points do not adversely impact on the pedestrian routes connecting to the centre.

C. Controls

- 1) All vehicles must be able to enter and leave the site in a forward direction without the need to make more than a three point turn.
- 2) The final location for the ingress of large trucks to the northern boundary of the site from Glenmore Parkway is subject to detailed design and traffic analysis.
- 3) Loading/unloading facilities are to be:
 - a) Separated from customer parking and circulation path of other vehicles.
 - b) Integrated into the design of developments and screened from the street.
 - c) Located away from circulation paths of other vehicles.
 - d) Designed for commercial vehicle circulation and access complying with AS2890.2.
- 4) The Main Street is to be a traffic calmed roadway together with raised thresholds for pedestrian cross over points and a reduced speed limit. Vehicular traffic is to give way to pedestrian at the raised threshold location/s.
- 5) Traffic calming devices are to be provided along the Main Street for safe pedestrian movement.
- 6) Traffic calming devices are to be considered along Town Terrace to reduce speed and truck movements as appropriate.
- 7) Generally, provision must be made for all vehicles, including emergency vehicles, to enter and leave the site in a forward direction.
- 8) For large scale retail and commercial development, consultation is to occur with Westbus regarding future bus access routes to the site.

7.2.6.3 On-Site Parking

A. Background

Onsite parking includes underground (basement) and surface (at-grade) parking for vehicles and bicycles. The following section provides on-site parking controls for the site.

B. Objectives

- a) To provide an appropriate amount of on-site car and bicycle parking to cater for future development.

- b) To integrate parking appropriately with the design of buildings to minimise its visual and environmental impact.
- c) To provide adequate space for parking and manoeuvring of vehicles.
- d) To ensure the appropriate on-site provision and design of accessible car parking.

C. Controls

- 1) Car parking is to be provided in accordance with the rates outlined in the Transport, Access and Parking Section of this Plan, unless it can be demonstrated that a lesser rate can still achieve sufficient parking provision to meet the needs of the shopping centre.
- 2) Accessible car parking spaces are to be provided and designed in accordance with the requirements with the Building Code of Australia and AS2890.
- 3) The car park and all its components including but not limited to driveway, aisle and ramp widths, ramp grades, and car space dimensions are to comply with the relevant Australian Standard (AS 2890.1 2004) – *Parking Facilities – Off-Street Car Parking*, as amended.
- 4) Where possible, natural ventilation is to be provided to underground parking areas with ventilation grills and structures that are integrated into the overall façade of the development and located away from the primary street frontage.
- 5) Short term parking is to be provided along one side of the Town Terrace east/west spine road.
- 6) 4 Council car spaces and driveway access adjacent to community centre are to be retained and integrated into design. These spaces are to be dedicated parking spaces for the community centre.
- 7) Proposals for basement parking areas are to be accompanied with a geotechnical report prepared by appropriately qualified professional and other supporting information to the Development Application.

7.2.6.4 Site Facilities and Services

A. Background

Adequate site facilities and amenities are important elements of a successful local centre function, and include bicycle storage and associated amenities, toilets and parents change rooms, accessible toilets, public telephones and staff facilities. Other servicing requirements of the site should be designed and sited to minimise visual and environmental impact.

B. Objectives

- a) To provide adequate site facilities to meet the needs of the local community.
- b) To establish appropriate access and location requirements for servicing.

C. Controls

- 1) The provision of site facilities such as bicycle storage and associated amenities, toilets and parents change rooms, accessible toilets, public telephones and staff facilities are to be considered as part of any redevelopment of the site.
- 2) Air conditioning, service vents and other associated structures should be:
 - a) Located away from street frontages

- b) Located in a position where the likely impact is minimised
- c) Adequately set back from the perimeter wall or roof edge of buildings
- d) Where it is to be located on the roof it should be integrated into the roof scale design and in position where such facilities become a feature in the skyline at the top of the building.

The responsibility for the ongoing management of waste facilities must be determined prior to work commencing on any redevelopment of the centre. Details of the management of waste by future tenants are to form part of the Waste Management Plan (in accordance with Section C5 Waste Management of this Plan) for the development.

7.2.7 Design Principles

7.2.7.1 Energy Efficiency

A. Background

The ability of development to optimise thermal performance, thermal comfort and day lighting will contribute to the energy efficiency of the buildings, provide increased amenity to occupants and reduce greenhouse emissions.

B. Objectives

- a) To encourage architectural design to minimise the need for mechanical heating and cooling of spaces to provide comfortable conditions for the community.
- b) To reduce the proportion of overall energy consumption in the construction and use of buildings.

B. Controls

- 1) Integration of shading devices and ventilation of building faces where practical, in order to reduce solar energy loads at high luminance periods of the day.
- 2) Using an architectural design to harness natural light into spaces where practical through integration of light wells, sky lights and voids to reduce lighting energy consumption.

7.2.7.2 Water Management and Water Sensitive Urban Design

A. Background

Building design can contribute to environmental sustainability by incorporating measures for improved water quality and efficiency of use. Integrating water use, collection and reuse measures into building and infrastructure design contribute to achieving environmentally sustainable outcomes.

B. Objectives

- a) To help improve the environment by improving the quality of water run-off.
- b) To ensure infrastructure design is complementary to current and future water use.
- c) To maintain pre-existing stormwater runoff flows off site.

C. Controls

- 1) The following water saving measures to be incorporated into new development:

- a) Water fixtures (low flow shower heads and taps, dual flush toilets, low flush/ water efficient urinals, etc.) are to be 3 stars (WELS Scheme) or better rated.
 - b) Select water efficient plants and/ or, indigenous vegetation for landscape in accordance with Council's preferred species.
 - c) Use non-potable water for watering new gardens and landscape features.
- 2) A Stormwater Management Plan is to be prepared that identifies how the quantity and quality of urban runoff from the site will be managed on the site as part of any major redevelopment of the centre.

7.2.8 Waste Management

A. Background

Waste management refers to all stages of development from demolition to design, construction and occupation. The following objectives and controls are in addition to those outlined in the Waste Management Section of this Plan, and are specific to the GPLC.

B. Objectives

- a) To minimise waste generation and disposal to landfill with careful source separation, reuse and recycling.
- b) To plan for the types, amount and disposal of waste to be generated during demolition, excavation and construction of the development.
- c) To ensure efficient storage and collection of waste and quality design of facilities.

C. Controls

- 1) Development applications involving major demolition or construction works should include proposed waste management strategies.
- 2) Such strategies could include any of the following:
 - a) Proposals for recycling and reuse of construction and demolition materials.
 - b) Use of sustainable building materials that can be reused or recycled at the end of their life.
 - c) Handling methods and location of waste storage areas, such that handling and storage has no negative impact on the streetscape, building presentation or amenity of occupants and pedestrians.
 - d) Procedures for the on-going sustainable management of green and putrescibles waste, garbage, glass, containers and paper, including estimated volumes, required bin capacity and on-site storage requirements.
- 3) Details of the management of waste by future tenants are to form part of the Waste Management Plan for any redevelopment of the centre.
- 4) A Waste Management Plan for the site is to be implemented as part of any redevelopment of the site, in accordance with the Waste Management Section of this Plan.

7.2.9 Safety and Security (Crime Prevention through Environmental Design)

A. Background

A safe and secure environment encourages activity, vitality and viability, enabling a greater level of security. Planning and design can identify and address safety and security issues through the use of environmental and technical measures.

B. Objectives

- a) To address safety, security and crime prevention requirements in the planning and design of development (including the NSW Police 'Safer by Design' crime prevention through environmental design (CPTED) principles).
- b) To ensure developments and the public domain is safe and secure for pedestrians.
- c) To encourage a sense of ownership of the public domain.

C. Controls

- 1) For any large scale retail and commercial development an assessment is to be provided in accordance with the CPTED principles.
- 2) Applicants should refer to the Site Planning and Design Principles Section of this Plan and address the CPTED principles in their development application.

7.2.10 Site Topography

A. Background

A site's natural topography and landform are important features that inform the urban structure of the place.

B. Objectives

- a) Development should respond to a site's natural topography and landform, minimising excavation and potential visual impacts and in turn reduces construction costs.

C. Controls

- 1) Applicants must demonstrate how their design/ development respond to the natural topography and landform of the site, based on site analysis drawings.

7.2.11 Other Controls

7.2.11.1 Town Square

A. Background

The Town Square is to be the primary social focus of the GPLC. It is to be a vibrant, active town square that forms the hub of the centre.

The Town Square should be designed as a multi-functional public space that is able to operate on various levels responding to special events (such as markets) without disrupting the pedestrian flows of the shopping centre or the traffic calmed vehicular movements. On a few occasions each year this space will be totally closed off but this will be done within a clearly defined and communicated management regime.

B. Objectives

- a) To provide a vibrant, active, town square with a shopping Main Street character.
- b) To provide improved connectivity and interaction between the Town Square and the community centre.
- c) To encourage the Town Square is to be the pedestrian focus of the GPLC.
- d) To promote uses around the square that maximise activity and vibrancy, which permit and promote after hours usage of the space.
- e) To encourage use of high quality and durable materials.
- f) To ensure that the Main street will be a primarily a pedestrian oriented street with traffic calming measures for vehicular movement, which allows for local access and a limited amount of short term parking for shoppers on both sides of the street.
- g) To provide a flexible Town Square space capable of being enlarged without disrupting the normal pedestrian flows or vehicular traffic movements, provision should be made for temporary closing of the road for specific larger community events and be controlled within the town centres management program.

C. Controls

- 1) Retail facades should be designed to activate the frontages to the Square both during and after hours.
- 2) Two/three storey buildings are encouraged forming the edge of Town Square to provide a sense of enclosure.
- 3) Development fronting the Town Square is to have active retail premises on the ground floor.
- 4) Active uses including restaurants and cafés fronting the Town Square are encouraged, specifically after normal business hours e.g. restaurants/ cafes. Awnings and/or colonnades create a weather edge to the Town Square.
- 5) Adequate lighting should be provided for evening use, safety and security.
- 6) The surface of Town Square should reflect its primary pedestrian focus. Appropriate traffic calming measures, different paving or clearly defined pedestrian crossings should be considered for the east/west spine road.
- 7) The area of the Town Square shall be not less than 400m² and will not incorporate the vehicular traffic's carriageways and/or the standard public pedestrian width within its dimensions.
- 8) The surface of Town Square should be designed to permit its use by service and emergency vehicles.
- 9) Allow sunlight access into the town square in all seasons while also allowing for adequate weather protection and sun-shading opportunities.
- 10) A detailed design for the Town Square should be prepared with any major DA for the centre. The detailed design should establish the appearance of facades to the Square, materials, street furniture, seating, lights, signage, traffic management devices, soft landscaping and other elements relevant to the character of the Town Centre.
- 11) The Town Square and adjacent 'Main street' roadway is to be managed in order to allow for specific community events and activities.

7.2.11.2 Community Centre Building

A. Background

The current Community Centre Building is isolated from the remainder of the existing shopping centre fronting towards the playing fields. The development of the shopping centre will bring opportunities to better connect and integrate the community facility with the surrounding development, although this will remain relatively constrained while the community facility remains in its present configuration.

The role and function of the Community Centre Building is expected to continue to evolve and expand over time in order to meet the needs of the growing community. Accordingly, provision should be made to ensure that if and when a substantial expansion or redevelopment occurs with the community facility there is a mechanism in place that would enable the potential to physically integrate or link with any approved retail development.

However, in the interim, the space between the Community Centre and any new development should be treated as usable public walkway/pathway space with provision for adequate landscaping and passive surveillance from the retail centre.

B. Objectives

- a) To consider any additional community needs and facilities that may arise with an expansion to the Community Centre Building.
- b) To ensure that the new development improves connections and access to the Community Centre Building in its present form.
- c) To provide for improved connections and physical linkages between the shopping centre development and the Community Centre Building in the event that this facility is redeveloped or substantially expanded.

C. Controls

- 1) New development is to demonstrate that the design enhances the amenity of existing linkages and access to the community facility building in its present form.
- 2) New development is to make provision for access by a potential future physical connection from the community facility building in the event of a major expansion or redevelopment of the community facility building, which would enable a connection at a floor level consistent with the adjacent development. The provision of access will be approximately 3m in width and be of mutually acceptable timing, design and location between the Council and the owners of GPLC.
- 3) New Development to have a minimum setback of 8m between the existing Community Centre building and any new development. Additionally the interim space between the community centre and new shopping centre is to be landscaped, attractive and enjoy a high degree of surveillance with pedestrian paths.

7.2.11.3 Management Plan

A. Background

The management for the ongoing care, control and management of both public and private domain is important and needs to be clearly defined in terms of responsibility for these various areas.

B. Objective

- a) To ensure that all public and private domain located within the town centre is adequately managed.

C. Control

- 1) Prior to the final approval of any further development of the town centre a Plan of Management is to be prepared and submitted to Council for approval. The Plan of Management shall incorporate measures for the ongoing care, control and maintenance of both the public and private domain and shall differentiate those lands and facilities, which will remain in private ownership.

7.3 Glenmore Park Major Land Use

7.3.1 Land to which this Section applies

This Section applies to all land at Glenmore Park Stage 1.

7.3.2 Purpose of the Section

The central purpose of this section is to clearly establish and identify major land use areas within Glenmore Park Stage 1.

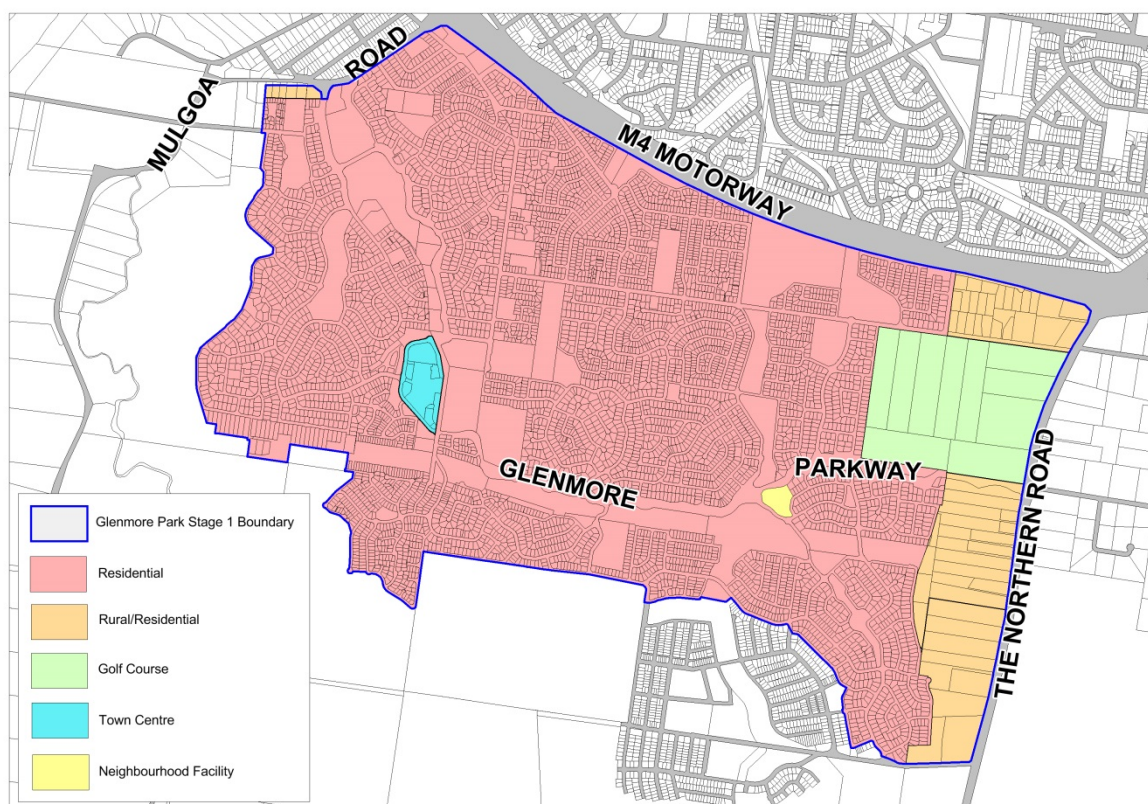
A. Objectives

- a) To establish major land use areas which identify specific precincts for key development activities;
- b) To promote the continuation of the open, semi-rural character of the estate's edges along The Northern Road and Mulgoa Road by maintaining a low density development pattern; and
- c) To restrict commercial or retail related activities from establishing along The Northern Road or Mulgoa Road frontages.

B. Controls

The following controls applying to all development proposals within Glenmore Park set the guidelines to be observed for each major land use area, as shown in Figure E7.13.

Figure E7.13: Major land use development areas in Glenmore Park Stage 1



1) Residential

In addition to the controls outlined in Section D2 Residential Development, the following objectives and controls apply:

A. Objectives

- a) To provide for a range of activities consistent with the establishment of a quality living environment;
- b) To encourage a diversity of housing types; and
- c) To provide development opportunities for non-residential activities which:
 - i) support neighbourhood planning concepts;
 - ii) do not impact on neighbourhood amenity;
 - iii) enhance access to a range of community services and facilities; and
 - iv) to make provision for a general store / neighbourhood shop within Glenmore Park, as show in Figure E7.25.

B. Controls

- 1) Minimum average density of 11 dwellings per net hectare; and
- 2) Range of lot sizes desirable.

2) Rural / Residential

A. Objectives

- a) To conserve the open, semi-rural character of The Northern Road and Mulgoa Road frontages of Glenmore Park;
- b) To promote the need to maintain a low density settlement pattern which:
 - i) recognises the importance of conserving the rural land use pattern and image of the gateways into the urban areas of the city located along the major road frontages; and
 - ii) provides sufficient flexibility for dwelling siting and orientation of allotments to minimise the visual impact of development and to overcome noise constraints;
 - iii) To provide an acceptable level of development in the event that reticulated sewer is not available to The Northern Road sub-catchments; and
 - iv) To provide for large lot residential living opportunities.

B. Controls

- 1) A minimum dwelling setback of 50m;
- 2) A range of lot sizes is desirable; and
- 3) No additional vehicle access to The Northern or Mulgoa Roads.

3) Neighbourhood Shopping Facilities

A. Objectives

- a) To provide for a range of commercial and retail activities and services at a neighbourhood level which satisfy day-to-day resident needs; and
- b) To encourage the early provision of retail and professional services and temporary facilities.

B. Controls

- 1) Scale and nature of the neighbourhood facility shall be supportive to, and not delay the timing for the natural inception of the major shopping facility at the Town Centre;
- 2) Activities which are inconsistent with the objectives of this major land use or which detract from the establishment of a high quality neighbourhood scale business centre, or the amenity of the surrounding area, will not be supported by Council; and
- 3) Maximum floorspace up to 1,500m².

4) Golf Course

A. Objectives

- a) To enable the continuation of the Penrith Golf Course to service the needs of Glenmore Park and the broader community.

B. Controls

- 1) Ensure that supplementary development is:

- a) consistent with the above-stated objectives for the rural/residential edge of the estate along The Northern Road and that the visual quality and amenity of the surrounding locality is conserved;
- b) managed in a manner which does not give rise to traffic conflicts on The Northern Road; and
- c) corporate signage is limited and consistent with the semi-rural character of the area.

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Part B – Glenmore Park Stage 2

7.4 Glenmore Park Stage 2

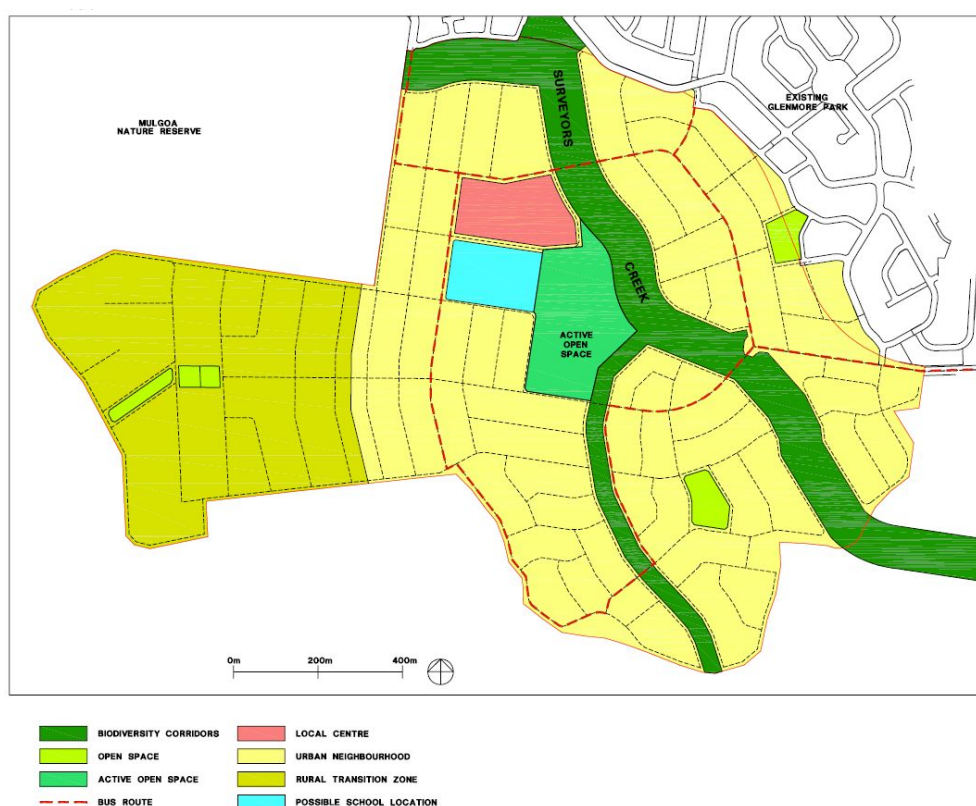
7.4.1 Preliminary

This Part is called 'Glenmore Park Stage 2' and supports the objectives of the Penrith Local Environmental Plan 2010 and to facilitate the sustainable development of residential, mixed use, retail and open space on the site.

7.4.1.1 Land to Which This Part Applies

This Section applies to the land as shown on Figure E7.14 below.

Figure E7.14: Glenmore Park Stage 2 Subject Land



7.4.1.2 Relationship to Other Plans and Documents

In addition to the provisions of the Penrith LEP 2010, the Section must be read in conjunction with any relevant Planning Agreement between the Glenmore Park Stage 2 Landowners (or individual landowners) and Penrith City Council. This section must be also read in conjunction with the Glenmore Park Stage 2 Development Contributions Plan 2007 where relevant.

The requirements of this Section are informed by Penrith's adopted Sustainability Blueprint for Urban Release Areas 2005.

7.4.1.3 Supporting Studies

The following supporting studies and documents have been used in the preparation of this Section:

- a) *Local Environmental Study* prepared by EDAW (November 2003).
- b) *Asset Protection Zone Assessment* prepared by Bushfire + Environmental Services (December 2006).
- c) *Corridor Management Plan* prepared by Cumberland Ecology (October 2006).
- d) *Stormwater Management Strategy* prepared by J. Wyndham Prince (October 2006).
- e) *Transport Management and Accessibility Plan* prepared by Transport and Traffic Planning Associates (October 2006).

These documents are available for reference from Council.

7.4.1.4 How to Use This Section

The section identifies key planning issues that Council will address when considering Development Applications. Each planning issue is structured in the following manner to provide a clear understanding of Council's expectations with regard to development:

Objectives:	Describe the rationale of the planning issue and what it is trying to achieve.
Performance Measures:	Qualitative measure against which a development's ability to achieve the objectives will be assessed. These measures provide flexibility for developers to achieve those objectives through a suite of design responses.
Development Controls:	Numeric based measures that will need to be achieved to meet the relevant objectives.

7.4.1.5 Concept Plans

A Concept Plan setting out proposals for the development of each precinct or site is required to be lodged and approved by Council prior to, or with, the first subdivision development application for each precinct.

A Concept Plan shall demonstrate:

- a) Proposed urban structure and public domain elements, including Landscape Masterplan.
- b) Delivery of required dwelling yield and diversity targets set out in Table E7.1.
- c) Distribution of lot types and housing forms to suit a variety of lifestyles, household types and financial capacities.
- d) Road hierarchy, sections and details.
- e) The location and design of open space networks
- f) The location of pedestrian and cycle paths.

- g) The Northern Road view shed analyses where required.
- h) Development Staging.
- i) Infrastructure Delivery Strategy.

7.4.2 Structure Plan

7.4.2.1 Introduction

A. Vision

A vision for Glenmore Park Stage 2 was established through the Local Environmental Study (LES). In brief, it recommended that the southern expansion of the Glenmore Park community should:

- a) Promote, service, and support a diverse, vital, and healthy community that is socially, environmentally, and economically sustainable, ensuring the quality of life for future generations.
- b) Demonstrate new benchmarks in urban outcomes and quality lifestyles.
- c) Be characterised by garden village precincts and rural living environments.
- d) Reflect the site's unique identity while building on its connection with Penrith City and the wider Region.
- e) Be characterised by innovation, accessibility, connectivity, sustainability, and diversity, celebrating the natural and cultural heritage of the area.

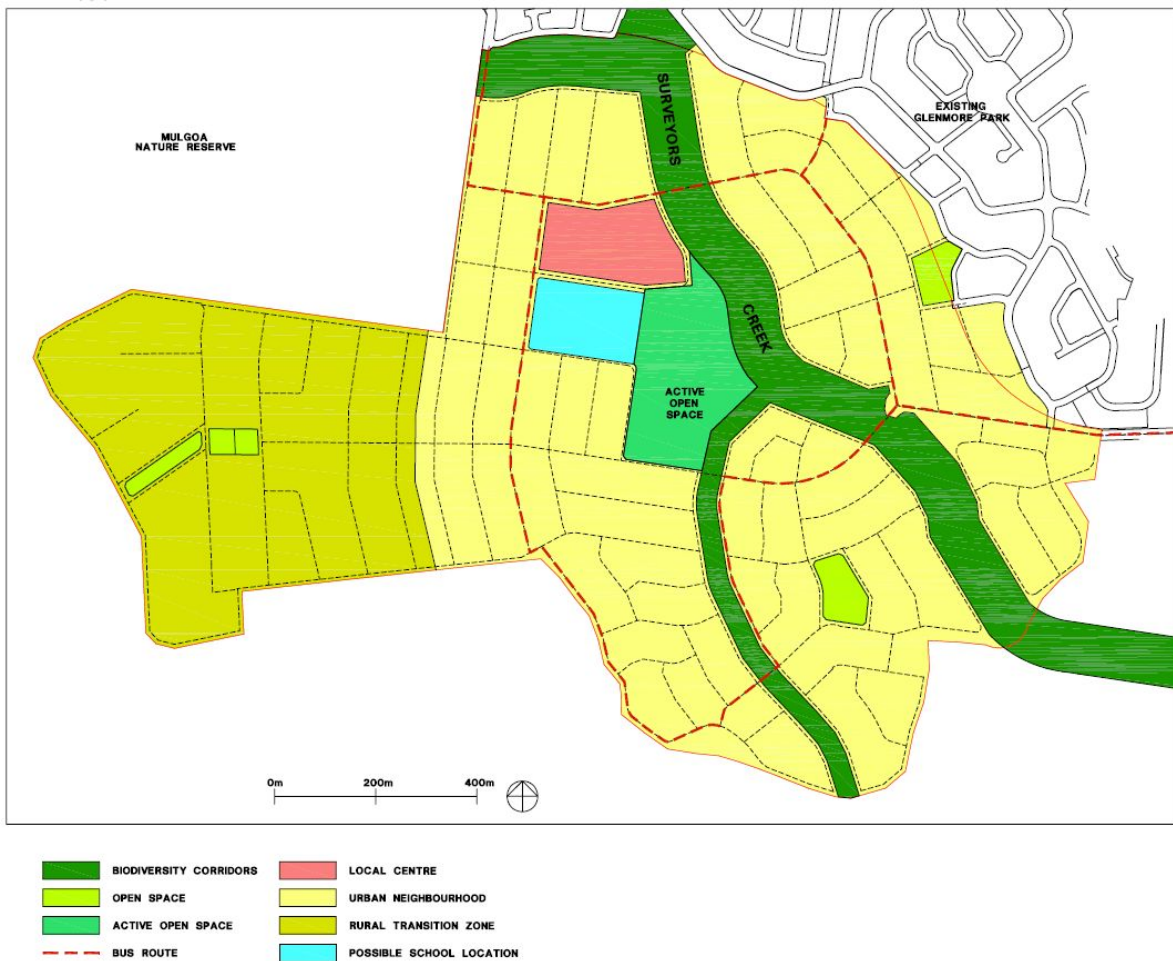
B. Objectives

- a) To provide a clear planning framework for development of the subject lands.
- b) To ensure that the most efficient use of urban zoned land is achieved.
- c) To ensure development meets sound environmental planning practices and standards.
- d) To encourage development that satisfies ecologically sustainable design principles.
- e) To protect the environmental heritage of the area.
- f) To utilise and enhance the area's natural character of the lands to provide opportunities for a unique community identity.
- g) To promote sustainable building forms.
- h) To facilitate the provision of diverse housing forms reflecting the increasingly diverse profile of Penrith's communities.
- i) To facilitate increased dwelling densities in areas of the highest amenity and accessibility.
- j) To integrate all modes of transport to ensure there are efficient links within and between open spaces, neighbourhood centre and adjacent residential areas and services.
- k) To protect and enhance watercourses as natural systems, riparian corridors and biological linkages.

7.4.2.2 Urban Structure

- a) The principal land use within Glenmore Park Stage 2 will be residential. The residential areas will straddle either side of a lineal open space network represented as a riparian corridor that is centred on and conserves Surveyors Creek.
- b) A neighbourhood centre, active open space and primary school, are centrally located to provide a focal point for the new community.
- c) Vehicle access will be provided via Bradley Street and a loop collector road will represent the primary organising element of the road network.
- d) The loop road enables a legible road hierarchy to permeate throughout the subject lands.
- e) Two additional road connections through to the existing Glenmore Park suburb will also be provided at the northern edge of the release area.
- f) Active and passive open spaces will be distributed throughout the urban area, building on existing natural assets and providing a coordinated and integrated network throughout the release area.
- g) Higher density forms of housing will be provided along corridor edges, around the Neighbourhood Centre, in good proximity to public transport routes and adjacent to active and passive open spaces
- h) Residential areas in the west of the release area will provide larger lots that provide a transition between urban areas and the surrounding rural landscape.
- i) Glenmore Park Stage 2 Structure Plan establishes the structure and form for the planning and future development of the subject lands. This Plan is illustrated at Figure E7.27 with the main elements being described and expanded upon in more detail in Section 7.4.3 Public Domain of this Section.

Figure E7.15: Glenmore Park Stage 2 Structure Plan



7.4.2.3 Dwelling Yield

A. Objectives

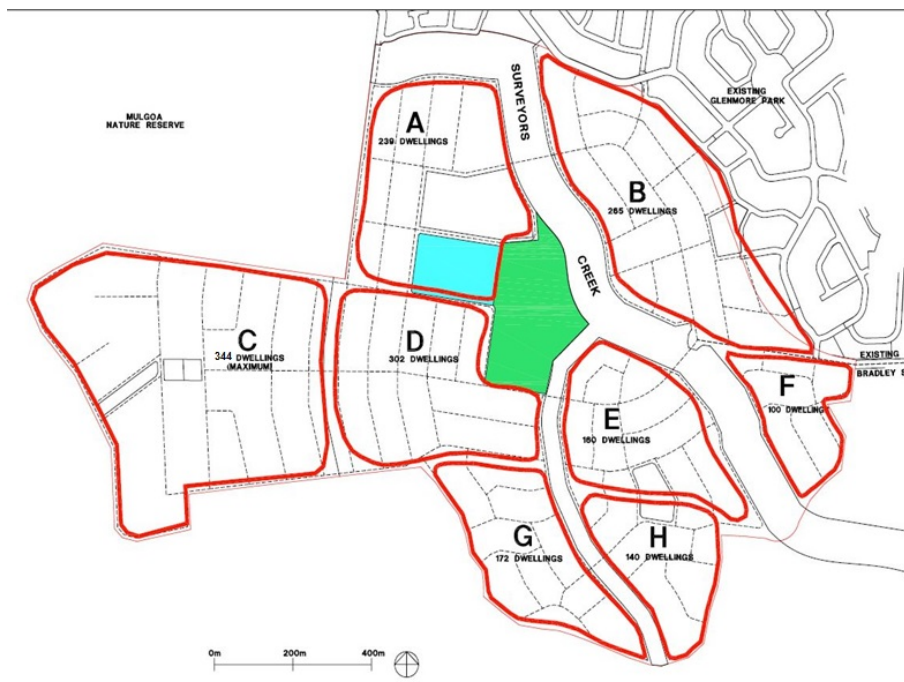
- To achieve ensure efficient use of zoned land and required infrastructure is achieved
- To sustain services and facilities required for diverse urban communities, including public transport.
- To promote a diverse range of housing types which will accommodate a wide demographic profile.
- To promote affordable housing opportunities.
- To achieve a dwelling density of 15 dwellings per hectare over the Net Developable Area.

B. Development Controls

- A minimum of 1,628 dwellings is delivered across the entire release area.
- Precincts as identified at Figure E7.16 are to deliver the dwelling yield indicated. All dwelling numbers identified at Figure E7.16 are minimum targets except Precinct C which provides a maximum dwelling target.

- 3) As subdivision of a precinct occurs a mechanism (such as Section 88B instrument) will accompany the subdivision plan and will identify individual lots for future accommodation of single dwellings, dual occupancies, terraces, apartments, etc. inclusive of the number of dwellings that each lot will deliver.
- 4) Any creation of 'super lots' and residue parcels will specify the minimum dwelling yield that those lots will be required to deliver. This may be achieved by way of a Section 88B instrument or other mechanism as agreed.
- 5) Council may require a detailed demonstration that proposed yields for lots are able to be suitably met as part of a Development Application.

Figure E7.16: Dwelling Yield



7.4.2.4 Dwelling Diversity

A. Objectives

- a) To promote diverse housing forms that meet the increasingly diverse demands of the local community.
- b) To ensure affordable housing strategies for the release area are achieved.

B. Performance Measures

These objectives may be achieved where diverse housing forms are provided within precincts and across the overall development area.

C. Development Controls

- 1) Development achieves indicative housing type numbers identified for each precinct at Table E7.1.

Table E7.1: Dwelling Diversity.

Precinct	Apartments and Studios	Terraces/Live-Works and Semi-Detached	Built to Boundary	Detached	Precinct Total
A	50	33	56	100	239
B	15	20	70	160	265
C	0	30	0	314	344
D	25	40	97	140	302
E	25	40	30	65	160
F	4	20	30	46	100
G	4	21	45	102	172
H	4	18	40	78	140
Total	127	222	368	1,005	1,722
% of Total	7.4	12.9	21.3	58.4	100

Note: Representations of these dwelling types are provided at Section 7.4.5 - Typical Development Forms of this Section.

7.4.3 Public Domain

7.4.3.1 Responding to the Site's Natural Features

7.4.3.1.1 Corridors

A. Objectives

- To conserve biodiversity by providing linkages between significant natural vegetation units within the City.
- To ensure that important natural features inform the urban structure of the place.
- To provide high amenity areas for residents.
- To protect, restore and enhance the environmental values and functions of watercourses and riparian corridors along Surveyors Creek and the western tributary of Surveyors Creek.

B. Performance Measures

These objectives may be achieved where:

- a) The natural drainage lines of Surveyors Creek and its western tributary are conserved as healthy and naturally functioning riparian corridors.
- b) Existing healthy remnant vegetation is retained within those corridors.
- c) Significant revegetation of the riparian corridors occurs as part of development.
- d) The corridors and other topographical features are represented as special places within the urban form.
- e) The design of the bridging structures over the corridor ensure the following:
 - i) Use of open piered bridge structures.
 - ii) 1% AEP flood conveyance.
 - iii) Flora and fauna connectivity.
 - iv) Scour protection.
 - v) Light penetration beneath structure.
- f) A Corridor Management Plan that identifies how the corridor will be established is prepared developed and implemented on site as part of its development.

C. Development Controls

- 1) A minimum corridor width of 100m is provided along the Surveyors Creek Corridor with an 80m Core Riparian Zone.
- 2) A minimum corridor width of 40m with 20m Core Riparian Zone is provided along the western tributary of Surveyors Creek.
- 3) The profile of the riparian corridors is consistent with that represented at Figures E7.18 and E7.19.
- 4) Riparian corridors are to be fully vegetated and provided in accordance with Figures E7.17, E7.18 and E7.19.
- 5) A Vegetation Management Plan must be prepared for the rehabilitation of the riparian corridors in Glenmore Park Stage 2 in accordance with the NSW Office of Water guidelines.
- 6) All remnant vegetation within the riparian corridors must be protected and rehabilitated.
- 7) All riparian corridors are to be vegetated with appropriate local native vegetation (i.e. fully structured trees, shrubs and groundcovers) at a density that would occur naturally.
- 8) An open and low perimeter fence or low bollard type barrier is to be provided along the entire perimeter of the riparian corridors to prevent inadvertent damage to riparian corridors.

Figure E7.17: Corridor Width Plan

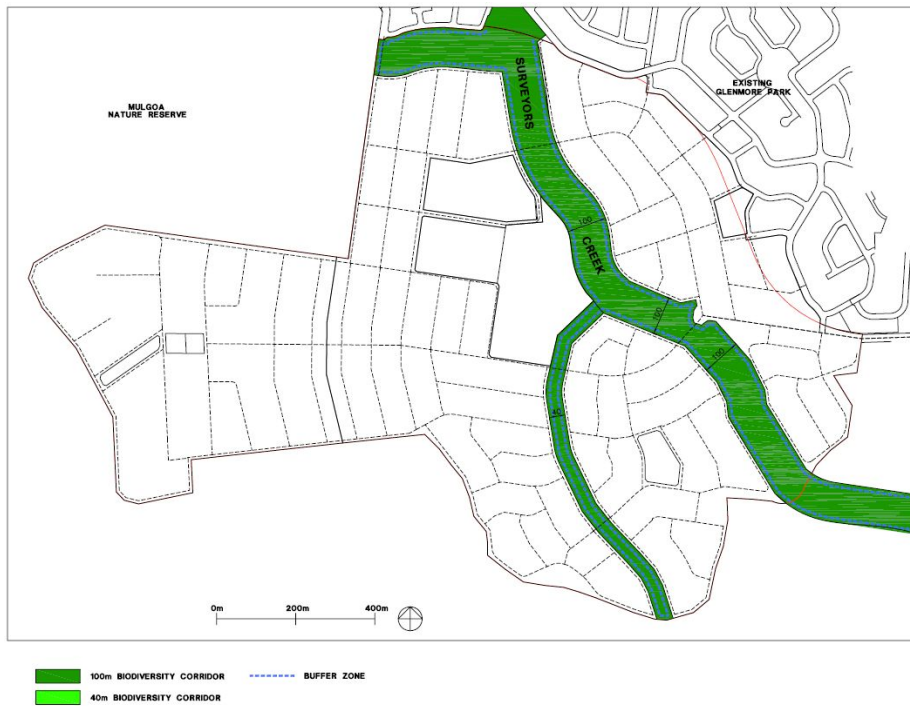


Figure E7.18: Corridor Profile Plan

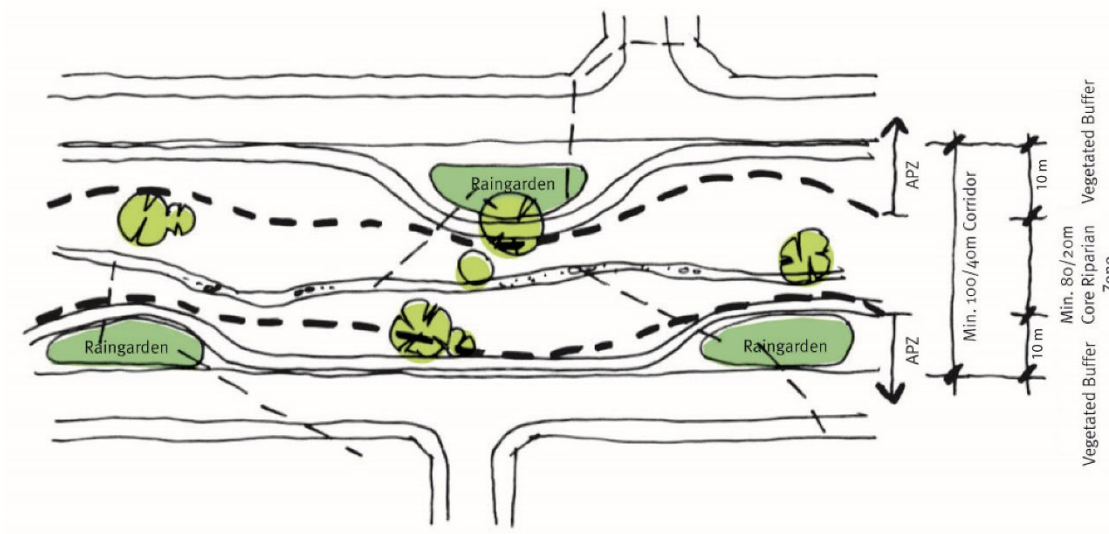
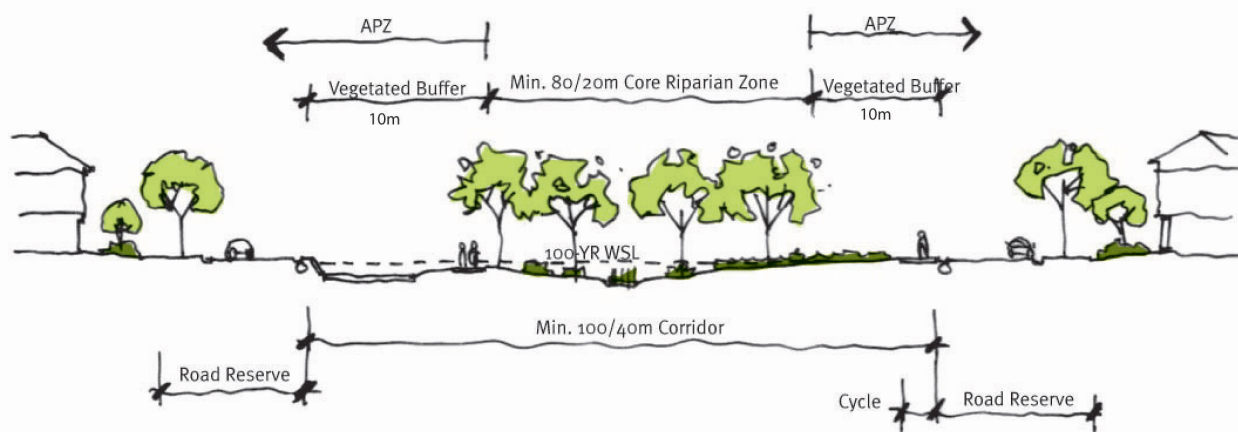


Figure E7.19: Corridor Profile Section



7.4.3.1.2 Bushfire Hazard Management

A. Objective

- a) To manage the risk to life and property assets from bushfire events while ensuring that the natural environment including riparian corridors are protected and enhanced.

B. Performance Measures

The objectives may be achieved where:

- a) Asset Protection Zones (APZs) of a scale and type suitable to the NSW Rural Fire Service are provided between all built forms and adjacent bushland units.
- b) APZ may incorporate the building setback of the adjoining built forms.

C. Development Controls

- 1) A minimum of 50m of the 100m wide corridor connection to the Mulgoa Nature Reserve is to be kept clear of vegetation that might promote the eastward spread of fire within the Reserve.

7.4.3.1.3 Water Management

A. Objectives

- a) To ensure Mulgoa Creek and Surveyors Creek are able to function as healthy, natural riparian corridors.
- b) To maintain the stability and integrity of the finished creek profile.
- c) To ensure the quality of water leaving the urban areas does not adversely impact upon the health of Mulgoa Creek and Surveyors Creek.
- d) To reduce the volume of stormwater run-off from the site.
- e) To ensure stormwater runoff is adequately treated before it enters the riparian corridors.

B. Performance Measures

These objectives may be achieved where:

- a) Trunk drainage works are provided as an initial stage of development of the release area.
- b) Stability within the watercourses prevents bank erosion.
- c) The stormwater management regime provides a treatment trains including pit inserts, bio-retention swales and rain-gardens to improve the quality of urban runoff before it enters the creek channels.
- d) The active playing fields, school site and neighbourhood centre incorporate on-site water quality treatment devices as part of their development.
- e) Separate Stormwater Management Plans for both the Mulgoa Creek and Surveyors Creek catchment that identify how the quantity and quality of urban runoff from the site will be managed are prepared and implemented on site as part of its development.

C. Development Controls

- 1) Achieve Council's downstream water quality objectives and measures in accordance with the Water Management Section of this Plan.

7.4.3.1.4 Flood Management

A. Objectives

- a) To manage the risk to life and property assets from flooding events.
- b) To allow the riparian corridor to function as a naturally occurring waterway.
- c) To manage most flood waters within the site.

B. Performance Measures

These objectives may be achieved where:

- a) Appropriate areas of land are provided outside the Core Riparian Zone for detention and storage of flood waters and may only be located within the vegetated buffer if no alternative location outside the vegetated buffer can be found, the basins only occupy limited areas and the basins can be designed in such a way that they will not reduce the function of the adjacent core riparian zone.
- b) Flood waters are managed within the riparian corridor.
- c) A Stormwater Management Plan for both the Mulgoa Creek and Surveyors Creek that identifies how the flood waters will be managed is prepared and implemented on site as part of its development.
- d) Refer to the flood liable provisions of Section C3 Water Management of this Plan for further details.

C. Development Controls

- 1) Stormwater detention is provided to reduce 1 year ARI post development flows to pre development levels.
- 2) Stormwater events larger than the 1 year ARI will be managed within the existing Blue Hills Wetland.

7.4.3.1.5 Trees

A. Objectives

- a) To protect and embellish local vegetation and habitat.
- b) To integrate significant trees within the landscape of the new urban area.

B. Performance Measures

These objectives may be achieved where:

- a) Existing mature trees are conserved for their natural functions and aesthetic value.
- b) Open spaces are co-located with existing stands of significant trees.
- c) Significant trees located within developable areas are able to conserved on site as part of the landscaped area of future development.
- d) No disturbance to existing ground levels occurs within the drip line of existing significant trees.
- e) Existing native vegetation in riparian corridors will be protected and corridors revegetated to fully structured native vegetation communities to provide habitat and movement for flora and fauna species.

7.4.3.1.6 The Northern Road View Shed

A. Objectives

- a) To conserve the important local view shed from The Northern Road as identified at Figure E7.20.
- b) To ensure that development in Glenmore Park Stage 2 is not visible from The Northern Road.

B. Performance Measures

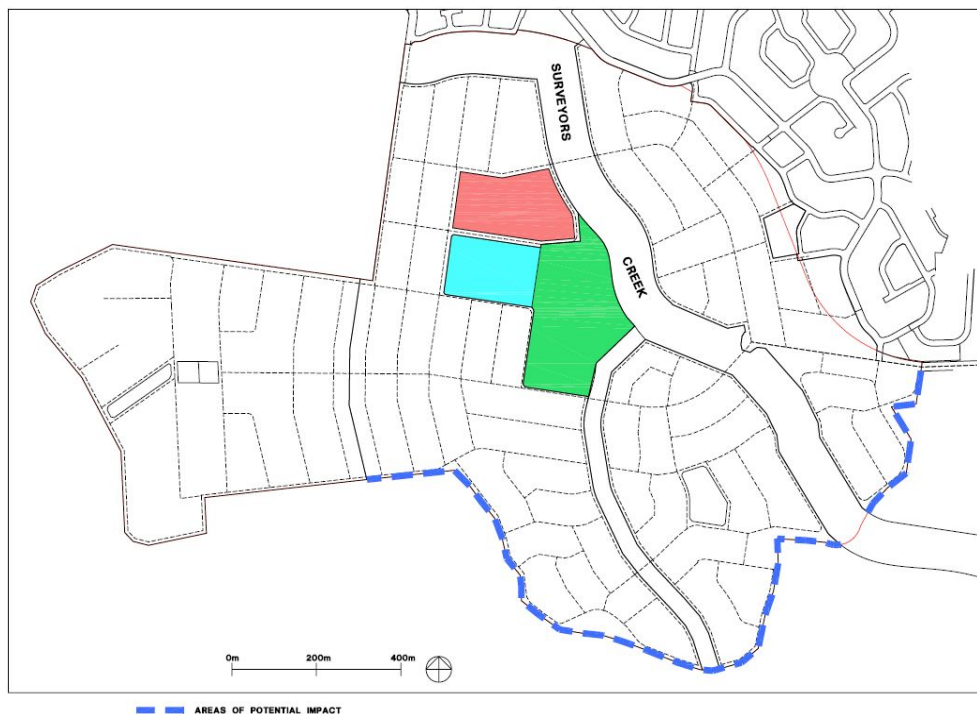
These objectives may be achieved where:

- a) Built forms (including outbuildings, fences and other structures) are located below the level of the ridge that extends along the southern and eastern perimeter of the site.
- b) Built forms do not adversely impact upon the existing rural landscape character as viewed from The Northern Road and its view shed.
- c) Urban infrastructure such as street lighting and other structures do not adversely impact upon the existing rural landscape character as viewed from The Northern Road and its view shed.

C. Development Controls

- 1) The roofline of dwellings and other buildings are to be located below the southern and eastern ridgeline when viewed from The Northern Road. This may be achieved through:
 - a) Benching of road reserves and building lots.
 - b) Use of single storey dwelling construction along precinct edges.
- 2) Road reserves adjacent to the southern and eastern ridgeline are to be landscaped with local native species.

- 3) View-line analysis maps are to accompany each Precinct Concept Plan for Council's approval.



**Figure
E7.20:
Areas of
Potential
Views from
The
Northern
Road**

7.4.3.2 Access and Movement

7.4.3.2.1 Urban Structure

A. Objectives

- a) To provide a clear urban framework for the entire release area that informs the location of land uses.
- b) To identify a clear hierarchy for movement within the subject lands and adjacent urban areas.
- c) To provide a safe and efficient movement network for all users.

- d) To promote public and active transport options.

B. Performance Measures

These objectives may be achieved where:

- a) The street network is a modified grid that facilitates walking and cycling for access to daily activities; and also enables direct local vehicle trips within the neighbourhood and to local activity points.
- b) The suburb has a coherent urban system of compact walkable neighbourhoods which cluster to form a suburb with a high degree of street connectivity.
- c) Neighbourhood identity is reinforced by the location of mixed use and open space areas at focal points within convenient walking distance for residents.
- d) The vehicle, cyclists and pedestrian networks, land-use mix and lot density assist in reducing local vehicle trips, travel distances and speeds, maximising public transport effectiveness, and encouraging walking and cycling to daily activities.

7.4.3.2.2 Vehicular Movement

A. Objectives

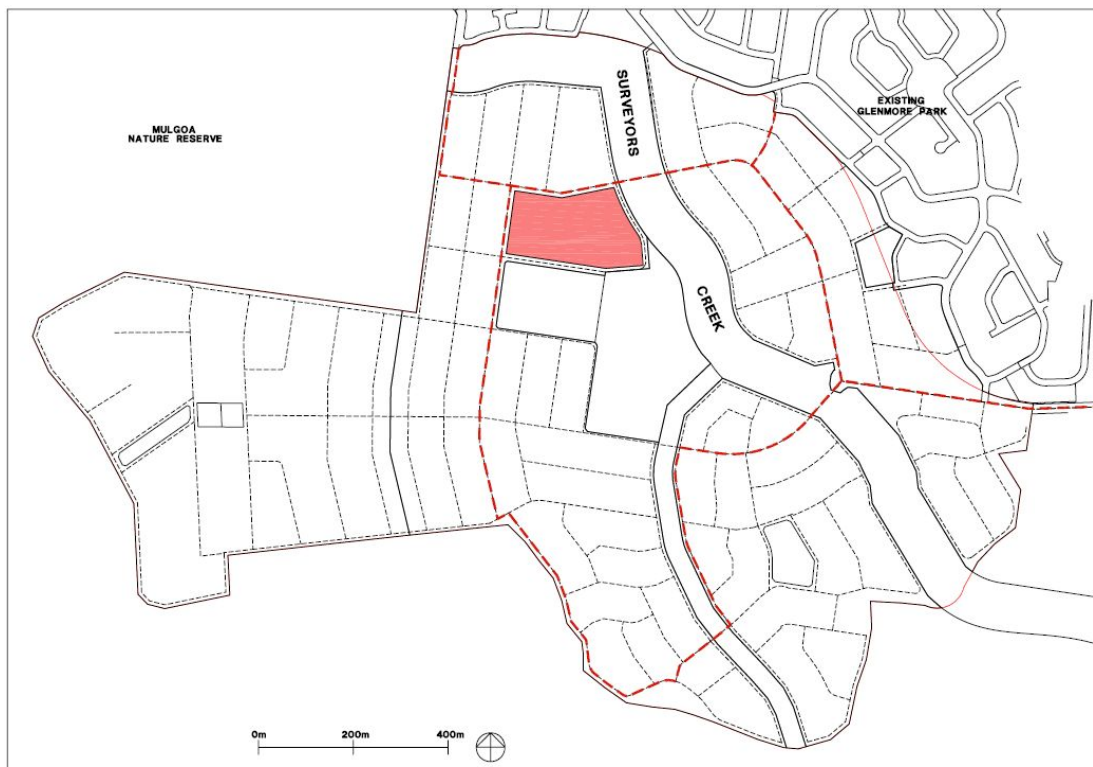
- a) To create a legible road hierarchy.
- b) To provide a high degree of connectivity within the site and between the site and the adjoining areas.
- c) To minimise the negative impacts of through traffic.

B. Performance Measures

These objectives may be achieved where:

- a) A hierarchy of streets should reflect the function and traffic load of each street in a network, minimise travel distances, maximise access to facilities and services and assist people find their way.
- b) A loop type internal collector road is provided as a defining element of the urban form and can accommodate bus movements. The route of this road is shown at Figure E7.21.
- c) The street network connects with adjacent collector routes and neighbouring streets to maximise movement efficiency and social connection.
- d) 3 vehicular access points to adjoining areas will be provided at locations shown at Figure E7.31.
- e) The predominant local street pattern is an east-west axial grid that maximises quantity of lots with a north-south axis.
- f) The street network takes account of the topography and vegetation and respects any existing or potential site assets.
- g) The street network allows all development to address the street.
- h) Rear lanes assist in reducing potential pedestrian and vehicle conflicts within the broader road network.

C. Development Controls



- 1) Street blocks have a maximum length of 300m and a maximum depth of 90m.
- 2) Cul-de-sacs are discouraged, however where their use is justified, will have a maximum length of 60m and only be used to improve the lot efficiency of deep or odd shaped street blocks and will always have their head located away from dominant movement direction.

Figure E7.21: Road Network

7.4.3.2.3 Public Transport

A. Objectives

- a) To increase opportunities for use of public transport.
- b) To enable the efficient operation of bus routes on designated roads.
- c) To encourage the early introduction of bus services within the estate.

B. Performance Measures

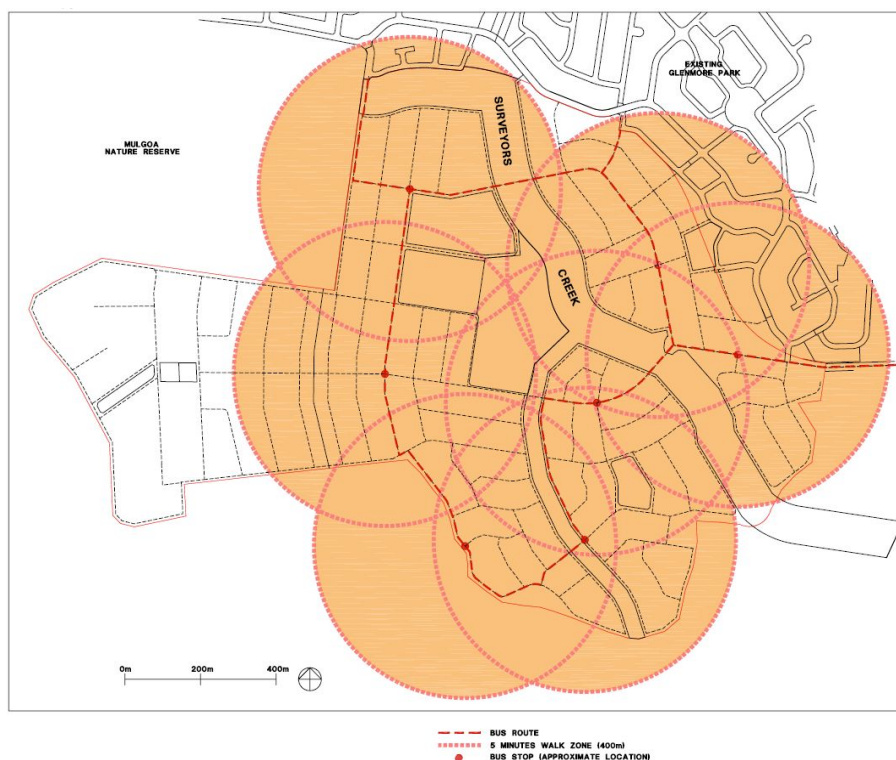
These objectives may be achieved where:

- a) The bus route facilitates connections between Precincts, the existing Glenmore Park estate and key facilities within the subject lands, local facilities and the Penrith CBD.
- b) A 10% modal shift from private vehicle to active and public transport modes is reached or exceeded.
- c) Bus routes and sheltered bus stops are designed, constructed and clearly marked.
- d) The planning principles for public transport are shown at Figure E7.22 are delivered as part of the development.
- e) The early delivery of bus services as the community grows.

C. Development Controls

- 1) All dwellings within the Surveyors Creek catchment are within 400m distance from the designated bus route.
- 2) The bus route will be designed and constructed in accordance with the road profiles identified at Section 7.4.3.3.3 Road Sections of this Part.

Figure E7.22: Public Transport Principles



7.4.3.2.4 Pedestrians and Bicycles

A. Objectives

- To promote active transport options by providing safe and convenient routes to and from key focal points within the release area and to the existing Glenmore Park estate.
- To promote an active and healthy lifestyle.
- To promote casual social interaction among neighbours.
- To promote Universal Design principles in all new facilities.

B. Performance Measures

These objectives may be achieved where:

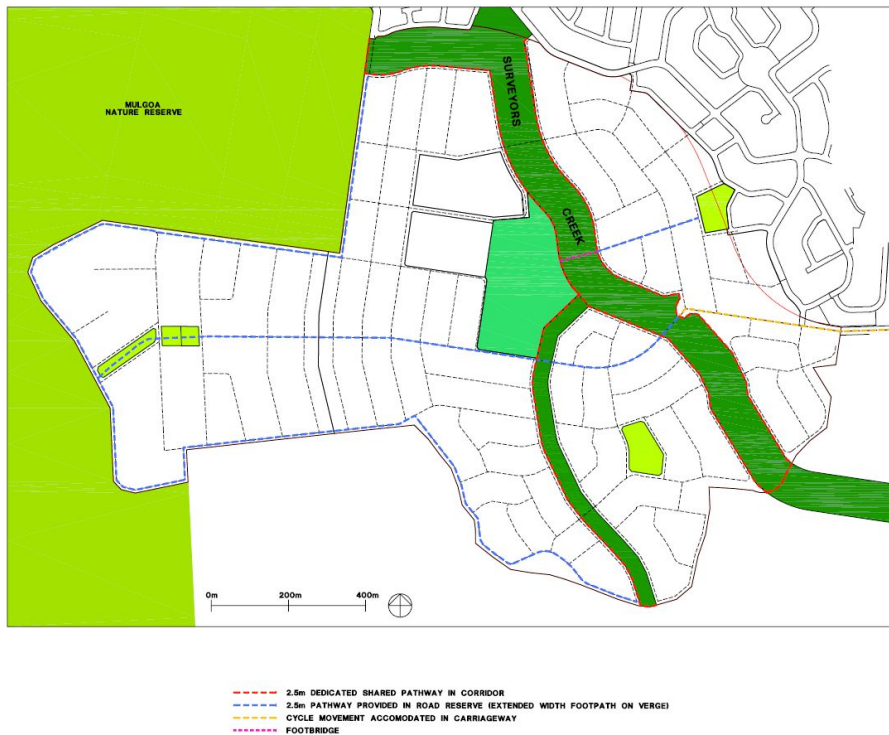
- Footpaths are an integrated element of the normal street network.
- The cycle network is a combination of on street and dedicated pathways that link the main points of attraction and significant natural features.
- Separate pathway will operate within parks and open spaces areas as well as the locations identified at Figure E7.23.
- Pathways in open spaces are aligned approximately parallel with its interface to the street to take advantage of the street lighting and allow for casual surveillance by residents and drivers.
- When provided within the street network, development that adjoins the shared pathway will generally provide vehicle access from rear lanes.

- f) Pathways are designed and constructed wherever possible and practical to be of appropriate width, longitudinal gradient and sight distance.
- g) Kerb details cater for all users, including aged people, people with prams and in wheelchairs, and people with disabilities, and take account of Universal Design principles.
- h) Street landscaping is provided to enhance the appearance of the street and pedestrian environment, including providing protection from the sun.
- i) A primary pathway network is designed, constructed and clearly marked in accordance with Figure E7.24, and with appropriate connections to existing Glenmore Park.
- j) Bicycle racks are provided as part of all developments that attract significant public patronage.
- k) Pedestrian paths and cycleways that are located within the riparian corridor must be in accordance with the Department of Water and Energy's 'Design and Construction of Paths, Cycleways and Accessways along Watercourses and Riparian Area Guideline 2007'.

C. Development Controls

- 1) The minimum width for footpaths provided as part of a road reserve is 1.2m.
- 2) Pathways on the collector roads and Bradley Street will be a minimum of 1.5m.
- 3) Pathways that form part of the open space network are a minimum of 2.5m.
- 4) Where the pathway aligns with the street network, as identified at Figure E7.23, the road reserve will be widened by 1.3m where it aligns with a local road or minor local road and 1.0m where it aligns with a collector road as determined by section 7.4.3.3.3 Road Sections, to ensure a 2.5m pathway can be provided.
- 5) Footpaths are to be provided to both sides of all roads (except Bradley Street Entry Area where a footpath is required only on the northern side).

Figure E7.23: Pedestrian + Cycle Network



7.4.3.3 Streetscapes

7.4.3.3.1 Landscape Character

A. Objectives

- To provide an attractive and sustainable residential community.
- To ensure development contributes to cohesive streetscape and desirable pedestrian environments.
- To provide safe and secure environments for pedestrians and cyclists.
- To promote casual social interaction among neighbours.
- To encourage an active and healthy and active lifestyle.
- To ensure street layouts provide well distributed public open spaces that contribute to the legibility and character of the development.
- To promote landscape treatments that is appropriate to the character and constraints of each locality.

B. Performance Measures

These objectives may be achieved where:

- The release area landscape includes streets lined with tall tree species.
- Landscaping is provided to create a character that is distinct to each Precinct.
- Streets are designed to establish or enhance the unique character of the precinct by responding to its topography, desirable views or local features.

- d) Street vistas are terminated with views to open spaces, parks and the Blue Mountains, where possible.
- e) The carriageway is visually contained to promote steady, predictable traffic speeds by:
 - i) Clearly defining the boundary between pedestrian and vehicle zones.
 - ii) Providing on-street parking.
 - iii) Planting street trees at regular spacing within the carriageway and/or verge.
- f) Boundaries between street verges and private front yards are clearly defined and houses are designed to encourage passive surveillance.
- g) Landscaping helps define boundaries, create continuity and provide shade.
- h) Water sensitive urban design elements are integrated into street verges, where possible.
- i) On-street parking is provided at a rate appropriate to the anticipated demand while ensuring the landscape character and street function is not compromised.
- j) Design details such as footpath and driveway cross-overs are uniformly applied to make the street character more consistent.
- k) Street signage is designed to be complementary to the overall streetscape design and character and signage clutter is avoided.

C. Development Controls

- 1) Street trees are provided at a rate of one tree for every 10m of site frontage.
- 2) Street trees are provided at minimum size of 75 litres and fitted with tree guards.
- 3) Species selection is appropriate to the character and constraints of the locality.
- 4) Footpath verges are increased adjacent lots which have building setbacks less than 4.5m and where large street tree planting is proposed.

7.4.3.3.2 Street Furniture and Public Art

A. Objectives

- a) To visually define and promote attractive public spaces.
- b) To enhance public spaces so that they are vibrant, safe and welcoming.
- c) To create a sense of identity for the area by building distinctive places which reflect cultural diversity and local heritage and illuminate contemporary significance and meaning.
- d) To facilitate cultural identity through art and design in public places, with the engagement of the local community.

B. Performance Measures

- a) Public art is used to define entry ways to the new release area.
- b) Public art is provided throughout key public domain areas.
- c) Public art may be freestanding art objects or works integrated into building facades, other built edges, and landscaping adjoining public spaces.
- d) Street furniture maximises pedestrian comfort, convenience and amenity.

- e) Street furniture forms an integrated element of the streetscape.
- f) Street furniture is integrated into the design of all public spaces and includes:
 - i) Seats.
 - ii) Litter bins.
 - iii) Drinking fountains.
 - iv) Lighting.
 - v) Street and information signs.
 - vi) Bicycle racks.
 - vii) Planter boxes.
 - viii) Other items suitable to the function of each public space.
- g) Street furniture throughout precincts should be consistent in design and style.
- h) Street furniture is to be located so as not to impede mobility, in accordance with AS1428:1-4.
- i) Location and detailing of all proposed street furniture and public art is indicated on Landscape Plans submitted with Development Applications.

7.4.3.3.3 Road Sections

A. Objectives

- a) To provide a safe and efficient movement network for all users.
- b) To encourage responsible driving behaviour, particularly low travel speeds on residential streets.
- c) To cater for the efficient provision of public utilities.
- d) To incorporate the natural features of the site including the movement of stormwater, existing and new trees.

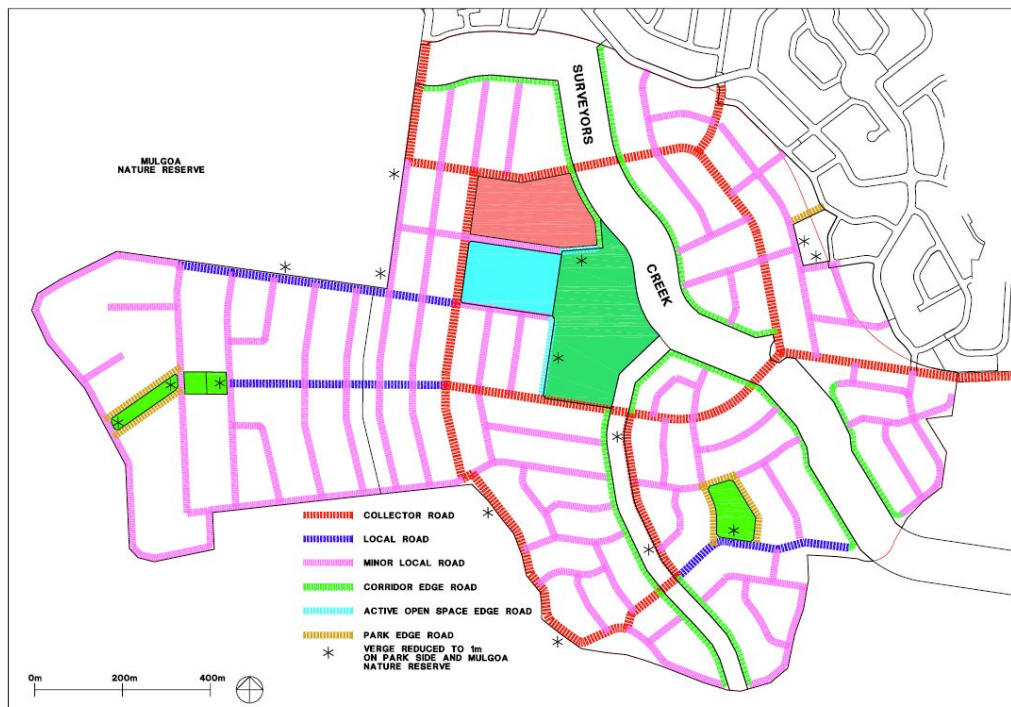
B. Performance Measures

These objectives may be achieved where:

- a) Streets are designed to ensure vehicle speeds can be controlled and it is clear where vehicles can be parked, cyclists can ride and where pedestrians should walk or cross.
- b) Opportunities for walking and cycling are well provided for.
- c) The materials, line marking and landscaping of the streets clearly delineate the travel lanes from the parking “lanes”.
- d) Where the provision of parking “lanes” is included in the street reserve width, they are landscaped as parking bays and defined by means of line marking and/or built tree planting bays.
- e) Parking on the grassed verge or on parks is restricted.
- f) Intersections are designed for the safe and convenient passage of vehicles, pedestrians and cyclists.

- g) Kerb radii at intersections and junctions are kept to a minimum, subject to satisfying required turning templates, to keep pedestrian crossing distances to a minimum, to control the speed of turning vehicles and to reduce the visual impact of large junctions.
- h) Speed control devices are provided to achieve target speeds.
- i) Any speed control devices, inclusive of road narrowing, are to be designed to take into account the needs of cyclists.
- j) Varying degrees, relative to the road hierarchy, of delays or the need for driver co-operation due to vehicles parking on local roads is an acceptable, traffic calming outcome.
- k) Upright kerbs are used throughout the suburb.
- l) Development occurs in accordance with the road hierarchy demonstrated at Figure E7.24.

Figure E7.24: Road Hierarchy



1) Bradley Street

A. Performance Measures

- a) Provides an entry statement to the release area.
- b) Where the topography allows, the road reserve provides water treatment swales rather than kerb and gutter.
- c) All development directly addresses the road.
- d) Direct vehicular access to development occurs only where topography and site distances allow.

- e) Provides for dedicated cycle lane on carriageway.
- f) The configuration of Bradley Street within the Urban Area - specifically the width of the kerb side lanes, can be adjusted to suit alternate access arrangements, such as services roads or areas where access is denied or not required.

B. Development Controls

- a) Bradley Street entry area is constructed in accordance with dimensions identified at Figure E7.25.
- b) Bradley Street urban area is constructed in accordance with dimensions identified at Figure E7.26.

Figure E7.25: Bradley Street – Entry Area

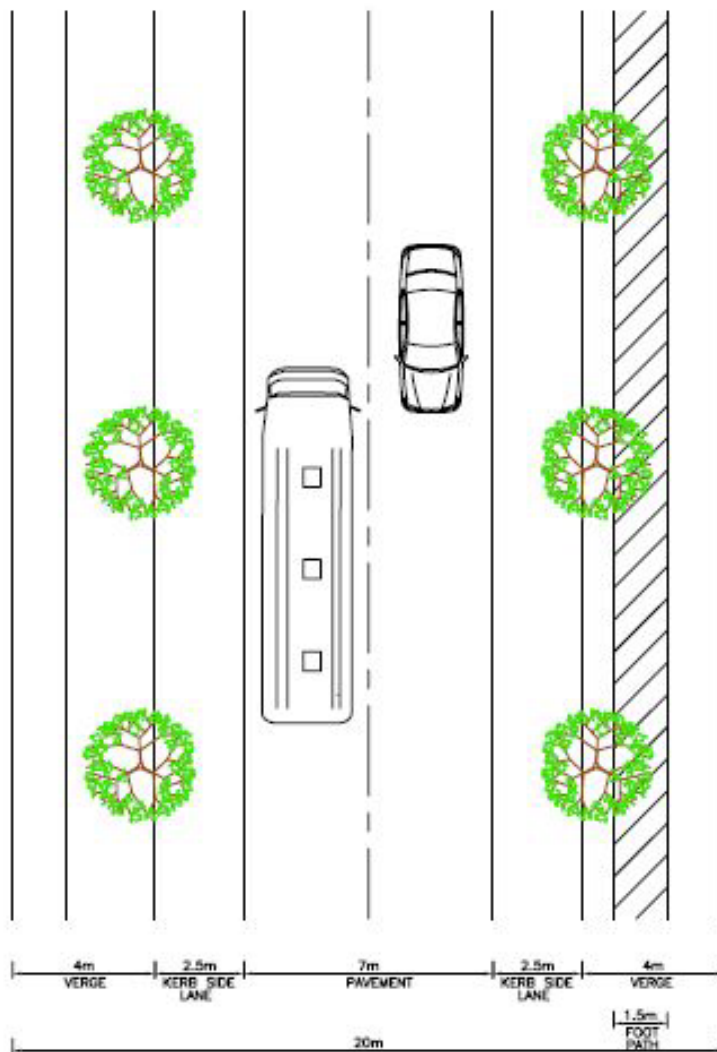
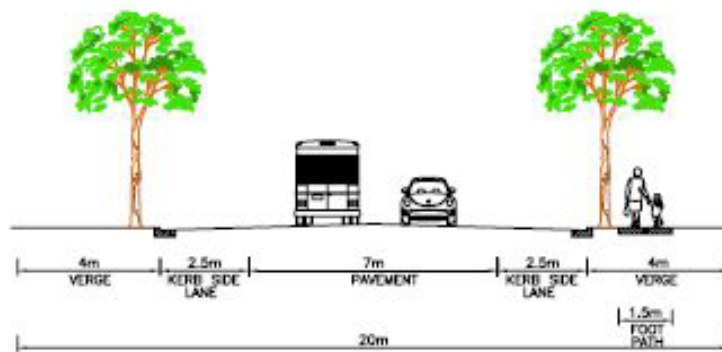
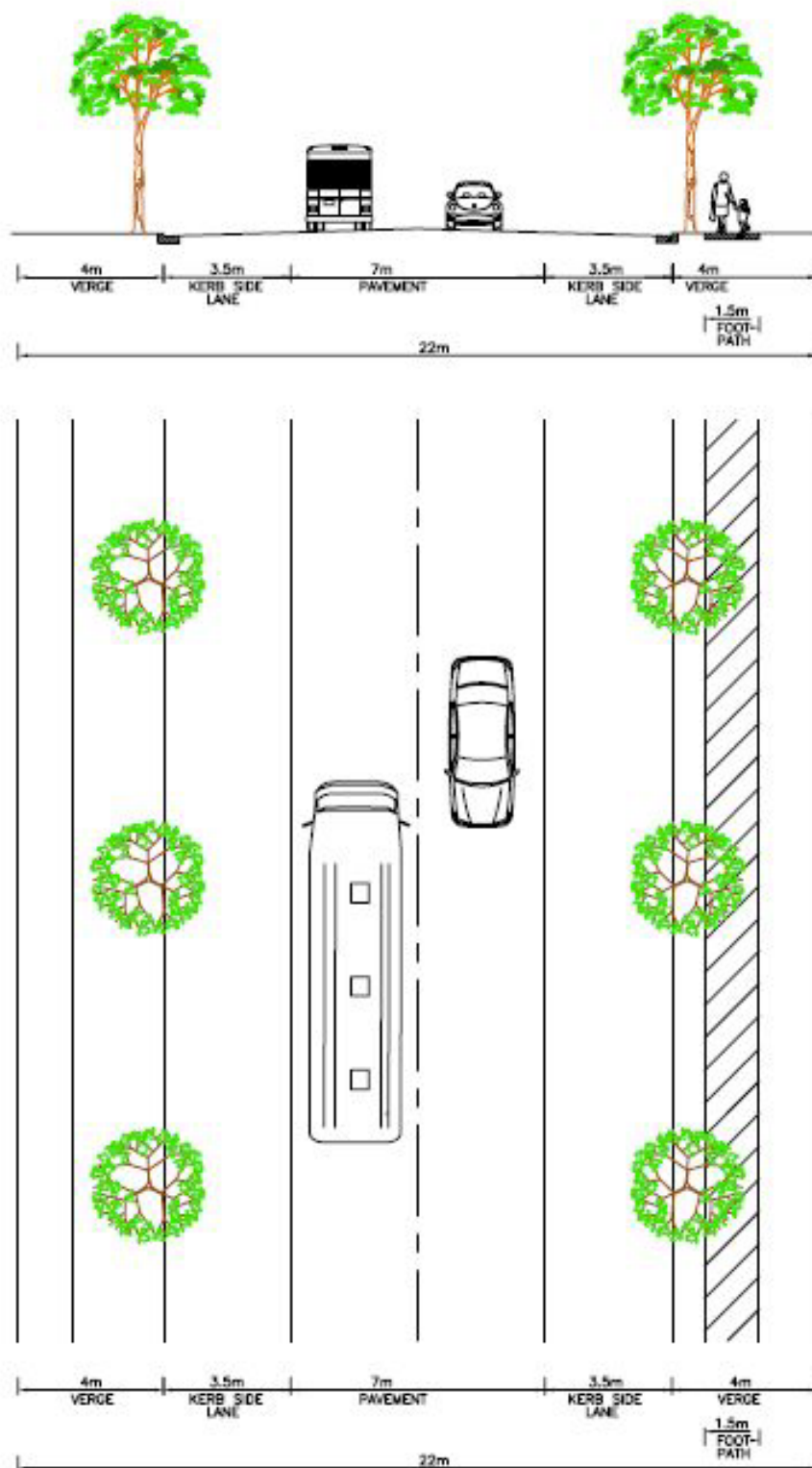


Figure E7.26: Bradley Street – Urban Area



2) Collector Roads

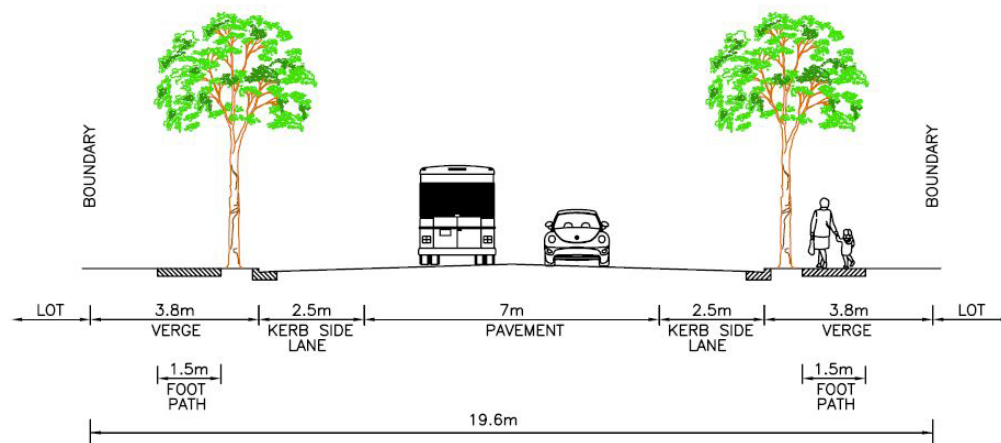
A. Performance Measures

- a) Provide high accessibility for all road users throughout the release area.
- b) Exhibit an urban landscape character.
- c) Have a clear lane width able to handle local bus services.
- d) Are of a scale consistent with the higher order role these roads will play in the overall movement network the release area.
- e) Integrate footpaths and establish pedestrian amenity that reflect the linking role these streets will play in the urban fabric.
- f) Be designed to provide safe pedestrian crossing points and lighting in accordance with the relevant Australian Standard.
- g) Are able to comfortably accommodate the co-location of bus shelters and pathways.

B. Development Controls

- 1) Collector Streets are constructed in accordance with Figure E7.27.
- 2) Widening of road may be required where topographical or road curve circumstances dictate.

Figure E7.27: Collector Road



3) Local Roads

A. Performance Measures

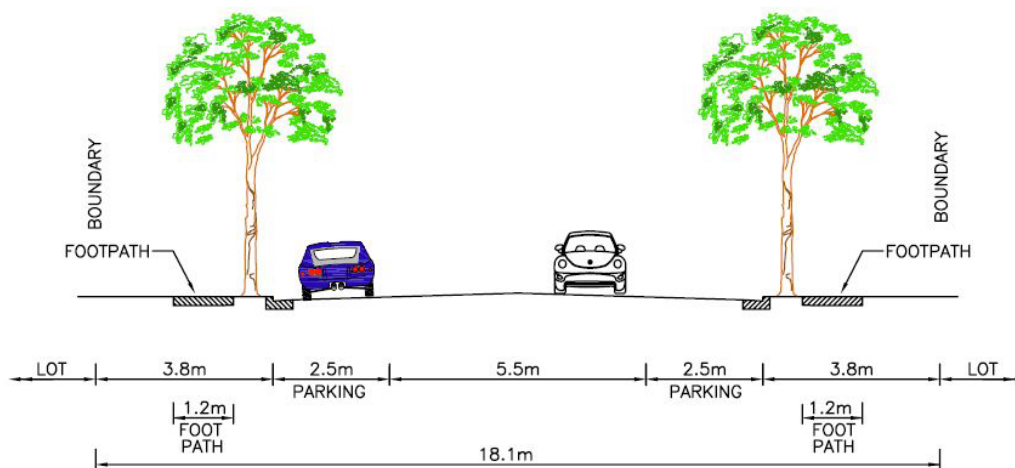
- a) Provide high levels of accessibility between the loop road and adjoining precincts.
- b) Roads are designed to allow a reasonable free flow of traffic at lower speeds.
- c) Occasional, minor delays or the need for driver co-operation due to vehicles parking on local roads is an acceptable, traffic calming outcome.

- d) Speed controls are provided as integrated element of the streetscape.
- e) Comfortably accommodate informal on-street parking.

B. Development Controls

- a) Streets are constructed in accordance with the dimensions identified at Figure E7.28.
- b) Widening of road may be required where topographical or road curve circumstances dictate.

Figure E7.28: Local Road



4) Minor Local Roads

A. Performance Measures

- a) Provide limited vehicle access for through traffic looking to access or exit the local road network.
- b) Regular, minor delays or the need for driver co-operation due to vehicles parking on local roads are an acceptable, traffic calming outcome.
- c) Maintaining high levels of permeability for non-vehicle road users.
- d) Roads are designed to ensure a low speed traffic environment.
- e) Informal on street parking constrains traffic movement.

B. Development Controls

- 1) Streets are constructed in accordance with the dimensions identified at Figure E7.29.
- 2) Widening of road may be required where topographical or road curve circumstances dictate.

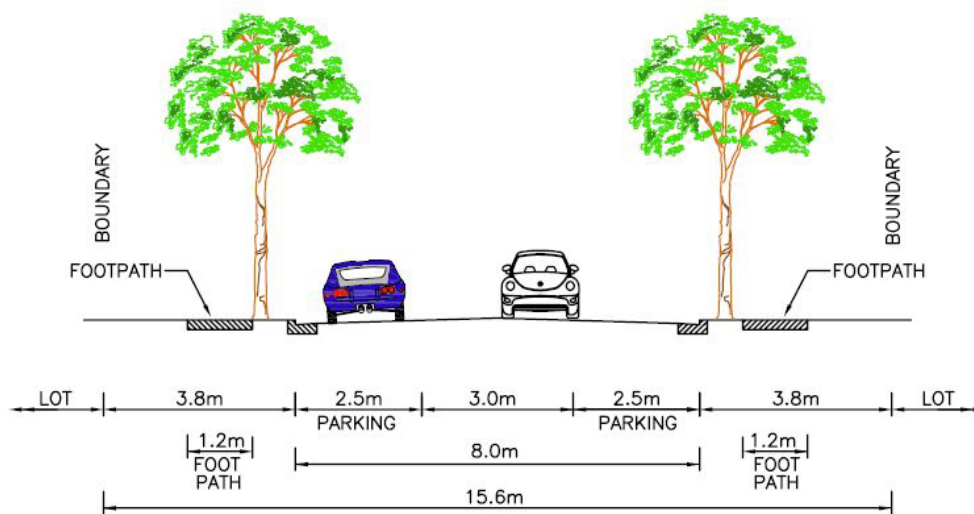


Figure E7.29: Minor Local Road

5) Lane Ways

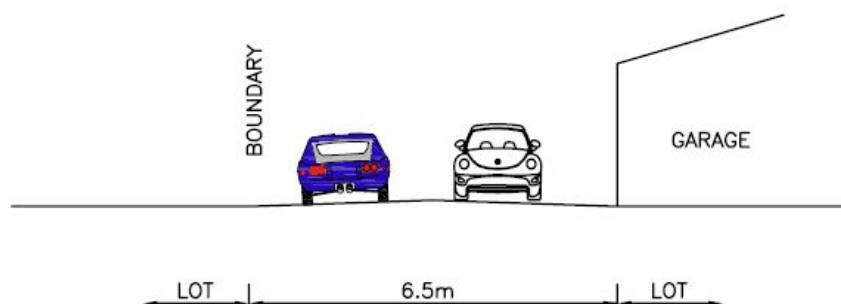
A. Performance Measures

- Lanes are shared zones allowing vehicular traffic for access to rear loaded garages only.
- Are to incorporate a change in materials and/or kerb cuts to provide differentiation to other vehicular streets.
- Are constructed in plain concrete pavement.
- No parking is permitted in Lane Ways.
- Designed with a central invert for drainage where topography allows.
- Studio units built above or adjacent to garages will be encouraged to provide surveillance.
- Laneway provide distinctive plantings at lane entry areas.

B. Development Controls

- Streets are constructed in accordance with the dimensions identified at Figure E7.30.
- Widening of road may be required where topographical or road curve circumstances dictate.
- The road design seeks to provide a maximum speed of 15 km/h.

Figure E7.30: Laneways



7.4.3.4 Open Spaces

7.4.3.4.1 Active Open Space

A. Objectives

- a) To provide for the active recreational needs of the local community.
- b) To provide multipurpose sporting and recreational activities that reflects seasonal demands.
- c) To provide a central neighbourhood place for community activities and gatherings.
- d) To provide the focus of interconnected high amenity landscaped environment.
- e) To encourage an active lifestyle for residents.

B. Performance Measures

These objectives may be achieved where:

- a) An active open space area is provided in accordance with the Figure E7.31.
- b) The open space provides a diverse range of active and sporting facilities.
- c) Active playing areas are provided with facilities and infrastructure to support various sporting events, including amenities for spectators.
- d) Active playing areas are differentiated as separate places by plantings, paths and other landscape elements.
- e) Pathways provide:
 - i) connection between the site and the broader pedestrian and bicycle network.

- ii) spectator access to and around the playing fields.
 - iii) connection to the Neighbourhood Centre and Primary School.
- f) Adjacent buildings provide passive surveillance of the park area.
- g) No back fences of development are to face public open space.
- h) Parking is provided both as a central parking lot and parking bays on the streets around the park.
- i) Large trees are provided around the perimeter of the park to enclose the space.
- j) The park is provided with an open and low fence or bollard type barrier along its perimeter.
- k) The park either provides or is co-located with the following facilities
 - i) large children playground.
 - ii) BBQ + Picnic facilities.
 - iii) Shade and seating structures,
 within or adjacent the riparian zone, but only within the vegetated buffer if no alternative location outside the vegetated buffer can be found, they only occupy limited areas, and they can be designed to not reduce the function of the adjacent core riparian zone.
- l) The indicative layout of the open space areas is shown on Figure E17.32.

C. Development Controls

- 1) A minimum area of 6.9 hectares is to be provided for active open space in a single location and configuration that can accommodate all identified uses.
- 2) Minimum Sporting facilities are to include:
 - a) Two Rugby League fields capable of use for cricket in summer cricket.
 - b) A multi-purpose Little Athletics and AFL field.
 - c) Two long jump pits.
 - d) One discus and shot put cage with associated throw space.
 - e) All active areas are provided with training lights.
 - f) Playing fields are provided on a north-south axis.
 - g) Safe and functional spectator seating and standing areas adjacent to the playing on their east and west sides.
 - h) A centrally metered irrigation system for the playing fields.
 - i) Shade structures for spectators.
- 3) A centrally located amenities complex containing:
 - a) 4 x team change rooms.
 - b) 2 x referee change rooms.
 - c) 2 x public toilet facilities appropriate for the number of spectators.
 - d) 2 x canteen spaces with a shared kitchen.
 - e) 2 x storage spaces.

- f) 1 x field management facility approximately 200m² in area.
- g) Wide paved apron area and roofed verandahs.
- h) A bitumen sealed, line-marked and lit area for 100 parked cars (including adequate accessible parking) and associated manoeuvring.

Figure E7.31: Open Space Network

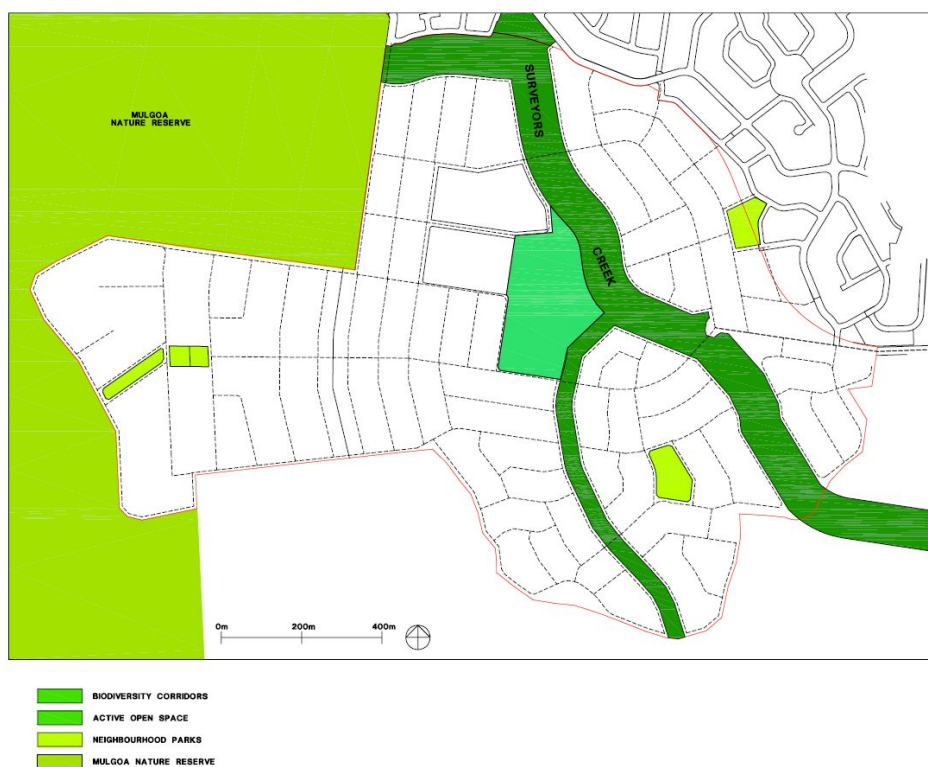


Figure E7.32: Active Open Space Layout



7.4.3.4.2 Neighbourhood Parks

A. Objectives

- a) To create a variety of public spaces that provides both passive and informal active open spaces.
- b) To conserve natural features of the site.
- c) To provide high amenity areas for adjacent residential development.
- d) To facilitate cultural identity through art and design in public places, with the engagement of the local community.

B. Performance Measures

These objectives may be achieved where:

- a) Each park is provided with has its own distinctive landscape character.
- b) Existing vegetation is retained and enhanced by additional complementary plantings.
- c) Parks create a precinct focus for the surrounding neighbourhood.
- d) Parks are generally bounded by streets with buildings oriented towards the open space providing outlook and passive surveillance.
- e) There are no back fences of development facing public open space.
- f) The parks provide linkages between the broader pedestrian and bicycle networks.
- g) Playground facilities are provided within the parks.
- h) Seating and shade opportunities are provided within the parks.

- i) The indicative location of neighbourhood parks is shown on Figure E7.31.
- j) Public art is provided throughout key public domain areas (refer Section 7.4.3.3.2 Street Furniture and Public Art).

C. Development Controls

- 1) A minimum total of 3.0 ha will be dedicated to Council to create 3 x large neighbourhood parks in areas generally shown at Figure E7.31.

7.4.3.4.3 Riparian Corridor Edge Parks

A. Objectives

- a) To provide an integrated network of open spaces.
- b) To enhance the character of major drainage routes through revegetation of those corridors.
- c) To provide high amenity areas for adjacent residential development.
- d) To link and extend the access and movement network for bicycles and pedestrians.
- e) To encourage an active lifestyle for residents by providing recreational and educational opportunities.

B. Performance Measures

These objectives may be achieved where:

- a) Recreational and educational opportunities dominate over the stormwater function of this location.
- b) A perimeter pathway is provided along both edges of the corridors.
- c) The pathway meanders through a diversity of landscaping settings that provide shade opportunities for users.
- d) The park is generally bounded by streets with buildings oriented towards the open space providing outlook and passive surveillance.
- e) There are no back fences of development facing the public open space.
- f) The park is provided with an open and low perimeter fence or bollard type barrier along the entire edge.
- g) Facilities including seating, shade, playgrounds and interpretive signage are provided at regular intervals along the edge.
- h) Parking opportunities are provided within the road reserve and co-located with recreational facilities.
- i) Riparian corridor parks can be co-located with active open spaces and neighbourhood parks.

C. Development Controls

- 1) The minimum width for shared and dedicated paths in open space network is 2.5m.

7.4.3.5 Neighbourhood Precinct

A. Objectives

- a) To create a memorable village experience for the local community.
- b) To provide a highly accessible community focal and gathering point.
- c) To create a retail centre based on traditional 'Main Street' shopping experiences.
- d) To ensure that a safe public domain represents a defining element of the centre.
- e) To accommodate a diverse mix of land uses including residential.
- f) To ensure that adequate land is reserved for the provision of a Primary School.
- g) To ensure the scale of retailing facilities sits comfortably within the local and regional retail hierarchy.
- h) To avoid duplication of parking provision by co-locating key land uses.
- i) To facilitate and encourage walking, cycling and public transport access as well as car access.

7.4.3.5.1 Urban Structure

A. Performance Measures

- a) The Neighbourhood Precinct is located at the heart of the community within a 10 minute walk for most of that community.
- b) A high quality public domain area is provided as part of a central organising element of the centre.
- c) The centre is co-located with other high use public places including active open space and the primary school.
- d) The retail area is located on the loop collector road.
- e) Accessible and legible linkages are provided between other key community components such as recreation areas and schools.
- f) The Precinct accommodates multi-mode transport ensuring excellent pedestrian and cycle links.
- g) Public transport is accommodated within the centre of the retailing precinct.
- h) The precinct shall provide both open-lot car parking and street based parking for convenience.
- i) Various land uses co-located in the Neighbourhood Precinct make efficient use of the total car parking spaces available.
- j) People are able to park their car in one location and engage in a variety of activities in close proximity to that space and within a safe pedestrian environment.
- k) Retail facilities are delivered as an early element of the broader release area.

7.4.3.5.2 Urban Character

A. Performance Measures

- a) The Precinct creates a sense of arrival and community identity.

- b) The Precinct is integrated into the overall release area landscape structure, emphasising the hierarchy of the precinct in the overall urban structure.
- c) A walkable pedestrian friendly environment is to be established with leafy active wide footpaths and pedestrian links that connect activities and gathering spaces.
- d) The precinct includes public meeting places, squares or promenades to create varied, comfortable, and accessible environments that provide a focus and destination for community activity.
- e) Car parks are to be leafy plazas that provide opportunities for other uses (i.e. markets or public gathering) with clear defined pedestrian links.
- f) Where medium to large scale uses are planned, finer grained uses should be incorporated time to minimise the impact of bulk and scale to the main thoroughfares of pedestrian movement.
- g) Opportunities for residential development are carefully planned within and adjacent to the Precinct Centre providing for passive security and surveillance.
- h) Appropriate dwelling forms encourage growth of the Precinct in time, both in terms of extended active hours and adaptive uses that allow for home based incubator businesses to emerge.
- i) The building form creates a series of spaces that provide shade in summer, sun in winter and are sheltered from unpleasant prevailing winds.
- j) Buildings define the street and provide a relatively continuous street frontage.
- k) Public art is incorporated at key focal points to promote community identity.
- l) The Main Street road reservation will allow for the provision of generously wide footpaths.
- m) Housing forms in the precinct will provide opportunities for home based employment and businesses.
- n) Key street intersections and transport interchanges are provided with distinctive paving and threshold type landscape treatments.

7.4.3.5.3 Retail Built Forms

A. Performance Measures

- a) Retailing is provided in a combination of traditional main street and internalised spaces.
- b) Smaller scaled single shops are presented to the main street.
- c) Maximise the percentage of active shopfront to public streets.
- d) Buildings are built primarily to the street edge.
- e) Glazed shop fronts are provided at the interface with the street.
- f) Wide awnings or verandahs are provided to the main street to provide pedestrian amenity.
- g) Shop fronts and awnings return around corners.
- h) Building design reflects a human and village scale.
- i) Buildings provide an appropriate environmental response to encourage pedestrian activity, seating and gathering spaces and contributing to safety and security.
- j) Two storey scale forms are provided at key road intersections within the centre.

- k) Entry areas to internalised retail areas are well defined and highly legible.
- l) The impact of deliveries should be minimised through location and separation of those activities.
- m) Figure E7.33 provides an indicative structure and layout Image for the Neighbourhood Precinct.

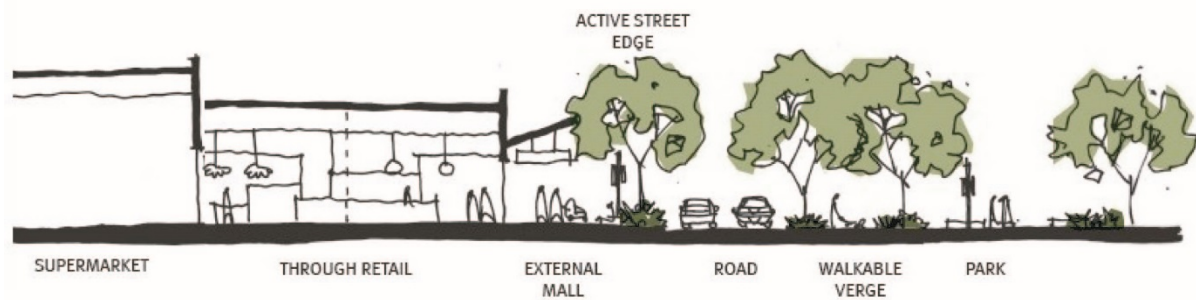
B. Development Controls

- 1) Detailed design and planning of the Neighbourhood Precinct shall be subject to the formulation of a Concept Plan as part of a Staged Development.
- 2) The road reservation for the Neighbourhood Centre Main Street will be designed and constructed as per Figure E7.36.
- 3) Any supermarket facility has an 'open' exterior.

Figure E7.33: Neighbourhood Precinct Structure



Figure E7.34: Section for the Neighbourhood Centre Main Street

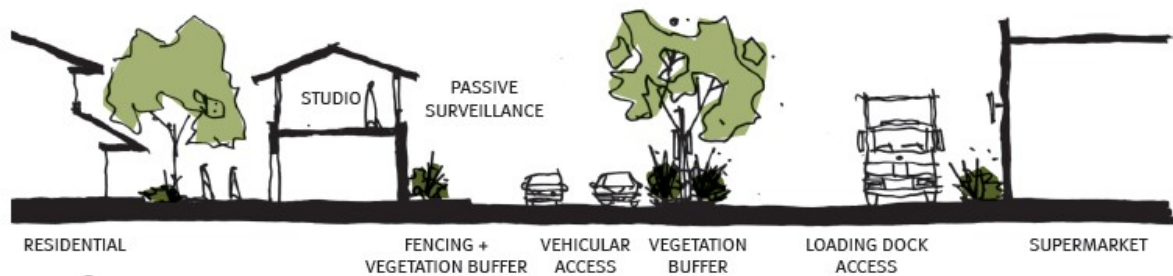


A

SECTION

B

Figure E7.35: Section for the Neighbourhood Centre Main Street (2)

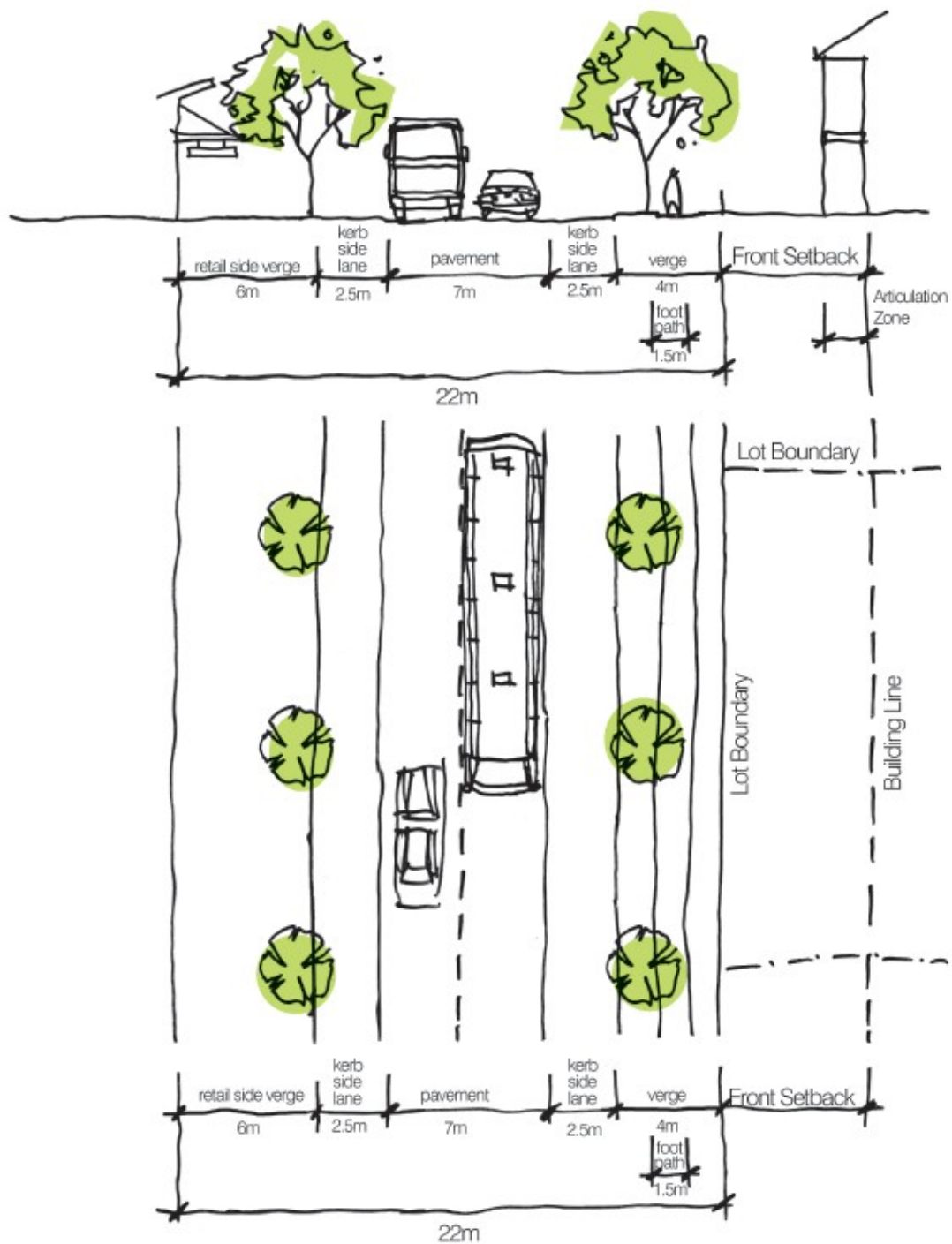


C

SECTION

D

Figure E7.36: Neighbourhood Precinct Road Reserve



7.4.3.5.4 Primary School

A. Performance Measures

- a) The school is located adjacent or closely linked by a pedestrian safe route to public playing fields.
- b) The school is located on a public bus route.
- c) Provides landmark buildings that define key road intersections.
- d) The built form of the school engages and activates the street edge to contribute to the pedestrian character and mutually benefit from passive surveillance.
- e) Suitable space should be provided for the short term pick-up and drop-off students that avoid the need for continuous circulating traffic.

B. Development Controls

- 1) Detailed design and planning of the School and Neighbourhood Centre shall be subject to the formulation of a Concept Plan as part of a Staged Development.
- 2) A minimum site frontage of 60m must be provided. This includes a minimum length of 40m for a single bus bay. Additional frontage, the equivalent of 12m per bus, may be required if a larger bus set-down area is needed.

7.4.4 Private Domain

7.4.4.1 Subdivision

A. Objectives

- a) To provide block sizes that maximise access to solar orientation.
- b) To provide a subdivision pattern that accommodates a range of dwelling densities and lot sizes.
- c) To provide lot sizes and shape that reflect the broader urban structure.
- d) To promote the most appropriate locations for higher density housing forms.
- e) To ensure development responds to site topography and natural assets.

B. Performance Measures

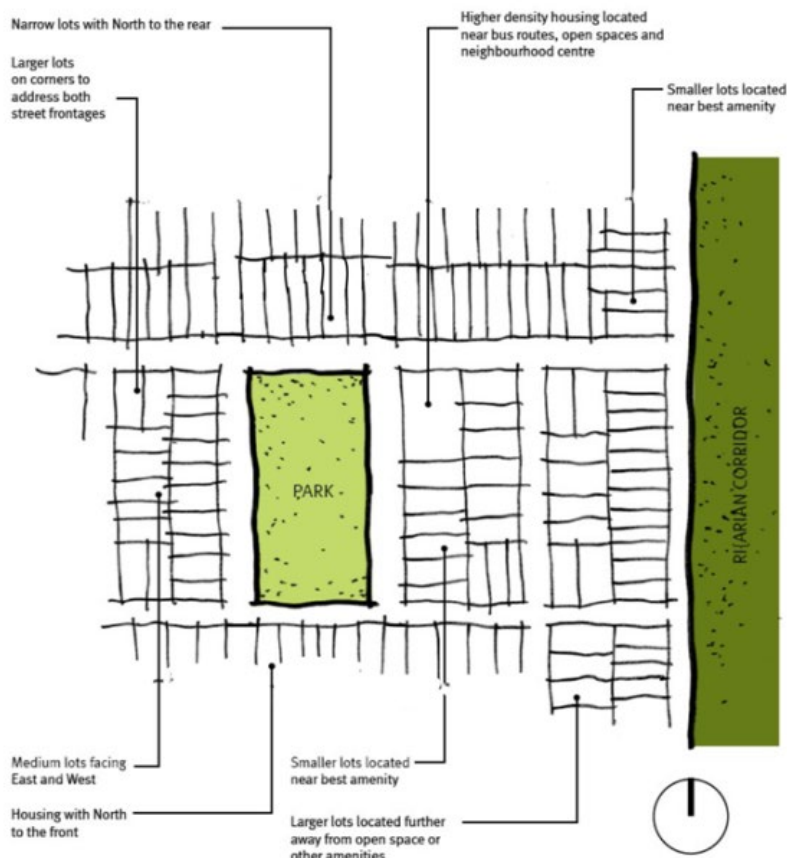
- a) Blocks and lots are generally rectilinear.
- b) Lots are oriented to facilitate siting of dwellings and private open space to take advantage of winter solar access and summer sun deflection.
- c) Lots identified to accommodate higher density housing forms will be focused on or around:
 - i) Open space areas.
 - ii) Neighbourhood centre.

- iii) Areas of highest accessibility.
- iv) Areas of high quality amenity.
- d) Larger lot frontages provided on street corners to allow development to address both street frontages.
- e) Lot sizes will respond to site topography by providing larger lots on sloping lands.
- f) Larger lots are provided in the rural transition (R2 Low Density Residential) zone.
- g) Lot sizes and dimensions take into account site topography and reduce the need for earthworks and retaining wall construction.
- h) Lot sizes and dimensions allow for retention of existing trees as part of subsequent site development.
- i) Lots front streets and overlook open spaces to provide passive surveillance of those areas.
- j) Benching of sites should preferably be undertaken at subdivision stage and earthworks plans should indicate positions of necessary retaining structures and associated drainage.

C. Development Controls

- 1) Subdivision including the creation of super lots will provide for the achievement of minimum dwelling targets.
- 2) Single dwelling lots are a minimum of 25m deep.
- 3) Lots in the rural transition (R2 Low Density Residential) zone will have a minimum lot size in accordance with Penrith LEP 2010.
- 4) Vary the depth of north-south oriented lots to provide longer, narrower lots on the south side of the street and shorter, wider lots on the north side, where possible.
- 5) Ensure lots with an east-west axis are 12m or more wide where possible, unless they are intended for use by attached dwellings.
- 6) Retaining walls are to be constructed with appropriate masonry materials.

Figure E7.37: Lot Design Principles



7.4.4.2 Shared Driveways

A. Objectives

- a) To provide make efficient use of urban land.
- b) To create high quality streetscapes.
- c) To minimise conflict between pedestrians and vehicles.

B. Performance Measures

- a) Shared driveways are formalised through the creation of right of carriageways as part of the subdivision.

- b) Provide safe and convenient access to rear garages.
- c) Shared driveways are a low maintenance environment.
- d) Shared driveways are used solely by residents with garages accessed by the private driveways.
- e) Shared driveways are the smallest configuration possible to serve the required rear garages.
- f) At the street entry, the driveway is narrow and landscaped to have low visual impact at the street entry and be clearly distinguishable as private access only.
- g) A studio is provided at the end of the longest driveway axis and provides windows that overlook the shared driveway.
- h) Adjacent dwellings provide additional passive surveillance opportunities over the driveway.
- i) Pedestrian gates are provided from the driveway to adjoining rear yard areas.
- j) Subdivision provides an appropriate arrangement for the long term maintenance and management for the driveway.

C. Development Controls

- 1) Will serve a maximum of 6 dwellings.
- 2) Are generally configured as one of four general types depending on block geometry and garages to be accessed as per Figure E7.38.
- 3) Are generally 3m wide and allow for exiting in a forward direction.
- 4) If connected to a street that will carry more than 300 vehicles per day, the shared driveway shall have a width of 5.5m for a distance of 6m from the kerb line.
- 5) All private driveways shall achieve the design standards as identified per Figure E7.39.
- 6) A minimum of one garage fronting the Shared Driveway provides a studio above the garage.

Figure E7.38: Shared Driveways Access Options

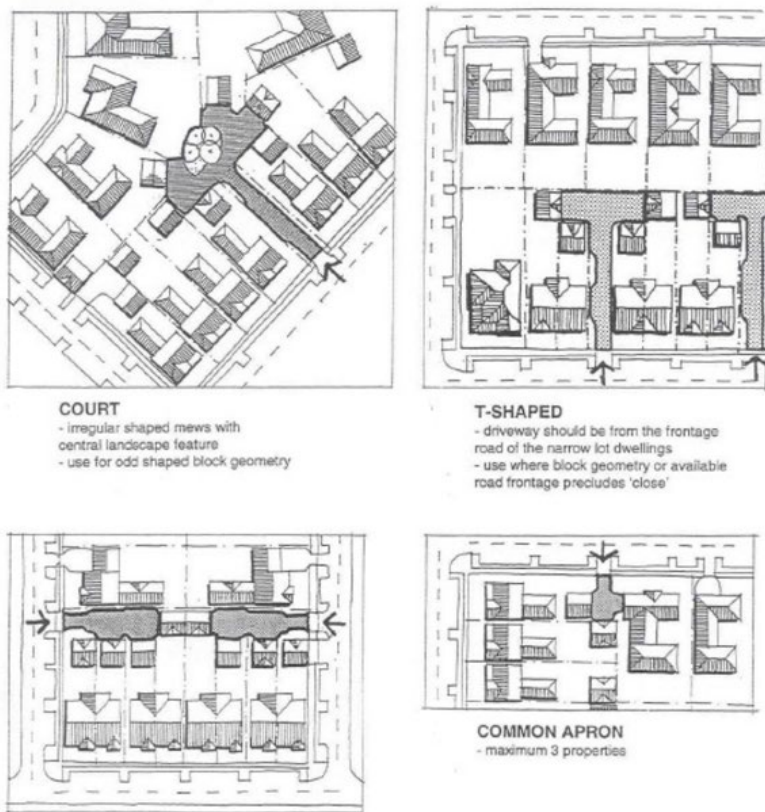
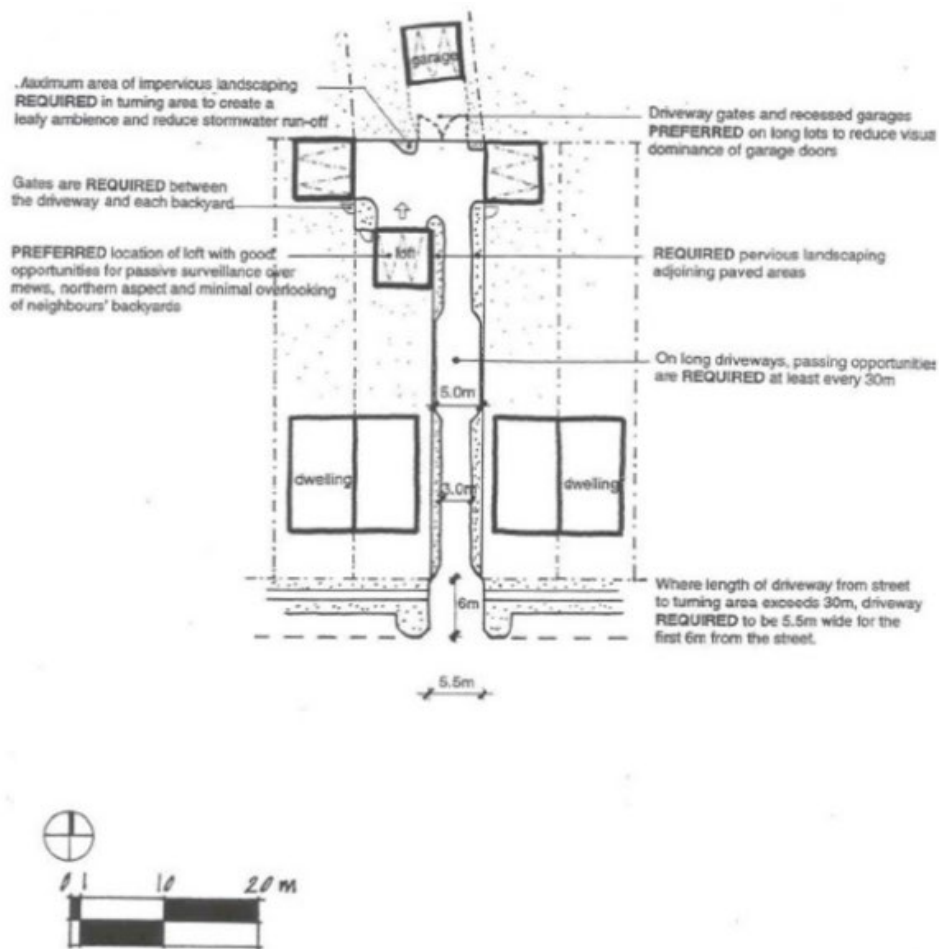


Figure E7.39: Shared Driveway - Design Principles



7.4.4.3 Site Planning

7.4.4.3.1 Principal Private Open Space

A. Objectives

- To provide a high level of residential amenity with opportunities for outdoor living within the property.
- To enhance the spatial quality, outlook, and usability of private open space.
- To optimise solar access to the living areas and private open spaces of the dwelling.

B. Performance Measures

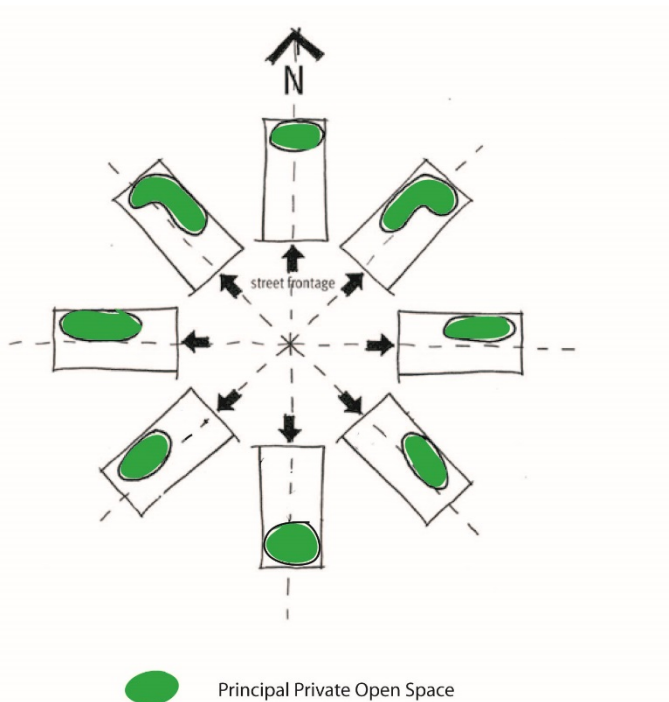
- Principal private open spaces are the primary organising element of site planning and dwelling design.
- Private open spaces should be located at ground level in rear yard areas that maximise opportunities to obtain solar access for all dwelling types other than apartments.
- Development with a northern orientation provides secondary private open spaces area at the street frontages through the use of courtyards and balconies.

- d) The principal private open spaces should have a direct interface with primary internal living area of its dwelling.
- e) Development should achieve the preferred location for open space location as demonstrated at Figure E7.40.

C. Development Control

- 1) Dwellings will achieve the minimum standards for Principal Private Open Space as identified at Section 5 of this section.

Figure E7.40: Private Open Space Siting



7.4.4.3.2 Garages and Parking

A. Objectives

- a) To provide sufficient and convenient parking for residents and visitors.
- b) To reduce the visual impact of garages, carports, and parking areas on the streetscape and improve dwelling presentation.
- c) To promote safe public domain areas.

B. Performance Measures

- a) Garages are sited as per the preferred siting diagram at Figure E7.41.
- b) The width of the lot will determine the maximum size of garage provided in either street frontage or rear lane locations as demonstrated at Figure E7.42.
- c) Front garages are to be setback behind the front most element of the house and integrated as part of the dwelling façade.

- d) Garages are constructed in materials and colours, which blend the garage doors into the main building.
- e) Garages provide flexible accommodation for vehicles, storage, and covered areas for outdoor recreation.
- f) Stacked parking is an acceptable outcome provided it is accommodated entirely within the property.
- g) Studios are provided over garages to rear lanes to provide surveillance, work from home or residential accommodation opportunities.
- h) Vehicle crossings between the street and front boundary shall be constructed in plain concrete only.

C. Development Controls

- 1) Double garages are the maximum garage size allowed for single dwelling houses.
- 2) Where a dwelling provides vehicular access to the street the garage will be setback a minimum of 5.5m from the front boundary.
- 3) Garages are to be provided per AS 2890.1 Off Street Parking, including:
 - a) Minimum width of 3.2m for single garages.
 - b) Minimum width of 5.8m for double garages.

Figure E7.41: Garage Siting

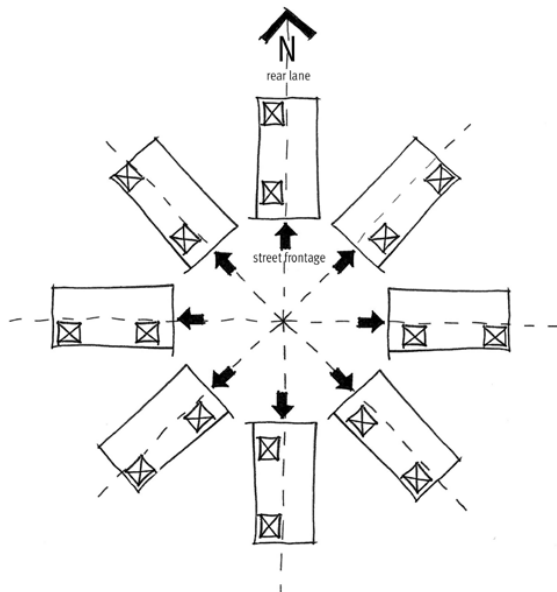
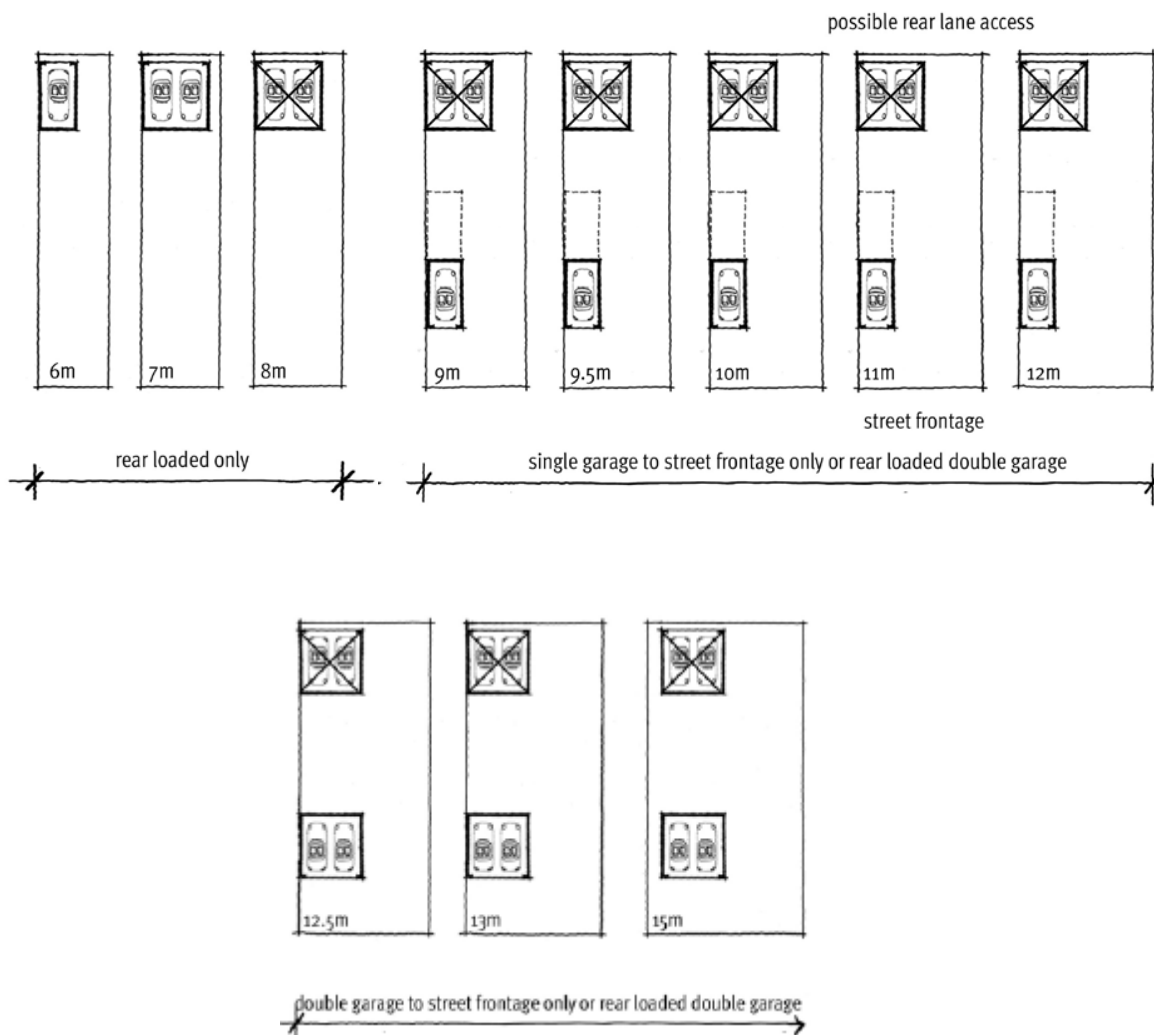


Figure E7.42: Maximum Garage Size



7.4.4.3.3

Building Footprints

A. Objectives

- To provide a variety of streetscapes that reflect the character of different precincts.
- To create an attractive and cohesive streetscape within local precincts.
- To maximise provision of solar access to dwellings.
- To minimise the impacts of development on neighbouring properties in regard to view, privacy, and overshadowing.
- To encourage the efficient and sustainable use of land.
- To allow for landscaped rear yard areas.
- To promote public safety of public domain areas.
- To manage risk from bushfire events.

B. Performance Measures

Front Setbacks

- a) Front setbacks are site responsive and will be determined for individual lots as part of the Subdivision Approval process given consideration to the following matters:
 - i) Future dwelling type.
 - ii) Orientation of lots.
 - iii) Provision of front yard open space and associated fencing.
 - iv) Availability of direct vehicle access to the street.
 - v) Relevant role of street in local road hierarchy.
 - vi) Proximity to open space areas.
 - vii) Location within Neighbourhood Centre.
 - viii) Requirements to provide Asset Protection Zone.

Rear Setbacks

- a) Landscaping provision to allow tall trees in the rear yard area to provide a vegetated backdrop to the development.

C. Development Controls

1) Front Setbacks

- a) Front setbacks are identified in Section 7.4.5 – Typical Development Forms, for each dwelling type.

2) Side Setbacks

- a) The width of the lot will determine the ability of the site to provide zero lot lines as demonstrated at Figure E7.43.
- b) Where only one side of a lot can provide a zero lot line, then Figure E7.44 will be used to determine which of those boundaries accommodates that zero lot line.
- c) A maintenance easement of at least 900mm is to be provided on the boundary adjacent to the zero lot line.
- d) All other side setbacks will be a minimum of 900mm.
- e) Fascias, gutters, downpipes, eaves (up to 450mm wide) and chimneys flues may encroach into the side setback.
- f) No windows are provided in zero lot line walls.

Figure E7.43: Zero Lot Lines

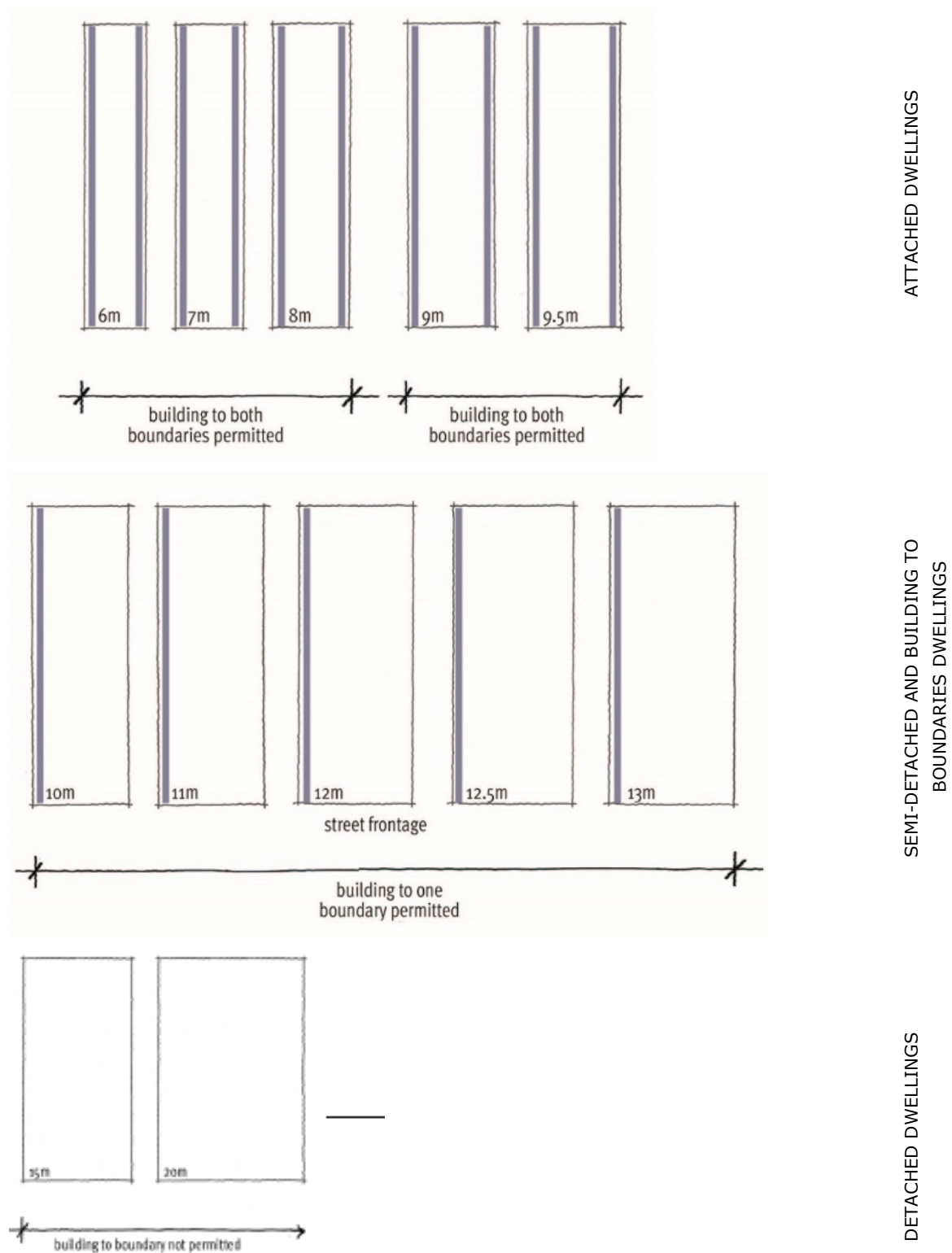
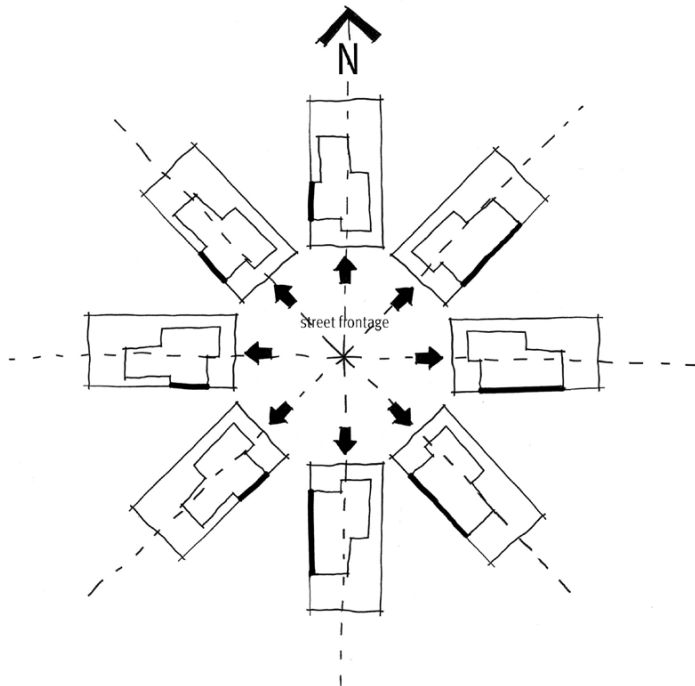


Figure E7.44: Zero Lot Line Location



7.4.4.4 Solar Planning

A. Objectives

- a) To achieve a high standard of residential amenity; and
- b) To protect reasonable amenity expectations of neighbouring sites.

B. Development Controls

- 1) Areas of Principal Private Open Space should achieve at least 3 hours of sunlight to 50% of the required private open space area between 9am and 3pm on 21 June.
- 2) Buildings should be designed to ensure that 40% of the Principal Private Open Space areas of adjoining dwelling sites receive a minimum of 3 hours of sunlight between 9.00am and 3.00pm on 21 June each year.

7.4.4.5 Dwelling Design

A. Objectives

- a) To provide simple and articulated building forms.
- b) To provide a high quality and cohesive streetscape.

- c) To promote an architectural style that is contemporary and innovative.
- d) To promote a safe public domain area.
- e) To promote energy efficient and sustainable development.
- f) To reduce the dominance of garages on the streetscape.
- g) To identify appropriate design responses for corner lots.

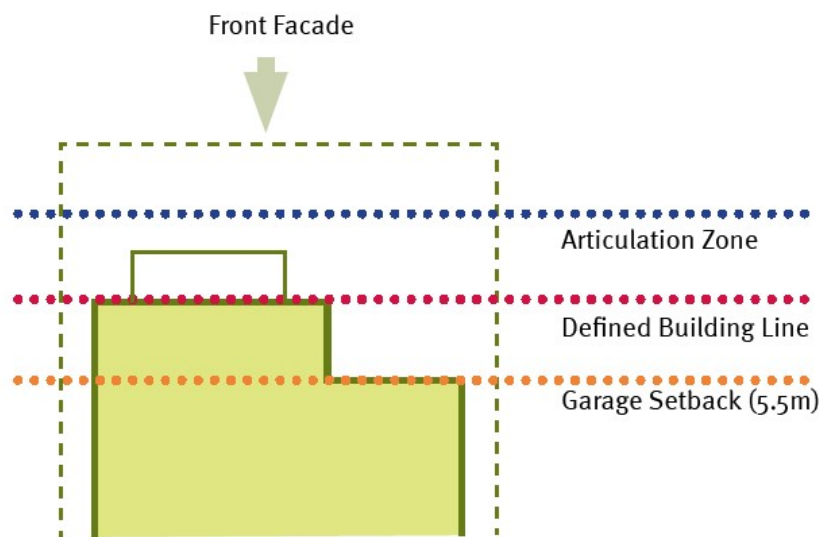
B. Performance Measures

- a) All development addresses the street and is provided with a clear, legible and well lit pedestrian entry.
- b) The street elevation is well articulated by the use of awnings, verandahs, balconies and feature elements on the front facades of dwellings.
- c) Development will achieve the principle of three layers of front setbacks as illustrated at Figure E7.45.
- d) The finished ground level of development is raised above the street level to improve the outlook and enhance visual privacy from within the dwelling and front verandahs.
- e) Garages will be recessed or capped by overhanging elements that provide shading over the garage opening.
- f) Dwellings orientate living spaces to the north, sleeping areas to the east or south and utility areas to the west or south.
- g) Dwellings provide shading of north, east and west facing windows with pergolas and awnings.
- h) Buildings are to be designed to allow cross ventilation by positioning windows and doors opposite each other within rooms.
- i) Material and external finishes of buildings in bushfire hazard areas comprise appropriate construction standards for those areas.
- j) Built forms on corners provide important place making and way finding elements in the streetscape.
- k) Corner sites provide a frontage to both streets and articulate their corner location with an architectural feature such as a wraparound verandah, bay window, corner entry or roof feature.
- l) Garages on corner lots are accessed from the secondary street.
- m) Dwellings provide adaptable house floor plans for the inclusion of a home office/business activity area.

C. Development Controls

- 1) Verandahs, awnings, etc. may project forward of the front building setback line by a maximum of 1.5m.
- 2) Building elements projecting forward of the front building setback are limited to a maximum of 60% of the dwelling width.
- 3) Eaves are required over all walls except those on zero lot lines.
- 4) External building materials/finishes are to be varied across front elevations of buildings.

Figure E7.45: Setbacks and Articulation



7.4.4.6 Visual and Acoustic Privacy

A. Objectives

- a) Ensure buildings are designed to achieve the highest possible levels of visual and acoustic privacy.
- b) Protect visual privacy by minimising direct overlooking of habitable rooms and private open space.
- c) Contain noise within dwellings and minimise the intrusion of noise from outdoor areas.

B. Performance Measures

- a) Windows to upper storeys to be located on front or rear facades where possible.
- b) Offset second storey windows of living areas that face directly to windows, balconies or private open space of adjoining properties.
- c) First floor balconies or living room windows not permitted to directly overlook private open space of adjoining dwellings unless suitable screening is provided.
- d) The design of attached dwellings must minimise the opportunity for sound transmission through the building structure, with particular attention given to protection bedrooms and living areas.
- e) Living areas and service equipment are located away from bedrooms of neighbouring dwellings.
- f) In attached dwellings, bedrooms of one dwelling are not to share walls with living spaces or garages of adjoining dwellings, unless it is demonstrated that the shared walls and floors meet the noise transmission and insulation requirements of the Building Code of Australia.
- g) Noise sensitive areas are to be located away from the noise emitting sources.

C. Development Controls

- 1) Habitable room windows with a direct sight line to habitable room windows in adjacent dwellings are to be avoided, however within 9m must be obscured by fencing, screens, or sufficient landscaping;
- 2) A screening device is to have a maximum of 25% permeability to be considered effective.

7.4.4.7 Defining Boundaries

A. Objectives

- a) Creates a clear distinction between public and private domain areas.
- b) To ensure front fences contribute to the streetscape.
- c) Maintain safety in the public domain.
- d) Rear and side fencing provide privacy to open space areas.

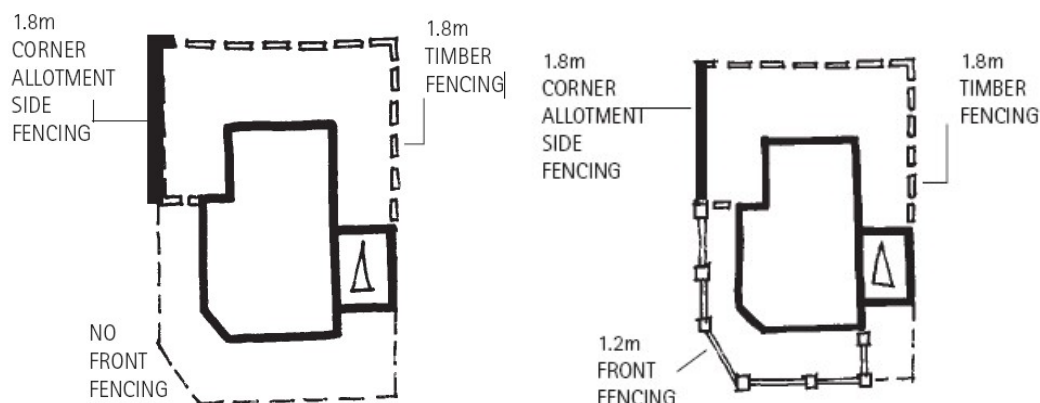
B. Performance Measures

- a) Delineation of front property boundaries is achieved through use of landscaping, low fences or changes of site level.
- b) Front fences must be transparent.
- c) Side property fences in front of the building line shall be treated as the front fence.
- d) Side property fences terminated at the front building line and returned to finish against the building.
- e) All retaining walls are to be of a masonry construction and where located on a boundary, traditional fencing material to be positioned on top of the retaining wall.

C. Development Controls

- 1) Fences to the street frontage:
 - a) are to be a maximum of 900mm in height.
 - b) may be a maximum of 1.2m in height where they define the primary open space of a dwelling.
- 2) Side property fences are to be a maximum of 1.8m high.
- 3) Fences to corner lots that accommodate single dwelling houses are to be a maximum 900mm high on both the primary street frontage and secondary street frontage to a point 10m from the dwelling frontage where it may then increase to 1,800mm in height.
- 4) Fences to corner lots that accommodate multi-unit housing forms are to be a maximum of 900 mm on the primary street frontage and 900 mm in height along the secondary street frontage in areas in front of the built form or 1.2m if they define the primary open space areas.
- 5) Transparent fencing shall have a minimum opening ratio of 50%.
- 6) Where solid fences are required to satisfy acoustic abatement, these fences shall not exceed 8m in length without some articulation or detailing to and must be softened on the street side with a landscaping strip of 700mm minimum.

Figure E7.46: Examples of Corner Lot Principles



7.4.4.8 Site Facilities

A. Objectives

- a) To ensure that adequate provision is made for site facilities.
- b) To ensure that site facilities are functional and accessible to all residents and are easy to maintain.
- c) To ensure that site facilities are thoughtfully integrated into development and are unobtrusive.

B. Performance Measures

- a) Development demonstrates that the design takes into account garbage bin storage and collection without reducing the amenity of the dwelling or neighbouring lots.
- b) Garbage bin storage and mail box structures are to be integrated with the overall design of buildings and/or landscaping and are not visible from the street or rear lane way.
- c) External clothes drying areas are to be provided for all residential development

7.4.5 Typical Development Forms

The development controls outlined in this Section are typical, generic arrangements for Glenmore Park Stage 2. Developers can establish more detailed controls for each precinct as part of approved Concept Plans, as long as those controls reflect the objectives and performance measures identified.

7.4.5.1 Apartments

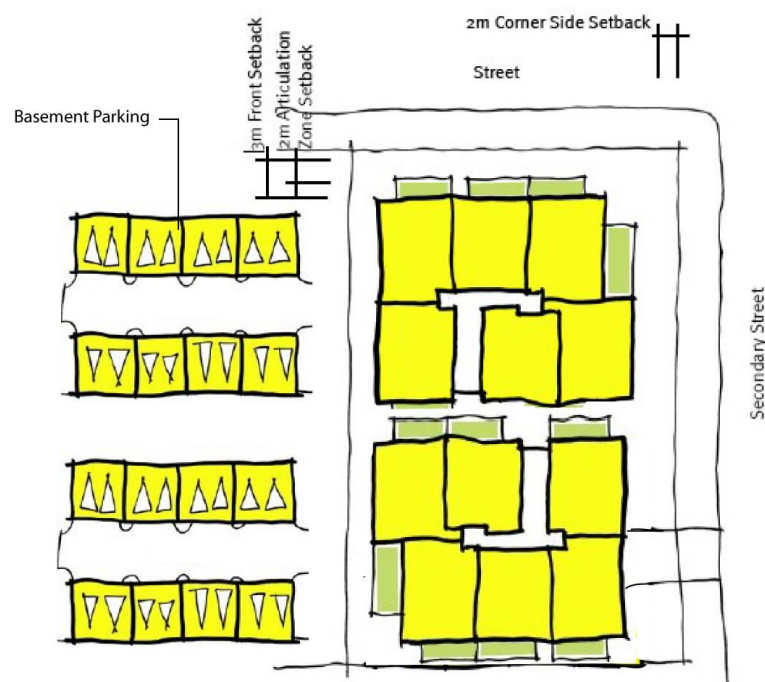
A. Performance Measures

- a) Development is designed to:
 - i) Provide a higher degree of urban orientated development outcomes.
 - ii) Be compatible in scale with the mass and character of adjacent building types.
 - iii) Provide parking on site and underground where possible.

B. Development Controls

Allotment Requirements	
Allotment Requirements	650m ²
Minimum Lot Frontage	25m
Open Space	
Ground level Principal Private Open Space	
Minimum Area	20m ²
Minimum Dimension	2.5m
Upper Level Principal Private Open Space	
Minimum Area	10m ²
Minimum Dimension	2m
Communal Open Space	
Development that provides more than 10 dwellings will provide a communal open space area that is at least 10% of the total site area.	
Minimum Dwelling Setbacks	
Front	3m
Secondary Setback	2m
Side	<ul style="list-style-type: none"> 1.5m for walls without openings to habitable rooms. 3m for walls with an opening to a habitable room.
Rear	<ul style="list-style-type: none"> 5m where development directly adjoins other residential development. 0m where development adjoins a rear lane or other public domain areas.
Garage to rear lane	0m
Other Requirements	
Location	<ul style="list-style-type: none"> In and adjacent to the Neighbourhood Centre Adjoining the major active open space facility
Height	Development shall: <ul style="list-style-type: none"> Have a maximum height of 4 storeys. Ensure building facades are articulated (balconies, blade walls, stepped facades, etc.) to provide visual interest and reduce overall building bulk.
Built Forms	Development must utilise multiple entries and circulation cores in buildings where a length greater than 15m.
Adaptable Dwellings	10% of dwellings shall be adaptable as per AS1428.1 – 1998 – Design for Access and Mobility.
Vehicle Manoeuvring	Provide turning movements as defined by AS2890.1 – 2004.

Figure E7.47: Apartment Design Principles



7.4.5.2 Terrace Dwellings and Live - Works

A. Performance Measures

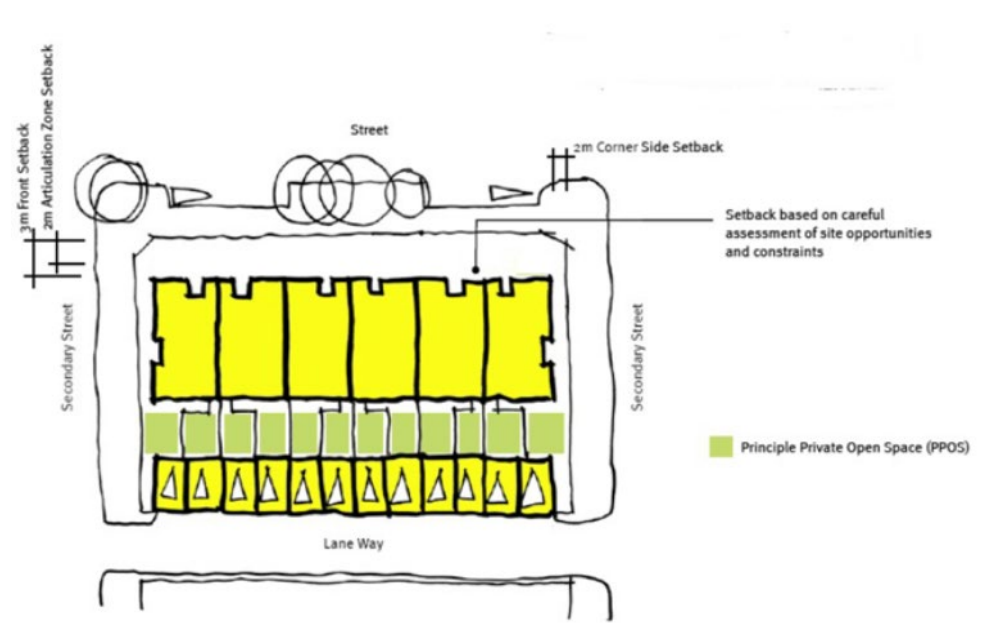
- a) Development is designed to:
 - i) Provide for parking with a rear loaded garage accessed from a rear lane or shared driveway.
 - ii) Rear of lot is generally orientated to the north.
 - iii) Integrated studio units located above a ground level garage or at ground level, located at the rear of the site in some locations.
 - iv) Dwellings are designed to incorporate the option of 'live-work' activities (homed-based businesses), particularly in locations adjacent to the Neighbourhood Centre.

B. Development Controls

Allotment Requirements	
Lot Size Range	195 – 230m ²
Lot Frontage	6m – 9.5m
Principal Private Open Space	
Minimum Area	20m ²
Minimum Dimension	4m

Minimum Dwelling Setbacks	
Front	3m
Secondary Frontage	2m
Side	0m
Rear:	
Ground Floor	4m
Upper Floor	6m
Garage to rear lane	0m
Other Requirements	
Location	<ul style="list-style-type: none"> • In and adjacent to the Neighbourhood Centre; • Adjoining the major active open space facility, riparian zones and neighbourhood parks.
Height	<ul style="list-style-type: none"> • Dwellings shall have a maximum height of 3 storeys.

Figure E7.48: Terrace Design Principles



7.4.5.3 Semi Detached Dwellings

A. Performance Measures

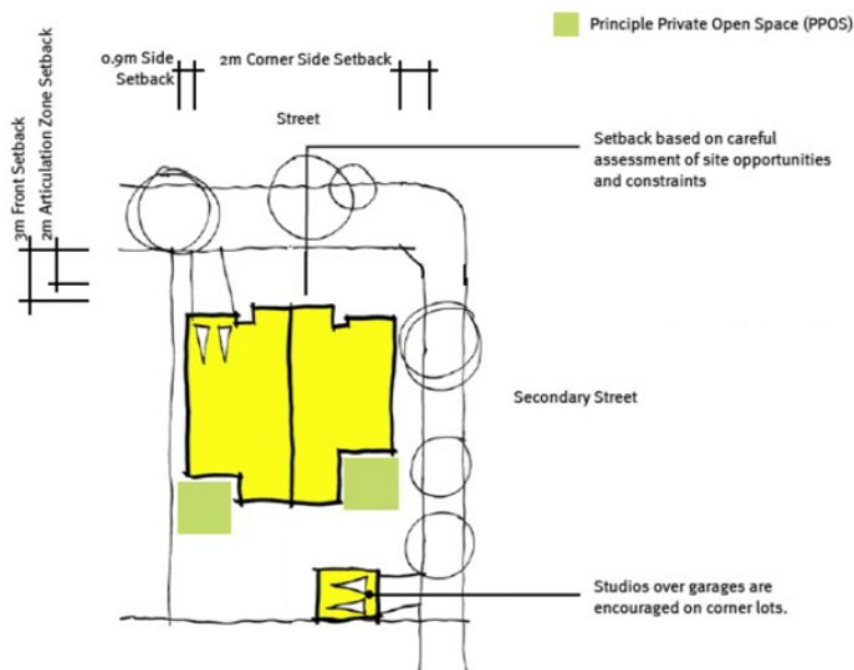
- Have the appearance of a larger home, but are comprised of 2 dwellings (3 dwellings including studio opportunity) on separate Title.
- When located at a corner, have distinct entries for each unit usually located on different street frontages.
- When located at a corner, provide vehicle access of different street frontages.
- Dwellings have an adaptable design which can incorporate options for home-based business activities.

B. Development Controls

Allotment Requirements	
Lot Size Range	230 – 450m ²
Lot Frontage	12 – 15m
Principal Private Open Space	
Minimum Area	30m ²
Minimum Dimension	4m
Minimum Dwelling Setbacks	
Front	3m

Secondary Frontage	2m
Side	<ul style="list-style-type: none"> • 0m on defined boundary as Figure E7.45: Setbacks and Articulation • 0.9m on other boundary
Rear:	
Ground Floor	4m
Upper Floor	6m
Garage to rear lane	0m
Other Requirements	
Height	<ul style="list-style-type: none"> • Dwellings shall have a maximum height of 2 storeys

Figure E7.49: Semi Detached Dwellings Design Principles



7.4.5.4 Studios

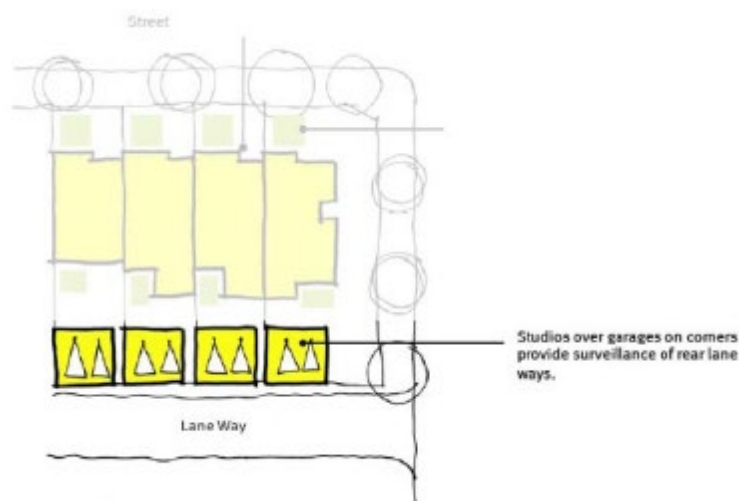
A. Performance Measures

Development is designed to:

- Be located above garages that are accessed from rear lanes or shared driveways.
- Provide their own sleeping, living, kitchen and bathroom areas.
- Provide causal surveillance over rear lanes or shared driveways.

- d) Windows and private open spaces do not overlook the private space of any adjacent dwellings.
- e) Do not overshadow the private open space of living space of any adjacent dwelling.
- f) Balconies or verandahs do not overhang vehicle access areas.

Figure E7.50: Studio Design Principles



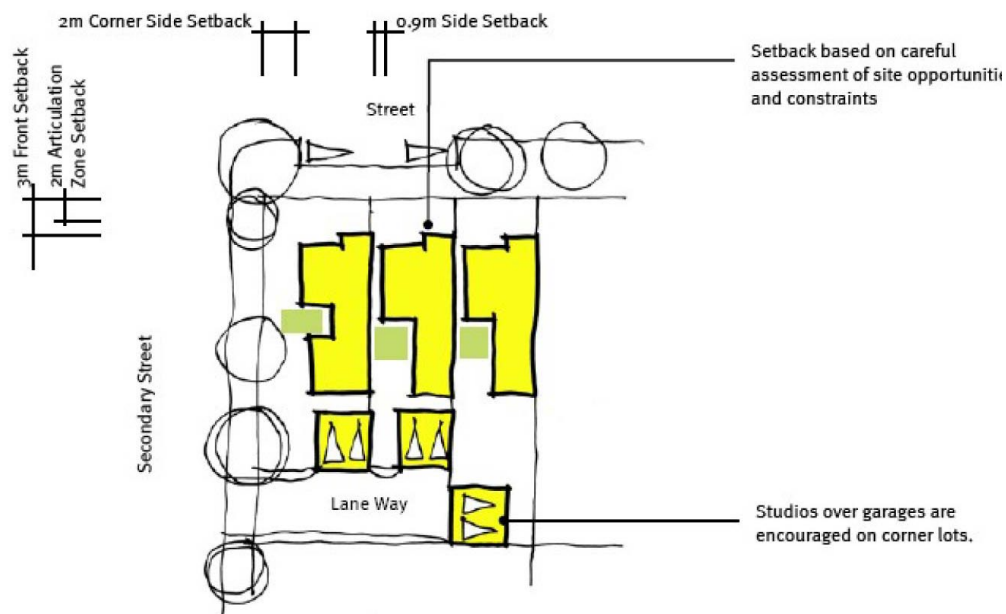
7.4.5.5 Built to Boundary Dwellings

A. Development Controls

Allotment Requirements	
Lot Size Range	230 – 450m ²
Lot Frontage	9.5 – 15m
Principal Private Open Space	
Minimum Area	40m ²
Minimum Dimension	4m
Minimum Dwelling Setbacks	
Front	4.5m
Secondary frontage	2m
Side:	<ul style="list-style-type: none"> • 0m on defined boundary. • 0.9m from other boundary.
Rear:	
Ground Floor	4m
Upper Floor	6m
Garage to Rear Lane:	0m
Other Requirements:	

Height	<ul style="list-style-type: none"> Dwellings shall have a maximum height of 2 storeys.
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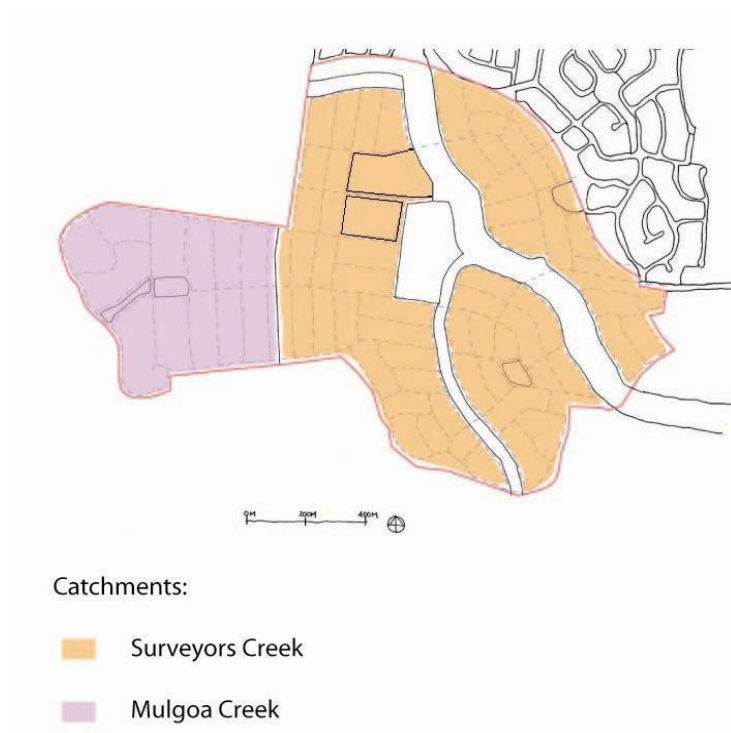
Figure E7.51: Built to Boundary Dwelling Design Principles



7.4.5.6 Detached Dwellings

Different development controls will apply to development of detached housing forms within the two catchments in the release area. These catchments are identified at Figure E7.52 below:

Figure E7.52: Catchments



7.4.5.6.1 Surveyors Creek Catchment

Allotment Requirements	
Lot Size Range	360m ² – 600m ²
Lot Frontage	12m – 15m
Principal Private Open Space	
Minimum Area	50m ²
Minimum Dimension	4m
Minimum Dwelling Setbacks	
Front	4.5m
Secondary Frontage	2m
Side	0.9m
Rear:	
Ground Floor	4m
Upper Floor	6m
Garage to rear lane	0m

Other Requirements:	
Height	<ul style="list-style-type: none"> Dwellings shall generally have a maximum height of 2 storeys. 3 storey development will only be permitted on land: <ul style="list-style-type: none"> Located at key intersections within a precinct, as identified part of an approved Concept Plan, and where they provide built form consistent with that shown at Figure E7.54. With slopes with a grade greater than (1:8) when they achieve built form consistent with that shown at Figure E7.55.

Figure E7.53: Detached Dwelling Principles

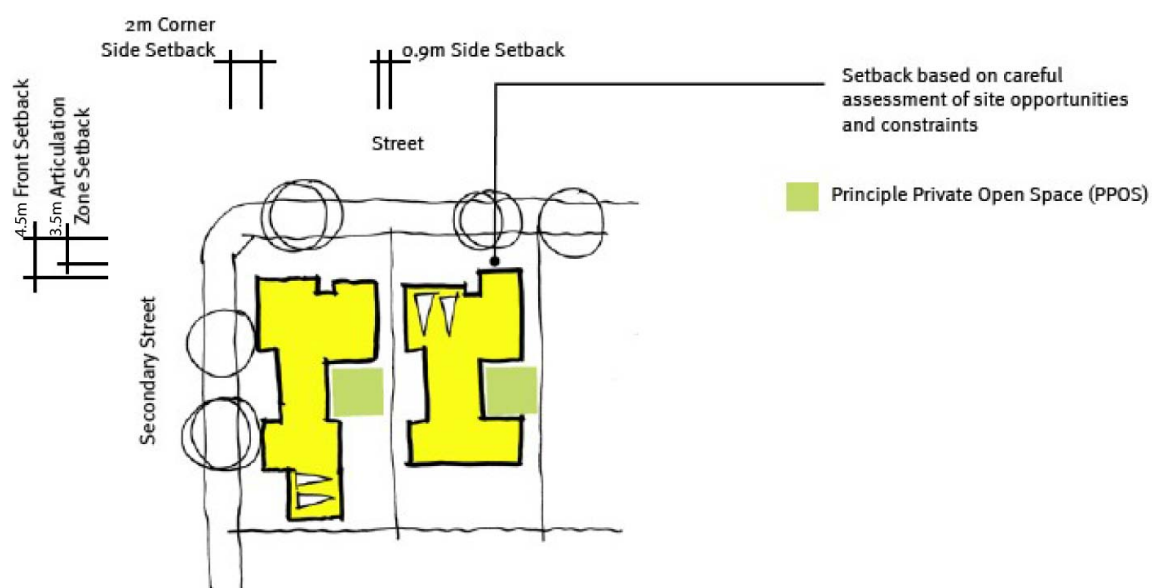


Figure E7.54: Three Storey Development at Key Intersections

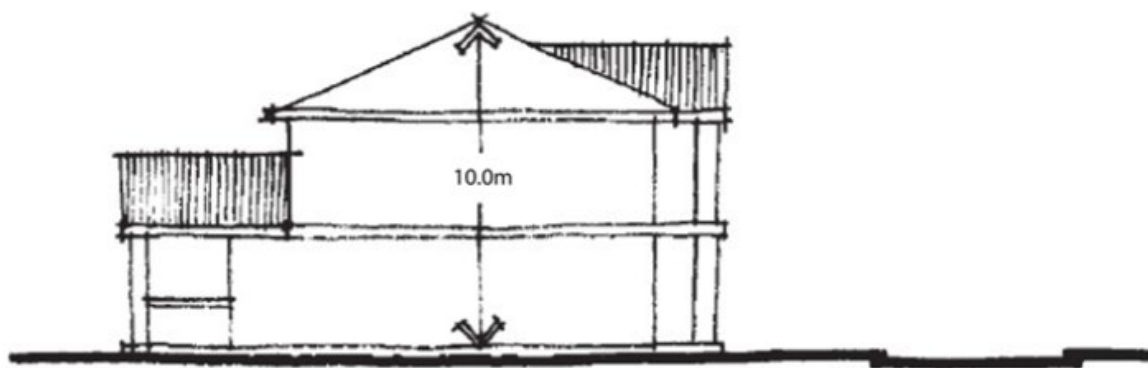
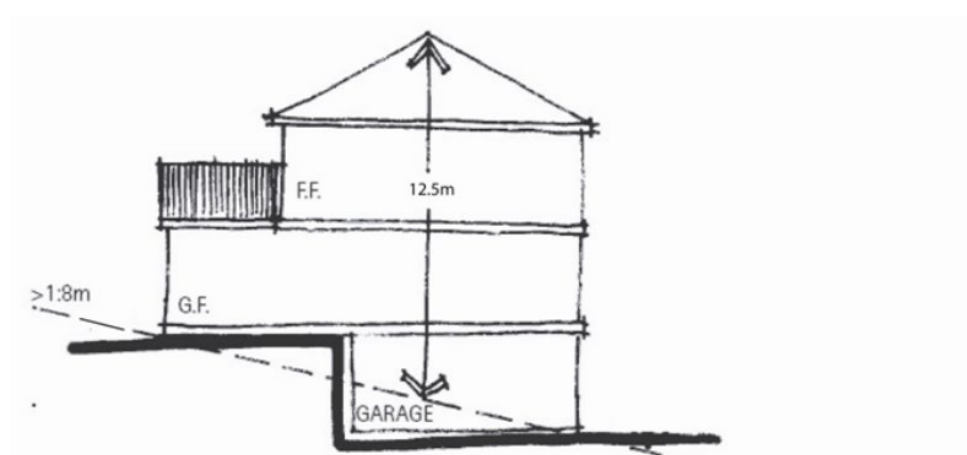


Figure E7.55: Three Storey Development on Lands With Grade >8:1



7.4.5.6.2 Mulgoa Creek Catchment

A. Performance Measures

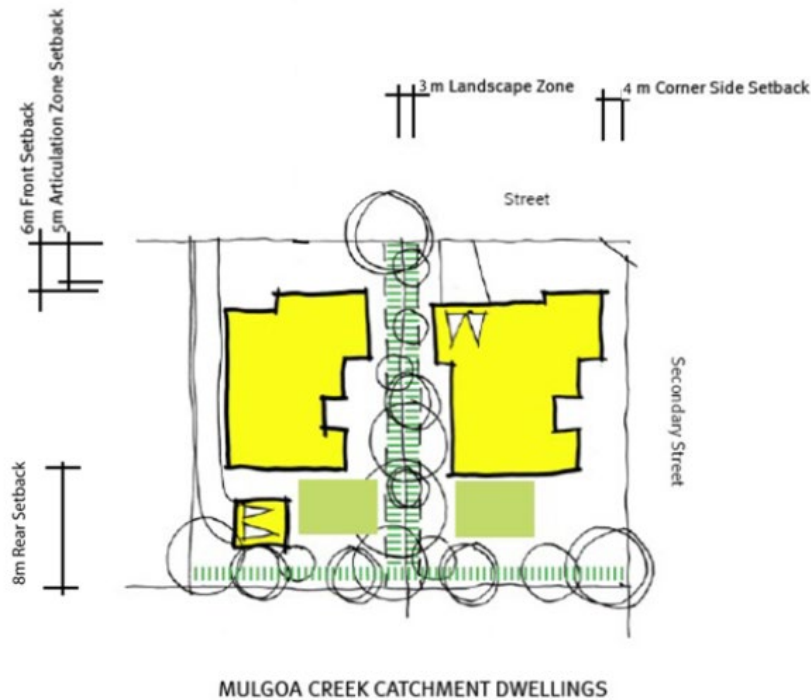
- Allow for landscaped side setbacks to provide visual separation between dwellings and a more spacious streetscape environment.
- Reflect the semi - rural character in road detailing, landscaping and fencing details.
- Lot sizes are to transition from the smaller lots in the Surveyors Creek catchment to the largest lots adjacent the Mulgoa Nature Reserve.

B. Development Controls

Allotment Requirements	
Lot size range	450m ² – 1,000m ²
Lot Frontage	20m
Principal Private Open Space	

Minimum Area		100m ²	
Minimum Dimension		5m	
Minimum Dwelling Setbacks			
	Lots <600m ²	600m ² - 1,000m ²	Lots >1,000m ²
Front	4.5m	6m	8m
Secondary Frontage	2m	4m	4m
Side	0.9m	0.9m	3m
Rear			
Ground Floor	4m	4m	8m
First Floor	6m	6m	
Other Requirements			
Height	Dwellings shall have a maximum height of 2 storeys		

Figure E7.56: Mulgoa Creek Catchment Dwelling Design Principles



7.4.5.7 Non-Residential Development

A. Performance Measures

- a) Non-residential development should be planned and designed according to principles of traditional suburban design, and to preserve the amenity of residential neighbourhoods.
- b) Principles of urban form and urban design that apply to permissible multi-unit housing are applied to non-residential development.
- c) Particular attention is paid to:
 - i) The development site including front setbacks, rear setbacks, dual frontage situations.
 - ii) Urban form including:
 - Traditional building design features.
 - Traditional garden frontages.
 - Orientation of building entrances.
 - Continuously occupied rooms facing the street.
 - Detailed consideration of significant townscapes or landscapes.
 - Signs.
 - iii) Driveways and parking including:
 - Provision of on-site parking appropriate to the proposed use, and in accordance with Penrith Council's parking codes, the RTA or Australian Standards.

- Minimise site coverage by paved areas.
 - Conceal garages from views available from public parks and streets.
 - Locate driveways and parking areas away from any neighbouring residential development.
- iv) Building envelope and side setbacks:
- To achieve a single storey appearance.
 - To provide for effective landscaped separation from adjacent developments.
- v) Minimise overshadowing of adjacent properties and minimise requirements for mechanical heating and cooling of interiors.
- vi) Protect the privacy of adjacent properties.
- vii) Sufficient areas are provided for storage and building services to meet requirements generated by the proposed development and located to protect the amenity of adjacent developments.

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E8 Kingswood

Part A – Design and Siting of Non-Residential Development on Land Fronting Morley Avenue and the Great Western Highway, Kingswood

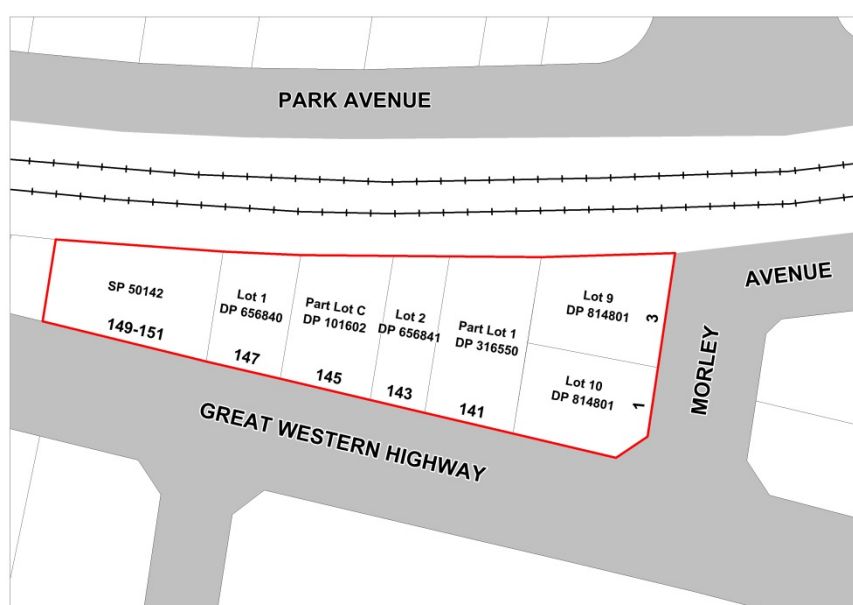
8.1 Preliminary

8.1.1 Land to which this section applies

This section applies to following land within Kingswood, as shown in Figure E8.1:

- Lots 9 and 10 DP 814801, 1 – 3 Morley Avenue, Kingswood,
- Part Lot C, DP 101602, 145 Great Western Highway, Kingswood,
- Lot 1, DP 656840, 147 Great Western Highway, Kingswood,
- Part Lot 1, DP 316550, 141 Great Western Highway, Kingswood,
- Lot 2, DP 656841, 143 Great Western Highway, Kingswood,
- SP 50142, 149 – 151 Great Western Highway, Kingswood.

Figure E8.1: Land to which this section applies



8.1.2 Aims and Objectives

- a) To encourage low traffic generating developments with sufficient onsite parking which satisfies Council's Car parking Code and adequate on site loading / off loading facilities;
- b) To encourage a proper design and landscape address to both the Great Western Highway and Western rail line consistent with the high visual exposure of the land;
- c) To ensure that developments will not detrimentally affect the existing environments and are compatible with adjoining land uses, particularly whilst any residential properties remain;
- d) To encourage amalgamation of allotments to allow orderly redevelopment to occur; and
- e) To ensure that development in layout, landscaping and signage is in keeping with the residential character of the land and in turn discourage the visual appearance of commercial ribbon development.

8.2 Development Controls

In considering an application for the development of land subject to this Section, Council shall take into consideration the following matters:

8.2.1 Building Setbacks

- 1) The following front building setbacks apply to development along the Great Western Highway:
 - a) 7m: 1 – 3 Morley Avenue and 141 – 147 Great Western Highway, Kingswood.
 - b) 5m: SP 50142, 149 – 151 Great Western Highway, Kingswood.
- 2) All building setbacks are to be appropriately landscaped.
- 3) On-site car parking will be considered within the front setback where it can be demonstrated that it will be suitably screened by landscaping.

8.2.2 Signage

- 1) All signage is to comply with the requirements of the Advertising and Signage Section of this DCP.
- 2) Signs identifying the location and activities of business will be permitted only along the Great Western Highway frontage.
- 3) No signage is to be erected along the frontage to the railway.

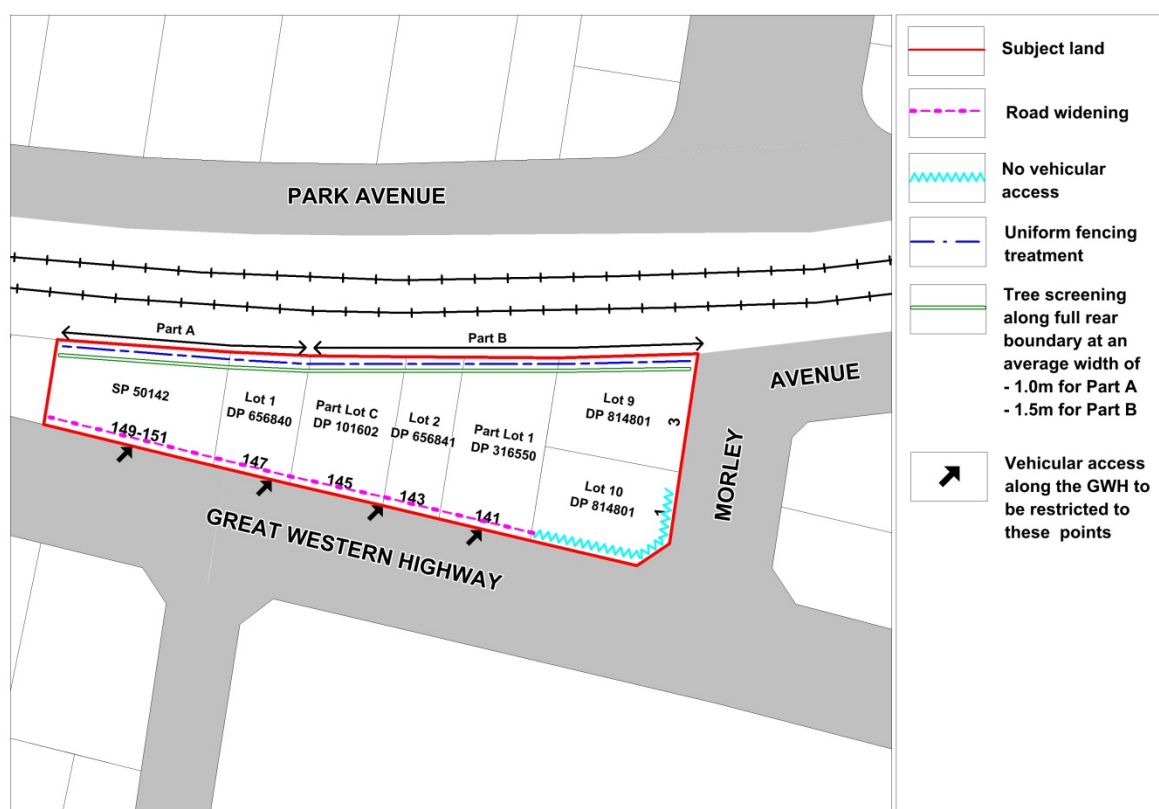
8.2.3 Car Parking

- 1) Car parking is to be provided in accordance with the Transport, Access and Parking Section of this DCP.
- 2) Car parking areas are to be suitably located so as to serve all sections of the development.
- 3) Car parking shall be provided with landscaping strips, particularly if adjacent to any existing dwelling being used for residential purposes and along the Great Western Highway and railway line boundaries of the allotments.

8.2.4 Vehicular Access

- 1) Vehicular access to 1 – 3 Morley Avenue, Kingswood will be provided off Morley Avenue only.
- 2) Vehicular access to other properties will be limited to existing vehicular access points, and in accordance with Figure E8.2: Vehicular Access. No new vehicular access points will be permitted off the Great Western Highway except for one access point to service SP 50142, 149 – 151 Great Western Highway, Kingswood.

Figure E8.2: Vehicular Access



8.2.5 Loading Areas

- 1) Sufficient loading areas shall be provided on site in accordance with the requirements of the Transport, Access and Parking Section of this DCP.

8.2.6 Storage Area

- 1) Storage areas will not be permitted along the Great Western Highway frontage. All goods and materials shall be stored within buildings.

8.2.7 Building Design and Layout

- 1) The design of buildings and layout of uses on site shall:

- a) ensure a proper design and landscape address to both the Great Western Highway and Western Rail Line having regard to the high visual exposure of the land; and
- b) ensure that any impact on the amenity of adjoining residential dwellings is minimised.

8.2.8 Western Rail Line

- 1) To achieve a high standard and uniform address to the Western Rail Line, the following shall be undertaken:
 - a) The lot boundary to the Western Rail Line is to be screened with trees comprising of species consistent with the existing landscape setting of the area. This tree screen shall vary in width as per the plan attached to this section; and
 - b) Any fencing treatment of the boundary to the Western Rail Line shall be uniform for all lots and comprise of wire mesh fencing to a height of 1.8m.

8.2.9 Landscaping along the Great Western Highway

- 1) Landscaping shall form an integral part of the use of the setback area from The Great Western Highway.
- 2) It shall at maturity effectively screen any car parks and visually 'soften' the built form nature of the development in order to emphasise the 'low key' commercial character of development and to be compatible with existing residences.

Part B – The Knoll

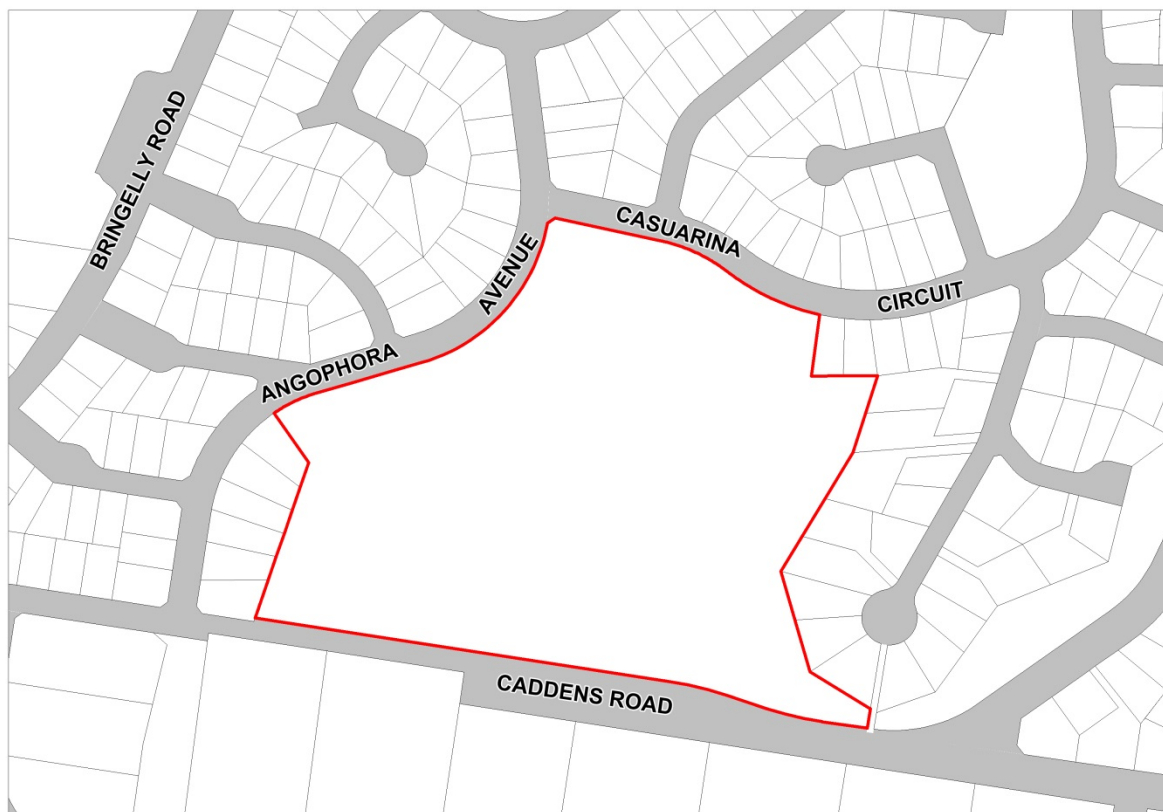
8.3 Preliminary

8.3.1. Land to which this Part Applies

This section applies to the land located at 17-53 Caddens Road, Orchard Hills (Lot 21 DP 1151724) within the Penrith Local Government Area.

The land, known as 'The Knoll' is identified in Figure 8.4.

Figure 8.4: Land to which The Knoll applies



8.3.1.1 Relationship to other Plans and Documents

This section must be read in conjunction with any environmental planning instrument applying to the land, as well as any Planning Agreement for The Knoll.

In the event of any inconsistency between this Section and the rest of this DCP, the requirements of this Section prevail.

Where a specific issue is not addressed in this Section, reference should be made to relevant sections of this DCP.

8.3.1.2 Supporting Studies

The following supporting studies and documents have been used in the preparation of this section and are available for reference from Council:

- a) Aboriginal Heritage Assessment by Godden Mackay Logan and Jo McDonald (March 2012).
- b) Ecological and Bushfire Report by EcoLogical Australia (March 2012).
- c) Infrastructure and Services Report by J. Wyndham Prince (March 2012).
- d) Phase 1 Environmental Site Assessment by WSP (March 2012).
- e) Traffic Report by Halcrow (May 2012).
- f) Stage 1 Road Safety Audit by GTA Consultants (November 2012)
- g) Community Consultation Report by Manidis Roberts (May 2012).
- h) Stormwater Management Report by J. Wyndham Prince (February 2013).
- i) JBS Environmental Phase 2 Investigation (Feb 2012).

8.3.2 Structure Plan

8.3.2.1 Vision for The Knoll

The Knoll comprises accessible grassland with an area of approximately 7.33 hectares. The Knoll is surrounded by existing residential development.

The development of the Knoll is to:

- a) Provide an appropriate balance between low-density residential development and public open space.
- b) Create a 'Hill Top Park' for community use.
- c) Demonstrate a high standard of residential amenity and a high standard of urban and architectural design quality.
- d) Maintain the existing established character of the areas adjoining the Knoll.
- e) Facilitate connections with land and development adjoining the Knoll.
- f) Maintain district views and vistas attained from the Hill Top Park.
- g) Provide an integrated, convenient and sustainable road, footpath and cycle network.

In order to achieve the vision for the Precinct, a Structure Plan was prepared as part of the planning proposal. This Structure Plan demonstrated the opportunity to subdivide land into a minimum of 45 individual residential lots and establish an area of informal public open space, to be known as Hill Top Park, at the central portion of the precinct.

The Knoll Structure Plan establishes the urban structure and form for the planning and future development of the Knoll. The Structure Plan (Figure E8.5) demonstrates the subdivision of the Knoll to provide 45 individual residential lots and an area of public open space in the form of a hill top park.

Figure E8.5 – Structure Plan for The Knoll



8.3.3 The Public Domain

8.3.3.1 Street Network

A. Objectives

- a) To deliver a safe and convenient vehicular, pedestrian and cycleway network.
- b) To provide visual interest within streetscapes.

B. Controls:

- 1) The street network is to be set out in accordance with the Structure Plan.
- 2) The cycleway network is to be built in accordance with the Structure Plan. The indicative route of the cycleway mostly crosses through the precinct and connects to the new Caddens residential development to the east of the precinct.
- 3) Street trees are required on all street verges/nature strips (between footpath and kerbs). Street planting will be located to:
 - a) Minimise risk to utilities and services.
 - b) Maintain adequate sight lines for vehicles and pedestrians particularly in locations of driveways and corners.
 - c) Provide adequate shading for pedestrians.
 - d) Provide attractive and interesting streetscape.
 - e) Minimise interference with street lighting.

- 4) The provision of street trees should be of a uniform species and preferably native.

Figure E8.6 – Indicative cross-sections and plans of desired streetscapes for allotments with precinct

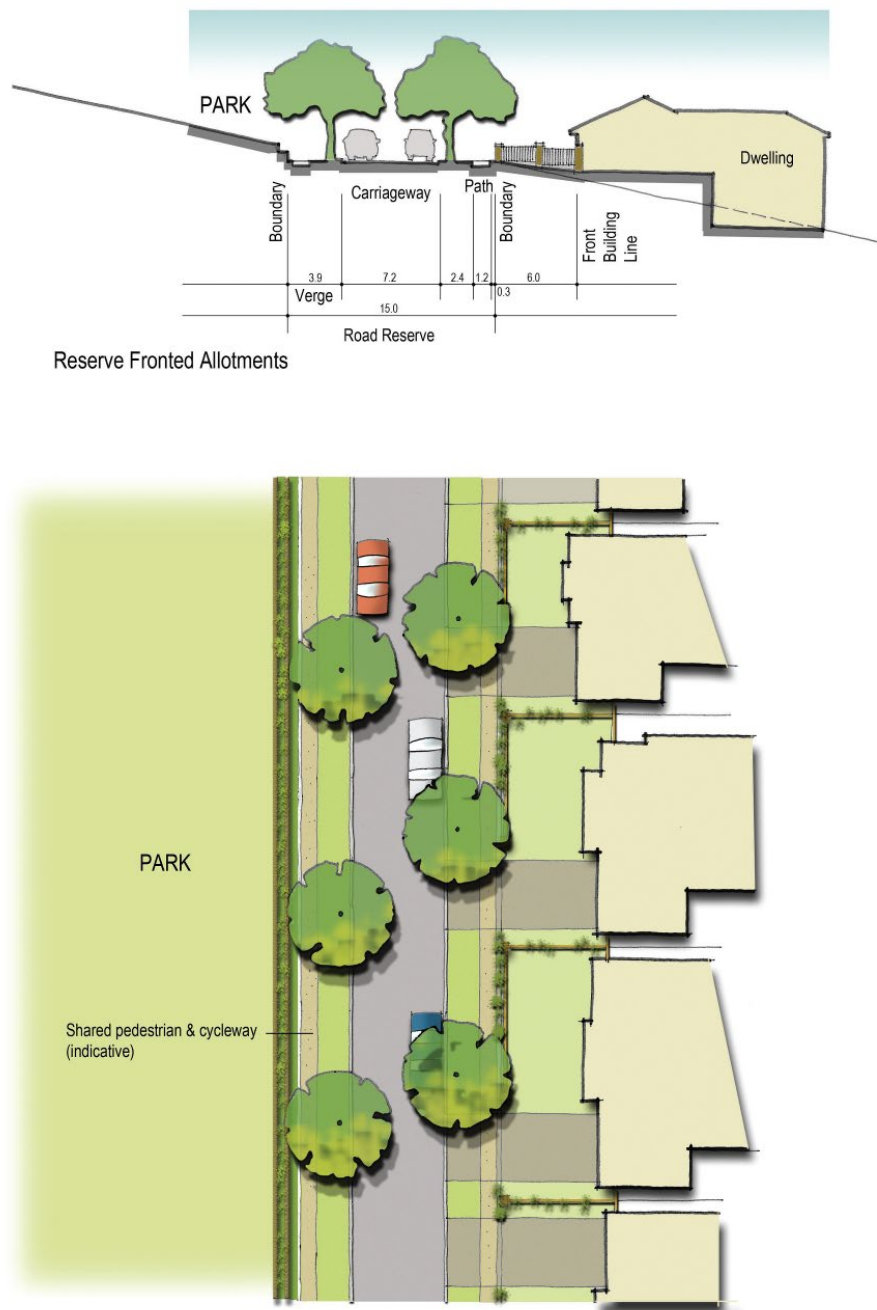
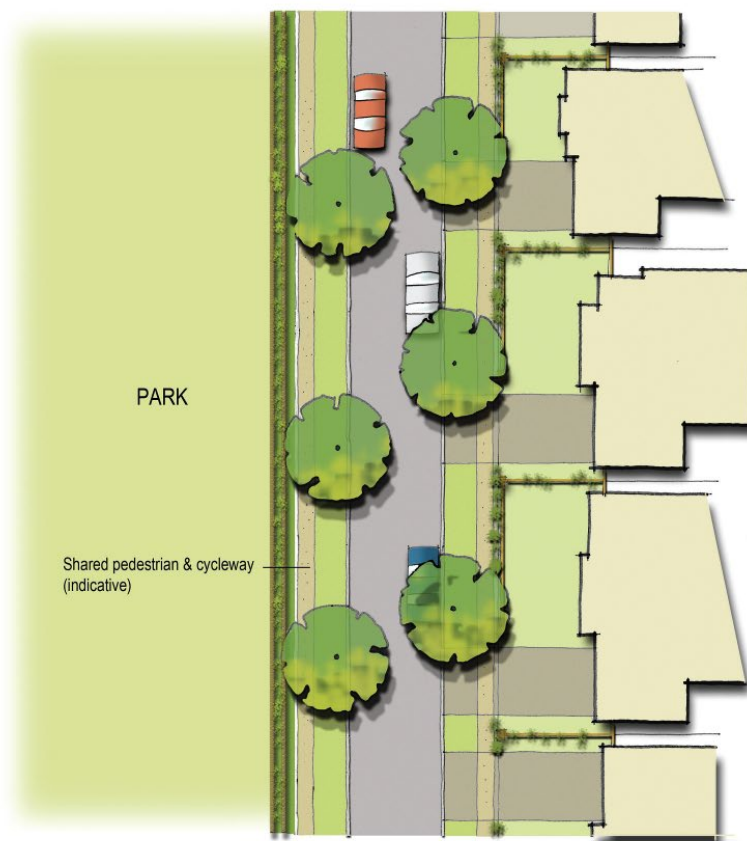
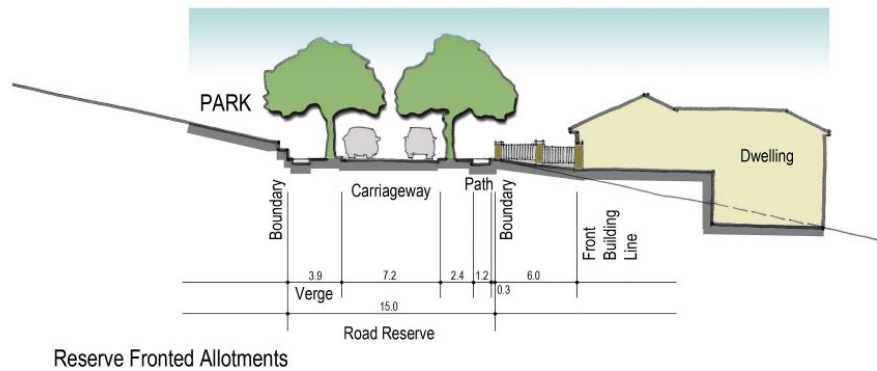


Figure E8.7 – Indicative cross-sections and plans of desired streetscapes for reserve fronted allotments within precinct



8.3.3.2 Pedestrian and Cycle Network

A. Objectives:

To provide a clear, convenient, efficient and safe network of pedestrian and cycleway paths for the use of the community, within and beyond the precinct.

To encourage residents to walk or cycle, in preference to using motor vehicles, as a way of gaining access to schools, shops, and local community and recreation facilities outside of the precinct.

B. Controls:

- 1) Pedestrian routes and cycleways are indicated on the Structure Plan.
- 2) Pedestrian footpaths are to have a minimum width of 1.5m.
- 3) All pedestrian and cycleway routes and facilities are to be consistent with the Planning Guidelines for Walking and Cycling (Department of Infrastructure, Planning and Natural Resources and the Roads and Traffic Authority, 2004).
- 4) Pedestrian and cycle routes and facilities in public spaces are to be safe, well lit, clearly defined, and be functional and accessible to people with a disability.
- 5) Clearly and frequently signpost shared pedestrian/cycle links.
- 6) Pedestrian and cycle pathways, and pedestrian refuge islands are to be designed to be fully accessible by all in terms of access points and gradients, generally in accordance with Australian Standard 1428:1-4.
- 7) Pedestrian and cycle pathways are to be constructed as part of road infrastructure works with detailed designs to be submitted with the development applications for subdivision.

8.3.3.3 Open Space Network

A. Objectives:

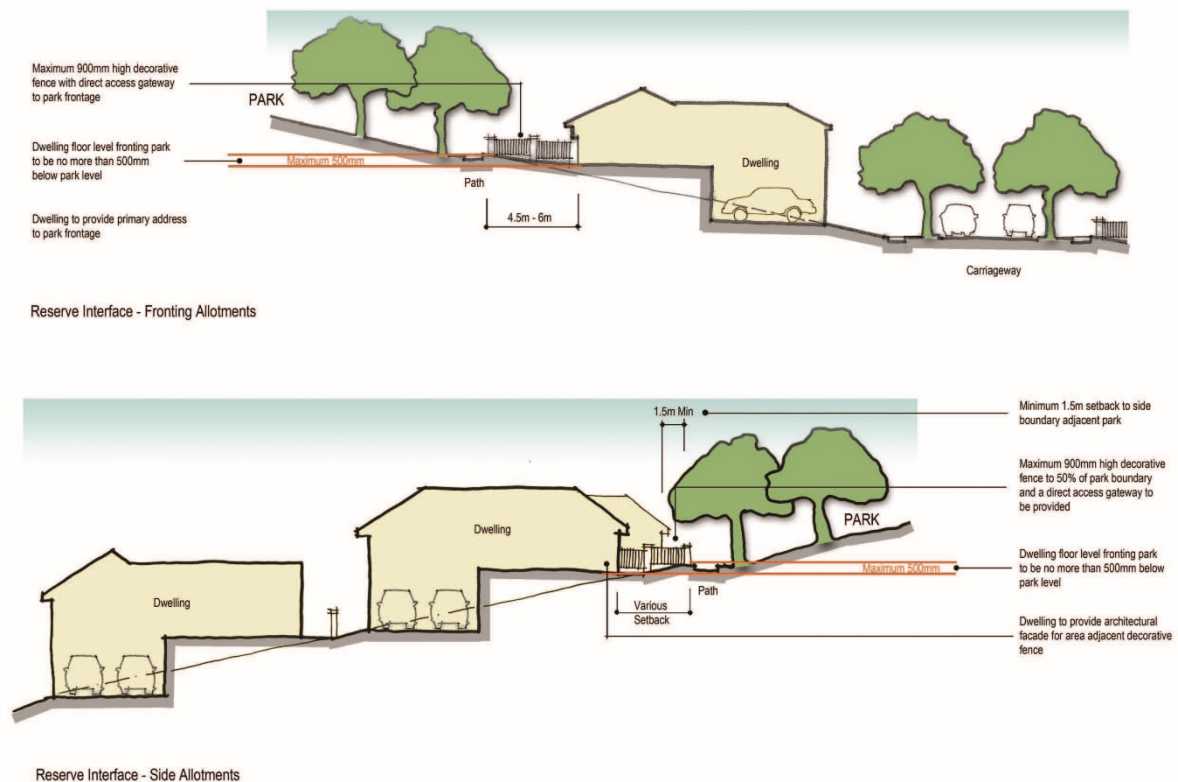
- a) To create a sense of identity for the precinct while maintaining the existing character of surrounding development.
- b) To respect the amenity and privacy of existing residential properties adjacent to the precinct.
- c) To create passive recreational open space for the precinct for both future residents of the precinct and existing residents of surrounding properties.
- d) To provide a visual focal point of the precinct.
- e) To maintain district views and vistas of Orchard Hills and beyond from the hilltop at the precinct.

B. Controls:

- 1) Retain and embellish the land nominated as Hill Top Park on the Structure Plan.
- 2) Dwellings that border the Hill Top Park should generally be orientated towards the open space for passive surveillance and deliver an attractive surround to the Hill Top Park (refer to Figure E8.8)
- 3) Provide cycle ways and footpaths to form key open space linkages throughout the precinct.

- 4) Identify areas for passive recreational space within the proposed Hill Top Park.
- 5) Provide a three metre wide landscaped easement between existing residential properties and new lots abutting the precinct's western and eastern boundaries to respect privacy and amenity between the precincts.
- 6) Provide appropriate street furniture within the Hill Top Park which should be consistent in terms of appearance and design. A public domain plan should be prepared with the subdivision development application showing street furniture, including as appropriate:
 - a) Seats
 - b) Litter bins
 - c) Drinking fountains
 - d) Lighting
 - e) Information signs

Figure E8.8 – Indicative interface with Hill Top Park on front and side allotments



8.3.4 Residential Development

8.3.4.1 Subdivision Design

A. Objectives:

- a) To establish a consistent urban form and structure that encourages a low density residential character with desirable streetscapes.
- b) To design lots that respond to the natural topography and street pattern of the precinct.
- c) To provide a desirable level of amenity for individual lots in terms of solar access, views and outlook, and proximity to public open space.

B. Controls:

- 1) The subdivision layout of the precinct should be subject to survey generally in accordance with the Structure Plan at Figure E8.5.
- 2) Provide a balanced range of north-south and east-west orientated sites.

8.3.4.2 Streetscape, Feature Elements and Roof Design

A. Objectives:

- a) To encourage dwelling designs which create a harmonious streetscape and responds to the predominate character of the surrounds of the precinct.
- b) To provide a clear distinction between public and private space and to encourage casual surveillance of the street and Hill Top Park.
- c) To identify elements of roof design that respond appropriately to the streetscape character while providing weather protection to windows.
- d) To create an attractive and cohesive streetscape through the provision of simple and articulated building and roof forms in a contemporary style.
- e) To reduce the dominance of garages on the streetscape.
- f) To encourage eaves, verandahs, balconies and other feature elements on the front facades of dwellings.

B. Controls:

- 1) Primary street façade of a dwelling to incorporate at least one of the following building elements to articulate its presentation to the street:
 - a) an entry feature
 - b) awnings or louvres or other sunshade devices over windows
 - c) open verandah
 - d) bay windows
 - e) balcony at first floor
 - f) other decorative architectural features
- 2) Secondary street façade on corner lots include at least a window off a habitable room and particular design features (e.g. verandah, balcony or landscaping).

- 3) Eaves to be provided to all roofs with a minimum overhang of 400mm.
- 4) Roof pitch is to be a maximum of 25 degrees.
- 5) Garages and parking spaces are to be sited behind the front building line of dwelling or integrated into the façade of the dwelling for garages that are situated at basement or sub-ground floor level.

Figure E8.9 – Primary Street Façade Design Principles



8.3.4.3 Dwelling Height, Massing and Siting

A. Objectives:

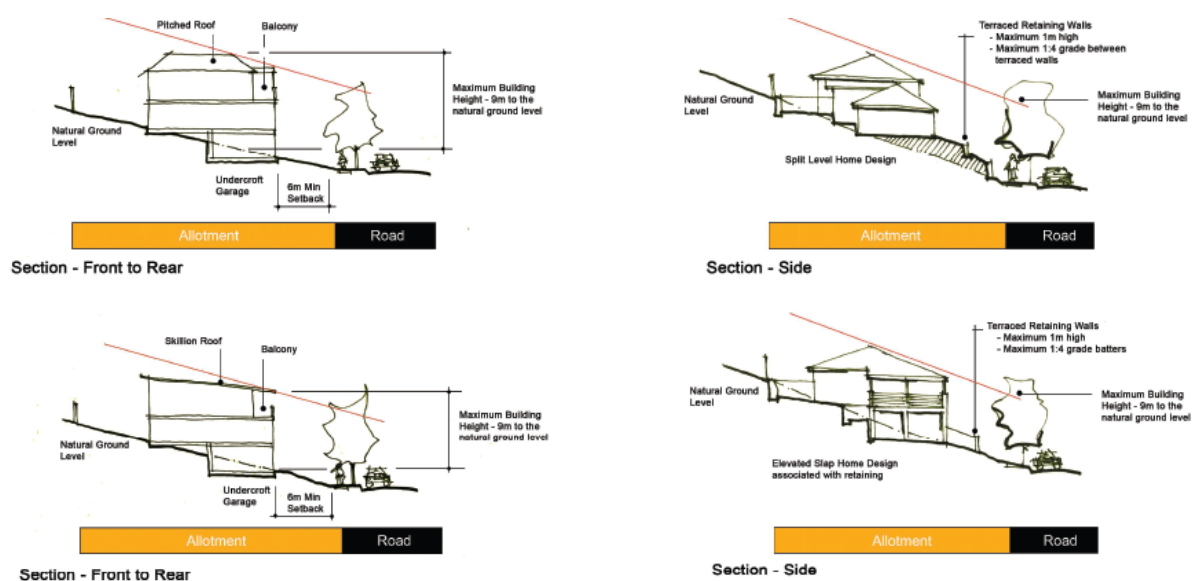
- a) To achieve consistency in design of dwellings and create an appropriate scale for dwellings to respond to the natural landscape and street pattern of the precinct.

- b) To nominate building heights to create a desirable streetscape and respect solar access and privacy aspects of individual lots.
- c) To avoid significant cut and fill of land to accommodate dwellings on steeply sloping site.

B. Controls:

- 1) Dwellings are to be a maximum of two storeys in height with the exception of dwellings that incorporate basement/undercroft garages or split level solutions for steeply sloping sites as illustrated in Figure E8.10.
- 2) Maximum external wall height for all dwellings is 7m from the natural ground level.
- 3) At least 3 hours of direct sun between 9am and 3pm onto 50% of principal private open space should be achieved for new dwellings and their adjoining properties.
- 4) Satisfy cut and fill and excavation numeric controls set out in Section 8.3.4.5 Development on Sloping Land of this Part.
- 5) Housing interface to the Hill Top Park to be a maximum of 500mm below park level at the boundary.

Figure E8.10 –Building Height and Development Control solutions for sloping sites



8.3.4.4 Building Setbacks

A. Objectives:

- a) To minimise the impacts of development on neighbouring properties in relation to views, privacy and overshadowing.

- b) To provide space between buildings.
- c) To reinforce the visual prominence of corner lots to promote a strong and legible character.
- d) To reduce the visual impact of front garaging on street frontages.

B. Controls:

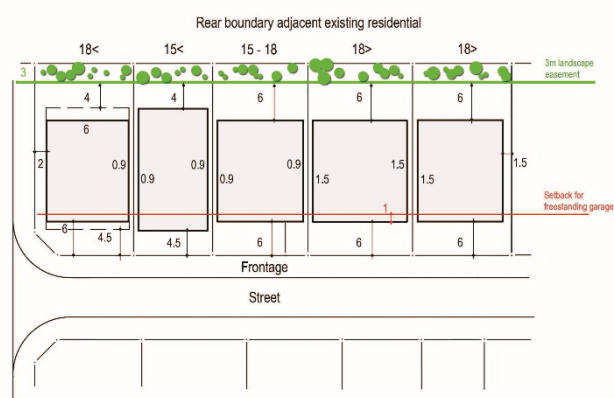
- 1) Dwellings are to be sited in conformity with the numeric controls specified in Table E8.1 and the landscape easement requirement specified in Section E8.3.3.3 Open Space Network, in order to establish a consistent front building line in response to the curve pattern of the road reserve as well as respecting solar access, privacy and amenity aspects of individual lots (refer figure E8.11).

Table E8.1: Building Setbacks

Allotment Type	Front	Side	Rear
Frontage with 18 and greater	6m	1.5m	6m
Frontage between 15m and 18m	6m	0.9m	6m
Frontage with 15m and lesser	4.5m	0.9m	4m

- 2) Secondary frontages for all corner sites are to be provided in accordance as follows:
 - a) 2m on lots less than 18m wide
 - b) 3m for dwellings on lots 18m and wider
- 3) Secondary frontages should be staggered to minimise the incidence of blank frontages.
- 4) Freestanding garages that are independent of a dwelling (i.e. not sited within the building envelope of a dwelling at basement/undercroft level) are to be sited at least 1m behind the front building line of dwellings to reduce its visual prominence within the street frontage of sites.

Figure E8.11 –Setback Principles



8.3.4.5 Development on Sloping Land

A. Objectives:

- a) To minimise incidence of cut and fill and alterations in natural ground levels.
- b) To encourage appropriate dwelling design which suits the topography of lots.
- c) To protect adjoining properties from potential structural instability by proposed excavation.
- d) To lessen the visual impact of retaining walls on allotment boundaries.

B. Controls:

- 1) Cut and fill of land is to be minimised under the following numeric controls:
 - a) Maximum depth of any cut in the slope is 1m.
 - b) Maximum height of any fill of the slope is 1m.
- 2) Side boundary retaining walls for development on cross slopes should retain a cut no higher than 1m.
- 3) Excavation works should be at least 1.5m from side and rear boundaries to respect the structural stability of adjoining sites.
- 4) Retaining walls should be setback at least 1m from any boundary and if possible screened by suitable landscaping.
- 5) Where the retaining of land is greater than 1m in height, retaining walls should be tiered with a minimum distance of 600mm between walls and suitably landscaped.
- 6) Enbankments should have a maximum grade of 1:4 and be suitably landscaped to prevent erosion.

8.3.4.6 Studio or Secondary Dwellings

A. Objectives:

- a) To provide a diversity of housing and accommodation options to satisfy various family types and age groups.
- b) To provide innovative housing solutions compatible with the surrounding residential development.

B. Controls:

- 1) The design of the studio or secondary dwelling should be compatible with the design scheme of the principal dwelling.
- 2) Windows and private open spaces should not overlook the private space of any adjacent dwellings.
- 3) Where practical private open space in the form of a balcony should be provided to the secondary dwelling in addition to private open space area requirements.

8.3.4.7 Private Open Space

A. Objectives:

- a) To allocate sufficient space within an allotment for recreational purposes.

- b) To provide a desirable level of residential amenity.
- c) To optimise solar access on recreational areas.

Controls:

- 1) Each dwelling must be provided with an area of private open space.
- 2) Minimum of 20% of site area is to be reserved for private open space capable for recreational uses.
- 3) 50% of the private open space should be exposed to direct sunlight for at least 3 hours between 9am and 3pm.

8.3.4.8 Site Coverage and Landscaped Area

A. Objectives:

- a) To provide sufficient landscaped area to each allotment.
- b) To encourage an appropriate level of amenity.
- c) To enhance streetscapes.
- d) To reduce impervious areas/or maximise pervious areas/or maximise stormwater infiltration/absorption to lessen site stormwater runoff.

Controls:

- 1) A 3m landscaped setback will be provided at the rear of properties which are adjacent to existing residents (as illustrated in Figure E8.5). This will be provided in addition to standard building setbacks detailed in section E8.3.4.4 Building Setbacks.
- 2) Landscaped area in any part of a site, at ground level, that is permeable and consists of soft landscaping, turf or planted areas and the like. On lots 450m² and greater, 35% of the lot area must be landscaped.
- 3) A landscape plan is to be submitted with all development applications for residential development. The development application must indicate the location and other requirements for landscaping contained in this DCP.
- 4) The front setback area of a dwelling is to be landscaped with the treatment to clearly delineate between the private and public domain. The front setback is to incorporate two trees. The rear garden must include at least one tree that will achieve a height of 6m at maturity. These may include existing trees that are to be retained.
- 5) To prevent accumulation of water and concentration of salts, subsoil drains are to be installed around the perimeter of residences and connected to the stormwater system.
- 6) Low water demand drought resistant vegetation is to be used in common landscaped areas, including native salt tolerant trees.
- 7) Garbage bin storage and clothes drying areas are to be concealed from view and shown on site plans.

8.3.4.9 Fencing

A. Objectives:

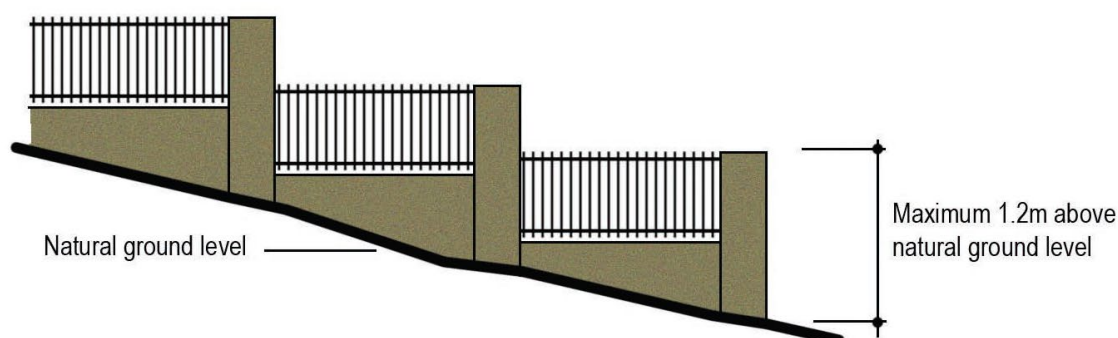
- a) To provide privacy to both residents and neighbours.

- b) To ensure boundary fencing is of a high quality and does not detract from the streetscape.
- c) To ensure that fencing is consistent with the street and the design and style with its dwelling.
- d) To permit causal surveillance of open space.

Controls:

- 1) The design of front fences is to take reference from, and complement, the architectural style of the dwelling on the site and dwellings on adjacent sites in terms of style, height and materials.
- 2) Maximum height of 1.2m for front fences.
- 3) On sloping sites, the height of the fence is to be averaged so that the fence steps down the slope (refer to Figure E8.12).
- 4) Any solid up-stand section should be limited to 600mm in height. The top half of the fence should be of an open design with a minimum open area of 50%, for visibility to and from the site. Components such as arched gates, piers and the like may exceed the maximum 1.2m height limit.
- 5) Maximum height of 1.8m for side and rear boundary fences.
- 6) Where a dwelling is located adjacent to open space, boundary fencing is to be of a high quality material and finish and the design is to permit causal surveillance of the open space.
- 7) The fencing on the secondary street of a lot with a frontage 17.5m or greater must be set back 0.9m from the secondary street boundary and must incorporate landscaped vegetation between the fence and the boundary.
- 8) Metal sheet fencing is not permitted anywhere.

Figure E8.12 – Front fencing



8.3.4.10 Garages and Access

A. Objectives:

- a) To provide sufficient, safe and secure parking for residents.
- b) To design and locate off-street car parking areas not to unreasonably detract from the appearance and quality of the dwelling-house or streetscape.

- c) To maximise pedestrian and vehicular safety.
- d) To minimise loss of views from the public domain.
- e) To discourage garages from dominating the frontage of a dwelling.

Controls:

- 1) Off-street parking spaces should be provided in accordance with within the Transport, Access and Parking Section of this DCP.
- 2) All car accommodation including garages must be sympathetic in architectural character to the dwelling and not visually dominate or adversely impact on the existing built or landscape character of the street.
- 3) Where a carport or garage entry forms part of the front façade of a dwelling, it is to be set back a minimum of 5.5m from the front boundary and at least 1m behind the building façade.
- 4) The maximum dimensions for garage doors are to be less than 50% of the front façade, 6m in width and 2.4m in height. Front double garages are only permitted on lots with a frontage width equal to or greater than 12.5m. Triple width garages are discouraged.
- 5) Parking spaces are to comply with AS 2890.1 off street parking, including:
 - a) Minimum internal width between main walls of 3m for a single garage; and Minimum internal width between main walls of 5.5m for a double garage.
 - b) Driveway access to garages on steep land must comply with AS 2890.1. Stencil-crete on driveways is not permitted.
- 6) Driveways are to be no wider than 4.5m at the front boundary and should be located a minimum of 1.5m from street trees.
- 7) Where practical driveways and car parking facilities for corner lots are to be accessed off a secondary street.
- 8) The maximum number of dwellings to be serviced from a shared driveway is 4.

8.3.5 Environmental and Residential Amenity

8.3.5.1 Visual and Acoustic Privacy

A. Objectives:

- a) To maintain visual and acoustic privacy for each property.
- b) To discourage overlooking from one dwelling to another.

B. Controls:

- 1) Habitable room windows should not directly face other habitable room windows or private open space of adjoining dwellings on site or on adjoining sites.
- 2) Balconies at first floor with side and rear aspects to have a maximum area of 15m² and a depth of 1.7m to minimise the incidence of overlooking from one dwelling to another.
- 3) Windows of habitable rooms above ground floor level should have sill heights of 1.7m. Windows with sill heights less than 1.7m above floor level should comprise opaque glazing below this level.

- 4) Use of landscaping alongside boundaries is encouraged to provide natural screening between lots.
- 5) The internal layout of residential buildings, window openings, the location and design of outdoor living areas and elements (i.e. courtyards, balconies and retaining walls), and building plant should be designed to minimise noise impact and transmission and enhance visual amenity.

8.3.5.2 Safety and Surveillance

A. Objectives:

- a) To reduce opportunities for concealment.
- b) To encourage natural and passive surveillance of the street and public domain.
- c) Dwelling design should encourage overlooking of primary and secondary streets as well as other public or communal areas, including the Hill Top Park. This is to be achieved by siting at least one living room to the front of the dwelling (which has an aspect to a primary street) and at least one habitable room to the side or rear (which has an aspect to a secondary street or public open space).
- d) Front fencing to comply with design controls set out in the fencing section of this Part to enable reasonable passive and casual surveillance of the street.
- e) Developments, including open space, are to avoid creating areas for concealment and blank walls facing the street.
- f) Pedestrian and communal areas are to have sufficient lighting to ensure a high level of safety and must be designed to minimise opportunities for concealment.
- g) Development applications for subdivision, public open space and community facilities are to incorporate the principles of Crime Prevention Through Environmental Design (CPTED). Refer to the Site Planning and Design Principles section of this Plan for the CPTED principles.

8.3.5.3 Sustainable Building Design

A. Objectives:

- a) Design and build dwellings that are environmentally sustainable in relation to energy and water use.
- b) Maximise opportunities for natural ventilation through building layout.

B. Controls:

- 1) Design of dwelling to be in accordance with energy and water use targets set out under State Environmental Planning Policy – Building Sustainability Index (BASIX). A BASIX Certificate is required for all new residential development.
- 2) Minimum dwelling floor to ceiling heights should be as follows:
 - a) Ground floor habitable rooms of two storey single dwellings – 2.65m;
 - b) Upper floors and all non-habitable rooms – 2.4m;
 - c) Single storey dwellings – 2.65m;
 - d) Attics – 1.5m wall height at edge of room with a 30 degree minimum ceiling slope; and
 - e) All floors of multi-unit dwellings – 2.4m.

- 3) Door and window openings and building/dwelling layout are to encourage adequate cross ventilation and solar access.
- 4) North and west facing windows are to incorporate sunshade awnings/panels or appropriate weather control devices.
- 5) All dwellings are to incorporate an outdoor clothes line/drying area in a sunny location not visible from a street or public place.

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E9 Mulgoa Valley

A. Background

Area included within the Mulgoa Valley Precinct

The Mulgoa Valley Precinct includes land in the Mulgoa Valley and parts of Wallacia. It is bounded on the west by the Nepean River and Blue Mountains National Park, on the south by the village of Wallacia (and includes the village), on the east by Luddenham and on the north by Glenmore Park and Regentville. The extent of the land is shown on the LEP Clause Application Map with a notation 'Mulgoa Valley'.

The Precinct is characterised by its predominantly rural landscape comprising creek flats, undulating agricultural land, wooded hills and escarpment, and large estate gardens. The backdrop of the Nepean River and Blue Mountains contributes to this landscape. The Precinct includes the villages of Mulgoa and Wallacia, which also have important cultural and natural heritage qualities.

The Mulgoa Valley Precinct plays an important role in providing:

- A nature and heritage conservation area on the fringe of the Sydney metropolitan area;
- A rural, recreation and tourism centre for Penrith and suburbs in the surrounding region;
- An area of limited rural living opportunities in sympathy with its landscape and heritage values; and
- A landscape buffer between the Blue Mountains National Park and the suburbs of Western Sydney.

Aims of the controls for the Mulgoa Valley Precinct

The controls for this Precinct seek to conserve the heritage, rural and natural landscape of the Mulgoa Valley, and encourage its development as a rural area emphasising its visual and environmental heritage values.

The controls are in addition to and support the provisions in LEP relating to Mulgoa Valley and the Villages of Mulgoa and Wallacia. In particular, applicants will need to demonstrate how any proposed development will address the development consent criteria in subclause (3) of the Mulgoa Valley clause of the LEP.

B. General Objectives

- a) To conserve the rural landscape of the Mulgoa Valley;
- b) To protect the setting of the villages of Mulgoa and Wallacia within the rural landscape;
- c) To conserve heritage items and vistas within the Valley;
- d) To protect natural ecological elements within the Valley;
- e) To protect the agricultural capability of prime agricultural land; and

- f) To ensure that development in the Valley is consistent with conserving its rural and natural landscape, heritage and agricultural qualities.

C. Other Relevant Sections of this DCP

This DCP is a multi-layered document that recognises the relationship of a number of issues in achieving sustainable outcomes. Therefore, it is important to read all relevant parts of this DCP.

9.1 Siting and Built Form controls

9.1.1 Heritage Items and Vistas

A. Background

The Mulgoa Valley Precinct has played an important role in the history of the State's development. From 1810, the Valley was a key area of European settlement and it became closely linked to the activities of the wealthy Cox family and other prominent figures of the colony. The Precinct's heritage significance lies in the surviving sites, buildings, gardens and pastoral landscapes developed by the Cox family. These features provide some of the best remaining physical evidence in NSW of the manner in which the country was settled and the impact that this had on the landscape. This section seeks to protect the Valley's heritage items and their vistas from any unsympathetic development.

B. Objectives

- a) To protect the surviving early colonial rural landscape from any further degradation;
- b) To ensure development does not prejudice the remaining evidence of the Cox family's associations with the Valley, its houses and gardens;
- c) To preserve and enhance the visual relationship between the sites of Cox's Cottage, St Thomas's Church and Fernhill;
- d) To conserve the surviving structures, features and gardens at the major historic and archaeological sites;
- e) To protect the visual catchments of heritage items by appropriately siting development having regard to the significance of the setting;
- f) To prevent development within the historic landscapes and curtilages of heritage items which may detract from the significance of those sites; and
- g) To prevent any activity which could destroy the potential archaeological resources of any heritage items.

C. Controls

- 1) No structures are to be located in the view corridors linking the heritage items of Cox's Cottage, St Thomas's Church and Fernhill.

- 2) Figures E9.1 and E9.2 show the extent of the historic landscapes and curtilages in the Mulgoa Valley and should be used in assessing the impact development may have on them. Buildings are to be screened from view from heritage items and their curtilages. (Figures E9.1 and E9.2 are located at the end of Section 9.1).
- 3) The vistas from the major heritage items in Mulgoa Valley are shown on the LEP on the Scenic and Landscape Values Map. No development is permitted in the vistas of these heritage items unless they are for the purpose of restoring, rehabilitating or preserving elements of the heritage items, such as fences, outbuildings, gates, roadways or plantings. Such structures should be designed and sited so as not to detract from the vistas.
- 4) Landscaping, including trees, should be sensitively sited to complement rather than interfere with the vistas.

9.1.2 Siting

A. Background

This section seeks to ensure that buildings are sited so they are in harmony with the existing landscape.

B. Objectives

- a) To ensure that buildings are sited to protect and enhance the rural and natural landscape of the Valley, particularly when viewed from roads and other public places.

C. Controls

- 1) Buildings are to be located on mid-slopes to avoid visual impact on ridges and to avoid the banks of watercourses.
- 2) Buildings are to be setback at least 30m from public roads and at least 100m from Mulgoa Road. This control may be varied depending on the topography of the site.
- 3) Buildings are to minimise excavation, filling and high foundations by avoiding slopes greater than 1 in 6.
- 4) The longest façade of a building is to be parallel to the contours of the land.
- 5) Buildings are to be grouped to minimise the visual impact of buildings in an open rural landscape.

9.1.3 Building Form, Materials and Colours

A. Background

This section seeks to ensure that buildings adopt appropriate building forms, materials and colours that are consistent with conserving the Valley's rural and natural landscape and its heritage values.

B. Objectives

- a) To ensure building forms are in keeping with the traditional buildings of the Mulgoa Valley;
- b) To ensure building materials match or complement those of older rural buildings and heritage items; and
- c) To ensure building colours are derived from the local natural landscape, especially the stone and soil, and from the traditional colours of the historic buildings of the Valley.

C. Controls

- 1) Buildings are to be a maximum of two storeys in height.
- 2) Pitched roofs are preferable with a slope of between 30 and 45 degrees. Skillion roofs by themselves are to be avoided except as verandahs or for extensions.
- 3) Large elements, especially flat surfaces, are to be avoided. Building façades and roof lines are to be broken into small elements. Garden structures, such as trellises and pergolas, can assist in breaking up large elements.
- 4) Buildings are to be designed with a horizontal rather than vertical emphasis. For example, elements such as verandahs and wide eaves can add a horizontal emphasis.
- 5) Windows and doors, expressed as openings in solid walls, are to have a vertical rather than a horizontal emphasis, and large unbroken glazed panels are to be avoided.
- 6) Building materials are to match or complement those of older rural buildings and heritage items. Examples of appropriate materials are:
 - a) Walls – Dressed Hawkesbury sandstone, rendered brickwork, rendered concrete block work, pise, mud brick, earth wall construction, painted weatherboard (horizontal), corrugated iron and timber slab construction; and
 - b) Roofs – Slate, timber shingles, clay tiles of traditional shape and colour, corrugated iron and ribbed sheet metal.
- 7) Building colours are to be derived from the local natural landscape, especially the stone and soil, and from the traditional colours of the historic buildings of the Valley. Examples are:
 - a) Walls – Light Indian Red, Biscuit, Light Stone, Drab, Light Red/Brown, Light Cream, Pink Beige and Brown Pink. Lighter colours are also acceptable, but avoid white and variegated and mottled colours in brickwork;
 - b) Roofs – Unpainted iron, Light Olive Green, Paynes Grey, slate grey and blue/grey; and
 - c) Trim – Bold rich deep colours such as Maroon, Terracotta and Brunswick Green.

9.1.4 Planting

A. Background

This section seeks to ensure that important indigenous vegetation and historic introduced vegetation that contributes to the landscape of the Mulgoa Valley Precinct is protected and enhanced.

B. Objectives

- a) To protect and enhance existing indigenous vegetation and historic introduced vegetation that contributes to the Valley's rural and natural landscape and its heritage values.

C. Controls

- 1) Existing stands of indigenous vegetation and key individual indigenous trees that contribute to the landscape character shall be retained.
- 2) Historic plantings of introduced trees and shrubs shall be retained where they have been identified as significant, or form a positive visual feature in the landscape, or complement a place of historic or cultural significance. For example, the entrance drive of *Pinus pinea* (Stone pines) at Winbourne, the *Araucaria bidwillii* (Bunya pines) at Glenmore, the *Ficus rubiginosa* (Port Jackson Fig) at Fairlight, and *Cinnamomum camphora* (Camphor Laurel) at Glenleigh.
- 3) Regrowth vegetation in the view corridors linking Cox's Cottage/St Thomas's Church/Fernhill may be selectively thinned to restore the landscape to an historic park-like character. However, the rough barked angophora species (*A. subvelutina* and *A. floribunda*) and their hybrids must be retained. For screening or to enhance this landscape character, clumps of three or four of these angophoras should be planted in appropriate locations. Naturally occurring seedlings or those specially propagated from specimens in the locality (provenance stock) for the purpose should be used.
- 4) A comprehensive list of suitable species is available on Council's website or by contacting Council.
- 5) Non-traditional introduced species with strongly coloured or otherwise prominent foliage is not recommended for planting in the Mulgoa Valley Precinct; e.g. golden cypress and *Pinus patula*. These species tend to detract from the landscape of traditional introduced species such as bunya pines or showy indigenous shrubs like wattles.

9.1.5 Access, Parking and Services

A. Background

This section seeks to ensure that access roads, parking areas and services do not detract from the Valley's rural and natural landscape or its heritage values.

B. Objectives

- a) To ensure the visual impact of access roads, parking areas and services is minimised.

C. Controls

- 1) Driveways and access roads shall follow the contours of the land as much as possible and be of the minimum width.
- 2) Driveways and access roads shall be constructed of compacted gravel, or paved or sealed in a dark coloured material if located on steep slopes.
- 3) Parking areas shall be separated from access roads and from the buildings they serve by planting and other landscaping.
- 4) Large parking areas shall not be visible from public roads.
- 5) Services should be appropriately located and screened by walls and vegetation to form part of a coherent group.

9.1.6 Fences and Entrances

A. Background

This section seeks to ensure that fences and entrances do not detract from the Valley's rural and natural landscape or its heritage values.

B. Objectives

- a) To ensure fences, gates and entrances are in harmony with the existing landscape and character of the Mulgoa Valley Precinct.

C. Controls

- 1) If practicable, avoid fences on road frontage boundaries.
- 2) Fences should be simple and unpretentious, and in keeping with traditional forms; e.g. unpainted timber post and rail, timber post and wire, or steel post and wire. Masonry fences, such as brick, blockwork or stone, should be avoided.
- 3) Gates and entrances should also be simple, and in keeping with traditional forms. Examples are:
 - a) Rendered and pointed brickwork, blockwork, sandstone, painted timber or post and rail;
 - b) Decorated gateposts with the property name carved or painted onto the gatepost or painted onto a wide timber top rail; and
 - c) Decorated iron, steel or timber gates.
- 4) Gates and entrances should relate to the materials and colours of the building to which they belong.

9.1.7 Signage

A. Background

This section seeks to ensure that signage does not detract from the Valley's rural and natural landscape or its heritage values.

B. Objectives

- a) To ensure signage is in harmony with the existing landscape and character of the Mulgoa Valley Precinct.

C. Controls

- 1) Signage, where permissible, shall relate to the style, character and function of the building or activity.
- 2) Signage shall not be freestanding in the natural landscape, but relate to walls, fences or buildings.
- 3) Signage shall be no larger than 0.72m² and no higher than 2m.
- 4) Illuminated signage is not permitted.
- 5) A distinctive signage system for the Valley is encouraged based on colonial lettering faces, proportions, sizes and details.

Figure E9.1: Historic landscapes

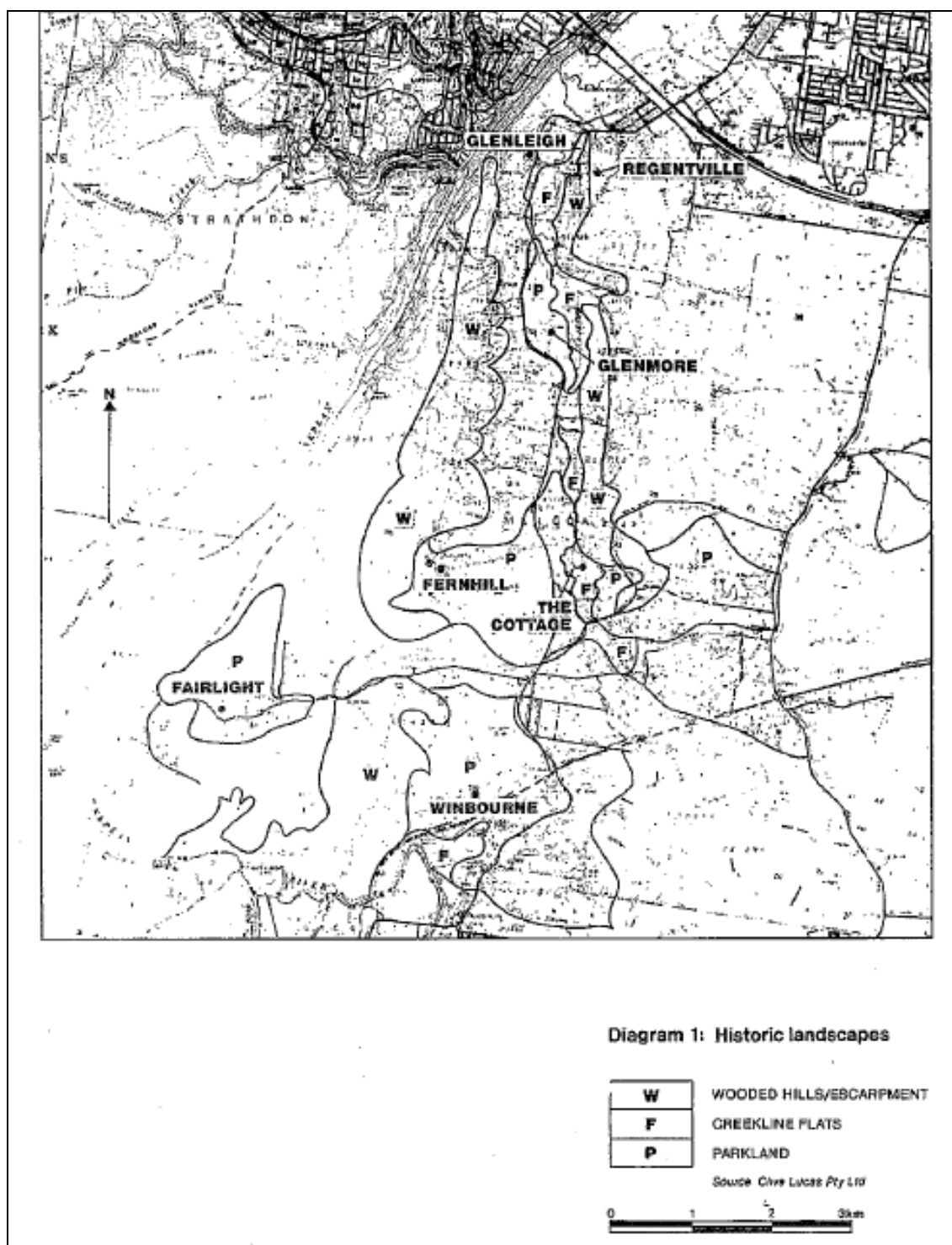
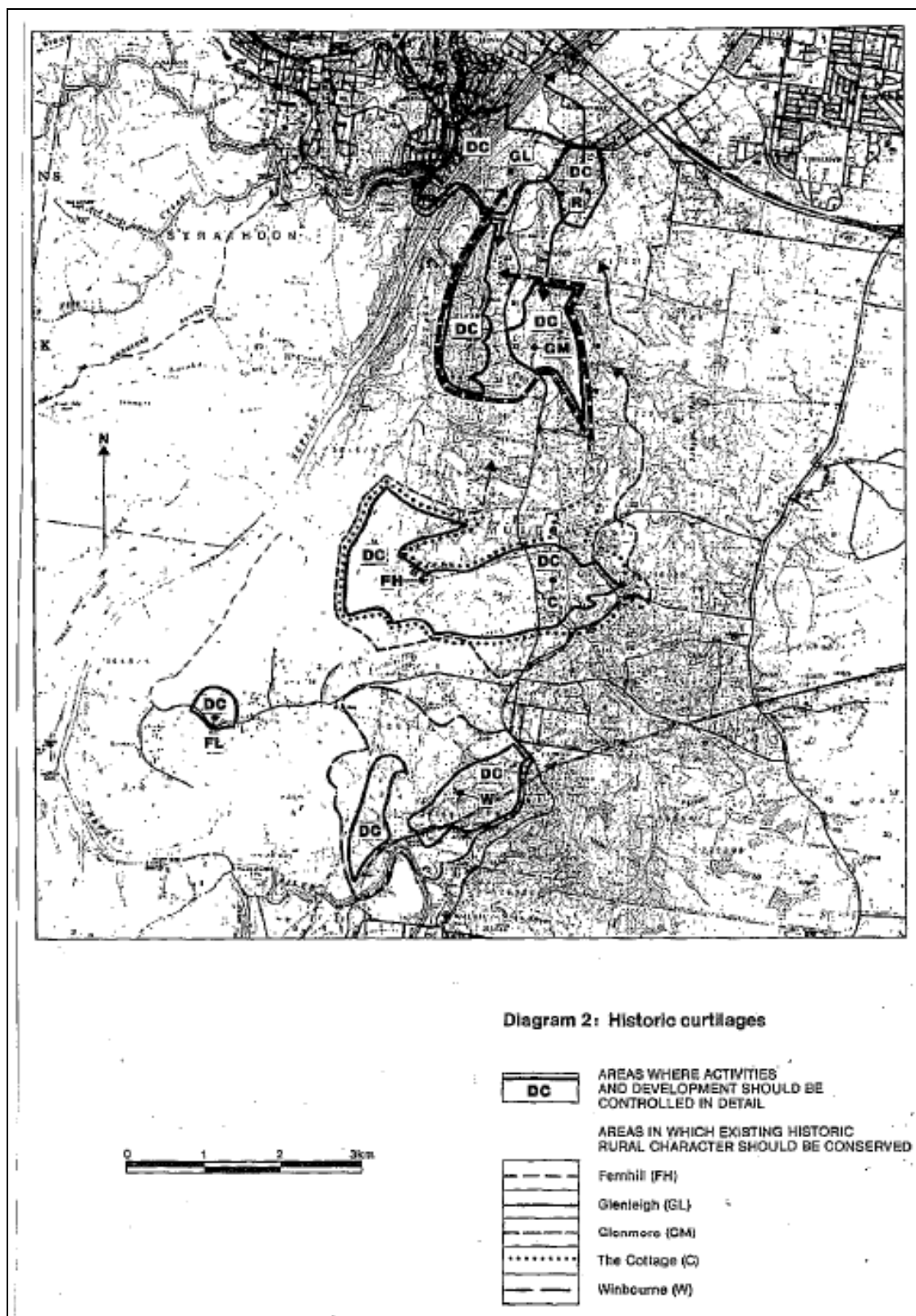


Figure E9.2: Historic curtilages



9.2 Other Controls

9.2.1 Mulgoa Road

A. Background

An important part of the Mulgoa Valley Precinct and appreciating its landscape is the drive along Mulgoa Road. Roadside vegetation, hills, gullies, bends and the changing views of heritage items and the landscape are the main attributes. This section seeks to ensure that Mulgoa Road and these attributes are protected.

B. Objectives

- a) To protect the present rural character and function of Mulgoa Road; and
- b) To ensure any new development does not impact on the safety and efficiency of Mulgoa Road.

C. Controls

- 1) Mulgoa Road shall be maintained as a rural road and shall not be improved to the level of a major regional thoroughfare.
- 2) Consent shall not be granted to development in the Mulgoa Valley Precinct if:
 - a) The safety and efficiency of Mulgoa Road will be adversely affected by the design and siting of the proposed access and by the nature, volume and frequency of vehicles using Mulgoa Road to gain access to the development; and
 - b) Any upgrading or strengthening of Mulgoa Road required to maintain its safety and efficiency detracts from the present rural character and function of Mulgoa Road.

9.3 Other Relevant Information

The following documents may assist applicants in addressing the controls for the Mulgoa Valley Precinct:

- Department of Environment and Planning 1984, Mulgoa Valley Regional Environmental Study
- Department of Environment and Planning 1987, Sydney Regional Environmental Plan No.13 – Mulgoa Valley – Parts I & II
- Penrith City Council 1999, Mulgoa and Wallacia Rural Villages Study.

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E10 Orchard Hills

A. Background

Area included within the Orchard Hills Precinct

The Orchard Hills Precinct is bounded by The Northern Road to the west, Caddens Road to the north, the South Creek corridor to the east, and the Orchard Hills defence establishment to the south. The M4 Motorway and The Northern Road are the main transport corridors in the area. Orchard Hills is a key part of the transition between the urban and rural areas of Penrith when approaching along the M4 Motorway and The Northern Road. The extent of the land is shown on the LEP Clause Application Map with a notation 'Orchard Hills'.

Orchard Hills has a predominately rural character with undulating hills and scenic vistas. Historically, its landscape was mainly overlaid with orchards and grapevines, and with rural farmhouses and outbuildings. A prominent line of hills mostly with an east-west orientation defines the topography of the area.

Today, Orchard Hills retains a largely rural character predominantly used for rural living on 2 hectare lots. There are also a number of intensive agricultural uses in operation throughout the locality. A number of schools and churches are dispersed in the area north of the M4 Motorway.

B. General Objectives

- a) To ensure that development does not adversely affect the scenic qualities, character and amenity of this precinct;
- b) To promote the continuation of the open, semi-rural character and regionally significant landscape setting of Orchard Hills and minimise the visual impact of development from major roads and public places;
- c) To recognise that Orchard Hills forms part of an important entry to the residential areas of Penrith, and that careful management of development in this location is critical to conserving the values of this City entry;
- d) To ensure that development does not unreasonably increase the demand for public infrastructure and public services;
- e) To ensure that non-residential activities do not:
 - i) Alter the character or scenic quality of the locality;
 - ii) Detract from the existing landscape setting;
 - iii) Promote the commercialisation of lands adjoining The Northern Road; or
 - iv) Generate traffic volumes which cannot be readily accommodated within the existing road pattern, or which create a traffic safety problem.

10.1 Siting and built form controls

10.1.1 Siting and orientation of dwellings and outbuildings

A. Objectives

In addition to the general objectives for Orchard Hills, the objectives of this section are to ensure that buildings are positioned in a manner and location that will:

- a) protect and enhance the semi-rural landscape of Orchard Hills;
- b) minimise the visual impact of development from major roads and public places; and
- c) enhance the important City entry qualities of Orchard Hills.

B. Controls

- 1) All buildings shall be set back a minimum of 30m to The Northern Road boundary and a minimum of 15m from all other roads.
- 2) An additional building setback shall be provided on those lots fronting The Northern Road, where in the opinion of Council, the development of the land is likely to impact on the open, semi-rural character of the land when viewed from The Northern Road.
- 3) Buildings and other structures shall not intrude into the skyline when viewed from The Northern Road or the M4 Motorway.
- 4) Buildings are to be located on mid-slopes to avoid visual impact on ridges and to avoid the banks of watercourses.
- 5) Buildings are to minimise excavation, filling and high foundations by avoiding slopes greater than 1 in 6.
- 6) The longest façade of a building is to be parallel to the contours of the land.
- 7) Buildings should be positioned to maximise opportunities for solar access in winter, and minimise exposure to summer sun and winter winds.
- 8) Buildings and other structures should be located to retain, whenever possible, remnant indigenous vegetation, including trees, shrubs, understorey plants and ground covers.

10.1.2 Building form, materials and colours

A. Objectives

In addition to the general objectives for Orchard Hills, the objectives of this section are to:

- a) ensure building forms are in keeping with the setting and context of the precinct; and
- b) ensure building materials contribute to maintaining the semi-rural character of the Precinct.

B. Controls

- 1) Buildings are to be a maximum of two storeys in height.
- 2) Pitched roofs are preferable with a slope of between 30 and 45 degrees. Skillion roofs by themselves are to be avoided except as verandahs or for extensions.
- 3) Large elements, especially flat surfaces, are to be avoided. Building facades and roof lines are to be broken into small elements. Garden structures such as trellises and pergolas can assist in breaking up large elements.
- 4) Buildings are to be designed with a horizontal rather than vertical emphasis.
- 5) Exterior windows and doors are to have a vertical rather than a horizontal emphasis. Large unbroken glazed panels are to be avoided.
- 6) Building materials and colours are to be in keeping with their surroundings, and are to be derived from the local horticultural and natural landscape.

10.1.3 Vegetation and plantings

A. Objectives

In addition to the general objectives for Orchard Hills, the objective of this section is to provide controls to ensure the layout of gardens and plantings, and the selection of species reflects the traditional landscape character of Orchard Hills.

B. Controls

- 1) Development on land occupied by existing vegetation (including, although not limited to, remnant and regrowth tree stands, existing or abandoned orchards and vineyards) shall demonstrate, in the design and siting of buildings, parking, access and general improvements, that all measures have been taken to retain and supplement this vegetation.
- 2) Landscape design should be based upon the traditional forms, colours, scale, textures, relationships and groupings of plant species in Orchard Hills. This can also include other garden elements of fences, gateways, hedges, windbreaks, driveways, and landscape built elements.
- 3) When deciding what to plant, applicants should consider the existing landscape and environmental amenity of the area with reference to agricultural, horticultural and homestead plantings, and the manner in which they have been traditionally used in the Orchard Hills landscape setting.

10.1.4 Access, parking and services

A. Objectives

In addition to the general objectives for Orchard Hills, the objective of this section is to ensure the visual impact of access roads, parking areas and services is minimised.

B. Controls

- 1) Access from properties fronting The Northern Road shall only be permitted if it serves dwellings or domestic outbuildings.
- 2) Traffic generating developments must demonstrate that traffic volumes can be readily accommodated within the existing road pattern and do not create a traffic safety problem.
- 3) Driveways and access roads shall follow the contours of the land, as much as possible, and be no wider than is necessary to allow for safe and effective vehicle movements.
- 4) Driveways, access roads and hardstand areas shall be constructed of compacted gravel, or paved or sealed in a dark coloured material if located on steep slopes.
- 5) Large parking areas shall not be visible from public roads, and shall be separated from access roads and from the buildings they serve by planting and other landscaping.
- 6) Any lighting provided should not intrude into the rural setting. Lighting structures and the light cast shall be discreet.
- 7) Services should be appropriately located and screened by walls and vegetation to form part of a coherent group.

10.1.5 Fences and entrances

A. Objectives

In addition to the general objectives for Orchard Hills, the objective of this section is to ensure fences, gates and entrances are in harmony with the existing landscape and character of the Orchard Hills Precinct.

B. Controls

- 1) If practicable, avoid fences on road frontage boundaries.
- 2) Fences should be simple and unpretentious, and in keeping with traditional forms; e.g. unpainted timber post and rail, timber post and wire, or steel post and wire.
- 3) Masonry fences, such as brick, blockwork or stone, should be avoided.
- 4) Gates and entrances should also be simple and in keeping with traditional forms. The scale, form and bulk should not detract from the established street frontage. Examples are:

- a) Rendered and pointed brickwork, blockwork, sandstone, painted timber or post and rail;
 - b) Decorated gateposts with the property name carved or painted onto the gatepost or painted onto a wide timber top rail; and
 - c) Decorated iron, steel or timber gates.
- 5) Gates and entrances should relate to the materials and colours of the building to which they belong.

10.1.6 Signage

A. Objectives

In addition to the general objectives for Orchard Hills, the objective of this section is to ensure that signage is in harmony with the existing landscape and character of the Orchard Hills Precinct.

B. Controls

Any signage must be rural in character and must:

- 1) relate to the style, character and function of the building or activity it advertises;
- 2) only refer to the development on the land to which the sign is located;
- 3) not be illuminated;
- 4) not exceed 1.5m² in area, or a maximum height of 2m above ground level, or intrude in the sky line; and
- 5) not be freestanding, but related to walls, fences or buildings.

10.2 Other relevant information

The following documents may assist applicants in addressing the controls for the Orchard Hills Precinct:

- Penrith Heritage Study
- Penrith Rural Lands Study and Strategy.

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Part A Penrith City Centre


11.1 Preliminary

11.1.1 Area included within the Penrith City Centre

This Section applies to development on land covered by the Penrith City Centre as shown in Figure E11.1. This part of the Section provides specific controls for the Penrith City Centre in addition to the general controls elsewhere in this DCP.

Figure E11.1 Penrith City Centre



 Area covered by Penrith City Centre

11.1.2 Aims and Objectives of this Section

The aim of this Section is to provide more detailed provisions for development in the Penrith Centre that will:

- a) contribute to the growth and character of Penrith
- b) deliver a balanced social, economic and environmental outcome; and
- c) protect and enhance the public domain.

The general objectives of this Section are:

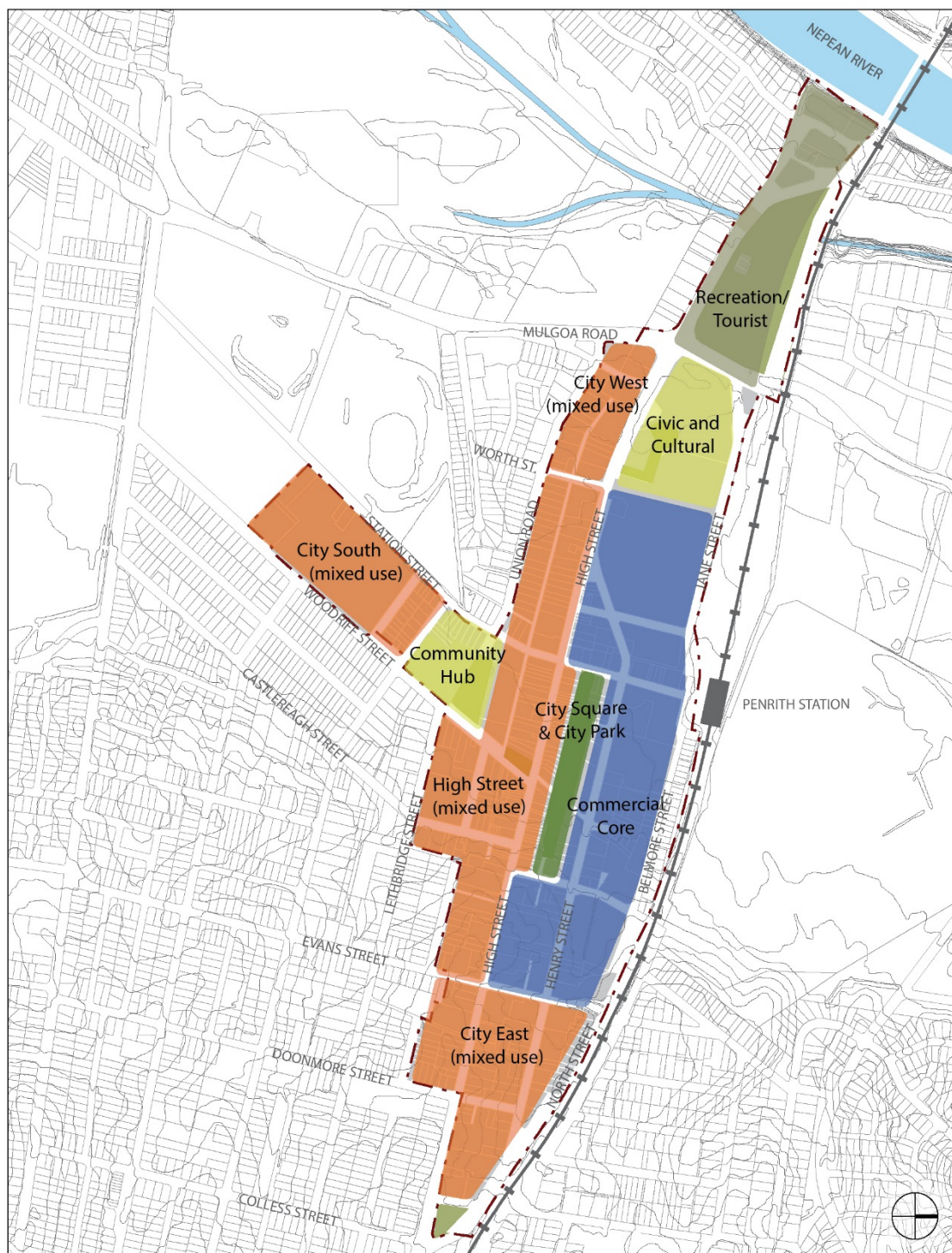
- a) To facilitate the revitalisation of Penrith City Centre by promoting redevelopment and urban sustainability;
- b) To promote high quality urban design and environmental sustainability in the planning, development and management of the City Centre;
- c) To provide for mixed use, commercial and residential development within the Town Centre which provides high levels of amenity for occupants;
- d) To provide high levels of accessibility within the City Centre, connecting significant activity nodes, public open space and surrounding residential areas;
- e) To encourage development within Penrith City Centre that gives primacy to the public domain and creates an attractive and vibrant centre;
- f) To encourage integration of the residential and non-residential land uses and improved access to transport facilities;
- g) To achieve an attractive and sustainable Penrith City Centre; and
- h) To ensure that development in the Penrith City Centre is consistent with the desired future character of each precinct as described in the following section.

11.1.3 Penrith City Centre Precincts and Character areas

The Penrith City Centre developed along a section of The Great Western Highway that was also the transport stop on The Great Western Rail Line. Its reliance on transport links for its development is evident in its elongated, east-west pattern. The City Centre has a distinctive heart in High Street.

There are eight precincts in the Penrith City Centre, all comprising their own distinct characteristics and is illustrated in Figure E11.2. The intended character of these precincts is identified below and will be used to inform and guide future development.

Figure E11.2 Penrith City Centre Character Areas



1. High Street Mixed Use

High Street is the historic heart of Penrith and is the focus of the City Centre activities with its central spine of 2.5km that is segmented into sub-precincts. The street has many low-rise, small scale retail shops, and a concentration of civic and cultural functions.

High Street is a focus of pedestrian activities with its wider, covered footpath areas which already encourage alfresco dining. The street will continue to be the hub for pedestrian street life in the City Centre, accompanied by central city 'greening'. Mixed use developments will encourage a diversity of uses locating in the centre to further activate the street, whilst the residential development aligning the southern edge of the street will engage pedestrian activities into the city centre.

Views of the Blue Mountains escarpment are available along sections of High Street, particularly the eastern half of High Street up to mid-block past Station Street, and should be retained at street level.

This precinct offers the new City Park and City Square, which will be located in what is currently the Allen Place parking area. These public space areas are intended to be a series of linked areas, each expressing its own character to entice residents and workers to visit and enjoy these spaces. The City Park and City Square will be connected to High Street and surrounding streets via laneways and arcades.

The buildings surrounding City Park and City Square will need to have active street frontages and uses fronting these public spaces. Memory Park, located at the corner of High Street and Woodriff Street, is a significant public space in the City Centre that needs to be preserved. It is at this space where ANZAC Day remembrance ceremonies are celebrated.

The concentration of public spaces in this precinct means that development will need to address any potential impacts on these spaces as buildings get higher.

Tree-lined streets provide shade to pedestrians. Other public domain improvements are proposed in the precinct such as continuing the awnings along the street frontage, high quality paving, street furniture and pedestrian lighting.

2. Commercial Core

This area is the 'gateway' to Penrith on arrival by rail, and given this status, needs to be a focus for the highest quality developments.

The Commercial Core precinct is dominated by the Westfield Penrith (Penrith Plaza) shopping centre. The interface of the shopping centre with the city and the 'street life' activity along High and Station Streets needs to be strengthened.

The eastern side of Station Street contains a mixture of commercial uses with some fringe retail and car parking. Council has significant land assets in this area. The TAFE College brings student life and activity into the area, and its presence should be strengthened. The government office development consolidates State Government activities in one building, opposite the station. This area, close to the station, has the potential to significantly intensify as a location for high quality commercial development, supported by some ground level retail.

This precinct will form the northern boundary of the new City Square and City Park. Both public spaces will be located in what is currently the Allen Place parking area, and are intended to be a haven for workers and residents in the City Centre. It is envisaged that the City Square and City Park will become the focus of City activities.

3. City East / Mixed Use

This is the eastern gateway into the city centre area and should be enhanced.

The area east of Evans Street currently contains a mix of fringe retail and residential development. It can develop in the future as a mixed use precinct with a village character of its own, including mixed use buildings containing retail, commercial and residential uses and a small retail hub with emphasis on access and walkability. It is envisaged for this area to develop a live-work character.

High rise commercial development should be restricted in this area to minimise leakage from the Commercial Core area. Links through this area to Nepean Hospital need to be protected and strengthened.

4. City South / Mixed Use

This area comprises the single storey Nepean Village shopping centre, surrounded by a large surface car park. It enjoys street frontages aligning its eastern and western boundaries that provide very distinct characteristics either side. Immediately adjoining the southern boundary is a former industrial property that will be redeveloped into a high density residential precinct.

It is envisaged this area will redevelop into a mixed use precinct with its own identity with clear connections to and synergies with the adjoining high density residential precinct and act as the shopping and service hub for the surrounding and intensifying residential area. There needs to be further emphasis on the land uses and activities located at, as well as the design and utility of urban spaces at the common boundary with that precinct. Future development should reduce the impact of surface car parks on local streets.

Its redevelopment opportunities will need to consider the interface with different environments aligning its boundaries, being residential (to its east) and sporting facilities (in the west).

The precinct can be redeveloped as a mixed use precinct with its own identity through better connectivity to the city centre at the northern end.

5. City West (Mixed Use)

The precinct comprises the southern side of High Street, between Worth Street and the intersection to Mulgoa Road. This area is presently underdeveloped, with a number of apartment buildings having been approved or under construction immediately behind High Street.

This area should be redeveloped, primarily as a high density residential precinct that will complement and bring additional activity to the adjoining civic and cultural precinct. It is envisaged that this area develop a live-work environment, which is promoted through the design and layout of residential buildings, and the location of compatible commercial and retail uses at the street level of such buildings.

This precinct currently enjoys unobstructed views of the Blue Mountains escarpment. It is acknowledged that redevelopment will result in loss of such views however, where view corridors can be reasonably maintained from High Street, then the views should be retained.

There is an opportunity to locate an urban space in this precinct that affords an “eat street” environment with connection to the adjoining civic and cultural precinct.

6. Civic and Cultural Precinct

Penrith’s Civic Centre, comprising the council’s offices and library, as well as the Joan Sutherland Performing Arts Centre comprise the civic and cultural precinct. It is located at the north-eastern corner of the High Street and Mulgoa Road intersection, enjoying unobstructed views of the Blue Mountains escarpment.

The precinct contains green public spaces which can be redeveloped to enliven this precinct, making it attractive and vibrant after hours.

7. Community Hub

A number of community facilities are already sited in the city centre and there is an opportunity to amalgamate these facilities in a central precinct at the heart of the city centre, between Station Street and Woodriff Street. There is opportunity to enhance the existing public space with landscaped and shaded spaces for community groups to meet and gather.

Its central location is ideal in ensuring that the precinct is easily accessible from adjoining residential areas, and greatly enhances the precinct's focus for community functions.

8. Recreation / Tourist

The precinct between the Nepean River and the Commercial Core is critical to creating Penrith as a true river city. The sports facilities at Woodriff Gardens and the rowing club along the river provide recreation opportunities for the local residents and workers. The area has low scale development, with some tourist facilities already located along the river (such as a hotel and function centre).

Creating a recreational link between the city centre and the river is a priority in this area. The landscape extension of High Street to the riverfront will be the priority to reconnect the city with the river and to create attractive and legible pedestrian links.

There is a potential to improve pedestrian and cycle connections across the river in this area. Opportunities for outdoor restaurants and cafes along the river should be examined, with the riverfront being landscaped as links to the Great River Walk are established, and improved pedestrian/ cycle paths provide 'bridge to bridge' recreational opportunities.

11.2 Building Form

11.2.1 Introduction

Building form and character refers to the individual elements of building design that collectively contribute to the character and appearance of the built environment.

The development provisions in this Section of the DCP are intended to encourage high quality design for buildings in the Penrith City Centre, balancing the character of Penrith with innovation and creativity. The resulting built form and character of development should contribute to an attractive public domain in central Penrith and produce a desirable setting for its intended uses.

The controls in this section aim to:

- a) Establish the scale, dimensions, form and separation of buildings appropriate for the setting in the city centre.
- b) Achieve an attractive and sustainable Penrith city form within the City Centre context.
- c) Provide a strong definition of the public domain. Achieve active street frontages with good physical and visual connections between buildings and the street.
- d) Ensure there is consistency in the main street frontages of buildings having a common alignment to improve accessibility.
- e) Provide for pedestrian comfort and protection from weather conditions.

- f) Define the public street to provide spaces that are clear in terms of public accessibility and safety, and are easy to maintain. Ensure building depth and bulk is appropriate to the environmental setting and landform by providing for view sharing and good internal building amenity.
- g) Ensure building separation is adequate to protect amenity, daylight penetration and privacy between adjoining developments.
- h) Encourage mixed use development with residential components that achieve active street fronts and maintain good residential amenity.
- i) Achieve an articulation and finish of building exteriors that contribute to a high quality of design excellence.
- j) Provide for high quality landscape to contribute to the amenity of the City Centre and a sustainable urban environment.
- k) Maintain and enhance important views from the City Centre to surrounding natural landscape features.
- l) Contribute to the legibility of the City.
- m) Ensure that buildings are responsive to the character and heritage values of the Penrith City Centre.

11.2.2 Building to Street Alignment and Street Setbacks

A. Background

Street setbacks and building alignments establish the front building line. They help to create the proportions of the street and can contribute to the public domain by enhancing streetscape character and continuity of street facades.

Street setbacks can also be used to enhance the setting and address for the building. They provide for landscape areas, entries to ground floor apartments and deep soil zones.

Buildings should be built up to the street alignment to reinforce the urban character and improve pedestrian accessibility, amenity and activity at street level. Above street frontage height, buildings are to be set back to provide sunlight access to streets, pedestrian areas and lower levels of other buildings. These setbacks offer comfortable wind conditions, view corridors, an appropriate building scale for pedestrians, and good growing conditions for street trees.

Towards the edges of the city centre, buildings are setback to provide amenity in predominantly residential areas, including entries to ground floor apartments, landscaping and deep soil zones.

B. Objectives

- a) To establish consistent building alignments to the street.
- b) To provide street setbacks appropriate to building function and character.
- c) To establish the desired spatial proportions of the street and define the street edge.
- d) To create a transition between public and private space.
- e) To locate active uses, such as shopfronts, closer to pedestrian activity areas.

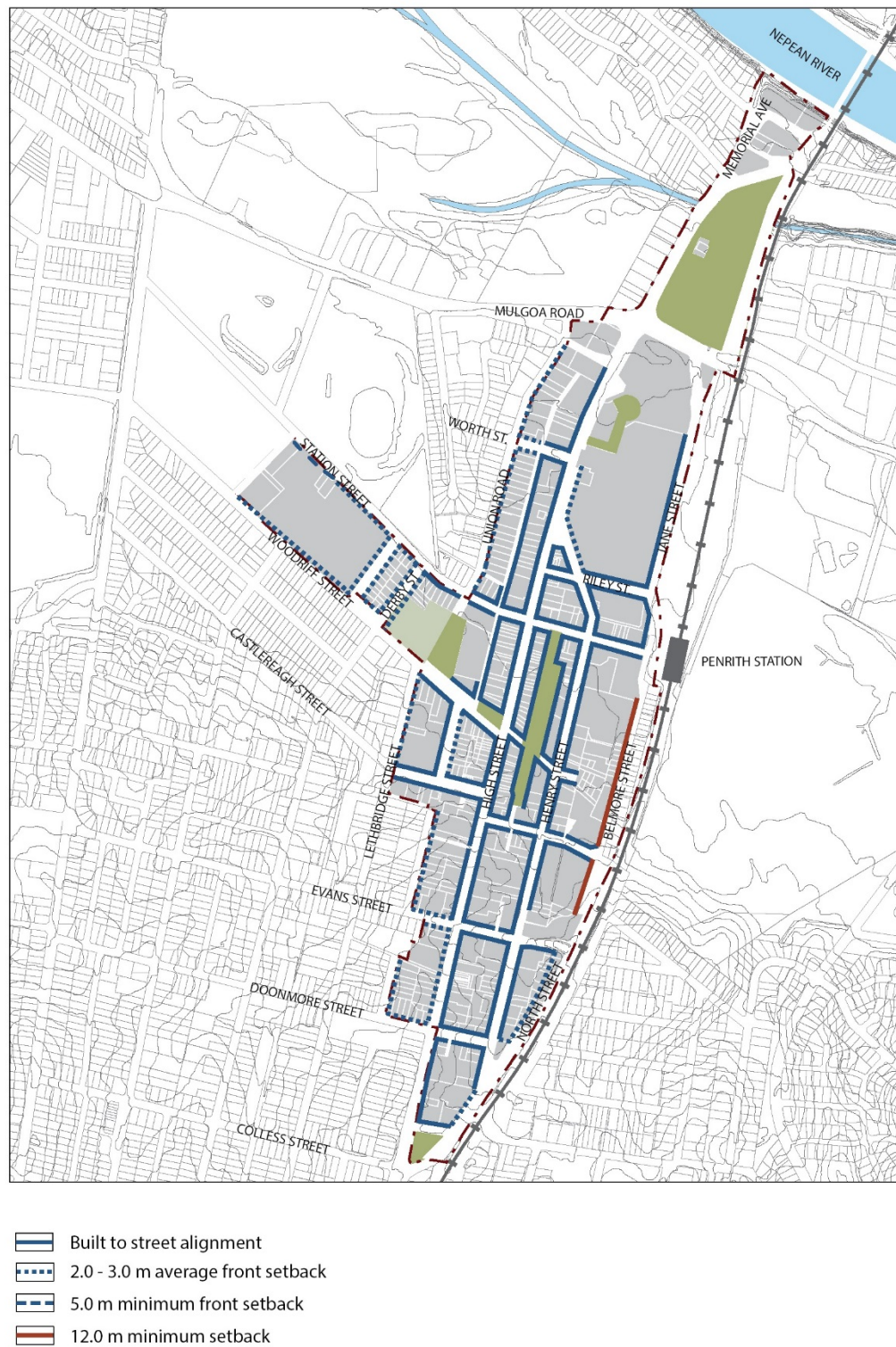
- f) To allow for street landscape character, where appropriate.
- g) To maintain sun access to the public domain.
- h) To protect important views to the Blue Mountains escarpment.

C. Controls

The controls for building form are as follows:

- 1) Street building alignment and street setbacks are specified in Figure E11.3.
- 2) Balconies may project up to 600mm into front building setbacks, provided the cumulative width of all balconies at that particular level totals no more than 50% of the horizontal width of the building façade, measured at that level.
- 3) Minor projections into front building lines and setbacks for sun shading devices, entry awnings and cornices are permissible.
- 4) Notwithstanding the setback controls, where development must be built to the street alignment (as identified in Figure E11.3) it must also be built to the side boundaries (0m setback) where fronting the street. The minimum height of development built to the side boundary must comply with the minimum street frontage height requirement.
- 5) Buildings along High Street must demonstrate that views to the Blue Mountains escarpment are maintained through the provision of perspectives.

Figure E11.3 Front Setbacks



11.2.3 Street Frontage Heights

A. Background

Well framed streets are an important characteristic of a City Centre. It is important that buildings within Penrith City Centre contribute to a strong definition of the street and public domain and reflect the City's status as a Regional City, and the function and character of different parts of the City.

The desired street frontage heights are specified in this section to ensure a sense of street enclosure that is appropriate to Penrith's natural setting and status as a regional city.

Street frontage heights refer to the height of the building at the street alignment and directly address the public street. Street sections specify required street frontage height and setbacks for development above street frontage height.

B. Objectives

- a) To provide consistent streetscapes through control of the built form visible from the public domain.
- b) To achieve comfortable street environments for pedestrians in terms of daylight, scale, sense of enclosure and wind mitigation as well as healthy environments for street trees.
- c) To allow sunlight access to new and existing significant public spaces in the city centre.
- d) To provide for an appropriate transition in building heights from key public spaces.
- e) To provide well sealed enclosure to the significant public spaces.
- f) To protect important views to the Blue Mountains escarpment.

C. Controls

- 1) Buildings must comply with the relevant street frontage heights as shown in Figure E11.4 and illustrated in Figures E11.5 to E11.10.
- 2) Development of land in the vicinity of Allen Place, Memory Park and Judges Park the development must demonstrate that it does not adversely overshadow the adjoining public places.

Figure E11.4 Street Frontage Heights

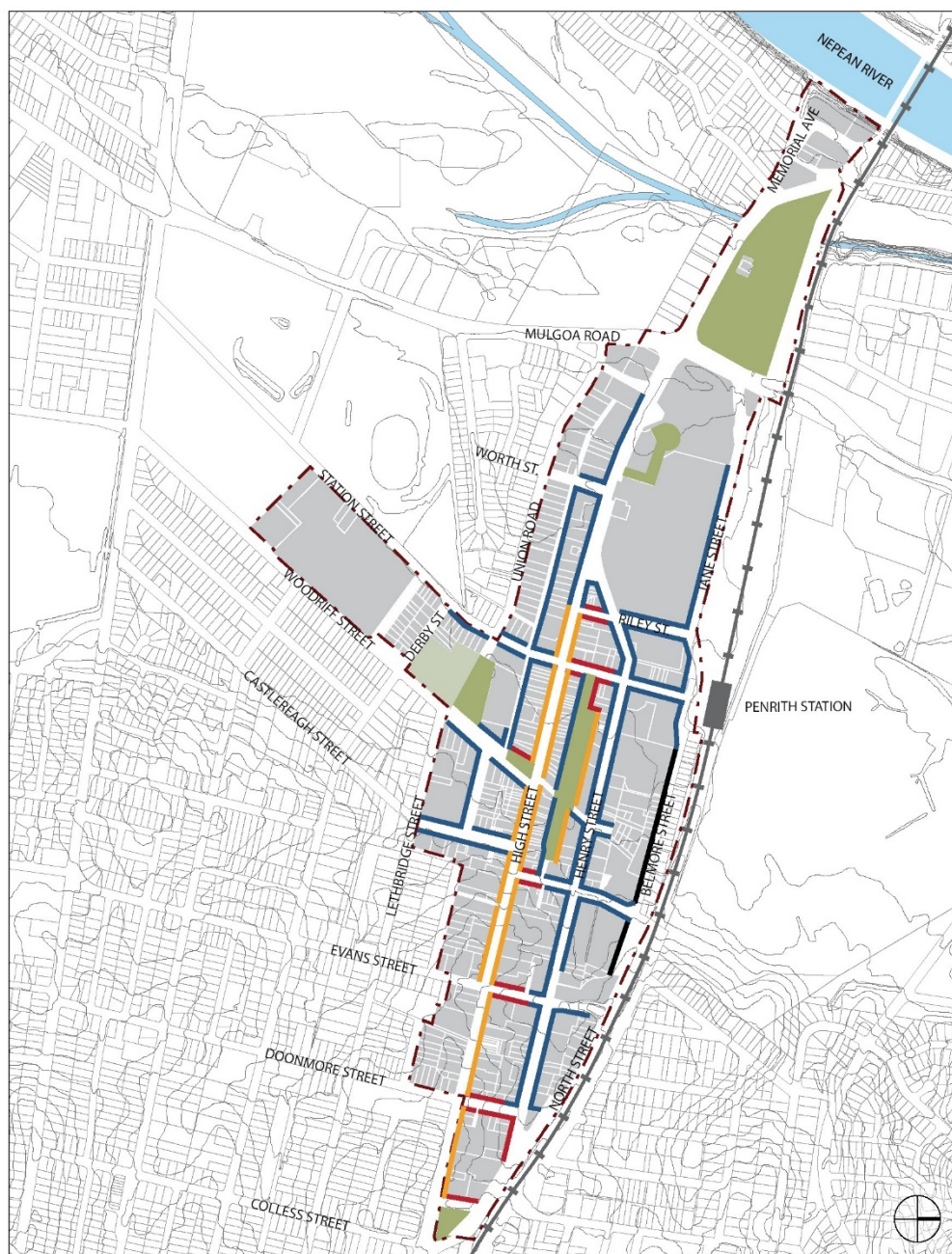
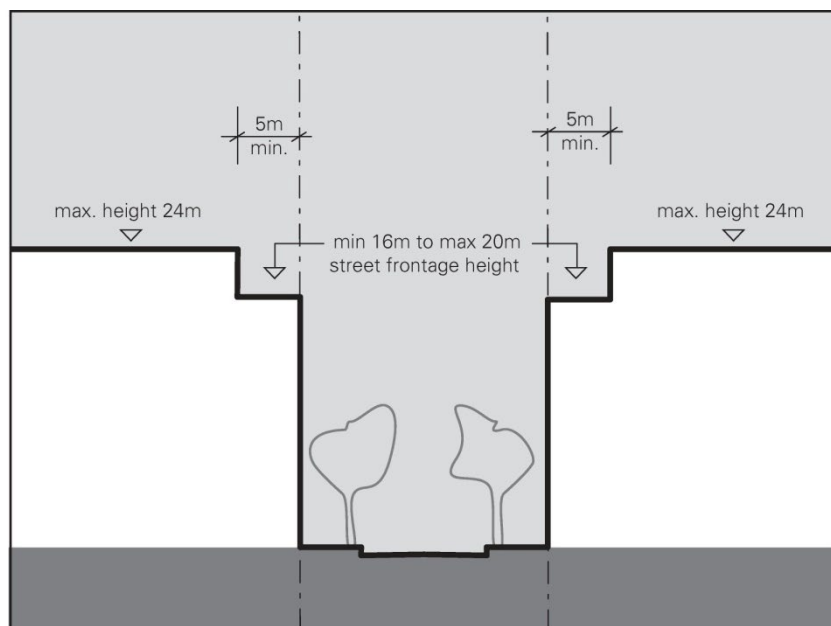
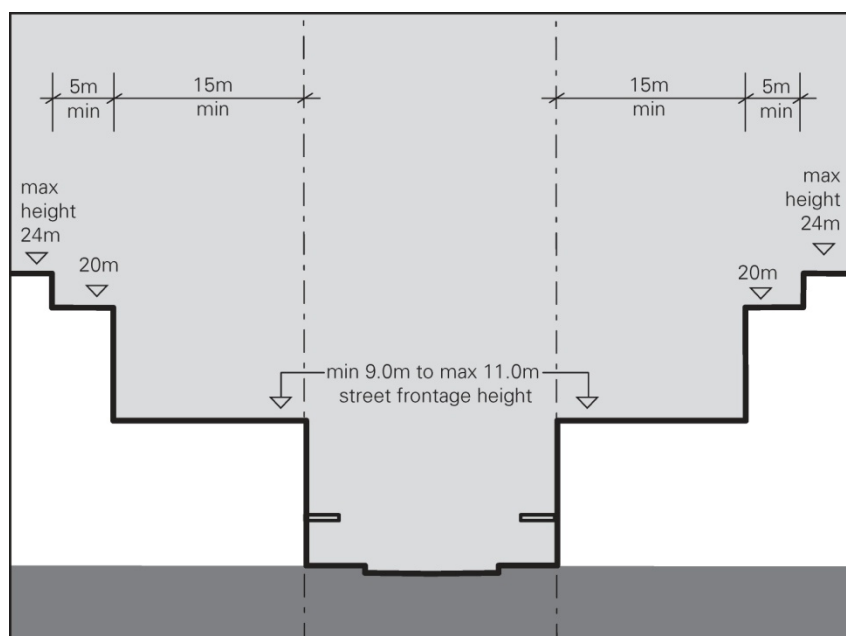


Figure E11.5: Street Frontage Height Type A



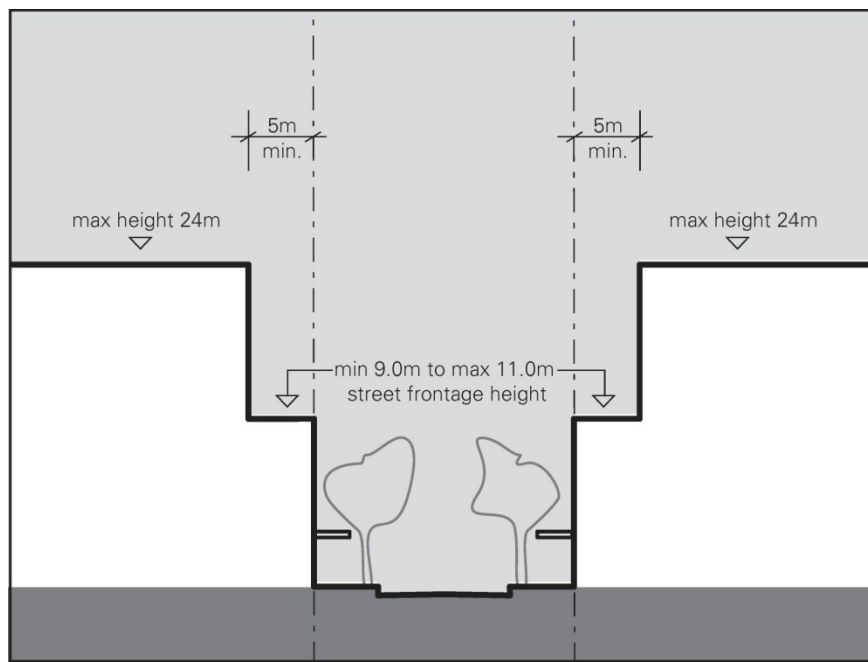
STREET FRONTAGE HEIGHT TYPE A

Figure E11.6: Street Frontage Height Type B



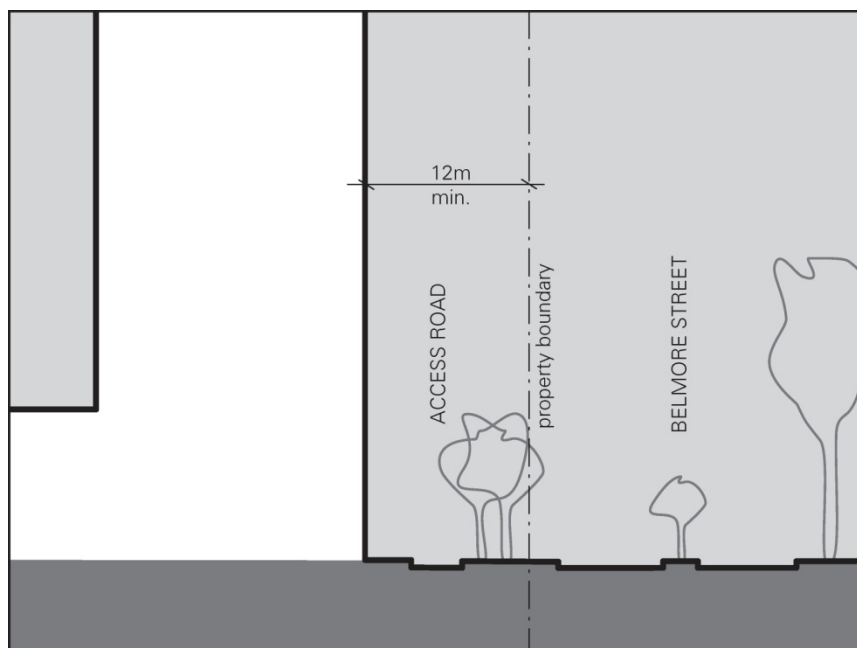
STREET FRONTAGE HEIGHT TYPE B

Figure E11.7: Street Frontage Height Type C



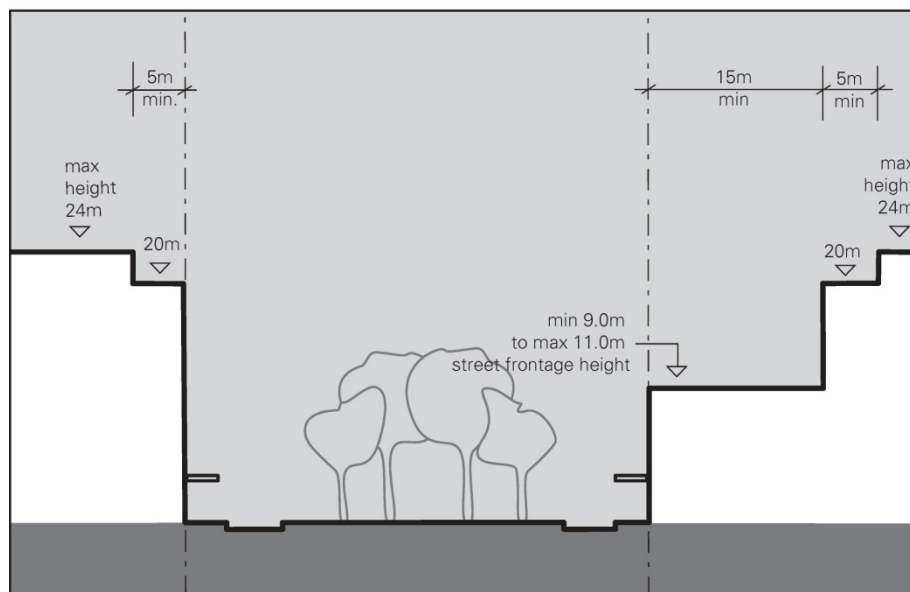
STREET FRONTAGE HEIGHT TYPE C

Figure E11.8: Street Frontage Height Type D



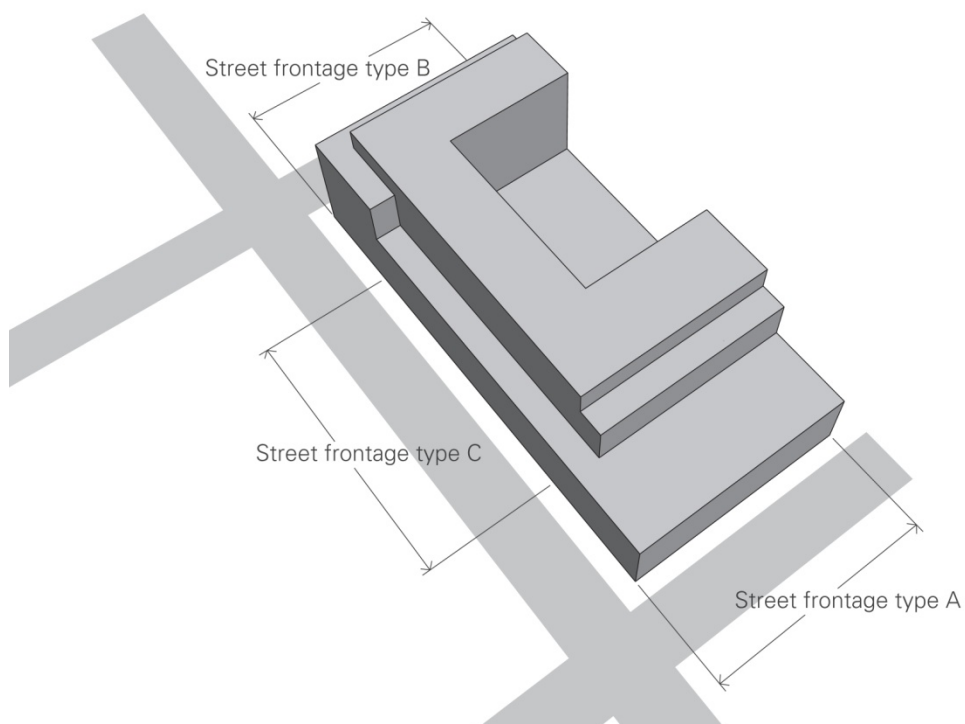
STREET SECTION TYPE D

Figure E11.9: Section through Allen Place (looking west)



SECTION THROUGH ALLEN PLACE
(looking west)

Figure E11.10: Example of possible transition between lower street frontage (Type A) to higher street frontage height (Type B) with the use of street frontage Type C



11.2.4. Building Depth and Bulk

A. Background

Controlling the size of upper level floor plates of taller buildings allows for good internal amenity, access to natural light and ventilation and reduces potential adverse effects that tall and bulky buildings may have on the public domain.

Building depth is related to building use. Typically, mixed use buildings have larger commercial floor plates combined with smaller residential floors.

B. Objectives

- a) To promote the design and development of sustainable buildings.
- b) To achieve the development of living and working environments with good internal amenity and minimise the need for artificial heating, cooling and lighting.
- c) To provide viable and useable commercial floor space.
- d) To achieve usable and pleasant streets and public domain at ground level. To achieve a city skyline sympathetic to the topography and context.
- e) To allow for view sharing and view corridors.
- f) To reduce the apparent bulk and scale of buildings by breaking up expanses of building wall with modulation of form.

C. Controls

- 1) The maximum floorplate sizes and depth of buildings are specified in the table below (also refer to Figure E11.11).
- 2) Notwithstanding the above, no building above 24m in height is to have a building length in excess of 50m.
- 3) All points of an office floor should be no more than 10m from a source of daylight (e.g. window, atria, or light wells) in buildings less than 24m in height, and no more than 12.5m from a window in buildings over 24m in height.
- 4) Use atria, light wells and courtyards to improve internal building amenity and achieve cross ventilation and/or stack effect ventilation. (Refer to figures E11.12 and E11.13)

The controls for building depth and height are outlined in Table E11.1.

Table E11.1: Controls for building depth and height

Land Use	Building Use	Condition	Maximum Floorplate	Maximum Building Depth (excludes balconies)
Commercial Core	All	Above 24m height	1,200m ²	25m
Mixed Use	Non Residential	Above 20m height	900m ²	20m

Land Use	Building Use	Condition	Maximum Floorplate	Maximum Building Depth (excludes balconies)
	Residential	Above 20m height	750m ²	18m
All other zones	All	Above 12m height	750m ²	18m

Figure E11.11: In the Commercial Core, the floor plates of commercial buildings above 24m are limited to 1,200m²

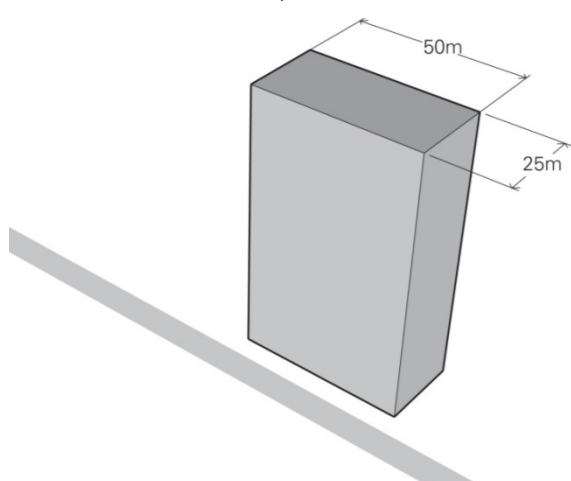


Figure E11.12: Atria type buildings allow good light penetration and ventilation, and can provide large flexible building floor plates

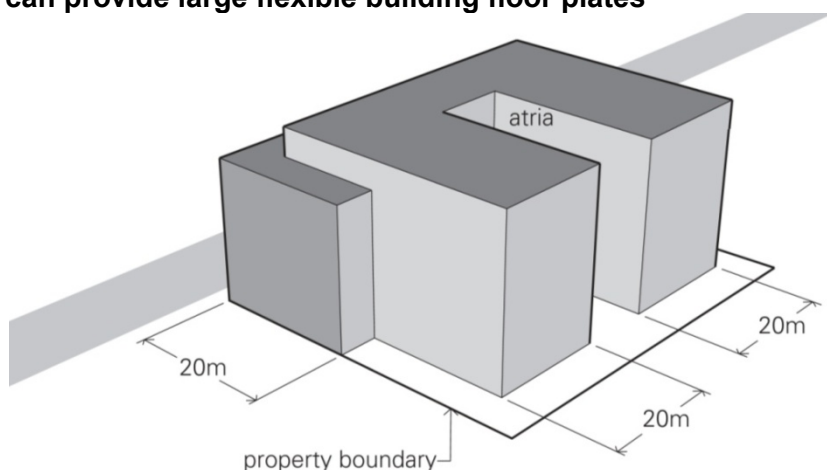
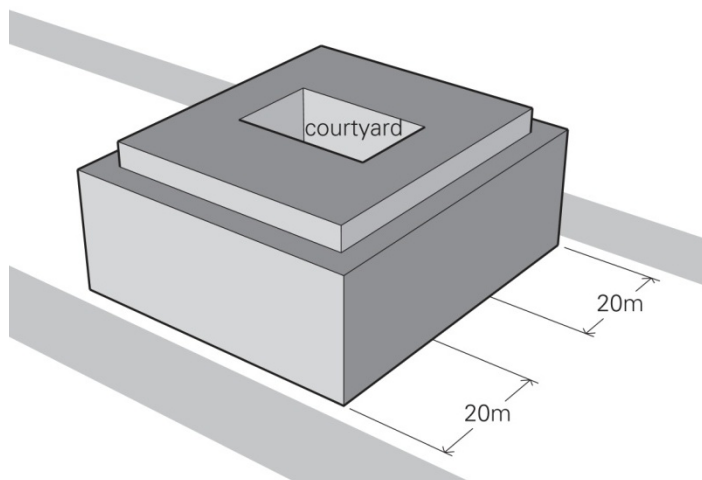


Figure E11.13: Courtyard type buildings allow good light penetration and well suited to sites with two street frontages



11.2.5 Boundary Setbacks and Building Separation

A. Background

Setbacks allow ventilation, daylight access and view sharing and increase privacy. In residential buildings and serviced apartments, separation between windows on side and rear facades and other buildings is particularly important for privacy, acoustic amenity and view sharing.

For commercial buildings, separation distances are smaller due to reduced requirement for visual and acoustic privacy.

Separation for mixed use buildings containing residential and commercial uses is to be in accordance with specified distances for each component use.

B. Objectives

- a) To ensure an appropriate level of amenity for building occupants in terms of daylight access, outlook, view sharing, ventilation, wind mitigation, and privacy.
- b) To achieve usable and pleasant streets and public domain areas in terms of wind mitigation and daylight access.

C. Controls

- 1) The minimum building setbacks from the side and rear property boundaries are specified in Table E11.2 and illustrated in figures E11.14 to E11.16.
- 2) Notwithstanding the setback controls, where development must be built to the street alignment (as identified in figure E11.3) it must also be built to the side boundaries (0m setback) in the vicinity of the street.
- 3) Where 0m side and rear boundary setbacks are permissible, and where it can be demonstrated that 0m setbacks cannot be achieved, Council may consider buildings that are setback from the boundary providing they are setback at least 5m to provide amenity in terms of day light access, useable outdoor space and landscaping. (Refer to figures E11.14 or E11.15)

- 4) If the specified setback distances cannot be achieved when an existing building is being refurbished or converted to another use, appropriate visual privacy levels are to be achieved through other means.

Table E11.2: Minimum side and rear setback distance from property boundary

Zone	Building Height and Use	Minimum Setback
Commercial Core	Up to a height of 20m	0m
	Above 20m	5m
	Above 24m	12m
Mixed Use	Non-Residential Uses	
	– Up to 20m	0m
	– Above 20m	5m
	– Above 24m	9m
	Residential uses up to 12m height:	
	– Non-habitable rooms	3m
	– Habitable rooms	6m
	Residential uses up to 24m height:	
	– Non-habitable rooms	4.5m
	– Habitable rooms	9m
	Residential uses above 24m height:	
	– Non-habitable rooms	6m
	– Habitable rooms	12m
All other zones	Non-residential uses:	
	– Up to 12m	3m
	– Above 12m	6m
	Residential uses up to 12m height:	
	– Non-habitable rooms	3m
	– Habitable rooms	6m

Zone	Building Height and Use	Minimum Setback
	Residential uses above 24m height:	
	– Non-habitable rooms	6m
	– Habitable rooms	12m

Figure E11.14: Minimum side and rear setbacks in the Commercial Core. Generally prefer lower levels to be built to the boundary or set back at least 5m.

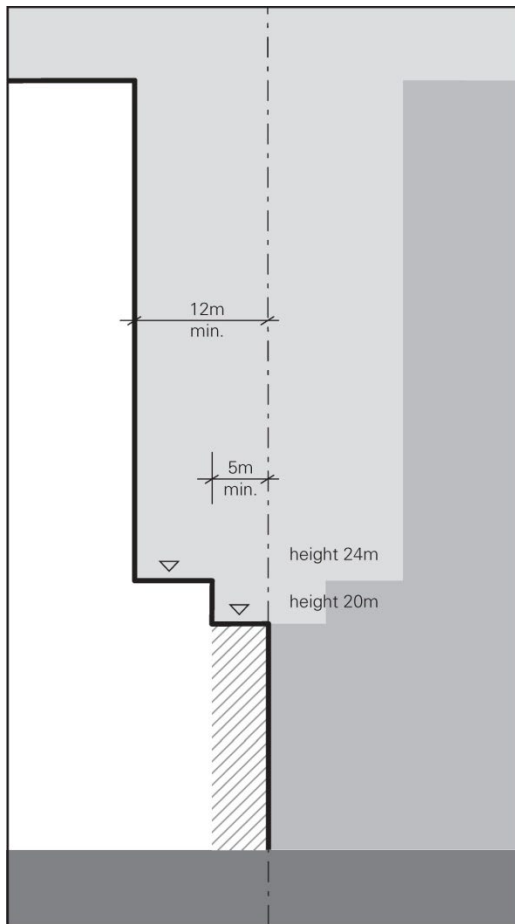


Figure E11.15: Minimum side and rear setbacks for non-residential development in the Mixed Use zone. Generally prefer lower levels to be built to be built to the boundary or set back at least 5m.

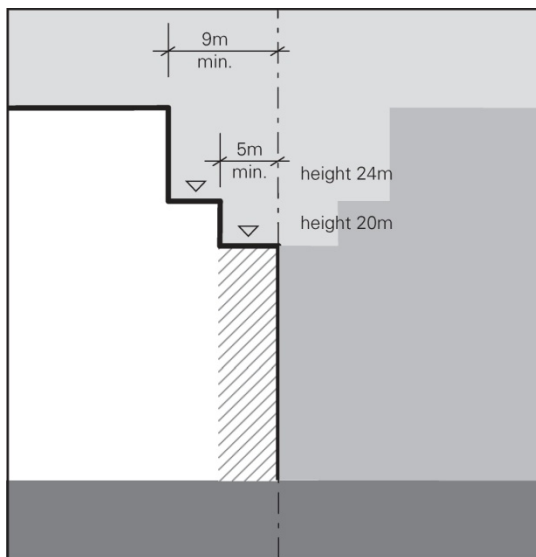
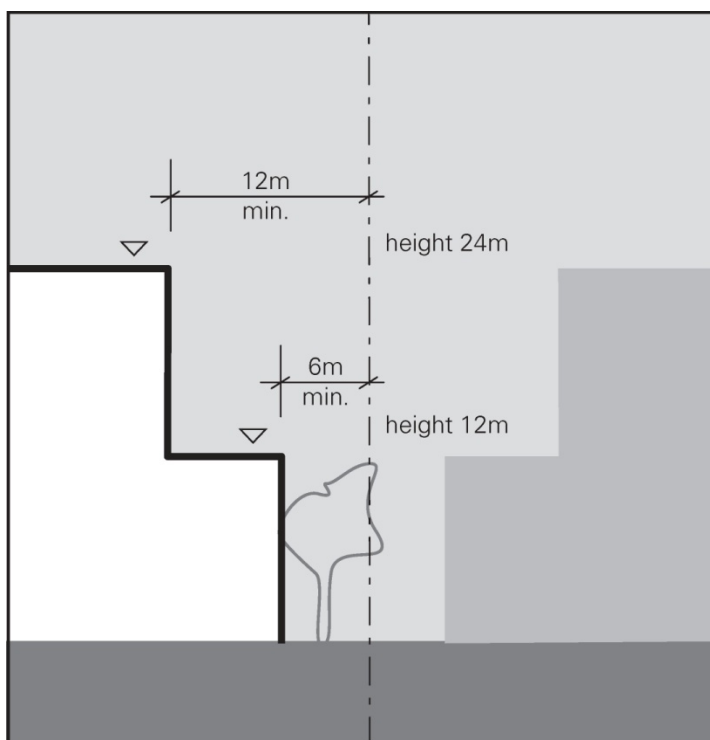


Figure E11.16: Minimum side and rear setbacks for habitable rooms of residential development in the Mixed Use zone.



11.2.6 Mixed Use Buildings

A. Background

Typically, different land uses and activities that are permitted in the same zone may be located in the same building and known as “mixed use developments”.

Mixed-use developments provide a variety of uses and activities within city centres, encouraging use of the City outside the working day, adding vibrancy and life to the city streets. Different uses within the same building are best located to a pattern and layout suitable to the mix of uses, with retail and business activity at ground level to assist street activation, and residential uses, requiring privacy and noise mitigation, located above street level.

Mixed use development within the City Centre is supported in sustainable locations, close to transport nodes, city parks and recreational areas and along central pedestrian locations.

B. Objectives

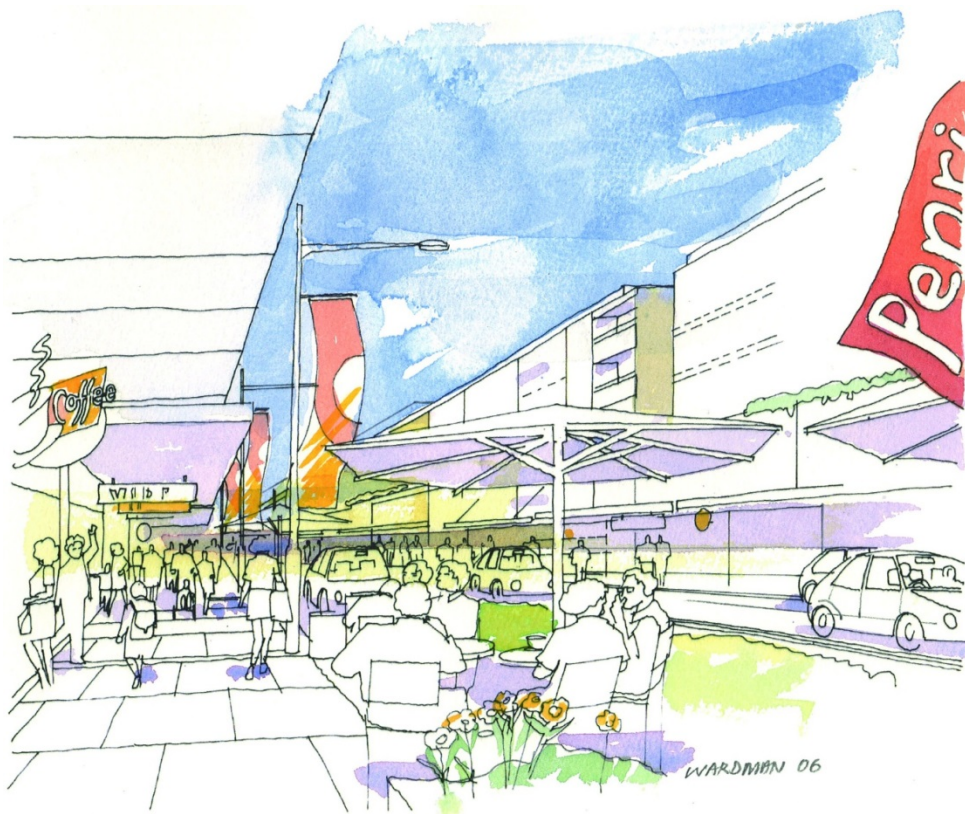
- a) To encourage a variety of mixed-use developments in the City Centre.
- b) To create lively streets and public spaces in the City Centre.
- c) To increase the diversity and range of shopping and recreational activities for workers, residents and visitors.
- d) To enhance public safety by increasing activity in the public domain on week nights and on weekends.
- e) To minimise potential conflicts and achieve compatibility between different uses.
- f) To minimise conflicts between permitted land use and heritage buildings.
- g) To ensure that the design of mixed-use buildings addresses residential amenity.
- h) To create legible and safe access and circulation in mixed use buildings.
- i) To ensure that mixed use buildings address the public domain and the street.

C. Controls

- 1) Provide flexible building layouts which allow greater adaptability of the floor area of, or tenancies on, the first floor of a building above the ground floor.
- 2) Ground floor of all mixed-use buildings is to have a minimum floor to ceiling height of 3.6m in order to provide for flexibility of future use. Above ground level, minimum floor to ceiling heights are 3.3m for commercial office, 3.6m for active public uses, such as retail and restaurants, and 2.7m for residential.
- 3) The commercial and residential activities of the building are to have separate service provision, such as loading docks, from residential access, servicing needs and primary outlook.
- 4) Locate clearly demarcated residential entries directly from the public street. Clearly separate and distinguish commercial and residential entries and vertical circulation.
- 5) Provide security access controls to all entrances into private areas, including car parks and internal courtyards.

- 6) Provide safe pedestrian routes through the site.
- 7) Front buildings onto major streets with active uses.
- 8) Avoid the use of blank building walls at the ground level.

Mixed Use Buildings in High Street



11.2.7 Site Cover and Deep Soil Zones

A. Background

Limiting site cover provides separation between buildings. This space may be public (accessible and useable by the general public), communal (shared by all occupants of a development) or private (for the exclusive use of a single dwelling or tenancy). Limiting site cover improves amenity by providing daylight access, visual privacy and opportunities for recreation and social activities. Site coverage is greater closer to the city core where wall-to-wall development is allowable.

Deep soil zones are areas of natural ground retained within a development, uninhibited by artificial structures and with relatively natural soil profiles. Deep soil zones have important environmental benefits, including:

- promoting healthy growth of large trees with large canopies,
- protecting existing mature trees, and

- allowing infiltration of rainwater to the water table and reduction of stormwater runoff.

B. Objectives

- To provide an area on sites that enables soft landscaping and deep soil planting, permitting the retention and/or planting of trees that will grow to a large or medium size.
- To limit building bulk on a site and improve the amenity of developments, allowing for good daylight access, ventilation, and improved visual privacy.
- To provide passive and active recreational opportunities.

C. Controls

- The maximum site cover and minimum deep soil area for development is specified in Table E11.3 below:

Table E11.3: Maximum site cover & minimum deep soil for development

Zone/Area	Maximum Site Cover	Minimum Deep Soil Area
Commercial Core	100%	0%
Mixed Use (Other)	100%	0%
Mixed Use (City East)	70%	10%
All Other Zones	70%	10%

- Deep soil area is provided in one continuous block. In multiple deep soil areas are provided they must have a minimum dimension (in any direction) of 6m.
- Where non-residential developments result in full site coverage and there is no capacity for water infiltration, the deep soil component must be provided on structure, in accordance with the provisions of Section 11.2.9 Planting on Structures. In such cases, compensatory stormwater management measures must be integrated within the development to minimise stormwater runoff.
- Where deep soil zones are provided, they must accommodate existing mature trees as well as allowing for the planting of trees/ shrubs that will grow to be mature trees.
- No structures, works or excavations that may restrict vegetation growth are permitted in this zone (including but not limited to car parking, hard paving, patios, decks and drying areas).

11.2.8 Landscape Design

A. Background

Landscape design includes the planning, design, construction and maintenance of all utility, open space and garden areas. Good landscaping provides breathing space, passive and active recreational opportunities and enhances air quality in city centres. It is fundamental to the amenity and quality of outside space for residential flats and multi-dwelling housing.

B. Objectives

- a) To ensure that the use of potable water for landscaping irrigation is minimised.
- b) To ensure landscaping is integrated into the design of development.
- c) To add value and quality of life for residents and occupants within a development in terms of privacy, outlook, views and recreational opportunities.
- d) To improve stormwater quality and control run-off.
- e) To improve the microclimate and solar performance within the development.
- f) To improve urban air quality and contribute to biodiversity.

Communal public space with deep soil zone allows for tree planting and high quality landscape



C. Controls

- 1) Recycled water should be used to irrigate landscaped areas.
- 2) Commercial and retail developments are to incorporate planting into accessible outdoor spaces.
- 3) Remnant vegetation must be maintained throughout the site wherever practicable.
- 4) A long-term landscape concept plan must be provided for all landscaped areas including the deep soil landscape zone, in accordance with the Landscape Design Section of this DCP. The plan must outline how landscaped areas are to be maintained for the life of the development.

11.2.9 Planting on Structures

A. Background

The following controls apply in the Commercial Core and Mixed Use zones for planting on roof tops or over car park structures, particular for communal open space required as a component of mixed use residential development, and in non-residential developments where the landscaping proposed is not on natural ground.

Constraints on the location of car parking structures due to water table conditions may mean that open spaces and courtyards might need to be provided over parking structures. The plants in these areas are grown in total containment with artificial soils, drainage and irrigation and are subject to a range of environmental stresses that affect their health, and ultimately their survival. Quality landscape design and open space amenity relies in part on the quality and health of plants.

B. Objectives

- a) To contribute to the quality and amenity of open space on roof tops and internal courtyards.
- b) To encourage the establishment and healthy growth of greening in urban areas.
- c) To minimise the use of potable water for irrigating planting on structures.

C. Controls

- 1) Recycled water should be used to irrigate in areas with planting on structures.
- 2) Design for optimum conditions for plant growth by:
 - a) providing soil depth, soil volume and soil area appropriate to the size of the plants to be established,
 - b) providing appropriate soil conditions and irrigation methods, and
 - c) providing appropriate drainage.
- 3) Design planters to support the appropriate soil depth and plant selection by:
 - a) ensuring planter proportions accommodate the largest volume of soil possible and soil depths to ensure tree growth, and
 - b) providing square or rectangular planting areas rather than narrow linear areas.
- 4) Increase minimum soil depths in accordance with:
 - a) the mix of plants in a planter for example where trees are planted in association with shrubs, groundcovers and grass,
 - b) the level of landscape management, particularly the frequency of irrigation,
 - c) anchorage requirements of large and medium trees, and
- 5) soil type and quality.
- 6) A long-term landscape concept plan is to be submitted with a development application. The plan is to be prepared in accordance with the requirements of the Landscape Design Section of this DCP. The plan must outline how the planting on structures are to be maintained for the life of the development.

Encourage high quality landscape on structures and internal communal courtyards



11.3 Pedestrian Amenity

A. Background

The pedestrian amenity provisions are intended to achieve a high quality of urban design and pedestrian comfort in the public spaces of the City Centre. The pedestrian environment is to be characterised by excellence of design, high quality materials and a standard of finish appropriate to a regional city centre. The City's lanes, arcades and through site links should form an integrated pedestrian network providing choice of routes at ground level for pedestrians.

In addition to the objectives and controls outlined in the introduction of this Section, the objectives of this section aim to increase the vitality, safety, security and amenity of the public domain by:

- a) encouraging future through site links at ground level.
- b) ensuring active street frontages and positive building address to the street.
- c) ensuring provision of awnings along the commercial core street frontages and other retail and tourist areas.

- d) mitigating adverse impacts on the street arising from driveway access crossings, advertising signage and selection of building finishes and materials.
- e) protecting significant views and vistas along streets.

11.3.1 Permeability

A. Background

Site links provide access connections between long sides of street blocks for pedestrian and vehicular access at street level. These links provide an important permeability function in the form of lanes, shared zones, arcades and pedestrian ways.

B. Objectives

- a) To improve access in the city centre by providing through site links as redevelopment occurs.
- b) To retain and enhance existing through site links as redevelopment occurs.
- c) To encourage active streets fronts along the length of through site links where possible.
- d) To provide for pedestrian amenity and safety.
- e) To encourage removal of vehicular entries from primary street frontages.
- f) To retain and develop lanes as useful and interesting pedestrian connections as well as for service access.
- g) To improve the permeability of large sites when they are redeveloped for more intensive uses.

C. Controls

- 1) Through site links are to be provided as shown in Figure E11.18.
- 2) Existing dead end lanes are to be extended through to the next street as redevelopment occurs.
- 3) New through site links should be connected with existing and proposed through block lanes, shared zones, arcades and pedestrian ways and opposite other through site links.
- 4) Existing publicly and privately owned links are to be retained.
- 5) The redevelopment of sites with an extra area of 5 hectares or more are to include new streets, lanes and/or site links to ensure permeability and encourage public access throughout the site.
- 6) Signage is to be located at street entries indicating public access through the site as well as the street to which the link connects.

Pedestrian links

- 7) Through site links for pedestrians are to be provided as shown in Figure E11.18 with accessible paths of travel that are:
 - a) a minimum width of 4m for its full length and clear of all obstructions including columns, stairs, etc.;
 - b) direct and publicly accessible thoroughfares for pedestrians; and

c) Open-air for its full length and have active frontages or a street address.

8) Arcades are to:

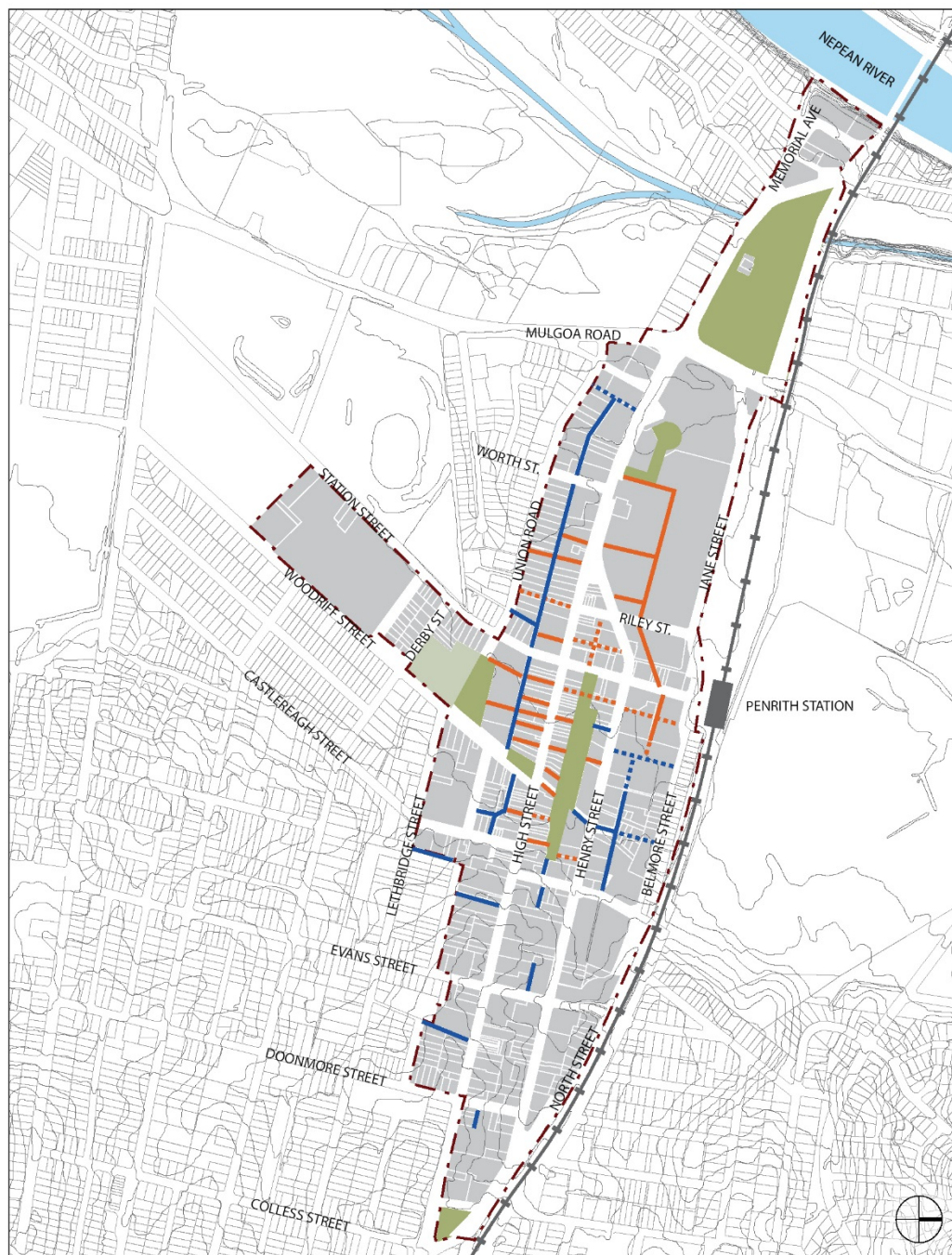
- a) have a minimum width of 4m for its full length and clear of all obstructions including columns, stairs, etc.;
- b) direct and publicly accessible for pedestrians during business trading hours;
- c) be designed as an accessible path of travel for persons with a disability and incorporate the 'safer by design' principles;
- d) have active frontages on either side for its full length;
- e) where practical, have access to natural light for at least 30% of its length; and
- f) where enclosed, have clear glazed entry doors to at least 50% of the entrance.

Lanes

9) Lanes are to be designated pedestrian routes that are:

- a) accessible paths of travel, with a minimum width of 6m for its full length clear of all obstructions;
- b) designed, paved and lit in accordance with the lighting provisions of this Plan and any technical documents applying to the city centre. The *Penrith City Centre Public Domain Masterplan* should be referred to for further design details.
- c) appropriately signposted indicating the street(s) to which the lane connects.

Figure E11.18 Existing and Desired Links



- Existing lanes to be retained
- - - Desired new lanes
- Existing pedestrian links to be retained
- - - Desired new pedestrian links

11.3.2 Active Street Frontages and Address

A. Background

Active street frontages promote an interesting and safe pedestrian environment. Busy pedestrian areas and non-residential uses such as shops, studios, offices, cafes, recreation and promenade opportunities promote the most active street fronts. Residential buildings contribute positively to the street by providing a clear street address, direct access from the street and direct outlook over the street.

B. Objectives

- a) To promote pedestrian activity and safety in the public domain.
- b) To maximise active street fronts in Penrith City Centre.
- c) To define areas where active streets are required or are desirable.
- d) To encourage an address to the street outside of areas where active street frontages are required.

C. Controls

Active Street Frontages

- 1) Active frontage uses are defined as one or a combination of the following at street level:
 - a) entrance to retail;
 - b) shop front;
 - c) glazed entries to commercial and residential lobbies occupying less than 50% of the street frontage, to a maximum of 12m frontage;
 - d) café or restaurant if accompanied by an entry from the street;
 - e) active office uses, such as reception, if visible from the street;
 - f) public building if accompanied by an entry.
- 2) Active street fronts are to be located at the ground level of all buildings located in those areas as shown in the Active Street Frontages map of Penrith LEP 2010.
- 3) Ground floor active street frontage uses are to be at the same level as the adjoining footpath and must be directly accessible from the street.
- 4) Restaurants, cafes and the like are to consider providing openable shop fronts.
- 5) Only open grill or transparent security shutters are permitted to retail frontages.

Street Address

- 1) Street address is defined as entries, lobbies, and habitable rooms with clear glazing to the street not more than 1.2m above street level, and does not include car parking areas.
- 2) Street address is required on the ground level of buildings specifically located in areas shown in the Active Street Frontages Map of Penrith LEP 2010.

- 3) Residential developments are to provide a clear street address and direct pedestrian access off the primary street front, and allow for residents to overlook all surrounding streets.
- 4) Provide multiple entrances for large developments including an entrance on each street frontage.
- 5) Provide direct 'front door' access from ground floor residential units.
- 6) Residential buildings are to provide not less than 65% of the lot width as street address.

11.3.3 Awnings

A. Background

Awnings increase the useability and amenity of public footpaths by protecting pedestrians from sun and rain. They encourage pedestrian activity along streets and, in conjunction with active edges such as retail frontages, support and enhance the vitality of the local area. Awnings, like building entries, provide a public presence and interface within the public domain and contribute to the identity of a development.

A separate approval to erect an awning over the road reserve including a footpath will be required under the *Roads Act 1993* and the *Local Government Act 1993*.

B. Objectives

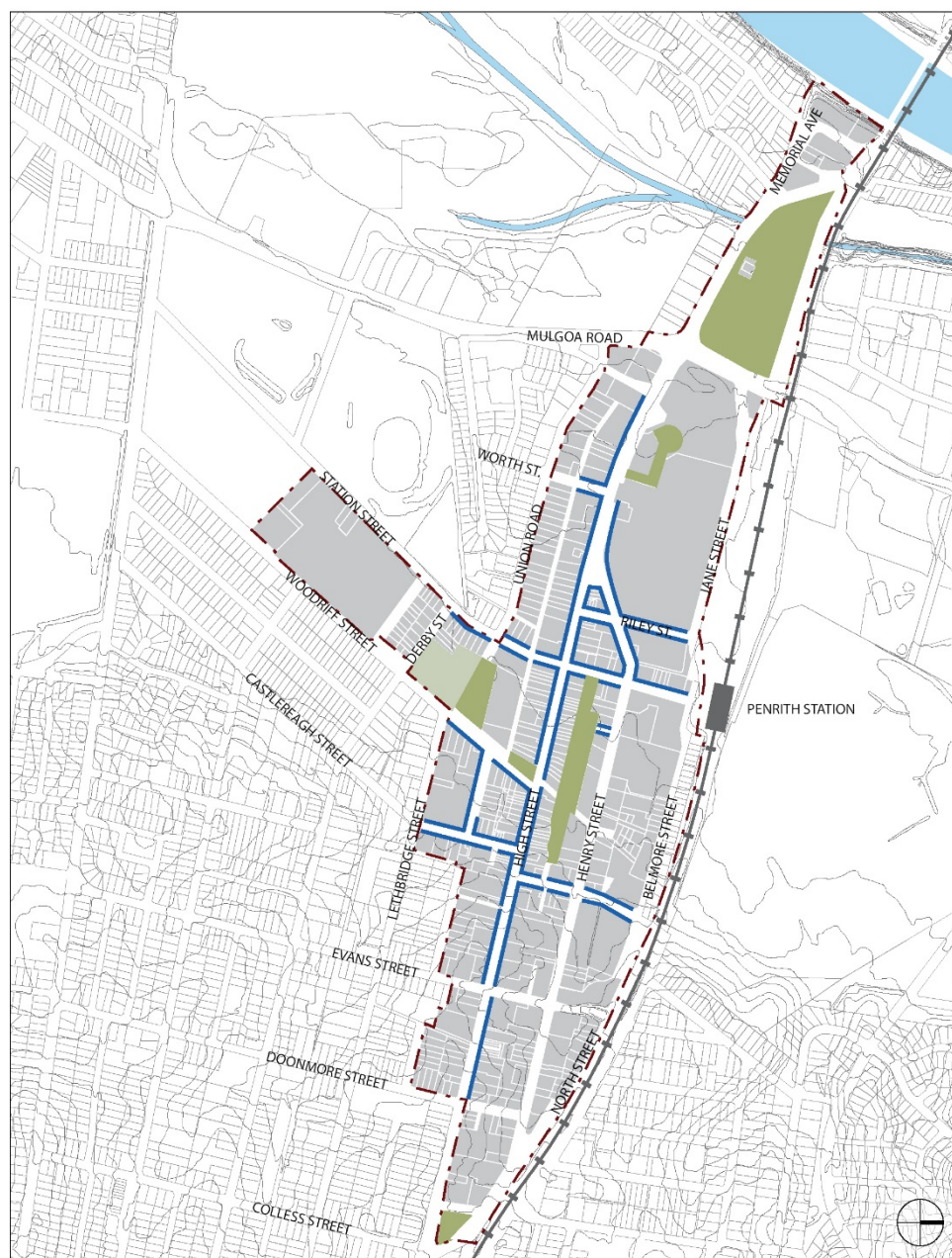
- a) To provide shelter from wind and rain for public streets where most pedestrian activity occurs.
- b) To address the streetscape by providing a consistent street frontage in the city centre.


C. Controls

- 1) Continuous street frontage awnings are to be provided for all new developments as indicated in Figure E11.19.
- 2) Awnings dimensions should generally be:
 - a) minimum 2.8m deep where street trees are not required, otherwise minimum 2.4m deep;
 - b) minimum soffit height of 3.2m and maximum of 4m;
 - c) steps for design articulation or to accommodate sloping streets are to be integral with the building design and should not exceed 700mm;
 - d) low profile, with slim vertical fascias or eaves (generally not to exceed 300mm height); and
 - e) set back from kerb to allow for clearance of street furniture
- 3) Awning design must match building facades and be complementary to those of adjoining buildings.
- 4) Wrap awnings around corners for a minimum 6m from where a building is sited on a street corner.
- 5) Vertical canvas drop blinds may be used along the outer edge of awnings along north-south streets. These blinds must not carry advertising or signage.

- 6) Provide under awning lighting recessed into the soffit of the awning or wall mounted onto the building to facilitate night use and to improve public safety.
- 7) One under-awning sign may be attached to the awning, at intervals of 6m of the awning frontage.

Figure E11.19 Awnings



 Continuous awnings required

11.3.4 Vehicle Footpath Crossings

A. Background

Vehicle crossings over footpaths disrupt pedestrian movement and threaten safety. The design of vehicle access to buildings also influences the quality of the public domain. Overly wide and high vehicle access points detract from the streetscape and the active use of street frontages.

The design and location of vehicle access to developments should minimise both conflicts between pedestrians and vehicles on footpaths, particularly along pedestrian priority places, and visual intrusion and disruption of streetscape continuity.

Design of driveways and vehicle access is to be in accordance with the provisions of the Transport, Access and Parking Section of this DCP.

B. Objectives

- a) To make vehicle access to buildings more compatible with pedestrian movements.
- b) To reduce the impact of vehicular access on the public domain.
- c) To ensure vehicle entry points are integrated into building design and contribute to the building design.

C. Controls

Location of Vehicle Access

- 1) No additional vehicle entry points will be permitted into the parking or service areas of development along those streets identified as significant pedestrian circulation routes in Figure E11.21.
- 2) In all other areas, one vehicle access point only (including the access for service vehicles and parking for non-residential uses within mixed use developments) will be generally permitted.
- 3) Where practicable, vehicle access is to be from lanes and minor streets rather than primary street fronts or streets with major pedestrian activity.
- 4) Where practicable, adjoining buildings are to share or amalgamate vehicle access points. Internal on-site signal equipment is to be used to allow shared access. Where appropriate, new buildings should provide vehicle access points so that they are capable of shared access at a later date.
- 5) Vehicle access may not be required or may be denied to some heritage buildings.

Design of Vehicle Access

- 1) Wherever practicable, vehicle access is to be a single lane crossing with a maximum width of 2.7m over the footpath, and perpendicular to the kerb alignment. In exceptional circumstances, a double lane crossing with a maximum width of 5.4m may be permitted for safety reasons (refer to Figure E11.20). The *Penrith City Centre Public Domain Masterplan* should be referred to for further design details.
- 2) Vehicle access ramps parallel to the street frontage will not be permitted.
- 3) To ensure vehicle entry points are integrated into building design.

- 4) Doors to vehicle access points are to be roller shutters or tilting doors fitted behind the building facade.
- 5) Vehicle entries are to have high quality finishes to walls and ceilings as well as high standard detailing. No service ducts or pipes are to be visible from the street.

Porte Cocheres

- 1) Porte cocheres disrupt pedestrian movement and do not contribute to active street frontage. They may only be permitted for hotels and major tourist venues subject to urban design, streetscape, heritage and pedestrian amenity considerations.
- 2) If justified, porte cocheres are to be internal to the building with one combined vehicle entry and exit point, or one entry and one exit point on two different street fronts of the development.
- 3) In exceptional circumstances for buildings with one street frontage only, an indented porte cochere with separate entry and exit points across the footpath may be permitted, as long as it is constructed entirely at the footpath level and provides an active frontage at its perimeter and provides for safe and clear pedestrian movement along the street.

Figure E11.20: Vehicle Footpath Crossing

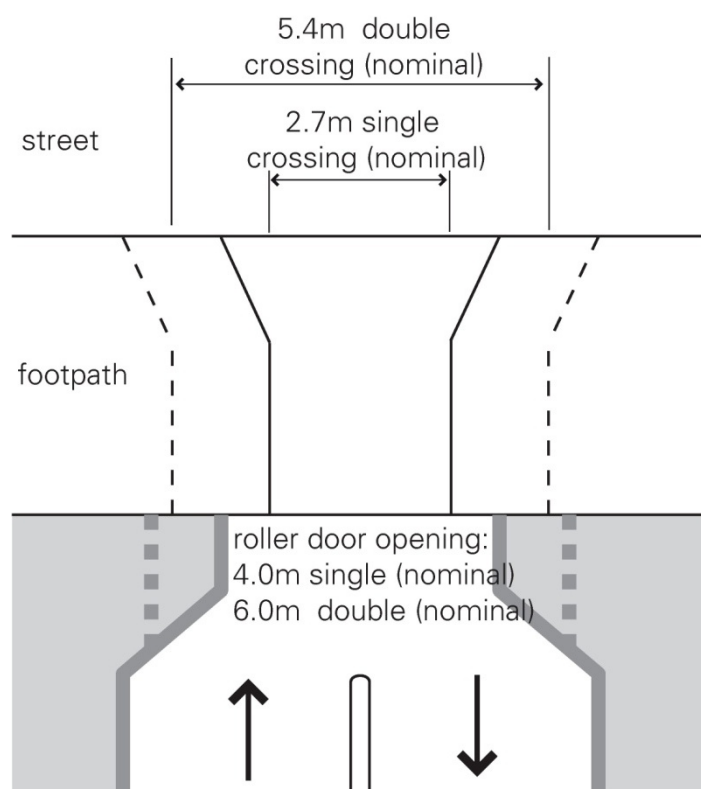
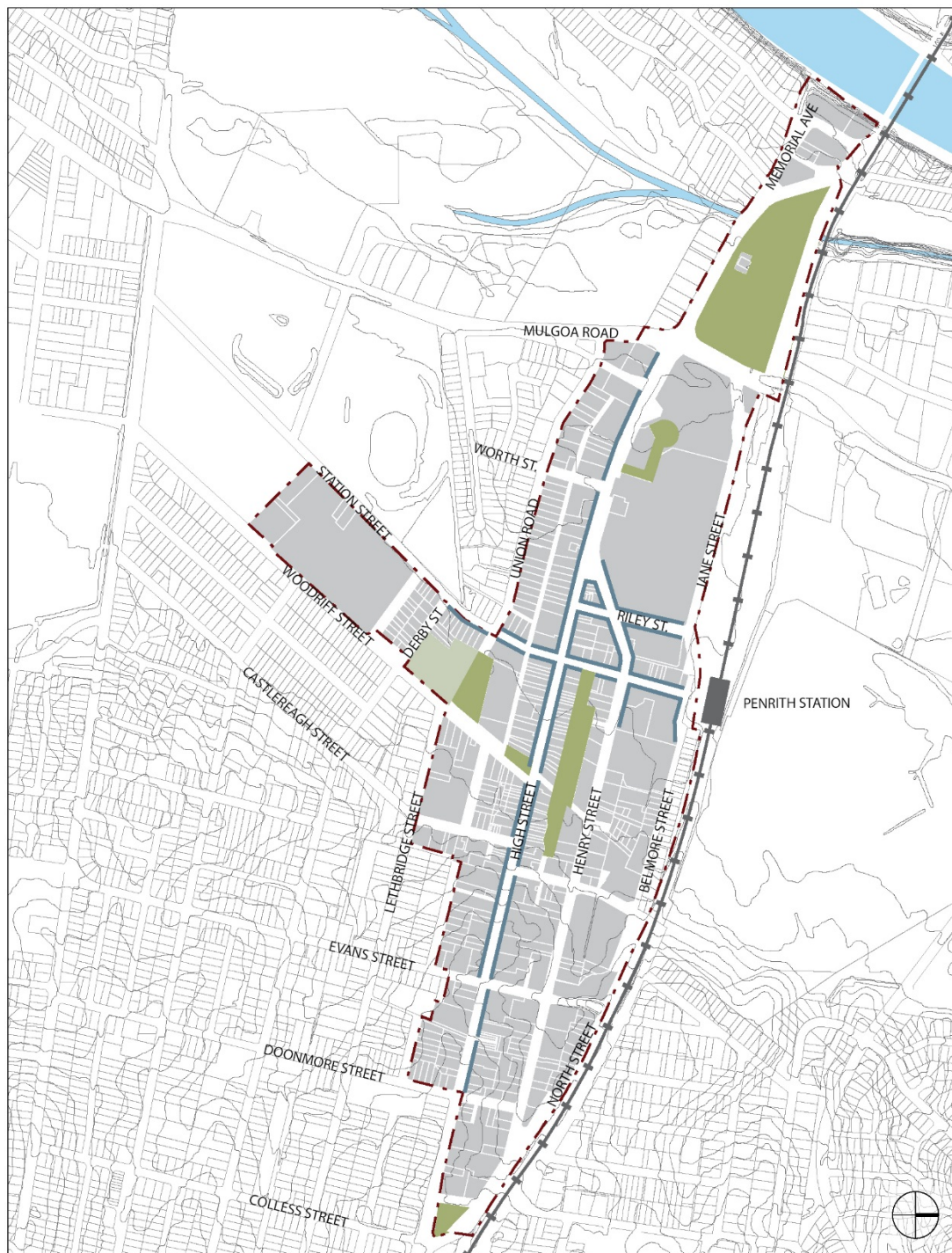


Figure E11.21 Restrictions on Vehicular Entries



 Additional vehicular entries not permitted

11.3.5 Pedestrian Overpasses and Underpasses

A. Background

Streets represent important components of the public domain and provide the best potential amenity and safety when activated by pedestrians. Streets offer sky exposure, sunlight and air, a sense of orientation and direct access to the main frontages of buildings. Generally, pedestrians should be encouraged to use the street level to enhance and contribute to street life, to promote activity and interest, and to maximise safety and security of the public domain. Penrith's climate does not warrant pedestrian isolation from the street, and any conflicts between pedestrians and vehicles are to be resolved at the street level.

Pedestrian overpasses are discouraged as they have a negative impact on the streetscape quality and on views and vistas along streets. New pedestrian underpasses will only be considered where they would directly connect to major transport nodes such as the railway station and substantially improve pedestrian safety and access.

B. Objectives

- a) To promote pedestrian activation of streets and public places.
- b) To promote 'safer by design' and crime prevention principles.
- c) To encourage pedestrian circulation at street level.
- d) To protect views and vistas along streets.

C. Controls

- 1) New overpasses over streets are discouraged. In exceptional circumstances, new overpasses may be considered subject to assessment of impacts on safety and crime prevention, streetscape amenity and activation of the public domain. In such circumstances, overpasses are to be fully glazed, not greater than 6m wide or more than one level high.
- 2) New pedestrian underpasses are strongly discouraged as they reduce pedestrian accessibility, safety and passive surveillance opportunities. In exceptional circumstances, new underpasses may be considered where it can be demonstrated they would substantially improve pedestrian safety and accessibility, will incorporate active uses for the entire length and have a minimum width of 4.5m clear of all fixed obstructions and a minimum ceiling height of 4m.

11.3.6 Building Exteriors

A. Background

Penrith's cityscape and public domain is defined by its buildings, streets and public places. The maintenance and improvement of the public domain is dependent on a consistent approach to the design of new development including the articulation and finish of building exteriors.

B. Objectives

To ensure that buildings in Penrith:

- a) contribute positively to the streetscape and public domain by means of high quality architecture and robust selection of materials and finishes;

- b) provide richness of detail and architectural interest especially at visually prominent parts of buildings such as lower levels and roof tops;
- c) present appropriate design responses to nearby development that complement the streetscape;
- d) clearly define the adjoining streets, street corners and public spaces and avoid ambiguous external spaces with poor pedestrian amenity and security; and
- e) maintain a pedestrian scale in the articulation and detailing of the lower levels of the building; and
- f) contribute to a visually interesting skyline.

C. Controls

- 1) Adjoining buildings (particularly heritage buildings) are to be considered when designing new buildings and extensions to existing buildings in terms of:
 - a) appropriate alignment and street frontage heights;
 - b) setbacks above street frontage heights;
 - c) appropriate materials and finishes selection;
 - d) facade proportions including horizontal or vertical emphasis; and
 - e) the provision of enclosed corners at street intersections.
- 2) Balconies and terraces should be provided, particularly where buildings overlook parks and on low rise parts of buildings. Gardens on the top of setback areas of buildings and on roofs are encouraged.
- 3) Articulate façades so that they address the street and add visual interest.
- 4) External walls should be constructed of high quality and durable materials and finishes with 'self-cleaning' attributes, such as face brickwork, rendered brickwork, stone, concrete and glass.
- 5) To assist articulation and visual interest, avoid expanses of any single material.
- 6) Maximise glazing for retail uses, but break glazing into sections to avoid large expanses of glass.
- 7) Highly reflective finishes and curtain wall glazing are not permitted above ground floor level
- 8) A materials sample board and schedule is required to be submitted with applications for development over \$1 million or for that part of any development built to the street edge.
- 9) The design of roof plant rooms and lift overruns is to be integrated into the overall architecture of the building, and in residential buildings may be screened by roof pergolas.

11.4 Access, Parking and Servicing

A. Background

In addition to controls contained in the Transport, Access and Parking Section of this DCP, this section contains more detailed objectives and controls on pedestrian access, on-site parking and site facilities, and site facilities and services for the City Centre.

B. General Objectives

- a) To facilitate the development of building design excellence appropriate to a regional city.
- b) To improve non-vehicular access to the city centre, including but not limited to bicycle, pedestrian and mass transit options.
- c) To require parking and servicing provisions to be contained within development sites to an amount and rate adequate for the economic and sustainable growth of the city centre.
- d) To provide for safe and secure access.
- e) To minimise impacts on city amenity, the public domain and streetscape.
- f) To ensure that access is provided for persons with a disability.

11.4.1 Pedestrian Access and Mobility

A. Background

Any new developments must be designed to ensure that safe and equitable access is provided to all, including people with a disability.

B. Objectives

- a) To provide safe and easy access to buildings to enable better use and enjoyment by people regardless of age and physical condition, whilst also contributing to the vitality and vibrancy of the public domain.
- b) To ensure buildings and places are accessible to people with a disability.
- c) To provide a safe and accessible public domain.

C. Controls

- 1) Main building entry points should be clearly visible from primary street frontages and enhanced as appropriate with awnings, building signage or high quality architectural features that improve clarity of building address and contribute to visitor and occupant amenity.
- 2) The design and provision of facilities for persons with a disability including car parking must comply with Australian Standard 1428 Parts 1 and 2 (or as amended) and the *Commonwealth Disability Discrimination Act 1992* (as amended). The *Penrith City Centre Public Domain Masterplan* should be referred to for further design details for access through and from public places.
- 3) Barrier free access is to be provided to not less than 20% of dwellings in each development and associated common areas.

- 4) The development must provide at least one main pedestrian entrance with convenient barrier free access to the ground floor, and have direct link to an identified accessible path of travel in the adjoining public domain.
- 5) The development must provide accessible internal access, linking to public streets and building entry points.
- 6) Pedestrian access ways, entry paths and lobbies must use durable materials commensurate with the standard of the adjoining public domain (street) with appropriate slip resistant materials, tactile surfaces and contrasting colours.
- 7) A report from an accredited access consultant is to be submitted with development application, indicating the proposal's compliance with AS1428. If approved, Council may impose a condition on the development consent requiring the submission of a compliance certificate (or other such document) from an accredited access consultant attesting to the development's compliance with AS1428, and that a person with a disability can access the development.

11.4.2 On-Site Parking Options

A. Background

On-site parking includes underground (basement), surface (at-grade) and above ground parking, including parking stations.

There are particular constraints in certain areas of Penrith city centre on the provision of car parking in underground structures. Due to the high water table, excavation on certain sites may become difficult beyond one level of basement parking. This may necessitate site design which locates the parking above ground. In these cases, minimising the impacts of above ground parking on the public domain is important.

B. Objectives

- a) To encourage economic growth in the City Centre.
- b) To enable the conversion of above ground parking to other future uses.
- c) To support the complementary use and benefit of public transport and non-motorised modes of transport such as bicycles and walking.

C. Controls

- 1) In addition to the parking requirements outlined in the Transport, Access and Parking Section of this DCP, Figures E11.22 and E11.23 contains additional options for car parking at Penrith City Centre.
- 2) On-site parking is to be accommodated in basement parking except in the blocks between Belmore and Henry Streets where above ground car parking may be permissible in the form illustrated in Figure 11.24 below.

Figure E11.22: Aboveground parking must be screened by an active edge to the public domain

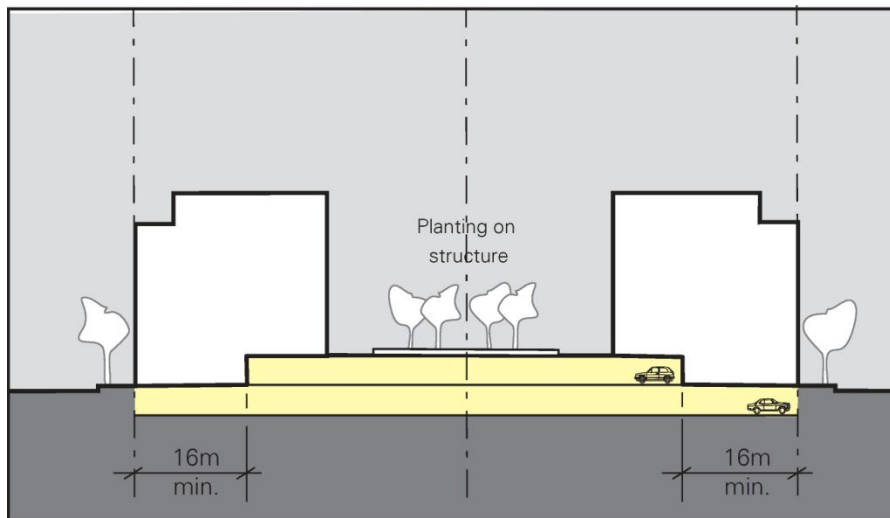


Figure E11.23: Above ground parking may be located adjacent to a lane, as illustrated above, with appropriate screening to reduce the impact on the public domain.

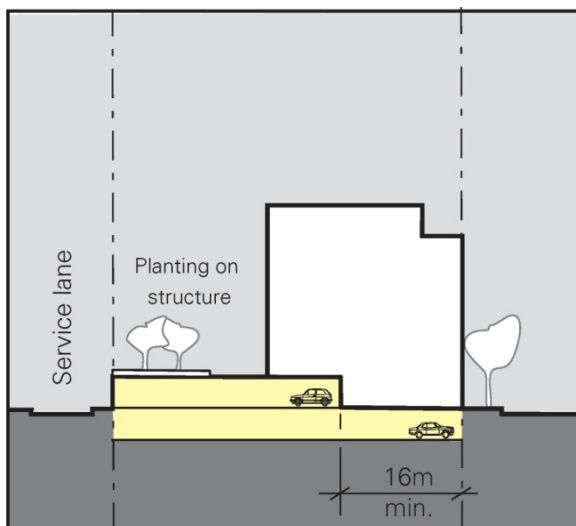
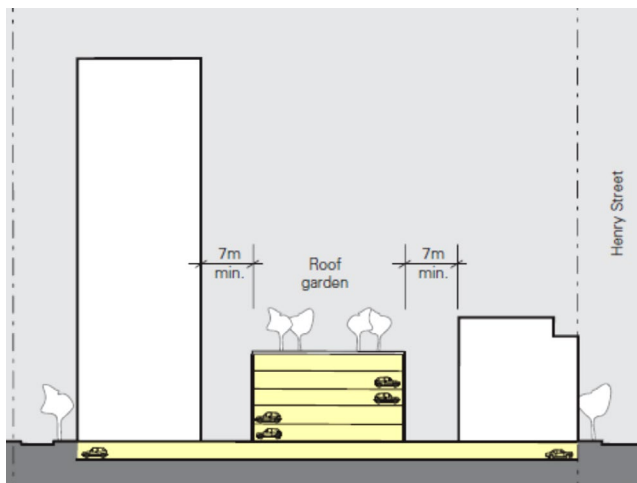


Figure E11.24: In the blocks between Belmore and Henry Streets, above-ground car parking may be permissible in the middle of the block where buildings ensure that it is not visible from surrounding streets or public spaces.



11.4.3 Site Facilities and Services

A. Objectives

- a) To ensure that the design and location of site facilities (such as clothes drying areas, mail boxes, recycling and garbage disposal units/ areas, screens, lighting, storage areas, air conditioning units, rainwater tanks/ hot water systems, solar panels and other such devices and communication systems) are integrated within the development and are unobtrusive.
- b) To ensure that site services and facilities are adequate for the nature and quantum of development.
- c) To establish appropriate access and location requirements for servicing.
- d) To ensure service requirements do not have adverse amenity impacts.

B. Controls

Mailboxes

- 1) Letterboxes should be integrated into a wall immediately adjacent the building entrance(s). Where there are a number of entrances into the building, the letterboxes located at each entrance should service the tenancies that will utilise that building entrance.
- 2) Letterboxes shall be secure and large enough to accommodate articles such as newspapers.

Communication facilities/networks

- 3) Telecommunication infrastructure should be built into the development and predominantly below ground, incorporating the following services fundamental in the effective operation of businesses, home businesses and dwellings:
 - a) Multiple telecom services including high speed internet (including broadband), voice and data systems,

- b) Cabling from all telephone lines, cable TV, internet is built into the building from the outset,
 - c) Consider centralised (C.A.T.V.) system is provided.
- 4) Where a master antenna is provided, the antennae must be sited in a location that does not intrude into, or is less visible from, surrounding public spaces/ open areas.

Service Infrastructure

- 5) Infrastructure attributed to the servicing of the development, including associated cabling, should be located below ground.

Air conditioning units, service vents and other associated structures

- 6) Such structures should be:
- a) located away from street frontages and lanes;
 - b) located in a position where the likely impact is minimised; and
 - c) adequately setback from the perimeter wall or roof edge of buildings.
- 7) Where it is to be located on the roof, it should be integrated into the roofscape design and in a position where such facilities do not become a feature in the skyline at the top of building(s).
- 8) Refer to the Water Management Section of this DCP for locational and connection requirements.

Loading/Unloading Areas

- 9) Loading/ unloading areas are to be:
- a) integrated into the design of developments;
 - b) separated from car parking and waste storage and collection areas;
 - c) located away from the circulation path of other vehicles; and
 - d) designed for commercial vehicle circulation and access complying with AS2890.2.
- 10) For mixed use developments, separate loading/unloading areas should be provided for commercial/retail and residential uses.
- 11) Vehicular access to the loading/unloading area(s) is preferred off rear lanes, side streets and right of ways. Where appropriate, consider a single vehicular access point for the loading/unloading area(s) and waste collection area(s).

Fire service and emergency vehicles

- 12) Generally, provision must be made for all emergency vehicles to enter and leave the site in a forward direction, particularly the NSW Fire Brigade vehicles where:
- a) NSW Fire Brigade cannot park their vehicles within the road reserve due to the distance of hydrants from the building or restricted vehicular access to hydrants; or
 - b) otherwise required by the NSW Fire Brigade's Code of Practice – Building Construction – NSWFB Vehicle Requirements.
- 13) For developments where NSW Fire Brigade vehicle(s) is required to enter the site, the circulation path and access/egress provision is to comply with NSW Fire Brigade's Code of Practice – Building Construction – NSWFB Vehicle Requirements.

11.5 Sustainable Development

11.5.1 Reflectivity

A. Background

Reflective materials used on the exterior of building can result in undesirable glare for pedestrians and potentially hazardous glare for motorists. Reflective materials can also impose additional heat load on other buildings. The excessive use of highly reflective glass should be discouraged. Buildings with a glazed roof, façade or awning should be designed to minimise hazardous or uncomfortable glare arising from reflected sunlight.

B. Objectives

- a) To restrict the reflection of sunlight from buildings to surrounding areas and buildings.

C. Controls

- 1) New buildings and facades should not result in glare that causes discomfort or threatens safety of pedestrians or drivers.
- 2) Visible light reflectivity from building materials used on the facades of new buildings should not exceed 20%.
- 3) Subject to the extent and nature of glazing and reflective materials used, a Reflectivity Report that analyses potential solar glare from the proposed development on pedestrians and motorists may be required.

11.5.2 Maximising Liveability and Longevity

A. Background

Developments should be designed and constructed beyond its initial/first use to ensure that building stock is durable and capable for adaptability in the future. This 'whole of building' approach should also consider how the building design, finishes and materials used in the construction phase affect the amenity and safety of future occupants of the building(s).

B. Objectives

- a) To encourage the design of developments based on a 'whole of building' approach.
- b) To reduce the occurrence of 'sick building' syndrome on occupants.
- c) To ensure that community safety and crime prevention measures are incorporated in the design of the development, including the public domain.

C. Controls

- 1) Demonstrate how the passive and active environmental design features of the building design and proposed construction achieves ESD criteria and the 'whole of building' approach. Elements include, but not limited to:
 - a) Adaptability of buildings and floor levels within buildings to accommodate a range of uses over time;
 - b) Occupant comfort and amenity;
 - c) Fulfilling the Ecospecifier's Assessment criteria; and

- d) Incorporation of safety and crime prevention measures in the design of buildings and public domain as well as the siting of activities in the building.

A report, prepared by a suitably qualified environmental design expert, may be required with the development application and application for Construction Certificate.

- 2) Development proposals may require referral to the NSW Police for crime prevention and safety considerations, in accordance with the community safety protocol.

11.5.3 Reduce Resource Consumption

A. Background

All materials have environmental and health consequences in extraction, manufacture, transport, storage and eventually, use in a development. Some materials have significant impacts for maintenance and disposal, and should be carefully considered as part of the material selection at the design and specification stages of a development.

B. Objectives

- a) To encourage the selection and use of construction materials with low environmental impact over the lifecycle of the building.
- b) To reduce the health problems associated with the solvent content of finishes and fittings.
- c) To reduce the health problems associated with the high formaldehyde emission from composite wood products.

C. Controls

- 1) Materials with low embodied energy properties and/or materials that have been salvaged/ recycled are to be selected for the construction and fit out of the development.
- 2) Avoid using high environmental/high impact materials, such as volatile organic compounds (VOC's) and hydrofluoro-carbons (HCFC's) as these materials can become volatile at room temperature contributing to poor indoor air quality and affecting the health of occupants.

11.6 Controls for Residential Development

A. Background

In addition to the controls in the Residential Development Section of this DCP, the State Environmental Planning Policy No.65 – Design Quality of Residential Flat Development (SEPP 65) and the accompanying Residential Flat Design Code also apply to residential development in the Penrith City Centre. This includes residential flat buildings, any residential flat component of a mixed use development, and serviced apartments that are strata titled. The Residential Flat Design Code includes provisions for:

- a) Site Analysis;
- b) Site configuration;
- c) Site amenity;
- d) Site access;
- e) Building configuration;

- f) Building amenity;
- g) Building form; and
- h) Building performance.

11.6.1 Housing Choice and Mix

A. Background

A choice of apartment types and mix of sizes in the City Centre caters for a variety of socio-economic groups. All residential development in the Penrith City Centre should also comply with the provisions outlined below.

B. Objectives:

- a) To ensure that residential development provides a mix of dwelling types and sizes to cater for a range of household types.
- b) To ensure that dwelling layout is sufficiently flexible for residents' changing needs over time.
- c) To ensure a sufficient proportion of dwellings include accessible layouts and features to accommodate the changing requirements of residents.
- d) To ensure the provision of housing that will, in its adaptable features, meet the access and mobility needs of any occupant.

C. Controls

- 1) Where residential units are proposed at ground level, a report must be provided with the development application demonstrating how future non-residential uses can be accommodated within the ground level design. The report must address:
 - a) access requirements including access for persons with a disability;
 - b) any upgrading works necessary for compliance with the Building Code of Australia; and
 - c) appropriate floor to ceiling heights.
- 2) For smaller developments comprising up to six dwellings demonstrate how the proposal achieves a mix appropriate to the locality.
- 3) For developments containing more than six dwellings, a mix of living styles, sizes and layouts is to be achieved by providing:
 - a) a mix of bed-sitter/studio, one bedroom, two bedroom and three bedroom apartments;
 - b) bed-sitter apartments and one bedroom apartments must not be greater than 25% and not less than 10% of the total mix of apartments within each development; and
 - c) two bedroom apartments are not to be more than 65% of the total mix of apartments within each development.
- 4) 10% of all dwellings or a minimum one dwelling, whichever is the greater, must be designed to be capable of adaptation for disabled or elderly residents. Dwellings must be

designed in accordance with the Australian Adaptable Housing Standard (AS 4299-1995), which includes “pre-adaptation” design details to ensure visitability is achieved.

- 5) Where possible, adaptable dwellings shall be located on the ground floor, for ease of access. Dwellings located above the ground level of a building may only be provided as adaptable dwellings where lift access is available within the building. The lift access must provide access from the basement to allow access for people with disabilities.
- 6) The development application must be accompanied by certification from an accredited Access Consultant confirming that the adaptable dwellings are capable of being modified, when required by the occupant, to comply with the Australian Adaptable Housing Standard (AS 4299-1995).
- 7) Car parking and garages allocated to adaptable dwellings must comply with the requirements of the relevant Australian Standard as accessible car spaces.

Residential Development in Woodriff Street



11.7 Controls for Special Areas

A. Background

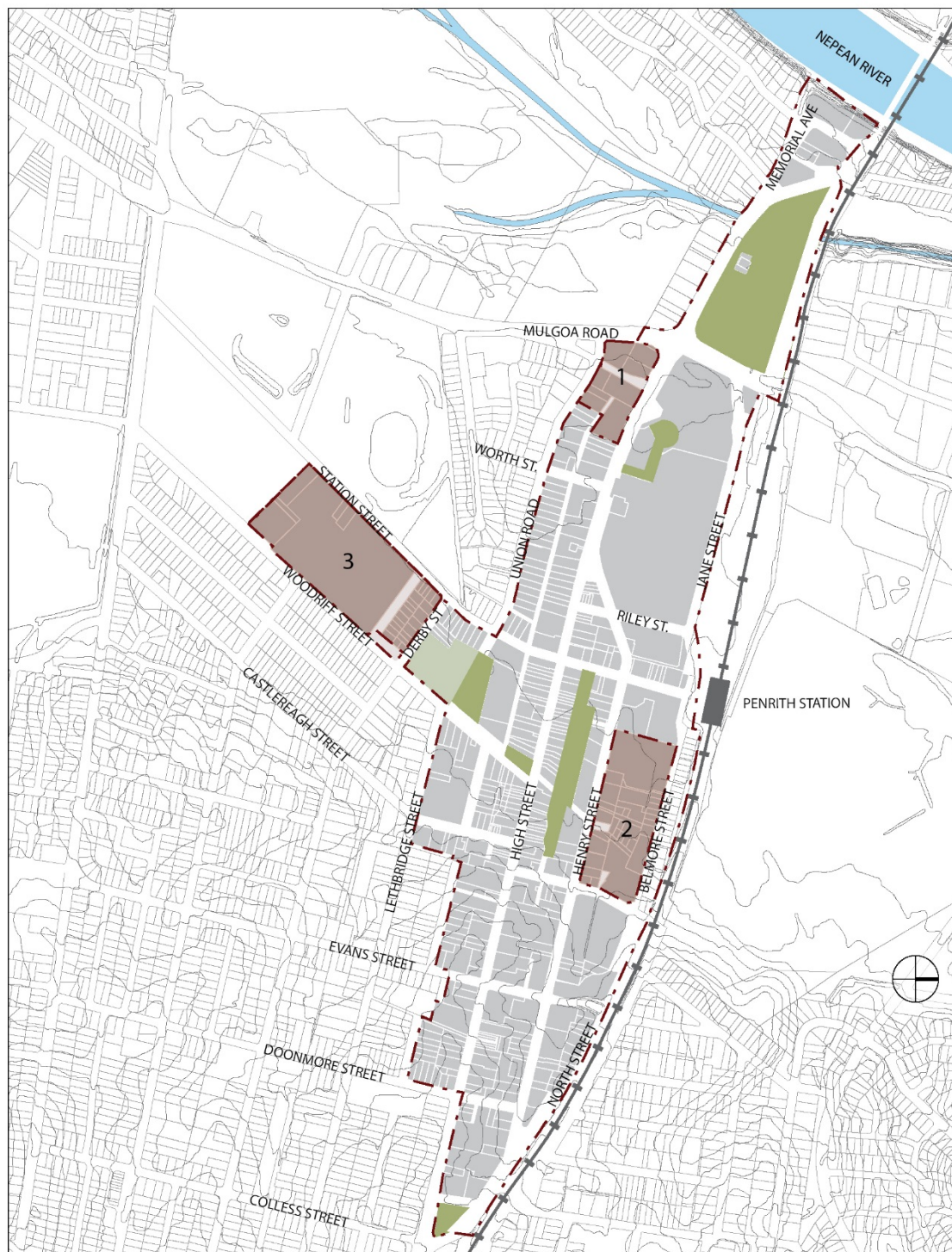
The following controls are additional to the general controls elsewhere in this DCP. Controls for special areas relate to specific sites or precincts in the City Centre.

11.7.1 Precinct Controls

A. Background

Due to their size and/or strategic importance in the City Centre, specific design principles and development outcomes have been identified for the sites identified in Figure E11.25. Redevelopment of these sites should implement design principles and outcomes expressed in the clauses and diagrams that follow.

Figure E11.25: Areas where Precinct controls apply



11.7.1.1 Precinct 1

Precinct 1 is the area generally bounded by High Street, Mulgoa Road and Union Road, as shown in Figure E11.26.

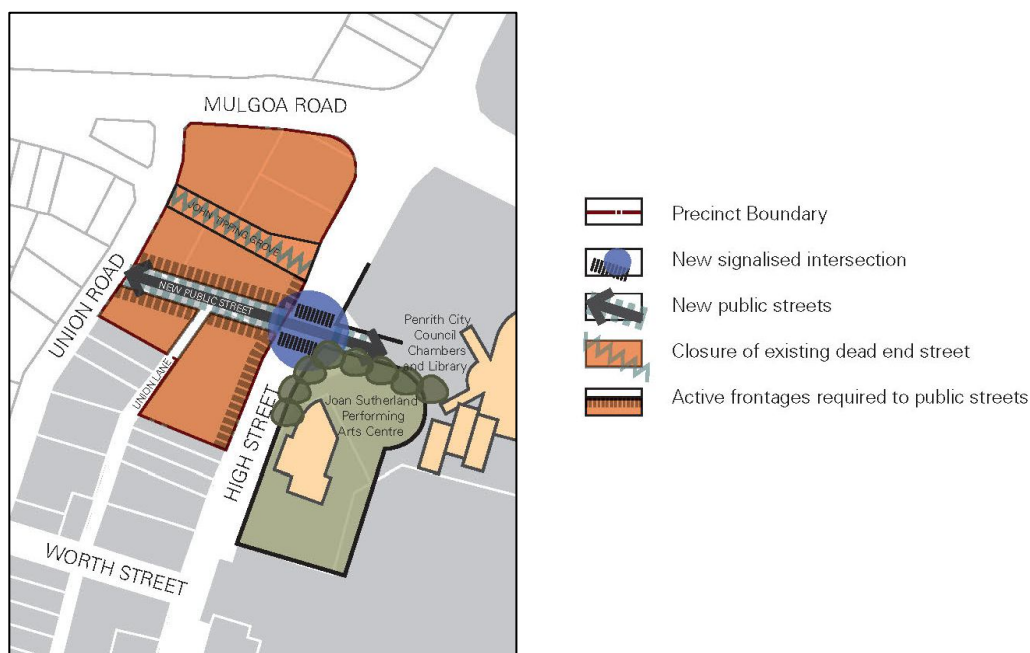
Development of the site must adhere to the following design principles:

- 1) Rationalise the existing pattern of land ownership.
- 2) Relocate redundant public street to provide north-south connectivity and active 'eat street' adjoining the Civic and Cultural Precinct.
- 3) Provide high quality and activity public domain interface with new and existing public streets.

Development of the site should provide the following outcomes:

- 1) Streets and pedestrian connections:
 - a) Closure John Tipping Grove between High Street and Union Road.
 - b) A new public street providing direct connections between High Street and Union Road.
 - c) Replace existing roundabout on High Street with a signalised intersection at junction of High Street and the new street.
 - d) Potential extension of Union Lane to the west to provide access and additional street frontage.
- 2) Land ownership:
 - a) Consolidation of existing land ownership patterns to allow orderly development of land.
- 3) Public domain interface:
 - a) Active frontage/land uses along the new street and High Street.
- 4) Built form:
 - a) Building built to the street alignment of the new street.

Figure E11.26: Precinct 1 Design Principles



11.7.1.2 Precinct 2

Precinct 2 is the area bounded by Henry Street, Lawson Street and Belmore Street, as shown in Figure E11.27.

Development of the site must adhere to the following design principles:

- 1) Provide good east-west and north-south connectivity with new streets, new lanes and pedestrian connections.
- 2) Provide off-street parking that is screened from existing streets.
- 3) Provide high quality and active public domain interface with all other existing public streets.

Development of the site should provide the following outcomes:

1) Streets and pedestrian connections:

- a) Provide at least two new public streets with direct connections between Belmore Street and Henry Street.
- b) Provide a new lane with east-west connectivity through the site and access to the rear of properties on Henry Street.

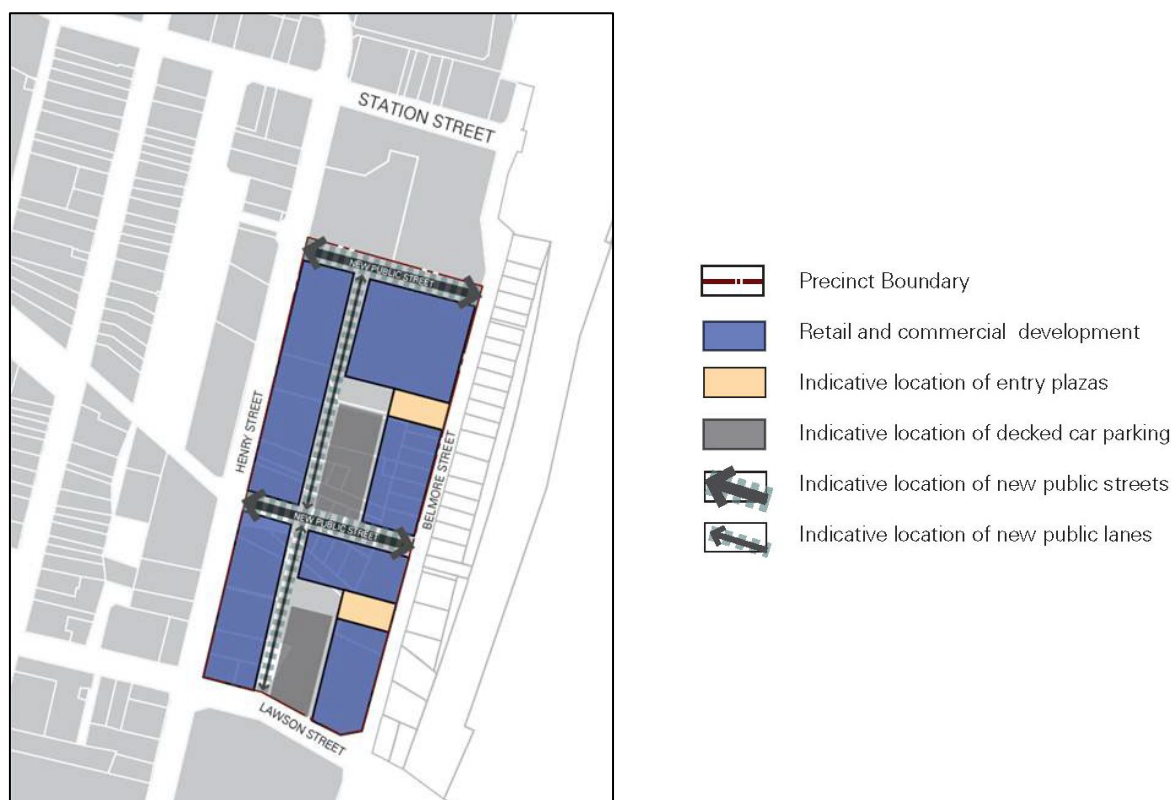
2) Open space:

- a) Design entry plazas as small public spaces to be adjacent to larger commercial buildings on Belmore Street.

3) Public domain interface:

- a) Active frontages to Henry Street, Lawson Street, Belmore Street and the new north-south streets.

Figure E11.27: Precinct 2 Design Principles



11.7.1.3 Precinct 3

Precinct 3 is the area bounded by Station Street, Jamison Road, Derby Street and the “Panasonic”, as shown in Figure E11.28.

Development of the site must adhere to the following design principles:

- 1) Provide good east-west and north-south connectivity with new streets and pedestrian connections.
- 2) Provide opportunities for residential uses towards Station Street and immediately adjoining the “Panasonic” site, where there is greater potential for appropriate amenity and street address.
- 3) Consolidate retail uses on remainder of the site.
- 4) Investigate opportunities for expansion of the shopping centre to the north.
- 5) Consolidate loading and service access to retail development on Woodriff Street.
- 6) Provide high quality and active public domain interface with all other existing public streets.
- 7) Provide sensitive interface with heritage items in the precinct.

Development of the site should provide the following outcomes:

- 1) Streets and pedestrian connections:
 - a) Provide a new public street with direct connections between Station and Woodriff Streets and a buffer between retail and residential development.
 - b) Provide a new pedestrian connection, parallel Station Street, linking with the pedestrian connection proposed on "Panasonic" site as illustrated.
 - c) Additional public streets, lanes and thoroughfare may be required to provide for residential address.
 - d) The closure of Reserve Street may be considered, subject to more detailed traffic analysis, the provision of adequate new public streets between Station and Woodriff Streets, and to provision of retail development with a direct and active frontage to Derby Street.
- 2) Land uses:
 - a) Locate retail, tourist accommodation and residential land uses in Area A.
 - b) Locate retail and commercial land uses only in Area B (as indicated).
- 3) Public domain interface:
 - a) Active frontage to Station Street, Reserve Street and Derby Street.
 - b) Front building setbacks as indicated.
 - c) Distinctive corners treatments at the locations indicated.
 - d) A landscaped corridor of mature trees on the northern side of Woodriff Street.
- 4) Heritage:
 - a) Integrate heritage listed buildings into the design of the new retail and residential development.

Figure E11.28: Precinct 3 Design Principles

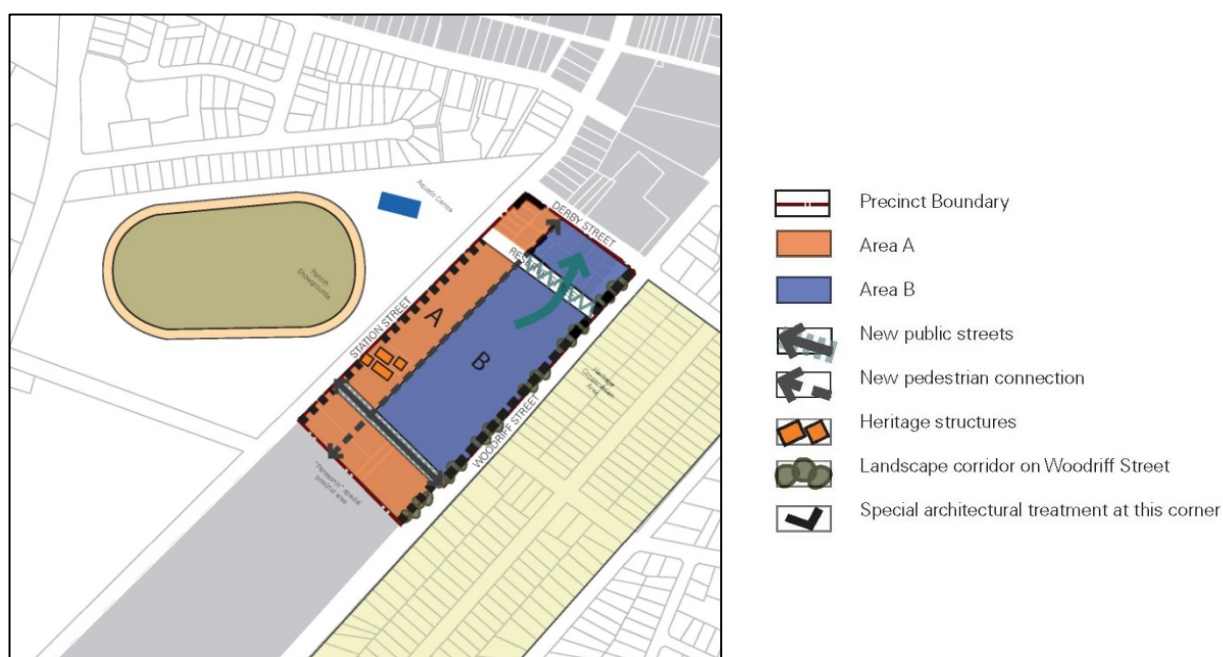


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Part B – North Penrith

11.8.1 Preliminary

This Section was adapted from the North Penrith Design Guidelines which were published by Landcom in 2013, and supplements the North Penrith Concept Plan approval issued by the Minister for Planning and Infrastructure on 9 November 2011.

11.8.1.1 Purpose of this Section

The purpose of this Section is to facilitate the development of retail, commercial, business, residential and light industrial land uses within the North Penrith Precinct in accordance with the North Penrith Concept Plan approval.

11.8.1.2 Land to Which this Section Applies

This Section applies to the North Penrith Precinct, as shown at Figure E11.30. North Penrith comprises approximately 40.6 ha of land that has been identified for a mixed use, transit oriented development.

Figure E11.30 - Land to which this Section Applies



11.8.1.3 Relationship with other Planning Documents

This Section must be read in conjunction with any environmental planning instrument which applies to the land, as well as any Planning Agreement for the North Penrith Precinct.

This Section provides specific controls for the North Penrith Precinct in addition to the general controls elsewhere in this DCP. In the event of an inconsistency between this Section and the rest of the DCP, the requirements of this Section prevail.

11.8.2 Concept Plan

11.8.2.1 Vision

The development of North Penrith is to:

- a) create well-designed spaces that engage and activate its community for living and working;
- b) provide well-connected linkages, nodes and destinations that integrates with a significant water body;
- c) create diverse, yet cohesive, housing products that allow capability to ever changing household needs and formations;
- d) provide a business/employment centre that is complementary and an extension to the Penrith CBD.

Figure E11.31 - Illustrative Concept Plan



Figure E11.32: Artist Impression of the Canal



Figure E11.33: Artist Impression of the Oval



Figure E11.34: Artist Impression of the Village Square



11.8.2.2 Outcomes

The expected outcomes of the North Penrith Precinct are:

1) Transport and Accessibility

- a) A residential density, urban structure and parking provision that supports the establishment of a model transit oriented development.
- b) An integrated and legible network of open space and pathways to encourage pedestrian and cyclist activity, particularly to and from the train station.

2) Urban Design

- a) A dense and interconnected mixture of land uses which include residential, recreational, employment, retail, office and business services.
- b) Create a transit oriented, cohesive development incorporating retail, commercial, business, civic, community, recreation, residential and employment uses.
- c) Create a safe and convenient pedestrian network formed by a closely spaced grid of streets interconnected with public open spaces.

3) Housing and Community

- a) A vibrant urban community of around 900 to 1,000 dwellings.
- b) Meet the growing and ageing population of Penrith through the provision of a diverse range of housing types and sizes.

- c) Around 7ha of open space/canals including a new oval with outdoor recreational facilities, canal edge boardwalk and local parks.

4) Economic

- a) Generate up to 770 direct jobs on the site and over 1,100 flow-on jobs.
- b) Deliver a high level of self-containment in terms of employment generation and retail expenditure, reducing the trip generation of residents, workers and commuters visiting North Penrith.
- c) Cater for the daily needs and services of the North Penrith community and commuters using Penrith Railway Station.
- d) Provide opportunities for employment generating development within a close proximity to public transport services.

5) Environmental

- a) Retention of identified key stands of existing trees.
- b) Mitigation and management of existing flooding issues on the site.

6) Heritage

- a) Enhance the heritage characteristics of Thornton Hall.
- b) Respect the Coombewood curtilage.
- c) Protection of environmental heritage by incorporation of the heritage features and vistas into the road and open space network.

11.8.3 Residential Development

11.8.3.1 Housing Density and Diversity

A. Objectives

- 1) To ensure that a minimum residential density is achieved in the precinct in recognition of its proximity to public transport and the Penrith City Centre.
- 2) To provide a diverse range of housing forms and densities.
- 3) To promote a range of dwellings types to meet the needs of a diverse range of age groups and family types.

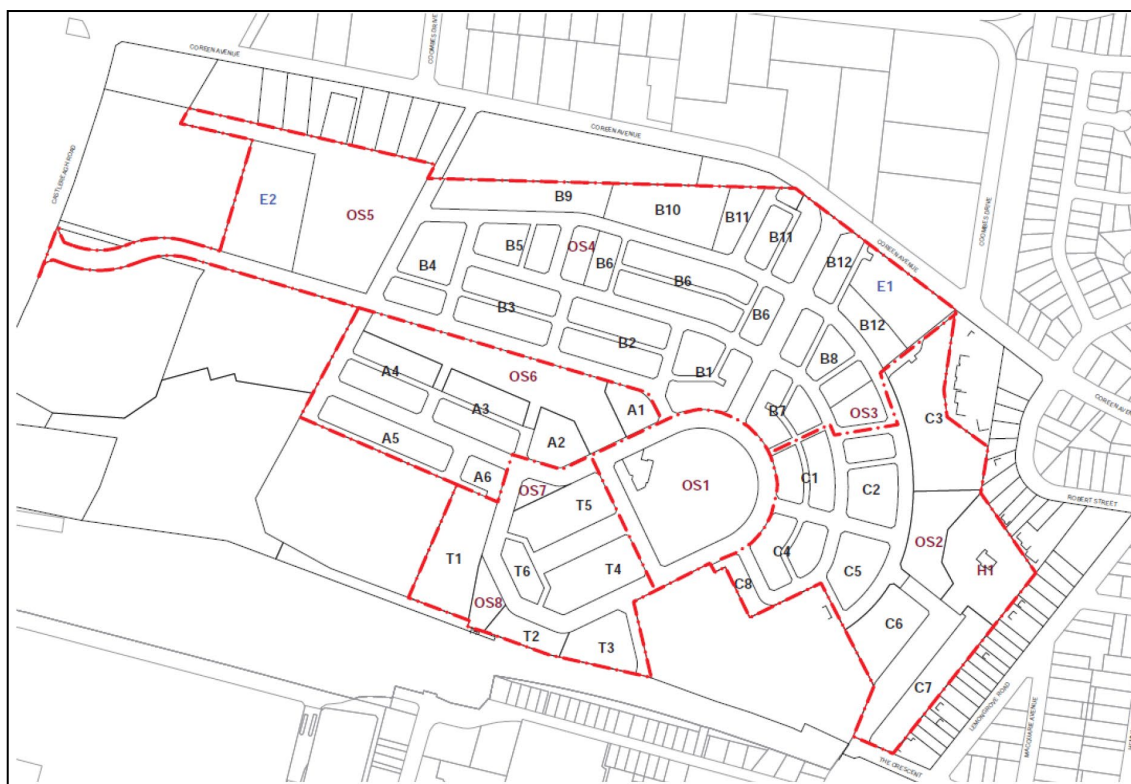
B. Controls

- 1) Between 900 and 1,000 dwellings are envisaged across the whole precinct. To ensure that a minimum of 900 dwellings is achieved as part of a subdivision application that creates more than 20 lots, the applicant is required to demonstrate that the sub-precinct dwelling target ranges shown in Figure E11.35 and Table E11.4 can be achieved.
- 2) Subject to agreement of Council and consultation with relevant landowners, dwelling yields may be 'traded' between sub-precincts as long as it meets overall targets and objectives of this DCP.

Table E11.4: Dwelling Target Ranges

Stage	Dwelling Target
Sub – Precinct A1 – A4	128 – 142
Sub – Precinct B1 – B10	181 – 313
Sub – Precinct C1 – C7	153 – 169

Figure E11.35: Minimum dwelling target plan



11.8.3.2 Subdivision

A. Objectives

- a) To provide a range of densities, lot sizes and dwelling types to foster a diverse community and interesting streetscapes.
- b) To ensure that all residential lots achieve a high level of amenity.
- c) To ensure that development on smaller lots is undertaken in a coordinated manner.

B. Controls

- 1) All applications for Torrens title subdivision proposing residential allotments:
 - a) on land identified at Figure E11.36, or
 - b) with a site area of less than 235m² and with a lot width of less than 8m (as measured at the front facade line)

are to be accompanied by plans for the proposed dwellings on those lots (i.e. an Integrated Housing Development Application). The minimum number of allotments within an 'integrated housing development' is generally to be 3, except where indicated on Figure E11.36.

Note: For the purposes of determining the width of an allotment, the front facade line is defined as being 3m from the front, street boundary alignment.
- 2) For residential allotments with a width greater than or equal to 8m (measured at the front facade line), the subdivision application must include a Building Envelope Plan (see example illustrating guiding principles at Appendix A). The Building Envelope Plan is to:

- a) demonstrate that an appropriate built form and residential amenity can be delivered on the allotment in compliance with the relevant provisions of this DCP,
- b) nominate elements such as front and side building setbacks, the location of zero lot lines, the preferred locations of private open space and garages and specific fencing requirements,
- c) nominate the minimum yield required of any 'super-lot' and / or for residual Integrated Housing Development Application sites.

These restrictions will be approved as part of the subdivision application and are to be complied with by any future application proposing a dwelling on that lot.

- 3) The location of the zero lot line is to be determined with regard to allotment orientation and the ability to achieve with solar access provisions within this DCP. Where a zero lot line is nominated on allotment on the Building Envelope Plan, the adjoining allotment is to include a 900mm easement for maintenance of the boundary wall (and any services along the side of the dwelling/garage) on the adjoining property. No overhanging eaves or the like will be permitted within the easement. The s88B instrument supporting the easement is to be worded so that Council is removed from any dispute resolution process between adjoining allotments.
- 4) For residential development within the R1 General Residential zone (except for residential flat buildings):
 - a) the lot depth is generally to be between 25m and 30m, and
 - b) the minimum lot width is 4.5m (for attached dwellings/semi-detached dwellings) and 8m for dwelling houses).

Note: Variations to (4) are permitted where it is part of an 'Integrated Housing Development Application' and the applicant can demonstrate that a good level of residential amenity can be achieved to both the proposed dwellings and adjacent properties.

- 5) Residential allotments should be rectangular and be oriented to facilitate siting of dwellings and private open space to take advantage of winter solar access and summer sun deflection. The use of battle-axe lots is to be avoided where possible.

Figure E11.36 - Sites that are to be undertaken as Integrated Housing Development Applications



11.8.3.3 Building Envelopes

A. Objectives

- a) To encourage the efficient use of land and a compact urban environment.
- b) To create attractive and cohesive streetscapes.
- c) To respect the curtilage of and view corridors associated with Thornton Hall.
- d) To manage impacts of development on neighbouring properties in regard to privacy, and overshadowing.
- e) To ensure building heights achieve built form outcomes that reinforce quality urban and building design.

B. Controls

- 1) The maximum number of storeys for residential development is shown at Figure E11.37.
- 2) For all residential development (excluding residential flat buildings), the floor area of the third storey is to be no more than 60% of the second storey.
- 3) The location and siting of the third storey is to ensure adequate solar access and privacy for the lot and adjacent residential lots.
- 4) Development adjacent to a laneway (i.e. ancillary dwelling) is to be no more than 2 storeys.

- 5) A minimum floor to ceiling height of 2.7m is to be provided for all ground floor living spaces.

Figure 11.37 – Maximum building height plan (storeys)



- 6) The maximum depth of a dwelling (exclusive of roofs and privacy screens etc) is:
- 15m for the second storey (identified as L2 on Figures E11.38 and E11.39),
 - 12m for any third storey component of a dwelling (identified as L3 on Figures E11.38 and E11.39).
- 7) The maximum depth of an ancillary dwelling (exclusive of roofs and privacy screens etc.) from the rear boundary is 8m.
- 8) Front setbacks for residential development within the R1 General Residential Zone (except for residential flat buildings) are (see Figures E11.38 and E11.39):
- between 3m and 4.5m (to the front facade line), except on the western side of H1 (Thornton Hall heritage carriageway) where the front setback from the boundary line is to accommodate tree retention and access driveway,

- b) a minimum 5.5m (and a minimum 1m behind the front facade line) for the garage, and
 - c) 0m to the secondary street (for a corner allotment) except for the first 7m of allotment which to be setback at 2m to accommodate the articulation zone requirements at Section 11.8.3.4 Building Design and Articulation (see Figures E11.38 and E11.39).
- 9) The rear setback for the ground floor level of a dwelling is 0.9m. This does not apply to garages and ancillary dwellings adjacent to a rear lane which may be built to the rear boundary. A rear setback of 3m is required for all allotments that back onto the existing residential allotments fronting Lemongrove Road and for Block C3.
- 10) The minimum side and rear setback requirements for residential development within the R1 General Residential Zone (except for residential flat buildings) are to be consistent with Table E11.5 below. Projections permitted into side and rear setback areas include sun hoods, gutters, down pipes flues, light fittings and electricity or gas meters, rainwater tanks and hot water units and the like.

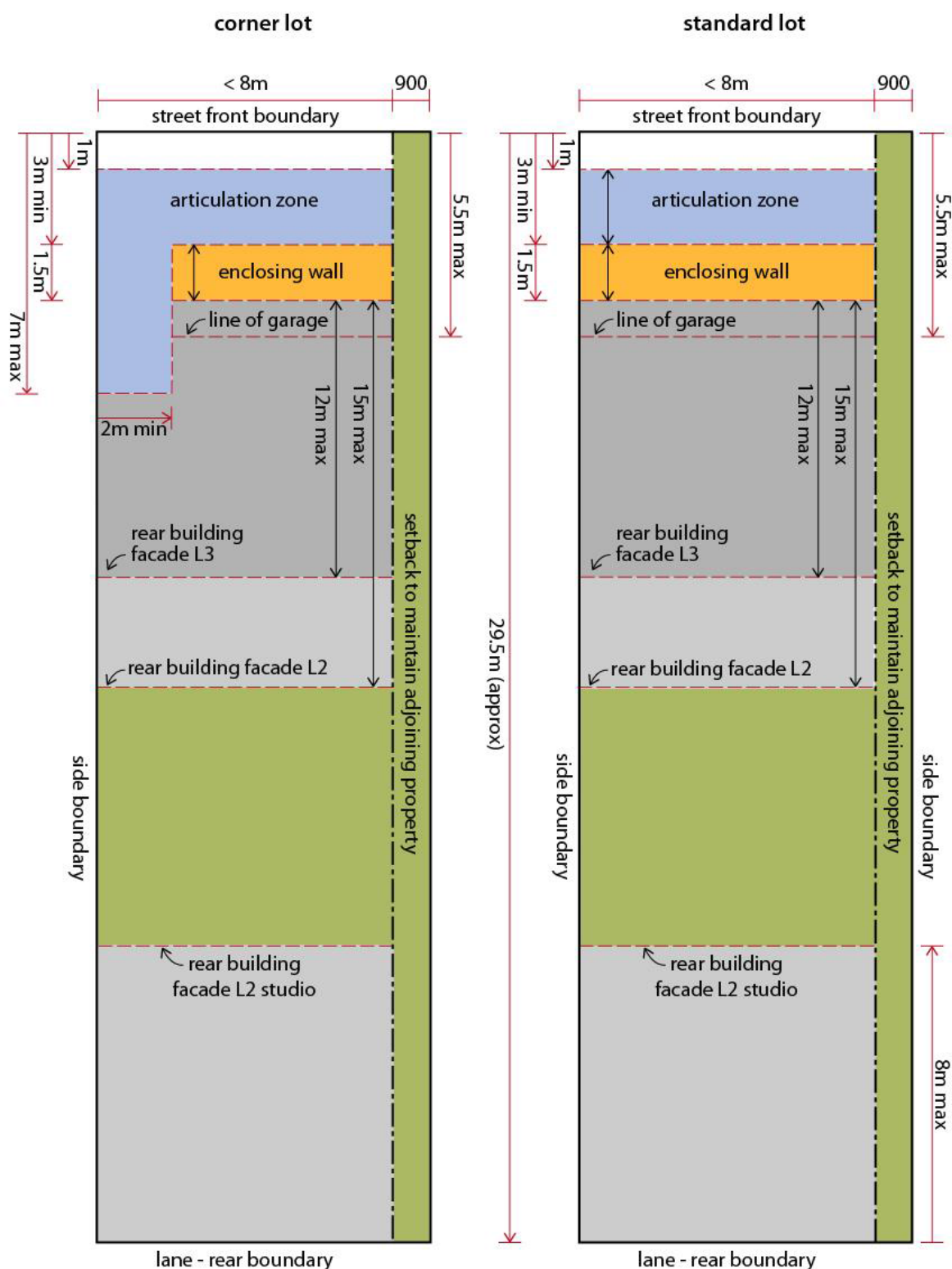
Table E11.5: Minimum side and rear setbacks

Dwelling Type	Minimum Side and Rear Setbacks
Ancillary Dwellings	0m on both sides 0m to rear lane
Multi-unit housing, attached dwellings	0m on both sides
Semi-detached dwellings	0m to one side 0.9m to one side
Dwelling houses (lots <8m wide)	0m on both sides
Dwelling houses (lots 8m wide and greater)	0m to one side 0.9m to one side – except for where permitted by (11) below

- 11) Despite the requirements of Table E11.5, dwelling houses on allotments that back onto existing residential allotments fronting Lemongrove Road, shall achieve:
- a) a minimum 4m setback at the ground level; and
 - b) a minimum 6m setback at the upper level.
- 12) Despite the requirements of Table E11.5, zero setbacks on both side boundaries for ancillary dwellings and dwelling houses are permitted where the following conditions apply:
- a) the dwellings are designed in a coordinated manner so as to ensure compliance with the relevant controls within this DCP, in particular, the private open space, privacy and solar access provisions;
 - b) construction of adjoining dwellings is undertaken either concurrently or sequentially,
 - c) reciprocal maintenance easements are included on adjoining allotment title (as per control 11.8.3.2(3)), and

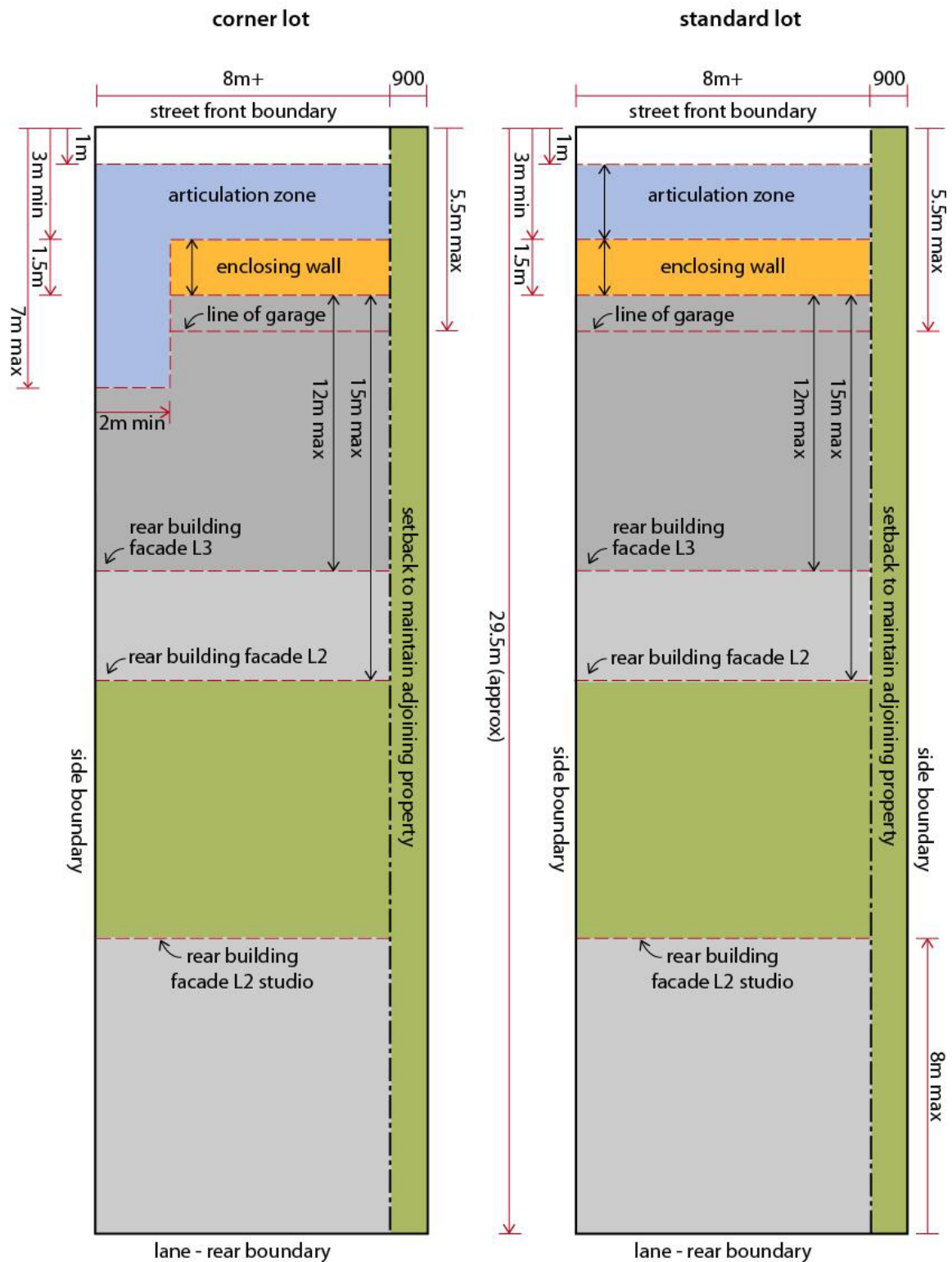
- d) compliance with the relevant aspects of the Building Code of Australia.
- 13) Where a studio loft above a garage straddles a property boundary, the central maintenance setback is not required. Appropriate arrangements for maintenance are to be included within the stratum lot title for the studio loft.

Figure 11.38 - Front and rear setback requirements, standard and corner lots (left), less than 8m wide



- 14) Variations to the building envelope controls contained within Section 11.8.3.3 are permitted where it is part of an 'Integrated Housing Development Application' and the applicant can demonstrate that a good level of residential amenity can be achieved to both the proposed dwellings and adjacent properties.

Figure E11.39 - Front and rear setback requirements, standard and corner lots (left), 8m+ wide



11.8.3.4 Building Design and Articulation

- 1) To ensure that buildings are designed to enhance the existing and future desired built form and character of the neighbourhood.
- 2) To create an attractive and cohesive streetscape through the provision of simple and articulated building and roof forms.

A. Controls

- 1) Particular attention is to be paid to the design quality of the front facade of a dwelling. An articulation zone is to be provided in front of the front facade line as illustrated at Figures E11.38 and E11.39. The articulation zone:
 - a) is to be setback at least 1m from the front boundary,
 - b) must extend at least 7m from the front boundary line along the secondary street frontage (for corner allotments), and
 - c) may extend over 2 storeys (for 2 and 3 storey development).
- 2) The front articulation zone should include at least 1 primary element or 2 secondary elements from the list below. The minimum depth for a secondary element is 500mm.

Table E11.6: List of elements in the front articulation zone

Primary Elements	Secondary Elements
Verandah/Porch	Entry feature or porticos
Balcony (including upper level balcony over garage door)	Awnings or other features over windows
Pergola	Eaves and sun shading
	Window box treatment
	Recessed or projecting architectural elements
	Bay windows

- 3) For corner allotments the articulation zone is to be a minimum depth of 2m from the primary and secondary frontages and may include either primary and/or secondary elements as listed above.
- 4) For allotments located on the southern, eastern and western side of a street, the articulation zone may be designed to incorporate private open space, including principal private open space.
- 5) Consideration should be given to expressing the third storey of a dwelling in a lighter weight manner than the structure below, through the use of material and colours and the like.
- 6) Eaves are to provide sun shading, to protect windows and doors and provide aesthetic interest. Subject to 11.8.3.2(3), eaves should have a minimum of 600mm overhang (measured to the fascia board). Council will consider alternative solutions to eaves so

long as they provide appropriate sun shading to windows and display a high level of architectural merit.

- 7) Building colours, materials and finishes are to be consistent the Residential Design Palette included at Appendix B.
- 8) Multi-coloured roof tiles are not permitted.

11.8.3.5 Private Open Space and Landscaping

A. Objectives

- 1) To provide a high level of residential amenity with opportunities for outdoor recreation and relaxation within the property.
- 2) To enhance the spatial quality, outlook, and usability of private open space.
- 3) To facilitate solar access to the living areas and private open spaces.

B. Controls

- 1) Each dwelling is required to be provided with an area of Private Open Space (POS) and Principal Private Open Space (PPOS) consistent with Table E11.7 below.

Table E11.7: Private Open Space Requirements

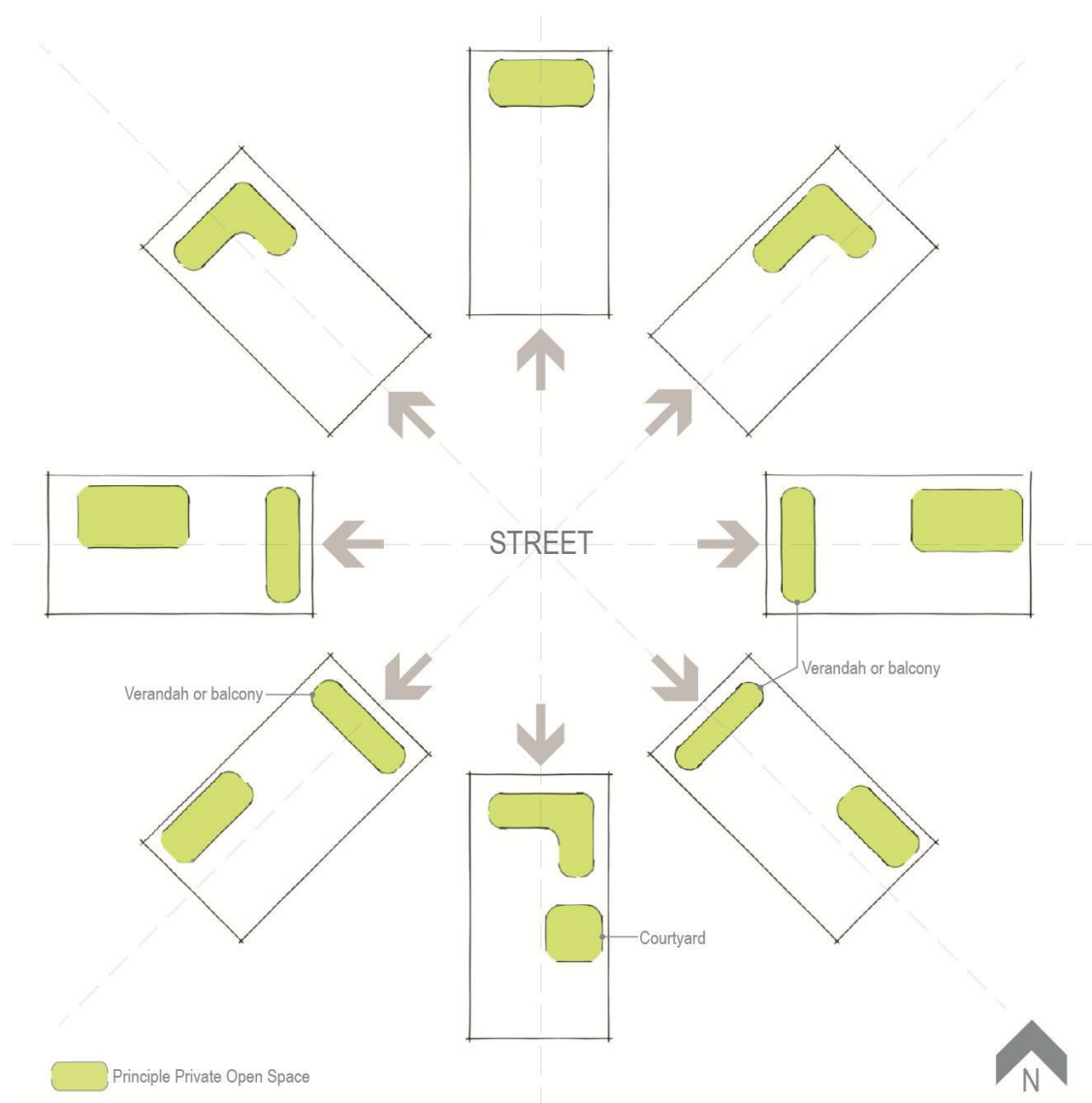
	Studio Loft	Multi-Unit Housing, attached and semi-attached dwellings and dwelling houses		
Lot Width*		<6m	6 – 10m	10m +
Private Open Space	Studio and 1 bedroom: 4m ² and minimum dimension 1m 2+ bedroom: 8m ² and minimum dimension 1m	Minimum 20% of the site area and minimum dimension of 2m	Minimum 20% of the site area and minimum dimension of 2m	Minimum 20% of the site area and minimum dimension of 2m
Principal Private Open Space	N/A	16m ² and minimum dimension of 3m	18m ² and minimum dimension of 3m	24m ² and minimum dimension of 4m

* measured at the Front Facade Line

- 2) The location of PPOS is to be determined having regard to allotment orientation, dwelling layout, adjoining dwellings, landscape features, and the preferred locations of PPOS illustrated at Figure E11.40. Where an allotment is located on the southern, eastern and western side of a street, the PPOS must not be provided exclusively within the front of the allotment between the dwelling and the primary street frontage, but may take the form of a garden court, verandah or balcony within the side and/or rear setback. PPOS located in the front of a dwelling must be useable and adjacent to a living space.

- 3) Where the PPOS is a balcony or roof top area, it must be provided with a fence or landscaped screen at least 1m in height, and be directly accessible from a habitable room.
- 4) The POS of the studio loft is to be located and designed so as to minimise visual and acoustic privacy impacts upon the principal dwelling and its associated POS.
- 5) The majority of dwellings within any given Development Block should receive at least 2 hours of sunlight between 9am and 3pm at the winter solstice (21 June) to 50% of the required PPOS of both the proposed development and the adjoining properties.
- 6) Despite 11.8.3.5 (5) above, where an integrated housing development application is proposed, a minimum 70% of the dwellings proposed by that application should receive at least 2 hours of sunlight between 9am and 3pm at the winter solstice (21 June).
- 7) The first 1m of a site, measured from the front boundary, (excluding driveways, footpaths etc.) is to be soft landscaped. Landscaping within the front yard is to comprise species from the Residential Design Palette included at Appendix B.

Figure E11.40- Private Open space location principles



11.8.3.6 Fencing

A. Objectives

- 1) To enhance the quality of the streetscape through consistent and co-ordinated front fencing.
- 2) To define the public and private domain and provide a sense of enclosure to the front yard.
- 3) To ensure boundary fencing is of a high quality and does not detract from the streetscape.

B. Controls

- 1) Front fencing is required for all residential allotments. Front fencing is to:
 - a) be between 700mm and 1.2m high (including feature elements),
 - b) be generally open in design and may comprise a solid component that is no higher than 700mm,
 - c) extend along the side boundaries to the front facade line (or at least 1m behind the front facade line for dwelling houses),
 - d) extend along the secondary street frontage to match the length of the articulation zone, and
 - e) are not to impede safe sight lines for pedestrians and / or traffic.
- 2) The design, materials and colour of front fencing is to be consistent with the Residential Design Palette included at Appendix B.
- 3) Where a dwelling is located adjacent to open space, boundary fencing is to be of a high quality material and finish. Articulated post and paling fences (with exposed posts) are preferred in these locations. The design of the fencing is to permit casual surveillance of the open space and provide the dwelling with outlook towards the open space.
- 4) Timber paling or lapped / capped fencing only can be used internally between allotments. No sheet metal fencing is permitted within the project.

11.8.3.7 Garages, Site Access and Parking

A. Objectives

- a) To provide a level of residential parking appropriate for the precinct's location, in close proximity to Penrith Railway Station.
- b) To reduce the visual impact of garages, carports and parking areas on the streetscape and improve dwelling presentation.
- c) To ensure the design of garages do not dominate the frontage of the dwelling.

B. Controls

- 1) The parking rates provided in this Section override the parking rates outlined in the Transport, Access and Parking Section of this DCP.
- 2) The maximum parking rates for multi-unit housing, attached and semi-detached dwellings and dwelling houses are:
 - a) 1-2 bedroom: 1 space per dwelling, and

- b) 3+ bedroom: 2 spaces per dwelling.
 - 3) All visitor parking is to be provided on-street.
 - 4) The garage arrangement is to be consistent with Figures E11.41 and E11.42 in that:
 - a) vehicle access for lots with rear lane access should only be via the rear lane,
 - b) for lots less than 8m wide, all garaging is to be accessed from the rear lane (if rear loaded). If there is no rear laneway, a single / tandem garage is permitted at the front,
 - c) for lots between 8m and 12m wide, garaging may comprise a single / tandem front loaded garage or a rear loaded, double / tandem garage, and
 - d) for lots greater than 12m wide, garaging may either comprise a double front loaded garage or a rear loaded, double / tandem garage.
- Note:** For the purposes of determining the width of an allotment, the front facade line is defined as being 3m from the front, street boundary alignment.
- 5) The maximum width of a garage door is 3.2m and 6m for single/tandem and double garages respectively. Where a studio loft is included, its own garage or carport requires access from the rear lane.
 - 6) Carports and garages are to be treated as an important element of the dwelling facade and interface with the public domain. They are to be integrated with and complementary, in terms of design and material, to the dwelling design. Garage doors are to be visually recessive through use of materials, colours, overhangs and the like.
 - 7) The location of driveways is to be determined with regard to dwelling design and orientation, street gully pits and tree bays and is to maximise the availability of on-street parking.
 - 8) All parking and driveway access is to comply with AS 2890.1 – 2004.

Figure E11.41 - Garage location principles (<8m and 8-12m wide lots)

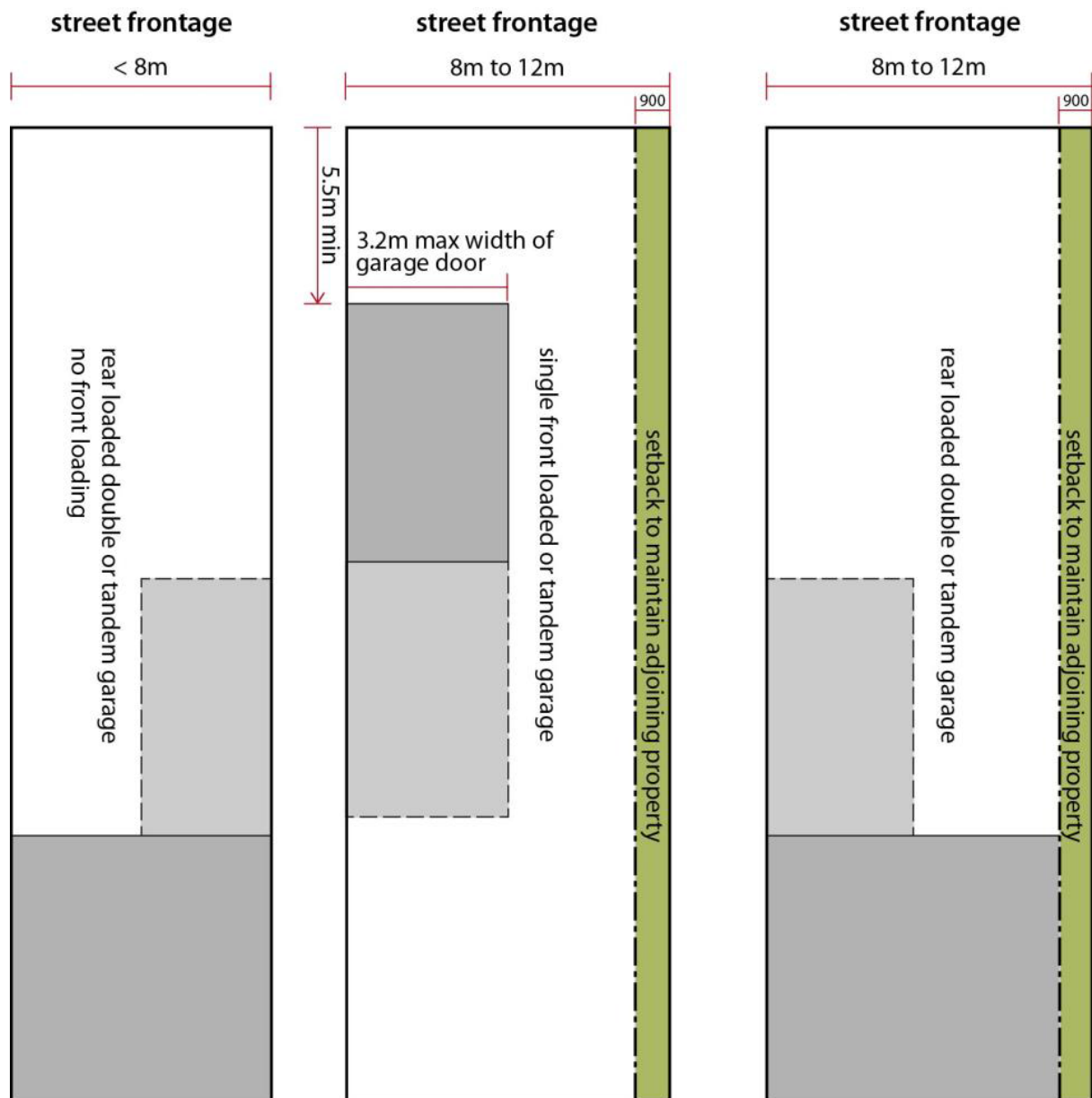
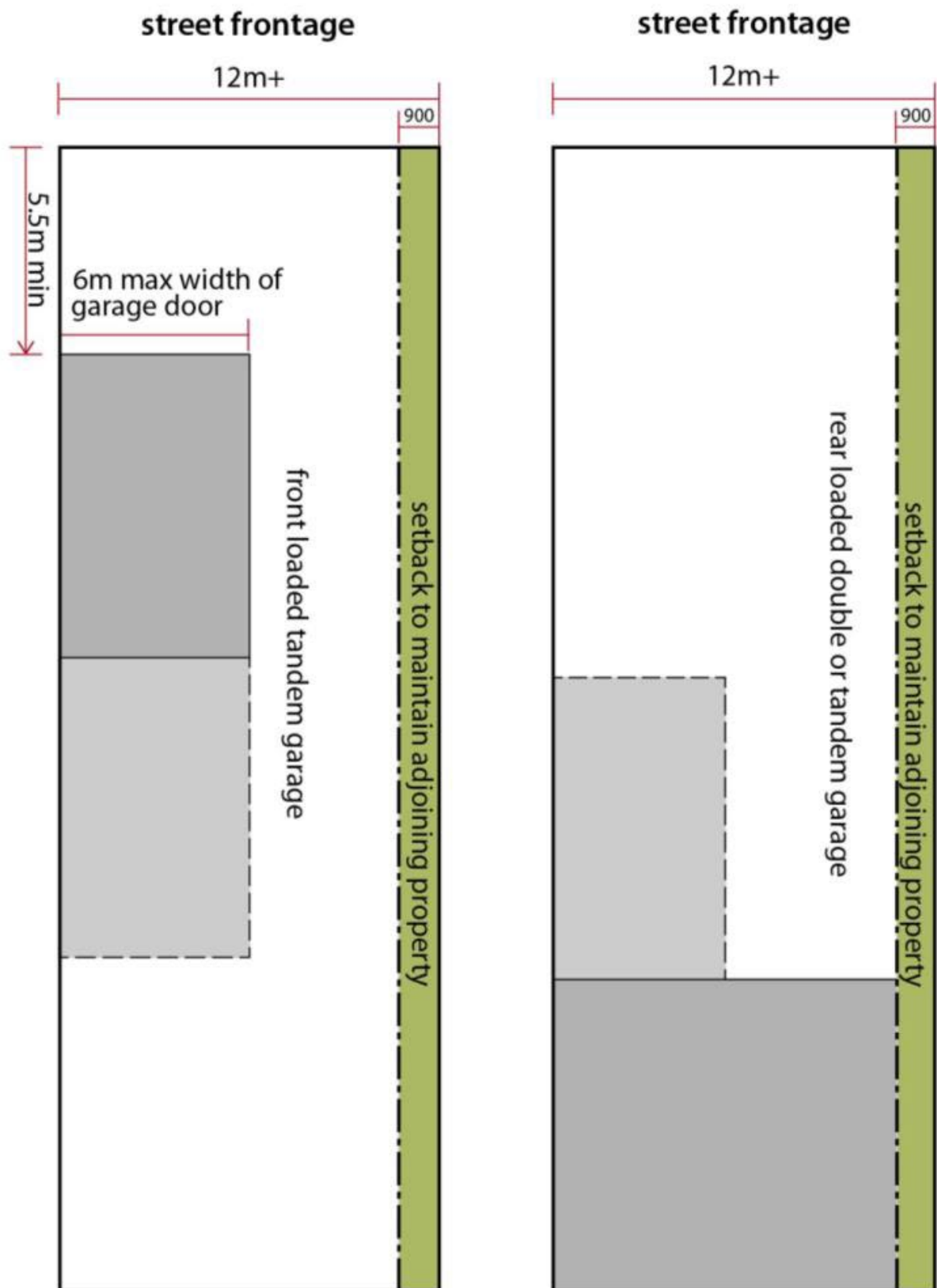


Figure E11.42 - Garage location principles (12m+ wide lots)



11.8.3.8 Visual and Acoustic Amenity

A. Objectives

- a) To ensure buildings are designed to achieve the highest possible levels of visual and acoustic privacy.
- b) To protect visual privacy by minimising direct overlooking of habitable rooms and private open space.
- c) To contain noise within dwellings and minimise the intrusion of noise from outdoor areas.

B. Controls

- 1) Direct overlooking of main habitable areas and private open spaces of adjacent dwellings should be minimised through building layout, window and balcony location and design, and the use of screening devices, including landscaping.
- 2) Habitable room windows with a direct sightline to the habitable room windows in an adjacent dwelling within 3m are to:
 - a) be obscured by fencing, screens or appropriate landscaping, or
 - b) be offset from the edge of one window to the edge of the other by a distance sufficient to limit views into the adjacent window, or
 - c) have sill height of 1.5m above floor level, or
 - d) have fixed opaque glazing in any part of the window below 1.5m above floor level.
- 3) A screening device is to have a maximum of 25% permeability to be considered effective.
- 4) The design of attached dwellings must minimise the opportunity for sound transmission through the building structure, with particular attention given to protecting bedrooms and living areas.
- 5) In attached dwellings, bedrooms of one dwelling are not to share walls with living spaces or garages of adjoining dwellings, unless it is demonstrated that the shared walls and floors meet the noise transmission and insulation requirements of the Building Code of Australia.
- 6) Residential development in close proximity to the railway corridor, Coreen Avenue, the east and west sides of the Boulevard, the upgraded commuter car park and those flanking the entry road from Coreen Avenue to the commuter car park, are to include design measures so as to achieve the following internal noise levels at these residences:
 - a) a target internal noise level of 35 dB(A) LAeq is to apply in the sleeping areas, and
 - b) a target internal noise level of 40 dB(A) LAeq in other living areas.

11.8.3.9 Specific Provisions - Key Sites

A. Objectives

- a) To provide additional guidance with respect to the urban design outcomes sought for key sites within the precinct.
- b) To promote development that results in a high quality public and private domain interface, in particular, the streetscape appearance of development.

B. Controls

- 1) Development on the key sites nominated at Figure E11.43 is to achieve the desired outcomes specified below.

Figure E11.43: Specific Provisions for key sites



Entry Boulevard Lots

- 1) A minimum building height of 2 storeys is required for all lots. A third storey is preferred on corner lots.
- 2) Dwelling facades are to display high quality materials and finishes consistent with the Residential Design Palette (Appendix B).
- 3) Despite Section 11.8.3.7 Garages, Site Access and Parking, all garaging is to be from the rear lane.
- 4) Front fencing is to generally consistent and assist in unifying the streetscape.

'Dress Circle' Park Lots

- 1) A building height of 3 storeys is encouraged for all dwellings (except for ancillary dwellings).
- 2) A high level of consistency of built form and massing is required across the dwelling frontages to achieve a harmonious streetscape and a strong urban edge to the oval.

- 3) Buildings are to take advantage of the location overlooking the oval with front balconies and terraces.
- 4) Dwellings are to display high quality materials and finishes consistent with the Residential Design Palette (Appendix B).
- 5) Identical facades are to be limited to no more than 4 dwellings in a row.
- 6) Despite Section 11.8.3.7 Garages, Site Access and Parking, all garaging is to be from the rear lane.

Innovation Lots

- 1) Housing is to demonstrate how compact, affordable dwellings can achieve a high level of internal amenity.
- 2) Dwellings are to be single or double storey and may include 0m side and rear setbacks.

Canal Edge Lots

- 1) A minimum building height of 3 storeys is encouraged for all residential dwellings (except for ancillary dwellings).
- 2) Building form and massing is to create a strong consistent edge to the canal.
- 3) Entrances stairs to dwellings off the canal walk are to be paired together.
- 4) The ground floor level and front yard / private open space of the dwellings is to be raised above the level of the pedestrian boardwalk to provide privacy for the dwellings.
- 5) Detailing of front fencing and landscaping (fronting the canal) is to balance privacy and surveillance issues. The front fencing treatment is to be of high quality and consistent along the full length of the canal frontage.
- 6) The dwelling facades are to display high quality materials and finishes consistent with the Residential Design Palette (Appendix B).
- 7) Buildings are to take advantage of the location overlooking the canal and include high levels of glazing and front balconies and terraces.
- 8) Despite Section 11.8.3.7 Garages, Site Access and Parking, all garaging is to be from the rear lane.

Opportunity Site

- 1) Buildings envelopes are to provide a legible and permeable development pattern.
- 2) The Opportunity Site may accommodate a variety of land uses, in addition to residential, such as commercial office, institution, education uses or the like, adjacent to the Village Centre, which is .
- 3) Non-residential uses fronting the canal should address the canal with semi-active uses.
- 4) The road and block pattern within the site may vary in response to alternative uses.
- 5) Building heights (of up to 6 storeys) are permitted for uses on the Opportunity Site.
- 6) A range of retail, business, and commercial premises should be provided at the ground level to activate the street frontages within the Opportunity Site.
- 7) Development within the Opportunity Site should promote pedestrian activity and cycling and provide facilities for pedestrians and cyclists.

11.8.3.10 Specific Provisions - Residential Flat Buildings

A. Objectives

- a) To establish high quality residential flat developments that have a good level of amenity.
- b) To provide additional guidance with respect to the urban design outcomes for residential flat buildings in the precinct.

B. Controls

- 1) Residential flat development is to be generally consistent with the guidelines set out within the NSW Residential Flat Design Code and the development controls in the table below. If there is any inconsistency, the development controls below prevail.
- 2) In addition, the parking rates provided in Table E11.8 override the parking rates outlined in the Transport, Access and Parking Section of this DCP.

Table E11.8: Development Controls for Residential Flat Buildings

Element	Control
Minimum Lot Size	650m ²
Maximum Building Height	Maximum 6 storeys, except for Block C3 which is 3 storeys
Maximum car parking rates	Studio: 0.5 spaces per dwelling 1 – 2 bedroom: 1 space per dwelling 3+ bedrooms: 2 spaces per dwelling Visitor parking on street

- 3) Development on the residential flat development sites nominated at Figure E11.44 is to achieve the desired outcomes specified below.

Note: Residential flat buildings may occur on sites other than those nominated at Figure E11.44.

Figure E11.44 – Sites nominated for key residential flat development



Blocks A1 – A6

- 1) Front buildings onto streets with active uses where possible.
- 2) A range of retail, business, and commercial premises should be provided at the ground level to activate the street frontages within the Opportunity Site particularly.
- 3) Development is to include or facilitate public pedestrian/cycle connections. Public access and connections to public access is to be provided at development application stage. A staging plan showing how the proposed development will connect to the public access should be provided with each development application.
- 4) The ground floor level and front yard / private open space of the dwellings is to be raised above the level of the canal / street to provide privacy for the dwellings.
- 5) Buildings are to take advantage of the location overlooking the canal and oval with front balconies and terraces.
- 6) Parking should be screened from the street and canal interfaces. Underground parking is preferred.
- 7) Block A2 should include a ground floor cafe/neighbourhood shop adjacent to the oval.
- 8) Streets and lanes are to:
 - a) be clear and direct throughways for pedestrians with paving finishes, lighting etc. that are appropriate for a pedestrian route.
 - b) provide public access at all times, and
 - c) have signage indicating public accessibility.

Blocks T3 – T5

- 1) Residential uses at ground floor should be designed as 'live/ work' spaces.
- 2) The residential component is to be consistent with relevant controls in Section 11.8.4 The Village Centre.

Block C3

- 1) Existing highlighted trees identified at Figure E11.45 are to be retained.
- 2) No excavation or disturbance of area around the trees identified in Figure E11.45.
- 3) The site is to be retained as whole and not re-subdivided (except for strata or community title). The trees are to be retained in common property.
- 4) Boundary fencing with Open Space (OS2) is to be transparent of high quality materials.

Figure E11.45: Block C3 tree retention



11.8.3.11 Specific Provisions - Ancillary Dwellings

A. Objectives

- a) To encourage a diversity of affordable housing product.
- b) To provide housing and accommodation options for a range of family types and age groups.
- c) To promote innovative housing solutions compatible with the surrounding residential environment.
- d) To provide passive surveillance of rear lanes and shared driveways.
- e) To encourage the use of studios over garages to provide surveillance, work from home or residential accommodation opportunities.

B. Controls

- 1) Subdivision applications that involve the creation of a laneway are to nominate the preferred location of an ancillary dwelling so as to comply with the generally controls with the indicative controls provided at Appendix A and achieve an acceptable degree of passive surveillance within the laneway. The preferred locations for ancillary dwellings are shown at Figure E11.46.
- 2) Ancillary dwelling development is to be consistent with the controls in the table below.
- 3) The parking rates provided in this Section override the parking rates outlined in the Transport, Access and Parking Section of this DCP.

Table E11.9: Controls for ancillary dwellings

Element	Control
Setbacks	0m to sides and laneway
Maximum building height	2 storeys (i.e. 1 floor above garage)
Private Open Space (required for studio lofts only)	Studio and 1 bedroom: 4m ² , minimum dimension 1m 2 or more bedroom: 8m ² , minimum dimension 1m
Maximum car parking	Secondary Dwellings: 0 spaces Studio lofts: 1 space

- 4) The design and layout of studio lofts is to minimise overlooking and overshadowing of the private space of the principal dwelling and any adjacent dwellings.
- 5) Strata title subdivision of a studio loft into a separate allotment will be permissible only where the following are provided:
 - a) appropriate private open space,
 - b) separate pedestrian access,
 - c) one on-site car parking space,
 - d) separate services for mail delivery and waste collection, and an on-site garbage storage area which is not visible from public street,
 - e) separate connections and metering for utilities, and
 - f) compliance with the Building Code of Australia.

E3



11.8.4 The Village Centre

11.8.4.1 Built Form Controls

For the purposes of this Part, the Village Centre is all land that is zoned B4 Mixed Use.

A. Objectives

- a) To encourage a vibrant and active mixed use village centre and cater for the needs of the North Penrith residents.
- b) To create an urban village environment that is complementary to its location near the Penrith City Centre and the Penrith Railway Station.
- c) To provide the opportunity to accommodate a large format commercial and / or education use as part of the Village Centre.
- d) To provide consistent streetscapes through control of the built form visible from the public domain.
- e) To ensure developments are safe and secure for pedestrians and contribute to the safety of the public domain.
- f) To provide shelter from sun, wind and rain for public streets where most pedestrian activity occurs.
- g) To ensure buildings and places are accessible to people with a disability.
- h) To ensure that all signage and advertising achieves a very high level of design quality in terms of graphic design, its relationship to the architectural design of buildings and the character of streetscapes.
- i) To ensure buildings achieve a high level of environmental sustainability.

B. Controls

- 1) The location of preferred land uses within the Village Centre is to be generally consistent with the Figure E11.47. The nominated 'Opportunity Site' may be developed for commercial, educational uses and the like should the demand arise.
- 2) Building heights within the Village Centre are to be a minimum of 2 storeys, excluding the supermarket, and a maximum of 6 storeys.
- 3) The ground floor of all mixed-use buildings is to have a minimum floor to ceiling height of 3.6m in order to provide for flexibility of future use. Above ground level, minimum floor to ceiling heights are 3.3m for commercial office, 3.6m for active public uses, such as retail and restaurants, and 2.7m for residential.
- 4) Building setbacks / build-to lines within the Village Centre are to be consistent with Figure E11.48. Buildings are generally to be built to the street/square alignment. No upper level setbacks are required.

Figure E11.47 - Village Centre location of preferred land uses



LEGEND	
	High Density Residential
	Med Density Residential
	Low Density Residential (heritage)
	Open Space
	Retail
	Public Carpark
	Commercial
	Employment
	Opportunity Site

Figure E11.48 - Village Centre build to lines



5) Building frontage types within the Village Centre are to be generally consistent with Figures E11.49 and E11.50 and Table E11.10 below.

Table E11.10: Building frontage characteristics

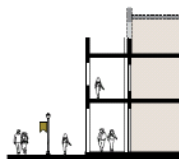
Frontage Type	Characteristics
Village Square colonnade	<ul style="list-style-type: none"> Continuous and consistent frontage treatment around the Village Square required with linkage to railway station entrance. May be in the form of a colonnade, posted verandah or similar structure. Minimum height of 8m to the top of the colonnade. Must extend over 2 storeys with a minimum clear depth of 3m and height of 3.6m (at ground level).
Awnings	<ul style="list-style-type: none"> Continuous and intermittent awnings required as per Figure E11.50. To be solid element (not glazed), at an angle of 90° to the wall (i.e. not angled upwards) May be cantilevered or suspended

Frontage Type	Characteristics
	<ul style="list-style-type: none"> • Dimensions: <ul style="list-style-type: none"> ▪ Min. 3m deep (to allow street trees etc.); ▪ Min. soffit height of 3.2m and max of 4m; ▪ Low profile, with slim vertical fascias or eaves (generally not to exceed 300m). • To be designed to match building facades and be complementary to those of adjoining buildings • Awnings to wrap around corners where a building is sited on a street corner • Vertical canvas drop blinds may be used along the outer edge of awnings. • Provide under awning or wall mounted lighting to facilitate night use and to improve public safety • One under-awning sign may be attached to the awning, at minimum intervals of 6m of the awning frontage • Temporary/pull down awnings permitted on intermittent awnings frontage.
Shelter to car park	<ul style="list-style-type: none"> • To provide continuous weather shelter between Village Square and the car park. • May be cantilevered or suspended with a min height of 3.2m. • Is to be well lit and publicly accessible at all times.

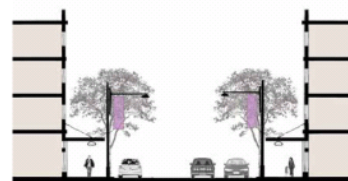
Figure E11.49 - Village Centre frontage types



Figure E11.50: - Examples of different frontage types within the Village Centre



Colonnade: This frontage type is appropriate for retail shopfronts around the Station Square. It can also provide access to commercial offices on levels one and two.



Awnings: The building is built to the frontage line. An awning attached to the building facade just underneath the first floor "transition" line, overlaps the footpath by 3m.

This frontage type is appropriate for conventional retail shopfronts, as well as showrooms or offices.



Posted Verandah and Posted Awning: The building is built to the frontage line. A posted verandah or posted awning is attached to the building facade and overlaps the footpath by 3m.

This frontage type is appropriate for conventional retail shopfronts, commercial buildings and mixed use.



Garden Forecourt: The majority of the building is setback 3m from the frontage line creating a garden forecourt for residential apartments. A front fence defines the front property boundary and has a maximum height of 1.2m with hedge behind.

- 6) Street frontages are required at ground level of buildings as shown at Figure E11.51 and Table E11.11 below.

Table E11.11: Street Frontage Requirements

Street Frontage Type	Characteristics
Active	<ul style="list-style-type: none"> Retail shop fronts and entries. Cafe / restaurants with direct access to the street.
Semi-active	<ul style="list-style-type: none"> Active street frontage uses Glazed entries to commercial and residential lobbies occupying less than 50% of the street frontage, to a maximum of 12m frontage. Active office uses, such as reception, if visible from the street. Public building if accompanied by an entry.
Street address	<ul style="list-style-type: none"> Active and semi-active street frontage uses Residential entries, lobbies, and habitable rooms with clear glazing to the street not more than 1.2m above street level, and does not include car parking areas

Figure E11.51 - Village Centre active frontages plan



- 7) Main building entry points should be clearly visible from primary street frontages and enhanced as appropriate with awnings, building signage or high quality architectural features that improve clarity of building address and contribute to visitor and occupant amenity.
- 8) Mixed use buildings within the Village Centre are to:
 - a) provide direct 'front door' access from ground floor residential units,
 - b) provide clearly separate and distinguishable commercial and residential entries and vertical circulation, and
 - c) provide multiple entrances for large developments including an entrance on each street frontage.
- 9) To facilitate the future conversion of ground floor residential uses to non-residential uses, the s88B instrument is to include a provision stating that the body corporate is not to unreasonably restrict or limit the ability for such a conversion to occur.
- 10) The design and provision of facilities for persons with a disability including car parking must comply with Australian Standard AS 1428 Parts 1 and 2 (or as amended) and the *Commonwealth Disability Discrimination Act 1992* (as amended). A report from an accredited access consultant is to be submitted with a development application (where relevant), indicating the proposal's compliance.
- 11) The solid to void ratio is to be generally 60/40 for above ground levels. External materials and finishes:
 - a) should be constructed of high quality and durable materials and finishes with 'self-cleaning' attributes (e.g. face and rendered brickwork, stone, concrete and glass);
 - b) consider the views/appearance from the commuter car park and the railway line;
 - c) maximise glazing for retail uses at ground level;
 - d) avoid large expanses of blank walls; and
 - e) are not to include highly reflective finishes and curtain wall glazing above ground floor level.
- 12) The design of roof plant rooms and lift overruns is to be integrated into the overall architecture of the building, and in residential buildings may be screened by roof pergolas.
- 13) As part of the first major retail/commercial development within the Village Centre, a signage strategy is to be prepared and submitted for approval and is to:
 - a) identify the preferred locations and quantum of all building identification and advertising signage,
 - b) include a palette of preferred materials, signage types and graphic style,
 - c) outline proposed illumination requirements so as to consider its impact on future, nearby residential uses,
 - d) promote a high quality, co-ordinated approach to signage within the Village Centre and minimise visual clutter, and
 - e) include details of any way finding signage.

Proposed signage within future development is to be consistent with the approved signage strategy.

- 14) Non-residential developments including mixed-use developments with a construction cost of \$1 million or more are to demonstrate a commitment to achieving no less than 4

stars under Green Star and 5 stars under the Australian Building Greenhouse Rating system.

- 15) All dwellings, including those dwellings in a mixed-use building and serviced apartments which are intended to be or are capable of being strata titled, are to demonstrate compliance with the State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004.
- 16) For commercial buildings that will be accommodating 'general office areas', the target internal noise level is to be 40 dB(A) LAeq.

11.8.4.2 Access, Parking and Servicing

A. Objectives

- a) To provide an appropriate level of on-site parking consistent with the principles of transit oriented development.
- b) To support the complementary use and benefit of public transport and non-motorised modes of transport such as bicycles and walking.
- c) To provide adequate space for parking and manoeuvring of vehicles (including service vehicles and bicycles).
- d) To reduce the impact of vehicular access on the public domain.

B. Controls

- 1) The parking rates provided in this Section override the parking rates outlined in the Transport, Access and Parking Section of this DCP.
- 2) Maximum parking rates are to be in accordance with Table E11.12. The preferred location of and access to car parking within the Village Centre is shown at Figure E11.52.

Table E11.12: Parking Rates

Development Type	Maximum Car Parking Rate
Commercial / Retail	1 space per 50m ² GFA*
Supermarket	1 space per 26m ² GFA
Residential <ul style="list-style-type: none"> • Studio • 1 – 2 bedrooms • 3 + bedrooms • Visitors • Car wash bay 	<ul style="list-style-type: none"> • 0.5 spaces per dwelling • 1 space per dwelling • 2 spaces per dwelling • On-Street only • 1 space for car washing for every 50 units up to a maximum of 4 spaces per building.
Other uses	In accordance with the Transport, Access and Parking Section of this DCP.

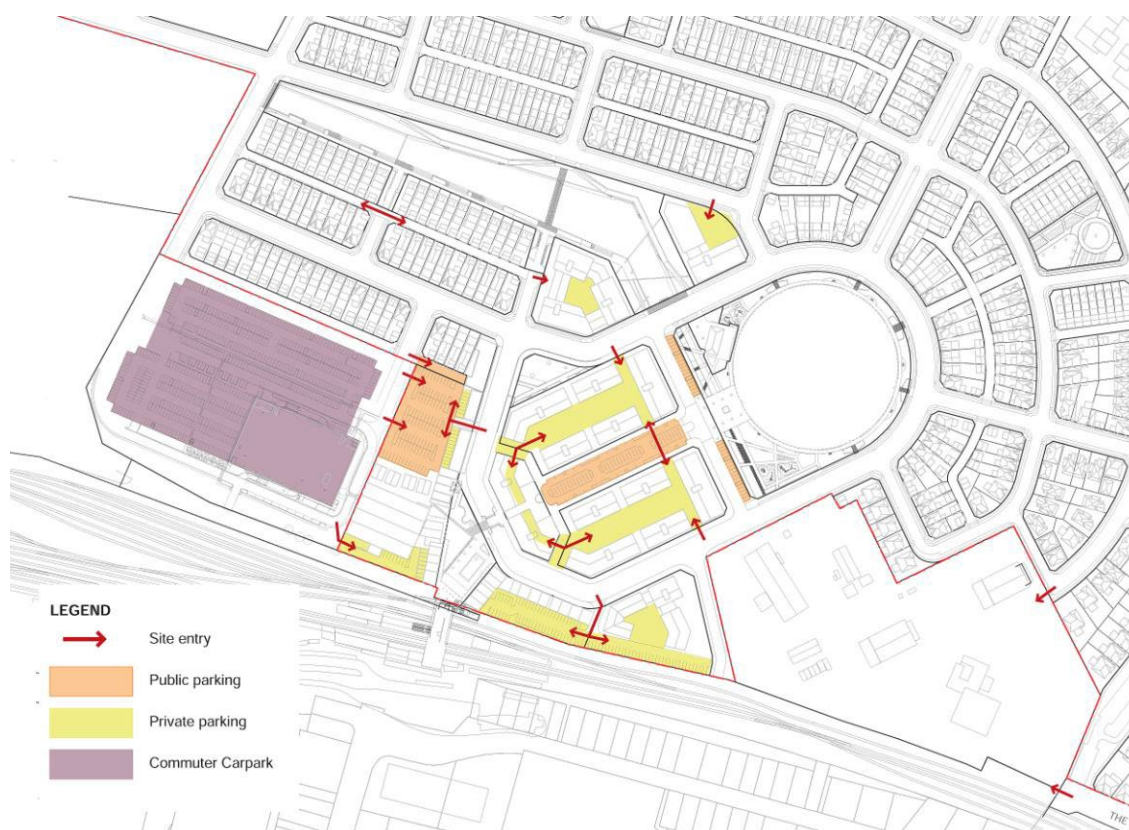
** A minimum of 1space per 75m² GFA is required for all commercial / retail uses*

- 3) Accessible car spaces should be in accordance with the Access to Premises Standards, Building Code of Australia and AS2890.

Bicycle parking shall be provided in accordance with the Transport, Access and Parking Section of this DCP.

- 4) Where above ground parking is proposed, the location of the parking area must:
- a) be located on the side or rear of the site, and not be visible from the street and street frontage;
 - b) be landscaped or screened so that cars parked in the parking area are not visible from adjoining buildings or the street/street frontage; and
 - c) allow safe and direct access to the building's entry points.
- 5) Where possible, natural ventilation is to be provided to underground parking areas with ventilation grilles and structures that are:
- a) integrated into the overall façade and landscape design of the development,
 - b) located away from the primary street facade, and
 - c) oriented away from windows of habitable rooms and private open space areas.
- 6) Car parking above ground level is to have a minimum floor to ceiling height of 2.8m so it may be adapted to another use in the future.
- 7) All parking provided on site is to meet AS2890 and where, appropriate AS1428.

Figure E11.52 - Village Centre preferred location of car parking



11.8.5 Thornton Hall

11.8.5.1 Built Form Controls

A. Objectives

- a) To conserve the heritage significance of Thornton Hall including its setting and its relationship with its surroundings.
- b) To provide an ongoing use that is appropriate for the heritage significance of the building.
- c) To encourage removal of inappropriate alterations and additions and the reconstruction of significant missing elements of the building.

B. Controls

- 1) Any alteration and additions to Thornton Hall is to be consistent with the following principles:
 - a) retain and conserve significant building fabric,
 - b) remove intrusive additions, including the verandah enclosures and brick porch,
 - c) reconstruct verandahs based on the evidence provided in early photographs. Consideration should be given to interpreting the balcony/parapet structure that was accessed via the roof,
 - d) external painting of the original section of Thornton Hall should be based on colours that were used during the last quarter of the nineteenth century,
 - e) retain significant internal spaces and significant internal fabric. This should include 1930s fireplaces, ceilings, layout of the three main rooms,
 - f) there should be no roof additions such as dormers,
 - g) additions to Thornton Hall should be restricted to one storey in height and should be located at the rear of the building, and
 - h) materials for any additions should be sympathetic to Thornton Hall but do not need to be the same as those used in Thornton Hall. A high standard of contemporary design should be encouraged for the additions.
- 2) New development is to maintain an appropriate curtilage around Thornton Hall and be consistent with the following principles and Figure E11.53 and E11.54.
 - a) maintain screening provided by existing trees. Some thinning of trees may assist in reinforcing the view corridor between Thornton hall and the rest of the site,
 - b) any garage should be located to the rear of Thornton Hall, and
 - c) any other outbuildings or structures such as a swimming pool should be located to the rear of Thornton Hall.
- 3) Vehicular access should reflect the original access to Thornton Hall. Reconstruct the original driveway and turning circle at the front of the house. Retain the historic hoop pine as the driveway entry marker at The Crescent.
- 4) Any new landscape design should enhance the setting of Thornton Hall and reinforce view corridors. Planting consistent with Thornton Hall's later nineteenth century date of construction should be considered for the grounds at the front of the house.
- 5) The existing trees along the existing entry road into Thornton Hall are to be retained and protected.

- 6) Fencing should be unobtrusive in character and simple in design. It is preferable to use timber rather than brick or stone. Hedging may be an acceptable alternative to a more traditional fence form.
- 7) Rear setback controls for all allotments that back onto the existing residential allotments fronting Lemongrove Road are provided at Section 11.8.3.3 Building Envelopes, control (11).

Figure E11.53 - Thornton Hall site principles

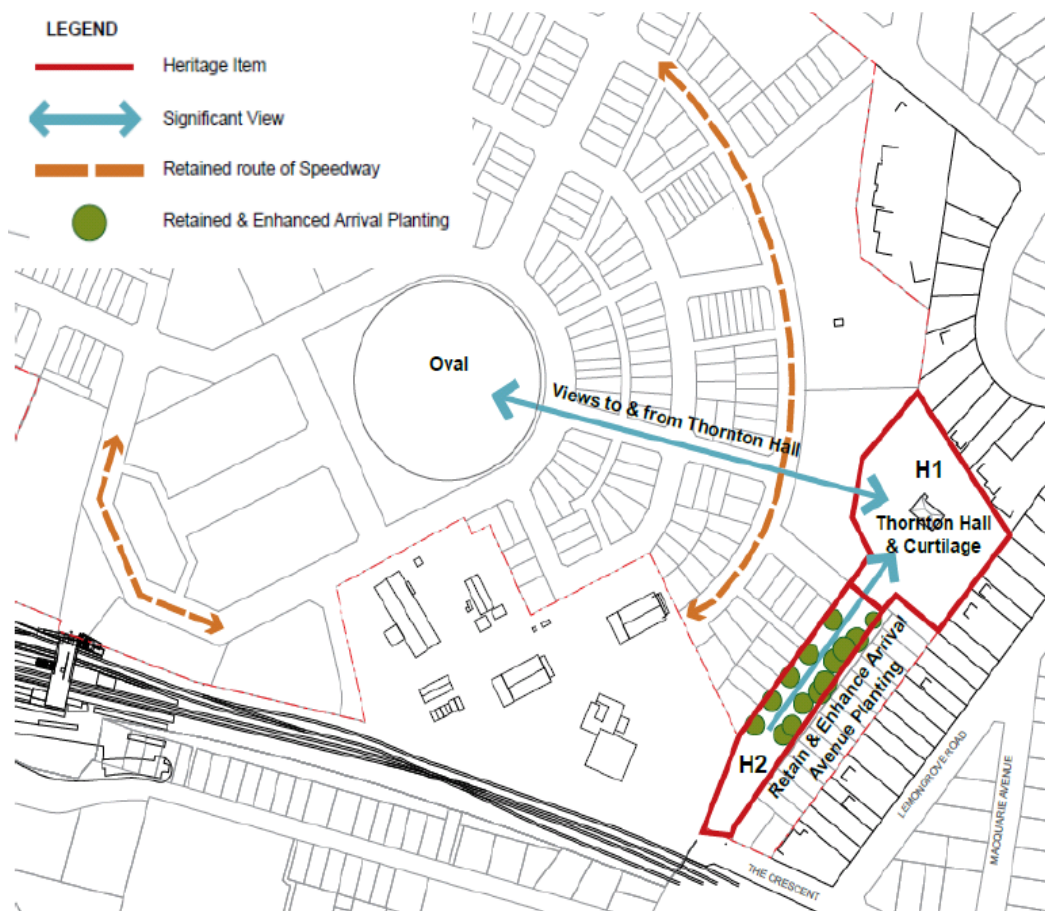


Figure E11.54: Thornton Hall Site Principles (aerial view)



11.8.6 Industrial Development

11.8.6.1 Built Form Controls

A. Objectives

- a) To minimise the impact of industrial development on adjacent residential uses, in terms of solar access, noise and odour.
- b) To ensure that industrial development can integrate with adjoining residential development and contribute to a visually cohesive urban environment.
- c) To encourage a high standard of architectural design, utilising quality materials and finishes appropriate for the locality.
- d) To enhance the visual quality of industrial development through appropriate setbacks, building and landscape design, particularly when viewed from public areas and residential areas.

B. Controls

- 1) The minimum lot size (Torrens Title) is 2,000m².
- 2) The maximum building height is 12m (1 - 2 storeys). Notwithstanding this, a maximum building height of 4m (1storey) applies within 8m from an adjoining residential boundary.
- 3) Building setbacks are as follows:

Table E11.13: Building Setback Requirements

Location	Minimum Setback
To Coreen Avenue (E1, E2)	6m
To western access road (E3)	6m
To adjacent industrial uses	0m
To adjacent residential uses	1m
To Combewood House property boundary	30m

- 4) Prominent elevations, such as those with a frontage to the street or public open space (OS5) are to:
 - a) be finished in high quality materials that are durable, low maintenance and non-reflective,
 - b) be activated through the use of glazing, office administration areas, building entries and the like (large, blank wall surfaces is not permitted), and
 - c) provide screening for any plant and mechanical equipment.
- 5) Elevations that are adjacent to a residential boundary are to be of solid in construction with minimal openings so as to minimise noise emissions.
- 6) Consideration should be given to the compatibility of the location and design of the car parking, storage loading areas to adjoining residential properties.
- 7) Boundary fencing (adjacent to residential uses) shall be between 1.8m and 2m high and of a solid material such as timber, steel or masonry.

Appendix A – Example of Building Envelope Plan



Appendix B – Residential Design Palette

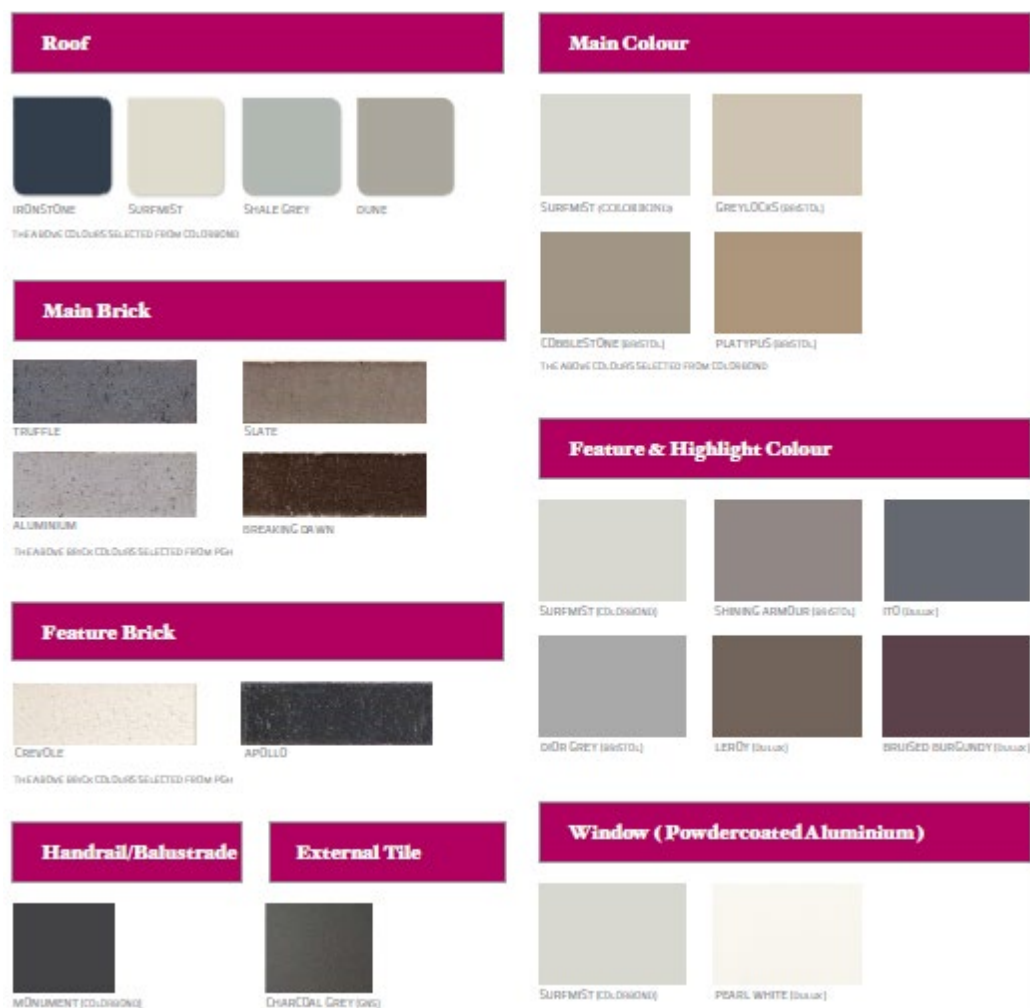


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Part C 164 Station Street, Penrith

1 Site analysis and local context

1.1 Land and purpose to which this section applies

This section applies to land located at 164 Station Street, Penrith as shown below (Figure 1), comprising 7.855Ha of land which has been identified to accommodate high density residential land uses consisting predominantly of high density housing/units. This purpose of this section is to facilitate the development of residential land uses in accordance with the envisaged future character of the site.

Figure 1: Land to which this section applies



1.2 Site Vision

The urban vision for the redevelopment of the former Panasonic industrial site is to create a new residential neighbourhood at the southern edge of Penrith City Centre which respects and acknowledges the significance of the area including the city's urban vibrancy adjacent to the Blue Mountains. The site will act as the southern gateway to the Penrith City Centre and the new residential neighbourhood is consistent with the Penrith Progression Structure Plan 2015.

1.3 Site Objectives

The development of the site is to meet the following site objectives:

- Create a benchmark in urban residential neighbourhood development for Penrith;
- Create a built form formulated around large areas of public and community open space which provided connectivity through the site;
- Provide well connected and accessible areas of open space which link the site to the surrounding context;
- Provide an inviting and secure site with limited vehicular movement above ground level to enhance pedestrianisation;
- Provide a diverse range of high density housing products which respond to growing household.

Figure 2: Landscape Masterplan



1.4 Local Context

The site location within proximity to the Penrith City Centre, Penrith Station and the areas broader context can be seen in terms of the city context and adjacent existing land uses. Refer to Figures 3 and 4:

Figure 3: Existing Land Use Analysis City Context

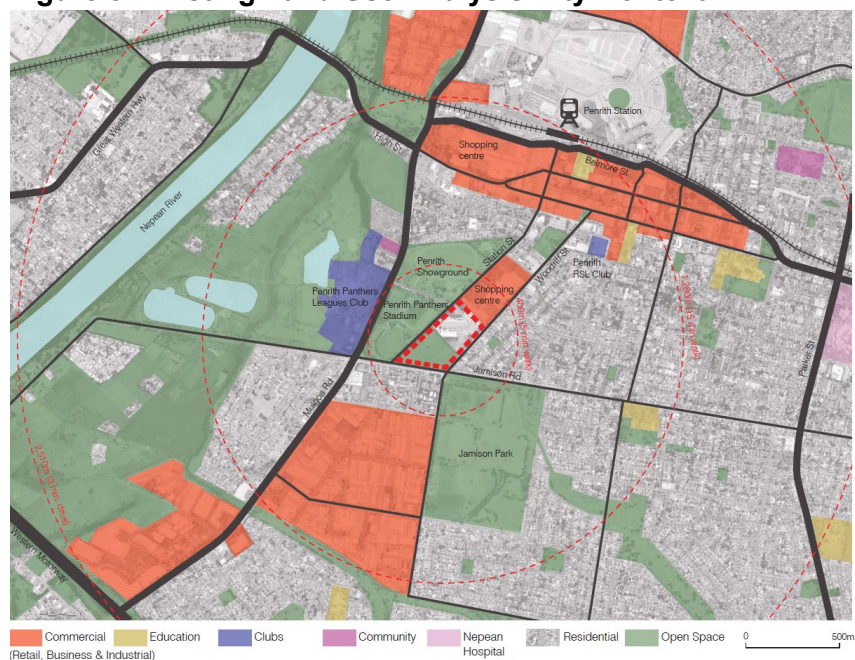


Figure 4: Site Context



2 Structure Plan

2.1 Urban Structure

The urban structure for the site is envisaged to be one centralised around the local and communal open space on the site, complimented by high quality public domain elements and architectural forms. In reference to architectural diversity and built form, the following objectives should be followed:

Objectives:

- To establish the urban image of the development by differences in public domain, built form and architectural diversity that enhance its prominent location within Penrith's city centre;
- To provide differences in streetscape treatment and urban character;
- To mark the pedestrian and vehicular entry points into the development off Station Street with formal urban strategies;
- To ensure a variety of pedestrian focused spatial experiences and safe social opportunities across the development.

Controls:

- To accommodate mixed uses and local retail off Station Street;
- To have a permeable pedestrian access structure with controlled vehicle circulation;
- To incorporate views and vistas across the site which accommodate Crime Prevention Through Environmental Design (CPTED) principles;
- Provide strong public landscape connections through the site in accordance with Figure 5;
- Encourage pedestrian access/movements through the site in accordance with Figure 6;
- Encourage through site views and vistas in accordance with Figure 7.

Figure 5: Urban Structure: Landscape and Open Space Connections

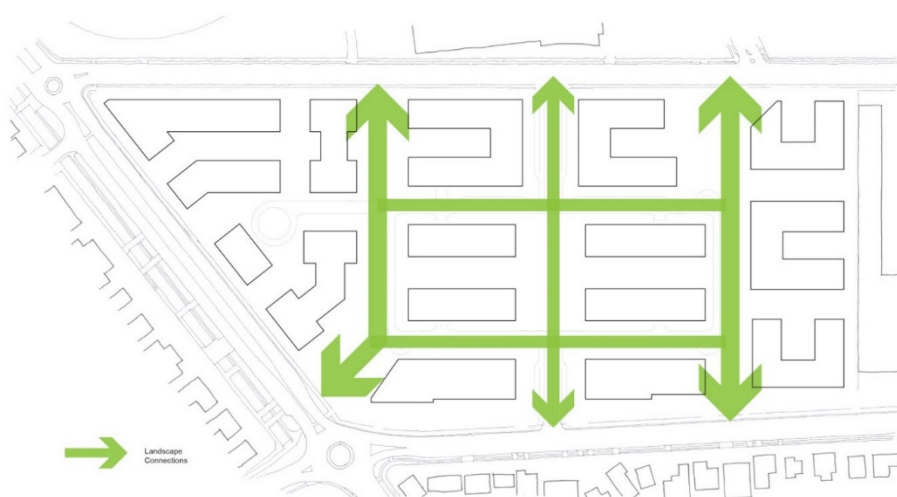


Figure 6: Urban Structure Access Patterns

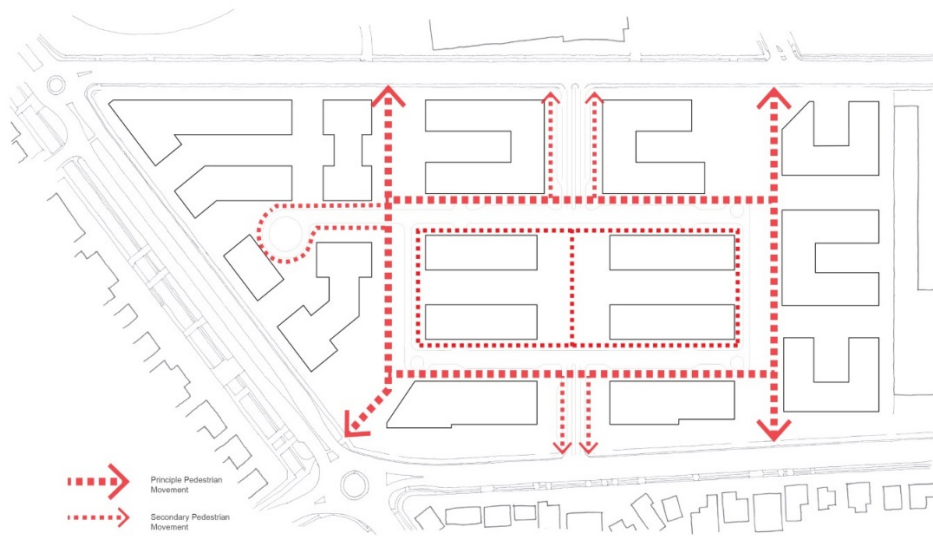
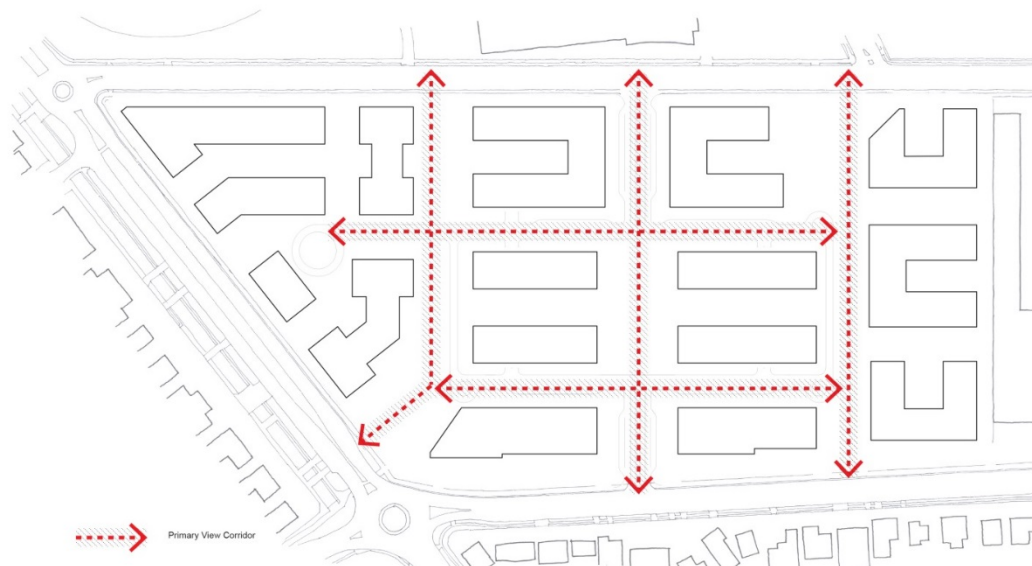


Figure 7: Urban Structure Views and Vistas



2.2 Landscape Structure

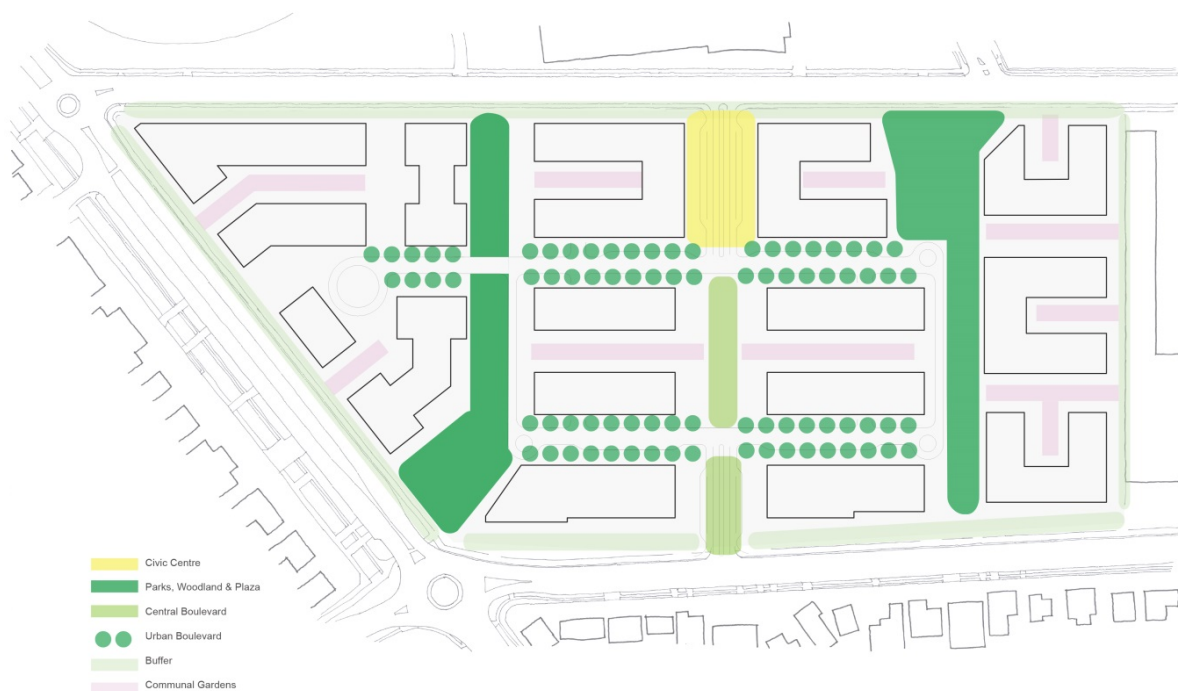
Objectives:

The public domain and landscape character within the development pursues the following qualities as detailed in Figure 8:

- A permeable, safe and pedestrian friendly landscape for community use;
- A formal entry boulevard with retail and community uses;
- Neighbourhood tree lined streets for enhanced urbanity and pedestrian friendly use;
- Picturesque linear parks with shared pedestrian and bicycle paths;
- Pedestrian links to Jamison Park to provide for passive recreation opportunities;
- A formal Station Street Plaza/Park;
- Landscaped buffers to adjacent developments;
- Opportunity for a diversity of Communal Gardens (private open space).

Public domain/landscape detail is the subject of a landscape design competition. The above principles will be maintained throughout the competition stages.

Figure 8: Indicative Landscape Character Zones



2.2.1 Landscape and Public Domain Allocation

A landscape design competition is required to be undertaken for public domain/public landscaping within the site. This competition is to run in accordance with the recommendations of the Government Architect and NSW State Governments Director Generals Design Excellence Guidelines. The Landscape Competition will relate to public open space (including the south finger parklands, the central boulevard garden and the north

finger parklands and plaza). An indicative landscape and public domain allocation plan is provided in Figure 9.

Controls

- A range of community uses within communal areas of open space are to be provided (including children's play areas and BBQ facilities);
- Private open space is to be clearly separated from public open space via level changes (see Figure 12)
- The following minimum area of public open space is to be provided on the site

Southern Finger and Linear Parkland	4,000 sqm
Central Boulevard	2,000 sqm
Northern Finger Linear Parkland with Station Street Plaza	4,000 sqm
Streetscape and pavement treatments	5,500 sqm
Boundary edges to Station Street, Jamison Road and Woodriff Street	1,000 sqm

Note detailed character of each of these landscaped areas will be undertaken by the successful competition entrant.

Figure 9: Landscape and Public Domain Allocation

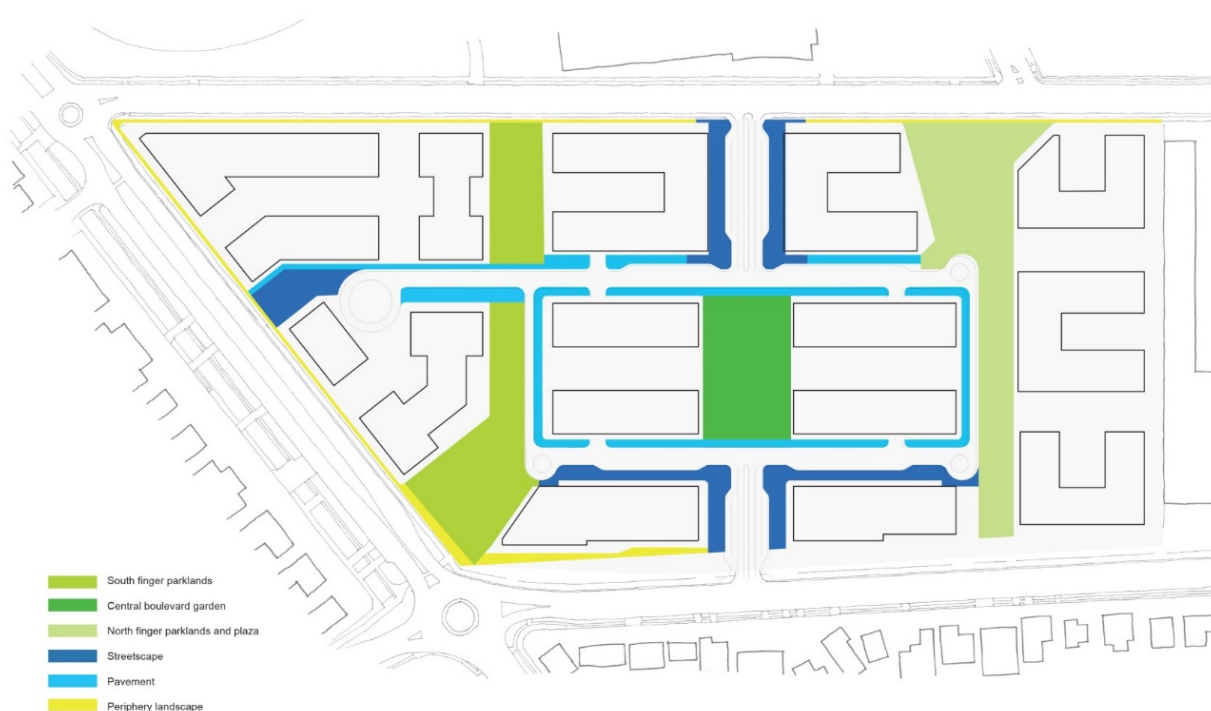


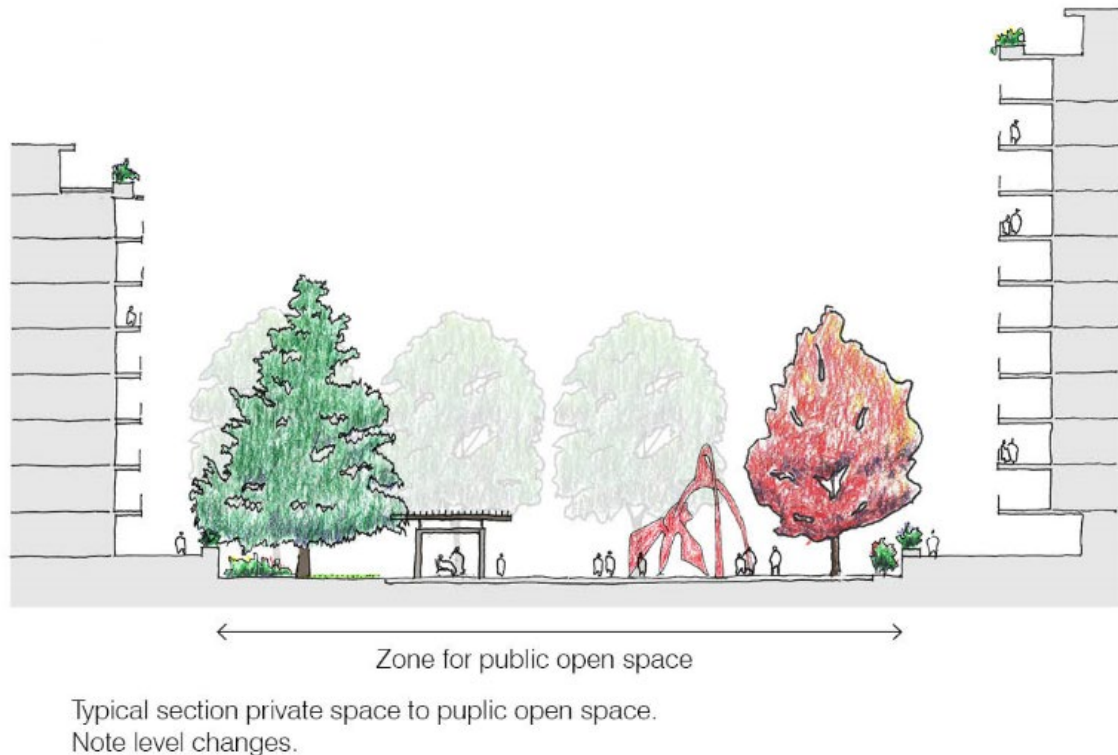


Figure 10: Illustrative Indicative Landscape Masterplan: Northern Finger Linear Park with Station Street Plaza. (Detailed Design subject to Landscape Competition)



Figure 11: Illustrative Indicative Landscape Masterplan: Southern Finger Linear Park. (Detailed Design subject to Landscape Competition)

Figure 12: Typical section plan demonstrating level transition from public v private open space



2.3 Character Areas and Urban Precincts

Built form is to spatially frame new streets and linear parks. Taller built form is located along Jamison Road to define the importance of the southern urban edge to Penrith's city centre. Additional height is to be located at the corner of Jamison and Station Street as urban markers and in association with the linear parks. Elsewhere, the modulation of built form will 'close off' and spatially frame internal vistas. This will accentuate the urban experience when moving between the various urban precincts.

The following section provides a breakdown of key precincts within the site. The broader urban form strategy can be seen below in *Figure 13*. Detailed design for buildings within these precincts will be provided at Development Application phase.

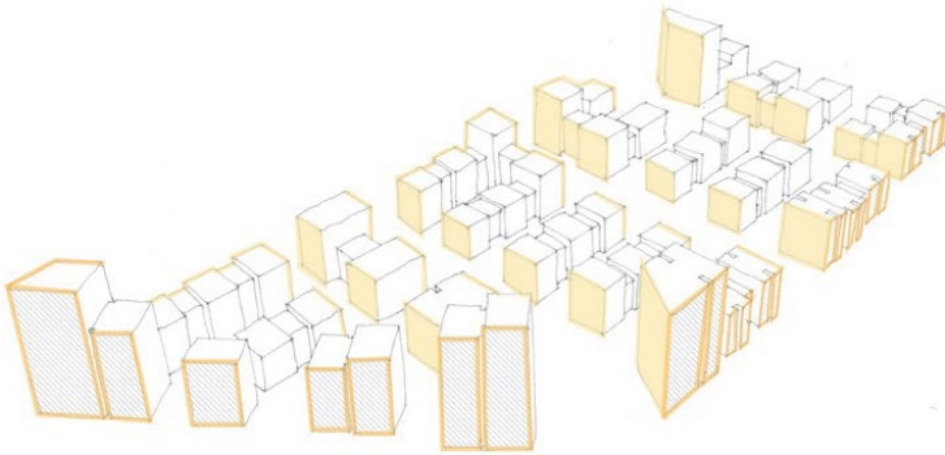
Objectives:

- Provide a sequence of urban precincts which provide design excellence in the provision of public domain landscaping and built form articulation;
- Provide urban precincts which respect the surrounding character of the site and its context within Penrith.

Controls:

- Development Applications are to follow precinct specific objectives and controls as they relate to different parts of the site in line with precincts identified in Figures 15 to 17.

Figure 13: Urban Form Strategy



2.3.1 Key Urban Building Form

The following corner sites are key urban building points within the site which will maintain the highest scale on the site.

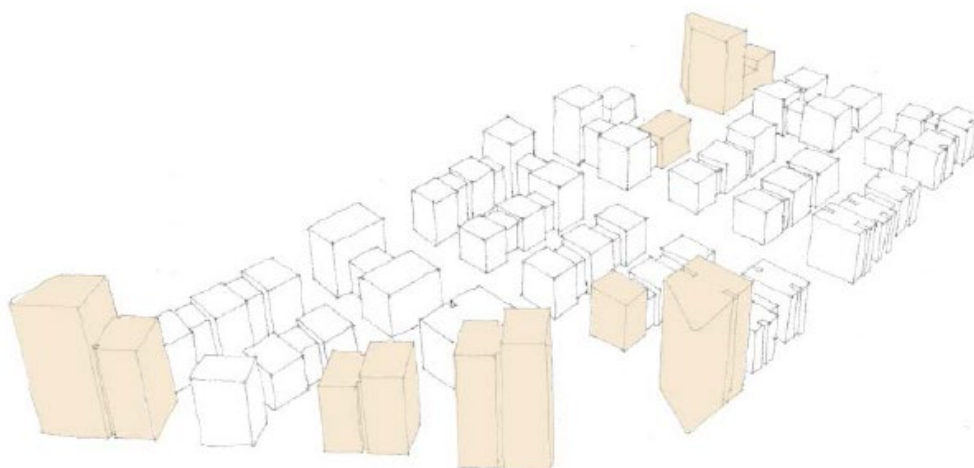
Objectives:

- Provide varied built forms across the site to improve vistas and visual presentation of buildings.

Controls:

- Pinnacle built forms are to be predominantly located on key building corners on the sites edges as identified in Figure 14.

Figure 14: Key Urban Forms



2.3.2 Urban Precinct: Station Street and Entry Boulevard

This section relates to the frontage of the site to Station Street and the entry boulevard into the site as identified in Figure 15.

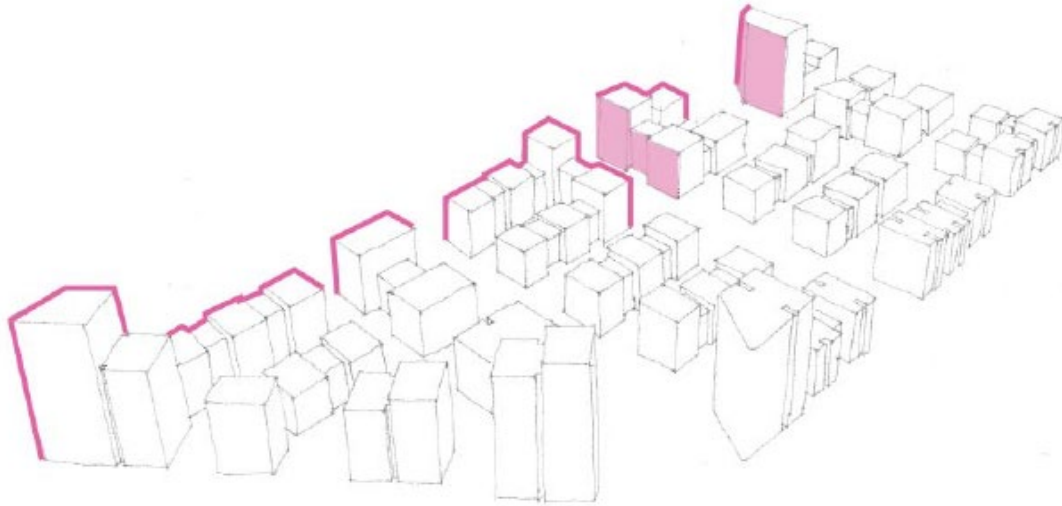
Objectives:

- Provide a constant scale and allow for balcony projections which are set back into the building block;
- Allow for articulated entry points which are appropriately scaled;
- Provide for pedestrian access via defined access ways within the building wall;
- Provide a distinction between ground floor uses and upper floors for residential uses in the area for the entry boulevard (ground level retail and residential above);
- Provide street awnings with a recessed ground floor where local retail uses are proposed.

Controls:

- Retail uses should be contained to the entry boulevard off Station Street and consist of localised retail uses which complement the predominantly high density residential use of the site (i.e. cafes, pharmacies, newsagencies, general practitioners);
- Provide footpath seating adjacent to the entry boulevard to the site off Station Street.

Figure 15: Station Street and Entry Boulevard Precinct



2.3.3 Urban Precinct: Jamison Road

This section relates to the Jamison Road site frontage, being the southern edge of Penrith's city centre, as identified in Figure 16.

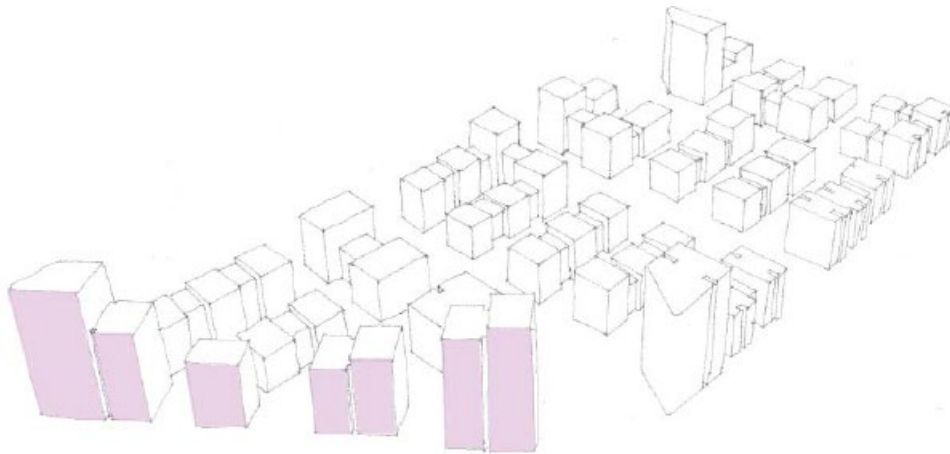
Objectives:

- Provide street corner articulation and urban markers;
- Reinforce the geometry of Jamison Road through a constant setback;
- Emphasise the vertical element of the buildings through modulation and articulation.

Controls:

- Built form to demonstrate design excellence and present as modulated and articulated to the street;
- Provide a distinction between ground floor apartments and upper floors.

Figure 16: Jamison Road Precinct



2.3.4 Urban Precinct: Woodruff and Park Edge

This section relates to the Woodruff Street frontage of the site and adjoining park edges as identified in Figure 17.

Objectives:

- Provide transitional built form;
- Encourage the retention of public verge open space adjoining Woodruff Street.

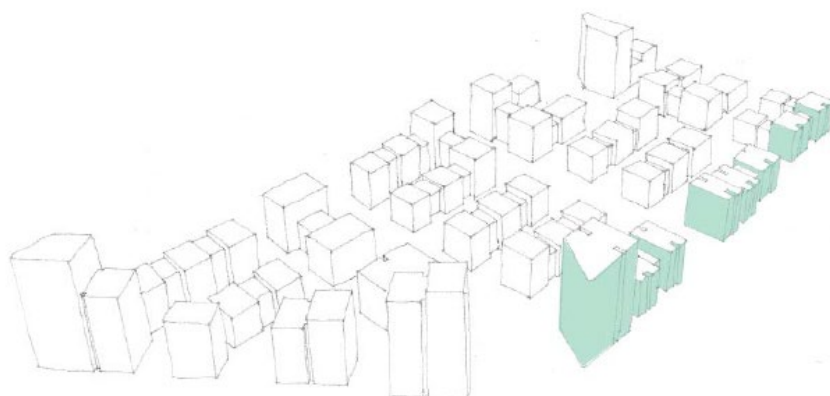
Woodruff Street Controls:

- Provide an appropriately scaled residential development to be set against a wide landscape verge;
- Create a varied building edge with a rhythm and modelling in the built form.

Park Edge Controls:

- Provide elevated ground floor units integrated with balcony terraces and screening to provide suitable privacy and interface with the public domain/landscaped verge fronting Woodruff Street.

Figure 17: Woodriff and Park Edge Precinct



2.4 Dwelling Density

Objectives:

- To provide a range of high density residential buildings to cater for housing demand and needs;
- To ensure that all residential development on the land is of a high quality and provides amenity;
- Appropriately cater for residential growth and housing demand within Penrith through delivery of dwelling yields illustrated.

Controls:

- The minimum residential dwelling densities should be achieved within each of the project stages;
- Higher density forms to be located on key corners of the site (urban markers). Lower scale form to be provided on eastern edge fronting Woodriff Street to respect the amenity of the adjoining low density residential uses;
- The following minimum apartment yields apply to the subject site at both a 2:1 compliant FSR and 2.5:1 FSR under the incentives clause

Dwelling Density	Current controls	Incentives clause
- Stage 1:	Minimum: 480	Minimum: 600
- Stage 2:	Minimum: 80	Minimum: 100
- Stage 3:	Minimum: 400	Minimum: 500
- Stage 4:	Minimum: 190	Minimum: 240
- Stage 5:	Minimum: 320	Minimum: 400
Minimum	1470 dwellings	1840 dwellings

2.5 Indicative Development Staging

Objectives:

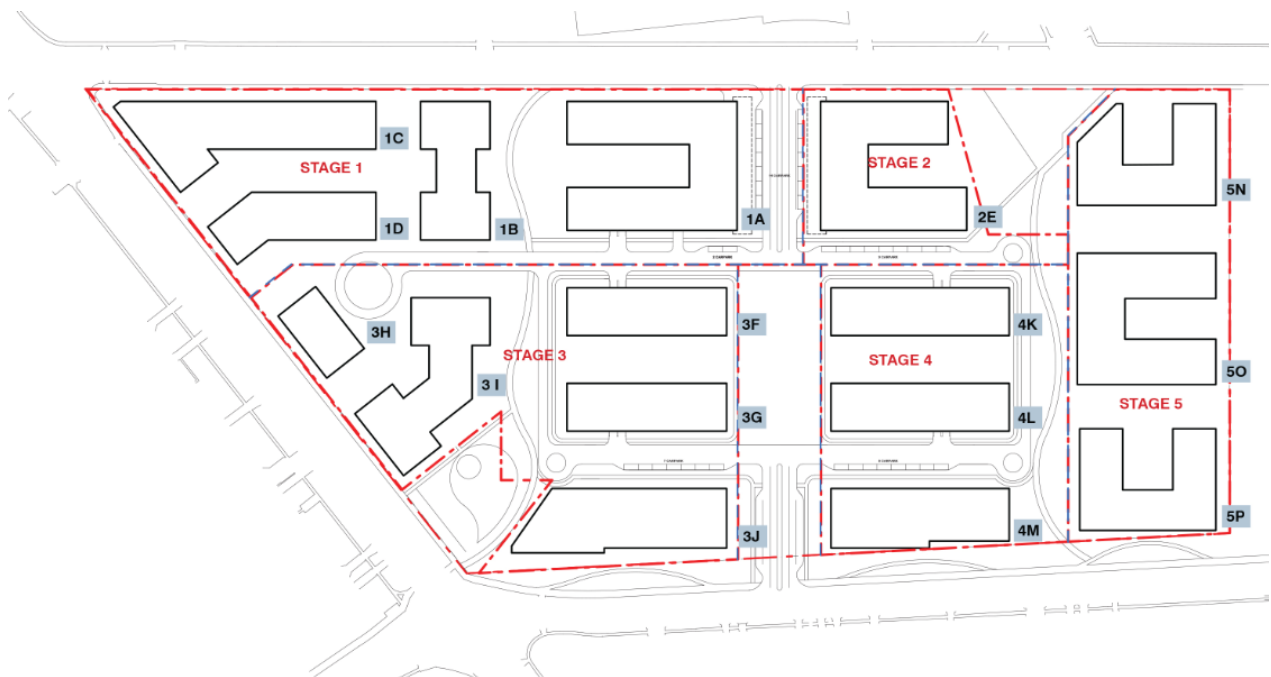
- Stage development to limit issues associated with construction and traffic;
- Stage construction promoting the use of both site frontages;
- Provide quality housing and amenities for each stage limiting associated construction issues.

Controls:

Undertake development in line with the indicative development staging plan identified in Figure 18:

- | | |
|-----------|--|
| - Stage 1 | Station Street and Entry Boulevard (South) Precinct |
| - Stage 2 | Station Street and Entry Boulevard (North) Precinct |
| - Stage 3 | Jamison Road, Woodriff Street and Central (South) Precinct |
| - Stage 4 | Woodriff Street and Central (North) Precinct |
| - Stage 5 | North Precinct |

Figure 18: Staging Plan



3 The Public Domain

3.1 Street Network and Design

Objectives

- Reduce vehicular movements at grade to maximise the presence and permeability of the ground level public domain and open space which connects the site to the surrounding context;
- Encourage primary vehicular movements to basements.

Controls

- Section 10.4 of the Penrith DCP 2014 applies in regard to road configuration and road hierarchy requirements

3.2 Pedestrian and Cyclist Networks

Pedestrian and cyclist movements should be incorporated into any design proposed on the site.

Objectives

- The public domain of the streetscape is to define the urban character of the development as a pedestrian friendly neighbourhood precinct;
- To ensure that the streets are safe for pedestrian and cyclist movements incorporating Crime Prevention Through Environmental Design principles;
- The site is to become a focus for community activity;
- Encourage a shared use path along the Station Street frontage;
- The pedestrian and cyclist paths are to be integrated within the existing and proposed open space networks

Controls:

- Pedestrian and cyclists paths are to be provided within the public domain and public open space areas providing connectivity between the site;
- Safe public thoroughfares are to be provided which connect the public domain to residential buildings and adjoining road networks.

3.3 Public Open Space and Landscape Network

The public open spaces are to set a high standard in urban design quality. These spaces are to allow passive and active recreation uses, accommodate safe pedestrian circulation during the day and at night, adopt water sensitive principles and tell a story about the richness of living in a residential neighbourhood within Penrith's city centre. The detailed design of public open spaces across the site will be the subject of a landscape design competition.

Objectives:

- To provide a variety of high quality public domain and public areas of open space within the street including quality pavement, tree lined streets and well delivered pocket parks;
- To provide high quality parkland spaces;
- To provide a diversity of open space that facilitates pedestrian linkages across the site;
- To provide superior quality landscaping to the site.

Controls:

- A minimum of 10,000 square metres of land is to be allocated to the provision of public open space (excluding streetscape improvements). Delivery of landscaping and building construction to be carried out simultaneously in accordance with the indicative staging plan in Figure 18;
- Provide comprehensive public and private landscaping in accordance with the indicative landscape plan provided in Figure 19;
- Creation of a linear landscape corridor through the central area;
- Create new public domain areas and public open spaces to frame key site entry areas and encourage pedestrian movements throughout the site
- Public art will be provided in key locations throughout the site.

Figure 19: Illustrative Landscape Masterplan



3.4 Above Ground Basements

Objectives:

- Improve basement circulation throughout the site

Controls:

- Above ground basements less than 1m above natural ground level can be provided on site where appropriate to assist natural ventilation to the basement;
- Basement openings above ground are to be adequately screened through building edge landscaping which separates the basement opening from the public domain and residential balconies as indicated in Figure 20.

Figure 20: Public Domain and Basement Interface



4 Residential Development

4.1 Key Design Principles

Site Design Objectives

- Provide good east-west and north-south connectivity with new public streets that are clearly integrated with the existing street network;
- Locate non-residential uses towards the northern end of the site where they will be in closer proximity to the city centre;
- Emphasise the significance of the site as the southern gateway to the city centre through the built form;
- Provide high quality public domain interface with existing streets surrounding the site;
- Consider interface with heritage conservation area on the eastern side of Woodriff Street.

Built Form Objectives

Provide a variety of building heights throughout the site which:

- Result in well-defined and visually interesting built form;
- Reflect the gateway treatment to the corner of Station Street and Jamison Road with opportunities for increased building heights;
- Provide appropriate transition to surrounding land uses which is sensitive to amenity and visual impact of surrounding or nearby development; and
- Taller buildings to be located and orientated to minimise the shadow impact on future buildings within the site and to avoid adverse impacts on the surrounding uses.

4.2 Building Height, Massing and Siting

Building height, massing and siting is to respect the surrounding urban context, public domain and landscaping provided on the site.

Objectives

- Where applicable, buildings should incorporate varying scales to improve articulation and modulation in addition to street presentation and architectural diversity. This includes varied heights and transition from low to medium to high rise buildings within specific precincts.

Controls

A range of building heights will be provided as indicated in *Figure 21*.

- **Station Street:** Predominantly medium building heights street edge alignment with higher building heights on key corners (Station Street and Jamison Road);
- **Jamison Road:** Key urban markers incorporating medium to high building heights;
- **Woodriff Street:** Predominantly low building heights appropriately setback from the road via the existing road reserve. High building heights will be on the corner of Woodriff Street and Jamison Road ;
- **Entry Boulevard:** Higher buildings on street edges with low to medium building heights at the connector road interface;

- **Connector Road/Park Precinct:** Predominantly low to medium building heights to maintain solar access to key areas of public open space.

Note: The building heights are subject to consistency with incentives provisions under the any Penrith LEP 2010. This includes Floor Space Ratio, Height of Building and any site specific or public-benefit based incentives.

The number of storeys indicated below are indicative only and will be subject to a Design Jury process.

Figure 21: Indicative Building Heights



4.3 Building Setbacks

Building setbacks are required to maintain appropriate separation between buildings in accordance with the controls of the NSW Apartment Design Guidelines.

Controls:

- 1) The following setbacks should be provided as identified in Figure 22
 - Station Street Frontage: 5m from site boundary (minimum)
 - Woodriff Street Frontage: 5m from site boundary (minimum)
 - Jamison Road Frontage: 5m from site boundary (minimum)
 - Buildings fronting public open spaces, parks and internal streets (other than entry boulevards): 2.5 m (minimum)
 - Entry Boulevarde off Station Street: 2.5m (minimum)
 - Northern Boundary: 6m (minimum)
- 2) Other setbacks (side and rear) will be governed via the separation controls of the Apartment Design Guidelines as follows:

Up to four storeys (approximately 12m):

- 12m between habitable rooms/balconies
- 9m between habitable and non-habitable rooms
- 6m between non-habitable rooms

Five to eight storeys (approximately 25m):

- 18m between habitable rooms/balconies
- 12m between habitable and no-habitable rooms
- 9m between non-habitable rooms.

Nine storeys and above (over 25m):

- 24m between habitable rooms/balconies
- 18m between habitable and non-habitable rooms
- 12m between non-habitable rooms.

Figure 22: Built Form Frontages Setback Plan



4.4 Private Open Space

Private open space must be provided for residential units on the site for each building

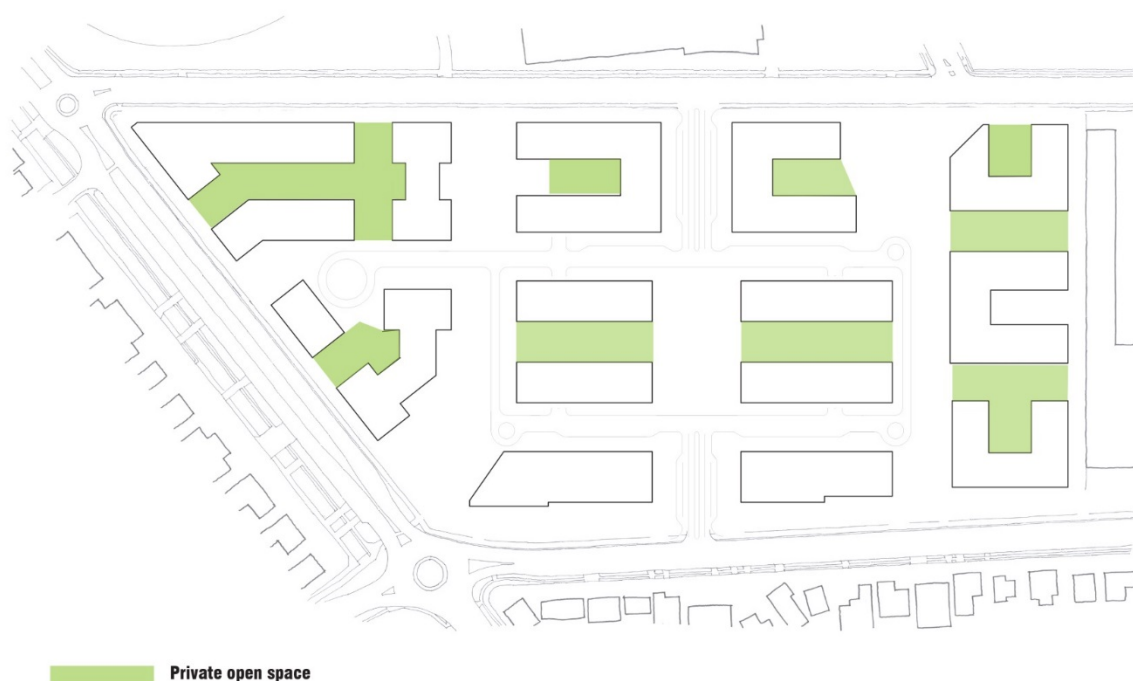
Objectives:

- Provide suitable private open space for future occupants of the site;
- Encourage the provision of rooftop private open space where possible.

Controls:

- Private open space to be provided within proximity of building envelopes within each site;
- Private open space is to be provided on the site via a combination of communal gardens, rooftop gardens and balconies;
- Private open space is to be provided in addition to the public open space within the site;
- Private open space is to be provided in accordance with SEPP 65 and Apartment Design Guideline provisions;
- Ground level public open space is to be provided in general accordance with Figure 23.

Figure 23: Indicative Ground Level Private/Communal Open Space Plan



4.5 Mixed Use Buildings

Objectives:

- Provide a number of mixed use buildings which provide localised retail and community uses;
- Provide localised services to meet the needs of future residents.

Controls:

- Provide a minimum of 1000 square metres of retail space surrounding the entry boulevard off Station Street as identified in Figure 24;
- Provide for other non-residential uses such as a child care centre within close proximity to the entry boulevard.

Figure 24: Indicative Ground Floor Retail and Childcare Centre Location



4.6 Housing Diversity

Objectives:

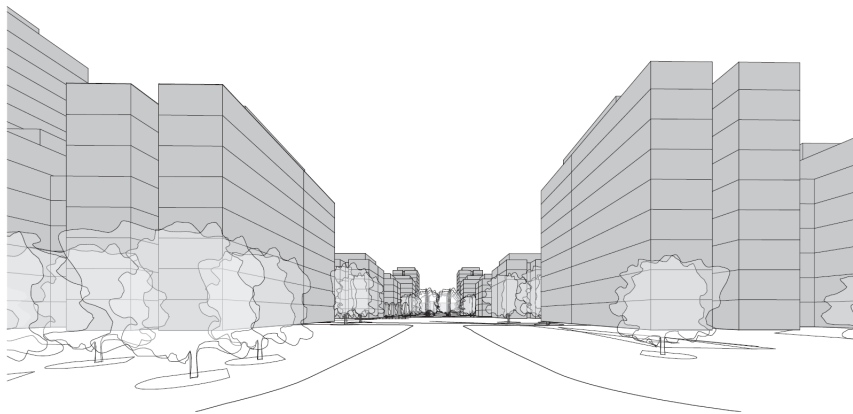
- A range of apartment sizes, types, forms and specifications are to be provided on the site.

Controls:

The following apartment mix will be achieved on the site:

- 1 Bedroom: 15-25%
- 2 Bedroom: 60-65%
- 3 Bedroom: 5 – 10%

Figure 25: Indicative Visualisation of Central Boulevard looking north-west demonstrating diversity of built form and through site thoroughfare



5 Environmental and Residential Amenity

5.1 Visual Privacy and Acoustic Amenity

Objectives:

- To ensure buildings are designed to achieve the highest possible levels of visual privacy, building quality and acoustic privacy;
- To protect visual privacy by reducing direct overlooking of habitable rooms and private open space (use provisions of blank walls for key buildings with public space interfaces); and
- To contain noise within dwellings and apartment buildings through appropriate design, use of building materials and minimise the intrusion of noise from outside sources.

Controls:

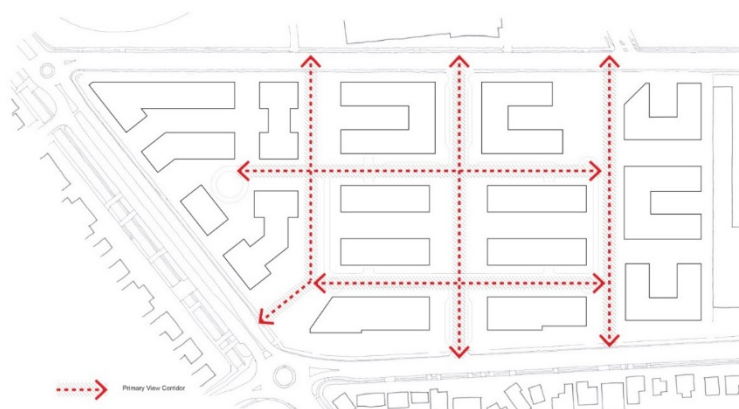
- Development Applications should address acoustic and visual amenity including both internal and external impacts;
- Buildings to comply with separation distances prescribed by SEPP 65 and the Apartment Design Guidelines.

5.2 View Corridors

Objectives:

- Maintain key view corridors through the site which provide enhanced views of areas of public open space and key thoroughfares;
- Enhance north south and east-west view corridors through the site to surrounding road networks as identified in Figure 26.
- Provide view corridors which support crime prevention through environmental design.

Figure 26: Primary View Corridors



6 Access, parking and servicing

6.1 Vehicle Access

Objectives:

- Minimise vehicular access across the site to improve pedestrian connections;
- Limit vehicular access and exits to the site to two primary intersections off Station Street and Woodriff Street;
- Limit service vehicular access around the site to areas identified in Figure 27.

Controls:

- Vehicular access and movements are to be predominantly undertaken within the basement;
- Above ground vehicle movements are to be predominantly used for basement access and service and emergency vehicles
- The vehicle movements identified in Figure 27 are indicative only and are subject to the outcomes of a traffic analysis and the satisfaction of Council.

6.2 Pedestrian Access and Mobility

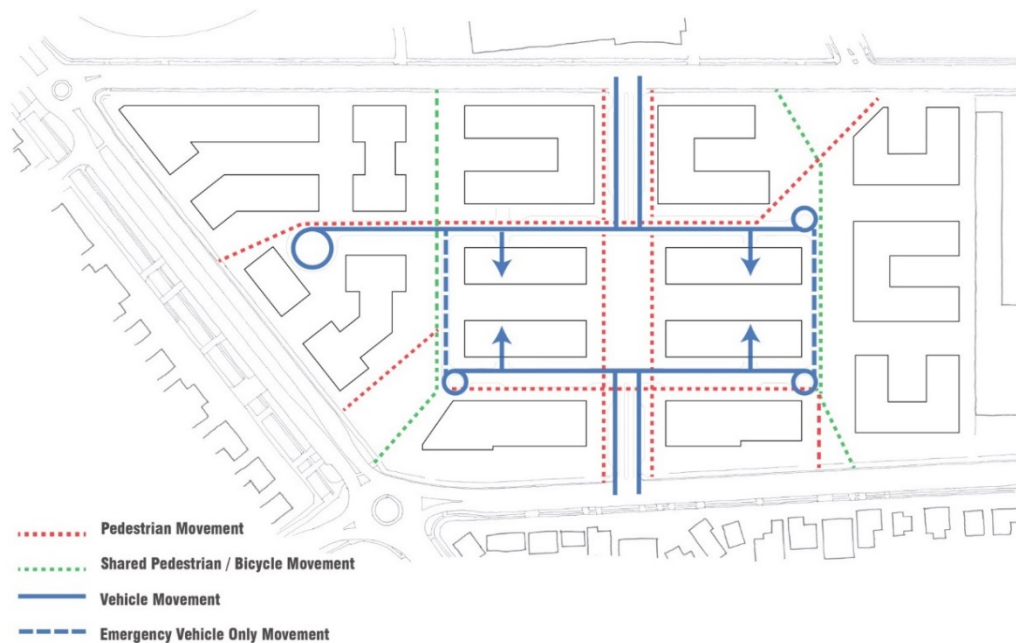
Objectives:

- Create large pockets of public open space within the site to encourage pedestrian use of open space;
- Provide pedestrian access paths through the entire site to promote the movement of people within and across the site;
- Provide pedestrian access from all of the sites key frontages (Station Street, Woodriff Street and Jamison Road) to allow the distribution of people throughout the site
- Encourage the provision of a shared user path along the Station Street frontage of the site.

Controls:

- Pedestrian and bicycle access paths to be provided connecting the site to adjoining streets consistent with the indicative pedestrian movements identified in Figure 27;
- Provide clear pathways from hardscape public domain through to public open space to encourage community use.

Figure 27: Vehicle Access and Pedestrian Movement Plan



6.3 On-Street Parking Options

This section relates to the provision of on street parking arrangements for visitors, residents, taxis, retail uses and the general public.

Objectives

- Where possible encourage the provision of on-street parking to support the community;
- Encourage the use of on-street loading bays adjacent localised retail uses to be used for loading facilities outside of peak hours;
- Encourage the provision of residential visitor parking to be provided at ground level across the site.
- Provide short term parking for the public wishing to use the public open space provided on site.

Controls:

- All parking to be provided on site;
- Parking is to be provided in accordance with the parking rates within Table C10.2 of the Penrith Development Control Plan 2014.

6.4 Parking requirements for Residential Apartments

Controls:

- Parking is to be provided in accordance with the parking rates within Table C10.2 of the Penrith Development Control Plan 2014;
- Resident parking is to be provided in basement levels.

6.5 Service Roads and Emergency Vehicles

The site will provide service and emergency vehicles road access via two east-west laneways off the primary t-intersection roads. These shared pathways will be made available for emergency and service vehicle access.

Controls:

- East-West road access for emergency and service vehicles is to be provided as identified in Figure 27 and 28.

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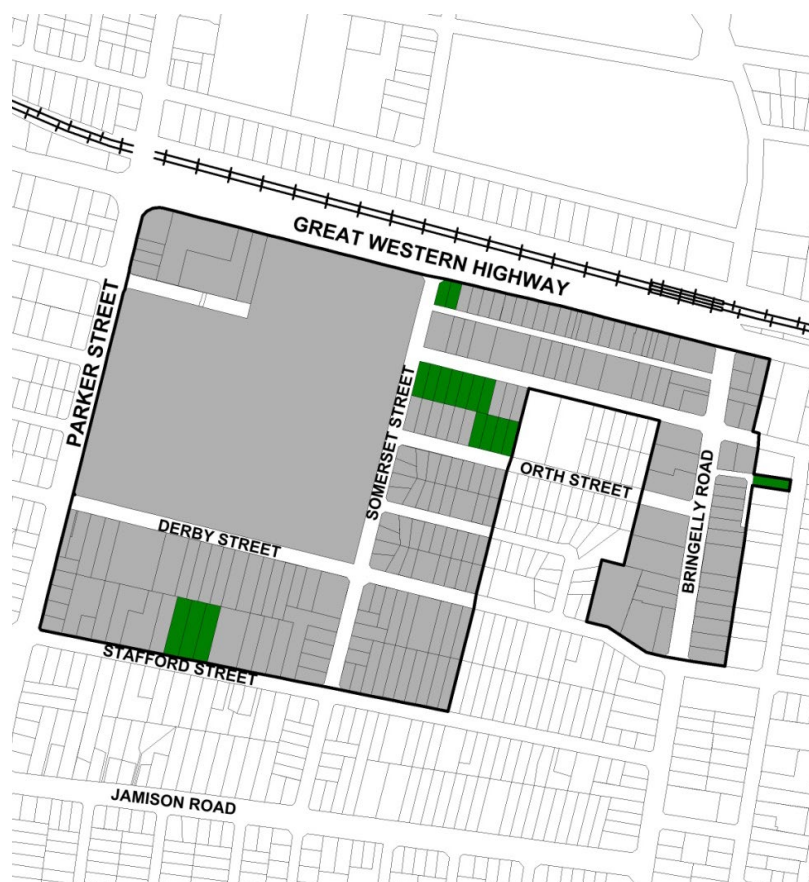
E12 Part A Hospital Precinct

12.1 Background

12.1.1 Area included within the Hospital Precinct

This section applies to development on land covered by the Hospital Precinct as shown in Figure E12.1. This section provides specific controls for the Hospital Precinct in addition to the general controls elsewhere in this DCP. In the event of any inconsistency between this section and the rest of the DCP, the requirements of this section prevail.

Figure E12.1 Land to which this section applies



12.1.2 Aims of the controls for the Hospital Precinct

The aim of the controls in this section of the DCP is to provide more detailed provisions for development in the Hospital Precinct that will:

- a) Contribute to the growth and character of Kingswood as a specialised medical precinct;
- b) Deliver a balanced social, economic and environmental outcome; and
- c) Protect and enhance the public domain.

12.1.3 General Objectives

- a) To facilitate the revitalisation of Kingswood by promoting redevelopment and urban sustainability;

- b) To promote high quality urban design, architectural excellence and environmental sustainability in the planning, development and management of the Hospital Precinct;
- c) To provide for mixed use, commercial and residential development within the Hospital Precinct which will provide high levels of amenity for occupants;
- d) To encourage medical related uses and research and development opportunities between the Hospital and the University of Western Sydney;
- e) To provide high levels of accessibility within the precinct, connecting significant activity nodes, public open space and surrounding residential areas;
- f) To encourage development within the Hospital Precinct that prioritises the public domain and creates an attractive and vibrant centre;
- g) To encourage integration of the residential and non-residential land uses and improved access to transport facilities;
- h) To achieve an attractive and sustainable precinct; and
- i) To ensure that development within the Hospital Precinct is consistent with the desired future character of each character area.

12.1.4 Character Areas

The Hospital Precinct is located in Kingswood, immediately east of, and in close proximity to, the Penrith City Centre. The location of the Nepean Hospital and the surrounding range of medical services and facilities within its boundaries make this area the primary medical centre for the Penrith LGA. The University of Western Sydney's Kingswood campus as well as TAFE NSW Nepean College is located within close proximity of the Precinct, with many of the services also catering to students of these tertiary institutions. The Hospital Precinct also enjoys good access by public transport, with the Kingswood Railway Station located north east of the Precinct.

The majority of the Hospital Precinct is zoned B4 Mixed Use under Penrith LEP 2010, which provides for an innovative mix of commercial and medical related uses as well as higher density housing to service the needs of medical patients, staff and students.

There are three precincts identified in the Hospital Precinct (see Figure E12.2), all with their own distinct characteristics. Generally, these activity precincts acknowledge and reinforce existing patterns of use in the area and have been identified as having potential to contribute to the precinct's demands for growth in health and medical related uses and the related demands for key worker and student accommodation in an accessible location, with close proximity to the Nepean Hospital, the University of Western Sydney, local services and public transport.

The intended character of each of these precincts is identified below and will be used to inform and guide future development.

A. Commercial Mixed Use

This precinct includes the existing shopping strip located adjacent to the Great Western Highway, Wainwright Lane located to the south and the northern end of Bringelly Road.

The location of the existing retail strip adjacent to the Great Western Highway offers businesses high visibility as well as strong public transport linkages as a result of the proximity to the Kingswood Railway station. There are existing pedestrian linkages from the station to the Nepean Hospital which will be reinforced to ensure pedestrian safety and comfort. Additional linkages will be encouraged to provide a more direct route for pedestrians and cyclists.

Development in this area will be required to respond to potential impacts to amenity caused by the proximity to major transport corridors through building design, layout and materials. Mixed use developments will provide active ground floor uses and high quality building and public domain design outcomes to create a comfortable pedestrian environment that reduces the noise and traffic impacts. The ground floor tenancies will accommodate retail businesses. The lot orientation of this area may require applicants to demonstrate adequate solar access can be provided to the public domain. Consistent landscape treatment will be provided along the Great Western Highway.

Bringelly Road will provide the second tier of development opportunities south of the primary commercial and retail strip. The reduced building heights and generous pedestrian verges in this part of the precinct will allow for a more human scale streetscape that is supportive of active uses that encourage the community to gather and enjoy the public domain. High order landscaping elements will be incorporated on the Bringelly Road/ Northern Road intersection to create an embellished eastern gateway to the Hospital Precinct.

Bringelly Road is largely developed with medium density residential dwellings in the form of residential flats and two storey townhouses. There is opportunity for this area to adopt a higher density residential form along Rodgers Street and Bringelly Road.

The north western part of the Commercial Precinct offers three frontages to the Great Western Highway, Parker Street and Barber Avenue and is a major gateway site to the whole Hospital Precinct. Development within this part of the precinct will be encouraged to incorporate high quality architectural design standards and landscaping, fitting for its location as the gateway to the Hospital Precinct.

B. Medical Mixed Use

This precinct is adjacent to the Nepean Hospital and offers the most dynamic environment to further develop the Hospital Precinct into a specialised medical precinct. This precinct encourages development that would support the operation of the hospital, such as medical offices, pharmacies, short-term accommodation, convenience stores and other forms of retail that will meet the needs of visitors and people using the medical services offered within the precinct.

Medium to high density development will be developed in a similar nature to the existing institutional scale development present within the precinct. Building heights will be 4-6 storeys and will incorporate ground floor active uses with commercial and residential uses located above. The western vista will be a key consideration when designing development within this Precinct.

Development along Somerset and Derby Street is encouraged to take advantage of the potential for these streets to offer a high quality entrance to the Hospital Precinct, with continuous landscaped themes and high quality architectural design. A high quality public realm will be achieved by providing generous pedestrian zones and activating ground floor frontages.

Orth Street should be treated as a major connector between the hospital and the main area of local community space located on Bringelly Road to the east. This connection will accommodate pedestrians and cyclists with a generous, landscaped southern verge.

C. Residential Edge

Development within this precinct should ensure there are pedestrian and cycle linkages from Stafford Street to Derby Street. The existing open space pocket on Stafford Street offers potential to be connected through to Derby Street which would add another public space in close proximity to the Hospital.

Development in this precinct will step down in bulk and scale to provide a transition to the surrounding residential areas located south and east of the Hospital Precinct and will ensure that impacts in terms of visual amenity and overshadowing are minimised.

Figure E12.2 Character areas



12.2 Land use controls

12.2.1 Mixed use development controls

A. Background

Mixed use developments can provide a variety of uses and activities, to ensure that the Hospital Precinct outside the working day, adding vibrancy and life to the streets. Different uses within the same building are encouraged with retail and commercial activity at ground level, and residential uses, requiring privacy and noise mitigation, located above street level. Residential developments overlooking street life provide active visual surveillance and contribute to a sense of security within an area.

The development of mixed use buildings within the Hospital Precinct, with active uses at the street frontage, is a significant strategy designed to revitalise the precinct and encourage medical related uses.

B. Objectives

- a) To encourage a variety of mixed use developments in the Hospital Precinct;

- b) To encourage medical based uses and facilities to locate in close proximity of the hospital;
- c) To create additional jobs to support the hospital and local community;
- d) To provide increased density to allow hospital workers to live close to work;
- e) To create lively streets and public spaces night and day within the Hospital Precinct;
- f) To increase the diversity and range of shopping and recreational activities for workers, residents and visitors;
- g) To enhance public safety by increasing activity in the public domain outside business hours;
- h) To minimise potential conflicts and achieve compatibility between different uses;
- i) To ensure that the design of mixed use developments addresses residential amenity;
- j) To create legible safe access and circulation in mixed use developments;
- k) To ensure that mixed use developments address the public domain and the street; and
- l) To ensure an appropriate scale between new development and street width, local context, adjacent buildings and public domain.

C. Controls

- 1) Mixed use developments are to provide flexible floor areas and layouts to both the ground and first floor of buildings to accommodate a range of commercial uses.
- 2) Standard floor to ceiling heights apply for mixed-use developments in accordance with the Building Code of Australia and the Residential Flat Design Code. However, where an applicant is seeking to take advantage of the additional building height incentives prescribed by LEP 2010, the following floor to ceiling heights apply:

- a) 3.5m on the ground and first floor; and
- b) 2.7m on the upper floors

These floor to ceiling heights must be applied to the entire floor in order to be granted the height bonus.

To demonstrate that 2.7m floor to ceiling heights can be achieved (allowing for recessed lighting) a minimum floor to floor height of 3.1m is to be provided.

- 3) Where it is proposed to vary the height of building controls to take advantage of the height incentives, applicants are to consult Council early in the design process.
- 4) The commercial and residential activities of the building are to have separate service provision, such as loading docks, lobbies and lift access, defined parking areas, garbage storage and servicing.
- 5) Mixed use developments are to provide commercial frontage (retail/business/office premises) as a part of the development as shown in Figure E12.3 for the ground and first floors. Variation may be considered to this control in order to provide adaptable housing.
- 6) The ground floor of a mixed use development is to provide a minimum of 75% commercial frontage.
- 7) A minimum site width of 24m is required for any mixed use development.

- 8) Residential entries shall be clearly marked and provide direct access to the street. Vehicular access is to be from rear lanes, where practicable and possible. Pedestrian entrances are to address the main streets.
- 9) Commercial and residential uses should have clearly separate entries and vertical circulation.
- 10) Security access controls must be provided to all entrances into private areas, including car parks and internal courtyards.
- 11) Buildings are to provide an active ground floor setback zone, free of columns, balustrades and other visual barriers to the primary streetfront.
- 12) Blank building walls at ground level are to be avoided.

Figure E12.3 Ground and first floor commercial



12.3. Built form controls

A. Background

Building form and character refers to the individual elements of building design that collectively contribute to the character and appearance of the built environment. Penrith LEP 2010 includes provisions for land use, building heights, floor space ratio, heritage provisions and design excellence. The controls in this section of the DCP encourage buildings that provide high quality design, innovation and creativity.

B. Objectives

- a) To establish an appropriate scale, dimension, form and separation of buildings;
- b) To achieve active street frontages with good physical and visual connections between buildings and the street;
- c) To ensure there is consistency in the main street frontages of buildings by having a common alignment to reinforce the streetscape sense of enclosure;
- d) To provide for pedestrian comfort and protection from weather conditions;
- e) To define the public street to provide spaces that are clear in terms of public accessibility and safety, and are easy to maintain;
- f) To ensure building depth and bulk is appropriate to the environmental setting and landform;
- g) To achieve visual interest and a reduction in scale through building design and finishes;
- h) To achieve design excellence;
- i) To achieve a high quality public domain through innovative use of landscape and public domain upgrades
- j) To achieve a high level of amenity throughout the Hospital Precinct and a sustainable urban environment; and
- k) To ensure that buildings are responsive to the overall character of the Hospital Precinct.

12.3.1. Street alignment, building height and setbacks

A. Background

Well framed streets are an important characteristic of a town centre. Buildings within the Hospital Precinct should contribute to a strong definition of the street and public domain by providing an appropriate scale, proportion and sense of enclosure to streets that reflect the hierarchy of the street and the precinct's role as an important centre.

Building alignment and street setbacks establish the front building line. They help to create the proportions of the street reserve and the level of interaction of the building to the street. They can contribute to the public domain by enhancing streetscape character and continuity of street facades.

Street setbacks can also be used to enhance the building address and provide for landscape areas, entries to buildings and deep soil zones. Buildings align along the street with a common setback line to reinforce the urban character and improve pedestrian accessibility, amenity and activity at street level.

Street frontage heights refer to the height of the building at the street alignment including buildings with setbacks. Above the street setback height, upper levels of buildings should be setback further to maintain an appropriate scale for the area.

The built form for the Hospital Precinct should be expressed as mixed use developments comprising of commercial and retail on the lower floors with additional levels of dedicated residential set further back.

B. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Establish consistent streetscapes through control of the built form visible from the public domain;

- b) Provide street setbacks appropriate to building function and character;
- c) Establish the desired spatial proportions of the street and define the street edge;
- d) Provide for an appropriate transition in building heights from key public spaces;
- e) Locate active uses closer to pedestrian activity areas;
- f) Maximise solar access to the public domain;
- g) Ensure an appropriate level of amenity for building occupants in terms of daylight access, outlook, view sharing, ventilation, wind mitigation, and privacy;
- h) Achieve comfortable public domain environments for pedestrians in terms of scale, daylight access and wind mitigation as well as healthy environments for street trees; and
- i) Provide building separation for visual and acoustic privacy.

C. Controls

- 1) Street building alignments are to be provided as specified in Figure E12.4.
- 2) Minor projections into front building lines and setbacks for sun shading devices, entry awnings and cornices are permissible.
- 3) Building height will generally be restricted to a maximum podium height of 2-4 storeys addressing the main streets, with any additional storeys set back.
- 4) Developments located within the Residential Edge Precinct must step down in height and demonstrate that the development does not adversely impact on the adjoining residential area in terms of visual amenity or overshadowing.

Figure E12.4 Street setbacks



12.3.2. Building Depth and Bulk

A. Background

Controlling the size of upper levels of taller buildings allows for good internal amenity, access to natural light and ventilation, and reduces potential adverse effects that tall and bulky buildings may have on the public domain.

B. Objectives

- a) To provide viable and useable commercial floor space;
- b) To ensure access to light, ventilation and outlook and minimise the dependence on artificial light;
- c) To reduce the bulk of buildings by limiting depth;
- d) To reduce the extent of overshadowing on neighbouring properties; and
- e) To reduce the apparent bulk and scale of buildings by breaking up expanses of building wall with modulation of form.

C. Controls

- 1) Non-residential buildings greater than 12m in height are to have a maximum depth of 25m.
- 2) All points of an office floor should be no more than 10m from a source of daylight (e.g. window, atria or light wells).
- 3) Atria, light wells and courtyards are to be used to improve internal building amenity and achieve cross ventilation and/or stack effect ventilation.
- 4) Large unrelieved expanses of wall or building mass will not be supported and should be broken up by the use of suitable building articulation, fenestration or alternative architectural enhancements.

12.3.3. Boundary setbacks and building separation

A. Background

Setbacks define the spaces between buildings and the balance in a street between built form and landscape between the buildings. The setbacks between the buildings set the rhythm of the street and contribute to the character of the street (ie mixed use versus residential).

Separation in combination with setbacks contributes to amenity by creating privacy, and allowing ventilation, daylight access and view sharing. The degree of separation required for the side setback at the street will relate directly to the design of any apartment or commercial use facing that boundary. For example, if living areas and balconies have their primary orientation towards the side boundary then the separation distance will take precedence over the setback control.

Separation for mixed use development containing residential and commercial uses is to be in accordance with specified distances for each component use.

B. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Ensure an appropriate level of amenity for building occupants in terms of daylight access, outlook, view sharing, ventilation, wind mitigation and privacy; and

- b) Achieve usable and pleasant streets and public domain areas in terms of wind mitigation and daylight access.

C. Controls

- 1) The minimum side and rear building setbacks for non-residential uses are specified in Table E12.1.
- 2) If the specified setback distances cannot be achieved when an existing building is being refurbished or converted to another use, appropriate visual privacy levels are to be achieved through other means.
- 3) Minimum separation distances for buildings within a site and between adjoining sites for buildings are:

Up to four storeys (approximately 12m):

- 9m between habitable and non-habitable
- 6m between non-habitable

Five to eight storeys (approximately 25m)

- 12m between habitable and non-habitable
- 9m between non-habitable rooms

Table E12.1 Side and rear setback requirements

Building height and use	Minimum Side and Rear Setback
Non-residential uses:	
– up to 12m	0 m
– 12m to 24m	6 m

12.3.4. Site coverage and deep soil zones

A. Background

Limiting site coverage provides separation between buildings. This space may be public (accessible and useable by the general public), communal (shared by all occupants of a development) or private (for the exclusive use of a single dwelling or tenancy). Limiting site coverage improves amenity by providing daylight access, visual privacy and opportunities for recreation and social activities.

Deep soil zones are areas of natural ground retained within a development, uninhibited by artificial structures and with relatively natural soil profiles. Deep soil zones have important environmental benefits, including:

- a) Promoting healthy growth of large trees with large canopies;
- b) Protecting existing mature trees; and
- c) Allowing infiltration of rainwater to the water table and reduction of stormwater runoff.

B. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Provide an area on sites that enables soft landscaping and deep soil planting, permitting the retention and/or planting of trees that will grow to a large or medium size;
- b) Limit building bulk on a site and improve the amenity of developments, allowing for good daylight access, ventilation and improved visual privacy; and
- c) Provide passive and active recreational opportunities.

C. Controls

- 1) Open space must be provided equivalent to 25% of the total site area.
- 2) The maximum site cover and minimum deep soil zone for development is specified in Table E12.2:

Table E12.2 Maximum site cover and minimum deep soil zone

Character Area	Maximum Site Cover	Minimum Deep Soil Zone (% of Site Area)
Commercial Mixed Use and Medical Mixed Use	75%	10%
Residential Edge	50%	15%

Note: Council may consider 100% site coverage on land within the Commercial Mixed Use character area along the Great Western Highway only.

- 3) The deep soil zone is to be provided in one continuous block. If multiple deep soil zones are provided, they must have a minimum dimension (in any direction) of 6m.
- 4) Where non-residential developments result in full site coverage and there is no capacity for water infiltration, planting on roof tops or over basement carport structures can be provided as a component of the mixed use development. In such cases, compensatory stormwater management measures must be integrated within the development to minimise stormwater runoff.
- 5) Where deep soil zones are provided, they must be associated with any existing mature trees as well as allowing for the planting of additional trees and landscape.
- 6) No structures, works or excavations that may restrict vegetation growth are permitted in deep soil zones (including, but not limited to, car parking, hard paving, patios, decks and drying areas).

12.3.5 Building exteriors

A. Background

A town's streetscape and public domain is defined by its buildings, streets and public places. The maintenance and improvement of the public domain is dependent on a consistent approach to the design of new development including the articulation and finish of building exteriors.

B. Objectives

The objectives of this section are to ensure that buildings in the Hospital Precinct:

- a) Contribute positively to the streetscape and public domain by means of high quality architecture and robust selection of materials and finishes;

- b) Provide richness of detail and architectural interest especially at visually prominent parts of buildings, such as lower levels and roof tops;
- c) Present appropriate design responses to nearby development that complement the streetscape;
- d) Clearly define the adjoining streets, street corners and public spaces and avoid ambiguous external spaces with poor pedestrian amenity and security;
- e) Maintain a pedestrian scale in the articulation and detailing of the lower levels of the building; and
- f) Contribute to a visually interesting skyline.

C. Controls

- 1) Adjoining buildings are to be considered when designing new buildings and extensions to existing buildings in terms of:
 - a) Appropriate alignment and street frontage heights;
 - b) Setbacks above street frontage heights;
 - c) Selection of appropriate materials and finishes;
 - d) Facade proportions including horizontal or vertical emphasis; and
 - e) Provision of enclosed corners at street intersections.
- 2) Balconies and terraces should be provided, particularly where buildings overlook parks and on low rise parts of buildings. Gardens on the top of setback areas of buildings and on roofs are encouraged.
- 3) Reliance on continuous balconies to create the main façade is not supported.
- 4) Building façades are to be articulated so that they address the street and add visual interest.
- 5) The design of the street and laneway facades should respond to the existing lot subdivision pattern in the vertical expression of the building.
- 6) External walls should be constructed of high quality and durable materials and finishes with 'self-cleaning' attributes, such as face brickwork, rendered brickwork, stone, concrete and glass. Use of painted render as the primary material is not encouraged.
- 7) To assist articulation and visual interest, large expanses of any single material are to be avoided.
- 8) Glazing for retail uses is to be maximised, but broken into sections to avoid large expanses of glass.
- 9) Highly reflective finishes and curtain wall glazing are not permitted above ground floor level.
- 10) A materials sample board and schedule are required to be submitted with applications for development over \$1 million or for that part of any development built to the street edge.
- 11) The design of roof plant rooms and lift overruns is to be integrated into the overall architecture of the building, and in residential buildings, may be screened by roof pergolas.

12.3.6 Landscape design

A. Background

Landscape design includes the planning, design, construction and maintenance of all utility, open space and garden areas. Water sensitive urban design principles are encouraged and should be applied as much as possible. Good landscaping is fundamental to the amenity and quality of outside space for residential flats.

Where streets vary in scale and character, trees and plantings should be used to enhance and create a consistent character to each street and place. The design of parks and open space areas should reflect the function of the place, its existing or potential character, and its place in the overall structure and hierarchy of the public domain. The design of these spaces should also contribute to providing a good amount of public amenity within the Hospital Precinct.

B. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Ensure that the use of potable water for landscaping irrigation is minimised;
- b) Ensure landscaping is integrated into the design of development;
- c) Add value and quality of life for residents and occupants within a development in terms of privacy, outlook, views and recreational opportunities;
- d) Achieve a strong and distinctive landscape character for the precinct and contribute to the reduction of surface stormwater runoff;
- e) Celebrate the symbolic interpretation with the landscape of regional parklands, the mountains and historic watercourses; and
- f) Create an ongoing City ecology by using appropriate species for the area.

C. Controls

- 1) Recycled water should be used to irrigate landscaped areas.
- 2) Commercial and retail developments are to incorporate planting into accessible outdoor spaces.
- 3) Remnant vegetation must be maintained throughout the site, wherever practicable.
- 4) A long term landscape concept plan must be provided for all landscaped areas, including the deep soil zone, in accordance with the Landscape Design section of this DCP. The plan must outline how landscaped areas are to be maintained for the life of the development.

12.3.7 Planting on structures

A. Background

The following controls apply to planting on roof tops or over car park structures, particularly for communal open space required as a component of mixed use residential development, or in non-residential developments where the landscaping proposed is not on natural ground.

The plants in these areas are grown in total containment with artificial soils, drainage and irrigation and are subject to a range of environmental stresses that affect their health, and

ultimately their survival. Compliance with the controls in this section will help minimise health risks to plants and provide quality landscaped areas.

B. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Contribute to the quality and amenity of open space on roof tops and internal courtyards;
- b) Encourage the establishment and healthy growth of greening in urban areas; and
- c) Minimise the use of potable water for irrigating planting on structures.

C. Controls

- 1) Planting should be designed for optimum conditions for plant growth by:
 - a) Providing soil depth, soil volume and soil area appropriate to the size of the plants to be established;
 - b) Providing appropriate soil conditions and irrigation methods; and
 - c) Providing appropriate drainage.
- 2) Planters should be designed to support the appropriate soil depth and plant selection by:
 - a) Ensuring planter proportions accommodate the largest volume of soil possible and soil depths to ensure tree growth; and
 - b) Providing square or rectangular planting areas rather than narrow linear areas.
- 3) Minimum soil depths should be increased in accordance with:
 - a) The mix of plants in a planter, for example, where trees are planted in association with shrubs, groundcovers and grass;
 - b) The level of landscape management, particularly the frequency of irrigation;
 - c) Anchorage requirements of large and medium trees; and
 - d) Soil type and quality.

12.4. Other controls

12.4.1 Public domain

All public domain works within the Hospital Precinct shall be undertaken in accordance with the provisions of Penrith City Council's "Kingswood Public Domain Manual" (2013) and the other relevant parts of this DCP.

12.4.2 Pedestrian amenity

The pedestrian environment provides people with their primary experience of and interface with the public domain. This environment needs to be safe, functional and accessible to all. It should provide a wide variety of opportunities for social and cultural activities.

Pedestrian amenity incorporates all those elements of individual developments that directly affect the quality and character of the public domain. The pedestrian amenity provisions are intended to achieve a high quality of urban design and pedestrian comfort in the public spaces of the Hospital Precinct.

The controls in this section aim to increase the vitality, safety, security and amenity of the public domain by:

- a) Encouraging future through site links at ground level;
- b) Ensuring active street frontages and positive building address to the street;
- c) Ensuring provision of awnings; and
- d) Protecting significant views and vistas along streets.

12.4.2.1 Permeability

A. Background

Through site links provide access connections between the long sides of street blocks for pedestrian and vehicular access at street level. These links provide an important permeability function in the form of lanes, shared zones and pedestrian ways.

B. Objectives

- a) To improve access in the Hospital Precinct by providing through site links as redevelopment occurs;
- b) To retain and enhance existing through site links as redevelopment occurs;
- c) To achieve activated links to increase safety and vitality;
- d) To achieve a high quality pedestrian environment;
- e) To retain or revitalise lanes as useful and interesting pedestrian connections as well as for service access; and
- f) To improve the permeability of large sites when they are redeveloped for more intensive uses.

C. Controls

- 1) Through site links are to be provided as shown in Figure E12.6 with accessible paths of travel that are:
 - a) A minimum width of 4m for its full length and clear of all obstructions including columns, stairs, building overhangs etc;
 - b) Direct and publicly accessible thoroughfares for pedestrians;
 - c) Open-air for its full length and have active frontages or a street address; and
 - d) Activated by retail or commercial for a minimum of 70% of its length.
- 2) Existing dead end lanes are to be extended through to the next street as redevelopment occurs.
- 3) New through site links should be aligned and connected with existing and proposed through block lanes, shared zones and pedestrian ways and opposite other through site links.
- 4) Existing publicly and privately owned links are to be retained.
- 5) Signage is to be located at street entries indicating public access through the site as well as the street to which the link connects.
- 6) Lanes are to be designated pedestrian routes that are:
 - a) Accessible paths of travel, with a minimum width of 6m for the full length, which is clear of all obstructions;

- b) Designed, paved and well lit; and
- c) Appropriately signposted indicating the street(s) to which the lane connects.

Figure E12.6 Existing and desired links



12.4.2.2 Active street frontages and address

A. Background

Active street frontages promote an interesting and safe pedestrian environment. Busy pedestrian areas and non-residential uses, such as shops, studios, offices, cafes, recreation and promenade opportunities, promote the most active street fronts.

Residential buildings contribute positively to the street by providing a clear street address, direct access from the street and direct outlook over the street.

B. Objectives

- a) To promote pedestrian activity and safety in the public domain;
- b) To maximise active street fronts in Hospital Precinct;
- c) To define areas where active streets are required or outdoor dining is encouraged; and
- d) To encourage an address to the street outside of areas where active street frontages are required.

C. Controls

- 1) Active frontage uses are defined as one or a combination of the following, at street level:
 - a) An entrance to retail premises;
 - b) A shop front;
 - c) Glazed entries to commercial and residential lobbies occupying less than 50% of the street frontage, to a maximum of 12m frontage;
 - d) A café or restaurant if accompanied by an entry from the street;
 - e) Active office uses, such as a reception, if visible from the street; and
 - f) A public building, if accompanied by an entry.
- 2) Active street fronts are to be located at the ground level of all buildings located in those areas as shown in Figure E12.7.
- 3) Ground floor active street frontage uses are to be at the same level as the adjoining footpath and must be directly accessible from the street.
- 4) Restaurants, cafes and the like are to consider providing openable shop fronts. A separate approval from Council is required under the *Roads Act* and *Local Government Act* for outdoor street dining.
- 5) Street address is defined as entries, lobbies, and habitable rooms with full height to a minimum of 2.1m clear glazing to the street.
- 6) Residential developments are to provide a clear street address and direct pedestrian access off the primary street front or laneway (if provided), and allow for residents to overlook all surrounding streets.
- 7) Commercial entries are to be separate to residential entries and are to address the primary street frontage.
- 8) Large developments should provide multiple entrances including an entrance on each street frontage leading to separate cores.
- 9) Residential buildings are to provide not less than 65% of the lot width as street address.

Figure E12.7 Active Street Frontages



12.4.2.3 Safety and security

A. Background

The design of buildings and public spaces has an impact on perceptions of safety and security, as well as actual opportunities for crime. A safe and secure environment encourages activity, vitality and viability, enabling a greater level of security.

B. Objectives

- a) To minimise opportunities for crime by incorporating environmental design in the development;
- b) To ensure developments are safe and secure for pedestrians;
- c) To contribute to the safety of the public domain; and
- d) To encourage a sense of ownership over public and communal open spaces.

C. Controls

- 1) For residential lobbies the lift is to be visible upon entry to the foyer.
- 2) The extent of corridors between the entry doors and the lift is to be minimised.
- 3) The minimum width of the corridor is to be at least 3m leading to the lift on the ground floor.
- 4) All residential lobbies are to be provided with a seating area and space for letterboxes.

- 5) Developments are to address the provisions of the Site Planning and Design Principles section of this DCP as it relates to Crime Prevention through Environmental Design (CPTED) principles.
- 6) Building design, particularly for higher density residential buildings, are to allow for passive surveillance of public and communal spaces, accessways, entries and driveways.
- 7) For large scale retail and commercial development with a gross floor area of over 5,000m², a 'safety by design' assessment by a qualified consultant, is to be provided in accordance with the CPTED principles.
- 8) Certain types of development will be referred to Council's Community Safety Officer and, where appropriate, NSW Police in accordance with the CPTED protocol between Penrith City Council and NSW Police.

12.4.2.4 Awnings

A. Background

Awnings increase the useability and amenity of public footpaths by protecting pedestrians from sun and rain. They encourage pedestrian activity along streets and, in conjunction with active edges such as retail frontages, support and enhance the vitality of the local area. Awnings, like building entries, provide a public presence and interface within the public domain and contribute to the identity of a development.

A separate approval to erect an awning over the road reserve including a footpath will be required under the *Roads Act* and the *Local Government Act*.

B. Objectives

- a) To provide shelter from wind and rain for public streets where most pedestrian activity occurs;
- b) To address the streetscape by providing a consistent street frontage in the Hospital Precinct; and
- c) To provide a visually integrated streetscape.

C. Controls

- 1) Continuous street frontage awnings are to be provided for all new developments where active street frontages have been identified in Figure E12.7.
- 2) Awnings should generally:
 - a) Be a minimum 2.8m deep where street trees are not required, otherwise a minimum 2.4m deep;
 - b) Have a minimum soffit height of 3.2m and a maximum of 4m;
 - c) Be stepped for design articulation or to accommodate sloping streets, integral with the building design and not exceed 700mm;
 - d) Be low profile, with slim vertical fascias or eaves (generally not to exceed 300mm height); and
 - e) Be setback from the kerb to allow for clearance of street furniture, trees, etc (minimum 600mm).
- 3) Awning design must match building facades and be complementary to those of adjoining buildings.

- 4) Awnings must wrap around corners for a minimum of 6m.
- 5) Under-awning lighting, recessed into the soffit of the awning or wall mounted onto the building, is to be provided to facilitate night use and to improve public safety.
- 6) One under-awning sign may be attached to the awning and must be 6m away from the sign of the adjoining property.

12.4.2.5 Vehicle footpath crossings

A. Background

Vehicle crossings over footpaths disrupt pedestrian movement and threaten safety. The design of vehicle access to buildings also influences the quality of the public domain. Overly wide and high vehicle access points detract from the streetscape and the active use of street frontages.

The design and location of vehicle access to developments should minimise both conflicts between pedestrians and vehicles on footpaths, particularly along pedestrian priority places, and visual intrusion and disruption of streetscape continuity.

B. Objectives

- a) To make vehicle access to buildings more compatible with pedestrian movements;
- b) To reduce the impact of vehicular access on the public domain; and
- c) To ensure vehicle entry points are integrated into building design and contribute to the building design.

C. Controls

- 1) A maximum of one vehicle access point (including the access for service vehicles and parking for non-residential uses within mixed use development) will be permitted for each development.
- 2) Where practicable, vehicle access is to be from lanes and minor streets rather than primary street fronts or streets with major pedestrian activity.
- 3) Where practicable, adjoining buildings are to share or amalgamate vehicle access points. Internal on-site signal equipment is to be used to allow shared access. Where appropriate, new buildings should provide vehicle access points so that they are capable of shared access at a later date.
- 4) To ensure pedestrian safety, vehicle entry points should not be located adjacent to building entry points.
- 5) Vehicle access widths and grades are to comply with the Australian Standard.
- 6) Vehicle access ramps parallel to the street frontage will not be permitted.
- 7) Vehicle access ramps must be integrated into the building design and are not permitted as separate structures, Ramps must not be exposed along the side boundary.
- 8) Vehicle entry points are to be integrated into building design.
- 9) Doors to vehicle access points are to be roller shutters or tilting doors fitted behind the building facade.
- 10) Vehicle entries are to have high quality finishes to walls and ceilings as well as high standard detailing. No service ducts or pipes are to be visible from the street.
- 11) Porte cocheres disrupt pedestrian movement and do not contribute to active street frontage. They may only be permitted for hotels, medical use buildings and major tourist

venues subject to urban design, streetscape, heritage and pedestrian amenity considerations.

- 12) If justified, porte cocheres are to be internal to the building with one combined vehicle entry and exit point, or one entry and one exit point on two different street fronts of the development.
- 13) In exceptional circumstances for buildings with one street frontage only, an indented porte cochere with separate entry and exit points across the footpath may be permitted, as long as it is constructed entirely at the footpath level, provides an active frontage at its perimeter and provides for safe and clear pedestrian movement along the street.

12.4.3 Car Parking

A. Background

Most controls that relate to car parking are included in the Transport, Access and Parking section of this DCP. The following section provides some additional on-site car parking options for the Hospital Precinct.

B. Objectives

- a) To facilitate an appropriate level of on-site parking provision to cater for a mix of development types;
- b) To minimise the visual impact of on-site parking; and
- c) To provide adequate space for parking and manoeuvring of vehicles.

C. Controls

- 1) Car parking above ground level is to have a minimum floor to ceiling height of 2.8m so it may be adapted to another use in the future.
- 2) Where possible, natural ventilation is to be provided to underground parking areas with ventilation grilles and structures that are:
 - a) Integrated into the overall façade and landscape design of the development;
 - b) Located away from the primary street façade; and
 - c) Oriented away from windows of habitable rooms and private open space areas.
- 3) Proposals for basement parking areas are to be accompanied with a geotechnical report, prepared by an appropriately qualified professional, and any other supporting information.
- 4) Basement car parking should be located directly under building footprints to maximise opportunities for deep soil areas unless the structure can be designed to support mature plants and deep root plants.
- 5) The appearance of car parking is to be improved by locating parking so that it is not visually prominent from the street.
- 6) Car parking structures located above ground and viewed from the public domain are to be architecturally treated or where practical, sleeved with development.
- 7) Car parking layouts are to comply with the relevant Australian Standards.

12.4.4 Site Facilities and Services

A. Objectives

- a) To ensure that the design and location of site facilities (such as clothes drying areas, mail boxes, etc.) are integrated within the development and are unobtrusive;
- b) To ensure that site services and facilities are adequate for the nature and quantum of development; and
- c) To establish appropriate access and location requirements for servicing.

B. Controls

- 1) Letterboxes should be integrated into a wall immediately adjacent to the building entrance(s). Where there are a number of entrances into the building, the letterboxes located at each entrance should service the tenancies that will utilise that building entrance.
- 2) Letterboxes shall be secure and large enough to accommodate articles such as newspapers.
- 3) Telecommunication infrastructure should be built into the development and predominantly below ground, incorporating the following services fundamental in the effective operation of businesses, home businesses and dwellings:
 - a) Multiple telecom services including high speed internet (including broadband), voice and data systems; and
 - b) Cabling from all telephone lines and cable TV.
- 4) Where a master antenna is provided, the antenna must be sited in a location that is least visible from surrounding public spaces/ open areas.
- 5) Air conditioning units, service vents and other associated structures should be:
 - a) Located away from street frontages and lanes;
 - b) Located in a position where the likely impact is minimised; and
 - c) Adequately setback from the perimeter wall or roof edge of buildings.
- 6) Where they are to be located on the roof, they should be integrated into the roofscape design and in a position where such facilities do not become a feature in the skyline at the top of building(s).
- 7) Separate waste storage and collection areas are to be provided for domestic and commercial waste.
- 8) For developments comprising residential uses, a separate storage and collection area for bulky waste (such as cardboard boxes) and old or discarded furniture/appliances shall be provided.
- 9) Vehicular access to the waste collection areas should be from rear lanes, side streets and right of ways.
- 10) The responsibility for the ongoing management of waste facilities must be determined prior to work commencing on the development. Details of the management of waste by future tenants are to form part of the Waste Management Plan for the development. (See Appendix F3 for details on waste management plans).
- 11) Loading/unloading areas are to be:
 - a) Integrated into the design of developments;

- b) Separated from car parking and waste storage and collection areas;
 - c) Located away from the circulation path of other vehicles;
 - d) Designed for commercial vehicle circulation and access complying with AS2890.2;
and
 - e) Vehicles are to enter and exit the site in a forward direction.
- 12) Separate loading/unloading areas are to be provided for commercial/retail and residential uses.
- 13) Generally, provision must be made for all emergency vehicles to enter and leave the site in a forward direction, particularly NSW Fire Brigade vehicles where:
- a) NSW Fire Brigade cannot park their vehicles within the road reserve due to the distance of hydrants from the building or restricted vehicular access to hydrants; or
 - b) Otherwise required by the NSW Fire Brigade's Code of Practice – Building Construction – NSWFB Vehicle Requirements.
- 14) For developments where NSW Fire Brigade vehicle(s) are required to enter the site, the circulation path and access/egress provision is to comply with the NSW Fire Brigade's Code of Practice – Building Construction – NSWFB Vehicle Requirements.

12.5 Other Information

Please refer to Parts C and D of this DCP for other relevant controls that may apply to development within the Hospital Precinct.

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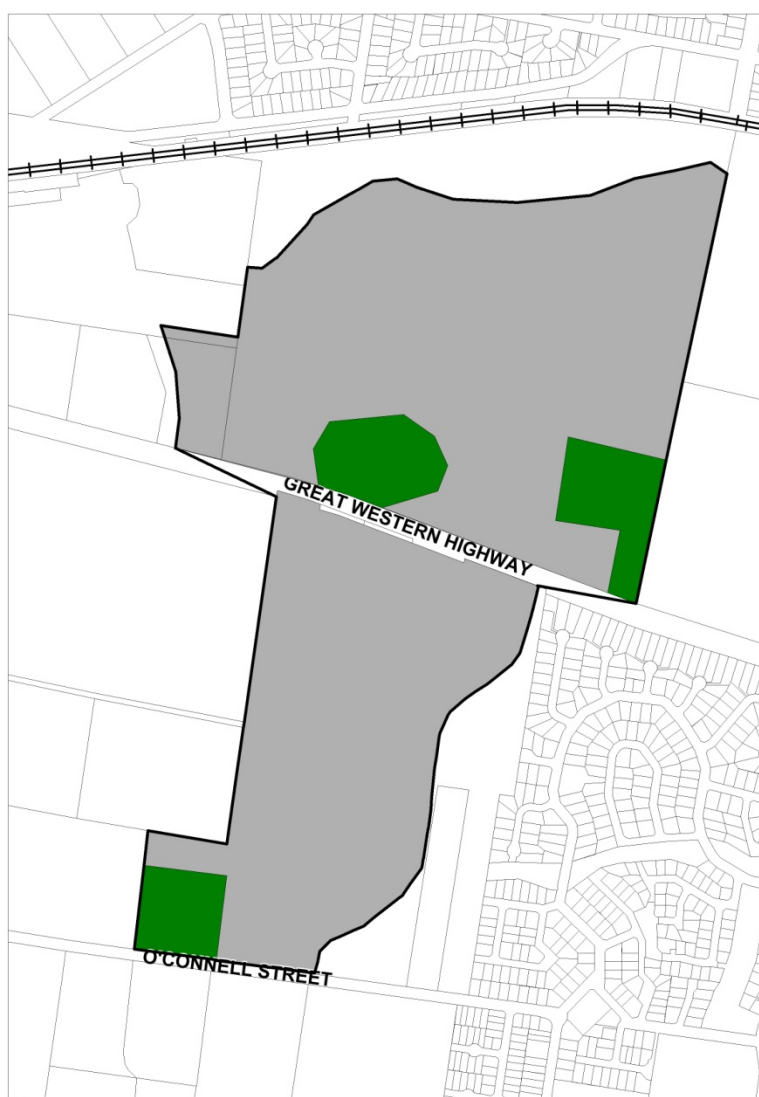
E12 Part B Business Park Precinct

12.6 Introduction

12.6.1 Area included in the Business Park Precinct

This Section applies to development on land covered by the Business Park Precinct as shown in Figure E12.8. This Section provides specific controls for the Business Park Precinct in addition to the general controls elsewhere in this DCP. In the event of any inconsistency between this Section and the rest of the DCP, the requirements of this Section prevail.

Figure E12.8 Land to which this section applies



12.6.2 General Objectives

- a) To encourage development that promotes investment in the Business Park;
- b) To provide a high quality environment for workers;
- c) To promote quality urban design, architectural excellence and environmental sustainability in the planning and development, and long term use of the Business Park;
- d) To encourage development in the Business Park that activates the public domain and creates an attractive and vibrant precinct;
- e) To provide a framework that is flexible enough to accommodate a range of different and innovative uses;
- f) To provide high levels of accessibility throughout the Business Park;
- g) To provide clear connectivity through the Business Park and to the surrounding neighbourhoods; and
- h) To provide the framework to facilitate and encourage the use of public transport, safe pedestrian and cycle movement, and vehicular movement.

12.6.3 Requirements for a Concept Plan

- 1) Council must not grant consent to development on land comprised within the Business Park unless:
 - a) A Concept Plan has been prepared substantially in accordance with the requirements of this Section, submitted to Council and adopted by Council; and
 - b) The development is consistent with the adopted Concept Plan.
- 2) Council may waive the requirement for a Concept Plan due to:
 - a) The minor nature of a development;
 - b) The adequacy of other planning controls; or
 - c) Council's discretion.

12.6.4 Preparation of a Concept Plan

The Concept Plan shall address the following:

- a) The existing physical and environmental features of the site;
- b) The general indication of the phasing of development;
- c) The proposed site layout including an indicative road layout;
- d) The distribution of land uses across the site and within multi storey buildings;
- e) An urban design and landscape strategy;
- f) An infrastructure strategy;
- g) A public art strategy;
- h) Location of open space, its function and landscaping;
- i) Design principles based on analysis of the site and its context;
- j) Identification of gateway sites and corridors;

- k) A street setback plan showing minimum front building setbacks and build-to boundary front setbacks;
- l) Identification of active street frontages;
- m) Pedestrian, vehicular and cycle road access and circulation networks and facilities;
- n) Remediation of any site contamination;
- o) Any other major infrastructure such as transmission lines, trunk sewage or water supply lines.

12.7 Built Form Controls

12.7.1 Street Alignment and Setbacks

Street setbacks and building alignments establish the front building line. They help to create the proportions of the street and can contribute to the public domain by enhancing streetscape character and continuity of street facades.

Street setbacks can also be used to enhance the setting and address for the building. They provide for landscape areas and entries to ground floor uses. Setbacks allow natural ventilation, daylight access and view sharing and increase privacy.

Above street frontage height, buildings should be set back to provide sunlight access to streets, pedestrian areas and lower levels of other buildings. These setbacks allow view corridors, an appropriate building scale for pedestrians, and good growing conditions for street trees.

A. Objectives

- a) To establish consistent building alignments to the street;
- b) To provide street setbacks appropriate to building function and character;
- c) To establish the desired spatial proportions of the street and define the street edge;
- d) To create a transition between public and private space;
- e) To locate active uses closer to pedestrian activity areas;
- f) To maximise solar access to the public domain;
- g) To ensure an appropriate level of amenity for building occupants in terms of daylight access, outlook, view sharing, ventilation, wind mitigation, and privacy; and
- h) To achieve useable and pleasant streets and public domain areas in terms of wind mitigation and daylight access.

B. Controls

- 1) Street setbacks are to be in accordance with the requirements specified in Table E12.2 or in accordance with an adopted Concept Plan for the Business Park. These setback areas are to be used for landscaping designed in accordance with the Landscape Design section of this DCP.
- 2) The minimum setback to the Great Western Highway is 20m.
- 3) Where appropriate, Landmark buildings are to be located on corner allotments to reinforce the intersections.
- 4) All buildings are to address the primary road.

- 5) A well designed urban landscaped entry plaza is to be developed on the frontage of all developments fronting primary roads.
- 6) Balconies may project up to 1m into front building setbacks, provided the cumulative width of all balconies at that particular level totals no more than 50% of the horizontal width of the building façade, measured at that level.
- 7) Minor projections into front building lines and setbacks for sun shading devices, entry awnings and cornices are permissible.
- 8) Basement car parking is not permitted to encroach into the setback area unless it can be demonstrated that the basement is designed to support significant mature trees and deep root planting.
- 9) Build to lines are to be adhered to however ground floor uses may be considered forward of the building line if these uses promote active street frontages.
- 10) The building setback areas are not to be used for the display or storage of goods/ materials.

Table E12.2: Minimum setback requirements

Road Classification	Minimum Setback
Primary Road	20m
Secondary Road	15m
All other	10m

Gateway Buildings

- 1) Gateway sites are to be nominated as part of future development applications. Special emphasis through architectural quality and detailing is required.
- 2) These buildings are to be iconic in form and will denote and provide emphasis to the street intersections.
- 3) Buildings are to address the corner condition with an emphasis on the higher order road.

12.7.2 Side and Rear Setbacks

Side and rear setback spaces provide a corridor of deep soil between sites. This area allows for the retention of existing mature trees, and future tree planting. Side and rear setbacks also provide opportunity to resolve changes in level between sites.

A. Objectives

- a) To create a pattern of development that positively defines the streetscape;
- b) To provide building separation for visual and acoustic privacy;
- c) To provide deep soil zones, and maintain mature/significant vegetation; and

- d) To contribute to the landscape character of the Business Park.

B. Controls

- 1) Buildings are to be set back 10m from the rear and 5m from side site boundaries.
- 2) Awnings, canopies, balconies, sun shading, and screening elements can project into the side or rear setback zones.
- 3) Basement car park structures should not encroach into the minimum required side or rear setback zone unless the structure can be designed to support mature trees and deep root planting.
- 4) Natural ground level is to be retained throughout side and rear setbacks, where possible.

12.7.3 Building Bulk

A. Objectives

- a) To promote the design and development of sustainable buildings;
- b) To achieve the development of working environments with good internal amenity and minimise the need for artificial heating, cooling and lighting;
- c) To provide viable and useable commercial floor space;
- d) To achieve useable and pleasant streets and public domain at ground level;
- e) To achieve a skyline sympathetic to the topography and context;
- f) To allow for view sharing and view corridors; and
- g) To reduce the apparent bulk and scale of buildings by breaking up expanses of building wall with modulation of form.

B. Controls

- 1) All points of a habited floor should be no more than 12m from a source of daylight (e.g. window, atria, or light wells).
- 2) Use atria, light wells and courtyards to improve internal building amenity and achieve cross ventilation and/or stack effect ventilation.
- 3) Courtyards and atria are to be arranged to promote access to natural light, pedestrian links and slender building forms.
- 4) Large unrelieved expanses of wall or building mass will not be supported and should be broken up by the use of suitable building articulation, fenestration or alternative architectural enhancements.

12.7.4 Building Separation

A. Objectives

- a) To allow solar access to buildings and communal areas;
- b) To retain mature vegetation between buildings and allow for deep soil planting;

- c) To provide a visual break between buildings and reduce the perceived bulk and scale of the built environment;
- d) To provide visual privacy between buildings; and
- e) To provide outlook from buildings.

B. Controls

- 1) A minimum 20m separation is to be provided between buildings facing one another within a site.
- 2) A minimum 10m separation is to be provided between buildings perpendicular to each other within a site. This reduced building separation control only applies where the width of the facing facades does not exceed 20m.
- 3) Building separation between sites is controlled by 12.7.2 Side and Rear Setback controls.

12.7.5 Site Coverage and Deep Soil Zones

Deep soil zones are areas of natural ground retained within a development, uninhibited by artificial structures and with relatively natural soil profiles. Deep soil zones have important environmental benefits, including:

- a) Promoting healthy growth of large trees with large canopies;
- b) Protecting existing mature trees; and
- c) Allowing infiltration of rainwater to the water table and reduction of stormwater runoff.

A. Objectives

- a) To provide developments with a high level of amenity and landscape character;
- b) To retain existing mature trees and allow for future tree planting; and
- c) To contribute to stormwater management and reduce runoff.

B. Controls

- 1) A minimum 20% of the site must be provided as deep soil area. The deep soil area will be included in the total landscaped area calculation for the site.
- 2) The deep soil zone is to be provided in one continuous block. If multiple deep soil zones are provided, they must have a minimum dimension (in any direction) of 6m.
- 3) Deep soil zones must accommodate existing mature trees as well as allowing for the planting of additional vegetation that will grow to be mature trees.
- 4) No structures, works or excavations that may restrict vegetation growth are permitted in deep soil zones (including, but not limited to, car parking and hard paving).

12.7.6 Architectural Excellence

This Section seeks to encourage urban design and architectural excellence as well as environmental sustainability in both the public and private domain. Architectural excellence is particularly important where the building is highly visible from the public domain either outside or within the Business Park.

Good building design should positively contribute to the overall architectural quality of the city and provide buildings appropriate to their context. In some circumstances, this

contribution may be as an iconic or landmark building, but more typically it is a well-mannered building that fits sensitively into the streetscape.

Architectural excellence should be achieved through careful consideration of:

- a) Built form- how it relates to its context;
- b) Quality of materials;
- c) Integrity of the design concept; and
- d) Its contribution to the public domain.

A. Objectives

- a) To encourage a high level of design consideration;
- b) To encourage that significant buildings achieve design excellence;
- c) To provide buildings that contribute positively to the precinct character; and
- d) To encourage the development of sustainable design.

B. Controls

- 1) All development applications are to include a comprehensive site analysis that informs the design of the building and its placement on the site.
- 2) All applications are to include a design report that explains the design concept including built form, context response and materials selection.
- 3) Design of buildings should ensure natural surveillance of pathways and open space around buildings is possible from within the building and/or from adjoining roads and open space areas.
- 4) Landmark and gateway buildings are to demonstrate architectural excellence in the following areas:
 - a) How the building reinforces and enhances significant vistas and view corridors.
 - b) How the building will enliven the public domain it adjoins.
- 5) The development must incorporate a variety of external finishes in terms of both colour and type of material used. The external finishes of the development are to be:
 - a) Made from durable high quality, low maintenance, non reflective materials;
 - b) Compatible with the overall design and form of the development;
 - c) Selected for all built forms to ensure the entire development presents a homogenous form;
 - d) Considered in association with proposed plantings and landscape treatment;
 - e) Considered for their ability to provide visual relief in large wall surfaces and elevations; and
 - f) Selected to ensure the development complements the surrounding built and natural environment.
- 6) Environmentally sustainable initiatives are to be incorporated into the design of all buildings.
- 7) Facades are to be composed with an appropriate scale, rhythm and proportion, which respond to building use and the desired character by:

- a) Defining a base, middle and top related to the overall proportion of the building.
 - b) Articulating building entries with awnings, porticos, recesses, blade walls and projecting bays.
 - c) Incorporating architectural features which give human scale to the design of the building at street level. These can include entrance porches, awnings, pergolas and fences using recessed balconies and deep windows to create articulation and define shadows thereby adding visual depth to the façade.
- 8) Façade design is to reflect and respond to the orientation of the site using elements such as sun shading and environmental controls where appropriate.
 - 9) Important corners are to be expressed by giving visual prominence to parts of the façade (e.g. a change in building articulation, material or colour, or roof expression).
 - 10) Building services such as roof plant and parking ventilation are to be coordinated and integrated with the overall façade and building design, and screened from view. Roof forms, building services and screening elements are to occur within the overall height controls.
 - 11) Ventilation louvers and car park entry doors are to be coordinated with the overall façade design.

12.7.7 Active Street Frontages

Active street frontages promote an interesting and safe pedestrian environment. Due to the size of the area, it is recognised that not all streets will develop as active pedestrian areas. Active frontages are to be identified where active ground level uses are to be consolidated, creating vibrant streetscapes in areas with high pedestrian traffic and possible located close to public transport and public open space.

Active uses include:

- a) Shop fronts;
- b) Retail and service facilities with a street entrance;
- c) Café or restaurants with street entrance;
- d) Community and civic uses with a street entrance; and
- e) Recreation and leisure facilities with a street entrance.

A. Objectives

- a) To promote pedestrian activity and safety in the public domain;
- b) To create vibrant streetscapes around areas of high pedestrian traffic;
- c) To encourage activity within the Business Park outside commercial business hours;
- d) To provide a mix of uses to support an increasing employment and visitor population over time; and
- e) To enhance pedestrian safety, security and amenity within the Business Park.

B. Controls

- 1) Entries to active frontage tenancies are to be accessible and at the same level as the adjacent footpath.

- 2) Vehicular access points should not, if possible, be located at primary active frontages.
- 3) Ground level uses at active frontage zones are to be located at or close to street level.
- 4) Transparency and openings to the street are to be maximised and blank walls, fire exits and building services elements are to be minimised.
- 5) The use of the footpath zone for outdoor seating areas is encouraged adjacent to active frontages.
- 6) Building entries are to address the primary road on corner sites.
- 7) All primary building entries should have entry canopies to emphasise the entry along the street.

12.7.8 Pedestrian Permeability

The design and function of pedestrian spaces delivers amenity to the people using these spaces. The ability for pedestrians to safely and efficiently access buildings, services and navigate through shopping areas is integral to good design. The equity and amenity of this access is also very important.

Pedestrian permeability is achieved by introducing through-site links which may be in the form of building separation, landscape dedications or setbacks.

A. Objectives

- a) To ensure new development achieves appropriate pedestrian permeability;
- b) To retain and enhance established and utilised through site links as redevelopment occurs;
- c) To promote activation of through site links where possible;
- d) To promote pedestrian circulation, amenity and safety;
- e) To promote activation of the public domain by encouraging outdoor dining in appropriate locations; and
- f) To retain and develop lanes as useful and interesting pedestrian connections as well as for service access.

B. Controls

- 1) Commercial developments must provide pedestrian through-site links, the location of which will be determined on a site-by-site basis. Requirements for the location of pedestrian through-site links are to be discussed with Council prior to lodging a Development Application.
- 2) Pedestrian through-site links are to be straight, with clear views from end to end.
- 3) Pedestrian through-site links are to be publicly accessible and universally accessible for all.
- 4) Where pedestrian through-site links are adjacent to a courtyard or public space, their design is to be integrated with design of the open space and access provided between the two.
- 5) Where pedestrian through-site links are provided between buildings, a high level of transparency is to be provided between the internal ground floor space of the building and the pedestrian link.
- 6) Active ground level uses are encouraged along pedestrian through-site links.

- 7) Public access should be provided during all business trading times.
- 8) Pedestrian through-site links are to be clearly signed to identify street entries and the street to which the through-site link connects.
- 9) Where practical, pedestrian through-site links should have access to natural light.

12.7.9 Awnings

Awnings increase the useability and pedestrian amenity of public footpaths by providing shelter and enclosure at a pedestrian scale. They encourage pedestrian activity along streets and, in conjunction with active street frontages, support and enhance the vitality of the local area. Awnings provide a public presence and interface within the public domain and contribute to the identity of the development.

A. Objectives

- a) To unify the streetscape;
- b) To provide continuous shelter from sun, wind and rain for public streets where most pedestrian activity occurs; and
- c) To reinforce a consistent pedestrian scale through all business developments.

B. Controls

- 1) Continuous awnings must be provided where active street frontages have been identified within the Concept Plan.
- 2) Awnings should generally:
 - a) Be a minimum 2.8m deep where street trees are not required, otherwise minimum 2.4m deep;
 - b) Have a minimum soffit height of 3.2m and a maximum of 4m;
 - c) Be stepped for design articulation or to accommodate sloping streets, integral with the building design and not exceed 700mm;
 - d) Be low profile, with slim vertical fascias or eaves (generally not to exceed 300mm height);
 - e) Be set back from the kerb to allow for clearance of street furniture, trees etc (minimum 600mm).
- 3) Awning design must match building façades and be complementary to those of adjoining buildings.
- 4) Awnings are to wrap around corners for a minimum for 6m to the secondary street frontage.
- 5) Vertical canvas drop blinds may be used along the outer edge of awnings along north-south streets.
- 6) Lighting is to be recessed into the soffit of the awning or wall-mounted onto the building to facilitate night use and to improve public safety.

12.7.10 Landscaping and Fencing

A. Objectives

- a) To provide landscaping that is integrated into the design of the precinct and development sites;
- b) To create well designed active and passive open space and recreation areas;
- c) To provide landscapes that contribute to the amenity of streets;
- d) To recognise urban air quality and biodiversity;
- e) To encourage the use of recycled water for landscaping irrigation;
- f) To incorporate Water Sensitive Urban Design principles and contribute to the reduction of stormwater runoff;
- g) To improve the microclimate within the development; and
- h) To ensure that fencing does not detract from the overall visual amenity and character of the Business Park.

B. Controls

- 1) A minimum 30% of the developable area of the site is to be provided as Landscaped Area.
- 2) Landscaped Area is the area of the site not occupied by any buildings which is landscaped by way of gardens, lawns, shrubs or trees and is available for use and enjoyment by the occupants of the building and excludes areas used for driveways or parking areas.
- 3) Water management principles are to be incorporated as per the Water Management section of this DCP.
- 4) Verge treatments are to be designed to reflect the intended use of the street activity and function.
- 5) New streets are to have a strong landscape character.
- 6) The landscape design within setbacks should consider the scale of the building and where appropriate, select and locate plants to help reduce the overall bulk and scale of the development.
- 7) All setback and car parking areas are to be regenerated and maintained to a high standard.
- 8) Outdoor staff break areas should be provided and integrated into landscaped areas. These areas are to be provided with shade and maintain a reasonable level of amenity.
- 9) Fencing should be constructed of natural materials and finishes that integrate into the landscape character of the Business Park.
- 10) No fencing, other than of a low ornamental type may be erected within the setback area to any road.
- 11) Fencing along rear boundaries adjacent to drainage or open space areas shall be integrated with the landscaping of the development.
- 12) All chain-wire fencing is to be black or dark green in colour.
- 13) Solid, metal sheet fencing is not permitted.

12.7.11 Water and Energy Efficient Design

A. Objectives

- a) To promote sustainable development which uses energy efficiently and minimises non-renewable energy usage in the construction and use of buildings; and
- b) To ensure that development contributes positively to an overall reduction in energy consumption and greenhouse gas emissions.

B. Controls

- 1) Development must aim to improve the control of mechanical space heating and cooling by designing heating/cooling systems to target only those spaces which require heating or cooling, not the whole building.
- 2) Developments should improve the efficiency of hot water systems by:
 - a) Encouraging the use of solar powered hot water systems;
 - b) Insulating hot water systems; and
 - c) Installing water saving devices, such as flow regulators, 3 star Water Efficiency Labelling and Standards Scheme (WELS Scheme) rated shower heads, dual flush toilets and tap aerators.
- 3) Developments must aim to reduce reliance on artificial lighting and design lighting systems to target only those spaces which require lighting at any particular 'off-peak' time, not the whole building. A timing system should be incorporated to automatically control the use of lighting throughout the building.
- 4) All non-residential developments Class 5-9 must comply with the Building Code of Australia energy efficiency provisions.
- 5) An Energy Efficiency Report from a suitably qualified consultant that demonstrates a commitment to achieve no less than 4 stars under the Australian Building Greenhouse Rating Scheme or equivalent must be provided for all commercial and industrial development with a construction cost of over \$5 million.

12.7.12 Traffic, Parking and Site Access

A. Objectives

- a) To control traffic generation from the development so that it does not exceed agreed limits;
- b) To integrate adequate car parking and servicing access without compromising street character, landscape or pedestrian amenity and safety;
- c) To ensure adequate parking to serve development is provided on site;
- d) To encourage shared use of parking;
- e) To allow flexibility in parking rates to reflect shared use or best practice;
- f) To provide parking structures that do not dominate the public domain; and
- g) To control site entry points to encourage the active use of street frontages.

B. Controls

- 1) An appropriate Traffic Report should accompany development applications for major development proposals that assesses the impact of projected vehicular traffic associated with the proposal.

- 2) Where practicable, vehicle access is to be from secondary streets.
- 3) Potential pedestrian/vehicle conflict is to be minimised by:
 - a) Limiting the width and number of vehicle access points;
 - b) Ensuring clear sight lines at pedestrian and vehicle crossings;
 - c) Utilising traffic calming devices;
 - d) Separating and clearly distinguishing between pedestrian and vehicular access ways.
- 4) The appearance of car parking and service vehicle entries is to be improved by locating or screening parking, garbage collection, loading and servicing areas visually away from the street.
- 5) Structured car parking that extends above ground, where viewed by the public domain, is to be architecturally treated or where possible sleeved by development.
- 6) Basement car parking should be located directly under building footprints to maximise opportunities for deep soil areas unless the structure can be designed to support mature plants and deep root plants.
- 7) Basement parking areas must not extend forward of the building line along a street.
- 8) Ventilation grills or screening devices or car park openings must be integrated into the overall design of the façade and landscape design of the development.

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Part C – South Werrington Urban Village

12.8 – South Werrington Urban Village

12.8.1 Preliminary

12.8.1.1 Background

South Werrington Urban Village (SWUV) comprises approximately 48 hectares of land that has been identified for urban development comprising residential and employment generating uses. SWUV will assist the delivery of housing and employment opportunities in Penrith and integrate with the existing Werrington community north and south of the Great Western Railway.

12.8.1.2 Land to which this section applies

This Section applies to development on land covered by the South Werrington Urban Village as shown in Figure E12.9. This section provides specific controls for the South Werrington Urban village in addition to the general controls elsewhere in this DCP. In the event of any inconsistency between this section and the rest of DCP 2014, the requirements of this section prevail.

Figure E12.9: Land to which this Chapter applies



12.8.1.3 Aims and General Objectives of this Section

The aims of this Section are to:

- a) Support the objectives of Penrith Local Environmental Plan 2010; and
- b) Facilitate the sustainable development of residential, employment and open space areas of the South Werrington Urban Village.

This Section seeks to achieve the following objectives:

A. General

- a) To facilitate and promote the principles of the Werrington Enterprise Living and Learning (WELL) Precinct.

Transport and Accessibility

- a) To integrate public transport opportunities into the planning process,
- b) To respond to the existing and future arterial road network including the Werrington Sub-Arterial,
- c) To provide a sub-arterial and collector road network that links with surrounding areas,
- d) To ensure vehicular, pedestrian and cycle ways link efficiently within and between residential areas and employment areas,
- e) To provide an inter-connective street system that links with the existing Werrington community,
- f) To ensure the proposed land uses relate to regional access routes, public transport routes, the local road network and the open space network,
- g) To provide an interconnected local road network that creates easy access, including truck access to employment areas and accommodates bus movements, and
- h) To provide a logical and interconnected pedestrian and cycleway system linking with surrounding areas.
- i) To ensure that there is adequate land set aside for the proposed east west link road within the land that is zoned for residential development.

Natural Environment

- a) To recognise the natural land form in the design of the urban areas,
- b) To conserve the biodiversity of the site by incorporating woodland areas into the open space system and protecting riparian corridors,
- c) To reduce environmental impact by locating higher density housing closer to the railway station,
- d) To design an integrated stormwater management system consistent with principles of water sensitive urban design, and
- e) To reinforce the importance of the natural landscape settings and areas with heritage conservation values, by protecting views and vistas to and from Frogmore House.

Built Environment

- a) To maximise opportunities for higher density residential development in proximity to Werrington Station,
- b) To respond to the physical, cultural and urban heritage of the area with plans and designs that respect the landform, climate and patterns of land use,

- c) To encourage a contemporary built form of well-designed buildings that consider the amenity of the occupants and neighbours, and
- d) To ensure that the proposed development and built form comply with best practices in ESD and complies with the principles in Penrith Council's Water Action Plan 2005 and Penrith City Council's Green House Gas Reduction Plan.

Social

- a) To provide diversity of housing choice, including affordable housing,
- b) To provide places for recreation that will accommodate casual activities,
- c) To encourage safety and security through passive surveillance of streets and open spaces,
- d) To build on the existing sense of community by integrating with the existing community, and
- e) To provide a range of passive open spaces that can act as meeting places for the existing and future communities.

Economic

- a) To encourage the provision of employment opportunities that are compatible with the existing or desired future adjoining residential development,
- b) To allow for the orderly and economic development of serviceable and accessible land, and
- c) To ensure that employment development is delivered in a manner timely with the adjoining residential development.

12.8.1.4 Supporting Studies

Some additional sources of relevant information for South Werrington Urban Village include:

- a) Community Facilities Study (BBC Consulting)
- b) Archaeology and Heritage Assessment (HLA-Envirosciences Pty Ltd)
- c) Employment Lands Paper (SGS Economics)
- d) Flora and Fauna Assessment (Kevin Mills and Associates)
- e) Assessment of Future Housing Needs and Population Characteristics (BBC Consulting)
- f) Report of Land Capability (Douglas Partners)
- g) Landscape Masterplan and Visual Assessment (Context Landscape Design)
- h) Traffic and Transport Assessment (Traffix)
- i) Bushfire Hazard Assessment (Holmes Fire and Safety and ABAC)
- j) Contamination (Douglas Partners)
- k) Stormwater and Servicing (Patterson Britton & Partners)

These documents are available for reference from Council.

12.8.1.5 Concept Plans

A Concept Plan setting out proposals for the development on each of the different development zones (i.e. Residential and Light Industry) is required to be lodged prior to, or

with, the first subdivision development application for each of the different development zones.

The Concept Plan must meet the objectives and controls of this section and demonstrate:

- a) The proposed urban structure and public domain elements, including Landscape Masterplan.
- b) The distribution of lot types and housing forms to suit a variety of lifestyles, household types and financial capacities for residential zones and consistent with the dwelling yield map in Figure E12.10 and Table E12.3.
- c) The dwelling proportion numbers, types and location of affordable housing lots as required by Council's *Sustainability Blueprint for Urban Release Areas*. This is not necessary for the proportion of affordable housing for the estate delivered via another means such as a monetary contribution through a Voluntary Planning Agreement.
- d) The proposed road hierarchy, sections and details.
- e) The location and design of open spaces.
- f) The location of pedestrian and cycle paths.
- g) Development Staging.
- h) Infrastructure Delivery Strategy.

12.8.2 Structure Plan

12.8.2.1 Vision

A vision for South Werrington Urban Village (SWUV) was established through the Werrington Enterprise Living and Learning Strategy 2004 which is as follows:

“Demonstrating a model for sustainable urban development, that captures its potential arising from proximity to transport linkages and tertiary educational facilities, the WELL precinct will be an internationally renowned destination of choice for business, residents and students. The synergies arising from the collective presence of these groups will energise the Precinct and represent a catalyst for the emergence of creativity and innovation demonstrated in the enterprise, living and learning activities undertaken within the Precinct. Whilst attracting and accommodating a diverse range of land use activities and people, the desirability of the place will be a function of the seamless integration of those people and activities and the cosmopolitan lifestyle choices it subsequently generates and offers.”

The urban form within this Section is derived from the WELL Precinct Strategy including the adopted WELL Concept Plan 2006 and the studies informing this strategy.

12.8.2.2 Urban Structure

The South Werrington Urban Village Structure Plan establishes the structure and form for the planning and future development of the subject lands. The emerging urban structure of SWUV is illustrated at Figure E12.10 – South Werrington Urban Village Structure Plan and characterised by the following performance measures:

Access

- a) The structure plan envisages the construction of the proposed Werrington Arterial. A new major collector road is proposed to link the Werrington Arterial to future employment development to the west. This new link road also provides a separation between the employment and residential land uses. The intersection of the new link road with the Werrington Arterial has been located and designed and can be constructed in stages if

required. The location of the new link road is as shown on the Structure Plan, and is located on the residential zoned land.

- b) A minor north south road is proposed linking Werrington Station with the Great Western Highway and forming an edge between the employment precinct and the land that forms part of the Wollemi School.
- c) The arterial and collector road system are proposed to be designed to accommodate buses and articulated vehicles.
- d) Local streets are proposed to be generally inter-connective and link with existing streets in South Werrington.
- e) A cycle system is proposed to provide movement through the area and linking with surrounding areas including the recreational areas to the east and St Marys. The system links with the proposed cycleway along the western side of the Werrington Arterial with the potential to extend northwards.

Land Use

- a) Employment land is proposed south of the proposed east west collector road and extending to the Great Western Highway. It is proposed that this land would be used for a range of service and light industrial purposes.
- b) Residential development is proposed with the density and form influenced by the topography, proximity to the station and the land use zoning of the existing residential area of South Werrington. Densities are to be consistent with Figure E12.11 and Table E12.3 relating to dwelling yields.

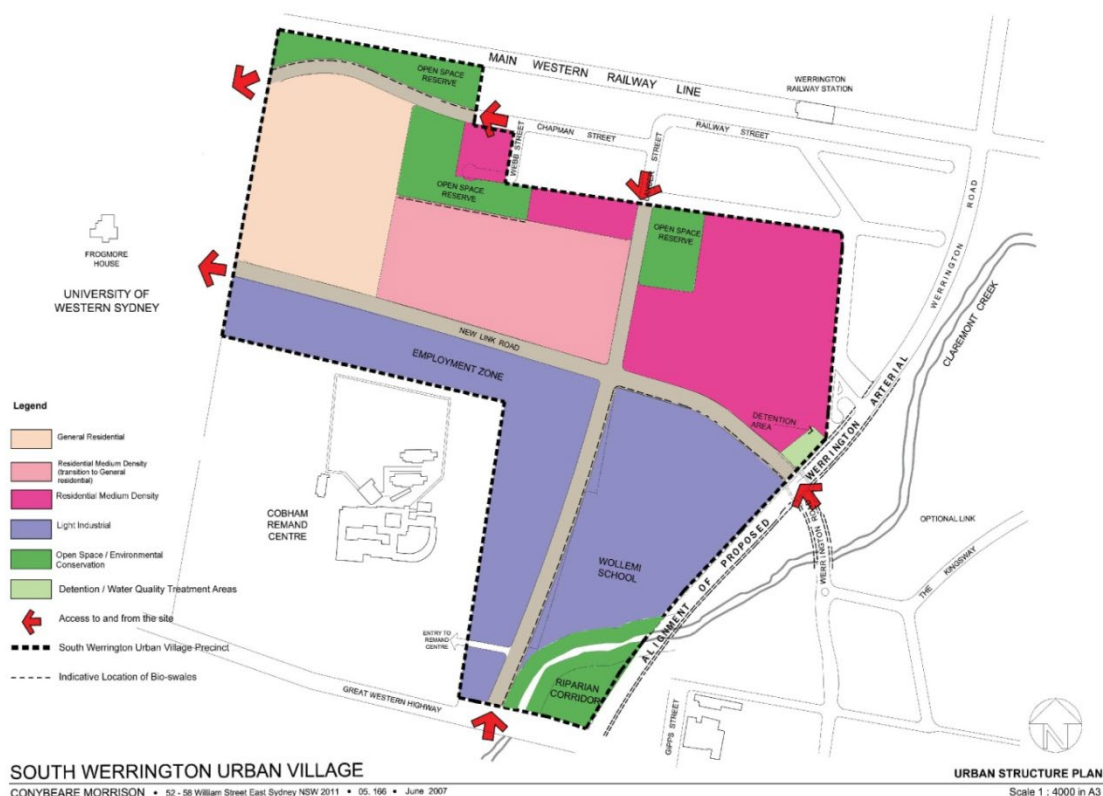
Open Space

- a) Passive Open Space areas are located within SWUV and have been located having regard to a number of factors:
 - i) the findings of the WELL Precinct studies in relation to the location of passive and active open space;
 - ii) the present supply of passive open space in Werrington and the potential for passive parks to act as a meeting place;
 - iii) the presence of woodland communities, predominantly along the northern boundary of the site and along the riparian corridor of Claremont Creek;
- b) Active Open Space are located outside SWUV however will be provided in accordance with WELL wide open space planning principles and the adopted WELL Contributions Plan. Development within SWUV will contribute towards active open space requirements across the WELL Precinct.

Stormwater Management

- a) An integrated approach to stormwater management is proposed that considers the capacity of the existing system and water sensitive urban design that is compatible with the topography and soil types.
- b) A range of measures are proposed to manage stormwater.
- c) The design of Stormwater Management Facilities is to include a schedule of the long term maintenance and operation costs.

Figure E12.10: South Werrington Urban Village Structure Plan



12.8.2.3 Desired Future Character

There are three main character areas within SWUV and they include:

- 1) General Residential:** General Residential allows for a range of housing types with the prominent housing type comprising detached housing on the lower sloped land leading up to Frogmore House. Streets are oriented north south to provide a layering of street trees and rear garden trees up the slope with lots sizes generous to allow glimpses to the ridge behind. The predominant character of the area shall be of low to mid rise roof form interspersed with vegetation. The height and bulk of development and vegetation will not obstruct views to or from Frogmore House.
- 2) Multi Dwelling Housing:** Development closer to the railway station is proposed to be medium density consistent with metropolitan planning policies and Council's *Sustainability Blueprint for New Urban Areas*. Development in the form of townhouses and apartments is proposed with a strong built edge to the street and a preference for dwellings that address the streets. This type of development will transition to the general residential area.

- 3) Employment Uses:** Development south of the proposed east west collector road is proposed for small lot industrial purposes that will not conflict with the existing and intended character and amenity of the residential areas to the north. Development in this location is to present high quality architectural design features with a strong built edge to the street with incorporated landscaping which contribute to the streetscape. The height of development and vegetation will not obstruct views to or from Frogmore House.

12.8.2.4 Dwelling Yields

A. Objectives

- a) To provide a diverse range of housing forms and densities.
- b) To promote a range of dwellings types to meet the needs of diverse age groups and family types.
- c) To provide opportunities for affordable housing.
- d) To provide a range of residential densities that respond to the topography and proximity to Werrington Station.

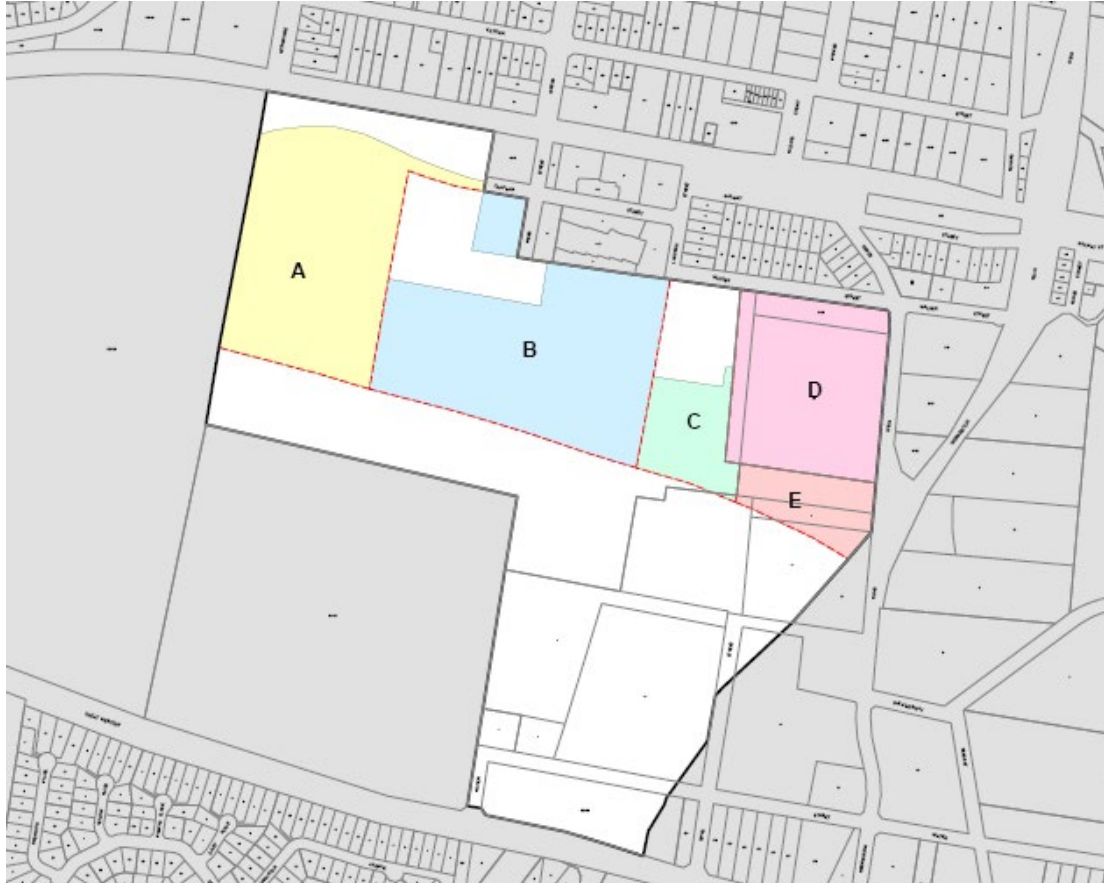
B. Development Controls

- 1) A minimum of 414 dwellings is to be delivered.
- 2) In order to ensure the minimum residential dwelling target is achieved, as part of a subdivision application, an applicant is to demonstrate to Council that the sub-precinct dwelling targets shown in Figure E12.11 and Table E12.3 will be achieved. Subject to agreement of Council and consultation with relevant landowners, dwelling yields may be 'traded' between sub-precincts as long as it meets overall targets and objectives of this DCP. The creation of a super lot or residual parcel is to specify the minimum dwelling yield which that lot is required to deliver.
- 3) Development proposals that seek densities above 414 dwellings must demonstrate that the site can accommodate the increased population with regard to issues including but not limited to potential traffic impacts, open space allocation and environmental constraints. It is recommended that applicants attend a pre-lodgement meeting with Council officers in these instances.

Table E12.3: Dwelling Yield

Sub-Precinct	Minimum dwelling yield
A	78
B	154
C	30
D	122
E	30
Totals	414

Figure E12.11 – Dwelling Yield



12.8.3 Public Domain

12.8.3.1 Responding to the Site's Natural Features

12.8.3.1.1 Riparian Corridors

A. Objectives

- a) To conserve biodiversity by providing linkages between significant natural vegetation units within the City.
- b) To protect, restore and enhance the environmental values and functions of watercourses and riparian corridors along Claremont Creek.
- c) To ensure that important natural features inform the urban structure of the place.
- d) To provide high amenity areas for residents.
- e) To ensure the water quality from the development is maintained or improved.

- f) To convey stormwater flows through the site in a safe manner.

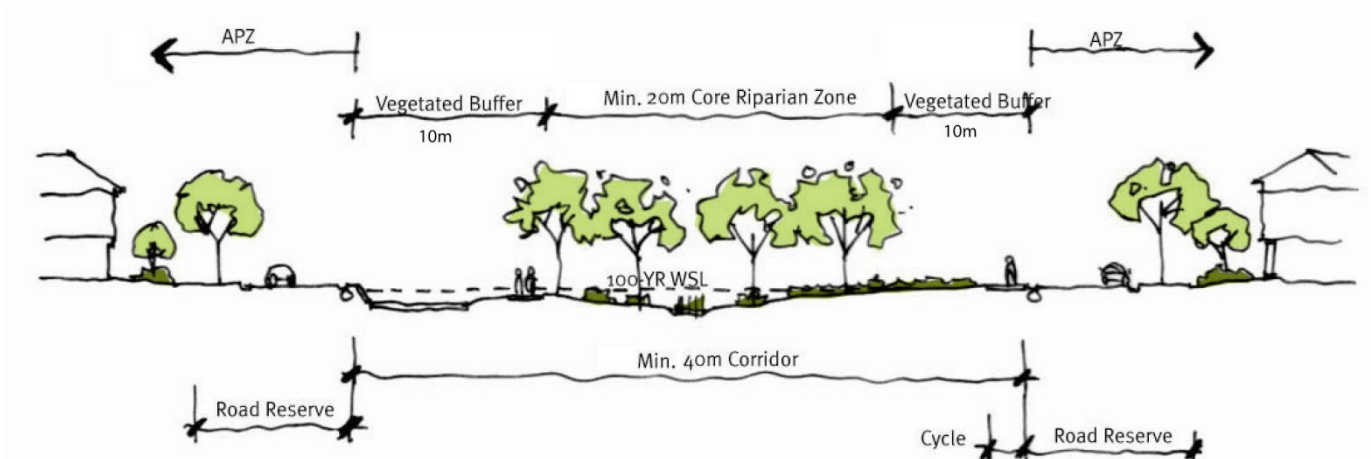
B. Performance Measures

- a) The natural drainage lines of Claremont Creek and its tributaries are conserved as healthy and naturally functioning riparian corridors.
- b) Existing healthy remnant vegetation is retained within those corridors.
- c) Significant revegetation of the riparian corridors occurs as part of development.
- d) The corridors and other topographical features are represented as special places within the urban form.
- e) A Corridor Management Plan shall be submitted and should identify how the corridor will be established is prepared developed and implemented on site as part of its development.
- f) Native vegetation within the riparian corridor is protected and rehabilitated with local provenance species at a density that would naturally occur.
- g) Water quality and water detention infrastructure should not be located within the Core Riparian Zone of the riparian corridor, and may be located in the Vegetated Buffer if:
 - i) No alternative location outside the Vegetated Buffer can be found, and
 - ii) The basin only occupies limited areas; and
 - iii) The basin can be designed in such a way that they will not reduce the function of the adjacent Core Riparian Zone.
- h) The management of the riparian corridor is to consider the long term maintenance and operation costs.

C. Controls

- 1) A minimum corridor width of 40m is to be provided along the Claremont Creek Corridor with 20m being core corridor.
- 2) The profile of the riparian corridor is to be generally consistent with that represented at Figure E12.13 – Corridor Profile Section.
- 3) Asset Protection Zones are to be located outside the Core Riparian Zone and the Vegetated Buffer and any requirements for bushfire Asset Protection Zones (APZ) are not to compromise in any way the extent, form or function of the riparian corridor.
- 4) Any pathways adjacent or adjoining Riparian Corridors are to be consistent with the Department of Water and Energy “Design and Construction of Paths, Cycleways and Accessways along Watercourses and Riparian Area Guidelines (Version 3, April 2007)”

Figure E12.13: Corridor Profile Section



12.8.3.1.2 Water Management

A. Objectives

- a) To maintain the stability and integrity of the finished creek profile.
- b) To ensure the quality of water leaving the urban areas does not adversely impact upon the health of Claremont Creek.
- c) To provide for stormwater detention.
- d) Reduce the peak flow rate of stormwater run-off from the site for all storms up to the 100 year ARI.

B. Performance Measures

- a) Trunk drainage works are provided as an initial stage of development of the release area.
- b) Stormwater management shall incorporate various strategies and devices and should demonstrate best management practices and may include (but not limited to); pit inserts, underground pollutant traps, bio-retention swales, rain-gardens and educational programs to improve the quality of urban runoff before enters the creek channels.
- c) Stormwater Management Plans for Claremont Creek catchment that identify how the quantity and quality of urban runoff from the site will be managed are prepared and implemented on site as part of its development.
- d) A water quality plan and maintenance plan shall be submitted to Council with applications for subdivision. This plan shall cover all elements of the proposed drainage system that will ultimately be transferred to Council, and shall outline the maintenance schedule to ensure that the system operates at the required standard.
- e) Consideration should be given to evaluating the opportunities for the integration of water supply and re-use of stormwater, grey water and treated effluent.
- f) Reference is to be made to Section 12.8.3.1.5 Salinity in relation to the construction and location of stormwater management devices.
- g) The design of the stormwater infrastructure is to include a schedule of the maintenance and operation costs of the facilities lifecycle.

C. Controls

- 1) Developments must achieve Council's downstream water quality objectives and measures outlined in the Water Management section of this DCP.

12.8.3.1.3 Flood Management

A. Objectives

- a) To manage the risk to life and property assets from flooding events up to PMF.
- b) To allow the riparian corridor to function as a naturally occurring waterway.
- c) To manage flood waters within the site in a safe manner.

B. Performance Measures

- 1) Appropriate areas of land are provided outside the Core Riparian Zone for detention and storage of flood waters.
- 2) Flood waters are safely managed within the riparian corridor.
- 3) A Stormwater Management Plan for Claremont Creek that identifies how the flood waters will be managed is prepared and implemented on site as part of its development.
- 4) Refer to the Water Management section of this DCP for further details.

C. Development Controls

- 1) Stormwater detention is to be provided to reduce post development flows to pre development levels for all storm events and durations.
- 2) Overland flow paths and floodways are to be sized and designed to safely convey flood waters.

12.8.3.1.4 Vegetation

A. Objectives

- a) To protect and embellish local vegetation and habitat.
- b) To integrate significant trees within the landscape of the new urban area.

B. Performance Measures

- 1) Existing mature trees are conserved for their natural functions and aesthetic value.
- 2) Open space is co-located with existing tree copses, where practicable.
- 3) Significant trees located within developable areas are able to be conserved on site, where practicable, as part of the landscaped area of future development.
- 4) No disturbance to existing ground levels occurs within the drip line of existing significant trees.

12.8.3.1.5 Salinity

A. Objectives

- a) To ensure that saline soils, groundwater levels and salinity processes are identified, prior to finalisation of development form.
- b) To ensure that appropriate measures are taken to protect buildings, infrastructure and the natural environment from deterioration associated with salt attack.

B. Performance Measures

- a) Development applications for subdivision shall include a preliminary site investigation, which identifies areas of potential salinity.
- b) A remedial action plan is to be submitted with a development application on land where there is an identified salinity hazard.
- c) Salt and drought tolerant plant species must be used in the landscaping within the site and should be identified in any landscape plans for the site. This also includes appropriate hard landscaping materials and practice.
- d) Detailed designs for stormwater management devices is required to ensure level of excavation and the impact of excavation will have on potential salinity on the site.
- e) Further investigation of the land as well as additional work during construction will be required and may include (but not necessarily limited to):
 - i) Installation of groundwater bores well in advance of construction and monitoring/sampling/analysis before, during and after construction, to assess changes in soil water quality as a result of the proposed development. The bores would be strategically located at exit points from the site into the Claremont Creek System.
 - ii) Routine inspections and earthwork monitoring during construction
 - iii) Detailed geotechnical investigations on a stage-by-stage basis for determination of pavement thickness designs and lot classifications.

C. Controls

- 1) Public and private infrastructure is to be designed and constructed in accordance with the recommendations of the salinity investigation.

12.8.3.1.6 Contamination

A. Objectives

- a) To ensure that contaminated land is identified, prior to finalisation of development form.
- b) To ensure that a remedial action plan is prepared for any identified areas of contamination.

B. Controls

- 1) Development applications for subdivision shall include an assessment of possible contamination prepared by a suitably qualified person which covers the following:
 - a) Likelihood of contamination over the subject area, based on previous land uses.
 - b) Assessments of the nature and extent of contamination in areas identified as likely to be contaminated
- 2) Reference is to be made to the particular requirements of SEPP 55-Contaminated Land in relation to contamination and remedial action plans, if required.

12.8.3.2 Transport and Accessibility

12.8.3.2.1 Road Network

A. Objectives

- a) To provide a clear urban framework for the entire release area that informs the location of land uses.
- b) To identify a clear hierarchy for movement within the subject lands and adjacent urban areas.
- c) To provide a safe and efficient movement network for all users.
- d) To promote public and active transport options.

B. Performance Measures

- a) The street network is a modified grid that facilitates walking and cycling for access to daily activities; and also enables direct local vehicle trips within the neighbourhood and to local activity points.
- b) The suburb has a coherent urban system of compact walkable neighbourhoods which cluster to form a suburb with a high degree of street connectivity.
- c) Neighbourhood identity is reinforced by the location open space areas at focal points within convenient walking distance for residents.
- d) The vehicle, cyclists and pedestrian networks and lot density assist in reducing local vehicle trips, travel distances and speeds, maximising public transport effectiveness, and encouraging walking and cycling to daily activities.

12.8.3.2.2 Vehicular Movement

A. Objectives

- a) To create a legible road hierarchy.
- b) To provide a high degree of connectivity within the site and between the site and the adjoining areas.
- c) To minimise the negative impacts of through traffic.

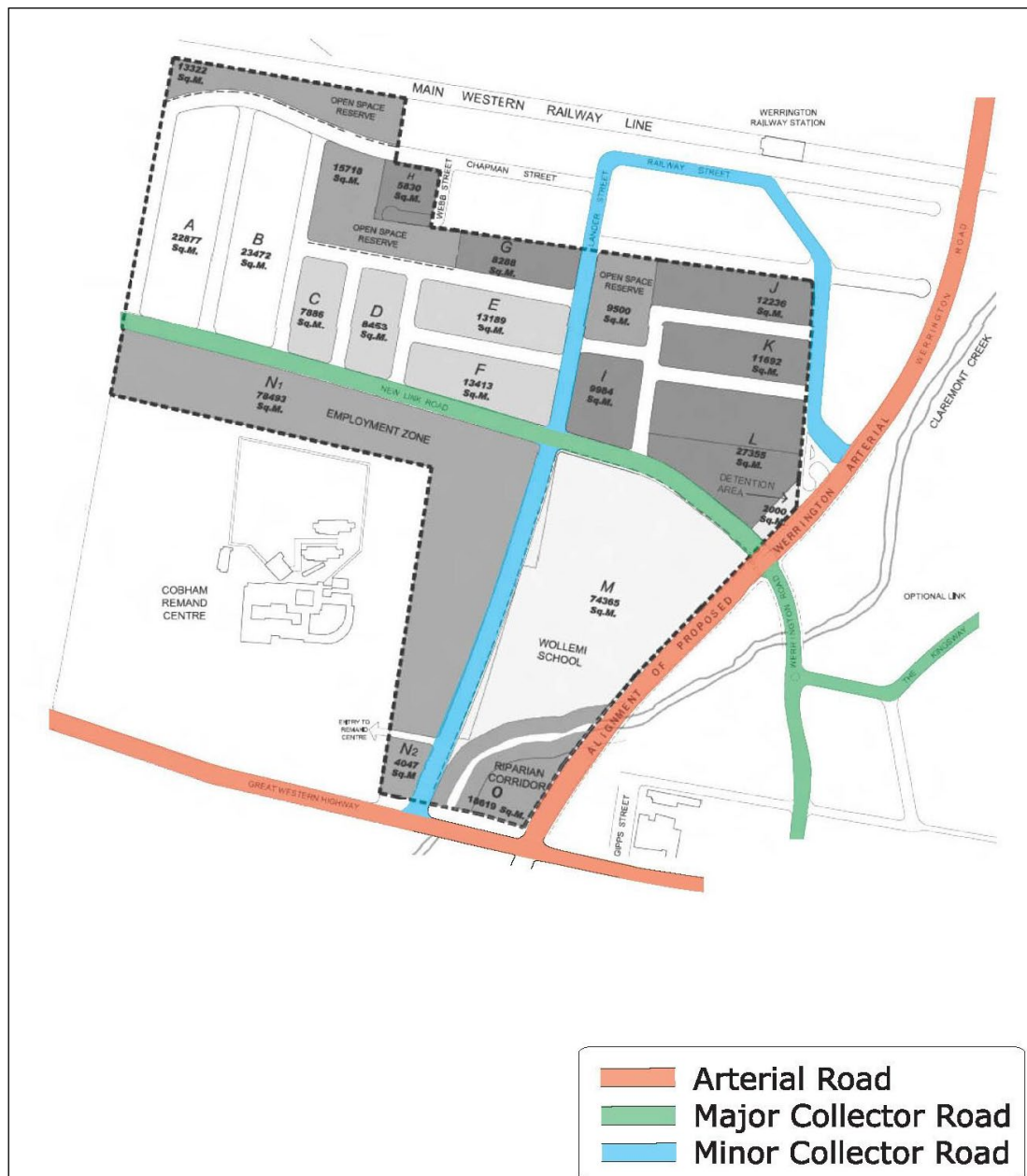
B. Performance Measures

- a) A hierarchy of streets should reflect the function and traffic load of each street in a network, minimise travel distances, maximise access to facilities and services and assist people find their way.
- b) The street network connects with adjacent collector routes and neighbouring streets to maximise movement efficiency and social connection.
- c) The street network takes account of the topography and vegetation and respects any existing or potential site assets.
- d) The street network allows all development to address the street.

C. Controls

- 1) Street blocks are to have a maximum length of 200m and maximum depth of 90m.

Figure E12.14: Road Network Hierarchy



12.8.3.2.3 Public Transport

A. Objectives

- To increase opportunities for use of public transport.
- To enable the efficient operation of bus routes on designated roads.
- To encourage the early introduction of bus services within the estate.

B. Performance Measures

- The bus route facilitates connections between the Precincts, the existing residential estates and key facilities adjoining the subject lands, local facilities and the Penrith CBD.
- Bus routes and sheltered bus stops are designed, constructed and clearly marked.
- The early delivery of bus services as the community grows.

C. Development Controls

- All dwellings within the release area are within 400m distance from a designated bus route as shown on Figure E12.15 Recommended Bus Route.
- The bus route will be designed and constructed in accordance with the road profiles identified at Section 12.8.3.2 – Road Sections.

Figure E12.15: Recommended Bus Route



12.8.3.2.4 Pedestrians and Bicycles

A. Objectives

- To promote active transport options by providing safe and convenient routes to and from key focal points within the release area.
- To promote an active and healthy lifestyle.
- To promote casual social interaction among neighbours.

- d) To promote Universal Design principles in all new facilities.

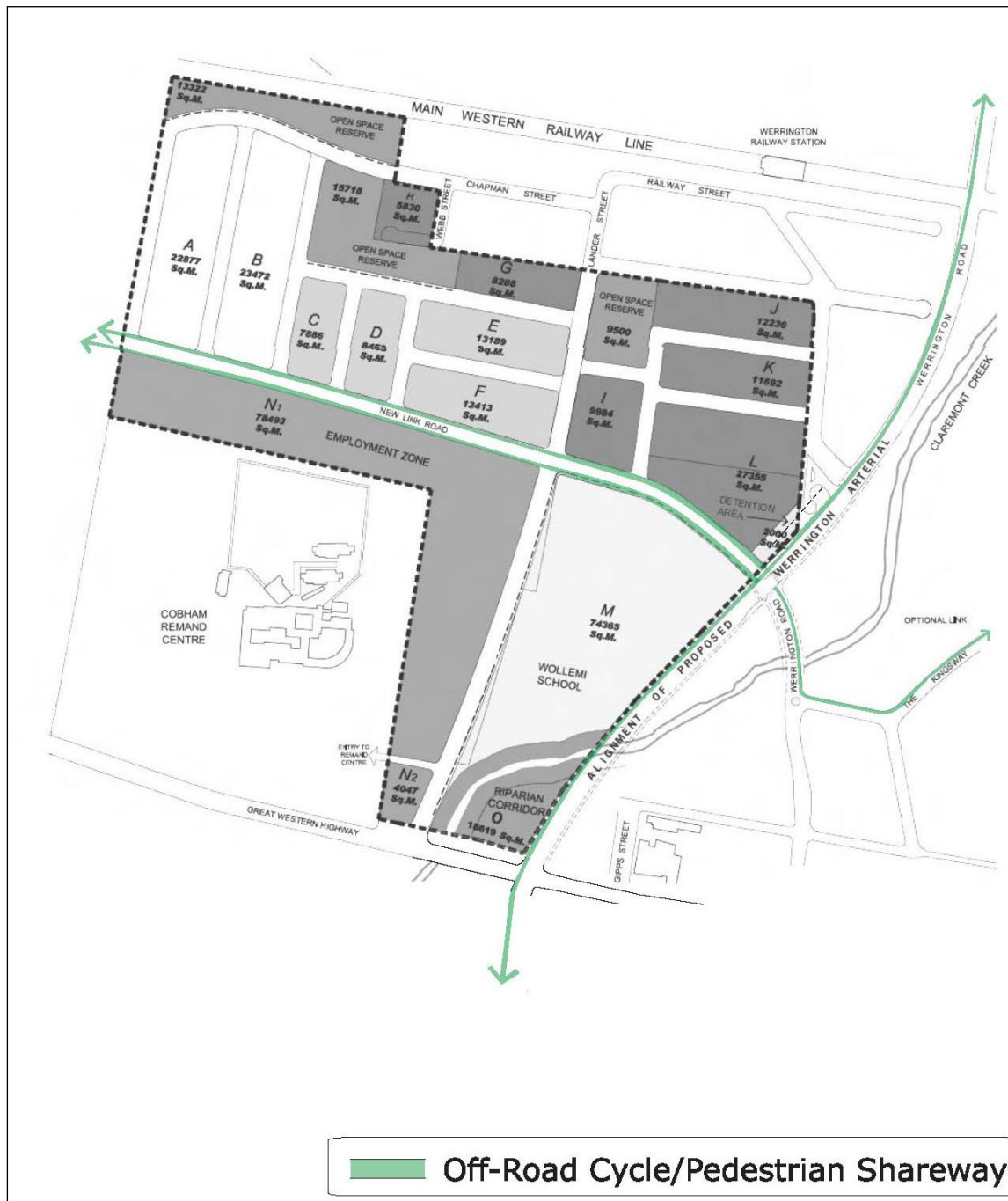
B. Performance Measures

- a) Footpaths are an integrated element of the normal street network.
- b) The cycle network is a combination of on street and dedicated pathways that link the main points of attraction and significant natural features.
- c) Separate pathway will operate within parks and open spaces areas as well as the locations identified at Figure E12.16 – Pedestrian and Cycle Network.
- d) Pathways in open spaces are aligned approximately parallel with its interface to the street to take advantage of the street lighting and allow for casual surveillance by residents and drivers.
- e) Pathways are designed and constructed wherever possible and practical to be of appropriate width, longitudinal gradient and, sight distance.
- f) Kerb details cater for all users, including aged people, people with prams and in wheelchairs, and people with disabilities, and take account of Universal Design principles.
- g) Street landscaping is provided to enhance the appearance of the street and pedestrian environment, including providing protection from the sun.
- h) A primary pathway network is designed, constructed and clearly marked in accordance with Figure E12.16 – Pedestrian and Cycle Network.

C. Development Controls

- 1) All Pathways will be a minimum of 1.5m and be provided to both sides of the road.
- 2) Pathways that form part of the open space network are to be a minimum width of 2.5m.
- 3) Where the pathway aligns with the street network, as identified at Figure E12.16 – Pedestrian and Cycle Network, the road reserve will be widened by 1.3m where it aligns with a local road or minor local road and 1.0m where it aligns with a collector road as determined by Section 12.8.3.3.2 Road Sections, to ensure a 2.5m pathway can be provided.

Figure E12.16: Pedestrian and Cycle Network



12.8.3.3 Streetscapes

12.8.3.3.1 Landscape Character

A. Objectives

- a) To provide an attractive and sustainable residential community.
- b) To ensure development contributes to cohesive streetscape and desirable pedestrian environments.
- c) To provide safe and secure environments for pedestrians and cyclists.
- d) To promote casual social interaction among neighbours.
- e) To encourage an active and healthy and active lifestyle.
- f) To ensure street layouts provide well distributed public open spaces that contribute to the legibility and character of the development.
- g) To promote landscape treatments that are appropriate to the character and constraints of each locality.
- h) To ensure that landscaping is maintained and enhanced as a major element in the streetscape.

B. Performance Measures

- a) The release area landscape includes streets lined with tall tree species.
- b) Streets are designed to establish or enhance the unique character of the precinct by responding to its topography, desirable views or local features.
- c) Street vistas are terminated with views to open spaces, parks and items of significance.
- d) The carriageway is visually contained to promote steady, predictable traffic speeds by:
 - i) Clearly defining the boundary between pedestrian and vehicle zones.
 - ii) Providing on-street parking.
 - iii) Planting street trees at regular spacing.
- e) Boundaries between street verges and private front yards are clearly defined and houses are designed to encourage passive surveillance.
- f) Landscaping helps define boundaries, create continuity and provide shade.
- g) Water sensitive urban design elements are integrated into street verges and shall be designed in such a way that they do not occupy the same zone required for street planting.
- h) On-street parking is provided at a rate appropriate to the anticipated demand while ensuring the landscape character and street function is not compromised.
- i) Design details such as footpath and driveway cross-overs are uniformly applied to make the street character more consistent.
- j) Street signage is designed to be complementary to the overall streetscape design and character and signage clutter is avoided.
- k) Existing mature trees are retained and native street tree plantings, are provided to enhance the appearance of the street and pedestrian environment, including providing protection from the sun.

C. Development Controls

- 1) Street trees are to be provided at a rate of one tree for every 10m of site frontage.
- 2) Street trees are to be provided at minimum size of 75 litres and fitted with tree guards.
- 3) Species selection is to be appropriate to the character and constraints of the locality.
- 4) Footpath verges are to be increased adjacent lots which have building setbacks less than 4.5m and where large street tree planting is proposed.

12.8.3.3.2 Road Sections

A. Objectives

- a) To provide a functional road network which allows good connections with the surrounding areas and encourages safe and convenient access into and through the site,
- b) To provide a safe and efficient movement network for all users.
- c) To encourage responsible driving behaviour, particularly safe travel speeds on residential streets.
- d) To cater for the efficient provision of public utilities.
- e) To incorporate the natural features of the site including the movement of stormwater, existing and new trees.

B. Performance Measures

- a) Streets are designed to ensure vehicle speeds can be controlled and it is clear where vehicles can be parked, cyclists can ride and where pedestrians should walk or cross.
- b) Opportunities for walking and cycling are well provided for.
- c) The materials, line marking and landscaping of the streets clearly delineate the travel lanes from the parking “lanes”.
- d) Where the provision of parking “lanes” is included in the street reserve width, they are landscaped as parking bays and defined by means of line marking and/or built tree planting bays.
- e) Parking on the grassed verge or on parks is restricted.
- f) Intersections are designed for the safe and convenient passage of vehicles, pedestrians and cyclists.
- g) The road layout and design should discourage high speeds and incorporate “traffic calming” devices as required.
- h) The road design shall make provision for the needs of cyclists.
- i) The road layout and design should allow for the safe access of commercial and articulated vehicles to the employment areas.
- j) Upright kerbs are used throughout the suburb.
- k) Development occurs in accordance with the road hierarchy demonstrated at Figure E12.14 – Road Network Hierarchy.

East West Road and North South Road

A. Performance Measures

- a) Direct vehicular access to development occurs only where topography and site distances allow safe entry and exit.
- b) Provide for dedicated cycle lane on carriageway.
- c) Provide high accessibility for all road users throughout the release area.
- d) Have a clear lane width able to handle local bus services.
- e) Are of a scale consistent with the higher order role these roads will play in the overall movement network the release area.
- f) Integrate footpaths and establish pedestrian amenity that reflect the linking role these streets will play in the urban fabric.
- g) Be designed to provide safe pedestrian crossing points and lighting in accordance with the relevant Australian Standard.
- h) Are able to comfortably accommodate the co-location of bus shelters and pathways.
- i) Include treatment of intersection of North South road with the East West road.

Local Roads

A. Performance Measures

- a) Provide accessibility between the link road and services the immediate residential lots.
- b) Roads are designed to allow a reasonable free flow of traffic and discourage high speeds.
- c) Speed controls are provided as integrated element of the streetscape and road design and provision is made for the needs of cyclists.

Minor Local Road

A. Performance Measures

- a) Provide limited vehicle access for through traffic look to access or exit the local road network
- b) Regular, minor delays or the need for driver co-operation due to vehicles parking on local roads is an acceptable, traffic calming outcomes.
- c) Maintaining high levels of permeability for non-vehicle road users
- d) Roads are designed to ensure a low speed traffic environment
- e) Informal on street parking constrains traffic movement

Laneways

A. Performance Measures

- a) Lanes are shared zones allowing vehicular traffic for access to rear loaded garages only.
- b) Are to incorporate a change in materials and/or kerb cuts to provide differentiation to other vehicular streets.
- c) Are constructed in plain concrete pavement.
- d) No parking is permitted in Lane Ways.
- e) Designed with a central invert for drainage where topography allows

- f) Studio units built above or adjacent to garages will be encouraged to provide surveillance.
- g) Laneway provide distinctive plantings at lane entry areas.

B. Controls (All road types)

- 1) Roads are to be constructed in accordance with the dimensions identified at Figure E12.17a – E12.17e as per the road hierarchy.
- 2) Any entry and exit to the employment areas must not adversely affect traffic movements on the road network.
- 3) Widening of road may be required where topographical or road curve circumstances dictate.
- 4) Any medians proposed within any road are to be in addition to the road widths detailed in Figures E12.17a – E12.17c.

Figure E12.17a: East West Link Road

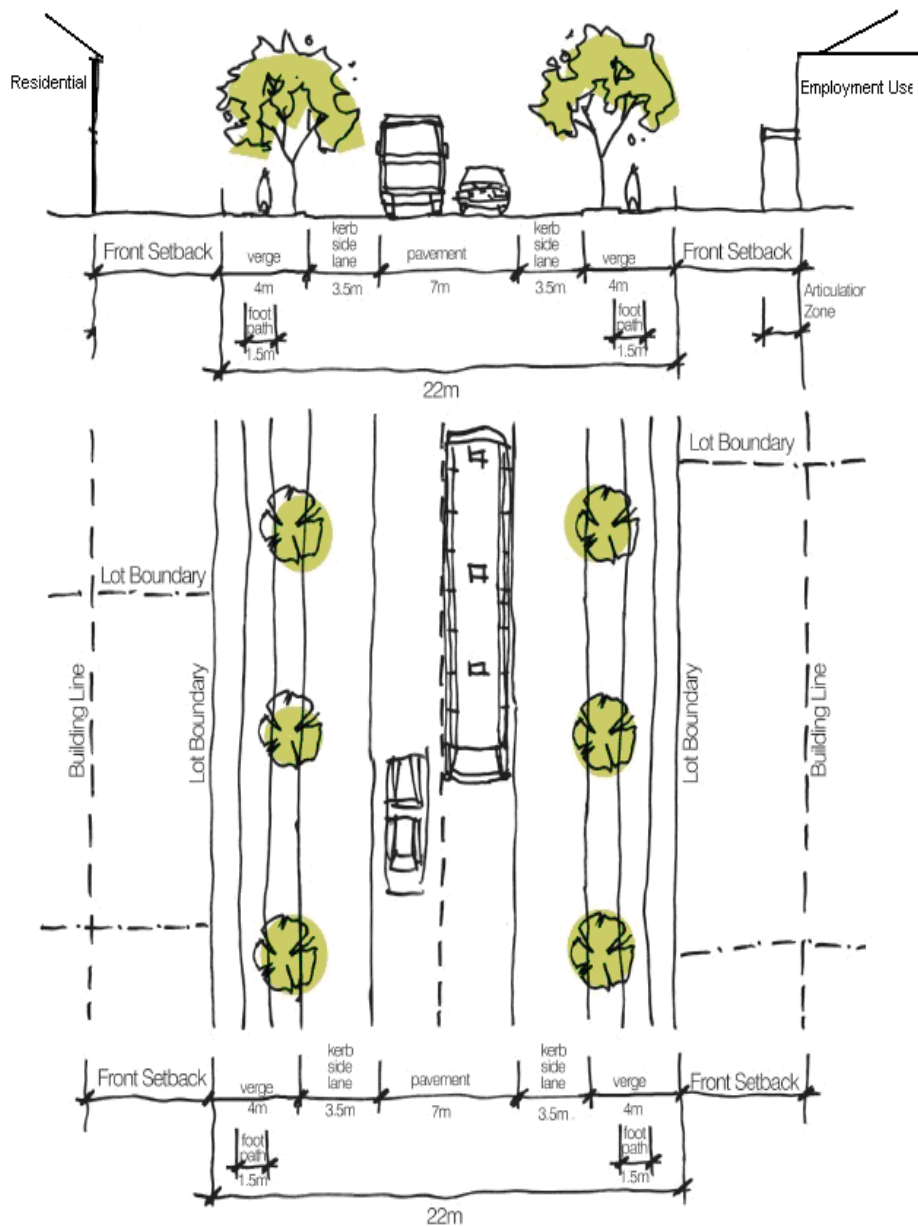


Figure E12.17b: North South Road

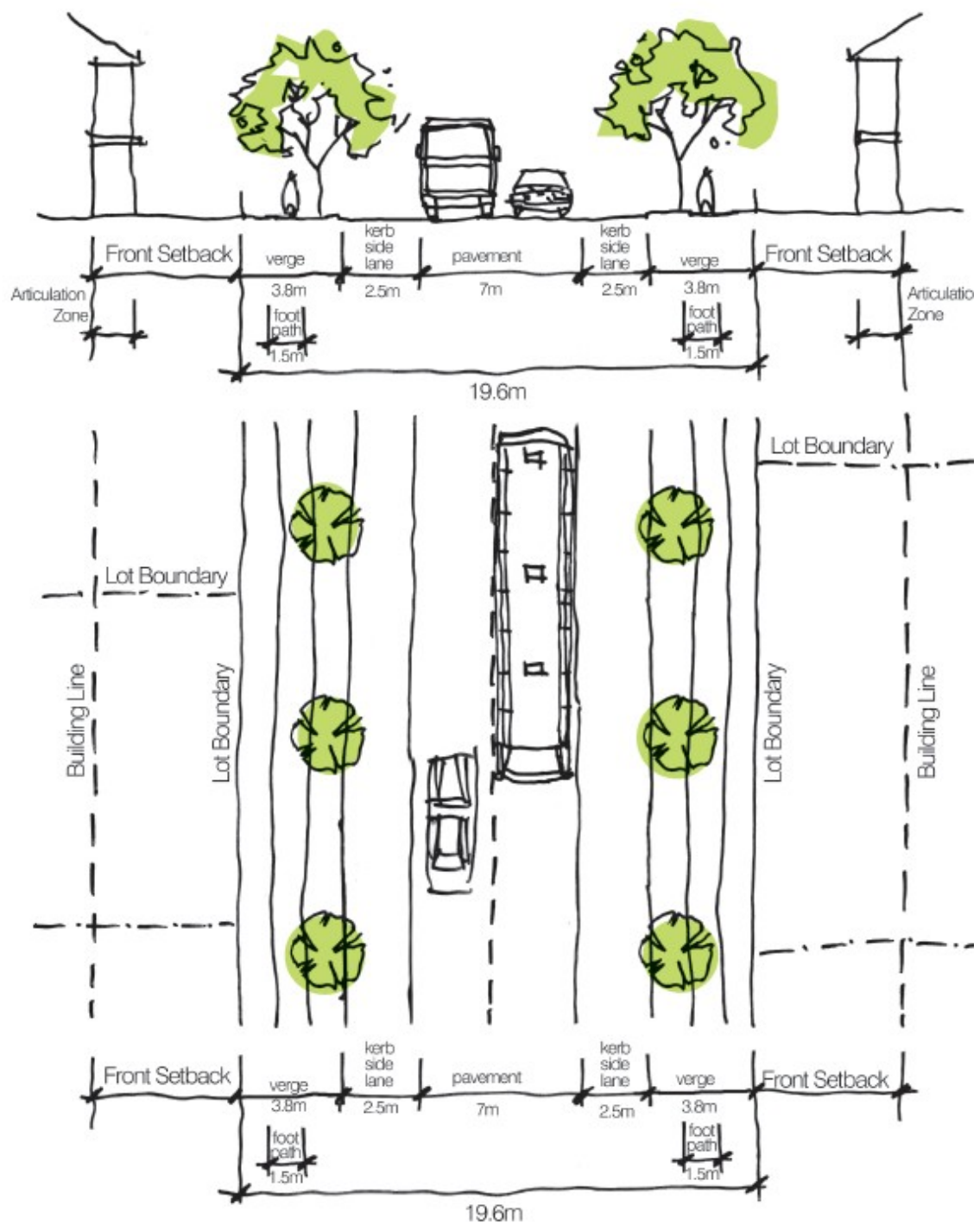


Figure E12.17c: Local Road

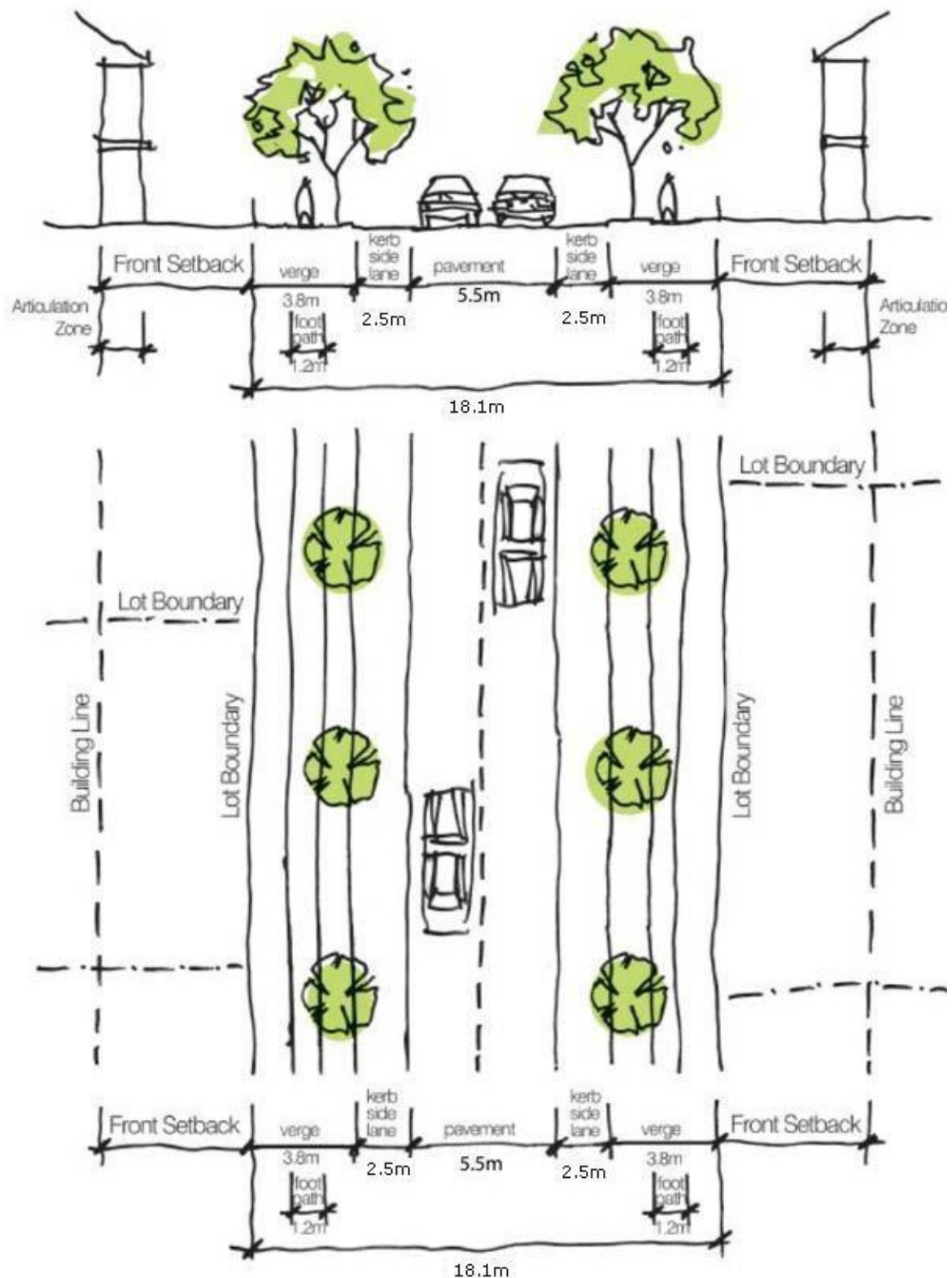


Figure E12.17d: Minor Local Road

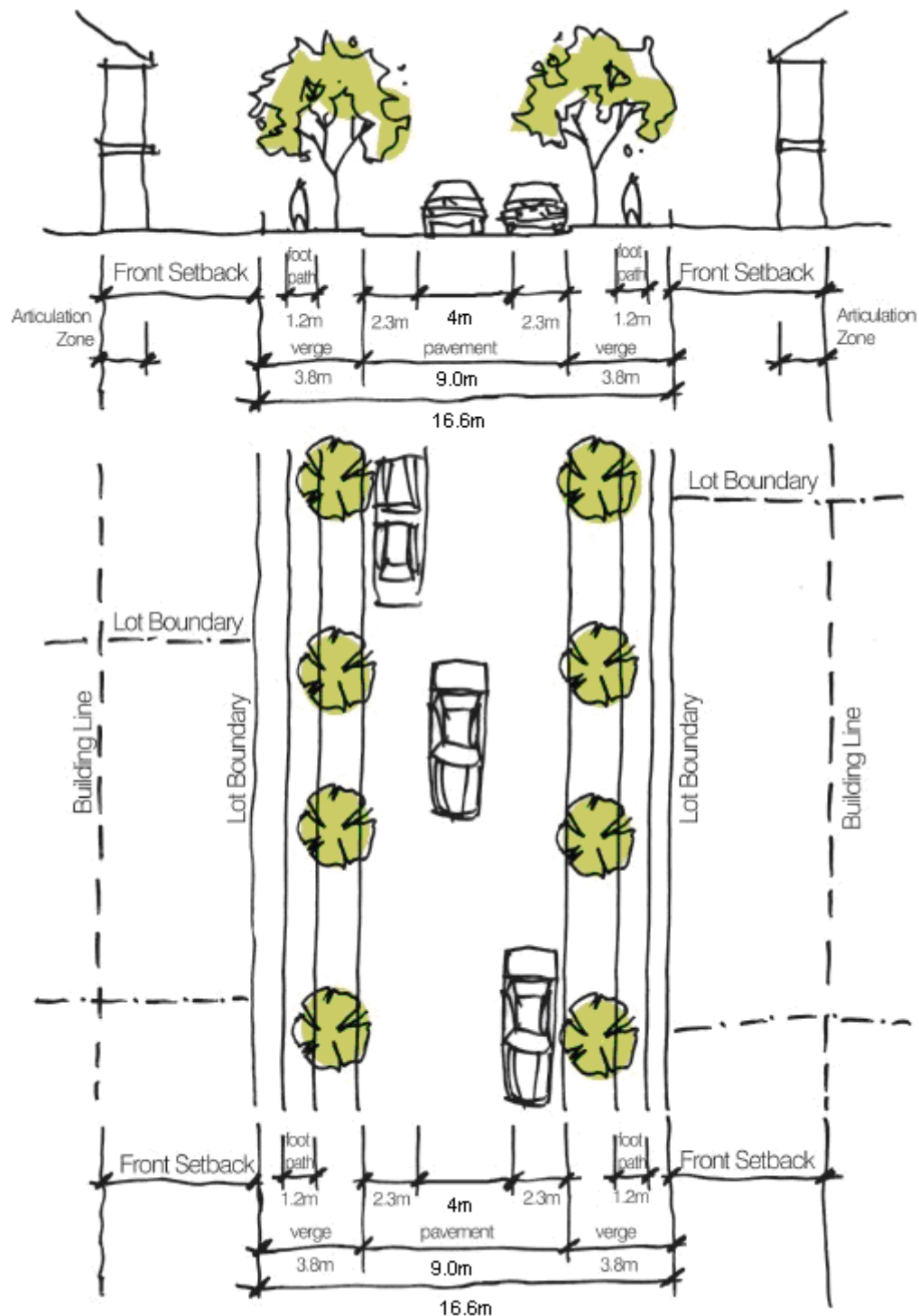
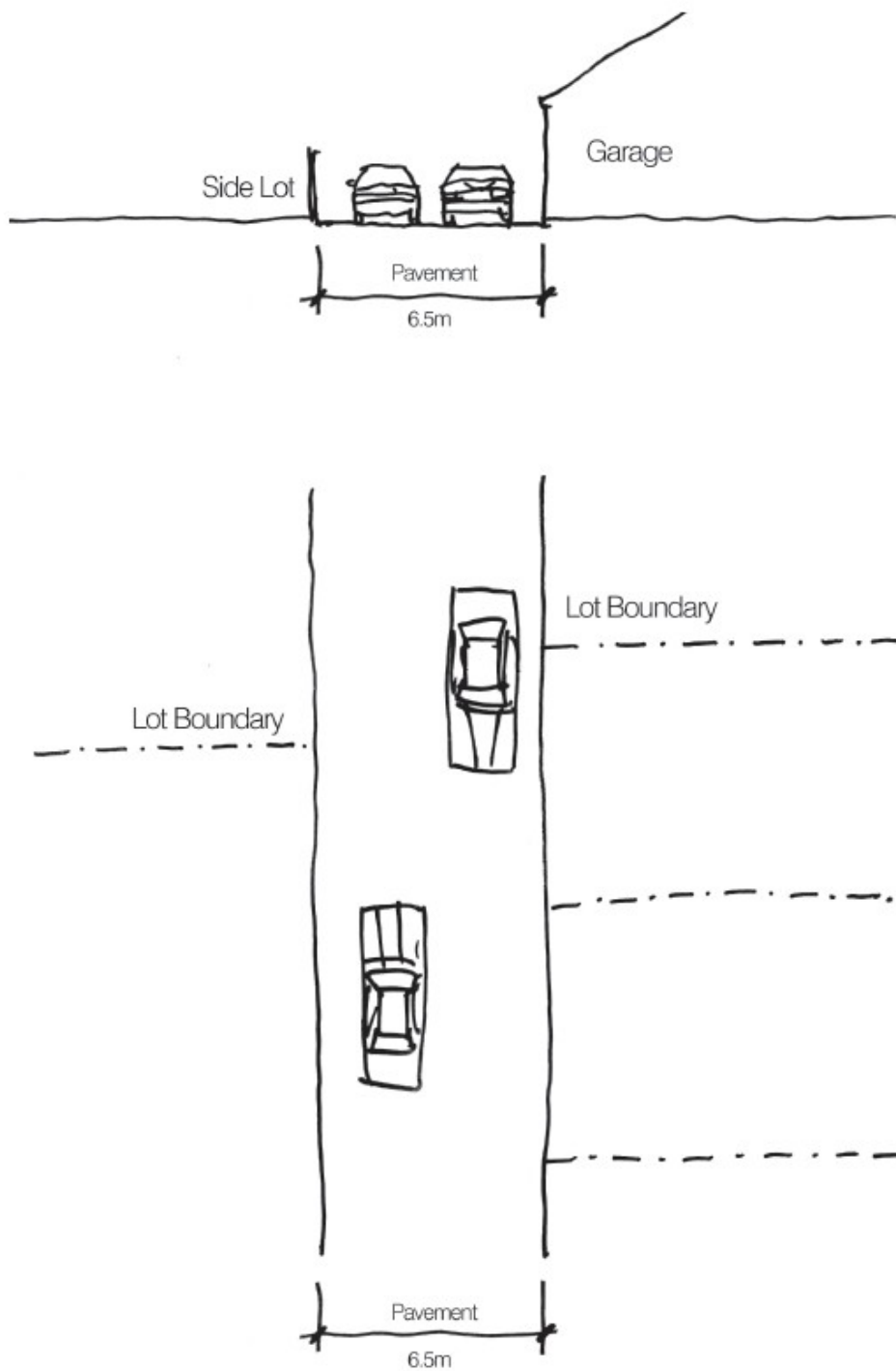


Figure E12.17e: Laneways



12.8.3.4 Passive Open Space and Environmental Conservation Areas

A. Objectives

- a) To encourage community interaction by creating desirable gathering spaces, using parks as local meeting places providing a range of passive recreation activities.
- b) To conserve and appreciate remnant woodland areas including biodiversity and native fauna habitat.
- c) To provide high amenity areas for adjacent residential development.

B. Performance Measures

- a) Existing vegetation is retained and enhanced by additional complementary plantings.
- b) Parks create a precinct focus for the surrounding neighbourhood.
- c) Parks are generally bounded by streets with buildings oriented towards the open space providing outlook and passive surveillance.
- d) There are no back fences of development facing public open space.
- e) The parks provide linkages between the broader pedestrian and bicycle networks.
- f) Playground facilities are provided within the parks.
- g) Seating and shade opportunities are provided within the parks.

C. Development Controls

- 1) The indicative location of neighbourhood parks and environmental conservation areas are indicated on the Structure Plan (Figure E12.10 – South Werrington Urban Village Structure Plan).
- 2) The design of the parks is to be in accordance with the concept landscape plans indicated in Figures E12.18a and E12.18b.
- 3) Lighting shall conform with the Australian Standards including AS1158, AS1680 and AS2890.
- 4) Development applications that include the creation of open space areas must be accompanied with a Vegetation Management Plan for those areas and shall outline procedures for such matters as (but not limited to); identifying revegetated areas, bushfire control, weed control, public access control, fencing and treatment of 'edge' zones.

Figure E12.18a: Western Local Park Concept Plan

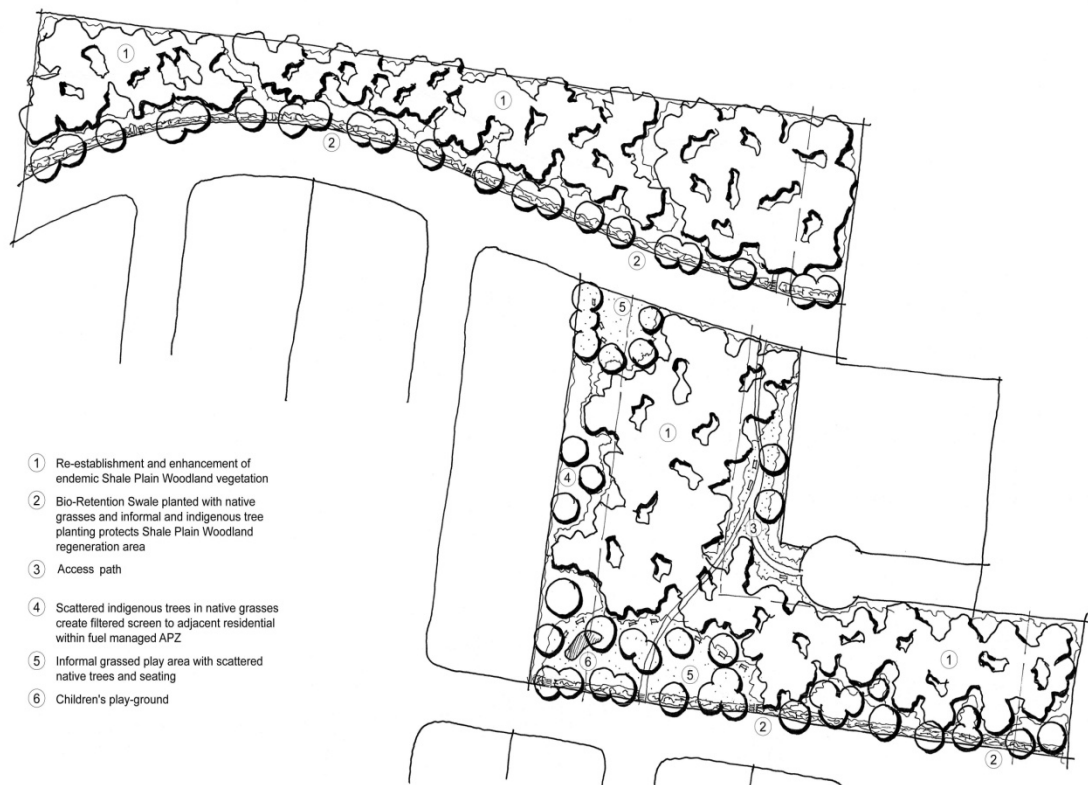
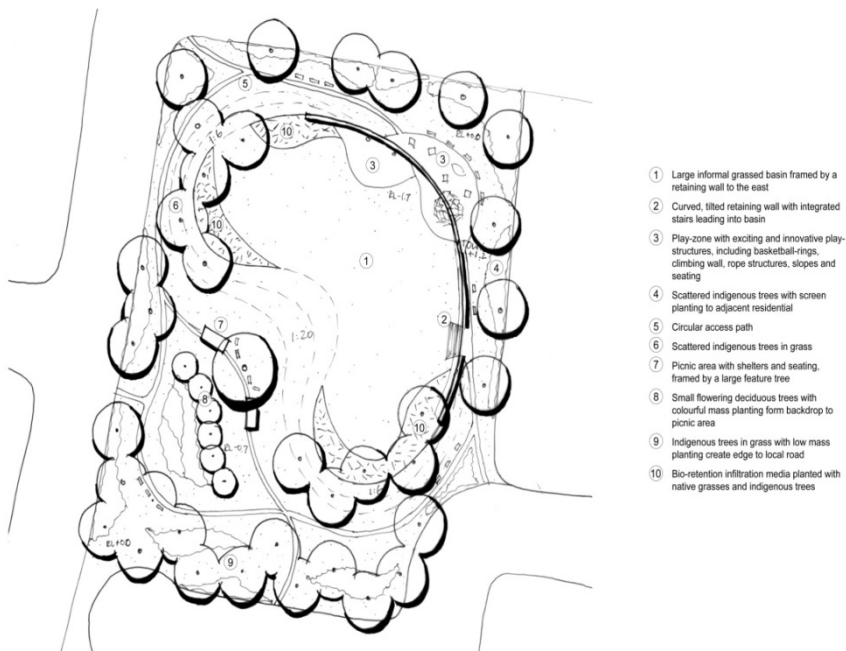


Figure E12.18b: Eastern Local Park Concept Plan and Northern Environmental Conservation Area (private land)



12.8.3.5 Public Facilities

A. Objective

- a) To ensure that facilities to be provided in the public domain can be effectively managed and maintained.

B. Controls

- a) The nature of facilities to be provided in the public domain shall include (but not limited to):
 - i) Seating
 - ii) Bins
 - iii) Lighting
 - iv) Signage
 - v) Drainage facilities
 - vi) Shade structures
 - vii) Public art
 - viii) Fencing
- b) Development applications shall include detailed designs and a management and maintenance plan for all facilities proposed for the public domain. The plan shall include suggested maintenance schedule, outlining the nature and frequency of works required. The purpose of the maintenance plan is to enable Council to properly assess the future maintenance requirements of proposed public domain infrastructure.

12.8.4. Private Domain

12.8.4.1 Subdivision

A. Objectives

- a) To provide block sizes that maximise access to solar orientation.
- b) To provide a subdivision pattern that accommodates a range of dwelling densities and lot sizes.
- c) To provide lot sizes and shape that reflects the broader urban structure.
- d) To promote the most appropriate locations for higher density housing forms.
- e) To ensure development responds to site topography and natural constraints and opportunities.
- f) To ensure lots have total areas and dimensions that allow dwellings, ancillary buildings, private outdoor open space, landscaped areas, vehicle access and parking to be located and constructed appropriately.

B. Performance Measures

- a) Lots are designed to maximise efficiency in house plans and useable external areas by having a regular shape.
- b) Lots are oriented to facilitate siting of dwellings and private open space to take advantage of winter solar access and summer sun deflection.

- c) Lots identified to accommodate higher density housing forms will be around open space areas.
- d) Larger lots frontages provided on street corners to allow development to address both street frontages.
- e) Lot sizes and dimensions take into account site topography and reduce the need for earthworks and retaining wall construction.
- f) Lot sizes and dimensions allow for retention of existing trees as part of subsequent site development.
- g) Lots front streets and overlook open spaces to provide passive surveillance of those areas.

C. Controls

- 1) Minimum lot dimensions for residential development are identified in Section 12.8.5- Residential Development Types.
- 2) Single dwelling lots are to be a minimum of 25m deep.
- 3) North-south oriented lots shall vary in depth to provide longer, narrower lots on the south side of the street and shorter, wider lots on the north side.
- 4) Lots with an east-west axis shall have a minimum width of 12m, unless they are intended for use by attached dwellings.
- 5) On north-south roads, allotments may need to be widened to provide for solar access and prevent overshadowing of dwellings and private open space.
- 6) Where land slopes are generally greater than 5%, road and allotment design should provide for dwellings to be generally parallel with the contours to minimise earthworks. Special care should also be taken in the configuration of roads and allotments to:
 - a) minimise boundary retaining walls, particularly associated with building to boundary
 - b) minimise potential overlooking
 - c) maintain solar access, where slopes face south. A greater distance between dwellings will generally be required to achieve the same solar access as on level sites or north facing slopes.
- 7) Excavations associated with a cut and fill platform for all single dwellings, single dwelling additions and Class 10 buildings are limited to a maximum of 1m.
- 8) Construction on sloping sites where the combined cut and fill will exceed 1m shall incorporate raised floor or split level type construction.
- 9) Lots are to be designed to meet dwelling yields detailed in Table E12.3 and Figure E12.11.

12.8.4.2 Site Planning

12.8.4.2.1 Principal Private Open Space

A. Objectives

- a) To provide a high level of residential amenity with opportunities for outdoor living within the property.
- b) To enhance the spatial quality, outlook, and usability of private open space.

- c) To optimise solar access to the living areas and private open spaces of the dwelling.

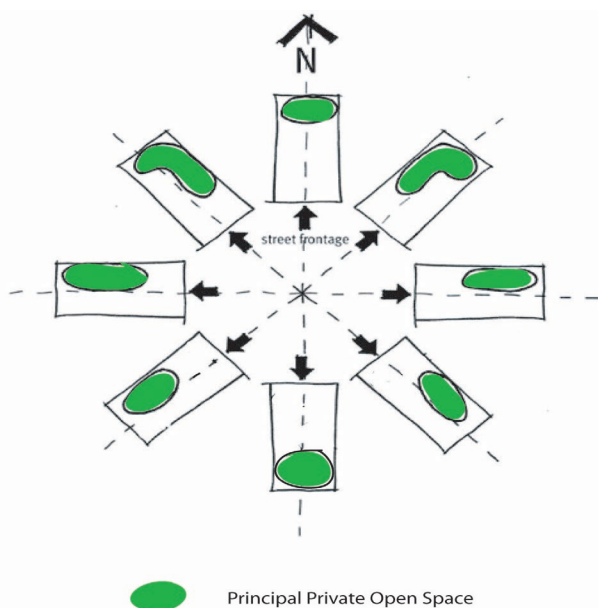
B. Performance Measures

- a) Principal private open spaces are the primary organising element of site planning and dwelling design.
- b) Private open spaces should be located at ground level in rear yard areas that maximise opportunities to obtain solar access for all dwelling types other than apartments.
- c) Development with a northern orientation provides secondary private open spaces area at the street frontages through the use of courtyards and balconies.
- d) The principal private open spaces should have a direct interface with primary internal living area of its dwelling.
- e) Development should achieve the preferred location for open space location as demonstrated at Figure E12.19 – Private Open Space Siting.

C. Development Control

- 1) Dwellings will achieve the minimum standards for Principal Private Open Space as identified at Section 12.8.5 – Residential Development Forms.

Figure E12.19: Private Open Space Siting



12.8.4.2.2 Garages and Parking

A. Objectives

- a) To provide sufficient and convenient parking for residents and visitors.
- b) To reduce the visual impact of garages, carports, and parking areas on the streetscape and improve dwelling presentation.
- c) To promote safe public domain areas.

B. Performance Measures

- a) Garages provide flexible accommodation for vehicles, storage, and covered areas for outdoor recreation.

- b) Studios are provided over garages to rear lanes to provide surveillance, work from home or residential accommodation opportunities.

C. Controls

- 1) Front garages are to be setback behind the front most element of the house and integrated as part of the dwelling façade.
- 2) Garages are to be constructed in materials and colours which blend the garage doors into the main building.
- 3) Double garages are the maximum garage size allowed for single dwelling houses.
- 4) Where a dwelling provides vehicular access to the street the garage will be setback a minimum of 5.5m from the front boundary.
- 5) Stacked parking is an acceptable outcome provided it is accommodated entirely within the property.
- 6) Vehicle crossings between the street and front boundary shall be constructed in plain concrete only.
- 7) Garages are to be provided per AS 2890.1 Off Street Parking, for full door opening including:
 - a) Minimum widths of 3.2m for single garages.
 - b) Minimum width of 5.8m for double garages.

12.8.4.2.3 Building Footprints

A. Objectives

- a) To provide a variety of streetscapes that reflects the character of different precincts.
- b) To create an attractive and cohesive streetscape within local precincts.
- c) To maximise provision of solar access to dwellings.
- d) To minimise the impacts of development on neighbouring properties in regard to view, privacy, and overshadowing.
- e) To encourage the efficient and sustainable use of land.
- f) To allow for landscaped rear yard areas.
- g) To promote public safety of public domain areas.
- h) To manage risk from bushfire events.

B. Performance Measures

Front Setbacks

- a) Front setbacks are site responsive and will be determined for individual lots as part of the Subdivision Approval process given consideration to the following matters:
 - i) Future dwelling type.
 - ii) Orientation of lots.
 - iii) Provision of front yard open space and associated fencing.
 - iv) Availability of direct vehicle access to the street.
 - v) Relevant role of street in local road hierarchy.

- vi) Proximity to open space areas.
- vii) Location within Neighbourhood Centre.
- viii) Requirements to provide Asset Protection Zone.

Rear Setbacks

- a) Landscaping provision that allows trees in the rear yard area to provide a vegetated backdrop to the development.

C. Development Controls

Front Setbacks

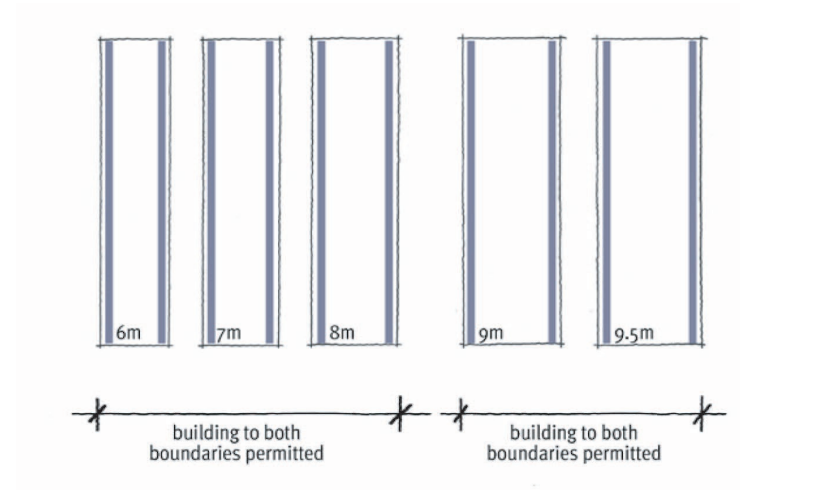
- 1) Front setbacks are identified in Section 12.8.5 – Residential Development Forms, for each dwelling type.

Side Setbacks

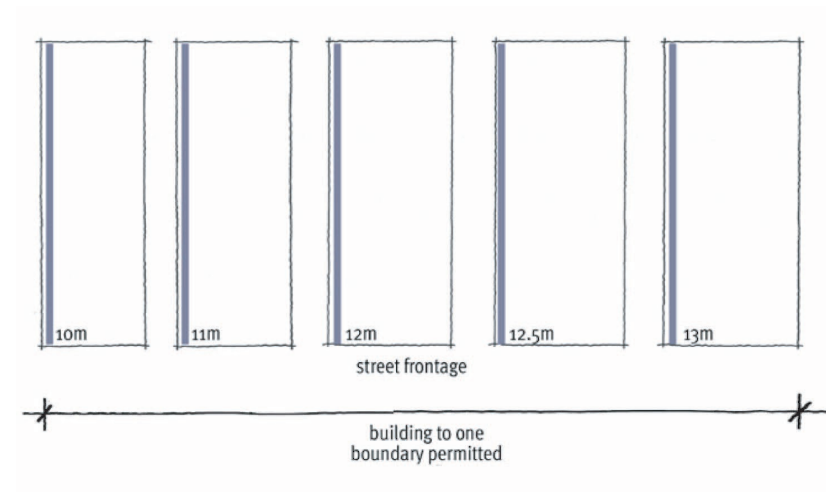
- 1) The width of the lot will determine the ability of the site to provide zero lot lines.
- 2) Where only one side of a lot can provide a zero lot line, then Figure E12.20 – Zero Lot Lines will be used to determine which of those boundaries accommodates that zero lot line.
- 3) A maintenance easement of at least 900 millimetres is to be provided on the boundary adjacent to the zero lot line.
- 4) All other side setbacks will be a minimum of 900mm.
- 5) Fascias, gutters, downpipes, eaves (up to 450 millimetres wide) and chimneys flues may encroach into the side setback.
- 6) No windows are provided in zero lot line walls.

Figure E12.20: Zero Lot Lines (all 3 figures below)

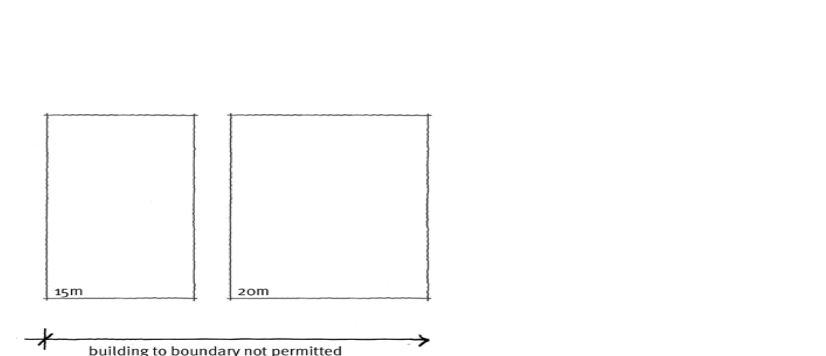
Attached dwellings



Semi Detached dwellings



Detached dwellings



12.8.4.3 Building Envelope

A. Objectives

- a) To ensure development is appropriately scaled to suit the dwellings local context.
- b) To ensure building heights achieve built form outcomes that reinforce quality urban and building design.
- c) To protect reasonable amenity expectations of neighbouring sites.

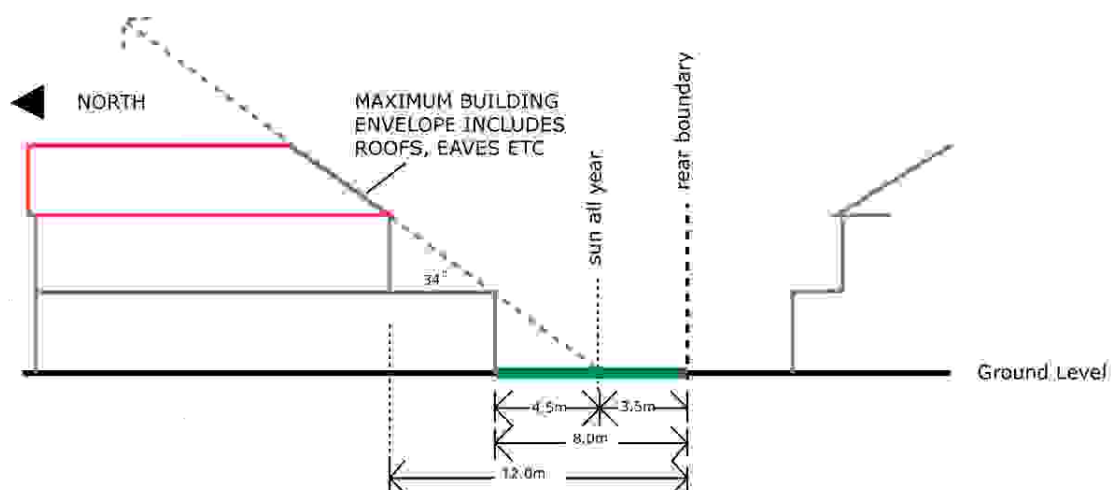
B. Performance Measures

- a) Building heights are site responsive and will be determined for individual lots as part of the Subdivision Approval process given consideration to the following matters:
 - i) Future dwelling type.
 - ii) Orientation of lots.
 - iii) Relevant role of street in local road hierarchy.
 - iv) Site topography.
 - v) Key street intersections.

C. Development Controls

- 1) Areas of Principal Private Open Space should achieve at least 3 hours of sunlight to 50% of the required private open space area between 9am and 3pm on 21 June.
- 2) Buildings should be designed to ensure that 40% of the Principal Private Open Space area of adjoining dwellings sites receives a minimum of 3 hours of sunlight between 9.00am and 3.00pm on 21 June.
- 3) Dwellings with a northern orientation that share a rear boundary with residential development will achieve the building height envelope as identified at Figure E12.21 – Building Envelope from Rear Boundaries.
- 4) Dwellings that share a rear boundary with a private driveway or rear lane is not required to achieve the building envelope.

Figure E12.21: Building Envelope from Rear Boundaries



12.8.4.4 Dwelling Design

A. Objectives

- a) To provide simple and articulated building forms.
- b) To provide a high quality and cohesive streetscape.
- c) To promote an architectural style that is contemporary and innovative.
- d) To promote a safe public domain area.
- e) To promote energy efficient and sustainable development.
- f) To reduce the dominance of garages on the streetscape.
- g) To identify appropriate design responses for corner lots.

B. Performance Measures

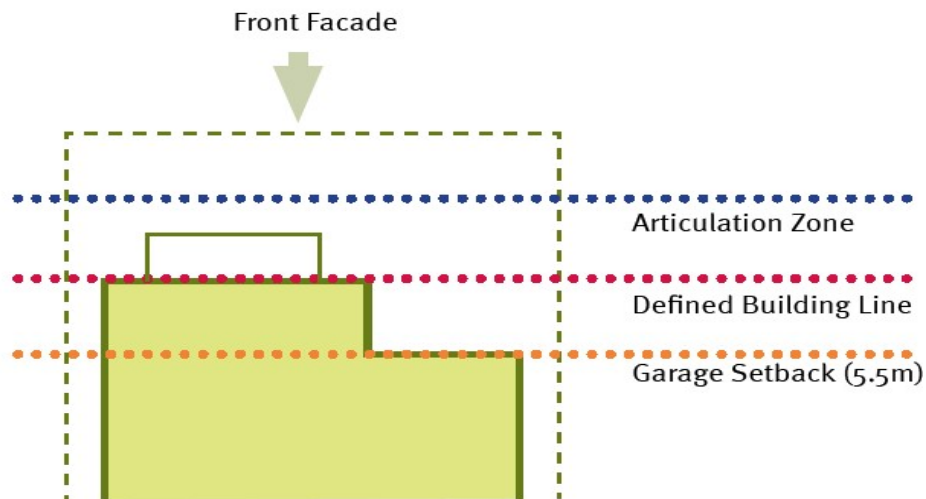
- a) All development addresses the street and is provided with a clear, legible and well lit pedestrian entry.
- b) The street elevation is well articulated by the use of awnings, verandahs, balconies and feature elements on the front facades of dwellings.
- c) Development achieves the principle of three layers of rear setbacks as illustrated at Figure E12.21 Building Envelope from Rear Boundaries.
- d) The finished ground level of development is raised above the street level to improve the outlook and enhance visual privacy from within the dwelling and front verandahs.
- e) Garages will be recessed or capped by overhanging elements that provide shading over the garage opening.
- f) Dwellings orientate living spaces to the north, sleeping areas to the east or south and utility areas to the west or south.
- g) Dwellings provide shading of north, east and west facing windows with pergolas and awnings.
- h) Buildings are to be designed to allow cross ventilation by positioning windows and doors opposite each other within rooms.
- i) Material and external finishes of buildings in bushfire hazard areas comprise appropriate construction standards for those areas.
- j) Built forms on corners provide important place making and way finding elements in the streetscape.
- k) Corner sites provide a frontage to both streets and articulate their corner location with an architectural feature such as, but not limited to a wraparound verandah, bay window, corner entry or roof feature.
- l) Dwellings provide adaptable house floor plans for the inclusion of a home office/business activity area.

C. Development Controls

- 1) Building elements (Verandahs, awnings, etc.) may project forward of the front building setback line by a maximum of 1.5m, as demonstrated in Figure E12.22 – Setbacks and Articulation.

- 2) Building elements projecting forward of the front building setback are limited to a maximum of 60% of the dwelling width.
- 3) Eaves are required over all walls except those on zero lot lines.
- 4) External building materials/finishes are to be varied across front elevations of buildings.
- 5) Retaining walls are to be constructed with appropriate masonry materials.

Figure E12.22: Setbacks and Articulation



12.8.4.5 Visual and Acoustic Privacy

A. Objectives

- a) Ensure buildings are designed to achieve the highest possible levels of visual and acoustic privacy.
- b) Protect visual privacy by minimising direct overlooking of habitable rooms and private open space.
- c) Contain noise within dwellings and minimise the intrusion of noise from outdoor areas.
- d) Ensure that noise generated by adjoining land use such as the proposed Werrington Arterial and Great Western Railway line are adequately addressed in the design and construction of development on the site

B. Performance Measures

- a) Windows to upper storeys are located on front or rear facades where possible.
- b) Offset second storey windows of living areas that face directly to windows, balconies or private open space of adjoining properties.
- c) First floor balconies or living room windows do not directly overlook private open space of adjoining dwellings unless suitable screening is provided.
- d) The design of attached dwellings minimises the opportunity for sound transmission through the building structure, with particular attention given to protection bedrooms and living areas.

- e) Living areas and service equipment are located away from bedrooms of neighbouring dwellings.
- f) Noise sensitive areas are located away from the noise emitting sources.

C. Development Controls

- 1) Habitable room windows with a direct sight line to habitable room windows in adjacent dwellings are to be avoided, however within 9.0m must be obscured by fencing, screens, or sufficient landscaping;
- 2) A screening device is to have a maximum of 25% permeability to be considered effective.
- 3) In attached dwellings, bedrooms of one dwelling are not to share walls with living spaces or garages of adjoining dwellings, unless it is demonstrated that the shared walls and floors meet the noise transmission and insulation requirements of the Building Code of Australia.
- 4) Residential development adjacent the proposed Werrington Arterial and the Main Western Railway will consider the relevant provisions in the Infrastructure SEPP.

12.8.4.6 Fencing

A. Objectives

- a) Creates a clear distinction between public and private domain areas.
- b) To ensure front fences contribute to the streetscape.
- c) Maintain safety in the public domain.
- d) Rear and side fencing provide privacy to open space areas.

B. Performance Measures

- a) Delineation of front property boundaries is achieved through use of landscaping, low fences or changes of site level.
- b) Front fences are open in style or “see through” construction (eg picket fence).
- c) Side property fences in front of the building line shall be treated as the front fence.
- d) Side property fences are terminated at the front building line and returned to finish against the building.

C. Development Controls

- 1) Fences to the street frontage:
 - a) are to be a maximum of 900mm in height.
 - b) may be a maximum of 1.2m in height where they define the primary open space of a dwelling.
- 2) Side property fences are to be a maximum of 1.8m high.
- 3) Fences to corner lots that accommodate single dwelling houses are to be a maximum 900mm high on both the primary street frontage and secondary street frontage to a point 10m from the dwelling frontage where it may then increase to 1.8m in height.
- 4) Solid front fences at 1.8m in height are to provide for a 1.2m landscape strip in front of the fence for its entire length.

- 5) Fences to corner lots that accommodate multi-unit housing forms are to be a maximum of 900mm on the primary street frontage and 900mm in height along the secondary street frontage in areas in front of the built form or 1.2m if they define the primary open space areas.
- 6) Front fencing shall have a minimum opening ratio of 50%.
- 7) Where solid fences are required to satisfy acoustic abatement, these fences shall not exceed 8.0m in length without some articulation or detailing to and must be softened on the street side with a landscaping strip of 1.2m minimum.
- 8) Prefabricated metal fencing is not permitted to the street frontage.

12.8.4.7 Site Facilities

A. Objectives

- a) To ensure that adequate provision is made for site facilities.
- b) To ensure that site facilities are functional and accessible to all residents and are easy to maintain.
- c) To ensure that site facilities are thoughtfully integrated into development and are unobtrusive.

B. Performance Measures

- a) Development demonstrates that the design takes into account garbage bin storage and collection without reducing the amenity of the dwelling or neighbouring lots.
- b) Garbage bin storage and mail box structures are to be integrated with the overall design of buildings and/or landscaping and are not visible from the street or rear lane way.
- c) External clothes drying areas are to be provided for all residential development.

12.8.5 Residential Development Forms

12.8.5.1 All Housing Types

A. Performance Measures

- a) Dwellings are designed to incorporate the option of 'live-work' activities (home-based businesses).
- b) To encourage quality designed dwellings that make a positive contribution to the streetscape and amenity of the neighbourhood.
- c) To provide definition of public domain by ensuring development addresses the streets and open spaces.
- d) To promote housing choice, variety and affordability.

12.8.5.2 Integrated Housing

A. Performance Measures

- a) Proposals where development includes subdivision which results in 3 or more dwellings on separate lots creating lots smaller than the minimum lot size for that type of development is to be considered as an Integrated Housing proposal.

- b) Any proposal for integrated housing shall be designed by an architect registered with The NSW Architects Registration Board.

12.8.5.3 Apartments

A. Performance Measures

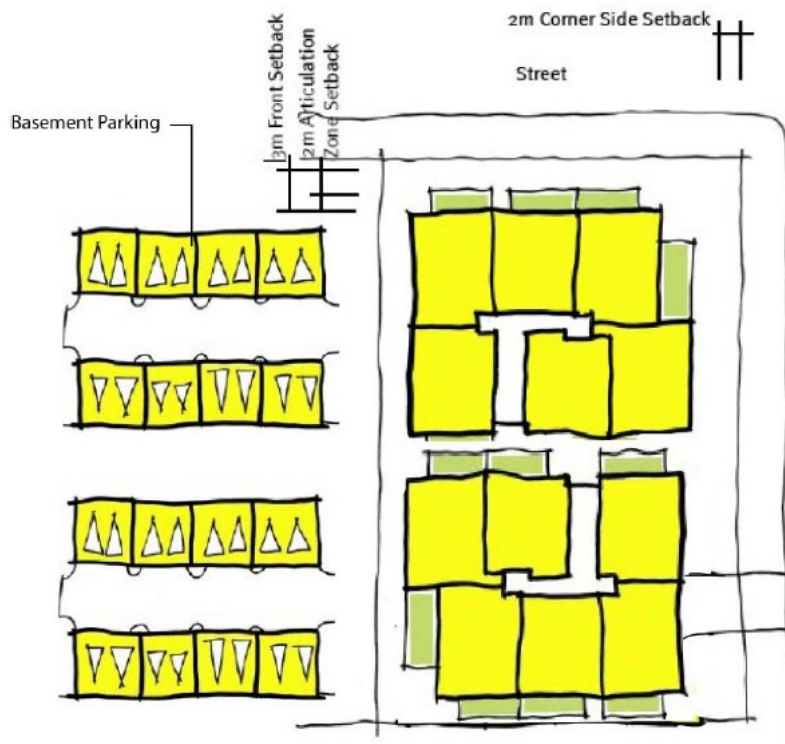
- a) Provide more urban orientated development and encourage higher density development in walking distance to Werrington Station.
- b) Be compatible in scale with the future mass and character of adjacent buildings.
- c) Provide parking on site and underground where possible.

B. Controls

Lot Dimensions	
Minimum Lot Size	650m ²
Minimum Lot Frontage	25m
Private Open Space	
Ground floor private open space	
Minimum Area	20m ²
Minimum Dimension	2.5m
Upper floor private open space	
Minimum Area	10m ²
Minimum Dimension	2m
Communal open space	
Per 10 dwellings	10m ²
Building setbacks	
Front	3m
Secondary Frontage	2m
Side	<ul style="list-style-type: none"> • 1.5m without opening to a habitable room • 3m opening to a habitable room
Rear	5m
Garage to rear lane/secondary frontage	0m

Other requirements	
Built Form	Development must utilise multiple entries and circulation cores in buildings with a length greater than 15m.
Adaptable Dwellings	10% of dwellings shall be adaptable per AS1428.1-1998- Design for Access and Mobility.
Vehicle Manoeuvring	Provide turning movements per AS 2890.1-2004.

Figure E12.23: Apartment Design Principles



12.8.5.4 Attached Dwellings

A. Performance Measures

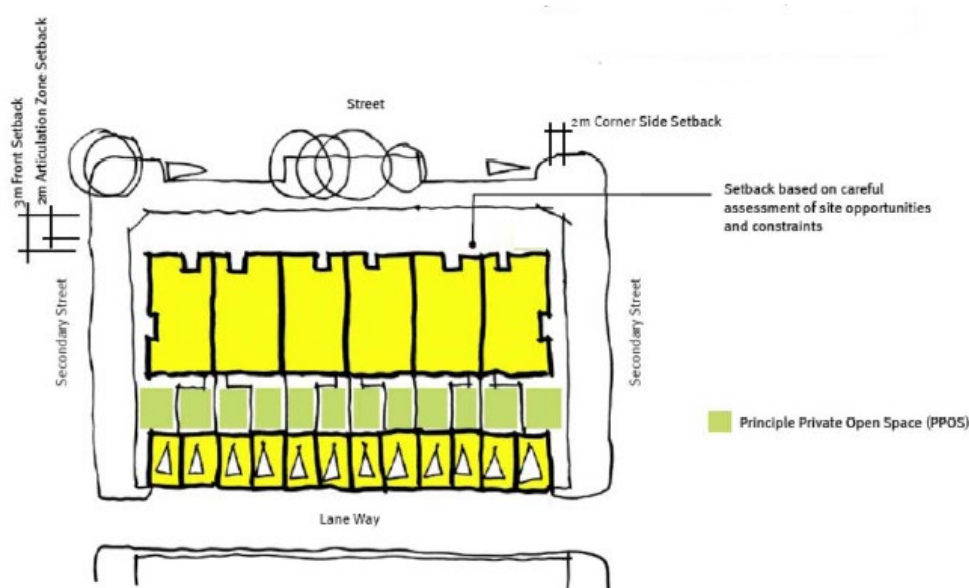
- Provide for parking with a rear loaded garage accessed from a rear lane or shared driveway.
- Integrate studio units located above a ground level garage are at ground level, located at the rear of the site in some locations.
- To encourage medium density development in close proximity to the railway station.

B. Controls

Lot Dimensions	
Minimum Lot Size	195m ² – 230m ²
Minimum Lot Frontage	6m – 9.5m
Private Open Space	
Minimum Area	20m ²
Minimum Dimension	4m
Landscaping Site Coverage**	40%
Building setbacks	
Front	3m
Secondary Frontage	2m
Side	0m
Rear	
Lots with a northern orientation	8m
All other lots:	
- Ground floor	4m
- Upper floor	6m
Garage to rear lane/secondary frontage	0m

** Any landscaped area having a dimension less than 2m shall not be included in the calculations of landscaped areas.

Figure E12.24: Attached Dwelling Design Principles



12.8.5.5 Semi Detached Dwellings

A. Performance Measures

- Have the appearance of a larger home, but comprise of 2 dwellings on separate Titles.
- When located on corner lots, semi-detached dwellings should provide distinct entries for each unit usually located on different street frontages.
- Dwellings have an adaptable design which can incorporate options for home-based business activities.
- When located at a corner provide vehicle access is to be provided off different street frontages.

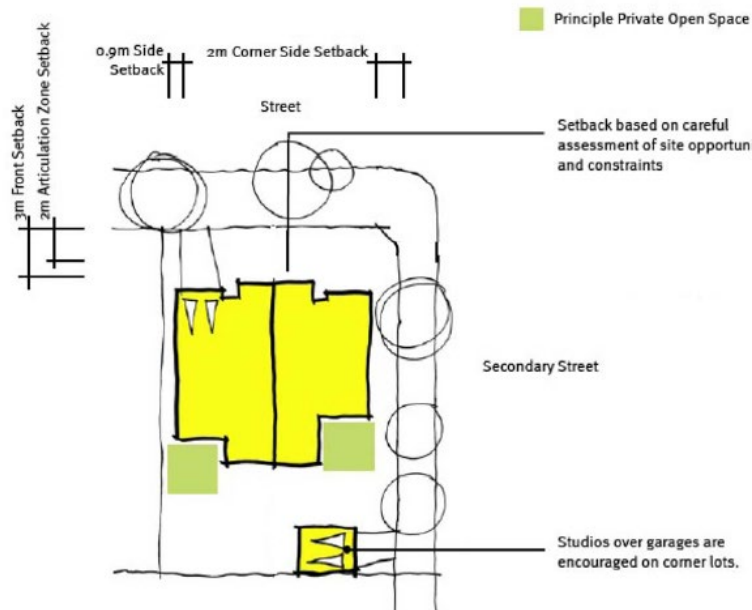
B. Controls

Lot Dimensions	
Minimum Lot Size	230m ² – 450m ²
Minimum Lot Frontage	12m – 15m
Private Open Space	
Minimum Area	30m ²
Minimum Dimension	4m
Landscaping Site Coverage**	40% of total site area

Building setbacks	
Front	3m
Secondary Frontage	2m
Side	0m (defined boundary) 0.9m
Rear	
Lots with a northern orientation	8m
All other lots:	
- Ground floor	4m
- Upper floor	6m
Garage to rear lane/secondary frontage	0m

** Any landscaped area having a dimension less than 2m shall not be included in the calculations of landscaped areas.

Figure E12.25 Semi Detached Design Principles



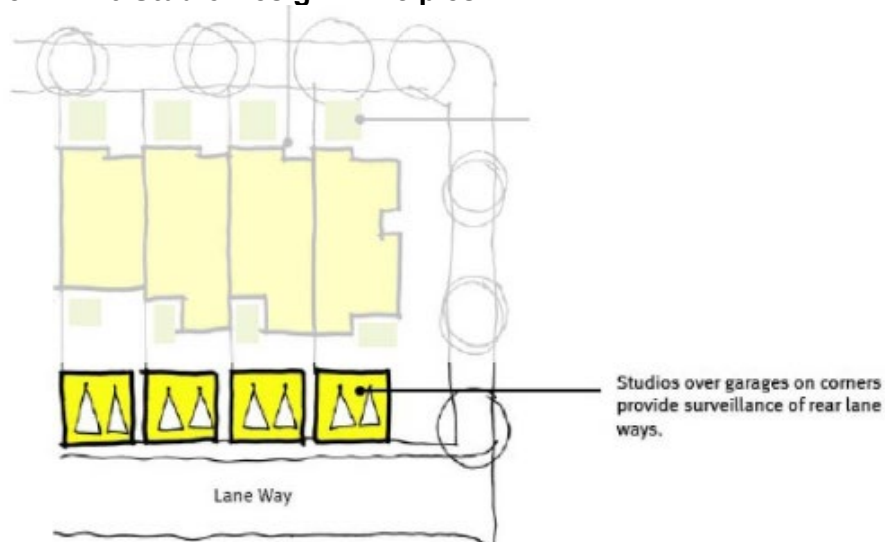
12.8.5.6 Studios

A. Performance Measures

- Be located above garages that are accessed from rear lanes or shared driveways.
- Provide their own sleeping, living, kitchen and bathroom areas.
- Provide casual surveillance over rear lanes or shared driveways.

- d) Windows and private open spaces do not overlook the private space of any adjacent dwellings.
- e) Do not overshadow the private open space of living space of any adjacent dwelling.
- f) Balconies or verandahs do not overhang vehicle access areas.

Figure E12.26 Studio Design Principles



12.8.5.7 Detached Dwellings

A. Performance Measures

- a) Allow for landscaped side setbacks to provide visual separation between dwellings and a more spacious streetscape environment.
- b) To provide for more detached dwellings in the general residential zone which transitions to the medium density zone.

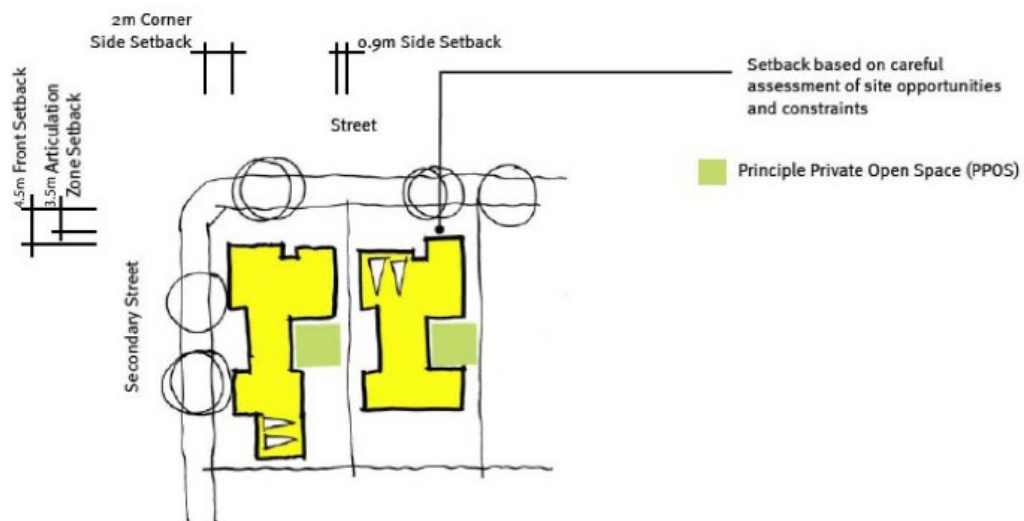
B. Controls

Lot Dimensions	
Minimum Lot Size	450m ²
Minimum Lot Frontage	15m – 18m
Private Open Space	
Minimum Area	50m ²
Minimum Dimension	4m
Landscaping Site Coverage**	40% of total site area

Building setbacks	
Front	4.5m
Secondary Frontage	2m
Side	0.9m
Rear	
Lots with a northern orientation <ul style="list-style-type: none"> - Ground floor - Upper floor 	8m 12m
All other lots: <ul style="list-style-type: none"> - Ground floor - Upper floor 	4m 6m
Garage Frontage	5.5m
Garage to rear lane/secondary frontage	0m

** Any landscaped area having a dimension less than 2m shall not be included in the calculations of landscaped areas.

Figure E12.27 Detached Dwelling Design Principles



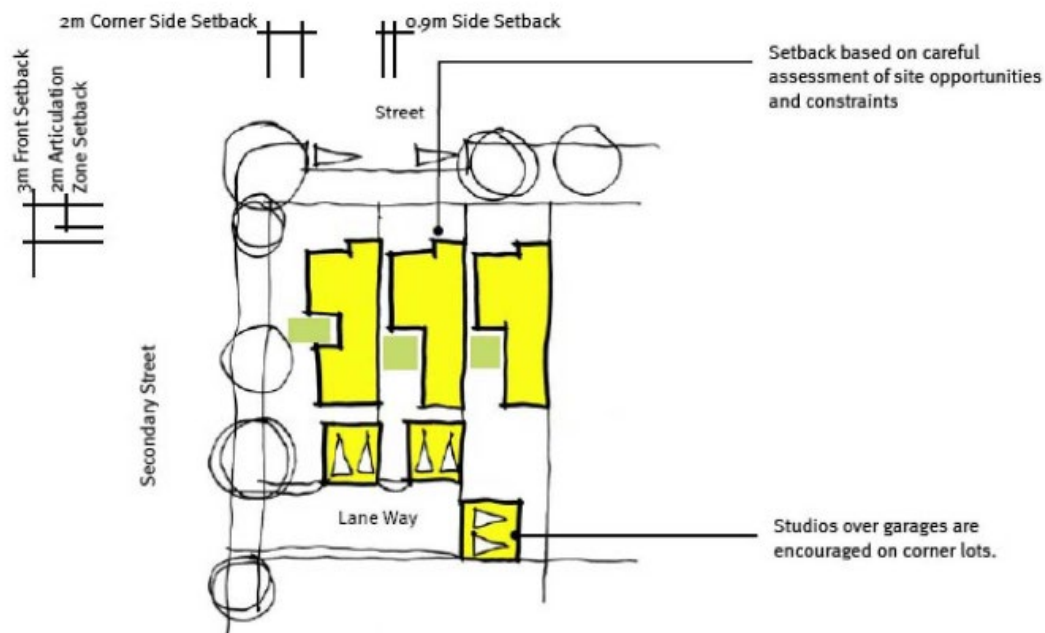
12.8.5.8 Built to Boundary Dwellings

A. Controls

Lot Dimensions	
Minimum Lot Size	230m ² – 450m ²
Minimum Lot Frontage	9.5m – 15m
Private Open Space	
Minimum Area	40m ²
Minimum Dimension	4m
Landscaping Site Coverage**	50% of total site area
Building setbacks	
Front	4.5m
Secondary Frontage	2m
Side	0m (defined boundary) 0.9m
Rear	
Lots with a northern orientation	8m
All other lots:	
- Ground floor	4m
- Upper floor	6m
Garage to rear lane/secondary frontage	0m

** Any landscaped area having a dimension less than 2m shall not be included in the calculations of landscaped areas.

Figure E12.28 Built to Boundary Design Principles



12.8.6 Development for Employment Purposes

A. Performance Measures

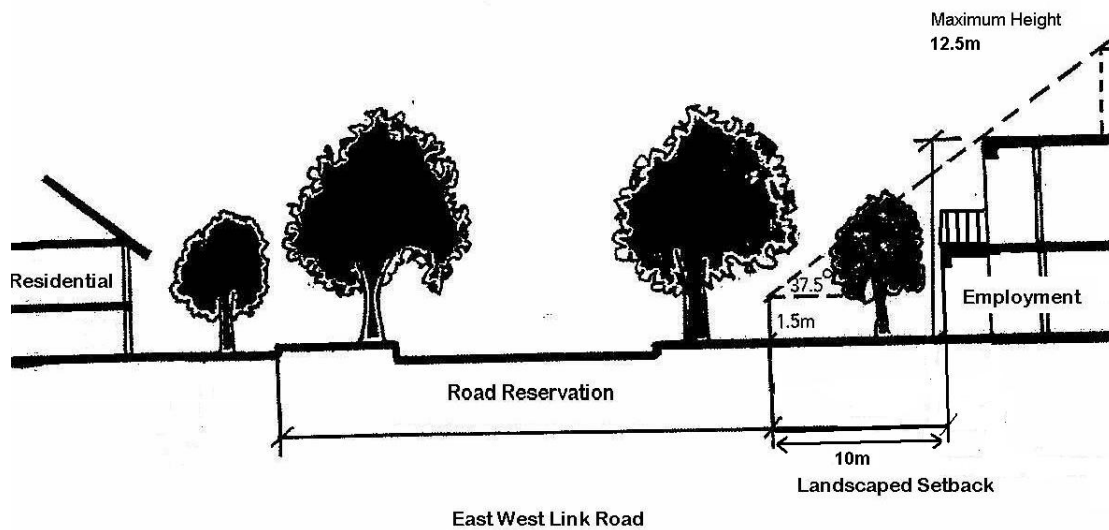
- a) Development for employment purposes should be planned and designed to be compatible with the existing and intended desired character of the locality.
- b) Development for employment purposes shall consider views and vistas to and from Frogmore House.
- c) Particular attention is paid to:
 - i) The development site including setbacks,
 - ii) Urban form including:
 - traditional building design features
 - Building design to incorporate articulation and interest to street frontages and should be of a contemporary and innovative design
 - provide landscaped frontages to the street.
 - orientation of building entrances.
 - continuously occupied rooms facing the street.
 - detailed consideration of significant townscapes or landscapes.
 - Signs.
 - iii) driveways and parking including:
 - provision of on-site parking appropriate to the proposed use, and in accordance with the Access and Parking section of this DCP, the RMS or Australian standards.

- minimise site coverage by paved areas.
 - conceal garages from views available from public parks and streets.
 - locate driveways and parking areas away from any neighbouring residential development.
 - Shared driveways between developments within the employment zones are encouraged
 - All vehicles to enter and leave in a forward direction.
- iv) building envelope and setbacks:
- to achieve a two storey appearance.
 - to provide for effective landscaped separation from adjacent developments.
- v) protect the privacy of adjacent properties.
- vi) sufficient areas are provided for storage and building services to meet requirements generated by the proposed development and located to protect the amenity of adjacent developments. These storage areas are to be suitably screened from nearby streets and the Great Western Highway.
- vii) provision is made for on-site stormwater detention and treatment.

B. Controls

Minimum Lot Size	2,000m ²
Minimum Lot	25m
Minimum Front Building Setbacks	10m
Council may consider a minor variation to the front setback but only where the proposal demonstrates a high level of architectural treatment plus an improved landscaping outcome.	
Height	Development will be carried out within the building height plane demonstrated in Figure E12.29 – Building Height Plan (Cross Section) to a maximum of 12.5m.

Figure E12.29: Building Height Plane - Cross Section of Employment development to Residential Development through proposed East West Link Road



Landscaping

- 1) A detailed landscape plan shall be submitted in accordance with the Landscape Design section of this DCP.
- 2) Landscaping within all setback areas shall be of a similar scale to the buildings on the site.
- 3) All unbuilt areas of the site not required for loading, car parking, or vehicle access should be landscaped.
- 4) 60% of any landscaped area shall provide for trees that grow to a height that exceeds the building height on the site and where possible be endemic to the area.

Drainage

- 1) On site stormwater detention systems are to be implemented to control the rate of runoff from the site to limit or reduce the rate of runoff to existing conditions or better.
- 2) A preliminary stormwater drainage plan is to be submitted with a development application for industrial uses on the site.
- 3) The onsite stormwater detention system must be designed, constructed and maintained in accordance with requirement of Councils OSD technical specifications.
- 4) Rainwater tanks are not to be located in the front setback and shall be integrated into the design of the building.

Fencing

- 1) No front fencing is permitted forward of the building line.
- 2) Security measures are to be integrated into the building design to avoid use of security fencing.
- 3) Should any fencing be required it is to be integrated into the landscaping theme to minimise visual impacts while providing associated site security. Chain wire, untreated metal, prefabricated metal and wooden fencing is not permitted.

Design

- 1) Architectural features shall be included in the design of the industrial buildings to provide for a more visually interesting industrial area that does not detrimentally affect the amenity and visual character of the locality or adjoining residential properties. Such features shall include:
 - a) Distinctive parapets or roof forms,
 - b) Visually interesting facades
 - c) Architectural emphasis on built form,
 - d) Variety of window patterns,
 - e) Variation in unit design within building group
 - f) Entrance areas to be visually prominent within the overall building form
- 2) Additional design features can also include (but not limited to):
 - a) Balcony
 - b) Canopy
 - c) Awnings
 - d) Entrances
 - e) Recesses
 - f) Consideration of external materials and finishes
- 3) Roofing is to be constructed of non-reflective pre-painted metal with mid-tone colouring.
- 4) Buildings located on corner lots need to address both street frontages and reinforce the corner by massing and façade orientation.

Access

- 1) Development fronting the proposed East West Link road shall provide access to the western side of the property to reduce the impacts of cut into the site.
- 2) No parking spaces are to be provided within the front building setback.
- 3) Onsite parking and manoeuvring areas are to be in accordance with AS 2890.1 and AS2890.2. Lots greater than 2,000m² shall cater for articulated vehicles.

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Part D – Werrington Mixed-Use Area

12.9 – Werrington Mixed-Use Area

12.9.1 Preliminary

12.9.1.1 Land to which this section applies

The Werrington Mixed-Use Area covers land bounded by:

- The Main Western Railway Line to the north;
- The Great Western Highway to the south;
- French Street and existing residential development to the west and;
- The University of Western Sydney (North Campus) to the east.

This Section does not apply to land zoned B7 Business Park.

12.9.1.2 Aims of this Section

- a) To create an urban environment that optimises residential and employment opportunities that will act as a catalyst for future development for the area, and provides a mix of residential and employment generating land uses.
- b) To optimise employment opportunities on the site presented by its proximity to the Great Western Highway and the University of Western Sydney (UWS).
- c) To optimise the potential for use of public transport by residents, employees and visitors to the site.
- d) To provide a high degree of accessibility that is safe and direct both within the site and between the site and the surrounding residential areas and educational institutions.
- e) To provide a permeable and interconnected street system, with direct access denied to and from the Great Western Highway and a network of public thoroughfares (street and car parking areas), that accommodate the needs of vehicles, bicycles and pedestrians for efficient, convenient and safe access to all areas.
- f) To promote active and vibrant street frontages with a high degree of surveillance, particularly along prominent access routes, streets and or boulevards in both residential and employment areas.
- g) To ensure buildings have a high level of environmental performance consistent with Penrith City Council requirements, particularly with regard to energy efficiency, water management and the control of noise and emissions.
- h) To retain and protect areas of high conservation value and commemorate past uses of the site.
- i) To promote development that achieves best practice in ecologically sustainable development and enhances the natural values of the site.
- j) To require the consideration of social and economic aspects of sustainable development.
- k) To provide a public domain with a high aesthetic quality and appropriate landscaping.
- l) To require the preparation for a Concept Plan for each zone on the site and provide details on the information to be included in that plan.

12.9.2 Concept Plans

12.9.2.1 Requirements for a Concept Plan

Separate Concept Plans may be prepared for each of the zones. Concept Plans can be prepared, considered and adopted independently of one another, provided each demonstrates an appropriate integration and suitable interface between the zones and activities. Each Concept Plan must also demonstrate that development of the site will satisfy the requirements of this Section.

Council must not grant consent to development on land to which this plan applies unless:

- a) a Concept Plan covering the land to be developed has been prepared; and
- b) the development is consistent with the amended DCP;

except in the case where the Council has waived the requirement for a Concept Plan or where the development is exempt from the Concept Plan requirement. Where this occurs, Council will provide the applicant with written notice of the waiver or exemption. In the case of a waiver or exemption, Council must assess development with regard to the provisions of this DCP, and development applications must meet the requirements for Concept Plans as specified in this Section.

Council may waive the requirement for a Concept Plan at its discretion, or where:

- a) the development is of a minor nature and not inconsistent with the provisions of the LEP and this Section; or
- b) development is for a purpose listed in the Penrith LEP 2010.

A Concept Plan is to address, illustrate and explain the matters that the council determines are relevant to the future residential development of the land, and must include the following:

- a) urban design principles derived from analysis of the property and the character of its surroundings;
- b) conservation of cultural heritage and compatibility with the character of established neighbourhoods in Penrith City;
- c) conservation of natural features and biodiversity;
- d) protection of natural hazards, including flooding, bushfire and ground salinity;
- e) distribution of land uses and open space;
- f) provision of access for pedestrians, cyclists, road vehicles and public transport;
- g) controls for private landscapes and built form;
- h) safety and amenity of residential areas and the public domain;
- i) provision of on-site car parking;
- j) provision of service infrastructure;
- k) provision of public facilities;
- l) landscaping and improvements to the public domain;
- m) management of stormwater drainage and minimisation of water quality impacts;
- n) contribution to energy efficiency;
- o) staging of future development; and
- p) proposed patterns of subdivision.

12.9.2.2 Concept Plan Strategies

The Concept Plan(s) must include and be based on the following strategies, prepared for the uses proposed in the relevant zone:

- 1) A transport management plan for the site, which promotes the use of public transport and pedestrian activity and recognises the site's context and surrounds. This study shall include:
 - a) an assessment of the adequacy of the current French Street/Great Western Highway intersection to deal with the traffic volumes which will result from development of the site; and
 - b) development of any necessary traffic measures for O'Connell Street and Second Avenue to address the impacts of traffic interruptions due to greater pedestrian movements in the area.
- 2) An environmental management plan for the site, which promotes the enhancement and protection of the environmental qualities of watercourses, riparian land, remnant bushland and biological corridor linkages in accordance with best practice ecologically sustainable development.
- 3) An integrated economic strategy for the site, that promotes the optimisation of employment opportunities, particularly high technology developments.
- 4) A social plan for the site, which promotes the effective delivery of community facilities, services, and recreation opportunities and provides for community safety.
- 5) An implementation strategy to ensure that the provisions and measures proposed in the Concept Plan can be achieved.

12.9.2.3 Adoption of a Concept Plan

Concept Plans are required to be adopted by Council. Council must not adopt a Concept Plan unless:

- a) The Concept Plan is consistent with the provisions and objectives of this Section and it addresses all matters outlined by this Section.

Council may consider a future application to amend an approved Concept Plan:

- a) Subject to the Penrith LEP 2010, and the provisions of this Section; and
- b) Submitted in the form of a development application or amendment to this Section.

Minor amendments only may be submitted in the form of a development application.

12.9.2.4 Form of a Concept Plan

Concept Plans are to be adopted and will be assessed against the provisions of this Section. Accordingly, it is important that the information is presented in a form that can be easily checked against and assimilated into the structure of this Section.

Concept Plans shall describe details of the design, implementation and management of future development. Those details shall be consistent with the provisions and the sections in this DCP, being:

- a) Urban Design;
- b) Sustainability;
- c) Site Features;
- d) Infrastructure Services; and
- e) The relevant zones.

This Section specifies the information to be provided in the Concept Plan and the provisions that must be complied with. A table will be required to be submitted with the Concept Plan

which lists each requirement contained in this plan and indicates where it is addressed in the Concept Plan. If any provision is considered not relevant to a Concept Plan, the table must indicate why it is not relevant and how the principles covered by the provision will be met (e.g. in a different Concept Plan, at Development Application stage etc.).

Concept Plans must include clear strategies for implementation and monitoring.

The use of tables, diagrams, and maps is encouraged to ensure information is clearly conveyed.

12.9.3 Urban Design

12.9.3.1 Land use and Activities

A. Objective

- a) To ensure that the land uses and activities proposed in each zone comply with the provisions of the relevant planning instruments, and that any negative impacts arising from these activities are minimised.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) a scaled map of the site demonstrating that the R1 General Residential zone has a minimum area of 6ha;
- 2) pictorial depiction of the division of each zone into specified activities, generally in accordance with the proposed land use layout shown in Map 1;
- 3) the nature of specified activities, with reference to likely environmental effects, including (where relevant) information on:
 - a) resident population and number of employees;
 - b) hours of operation;
 - c) likely visitation;
 - d) traffic generation; and
 - e) noise generation.
- 4) compatibility of each activity with neighbouring activities, both on this site and on neighbouring properties;
- 5) measures to achieve an appropriate interface between adjacent precincts and land uses, both on this site and on neighbouring land, including boundaries, buffers and gateways;
- 6) visibility and accessibility of business / retail floor-space; and
- 7) important heritage values identified by any relevant heritage studies.

12.9.3.2 Pattern of Streets, Open Spaces and Community Facilities

A. Objective

- a) To ensure that the design of public areas, including streets, open space and community facilities, considers the needs of future residents and visitors in terms of accessibility, pedestrian movement, public transport use, safety and amenity.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) details of access networks for vehicles, pedestrians and cyclists which are appropriate and effective, and cater for likely pedestrian routes around and through the site, including between the station and the UWS and TAFE campuses;
- 2) provision of a hierarchical structure of open spaces and meeting places;
- 3) provision of a 'central park' which provides meaningful passive and active recreation opportunities;
- 4) walking distances to key destinations, including UWS and TAFE;
- 5) bus routes, bus and taxi set-downs;
- 6) road-safety elements requiring detailed design treatment;
- 7) vistas to key landmarks or features within the future development and beyond;
- 8) interpretation and / or commemoration of particular items of historic or heritage significance;
- 9) location of open spaces and community facilities, and the basis for this;
- 10) any options presented by the site for innovative approaches to the implementation, ownership and management of required "public" infrastructure; and
- 11) a draft management plan prepared in accordance with the Local Government Act for all open space which is proposed to be dedicated to Council.

12.9.3.3 Pattern of Street-Blocks and Subdivision

A. Objectives

- a) To ensure residential density standards can be met.
- b) To ensure design and layout of the site considers principles of ESD, safety and amenity.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Overall dimensions and net area of each street block;
- 2) The climatic orientation of each block, optimising winter solar access;
- 3) Compatibility with accepted principles of planning for safety;
- 4) The identification and reinforcement of significant vistas; and
- 5) Reinforcement of the gateways to the site, in particular at principal road intersections.

12.9.3.4 Pattern of Built Form and Landscaped Areas

A. Objectives

- a) To ensure Concept Plans provide sufficient detailed information on proposed uses of the site to allow Council, the community and other stakeholders to develop an accurate picture of the site's future.
- b) To ensure relevant aspects of urban design are considered in planning the design and layout of the site.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Indicative range of building types;
- 2) Indicative building envelopes expressed in terms of:
 - a) footprint;
 - b) height and rise in storeys;
 - c) overall frontage to the street;
 - d) orientation;
 - e) setbacks;
 - f) articulation and variation of forms;
 - g) articulation and variation of garden areas;
 - h) private open space provision;
- 3) Projections of residential population and / or employment floor space;
- 4) Car parking shall be:
 - a) provided in accordance with the Parking section of this DCP for residential development unless otherwise indicated in the Infrastructure Services part of this Section;
 - b) located appropriately for residents, employees, visitors and/or loading and unloading.
- 5) Landscaping strategy, in accordance with the proposed open space network shown in Figure 12.31 and the provisions of this plan; and
- 6) Recommendations for location, orientation and detailed design of dwellings, buildings, private and public open space that are necessary to meet the solar access provisions of this plan.

12.9.3.5 Public Domain

A. Objective

- a) To ensure that the safety, functionality, and amenity of the public domain is considered in the design and layout of the site.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Location of each activity relative to the public domain;
- 2) Location of on-site parking relative to the public domain and neighbouring occupancies;
- 3) Measures to maximise public domain safety, including accepted Crime Prevention Through Environmental Design (CPTED) principles;
- 4) Integrated design of landscapes and buildings;
- 5) Design responses to the character of surrounding development and heritage items;
- 6) Design responses to achieve an individual character for each precinct;

- 7) Planning and design principles that achieve architectural variation within each street block, particularly with regard to the shape and style of facades and the selection of materials;
- 8) Planning and design principles for landscaping of private areas and the public domain, including:
 - a) vegetation,
 - b) paving,
 - c) lighting,
 - d) signage; and
 - e) street furniture.

Figure 12.30: Map 1 – Proposed Land Use Layout



Figure 12.31: Map 2 – Proposed Open Space Layout



12.9.4 Sustainability

Sustainability generally refers to the protection of ecosystems and biodiversity for the benefit of current and future generations as well as in terms of social and economic issues, so that it encapsulates all aspects of community life and wellbeing. This ‘triple bottom-line’ of environmental, social and economic considerations must be considered together if our community is to achieve true sustainability.

Given its location and nature, the Werrington Mixed-Use site presents a unique opportunity to achieve a development with a higher level of sustainability than is generally achieved in Penrith. The implementation of Environmentally Sustainable Development principles is a fundamental tenet for development within the Werrington site. The provisions of this Section of this DCP are designed to maximise this opportunity.

12.9.4.1 Social and Economic

A. Objectives

- a) To ensure that plans for development of the site consider social implications for both future occupants and surrounding residents, and
- b) To optimise the economic contribution development of the site can make, given its location and relationship with surrounding uses, particularly the University of Western Sydney.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Demonstrate that the social needs of future occupants of the site have been considered in the context of the overall development, with particular reference to the social plan required by Concept Plan Strategies of this Part.

- 2) The initiatives developed in the economic plan required under Concept Plan Strategies of this Part are to be incorporated into the overall development plan for the site.

12.9.4.2 Biodiversity: Flora and Fauna

Indigenous vegetation and habitat on the site has been substantially modified by past use. Despite this, remnant native vegetation on the site provides biodiversity and habitat value and should be preserved, including vegetation which has been identified as Cumberland Plain Woodland.

Cumberland Plain Woodland is an endangered ecological community and occurs within the subject lands. The Cumberland Plain Woodland should be viewed as an ecological constraint to development of the site and must be retained and protected. There are additional small pockets of woodland in the south-western part of the site. When designing the layout of the employment area, consideration should be given to preserving these stands and protecting their long-term viability.

A. Objectives

- a) To conserve wildlife habitat and indigenous plant species;
- b) To ensure that development adjacent to areas of existing vegetation identified for preservation is designed to minimise impact; and
- c) To retain indigenous vegetation and wildlife habitat and ensure appropriate buffer zone edge treatment between any development and any adjacent Cumberland Plain Woodland.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Demonstrate what measures will be taken to enhance the biodiversity and habitat value of the site.
- 2) Identify those parts of the site that should not be disturbed and detail strategies to ensure they are protected;
- 3) Include a rehabilitation plan which details measures and strategies for protecting the long-term viability of remnant Cumberland Plain Woodland;
- 4) Identify and demonstrate appropriate edge treatments, including buffer zones, to minimise the impact of development on the Cumberland Plain Woodland present on the site;
- 5) Include a biodiversity strategy for the site which:
 - a) Preserves mature trees within public reserves;
 - b) Preserves the mature stand of trees in the footpath reserves, building setbacks and on-site car parking areas;
 - c) Expands available habitat into corridors or blocks of appropriate configuration;
 - d) Employs predominantly indigenous plant species in site landscaping themes;
- 6) Minimise the number of separate vehicular and pedestrian crossings of the riparian corridor.
- 7) Good quality, durable physical barriers shall be installed (complying with a National Parks and Wildlife Service specification) to prevent vehicular access and discourage pedestrian access into woodland areas;

- 8) Development practices for the site shall provide for the storage and reuse of excavated soils that are not affected by chemical or other contamination, to promote growth of indigenous species; and
- 9) A Management Plan for all native vegetation on the site outlining the ongoing measures needed to properly manage areas required to be conserved.

12.9.4.3 Water Cycle

The Werrington Mixed-Use site drains to South Creek. Studies by the Environment Protection Authority (EPA) and Sydney Water have demonstrated that the water quality in South Creek is significantly impacted by urban runoff. Minimising the pollution contained in urban runoff from this site will have a beneficial impact on the water quality in South Creek and ultimately the Hawkesbury River.

A. Objectives

- a) To achieve an integrated approach to water cycle management on the site;
- b) To control the quantity and quality of runoff from the site to maximise the improvements to downstream receiving waters and minimise the impact on the downstream catchment;
- c) To investigate innovative approaches to water supply to minimise water wastage and reduce the demand for potable water; and
- d) To maximise the ecological, visual and recreational benefits gained from the riparian corridor.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Demonstration that future development will not generate undesirable environmental impacts on receiving waters;
- 2) Identification and incorporation of best management practices to control runoff quantity and quality from the site;
- 3) Provision of information on existing salinity levels on site, including soil and ground water testing, and indicates measures to be taken to ensure that development does not adversely impact on those levels;
- 4) Provision of a stormwater management plan which demonstrates conformity with the EPA guidelines – Managing Urban Stormwater and Penrith City Council applicable development guidelines and the Storm Water Management Plans for South Creek; and
- 5) Incorporation of sufficient runoff detention on the site to ensure peak flow rates do not exceed existing rates for all storm events.
- 6) Adoption of an integrated approach to the management of wastewater, which is consistent with:
 - a) the objectives for a medium-density development incorporating water-sensitive urban design practices;
 - b) capacity of site soils to absorb run-off;
 - c) existing levels of soil salinity;
 - d) the scale and desired density of future development, and the associated cost-benefits of dual supply for irrigation of open spaces and gardens;
 - e) local climate and likely rates of evaporation from open ponds;

- f) potential cost-benefits associated with nutrient polishing for stormwater and treated sewage effluent.
- 7) A surface drainage design shall be prepared, which is designed:
- a) includes any runoff detention and water quality control ponds, swales and channels;
 - b) minimises land-take, consistent with the desired character of future development while still incorporating all major trees and riparian vegetation;
 - c) takes the form of a naturalistic channel with water on the surface;
 - d) limits disturbance to the ground whenever possible;
 - e) utilises landscaped, open space and passive recreational features;
 - f) ensures engineered structures are integrated with the configuration and character of the wider development and its public domain; and
 - g) incorporates ecological habitats in a riparian corridor.
- 8) Requirements for development proposals for the site to evaluate opportunities for the integration of water supply and re-use of stormwater, Greywater and treated effluent:
- a) in consultation with authorities such as Sydney Water, NSW EPA, NSW Department of Health, and Penrith City Council;
 - b) A thorough investigation of opportunities for the reuse on-site of Greywater and treated effluent and recycled stormwater, noting:
 - i) rainfall patterns and the assimilative capacity of the site's soils;
 - ii) landscaped areas available for irrigation with treated effluent;
 - iii) impacts of irrigation on existing soil salinity; and
 - iv) cost and feasibility of dual supply and storage of treated effluent for non-potable purposes.
- 9) Requirement for development proposals for the site to investigate and employ a package of measures that effectively reduces demand for potable water through re-use, including:
- a) dual potable and non-potable supplies; and / or
 - b) appropriate landscape design and selection of species; and / or
 - c) rain-water tanks; and / or
 - d) use of site stormwater; and / or
 - e) the use of AAA rated plumbing fittings and appliances, including shower heads, water tap outlets, toilet cisterns, dishwashers and washing machines. Plumbing fittings shall achieve the following standards:
 - i) shower heads – 9 litres or less per minute,
 - ii) water tap outlets – 9 litres or less per minute,
 - iii) toilet cisterns – 6/3 litre dual flush or equivalent, and
 - iv) separate hot and cold taps in basins and sinks.

12.9.4.4 Air Quality

A. Objectives

- a) To ensure that development does not have an undue adverse effect on air quality; and

- b) To identify appropriate compensatory measures that can be taken to help improve air quality in general.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Stationary pollution sources are to comply with EPA licensing standards;
- 2) Prohibition of the use of solid fuel heaters on the site;
- 3) Identification and promotion of the use of compensatory measures such as the provision of green corridors; and
- 4) Optimisation of the proportion of the site available for soft landscaping.

12.9.5 Public Transport

A. Objectives

- a) To reduce the demand for use of private motor vehicles and maximise the use of public transport through integrated planning of land uses and transportation, and
- b) To provide a dense and interconnected mixture of land uses which include residential, recreational, employment, retail and business services.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) The principles developed in the transport management plan required by Concept Plan Strategies of this Part have been incorporated into the overall development of the site; and
- 2) A safe and convenient pedestrian network formed by a closely spaced grid of streets interconnected with public open spaces.

12.9.6 Site Features

12.9.6.1 Topography and Soils

A. Objective

- a) To protect the site's landscape character, and minimise any environmental effects likely to arise from future development.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Information is to be provided on the soil characteristics of the site and surrounding areas, including salinity and erodability;
- 2) Concept Plans shall demonstrate how this information has been considered in site planning;
- 3) The development layout of the site shall minimise the need for reconfiguration of existing topography, particularly in areas surrounding any mature trees which are to be preserved and in the vicinity of identified Aboriginal sites and artefacts.

12.9.7 Infrastructure Services

12.9.7.1 Street Networks

The network and design of streets has a fundamental influence upon the form and character of development, and the environmental amenity of neighbourhoods. Streets have several roles. They provide:

- a) safe and convenient access for pedestrians and cyclists;
- b) effective distribution and circulation of vehicles;
- c) visitor parking;
- d) routes for reticulated services;
- e) boundaries and separation between dissimilar land uses;
- f) landscaped corridors which contribute to the character of neighbourhoods and overall townscape;
- g) view corridors and vistas to landmarks within the site and beyond;
- h) a public address for dwellings, commercial and employment activities;
- i) establish an appropriate solar orientation for allotments and dwellings;
- j) routing for trunk services; and
- k) overland drainage paths.

A. Objectives

Design a street network that:

- a) is appropriate to environmental design objectives;
- b) is economically efficient;
- c) generates a distinctive character; and
- d) provides high standards of amenity.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) The road network shall be designed to accommodate multiple purposes, including:
 - a) safe and efficient access for pedestrians (including alternative forms of pedestrian activity), cyclists and vehicles;
 - b) underground routing of service infrastructure;
 - c) contribution to traditional townscape character;
 - d) provision of vistas to landmarks within the site and beyond;
 - e) establishment of appropriate solar access for allotments, open spaces, buildings and dwellings; and
 - f) alternative means of emergency access, for example: during flood events.

12.9.7.2 Principal and Secondary Site Roads

The site is situated on the edge of established residential suburbs, with frontages to a main road and the University site. An initial assessment of traffic impacts supports the following configuration for this site's major roads:

- a) hierarchical network which separates residential and employment traffic;
- b) major entrance from French Street.

A. Objectives

- a) To consider multiple objectives for roads including access and circulation, the character of townscape and market appeal of future development; and
- b) To provide safe and effective access to individual properties, contribute to a distinctive neighbourhood character and provide high standards of amenity.

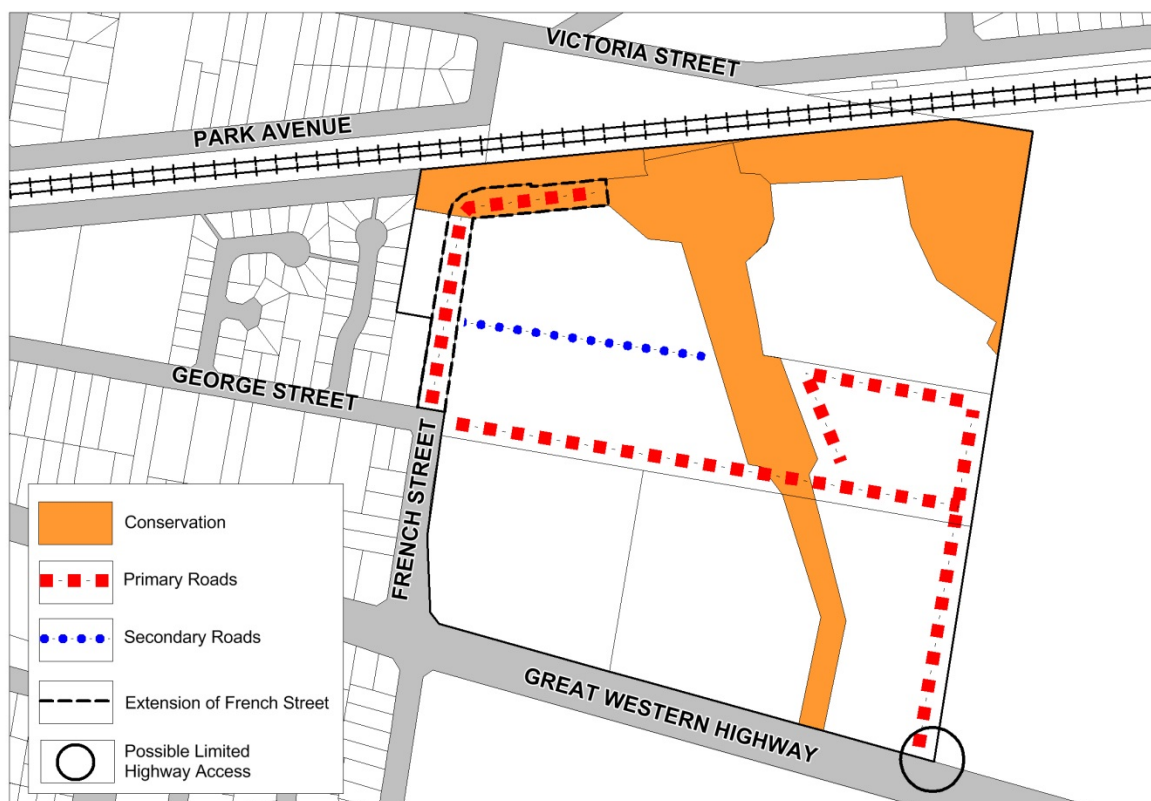
B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) The design and layout of principle and secondary site roads shall:
 - a) be in accordance with relevant Council policy and design standards and be based on forecast traffic flows;
 - b) provide efficient access and circulation for buses and taxis;
 - c) facilitate a configuration of neighbourhood streets appropriate to the desired solar orientation of dwellings;
 - d) provide safe pedestrian access, and vistas towards landmarks and central destinations within the site and beyond; and
 - e) limit the number of four-way intersections and where they occur, indicate their management.
- 2) The configuration of principal roads shall:
 - a) not adversely affect traffic flows along existing arterial and main roads;
 - b) interconnect the residential and employment areas;
 - c) provide for a tightly-spaced grid of secondary streets, designed according to principles of traditional neighbourhood design; and
 - d) provide high-exposure business addresses.
- 3) Principle roads shall be designed:
 - a) to provide adequate capacity to cater for expected traffic flows;
 - b) according to principles of traditional neighbourhood design;
 - c) to control traffic speeds, incorporating safe pedestrian crossings to central destinations;
 - d) as tree-lined thoroughfares which contribute to the overall character of townscape;
 - e) to accommodate kerbside parking for visitors in the residential area and the employment area; and
 - f) to provide access to the Mixed-use employment zone separated from the Mixed-use residential zone.
- 4) The configuration of secondary roads shall:

- a) discourage peak movements of through traffic;
 - b) discourage employment-area traffic from entering residential precincts; and
 - c) distribute local traffic efficiently and effectively without congestion at intersections.
- 5) Secondary roads shall be designed to:
- a) provide a distinctive landscaped address and character for each precinct;
 - b) to facilitate safe and effective circulation, parking and unloading for transport vehicles within employment precincts;
 - c) optimise on-street parking within residential precincts; and
 - d) incorporate designated pedestrian footpaths, dimensioned and finished to service each precinct according to its desired function and character.

Figure 12.32: Proposed Road Network



12.9.7.3 Pedestrian and Cycle Access

A. Objective

- a) To provide safe and effective pedestrian and cycle access to key destinations.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Effective and convenient pedestrian and cycle access along streets, through public parks and drainage reserves, demonstrating that the pedestrian/cycle network has been linked to:
 - a) key destinations on-site:
 - i) the future village centre;
 - ii) residential precincts and employment areas; and
 - iii) community facilities, open spaces and meeting points;
 - b) destinations surrounding the site that have regional, city or district significance, including the UWS and TAFE College.

Figure 12.33: Pedestrian, Cycle Routes and Bus Routes



12.9.7.4 Energy Supplies

A. Objective

- a) To ensure that the site is adequately supplied with energy.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Council is to be supplied with appropriate evidence demonstrating that the site can be adequately serviced.

- 2) Prior to the submission of an application for development of the site, the owner / applicant shall negotiate the planning and design of services with relevant gas and electricity service providers.
- 3) All new services shall be located underground

12.9.7.5 Community Services and Recreation

A. Objective

- a) Determine the range of services required and opportunities for public recreation and community use, consistent with the desired character of development and population projections.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Confirmation of the likely population and social profile of the site's future residents;
- 2) Identification of the range of needs, which may be reasonably attributed to the projected population;
- 3) Identification of innovative means by which these needs can be met, possibly including shared facilities and/or joint ventures;
- 4) A balanced provision of facilities to meet projected needs, having regard to existing facilities within the area;
- 5) An appropriate location, configuration and design for facilities which meets the needs of users and minimises the costs operation and maintenance; and
- 6) Demonstration that local and district needs will be met in accordance with Council's social planning framework.

12.9.7.6 Landscape Design

Effective landscape design is fundamental to traditional neighbourhood design, and makes a significant contribution to the implementation of Ecologically Sustainable Development objectives.

A. Objective

- a) To integrate the planning and design of buildings with the site's landscaping.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Landscapes shall be designed to achieve the environmental, recreational, amenity and townscape objectives of this Section and the Landscape Design Section.
- 2) Design of landscapes shall minimise need for water and nutrients;
- 3) Mature vegetation that has habitat, civic or heritage values shall be conserved;
- 4) Plant species to be in accordance with the Landscape Design Section and the Flora & Fauna study for the site;
- 5) Paving material, lighting, signage and street furniture shall be in accordance with Council guidelines;

- 6) Existing habitat shall be expanded with new plantings configured to provide continuous corridors;
- 7) The design of public streets and parks shall:
 - a) facilitate multiple uses;
 - b) be consistent with Council's current management policies and practices;
 - c) ensure that landmark locations, key thoroughfares and vistas are complemented and reinforced;
 - d) ensure that the public domain is embellished to compensate for smaller residential gardens;
 - e) ensure that drainage reserves are embellished as attractive components within the public domain, as effective adjuncts to wastewater management and as habitat for bird life;
 - f) provide for the identification of individual neighbourhoods and precincts; and
 - g) incorporate appropriate street tree planting.
- 8) Landscape design strategies shall be prepared for each residential neighbourhood and employment precinct; and
- 9) Shelter and shade should be provided for buildings and open spaces, moderating the site's natural microclimate.

12.9.8 Residential Development

A. Objectives

- a) To create a residential environment that is considered vibrant, aesthetically pleasing and safe for residents and visitors;
- b) To provide a safe and competent pedestrian and transport network that links people with activities and places in an efficient manner;
- c) To provide for a range of housing types that should include an affordable housing component;
- d) To integrate with recreational, community and educational facilities;
- e) To provide retail and commercial activities that are not in direct competition with locally based firms; and
- f) To conserve areas of biological diversity, which have heritage significance or are environmentally sensitive.

12.9.8.1 Residential Density

A. Objectives

- a) To provide for a range of residential densities and housing choice.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) A minimum average net density of 30 dwellings per hectare is to be achieved in the R1 General Residential zone. Such density is to be achieved with a mix of housing types, including:

- a) Two storey townhouses; and
- b) Small lot housing.

12.9.8.2 Residential Amenity

A. Objectives

- a) To achieve a high standard of residential and environmental amenity.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) A high standard of amenity appropriate to a medium density and mixed-use environment is to be achieved. This shall include measures to:
 - a) reduce or eliminate potential conflicts between different neighbouring land uses;
 - b) protect visual privacy for dwellings and private open spaces consistent with the Residential Development Section;
 - c) Provide appropriate new communal spaces within the neighbourhoods and the village centre to allow for social interaction of residents.
- 2) Submission of a noise and vibration assessment for any residential development located within 100m of a major arterial road, Transitway environment or rail corridor or in any other area significantly affected by road and/or rail noise and vibration, and appropriate measures to minimise this impact in areas that are significantly affected by noise and vibration.
- 3) Internal noise levels shall accord with EPA noise criteria including:
 - a) Environmental Criteria for Road Traffic Noise, 1 July 2011, Environment Protection Authority;
 - b) Interim Guidelines for Development Near Rail Corridors and Busy Roads, 2008, Department of Planning; and
 - c) NSW Industrial Noise Policy, December 1999, Environment Protection Authority.
- 4) Internal noise levels shall accord with the Noise and Vibration Section;
- 5) Site planning and building design shall consider and address noise mitigation for areas close to significant noise sources including:
 - a) residential development adjoining French Street and the new east/west road link;
 - b) residential development adjoining employment developments; and
 - c) residential development adjoining the railway line.

12.9.8.3 Crime Prevention and Community Safety

A. Objective

- a) To ensure the design of all public areas limits opportunities for crime.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Compliance with the CPTED principles within the Site Planning and Design Principles Section;

- 2) Protection of public spaces shall be demonstrated by:
 - a) designing for high levels of casual surveillance;
 - b) use of effective lighting type and location;
 - c) thoughtful placement of garden areas, trees, street furniture, walling and other structures;
 - d) clear delineation between public and private areas;
 - e) ensuring there are clear sight lines;
 - f) elimination of entrapment and isolated spots;
 - g) provision of safe children's play areas;
 - h) provision of clear signage;
 - i) siting and design of buildings with graffiti management in mind; and
 - j) provision for ongoing maintenance and management strategies that will provide a high level of visual amenity.
- 3) Dwelling security to be demonstrated by ensuring:
 - a) dwellings are designed to have a clear presentation to the street; and
 - b) dwelling entrances being designed to allow the occupant to view persons at the front door without needing to open the door.

12.9.8.4 Population and Housing

A. Objective

- a) To encourage diversification in housing to meet underlying demand from Penrith's existing population.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Demonstration that the development pattern proposed for the site provides housing choice which:
 - a) meets identifiable demand from Penrith's population;
 - b) expands the range of available housing types;
 - c) is within an environmental setting which offers a village lifestyle; and
 - d) complies with the provisions of the Residential Development Section of this DCP.

12.9.8.5 Home-Based Business Activities

A. Objective

- a) To maximise opportunities for residents to establish and operate small-scale business activities from home.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Site planning, housing designs and other physical measures to be included to support home-based business activities, including:
 - a) dedicated rooms for business activities;
 - b) separate entrances for the residences and for business rooms;
 - c) flexible parking and vehicle access for visitors and / or residents – subject to the scale of activity;
 - d) buildings designed according to traditional residential scale and appearance when viewed from the street; and
 - e) 'smart wiring' of homes to enable consumers to access multi telecommunications facilities (internet, e-commerce, cable TV, lighting, audio, security).

12.9.8.6 Retail and Business Services

A. Objective

Provide retail floorspace in the village centre that services the day-to-day needs of local residents and businesses.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Sufficient retail floorspace shall be provided to meet projected local demand of:
 - a) future residents; and
 - b) future businesses.
- 2) The location and design of retail floorspace shall support the desired form and character of the future development:
 - a) in a consolidated form to provide a core of pedestrian activity within the village centre;
 - b) in a location which is central, highly visible and accessible, fronting a principal site road;
 - c) incorporating a civic open space;
 - d) with continuous "active" shop-frontages and all-weather awnings facing wide, tree-lined footpaths;
 - e) with short-term parking at kerbside for visitors and shoppers;
 - f) within buildings designed to preserve a human scale at street-level; and
 - g) retail and commercial facilities are restricted to the ground floor level of buildings only.
- 3) Small-scale retail-type services shall be accommodated on the site:
 - a) in response to demand from local home businesses and other business activities;
 - b) in prominent locations; and
 - c) designed to maximise visibility and accessibility, and to provide distinctive urban design elements.

12.9.8.7 Parking

A. Objectives

- a) To ensure a level of parking provision consistent with the density and form of housing provided; and
- b) To limit parking numbers as a tool to increase the use of public transport.

B. Controls

The following elements are required to be incorporated in a Concept Plan:

- 1) Applications for residential development shall demonstrate compliance with the relevant parking rates in and the Car Parking section of this DCP.
- 2) A reduction in required parking provision may be considered by Council for any dedicated student housing within the development where a lesser demand is demonstrated.

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Part A - Riverlink Precinct (Excluding Panthers Penrith Site)

A. A. Background

The Riverlink Precinct has a rich and diverse history. Originally settled by the local Aboriginal peoples (Mulgowey and Booroonboorongal people), the area was first settled by Europeans in 1803 when land along the east bank of the Nepean River was surveyed. Land lots adjacent to the river were granted by Governor King to free settlers, ex-military men and ex-convicts.

Following further European settlement in the early 1800s, the Nepean River was crossed in 1813 by Gregory Blaxland, William Lawson and William Wentworth, who sought greater grazing lands in the western plains in order to help sustain the growing colony. This resulted in new towns along the river providing a gateway to the west. The construction of a road connecting Emu Plains to Sydney in 1815 resulted in further growth in the area. The construction of the Victoria Bridge in 1867 and the Regentville Bridge (also known as the M4 Bridge) further shaped development of the Riverlink Precinct. Ongoing development in the area over time has resulted in the Precinct's diverse land uses which exist today, such as residential, employment and entertainment facilities.

This section of the DCP applies to development on land known as the Riverlink Precinct as identified in Figure E13.1: Riverlink Precinct Location Map. This section provides specific controls for the Riverlink Precinct and is to be read in conjunction with other parts of the DCP.

Documents which are to be considered in the context of E13 Riverlink Precinct include:

- a) Riverlink Precinct Plan (2008)
- b) Riverlink Precinct Urban Design Study (2009)
- c) Traffic, Transport and Access Study (2009)
- d) Economic Impact and Land Use Analysis (2010)
- e) The Future of Penrith, Penrith of the Future (2012)
- f) 'Our River' Master Plan Report (2013)

The Riverlink Precinct is located within a 2km radius of the city centre and is approximately 370 hectares in area. The Precinct is bounded by the eastern bank of the Nepean River to the west, Mulgoa Road to the east, the M4 Motorway to the south and the Western Railway line to the north. It includes the Penrith Panthers Club and associated lands and facilities as shown in Figure E13.1.

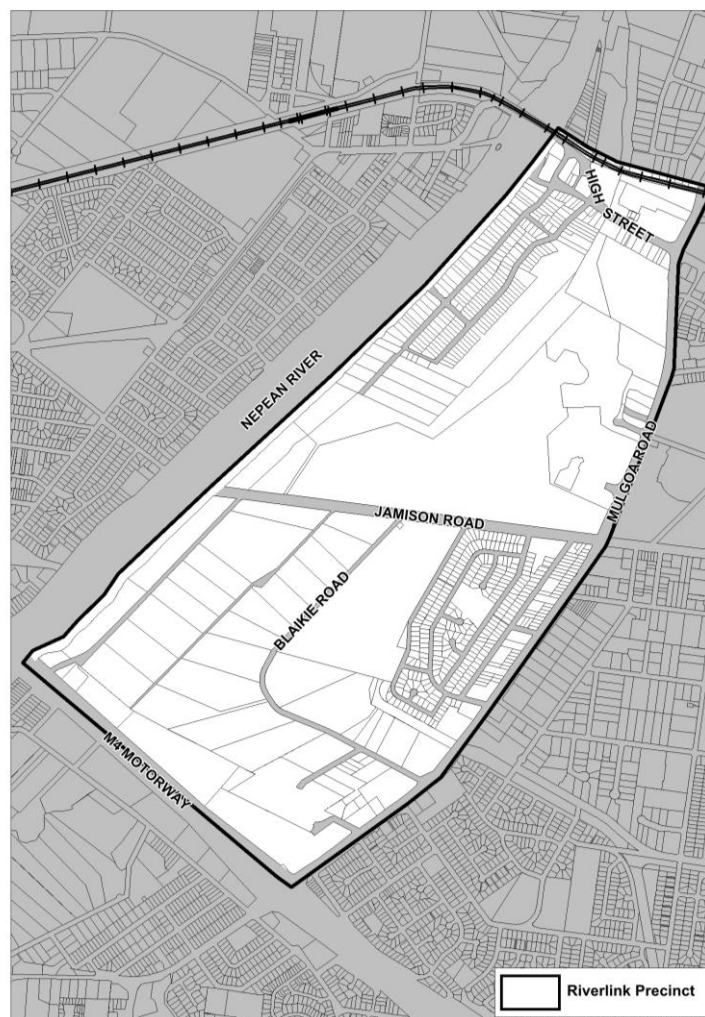
The Precinct comprises a mix of uses including:

- Residential – rural and suburban – single detached houses, townhouses/villas, retirement housing.
- Bulky goods retail/warehousing – large floorplate with at grade car parking.
- Leisure/entertainment – large floorplate commercial buildings with at grade car parking.
- Hotels/motels – large floorplate, 2+ storey commercial buildings with at grade car parking.
- Open space – Tench Reserve, drainage easements, stormwater drainage.

The Precinct has the broad goal of creating a living, entertainment and working hub to link the city centre to the Nepean River. It seeks to create a cohesive and well-connected precinct by:

- Enhancing and activating Mulgoa Road as a significant approach to Penrith City Centre
- Reinforcing key intersections as gateways to the Precinct and the Penrith City Centre
- Creating a clear and legible public domain framework of streets and open space
- Creating a new local north-south access link between Jamison Road and the Great Western Highway
- Extending Ransley Street west through the Panthers site, connecting to the open space corridor
- Creating an exciting core of entertainment, leisure and lifestyle uses around the existing club
- Incorporating sustainability best practice
- Connecting Riverlink pathways with the Great River Walk
- Encouraging views of the Blue Mountains from the public domain
- Encouraging design excellence
- Improving connectivity through the Precinct
- Enhancing Peachtree Creek.

Figure E13.1 Riverlink Precinct Location Map



Riverlink Precinct Vision

The Riverlink Precinct will be a living and working hub providing residential and employment activities with a key focus on the Nepean River. The Precinct will comprise a mix of activity nodes, with a diverse range of land uses and services and a substantial entertainment and leisure-based focus. A range of entertainment activities will be provided which will attract visitors from an extensive catchment in addition to servicing the local community.

Community and cultural needs, including additional cultural facilities will be provided at the Western Gateway to the Penrith CBD and provide a distinctive architectural focus.

The public domain and open space character will be treed and green and relatively open, revealing views and vistas to the Blue Mountains, Peachtree Creek parklands and the Nepean River. View corridors to the Blue Mountains will be reinforced. A series of open space linkages will preserve areas for active and passive recreation, ensure land remains for natural habitats and incorporate water sensitive design. The public domain throughout the Precinct will be permeable and connected to its context and feature design excellence. A series of pedestrian and cyclist pathways will encourage walkability and easy access to the CBD and water activity nodes in the Precinct. Gateways for entering the sites will be strengthened and reinforced from major roads and thoroughfares. Mulgoa Road will be a high quality, urban entry to the Penrith CBD environs.

Built form development in the Precinct will be of a high quality, providing visual and landscape amenity for workers and residents befitting the site's proximity to the Penrith CBD. Development will incorporate best practice in terms of sustainability and urban design outcomes. The heritage significance of all heritage items and the natural landscape features in the Precinct will be recognised, reinforced and valued.

B. B. Precinct Objectives

1) Connectivity and links

- a) To create strong synergies with the Penrith City Centre by optimising the proximity to the centre and complementing its land uses and character areas.
- b) To create the Riverlink by strengthening the relationship to and connection with the Nepean River.
- c) To reinforce transport links and pedestrian connections to the Penrith City Centre and public transport hubs.
- d) To improve links and connectivity across the Precinct and between the various landholdings.

2) Co-operation

- a) To address precinct issues such as flooding and access through collaboration with key stakeholders within the Riverlink Precinct.

3) Local character and regional appeal

- a) To reinforce and enhance local identity and sense of place through public domain and building design.
- b) To create a highly desirable visitor destination.
- c) To create an exciting new entertainment, leisure and lifestyle hub.

4) Design excellence

- a) To meet and exceed sustainability benchmarks, including water quality.
- b) To achieve public domain and architectural design excellence.

13.1 Urban Framework

The Urban Framework focuses on the broad scale and the long term, and sets an overall planning and design context within which more detailed and localised strategies, studies and projects can be coordinated. The Urban Framework provides a physical interpretation of Riverlink's vision and strategies. It helps to ensure that the built environment created reflects the community's vision and Council's strategies, and it underpins an integrated approach to better physical environments.

13.1.1 Landscape Structure

C. A. Background

The largely undeveloped and floodplain nature of the Precinct means that the existing character is predominantly 'green', grassed and open with a rural and undeveloped feel. There is a mixture of public domain and park planting, private domain larger site planting (front and rear), and riparian planting (creek or river vegetation). There are some small neighbourhood parks associated with the residential areas.

The Landscape Structure seeks to integrate the natural and civic areas of the site through strong landscape links from the riparian areas back along the tree linked roadways to the Mulgoa Road frontage. Landscape components and strategies that underpin the Landscape Structure include:

- Landscaping streets, site boundaries and interfaces that contribute to the landscape identity of the Precinct.
- Acknowledging and responding to the site flooding events through landscape, environmental, engineering, built form and site management elements.
- Provision of a green interface with Mulgoa Road.
- Developing an interesting and culturally engaging component to connect the Great River Walk along the Nepean River.
- Enhancing the flood prone areas and riparian areas along Peachtree and Surveyors Creek as open space with a variety of active and passive recreational areas including a pedestrian/cyclist network. Naturalise, rehabilitate, and re-establish indigenous plantings along Peachtree and Surveyors Creeks.
- Maintaining the 'green' character by requiring setbacks for front gardens or plantings.
- Enhancing views to the Nepean River through management of the riparian plantings at Jamison Road and other public streets.
- Creating access points to the water for a wide range of passive and recreational activities.
- Creating shade in summer and solar access in winter.

D. B. Objectives

- a) To create well designed active and passive recreation areas and open spaces;
- b) To ensure the landscape contributes to the amenity of streets, including shade, especially the active streets;
- c) To maintain view corridors to the mountains;
- d) To reinforce the city's ecology by using appropriate species for the area;
- e) To improve urban air quality and contribute to biodiversity;

- f) To ensure landscaping designs incorporates methods for conserving mains water; and
- g) To incorporate WSUD principles and contribute to the reduction of stormwater runoff.

E. C. Controls

1) General

- a) A long-term landscape concept plan must be provided for all landscaped areas including the deep soil landscape zone in accordance with the Landscape Design section of this DCP.
- b) Remnant vegetation and riparian areas in the precinct are to be protected and enhanced where possible.
- c) Any significant stands of mature trees are to be assessed and where the health and vigour of the stand is demonstrated, are to be retained.
- d) Landscaping is to be integrated in the front setback of the development to provide an attractive outlook within buildings, an attractive edge to the footpath, and to screen and breakdown the apparent scale of large areas of façade, bulk of building mass and urban form.
- e) Where the setback area is a deep soil zone, clear-trunk canopy trees shall be planted.
- f) Where an established planting character exists, this is to be continued into adjacent new development sites.
- g) Native or indigenous plants that have lower water requirements are to be incorporated.
- h) Landscaping of balconies, walls or roofs (vertical gardens/pots) should be provided to help visually minimise building mass and help soften the building. These areas should be designed for optimum conditions for plant growth by:
 - i. Providing soil depth, soil volume and soil area appropriate to the size of the plants to be established;
 - ii. Providing appropriate soil conditions and irrigation methods
 - iii. Providing appropriate drainage.
 - iv. The mix of plants in a planter, for example, where trees are planted in association with shrubs, groundcovers and grass.
 - v. Ensuring appropriate long term maintenance will be provided.

2) Street Design

- a) All streets are to provide verge planting in local streets and full width decorative paving in pedestrian areas with high activity.
- b) The street detailing, furniture, lighting and finishes are to be developed to respond to the specific character of the Precinct and are to complement the design palette in the draft Penrith Public Domain Technical Manual.

13.2 Connectivity

Connections for pedestrians, cyclists, public transport, cars, trucks and service vehicles through new and existing links to the Great River Walk, City Centre and surrounding areas ensures key activity nodes are activated. Key links through the Precinct as shown in Figure E13.2 will acknowledge views to the Blue Mountains and connections to the River.

13.2.1 Permeability

A. Background

Within the non-residential areas of the Precinct, there is a limited street network reflecting the large scale building footprint of land uses and activities and lack of development due to flooding. Large blocks reflect existing uses – bulky goods and entertainment. Rural residential, smaller blocks and lots (which are finer grain) reflect smaller scale residential uses.

Through site links provide access connections between the long sides of street blocks for pedestrian and vehicular access at street level. These links provide an important function in the form of lanes, shared zones, arcades and pedestrian ways.

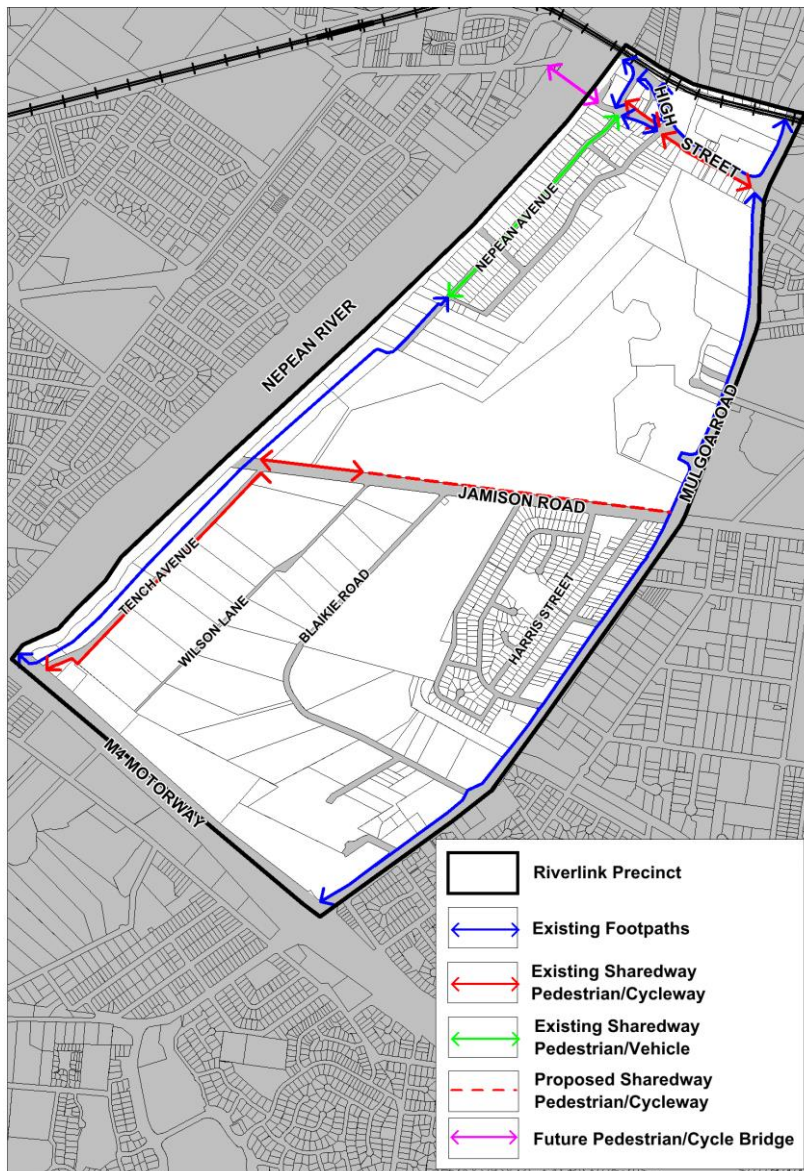
B. Objectives

- a) To retain and enhance existing through site links as redevelopment occurs.
- b) To enhance connections between the Riverlink Precinct and surrounding areas, both along and across the Nepean River and through existing and new street networks.
- c) To take advantage of all possible pedestrian connections to enable the site to function physically as a 'Riverlink' to the City Centre.
- d) To connect the Riverlink pedestrian/cyclist network to the Great River Walk.
- e) To improve the visual connection through the precinct to the river and mountains.
- f) To improve permeability of large sites when they are redeveloped for more intensive uses.
- g) To provide for pedestrian amenity and safety.

C. Controls

- 1) Through site links are to be provided as shown in Figure E13.2: Existing and Proposed Connections with accessible paths of travel that are:
 - a) a minimum width of 4m for its full length and clear of all obstructions including columns, stairs, etc
 - b) Direct and publicly accessible thoroughfares for pedestrians; and
 - c) Open-air for its full length and have active frontages or a street address.
- 2) Ensure new streets and through site links extend and reinforce the existing street and block pattern as shown in Figure E13.2.
- 3) New through site links should be connected with existing and proposed through block lanes, shared zones, arcades and pedestrian ways and opposite other through site links.
- 4) The redevelopment of sites with an extra area of 5 hectares or more are to include new streets, lanes and/or site links to ensure permeability and encourage public access throughout the site.
- 5) Locate vehicular access and entries to parking on secondary streets or at the rear of buildings.
- 6) Existing publicly and privately owned links are to be retained.
- 7) Signage is to be located at street entries indicating public access through the site as well as the street to which the link connects.

Figure E13.2: Existing and proposed connections



13.2.2 Pedestrian and Cycle Network

A. Background

A series of linkages will encourage walkability and easy access to activity nodes in the Precinct as shown in Figure E13.2 Existing and Proposed Connections. Better pedestrian and cycleway connections will be created by new links and connections between existing pathways. Safety will be enhanced by designing buildings that have natural surveillance of pathways, laneways, parks, open space corridors or other elements of the public domain.

B. Objectives

- a) To provide safe and easy access to buildings to enable better use and enjoyment by people regardless of age and physical condition, whilst also contributing to the vitality and vibrancy of the public domain

- b) To provide a safe and accessible public domain
- c) To create an extended and enhanced pedestrian and cycling network.
- d) To provide continuous trafficable footpaths to all streets.
- e) To provide opportunities for casual surveillance, places to enjoy views, and place to sit and rest along the off road pedestrian and cycle network.
- f) To ensure adequate provision for expansion of the cycle network.

F. C. Controls

- 1) Paved surfaces are to be designed to delineate between different uses including pedestrian areas, car parking spaces and driveways.
- 2) Signage is to be located at street entries indicating public access through the site as well as the street to which the link connects.

13.3 Built Form

The development provisions in this section are intended to encourage high quality design for new buildings, balancing the character of the Riverlink Precinct with innovation and creativity. The resulting built form and character of new development should contribute to an attractive public domain and produce a desirable setting for its intended uses.

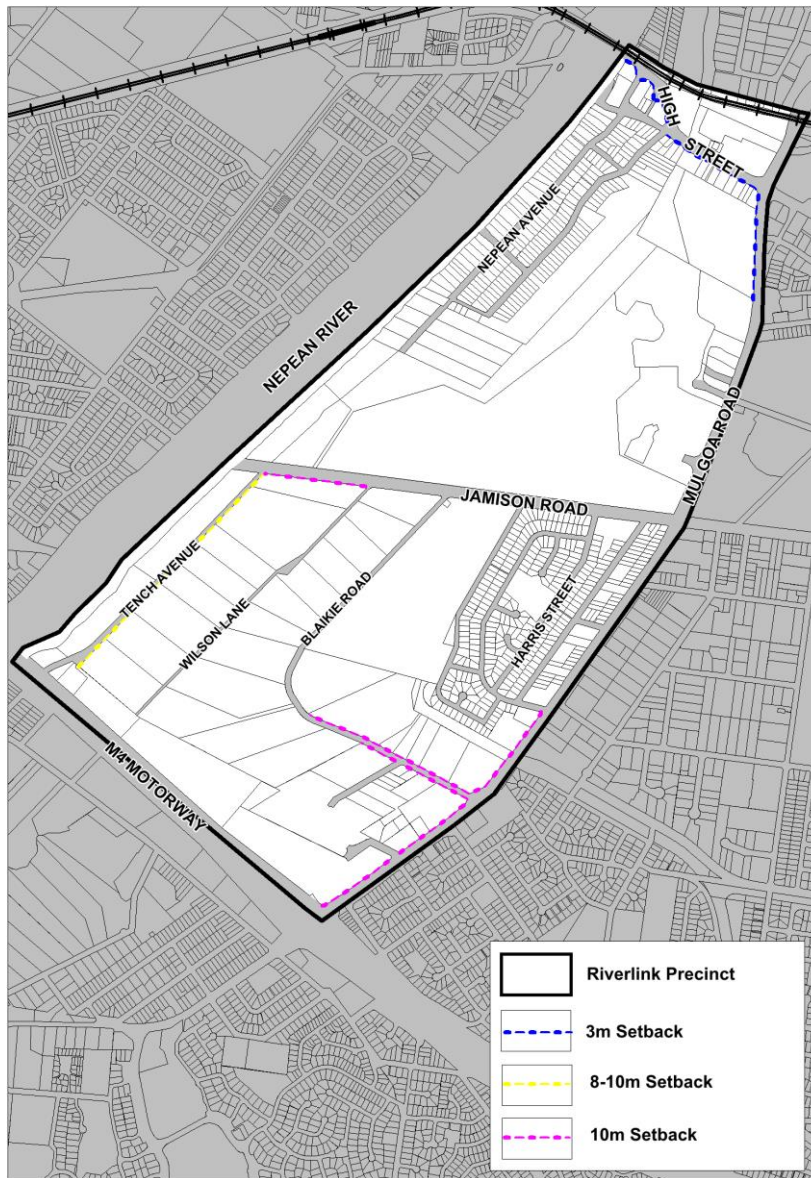
13.3.1 Street Alignment and Setbacks

G. A. Background

Street setbacks and building alignments establish the front building line. They help to create the proportions of the street and can contribute to the public domain by enhancing streetscape character and continuity of street facades.

Street setbacks can be used to enhance the setting and address for the building. They provide for landscape areas, deep soil zones and entries to ground floor apartments. Setbacks allow ventilation, daylight access and view sharing and increase privacy.

Figure E13.3 Street Setbacks



B. Objectives

- To establish consistent building alignments to the street.
- To provide street setbacks appropriate to building function and character.
- To establish the desired spatial proportions of the street and define the street edge.
- To create a transition between public and private space.
- To locate active uses closer to pedestrian activity areas.
- To maintain solar access to the public domain.
- To protect important views to the Blue Mountains escarpment.
- To ensure an appropriate level of amenity for building occupants in terms of daylight access, outlook, view sharing, ventilation, wind mitigation, and privacy.

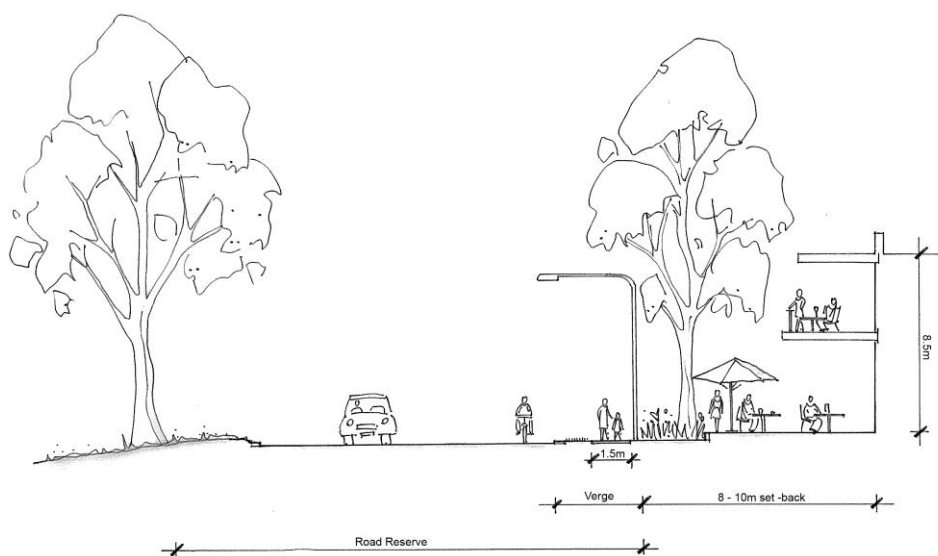
- i) To achieve usable and pleasant streets and public domain areas in terms of wind mitigation and daylight access.
- j) To provide building separation for visual and acoustic privacy
- k) To provide deep soil zones within sites and maintain mature/significant vegetation where possible.

C. Controls

- 1) Street setbacks are to be in accordance with those shown in Figure E13.3. Where an area is not identified in Figure E13.3 applicants should refer to other sections of this DCP for minimum setback requirements.
- 2) Provide slender buildings aligned to the street or pedestrian walkways where possible.
- 3) Minor projections into front building lines and setbacks for sun shading devices, entry awnings and cornices are permissible.
- 4) Buildings must demonstrate that views to the Blue Mountains escarpment are maintained through the provision of technically accurate perspectives to the satisfaction of Council officers.
- 5) The following development is permitted and preferred within the 8-10m setback along Tench Avenue:
 - a) Outdoor dining and awnings, including upper storey dining, where appropriate, to maximise views to the river;
 - b) Landscaping, including shade trees; and
 - c) Limited signage and parking.

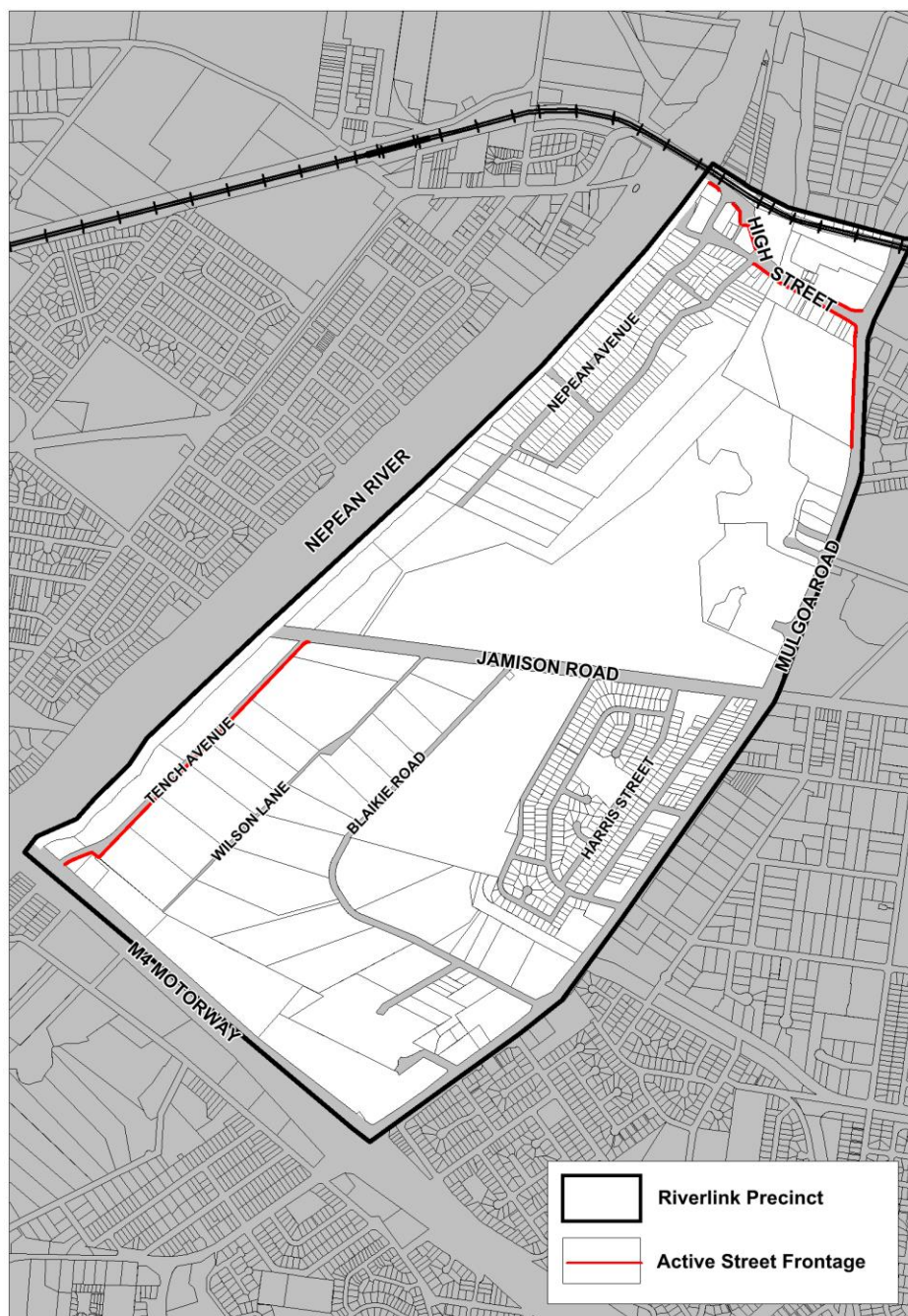
A cross section of preferred development within the 8-10m setback along Tench Avenue is illustrated in Figure E13.4 below.

Figure E13.4: Cross section of preferred development within 8-10m setback along Tench Avenue



13.3.2 Active Street Frontages

Figure E13.5: Active Street Frontages



A. Background

Active frontages promote an interesting and safe pedestrian environment. Due to the size of the area, it is recognised that not all streets will develop as active pedestrian areas. As shown in Figure E13.5 Active Street Frontages have been identified where active ground level uses are to be consolidated, creating vibrant streetscapes in areas with high pedestrian traffic and possibly located close to public transport and public open space.

Active uses include:

- Shop fronts

- Retail/service facilities with a street entrance
- Cafe or restaurants with street entrance
- Community and civic uses with a street entrance
- Recreation and leisure facilities with a street entrance.

B. Objectives

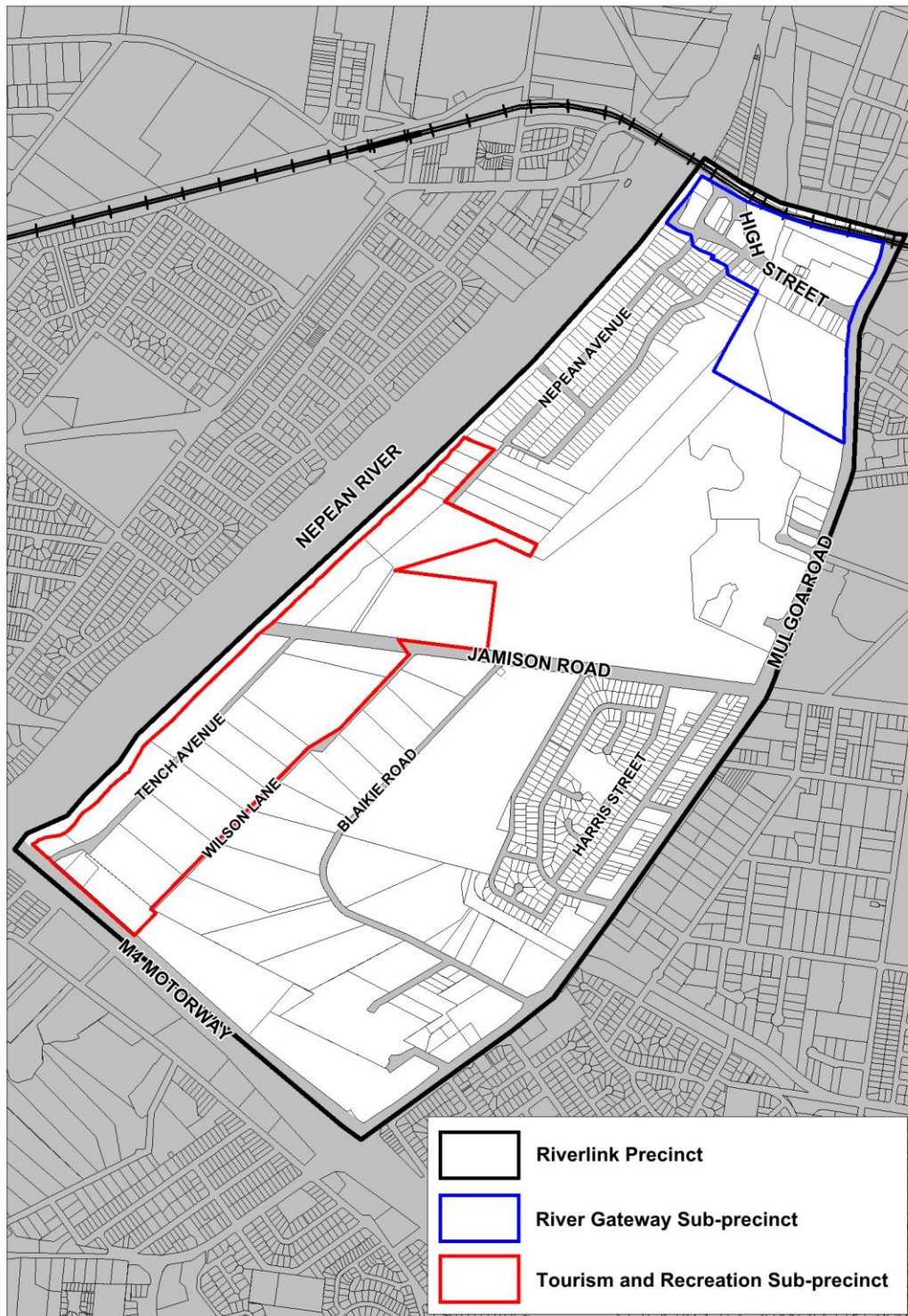
- a) To promote pedestrian activity and safety in the public domain.
- b) Achieve active street frontages with good physical and visual connections between buildings and the street
- c) To create vibrant streetscapes around areas of high pedestrian traffic.
- d) To encourage activity within the site outside commercial business hours.
- e) To provide a mix of uses to support an increasing employment and visitor population over time.
- f) To enhance pedestrian safety, security and amenity.

C. Controls

- 1) Active ground level uses are to be located as shown in Figure E13.5.
- 2) Entries to active frontage tenancies are to be accessible and at the same level as the adjacent footpath.
- 3) Vehicular access points should not be located at primary active frontages or adjacent to building entry points.
- 4) Ground level uses at active frontage zones are to be located at or close to street level.
- 5) Transparency and openings to the street are to be maximised and blank walls, fire exits and building services elements are to be minimised.
- 6) Locate primary pedestrian entries to buildings on the street frontage.
- 7) Design setback areas to provide interest and maximise opportunities for casual surveillance.
- 8) Design openings, including main entries, to the street to activate the street and to provide passive surveillance and overlooking of the public domain
- 9) Development on High Street may be built to the street frontage to encourage active uses including restaurants and cafes.

13.4 Future Character Strategy for Sub Precincts

Figure E13.6: Sub Precincts



A. Introduction

Character is determined by the differing combinations of physical elements that give an area a distinctive quality. These elements refer to the physical setting, the economic and land use patterns over time, and the social and cultural history.

Due to the size and strategic importance of the Riverlink Precinct, specific design principles and development outcomes have been identified for sub precincts. Large parts of the Precinct are in transition and will have a different character in time to what currently exists.

This part seeks to encourage urban design and architectural excellence as well as environmental sustainability in both the public and private domain for these key precincts.

Built form and public domain controls need to retain positive character elements such as built form and landscape elements and control future development to achieve a desired future character. Development within sub precincts as shown in Figure E13.6 is to consider the desired character of that precinct.

Architectural excellence is particularly important where the building is highly visible from the public domain outside the Precinct. Good building design should positively contribute to the overall architectural quality of the city and provide buildings appropriate to their context. In some circumstances, this contribution may be as an iconic or landmark building, but more typically it is as a well-mannered building that fits sensitively into the streetscape.

The maintenance and improvement of the public domain is dependent on a high quality approach to the design of new development including the articulation and finish of building exteriors. Careful consideration must be given to the built form, quality of materials, integrity of the design concept and its contribution to the public domain.

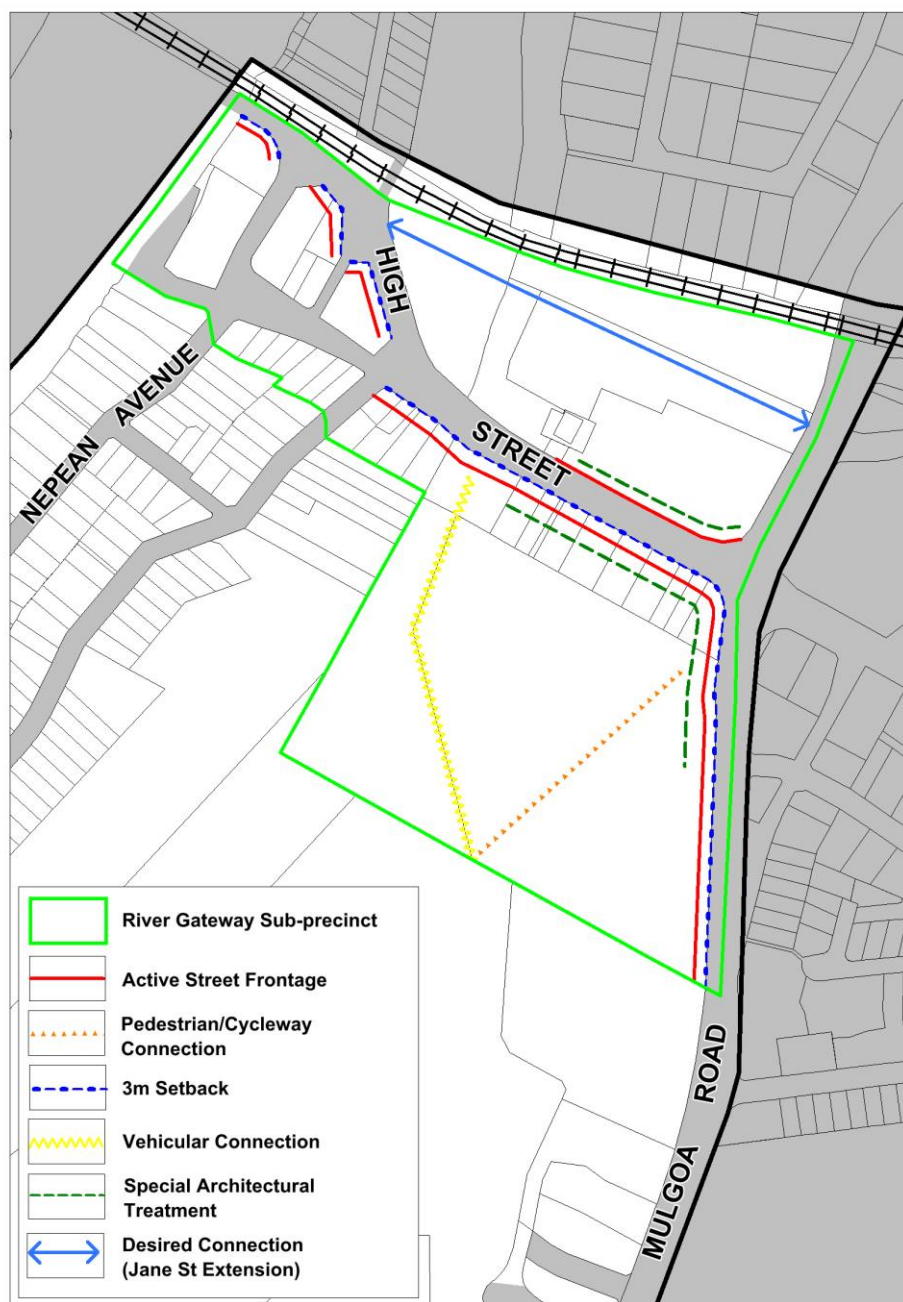
Sub precincts are also rich in panoramic and focused street views to the Blue Mountains escarpment. These views are fundamental to the identity of the region and characterise this area of Penrith. Views are regarded as significant when they terminate at places of architectural, landscape, or cultural significance. This may include views of the Nepean River, public open space areas or heritage buildings. It is important that views to the Blue Mountains be maintained from as many points as possible at street level. In the redevelopment of key sites consideration should be given to opening up new significant views.

B. Objectives

- a) To create a framework that is flexible enough to accommodate a changing range of uses over time and respond to market opportunities
- b) To facilitate the orderly development of key precincts
- c) To create distinctive places activated by a mix of uses
- d) To ensure that development contributes to the overall creation of a destination within Penrith
- e) To retain and enhance panoramic views to the Blue Mountains escarpment and the Nepean River from existing streets and the public domain
- f) To retain and enhance views to natural and cultural landmarks and heritage items

13.4.1 River Gateway

Figure E13.7: River Gateway sub-precinct



A. Background

The River Gateway sub precinct as shown in Figure E13.7 is an integral part of the 'Riverlink', the reconnecting of the City Centre with the River, to better link the beauty of the City's natural landscape with its urban environments. This Precinct, along with the Carpenters site and Woodriff Gardens, proposes the re-visioning of public transport, stronger pedestrian and cycling networks, green spaces and a pedestrian bridge. In addition, there has been identified a community desire for an activated river frontage, as well as a strategic mix of indoor and outdoor areas which encourage people of all ages to come together to build a sense of community.

B. Objectives

- a) To connect the Penrith City Centre with the River and Penrith Lakes
- b) To create multi-modal opportunities for people to engage with the River
- c) To optimise views of the Victoria Bridge, Nepean Valley and the Blue Mountains eastern escarpment
- d) To connect Penrith, Emu Plains and the Blue Mountains
- e) To respect the historic setting and place
- f) To provide an iconic bridge, dedicated to pedestrians and bicycle riders, over the Nepean River
- g) To ensure buildings and structures are iconic and regionally significant, and which distinguish Penrith from other places
- h) To integrate with a green network that connects the Penrith City Centre with the River and environs – the 'Riverlink'

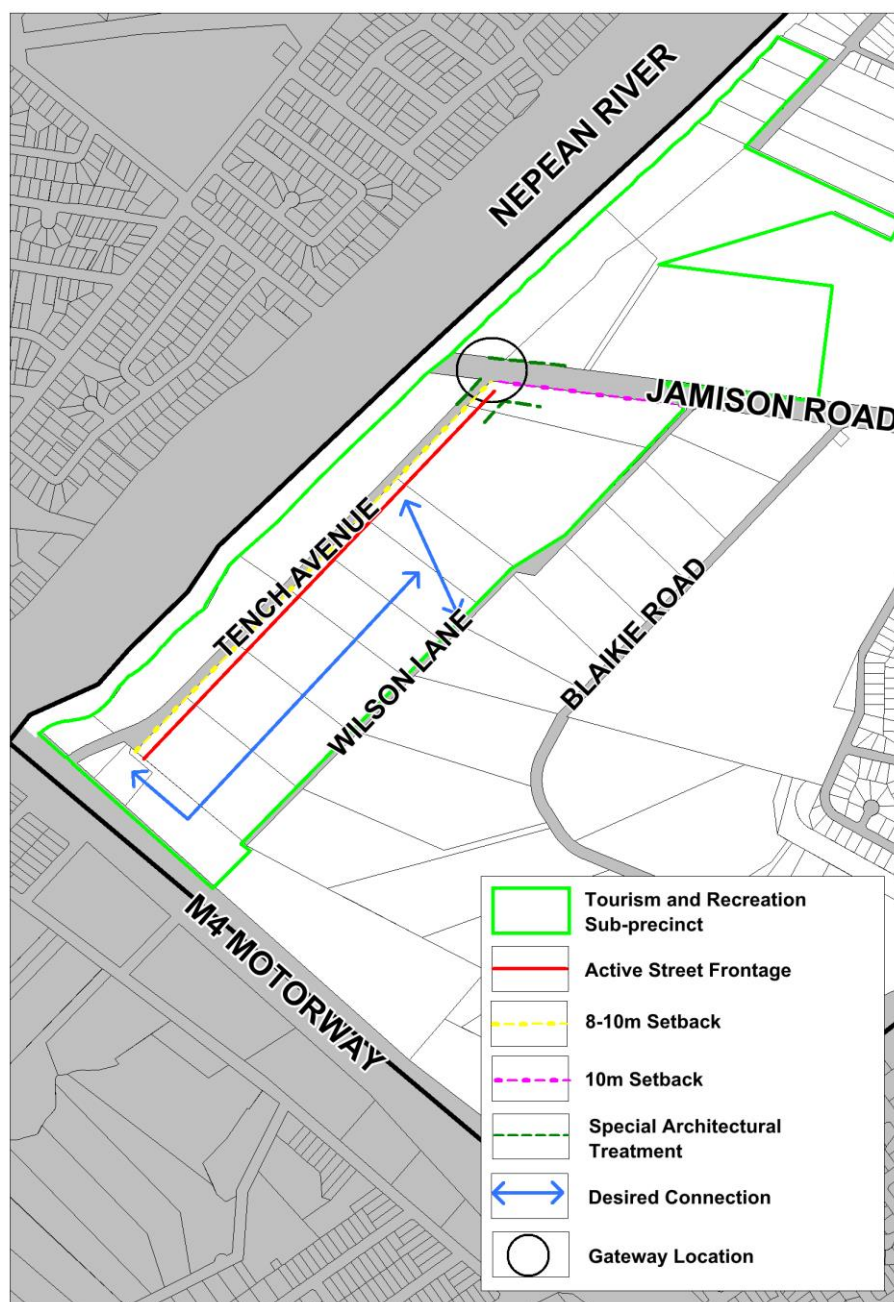
C. Controls

- 1) The built form within this sub precinct must provide a transition from the City Centre to the active, recreational edge of the Nepean River and the lower density residential surrounds.
- 2) Development should be massed to the High Street corners at Mulgoa and Castlereagh Roads to mark the City Centre Western Gateway.
- 3) Development must provide an active edge to High Street, street address and continuation of High Street to the water.
- 4) Power lines are to be located underground.
- 5) Where power lines cannot be located underground, development may need to be set back from the corridor to allow for an appropriate buffer zone (may require up to 30 metres each side – with exact dimensions to be confirmed by utility authorities).
- 6) Civic and cultural elements of the City Centre should be incorporated and extended through to the Nepean River via High Street.
- 7) Landmark and gateway locations are to have buildings that demonstrate architectural excellence in the following ways:
 - a) How the building reinforces and enhances significant vistas and view corridors.
 - b) How the building will enliven the public domain it adjoins.
- 8) Particular attention is to be paid to detailing of materials. In general:
 - a) Painted surfaces are not appropriate especially at street 'level'.
 - b) External walls should be clad with high quality and durable materials and finishes.
 - c) Architectural form/design uniqueness is to be considered.
- 9) Provide an architecturally distinctive, high quality, unique and well-designed building, which responds to the character of the region and establishes the site as a special place.
- 10) Buildings are to be simple, elegant and well proportioned.

- 11) Balconies and terraces should be provided, particularly where buildings overlook parks and on low rise parts of buildings. Gardens on the top of setback areas of buildings are encouraged.
- 12) Façades are to be articulated so that they address the street and add visual interest.
- 13) To assist articulation and visual interest, large expanses of any single material are to be avoided.
- 14) Adjoining buildings (particularly heritage buildings) are to be considered in the design of new buildings in terms of:
 - a) datum of main façade and roof elements,
 - b) appropriate materials and finishes selection,
 - c) façade proportions including horizontal or vertical emphasis.
- 15) Parking areas must not dominate the street frontage.
- 16) Mixed use buildings are to provide pedestrian friendly, active street edges.
- 17) A street should be provided on the boundary of the Mountain View Retirement Village complex to activate this edge.
- 18) A north-south vehicular link should be provided through the sub precinct from Great Western Hwy/High Street to the southern boundary (Panthers Precinct).
- 19) A view connection should be created from Penrith Civic Centre through the sub precinct on the corner of Mulgoa Road and High Street in the form of a pedestrian through link.
- 20) A landscaped public domain is to be provided with water features and public art incorporated at street level.
- 21) The city edge should be defined through the use of formal structured plantings, banners on light poles, and street treatments in line with the City Centre.
- 22) Environmental and sustainable initiatives are to be incorporated into new buildings.

13.4.2 Tourism and Recreation Precinct

Figure E13.8: Tourism and Recreation Precinct



A. Background

The Nepean River has a long cultural history, dating back thousands of years. As a spectacular natural and cultural landscape setting, the river provides the opportunity for a series of memorable spaces and places each with their own focus and character, a place to celebrate the community's culture and diversity.

The Tourism and Recreation Precinct as shown in Figure E13.8 is focused around the River and provides a sequence of foreshore open spaces of different sizes, shapes and characters that contribute to a rich and varied promenade experience that draws people along the

waterfront. The river is a significant and important recreational asset in the region. An active and vibrant river should provide a wide range of recreational opportunities both on and off the water, making the river a place to be enjoyed by all.

B. Objectives

- a) Be a destination – provide a river park for the people
- b) Provide a strong sense of arrival along Jamison Road
- c) Create a connected, active and vibrant river with a wide range of recreational opportunities at hubs both on and off the water
- d) Create spaces and places for people to celebrate the community's culture and diversity

C. Controls

- 1) Facilitate access and areas for casual spectator vantage points for river based events
- 2) Facilities for water related uses should be provided at major points along the River such as pontoons, wharf structures, boardwalks and viewing decks.
- 3) Improved vehicle circulation and parking should be provided, including trailer parking near boat launch areas.
- 4) Improvements to the public domain are to be implemented such as street lighting and continuous street planting.
- 5) Vehicular access points and entries to parking areas are to be located on secondary streets or at the rear of buildings.
- 6) Landmark and gateway intersections are to be reinforced with buildings and structures and are to demonstrate architectural excellence in the following areas:
 - a) How the building reinforces and enhances significant vistas and view corridor
 - b) How the building will enliven the public domain it adjoins.
- 7) Materials are to be selected for durability and quality. In general painted surfaces are not appropriate especially at street 'level'.
- 8) Particular attention is to be paid to detailing of materials.
- 9) Balconies and terraces should be provided, particularly where buildings overlook parks and on low rise parts of buildings. Gardens on the top of setback areas of buildings are encouraged.
- 10) Facades are to be articulated so that they address the street and add visual interest.
- 11) To assist articulation and visual interest, large expanses of any single material are to be avoided.
- 12) External walls should be clad with high quality and durable materials and finishes.
- 13) Adjoining buildings (particularly heritage buildings) are to be considered in the design of new buildings in terms of:
 - a) datum of main façade and roof elements,
 - b) appropriate materials and finishes selection,
 - c) façade proportions including horizontal or vertical emphasis.
- 14) Buildings are to be simple, elegant and well proportioned.
- 15) Environmental and sustainable initiatives are to be incorporated into new buildings.

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13.4.2.1 2 Tench Avenue, Jamisontown

13.4.2.1.1 Introduction

A. Land to which this section applies

This section applies to development permitted pursuant to clause 7.29 of Penrith LEP 2010 at 2 Tench Avenue, Jamisontown (Lot 1 DP 38950) as identified in Figure E13.9.



Figure E13.9: Aerial Image of the Subject Site (Source: Six Maps 2018)

B. Relationship of this section to the Riverlink Precinct Section

Clause 7.29 of Penrith LEP 2010 permits a development on the site that incorporates an indoor ski slope.

This section provides specific controls for a development on the site that incorporates an indoor ski slope, in addition to the general controls elsewhere in this DCP. Where there is an inconsistency between this section and the rest of the DCP, the requirements of this section prevail.

C. Vision

It is envisaged that the subject site will be developed for an indoor skiing facility, utilising the site-specific provisions under LEP clause 7.29 and this section of the DCP.

The development will potentially accommodate an indoor ski slope and a range of other facilities such as an ice-skating rink, ice climbing facilities, rock climbing facilities, snow play areas, a gymnasium and training facilities. The development

may also accommodate hotel accommodation, function centre and food and drink premises.

D. Objectives

- (a) To contribute to the attainment of the objectives of the SP3 Tourist zone and Riverlink Precinct and Tourism and Recreation sub-precinct by facilitating the development of a unique indoor recreation facility that offers a range of winter sport related activities that will attract local, interstate and international visitors;
- (b) To promote quality urban design, architectural excellence and environmental sustainability in the planning, development and management of the development of the site;
- (c) To encourage the development of a high-quality building that positively contributes to the skyline and view corridors to and from the Blue Mountains and escarpment and provides an appropriate architectural response to the Gateway location of the site;
- (d) To ensure that the development provides an appropriate interface with the public domain and contributes to a positive pedestrian experience for visitors to the precinct;
- (e) To ensure that massing, setbacks, design and landscaping of the development minimise the visual, privacy, acoustic and overshadowing impacts of the development on this site;
- (f) To ensure the development is compatible with the flood characteristics of the site and that any development on the site has no impact on adjoining or upstream or downstream properties; and
- (g) To ensure local traffic impacts of the development are appropriately managed and adequate parking is provided on site.

13.4.2.1.2 Design Excellence

A. Background

This Part seeks to encourage urban design and architectural excellence as well as environmental sustainability. This Part supports the requirement of clause 7.29 of the Penrith LEP 2010 for a design competition to be held for the future development of the site.

Achieving design excellence for the development is particularly important given the building will be a visually prominent building.

B. Objectives

- a) To ensure that the development achieves design excellence;
- a) To encourage a high level of design consideration;
- b) To ensure that buildings contribute positively to the precinct character.
- c) To encourage the development of sustainable design.
- d) To encourage the use of high quality, durable and robust materials.

C. Controls

- 1) The development must achieve design excellence. In deciding whether the development exhibits design excellence, the following matters are to be taken into consideration:
 - (a) whether a high standard of architectural design, materials and detailing appropriate to the building type and location will be achieved,
 - (b) whether the form and external appearance of the development will improve the quality and amenity of the public domain,
 - (c) Whether the building reinforces and enhances significant vistas and view corridors,
 - (d) how the development will address the following matters—
 - (i) the impact of the development on the heritage significance of 'Madang Park' which is listed as a heritage item with local significance in Schedule 5 of the Penrith LEP 2010.
 - (ii) the relationship of the development with buildings on neighbouring sites in terms of separation, setbacks, amenity and urban form,
 - (iii) bulk, massing and modulation of the building,
 - (iv) environmental impacts such as sustainable design, overshadowing, and reflectivity,

- (v) the achievement of the principles of ecologically sustainable development,
 - (vi) pedestrian, cycle, vehicular and service access, circulation and requirements,
 - (vii) the impact on, and any proposed improvements to, the public domain.
 - (viii) achieving appropriate interfaces at ground level between the building and the public domain.
 - (ix) excellence and integration of landscape design.
- 2) Any future development application must be accompanied by a report that details how the building achieves design excellence in relation to these matters.

13.4.2.1.3 Built Form

13.4.2.1.3.1 Indicative Building Envelope

A. Background

This section of the DCP will guide the building envelope for development on this site to control and minimise the potential environmental impacts of future development on this site on the surrounding properties and ensure that the development delivers an appropriate streetscape outcome along both Tench Avenue and Jamison Road.

Controlling the height and setbacks of the building will be essential to reducing the apparent bulk and scale of the building, creating an appropriate landscaped setting for the building and providing a physical and visual transition between the building and the surrounding properties. The setbacks will also ensure a reasonable level of solar access will be maintained to the adjoining properties.

B. Objectives

- a) To ensure future development achieves a high-quality streetscape;
- b) To minimise the impacts of overshadowing; and
- c) To ensure adequate separation and amenity is provided to the surrounding properties.
- d) To ensure the development is compatible with the flood characteristics of the site and that any development on the site has no impact on adjoining or upstream or downstream properties.

C. Controls

- 1) The building height and setbacks are to be generally consistent with the height and setbacks shown in Figures E13.10, E13.11, E13.12 and E13.13. The building envelope depicted in these Figures is indicative only and is to be refined through the design excellence process.
- 2) The ski slope may extend up to 2 metres into the 10 metre setback to Jamison Road, above a height of 6 metres above ground level, to allow for the articulation and modulation of the ski-slope.
- 3) The ski slope is to be setback from the southern boundary to minimize the visual and solar access impacts of the slope on the adjoining property. The height and setback of the ski slope from the southern boundary should be consistent with the indicative building envelope diagram included as Figure E13.12.

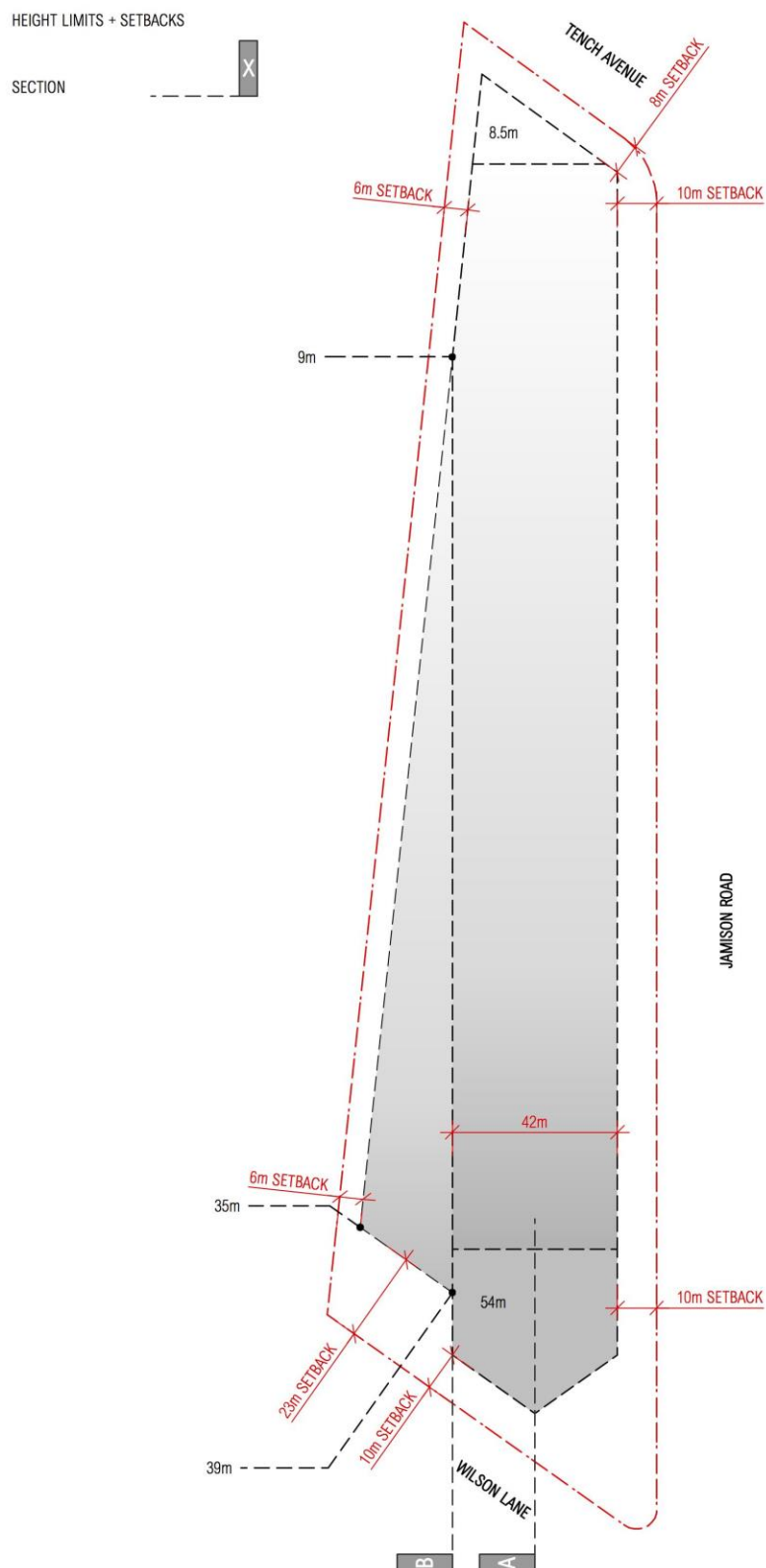
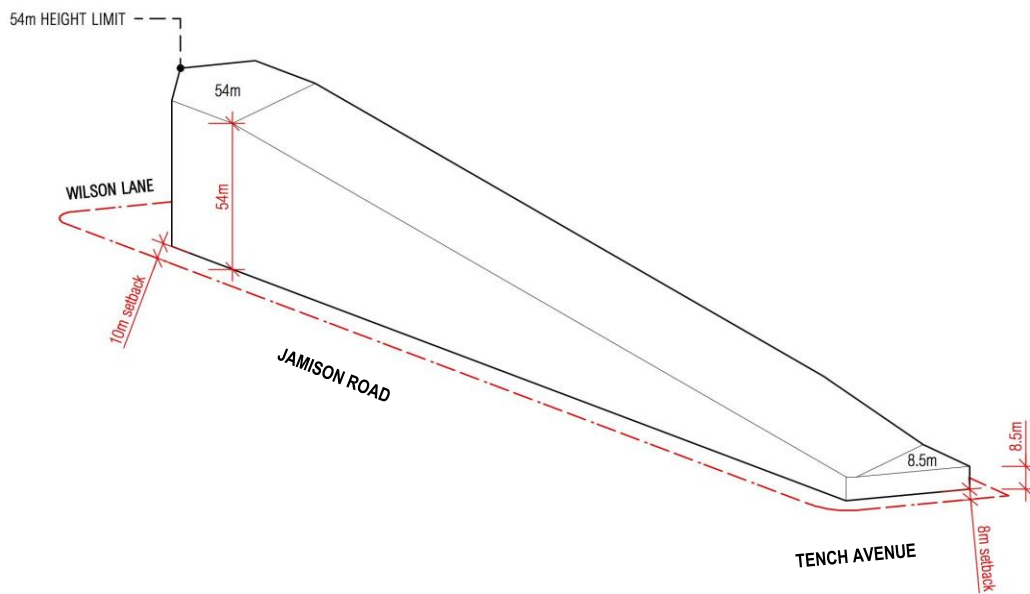


Figure E13.10: Site plan view of height limits and setbacks

SETBACKS + HEIGHT LIMITS



SETBACKS + HEIGHT LIMITS

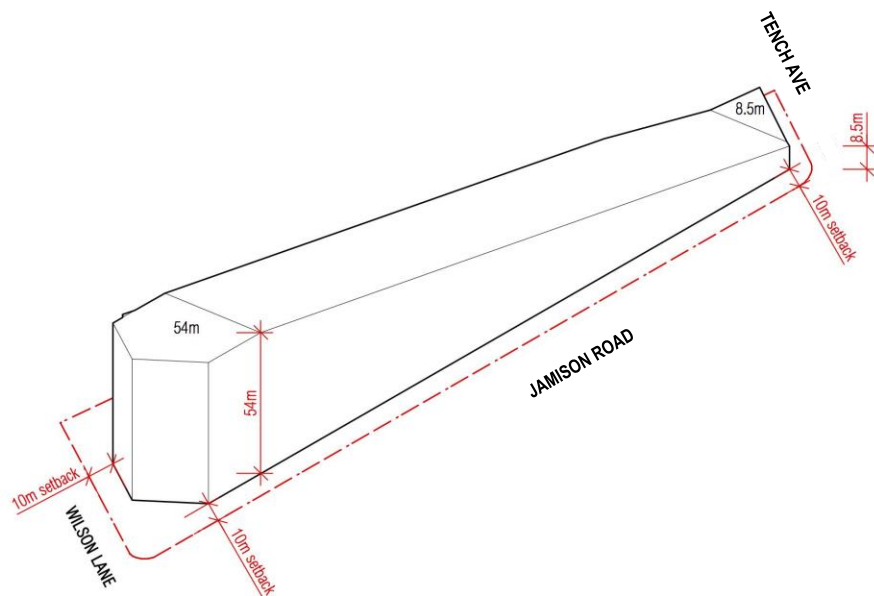
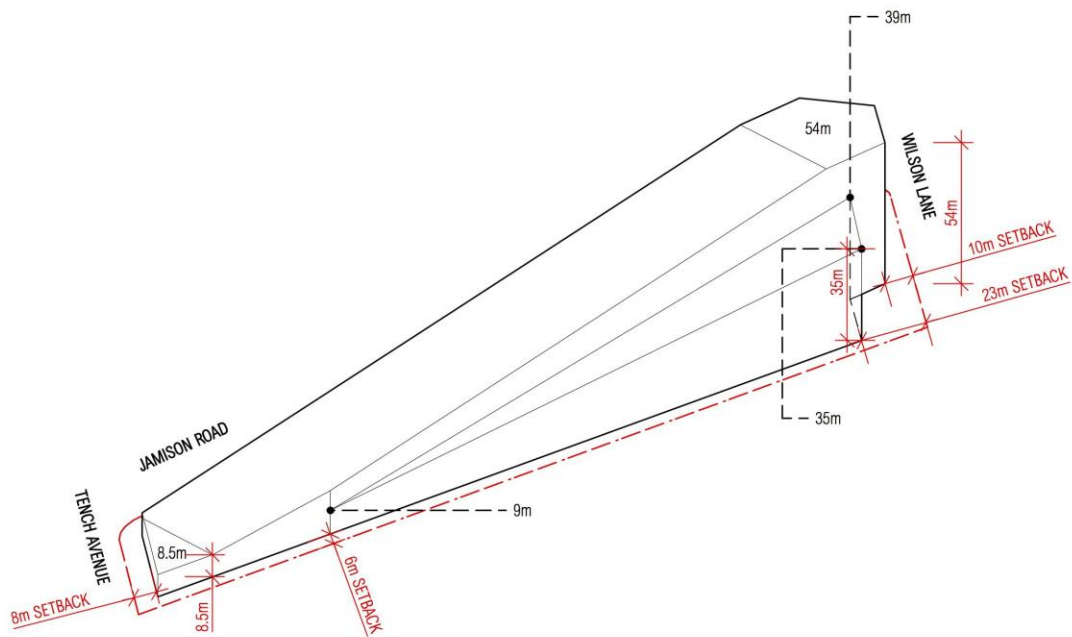


Figure E13.11: Indicative Building Envelope – Height limits and setbacks

SETBACKS + HEIGHT LIMITS



SETBACKS + HEIGHT LIMITS

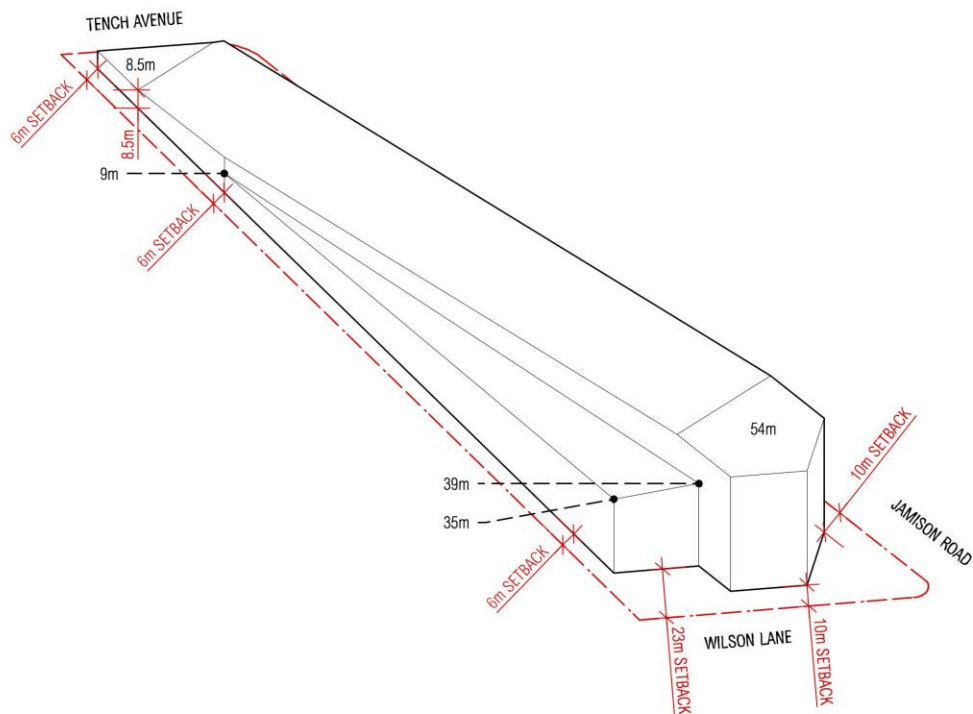


Figure E13.12: Building Envelope – Height limits and setbacks

SETBACKS + HEIGHT LIMITS

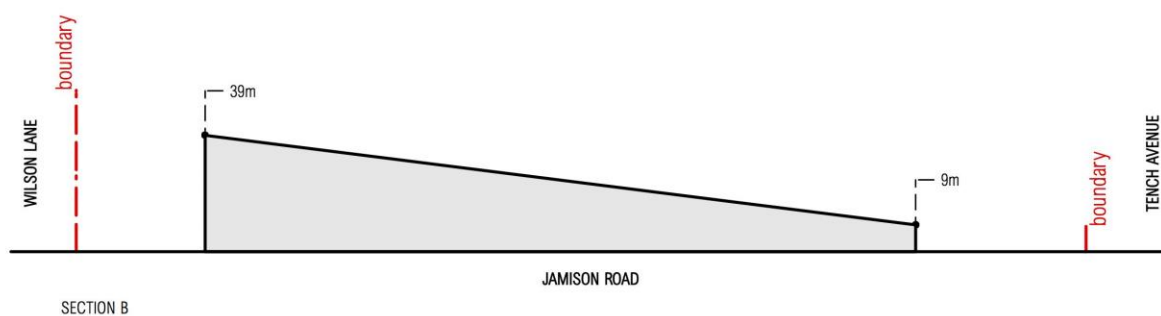
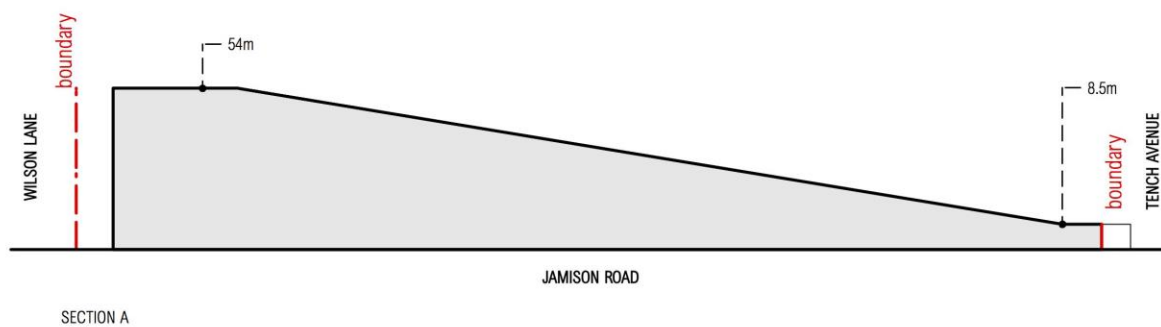


Figure E13.13: Sections – Height limits and setbacks

13.4.2.1.3.2 Building Design and Articulation

A. Background

The future development will be designed to be a landmark building for the area due to its height and unique shape. A high-quality architectural design is required for the building to ensure that the landmark building provides a positive contribution to the local skyline and attracts visitors to the Riverlink Tourism and Recreation Precinct.

The composition and detailing of the building façade will influence the apparent bulk and scale of the building, the success of the building's relationship with the public domain and the visual impact on the surrounding properties. The pattern or rhythm established by the proportions of the façade, the modulation of the external walls, the design of façade elements and the quality of the materials are therefore all-important considerations.

B. Objectives

- a) To ensure that new development makes a positive contribution to the skyline, streetscape and public domain;
- b) To ensure that the building's facades define and enhance the public domain.
- c) To create a transition between public and private space;
- d) To maintain a usable and pleasant public domain at street level;
- e) To ensure that an appropriate architectural treatment is provided at the intersection of Jamison Road and Tench Avenue; and
- f) To ensure that building elements such as awnings, screens, shading devices, roof structures and service elements are integrated into the overall building form and façade design.

C. Controls

- a) As the building will be visible from vantage points throughout the local area, both the northern and southern sides of the building are to be articulated and modulated to provide visual interest.
- b) Long continuous walls are to incorporate design treatments to reduce their visual mass and bulk. Such design treatments may include the use of architectural treatments or elements that serve to provide building articulation and modulation, the inclusion of greenwalls and the use of a variety of high quality external colours and materials.
- c) The intersection of Jamison Road and Tench Avenue is identified as a Gateway Location in the Riverlink Tourism and Recreation Precinct section of this DCP. The building is to respond to the Gateway Location of the site by:
 - Incorporating an active frontage to Tench Avenue (as required by the Riverlink Active Street Frontages section of this DCP),
 - Providing pedestrian access to the building from Tench Avenue. The building entry point is to be clearly visible from the street and enhanced as appropriate with awnings, building signage or high-quality architectural features that improve the clarity of a building's address and contribute to visitor and occupant safety and amenity.

- Delivering high quality building facades complemented by a landscape design that enlivens the public domain and contribute to a strong sense of arrival.
- d) A range of high quality, attractive and durable materials are to be used. A detailed schedule of external colours and finishes and photomontages are to be submitted with the development application.
 - e) Building services such as roof plant and parking ventilation are to be coordinated and integrated with the overall façade and building design and screened from view.
 - f) Ventilation louvres and car park entry doors are to be coordinated with the overall façade design.
 - g) The building and landscaping design is to incorporate the strategies outlined in the Penrith Council Cooling the City Strategy. The Statement of Environmental Effects is to detail how the development is consistent with the strategies outlined in the Penrith Council Cooling the City Strategy.

13.4.2.1.3.3 Landscape and Public Domain Design

A. Objectives

- a) To ensure landscaping is integrated into the design of the development;
- b) To provide landscaped areas and deep soil zones within the site and maintain mature/significant vegetation where possible; and
- c) To ensure that the use of potable water for landscaping irrigation is minimized.
- d) To ensure landscaping is compatible with the flood constraints of the site.

B. Controls

- 1) A detailed Landscape Plan and Public Domain Plan prepared by a suitably qualified professional is to be submitted with the development application.
- 2) The Landscape Plan must address, and be consistent with, the requirements of the Landscape Design section of this DCP.
- 3) The Landscape Plan and Public Domain Plan must include details of the landscape treatment of the public domain between the site and the adjacent roads/lane. Cross-sections are required to be submitted to detail verge widths, footpath locations and space for tree plantings.
- 4) The public domain design must improve accessibility to the site by foot, bike and public transport by providing appropriate connections to the existing shared path on the northern side of Jamison Road and the bus stop on Tench Avenue.
- 5) A minimum setback of 6 metres is required to the southern boundary at ground level. The existing mature vegetation along the southern boundary is to be retained where possible and enhanced.

- 6) Landscaping is to be integrated in the setbacks of the development to Tench Avenue and Jamison Road to provide an attractive edge and shade to the footpath, and to screen and soften the bulk and scale of the façade.
- 7) The building's setback to the southern boundary, Jamison Road and Tench Avenue is to be a deep soil zone, except where pedestrian pathways and vehicular crossings are required.
- 8) Consideration should be given to including green walls into the façade design.
- 9) Recycled water should be used to irrigate landscaped areas. Details are to be submitted with the development application.
- 10) The development application should address the development's consistency with the Greener Places Design Guide Framework.
- 11) An urban tree canopy of at least 25% should be achieved in accordance with the Draft Greener Places Design Guide prepared by the Government Architect New South Wales.
- 12) Details of any proposed landscaping shall be included in a Flood Impact Assessment.

13.4.2.1.4 Views and Visual Impact

A. Background

The Penrith LEP 2010 permits a maximum building height of 54 metres for the development. The future development of the site will be a local landmark and visible from vantage points in Penrith and outside the area.

To ensure that view corridors to and from Penrith and the Blue Mountains are not adversely impacted by the development, and to ensure the development has a positive impact on the local skyline, a high standard of architectural design is required.

B. Objective

- a) To ensure the building provides a positive contribution to the local skyline and reinforces view corridors to the Blue Mountains.

C. Controls

- 1) The form and detailing of the building should create a visually interesting and attractive façade when viewed from the surrounding public domain and from a distance.
- 2) The building is to be setback from Jamison Road in accordance with the setbacks specified in the Indicative Building Envelope section of this Part of the DCP to ensure the view corridor along Jamison Road to the Blue Mountains is maintained and to minimize the visual dominance of the building on the view corridor.
- 3) Landscaping is to be provided in the building's setback to Jamison Road to soften the view corridor to the west from Jamison Road and to contribute to the landscaped, open character of the Precinct.
- 4) The building is to be setback from Tench Avenue in accordance with the setbacks specified in the Indicative Building Envelope section of this Part of the DCP to provide a consistent landscaped setback along Tench Avenue and ensure that views along Tench Avenue are not adversely impacted by the building.
- 5) The western façade of the building is to have a maximum height of 8.5 metres to provide consistency in the height of development adjacent to Tench Avenue and to provide an appropriate transition in scale from the foreshore park to the highest point of the building.
- 6) A Visual Impact Assessment (VIA) is to be submitted with the development application. The VIA is to be prepared in accordance with the relevant NSW Land and Environment Court Planning Principles. All photographs and observations should be made by a suitably qualified expert.
- 7) Photomontages showing the building from the key vantage points identified in Figure E13.14 are to be submitted to show how the building will reinforce and enhance significant vistas and view corridors.

VANTAGE POINTS



VANTAGE POINTS:

01. From the M4 Bridge
02. Yandhai Nepean Crossing
03. The Blue Mountains escarpment
04. Mt Portal lookout
05. Regatta Park
06. Lewers Gallery (Heritage Item)
07. Corner Jamison Rd and Mulgoa Rd
08. Corner Jamison Rd and Harris St
09. Corner Jamison Rd and Racecourse Rd
10. Corner Jamison Rd and York Rd
11. Corner Jamison Rd and Blakie Rd
12. Corner Jamison Rd and Wilson Ln
13. Madang Park
14. River Rd
15. Tench Avenue

Figure E13.14: Vantage point locations for photomontages

13.4.2.1.5 Sustainability

13.4.2.1.5.1 Environmental Performance

A. Background

Ecologically sustainable development principles are to be applied in the design, construction and ongoing operation of the development to minimise the use of non-renewable resources.

B. Objectives

- a) To apply principles and processes that contribute to ecologically sustainable development (ESD);
- b) Minimise the impacts of the development on the environment;
- c) Minimise the use of potable water and encourage water re-use; and
- d) To minimise non-renewable energy consumption in the construction and use of the building.
- e) Consider the use of sustainable materials and building components.

C. Controls

Thermal Efficiency

- 1) The thermal performance of the building is to be optimised by using building materials and insulation that maximise the thermal efficiency of the building.
- 2) No direct external glazing to external walls to be provided from the snow and ice areas.
- 3) The areas of the building that accommodate uses reliant on snow and ice are to be sealed to reduce energy consumption in temperature regulation and to slow the decline of snow and ice quality.

Energy Efficiency

- 1) Development is to be designed and constructed to reduce the need for active heating and cooling by incorporating passive design measures including design, location and thermal properties of glazing, natural ventilation, appropriate use of thermal mass and external shading.
- 2) A renewable energy source is to be provided for the building, such as a Photovoltaic Solar System, that contributes to making electricity for the uses of the building.
- 3) Where possible heat removed from the snow and ice areas is to be captured and re-used.
- 4) Car parking areas are to include electric vehicle charging points.
- 5) Where possible, the responsible sourcing of construction and fit out materials are to be used, including recycled content and recyclable materials.

Water Efficiency

- 1) The following water saving measures are to be incorporated into the development:

- a) Where possible recycled or harvested rainwater is to be used for water use in the building and watering new gardens and landscape features.
- b) Snow and ice scraped off for cleaning / re-topping is to be placed in a drainage holding area so the ice can be melted, filtered and stored in the main water tank.
- c) Snow and ice melted from the bottom layer is to be drained and filtered into the main water tank.
- d) All water fixtures (low flow shower heads and taps, dual flush toilets, low flush/waterless urinals, etc) are to be the highest Water Efficiency Labelling Scheme (WELS) star rating available at the time of development.
- e) Stormwater capture and reuse, including water quality management is to be in accordance with Council's Policy Water Sensitive Urban Design Policy.
- f) Water efficient plants and / or locally indigenous vegetation are to be used for landscaping.

Requirements for Specific Uses

Indoor ski slope

After commissioning the ski slope, the ski slope component of the building shall meet the following criteria:

- 100% green energy sourced from the building, or other sources, such that the operations are energy carbon neutral for the making of snow, conditioning and lighting of the space and all internal power requirements.
- 100% of all water required for snow and ice making shall be sourced from the roof and water tanks specially constructed for the purpose.

Ice Hockey arena and ice climbing area

After commissioning the ice hockey arena and ice climbing area, this component of the development shall meet the following criteria:

- 100% green energy sourced from the building, or other sources, such that the operations are energy carbon neutral for the making of snow, conditioning and lighting of the space and all internal power requirements.
- 100% of all water required for snow and ice making shall be sourced from the roof and water tanks specially constructed for the purpose.

Snow centre foyer and reception, hotel and all ancillary retail areas

The snow centre foyer and reception, hotel and all ancillary retail areas shall be designed to achieve the equivalent of a Green Building Council of Australia Green Star 5-star rating.

13.4.2.1.5.2 Reflectivity

A. Background

Reflective materials used on the exterior of building can result in undesirable glare for pedestrians and potentially hazardous glare for motorists. Reflective materials can also impose additional heat load on other buildings. The excessive use of highly reflective glass should be discouraged. Buildings should be designed to minimise hazardous or uncomfortable glare arising from reflected sunlight.

B. Objective

- a) To restrict the reflection of sunlight from buildings to surrounding areas and buildings.
- b) to encourage the consideration of the use of sustainable materials and building components

C. Controls

- 1) Finishes and materials are to be of a low reflectivity. Visible light reflectivity from building materials used on the façades of new buildings should not exceed 20%.
- 2) New buildings and facades should not result in glare that causes discomfort or threatens safety of pedestrians or drivers.
- 3) Given the height of the building and proximity of the site to major roads a Reflectivity Report, prepared by a suitably qualified professional, is to be submitted that analyses the potential solar glare from the proposed development on pedestrians and motorists.

13.4.2.1.6 Amenity of Surrounding Properties

A. Background

The development of the site will need to be carefully managed to ensure the changing character of the Precinct does not unreasonably impact on the amenity of existing surrounding uses.

The design of the indoor skiing facility should minimise the potential visual, solar, privacy and acoustic impacts on the surrounding properties.

B. Objectives

- a) To maintain a reasonable level of amenity for the surrounding properties;
- b) To ensure the shadow cast by the development does not exceed the shadow generated by the permitted building envelope;
- c) To ensure that the noise generated by the uses and any associated plant and machinery complies with the relevant standards to protect the amenity of the surrounding properties;
- d) To ensure that development will not result in light overspill or glare from artificial illumination; and
- e) To provide clear and direct pedestrian entrances to the building to avoid unnecessary disturbance to the surrounding properties.

C. Controls

General

- 1) A Plan of Management is to be submitted with the development application for the indoor skiing facility to ensure that the development operates with minimal impact on the surrounding properties. The Plan of Management is to include details of:
 - Hours of operation. Where uses within the development have different hours these hours must be clearly identified.
 - Noise control measures including measures to be implemented to minimize the noise impact of visitors entering or leaving the premises between 10pm and 6am.
 - Deliveries and rubbish collection and details of measures to be implemented to minimize any impacts on the amenity of the surrounding properties.
 - Cleaning and maintenance of the grounds of the future development of this site.
 - Fire safety and emergency access
 - Flood evacuation procedure
 - Complaint management
 - Safety and security measures including:
 - Perimeter lighting.
 - Surveillance or security cameras.

- Fencing and secure gates.

Solar Access

- 1) The development is to comply with the indicative building envelope shown in Part 13.4.2.1.3.1 of this DCP to limit the extent of shadow cast by the development.
- 2) The development is not to result in any additional shadowing than is shown on the shadow diagrams that identify the shadow cast by the indicative building envelope. The shadow diagrams are included as Figures E13.15, E13.16 and E13.17.
- 3) The extent of shadow cast by the development is to be minimized. A design statement is to be submitted that outlines how the shadow cast by the building has been minimized.
- 4) Shadow diagrams showing the impact of the proposed development at each hour between 9am and 3pm on 21 June are to be submitted with the development application.

Visual and Privacy Impacts

- 1) The southern elevation must include visual interest through the modulation and articulation of the façade to provide an appropriate outlook from the adjoining property. The southern elevation should incorporate a range of materials to contribute to the visual interest of the façade and consideration should be given to the inclusion of green walls.
- 2) The setback of the ski slope to the southern boundary should accord with the setbacks shown in Figures E13.10 and E13.12 in order to limit the visual impact of the building on the properties to the south.
- 3) The number of windows and openings on the southern elevation is to be minimized in order to maintain a reasonable level of visual privacy to the adjoining properties to the south and prevent light spill. Generally only high-level windows should be provided. Where windows are necessary on the levels below the ski slope, measures to protect the privacy of the adjoining property are to be considered such as high sill windows, translucent glass windows or windows with privacy screens.
- 4) The overspill from artificial illumination is to be minimised. Indicative nighttime views are to be submitted with the application to demonstrate the extent of nighttime illumination.

Acoustic Impact

- 1) The developments must comply in all respects with the *Protection of the Environment Operations Act 1997*, and other relevant legislation.

- 2) Where possible noise generating plant and machinery are to be located away from noise sensitive uses on the surrounding properties.
- 3) A Noise Impact Statement is to be submitted with any future development application. The Noise Impact Statement is to be prepared by a qualified acoustic consultant in accordance with the requirements set out in Appendix F3 DA Submission Requirements of this DCP.

Signage

- 1) Signage for the development is to be integrated into the design of the building.
- 2) A Signage Strategy must accompany the development application that provides details of all directional and business identification signage required for the development.
- 3) Signage for the development is to be consistent with the Advertising and Signage provisions of the DCP.

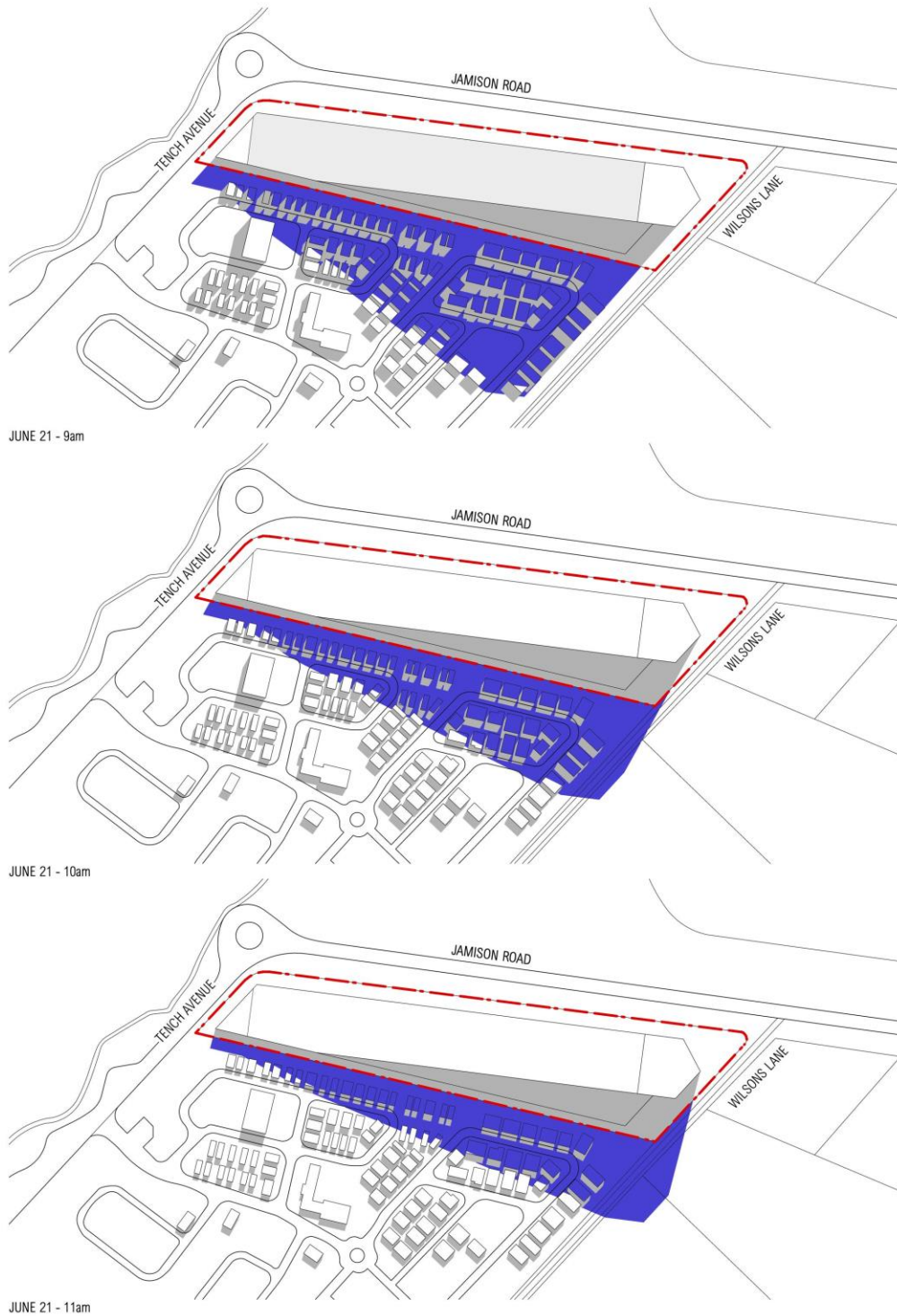


Figure E13.15 Shadow diagrams generated by the indicative building envelope showing maximum extent of shadow



Figure E13.16 Shadow diagrams generated by the indicative building envelope showing maximum extent of shadow

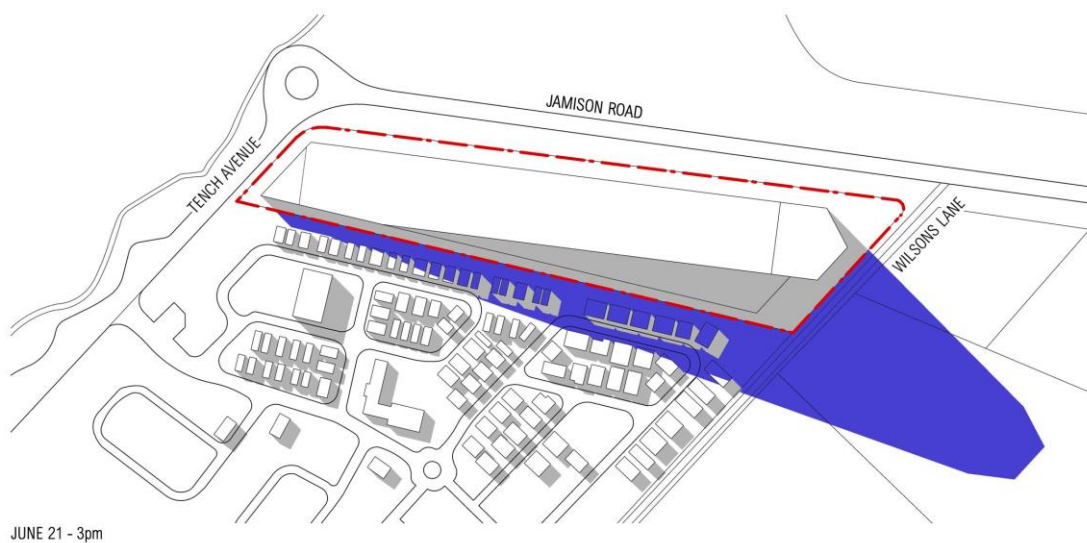


Figure 13.17 Shadow diagrams generated by the indicative building envelope showing maximum extent of shadow

13.4.2.1.7 Traffic, Parking and Site Access

A. Background

The future development on this site will accommodate a unique combination of uses. The traffic generation and parking needs will therefore differ from traditional single use sites and require site-specific responses and treatments.

B. Objectives

- a) To ensure that adequate car, motorcycle and bus parking is provided on site for staff and visitors;
- b) To ensure that driveways and parking structures do not dominate the public domain.
- c) To integrate adequate car parking and servicing access without compromising street character, landscape or pedestrian amenity and safety;

C. Controls

Traffic and Access

- 1) A Travel / Transport Plan is to be submitted with the development application and is to contain a range of measures to promote and maximise the use of more sustainable modes of travel to and from the site.
- 2) A Traffic Report is to be submitted with the development application for the development. The Traffic Report is to be prepared in accordance with the requirements set out in Appendix F3 DA Submission Requirements of this DCP.
- 3) The Traffic Report is to assess the impact of the development on the efficiency of the local road network and the performance of intersections.
- 4) The intersection of Jamison Road / Blaikie Road is to be upgraded in the form of an urban Channelised Right Turn treatment (CHR) to accommodate predicted traffic volumes during the AM and PM peak. The upgraded layout of the Jamison Road intersection with the CHR treatment is shown in Figure E13.18.
- 5) Vehicular access to the site is to be provided from Jamison Road or Wilson Lane in the zones shown in Figure E13.19.
- 6) All vehicular access to the development is to comply with Australian Standard AS2890.1 and AS2890.2 and accommodate vehicles up to and including a 14.5-metre-long bus/coach.
- 7) Potential pedestrian/vehicle conflict is to be minimised by:
 - a) Limiting the width and number of vehicle access points;
 - b) Ensuring clear site lines at pedestrian and vehicle crossings;
 - c) Separating pedestrian and vehicular accessways.
- 8) All vehicles must enter and leave the site in a forward direction.

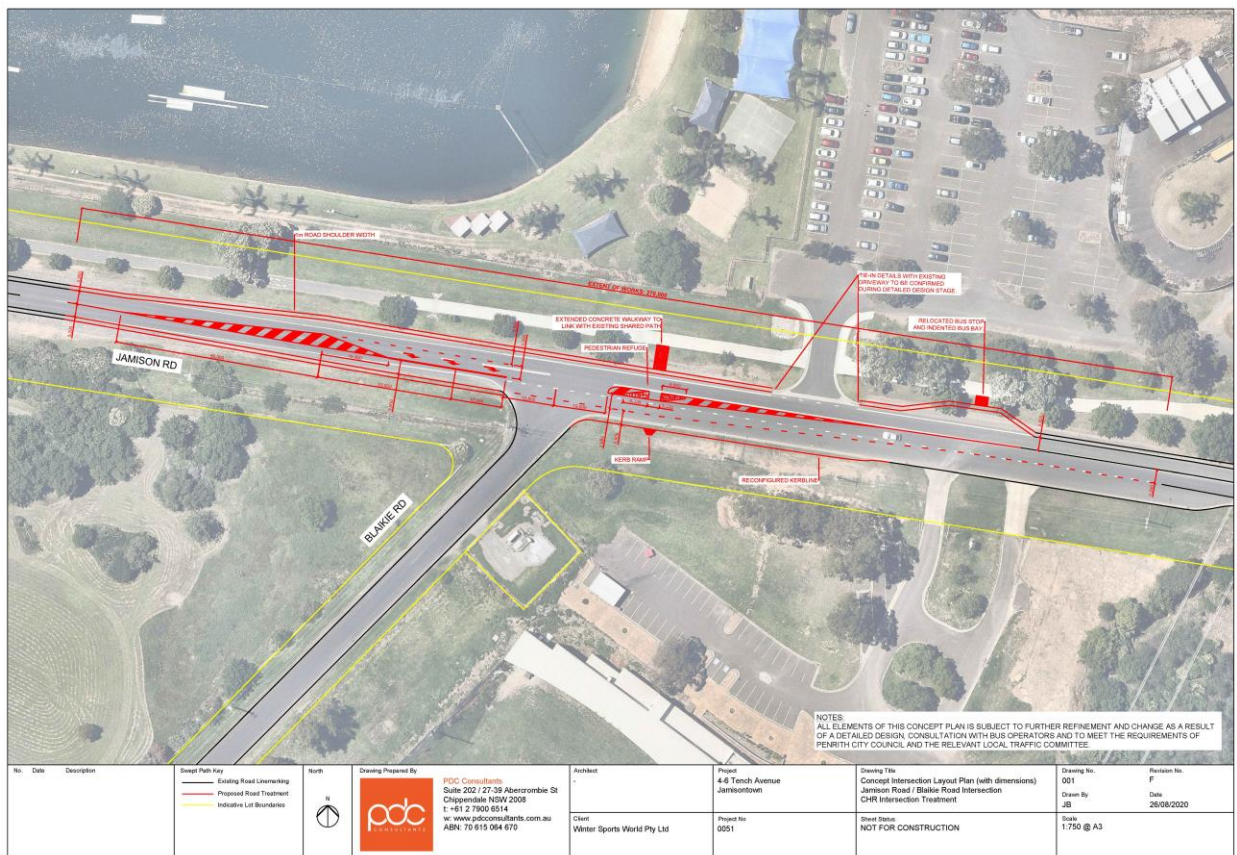


Figure E13.18: Upgraded layout of the Jamison Road and Blake Road intersection with the CHR treatment



Figure E13.19: Vehicular access points

Parking

1) Car parking is to be provided at the following minimum rates:

Use	Parking Requirement
Indoor Recreation Facility	Visitor: 1 space per 2.5 persons Staff: The staff parking rate shall be confirmed by a survey of a similar site in the Penrith LGA. The parking rate for staff shall be either 1 space per 2 staff or at the rate determined from a survey of a similar site in the Penrith LGA, whichever is the higher rate.
Hotel	Visitor: 1 space per room Manager: 1 space per manager Employees: 1 space per 6 employees
Function Centre	Table C10.2 of the DCP provides a parking rate for function centres of 1 space per 3.5 seats or 1 space per 3.5sqm of gross floor area, whichever is the greater. Given the people attending large functions would also stay at the hotel and use the indoor recreation facility, the lesser car parking rate should be applied for a function centre that forms part of the development.

- 2) The Traffic Report is to assess the likely demand for bus, motorcycle and bicycle parking. The development must be designed to accommodate the assessed demand for bus, motorcycle and bicycle parking on the site.
- 3) All internal car, service vehicle and bus/coach parking facilities are to be designed in accordance with the relevant requirements of Australian Standards AS2890.1, AS2890.2, AS2890.3 and AS2890.6.
- 4) Bicycle parking and storage facilities shall be designed in accordance with Australian Standard AS2890.3 – Bicycle Parking Facilities.
- 5) The appearance of car parking and service vehicle entries is to be improved by locating parking, garbage collection, loading and servicing areas away from the street or screening these areas.
- 6) Structured parking that extends above ground where viewed from the public domain is to be architecturally treated or where possible sleeved with development.
- 7) The car park shall meet the minimum standards required under Section J of the National Construction Code.

13.4.2.1.8 Flooding and Drainage

A. Background

Flooding and stormwater are major considerations for the development.

A Stormwater Management Strategy (SMS) will minimise the impact on water quality, identify opportunities to maximise the reuse of stormwater runoff, reduce the demand on potable water supplies, reduce pollutants and enhance the landscaping opportunities within the development.

The SMS will be based upon the principles of Water Sensitive Urban Design (WSUD) and will be underpinned by a stormwater harvesting strategy aimed at maximizing the reuse of runoff for non-potable purposes, maintaining the ecological integrity of Peach Tree Creek and the Nepean River and complying with Penrith City Council's water management requirements as set out in Section C3 of this DCP.

The development will require an appropriate level of flood assessment and will include the need to undertake a detailed Flood Impact assessment. The applicant should recognise that a Flood Impact Assessment was not undertaken in preparation of this section of the DCP and as such the building footprint may need to be amended or reduced to ensure that any proposed development has no impact on upstream, downstream or adjoining properties when considering pre and post development flows. The assessment will need to include consideration of flood behaviour and hazard, and any mitigation measures required to ameliorate any impacts identified.

B. Objectives

- a) To manage development of the site with respect to its flooding characteristics;
- b) To develop the site in accordance with sound flood management principles;
- c) To achieve high quality outcomes for water quality and quantity; and
- d) To provide opportunities for WSUD initiatives.

C. Controls

1) The development application is to address the relevant sub-sections of the Water Management section of this DCP.

2) Any proposed development must have no adverse impacts on upstream, downstream or adjoining properties when considering pre and post development scenarios for all storms up to and including the 1% AEP.

2) A Stormwater Management Strategy (SMS) is to be prepared and be submitted with the development application and should identify and address:

- a) Impacts of stormwater generated both on and off the site;

- b) Overland flow paths;
- c) Opportunities to maximise the reuse of stormwater runoff;
- d) Means to reduce the demand on potable water supplies; and
- e) Reductions in pollutants entering the water system.

3) A Flood Study must be prepared in accordance with the Water Management section of the DCP and Councils Stormwater guidelines for Building Developments. The Flood Study must address:

- the Low Flood Island and any loss of flood storage and how this is proposed to be mitigated
- impacts of the development on the flood
- the impacts of flooding on the development

4) Any future Development Application is to be supported by a comprehensive Flood Evacuation Strategy and Emergency Response Plan, that is consistent with the relevant NSW State Emergency Service flood evacuation plan.

5) Any future Development Application is to be supported by a comprehensive Flood Impact Assessment. The flood impact assessment shall include but not be limited to an assessment of the proposed development and its impacts on upstream and downstream properties. The Development shall be designed to ensure that there are no impacts on upstream, downstream or adjoining properties with regard to increases in depth or velocity comparing pre and post development conditions.

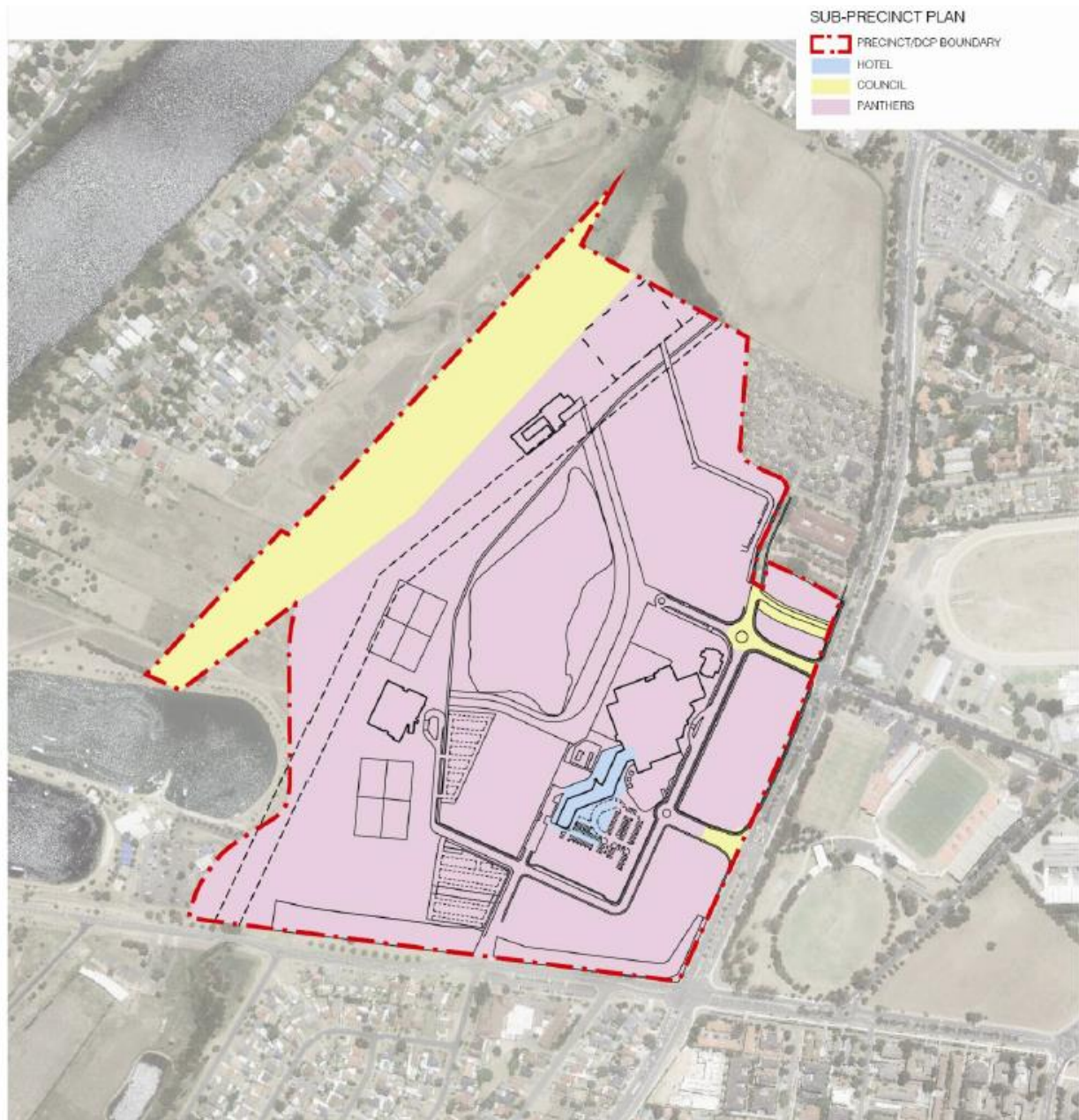
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Part B – PANTHERS PENRITH PRECINCT

13.5. Panthers Penrith Site

Figure E13.9: Ownership - Panthers Penrith Precinct Area



13.5.1. Background

This section applies to development on land known as Panthers Penrith Precinct as identified in Figures E13.9 and E13.10. This section provides specific controls for Panthers Penrith in addition to the general controls elsewhere in this DCP. Where there is an inconsistency between this section and the rest of this DCP, the requirements of this section prevail.

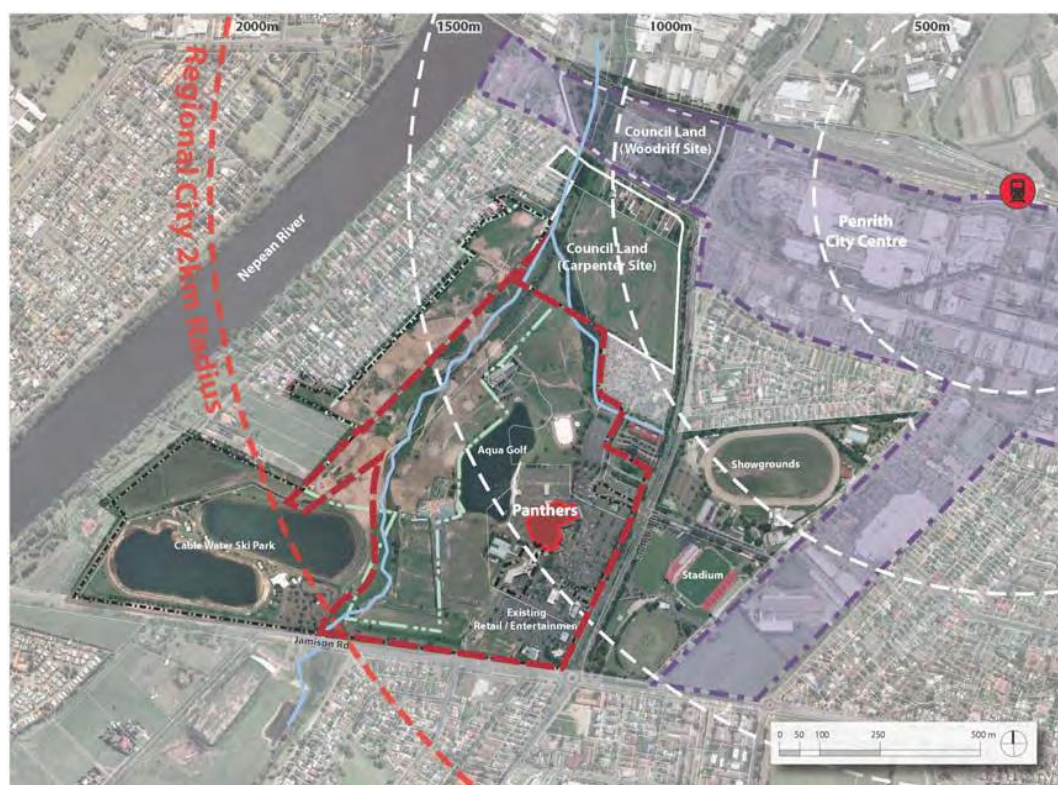
The Panthers Penrith Precinct is located within a 2km radius of the City Centre and is approximately 68.1ha in area. It is bounded by Mulgoa Road to the east, the Nepean River, Nepean and Ladbury Avenue residences to the west, Council's 'Carpenter's site' to the north and Jamison Road to the south. It includes the Panthers Club and associated lands and facilities.

The agglomeration of land uses, within an entertainment core east of Peachtree Creek that incorporates the existing Panthers Club will be revitalised, as an entertainment, leisure, lifestyle and sporting precinct. Possible uses include cinemas, bowling, restaurants, cafes, limited retail, health, wellness and aquatic facilities, sporting facilities, accommodation and a multi-use events/exhibition centre. It will be surrounded by a mix of residential offerings and campus style business park accommodation. Recreational opportunities will be enhanced with green parks and open spaces, as well as walking and cycling tracks. The part of the precinct that has been identified for entertainment, retail, business and residential use in the Panthers Penrith Planning Proposal is 51.11ha in area.

The aim of the controls in this section of the DCP is to provide more detailed provisions for development in the Panthers Penrith Precinct that will:

- a) Contribute to the growth and character of Panthers Penrith Precinct as a cohesive and active entertainment, leisure, lifestyle (including sporting) precinct that will contribute to Penrith as a regional city;
- b) Deliver a balanced social, economic and environmental outcome; and
- c) Protect and enhance the public domain.

E13.10: The Panthers Penrith Precinct relationship to Penrith City Centre



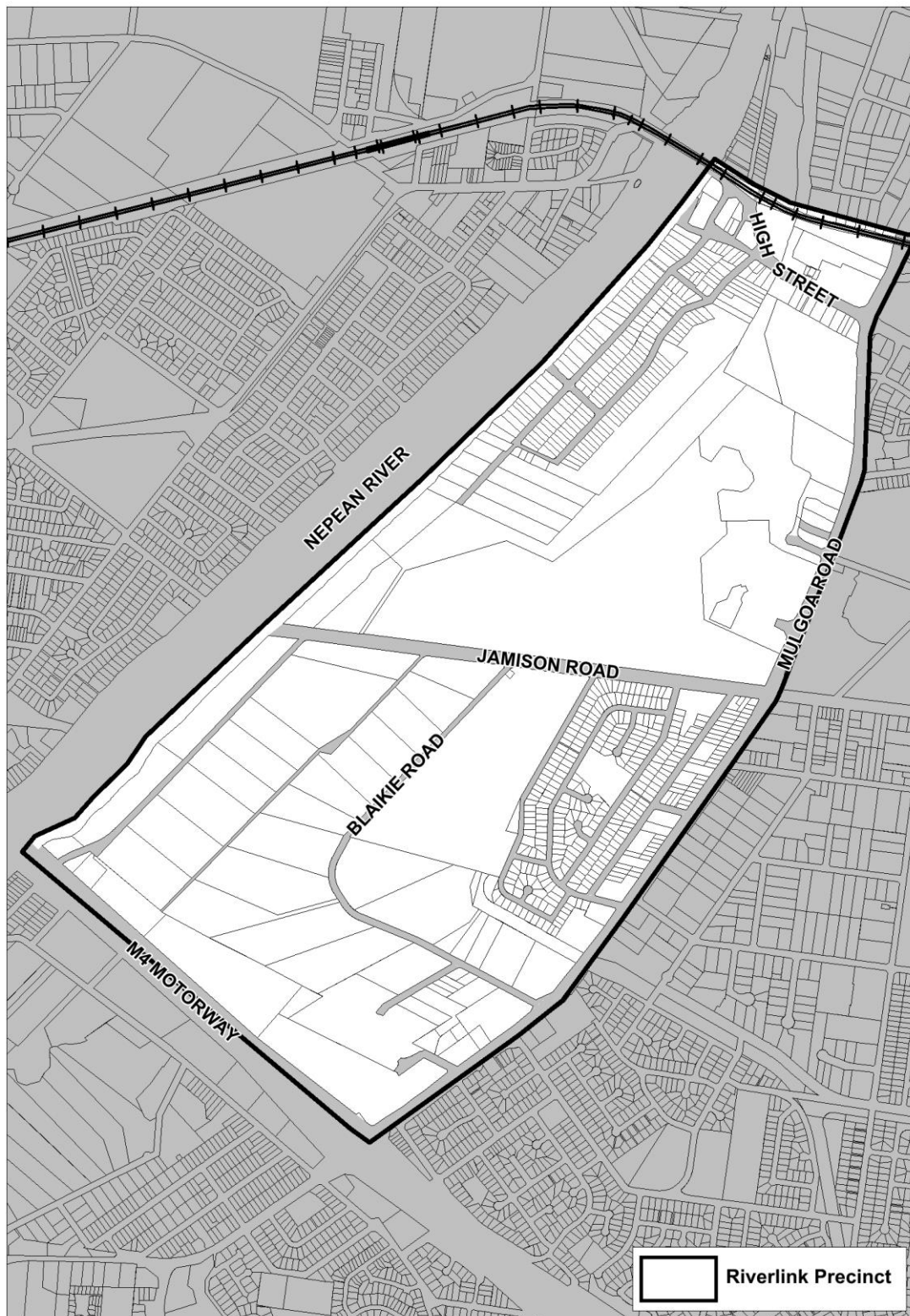
13.5.2. Riverlink Precinct Plan

The Panthers Precinct lies within the area considered in the Penrith Riverlink Precinct Plan (adopted by Council 5 May 2008) – a vision plan for the area on the eastern bank of the Nepean River between the Main Western Railway Line and the M4 Motorway (Figure E13.11). It includes the area known as Blaikie Road and Tench Avenue, south of Jamison Road and identifies locations and types of future activity nodes, view corridors, key gateway locations and connections for the precinct including the Concept Plan area.

The Riverlink Precinct Plan has the broad goal of creating a living, entertainment and working hub to link the City Centre to the Nepean River. It seeks to create a cohesive and well-connected precinct by:

- a) Enhancing and activating Mulgoa Road as a significant approach to Penrith City Centre
- b) Reinforcing key intersections as gateways to the Precinct and the Penrith City Centre
- c) Creating a clear and legible public domain framework of streets and open space
- d) Creating an exciting core of entertainment, leisure and lifestyle uses around the existing club
- e) Incorporating sustainability best practice
- f) Connecting Riverlink pathways with the Great River Walk
- g) Encouraging views of the Blue Mountains from the public domain
- h) Encouraging design excellence
- i) Improving connectivity through the Precinct
- j) Enhancing Peachtree Creek with the planting of indigenous riparian vegetation.

Figure E13.11: The Riverlink Precinct



13.6 PANTHERS PENRITH PRECINCT VISION

13.6.1. Panthers Penrith Precinct Vision

Figure E13.12: Panthers Penrith Illustrative Concept Plan showing indicative land uses





1. Entertainment Uses



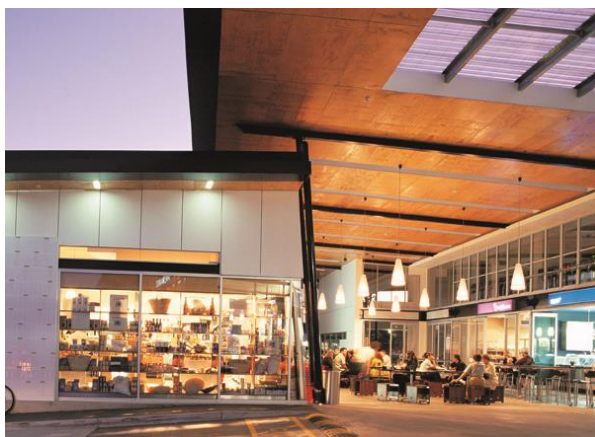
2. Outlet Retail



3. Multi Use Facility



4. Commercial Uses



5. Cafes and Restaurants



6. Medium density housing

The Panthers Penrith vision is to create a vibrant entertainment, leisure, lifestyle and sporting precinct that offers a range of activities to attract a diverse mix of locals and intrastate, interstate and international visitors.

Panthers Penrith Precinct will be a dynamic and sustainable place, providing a new workplace, day and night-time entertainment, a new and different shopping experience, food and beverage opportunities, conferencing and accommodation. It will be linked to the Penrith City Centre by public transport, pedestrian and cycle pathways.

In addition to building on the Panthers Penrith Precinct as a core entertainment, leisure and lifestyle offer for the region, the plan aims to provide open space and access that will benefit the wider community and to contribute to Penrith's role as a regional city. The illustrative plan developed for the precinct (Figure E13.12) shows the proposed concept with the anticipated building footprint.

The Panthers Penrith Precinct will enable better integration with and connection to neighbouring lands and will facilitate improved management of precinct-wide issues such as flooding. The regionally important Riverlink will be incorporated into the structure, providing a key missing pedestrian and cycle connection between the Nepean River and the city centre. In addition, the needs of adjoining sites have been taken into account.

The Panthers Penrith Precinct is to be a pedestrian oriented, quality-landscaped and urban public domain with equitable access throughout the precinct for pedestrians, public transport, cyclists and cars. The new landscaped public domain is to improve amenity for workers and residents of the nearby areas in addition to providing convenient and logical internal linkages.

13.6.2. Precinct Objectives

- a) To facilitate the development of the place by promoting redevelopment and urban sustainability;
- b) To promote quality urban design, architectural excellence and environmental sustainability in the planning, development and management of the place;
- c) To create a high quality public domain and ensure development integrates and relates to the public domain;
- d) To provide for mixed use development (entertainment, limited retail, hotel, campus style office development, residential, seniors living, multi-use events /exhibition) which provide high levels of amenity for occupants and visitors;
- e) To provide high levels of accessibility within Panthers Penrith, connecting significant activity nodes, public open space and surrounding residential and mixed use areas;
- f) To encourage development within Panthers Penrith that gives primacy to the public domain and creates an attractive and vibrant centre;
- g) To encourage integration of the existing Panthers Club with residential and non-residential land uses and improved access to transport facilities;
- h) To ensure that development at Panthers Penrith is consistent with the desired future character of the precinct and sub-precincts as described in the following section;
- i) To provide clear connectivity through the site and to the surrounding neighbourhood;
- j) To ensure that view corridors are maintained to the lake and Blue Mountains escarpment;
- k) To provide the framework to facilitate and encourage the use of public transport, safe pedestrian and cycle movement and vehicular movement;

- l) To create a sensitive buffer between the development within the precinct and neighbouring properties, where required; and
- m) To maximise opportunities for pedestrian activities around the lake at the centre of the precinct to create an active promenade and waterside edge and allow for lakeside circulation.

13.7 URBAN FRAMEWORK

13.7.1. Structure Plan

Figure E13.13: Panthers Penrith Structure Plan



A. Background

A new public domain defined by streets and blocks and interface between buildings and the lakeside will create new site connectivity, links to existing surrounding areas and safe and legible access for pedestrians, cyclists, public transport, cars, trucks and service vehicles.

The Structure Plan is based around the creation of a new integrated street network that will be designed to Penrith Council standards. Cycle paths will be provided in appropriate

locations in the open space network. The creek open space corridor will be activated by the construction of a new road along the western edge of the site known as the Riverlink.

The plan has been developed to accommodate a range of flexible uses within a new framework of roads and open space opportunities. It allows for a variety of complementary uses to be developed on the site over the next 20 years.

The landscaped public domain will improve amenity for workers, visitors, patrons and residents of the nearby areas in addition to providing convenient and clear internal linkages. Key links through the site will acknowledge views to the Blue Mountains and connections to the River.

- **B. Objectives**

- a) To create a new entertainment, leisure, lifestyle (including sporting) precinct that contributes to Penrith's role as a regional city;
- b) To create a well defined and accessible public domain that is connected to the CBD, river and recreation system;
- c) To achieve active street frontages with good physical and visual connections between buildings and the street;
- d) To provide for pedestrian comfort, amenity and protection from weather conditions;
- e) To provide for quality landscape to contribute to user amenity and a sustainable urban environment;
- f) To maintain and enhance important views to surrounding natural landscape features, including the lake and the Blue Mountains;
- g) To establish the scale, dimensions, form and separation of buildings appropriate for the setting;
- h) To develop a built form and density that reflects the location and proximity to the city centre;
- i) To protect and enhance the amenity of residents in the vicinity of the development; and
- j) To create an active and well defined lake's edge that is accessible and provides a central focal point for the site.

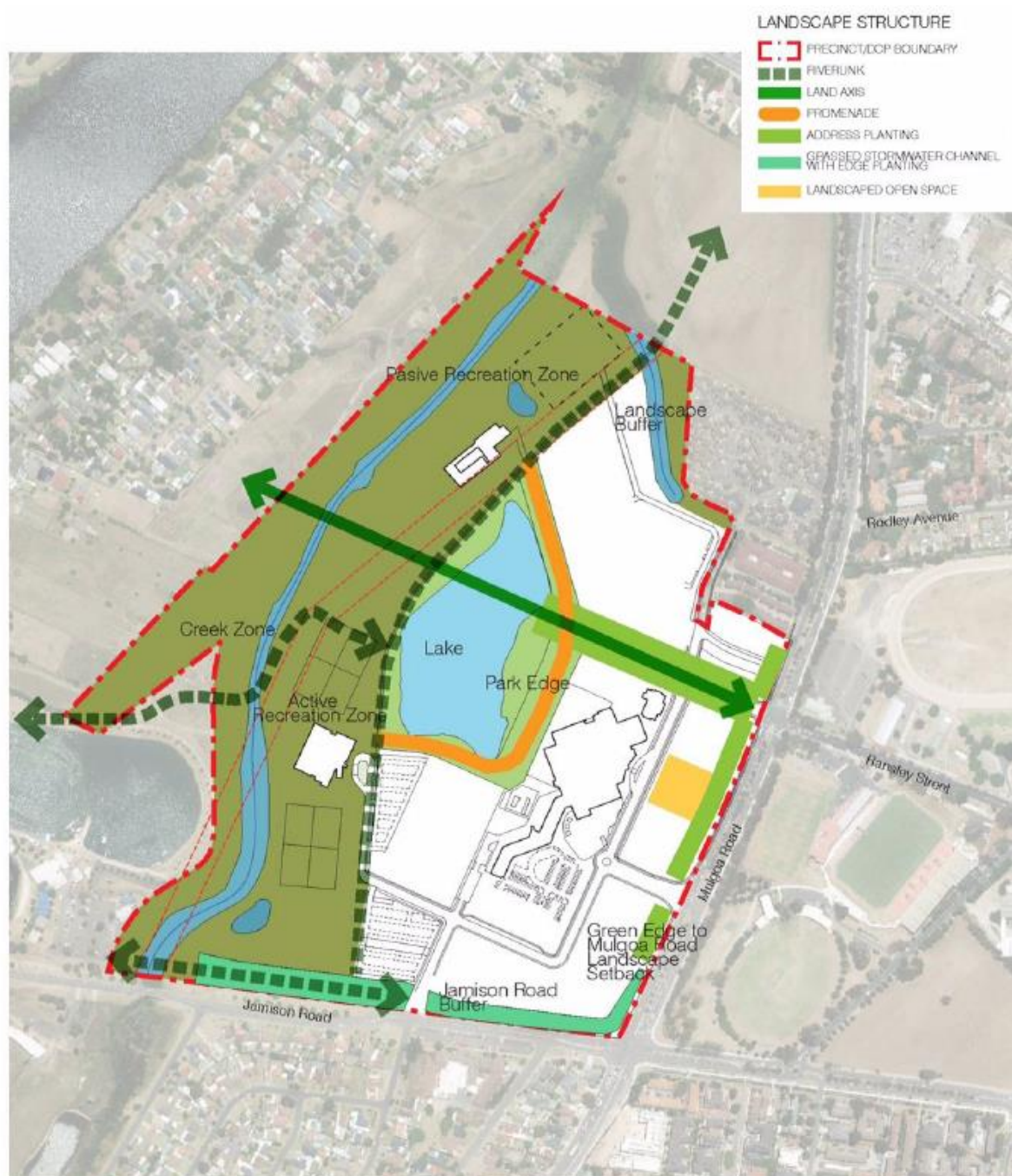
C. Controls

Future development is to be consistent with Figure E13.13 and is to:

- 1) Develop a public domain based on the lake's edge, new streets and blocks.
- 2) Extend key streets from the existing network.
- 3) Facilitate access to the Peachtree Creek corridor.
- 4) Create view corridors that open views to the Blue Mountains.
- 5) Focus activity around the lake's edge and Ransley Street.
- 6) Create a high quality address to Mulgoa Road.
- 7) Develop high quality buildings that in particular respond to gateway locations.
- 8) Create new pedestrian and cyclist links along the Riverlink corridor.

13.7.2. Landscape Structure

Figure E13.14: Landscape Structure



A. Background

The plan seeks to create a vibrant new destination with integrated public domain, streetscapes, built form and sophisticated coordinated range of finishes, furniture, lighting, street trees and landscaping. Water Sensitive Urban Design (WSUD) features, signage systems, canopies and other public domain elements will add to the detailed resolution of the public domain.

The Landscape Structure seeks to integrate the natural and civic areas of the site through strong landscape links from the riparian areas back along the tree lined roadways to the Mulgoa Road frontage. Proposed landscape components and strategies that underpin the Landscape Structure include:

- a) Enhancement of the linear north-south open space and riparian corridor that links Penrith and the Riverlink Precinct Plan structure of pedestrian and cycleway connectivity, and strong integration of the surrounding area with the Panthers precinct.
- b) Reinforcing the central lake as a focal landscape element, and creating an active lakeside that provides a high level of amenity within the precinct.
- c) Create a civic identity through a parkland and playing fields area that extends west of the lake to integrate and transition between the developed eastern portion of the site, and the open space and riparian zone to the west of the site.
- d) Acknowledgement of and a response to the site flooding events through landscape, environmental, engineering, built form and site management elements.
- e) Framing western views to the mountains.
- f) Creation of shade in summer and solar access in winter to key public spaces.
- g) Provision of a landscaped interface with Mulgoa Road.
- h) The creation of defined site entries that integrate with new public domain areas and open spaces to the north, south and west.
- i) Development of an interesting and culturally engaging component to connect to the Great River Walk along the Nepean River.
- j) Create a landscaped precinct that integrates with the precinct's surrounds.
- k) The detail design response of all landscape areas is to be the subject of on-going consultation with Council in order to develop a specific Panthers precinct identity and landscape character, while also referencing the existing open space and urban design palette of Penrith.

B. Objectives

- a) To ensure landscaping is integrated into the design of the precinct and development sites;
- b) To ensure landscape design is flood compatible so that works proposed improve safety and do not adversely flood impact others;
- c) To reinforce and enhance the entries and gateways to the precinct from Mulgoa and Jamison Roads;
- d) To create well designed active and passive recreation areas, open spaces, and lakeside promenade;
- e) To create a well defined high amenity and active lakefront;
- f) To ensure that landscape contributes to the amenity of streets, including shade, particularly to the active streets;
- g) To maintain select view corridors to the mountains and the lake;
- h) To reinforce the city's ecology and biodiversity by using appropriate species for the area;
- i) To improve urban air quality;
- j) To ensure that the use of potable water for landscaping irrigation is minimised;
- k) To incorporate WSUD principles and contribute to the reduction of stormwater runoff; and

- l) To improve the microclimate within the development.

C. Controls

1. General

- a) A detailed landscape/public domain design is to be submitted with a development application. In addition to this section refer to Section C6 of this DCP.
- b) The landscape treatment of precincts within the site is to be developed based on the following controls for open space uses, landscape character and the Landscape Principles for the precinct. Remnant vegetation and riparian areas in the precinct are to be protected and enhanced where possible.
- c) Any significant stands of mature trees are to be assessed and where possible, are to be retained.
- d) The vegetation within the area identified as “Landscape Buffer” on Figure E13.14 is to be retained.
- e) Water management principles are to be incorporated as per the Water Management Section of this DCP.

2. Street Design

- a) Verge planting is to be provided in local streets and full width paving in pedestrian areas with high activity.
- b) New streets in the precinct are to have a strong landscape character with planting of trees consistent with Council policy. East-west street trees are to be predominantly native and north-south streets deciduous.
- c) The street detailing, furniture, lighting and finishes are to be developed to respond to the specific character of the Panthers precinct and its sub-precincts and are to complement the design palette in draft Penrith Public Domain Technical Manual.

3. Lake Edge

- a) The lake edge is to be developed as a pedestrian promenade that links that retail outlet centre to the north, club and club expansion to the east, and multi-purpose facility to the south. The promenade will become a key focus for activity in the precinct and will allow for adjacent land uses to ‘spill out’ to the lake frontages.
- b) The lake edge treatments will appropriately include trees, shade structures, seating and other amenity elements that will encourage gathering and active uses at the water edge. The design is to vary to respond to the adjoining conditions including roadways, the promenade, passive and active recreational areas, development zones and the parkland interfaces:
 - Western edge - predominantly a soft landscape interface with easy transition of slopes back to the adjoining Riverlink pathway and open space areas. The edge provides a future north-south link through the precinct.
 - Eastern and northern edge – a formalised promenade edge to the lakeside that will be the primary focal point of the site, drawing activity from the various uses across the eastern portion of the site.
 - Southern edge – An edge defined by the multi-use facility that allows interaction with the waterfront.
- c) Views of mountains and access to the water are to be key elements in the landscape/public domain design.

- d) The promenade and lake edge is to provide sufficient area to accommodate a range of uses such as festivals, markets, passive and active recreation and interaction with the lake.
- e) The lakefront open space and promenade will accommodate spill over from any multi use facility to the south and is to integrate food, beverage and outdoor dining and recreational opportunities provided by the club expansion and retail outlet centre at the eastern and northern edges of the lake.
- f) Provide pedestrian connectivity from the active eastern part of the precinct to the western edge of the lake.

4. Ransley Street

- a) The Ransley Street character is to be designed as the main entry to the precinct. It is to be lined with active land uses, and lead to the active promenade at the lake frontage.
- b) Wide pavements are to be provided to allow for active adjacent land uses. In particular the southern side is to allow for generous pedestrian circulation and outdoor eating areas. These pavement areas will connect to a lakefront promenade and to parkland to the west and are to be suitable for active uses.
- c) The view corridor is to be maintained along the street to the mountains.
- d) Provide a focal point at the end of Ransley Street to draw visitors to the lake edge and to activate the precinct.
- e) A well designed urban space at the end of the Ransley Street activity zone is to be provided.
- f) The street should be characterised by active uses at ground floor level.

5. Recreational Open Space

- a) Detailed design is to allow parkland areas to transition from high amenity and useable trees-in-grass style parkland, to more densely vegetated areas with strong riparian character and content.
- b) The central visual axis along Ransley Street is to be extended to a visual element across the lake and the parkland.
- c) Areas for services and associated uses should not impact on the functionality or amenity of the recreational precinct.
- d) Parking areas serving the active recreation areas are to be suitably located and are to incorporate suitable landscaping and tree planting.
- e) A plan for the landscape treatment of Peachtree Creek is to be developed by the owners of the creek - Penrith City Council and Panthers Penrith.
- f) Any development application in the Recreational Precinct in regards to Peachtree Creek rehabilitation must take into consideration conditions of previous approval for a golf course on the site.

6. Mulgoa Road Frontage

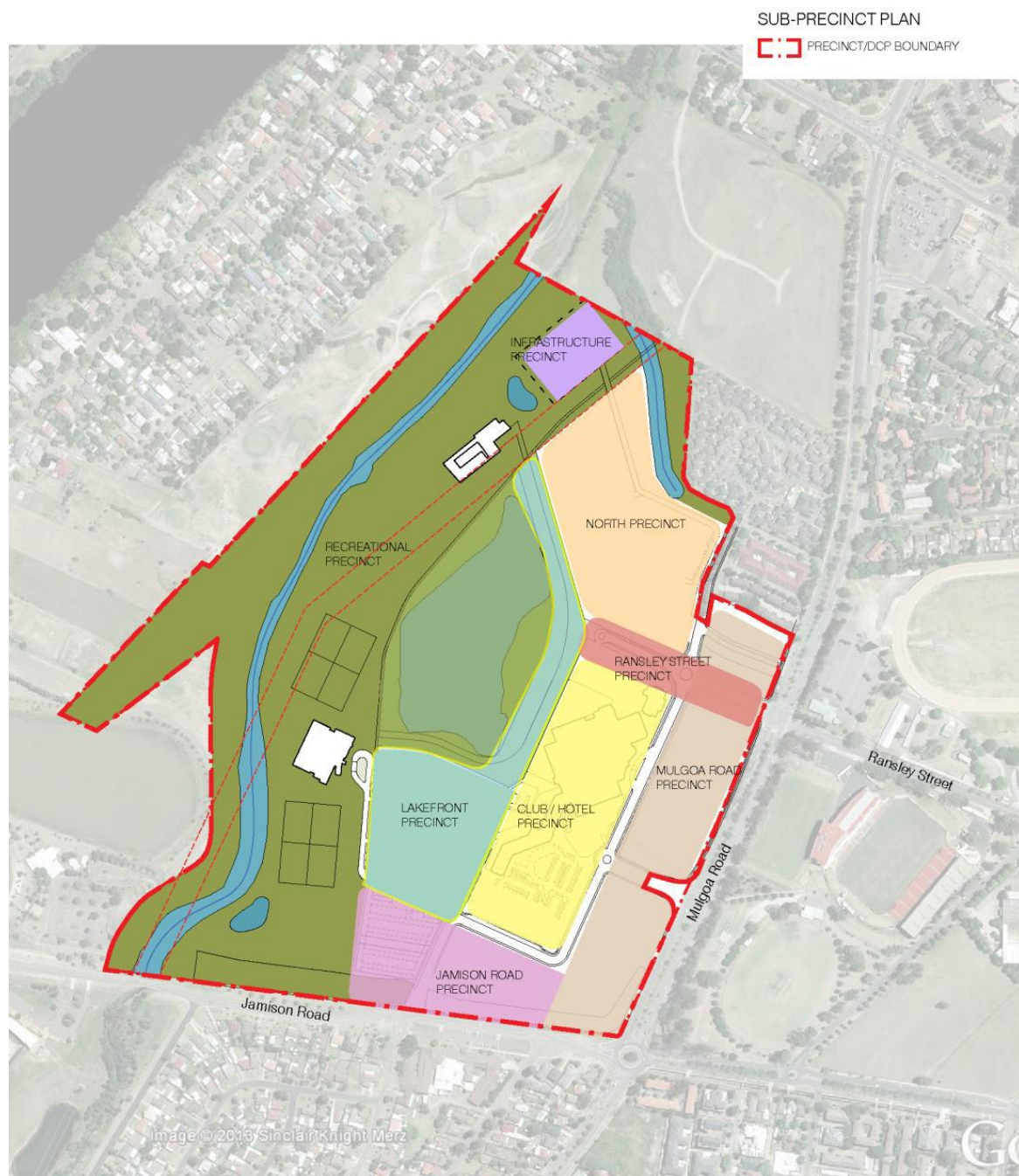
- a) Acknowledging the importance of this major regional roadway, the landscape treatment along Mulgoa Road is to be high quality design and is to be well maintained in the future.
- b) A 5m landscape setback along this frontage is to continue the nearby character of lawns, grasses and low native planting and retain the existing native canopy trees.
- c) Planting is to provide framed and filtered views and exposure to the new buildings along this frontage.

7. Jamison Road Frontage

- a) Jamison Road is to provide a transitional landscape character, continuing the Mulgoa Road landscape character with scattered canopy trees east of the new Harris Street intersection, and a more open parkland landscape character to its west.
- b) A landscape setback is to accommodate overland flow from land to the east.
- c) Landscape east of the overflow at-grade car park along the Jamison Road frontage is to successfully interface with adjoining playing fields and Peachtree Creek open space.

13.7.3 Sub Precincts

Figure E13.15: Sub Precincts



A. Background

The Panthers Precinct comprises a series of integrated sub precincts, each with a distinctive character and role. The sub precincts are defined by varying uses and built form, which are interconnected through the key focal points, being the lake's edge, Ransley Street and the site's street network.

Within each sub precinct there are a wide range of uses possible. These uses are not necessarily limited to a particular sub precinct however development must address the

envisaged character of each sub-precinct. It is the mix of these uses that provide a net community benefit to Penrith in delivering an entertainment, leisure and lifestyle precinct.

The following is the envisaged character and range of indicative uses for each sub precinct:

1. Ransley Street sub precinct

Ransley Street links the main entry from Mulgoa Road west to the Lakefront and Recreation precinct. This sub precinct, centred on Ransley Street will be a pedestrian oriented place, is linked by a range of active uses on both sides at street level.

The Ransley Street alignment and the alignment of buildings on either side provide a vista to the mountains, visible on entry to the Panthers Precinct as well as from Ransley Street to the east of Mulgoa Road. It will be an active street that will become a destination and strong entry to the precinct.

Indicative land uses within this sub precinct include a mix of uses comprising staged retail (limited to 12,500m² GFA), entertainment and possibly residential uses above. These sites are seen as having active edges that encourage both a vibrant street life and a rich public domain. Cafes, restaurants and ground level retail will generate activity through the day and into the evening as the Precinct becomes a unique urban environment.

2. Mulgoa Road sub precinct

Mulgoa Road is one of the major entries to Penrith City and therefore the sub precinct fronting it is an important 'front door' and gateway to the city itself.

This frontage is currently characterised by a 'green' landscaped edge to both sides of Mulgoa Road. It is proposed to strengthen this frontage with a well defined built form that reinforces the landscape setback.

While buildings within the Mulgoa Road precinct will not have direct vehicle access off Mulgoa Road, the buildings are to address this frontage, not 'turn their backs' on Mulgoa Road.

Open space between the Club and Mulgoa Road is to enhance the clubs address to the street. This open space is to be defined by a strong built edge to the north and south and will open up the site to its surrounds.

The north-west corner of the Jamison and Mulgoa Road intersection will be highly visible and will require high quality architectural and landscape design.

Indicative land uses include:

- a) Campus-style office development that is differentiated from, but complements, office space in the Penrith City Centre.
- b) A mix of uses that attract and sustain a vibrant and active day and night time economy.
- c) Sporting and recreation uses.

3. Club/Hotel sub precinct

There are existing buildings and facilities associated with the Club and Hotel within this sub precinct.

A key objective of the Panthers Precinct, and reinforced in this sub precinct, is to create a series of connections between this core and its surroundings including east to Mulgoa Road, west to the open space and recreation facilities as well as to the north towards the city.

Future development and/or expansion of the existing Club and existing Hotel should take advantage of views over the lake and towards the Blue Mountains.

It is proposed that new buildings will improve the activation of the public street edges of this precinct including the relationship with new Ransley Street area and the western edge.

Indicative land uses may include:

- a) Extension to the existing Club.
- b) Indoor/outdoor dining will be a vibrant and exciting new destination for Penrith.
- c) Food and beverage outlets and live entertainment venues.
- d) Hotel uses with synergies with conference and meeting events.
- e) A mix of uses that attract and sustain a vibrant and active day and night time economy.
- f) An aquatic centre.

4. Lakefront sub precinct

This sub precinct sits between the existing club core and recreation and open space area to the west. It is therefore an important linking sub precinct as well as the primary focus for pedestrian activity and active uses that 'spill out' to the lake, and the precinct's open space corridor. The Lakefront should also provide good pedestrian amenity.

The sub precinct will activate both the open space generally and the Lakefront in particular providing an excellent outlook to open space and the mountains.

Indicative uses may include:

- a) A Multi use events/ exhibition centre which would be a significant asset for Penrith and the region. The facility would host conferences, exhibitions, sporting events and concerts. Associated uses may include a gymnasium, sports medicine facility, café, community services and supporting facilities.
- b) Serviced apartments/ hotel uses with synergies with conference and meeting events.
- c) Café/restaurants to activate the Lake edge.

5. Jamison Road sub precinct

This Precinct is the southern edge of the Panthers site and is immediately north of Jamison Road and the largely residential areas to the south.

The precinct also addresses the open space recreational area to the west and a range of precincts to the north and east.

Indicative land uses may include:

- a) Residential development to provide additional activity and year round activation of the Precinct. A range of options exists on the site for medium and higher density residential and aged housing. Planning will take advantage of water and open space views with residents enjoying the range of uses and facilities within the precinct.
- b) Car park to support adjoining development.

6. North sub precinct

This sub precinct sits immediately north of Ransley Street and is located adjacent to the open space recreational area and lake.

The sub precinct creates a transition from the Panthers site to the Council owned 'Carpenter's site' that sits to the north which then connects to the Penrith City.

Retail uses within the zone will contribute to the activation of the Ransley Street precinct and the lakefront.

Indicative land uses may include:

- a) A retail outlet centre (limited to 25,000m² net usable floor area) which focuses on discounted and discontinued retail lines has been proposed in concept planning for the

precinct. The scale of the centre and its parking requirement will be subject to feasibility studies and traffic assessment. Rather than an internalised mall, there is an opportunity for the centre to explore the provision of outdoor dining and lakefront retail and take advantage of views over the lake and to the Blue Mountains.

- b) A mix of uses such as cafes, restaurants and ground level retail will generate activity through the day and into the evening as the Precinct becomes a unique urban environment.

7. Recreational sub precinct

The recreational sub precinct is the largest precinct on the Panthers site, occupying almost half the entire area. The precinct includes Peachtree Creek and the Riverlink which connects green space from Jamison Road northwards to Penrith City Centre via Council's 'Carpenter's site'.

This sub precinct will be characterised by landscaping, creek, lake and outdoor playing fields. The fields will be integrated into the landscape design to create distinctive linear parkland with a water focus at the termination of Ransley Street.

Indicative land uses may include:

- a) Sports facilities available to the wider Greater Western Sydney community as well as to elite training to allow promotion of excellence and participation.
- b) A range of active and passive recreation uses are to be accommodated including playing fields for a range of sporting codes.
- c) Temporary markets and community events.

8. Infrastructure sub precinct

Major services on the site will be located on land in the north of the precinct. High tension lines run through the site and it will be the location for substations and other service uses. Landscape buffers to the road, creek and adjoining site will be provided as necessary. This sub precinct can accommodate site maintenance facilities as required.

B. Objectives

- a) To create distinctive places activated by a mix of uses compatible with each sub precinct;
- b) To create a framework that is flexible enough to accommodate a changing range of uses over time and respond to market opportunities;
- c) To facilitate the orderly development of the precinct;
- d) To encourage high quality urban design, architectural excellence and environmental sustainability;
- e) To minimise potential conflicts and achieve compatibility between different uses;
- f) To guide development of sub-precincts across the site;
- g) To ensure that development contributes to the overall creation of a destination within Penrith;
- h) To plan uses in the most appropriate locations; and
- i) To preserve views to surrounding places where identified.

C. Controls

1. General

- a) A development application within each sub precinct is to consider the desired character of that sub precinct and the Panthers Precinct.

2. Mulgoa Road sub precinct

- a) Any proposed residential uses are to be located at the southern end towards Jamison Road and north of Ransley Street within this sub precinct.
- b) Development is to take advantage and respond to the high visibility of the Mulgoa Road frontage. A high quality architectural response is required for development along the Mulgoa Road frontage and is to address this road.
- c) Campus style office development is to complement office space within the City Centre through features such as low rise, large floor plate development.

3. Club/Hotel sub precinct

- a) Future expansion of the existing club is to take advantage of views to the lake and Blue Mountains and allow for associated outdoor areas for club use.
- b) Pedestrian linkages through the sub precinct are to be provided.

4. Ransley Street sub precinct

- a) Ransley Street is to be developed as the main street to the Precinct with a range of active street level uses including restaurants and cafes. The sub precinct is to support uses to the immediate north and south of Ransley Street.
- b) A focal point is to be provided at the lakefront end of the street to create a sense of arrival.
- c) Development is to facilitate connectivity between Ransley Street and the Stadium to connect patrons between the two sites and generate activity by providing an attractive pedestrian environment.
- d) Development in Ransley Street is to take into consideration views towards the lake and the Blue Mountains.

5. Mixed Use Controls (not limited to Ransley Street sub precinct)

- a) Developments with a mix of uses must have flexible building layouts which allow greater adaptability of the floor area of, or tenancies on, the first floor of a building above the ground floor.
- b) Development with a mix of uses is to have a minimum floor to floor height of 3.6m in order to provide for flexibility of future use.
- c) The commercial and residential activities of the building are to have separate service provision, such as loading docks and residential access and servicing needs.
- d) Residential pedestrian and vehicular entries shall be clearly marked and provide direct access to the street. Pedestrian entrances are to address the main streets.
- e) Commercial and residential uses should have clearly separate pedestrian and vehicular entries and internal vertical circulation.
- f) Security access controls must be provided to all entrances into private areas, including car parks and internal courtyards.
- g) Buildings are to front onto major streets with active uses.
- h) Blank building walls with frontage to streets or open space are to be avoided.

6. Lakefront sub precinct

- a) A landmark building (up to 32m) is to be located on the lake adjacent to the Ransley Street termination.
- b) Develop an accessible frontage to the lakefront. Ensure shade through the provision of trees and shade structures.
- c) A well designed landscaped promenade is to be developed on the lakefront, connecting the retail outlet centre, the Club and the multi-use facility.

7. North sub precinct

- a) Large scale retail outlet centre use in the sub precinct is to explore the possibility of open air shopping and must develop a strong relationship to the lake and Ransley Street activity zone.
- b) Any uses within this sub precinct are to consider the privacy and amenity of adjoining residences.
- c) A landscape buffer is required at the interface with existing adjoining residential development.

8. Recreational sub precinct

- a) On-grade parking areas are to be located adjacent to sports fields with suitable landscaping so as to minimise visual impact and to provide shade.
- b) Development within the Recreational sub precinct will be required to demonstrate compatibility and flood conveyance and must not adversely affect the existing flood conditions.

9. Jamison Road sub precinct

Residential (not limited to Jamison Road sub precinct)

- a) In addition to other controls in this DCP, State Environmental Planning Policy No.65 – Design Quality of Residential Flat Development (SEPP 65) and the accompanying Residential Flat Design Code apply to residential development in the Panthers Penrith Precinct including flats, multi dwelling housing, any residential component of a mixed use development, and serviced apartments that are strata titled.
- b) In particular, Parts 2 and 3 of the Residential Flat Design Code will apply to the precinct and include provisions for the following:
 - Site configuration including deep soil zones, fences and walls, landscape design, open space, orientation, planting on structures, and stormwater management
 - Site amenity including safety and visual privacy
 - Site access including building entries, parking, pedestrian and vehicle access
 - Building configuration including apartment layout, balconies, ceiling heights, flexibility, ground floor apartments, internal circulation, mixed use and storage
 - Building amenity including acoustic privacy, daylight access and natural ventilation
 - Building form including awnings, facades and roof design
 - Building performance including energy efficiency, maintenance, waste management and water conservation.
- c) In addition to controls for apartment mix in Part 3 of the Residential Flat Design Code, the following controls apply:

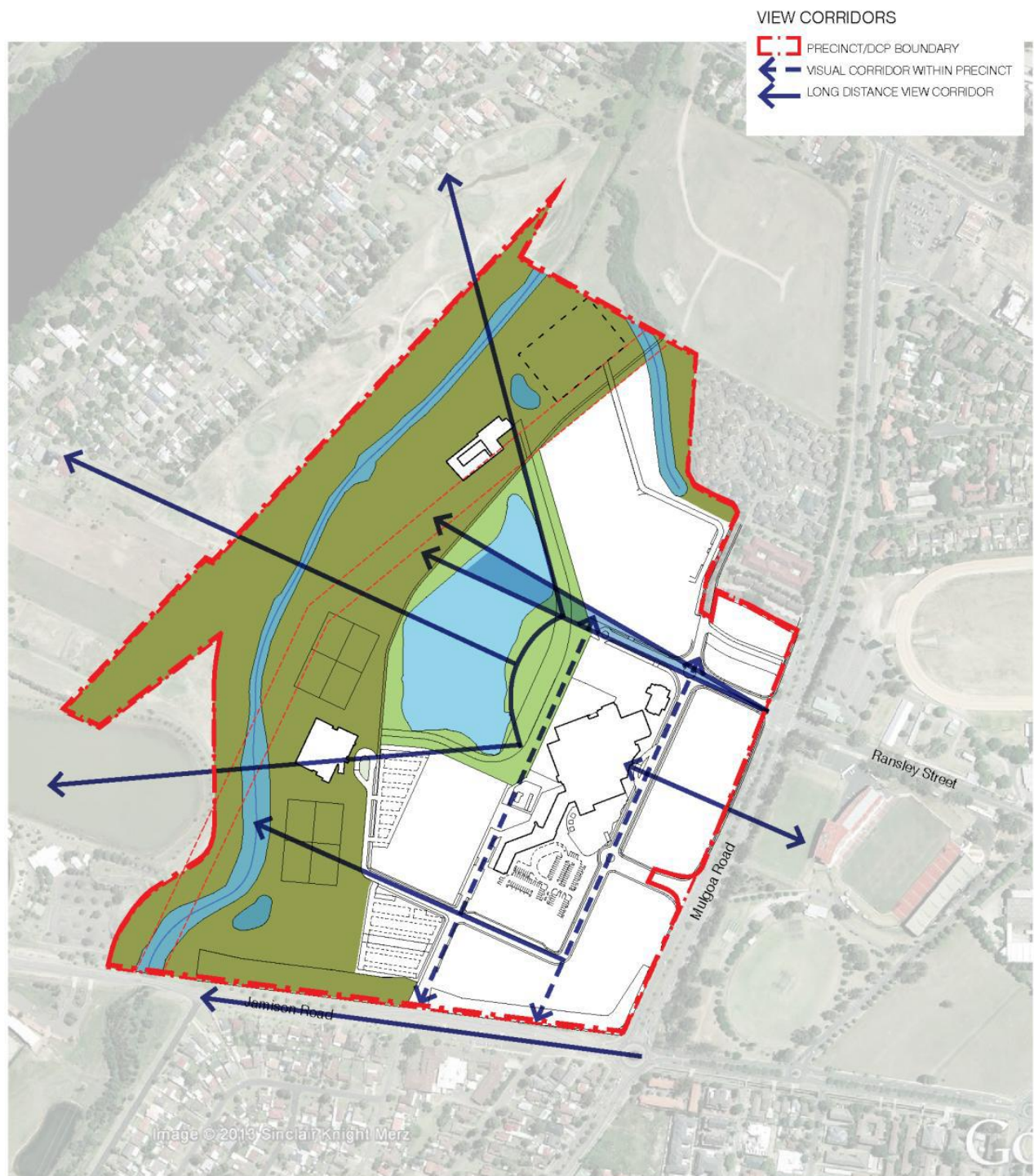
- i) Where residential units are proposed at ground level in a zone nominated as an Active Frontage, a report must be provided with the development application demonstrating how future non-residential uses can be accommodated within the ground level design. The report must address:
- Access requirements including access for people with a disability;
 - Any upgrading works necessary for compliance with the Building Code of Australia; and
 - Appropriate floor to ceiling heights.
- ii) 10% of all dwellings or a minimum one dwelling, whichever is the greater, must be designed in accordance with the Australian Adaptable Housing Standard (AS 4299-1995), to be capable of adaptation for people with a disability or elderly residents.
- iii) Where possible, the mandatory adaptable dwellings shall be located on the ground floor. Adaptable dwellings located above the ground level of a building may only be counted towards the minimum required where lift access from the basement is available within the building.
- iv) The development application must be accompanied by certification from an accredited Access Consultant confirming that the adaptable dwellings are capable of being modified, when required by the occupant, to comply with the Australian Adaptable Housing Standard (AS 4299-1995).
- v) Car parking and garages allocated to adaptable dwellings must comply with the requirements of the relevant Australian Standard regarding parking for people with a disability.

10. Infrastructure sub precinct

- a) Development must preserve amenity of existing adjoining residences and a landscape buffer must be maintained.
- b) Landscaped setbacks shall be provided from the river walk edge to screen and minimise visual impacts from any utilities locating within this sub precinct.
- c) Development application for infrastructure is to consider any visual impacts.

13.7.4 Views

Figure E13.16: Views



A. Background

There are a number of existing distant views, especially from the eastern edges, looking west across the site. These views are important to the identity of the region and characterise this area of Penrith.

The Blue Mountains can be seen from various points along Mulgoa Road and along the Ransley Street alignment at the Panthers site. There are important views between the Panthers Club and the Penrith Football Stadium across Mulgoa Road. Figure E13.16 shows the views corridors on the Site to the mountains and between the Panthers Club and the Penrith Football Stadium.

B. Objectives

- a) To maintain identified views and vistas;
- b) To reinforce the visual connection between Mulgoa Road and the mountains;
- c) To protect and provide visual connectivity between sub precincts and towards the site recreational areas;
- d) To improve legibility and sense of place from within the site;
- e) To visually connect the Precinct to the wider area; and
- f) To create new view corridors where possible, to maximize views over the lake and towards the Blue Mountains.

C. Controls

- 1) Development is to preserve major views /vistas as identified on Figure E13.16.
 - a) Extension of Ransley Street view corridor to the Blue Mountains
 - b) The view from the Club entry to the Stadium
 - c) Views from the eastern edge of the lake to the Blue Mountains.

13.7.5 Public Art Strategy

A. Background

Panthers Penrith is an entertainment, leisure, lifestyle and sporting precinct with a unique sense of place. It is a key destination for the Penrith Community and the Western Sydney region that will be further realised by the vision of the master plan. The provision of public art within open space is an important step in contributing to this sense of place in the precinct and the creation of an enlivened public domain.

Public art should be developed with the engagement of professional artists, and reflect and interpret matters of local significance.

An art strategy for the precinct is to be developed that responds to the architectural character and environment of the Panthers Penrith precinct through the staged integration of public art with public spaces as the precinct is delivered.

B. Objectives

- a) To integrate urban art within the public domain and property development;
- b) To position Penrith as an internationally renowned arts destination;
- c) To encourage excellence in the development of urban art initiatives;
- d) To create opportunities for landmark statements in the Penrith landscape; and

- e) To enrich the public domain through the installation of artworks in the open space network, particularly around the lakeside promenade.

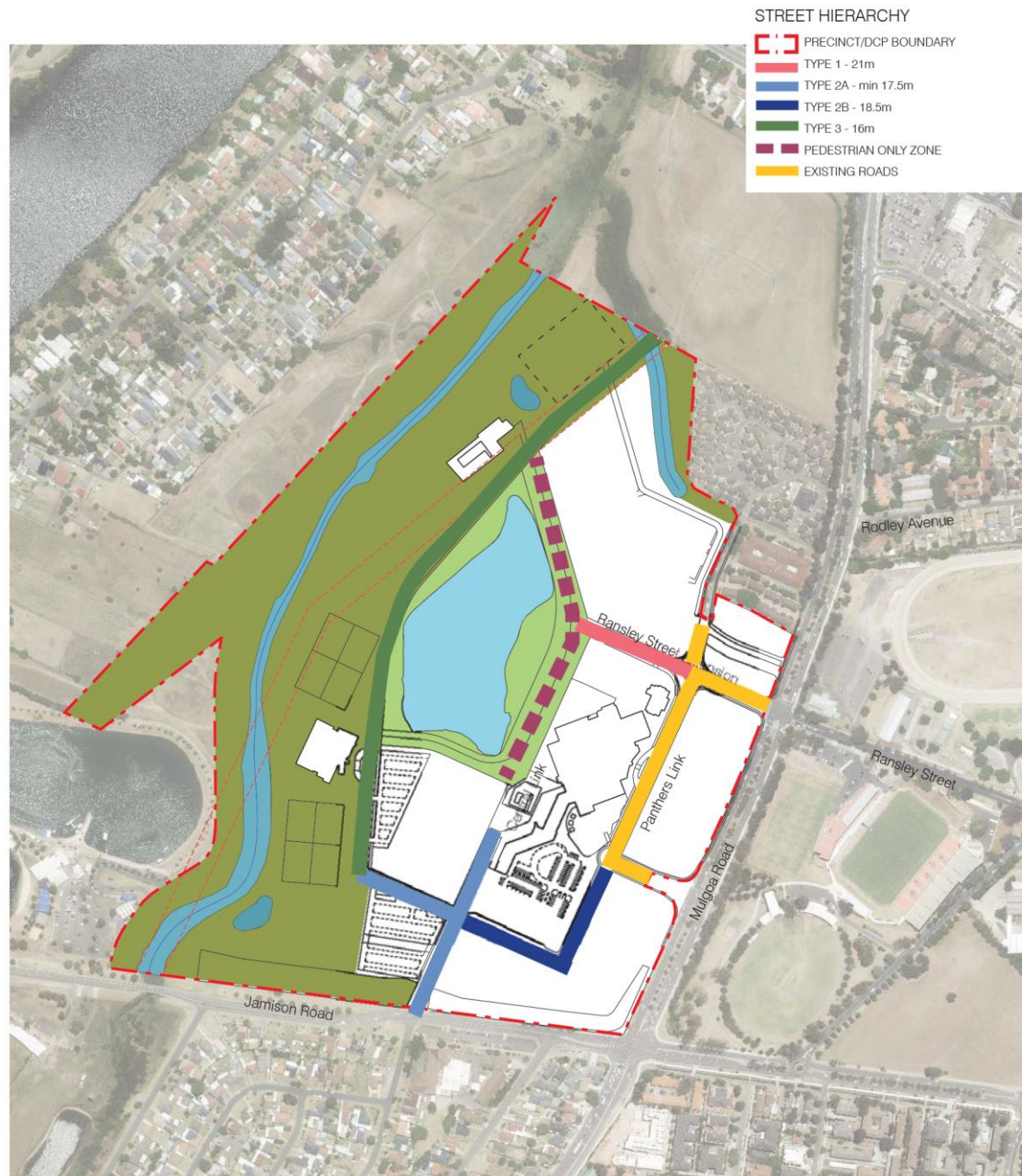
C. Controls

- 1) A Public Art Strategy is to be prepared by a specialist art consultant for the whole Precinct prior to approval of the first major building development application \$5 million in value.
- 2) The Public Art Strategy is to be relevant and site specific for the precinct and is to address:
 - a) Context of precinct within Penrith and the Penrith Community
 - b) Community / public artist engagement
 - c) Location of installations/art work
 - d) Themes and narrative
 - e) Procurement strategies
 - f) Maintenance strategies
 - g) Decommissioning strategies.

13.8 CONNECTIVITY

13.8.1. Street Design and Character

Figure E13.17: Street Hierarchy



A. Background

The Panthers Penrith Precinct currently has three existing streets: Ransley Street, Panther Place and the road between Ransley Street and Panther Place in front of the Club. The expanded street network encourages pedestrian permeability, public transport, cycle and local vehicle and service access and movement across the Site and to adjoining places.

A clear hierarchy of street types is proposed throughout the site.

The street character is local in nature with street tree planting used to reinforce the character of the street. Generous footpaths and setbacks allow for cafes and outdoor seating opportunities. Consistently spaced street tree planting will create a generous landscape treatment framing the street, providing shade to the street and complementing the green corridors of Mulgoa Road and the north-south open space green corridor.

It is anticipated that Panthers Penrith will have a variety of new streets:

Ransley Street extension (Type 1 - Primary Street)

The Ransley Street extension provides the primary point of address to the Site, linking Mulgoa Road physically and visually to the Site and to the mountains beyond. The opening up of this link will also create a memorable sense of arrival. The interface and intersections of this link create the most important address points to the Site. Its character will be active with some outdoor seating, and with buildings built to the boundary. It will provide an appropriate prelude to the vibrancy of the lake promenade and adjacent uses.

Panthers Link (Existing Road to remain)

The Panthers Link is currently the primary north-south vehicular link within the Site. This road will be maintained with public domain improvements. The public bus will use this street with the front entry to Panthers the main stop within the Site.

Central Link (Type 2 Secondary Street)

The Central Link roads will provide vehicular access within the Site, from Jamison Road at the south to Panthers Link. They will be designed to accommodate events and exhibition traffic and service vehicles.

Peachtree Creek Edge & Riverlink (Type 3 - Park Edge Street)

The Peachtree Creek edge will be defined by a low volume north-south vehicular link through the Site from Jamison Road at the south, past the western edge of the existing lake to the northern boundary of the site. A footpath and cycleway will be developed the full length of the north-south corridor providing an essential part of the link from the CBD leading to the Nepean River. The street will be strongly pedestrian focussed but it will accommodate slower vehicular traffic with the ability to close the street if required for events or at other times.

B. Objectives

- a) To create a quality public domain that provides legible, safe and comfortable street environments, in terms of daylight, scale, sense of enclosure and wind mitigation;
- b) To ensure good circulation within the site;
- c) To encourage sunlight access to new public spaces; and
- d) To facilitate view corridors to the Blue Mountains.

C. Controls

- 1) All streets will be constructed in accordance with Council's standards.

2) The dimensions of each road as noted in Figure E13.17 will be:

Road Type	1	2	2a	3
	Primary Street	Secondary Street (without parking)	Secondary Street (with parking)	Park Edge Street
Total width	21.0 m	17.5m	18.5m	16m
Road width	7.0 m	10.5m	6.5m	6.5m
Parking	2 x 2.5 m	NA	2 x 2.5 m	1 x 3.0m
Footpath & verge	2 x 4.5m	2 x 3.5m	2 x 3.5m	1 x 6m

3) Street sections are illustrated in Figures E13.18-21.

Figure E13.18 Primary Street – Type 1

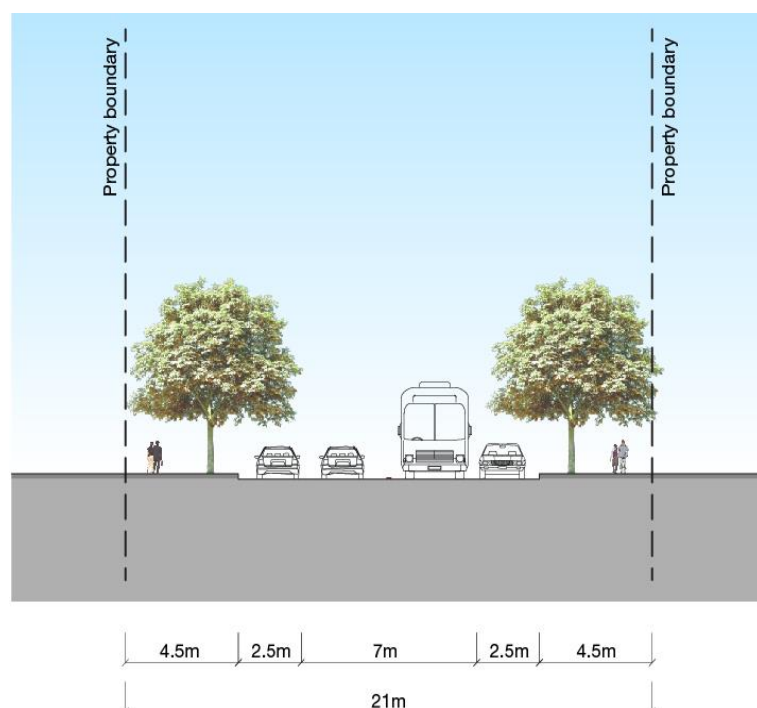


Figure E13.19 Secondary Street (without parking) – Type 2

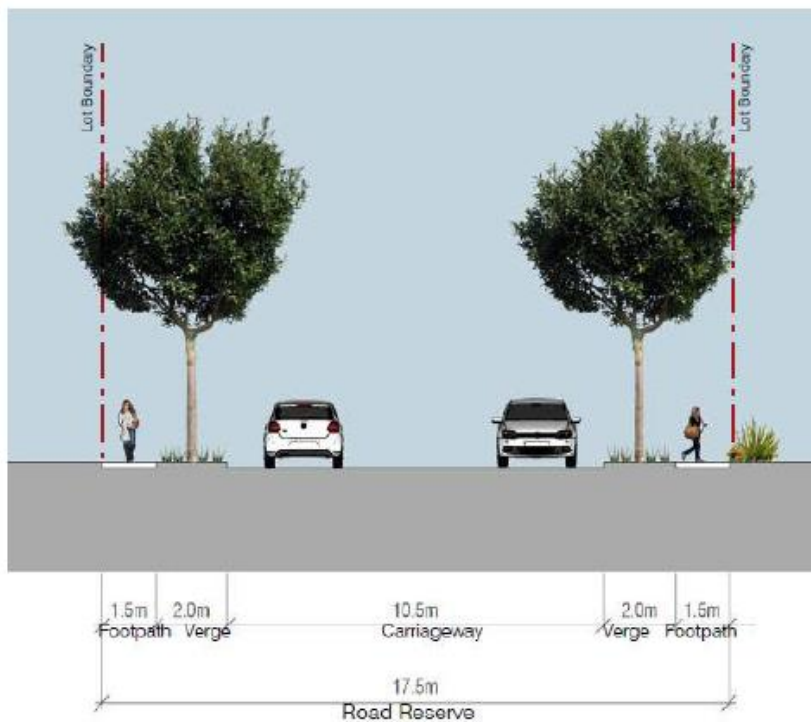


Figure E13.20 Secondary Street (with parking) – Type 2a

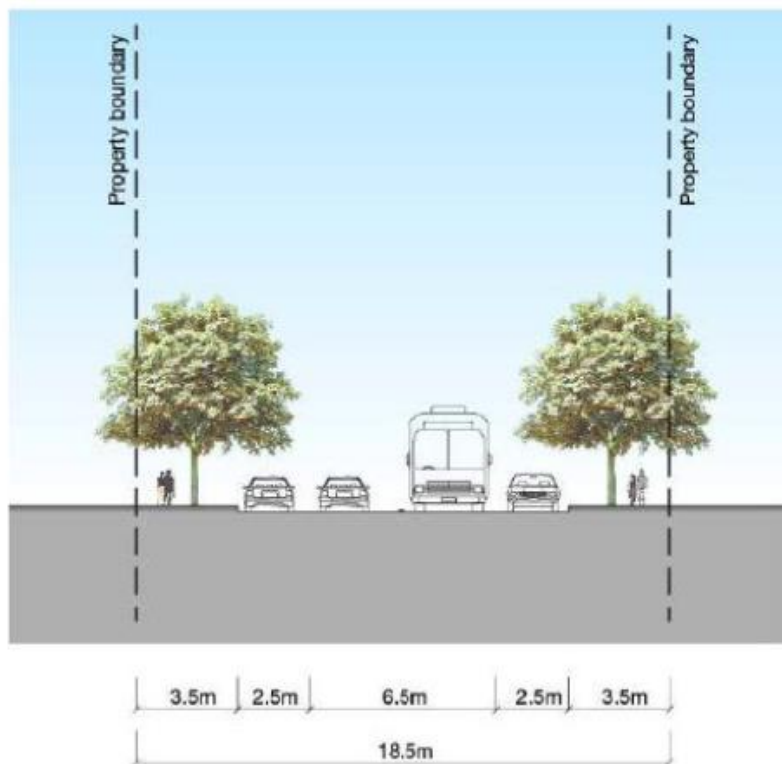
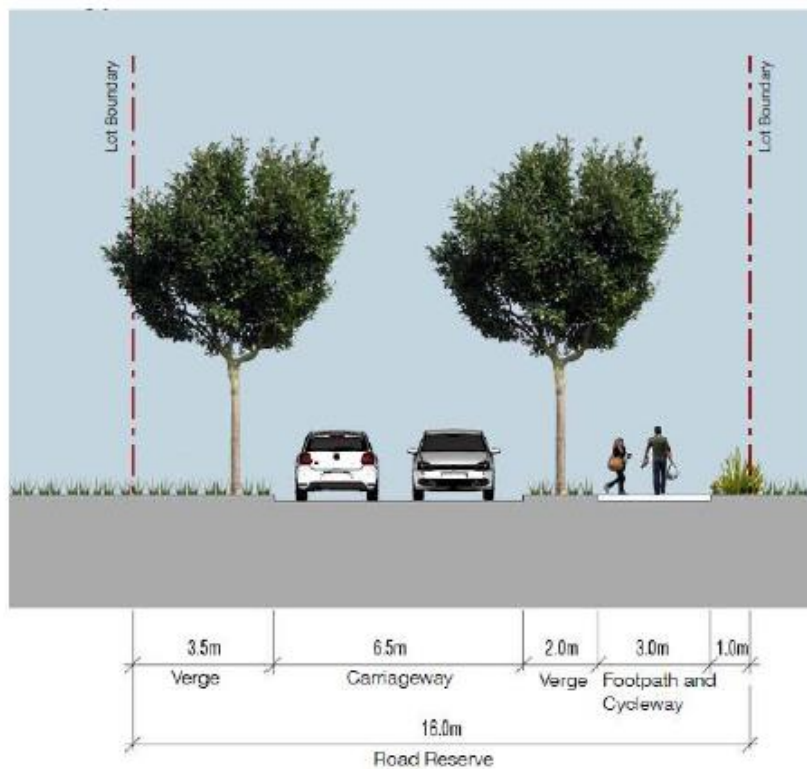
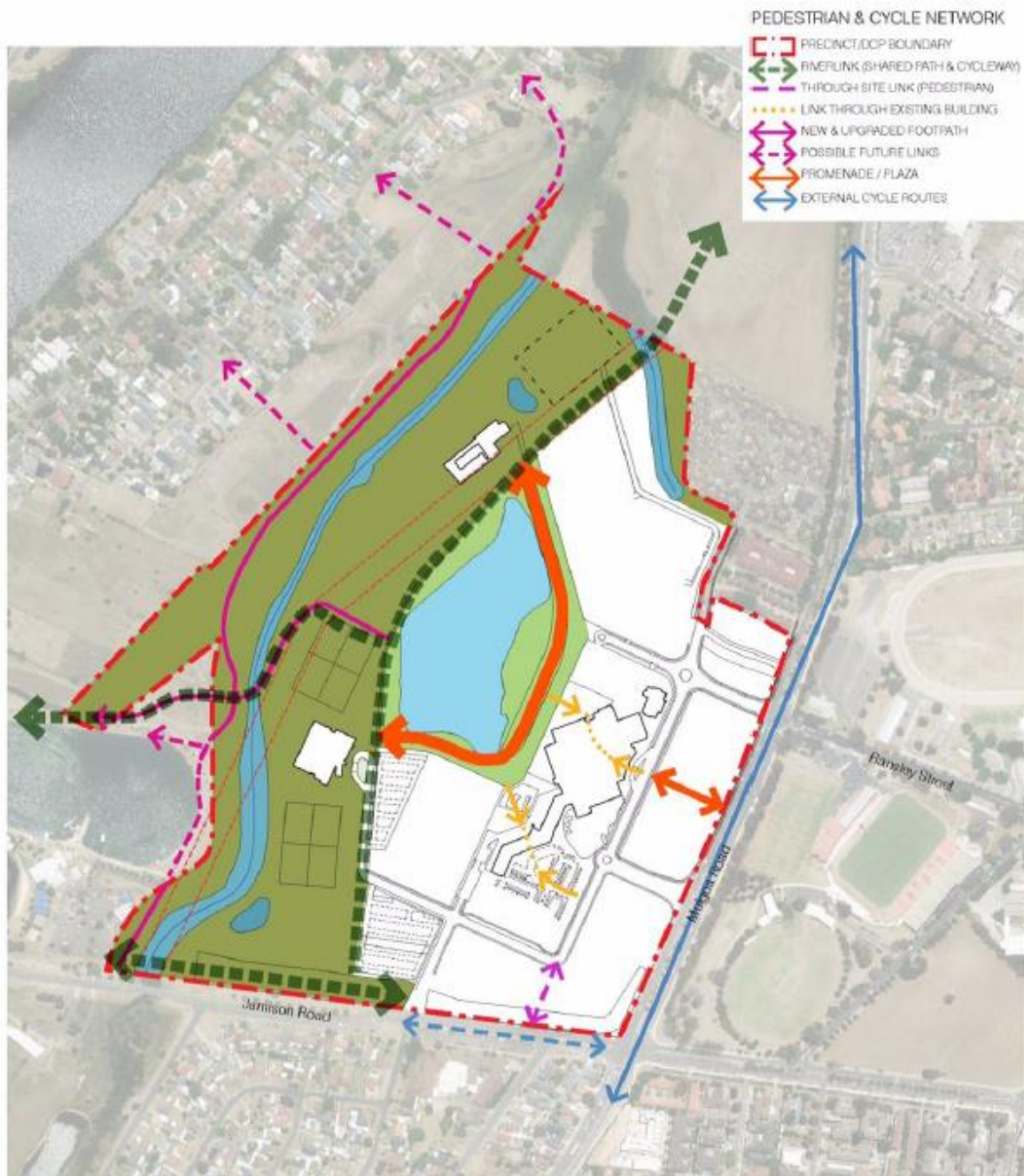


Figure E13.21: Park Edge Street – Type 3



13.8.2. Pedestrian and Cycle Network

Figure E13.22: Pedestrian and Cycle Network



A. Background

The new road network forms the basis of both pedestrian and cycle access within the site. Generous footpaths accommodate pedestrian movement and wide lanes and in some areas dedicated cycleways facilitate bicycle movement around the precinct.

B. Objectives

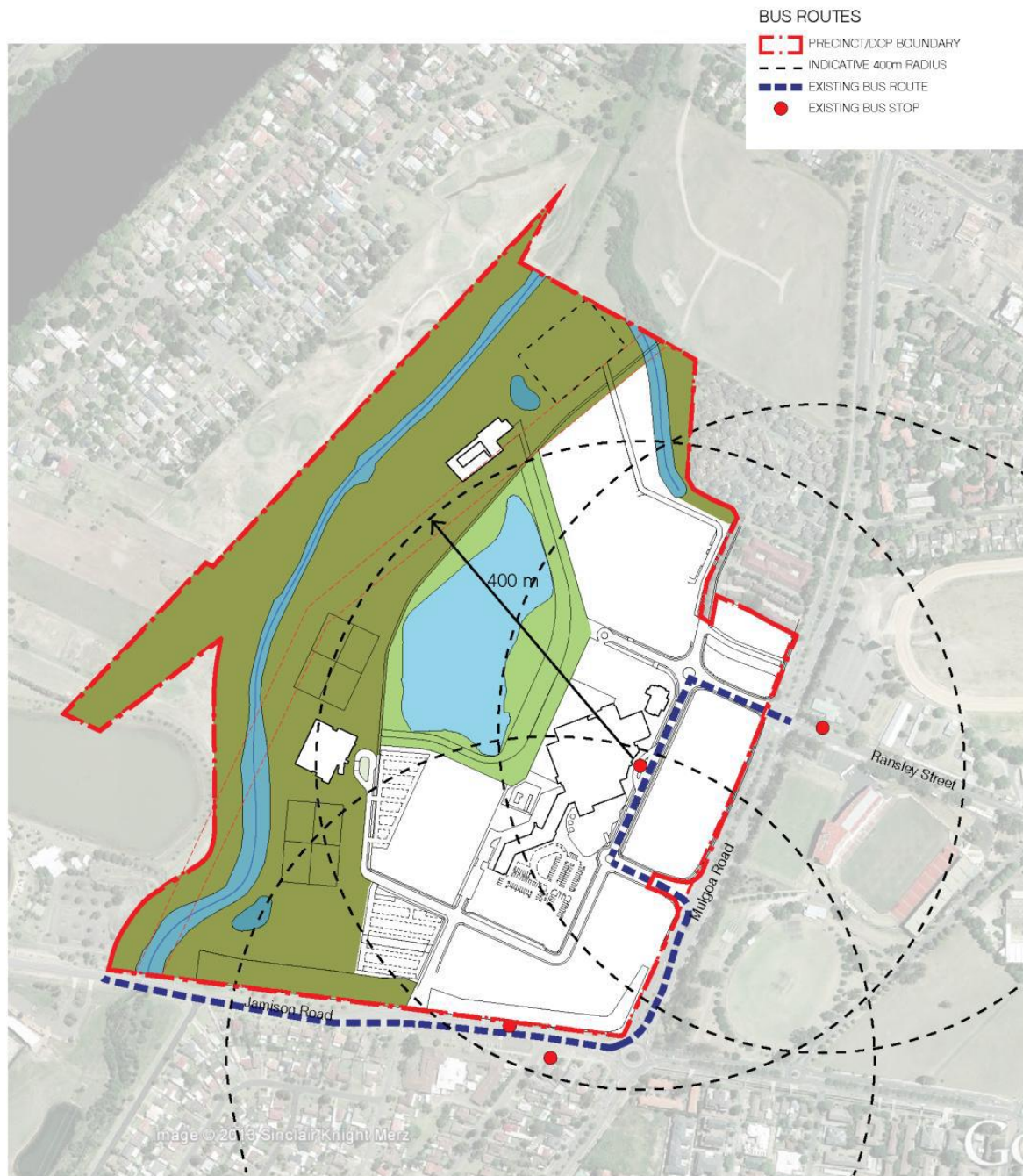
- a) To improve access in the Panthers Penrith by providing through site links as development occurs;
- b) To retain and enhance existing through site links as redevelopment occurs;
- c) To encourage active street fronts along the length of through site links where possible;
- d) To provide for pedestrian amenity and safety;
- e) To improve the permeability of large sites when they are redeveloped for more intensive uses; and
- f) To provide a lakefront promenade that provides a central pedestrian connection to the various lakeside sub precincts.

C. Controls

- 1) Pedestrian and cycle access within the site is to be provided as indicated in Figure E13.22.
- 2) A dedicated cycle lane is to be provided to the park edge.
- 3) Pedestrian links are to make use of existing crossings within the Peachtree Creek zone.
- 4) Pedestrian links are to facilitate future connections from outside the site.
- 5) Through site links are to be provided as shown in Figure E13.24 with accessible paths of travel that are:
 - a) A minimum width of 4m for its full length and clear of all obstructions including columns, stairs, etc.
 - b) Direct and publicly accessible thoroughfares for pedestrians.
- 6) Signage is to be located at street entries indicating public access through the site as well as the street to which the link connects.

13.8.3. Public Transport

Figure E13.23: Public Transport Nodes



A. Background

The Site benefits from its relatively close proximity to Penrith railway station – the station is within 20 minutes casual walking distance to the north of the precinct.

A number of bus routes travel north-south along Mulgoa Road, providing access to the railway station and Penrith city centre. Jamison Road has a weekday bus service. Panthers has a bus stop for public buses serving Penrith and the Blue Mountains.

B. Objectives

- a) To locate higher density development near public transport opportunities;
- b) To explore extension of bus services into the site; and
- c) To ensure adequate infrastructure for pedestrian amenity and safety.

C. Controls

- 1) The public transport route is shown as per Figure E13.23.
- 2) New development is to respond to public transport opportunities within and adjacent to the site.
- 3) Ensure adequate infrastructure for bus users such as seating and shelters are provided at bus stops within the site.

13.8.4. Traffic, Parking and Site Access

Figure E13.24: Restricted Vehicular Access



A. Background

The Panthers Penrith Precinct will accommodate a range of uses and traffic generation and parking needs will differ from traditional single use sites.

Panthers have entered into a Voluntary Planning Agreement with the roads and Maritime Services and Council to deliver local and State road infrastructure as result of traffic generated by the development within the Precinct.

B. Objectives

- a) To ensure that traffic generation of development on the Panthers Penrith Precinct does not exceed agreed limits;
- a) To integrate adequate car parking and servicing access without compromising street character, landscape or pedestrian amenity and safety;
- b) To ensure that adequate parking to serve development is provided on site;
- c) To encourage shared use of parking;
- d) To allow flexibility in parking rates to reflect shared use or best practice;
- e) To ensure that parking structures do not dominate the public domain; and
- f) To control site entry points to encourage the active use of street frontages.

C. Controls

Traffic and Access

- 1) Development applications for major development proposals should be accompanied by an appropriate Traffic Report that details the assessed impact of projected vehicular traffic associated with the proposal. Traffic on the site is not to exceed limits identified in the Voluntary Planning Agreement supporting Traffic Management Report.
- 2) Any Traffic Report or Traffic Impact Statement is required to address the following issues:
 - a) The objectives of this section relating to transport and land use;
 - b) The objectives of this section relating to traffic management and safety; and
 - c) The objectives and controls of this section relating to traffic generating developments.
- 3) A Traffic Plan that addresses Special Event traffic conditions is to be submitted with any DA for event or major sporting facilities on the site.
- 4) Vehicular access is not permitted in zones nominated in Figure E13.24 and where practicable, vehicle access is to be from secondary streets.
- 5) A new median in Jamison Road is to be provided.
- 6) Potential pedestrian/vehicle conflict is to be minimised by:
 - a) Limiting the width and number of vehicle access points;
 - b) Ensuring clear site lines at pedestrian and vehicle crossings;
 - c) Utilising traffic calming devices; and
 - d) Separating and clearly distinguishing between pedestrian and vehicular accessways.

Parking

- 1) The appearance of car parking and service vehicle entries is to be improved by locating or screening parking, garbage collection, loading and servicing areas visually away from the street.
- 2) Structured parking that extends above ground where viewed from the public domain is to be architecturally treated or where possible sleeved with development.
- 3) Any development application within the Mulgoa Road sub precinct is to submit a car parking strategy that details the location and provision of the displaced existing parking as a result of any development within this sub precinct.

13.9 BUILT FORM

13.9.1. Street Alignment, Wall Height and Setbacks

Figure E13.25: Setbacks

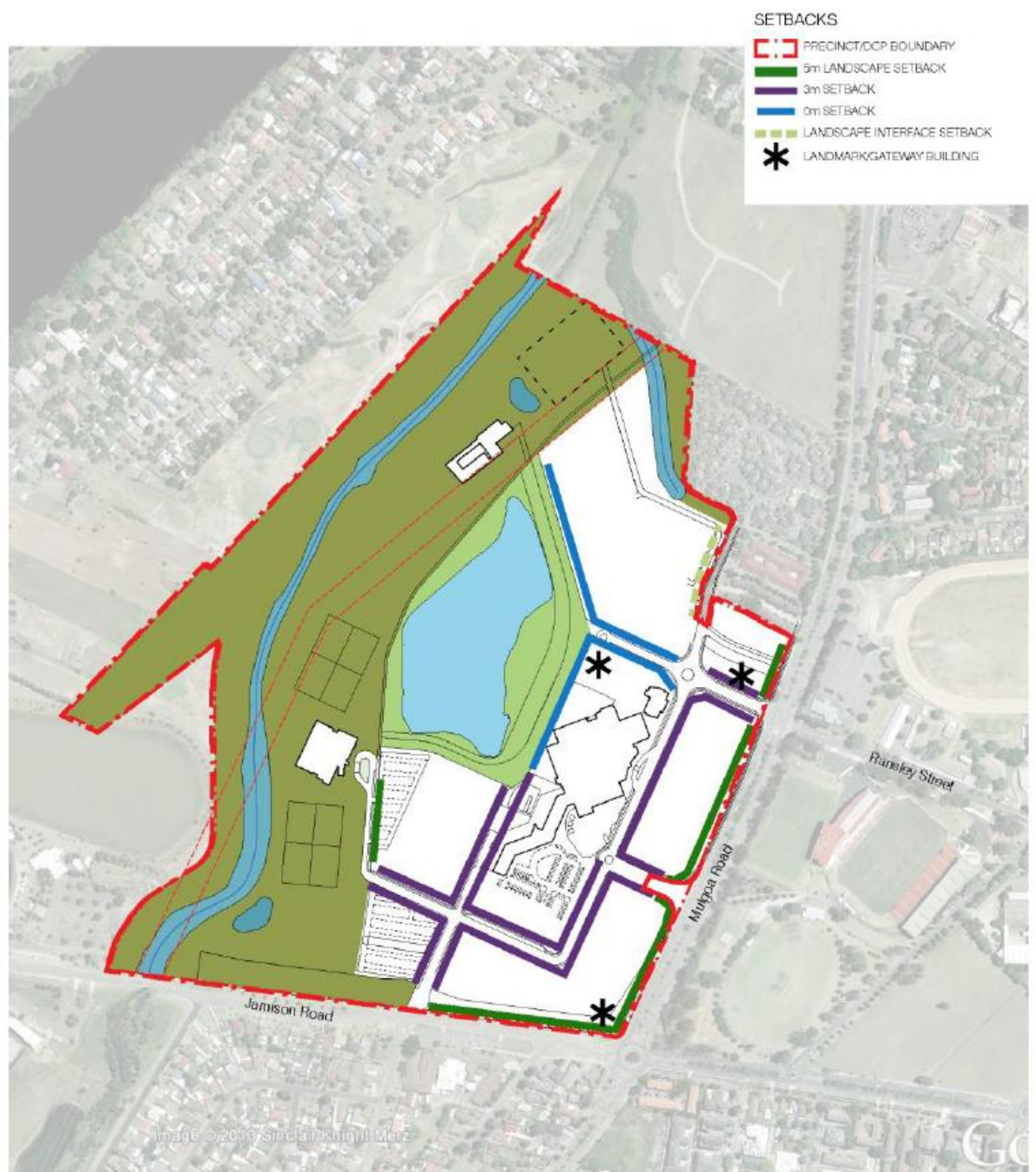
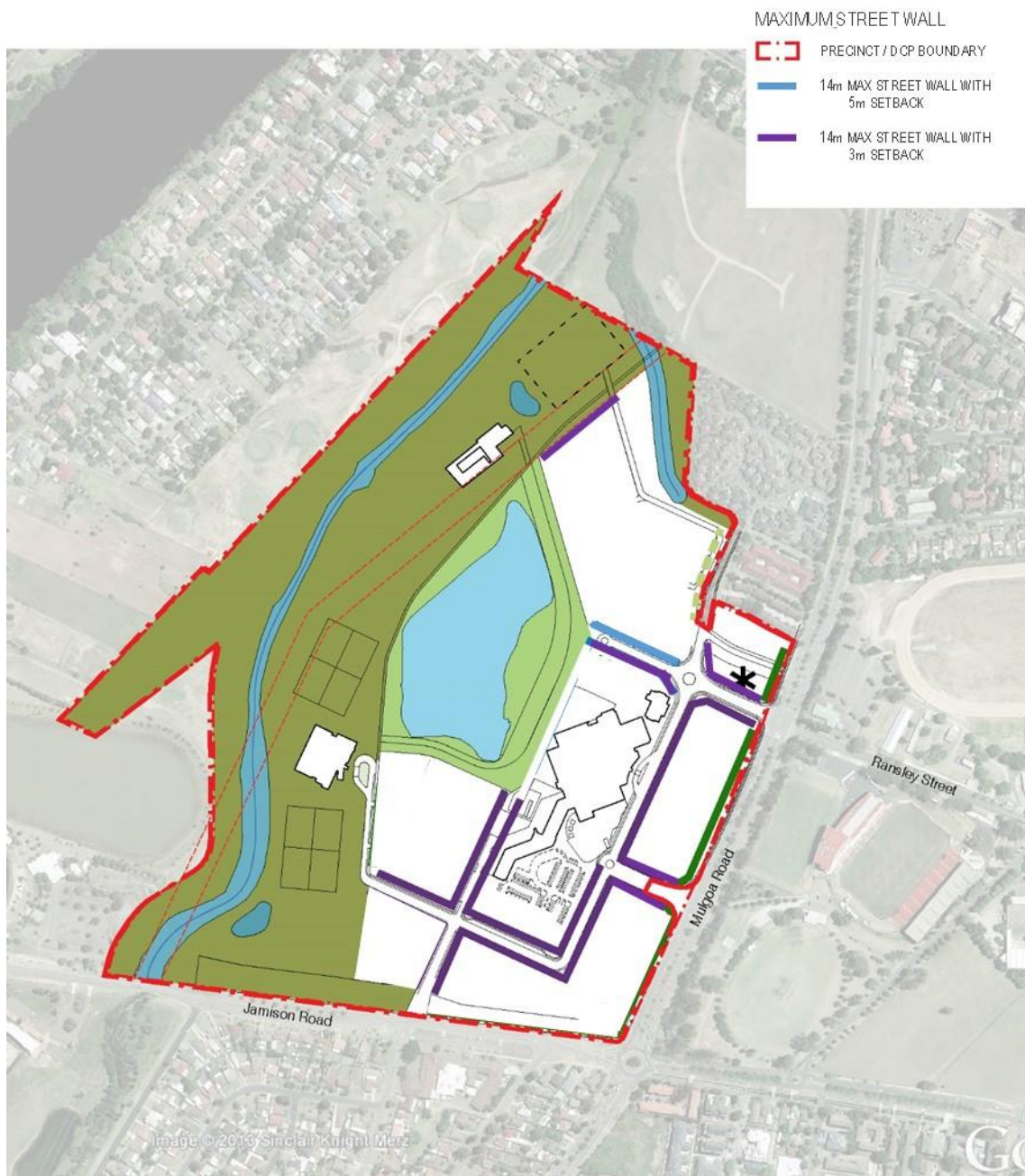


Figure E13:26 Street Wall Height



A. Background

Zoning of the site allows for heights up to 24m with a landmark building site of 32m. The establishment of a clear and cohesive built form framework allows for flexibility of building use.

Street setbacks and building alignments establish the front building line. They help to create the proportions of the street and can contribute to the public domain by enhancing streetscape character and continuity of street facades.

Street setbacks can also be used to enhance the setting and address for the building. They provide for landscape areas, entries to ground floor apartments and deep soil zones. Setbacks allow ventilation, daylight access and view sharing and increase privacy.

Buildings should be built up to the street alignment to reinforce the urban character and improve pedestrian accessibility amenity and activity at street level. Above street frontage height, buildings are to be set back to provide sunlight access to streets, pedestrian areas and lower levels of other buildings. These setbacks allow view corridors, an appropriate building scale for pedestrians, and good growing conditions for street trees.

B. Objectives

- a) To establish consistent building alignments to the street;
- b) To provide street setbacks appropriate to building function and character;
- c) To establish the desired spatial proportions of the street and define the street edge;
- d) To create a transition between public and private space;
- e) To locate active uses closer to pedestrian activity areas;
- f) To maintain sun access to the public domain;
- g) To protect important views to the Blue Mountains escarpment;
- h) To ensure an appropriate level of amenity for building occupants in terms of daylight access, outlook, view sharing, ventilation, wind mitigation, and privacy;
- i) To achieve usable and pleasant streets and public domain areas in terms of wind mitigation and daylight access;
- j) To provide building separation for visual and acoustic privacy; and
- k) To provide deep soil zones within sites, and maintain mature/significant vegetation where possible.

C. Controls

General

- 1) Street building alignment and street setbacks are specified in Figure E13.25 and Figure E13.26.
- 2) Balconies may project up to 600 mm into front building setbacks, provided the cumulative width of all balconies at that particular level totals no more than 50% of the horizontal width of the building façade, measured at that level.
- 3) Minor projections into front building lines and setbacks for sun shading devices, entry awnings and cornices are permissible.
- 4) The minimum height of development built to the side boundary should comply with the maximum street frontage height requirement as shown in Figures E13.27-31. Exceptions

to this control can occur for parts of a building's frontage provided it is not more than 40% of that buildings frontage and such exemption is justified on architectural merit.

- 5) Where 0m side and rear boundary setbacks are permissible, it must be demonstrated that 0m setbacks provide amenity in terms of day light access and ventilation.

Gateway Buildings

- 1) Gateway sites have been nominated at the corner of Jamison and Mulgoa Roads and at the site entry off Mulgoa Road at Ransley Street. Special emphasis through architectural quality and detailing is required.
- 2) These buildings are to be iconic in form and will denote and provide emphasis to the main Blue Mountain view corridors from Mulgoa Road.
- 3) Buildings are to address the corner condition with an emphasis on the approach along Mulgoa Road.

Figure E13:27 Setbacks on existing North/South Street

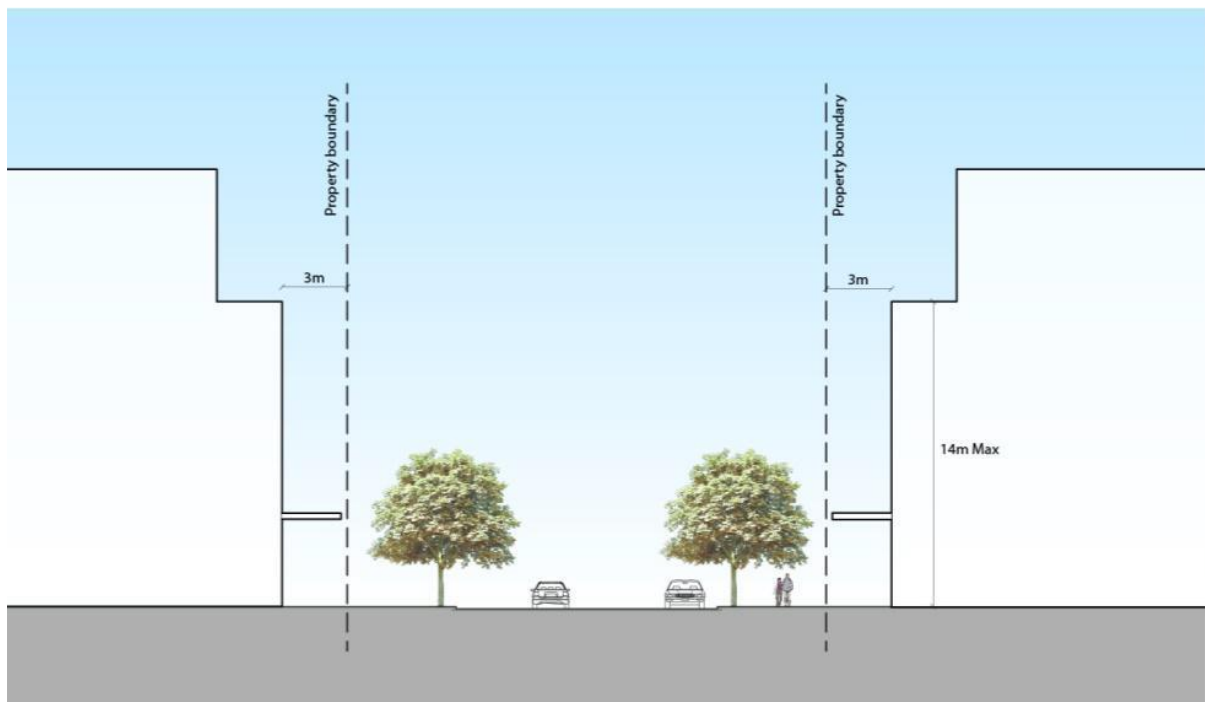


Figure E13:28 Setbacks West of Existing Hotel

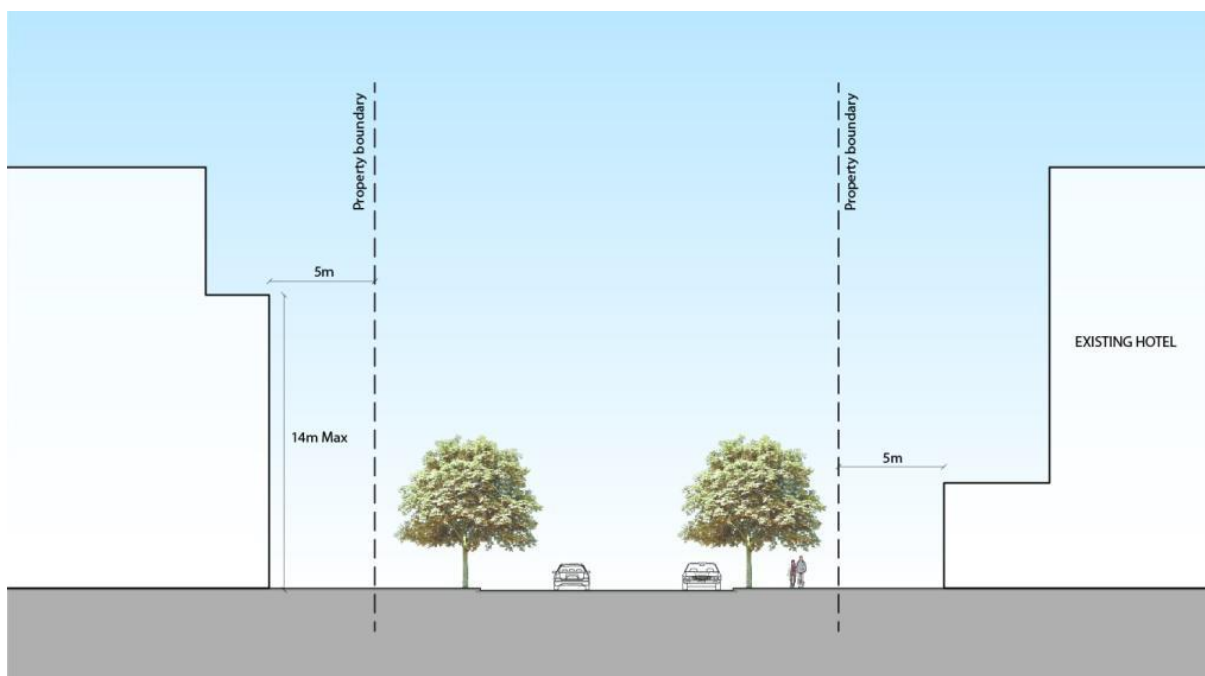


Figure E13:29 Setbacks on Ransley Street

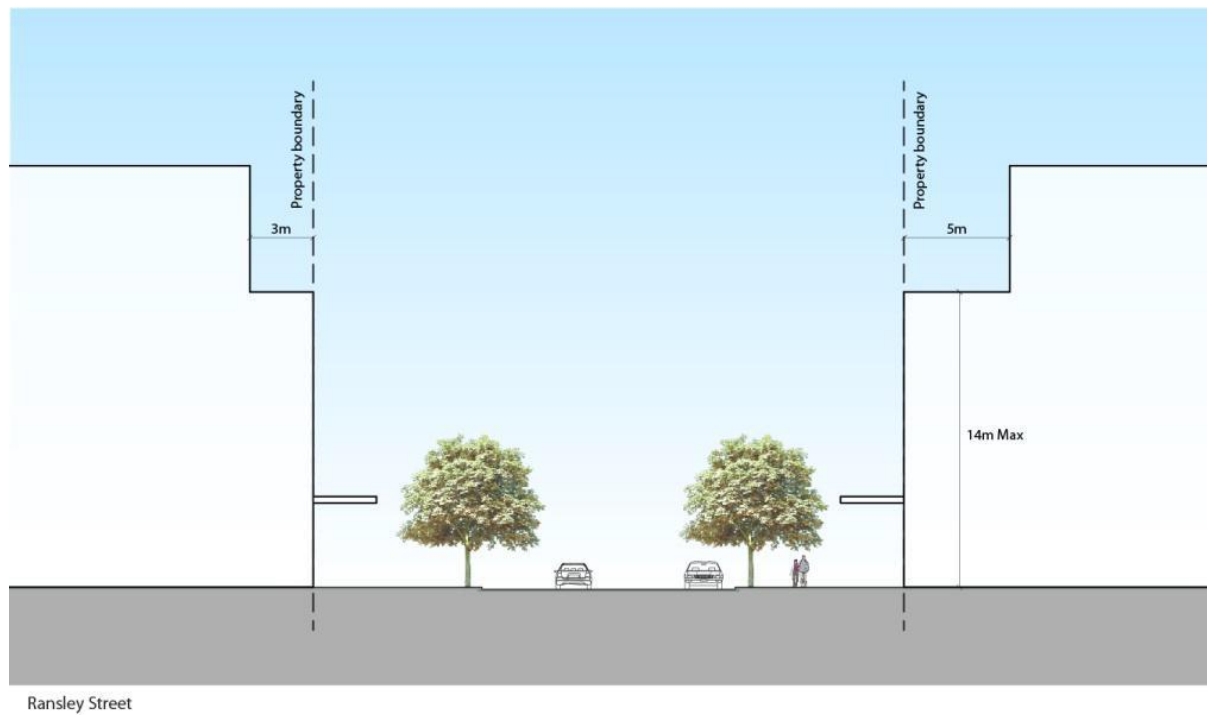


Figure E13:30 Setbacks Park Edge Street

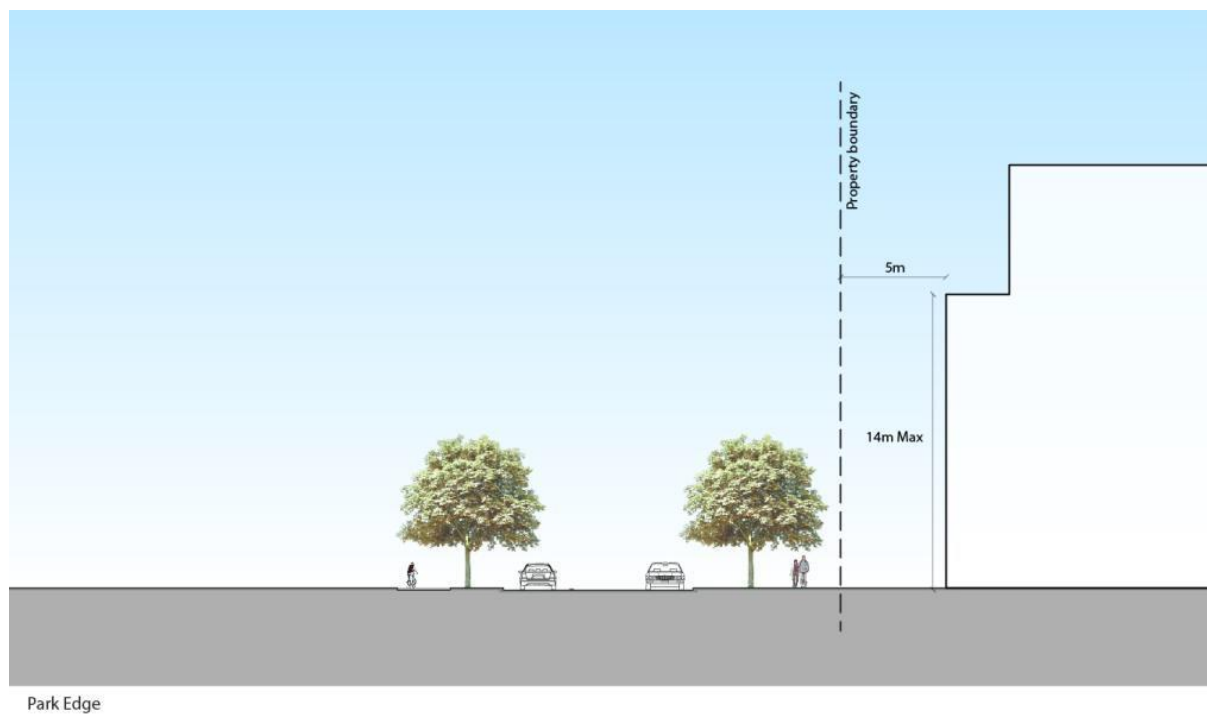
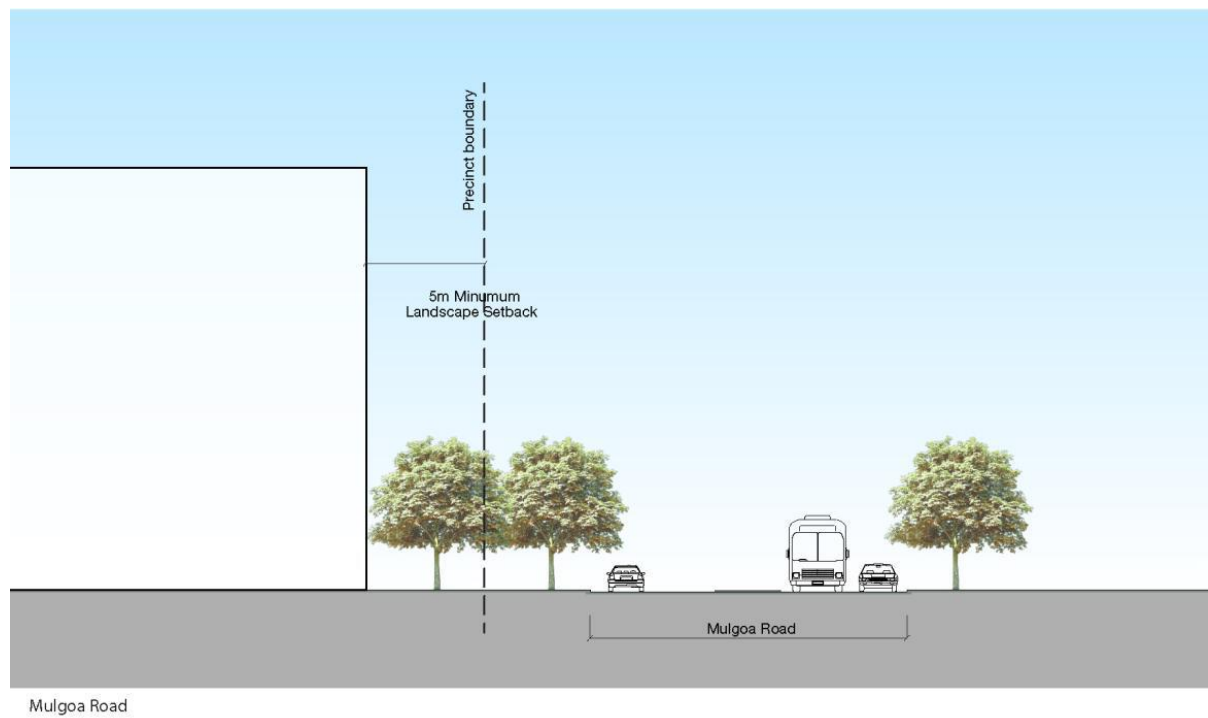


Figure E13:31 Mulgoa Road Frontage



13.9.2. Active Street Frontages

Figure E13.32: Active Frontages



A. Background

Active frontages promote an interesting and safe pedestrian environment. Due to the size of the area, it is recognised that not all streets will develop as active pedestrian areas. Active frontages have been identified where active ground level uses are to be consolidated, creating vibrant streetscapes in areas with high pedestrian traffic and possibly located close to public transport and public open space.

Active uses include:

- a) Shop fronts
- b) Retail/service facilities with a street entrance
- c) Cafe or restaurants with street entrance
- d) Community and civic uses with a street entrance
- e) Recreation and leisure facilities with a street entrance.

B. Objectives

- a) To promote pedestrian activity and safety in the public domain;
- b) To create vibrant streetscapes around areas of high pedestrian traffic;
- c) To encourage activity within the Site outside commercial business hour;
- d) To provide a mix of uses to support an increasing employment and visitor population over time; and
- e) To enhance pedestrian safety, security and amenity within Precinct.

C. Controls

- 1) Active ground level uses are to be located as shown Figure E13.32.
- 2) Active street fronts are to be maximised along Ransley Street, to the lakeside promenade, and in front of hotels and the multi-use facility.
- 3) Entries to active frontage tenancies are to be accessible.
- 4) Vehicular access points should not, if possible, be located at primary active frontages.
- 5) Ground level uses at active frontage zones are to be located at or close to street level.
- 6) Transparency and openings to the street are to be maximised and blank walls, fire exits and building services elements are to be minimised.

13.9.3. Awnings

Figure E13.33: Awning Locations



A. Background

Awnings increase pedestrian amenity by providing shelter and enclosure at a pedestrian scale. They encourage pedestrian activity along streets and, in conjunction with active edges, support and enhance the vitality of the local area. Awnings and entry canopies provide a public presence and interface within the public domain, contributing to the identity of a development.

B. Objectives

- a) To provide weather protection, safety and security for pedestrians;
- b) To unify the streetscape; and
- c) To demarcate building entries and contribute to the image and identity of development.

C. Controls

Awnings

- 1) Continuous awnings must be provided as shown in Figure E13.33.
- 2) Awning width is to be a minimum of 3m.
- 3) Provide awnings with a soffit height of 3.6m above the finished ground floor level. On sloping sites, awning soffit height may vary from 3.6m – 4.2m.
- 4) Where the topography slopes along the street, awnings are to step to provide a regular height over the footpath. Steps in awnings should not exceed 600mm.
- 5) Stepped awnings must be detailed to provide continuous weather protection.
- 6) Glazing is not permitted in continuous awnings.
- 7) Under awning lighting is to be provided to achieve appropriate luminance levels for pedestrians (Refer to relevant Australian Standards). This should be recessed into the soffit of the awning.

Entry Canopies

- 1) Entry canopies and discontinuous awnings may be provided to building entries not located along Active Frontages.
- 2) Entry canopies may be glazed or solid, and are to be coordinated with the overall facade design.
- 3) Provide canopies with a soffit height of 3.6m – 4.2m.

13.9.4. Building Depth and Bulk

A. Background

The final use of sites remains flexible and subject to market demand and opportunities. Without a clear program of land uses across the precinct, controlling the size of floor plates of buildings and site coverage helps to create good internal amenity, access to natural light and ventilation and reduces potential adverse effects that tall and bulky buildings may have on the public domain, including visual impacts and overshadowing.

Building depth is related to building use.

B. Objectives

- a) To promote the design and development of sustainable buildings;

- b) To achieve the development of living and working environments with good internal amenity and minimise the need for artificial heating, cooling and lighting;
- c) To provide viable and useable commercial floor space;
- d) To achieve usable and pleasant streets and public domain at street level;
- e) To achieve a skyline sympathetic to the topography and context;
- f) To allow for view sharing and view corridors; and
- g) To reduce the apparent bulk and scale of buildings by breaking up expanses of building wall with modulation of form.

C. Controls

- 1) Commercial floor plate sizes are governed by the Panthers Penrith provisions within the LEP.
- 2) All points of an office floor should be no more than 10m from a source of daylight (e.g. window, atria, or light wells) in buildings less than 24m in height, and no more than 12.5m from a window in buildings over 24m in height.
- 3) Use atria, light wells and courtyards to improve internal building amenity and achieve cross ventilation and/or stack effect ventilation.

13.9.5. Building Articulation

A. Background

Building articulation refers to the three dimensional external modelling of a building façade. Building articulation establishes the relationship of the building with its street. The composition and detailing of the building façade has an impact on its apparent scale as well as its appearance. The pattern or rhythm established by the proportions of the façade, the modulation of the external walls, the design of façade elements, their materials and detailing are all important considerations.

B. Objectives

- a) To create buildings with articulated façade that address the public domain;
- b) To ensure that new developments have facades which define and enhance the public domain; and
- c) To ensure that building elements such as awnings, sun screens, shading devices, roof structures and service elements are integrated into the overall building form and façade design.

C. Controls

- 1) Facades are to be composed with an appropriate scale, rhythm and proportion, that respond to building use and the desired character by:
 - a) Defining a base, middle and top related to the overall proportion of the building;
 - b) Expressing key datum lines in the context using cornices, a change in materials or building setback;
 - c) Expressing the internal layout of the building, for example, vertical bays or its structure, such as party wall divisions;
 - d) Expressing the variation in floor to floor height, particularly at the lower levels;

- e) Articulating building entries with awnings, porticos, recesses and blade walls; and
 - f) Incorporating architectural features which give human scale to the design of the building at street level. These can include entrance porches, awnings, pergolas and fences using recessed balconies and deep windows to create articulation and define shadows thereby adding visual depth to the façade.
- 2) Facade design is to reflect and respond to the orientation of the site using elements such as sun shading and environmental controls where appropriate.
 - 3) The maximum unbroken facade length is to be 70 metres and it must provide articulation and interest.
 - 4) Important corners are to be expressed by giving visual prominence to parts of the façade (e.g. a change in building articulation, material or colour).
 - 5) Building services such as roof plant and parking ventilation are to be coordinated and integrated with the overall façade and building design, and screened from view.
 - 6) Ventilation louvres and car park entry doors are to be coordinated with the overall façade design.

13.9.6. Architectural Excellence

A. Background

This Part seeks to encourage urban design and architectural excellence as well as environmental sustainability in both the public and private domain.

Architectural excellence is particularly important where the building is highly visible from the public domain outside the precinct.

Good building design should positively contribute to the overall architectural quality of the city and provide buildings appropriate to their context. In some circumstances, this contribution may be as an iconic or landmark building, but more typically it is as a well-mannered building that fits sensitively into the streetscape.

Architectural excellence should be achieved through careful consideration of:

- a) Built form – how it relates to its context
- b) Quality of materials
- c) Integrity of the design concept
- d) Its contribution to the public domain.

B. Objectives

- a) To encourage a high level of design consideration;
- b) To ensure that significant buildings achieve design excellence;
- c) To ensure that buildings contribute positively to the precinct character; and
- d) To encourage the development of sustainable design.

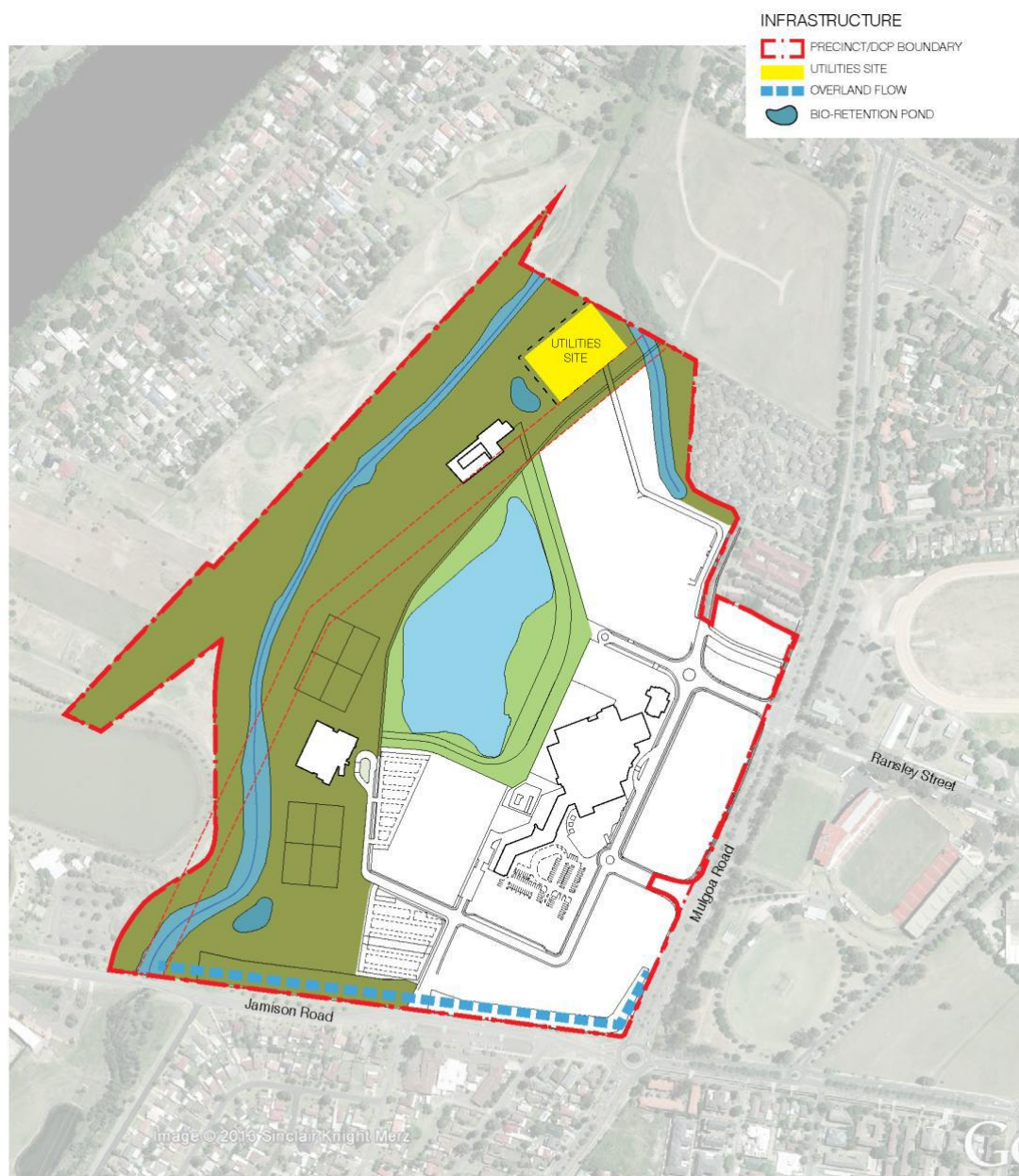
C. Controls

- 1) All applications are to explain the design concept including built form, context response and materials selection.
- 2) Gateway buildings are to demonstrate architectural excellence in the following areas:
 - a) How the building reinforces and enhances significant vistas and view corridors

- b) How the building will enliven the public domain it adjoins.
- 3) Materials are to be selected for durability and quality. In general painted surfaces are not appropriate especially at street 'level'.
- 4) Particular attention is to be paid to detailing of materials.
- 5) Buildings are to be simple, elegant and well proportioned.
- 6) Environmental sustainable initiatives are to be incorporated into new buildings.

13.10 DELIVERY

Figure E13.34: Infrastructure Plan



13.10.1. Flooding and Drainage

A. Background

Flooding and stormwater are major considerations on the Penrith Panthers Precinct site. A precinct Stormwater Management Strategy (SMS) will minimise the impact on water quality, identify opportunities to maximise the reuse of stormwater runoff, reduce the demand on potable water supplies, reduce pollutants and enhance the landscaping opportunities within the development.

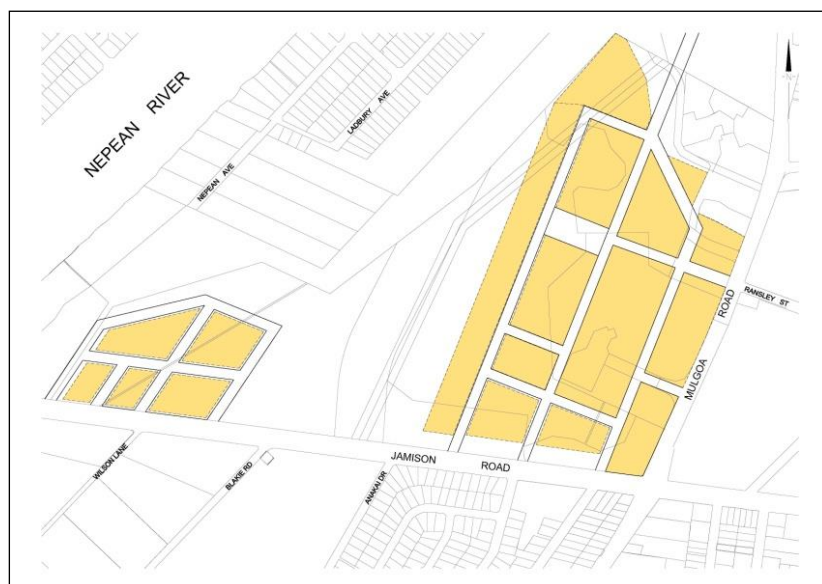
The SMS will be based upon the principles of Water Sensitive Urban Design (WSUD) and will be underpinned by a stormwater harvesting strategy aimed at maximizing the reuse of runoff for non-potable purposes, maintaining the ecological integrity of Peachtree Creek, and complying with Penrith City Council's water management requirements as set out in Section C3 of this DCP.

Any development that is flood affected will require an appropriate level of flood assessment and may include the need to undertake modelling and prepare flood reports. The assessment will need to include consideration of flood behaviour and hazard, and any mitigation measures required to ameliorate any impacts identified.

Maintaining the regional flood runner function of Peachtree Creek through the site and ensuring no adverse impact upon flood levels and flood conveyance on surrounding properties and in Peachtree Creek is of prime importance. In this regard the adopted flood conveyance principles of Panthers Planning Proposal Appendix H Scenario 4 Flood Model apply to the site (i.e. conveyance of 200 year regional flood).

The flood levels detailed in Panthers Planning Proposal Appendix H table H1.1 have been prepared for strategic planning purposes only. Applicable flood levels for each development shall be determined in conjunction with Penrith City Council at the time of each application.

**Figure E13.35: Development Layout as modelled from Panthers /
Adopted Scenario 4 development footprint**



B. Objectives

- a) To manage development of the Panthers site with respect to its unique flooding characteristics;
- b) To develop the site in accordance with sound flood management principles;
- c) To achieve high quality outcomes for water quality and quantity; and
- d) To provide opportunities for WSUD initiatives.

C. Controls

- 1) All applications are to address the relevant sub-sections of the Water Management section of this DCP.
- 2) A Stormwater Management Strategy (SMS) is to be prepared for the whole Precinct and be submitted with the first major development application and should identify and address:
 - a) Impacts of stormwater generated both on and off the site;
 - b) Stormwater easements and overland flow paths;
 - c) Opportunities to maximise the reuse of stormwater runoff;
 - d) Means to reduce the demand on potable water supplies; and
 - e) Reductions in pollutants entering the water system.
- 3) Any development west of the Club and within the flood flow conveyance corridor is to develop a strategy to ensure that the 200-year regional flood runner is maintained without causing adverse impact to adjoining lands in accordance with the principles of Scenario 4 modelling under Panthers Planning Proposal – Appendix H. The strategy will identify the timing, staging and detailing of necessary works to be undertaken.
- 4) Development of a comprehensive flood evacuation and emergency response plan as part of the Infrastructure Master Plan.

13.10.2 Utilities

A. Background

The Panthers Penrith Precinct will connect to the local utilities network, with upgrades occurring where required to support the future development. As part of the overall development strategy, alternative services and energy sources will be investigated.

An integral part of determining development suitability for a site involves assessing whether the appropriate utilities and services are available on the site to service the proposed development, and whether they have sufficient capacity to meet the demand of the proposal.

This section aims to ensure that development consent is only granted where a proposal can be appropriately serviced, either through the existing system having sufficient capacity or being upgraded, or an alternative system being provided. In most cases, the developer will be required to fund necessary system upgrades or alternatives.

B. Objectives

- a) To ensure that development will not place unreasonable pressure on servicing authorities in terms of timing and extent of supply;
- b) To ensure that development will take place only where satisfactory arrangements are made with the servicing authorities; and
- c) To ensure that adequate consultation is carried out with the relevant servicing authorities during the formulation of development proposals.

C. Controls

- 1) All development applications are to address the existing and proposed provision of services/utilities to a site and whether there is satisfactory capacity to address the required demand of the proposal.

- 2) Satisfactory arrangements are to be made with the servicing authorities for the provision of services to the property.
- 3) Where possible, services (including easements) should not be located in areas where vegetation will be removed or damaged.
- 4) Existing easements are to be reviewed and rationalised.
- 5) A site utilities zone with adequate landscape screening is to be located in the north of the site as indicated in Figure E13.34.

13.10.3 Staging

A. Background

The Panthers Penrith Precinct Structure Plan represents indicative super lots on the site and the order and timing in which elements are to be delivered will be in response to market opportunities.

The delivery of individual developments must be considered in the context of:

- a) Available and future infrastructure
- b) Site access
- c) Flood control
- d) Public domain delivery
- e) Traffic and parking limits
- f) As each development is delivered, the supporting infrastructure must be provided. All relevant supporting studies must be completed with each major development application.

B. Objectives

- a) To facilitate orderly development of the site;
- b) To ensure that adequate services are provided at each stage of development;
- c) To ensure that infrastructure anticipates future development; and
- d) To ensure that development does not exceed floor space or traffic and parking limits identified for the Precinct.

C. Controls

- 1) Each development application for new buildings in excess of 1,000m² GFA is to identify the infrastructure provision necessary to service this development. This includes, but is not limited to:
 - a) Power
 - b) Water and gas supply
 - c) Drainage works
 - d) Flood control works
 - e) Roadworks.
- 2) Infrastructure provision is to anticipate future development adjacent and linked to the site. The provision is to ensure that any disruption to new roads and services is minimised as future projects are brought on line.

- 3) Consideration of any flood studies undertaken to determine in particular the timing and delivery of any flood mitigation works (e.g. if required, reducing the ski lake)
- 4) Major new development in excess of 1,000m² GFA will require evaluation of parking and traffic generation based on the findings and limits identified in Supplementary Transport Assessment for the Panthers Penrith Planning Proposal GHD May 2011 and the Panthers Roadworks Planning Agreement.
- 5) A register of all floor area, use and parking provision in the precinct is to be maintained through the life of precinct development.

- 4) Buildings adjacent to APZs are to be constructed in accordance with the requirements of Appendix 3 of Bushfire Protection and Australian Standard 3959 - Construction of Building in Bushfire-prone Areas.
- 5) Where an allotment fronts and partially incorporates an APZ it shall have an appropriate depth to accommodate any building with private open space and the minimum required APZ. The APZ will be identified through a Section 88b instrument.

13.10.4. Staging

A. Background

The Panthers Penrith Precinct Structure Plan represents indicative super lots on the site and the order and timing in which elements are to be delivered will be in response to market opportunities.

The delivery of individual developments must be considered in the context of:

- a) Available and future infrastructure
- b) Site access
- c) Flood control
- d) Public domain delivery
- e) Traffic and parking limits
- f) As each development is delivered, the supporting infrastructure must be provided. All relevant supporting studies must be completed with each major development application.

B. Objectives

- a) To facilitate orderly development of the site;
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C. Controls

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 - a) Power
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 - c) Drainage works
 - d) Flood control works
 - e) Roadworks.
- 2) Infrastructure provision is to anticipate future development adjacent and linked to the site. The provision is to ensure that any disruption to new roads and services is minimised as future projects are brought on line.
- 3) Consideration of any flood studies undertaken to determine in particular the timing and delivery of any flood mitigation works (e.g. if required, reducing the ski lake)

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- 5) A register of all floor area, use and parking provision in the precinct is to be maintained through the life of precinct development.

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E14 St Clair

14.1 Land at Banks Drive and Mamre Road

14.1.1 Land to which this section applies

This section applies to Lot 1 and 2 DP 730490 and Lot 52 DP 634527 situated at the north-eastern corner of Banks Drive and Mamre Road St Clair.

Figure E14.1: Land to which this Section Applies



14.1.2 Aims of this section

The aim of this section is to retain the landscaped buffer areas to the street frontages and boundaries with the residential areas, in order to maintain the amenity and scenic quality of the area.

14.1.3 Development Standards

14.1.3.1 Setbacks

Any application submitted concerning development of this land is to observe the following landscaped setback/buffer area provision:

- a) 18m to Mamre Road;
- b) 5m to Banks Drive; and
- c) 12m to any adjoining residential development,

14.1.3.2 Access

All access to the site is confined to the frontage to Banks Drive.

14.2 Land at Cook Parade

14.2.1 Land to which this section applies

Lot 2566 DP263157, Lot 68 DP702772 and Lots Part 671 and 672 DP739138 Cook Parade, St Clair

14.2.2 Aims of this section

This section:

- Specifies the purposes for which land may be developed; and
- Regulates the siting of facilities on the land described above.

14.2.3 Controls

This section operates in the manner set out on the accompanying map (SC-020)

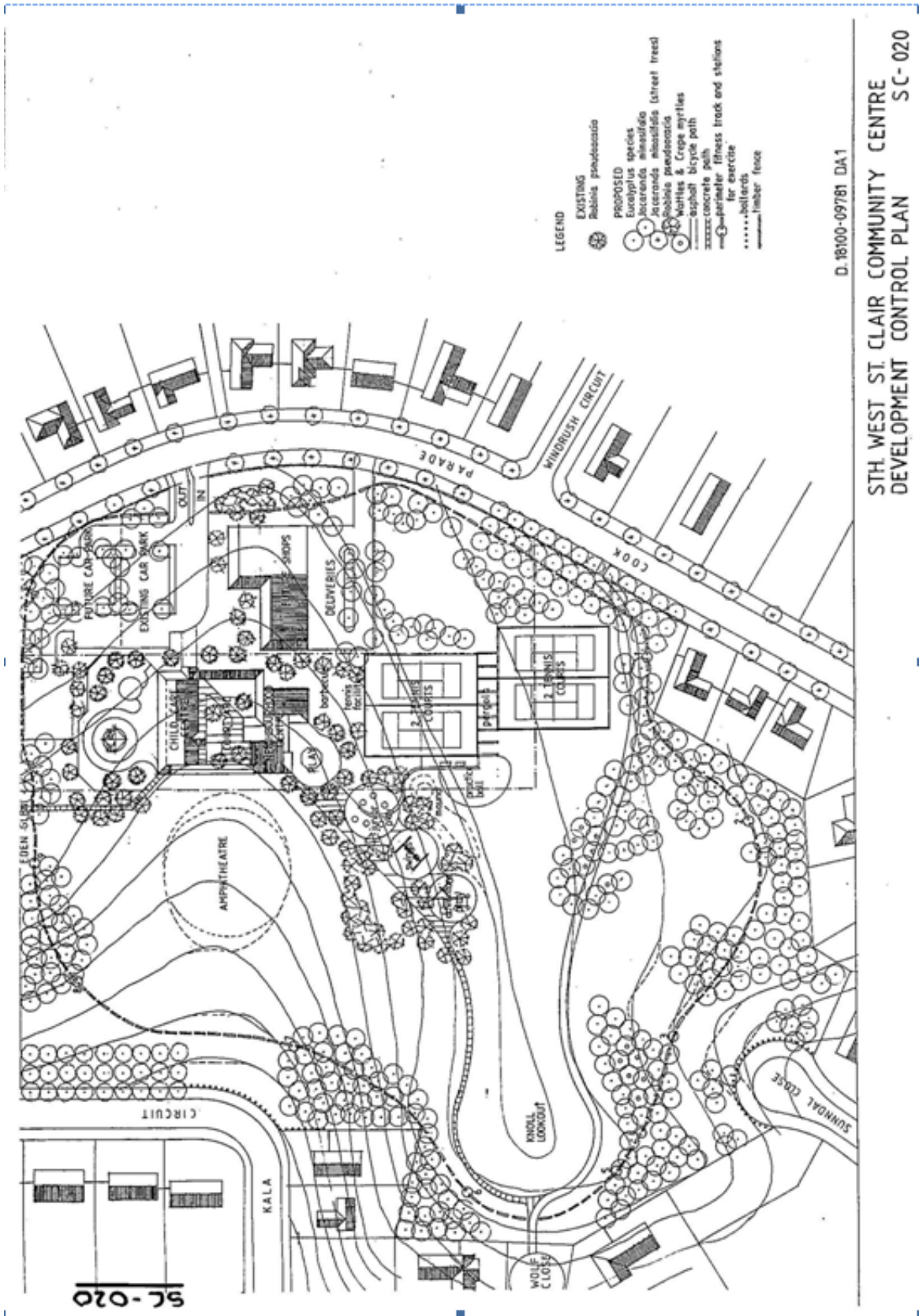


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E15 Part A St Marys Town Centre

A. Background

This section applies to development on land covered by the St Marys Town Centre as shown in Figure E15.2. This section provides specific controls for the St Marys Town Centre in addition to the general controls elsewhere in this DCP.

The aim of the controls in this section of the DCP is to provide more detailed provisions for development in the St Marys Town Centre that will:

- a) Contribute to the growth and character of St Marys;
- b) Deliver a balanced social, economic and environmental outcome; and
- c) Protect and enhance the public domain.

B. General Objectives

- a) To facilitate the revitalisation of St Marys Town Centre by promoting redevelopment and urban sustainability;
- b) To promote high quality urban design, architectural excellence and environmental sustainability in the planning, development and management of the Town Centre;
- c) To provide for mixed use, commercial and residential development within the Town Centre which provides high levels of amenity for occupants;
- d) To provide high levels of accessibility within the Town Centre, connecting significant activity nodes, public open space and surrounding residential areas;
- e) To encourage development within St Marys Town Centre that gives primacy to the public domain and creates an attractive and vibrant centre;
- f) To encourage integration of the residential and non-residential land uses and improved access to transport facilities;
- g) To achieve an attractive and sustainable St Marys Town Centre; and
- h) To ensure that development in the St Marys Town Centre is consistent with the desired future character of each precinct as described in the following section.

C. Town Centre character areas

St Marys Town Centre is the vibrant heart of the St Marys area, providing diverse experiences and services within a friendly atmosphere. St Marys Town Centre is the second highest order centre (retail/commercial districts) within the Penrith Local Government Area after the Penrith City Centre.


St Marys Town Centre is built on the existing street patterns established in the 19th century. Queen Street links the Great Western Highway with the railway line and remains the focus of the Town Centre.

The plan for the St Marys Town Centre includes the establishment of two distinct gateways, which, coupled with the creation of a central town square, aims to revitalise the heart of the town. To further assist the continuing redevelopment of the area, the existing commercial centres have been expanded towards Queen Street to further animate the street. The inclusion of the shopping centres into the fabric of the Town Centre strikes a balance between the benefits of street retail life and the convenience of shopping centres.

A large part of St Marys Town Centre is zoned B4 Mixed Use which provides for greater diversity and an integration of land uses appropriate to the success of a sustainable and prosperous town centre.

Figure E15.2: Map of St Marys Town Centre



 Area covered by St Marys Town Centre

There are seven precincts identified in the St Marys Town Centre (see Figure E15.3), all with their own distinct characteristics. Generally, the identified activity precincts acknowledge and reinforce existing patterns of use in the Town Centre. The intention is to allow for a clearly legible series of precincts that define the retail and commercial centre whilst promoting mixed use to be implemented appropriately. The intended character of these precincts is identified below and will be used to inform and guide future development.

1. Northern: East + West (Mixed use)

The Northern Mixed Use precinct adjacent to the Railway station is the northern gateway to St Marys Town Centre. This precinct provides a key focus for the revitalisation of St Marys Town Centre. This precinct is divided by Queen Street into two discrete portions; namely Northeast and Northwest. Each portion has its own particular precinct controls.

Building heights of up to 32m, demonstrating adequate solar access to the public domain, and street frontage heights are permissible in this precinct to emphasise the arrival to St Marys Town Centre from the railway.

This precinct will be well lit and heavily used by pedestrians. Pedestrian connections will be provided to encourage human activity and interaction (foot traffic). Public art within the streetscape will be encouraged. Traffic flows will be limited.

Improvements to accessing the north western section for both vehicles as well as pedestrians/cyclists will be encouraged. New development will incorporate residential uses that overlook the street. The shopping centre will increase its active frontages and provide better connectivity to Queen Street.

The existing commercial centre is expanded westwards to create a more direct connection to Queen Street activities. The western portion of the precinct will incorporate a substantial amount of public/commuter parking.

2. Queen Street: East + West (Mixed use)

Queen Street is the focus of the town's activities. Most of the shops, together with cafes, restaurants and community activities will locate here to add vibrancy to the street life. It is the town's 'spine' linking the Great Western Highway in the south to the Railway Station in the north.

Variations in site depths on either side of Queen Street, namely the west and eastern sections, determine different development opportunities. This section of the DCP acknowledges these differences; hence variations in controls will apply.

The strong avenue of street trees, low scale fronts, awnings and wide footpaths make Queen Street an ideal environment for al-fresco dining.

The street's role, as the main spine of the town centre, will be reinforced. A maximum podium height is maintained at street frontage.

Residential opportunities will be provided at a setback above the podium fronting onto Queen Street. Queen Street's cross section will allow sufficient daylight into the street, providing ideal tree growth and sunny sidewalk dining conditions. Access to residential development will be via rear lanes.

The taller built form in behind Queen Street will be orientated east-west to provide northern exposure to the buildings and to maintain views to the mountains. Views to the Blue Mountains are found along each of the side streets primarily to the west and should be maintained at street level.

Improved pedestrian permeability will create better connections between the town and adjacent residential areas. An extension of Chapel Street is proposed which will form a main east-west crossing approximately half way along Queen Street. This street will act as the northern boundary of the Town Square and connect to a green corridor along the north of the Western Commercial Centre, linking west to the Leisure Centre and creek open space.

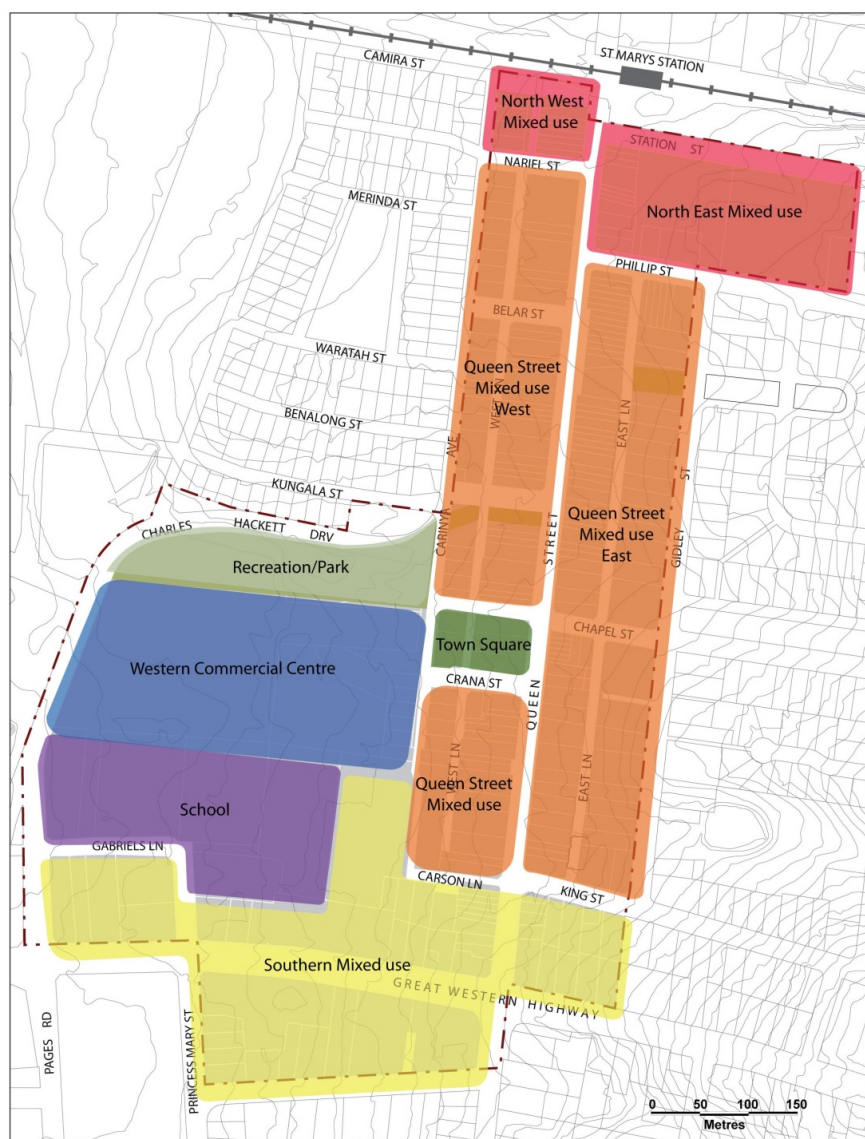
It is envisaged, however, that in a longer term, a more centrally located compact urban park should be located in proximity to the central square and address Queen Street.

3. Town Square

Every town needs a place to gather, to celebrate and to come together as a community. A new Town Square precinct will be created at the intersection of Chapel and Queen Streets and will focus on community uses. Active frontages will face the square. A pedestrian entrance will be located on the western side of the square to an extended shopping centre (Western Commercial Centre) in order to better connect the commercial centre to the town centre.

The maximum height of buildings surrounding the square is defined in Figure E15.12.

Figure E15.3: Town Centre Character Areas



- Area covered by St Marys Town Centre
- Northern Mixed Use
- Queen Street Mixed Use
- Town Square
- Western Commercial Centre
- School
- Southern Mixed Use
- Recreation/Park

4. Western (Commercial Centre)

The commercial centre to the west of the Town Square is to be extended eastward up to the new square. It is envisaged that a natural pedestrian desire line will be created along Queen Street from the Western Commercial Centre to the Northern Mixed use zone, which also contains a commercial centre. A major pedestrian access is to be provided onto Carinya Avenue in the vicinity of Crana Street adjacent to the Town Square.

5. Southern (Mixed use)

The Southern Mixed Use area along the Great Western Highway includes the southern gateway to the Town Centre. Development within this precinct provides a gateway statement improving the sense of arrival to the St Marys Town Centre as well as providing a link to the Cultural Centre and surrounding precincts. High quality architectural buildings will be created to provide prominent statements.

While this area is zoned mixed use, its proximity to the noise and traffic of the highway lends this area to larger footprint commercial or retail uses. A 16m height limit applies across the zone. A lower street edge height of 6m applies along Sainsbury Street in order to acknowledge the existing residential area to the south. Any development in the vicinity of the historic houses on the south western corner of the block should provide a curtilage to the satisfaction of Council.

The south western corner of Queen Street and the Great Western Highway is the Council's Arts and Community centre. Enhanced landscaping and the angled facades of the buildings on the other corners will give this intersection a unique character.

6. School

St Marys Public School is located on the southern end of the Western Commercial Centre. A pedestrian link is proposed at the northern end of the school connecting Carinya Avenue and Charles Hackett Drive. This will replace an existing pathway and connect Queen Street and the school through the new Square and central Queen Street's urban spine.

7. Recreation/Park

To the north of the Western Commercial Centre is the Recreation Park separated by the extension of Chapel Street west which links the Leisure Centre and creek area to the west. Chapel Street's extended boulevard treatment together with the northern adjacent green east-west corridor, allows the landscape elements to filter through the Town Centre. This combination of park and boulevard will replace the current car park to the north west of the Commercial Centre along Charles Hackett Drive. The park will represent historic watercourses and will be planted with local species. Active uses and pedestrian entrances will be encouraged along the northern side of the Commercial Centre.

D. Town Centre structure

Towns and cities are dependent upon their urban structure, i.e. their patterns of roadways and open spaces, to create a distinctive urban identity. This pattern not only distinguishes the urban centre from other centres but enables an urban centre to grow and incorporate a range of diverse activities and functions.

This DCP is primarily focused on the built form controls and providing appropriate controls to ensure the protection of pedestrian amenity within the Town Centre. However, it is worthwhile to highlight the broader civic objectives which underpin the workings of the DCP. These are:

- a) Reinforcing the role of Queen Street as the primary north/south axis and retaining the human scaled character of this boulevard;

- b) Introducing Chapel Street as the secondary east/west axis linking open green space to lower west (Wianamatta Creek);
- c) Creating both a centrally located Square and Park celebrating the junction of the above two main urban axes;
- d) Ensuring the distinctive panoramas and vistas to the western escarpment of the Blue Mountains are enhanced;
- e) Strengthening the Gateway Entrances; i.e. southern gateway entrance at the junction of Queen Street with the Great Western Highway as well as the northern public transport gateway entrance adjacent to the Railway Station;
- f) Improving permeability through the south western precincts of Western Commercial Centre, School and Southern Mixed Use as well as the Northern Mixed Use Precincts;
- g) Allowing greater access to the Town Centre at all levels by utilising peripheral routes, such as Charles Hackett Drive/Carinya Avenue to the west and Gidley Street and possible northern extensions to the east;
- h) Re-connecting the Duration Cottage Precinct to the Town Centre through more direct paths and roadways; and
- i) Positioning future public car parking facilities adjacent to major retail destinations and public transport interchanges.

All of the above urban design objectives assist in producing a focused urban image of St Marys Town Centre and the detail design issues of the DCP work in concert with achieving that end.

15.1. Land use controls

15.1.1 Residential development controls

A. Objectives

- a) To ensure that residential development provides a mix of dwelling types and sizes to cater for a range of household types;
- b) To ensure that dwelling layout is sufficiently flexible for the changing needs of residents over time;
- c) To ensure a sufficient proportion of dwellings include accessible layouts and features to accommodate the changing requirements of residents; and
- d) To ensure the provision of housing that will, in its adaptable features, meet the access and mobility needs of any occupant.

B. Controls

In addition to controls for apartment mix in Part 3 of the Residential Flat Design Code, the following controls apply:

- 1) Where residential units are proposed at ground level, a report must be provided with the development application demonstrating how future non-residential uses can be accommodated within the ground level design. The report must address:
 - a) Access requirements including access for people with a disability;
 - b) Any upgrading works necessary for compliance with the Building Code of Australia; and
 - c) Appropriate floor to ceiling heights.

- 2) For smaller developments of up to six dwellings, the proposal must demonstrate how the dwelling mix is appropriate to the locality.
- 3) For developments containing more than six dwellings, a mix of living styles, sizes and layouts is to be achieved by providing:
 - a) A mix of bed-sitter/studio, one bedroom, two bedroom and three bedroom apartments;
 - b) Bed-sitter apartments and one bedroom apartments must not be greater than 25% and not less than 10% of the total mix of apartments within each development; and
 - c) Two bedroom apartments are not to be more than 65% of the total mix of apartments within each development.
- 4) 10% of all dwellings or a minimum one dwelling, whichever is the greater, must be designed in accordance with the Australian Adaptable Housing Standard (AS 4299-1995), to be capable of adaptation for people with a disability or elderly residents.
- 5) Where possible, the mandatory adaptable dwellings shall be located on the ground floor. Adaptable dwellings located above the ground level of a building may only be counted towards the minimum required where lift access from the basement is available within the building.
- 6) The development application must be accompanied by certification from an accredited Access Consultant confirming that the adaptable dwellings are capable of being modified, when required by the occupant, to comply with the Australian Adaptable Housing Standard (AS 4299-1995).
- 7) Car parking and garages allocated to adaptable dwellings must comply with the requirements of the relevant Australian Standard regarding parking for people with a disability.

15.1.2 Mixed use development controls

A. Objectives

- a) To encourage a variety of mixed use developments in the Town Centre;
- b) To create lively streets and public spaces in the Town Centre;
- c) To increase the diversity and range of shopping and recreational activities for workers, residents and visitors;
- d) To enhance public safety by increasing activity in the public domain on week nights and on weekends;
- e) To minimise potential conflicts and achieve compatibility between different uses;
- f) To ensure that the design of mixed use developments addresses residential amenity;
- g) To create legible safe access and circulation in mixed use developments; and
- h) To ensure that mixed use developments address the public domain and the street.

B. Controls

- 1) Mixed use developments must provide flexible building layouts which allow greater adaptability of the floor area of, or tenancies on, the first floor of a building above the ground floor.
- 2) The ground floor of all mixed use developments is to have a minimum floor to ceiling height of 3.5m in order to provide for flexibility of future use. Above ground level,

minimum floor to ceiling heights are 3.3m for commercial office, 3.5m for active public uses, such as retail and restaurants, and 2.7m for residential uses.

- 3) The commercial and residential activities of the building are to have separate service provision, such as loading docks and residential access, servicing needs.
- 4) Mixed use developments are to provide commercial frontage (retail/business/office premises) as a part of the development as shown in Figure E15.4 for ground floor and Figure E15.5 for first floor. Variation may be considered to this control if it can be demonstrated that the proposed commercial use will not interfere with the amenity of the surrounding area. Variation may also be considered for residential at ground floor in order to provide adaptable housing.
- 5) Residential entries shall be clearly marked and provide direct access to the street. Vehicular access is to be from rear lanes, where practicable and possible. Pedestrian entrances are to address the main streets.
- 6) Commercial and residential uses should have clearly separate entries and vertical circulation.
- 7) Security access controls must be provided to all entrances into private areas, including car parks and internal courtyards.
- 8) Buildings are to front onto major streets with active uses.
- 9) Blank building walls at ground level are to be avoided.

15.2 Built form controls

Figure E15.4: Ground Floor Commercial



-  Area covered by St Marys Town Centre
-  Ground Floor Commercial

* Setbacks & building heights control apply.

Figure E15.5: First Floor Commercial



- Area covered by St Marys Town Centre
- First Floor Commercial

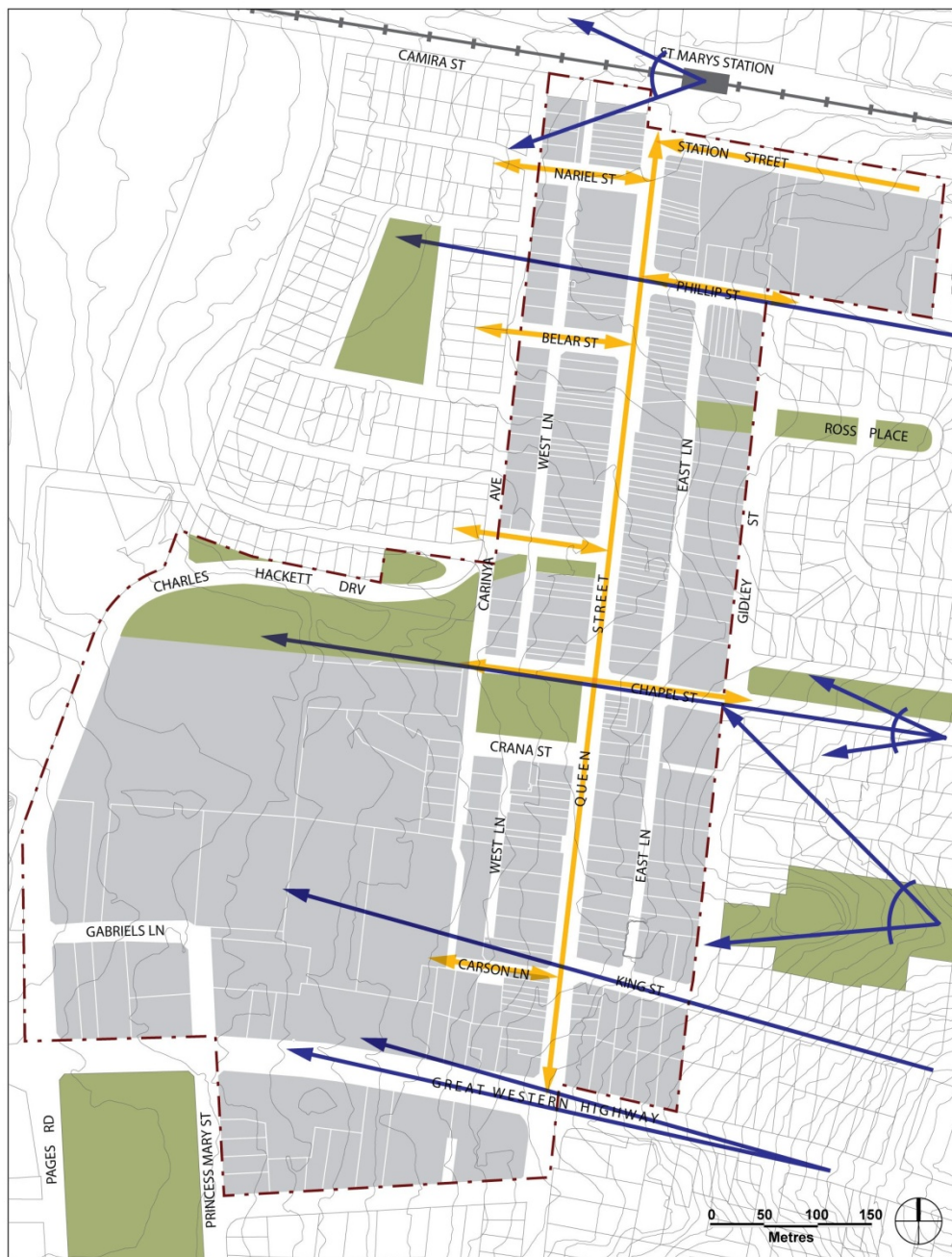
* Setbacks & building heights control apply.




A. Objectives

In addition to the general objectives of this Section, the objectives of this section are to:

- a) Establish an appropriate scale, dimension, form and separation of buildings;
- b) Provide a strong definition of the public domain;
- c) Achieve active street frontages with good physical and visual connections between buildings and the street;
- d) Ensure there is consistency in the main street frontages of buildings by having a common alignment to improve accessibility;
- e) Provide for pedestrian comfort and protection from weather conditions;
- f) Define the public street to provide spaces that are clear in terms of public accessibility and safety, and are easy to maintain;
- g) Ensure building depth and bulk is appropriate to the environmental setting and landform by providing for view sharing and good internal building amenity;
- h) Ensure building separation is adequate to protect amenity, daylight penetration and privacy between adjoining developments;
- i) Encourage mixed use development with residential components that achieve active street fronts and maintain good residential amenity;
- j) Achieve an articulation and finish of building exteriors that contribute to a high quality of design excellence;
- k) Provide for high quality landscape to contribute to the amenity of the Town Centre and a sustainable urban environment;
- l) Maintain and enhance important views from the Town Centre and railway concourse to surrounding natural landscape features as depicted in Figure E15.6: Views;
- m) Contribute to the legibility of the City; and
- n) Ensure that buildings are responsive to the character and heritage values of the St Marys Town Centre.

Figure E15.6: Views



-  Area covered by St Marys Town Centre
-  Regional - Views to mountains
-  Local Views within Town Centre

15.2.1 Building to street alignment and street setbacks

A. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Establish consistent building alignments to the street;
- b) Provide street setbacks appropriate to building function and character;
- c) Establish the desired spatial proportions of the street and define the street edge;
- d) Create a transition between public and private space;
- e) Locate active uses, such as shopfronts, closer to pedestrian activity areas;
- f) Allow for street landscape character, where appropriate;
- g) Maintain sun access to the public domain; and
- h) Protect important views to the Blue Mountains.

B. Controls

- 1) Street building alignments are to be provided as specified in Figure E15.7.
- 2) Balconies may project up to 600mm into front building setbacks, provided the cumulative width of all balconies at that particular level totals no more than 50% of the horizontal width of the building façade, measured at that level.
- 3) Minor projections into front building lines and setbacks for sun shading devices, entry awnings and cornices are permissible.
- 4) Buildings along Queen Street must demonstrate that views to the Blue Mountains escarpment are maintained through the provision of technically accurate perspectives to the satisfaction of Council officers.

Figure E15.7: Specific Street Alignment and Street Setbacks



15.2.2 Street frontage heights

A. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Provide consistent streetscapes through control of the built form visible from the public domain;
- b) Achieve comfortable street environments for pedestrians in terms of daylight, scale, sense of enclosure and wind mitigation as well as healthy environments for street trees;
- c) Allow sunlight access to new and existing significant public spaces in the Town Centre;
- d) Provide for an appropriate transition in building heights from key public spaces; and
- e) Maintain views to the Blue Mountains.

B. Controls

- 1) Buildings must comply with the relevant street frontage heights and setbacks for development above street frontage height as shown in Figure E15.8 and illustrated in Figures E15.9 to E15.14.
- 2) For development abutting/adjoining the Town Square and the railway precinct, applicants must undertake modelling as part of the development application to demonstrate that the development does not adversely overshadow the adjoining public places (Town Square etc.).
- 3) Development on or extending to Carinya Avenue must step down in height and demonstrate that the development does not adversely impact the abutting/adjoining residential area.

Figure E15.8: Street Frontage Heights

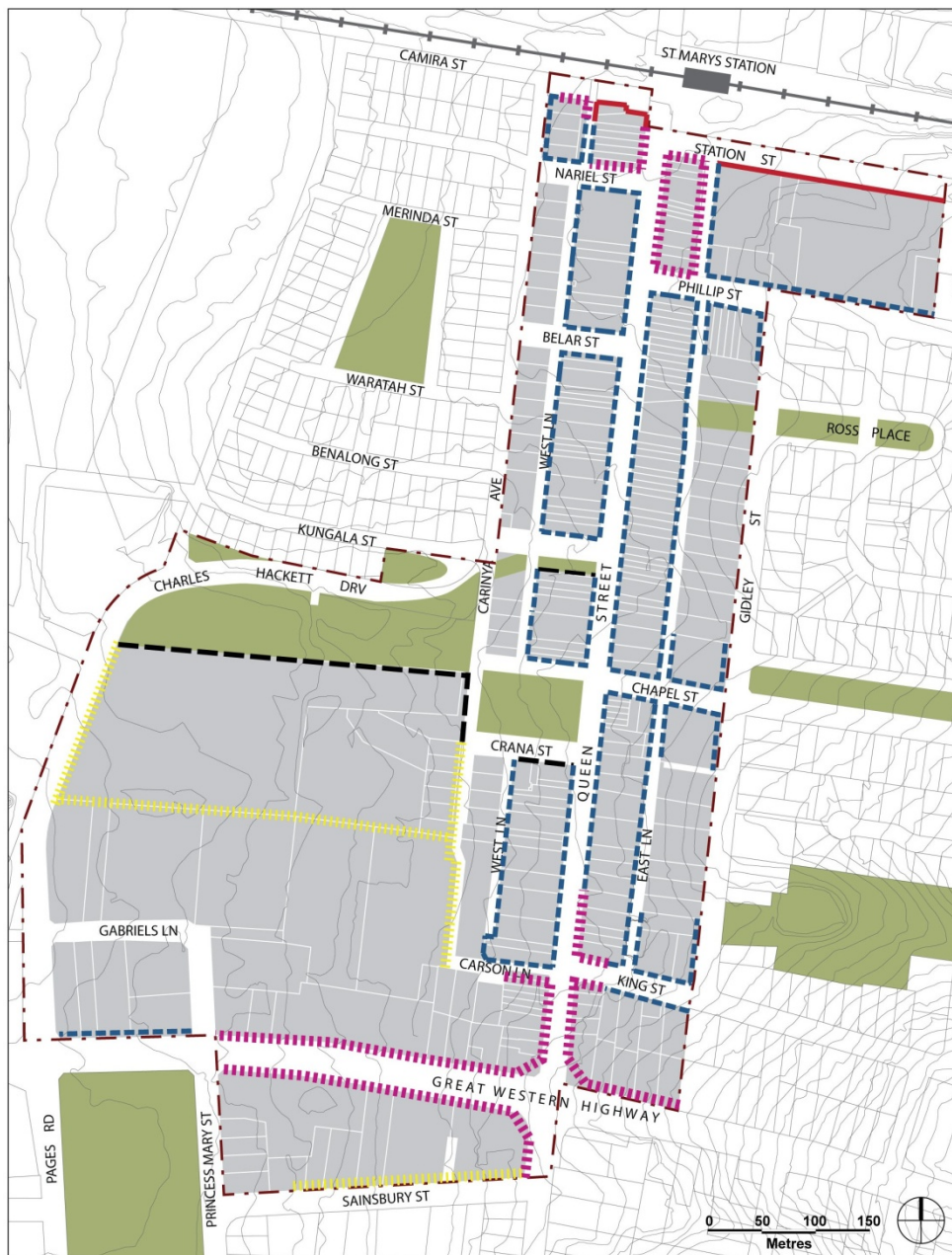


FIGURE 2.1: STREET FRONTAGE HEIGHTS

- Area covered by St Marys Town Centre
- Street frontage maximum height 6m applies
- Street frontage maximum height 9-12m applies
- Street frontage maximum height 16m applies
- Street frontage maximum height 24m applies
- Street frontage maximum height 32m applies

Where unspecified: Subject to prevailing conditions and merit assessment

Figure E15.9: Typical Sections







-  Area covered by St Marys Town Centre
-  Common areas
-  Extent of common areas
-  Typical Sections

Figure E15.10: Typical Section for Area A

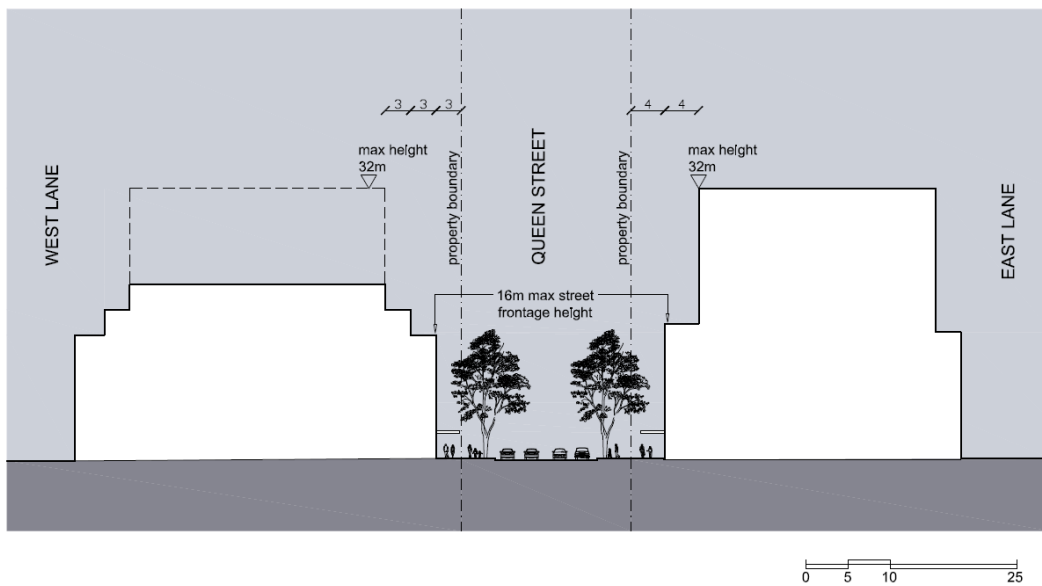
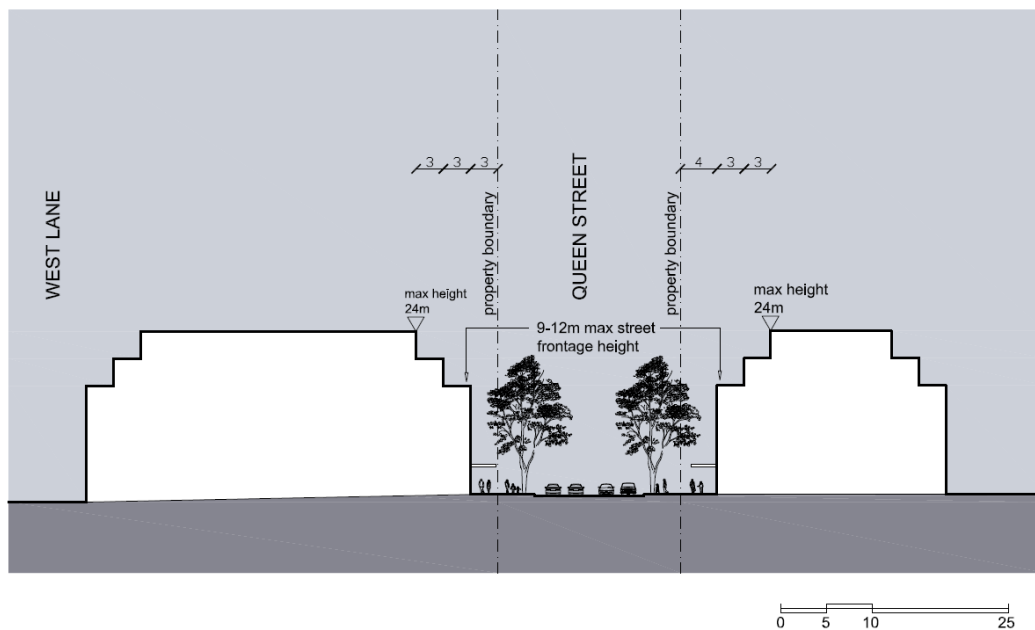


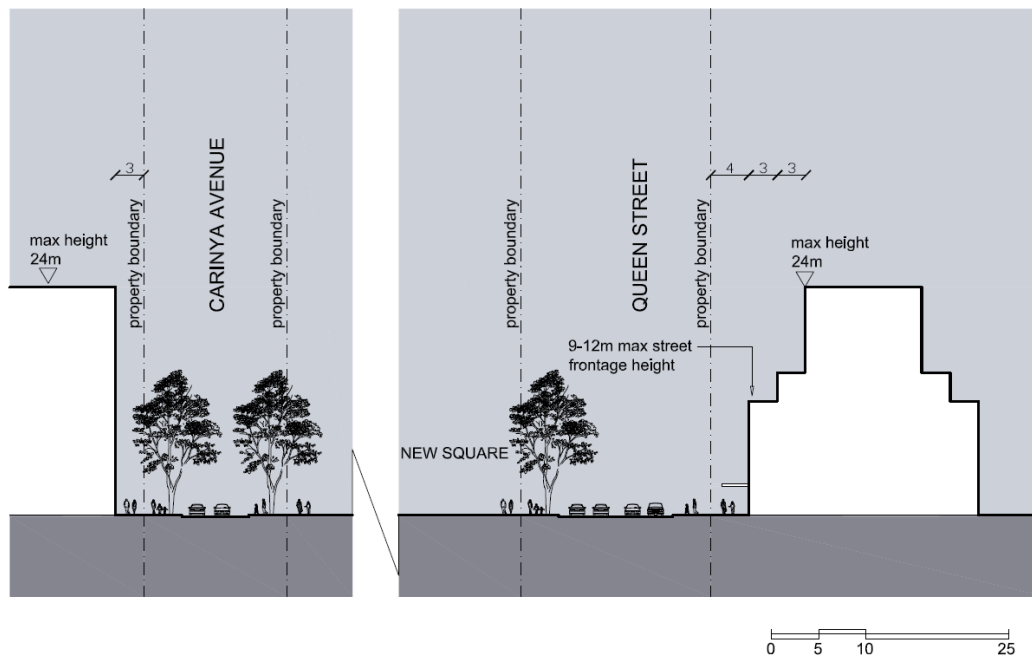
Figure E15.11: Typical Section for Area B



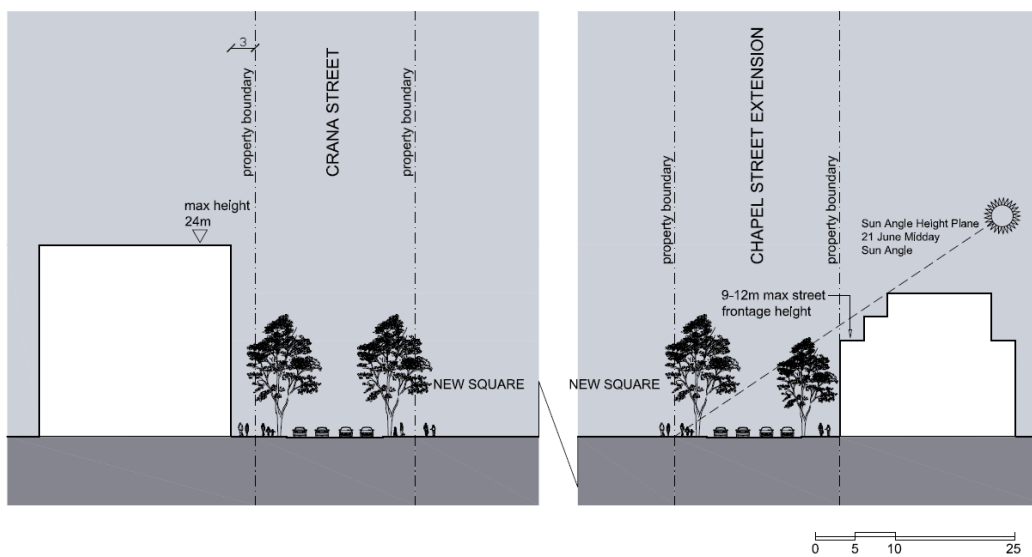
Note: Maximum height is subject to provision of adequate solar access to public domain and neighbouring properties.

Figure E15.12: Typical Section for Area C

East-West section



North-South section



Note: Maximum height is subject to provision of adequate solar access to public domain and neighbouring properties.

Figure E15.13: Typical Section for Area D

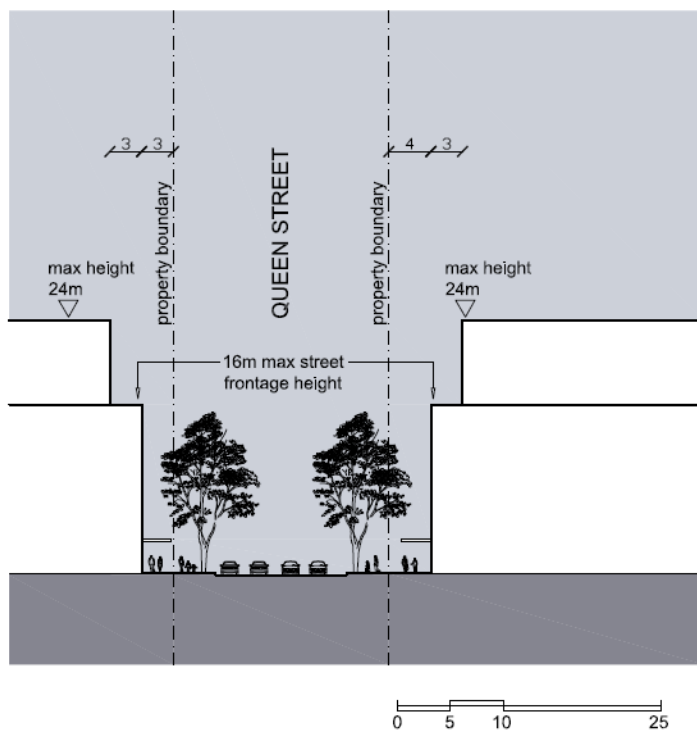
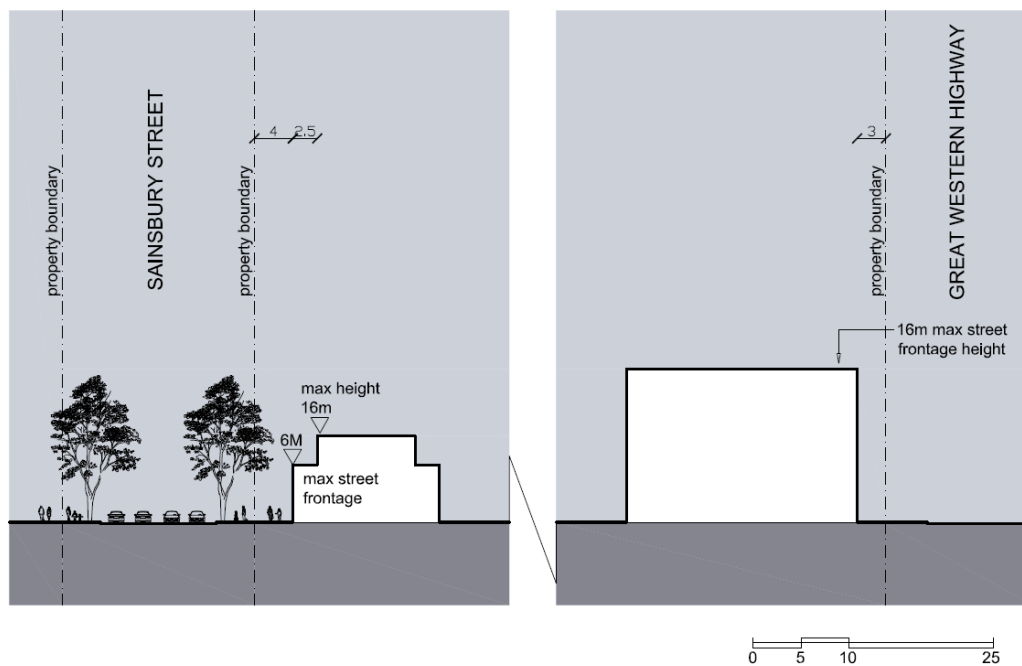


Figure E15.14: Typical Section for Area E



Note: Maximum height is subject to provision of adequate solar access to public domain and neighbouring properties.

15.2.3. Maximum building heights and lot layout requirements

A. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Ensure an appropriate scale between new development and street width, local context, adjacent buildings and public domain; and
- b) Ensure appropriate management of overshadowing, access to sunlight and privacy.

B. Controls

- 1) Building height will generally be restricted to a maximum podium height addressing the main streets (see Figures E15.09 to E15.14), with additional set backed residential development (with exception to buildings within the North West and North East Mixed Use Precincts which are considered as special precinct areas).

Note: The applicant should demonstrate that the prospective design does not adversely affect the solar access of neighbouring existing buildings particularly during winter solstice noon.

- 2) A minimum site width of 24m is required for any mixed use development.
- 3) Buildings will not extend or bridge over laneways (with the exception of the North West Mixed Use Precinct).
- 4) An access driveway of 3m is to be provided at the boundaries of an amalgamated block, when developed. This will result in the formation of a laneway of 6m on development of the adjacent amalgamated block. This laneway will be shared by both developments.

15.2.4. Building Depth and Bulk

A. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Provide viable and useable commercial floor space;
- b) Allow for view sharing and view corridors; and
- c) Reduce the apparent bulk and scale of buildings by breaking up expanses of building wall with modulation of form.

B. Controls

- 1) The maximum gross floor area and depth of buildings are specified in Table E15.1.
- 2) Notwithstanding the above, no building above 24m in height is to have a building length in excess of 50m.
- 3) All points of an office floor should be no more than 10m from a source of daylight (e.g. window, atria or light wells).
- 4) Atria, light wells and courtyards are to be used to improve internal building amenity and achieve cross ventilation and/or stack effect ventilation.

Table E15.1: Maximum gross floor area and depth of buildings

Area	Building Use	Condition	Maximum gross floor area	Maximum building depth (includes balconies)
Northern Mixed use	Residential	Above 12m height	710m ²	18 m
	Non-residential	Above 12m height	900m ²	25 m
Southern Mixed Use	Residential	Above 12m height	600m ²	18 m
	Non-residential	Above 12m height	900m ²	25 m
Queen Street Mixed Use	Residential	Above 12m height	-	18m
	Non-residential	Above 12m height	-	20m
All Other	All	Above 12m height	750m ²	18m

15.2.5 Boundary setbacks and building separation

A. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Ensure an appropriate level of amenity for building occupants in terms of daylight access, outlook, view sharing, ventilation, wind mitigation and privacy; and
- b) Achieve usable and pleasant streets and public domain areas in terms of wind mitigation and daylight access.

B. Controls

- 1) The minimum side and rear building setbacks are specified in Table E15.2.
- 2) Side and rear setbacks are required to be built to the property boundary. Where this cannot be achieved, the minimum setback shall be 6m to ensure that the setback area is sufficient to provide daylight access, useable outdoor space and landscaping.
- 3) If the specified setback distances cannot be achieved when an existing building is being refurbished or converted to another use, appropriate visual privacy levels are to be achieved through other means.

Table E15.2: Minimum side and rear building setbacks

Building height and use	Minimum Side and Rear Setback
Non-residential uses:	
– up to 12m	0m
– 12m to 24m	6m
– above 24m	9m
Residential uses up to 12m height:	
– non-habitable rooms	3m
– habitable rooms	6m
Residential uses 12m to 24m height:	
– non-habitable rooms	4.5m
– habitable rooms	9m
Residential uses above 24m height:	
– non-habitable rooms	6m
– habitable rooms	12m

15.2.6 Site coverage and deep soil zones

A. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Provide an area on sites that enables soft landscaping and deep soil planting, permitting the retention and/or planting of trees that will grow to a large or medium size;
- b) Limit building bulk on a site and improve the amenity of developments, allowing for good daylight access, ventilation and improved visual privacy; and
- c) Provide passive and active recreational opportunities.

B. Controls

- 1) The maximum site cover and minimum deep soil zone for development is specified in Table E15.3.

Table E15.3: Maximum site cover and minimum deep soil zone

Area	Maximum Site Cover	Minimum Deep Soil Zone (% of Site Area)
Northern Mixed Use	100%	0%
Mixed Use east of Queen street	100%	0%
Mixed Use west of Queen Street	50%	25%
Residential All other areas	70%	10%

- 2) The deep soil zone is to be provided in one continuous block. If multiple deep soil zones are provided, they must have a minimum dimension (in any direction) of 6m.
- 3) Where non-residential developments result in full site coverage and there is no capacity for water infiltration, the deep soil component must be provided on the structure, in accordance with the provisions of Sections 15.2.7 and 15.2.8 below. In such cases, compensatory stormwater management measures must be integrated within the development to minimise stormwater runoff.
- 4) Planting on roof tops or over carport structures can be provided as a component of the mixed use development.
- 5) Green spaces as community gardens/private open space between buildings and car park entrances can be provided at the rear of buildings.
- 6) Where deep soil zones are provided, they must accommodate existing mature trees as well as allowing for the planting of additional vegetation that will grow to be mature trees.
- 7) No structures, works or excavations that may restrict vegetation growth are permitted in deep soil zones (including, but not limited to, car parking, hard paving, patios, decks and drying areas).

15.2.7. Landscape design

A. Background

Landscape design includes the planning, design, construction and maintenance of all utility, open space and garden areas. Water sensitive urban design principles are encouraged and should be applied as much as possible. Good landscaping provides breathing space, passive and active recreational opportunities and enhances air quality. It is fundamental to the amenity and quality of outside space for residential flats.

The topography of St Marys Town Centre slopes from east to west towards the creek. The natural drainage patterns have been reflected in the east west landscape elements existing in the Town Centre. This existing pattern should be reinforced by allowing deep planting zones between the proposed east-west building forms on either side of Queen Street creating green corridors. Figure E15.15 shows how existing green links, such as Charles

Hackett Drive, will be extended to Queen Street via the existing Kungala Street open space. Ross Place will also be extended to East Lane.

Where streets vary in scale and character, trees and plantings should be used to enhance the character of each street and place, and create diversity through the Town Centre. Many of the existing local parks should be upgraded to improve circulation, recreation opportunities and ecological value. The design of each park and open space area should reflect the function of the place, its existing or potential character, and its place in the overall structure and hierarchy of the public domain. The design of these spaces should also contribute to providing a good amount of public amenity within the Town Centre.

B. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Ensure that the use of potable water for landscaping irrigation is minimised;
- b) Ensure landscaping is integrated into the design of development;
- c) Add value and quality of life for residents and occupants within a development in terms of privacy, outlook, views and recreational opportunities;
- d) Give the Town Centre a strong landscape character and contribute to the reduction of surface stormwater runoff;
- e) Introduce small deciduous trees on east-west streets in the commercial core, and retain sunlight penetration to the south side of streets;
- f) Create an opportunity of visual and symbolic interpretation with the landscape of regional parklands, the mountains and historic watercourses;
- g) Create an ongoing City ecology by using appropriate species for the area; and
- h) Select predominantly evergreen trees to reduce the impact of concentrated seasonal leaf drop.

C. Controls

- 1) Recycled water should be used to irrigate landscaped areas.
- 2) Commercial and retail developments are to incorporate planting into accessible outdoor spaces.
- 3) Remnant vegetation must be maintained throughout the site, wherever practicable.
- 4) A long term landscape concept plan must be provided for all landscaped areas, including the deep soil zone, in accordance with Landscape Design Section. The plan must outline how landscaped areas are to be maintained for the life of the development.
- 5) Landscaping concepts should be guided by Figure E15.15.

Figure E15.15: Green Links and Landscaping Framework



- Area covered by St Marys Town Centre
- Existing avenue trees
- Small deciduous trees
- East-west overland flow corridors (framework of evergreen trees)
- Enhanced park planting
- Opportunity for enhanced carpark planting
- Enhanced/new pedestrian plaza or square
- Enhanced streetscape as entry statement & 'gateway' precinct
- Opportunity for green roof
- Existing Parks

15.2.8 Planting on structures

A. Objectives

In addition to the objectives for Built Form, the objectives of this section are to:

- a) Contribute to the quality and amenity of open space on roof tops and internal courtyards;
- b) Encourage the establishment and healthy growth of greening in urban areas; and
- c) Minimise the use of potable water for irrigating planting on structures.

B. Controls

- 1) Planting should be designed for optimum conditions for plant growth by:
 - a) Providing soil depth, soil volume and soil area appropriate to the size of the plants to be established;
 - b) Providing appropriate soil conditions and irrigation methods; and
 - c) Providing appropriate drainage.
- 2) Planters should be designed to support the appropriate soil depth and plant selection by:
 - a) Ensuring planter proportions accommodate the largest volume of soil possible and soil depths to ensure tree growth; and
 - b) Providing square or rectangular planting areas rather than narrow linear areas.
- 3) Minimum soil depths should be increased in accordance with:
 - a) The mix of plants in a planter, for example, where trees are planted in association with shrubs, groundcovers and grass;
 - b) The level of landscape management, particularly the frequency of irrigation;
 - c) Anchorage requirements of large and medium trees; and
 - d) Soil type and quality.

15.3 Other controls

15.3.1 Pedestrian amenity

The pedestrian environment provides people with their primary experience of and interface with the Town Centre. This environment needs to be safe, functional and accessible to all. It should provide a wide variety of opportunities for social and cultural activities.

Pedestrian amenity incorporates all those elements of individual developments that directly affect the quality and character of the public domain. The pedestrian amenity provisions are intended to achieve a high quality of urban design and pedestrian comfort in the public spaces of the Town Centre.

The Town Centre's lanes, arcades and through site links should form an integrated pedestrian network providing choice of routes at ground level for pedestrians. The controls in this section aim to increase the vitality, safety, security and amenity of the public domain by:

- a) Encouraging future through site links at ground level;
- b) Ensuring active street frontages and positive building address to the street;
- c) Ensuring provision of awnings as shown in Figure E15.18; and
- d) Protecting significant views and vistas along streets.

1. Permeability

A. Objectives

- a) To improve access in the Town Centre by providing through site links as redevelopment occurs;
- b) To retain and enhance existing through site links as redevelopment occurs;
- c) To encourage active street fronts along the length of through site links where possible;
- d) To provide for pedestrian amenity and safety;
- e) To retain and develop lanes as useful and interesting pedestrian connections as well as for service access; and
- f) To improve the permeability of large sites when they are redeveloped for more intensive uses.

B. Controls

- 1) Through site links are to be provided as shown in E15.16 with accessible paths of travel that are:
 - a) A minimum width of 4m for its full length and clear of all obstructions including columns, stairs, etc;
 - b) Direct and publicly accessible thoroughfares for pedestrians; and
 - c) Open-air for its full length and have active frontages or a street address.
- 2) Existing dead end lanes are to be extended through to the next street as redevelopment occurs.
- 3) New through site links should be connected with existing and proposed through block lanes, shared zones, arcades and pedestrian ways and opposite other through site links.
- 4) Existing publicly and privately owned links are to be retained.
- 5) Signage is to be located at street entries indicating public access through the site as well as the street to which the link connects.
- 6) Arcades are to:
 - a) Have a minimum width of 4m for the full length which is clear of all obstructions including columns, stairs, etc;
 - b) Be direct and publicly accessible for pedestrians during business trading hours;
 - c) Be designed as an accessible path of travel for persons with a disability and incorporate the 'safer by design' principles;
 - d) Have active frontages on either side for the full length;
 - e) Where practical, have access to natural light for at least 30% of the length; and
 - f) Where enclosed, have clear glazed entry doors to at least 50% of the entrance.
- 7) Lanes are to be designated pedestrian routes that are:
 - a) Accessible paths of travel, with a minimum width of 6m for the full length, which is clear of all obstructions;
 - b) Designed, paved and well lit; and
 - c) Appropriately signposted indicating the street(s) to which the lane connects.

Figure E15.16: Existing and Desired Links



- Area covered by St Marys Town Centre
- Existing pedestrian links to be retained
- Desired new pedestrian links
- Desired roadway
- Desired secondary pedestrian links

2. Active street frontages and address

A. Objectives

- a) To promote pedestrian activity and safety in the public domain;
- b) To maximise active street fronts in St Marys Town Centre;
- c) To define areas where active streets are required or outdoor dining is encouraged; and

- d) To encourage an address to the street outside of areas where active street frontages are required.

B. Controls

- 1) Active street fronts must be provided in locations as shown in the LEP maps.
- 2) Outdoor dining areas are encouraged in areas shown in Figure E15.17.
- 3) Active frontage uses are defined as one or a combination of the following, at street level:
 - a) An entrance to retail premises;
 - b) A shop front;
 - c) Glazed entries to commercial and residential lobbies occupying less than 50% of the street frontage, to a maximum of 12m frontage;
 - d) A café or restaurant if accompanied by an entry from the street;
 - e) Active office uses, such as a reception, if visible from the street; and
 - f) A public building, if accompanied by an entry.
- 4) Ground floor active street frontage uses are to be at the same level as the adjoining footpath and must be directly accessible from the street.
- 5) Restaurants, cafes and the like are to consider providing openable shop fronts. A separate approval from Council is required under the Roads Act and Local Government Act for outdoor street dining.
- 6) Only open grill or transparent security shutters are permitted to retail frontages.
- 7) Street address is defined as entries, lobbies, and habitable rooms with clear glazing to the street. It is required on the ground level of buildings and should not be more than 1.2m above the street level.
- 8) Residential developments are to provide a clear street address and direct pedestrian access off the primary street front, and allow for residents to overlook all surrounding streets.
- 9) Large developments should provide multiple entrances including an entrance on each street frontage.
- 10) Residential buildings are to provide not less than 65% of the lot width as street address.

Figure E15.17: Outdoor dining encouraged



- Area covered by St Marys Town Centre
- Outdoor dining encouraged

3. Safety and security

A. Objectives

- a) To minimise opportunities for crime by incorporating environmental design in the development;
- b) To ensure developments are safe and secure for pedestrians;
- c) To contribute to the safety of the public domain; and
- d) To encourage a sense of ownership over public and communal open spaces.

B. Controls

- 1) Developments are to address the provisions of the Site Planning and Design Principles Section of this DCP as it relates to Crime Prevention through Environmental Design (CPTED) principles.
- 2) Building design, particularly for higher density residential buildings, are to allow for passive surveillance of public and communal spaces, accessways, entries and driveways.
- 3) For large scale retail and commercial development with a gross floor area of over 5,000m², a 'safety by design' assessment by a qualified consultant, is to be provided in accordance with the CPTED principles.
- 4) Certain types of development will be referred to Council's Community Safety Officer and, where appropriate, NSW Police in accordance with the CPTED protocol between Penrith City Council and NSW Police.

4. Awnings

A separate approval to erect an awning over the road reserve including a footpath will be required under the Roads Act and the Local Government Act.

A. Objectives

- a) To provide shelter from wind and rain for public streets where most pedestrian activity occurs;
- b) To address the streetscape by providing a consistent street frontage in the Town Centre; and
- c) To provide a visually integrated streetscape.

B. Controls

- 1) Continuous street frontage awnings are to be provided for all new developments as indicated in Figure E15.18.
- 2) Awnings should generally:
 - a) Be a minimum 2.8m deep where street trees are not required, otherwise a minimum 2.4m deep;
 - b) Have a minimum soffit height of 3.2m and a maximum of 4m;
 - c) Be stepped for design articulation or to accommodate sloping streets, integral with the building design and not exceed 700mm;
 - d) Be low profile, with slim vertical fascias or eaves (generally not to exceed 300mm height); and

- e) Be setback from the kerb to allow for clearance of street furniture, trees, etc (minimum 600mm).
- 3) Awning design must match building facades and be complementary to those of adjoining buildings.
- 4) Awnings must wrap around corners for a minimum of 6m.
- 5) Under-awning lighting, recessed into the soffit of the awning or wall mounted onto the building is to be provided to facilitate night use and to improve public safety.
- 6) One under-awning sign may be attached to the awning and must be 6m away from the sign of the adjoining property.

Figure 15.18: Awnings



5. Vehicle footpath crossings

A. Objectives

- a) To make vehicle access to buildings more compatible with pedestrian movements;
- b) To reduce the impact of vehicular access on the public domain; and
- c) To ensure vehicle entry points are integrated into building design and contribute to the building design.

B. Controls

- 1) No additional vehicle entry points will be permitted into the parking or service areas of development along streets with significant pedestrian circulation. (See Figure E15.19).
- 2) In all other areas, one vehicle access point only (including the access for service vehicles and parking for non-residential uses within mixed use developments) will be permitted.
- 3) Where practicable, vehicle access is to be from lanes and minor streets rather than primary street fronts or streets with major pedestrian activity.
- 4) Where practicable, adjoining buildings are to share or amalgamate vehicle access points. Internal on-site signal equipment is to be used to allow shared access. Where appropriate, new buildings should provide vehicle access points so that they are capable of shared access at a later date.
- 5) Vehicle access widths and grades are to comply with the Australian Standard.
- 6) Vehicle access ramps parallel to the street frontage will not be permitted.
- 7) Vehicle entry points are to be integrated into building design.
- 8) Doors to vehicle access points are to be roller shutters or tilting doors fitted behind the building facade.
- 9) Vehicle entries are to have high quality finishes to walls and ceilings as well as high standard detailing. No service ducts or pipes are to be visible from the street.
- 10) Porte cocheres disrupt pedestrian movement and do not contribute to active street frontage. They may only be permitted for hotels and major tourist venues subject to urban design, streetscape, heritage and pedestrian amenity considerations.
- 11) If justified, porte cocheres are to be internal to the building with one combined vehicle entry and exit point, or one entry and one exit point on two different street fronts of the development.
- 12) In exceptional circumstances for buildings with one street frontage only, an indented porte cochere with separate entry and exit points across the footpath may be permitted, as long as it is constructed entirely at the footpath level, provides an active frontage at its perimeter and provides for safe and clear pedestrian movement along the street.

6. Building exteriors

A. Objectives

The objectives of this section are to ensure that buildings in St Marys Town Centre:

- a) Contribute positively to the streetscape and public domain by means of high quality architecture and robust selection of materials and finishes;
- b) Provide richness of detail and architectural interest especially at visually prominent parts of buildings, such as lower levels and roof tops;

- c) Present appropriate design responses to nearby development that complement the streetscape;
- d) Clearly define the adjoining streets, street corners and public spaces and avoid ambiguous external spaces with poor pedestrian amenity and security;
- e) Maintain a pedestrian scale in the articulation and detailing of the lower levels of the building; and
- f) Contribute to a visually interesting skyline.

B. Controls

- 1) Adjoining buildings are to be considered when designing new buildings and extensions to existing buildings in terms of:
 - a) Appropriate alignment and street frontage heights;
 - b) Setbacks above street frontage heights;
 - c) Selection of appropriate materials and finishes;
 - d) Facade proportions including horizontal or vertical emphasis; and
 - e) Provision of enclosed corners at street intersections.
- 2) Balconies and terraces should be provided, particularly where buildings overlook parks and on low rise parts of buildings. Gardens on the top of setback areas of buildings and on roofs are encouraged.
- 3) Façades are to be articulated so they address the street and add visual interest.
- 4) External walls should be constructed of high quality and durable materials and finishes with 'self-cleaning' attributes, such as face brickwork, rendered brickwork, stone, concrete and glass.
- 5) To assist articulation and visual interest, large expanses of any single material are to be avoided.
- 6) Glazing for retail uses is to be maximised, but broken into sections to avoid large expanses of glass.
- 7) Highly reflective finishes and curtain wall glazing are not permitted above ground floor level.
- 8) A materials sample board and schedule are required to be submitted with applications for development over \$1 million or for that part of any development built to the street edge.
- 9) The design of roof plant rooms and lift overruns is to be integrated into the overall architecture of the building, and in residential buildings, may be screened by roof pergolas.

15.3.2 Access, parking and servicing

This section contains detailed objectives and controls on pedestrian access, vehicular access and site facilities, including refuse collection and removal. The Transport, Access and Parking Section of this DCP provides more information in this regard. However, the following controls apply specifically to the St Marys Town Centre:

1. Pedestrian access and mobility

A. Objectives

The objective of this section is to provide safe and easy access to buildings to enable better use and enjoyment by people regardless of age and physical condition, whilst also contributing to the vitality and vibrancy of the public domain.

B. Controls

- 1) The design and provision of facilities for persons with a disability, including car parking, must comply with Australian Standard AS 1428 Pt 1 and 2 (as amended) and the Commonwealth Disability Discrimination Act 1992 (as amended).
- 2) Barrier free access is to be provided to not less than 20% of dwellings in each development and associated common areas.
- 3) The development must provide at least one main pedestrian entrance with convenient barrier free access to the ground floor, and have a direct link to an identified accessible path of travel in the adjoining public domain.
- 4) The development must provide accessible internal access, linking to public streets and building entry points.
- 5) Pedestrian access ways, entry paths and lobbies must use durable materials commensurate with the standard of the adjoining public domain (street) with appropriate slip resistant materials, tactile surfaces and contrasting colours.
- 6) A report from an accredited access consultant is to be submitted with the development application, indicating the proposal's compliance with AS1428. If approved, Council may impose a condition on the development consent requiring the submission of a compliance certificate (or other such document) from an accredited access consultant attesting to the development's compliance with AS1428, and that a person with a disability can access the development.

2. Vehicular driveways and manoeuvring areas

A. Objectives

- a) To minimise the impact of vehicle access points on the quality of the public domain;
- b) To minimise the impact of driveway crossovers on pedestrian safety and streetscape amenity; and
- c) To minimise stormwater runoff from uncovered driveways and parking areas.



B. Controls

- 1) Driveways should be:
 - a) Provided from lanes and secondary streets rather than the primary street, wherever practical;
 - b) Located taking into account any services within the road reserve, such as power poles, drainage inlet pits and existing street trees;
 - c) Setback a minimum 6m from the tangent point in the kerb; and
 - d) Located to minimise noise and amenity impacts on adjacent residential development.
- 2) Vehicle access is to be integrated into the building design so as to be visually recessive.

- 3) All vehicles must be able to enter and leave the site in a forward direction without the need to make more than a three point turn.
- 4) Design of driveway crossings must be in accordance with Council's specifications for vehicle crossovers, with any works within the footpath and road reserve subject to a Section 138 Roads Act approval.
- 5) The car park and all its components including, but not limited to, driveways, aisle and ramp widths, ramp grades, air space dimensions are to comply with AS 2890. Note that private car spaces are to be designed for full door opening in accordance with AS 2890.1. (AS 2890.1-2004 requires 2.6m).
- 6) Access ways to underground parking should be sited to minimise noise impacts on adjacent habitable rooms, particularly bedrooms.
- 7) The driveway threshold shall be designed to prevent ingress of stormwater and/or flooding from local catchments.
- 8) No vehicle entry will be permitted via Queen Street (See Figure E15.19).

Figure E5.19: Restrictions on Vehicular Entries



-  Area covered by St Marys Town Centre
-  Additional vehicular entries not permitted

3. Site Facilities and Services

A. Objectives

- a) To ensure that the design and location of site facilities (such as clothes drying areas, mail boxes, etc.) are integrated within the development and are unobtrusive;
- b) To ensure that site services and facilities are adequate for the nature and quantum of development; and
- c) To establish appropriate access and location requirements for servicing.

B. Controls

- 1) Letterboxes should be integrated into a wall immediately adjacent to the building entrance(s). Where there are a number of entrances into the building, the letterboxes located at each entrance should service the tenancies that will utilise that building entrance.
- 2) Letterboxes shall be secure and large enough to accommodate articles such as newspapers.
- 3) Telecommunication infrastructure should be built into the development and predominantly below ground, incorporating the following services fundamental in the effective operation of businesses, home businesses and dwellings:
 - a) Multiple telecom services including high speed internet (including broadband), voice and data systems; and
 - b) Cabling from all telephone lines and cable TV.
- 4) Where a master antenna is provided, the antenna must be sited in a location that is least visible from surrounding public spaces/ open areas.
- 5) Air conditioning units, service vents and other associated structures should be:
 - a) Located away from street frontages and lanes;
 - b) Located in a position where the likely impact is minimised; and
 - c) Adequately setback from the perimeter wall or roof edge of buildings.
- 6) Where they are to be located on the roof, they should be integrated into the roofscape design and in a position where such facilities do not become a feature in the skyline at the top of building(s).
- 7) Council's policy on rainwater tanks for new dwellings provides locational and connection requirements for dwellings in residential areas.
- 8) Separate waste storage and collection areas are to be provided for domestic and commercial waste.
- 9) For developments comprising residential uses, a separate storage and collection area for bulky waste (such as cardboard boxes) and old or discarded furniture/appliances shall be provided.
- 10) Vehicular access to the waste collection areas should be from rear lanes, side streets and right of ways.
- 11) The responsibility for the ongoing management of waste facilities must be determined prior to work commencing on the development. Details of the management of waste by future tenants are to form part of the Waste Management Plan for the development. (See Appendix F3 for details on waste management plans).
- 12) Loading/unloading areas are to be:

- a) Integrated into the design of developments;
 - b) Separated from car parking and waste storage and collection areas;
 - c) Located away from the circulation path of other vehicles;
 - d) Designed for commercial vehicle circulation and access complying with AS2890.2; and
 - e) Vehicles are to enter and exit the site in a forward direction.
- 13) Separate loading/unloading areas are to be provided for commercial/retail and residential uses.
- 14) Generally, provision must be made for all emergency vehicles to enter and leave the site in a forward direction, particularly NSW Fire Brigade vehicles where:
- a) NSW Fire Brigade cannot park their vehicles within the road reserve due to the distance of hydrants from the building or restricted vehicular access to hydrants; or
 - b) Otherwise required by the NSW Fire Brigade's Code of Practice – Building Construction – NSWFB Vehicle Requirements.
- 15) For developments where NSW Fire Brigade vehicle(s) are required to enter the site, the circulation path and access/egress provision is to comply with the NSW Fire Brigade's Code of Practice – Building Construction – NSWFB Vehicle Requirements.

4. On-site parking options

A. Background

On-site parking includes underground (basement), surface (at-grade) and above ground parking, including parking stations. Most controls that relate to on-site car parking are included in the Transport, Access and Parking Section of this DCP. The following section provides some on-site car parking options for St Marys Town Centre.

B. Objectives

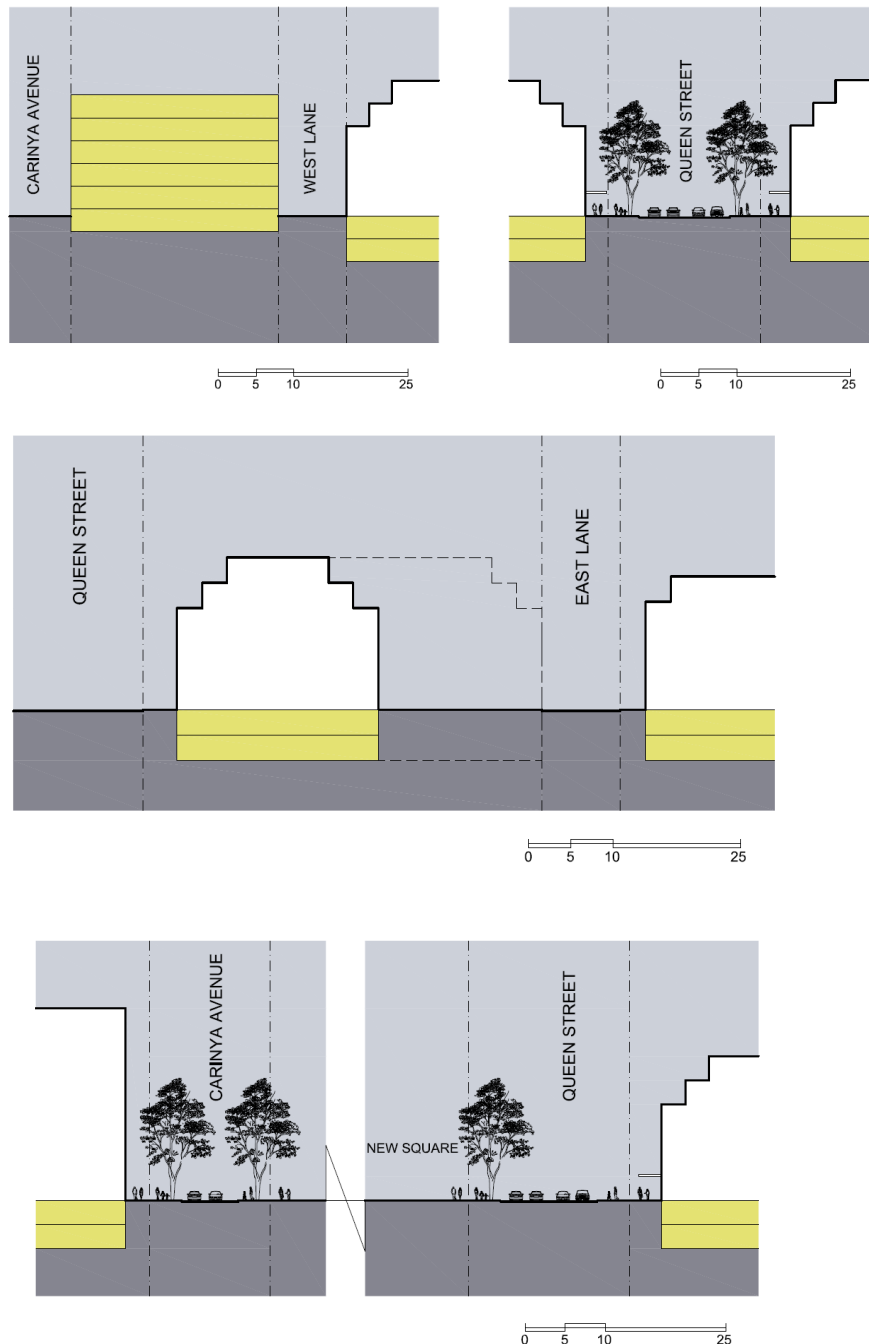
- a) To facilitate an appropriate level of on-site parking provision in the Town Centre to cater for a mix of development types;
- b) To minimise the visual impact of on-site parking; and
- c) To provide adequate space for parking and manoeuvring of vehicles.

C. Controls

- 1) Car parking above ground level is to have a minimum floor to ceiling height of 2.8m so it may be adapted to another use in the future.
- 2) Where possible, natural ventilation is to be provided to underground parking areas with ventilation grilles and structures that are:
 - a) Integrated into the overall façade and landscape design of the development;
 - b) Located away from the primary street façade; and
 - c) Oriented away from windows of habitable rooms and private open space areas.
- 3) Proposals for basement parking areas are to be accompanied with a geotechnical report, prepared by an appropriately qualified professional, and any other supporting information.
- 4) Figure E15.20 contains options for car parking at St Marys Town Centre.

- 5) Car parking layouts are to comply with the relevant Australian Standards.

Figure E15.20: Underground and Multi Deck Parking Examples



15.3.3 Precinct controls

Due to their size and/or strategic importance in the Town Centre, specific design principles and development outcomes have been identified for the sites identified in Figure E15.21.

Redevelopment of these sites should implement design principles and outcomes expressed in the clauses and diagrams that follow.

Figure E15.21: Areas Where Precinct Controls Apply



1. Precinct 1

Precinct 1 is the area generally bounded by Station Street to the north, Queen Street to the west, Phillip Street to the south and the property boundary between the commercial centre and the adjacent residences to the east as shown in Figure E15.22.

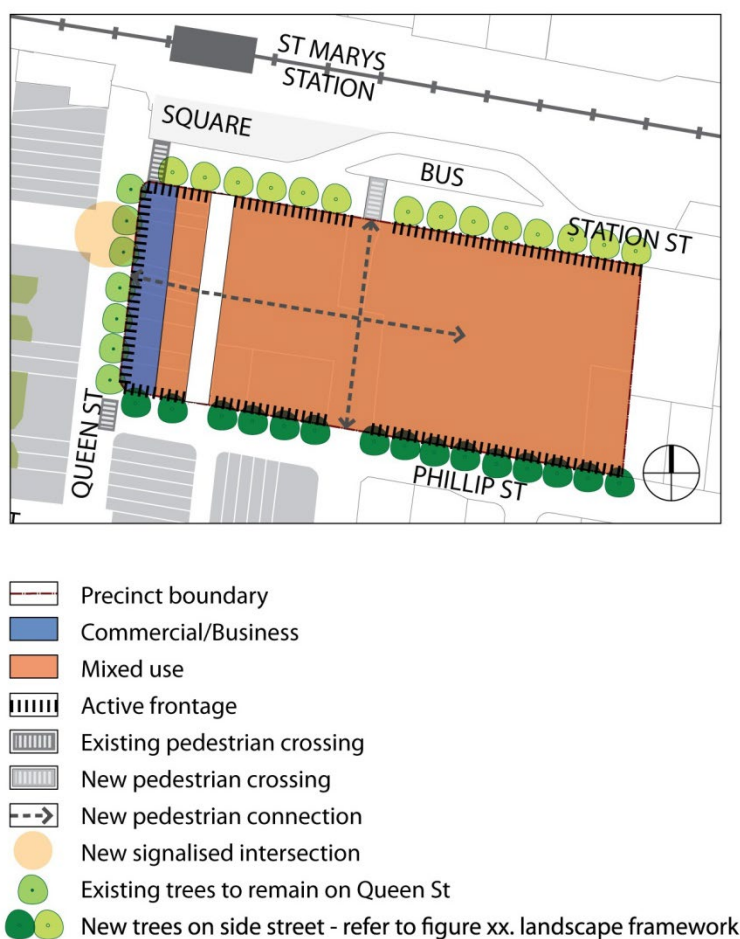
Development of the site must adhere to the following design principles:

- 1) Relocate the redundant public lane (East Lane) to provide north-south pedestrian connectivity through the site from Phillip Street to Station Street in the prolongation of Gidley Street;
- 2) Provide pedestrian connectivity in the form of an east/west arcade from Queen Street to the north south pedestrian connection through from Phillip to Station Streets;
- 3) Provide high quality and active public domain interface with new and existing public streets;
- 4) Investigate opportunities for expansion of the shopping centre to the west toward Queen Street; and
- 5) Provide roof top gardens for communal use.

Development of the site should provide the following outcomes:

- 1) Streets and pedestrian connections:
 - a) Improve and upgrade pedestrian amenity of East Lane from Phillip Street northwards;
 - b) Provide a new pedestrian access from Phillip to Station Streets in the alignment of Gidley Street;
 - c) Create active shop fronts to Station, Queen and Phillip Streets in the section from Queen to Gidley Streets; and
 - d) Provide a high quality architectural outcome for the Station Street façade emphasising residential entrances to buildings.
- 2) Land ownership:
 - a) Consolidate existing land ownership patterns to allow orderly development of land.
- 3) Public domain interface:
 - a) Provide active frontage/land uses along Station, Queen and Phillip Streets.
- 4) Built form:
 - a) Construct buildings to the street alignment of Station Street and up to a maximum of 32m. Buildings are to be setback on Queen Street by 4m and to a maximum height of 16m for a further depth of 15m. The 'sun angle height plane' should be considered for residential buildings within the site and to the footpath on the southern side of Phillip Street.

Figure E15.22: Precinct 1



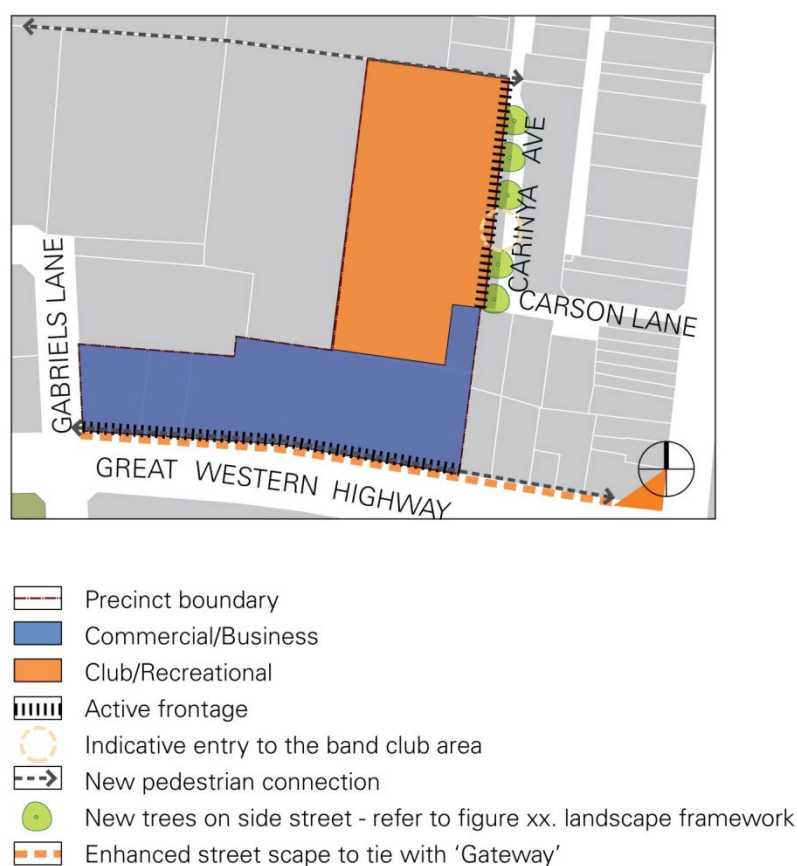
2. Precinct 2

Precinct 2 is the area bounded by Carinya Avenue to the east, Council owned land to the north, the school to the west and the band club to the south as shown in Figure E15.23.

Development of the site must adhere to the following design principles:

- 1) Provide good east-west and north-south connectivity with widened public street and pedestrian connections from the streets to St Marys Primary School that are clearly integrated with the existing street network and are safe;

Figure E15.23: Precinct 2



- 2) Locate non-residential uses towards the southern end of the site where they will be in closer proximity to the Band Club but still connected to the Town Square Precinct;
- 3) Provide a high quality public domain interface with existing public streets; and
- 4) Consider the interface with St Marys Primary School.

Development of the site should provide the following outcomes:

- 1) Streets and pedestrian connections:
 - a) Provide a widened section of Carinya Avenue from Crana Street to Carson Lane;
 - b) Provide a new pedestrian connection, at the northern boundary of the precinct from Carinya Avenue to Charles Hackett Drive; and
 - c) Provide an active frontage to Carinya Avenue.
- 2) Open space:
 - a) Provide public open space (passive recreation) in the form of a landscaped car park in the area in front of the precinct along Carinya Avenue.
- 3) Land uses:
 - a) Locate a mix of tourist and visitor accommodation and entertainment facilities.
- 4) Public domain interface:
 - a) Front building setbacks as indicated to achieve alignment on Carinya Avenue; and
 - b) Plant street trees along Carinya Avenue.

3. Precinct 3

Precinct 3 is the area bounded by Carinya Avenue to the east, Charles Hackett Drive to the west, the park on the southern side of Charles Hackett Drive to the north and the St Marys Primary School to the south as shown in Figure E15.24.

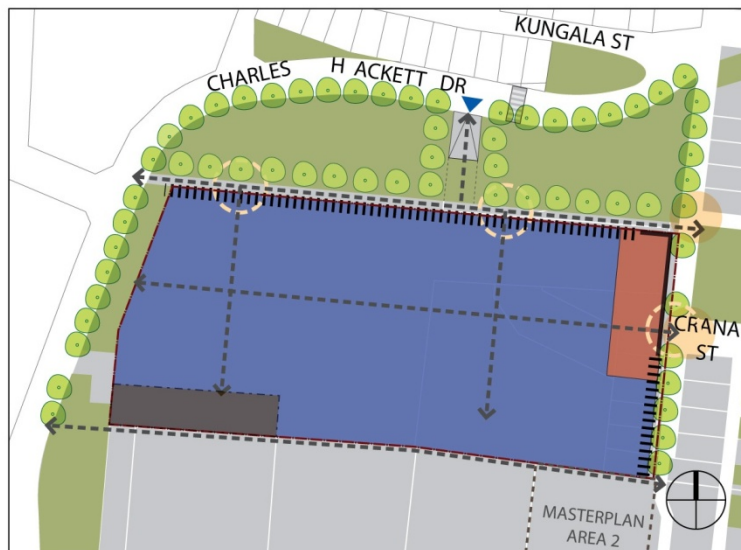
Development of the site must adhere to the following design principles:

- 1) Provide clearly visible entry points to the east at Carinya Avenue in line with Crana Street and adjacent to the Town Square;
- 2) Provide opportunities for residential or commercial uses at the eastern end of the precinct overlooking the Town Square to a maximum height of 24m ensuring that the residences have a Carinya Avenue address;
- 3) Consolidate retail uses on the remainder of the site;
- 4) Provide car parking under the new retail with access via Charles Hackett Drive (north);
- 5) Consolidate loading and service access to retail development on Charles Hackett Drive (west);
- 6) Provide a high quality and active public domain interface to Carinya Street and to the park on the northern side of the precinct;
- 7) Provide pedestrian connections through the centre; and
- 8) Provide roof top gardens for communal use.

Development of the site should provide the following outcomes:

- 1) Streets and pedestrian connections:
 - a) Provide a high quality new public park to the north of the precinct to replace the existing car park;
 - b) Provide a new pedestrian connection and entrance to the Centre at the Town Square in line with Crana Street as illustrated;
 - c) Provide access to an underground car park from Charles Hackett Drive (north) that does not interrupt pedestrian flow of the park from east to west; and
 - d) Provide service and delivery access from Charles Hackett Drive (west) at the southern edge of the precinct.
- 2) Land uses:
 - a) Locate commercial land uses as indicated in Figure E15.24; and
 - b) Locate mixed land uses as indicated in Figure E15.24.
- 3) Public domain interface:
 - a) Provide active frontage and land uses to the Town Square along Carinya Street and along the park edge to the north;
 - b) Front building setbacks as indicated; and
 - c) Provide a landscaped corridor of mature trees on the northern side of the precinct.

Figure E15.24: Precinct 3



- Precinct boundary
- Commercial/Business
- Mixed use
- Service area & access
- Active frontage
- Special architectural treatment for building frontage
- Indicative location of entry plaza
- New pedestrian crossing
- New pedestrian connection
- New signalised intersection
- New trees on side street - refer to figure xx. landscape framework
- Access ramp to underground carpark

4. Precinct 4

Precinct 4 is the area bounded by Queen Street to the east, Nariel Street to the south, Carinya Avenue to the west and the railway land to the north as shown in Figure E15.25. This parcel of land is significant as it assists in forming the entry gateway for public transport commuters as well as marking the northern most urban edge of the Town Centre itself.

Figure E15.25: Precinct 4



Development of the site must adhere to the following design principles:

- 1) Provide a vehicular and pedestrian connection from the existing West Lane through to Queen Street adjacent to the northern most boundary;
- 2) Utilise the above laneway to access the basement car parking facilities;
- 3) Provide a distinctive commercial/mixed use multi-level development on the northern section fronting onto Queen Street; and
- 4) Step the development down to Carinya Avenue in order to maintain a modest medium density residential scale.

Development of the site should provide the following outcomes:

- 1) Street and pedestrian connections:
 - a) Provide a safe and useable laneway connection from the northern most section of West Lane around to Queen Street as well as a pedestrian path returning to the northerly section of Carinya Avenue;

- b) Provide a landscaped section at the base on the north eastern section of the development as well as landscaping along the railway's northern boundary;
 - c) Provide vehicular access to basement car parking via the laneway and minimise in order to achieve a safe pedestrian amenity within the laneway; and
 - d) Accommodate a generous landscape setback in Carinya Avenue to achieve a stepped terrace style residential edge to the existing lower scaled cottages.
- 2) Land uses:
- a) Provide mixed use and strong commercial land uses to north eastern and Queen Street addresses; and
 - b) Provide a residential tower to medium domestic scale fronting Carinya Avenue.
- 3) Public domain:
- a) Provide active frontage and land uses out to Queen Street and the northern section fronting the extension of the laneway connecting to Queen Street;
 - b) Provide a landscaped plaza at the base of the north eastern multi-storied development; and
 - c) Provide a landscaped edge to the northern boundary with the railway corridor.

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F1 Definitions

A. Background

This Appendix outlines the meaning of the terms used in Penrith Development Control Plan (DCP) 2014. Terms defined in the *Standard Instrument (Local Environmental Plans) Order 2006* under the *Environmental Planning and Assessment Act 1979* are not reproduced in this Appendix. They can be found in the Dictionary to Penrith LEP 2010. Terms used in this DCP which are not in LEP 2010 are included in this Appendix.

The definitions in this Appendix are not exhaustive. Where the meaning of a term is not clear, it is recommended that applicants contact Council for clarification.

B. Objectives

The objective of this Appendix is to clarify the meaning of the terms used throughout Penrith Development Control Plan 2014.

C. Definitions

0 - 9

10% of LA1 means a noise level that exceeds the valid noise level of LA1 15min by more than 10% within any 15 minute period.

10% of LA90 means a noise level that exceeds the valid noise level of LA1 90min by more than 10% within any 90 minute period.

50% of LA90 means a noise level that exceeds the valid noise level of LA1 90min by more than 50% within any 90 minute period.

A

absorption means uptake of liquid into soil.

acceptable noise level criterion means the accepted noise levels for future development outlined in Penrith DCP 2014.

access lane means a street providing local residential access with shared traffic, pedestrian and recreation use, but with local traffic priority.

access ways means the driveways that service the rear garages of 'B' and 'C' type dwellings. The use of the access ways will be restricted to the landowner(s) requiring access to their rear garages.

accredited Auditor means a person accredited by the Environment Protection Authority (EPA), under the NSW Accredited Site Auditor Scheme through the *Contaminated Land Management Act 1997*.

accumulative building footprint

means the total sum of the ground floor area of all of the sheds on a single property

activity means:

- a) the erection of a building;
- b) the carrying out of work in, on, over or under land;
- c) the use of land or of a building or work;
- d) the subdivision of land;

and includes any act, matter or thing for which provision may be made under Section 26 of the *Environmental Planning and Assessment Act 1979*, and which is prescribed for the purpose of this definition, but does not include:

- a) any act, matter or thing for which development consent under Part 4 of the *Environmental Planning and Assessment Act 1979* is required or has been obtained;
- b) any act, matter or thing which is prohibited under an environmental planning instrument.

adjoining and neighbouring land

means any land that may be detrimentally affected by the use of, or the erection of a building or work on the development site.

advertised development means development, other than designated development, that is identified as advertised development by the Act, Regulation, an environmental planning instrument or this development control plan. Advertised development includes

any development for the purposes of a scheduled activity at any premises under the *Protection of the Environment Operations Act 1997* that is not designated development.

advertiser means either the person, who caused the advertisement to be displayed, or the owner, or occupier of the building or land on which the advertisement is displayed.

advertising, in the context of Penrith DCP 2014, means public notification by an advertisement appearing in the local newspaper or newspapers which are distributed throughout the Penrith City Council Local Government Area.

advertising area means:

- a) the total surface area of a sign face, including any margin, frame or embellishment which forms an integral part of the sign; or
- b) in the case of an advertisement with more than one sign face, the total surface area viewed from any direction.

aerated wastewater treatment system means a wastewater treatment process typically involving settling of solids and flotation of scums, oxidation and consumption of organic matter through aeration, clarification (secondary settling of solids) and disinfection of wastewater before surface irrigation.

affected person means a person who:

- a) owns and/or occupies a property or building that adjoins or abuts the development site; or
- b) in the opinion of the responsible officer, may be detrimentally affected by the use of, or the

erection of a building or carrying out of work on the development site.

allotment means the parcel of land to be initially subdivided into Torrens title, but does not relate to subsequent strata or community title subdivision of development of this land.

ancillary dwellings includes 'Secondary Dwellings', as defined by the Standard Instrument, and 'Studio Lofts' which are self-contained dwellings that may be occupied separately from the principal dwelling and are on a separate title from the principal dwelling.

appropriately qualified person, for the purposes of this development control plan, is a person who, in the opinion of Council, has demonstrated experience, or access to experience in relevant areas. In addition, the person will be required to have appropriate professional indemnity and public risk insurance.

approval means a consent, licence or permission or any form of authorisation.

arborist means a specialist in the care of trees and vegetation with relevant qualifications and training. Minimum AQF Level 3 equivalent or above.

archival recording means the method of recording heritage items to meet the requirements of the Office of Environment and Heritage guidelines for recording heritage items of local significance.

arterial road means a road that carries predominantly through traffic from one region to another, thus forming the principal avenue of

communication for traffic movements.

asset protection zone means an area surrounding a development where fuel is managed to reduce the bush fire hazard to an acceptable level.

Australian height datum (AHD) is a common national surface level datum approximately corresponding to mean sea level.

average recurrence interval (ARI) is the long term average number of years between the occurrence of a flood as big as or larger than the selected event. For example, floods with a discharge as great as or greater than the 100 year ARI flood event will occur on average once every 100 years.

B

bank (of a waterway or other waterbody) includes lagoons, backwaters, and other elements of the river. Council will determine the minimum setback required if the "bank" is difficult to define.

biodiversity corridors and areas of remnant indigenous vegetation means areas, or networks of areas, of indigenous vegetation which allow migration of plants and animals, and provide examples of local biodiversity and habitat for various species in their own right.

blind corners means areas that people cannot see around due to the angle of the design, setbacks, landscaping or internal corridors. When blind corners cannot be avoided they should be treated with mirrors, clear glass panels, windows or other treatments, low height maintained vegetation, to allow visibility around or through the corner.

bioretention systems are vegetated soil media filters, which treat stormwater by allowing it to pond on the vegetated surface, then slowly infiltrate through the soil media. Treated water is captured at the base of the system and discharged via outlet pipes.

buffer means a strip of land that is reserved between a potential source of pollution and an area that must be protected from the pollution.

building, in the context of Penrith DCP 2014, includes part of a building and any structure or part of a structure including a swimming pool, but does not include:

- a) a manufactured home, a moveable dwelling or associated structure or part of a manufactured home, a moveable dwelling or associated structure; or
- b) a temporary structure within the meaning of the *Local Government Act 1993*.

building works include any part of a building and any structure or part of a structure.

bush regeneration involves staged removal of non-indigenous plants to allow, where possible, natural regeneration to occur.

C

catchment means the area from which a stream, river, lake or other body of water receives its water.

category 1 remediation work means remediation work that needs development consent under *State Environmental Planning Policy No.55 – Remediation of Land*.

category 2 remediation work means remediation work that does not

need development consent under *State Environmental Planning Policy No.55 – Remediation of Land*.

change table refers to a baby change table that is required to have protective sides of 100mm, which will stop a baby's ability to roll off; and a soft, clean base for the baby to lie on.

channel or restrict the movement of people refers to physical cues that direct people to use a particular route, e.g. a change in elevation, fence, path or lighting.

Class 6 or 9 of the *Building Code of Australia*

Class 6: a shop or other building for the sale of goods by retail or the supply of services direct to the public, including:

- a) an eating room, café, restaurant, milk or soft-drink bar; or
- b) a dining room, bar, shop or kiosk as part of a hotel or motel; or
- c) a hairdresser's or barber's shop, public laundry, or undertaker's establishment; or
- d) market or sale room, showroom, or service station.

Class 9: a building of a public nature:

- a) Class 9a – a health-care building; including those parts of the building set aside as a laboratory; or
- b) Class 9b – an assembly building, including a trade workshop, laboratory or the like in a primary or secondary school, but excluding any other parts of the building that are of another Class; or

- c) Class 9c – an aged care building.

clinical waste means any waste resulting from medical, nursing, dental, pharmaceutical or other related clinical activity, being waste that has the potential to cause injury, infection or offence.

collection area means the location where waste or recyclable materials are transferred from storage containers to a collection vehicle for removal from the site.

collector road means a road which collects and distributes traffic in an area, as well as serving abutting properties.

community association means the body that owns, manages and maintains the Community Property. The Association consists of the proprietors of the Community Lots and representatives of subsidiary schemes.

community safety involves recognising the need for people to work together to create a safer environment for people to live and work.

community services means community facilities, such as a community hall, recreation centre or child care facilities.

complying development has the same meaning as in the Act.

complying development certificate has the same meaning as in the Act.

compost means decomposed organic matter.

compostable material means vegetative material capable of being converted to humus by a biological decay process.

conservation means the management of natural resources in a way that will benefit both present and future generations.

conservation management plan means the same as ‘heritage conservation management plan’ as defined in Penrith LEP 2010.

construction guidelines should be interpreted as referring to Penrith City Council’s “Guidelines for Engineering Works for Subdivisions and Development – Part 2 – Construction”.

construction site is that portion of a site disturbed by the development and/or building and includes the areas where building materials are placed and access traversed by vehicles.

contaminated land means land in, on or under which any substance is present at a concentration above that naturally present in, on or under the land and that poses, or is likely to pose, an immediate or long-term risk of harm to human health or any other aspect of the environment.

contaminated land planning guidelines means guidelines under section 145C of the *Environmental Planning and Assessment Act 1979*.

contamination means the concentration of substances above that naturally present that poses, or is likely to pose, an immediate or long-term risk to human health or the environment.

corner shop has the same meaning as ‘neighbourhood shop’ in Penrith LEP 2010.

Council’s engineer means Council’s Engineering Services Unit

Supervisor or his nominated representative.

Council’s satisfaction (in relation to vegetation management) means providing documented evidence in the form of photographs, a statutory declaration, witness statement or report from an arborist to justify any proposed works.

crime prevention refers to reducing the risks of criminal events and related misbehaviour by intervening in their causes.

D

dead (in relation to vegetation) means no longer alive, permanent leaf loss of wilting.

debris means accumulated material that is not necessarily of anthropogenic origin, e.g. leaf litter, branches, garden refuse, etc.

degradation means to reduce from a higher to a lower quality.

design cues refers to whether the physical design of a space supports the intended function of a space.

design for de-construction is a design technique that allows for ready de-construction of products or materials at the end of their service life.

designated development means any class of development that is declared to be designated development by an environmental planning instrument or the Regulation.

designated road means any arterial or sub-arterial road identified as such in an environmental planning instrument.

development means:

- a) the use of land;
- b) the subdivision of land;
- c) the erection of a building;
- d) the carrying out of a work;
- e) the demolition of a building or work; or
- f) any other act, matter or thing referred to in section 26 of the Act that is controlled by an environmental planning instrument;

but does not include any development of a class or description prescribed by the Regulation for the purposes of this definition.

development application means an application for consent under Part 4 of the Act to carry out development but does not include an application for a complying development certificate.

development consent means consent under Part 4 of the Act to carry out development but does not include a complying development certificate.

development site means the land to which the development application relates.

diffuse means the movement of a substance from a higher to a lower concentration.

directional sign means a road sign, street sign posting, and signs indicating tourist and other major facilities, e.g. parking, rest areas, etc.

domestic wastewater means wastewater arising from household activities, including

wastewater from bathrooms, kitchens and laundries.

drain means any channel, conduit or pipe used for removing water, other than sewage, and includes a stormwater detention basin but does not include a building or place specifically defined elsewhere in this Appendix.

drip line (of a tree or shrub) means the area directly located under the outer circumstance of the tree branches. This is where the tiny rootlets are located that take up water for the tree.

dying (in relation to vegetation) means significant loss of vigour or irreversible decline.

E

effluent means any waste products (treated or untreated) from any process or human activity that is discharged into the environment.

engineer should be interpreted as a person acceptable for Corporate Membership of The Institution of Engineers Australia.

engineering works means the design and/or construction of:

- a) land filling;
- b) roads and associated structures;
- c) drains and associated structures.

entrapment spot refers to places which could provide opportunities for concealment or which could provide an opportunity for an assault to be committed with limited chance of detection.

environment means components of the earth, including:

- a) land, air and water; and

- b) any layer of the atmosphere; and
- c) any organic or inorganic matter and any living organism; and
- d) human-made or modified structures and areas, including interacting natural ecosystems that include components referred to in (a) – (c).

environmental planning instrument means an environmental planning instrument within the meaning of the *Environmental Planning and Assessment Act 1979*.

erosion means the detachment and removal of soil materials from a given area, by the processes of wind, water and/or gravity.

erosion and sediment control plan means a plan showing how potential erosion and sedimentation occurring on a given site, as a result of a land use, building or development activity, will be minimised.

exhibition period means the period in which a development application is available for public view and submissions.

exhibition village sign means a sign erected on a property on which Council has approved an 'exhibition home/s'.

existing ground level means the level of a site before development is carried out on the site in accordance with this Plan;

existing on-site sewage management system (SMS) means an on-site sewage management system installed and operating prior to the adoption of this Plan.

external wall height means the distance from the natural ground level to the underside of the eaves.

F

fascia sign means an advertisement attached or painted to the fascia of an awning.

first flush treatment strategy shall meet the following criteria where:

Catchments \leq 5 ha

- a) Gross Pollutants and Coarse Sediment – a Treatable Flow Rate = 60 L/s/ha, with sufficient storage volume to retain the pollutants generated by the first 30mm of runoff;
- b) Fine Particulates – a Treatable Flow rate = 10 L/s/ha, with sufficient storage volume to retain the pollutants generated by the first 15mm of runoff;

Catchments $>$ 5 ha

- a) Compliance with the modelling techniques in Appendix F Managing Urban Stormwater: Council Handbook (Draft) NSW EPA (1997). Minimum Treatable Flow Rate equivalent to the 6-month ARI critical storm for the catchment (maximum duration of 15 minutes for urbanised catchments $<$ 20 ha).

flashing sign means an advertisement illuminated in whole or in part at frequent intervals by a light source.

flood fringe areas means the remaining area of land affected by flooding after floodway and flood storage areas have been defined.

flood hazard means the potential for damage to property or persons due to flooding.

flood hazard (high) or high flood hazard occurs when there is possible danger to life and limb;

evacuation by trucks is difficult; there is potential for structural damage; and social disruption and financial losses could be high.

flood hazard (low) or low flood hazard occurs when, should it be necessary, people and their possessions could be evacuated by trucks; able-bodied adults would have difficulty wading.

flood liable land or flood prone land means land susceptible to flooding by the probable maximum flood event.

floodplain means the area of land which is subject to inundation by floods up to and including the Probable Maximum Flood.

flood planning level means the level of a 1:100 ARI (average recurrence interval) flood event plus 0.5 metres freeboard.

flood proofing involves a combination of measures incorporated in the design and/or construction and alteration of individual buildings or structures subject to flooding for the reduction or elimination of flooding damages.

flood safe access means access that is generally considered satisfactory when the depth of flooding over vehicular driveways and roads is limited to approximately 0.25 metres with low velocities.

flood storage areas means those parts of the floodplain that are important for the temporary storage of floodwaters during the passage of a flood. Adverse impacts on flood behaviour, if these areas were filled, would generally relate to an increase in flood levels greater than 0.1m,

however, this can vary from site to site.

floodway means those areas of the floodplain where a significant discharge of water occurs during floods. They are often aligned with obvious naturally defined channels. Floodways are areas which, even if only partially blocked, would cause a significant redistribution of flood flow, which may in turn adversely affect other areas. Additionally, they are areas in which development may be adversely affected by the passage of floodwaters other than by immersion alone. They are often, but not necessarily, the areas of deeper flow or the areas where higher velocities occur.

floor means that space within a building which is situated between one floor level and the floor level next above or if there is no floor above, the ceiling or roof above;

flush wall sign means an advertisement that is attached to the wall of a building, other than the transom, doorway or display window.

free oil means free floating droplets of viscous liquid $\geq 150 \mu\text{m}$ that do not emulsify in aqueous solutions, e.g. cooking oil, motor oil, etc.

front façade line is the main front enclosing wall of a dwelling.

G

garbage chute means a duct in which deposited material descends from one level to another within the building due to gravity.

garbage means refuse or waste material other than trade waste, effluent, compostable material,

green waste or recyclable material.

garbage room means a room where garbage and recycling receptacles are stored awaiting reuse or removal from the premises.

generating works means a building or place used for the purpose of making or generating gas, electricity or other forms of energy.

good amenity refers to well presented public space that promotes people feeling some ownership and responsibility for.

gross pollutants is a term used to collectively describe litter and debris transported by urban runoff, of a size that may be retained by a 5mm mesh screen.

ground floor footprint is the area measured from the external face of any wall of any dwelling, outbuilding (other than a farm building), dual occupancy dwelling, garage or undercover car parking area, animal house or garden shed.

groundwater refers to all underground waters.

H

habitable room means a living area, such as a lounge room, dining room, rumpus room, kitchen and bedroom, but excluding garages.

hazardous waste means any waste that is or contains a substance specified in Schedule 1, Part 3 of the *Protection of the Environment and Operations Act 1997*.

health care services means services ordinarily provided by a health care professional to members of the public, but does not include

any procedures such as x-rays, ultrasounds, cat-scans, radiography or pathology tests or the like.

health investigation levels are criteria published by the National Environmental Health Forum.

height in relation to:

- a) a building means the vertical distance measured between natural ground level at any point at which the building is sited, and the roof of the topmost floor of the building above that point.
- b) any advertising sign or structure means the vertical distance measured between the natural ground level at any point at which the advertising sign or structure is sited and the upper-most portion of the advertising sign or structure at that point.

heritage interpretation strategy means a strategy which:

- a) defines the land and places to which the heritage interpretation strategy relates;
- b) describes the cultural landscapes, history and heritage assets located on that land;
- c) describes the significance of the cultural landscape history and heritage assets on that land;
- d) provides strategies for the commemoration and communication of the heritage significance of the land and heritage assets located thereon;
- e) includes indicative designs and concept sketches for recommended methods of commemorating key historical site uses;

- f) recommends appropriate construction materials, production methods and siting to be adopted in implementing heritage commemoration strategies; and
- g) has been adopted by Council (including any amendments to that plan and endorsed by resolution of Council).

heritage maintenance plan means a systematic and regular program of works and activities for the ongoing protective care of a heritage item, or a potential place of heritage significance, or a work, archaeological site or place within a heritage conservation area. It includes, but is not limited to, regular inspection and periodic works programmed to be undertaken over the short, medium and long term on the following general building elements:

- a) foundations;
- b) walls;
- c) roof;
- d) roof plumbing and stormwater system;
- e) doors and windows;
- f) floors;
- g) ceilings;
- h) timberwork and joinery;
- i) plasterwork;
- j) paintwork;
- k) lighting and power;
- l) plumbing;
- m) heating and cooling; and
- n) site works.

I

in the vicinity means:

- a) within an allotment abutting or directly across a road reservation from an allotment containing a heritage item, or within two hundred metres of a boundary of an allotment containing a heritage item (whichever is the lesser); or
- b) within the curtilage of a heritage item that has been formally defined by an environmental planning instrument, or in a heritage study supporting that instrument, or by a Commission of Inquiry, or in a development control plan, or in a conservation management plan.

independent review is a site audit, conducted by a site auditor. An independent review may be required by a planning authority of any information submitted by a proponent, conducted at the proponent's expense.

indigenous vegetation means one or more plant species of vegetation, including trees, shrubs, understorey plants, groundcover and plants occurring in a wetland, that existed in the City of Penrith before European settlement or have regrown through natural or assisted processes. This may include standing dead trees which provide essential habitat for natural flora.

infill development refers to the development of vacant blocks of land and extensions/additions to existing developments that are generally surrounded by developed properties.

integrated development has the meaning given by Section 91 of the *Environmental Planning and Assessment Act, 1979*.

internal lot means a lot the only means of access to which is an access corridor (a battle-axe or hatchet shaped lot) or a right-of-carriageway over another lot.

introduced vegetation means non-native vegetation being one or more plant species of vegetation that did not exist in the City of Penrith before European settlement.

investigation order means an investigation order made by the EPA under Division 2 of Part 3 of the *Contaminated Land Management Act 1997*.

J

K

L

land application area means the area over which treated wastewater is applied.

landfill site is a waste disposal site used for the controlled deposit of solid waste on or into land.

landscaped open space means that part of the site not occupied by any building(s), (except swimming pools or open air recreation facilities), which is predominantly landscaped by way of planting of gardens, lawns, shrubs or trees and is available for the use and enjoyment of the occupants of the dwelling(s) erected on the site, but does not include the area used for driveways, parking areas or drying yards.

Leq means the energy average of a valid 15 minute noise level in any specified time period.

litter means all material of human (anthropogenic) origin that is capable of being mobilised by stormwater runoff.

local amenity refers to local character and agreeable features.

local development means development, other than State Significant development, requiring development consent under an environmental planning instrument. Local development may comprise:

- a) advertised development;
- b) concurrence development;
- c) designated development; or
- d) integrated development.

local road means a road or street used primarily for access to abutting properties.

lop (in relation to vegetation management) means to cut branches or stems between branch unions or internodes. This is an unacceptable pruning practice as it may create hazardous trees.

M

manual self-opening door means a door which is opened by pushing a button.

mapped wetland 156 means the wetland area identified in *Sydney Regional Environmental Plan No. 20* as '156'.

mass movement is a general term encompassing erosion processes in which gravity is the primary force acting to dislodge and transport land surface materials.

minor local road means a minor street providing local residential and cycleway access.

movement predictors refers to public footpaths.

N

natural ground level means the ground surface level prior to any development, including any cutting, filling and grading, and, where the existing ground level differs from the natural ground level, the natural ground level shall be as determined by the council after taking into account any information concerning its location.

natural regeneration means allowing or assisting the bush to grow back by itself.

nett lettable floor area means the floor area of the building, excluding wall thicknesses, liftwells, stairs, corridors, lunch rooms, staff amenities, plant rooms and the like.

new on-site sewage management system (SMS) means a proposed on-site sewage management system for installation and operation.

non-valid noise level data means data recorded when:

- a) wind gusts exceed 15 metres per second;
- b) average wind speed exceeds 3 metres per second; or
- c) it is raining.

notification means the posting or dispatch of a notification letter.

notification letter means the letter sent by Council to an affected person advising of:

- a) a development application; or
- b) an application for modification under Section 96 of the Act; or

- c) an applicant's request under Section 82A of the Act for Council to review its determination;

but not an application for a complying development certificate.

nutrients means a substance that provides nourishment to another organism. For the purposes of stormwater runoff, it may be defined as Total Nitrogen (TN) consisting of nitrate nitrogen ($\text{NO}_3\text{--N}$), nitrite nitrogen ($\text{NO}_2\text{--N}$), ammonium nitrogen ($\text{NH}_4\text{+--N}$) and organic nitrogen; and Total Phosphorus (TP) consisting of filterable phosphorus (orthophosphate $\text{PO}_4\text{--3-P}$, condensed phosphates, organic phosphorus and colloidal phosphorus) and particulate phosphorus (organic particles; and inorganic particles that may or may not be adsorbed to suspended particulates).

O

offensive noise is defined under the *Protection of the Environment Operations Act 1997*.

outbuildings include garages, garden sheds, small-scale storage sheds for non-agricultural purposes, outdoor toilets, etc.

outdoor noise level means the noise level measured at any point outside a building (including terraces, balconies, courtyards, garden areas) which does not include any correction for façade reflection.

out-of-school hours (OOSH) care means a child care service providing care for children aged between five and twelve years which may:

- a) provide care before school hours (being not after 9.00am on school days);
- b) provide care after school hours (being not before 2.30pm on school days); and
- c) provide care during school vacations and pupil free days.

owner means:

- a) the person or persons who appear on Council's property system to be the owner of land, at the date of notification; or
- b) in the case of land that is the subject of a strata scheme under the *Strata Titles Act 1973*, or a leasehold strata scheme under the *Strata Titles (Leasehold) Act 1986*, the owner is the body corporate and the individual title owners; or
- c) in the case of land that is a community, precinct or neighbourhood parcel within the meaning of the *Community Land Development Act 1989*, the owner is the Association for the parcel.

owner, in the context of Penrith DCP 2014, means the persons or persons who appear on Council's property system to be the owner of land, at the date of notification.

P

parking area has the same meaning as a car park.

pathways means the series of interconnecting publicly accessible pedestrian/cycle links.

pedshed or **pedestrian catchment** or **walking catchment** is the area from which a given point or destination can be reasonably accessed by walking. Potential pedshed or walkability is defined

by a radius of 400m (5 minute walk) or 800m (10 minute walk). Actual pedshed or walkability is defined by drawing a line along pedestrian routes up to 400m or 800m.

permeability is the general term used to describe the rate of water through a substance.

planning authority, in the case of a function relating to a development application, is the consent authority (or a person or body taken to be a consent authority). In the case of any other function, planning authority means the public authority or other person responsible for exercising the function.

planning function is a function exercised by a planning authority under the *Environmental Planning and Assessment Act 1979*, such as the preparation or making of an environmental planning instrument.

pollutant means a contaminant that adversely alters the physical, chemical or biological properties of the environment.

potential place of heritage significance means a place:

- a) that is on the Potential Place of Heritage Significance list held by Council; or
- b) that is subject to an Interim Heritage Order or nominated for inclusion on the State Heritage Register; or
- c) that is, in the opinion of Council, a place of heritage significance to the community.

preliminary investigation is an investigation to identify any past or present potentially contaminating activities to provide

a preliminary assessment of any site contamination.

primary road frontage means the road to which an allotment is addressed.

principal private open space means the portion of private open space which is conveniently accessible from a living area of the dwelling, and which receives the required amount of solar access.

probable maximum flood (PMF) is the largest flood that could conceivably occur at a particular location.

produce store has the same meaning as 'rural supplies' in Penrith LEP 2010.

prohibited development means:

- a) development the carrying out of which is prohibited on land by the provisions of an environmental planning instrument that apply to the land; or
- b) development that cannot be carried out on land with or without development consent.

psychological (symbolic) barriers refers to circumstances where a 'reasonable individual' recognises that he or she is transitioning from public to private space. This can be achieved externally by use of paths, plants, colour and landscaped surfaces. This can be achieved internally by use of plants, arrangement of furniture, floor surfaces, colours, etc.

public domain means space that is provided for, accessible to, and frequented by the public.

R

reactive soil is a term used in the construction industry to describe

a soil that changes volume with changes in moisture content. This can damage foundations.

real estate sign means an advertisement that contains only a notice that the place or premises to which it is fixed is or are for sale or letting (together with particulars of the sale or letting) and that is not displayed for more than 14 days after the letting or completion of the sale.

recognised authority is a body, department, organisation or similar who is considered by Council as a competent and reliable source of advice and information for erosion and sediment control.

recyclable means capable of being reprocessed into useable material.

regional environmental plan (REP) is a plan made by the Minister under Section 51 of the Act that is in force. As of 1 July 2009, REPs are no longer part of the hierarchy of environmental planning instruments in NSW. All existing REPs are now deemed State Environmental Planning Policies (SEPPs).

registered surveyor should be interpreted as a person registered under the *Surveyor's Act, 1929* as amended.

remedial action plan (RAP) refers to the documentation detailing the methodology proposed, targets, timetable, quality control procedures and precautions to be taken during remediation work.

remediation of contaminated land includes:

- a) preparing a long-term management plan (if any) for the land; and
- b) dispersing, destroying, reducing, mitigating or containing the contamination of the land; and
- c) eliminating or reducing any hazard arising from the contamination of the land (including by preventing the entry of persons or animals on the land); and
- d) rehabilitating land.

remediation order is a remediation order made by the EPA under Part 3 of the *Contaminated Land Management Act 1979*.

residual means a substance that remains after the rest has been taken.

responsible Council officer means an officer of the Council of the City of Penrith who will be responsible for the processing and assessment of the development application.

responsible person is the person whose role it is to ensure that the pollution control strategy is maintained in a form that ensures it performs in accordance with its original design specification. They shall be:

- a) where an approval has been issued or given by Council:
 - i) the applicant; or
 - ii) the person nominated in writing by the applicant and where such nomination is accepted in writing by the nominee; or
- b) where there has been no approval issued or given by or required by Council:

- i) the supervisor, project manager or other person who has the ongoing day-to-day control over the site; or

- ii) the person whose duty statement or contractual arrangement requires that person to correctly install and adequately maintain the water quality control measures;

- c) where the development is a strata development, the responsible person may be the 'Body Corporate'.

restricted material means publications classified Category 1 restricted, Category 2 restricted or RC (Refused Classification) under the Commonwealth's *Classification (Publications, Films and Computer Games) Act 1995*.

re-use means re-using a product for the same or different purposes without further manufacture.

ridgeline means the highest point at which upward angled roof planes meet.

ringbark means a form of girdling involving physical damage to the bark or cambium.

roof sign means an advertisement erected on or above the roof or parapet of a building.

S

safer by design is a crime prevention strategy that focuses on the design, planning and structure of our cities and neighbourhoods. It aims to reduce opportunities for crime by employing design and space management principles, which reduce the likelihood of essential crime ingredients from intersecting.

salinisation means the accumulation of soluble salts in soil.

salinity means the accumulation of mineral salts in the soil, groundwater and surface waters. (It is primarily a groundwater problem that produces effects at the soil surface due to rising watertables which can lead to serious land degradation problems).

schedule of conservation works means a description and assessment of the existing condition of the internal and external materials, fabrics and finishes of a building and a description of the conservation, restoration and rehabilitation methods necessary to maintain its heritage significance and upgrade and rectify the building for its future use. It includes, but is not limited to, information on the maintenance of the heritage values of the building through the appropriate design and installation of new services, materials, fabrics and finishes on:

- a) external walls, roofs, verandahs, doors, windows, chimneys, ventilation, outbuildings, fences, gates, paving, drainage, trees and gardens, and
- b) internal walls, ceilings, attic space, doors, windows, architraves, skirtings, floors and sub-floor access and ventilation.

It also includes information on the timing of the undertaking of the list of proposed construction activities and estimates of the cost of each component of the construction activities.

secondary road frontage means a road frontage other than the primary road frontage.

sediment means solid material of varying size, both mineral and organic, that is in suspension, is being transported, or has been moved from its site of origin by air, wind, water or gravity, and comes to rest on the earth's surface either above or below sea level. Course sediment is defined as soil particles >0.5 mm in diameter. Fine particulates are defined as all material >0.02 mm but <0.5 mm in diameter. Fine sediment is the fraction of soil consisting of silt (0.002 mm to 0.02 mm in diameter) and clay (<0.002 mm in diameter).

sedimentation means the deposition of eroded soil, sediment or other material.

seepage means the gradual flow of groundwater to the surface over a wide area, but not from a spring.

self rectification is a process that allows an individual (with the relevant information provided) to rectify a breach of the law, legislation, guidelines, or civic responsibility.

sensitive land use means an educational establishment, child care centre, place of public worship, playground or any other place regularly frequented by children for recreational or cultural activities, or a dwelling.

sewage means waste matter that passes through sewers.

significant alterations / additions are those where the roof or hard surface area is increased to the minimum standard and those additions are not less than 25% of the existing roof area.

site audit means an independent review:

- a) that relates to investigation, or remediation, carried out (whether under the *Contaminated Land Management Act 1997* or otherwise) in respect of the actual or possible contamination of the land; and
- b) that is conducted for the purpose of determining any one or more of the following matters:
 - i) the nature and extent of any contamination of the land;
 - ii) the nature and extent of the investigation or remediation;
 - iii) what investigation or remediation remains necessary before the land is suitable for any specified use or range of uses.

site auditor means a person for the time being accredited under the *Contaminated Land Management Act 1997* as a site auditor.

site audit statement means a written statement by a site auditor of the findings of a site audit. A site audit statement must be prepared on a prescribed form.

site filling means the use of clean, non-putrescible material, such as soil, sand and clean building materials, to change the existing ground level of an area.

site line means the line of vision from a person to a place or building.

soil 1. (Agronomy) the unconsolidated mineral and organic matter on the immediate surface of the earth that serves as a natural medium for the growth of land plants.
2. (Engineering) earth and rock particles resulting from the physical and chemical disintegration of rocks, which may or may not contain organic

matter. It includes fine materials (silts and clays), sand and gravel.

source separation means the separating of waste into like materials for recycling, reuse or collection at the site at which the waste was generated.

spatial definition refers to the way in which a space is defined.

special waste means any waste that requires special disposal arrangements as they represent a significant hazard to human health, life, property or the biophysical environment. This includes, but is not limited to, explosives, poisons, clinical wastes, radioactive substances, declared chemical wastes, asbestos, lead, medical wastes and quarantine wastes.

sponsorship advertising in sporting fields or grounds means an advertisement informing about sponsors, products of sponsors of teams or organisations using the facility.

spruiker means a person or persons located in the public place including a footpath who seek to entice people to enter the premises.

standard lot means a lot that is not an internal (or battle-axe or hatchet-shaped) lot.

State Environmental Planning Policy is a policy made by the Governor under Section 37 of the Act that is in force.

State Significant development means development, other than designated development, which:

- a) is declared by a State Environmental Planning Policy or Regional Environmental Plan to be State Significant development

and may be carried out with development consent; or

- b) in the opinion of the Minister, to be of state or regional significance, is declared by notice in the government gazette to be State Significant development and may be carried out with development consent; or
- c) the Minister has directed that the development application be referred to him for determination; or
- d) is prohibited development under Section 89 of the Act;

to which the Minister is the consent authority.

sub arterial road means a road connecting arterial roads to areas of development, and carrying traffic directly from one part of a region to another.

subdivision (of land) has the meaning referred to in Section 4B of the *Environmental Planning and Assessment Act 1979*.

sub-surface irrigation means artificial watering of land through buried watering systems.

suitably qualified and experienced person for undertaking flora and fauna assessment reports is:

- a) a person with tertiary qualifications in ecology, zoology or botany;
- b) a person with a minimum of 5 years experience in undertaking flora and fauna surveys;
- c) a person with a demonstrated knowledge of the flora and fauna that occurs in the Penrith local government area; and

- d) a person possessing appropriate licences or approvals under relevant legislation.

surface irrigation means artificial watering of land through an above ground system.

surface water means any water (usually as a result of rainfall) that enters drainage areas, creeks, rivers and reservoirs such as dams and lakes.

survey plan means a plan prepared by a surveyor registered under the *Surveyor's Act 1929*, which shows:

- a) the boundaries of the allotment of land and its location with respect to any road on which the land has a boundary;
- b) the location of any proposed building, work, road or accessway in relation to the boundaries of the land;
- c) the existing level to Australian Height Datum, of:
 - i) any existing or proposed road or accessway; and
 - ii) the ground at each corner of the allotment; and
 - iii) the ground around the perimeter of any proposed building or work;
- d) the finished floor level, to Australian Height Datum, of all floors within any proposed building; and
- e) the extent of the finished level to Australian Height Datum of any proposed excavation or filling of land.

sustainable waste management involves managing and controlling the generation of waste so that

the needs of the current generation are met without limiting the options and capacity of future generations to meet their own needs.

symbolic barriers has the same meaning as psychological barriers.

T

tactile pavement refers to a surface that has been treated to provide cues (particularly to vision impaired) that a physical environment is about to change; e.g. pavers with small raised disk treatments at approaches to pedestrian crossings at street lights.

temporary sign means an advertisement or advertising structure of a temporary nature that:

- a) announces any local event of a religious, educational, cultural, political, social or recreational character or relates to any temporary matter in connection with such an event;
- b) does not include advertising of a commercial nature; and
- c) is displayed for a period not exceeding two months, or a period Council may otherwise determine and specify in the terms of approval.

the Corporation means the corporation constituted by section 8(1) of the Act;

the Minister means the Minister for Planning.

the Regulation means the *Environmental Planning and Assessment Regulation 2000*, as amended.

top (in relation to vegetation management) means to reduce the height of a tree through the practice of lopping.

top hamper sign means an advertisement that is attached to the transom of a doorway or display window of a building.

total suspended solids include a range of inorganic and organic particles suspended in the water column, which can be defined as the filterable residue retained on a 2.0mm pore size filter dried at 105°C.

trade waste means waste or refuse arising from any trade or industry.

transport management and accessibility plan (TMAP) means:

- a) a comprehensive assessment of the transport impacts (addressing both the movement of people and goods) of a major site development or re-development proposal; and
- b) the identification of a package of appropriate transport measures (including infrastructure, services and demand management initiatives) for the proposed development, which will help to manage the demand for travel to and from the development, and in particular, reduce the demand for travel by private car and commercial vehicle.

treatable flow rate means the minimum flow that a pollution control device must be capable of treating, without bypass, to achieve the desired pollution retention criteria for the particular

development style and catchment area. In the City of Penrith, the Treatable Flow Rate (TFR), for sites equal to or less than 5 ha in area, shall be 60 L/s for every hectare of catchment for gross pollutants and 10 L/s for every hectare of catchment for fine particulates. The goal of establishing a TFR is to capture and retain gross pollutants generated by the first 30mm of runoff, and to capture and retain fine particulates generated by the first 15mm of runoff.

tree means:

- a) a living perennial plant that has a height of three (3) metres or more or a trunk circumference exceeding 300mm at 400mm above ground level, or
- b) individual trees, gardens or native vegetation listed as Significant Trees and Gardens.

U

under awning sign means an advertisement that is attached to the underside of an awning, with maximum dimensions 2.4m x 0.5m and is a minimum 2.6m from the underside of the sign to the footpath.

unencumbered floor space means the area of the floor of a room readily available for unobstructed use, and excludes space occupied by any cupboard, furniture, fixture or fitting and thoroughfares.

universal design means the design of products and environments to be useable by all people, to the greatest extent possible, without adaptation or specialised design.

unsewered means not connected to reticulated mains sewer.

urban capability is a method of land classification which ranks land according to various intensities of urban use on the basis of the physical constraints applying to it. The classification does not consider development costs, social implications, aesthetics or other factors relating to ecology and the environment. It is based on physical criteria alone and thus the classification of various areas as suitable for a particular type of urban development is an assessment of the capability of those areas to sustain a particular level of disturbance.

utility undertaking means any undertaking carried on by or by authority of any Government department, or in pursuance of any Commonwealth or State Act, for the purposes of:

- a) railway, road, water or air transport, or wharf or river undertakings; or
- b) the provision of sewerage, sewage treatment or drainage services; or
- c) the supply of water, hydraulic power, electricity or gas; or
- d) telecommunications facilities; or
- e) water quality control facilities.

V

vacant land means land on which, immediately before the day on which a notice is given, or an application for development consent is lodged, there were no buildings other than fences, greenhouses, conservatories, garages, summer houses, private boat houses, fuel sheds, tool houses, cycle sheds, aviaries, milking bails, hay sheds, stables,

fowl houses, pig sties, barns or the like.

valid noise levels means the measured noise level data excluding the non-valid noise level data.

validation action plan refers to documentation detailing the methodology by which an applicant or its consultant intends verifying that the remediation work has been satisfactorily carried out. It contains the requirements for post rehabilitation testing and the justification for it. A validation plan may be included within a remediation plan.

validation report outlines the evidence or documentation of an assessment as to whether the remediation work undertaken has achieved the desired clean-up standard.

W

waste and recycling storage area means a designated area upon the site of a building for the housing of approved containers to store all waste material (including recyclable material) likely to be generated by the building's developers or occupants.

waste cupboard means a storage area within each dwelling (usually in the kitchen) of a size sufficient to enable source separation of a single day's waste into garbage recyclables and compostable material.

waste disposal means to discharge, emit or deposit into the environment, any matter whether liquid, solid, gaseous or radioactive, in such volume, consistency or manner as to cause a significant alteration to

the environment, but does not include waste water disposal carried out by the Sydney Water Corporation Limited.

waste management plan is a plan detailing the anticipated volume and types of waste and recyclable materials likely to be generated, how it is to be stored and treated on-site, and how the residual is to be disposed of.

wastewater means water that carries wastes from residential, industrial or commercial premises.

waterlogging refers to becoming saturated with water.

work based child care means a centre based child care service provided by one or more organisations for the benefit of employees.

working day means a day that is not:

- a) A Saturday or Sunday; or
- b) A public holiday or a bank holiday in the place to which the letter was addressed.

work supervisor means the person(s) responsible for supervising the development activity works.

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F2 DA Process

1.1. Overview of the Application and Assessment Process

The development application and assessment process is the process by which Council accepts, assesses and determines development applications. Some parts of the process are regulated by legislation, other parts have been developed by Council in an effort to achieve a process that provides both an efficient service and turnaround time for applicants, and gives the community reasonable opportunity to comment on those applications which may affect them. The assessment process also provides Council the opportunity to be sure that development occurring in Penrith is consistent with the relevant legislation – primarily the *Environmental Planning and Assessment Act 1979* and Penrith Local Environmental Plan 2010 (Penrith LEP 2010) – and Council policy (including this Plan).

Some parts of the assessment process are consistent for all types of applications. These are:

- Formal acceptance and receipt by Council;
- Assessment of the application against relevant legislation and Council policy;
- Determination of the application; and
- Written notification to the applicant of the determination of the application and any conditions imposed.

In recognition that different applications require different levels of assessment, Council has developed separate processes for major and minor development applications. Minor applications may not require neighbour notification and will generally be assessed within 14 days. Major applications require neighbour notification as a minimum, and may also require an advertisement in the newspaper.

The following is a guide to the assessment process for minor and major applications. It should be noted that any application which appears minor on first assessment may become more significant due to factors revealed once the assessment process has commenced. In addition, proposals which are minor on simple or unconstrained sites may be major or more complex on constrained sites (e.g. flood prone land, bushfire prone land, sloping sites or sites with significant vegetation cover).

1.2. Minor Applications

Minor development applications are likely to be for a type of development listed in *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* (the Codes SEPP) or in Schedule 2 or 3 of Penrith LEP 2010, but which do not meet the requirements in those instruments to be classified as exempt or complying. Likely examples include:

- Dwellings (alterations and additions)
- Sheds
- Swimming pools
- Rainwater tanks
- Decks and pergolas
- Boundary adjustments.

1.3. Major Applications

Major applications require much more assessment due to the complexity of the development proposed or the individual site conditions or both.

Please contact Council to confirm whether your proposal is considered to be major development.

1.4. Development Application Process

A Development Application (DA) is a formal request for permission to carry out a proposed development. Generally, you will need a DA if you propose to:

- Erect a new building/structure;
- Alter or add to an existing building;
- Demolish a building;
- Demolish, alter or damage a heritage building or a building within a Heritage Conservation Area;
- Change the use of a building;
- Subdivide land or strata subdivide a building;
- Display or erect an advertising sign;
- Erect an outbuilding; or
- Erect a swimming pool.

Development Application forms are available from Council, or on Council's website at www.penrithcity.nsw.gov.au.

Fees will be charged in accordance with Council's advertised fees and charges.

1.4.1. Pre-Lodgement

Council's primary aim is to identify and, if possible, resolve issues 'up front' ahead of a DA being submitted. To this end, Council provides pre-lodgement advice at Development Panel meetings. We know, from our experience, that this enables the DA to be determined faster.

We have a commitment to the quality of advice and customer service provided at the Development Panel meetings. In supporting this enhanced service, Council has resolved that all development proposals (other than dwellings and ancillary buildings, minor commercial or industrial additions/alterations, use/occupancy of buildings, minor rural development or advertising signs) should be reviewed by the Development Panel before the DA is submitted.

By working together with you, we can avoid unnecessary delays with your application.

The concept details are required to be received by Council prior to the appointment time/date.

Development Panel Meeting

The Panel will be attended by senior staff from appropriate sections of Council. Your proposal will be discussed at the meeting and verbal advice provided of which minutes will be kept.

Where possible, we will endeavour to provide you with a level of certainty about your proposal, however, we cannot give absolute commitment at this early stage.

A written response summarising any issues with your proposal will be provided as soon as possible after the meeting date.

Development Application

If you proceed with the DA after the above process, you should take account of all issues raised by the Development Panel. However, you cannot assume Council's support for your proposal based on pre-lodgement advice as a full assessment and determination can only be made after lodgement of the DA.

1.4.2. Plans/Drawings

The following plans and documentation will be required for most development applications:

- Site Plan;
- Floor Plan;
- Elevation Plan;
- Section Plan;
- Specifications;
- Statement of Environmental Effects;
- Energy Rating;
- Shadow Diagrams;
- Notification Plan;
- Landscaping Information;
- Erosion and Sediment Control Details;
- Drainage Plan;
- Waste Management Plan;
- Public Art Strategy (where relevant).

Additional information on submission requirements is included in Appendix F3 of this Plan.

Application form

Council's Development Application Form must be completed and provided with any development application.

1.4.3. Fees and Charges

The applicable fees and charges will need to be paid when submitting the DA. Fees and charges vary depending on the type, scale and nature of the development proposed. Council's current Schedule of Fees and Charges contains a comprehensive listing of current fees and charges for Council businesses and services.

1.4.4. Notification and Advertising

For a range of DAs, Council notifies landowners and occupiers who are likely to be affected by the proposal. This is determined by a site assessment of the locality.

Large scale site plans, elevations, a statement of environmental effects and other relevant information is available for public viewing.

1.4.5. Assessment

Following lodgement of the DA and the end of the notification and/or advertising period, Council conducts a site inspection to assess the impact of the proposed development. All submissions received will also be considered.

If the application is satisfactory, Council will issue development consent. This consent will be subject to conditions.

1.4.6. Development Consent

Council's assessment officer will complete a detailed assessment of your DA and arrange site inspection/s, when required. If the development is approved, Council will issue a Development Consent, subject to listed conditions.

1.4.7. Construction Certificate

A Construction Certificate is a certificate that states that building work can commence on an approved development and that it complies with the terms of the consent and the Building Code of Australia. This certificate can be issued by either Council or an independent certifier.

You must have development consent to obtain a construction certificate. No work must commence before you obtain a construction certificate.

You must also appoint a Principal Certifying Authority (PCA) and notify Council two (2) days prior to work commencing.

You may appoint Council as your PCA. To do this, please complete and lodge the *Application for Council PCA* form at least two (2) days before you are to start work on the site.

You should also ensure that any conditions requiring compliance before you can commence work have been completed to the satisfaction of your PCA.

Private Certifiers on Building Sites

Since July 1998, qualified professionals can oversee the construction of a development and/or certify stages of the construction phase. As such, you have the choice of using Council or a qualified professional, known as a private certifier, to certify the construction of your development.

If building or excavation works are required for the development, including subdivision, then you will need a Construction Certificate to commence works on the site. The Construction Certificate can only be issued after:

- a) Council has issued development consent for the same development; and
- b) Specifications and information has been provided with the Construction Certificate application to ensure compliance with the relevant standards including the Building Code of Australia; and
- c) Where relevant, specific conditions of the development consent requiring compliance before a Construction Certificate is issued has been complied with.

Once you have received a Construction Certificate, you will need to engage a PCA (either Council or a private certifier). The PCA is responsible for:

- i) Overseeing the construction works on the site; and
- ii) Ensuring that the relevant conditions of the development consent are being complied with; and

- iii) Ensuring that stages of the construction have been duly certified by the appropriately qualified professional; and
- iv) issuing an Occupation Certificate for the building before the building can be occupied or use of the development commenced.

If Council is not your PCA, you are responsible for advising the Council of your nominated PCA, including their details, 2 days before you commence construction works.

To ensure that your development is completed in a coordinated and timely manner, you are strongly advised to engage the same person who is issuing your Construction Certificate to also be the PCA for the construction phase.

Engaging a Private Certifier

Private certifiers are appropriately qualified professionals who have attained accreditation from their relevant professional accreditation board. Private certifiers, like Council, also require professional indemnity insurance as they are potentially responsible to make good poor or defective work if it can be demonstrated that they have been negligent.

In engaging a private certifier and/or a PCA (if not Council), you should ensure that the person has the appropriate accreditation relevant to your development.

Please note that it is difficult to change PCAs once the construction has commenced.

Council's role if a private certifier is the PCA

Complaints may arise during the construction of the development. Typically, these complaints are given to Council, despite the project being overseen by a private PCA. Depending on the nature of the complaint, Council will direct the complaints to the PCA to resolve.

Council will deal with immediate matters affecting resident amenity and the environment, such as noise and air pollution, hours of construction, erosion and sediment control, and waste management. In this regard, Council may decide to proceed with one or more of the following actions:

- i) Advise the PCA of the complaint and issue a warning (as a first offence);
- ii) issue a Penalty Infringement Notice (for certain breaches);
- iii) Commence the Orders provisions under the *Environmental Planning and Assessment Act* by issuing a Notice to Issue an Order;
- iv) Commence proceedings in the Court for serious offences.

1.4.8. Inspections Required

New Dwellings

1. Slab-On-Ground Construction

Erosion and Sediment Control Barriers

Erosion and sediment control barriers must be installed on all building sites in order to prevent site erosion and the runoff of sediment from building sites into the stormwater system. It is very important to implement these measures as soil erosion on building sites can be a major source of sediment pollution in our waterways. Although a single block of land may seem a small part of the river catchment, the cumulative effect of polluted runoff from a number of building sites can have a dramatic impact on water quality.

The most common types of barriers are filter fabric or sediment fences and straw bales. Note: Filter fabric looks like green shadedcloth but it is in fact a special material developed especially for sediment control. Shadedcloth is not to be used for erosion and sediment control.

Piers

This inspection may not be required in all cases. It is necessary to determine whether piers are expected to be dug.

The inspector must inspect the pier holes once they have been dug and cleaned out, and before they are filled with concrete.

Slab Steel

This inspection is required for all slabs. The inspector must inspect the steel once the slab is 'formed up', the termite protection method has been installed (where necessary), the 'membrane' (plastic) is laid, steel reinforcement has been placed and before the concrete is poured.

2. Timber Floored Dwellings

Strip Footings

Strip footings contain reinforcement steel and so must be inspected once the footing has been dug and the reinforcement steel has been installed but before the concrete is poured.

Pad Footings

Pad footings must be inspected once they have been dug and cleaned out but before the concrete is poured into them. Isolated pad footings do not contain any reinforcement steel; they comprise of concrete only.



Bearers and Joists

The bearers and joists must be inspected before the wall and roof framing is erected and before any floor is installed. Many builders may argue that the bearers and joists may be inspected at the same time as the rest of the frame is inspected. This is not acceptable because if the bearers and joists are incorrectly installed, it is too late once the full frame is constructed. The inspectors must also ensure that the ant capping is correctly installed. Without exception, timber floored dwellings and dwelling additions must have an inspection solely for bearers and joists.



3. Slab-On-Ground Construction/Timber Floored Dwellings

Frame

The inspector must inspect the framework once it is completed. All brickwork must be erected and for trussed roofs, roof covering must be laid. The inspection cannot be done unless these rules are followed.

For a conventional framed house, the roof tiles do not have to be laid prior to the frame inspection.

The frame must be inspected prior to installation of internal wall and ceiling linings.



Note: When roof covering has been installed, gutters and downpipes should be connected (see stormwater inspections).

Wet Area Flashing

Generally there are two types of wet area flashing.

One type is applied to the framework *before* the wall lining has been done. This type can be inspected at the frame stage.

The other type is applied *after* walls have been lined which will require a separate inspection before any tiling can be done.



Stormwater

Stormwater plumbing work does not have to be completed by a licensed plumber. It may be done by owner/builders.

The inspector must inspect the stormwater lines once they are laid in the trenches and connected to either the street gutter or an easement (common drainage line). The use of rubble drains is generally not favoured by Council; however, this system of drainage may be considered depending upon the suitability of the site. The installation of rubble drains must be approved by Council.

Final

A final inspection cannot be carried out until the dwelling is completed. Generally, the following matters are required to be completed:

- The site should be clean, neat and tidy, free of any unwanted building materials.
- All painting both internal and external should be completed.
- Smoke detectors to be installed and a certificate provided.
- All certificates requested by the inspector, for example, structural engineer's certificates and pest control certificates, should be submitted to Council.
- All excavated and filled banks should be retained.
- All conditions of consent must be complied with, for example, if landscaping was required to be done, it must be fully completed in accordance with the approved application.

Applicants may apply for early occupation of a dwelling. The application must be made in writing to Council and be accompanied by the appropriate fee.

Early occupation of a dwelling will only be considered when all of the cooking and washing facilities are connected and in full working order, i.e. a bathroom, kitchen and laundry must be fully operational. Also, any balconies or stairs etc. requiring handrails and balustrades must have them installed.



4. Swimming Pools

a) Above-ground pools

Excavation

If a pool is sunk into the ground, an inspection may or may not be required. (Check the consent or with Council).

Fencing

The fence must be inspected before any water has been put into the pool.

Final

The final inspection is done when the pool is full, the filters are connected and the resuscitation chart has been put up.



b) In-ground pools

Concrete Pools - Excavation/Steel

This inspection is required to be carried out once the hole for the pool is dug and before the concrete is poured. For steel reinforced concrete pools, the inspector will inspect the steel reinforcement and the excavation at the same time.

Fibreglass Pools - Excavation

The excavation is inspected first, then the coping is inspected.

Fencing

Pool fencing must be inspected before any water is put in the pool.

Final

The final inspection is done when the pool is full, the filters are connected and the resuscitation chart has been put up.



1.4.9. Occupation Certificate

An occupation certificate, issued under the *Environmental Planning and Assessment Act 1979*, allows a person to occupy and use a new building or change the use of an existing building. An occupation certificate is required for any new building work, or change of use of a building, that has development consent or a complying development certificate. An occupation certificate is issued by your Principle Certifying Authority (PCA).

Occupation certificates are not required for buildings which are exempt development.

They may not be issued for the occupation or use of a new building after 12 months from the date on which the building was first occupied or used.

An occupation certificate verifies that the PCA (Council or a Private Certifier) is satisfied that the building is suitable to occupy or use in terms of the requirements of the Building Code of Australia. That Code sets required standards for the design and construction of various classes of buildings to protect health, safety and amenity.

There are two types of Occupation Certificate:

1. Final Occupation Certificate

A final occupation certificate allows commencement of either the occupation or use of a new building (including alternations/ extensions) or the new use of an existing building resulting from a change in its use.

2. Interim Occupation Certificate

An interim occupation certificate allows commencement of either the occupation or use of a partially completed building, or of a new use of part of an existing building resulting from a change of use of the building.

It is rare that an interim certificate is issued, but if one has been, a final occupation certificate is still required when all building work or the change of use is complete. A final occupation certificate revokes any occupation certificates issued earlier.

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F3 DA Submission Requirements

1. Introduction

This Appendix outlines the requirements for submission of supporting information with development applications. Not all applications will require all the supporting information listed in this section. Which reports are required will depend on the land use itself, the scale of the development, its location and the individual site features.

The distinction between minor and major development is discussed in Appendix F2 'Development Process'. In some cases, the scale of development or the nature of the proposed site will mean that what would normally be classed as minor development may be major development, and vice versa. If in doubt, please contact Council.

Table F3.1 in section 2 below outlines which information is likely to be required for different land uses in different areas. Applicants will need to be aware of site features and natural hazards (e.g. flooding, bushfire, vegetation, high visibility, etc) in order to determine whether a particular report or plan will be required. If in doubt, please contact Council.

2. Submission Requirements Overview

Table F3.1 shows the submission requirements for a number of different types of applications to Council.

Table F3.1

MATRIX OF INFORMATION TO ACCOMPANY APPLICATIONS	Residential Dwellings	Alteration and additions to residential dwellings	Garage, Outbuilding, Awning, Carport, etc	Farm Shed	Swimming Pool	Dual Occupancy/ Secondary Dwelling	Multi dwelling housing and residential flat buildings	Commercial / Industrial building	Alteration and additions to Commercial / Industrial	Demolition	Subdivision of Land	Septic tank	Advertising sign	Home business	Applicant Checklist	Council Checklist
Site Plan	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Floor Plan	✓	✓	✓	✓		✓	✓	✓	✓		✧	✓		✓		
Elevation Plan	✓	✓	✓	✓	✓	✓	✓	✓	✓				✓	❖		
Section Plan	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✧	❖		
Specifications	❖	❖	❖	❖	❖	❖	❖	❖	❖	✓		✓	✧	❖		
Statement of Environmental Effects	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✧	✓		
BASIX	✓	❖			❖	✓	✓									
Building Sustainability Rating Certificate	✓	✓				✓	✓	✧	✧		✧					
Shadow Diagrams	✧	✧				✧	✧	✧	✧							
Landscaping Plan	✧	✧	✧	✓		✓	✓	✓	✧		✓	✓				
Erosion / Sediment Control	✓	✓	✧	✧	✧	✓	✓	✓	✧	✓	✧	✧	✧			
Drainage Plan (Stormwater)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✧	✧	✓				

MATRIX OF INFORMATION TO ACCOMPANY APPLICATIONS	Residential Dwellings	Alteration and additions to residential dwellings	Garage, Outbuilding, Awning, Carport, etc	Farm Shed	Swimming Pool	Dual Occupancy/ Secondary Dwelling	Multi dwelling housing and residential flat buildings	Commercial / Industrial building	Alteration and additions to Commercial / Industrial	Demolition	Subdivision of Land	Septic tank	Advertising sign	Home business	Applicant Checklist	Council Checklist
	✧	✧	✧			✧					✧	✧		✧		
	✓	✧		✧	✓	✓	✓	✓	✧	✓				✧		
	✓	✓		✓		✓	✓	✓	✓							
	✓			✧		✓	✓	✓			✓					

✓ Indicates this information is required

✧ Indicates this information is required if you are applying for a Construction Certificate or Complying Development Certificate

✧ Indicates this information may be required

Certain applications may require the submission of additional information that has not been listed above. Council encourages you to consult prior to lodging your application. This ensures that many issues may be resolved before an application is lodged and that each application contains all necessary information to enable prompt processing by Council.

3. Plans/Drawings

Table F3.2 lists the types of plans and drawings likely to be required for minor and major development. A minimum of 6 complete sets of all plans and documents are required for the submission of applications.

Table F3.2

Ref.	Plan	Minor	Major	Comments/Other
1	CD with all Plans in PDF format	✓	✓	
3	Survey/contour Plan	✓	✓	If relevant
4	Site Plan	✓	✓	If relevant
5	Site Analysis	✓	✓	
	Local analysis		✧	
	Regional analysis		✧	
6	Floor Plans	✓	✓	If relevant
7	Section Plans	✓	✓	If relevant
8	Elevation Plans	✓	✓	If relevant
9	Demolition Plans	✓	✓	If relevant
10	Shadow Diagrams		✓	
11	Landscape Plan	✧	✓	If relevant
12	Specifications of Advertising Signage	✓	✓	If relevant
13	Specification of External Finishes	✓	✓	If relevant
14	Sample Board		✓	If relevant
15	Photomontages		✓	If relevant
16	Subdivision Plan		✓	If relevant
17	Model		✓	If relevant
18	Plant and Plant Rooms		✓	If relevant

✓ Indicates this information is required

✧ Indicates this information may be required

4. Supporting Report Requirements

Tables F3.3 and F3.4 list the types of reports likely to be required for minor and major development.

Table F3.3

Report	Minor	Major	Notes / Comments
Site Analysis (Site Plan)	✓	✓	Level of detail will vary depending on scale and/or complexity of development or site
Statement of Environmental Effects	✓	✓	Level of detail will vary depending on scale and/or complexity of development or site
Building Sustainability Rating Certificate <ul style="list-style-type: none"> BASIX Certificate Non-residential Development 	✓	✓ ✓	<p>BASIX Certificate required for dwelling construction or alterations.</p> <p>Required for non residential development (including mixed use) over \$1 million.</p>
Landscaping Information <ul style="list-style-type: none"> Landscape Site Analysis Plan Landscape Concept Plan Landscape Detail Plan Landscape Implementation Report Landscape Maintenance Report Landscape 3 Year Landscaping Report 	✓ ✧ ✧	✓ ✓ ✓ ✧ ✧ ✧	
Erosion and Sediment Control <ul style="list-style-type: none"> Erosion and Sediment Control Plan Additional Erosion and Sediment Control Measures 	✓	✓ ✓	<p>Level of detail will vary depending on scale and/or complexity of development or site</p>

Report	Minor	Major	Notes / Comments
Stormwater and Drainage			
• Drainage Plan (Stormwater)	✓	✓	
• Site and Soil Assessment Report	✓	✓	
• Stormwater and Drainage Report		✧	
Waste Management Plan	✓	✓	
Transport and Traffic Impact Assessments			
• Traffic Impact Statement	✧	✓	
• Traffic Report		✧	
• Transport Management and Accessibility Plan (TMAP)		✧	

✓ Indicates report is required

✧ Indicates this information may be required

Certain applications may require the submission of additional information that has not been listed above. Council encourages you to consult prior to lodging your application. This ensures that many issues may be resolved before an application is lodged and that each application contains all necessary information to enable prompt processing by Council.

Table F3.4

Report	Minor	Major	Notes / Comments
The following reports are required if the site or development characteristics fit the necessary criteria. For example, if a site is on bushfire prone land, a bushfire assessment report will be required. If the proposal includes works to trees and vegetation then the relevant applications and reports will be required.			
Works to trees and vegetation			
• Tree Survey and Assessment Report	✓		Information to be provided with applications for tree pruning / removal
• Arboricultural Survey Report	✧	*✓	Certain works to trees and vegetation
• Tree Management Plan	✧	*✓	Where trees to be retained as part of development

Report	Minor	Major	Notes / Comments
<ul style="list-style-type: none"> Flora and Fauna Assessment Report Species Impact Statement 	*✓ *✓	*✓ *✓	Information to be provided with development applications for works to any indigenous trees and vegetation *where Council determines works to trees and vegetation likely to impact threatened species, populations, ecological communities or habitats
Bushfire Assessment Reports <ul style="list-style-type: none"> Non-integrated development Integrated development 	*✓ 	 *✓	*if site is bushfire prone land *if site is bushfire prone land
Flood Study	*✓	*✓	*if site is affected by 1 in 100 ARI flood event
Salinity Analysis	*✓	*✓	*if site identified as subject to potential risk of salinity
Visual Impact Assessment	*✓	*✓	*if site is located in areas identified on Penrith LEP 2010 Scenic and Landscape Values Map or land zoned E1 or E2 on Penrith LEP 2010 Land Zoning Map
Heritage <ul style="list-style-type: none"> Heritage Impact Statement Heritage Conservation Management Plan Archival Record 	*✓ ✧ *✓	*✓ ✧ *✓	*any development that would: -affect a heritage item; -be carried out in a heritage conservation area; -affect a place of potential heritage significance; or -occur in the vicinity of a heritage item. *where proposal could affect the significance of a heritage item, heritage conservation area or place of potential heritage significance *where proposal involves demolition or partial demolition of a heritage item, a place within a heritage conservation area or a potential place of heritage significance

Report	Minor	Major	Notes / Comments
<ul style="list-style-type: none"> Archaeological Assessment Report Aboriginal Cultural Heritage Archaeological Survey Report 	*✓ ✧	*✓ ✧	*where proposal involves disturbance or development of a heritage item listed as an <i>archaeological site</i> in Penrith LEP 2010 *where proposal involves disturbance to the soil or construction works and the land is potentially archaeologically sensitive or has an area of 5 hectares or more
Contamination <ul style="list-style-type: none"> Contamination Investigation Report / Preliminary Contamination Investigation (Stage 1) Detailed Contamination Site Investigation (Stage 2) Site Remedial Action Plan (Stage 3) Validation and site monitoring reports Site Audit (Contamination) Chemical Use and Storage Report 	✧ ✧ ✧ ✧ ✧ ✧	*✓ *✓ *✓ *✓ *✓ ✧	*where contamination is, or may be, present *when preliminary investigation indicates land is contaminated or is, or was, formally used for a potentially contaminating activity *where remedial action is required *to confirm whether the clean-up objectives have been attained and whether further remediation or restrictions on land use are required *where independent review is required of site investigation, remediation or validation *if proposal involves storage of chemicals on the site
Noise Impact Statement	*✓	*✓	*where proposal may be impacted by road, rail or aircraft noise and/or where proposal is potentially noise generating
Land Stability, excavation and filling <ul style="list-style-type: none"> Geotechnical report Landfill validation report 	*✓ *✓	*✓ *✓	*where building is proposed on land with slope gradient higher than 15% *where proposal involves landfill

Report	Minor	Major	Notes / Comments
Water Management Plan	✓	✓	Where application is for an industrial or rural land use that will increase the water needs of a particular area
Social Impact Assessment		✓	
Economic Impact Assessment		✓	Including child care centres over 40 places, major retail development
Environmental Impact Assessment	✧	✓	Major development (e.g. designated development) and development that may result in contamination
Urban Design Assessment		✓	
Local Analysis	✧	✓	
Regional Analysis	✧	✓	
Infrastructure Delivery Plan		✓	Required for new urban areas
3D Modelling		✧	Required for certain developments in St Marys Town Centre

✓ Indicates report is required

✧ Indicates this information may be required

Certain applications may require the submission of additional information that has not been listed above. Council encourages you to consult prior to lodging your application. This ensures that many issues may be resolved before an application is lodged and that each application contains all necessary information to enable prompt processing by Council.

4.1. Site Analysis (Site Plan)

A Site Analysis involves looking at the features of the site and the immediate surrounding area and, where possible, presenting the information in a diagram(s). This enables the opportunities and constraints to be identified and subsequent development to respond appropriately to the site characteristics. A Site Analysis should include the following minimum elements:

- 1) The site's dimensions and areas;
- 2) North point and the site's orientation (e.g. solar access);
- 3) Topography (with 0.5m to 1m contours);
- 4) Road, pedestrian and cycle access points;

- 5) Services and infrastructure (e.g. electricity poles, stormwater drainage lines, natural drainage, kerb crossings and easements);
- 6) Rights of way;
- 7) Views to and from the site (more detail is provided below);
- 8) Site overland flows and drainage patterns;
- 9) Geotechnical characteristics of the site and suitability for development;
- 10) Location of site in relation to shops, community facilities and transport;
- 11) Heritage items on site or on adjoining properties;
- 12) Form and character of adjacent and opposite buildings in the streetscape, including both sides of any street that the development fronts;
- 13) Location and use of any existing buildings or built features on the site;
- 14) Location and important characteristics of adjacent public, communal and private open spaces;
- 15) Location of significant vegetation on the site and on adjoining properties and all street trees;
- 16) Location of any significant noise sources on and in the vicinity of the site; and
- 17) Assessment of site contamination and/or remediation.

The Site Analysis includes the site and the immediate context - usually up to 50 or 100 metres in any direction from the site (depending on the scale of development, the proposed land uses and its impacts). The Site Analysis should include plan and section drawings of the existing features of the site at the same scale as the site and landscape plan.

Not all of the elements listed above will be relevant for every development or site. You are strongly recommended to contact Council's Development Services Unit to discuss the requirements for your proposal prior to lodging a development application.

4.2. Statement of Environmental Effects

A Statement of Environmental Effects (SEE) is a written document that supports the development application. It demonstrates that, as the applicant, you have considered what impact your development will have on the natural and built environment and how you propose to mitigate any negative effects. All developments will require a SEE, although the level of detail may vary according to the type of development. For most minor development, there is no need for the SEE to be prepared by a specialist.

A SEE should include, but is not limited to, the following:

An Assessment of Relevant Planning Controls

This section is important as it demonstrates how the proposal complies with relevant planning policies (including State Environmental Planning Policies (SEPPs), Local

Environmental Plans (LEPs), Development Control Plans (DCPs) and other relevant policies).

For each issue listed below, identify which policies apply to the site and describe how the proposal complies.

Site Suitability

- i) Identify flooding, drainage, landslip, mine subsidence, soil erosion, bushfire or any other risk.

Access and Traffic

- ii) Describe driveway access, manoeuvrability and pedestrian safety.
- iii) Discuss the suitability of the existing road network.
- iv) Describe the number of vehicle movements entering and exiting the site, including delivery trucks.
- v) Describe the number and location of parking spaces.

Streetscape and Design

- vi) Discuss how the design of the development has taken into consideration the existing streetscape.
- vii) Provide details of the proposed external finishes, including material type and colour.

Services

- viii) Discuss the availability of utility services such as power, water, sewer and telephone services.
- ix) Describe the method of sewerage effluent and stormwater disposal.

Privacy, Views and Overshadowing

- x) Provide shadow diagrams and explain how they satisfy Council's requirements for solar access.
- xi) Discuss how the proposal affects the views both from and into the site, from neighbouring properties, roads and any more distant elevated vantage points together with any measures to reduce the impact.

Social and Economic Effects

- xii) Discuss whether the development will have a positive or negative social impact on the locality. Provide proposed measures to address any negative impacts.
- xiii) Discuss what economic impact the development will have on the locality.

Flora and Fauna

- xiv) In relation to the Threatened Species Conservation Act, discuss the impact that the development will have any threatened or endangered species.

4.3. Building Sustainability Rating Certificate

4.3.1. Residential Development (BASIX Certificate)

A BASIX Certificate is required for all dwellings, including those dwellings in a mixed use development and serviced apartments intended or capable of being strata titled. Proposals for additions and/or alterations to an existing dwelling also need a BASIX Certificate.

The Building Sustainability Index (BASIX) is a web-based planning tool designed to assess the potential performance of residential buildings against a range of sustainability indices. Applicants can generate the BASIX Certificate only on the NSW Department of Planning BASIX website: www.basix.nsw.gov.au. For more information, phone the BASIX Help Line on 1300 650 908.

The applicant is required to submit the BASIX Certificate with the development application or Complying Development Certificate application. The BASIX Certificate and plans and/or specifications must be consistent. Plans and specifications must identify BASIX commitments fundamental to the design of the development (e.g. location and size of rainwater tanks, windows, heating and cooling systems). Inconsistencies may be resolved through amendment of plans and/or specifications or by submitting a new BASIX Certificate with commitments that match the rest of the application.

Like other development and building standards, BASIX commitments will be checked for installation and operation as part of the certification of completed building works. It should also be noted that as many BASIX commitments will involve the purchase and correct installation of building elements and materials, it is important to keep all receipts and certificates of installation for review by the certifying authority.

4.3.2. Non-residential Development

Non-residential developments including mixed use developments with a construction cost of \$1 million or more are to demonstrate a commitment to achieving no less than 4 stars under Green Star or 4.5 stars under the National Australian Built Environment Rating System.

The applicant is required to submit the rating certificate with the development application or Complying Development Certificate application. The plans and specifications must also identify the Green Star or NABERS commitments which will be checked by a professional building certifier during construction. Submitted plans or specifications and the certificate must be consistent. Inconsistencies may be resolved through amendment of plans and/or specifications or by submitting a new Certificate with commitments that match the rest of the application.

National Australian Built Environment Rating System (NABERS)

NABERS is a national rating system that measures the energy efficiency, water usage, waste management and indoor environment quality of a building or tenancy and its impact on the environment. NABERS provides a star rating based on a buildings actual operational performance. The rating takes into consideration:

- The climactic conditions in which the building operates
- The hours of its use

- The level of services it provides
- The energy sources it uses
- Its size and occupancy.

For more information, visit www.nabers.gov.au

Green Star

Green Star is an environmental rating scheme that provides formal accredited evaluation of the environmental design and achievements of buildings across nine categories (management, indoor environment quality, energy, transport, water, materials, land use and ecology, emissions and innovation). Green Star provides certified ratings of 4, 5 or 6 Stars. Information about Green Star is available from www.gbca.org.au/green-star.

The Green Star certification system was developed and is administered by the Green Building Council of Australia, a not-for-profit organisation.

4.4. Landscape Plans

All design work is to be undertaken to a level consistent with industry best practice and must meet the following requirements as a minimum. The degree of detail is to be relevant and appropriate to the scale of the development. The name, qualifications and membership details of the person or company preparing the plans is to be shown on each plan.

4.4.1. Landscape Site Analysis Plan

The purpose of a Landscape Site Analysis Plan is to ensure that key site planning issues are identified and are a part of the design process. For category 2 and 3 developments (see the Landscape Design Section of this Plan), the details of the site analysis are best depicted on a separate plan. In the case of category 1 proposals, this information can form part of the Landscape Concept Plan.

It is not sufficient to prepare a Landscape Site Analysis Plan and then ignore it during the design process. The Landscape Site Analysis Plan will have identified the opportunities and constraints of a particular site and the relevant surrounding area. The purpose of the Landscape Site Analysis Plan is to inform the design process. Some of the information will also form the basis for preparing management plans for vegetation, erosion and sedimentation control, stormwater and waste.

The following indicates the sort of information to be collected and presented in the Landscape Site Analysis Plan depending upon the site and the complexity of the proposal. Figure F3.1 provides an example.

1. Site survey

- a) Identifies the lot and its boundaries.

2. Plan information

- a) Scale of plan at 1:100 or 1:200 (use ONLY these scales) plus bar scale.
- b) North point.

- c) Name and qualifications of person preparing Landscape Site Analysis Plan.

3. Existing site features

- a) Location and uses of any existing buildings and structures on the site showing those to be removed and retained.
- b) Location and height of walls and fences built to the boundary.
- c) Heavily shaded areas from existing structures, mature trees or dominant landform, such as rock ledges.
- d) Archaeological and heritage sites.
- e) Any easements and rights-of-way and their restrictions.

4. Services

- a) Location of existing overhead and underground utility services (electricity, gas, telephone, water, sewer and stormwater drainage lines, inlets and collection points).

5. Use of adjacent land

- a) Location and uses of adjacent buildings and vegetation.
- b) Ridge levels and floor levels of adjacent buildings.
- c) Potential for overlooking into and from window openings in walls adjacent to the development site.
- d) Potential for shading on adjacent properties.
- e) Streetscape features and character (e.g. street trees, poles, kerb crossovers, bus stops) and street trees

6. Landform

- a) Height contours at regular intervals (and any relevant road benchmark) and areas of steep slope (20% or more).
- b) Existing natural features (e.g. cliffs, rock outcrops).
- c) Orientation of site (e.g. south-facing slope).

7. Soils

- a) Depth of topsoil and subsoil.
- b) pH (the level of soil acidity affects its performance).
- c) Condition - fertility, whether it has been compacted, cut or filled.
- d) Erosion problems, contamination or salinity.

8. Plants

- a) Existing established individual or stands of trees and vegetation with their height and spread, condition and common/botanical name – particularly note any trees listed as “Significant”.
- b) Existing ground levels around the base of trees.
- c) Extent and name of any weed infestation.
- d) Plants proposed to be removed.
- e) Plants proposed to be protected and retained.

9. Wildlife

- a) Any habitats on the site and nearby land.
- b) Fauna habitat possibilities (e.g. niches in rockeries, ponds for frogs, habitat plants (nectar for small birds)).

10. Climate

- a) Directions of pleasant and unpleasant summer and winter winds.
- b) Windbreaks and their likely permanence.
- c) Frost pockets.
- d) Shady areas.
- e) Direction and extremity of bushfire threat.

11. Water

- a) Sources of water flowing on to the site and the general quality of that water.
- b) Drainage patterns on the site, areas of concentrated runoff, ponding, possible flooding.
- c) Adjoining riparian zone, if within 40 metres of a waterway.
- d) Characteristics of the drainage system immediately downstream of the site (e.g. bushland creek or a constructed stormwater drainage channel).

12. Views and vistas

- a) Good and unsightly views into and from the site.
- b) Qualities of the site that are important in the view to and from the site (e.g. major trees).

4.4.2. Landscape Concept Plan

A Landscape Concept Plan is required for all category 2 and 3 developments and may also be required for some category 1 developments. It should express the developer's intent and ideas, and show how the proposed landscaping relates to the characteristics of the site and its setting.

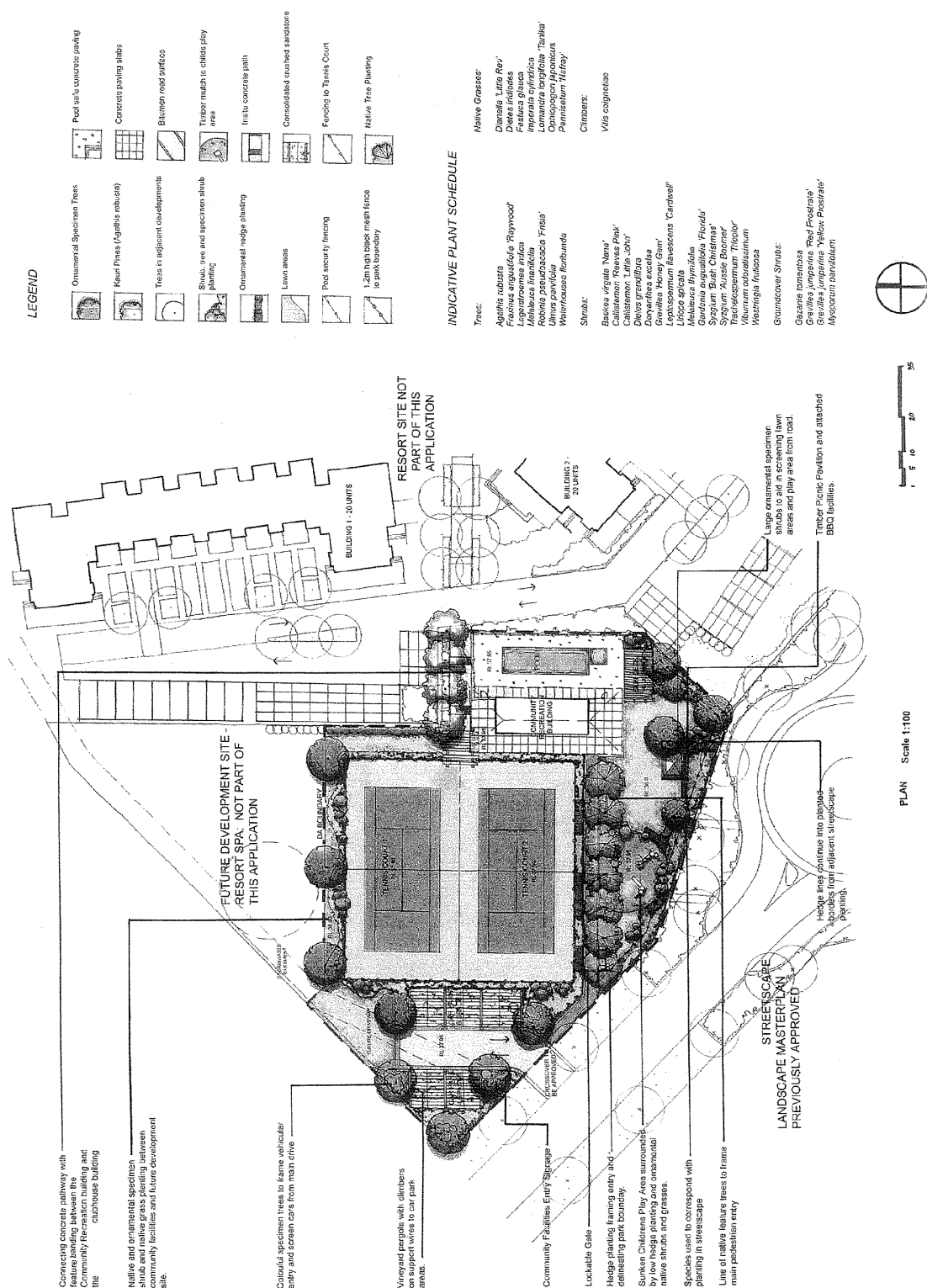
The following information should be provided in the Landscape Concept Plan:

- a) A statement summarising the vision or concept of the design, existing and proposed character, relevant issues identified in the site analysis and other reports, and how the design responds to those issues for example heritage and access issues.
- b) All proposed areas to be landscaped including balconies, roof gardens, courtyards. Show general landscape materials, finishes and treatments (e.g. massed planting beds, specimen trees, paving, gravel, turf, water element, lighting, signage). Include notations linked to specific parts of the plan to explain purpose, function and character.
- c) Hard and soft landscaped areas showing contours, spot heights and finished levels, including retaining walls and fencing heights, types and colours.
- d) Existing trees to be retained including surveyed spot height at the base of the trunk, and numbered where relevant according with the arborist report. Also include the extent of tree protection zones and measures on the plan (refer to AS4970 Protection of Trees on Development Sites).
- e) Broad descriptions of proposed land modelling and areas of cut and fill. The plan must demonstrate that any proposed changes of level will not have an adverse effect on the plants and natural features to be retained.
- f) Description of landscape values being promoted (e.g. bushland habitat, temperature moderation, reduce runoff and increase infiltration, heritage, streetscape compatibility, etc.).
- g) Indicative planting scheme that includes an indicative schedule of tree, shrub and groundcover species to be used (include botanical and common name, mature height, spread of foliage and container size). Any species nominated for street trees should be listed separately.
- h) Specification notes for maintenance works (watering, weeding and fertilising of plants for successful establishment) including the proposed duration of the plant establishment period. Also proposed maintenance activities that will affect the appearance of plants such as hedging.
- i) Accessibility and universal design statement for open space areas, including compliance with relevant Australian Standards, seating types (including armrests and backs), ramps, kerb ramps etc.
- j) Existing trees that adjoin the site or may be affected by the development including existing trees to be removed.
- k) Landscape details (including cross sections and elevations) to indicate changes in level, walls, depth of planting media, preliminary construction details or any key components.
- l) Replacement strategy for failures in plant materials and built works.

- m) Erosion and sediment control details may need to be included depending upon the scale of the works.
- n) Submit any other related plans for the context eg. masterplans, precinct plans with other stages, circulation networks.

An example of a Landscape Concept Plan is included in Figure F3.2. Elevations and sections are recommended to illustrate design intent.

Figure F3.2



4.4.3. Landscape Detail Plan

A Landscape Detail Plan is required for all Category 3 developments and may be required for some category 2 developments. When Council requires a Landscape Detail Plan the documentation is to be concise and detailed, suitable for tendering. The Landscape Detail Plan must be consistent with the Landscape Concept Plan approved as part of the development consent. For smaller developments, it may be appropriate for the Landscape Concept Plan to be combined with the Landscape Detail Plan.

All requirements listed to be shown on the Landscape Concept Plan, a Landscape Detail Plan should provide information on the following:

1. Site layout

- a) Details for special treatments (e.g. weed eradication, creek banks, mounding, roof gardens, extent or edge basement). Clearly define deepsoil and podium areas.
- b) Location of utility areas and screening details (e.g. garbage receptacle area, storage of recyclable waste, clothes drying area, letter boxes, play areas, common open space, staff recreation areas).
- c) Location and details of lighting and other outdoor fixtures (e.g. signs, furniture including street lighting and power poles).

2. Built structures

- a) Existing and proposed buildings and other structures (including finished levels and floor heights) including play equipment.
- b) Roadways, driveways, car parks, podiums and footpaths (including materials and finished levels). Particular attention should be paid to any areas proposed to meet Australian Standards on Disability Access.
- c) Existing and proposed walls, fences, gates and retaining walls (including materials, heights, colours and finished levels).
- d) Overshadowing caused by proposed built structures on existing site features and on adjacent land.

3. Plant selection

- a) Planting layout plan showing location of species and dimensions at maturity, including street trees, trees on adjacent properties, trees on site, shrubs, groundcovers, turf, etc.
- b) Planting schedule with botanical and common names, whether evergreen or deciduous and local/native/exotic species, container size, quantities, dimensions at maturity, spacing and staking and tying requirements for all species nominated.
- c) Schedule listing botanical and common names of trees to be removed, and trees to be retained.

4. Construction details

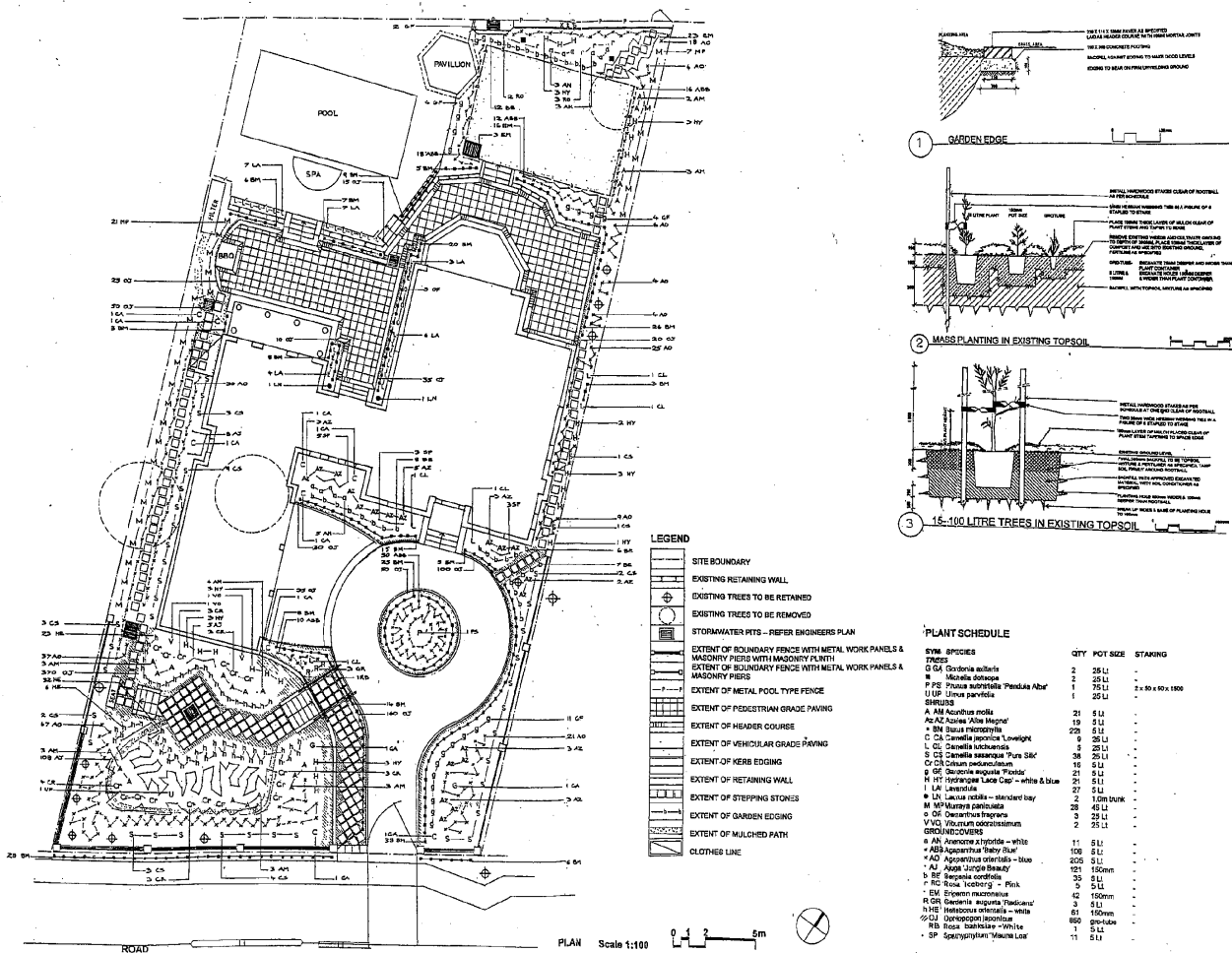
- a) Standard construction and detail drawings (e.g. sections through mass planting beds, tree planting, paths, steps, retaining walls and fencing).

- b) Detailing and location of all edge treatments (e.g. concrete, brick, timber).
- c) Any non-standard construction details to demonstrate how the design would be implemented.

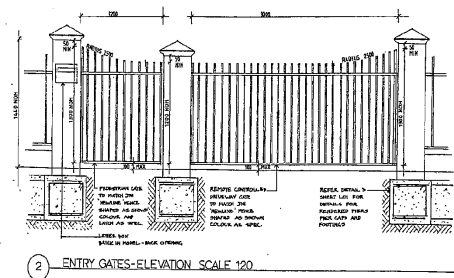
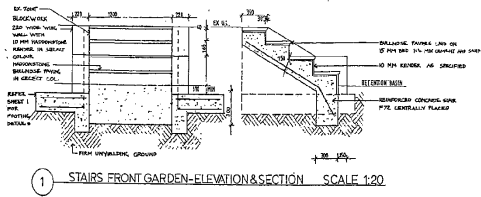
Examples of Landscape Detail Plans are included in Figures F3.3 – F3.5.

Figure F3.3: Landscape Detail Plan (Single Residential)

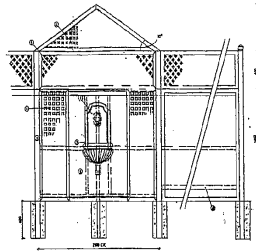
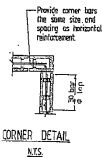
LANDSCAPE DETAIL PLAN (SINGLE RESIDENTIAL)



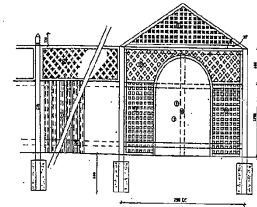
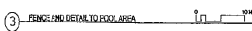
LANDSCAPE DETAIL PLAN CONTINUED (SINGLE RESIDENTIAL)



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19. IMPROVED COSTS OF PRODUCTION - IMPROVED QUALITY WITH LOWER COSTS, REDUCE
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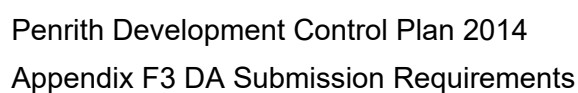


- 1) HAND LAYED LAMINATE FRAMES IN REDUCED DIMENSIONS TO MATCH & FRAME HEAD
- 2) HAND LAYED LAMINATE FRAMES IN REDUCED HEIGHT TO FIT PANEL
- 3) HAND LAYED LAMINATE FRAMES IN REDUCED WIDTH TO FIT PANEL
- 4) HAND LAYED LAMINATE FRAMES WITHIN HITS IN REDUCED LENGTH TO MATCH PANEL
- 5) HAND LAYED LAMINATE FRAMES WITHIN HITS IN REDUCED WIDTH TO MATCH PANEL
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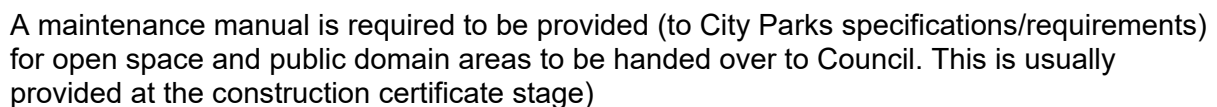


NOTE -- ALL FENCING TO HAVE PAINTED FINISH
AS SPEC. COLOURS TO SCHEDULE BY ARCHITECT

LANDSCAPE DETAIL PLAN (MULTI-UNIT)



LANDSCAPE DETAIL PLAN (SUBDIVISION)



When the landscape works associated with the consent are completed a Landscape Implementation Report is to be submitted to Council. This will provide written certification that:

- Penrith Development Control Plan 2014
Appendix F3 DA Submission Requirements

- d) A plant establishment period has been set, and its duration and name of contractor engaged to undertake the maintenance work.

No Occupation Certificate for the development will be issued prior to Council receiving this report. If Council is not the Principal Certifying Authority for the development, a copy of the Implementation Report is to be forwarded to Council.

4.4.5. Landscape Maintenance Report

Twelve months after the Principal Certifying Authority has issued an Occupation Certificate, a Landscape Maintenance Report is to be submitted to Council. This will provide written certification on whether the approved landscaping has been completed in accordance with the approved landscape plan and consent conditions. The Maintenance Report should also state whether the work has been completed in accordance with all relevant Australian Standards and that all plants are healthy with no evidence of die-back, stress, disease or loss.

4.4.6. Landscape 3 Year Landscaping Report

For larger and more visually significant developments, Council at its discretion may place a condition on the consent requiring that a report be provided to Council 3 years after the issuing of the Occupation Certificate. This report is to certify one of the following:

- a) Landscaping has matured and is in accordance with the original landscape approval.
- b) The landscaping has not matured in accordance with the original design philosophy and requires significant restoration. If this is the case, restoration plans are to be submitted to Council for approval and implemented at the expense of the property owners.

As a guide, developments that may have this condition placed upon the consent will generally be in visually significant locations or of a size that Council considers warrants ensuring that the landscaping is still thriving and in accordance with the original design philosophy.

4.5. Erosion and Sediment Control

An Erosion and Sediment Control Plan is required where any proposed land use or development activity involves:

- a) The disturbance of the existing ground surface or placement of fill thereon, and/or result in a change to the shape of the land; and
- b) Changes in the velocity and/or volume of water runoff entering directly or indirectly a natural waterbody, or flowing over the land.

4.5.1. Erosion and Sediment Control Plan

Erosion and Sediment Control Plans (ESCP) must include:

- 1) A drawing that clearly shows the site layout and, where appropriate, the approximate locations of best management practices and other matters listed in (2) and (3) below. Where these drawings are to scale, the scale should be at 1:500 or larger.

A narrative should accompany the drawing that describes how erosion control and soil and water management will be achieved on site, including ongoing maintenance of structures.

2) The following background information should be presented on the drawings(s):

- a) Location of site boundaries and adjoining roads;
- b) Approximate grades and indications of direction of fall;
- c) Approximate location of trees and other vegetation, showing items for removal or retention (consistent with any other plans attached to the application);
- d) Location of site access, proposed roads and other impervious areas (e.g. parking areas and site facilities);
- e) Existing and proposed drainage patterns with stormwater discharge points;
- f) North point and scale.

3) On the drawing or in a separate commentary, show how the various soil conservation measures will be carried out on site, including:

- a) Timing of works;
- b) Locations of areas where a protective ground cover will, as far as is practicable, be maintained;
- c) Access protection measures;
- d) Nature and extent of earthworks, including the amount of any cut and fill;
- e) Where applicable, the diversion of runoff from upslope lands around the disturbed areas;
- f) Location of all soil and other material stockpiles including topsoil storage, protection and reuse methodology;
- g) Location and type of proposed erosion and sediment control measures;
- h) Site rehabilitation proposals, including schedules;
- i) Frequency and nature of any maintenance program;
- j) Other site-specific soil or water conservation structures.

4.5.2. Additional Erosion and Sediment Control Measures for Large Sites

Where an application is for a site(s) over 2500m² and there will be substantial excavation, cut and/or fill, the applicant is required to include a number of additional measures in the Erosion and Sediment Control Plan:

- 1) Identify all areas likely to cause pollution of waterways from the transport of stormwater runoff containing sediment and silt, and implement appropriate devices to stop the risk of pollution.

- 2) Divert clean water around the construction site to prevent contamination.
- 3) Retain as much natural vegetation as possible and limit site disturbance.
- 4) Control stormwater that enters the construction site from upstream.
- 5) Divert stormwater from undisturbed upper slopes onto stable areas.
- 6) Retain and stockpile all excavated topsoil on site for future landscaping and to minimise risk of erosion.
- 7) Prevent sediment/silt from entering adjoining public or private property (especially drains) by installing sediment control devices at the low side of sites and wash down areas.
- 8) Provide a single, stabilised entry/exit point to the site.
- 9) Prevent sediment or building materials from reaching the road or Council's stormwater system. Remove sediment by sweeping, shovelling or sponging. Under no circumstances shall sediment be hosed.
- 10) Where a work zone permit over public property is applicable, ensure that appropriate debris control devices are implemented to prevent spillage of building materials into stormwater drains.
- 11) Compact all drainage lines when backfilling.
- 12) Connect downpipes to the stormwater system as early as possible.
- 13) Revegetate all disturbed areas, after on-site works are completed, in order to stabilise surface.
- 14) Maintain all sediment control devices during construction and earthworks to standards acceptable to Council.

4.6. Stormwater and Drainage

Relevant Stormwater Drainage Policy

Council has adopted the *Stormwater Drainage Specification for Building Developments*. This policy provides guidance to ensure that stormwater drainage for building developments is designed to provide a robust, safe and low maintenance system to manage stormwater impacts on the drainage network and surrounding properties in a holistic manner that is incorporated aesthetically with the overall development.

This policy sets out the documentation that is required to be submitted to Council as part of the Development Application.

4.6.1. Drainage Plan

Where developments result in stormwater runoff, detailed stormwater management plans are required. The submission requirements are contained in Council's *Stormwater Drainage Specification for Building Developments*.

Stormwater design is an important consideration in planning a development and should be considered prior to determination of the final building layout and landscaping treatment.

A concept Stormwater Management Plan (SMP), prepared by a suitably qualified person shall be submitted with the Development Application. The SMP shall include a site drainage plan prepared in accordance with the checklist in Appendix A of Council's *Stormwater Drainage Specification for Building Developments*. The SMP shall also address Council's *Water Sensitive Urban Design Policy* and *Water Sensitive Urban Design Technical Guidelines*.

4.6.2. Stormwater and Drainage Report

A Stormwater and Drainage Report may be required for major development; or if the site is subject to flooding from adjacent or on site drainage channels; or if the site is affected by drainage constraints; or if the development proposes to divert a natural or artificial drainage line (including overland flow paths).

A Stormwater and Drainage Report must include:

- 1) A statement or justification as to why the proposed development is appropriate on flood prone land;
- 2) A survey of the site, with 1 metre contours;
- 3) A survey of the watercourse/drainage line (if applicable);
- 4) The estimated 1% Average Exceedance Probability flood level (or 1:100 ARI flood level); and
- 5) Demonstration that:
 - The development will not increase the drainage flow to other properties;
 - The quantity and velocity of runoff will not increase, post development; and
 - The buildings are sited away from the impact of any drainage overflow.
- Further details are contained in Council's *Stormwater Drainage Specification for Building Developments*.

4.6.3. On Site Detention Systems

An On Site Detention Systems Report is required for developments as specified in Council's *Stormwater Drainage Specification for Building Developments*. The system must be designed by a suitably qualified civil engineer and address the requirements of the DCP and Council's *Stormwater Drainage Specification for Building Developments*.

4.6.4. Site and Soil Assessment Report

A Site and Soil Assessment Report is required to be submitted for a new domestic 'Aerated Wastewater Treatment System' (AWTS) when:

- The buffer distances as referred to in the controls in the On Site Sewage Management subsection of Infrastructure and Services section are not provided;

- A subdivision application is being considered;
- The AWTs is proposed within an identified high risk area; e.g. when site slope exceeds 20% (refer to table in the On Site Sewage Management provisions of the Infrastructure and Services Section of this Plan); or
- An on-site SMS already exists on the site and a second system is proposed.

A Site and Soil Assessment Report is required to be submitted for all other types of on-site SMS. Section 4 of the 'Environmental and Health Protection Guidelines - On Site Sewage Management for Single Households' and AS/NZS 1547:2000 should be used as a guide. A model Site and Soil Assessment Report is included in Council's On-site Sewage Management and Greywater Reuse Policy.

4.7. Waste Management

4.7.1. Waste Management Plans

Waste Management Plans are required for any application for demolition, construction or change of use of buildings for rural, residential, commercial or industrial development, or subdivision. This includes alterations or additions of over 50% of the existing buildings. Waste Management Plans are also required for applications for a Complying Development Certificate.

Waste Management Plans must provide details of:

- a) The types and volumes of wastes and recyclables likely to be generated as a result of the development;
- b) How waste and recyclables will be stored and treated on site;
- c) How waste and recyclables are to be disposed of; and
- d) How ongoing waste management will operate once the development is complete.

Table F3.5 provides an outline of the details required on these plans, which are to accompany the development application.

Table F3.5

Proposed Development	Details Required on Plans
Demolition	<p>Areas to be excavated</p> <p>On-site sorting and storage areas</p> <p>Access for vehicles</p>

Proposed Development	Details Required on Plans
Construction	Areas to be excavated On-site sorting and storage areas Access for vehicles
Single Dwellings and Dual Occupancies	Location of waste storage and recycling areas
Multi-Unit Dwellings	Location and design for waste storage areas / facilities
Commercial Development	Location and design of waste storage areas / facilities Vehicular access
Industrial Development	Location and design of waste storage areas / facilities Vehicular access

4.7.2. Sample Waste Management Plans

The applicable sections of Tables F3.6 – F3.10 below must be completed and submitted with your development application for demolition, construction or use of a premise.

Table F3.6

OUTLINE OF THE PROPOSAL			
Site Address:		162 Smith Street, Green Park	
Name of Applicant:		Joe Bloggs, Buildwell Construction	
Address of Applicant:		PO Box 101, Penrith NSW 2003	
Phone:	4732 1234	Fax:	4732 4321
Buildings and other structures currently on the site:			
3 bedroom brick house, concrete slab and driveway, timber fencing			
Description of Proposal:			
Two storey commercial building (with offices), built with a metal frame and brick construction			
Applicant's Signature:		Date:	

Table F3.7: Demolition

Materials	Destination			
	Re-use and recycling		Disposal	
Material	Estimated Volume (m ² or m ³)	ON SITE Specify proposed reuse or on-site recycling	OFF-SITE Specify contractor and recycling outlet	Specify Contractor and Landfill Site
Excavation Material	200m ³	<i>Re-use top soil for landscaping and behind retaining walls</i>		<i>Remainder to XY landfill by JKL waste contractors</i>
Green waste	60 m ³	<i>Separated – some chipped for landscaping</i>	<i>Remainder to XYZ Landscape Suppliers for re-use</i>	<i>Stumps and large trunks separated and to Deep Gully Land Fill by JKL Waste Contractor</i>
Bricks	100 m ³	<i>Clean and reuse lime mortar bricks for footings. Broken bricks for internal wall</i>	<i>Concrete mortar bricks to KLM Crushing and Recycling Company</i>	<i>NIL</i>
Concrete	15 m ³	<i>Existing driveway to remain during construction</i>	<i>KLM Crushing and Recycling Company</i>	<i>NIL</i>
Timber – what kind? <i>Hardwood</i>	5 m ³	<i>Re-use for formwork and studwork. Chip remainder for use in landscaping.</i>	<i>To stockpile at EFG Transfer Station, by JKL Waste Contractor</i>	<i>NIL</i>
Plasterboard	3 m ³	<i>Break up and use in landscaping</i>		<i>Remainder to XY landfill by JKL waste contractors</i>

Materials	Destination			
	Re-use and recycling		Disposal	
Material	Estimated Volume (m ² or m ³)	ON SITE Specify proposed reuse or on-site recycling	OFF-SITE Specify contractor and recycling outlet	Specify Contractor and Landfill Site
Metals - What kind? <i>Aluminium</i>	<i>1 m³</i>		<i>FGH Metal Recyclers</i>	<i>NIL</i>
Other <i>Tiles/ Doors/ Windows</i>	<i>5 m³</i>	<i>Broken tiles used for access</i>	<i>S.T Second Hand Building Supplies</i>	<i>NIL</i>

Note: Details of on-site waste management should be provided on the plans accompanying your application (i.e. location of on-site storage areas / containers, vehicular access point, etc).

Table F3.8: Construction

Materials	Destination			
	Re-use and recycling		Disposal	
Material	Estimated Volume (m ² or m ³)	ON SITE Specify proposed reuse or on-site recycling	OFF-SITE Specify contractor and recycling outlet	Specify Contractor and Landfill Site
Excavation Material		<i>See demolition section</i>		
Green waste		<i>See demolition section</i>		
Bricks	2 m ³		<i>KLM Crushing and Recycling Company</i>	<i>NIL</i>
Concrete	5 m ³		<i>KLM Crushing and Recycling Company</i>	<i>NIL</i>
Timber – what kind? <i>Hardwood</i>	3 m ³	.	<i>XYZ Landscape Suppliers for chipping and composting</i>	<i>NIL</i>
Plasterboard	1 m ³		<i>XYZ Landscape Suppliers</i>	<i>NIL</i>
Metals - What kind? <i>Aluminium</i>	3 m ³		<i>FGH Metal Recyclers</i>	
Other <i>Tiles/ Doors/ Windows</i>	1 m ³			<i>Deep Gully landfill by JKL Waste Contractor</i>

Note: Details of on-site waste management should be provided on the plans accompanying your application (i.e. location of on-site storage areas / containers, vehicular access point, etc).

Table F3.9: Ongoing use of a premise

Type of Waste To be Generated	Volume (m ³ or litres per week)	Proposed On-Site Storage and Treatment Facilities	Destination
<p>Recyclables</p> <ul style="list-style-type: none"> • office paper • retail paper / cardboard • glass, aluminium, steel, and plastic containers • wooden pallets • printer cartridges • plastic crates • ferrous and non-ferrous metals • wood/timber • vehicle batteries <p>Liquid Waste</p> <ul style="list-style-type: none"> • cooking oils • sump oil <p>Organic Waste</p> <ul style="list-style-type: none"> • food organics • garden organics <p>Medical Waste</p> <ul style="list-style-type: none"> • syringes, sharps • bandages and any blood or body fluid contaminated products <p>Other Waste</p> <ul style="list-style-type: none"> • food scraps etc • non recyclable plastics (i.e. wrapping) • non-recyclable retail wastes including fabrics, ceramics and contaminated paper and cardboard 	Refer to waste generation rates in Appendix F4 Technical Information	<p>Interim Storage</p> <ul style="list-style-type: none"> • separate storage bins for general waste and recyclables placed in strategic locations throughout the building (see location plan) • liquid wastes stored within sealed containers • all medical wastes stored in approved secured containers • garden organics removed by gardening contractor • food organics stored in water and vermin proof containers <p>Storage Prior to Collection</p> <ul style="list-style-type: none"> • central garbage and recycling bin storage bay/room for all users located adjacent to loading dock at rear of complex • shared garbage and recycling bin bays (residential units) provided in accordance with Councils requirements (see plans) • food and organic waste stored in refrigerated rooms if required • medical waste bins store in secure room or storage area • liquid waste and batteries stored in a suitably bunded area or location to secure accidental spillage • wooden pallets and plastic crates stored in loading dock area 	<p>Collection and Processing</p> <ul style="list-style-type: none"> • dry recyclables collected weekly by ABC Contractors for processing at the Disy Recycling Plant Sydney • general waste collected twice weekly by Dump Contractors for delivery to the Government landfill site at Western Creek • medical waste collected weekly by Med Contractors for incineration at the local hospital • cooking oils and motor vehicle oils collected by Liquid Recyclers for reprocessing into liquid gold • food organics collected twice weekly by Food Processors for processing and recovery of energy • garden organics delivered to XYZ composting plant • wood and plastic crates collected by the distributor for reuse • scrap metals collected weekly by Ferrous Contractors for recycling at their Bathurst Plant

Type of Waste To be Generated	Volume (m ³ or litres per week)	Proposed On-Site Storage and Treatment Facilities	Destination
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Note: Attach plans showing the location of waste storage and collection areas, and access routes for tenants and collection vehicles.

Table F3.10: Ongoing management of a premise

Describe how you intend to ensure the ongoing management of waste on-site
1. Interim waste storage areas and/or bins and communal waste storage areas and/or bins will be well signposted to ensure correct use.
2. Cleaning staff will be employed to transfer wastes and recyclables from the interim storage containers to the communal storage area and ensure that the storage bins and storage area is kept clean and in good order.
3. The company tenanted the premises will prepare an environmental management system addressing office and retail waste and recycling. This will include expectations and objectives for sorting and separating wastes.
4. An information kit will be provided to all tenants addressing office and retail wastes, their recycling requirements, and details of the location and operation of the waste storage area.
5. Waste audits will be conducted annually to determine waste output and to improve waste avoidance and resource recovery practices.

4.7.3. Waste Management Checklists

Checklist for Applicants

	Yes	No
Is the waste management plan completed?		
Are facilities available for the separation of wastes and recyclables?		
Has an area been allocated for the storage and collection of wastes?		
Are the waste storage and collection areas located so as to provide easy access for both occupants and collection services?		
Do your plans show details of on-site storage space for construction materials, waste materials and recyclables?		
Is the project planned to maximise the reuse of materials?		
Have arrangements been made for the ongoing management of waste?		

Checklist of Site Works

	Yes	No
Is the waste management plan acknowledged on-site?		
Are waste responsibilities clarified for all personnel and sub-contractors?		
Are works scheduled to minimise time between delivery and installation?		
Is the site planned and managed to minimise wastes?		
Have you arranged for the sale of recycled and salvaged materials?		
Are waste bins covered, sign-posted and properly used?		
Is site signage in place indicating environmental/waste commitment?		

4.8. Transport and Traffic Impact Assessments

4.8.1. Traffic Impact Statement

A Traffic Impact Statement is a simplified process of identification and assessment of relevant traffic impacts of a development. A Traffic Impact Statement may be required for any development proposal where traffic generation and impacts are minor, but have potential to adversely affect the surrounding areas. A Traffic Impact Statement may be prepared by anyone as long as it is of a suitable standard.

The information provided should reflect the size, type and location of the development as well as the relationship to surrounding developments and the adjacent transport network.

The following provides an outline of issues to be addressed in a Traffic Impact Statement:

- a) Traffic generation/attraction and trip distribution of the proposed development;
- b) Parking provisions appropriate to the development;
- c) Impact on road safety;
- d) Existing public transport services in the vicinity of the proposed development;
- e) Impact of generated traffic on key adjacent intersections, streets in the neighbourhood of the development, the environment and other major traffic generating development sites in close proximity;
- f) Existing parking supply and demand in the vicinity of the proposed development;
- g) Safety and efficiency of access between the site and the adjacent road network;
- h) Impact of traffic noise;
- i) Peak period traffic volumes and congestion levels at key adjacent intersections;
- j) Safety and efficiency of internal road layout, including service and parking areas;
- k) Existing proposals for improvements to the adjacent road network and hierarchy;
- l) AADT- annual average daily traffic. It is the estimated yearly total of traffic movements divided by 365; and
- m) Volumes and historical trends on key adjacent roads.

4.8.2. Traffic Report

A Traffic Report is an intermediate level of investigation and assessment of relevant traffic impacts of a proposed development. Development proposals of a size or capacity detailed in Column 2 of Schedule 3 of *State Environmental Planning Policy (Infrastructure) 2007* must be accompanied by a Traffic Report. Council may also require a Traffic Report for other development proposals whose scale, nature or type has potential to impact on transport and traffic.

The Traffic Report must detail the assessed impact of projected pedestrian, cycle and vehicular traffic associated with the proposal and include recommendations as to the extent and nature of the traffic facilities necessary to preserve or improve the safety and efficiency of the adjacent road system, especially on major roads.

The requirements for Traffic Studies and Reports are detailed in the NSW Roads and Traffic Authority "Guide to Traffic Generating Developments." The information provided should reflect the size, type and location of the development as well as the relationship to surrounding developments and the adjacent transport network. Reports should be prepared in accordance with the requirements of the "Guide to Traffic Generating Developments", an outline of which is provided in Table F3.11.

Table F3.11: Key issues in preparing traffic impact studies

Procedures & Key Parameters	Source	Check✓
<i>Brief description of the development</i>		
<i>Application and study process</i>		
Introduction		
<i>Background</i>		
<i>Scope of report</i>		
<i>The key issues and objectives of a traffic impact study</i>		
General Data Collection / Existing Conditions		
<i>Description of the Site and Proposed Activity</i>		
<i>Site location</i>		
Current land use characteristics (zoning) of the proposed site and land use in the vicinity	Development Consent Authority	
<i>Site access</i>		
<i>The Existing Traffic Conditions</i>		
Road hierarchy; including the identification of the classified road network (major and minor roads) which may be affected by the development proposal	Council / RTA	
Inventory of road widths, road conditions, traffic management and parking control	Council / RTA and Survey	
Current and proposed roadworks, traffic management works and bikeways	Council / RTA	
<i>Traffic Flows</i>		

Table F3.11 cont.

Procedures & Key Parameters	Source	Check✓
Commuter parking provision	State Rail / Cityrail / Survey	
<i>Pedestrian Network</i>		
Identify major pedestrian routes	Survey	
Pedestrian flows and potential conflicts with vehicles, particularly where such conflicts cause capacity constraint on either vehicular or pedestrian movement	Survey	
Pedestrian infrastructure	Survey	
<i>Proposed developments in the vicinity</i>		
Proposed Development		
<i>The Development</i>		
Plan reference, if plans not contained in study report		
Nature of development		
Gross floor areas of each component of development		
Projected number of employees/users/residents		
Hours and days of operations		
Staging and timing of development		
Selection of appropriate design vehicles for determining access and circulation requirements	Section 6	
<i>Access</i>		
Driveway location, including review of alternative locations	Sections 5, 6	
Sight distance of driveways and comparisons with stopping and desirable minimum sight distances	Section 6	
Service vehicle access	Section 6	
Analysis of projected queuing at entrances	Section 6	
Current access to site and comparison with proposed access		
Provision for access to, and by, public transport	Section 6	

Table F3.11 cont.

Procedures & Key Parameters	Source	Check✓
<i>Circulation</i>		
Proposed pattern of circulation	Section 6	
Internal road widths	Section 6	
Provision for bus movements	Section 6	
Service area layout		
<i>Parking</i>		
Proposed supply		
Parking provision recommended by State Government policy	RTA / DUAP	
Council code and local parking policies and plans	Council	
Parking layout		
Projected peak demand, based where appropriate on similar research reports and on surveys of similar developments;	Section 5	
Parking for Service / courier vehicles and bicycles	Section 5	
Impact of Proposed Development		
<i>Traffic generation during design periods</i>		
Daily and seasonal factors		
Pedestrian generation and movements		
<i>Traffic Distribution and Assignments</i>		
Hourly distribution of trips		
Assignments of these trips to the road system based where possible on development feasibility studies or on origin/ destination surveys undertaken at similar developments in the areas		
<i>Impact on Traffic Safety</i>		
Assessment of Road Safety Impact		
<i>Impact of Generated Traffic</i>		
Daily traffic flows and composition on key streets and their expected effect on the environment particularly in residential areas		

Table F3.11 cont.

Procedures & Key Parameters	Source	Check✓
Peak period volumes at key intersections and effect of generated traffic on congestion levels	Survey	
Impact of construction traffic during construction stages		
Other proposed developments in the vicinity their timing and likely impact, if known		
Assessment of traffic noise		
<i>Public Transport</i>		
Options for extensions and changes to bus routes and bus stops following discussions with the STA and or private bus operators	STA / Private Operators	
Provision for pedestrian access to bus stops		
<i>Recommended Works</i>		
Improvements to site access and circulation		
Improvements to roads, signals, roundabouts and other traffic management measures		
Improvements to pedestrian facilities		
Effect of recommended works on the operation of adjacent developments		
Effect of recommended works on public transport services including access to bus routes and bus stops		
Provision of LATM measures		
Funding of proposed improvement projects		
Noise attenuation measures		

4.8.3. Transport Management and Accessibility Plan

A Transport Management and Accessibility Plan (TMAP) is required to be submitted for all major developments. A TMAP is a comprehensive assessment of the transport impacts of a major site development or re-development proposal. The TMAP must identify a package of appropriate transport measures (including infrastructure, services and demand management initiatives) for the proposed development, to manage the demand for travel to and from the development, and reduce the demand for travel by private car and commercial vehicles. This should include maximising opportunities for public transport, cycleways and pedestrian paths that link to existing or planned community, recreational and business services and facilities.

The TMAP must be prepared by a suitably qualified and experienced person. The NSW Department of Transport and Roads and Traffic Authority's "Draft Interim Guidelines on Transport Management and Accessibility Plans" provides information of the requirements of TMAPs. The following information is taken from this document to provide an overview of the requirements for a TMAP.

1) Project Context

- a) Outline the strategic context; and
- b) Set objectives and targets/performance criteria. Objectives and targets should include the objectives of this DCP, particularly the general objectives of C10 'Transport, Access and Parking', the specific objectives of the Transport and Land Use Section of this Plan and any other relevant section.

1) Proposal

- a) Describe the proposed site;
- b) Describe the proposed development/land use and the potential future land uses; and
- c) Describe the current transport infrastructure context.

2) Initial Transport Assessment

- a) Outline the technical assessment assumptions; and
- b) Assess the existing travel patterns (including freight).

3) Transport Assessment of Proposal

- a) Determine an initial estimate of travel demand (person trips, freight trips or both);
- b) Estimate the distribution of generated trips between origins and destinations;
- c) Estimate likely modal split (including freight);
- d) Estimate the loads on transport infrastructure/services that serve the project study area;
- e) Analyse capacity/amenity/government policy implications and determine if desired transport system performance criteria are met;
- f) Identify feasible options (including transport and development design) to modify transport impacts; and
- g) Test options to meet objectives and targets.

4) TMAP and Agreement

- a) Identify appropriate measures, including infrastructure, services and policies; and
- b) Check options against objectives and targets, and cost effectiveness and agree on preferred option package.

5) Agreed Package

- a) Include consideration of funding, timing and evaluation.

6) Review of TMAP and Agreement

- a) At the time of development application and at an appropriate interval.

4.9. Works to Trees and Vegetation

Where trees or vegetation are proposed to be ringbarked, cut down, topped, lopped, removed, injured or wilfully destroyed, an assessment of the impact of that work must be carried out. This assessment will vary in scale and complexity depending on the location and extent of the works and whether the site contains any threatened species, population, ecological community or its habitat. Applicants are advised to consult with Council's

Development Services Unit or Tree Management Officer regarding the form of application (Tree Pruning/Removal Application or Development Application) and the level of information required.

4.9.1. Tree Survey and Assessment Report

A Tree Survey and Assessment Report is the minimum level of information to be provided for works to any tree or vegetation. The Tree Survey and Assessment Report is to be provided for a Tree pruning/removal application. A Tree Survey and Assessment Report must address the following matters:

- 1) The location and type of tree(s) or vegetation;
- 2) Details of the proposed works and the reasons for the works;
- 3) The health and condition of the tree(s) or vegetation, including its structural soundness and the condition of the root zone;
- 4) The aesthetic, scientific and/or historic importance of the tree(s) or vegetation;
- 5) The impact of the proposed work on the appearance, health or stability of the tree(s) or vegetation and the general amenity of the surrounding area, including any effect on the streetscape;
- 6) In the case of an application to remove a tree(s) or vegetation, whether pruning would be a more practicable and desirable alternative;
- 7) The risk of personal injury;
- 8) The risk of damage to buildings, structures or services;
- 9) The extent of other trees and vegetation on the property;
- 10) Whether the tree(s) or vegetation is habitat, a source of food or shelter, or used by fauna.

4.9.2. Arboricultural Survey Report (or Arborist Report)

All existing vegetation on the site should be noted on the landscape site analysis plan and in the landscape submission to Council. This includes all existing trees, bushland and shrubs of any prominence or value. However, in the case of large and/or significant trees or shrubs, a separate report should be prepared by a qualified consulting arborist. This report should include an Arboriculture Survey to provide detailed information on the trees present. Full detail of trees to be removed, as well as trees proposed for retention, should be given.

The report is to be prepared by an arborist. Arborists Reports on existing trees and shrubs taller than 5m are to include the following information, where appropriate:

- 1) Allocated survey number (to correlate with survey plan and identify location within site);
- 2) Species name and common name;
- 3) Trees/shrubs to be retained;

- 4) Trees/shrubs to be removed due to the proposed development;
- 5) Trees/shrubs to be removed due to death or disease;
- 6) Estimated height (to aid on-site identification and assessment of significance);
- 7) DBH (Diameter at Breast Height – to indicate tree maturity and allow estimation of lateral root spread);
- 8) Canopy spread (to allow assessment of any requirement to prune or likely impact of overshadowing);
- 9) Health and/or condition status;
- 10) Recommended TPZ (Tree Protection Zone) for trees, which are to be retained, if applicable. This is the minimum distance from the centre of any tree at which development should commence;
- 11) All trees on adjoining properties that are within 3m of the boundary of the proposed development; and
- 12) Where the proposed development will have a significant impact upon the future health and suitability for retention of other large or significant trees located on adjacent properties, but which are further away than 3m, their existence is to be noted and appropriate recommendations provided for their management.

Where the consulting arborist chooses to apply further information, such as a SULE rating, or comparative suitability scale, Council will give this due weight in an assessment of an application.

Council, in assessing development applications where tree removal is included, will consider the following:

- 1) The contribution that the tree makes to the visual landscape that it sits within, including streetscape and distant views;
- 2) If trees are proposed to be removed, whether the proposed development can be modified to retain the tree/s; and
- 3) Whether there are any special construction requirements near to or adjacent to any trees proposed to be retained on the development site.

If there are significant trees on the site, which are being retained, Council may require that these trees be valued by a consulting arborist using the Thyer Method of valuation. If this is the case, this information is to be submitted to Council along with a copy of the Thyer Tree Valuation Work sheet for each tree or group of trees as a part of the Arboricultural Survey Report.

It should be noted that Council generally encourages the retention of trees on development sites and encourages development proposals to be designed so as to minimise the need for tree removal, while ensuring the health of the trees which are retained. Council will consider the removal of trees on development sites in the following instances:

- 1) The applicant can demonstrate that it is not possible to modify the development to allow retention of the tree/s as the proposed development will become economically unviable.

- 2) The applicant can demonstrate that the trees are of such a size and scale that, if they were to be retained, they would not be compatible with the development.
- 3) The applicant can demonstrate that the health of the trees warrants their removal as they are posing a hazard or threat.
- 4) The applicant can demonstrate that the safe useful life expectancy of the tree is minimal.
- 5) The applicant can demonstrate that the tree makes minimal contribution to the streetscape.
- 6) The applicant can demonstrate that the tree or trees make minimal contribution to the landscape amenity of the locality or neighbouring properties.

4.9.3 Tree Management Plan

Where trees are proposed to be or are required to be retained as a part of a development, the Arboricultural Survey Report should also provide a comprehensive Tree Management Plan.

The Tree Management Plan is to be in place PRIOR to commencement of any site works. Site works includes the demolition of existing structures or the entrance onto site of any machinery for excavation, demolition or large scale rubbish removal.

4.9.4. Flora and Fauna Assessment Report including a Seven Part Test

Where vegetation works are proposed to any indigenous vegetation, a Flora and Fauna Assessment Report will, in most cases, also be required. The Flora and Fauna Assessment Report must be undertaken by a suitably qualified and experienced person; i.e. a person with tertiary qualifications in ecology, zoology or botany; with a minimum of 5 years experience in undertaking flora and fauna surveys and assessments; with a demonstrated knowledge of the flora and fauna that occurs in the Penrith local government area; and possessing appropriate licences or approvals under relevant legislation.

The assessment and report must be undertaken and prepared in accordance with the following guidelines:

- *Threatened Species Assessment Guidelines – The Assessment of Significance for TSC Act* (DECCW (OEH) 2007)
- Threatened Species Survey and Assessment: Guidelines for developments and activities (working draft) (DEC, 2004)
- *Significant Impact Guidelines – Matters of National Environmental Significance for the EPBC Act* (Prepared by the Commonwealth Department of the Environment, Water, Heritage and the Arts, 2013).

The report must include as a minimum:

- 1) A written and mapped description of the plant and animal species present and their habitats;
- 2) A clear site plan showing, as a minimum, the proposed development and any associated APZ and Effluent Management Area, location of all vegetation and important site features, location of any vegetation to be removed.

- 3) A statement on whether any of the plant and animal species or their habitats are listed as threatened, endangered or vulnerable species or communities under the *Threatened Species Conservation Act 1995* and/or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*;
- 4) A description of the proposed vegetation works and, if the works are to be undertaken as part of a proposed development, a description of the proposed development, including measures to mitigate adverse impacts;
- 5) An objective assessment to determine whether the proposed works and development are likely to significantly affect any threatened species, populations or ecological communities or their habitats. This assessment is required under section 5A of the *Environmental Planning and Assessment Act 1979*. Section 5A lists the factors that must be taken into account in making such a determination; and
- 6) Consideration of the likely impacts the proposed works or development may have on any potential use of the vegetation as a fauna movement corridor. Where relevant, consideration of the importance of any rural dams for fauna habitats. The location of any Asset Protection Zone or Effluent Management Area should also be considered by the assessment.

4.9.5. Species Impact Statement

A Species Impact Statement must be prepared by a suitably qualified and experienced person. It is required when Council has reviewed the flora and fauna assessment report and determined that the proposed works and/or proposed development are likely to have a significant effect on a threatened species, population or ecological community or its habitat. The species impact statement must be prepared in accordance with the requirements of the *Threatened Species Conservation Act 1995*. Before preparing a species impact statement, the requirements of the Office of Environment and Heritage and Council must be sought.

4.10. Bushfire Assessment Reports

Development applications on bush fire prone land must be accompanied by a Bush Fire Assessment Report. The Bush Fire Assessment Report must include all the information required by the Rural Fire Service's 2006 publication "Planning for Bush Fire Protection" (PBP).

4.11. Flood Study

A Flood Study will be required for any development on land which has been identified as fully or partially flood affected. A flood study must include:

- 1) A statement or justification as to why the proposed development is appropriate on flood prone land;
- 2) A survey of the site, with 1m contours;
- 3) A survey of the main watercourse (if applicable);
- 4) The estimated 1% Average Recurrence Interval (ARI) flood level;

- 5) Location of flood free access/egress, including spot points to demonstrate that the surface of the access is driveable in flood events;
- 6) Demonstration that:
 - a) The development will not increase the flood hazard or risk to other properties;
 - b) The structure of the proposed buildings will be adequate to deal with flooding situations;
 - c) The proposed building materials are suitable;
 - d) The buildings are sited in the optimum position to avoid flood waters and allow safe flood access for evacuation;
 - e) The proposed redevelopment will not expose any resident to unacceptable levels of risk, or any property to unreasonable damage; and
 - f) Any existing buildings comply with the Draft Flood Proofing Code.

Additionally, where filling of flood liable land is proposed, the Flood Study will need to demonstrate that:

- a) Flood levels are not increased by more than 0.1m by the proposed filling;
- b) Downstream velocities are not increased by more than 10% by the proposed filling;
- c) Proposed filling does not redistribute flows by more than 15%;
- d) The potential for cumulative effects of possible filling proposals in that area is minimal;
- e) There are alternative opportunities for flood storage;
- f) The development potential of surrounding properties is not adversely affected by the filling proposal;
- g) The flood liability of buildings on surrounding properties is not increased; and
- h) No local drainage flow/runoff problems are created by the filling.

The above criteria can only be addressed and satisfied by the submission of a detailed Flood Study by an appropriate consulting engineer. The Flood Study would involve both hydrologic and hydraulic analysis of the watercourse and the effects of the proposed filling on flood levels, flow velocities and distribution of flows.

4.12. Salinity Analysis

A Salinity Analysis is required if the site has been identified as subject to a salinity hazard, or if a preliminary investigation has indicated that the site is, or is likely to be, affected by salinity.

A Salinity Analysis must include:

- Results of the initial evaluation;

- Description of the landscape;
- Description of the soil profile;
- Soil chemical analyses;
- Soil aggressivity and sodicity (if relevant);
- The impact of the proposed development on the saline land or potentially saline land;
- The impact of the saline land or potentially saline land on the development; and
- A Remedial Action Plan, which details;
 - i) The remediation objectives;
 - ii) The process and standards by which the land will be remediated; and/or
 - iii) Mitigation measures required during the course of construction;
 - iv) Specific measures that will be undertaken to reduce the risk of salinity damage to property and structures.

Investigations and sampling for salinity are to be conducted in accordance with the requirements of “Site Investigations for Urban Salinity” (Department of Natural Resources).

The author of the Salinity Analysis must sign off on the project on completion of works and submit this to Council prior to an Occupation Certificate being issued, if required.

4.13. Visual Impact Assessment

New proposals on land identified in the LEP on the Scenic and Landscape Values Map or on land zoned E1 National Parks and Nature Reserves or E2 Environmental Conservation are required to submit a Visual Impact Assessment (VIA) with their development application. Depending on the nature of the development, the VIA is to be prepared by either the designer of the development or a suitably experienced and qualified professional.

Visual Impact Assessment Type 1 (VIA 1)

The following information is to be submitted when undertaking a VIA for Category 1 development:

- 1) Describe the existing visual landscape character of the site and surroundings, taking into consideration existing features such as: the natural landscape (e.g. ridgelines, hillsides, slopes, watercourses and vegetation); the built form (e.g. buildings and structures, roads and other infrastructure); and land use patterns (e.g. in rural areas, existing agricultural patterns and scale). Refer to Penrith City Council’s “Landscape Character Strategy” (2006).
- 2) Provide ground level photographs confirming the scenic prominence of the site and surrounding locality relative to public vantage points. Provide a map to indicate the location from where the photograph is taken and an arrow indicating the direction it was taken.

- 3) Identify the visual impacts and list the mitigation measures employed to reduce the visual impact of the development.
- 4) Superimpose a sketch of all components of the development (e.g. buildings, fences, driveways, dams and signage), as well as all mitigation measures (e.g. mature vegetation, colours and screens) onto at least three photo images taken from relevant viewpoints, to illustrate the appearance of the final development.

Visual Impact Assessment Type 2 (VIA 2)

The following information is to be submitted when undertaking a VIA for Category 2 development:

- 1) Baseline Study – Describe and map the existing visual landscape character and determine the objectives for managing visual landscape character. Refer to Penrith City Council's "Landscape Character Strategy" (2006). Describe and map the site and surroundings, taking into consideration existing features such as: the natural landscape (e.g. ridgelines, hillsides, slopes, watercourses and vegetation); the built form (e.g. buildings and structures, roads and other infrastructure); and land use patterns (e.g. in rural areas, existing agricultural patterns and scale).
- 2) Describe the proposed development:
 - a) Analyse, describe and illustrate the main visual components of the proposed development, particularly elements likely to be visible;
 - b) Describe what different development options (e.g. siting options, different building designs (including orientation, form, colours and materials) and landscape designs) have been considered;
 - c) Provide plans showing locations and the extent of major visual features. Include elevations of buildings and other major structures, showing elements such as height, colours and proposed materials; and
 - d) Where appropriate, include a projected timeline describing changes to the proposed development over a period of time.
- 3) Identify and evaluate the potential visual impacts:
 - a) Identify the views and likely viewers affected;
 - b) Identify and describe the likely changes to the visual landscape character and views; and
 - c) Evaluate the impacts showing the relationship between 'sensitivity' of the affected landscape (the extent to which the landscape is able to accommodate the type and scale of development without adverse effect on character or value) and 'magnitude' of the impact (a combination of extent, scale and duration of any impact).
- 4) Demonstrate visual mitigation measures:
 - a) Determine whether or not the proposed development meets the objectives for managing visual landscape character established in step a) above;
 - b) Identify measures that reduce the negative impacts and facilitate the positive impacts (e.g. layout; choice of site level; reduced proportions; reflectivity of colour of materials;

articulation; extent of cut and fill; visual buffers; and extent of vegetation removed and retained); and

- c) Demonstrate a commitment to implementation of the measures and, where relevant, submit a contingency plan should mitigation not be successful.
- 5) Provide a diagrammatic 'summary drawing' to show how all mitigation measures work together in response to the development.

Submission Material for VIA 1 and 2

Appropriate information should be submitted to support the visual impact assessment and may include:

- a) Succinct and understandable text;
- b) Illustrations that are closely linked to the text, including annotated maps, plans, overlays and photographs;
- c) Aerial photographs showing the site and surroundings, predominant patterns of land use, buildings, vegetation and gardens;
- d) Ground level photographs confirming the scenic prominence of the site and surrounding locality relative to public vantage points. Care should be taken in selecting viewpoints and the focal length of camera settings, so as to represent what the eye sees and not mislead interpretation. Panoramic views are best presented as a sequence of such photographs rather than a wide angle photo. A map should be provided to indicate the location from where the photograph is taken and an arrow indicating the direction it was taken;
- e) Measured surveys describing topography and natural features, and locating structures and services;
- f) Charts and tables to convey complex information and allow comparisons to be made (e.g. landscape data, impact magnitude and significance);
- g) Visualisations such as photo montages, video representations, 3D computer-generated models, with viewpoints selected with care;
- h) Specialist reports, such as an architectural concept report or a landscape concept plan.

Council may request additional specific information to assess the ability of a proposal to address the principles for protecting areas with scenic and landscape values, depending on the specific circumstances of the proposal and the site.

4.14. Heritage

4.14.1. Heritage Impact Statements

As a minimum, the following issues must be addressed in a Heritage Impact Statement:

- 1) **For development that would affect a heritage item:**

- a) The heritage significance of the item as part of the environmental heritage of Penrith;
- b) The impact that the proposed development will have on the heritage significance of the item and its setting, including any landscape or horticultural features;
- c) The measures proposed to conserve the heritage significance of the item and its setting;
- d) Whether any archaeological site or potential archaeological site would be adversely affected by the proposed development;
- e) The extent to which the carrying out of the proposed development would affect the form of any significant subdivision pattern; and
- f) The issues raised by any submission received in relation to the proposed development in response to the notification or advertising of the application.

2) For development that would be carried out in a heritage conservation area:

- a) The heritage significance of the heritage conservation area and the contribution which any building, work, relic, tree or place affected by the proposed development makes to this heritage significance;
- b) The impact that the proposed development would have on the heritage significance of the heritage conservation area;
- c) The compatibility of any proposed development with nearby original buildings and the character of the heritage conservation area, taking into account the size, form, scale, orientation, setbacks, materials and detailing of the proposed development;
- d) The measures proposed to conserve the significance to the heritage conservation area and its setting;
- e) Whether any landscape or horticultural features would be affected by the proposed development;
- f) Whether any archaeological site or potential archaeological site would be adversely affected by the proposed development;
- g) The extent to which carrying out of the proposal development in accordance with the consent would affect any historic subdivision pattern; and
- h) The issues raised by any submission received in relation to the proposed development in response to the notification or advertising of the application.

3) For development that would affect a place of potential heritage significance:

- a) The heritage significance of the place as part of the environmental heritage of Penrith;
- b) The impact that the proposed development will have on the heritage significance of the place and its setting, including any landscape or horticultural features;
- c) The measures proposed to conserve the heritage significance of the place and its setting;

- d) Whether any archaeological site or potential archaeological site would be adversely affected by the proposed development; and
- e) The extent to which carrying out of the proposal development in accordance with the consent would affect any historic subdivision pattern.

4) For development within the vicinity of a heritage item:

- a) A Heritage Impact Statement shall be lodged with a development application for buildings or works in the vicinity of a heritage item. This requirement extends to development that:
 - i) May have an impact on the setting of a heritage item, for example, by affecting a significant view to or from the item or by overshadowing; or
 - ii) May undermine or otherwise cause physical damage to a heritage item; or
 - iii) Will otherwise have any adverse impact on the heritage significance of a heritage item or of any heritage conservation area within which it is situated.
- b) As a minimum, the following issues must be addressed in the Heritage Impact Statement:
 - i) The impact of the proposed development on the heritage significance, visual curtilage and setting of the heritage item;
 - ii) Details of the size, shape and scale of, setbacks for, and the materials to be used in, any proposed buildings or works; and
 - iii) Details of any modification that would reduce the impact of the proposed development on the heritage significance of the heritage item.

4.14.2. Heritage Conservation Management Plan

A Heritage Conservation Management Plan may be required where a proposal could affect the significance of a heritage item, heritage conservation area or place of potential heritage significance. A Conservation Management Plan guides the future development and management of a heritage item, place or area in a way that protects its heritage significance. It not only identifies a preferred use for the item, place or area but also how any proposed changes will be implemented so that the maximum heritage significance is retained. As such, it provides a framework for investigating, assessing and managing the heritage significance of heritage items, places or areas.

The issues to be addressed in the Conservation Management Plan will vary depending on the heritage item and the proposed development. Conservation Management Plans must be prepared by a qualified heritage consultant in accordance with the guidelines of the NSW Heritage Office. The following is provided as a guide only on the information to be included in a Conservation Management Plan:

- a) An investigation of the heritage item's historical and geographical context, its history, fabric, research potential, and importance to the community;
- b) A statement of significance, of the nature, extent and degree of significance of the heritage item based on the documentary and physical evidence;

- c) A conservation policy, arising out of the statement of heritage significance, to guide current and future owners of the item on the development potential of the item and its ongoing maintenance. Constraints and opportunities should be identified;
- d) Examination of current proposals for reuse or development, and how they can best be achieved in accordance with the conservation policy. Where proposals may have an adverse impact on the heritage significance of the item, the need for such work must be justified. Where development proposals have not been finalised, several likely options are to be discussed;
- e) Recommendations for how the heritage item can best be managed bearing in mind those responsible and interested in its ongoing conservation. It is to include proposals to review the Conservation Management Plan and the item's maintenance.

4.14.3. Archival Recording Standards

Archival recording is required where demolition or partial demolition of a heritage item, a place within a heritage conservation area, or a potential place of heritage significance is proposed. The archival recording should be undertaken by a heritage consultant experienced in the preparation of an archival recording.

The following is a simple checklist of items that must be included in an archival recording. Additional information may be submitted if it adds to the understanding of the place.

- 1) Title page with subject, author, client, date and copyright;
- 2) Statement of why the record was made;
- 3) Outline history of the item and associated sites, structures and people;
- 4) Statement of heritage significance of the items using "Assessing Heritage Significance" by the NSW Heritage Office (2002);
- 5) Inventory of archival documents related to the item (e.g. company records, original drawings), when available;
- 6) Location plan showing the relationship to surrounding geographical features, structures, roads, vegetation etc. including a north point;
- 7) Base plans - Drafted or hand-drawn base plans shall be prepared and include:
 - a) Cross-references to photographs;
 - b) Names of the relevant features, structures and spaces; and
 - c) A north point.
- 8) Black and white photographic record - One set of 35mm black and white negatives labelled and cross-referenced to base plans and accompanied by informative catalogues are required. Two copies of proof sheets and select medium format prints showing important details shall be provided. Images shall include:
 - a) Views to and from the site (possibly from four compass points);
 - b) Views showing relationships to other relevant structures and landscape features;

- c) All external elevations;
- d) Views of all external and internal spaces (e.g. courtyards, rooms, roof spaces etc.); and
- e) External and internal details (e.g. joinery, construction joints, decorative features, paving types, etc.).

All photographic images shall be mounted and labelled.

- 9) Colour slides - Two copies mounted in archival stable slide pockets, clearly labelled and cross-referenced to base plans. Images shall include:

- a) Views to and from the site and/or the heritage item; and
- b) Views and details of external and internal colour schemes as appropriate.

Selected colour prints may be required. They should be mounted and labelled.

- 10) Measured Drawings - Appropriately scaled drawings printed on archival stable paper shall be provided. For a built item, this may include:

- a) Site plan (1:500 or 1:200);
- b) Floor plan/s (1:100 or 1:50);
- c) Elevations and sections (1:100 or 1:50);
- d) Roof plan/s (1:100 or 1:50);
- e) Ceiling and joinery details (1:20 or 1:10); and
- f) Machinery and services details (e.g. drainage lines).

- 11) Presentation - The archival recording shall be presented to Council as a single bound document preferably in A4 format. Large maps shall be folded and inserted as map pockets attached to the document. Similarly, all photographic images shall be fixed to the document and labelled. No unbound documents or loose supporting materials such as maps, plans, slides, negatives or prints are acceptable.

Two complete copies of the archival recording are required. However, one copy may not include a set of photographic negatives and colour slides. An additional copy of the whole recording must be submitted on electronic media in addition to the two required hard copies.

4.14.4. Archaeological Assessment Report

Archaeological Assessment Reports should contain sufficient data to stand alone; support documents should be unnecessary. They should demonstrate the process and results, providing information in a format that is useful as reference material. Archaeology is a specialised field and many activities, including excavation, must be undertaken or supervised by a trained archaeologist.

The content of an Archaeological Assessment Report will depend on the site and the purpose of the study. The NSW Heritage Branch of the Department of Planning is

responsible for developing best practice standards, policies and guidelines for the treatment and conservation of historical archaeological remains that are known or anticipated to exist in NSW. Advice should be sought from the Heritage Branch regarding specific requirements for archaeological assessments.

The following checklist provides a guide to likely minimum information requirements:

- a) Site or study area marked on a map;
- b) Relevant statutory controls/zonings;
- c) Author identification;
- d) Background to the assessment, including reference to previous reports;
- e) Outline of methodology employed;
- f) Sources consulted;
- g) An historical outline/summary;
- h) Analysis of physical evidence (possibly illustrated);
- i) Synthesis (possibly in graphic overlay form);
- j) Likelihood of archaeological remains occurring (known, potential, no archaeological features), may be presented graphically;
- k) Identification of research themes and questions (and how these were derived);
- l) Assessment of significance (statement of significance and/or graded zones);
- m) Identification of issues;
- n) Policy statement;
- o) Recommendations;
- p) Acknowledgments;
- q) Bibliography.

4.14.5. Aboriginal Cultural Heritage Archaeological Survey Report

An Aboriginal Cultural Heritage Archaeological Survey is required for development proposals on land identified as potentially archaeologically sensitive in the Culture and Heritage Section of this DCP. The Department of Environment, Climate Change and Water (DECCW) should be contacted for advice on survey needs and requirements. The following information is taken from the NSW National Parks and Wildlife Service "Aboriginal Cultural Heritage – Standards and Guidelines Kit" to provide an indication of the archaeological survey reporting requirements.

An Archaeological Survey Report must provide a full description of the development and its potential impact on the landscape and heritage resource. This should be a summary of both the impact history of the study area (previous land uses, previous impact assessments and

their results), and the potential impact of the proposed development on cultural heritage. It should include consideration of the impact of the development both during and after construction/implementation (i.e. many sites survive the construction of a development, only to be slowly degraded and disturbed by changes in land use over the longer term). The following information is required, as appropriate, to the specific type of development:

- a) The type of development proposed and how the proposed development is to be implemented;
- b) Flexibility of project design, timing and staging of the proposal; and
- c) Identification of direct and indirect impacts (both short and long term).
- d) The following is an indication of the requirements for a report:
- e) Introduction (including description of study area and proposed activity/development and a description of the impact);
- f) Experience/Qualifications;
- g) Aboriginal Values;
- h) Community Consultation (significance);
- i) Methodology (including details of field work);
- j) Photographs;
- k) Results (including discussion of the study area);
- l) Recommendations;
- m) References (other reports); and
- n) Maps (including maps of study area), glossary, appendices, plates, figures, etc.

4.15. Contamination

Advice on the reporting requirements for contaminated sites should be sought from the relevant state environment agency. The following information is taken from “Guidelines for Consultants Reporting on Contaminated Sites (1997)”. Applicants should refer to this document for full information on reporting requirements.

4.15.1. Contamination Investigation Report / Preliminary Contamination Investigation (Stage 1)

The Preliminary Site Investigation Report should:

- a) Identify all past and present potentially contaminating activities;
- b) Identify potential contamination types;
- c) Discuss the site condition;

- d) Provide a preliminary assessment of site contamination; and
- e) Assess the need for further investigations.

An appraisal of the site history is fundamental to the preliminary assessment and may be used to assess potential site contamination. It is important to review and assess all relevant information about the site, including information obtained during a site inspection.

Where a complete site history clearly demonstrates that site activities have been non-contaminating, there may be no need for further investigation or site sampling.

However, where contaminating activities are suspected or known to have occurred, or if the site history is incomplete, it may be necessary to undertake a preliminary sampling and analysis program to assess the need for a detailed site investigation

4.15.2. Detailed Contamination Site Investigation (Stage 2)

The Detailed Site Investigation Report should give comprehensive information on:

- a) Issues raised in the preliminary investigation;
- b) The type, extent and level of contamination;
- c) and assess:
- d) Contaminant dispersal in air, surface water, groundwater, soil and dust;
- e) The potential effects of contaminants on public health, the environment and building structures;
- f) Where applicable, off-site impacts on soil, sediment and biota; and
- g) The adequacy and completeness of all information available to be used in making decisions on remediation.

If the results of the detailed site investigation indicate that the site poses unacceptable risks to human health or the environment – on-site or off-site, and under either the present or the proposed land use – then a remedial action plan needs to be prepared and implemented, and development consent obtained for these works.

4.15.3. Site Remedial Action Plan (Stage 3)

The Remedial Action Plan should:

- a) Set remediation goals that ensure the remediated site will be suitable for the proposed use and will pose no unacceptable risk to human health or to the environment;
- b) Document in detail all procedures and plans to be implemented to reduce risks to acceptable levels for the proposed site use;
- c) Establish the environmental safeguards required to complete the remediation in an environmentally acceptable manner; and

- d) Identify and include proof of the necessary approvals and licences required by regulatory authorities.

Once remedial work is complete, a report should be prepared detailing the site work conducted and regulatory decisions made.

4.15.4. Validation and Site Monitoring Reports

Reporting requirements are of two types: validation and, where appropriate, ongoing site monitoring.

Validation reporting

Where remedial action has been carried out, the site must be 'validated' to ensure that the objectives stated in the Remedial Action Plan have been achieved. A report detailing the results of the site validation is required.

The extent of validation required will depend on:

- a) The degree of contamination originally present;
- b) The type of remediation processes that have been carried out; and
- c) The proposed land use.

Validation must confirm statistically that the remediated site complies with the clean up criteria set for the site. For guidance, see the NSW EPA's "Contaminated Sites Sampling Design Guidelines". Where applicable, the US EPA's "Methods for Evaluating the Attainment of Cleanup Standards" (1989) can also be used.

The Validation Report must assess the results of the post-remediation testing against the clean-up criteria stated in the Remedial Action Plan. Where targets have not been achieved, reasons must be stated and additional site work proposed to achieve the original Remedial Action Plan objectives.

The Validation Report should also include information confirming that all DECCW and other regulatory authorities' conditions and approvals have been met. In particular, documentary evidence is needed to confirm that any disposal of soil off-site is done in accordance with the Remedial Action Plan.

Ongoing site monitoring reporting

Where full clean-up is not feasible, or on-site containment of contamination is proposed, the need for an ongoing monitoring program should be assessed. If a monitoring program is needed, it should detail the proposed monitoring strategy, parameters to be monitored, monitoring locations, frequency of monitoring, and reporting requirements.

4.15.5. Site Audit (Contamination)

In determining applications for development, Council may require an independent review (Site Audit) of any or all stages of the site investigation, remediation or validation process, conducted in accordance with the *Contaminated Land Management Act* ('CLM Act').

A Site Audit will lead to the provision of a Site Audit Statement, stating for what use the land is suitable, including any conditions that should be adhered to for that land use (e.g. to maintain capping). Only site auditors accredited by the DECCW under the CLM Act can issue site audit statements. A Site Audit Statement must be prepared in accordance with DECCW Guidelines for the NSW Site Auditor Scheme and must be in a prescribed form.

4.15.6. Chemical Use and Storage Report

A chemical use and storage report may be required if the development involves storage of chemicals on the site.

A chemical use and storage report will not be required when:

- a) The use of chemicals is for routine cleaning, and the chemicals to be used are of household or hospital grade;
- b) The total quantity of chemicals to be routinely used or stored on the site does not exceed 100 litres;
- c) The chemicals to be used or stored are not of sufficient acidity, alkalinity or strength to cause significant harm on skin contact, or to the environment if a spill were to occur;
- d) The application outlines the methods proposed to be used to minimise the potential for spills.

A chemical use and storage report will be required where chemicals are proposed to be stored on site or habitually used as part of a development which present a significant hazard to human health or the environment, and where those chemicals are required to be stored in quantities of greater than 100 litres.

A chemical storage and use report must include:

- 1) Detailed description of the use and all methods/procedures associated with the use of each chemical;
- 2) A floor plan of the subject premises depicting the dimensions of the building and indicating the internal layout of all equipment, storage and display areas;
- 3) A comprehensive list of all chemicals/goods and quantities proposed to be utilised and stored;
- 4) A spill response/management plan;
- 5) A description of the method of storage of chemicals/goods on the premises and the type of containment or packaging used including bunding or secondary containment precautions;
- 6) A description of the method of transportation of chemicals/goods to the premises including the size and nature of vehicles, proposed routes and frequency of delivery;
- 7) Details of the number of vehicles likely to be involved and the location of vehicle storage/standing areas;
- 8) Details of on-site water quality control; and

- 9) Details of waste treatment and transportation.

4.16. Noise Impact Statement

Where a Noise Impact Statement, prepared by a suitably qualified acoustic consultant, is required, it should include:

- 1) A description of the proposed development including plans and elevations. For rural development, this includes plans and elevations of any enclosures/external structures and descriptions of building construction and means of ventilation;
- 2) Details of local topography, existing and proposed buildings and exposed or shielded situations which may affect the results and any allowances made in this regard;
- 3) Relevant legislation, standards, guidelines and policies that have been applied;
- 4) Background noise measurements. For rural development, this includes details of existing daytime and night-time background levels and the means by which these levels were obtained;
- 5) Details of instruments and methodology used for noise measurements;
- 6) Noises level data for all major sources, in octave band levels where appropriate;
- 7) A site map showing noise sources, measurements, locations and noise receivers;
- 8) Noise criteria applied to the proposal;
- 9) Noise predictions for the proposed activity;
- 10) Consideration of any other significant or relevant acoustic information concerning the project;
- 11) A comparison of noise predictions against noise criteria. Where appropriate, this should include a comparison of the predicted noise levels with the relevant design criteria at each potentially sensitive receiver location considered;
- 12) A description of proposed mitigation measures, the resultant noise reduction likely, and an assessment of the feasibility and reasonableness of these measures;
- 13) A statement of opinion confirming how compliance with acoustic criteria requirements can be practically achieved; and
- 14) In situations where vibration is considered to be an issue, a suitable assessment of any vibration impacts.

4.17. Requirements relating to land stability, excavation and filling

Any development application that proposes excavation and/or filling, and therefore changes to the levels of a site, is required to clearly address the following:

- 1) Where the excavation and/or filling will occur on the site;
- 2) Justification for the need to change the land levels in terms of the overall development; and
- 3) Any impacts from the changed land levels as a consequence of excavation and/or filling including potential impacts on groundwater levels, flow or quality.

4.17.1. Landfill Validation Report

A Landfill Validation Report is required where importation of fill is proposed. The report must be prepared by an appropriately qualified person and must include:

- 1) The property description of the source of the fill (hereafter called the subject property);
- 2) The site history of the subject property, including present and past land uses;
- 3) Results of any previous site investigations for contaminants on the subject property;
- 4) Present and past zonings of the subject property (e.g. industrial, agricultural or defence purposes);
- 5) Description of the present and past land uses of the land immediately adjacent to the subject property, including any information relating to potential or known contamination;
- 6) Proposed location and purpose for introducing fill onto a property;
- 7) Details of the transporters or contractors responsible for transporting the fill material from its source to its final and approved destination;
- 8) Level of finished fill and extent of proposed fill in relation to adjoining property;
- 9) Methods of controlling erosion and siltation;
- 10) Effect of fill on adjoining property, particularly in relation to water flow;
- 11) Compaction method;
- 12) Advice confirming that the proposed fill is suitable for the proposed use; and
- 13) Advice confirming that land-filling activities comply with relevant criteria and pose no unacceptable risk to human health or the environment.

Council may require a further detailed investigation to occur if contamination is, or may be, present in the fill material to prove that the fill material is suitable for the proposed use.

4.17.2. Geotechnical Report

A Geotechnical Report must be prepared by a suitably qualified consultant and is required where the existing slope on a site is greater than 15% (or the land is likely to be subject to any land stability issues); where on site effluent disposal is proposed (this may be addressed as part of the onsite effluent disposal supporting information); or where excavations are proposed that are likely to impact groundwater, including basement levels. A Geotechnical

Report may be required for other applications due to the characteristics of the particular site or the scale or nature of the development.

The requirements for Geotechnical Reports vary greatly in scope and extent depending on the scale and type of development and the specific characteristics of the site. As a guide, all geotechnical reports will include:

- 1) A description of the site and its existing geotechnical hazards/risks;
- 2) Details of the site substrata [or sub-surface conditions], relevant geological information, advice on groundwater seepage;
- 3) A risk assessment in accordance with the Australian Geomechanics Society [AGS] guidelines; and
- 4) Recommendations on the treatment of any identified hazards and design parameters and data for the construction of the development.

4.18. Water Management Plan

Any application for a new industrial or rural land use that requires the consent of Council and will increase the water needs of a particular area must submit a Water Management Plan which:

- 1) Estimates future water needs of the proposed development;
- 2) Indicates the proposed water source to meet those needs; and
- 3) Outlines water conservation measures to be implemented.

4.19. Dust Suppression Plan

A Dust Suppression Plan is an essential part of controlling dust problems from agriculture, construction and extraction activities. A Dust Suppression Plan should identify potential for dust generation and the control measures to be implemented to minimise dust.

Where a Dust Suppression Plan is required for a proposed development, the plan should include:

- 1) A site description of the existing site and the proposed development;
- 2) A site map showing:
 - a) North point and scale;
 - b) Property boundary, contours, existing landforms, prevailing wind directions and adjacent features;
 - c) All areas and vegetation to be retained or left undisturbed;
 - d) All areas and vegetation that will be disturbed;
 - e) Location of the proposed development/activity;

- f) Location of physical barriers, such as fencing and wind breaks;
 - g) Location of stockpiles and storage areas;
 - h) Traffic routes and stabilised site access/exit points; and
 - i) Any areas with potential for dust generation.
- 3) Details of the dust control measures, including:
- a) Timing of works;
 - b) Areas to remain vegetated, or be revegetated;
 - c) Wind breaks;
 - d) Coverings for stockpiles and transportation;
 - e) Frequency and location of water sprays;
 - f) Identifying wind speed limits for operations; and
 - g) Any other site or operational specific control measures.

4.20. Odour Management Plan

An Odour Management Plan identifies the range of measures to be used to minimise odour impacts. The factors contributing to odour generation are complex and vary according to the land use or industry producing the odour. Reference to industry specific guidelines and best practice is required. An Odour Management Plan should identify the potential for odour generation and impacts, and management protocols to minimise these.

Where an Odour Management Plan is required, the plan should include:

- 1) A description of the proposed development including plans and elevations. For rural development, this includes plans and elevations of any enclosures/external structures and descriptions of building construction and means of ventilation;
- 2) Details of the site characteristics (including topography, prevailing winds, adjacent land uses, location and proximity of neighbours);
- 3) Details of the odour that will be generated by the development, including offensiveness, intensity and frequency of odour emissions;
- 4) A site map showing odour sources;
- 5) A description of proposed mitigation measures, the resultant odour reduction likely, and an assessment of the feasibility and reasonableness of these measures; and
- 6) Details of relevant legislation, standards, guidelines and policies that have been applied.

4.21. Social Impact Assessment

A Social Impact Assessment will be required for all major development types which are likely to have a significant social impact on the existing community. For example, large subdivisions (residential or rural residential) or large housing developments.

A Social Impact Assessment must:

- 1) Identify the Community - Identify the existing community and the proposed future community. This will include a demographic assessment of existing and proposed communities;
- 2) Identify the Needs - Identify the needs of the community based on the assumptions made as part of 1) above. This includes health, recreation, education, employment, etc.;
- 3) Identify the Issues - Identify the issues that will impact on those communities and needs, particularly the ability of existing facilities to meet the needs of existing and proposed communities; and
- 4) Develop Recommendations and Mitigating Measures - Assess how the proposal will avoid or mitigate social impacts, including reference to any additional infrastructure proposed to be provided.

4.22. Economic Impact/Needs Assessment

An Economic Impact Assessment will be required for all development which may have an economic impact on similar uses in the surrounding area, including major retail development (traditional or bulky goods) and child care centres over 40 places.

An economic impact assessment must:

- 1) Identify the likely spheres of impact (traditional retail, bulky goods retail, child care centres, etc.);
- 2) Identify the likely extent of impact, based on proximity, similarity of service, etc.; and
- 3) Demonstrate that there is sufficient market for the proposed use or that the proposed use meets an unmet need in the area.

4.23. Infrastructure Delivery Plan

The preparation and submission of an Infrastructure Delivery Plan (IDP) is required for all new release areas. The IDP is required to identify all infrastructure, including civil works, utility services, community, social, cultural and recreational facilities, to service a new release area and establish a framework for its timely provision.

The IDP should include associated costing (including ongoing operating and maintenance costs) and estimated delivery timeframes for all infrastructure, with a commitment to providing services up front where they are required early in the life of new estates. Where possible, the IDP should demonstrate efficient use and/or extension of existing infrastructure. The IDP should explore opportunities for the delivery of innovative and

sustainable infrastructure, services, facilities and networks with adherence to the principles of social justice, equity and accessibility.

The IDP shall provide an accurate costing for all infrastructure to be provided and a delivery program with key pre-planning design and construction phases identified. The IDP shall incorporate relevant apportionment of costs where it is agreed those will be shared with other providers. The IDP will form the basis for the development of Section 94 Contributions Plans and/or Development Agreements, as well as agreements required to be entered into with the State Government and its agencies for the delivery of regional based facilities.

Specifically, the following infrastructure and services are to be identified and provided for in all new release areas:

- 1) A safe, efficient, and effective road system and cycleway/pedestrian network which links with existing and new infrastructure, public transport services, shopping centres, community facilities and recreation areas;
- 2) Public transport networks and systems which deliver effective access to major destinations and other transport mode connections. A Transport Management and Accessibility Plan (TMAP) (see 4.8.3 in this Appendix) will be required to identify public transport systems improvements generated by new release areas;
- 3) Underground routing of all utility services including gas, water, sewer, electricity and telecommunications (including broad-banding capability);
- 4) Planned development of infrastructure that meets local energy, water and sewer authority standards;
- 5) Modern telecommunication infrastructure with the capacity to support multiple telecommunications services, such as high-speed internet (including broad band), voice and data systems, and community intranets. Shared service corridors should have capacity to accommodate technology advancements and any increases in demand; and
- 6) Community, social, cultural, educational and recreational facilities to service the new community.

Further, the IDP must address the following matters:

- 1) Identify the estimated costs of community, cultural and recreational facilities and services and timeframes for delivery (e.g. relationship to housing production);
- 2) Develop strategies for the upfront provision of a baseline level of services and facilities to service the initial population. This includes a framework for the timely provision of social infrastructure including small-scale retail/convenience store, access to transport/bus services and open space/recreation areas, facilities and meeting places to support a healthy community (e.g. playgroups, parent groups, youth activities, seniors group, children services, medical, mail box, telephone, etc) to service the initial population;
- 3) Provide accurate costings for all infrastructure and identify a delivery program with key pre-planning design and construction phases. It shall also incorporate relevant apportionment of costs where it is agreed those will be shared with other providers;
- 4) Identify and cost all necessary maintenance requirements for infrastructure assets proposed to be transferred to Council for ownership and ongoing care including future replacement costs where necessary;

- 5) Identify the interim management and maintenance arrangements for infrastructure assets which will be retained in the short term by the developer pending transfer to Council; and
- 6) Develop Plans of Management consistent with the requirements of the Local Government Act for all open space areas proposed to be transferred to Council.

4.24 3D Modelling for Development within St Marys Town Centre

Council officers may request for any development in the St Marys Town Centre with an estimated cost greater than \$1 million, or development that exceeds two-storeys in height, or development that is in a prominent location, to be accompanied by a 3D file of the proposed development in the context of the St Marys Town Centre 3D Model.

The 3D Model will be used on the basis of a two-way sharing of data, with Council providing to the prospective developer, a 3D file extract of the relevant area from the Model in the early stages of design, in order to assist in design development.

Architects and developers will be informed at the initial enquiry stage of the 3D Model requirement and encouraged to contact Council's GIS Unit to arrange for the provision of an extract from the St Marys 3D Model, or to discuss technical issues.

The process will be the subject of a licence agreement between the developer and Council and will be subject to payment of the prescribed fee, both on the provision of the 3D Model extract and at the development application stage. The agreement will require that the developer import the digital 3D plans of the proposed development into the supplied model extract for submission with the development application. The computer file extract, with the proposed development included, would be imported back into the 3D Model to facilitate assessment of the proposal by Council's Development Services Unit, other Council officers, other interested persons and ultimately Council itself.

A fee for the use of this service will be negotiated.

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F4 Technical Information

A. Background

This Appendix contains more detailed information to support the controls in this DCP. It also refers to policies of Council.

It is recommended that applicants contact Council's Development Services Department to check for updates to this information prior to commencing their development application.

B. General Objectives

- a) To provide technical information to support the controls in other sections of the DCP;
- b) To refer to existing policies and guidelines of Council; and
- c) To provide information about the existing policies and guidelines of other agencies and organisations.

C. Other Information

This Appendix refers to the technical information and policies of Council. In many cases, applicants will also be required to comply with the policies and technical standards of State and Commonwealth agencies and utility agencies. Applicants should directly contact these agencies to obtain this information.

1. Policy and Guideline Documents of Council

The following policy and guideline documents provide background and technical information to support Penrith DCP 2014 and are separately available from Council's website at www.penrithcity.nsw.gov.au:

- Penrith City Council Landscape Character Strategy (2006)
- Penrith City Council Sustainability Blueprint for Urban Release Areas (June 2005)
- Penrith City Council Biodiversity Strategy (May 2004)
- Penrith City Council - Heritage Study (May 2006) prepared by Paul Davies Pty Ltd
- Penrith Integrated Transport and Land Use Strategy 2008
- Penrith City Council On-site Sewage Management and Greywater Reuse Policy (April 2014).
- City Strategy

2 Technical Information

2.1 Social Principles

A. Background

A socially sustainable society is one that is just, equitable, inclusive and democratic, and provides quality of life for current and future generations.

As the population of Penrith grows, increasing residential and working populations will put pressure on open space areas and natural resources as well as on the existing built form, services and infrastructure. Increasing the population in an area will require an increase in amenity to ensure that places remain liveable for the whole community.

Understanding the social context and needs of the local community in terms of lifestyle, affordability, access to social facilities and employment opportunities influences the choice and location of all land uses. Quality design outcomes and successful project delivery requires an integration of the proposed development's aims, Council's goals for a particular area and processes which involve and support the local community.

B. Objectives

The objective of this section is for development proposals to consider and, where relevant, address the following:

- a) Conducting a social impact assessment for major developments;

- b) Ensuring a development addresses Council's social goals as set out in the Principles in Chapter B of this DCP;
- c) Ensuring a development addresses the proximity and accessibility of community facilities in the area; and
- d) Promoting housing choice in the form of a mix of dwelling types, affordability and accessibility.

C. Social Impact Assessment

The key way to determine whether a proposed development will impact on social sustainability is to conduct a Social Impact Assessment (SIA). A SIA will not be required for all developments. However, an applicant (in collaboration with Council) should assess whether there will be any social impacts, and if so, lodge a SIA with the application. The types of development that may require a SIA include residential developments, new industry, commercial development, retail development, entertainment and place of worship.

A social impact assessment can be defined as,

"The processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment." (International Principles of SIA).

The aim of a SIA is to predict, anticipate and understand what may happen as a result of a development. In doing this, it aims to find out how to maximise the desired outcomes and minimise the adverse outcomes to the community.

A SIA should include an in depth assessment about actual and potential social impacts. Both positive and negative impacts need to be considered as well as the extent of the impact.

Council, the applicant and the community all have a role in the identification and assessment of social impacts that may result from a development. For the purposes of everyday planning, such as major changes in land use, social impact assessment requires an analysis of three key factors:

- Impact on the existing community;
- Impact on the community associated with the new development; and
- Impacts on the future community.

To do this, the following steps are generally taken:

- a) Identifying the Community** - Identifying the existing, future, and proposed communities;
- b) Identifying the Needs** - Identifying the needs that relate to the existing, future and proposed communities;
- c) Identifying the Issues** - Identifying the issues that will impact on those communities and needs; and

- d) Developing the Recommendations and Mitigating Measures** - Assessing how the proposal will avoid or mitigate social impacts. Once impacts have been identified, measures to address these impacts, called mitigating measures, and recommendations can be developed.

Further details of these steps are provided below.

1. Identifying the Community

Identifying the community involves the following steps:

- a) Identify the existing community (residents, businesses, schools, churches, surrounding land uses, age structure, household types, income etc.) by:
 - Looking at ABS Census of Population and Housing.
 - Looking at SEIFA (Social Economic Index of advantage/disadvantage and wellbeing), Community Profile; and Community Atlas and population forecast on Council's website;
 - Looking at regional plans.
 - Looking at Council's City Strategy which includes policy documents: Penrith Inclusion Plan; Planning for an Ageing Community Strategy 2010; Service for Men Study; Women's Services Advocacy Strategy; Youth Action Plan 2010.
- b) Identify the future community using population projections (see Population Forecast on Council's website).
- c) Identify the future community that your proposal would bring to the area (i.e. if you are proposing a major residential development then provide a snapshot of total number and breakdown of some key characteristics - age, household type, size, etc).

2. Identifying the Needs

Identifying the needs involves the following steps: (This will require some discussion with local service providers and the existing community).

- a) Identify the level of services and facilities that the existing community has available (e.g. type of service, availability of service, affordability of service).
- b) Identify the current gaps in current service and facility provision.
- c) Identify what the needs of the future community will be and what services will be required to meet this need.

3. Identifying the Issues

When considering the issues you need to be mindful of both positive and negative impacts, e.g. will the development bring more children into the area and therefore make better use of or put pressure on existing school infrastructure.

The key issues to be considered in a SIA are outlined in Table F4.1. The table is intended to guide you in developing your SIA. You need to address the areas that are relevant to your application. Remember to document who you consulted, what issues were raised, how

you will enhance positive and reduce negative impacts and whether there are any other issues you need to consider.

Table F4.1

Possible Social Impacts (positive and negative)	Questions to consider
Demographic and population change	<p>Will the proposal create a significant change to the existing population in terms of overall numbers and makeup (i.e. will it double the size, will it create a significant increase in older people, etc)?</p> <p>What is the current makeup of the existing community (e.g. age groups, family type, household income, employment status etc)?</p> <p>What is the total expected increase/decrease? What percentage is this of the total population of the suburb, area, LGA?</p>
Accommodation and housing	<p>Will the proposal change the current provision of housing? Will it create shortages or too much? Will it impact on affordability? Will it change the household size and characteristics of the community for the positive or negative? Will the proposal respond to current demands in housing type, etc.? You may need to undertake an assessment on housing affordability.</p> <p>Consider quantity, type and density of housing.</p>
Mobility and access	<p>Will the proposal create a strain on existing transport services? Can the existing transport services be augmented to meet demand or will they need to be expanded? Can people currently get to places they need to go to (e.g. what is the current level of mobility, what is needed, etc)?</p>
Community facilities and social infrastructure requirements	<p>What facilities and infrastructure is currently available? How will the proposal impact on existing community access to these facilities? Can existing facilities meet the anticipated increase in demand? Will the proposal result in the need to upgrade existing facilities or will new facilities be required? What new facilities may be required?</p>
Needs of service age groups	<p>What service age groups currently meet in the area? Will the proposal create impacts on existing social groups? Will the proposal create the need for new service age groups? For example, if the development is for student accommodation or seniors housing, will the community be able to service this group? Will this new group create impacts on the existing community?</p>
Heritage and cultural values and beliefs	<p>Will the proposed development impact on Indigenous and European heritage? Is there an item of local significance to be considered on the site? How will the existing or incoming communities' cultural needs be met?</p>
Community identity	<p>Will the proposal change the socio economic makeup of the</p>

Possible Social Impacts (positive and negative)	Questions to consider
and cohesion	community? Will the proposal change the age characteristics of the community? Can the incoming community integrate with the existing community to ensure community cohesion or will it create issues? How will these issues be minimised?
Cohesion of the development and its surrounds	Is the proposal consistent with development that surrounds it? Is the proposal significantly larger in scale and type than existing development? Is the proposal going to result in a distinct change in the locality (e.g. from rural to urban)?
Health	Will the proposal create issues associated with health? There are a number of social indicators of health. Examples include opportunities for building community interaction, community capacity, wealth, activity, etc.
Leisure and recreation	Will the proposal create opportunities or constraints for leisure and recreation? Does the proposal meet the future community's needs in this area? Will the proposal create demands on existing recreation and leisure facilities that cannot be met? Will the proposal justify the ongoing operation of recreation and leisure facilities?
Risk perception in the community and crime and public safety	Have CPTED principles being considered? (Chapter C1 'Site Planning and Design Principles' contains information about CPTED). Will the proposal create a higher incidence of crime or create more opportunities for informal surveillance? Will the proposal create more opportunities for crime?
Social amenity	Will the proposal contribute or impact on the overall character of an area? For example, will changes impact on open land, trees, historic buildings and the inter-relationship between all elements in the environment? Will the proposal contribute to or impact on the overall social makeup of an area in terms of population, levels of service and facility provision, etc.?
Equity and universal design	An overarching principle of social inclusion is that of equity of access to resources, services and opportunities. This includes the principle of universal design which seeks to promote accessibility in both the public and private domains to all people. How has the principle of equitable access and universal design been incorporated into the proposal?
Employment	Will the proposal create employment opportunities and contribute to the surrounding community? Will the proposed employment be able to be met in the local community with local skills or will a whole new group of people be required? Will the proposal lead to issues of displacement? Use your demographic profile to discuss.
Local economic effects	Will the proposal boost or take away from the local economy? Will the proposal threaten the existing economic environment?

Possible Social Impacts (positive and negative)	Questions to consider
Property value	This can be incorporated into the principle above and it may be useful to use an economic consultant. However, you may be able to research impacts of similar proposals to yours and whether there were any impacts to property values.

4. Developing the Recommendations and Mitigating Measures

Against each issue, the impacts for existing residents within the community and impacts on future residents of the development need to be considered and strategies or mitigating measures, if appropriate, to address any impacts identified.

Recommendations will identify the means by which the negative impacts associated with the proposal may be minimised or avoided and the positive impacts enhanced.

Mitigating measures are those steps that could be taken to reduce or enhance the levels of impact identified (e.g. provision of a transport service, creation of community facilities, provision of a bus shelter, etc) to meet future community needs. These measures are usually required to be provided by the developer (e.g. if your proposal will increase demand on public transport, you may need to recommend augmenting the existing public transport provision or creating a new service that meets your development's needs).

The final recommendation of the SIA needs to support or not support the proposal. You need to outline reasons why.

2.2 Economic Principles

A. Background

Economic capacity is tied to the physical ability of a locality to support growth and change, including the provision of community infrastructure and services. It is important to balance the interests of the public domain and the community's goals with realistic commercial expectation, market demands, real estate and development profit.

Not every aspect of economic sustainability will be governed by this DCP. However, several key aspects of economic sustainability addressed in this DCP include, but are not limited to:

- a) The economic equity of access to natural resources;
- b) Economic cost of provision of transport, services and infrastructure;
- c) Economic impacts of specific land uses.

B. Objectives

The objective of this section is for development proposals to consider and, where relevant, address the following:

- a) Conducting an economic impact analysis for major developments;
- b) Ensuring a development addresses Council's economic goals as set out in the Principles in Chapter B of this DCP;
- c) Ensuring a development addresses the proximity and accessibility of employment and services in the area; and
- d) Promoting development that is economically sustainable.

C. Economic Assessment

The key way to determine whether a proposed development will impact on economic sustainability is to conduct an Economic Assessment. An economic assessment will not be required for all developments. However, an applicant (in collaboration with Council) should assess whether there will be any significant economic impacts from a proposal, and if so, lodge an economic assessment with the application. Many economic impacts are closely related to social impacts and this should be addressed.

1. Market demand

Is the proposal based on a thorough market appraisal to determine the need for the proposed land use, the required amount of floor space needed and whether the market has any particular design requirements? This needs to be assessed not just for the immediate future, but also for longer term projections. If there is uncertainty, then proposals need to include a level of adaptability to allow it to change as the market demand requires.

2. Employment

Will the proposal create employment and contribute to the surrounding community? Will the proposed employment be able to be met in the local community with local skills or will a whole new group of people be required, leading to issues of displacement, opportunities, etc.? Use your demographic profile to discuss.

3. Local economic effects

Will the proposal boost or take away from the local economy? Will it threaten the existing economic environment?

4. Property value

This can be incorporated into the principle above and it may be useful to use an economic consultant. However, you may be able to research impacts of similar proposals to yours and whether there were any impacts to property values.

2.3 Environmental Principles

A. Background

There are a number of environmental objectives and controls set out in this DCP. The broad aim in addressing these environmental issues is to address them in a holistic manner - to avoid fixing one problem by causing another. For this reason, environmental issues have been grouped as issues relating to:

- a) Vegetation Management ;
- b) Water Management;
- c) Land Management;
- d) Waste Management; and
- e) Landscape Design.

In addition, there are a number of 'human environment' issues that impact on the natural environment, including:

- a) Site Planning and Design Principles;
- b) Culture and Heritage;
- c) Public Domain;
- d) Advertising and Signage; and
- e) Transport, Access and Parking.

Therefore, environmental issues permeate all aspects of development and all of these chapters need to be addressed to understand the potential impact of any development proposal.

B. Objectives

The objective of this section is for development proposals to consider and, where relevant, address the following:

- a) Conducting an environmental assessment for major developments;
- b) Ensuring a development addresses Council's environmental goals as set out in the Principles in the DCP Principles Section of this DCP;
- c) Ensuring a development responds to the environmental constraints and opportunities as set out in the Site Planning and Design Principles Section of this DCP; and
- d) Ensuring that development is environmentally sustainable.

C. Environmental Assessment

The environmental principles that should be covered by the contextual analysis and addressed by the design/development (as set out in this DCP) include:

Air Quality and Climate

- a) Protecting air quality.

Vegetation Management and Landscape Design

- a) Protecting threatened species, populations or ecological communities

- b) Protecting wildlife/fauna and habitats
- c) Protecting native vegetation/bushland and biodiversity corridors
- d) Protecting significant trees and landscape
- e) Minimising weed species and infestation
- f) Minimising bushfire risk.

Water Management

- a) Protecting water catchments and surface water and ground water (quality and quantity)
- b) Protecting watercourses, wetlands, groundwater dependent water systems and riparian corridors
- c) Managing flood liable lands
- d) Managing stormwater and drainage patterns.

Land Management

- a) Protecting soils and soil quality/condition
- b) Responding to topography, landform and site stability
- c) Minimising earthworks, excavation and filling
- d) Minimising erosion and sedimentation
- e) Addressing contaminated soils
- f) Addressing salinity
- g) Addressing and avoiding landfill.

Waste Management

- a) Minimising and managing existing and potential waste generation during design and operation, demolition and construction
- b) Managing on-site sewage
- c) Addressing hazardous waste.

2.4 Built Form and Infrastructure Principles

A. Background

In addition to the principles of sustainability, there are a number of built form and infrastructure principles that are supported by more than just economic, social or environmental reasoning. These are sometimes referred to as principles of good 'urban design'.

B. Objectives

The objective of this section is for development proposals to consider and, where relevant, address the following:

- a) Conducting an urban design assessment for major developments;
- b) Ensuring a development addresses Council's built form and urban design goals as set out in the Principles in Section B – DCP Principles of this DCP; and
- c) Ensuring a development responds to the built form constraints and opportunities as set out in Section C1 of this DCP.

C. Urban Design Assessment

The built form and infrastructure principles that should be covered by the contextual analysis and addressed by the design/development (as set out in this DCP) include:

Site Planning and Design Principles

- a) Responding to climatic conditions and maximising passive solar design and energy conservation in the built form
- b) Responding to topography and minimising visual impact
- c) Responding to areas of scenic or visual importance
- d) Providing appropriate height, scale and massing
- e) Providing an articulated built form
- f) Designing for safety and security
- g) Providing accessibility.

Culture and Heritage

- a) Minimising impact on heritage items, conservation areas or landscapes
- b) Providing appropriate development in the vicinity of heritage items
- c) Minimising impact on archaeological sites.

Public Domain

- a) Providing open spaces and recreational opportunities
- b) Providing outdoor dining and trading areas
- c) Enhancing the streetscape
- d) Providing public art opportunities
- e) Providing pedestrian amenity.

Advertising and Signage

- a) Controlling signage and advertising to minimise visual impact and integrate with existing built form and landscape character.

Transport, Access and Parking

- a) Protecting the character of key transport corridors
- b) Integrating access and driveway design into site design
- c) Integrating vehicle parking into site and building design
- d) Integrating alternative transport means such as footpaths and cycleways.

Noise and Vibration

- a) Providing acoustic amenity.

Infrastructure and Services

- a) Providing utilities such as water, sewerage, gas, electricity, telephone
- b) Managing on-site sewage
- c) Controlling the design of infrastructure, engineering and construction works.

2.5 Specific Land Use Principles

In addition to the above controls that apply to all land uses, applicants are required to provide contextual analysis and respond in the design/development to issues described in the specific land use chapters including:

- a) Rural Land Uses
- b) Residential Land Uses
- c) Commercial and Retail Land Uses
- d) Industrial Land Uses
- e) Other Land Uses.

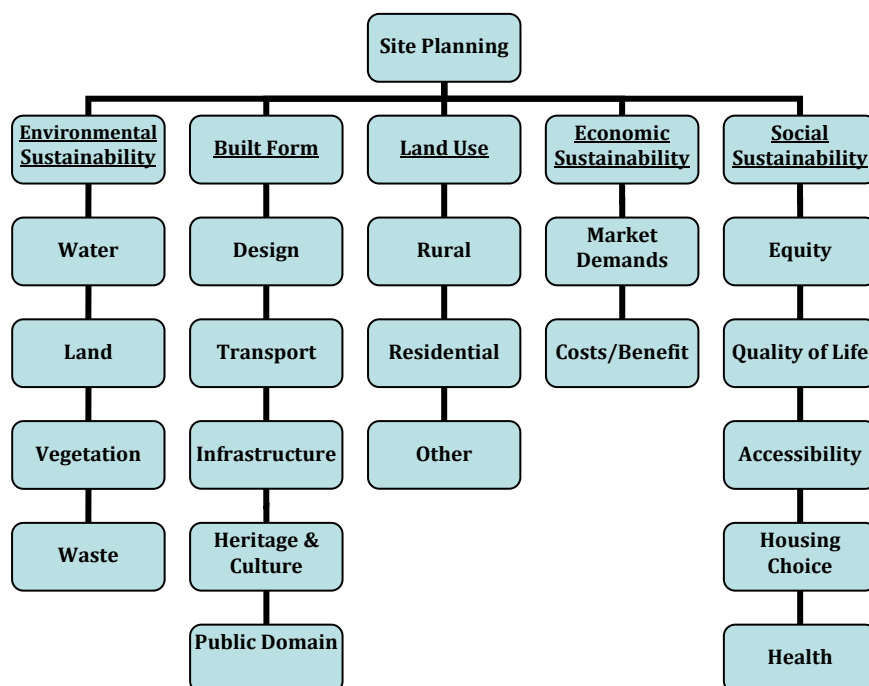
2.6 Site Planning

Planning of a site needs to analyse the opportunities and constraints of a site for a proposed development across a number of broad issues. Figure F4.1 below provides a general guide to the wide range of factors that influence the design, layout, construction and ongoing use and maintenance of a development site. These issues can be broadly categorised as follows.

- a) Social opportunities and constraints;

- b) Economic opportunities and constraints;
- c) Environmental opportunities and constraints; and
- d) Built form and infrastructure opportunities and constraints.

Figure F4.1



2.6.1 Regional Analysis

Regional analysis involves looking at the regional context, including but not limited to:

- a) Regional locational context and urban centres (e.g. nearest major centres);
- b) Regional topography (e.g. general terrain for region);
- c) Regional transport (e.g. major rail and road connections);
- d) Regional environmental systems (e.g. major watercourses and open space connections/facilities); and
- e) Regional infrastructure/services (e.g. major shopping, cultural, civic, educational facilities and services/utilities).

Regional contextual analysis can range from 10 to 100 kilometres from the site (depending on the scale of development, the proposed land uses and its impacts). Regional transport networks, cycle and pedestrian routes, existing land uses, ecological and infrastructure systems, open space networks and visual connections extend beyond the local boundaries and have significant influence on local decision making and appropriate land use outcomes.

Not all of the elements listed above will be relevant for every development or site. It is strongly recommended that you contact Council's Development Services Department to discuss the requirements for your proposal prior to lodgement of a development application.

2.6.2 Local Analysis

Local analysis involves looking at the local context around the site, including but not limited to:

- a) Local locational context (e.g. nearest neighbourhood and local centres);
- b) Local climate (e.g. prevailing winds);
- c) Local infrastructure/services (e.g. local shopping, education, employment, utilities and community facilities);
- d) Local topography (e.g. nearest mountains and valleys);
- e) Local transport (e.g. local rail, bus and pedestrian/bicycle paths);
- f) Local street hierarchy and layout;
- g) Local visual analysis (e.g. visibility of site from local area);
- h) Local environmental systems (e.g. local watercourses, drainage channels, and parks);
- i) Local built form outcomes (e.g. area character);
- j) Local subdivision pattern (e.g. block and road pattern);
- k) Local heritage items, conservation areas or streetscapes; and
- l) Adjacent land uses.

Local contextual analysis can range from 50 metres to 10 kilometres from the site (depending on the scale of development).

Not all of the elements listed above will be relevant for every development or site. It is strongly recommended that you contact Council's Development Services Department to discuss the requirements for your proposal prior to lodgement of a development application.

2.6.3 Site Analysis

Site analysis involves looking at the features of the site and the immediately surrounding area and, where possible, presenting the information in a diagram(s). That diagram should include the following minimum elements:

- a) The site's dimensions and areas;
- b) North point and the site's orientation (e.g. solar access);
- c) Topography (with 0.5 to 1 metre contours);
- d) Road and pedestrian access points;

- e) Services and infrastructure (e.g. electricity poles, stormwater drainage lines, natural drainage, kerb crossings and easements);
- f) Rights of way;
- g) Views to and from the site;
- h) Site overland flows and drainage patterns;
- i) Geotechnical characteristics of the site and suitability for development;
- j) Location of site in relation to shops, community facilities and transport;
- k) Heritage items on site or on adjoining properties;
- l) Form and character of adjacent and opposite buildings in the streetscape, including both sides of any street that the development fronts;
- m) Location and use of any existing buildings or built features on the site;
- n) Location and important characteristics of adjacent public, communal and private open spaces;
- o) Location of significant vegetation on the site;
- p) Location of any significant noise sources on and in the vicinity of the site; and
- q) Assessment of site contamination and/or remediation.

Site analysis includes the site and the immediate context - usually up to 50 to 100 metres in any direction from the site (depending on the scale of development, the proposed land uses and its impacts). Site analysis should include plan and section drawings of the existing features of the site at the same scale as the site plan and landscape plan.

Not all of the elements listed above will be relevant for every development or site. It is strongly recommended that you contact Council's Development Services Department to discuss the requirements for your proposal prior to lodgement of a development application.

2.7 Key Areas with Scenic and Landscape Values

This section provides further information on what is meant by gateways and why they are important.

2.7.1. Gateways

Gateways are distinctive sites or spatial sequences which denote a change in a spatial or visual experience. They serve to reinforce the legibility of the environment. The design of development at these sites requires a special response given the visual sensitivities of these locations.

Gateways have a variety of configurations and scales from regional significance to neighbourhood scale. They can be marked by changes such as land use, density of development, vegetation, topography and space. Gateways should relate to a region's

natural resources, scenic views and local cultural heritage. Some are site specific places of environmental identity and others provide a sense of transition or even anticipation. They can identify entrances and destinations.

Located mostly on thoroughfares that convey significant numbers of people, such as major roads and rail corridors, gateways communicate to people that they are entering a unique or different area. The sense of arrival is important in gaining a first impression of a place, contributing to how we perceive the City and can be a lasting positive experience. A legible gateway defines the edges or boundaries of a place on the continuous and recognisable environmental identity of the road or rail corridor, marking it as a special place or landscape.

It is the combination of particular landscape elements, buildings and the sense of place that contributes to the clear legibility and recognisable environmental identity of gateways. Particular landscape elements that contribute to the overall character and environmental identity of the place include vegetation, street trees, road width, depth of front setbacks and lighting. Views to distant natural features and backdrops provide a context to the site, also contributing to the uniqueness of the place or its 'sense of place'. Gateways should be distinctive, bold and uncomplicated.

Gateways may also be located at sites such as significant community congregation areas, public art installations, municipal buildings and ceremonial places. By distinction, a gateway in this context is not the ubiquitous 'entry feature'. It is not a monument to establish a development, nor a marketing tool to create a distinct boundary between a new development and surrounding developments and land uses.

Types of gateways in the City of Penrith may include:

- a) Crossings;
- b) Village bookends;
- c) Land use interfaces;
- d) Intersections; or
- e) Cultural elements.

Chapter C1 'Site Planning and Design Principles' identifies the gateways in the City of Penrith.

New development must contribute to the importance of these gateway locations through sensitive integration in the gateway setting and excellence of design.

2.8 Vegetation

Contact Council for advice.

2.9 Landscape Technical Specifications

2.9.1 Tree/Vegetation Protection during Construction

Trees, which are to be retained, are to be protected during construction. The method and detail of the protection is to be provided by the consulting arborist who prepared the Tree Management Plan.

2.9.2 Landscape Quality Assurance Standards

1. Landscaping materials

Standards have been developed to guide the manufacture of composts, soil conditioners, potting mixes, topsoils, landscape soil mixes and mulches. The standards detail the processing requirements for these products as well as the physical and chemical requirements of these products.

All of the products required for landscaping works specifications must first meet the requirements of the relevant Australian Standards:

AS 4419 Soils for Landscaping and Garden Use

This Standard sets requirements for bulk density, organic matter, weed content, wettability, pH, electrical conductivity, ammonium toxicity, phosphorous content, dispersability, toxicity, nitrogen drawdown, permeability, soil texture and large particles.

AS 4454 Composts, soil conditioners and mulches

This Standard sets requirements for compliance with National health standards; physical, chemical, pasteurization and composting requirements; weed propagules; packaging; marking and documentation; and product analysis.

One of the most effective ways of achieving environmental sustainability is through specifying the use of landscaping materials that contain a minimum percentage of recycled garden and wood waste, as follows:

Mulches	100%
Composts and soil conditioners	80%
Landscaping, garden mixes and on slab soils	40%
Top dressing mixes	20%
Potting mixes	40%

Quality Assurance of products

Some landscaping products have been certified to the relevant Australian Standard and contain the minimum percentages of composted garden and wood waste as specified above.

In order to ensure the quality and environmental sustainability of products delivered to the site, contractors will be required to:

- a) Source product from any of the certified range of products. For example, the certified 'Garden to Garden' manufacturers are available from Waste Service NSW. Your selected manufacturer must provide you with a Manufacturers Australian Standards Licence Number for that particular product; or
- b) If you source product from outside the Garden to Garden range you must:
 - i) Provide certified proof that the manufacturer you have chosen has a Quality Assurance System in place;

- ii) Provide a current test certificate from an approved independent laboratory indicating full compliance with all the physical and chemical requirements (including toxicity and containment levels) of the relevant Australian Standard for the batch from which the product has been sourced; and
- iii) Provide records that will satisfy the principal's representative that the products provided contain the minimum percentage of recycled garden and wood waste as outlined in the specification.

2. Plant Material

Plant substitutions may only be made with written consent of those preparing/designing Landscape Plans. All plants are to be obtained from a nursery located in an area having a similar climate to the site or hardened off for a minimum six week period. All plant material is to be:

- a) True to species and sizes;
- b) Healthy, of good form, not soft or forced;
- c) With large robust root systems that are not root bound;
- d) Free from disease and insect pests; and
- e) Trees are to have a single leading shoot and conform to 'NATSPEC Specifying trees - a guide to assessment of tree quality' (Clark 2003). The NATSPEC guide provides a list of important characteristics which should be checked when assessing the quality of tree stock, and briefly explains why they matter.
- f) In line with current standards.

3. Before planting

Pre-planting

Parts of the site to be landscaped are to have all weeds removed prior to landscaping work commencing. Use hand tools on smaller weeds and, as a last resort, spot application of herbicide to larger, perennial and vigorous weeds.

Backfill retaining walls and make other garden beds after brickwork, electrical and drainage works and adjoining pavements have been completed. Water to settle the soil down and eliminate air pockets. This must be done with a fine gentle spray to prevent surface erosion. If planting is delayed by more than one week from backfilling or other soil preparation then mulch is to be applied to each area left unplanted.

Hardening off plants

Plant root systems shall be maintained moist at all times with particular attention being paid to watering during the onsite installation period before and during planting`.

4. Further Information and Contacts

General Contacts

- a) Australian Institute of Horticulture

- b) Australian Institute of Landscape Architects
- c) Australian Institute of Landscape Designers and Managers
- d) NSW Landscape Contractors Association
- e) National Arborists Association of Australia.

Government Agencies and Authorities

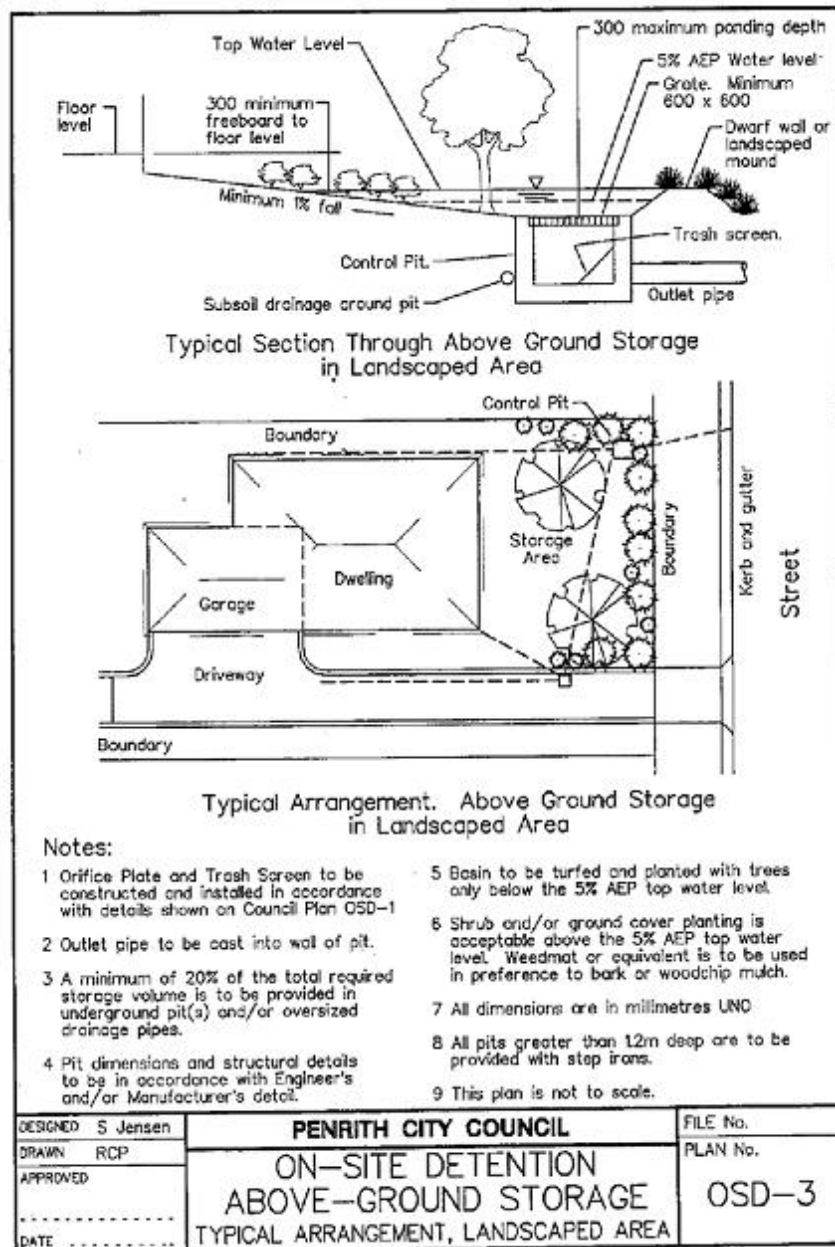
- a) NSW Department of Planning and Environment
- b) NSW Office of Environment and Heritage
- c) NSW Environment Protection Authority.

Non-government agencies

- a) Australian Association of Bush Regenerators
- b) Australian Garden History Society
- c) Australian Plant Society
- d) Landcare Australia
- e) Landcare/Bushcare/Coastcare
- f) Local Government and Shires Association
- g) National Trust.

2.9.3 Above Ground On Site Stormwater Detention and Landscaping

Figure F4.3



2.10 Green Roofs and Roof Gardens

A. Background

Roof space has significant potential to contribute to the amenity, comfort and sustainability of our cities and surrounding areas. Green roofs are one way in which roof spaces can be designed, or retrofitted, to enhance urban areas.

Green roofs are divided into two broad categories, extensive and intensive. Intensive gardens are similar to traditional parks or gardens, but are raised above the ground level, at the top of buildings or at an intermediate level. Extensive gardens are typically not intended for recreational use, are comprised of hardy, low maintenance ground cover species covering large areas of roof space.

Extensive	Intensive
<ul style="list-style-type: none">• Have shallow layer of soil (less than 15cm)• Use hardy groundcover plants (drought and heat tolerant)• Entire area often not suitable for recreational use• Require minimal maintenance• In many cases existing buildings can be retrofitted to enable installation	<ul style="list-style-type: none">• Similar to traditional gardens• Use deeper soils to enable planting of trees and shrubs• Often used as open space or recreation• Are more expensive to construct and maintain• Require purpose built structures and reinforcing due to increased weight• Can incorporate decorative paving and shade structures

B. Benefits

Green Roofs (extensive and intensive) provide a range of benefits, directly (to the individual building) and indirectly (contributing to improved amenity within the urban area).

These benefits can be grouped as amenity, environmental and economic benefits.

1. Amenity Benefits

Leisure and functional open space – In urban environments with limited areas of open space, intensive green roofs and elevated gardens provide recreational space.

Visual amenity value – A significant benefit of intensive and extensive green roofs is the enhanced view and amenity from overlooking buildings.

2. Environmental Benefits

Air quality - Vegetation has the capacity to filter out fine air-borne particles and gaseous pollutants. This process is increasingly beneficial as the cumulative area of vegetation increases.

Ecological value - The enhancement of biodiversity through the use of green roofs is closely linked to the type of vegetation being used and its location.

Water management - Green roofs provide a stormwater detention and retention function, slowing runoff of rainfall into stormwater systems. The transpiration of water held in the soil can also reduce the volume of stormwater runoff.

Reduced 'heat island effect' - The urban heat island effect is localised warming due to the increase in the large amounts of paved and dark coloured surfaces, such as roads, roofs and car parks as a result of urban development. Increasing vegetation and reducing the hardscape on site will assist the urban heat island effect.

3. Economic Benefits

Building insulation and energy efficiency - One of the most important tangible benefits that green roofs offer is reduced maintenance and cooling costs due to increased building insulation and energy efficiency.

Employee satisfaction - Green roofs provide various social benefits by providing 'green relief' to the urban landscape. Green roofs have the potential to increase employee satisfaction by enhancing their surroundings. This, in turn, could improve productivity (*Growing Up-The Blueprint to Green Proof Melbourne*).

Green roof design, construction and maintenance

A green roof is comprised of a series of layers that provide an environment suitable for plant growth and protecting the underlying building structure, shown in Figure F4.4. Appropriate design, construction and maintenance is critical to ensure success. See the following links for further information in this regard: greenroofs.wordpress.com/ and commons.bcit.ca/greenroof/case.html.

C. Further information

Green Roofs Australia (www.greenroofs.wordpress.com) has further information on a range of case studies and examples of green roofs in Australia and internationally, as well as information about technical guidelines and manuals.

2.11. Contaminated Lands

2.11.1. List of potentially contaminating activities

This list is for guidance only as examples of activities that can cause contamination of a site. The list is not exhaustive.

Some activities that may cause contamination:

• acid/alkali plant and formulation	• agricultural/horticultural activities
• airports	• asbestos production and disposal
• chemicals manufacture and formulation	• defence works
• drum re-conditioning works	• dry cleaning establishments
• electrical manufacturing (transformers)	• electroplating and heat treatment premises
• engine works	• explosives industry
• gas works	• iron and steel works
• landfill sites	• metal treatment
• mining and extractive industries	• oil production and storage
• paint formulation and manufacture	• pesticide manufacture and formulation
• power stations	• railway yards
• scrap yards	• service stations
• sheep and cattle dips	• smelting and refining
• tanning and associated trades	• waste storage and treatment
• wood preservation	

Source: ANZECC and NHMRC 1992, Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites.

2.11.2. List of industries and chemicals used

This list is for guidance only as examples of activities that can cause contamination of a site. This list is not exhaustive.

Industry	Type of Chemical	Associated Chemicals
Agricultural/ horticultural activities		See fertiliser, insecticides, fungicides, herbicides under 'Chemicals manufacture

Industry	Type of Chemical	Associated Chemicals
		and use'.
Airports	Hydrocarbons Metals	Aviation fuels Particularly aluminium, magnesium, chromium
Asbestos production and disposal		Asbestos
Battery manufacture and recycling	Metals Acids	Lead, manganese, zinc, cadmium, nickel, cobalt, mercury, silver, antimony Sulphuric acid
Breweries/distilleries	Alcohol	Ethanol, methanol, esters
Chemicals manufacture and use	Acid/alkali	Mercury (chlor/alkali), sulphuric acid and nitric acids, sodium and calcium hydroxides
	Adhesives/resins	Polyvinyl acetate, phenols, formaldehyde, acrylates, phthalates
	Dyes	Chromium, titanium, cobalt, sulphur and nitrogen organic compounds, sulphates, solvents
	Explosives	Acetone, nitric acid, ammonium nitrate, pentachlorophenol, ammonia, sulphuric acid, nitroglycerine, calcium cyanamide, lead, ethylene glycol, methanol, copper, aluminium, bis(2-ethylhexyl) adipate, dibutyl phthalate, sodium hydroxide, mercury, silver
	Fertiliser	Calcium phosphate, calcium sulphate, nitrates, ammonium sulphate, carbonates, potassium, copper, magnesium, molybdenum, boron, cadmium
	Flocculants	Aluminium
	Foam production	Urethane, formaldehyde, styrene
	Fungicides	Carbamates, copper sulphate, copper chloride, sulphur, chromium, zinc
	Herbicides	Ammonium thiocyanate, carbamates, organochlorins, organophosphates, arsenic, mercury, triazines
	Paints - Heavy Metals - Solvents	Arsenic, barium, cadmium, chromium, cobalt, lead, manganese, mercury, selenium, zinc, titanium Toluene oils natural (e.g. pine oil) or

Industry	Type of Chemical	Associated Chemicals
		synthetic
	Pesticides - Active ingredients - Solvents	Arsenic, lead, organochlorines, organophosphates, sodium tetraborate, carbamates, sulphur, synthetic pyrethroids Xylene, kerosene, methyl isobutyl ketone, amyl acetate, chlorinated solvents
	Pharmaceutical - Solvents	Acetone, cyclohexane, methylene chloride, ethyl acetate, butyl acetate, methanol, ethanol, isopropanol, butanol, pyridine methyl ethyl ketone, methyl isobutyl ketone, tetrahydrofuran
	Photography	Hydroquinone, sodium carbonate, sodium sulphite, potassium bromide, monomethyl para-aminophenol sulphate, ferricyanide, chromium, silver, thiocyanate, ammonium compounds, sulphur compounds, phosphate, phenylene diamine, ethyl alcohol, thiosulphates, formaldehyde
	Plastics	Sulphates, carbonates, cadmium, solvents, acrylates, phthalates, styrene
	Rubber	Carbon black
	Soap/detergent - General	Potassium compounds, phosphates, ammonia, alcohols, esters, sodium hydroxide, surfactants (sodium lauryl sulphate), silicate compounds
	- Acids	Sulphuric acid and stearic acid
	- Oils	Palm, coconut, pine, teatree
	Solvents - General - Hydrocarbons - Chlorinated organics	Ammonia e.g. BTEX (benzene, toluene, ethylbenzene, xylene) e.g. trichloroethane, carbon tetrachloride, methylene chloride

Industry	Type of Chemical	Associated Chemicals
Defence works		See explosives under 'Chemicals manufacture and use', 'Foundries', 'Engine works', 'Service stations'
Drum reconditioning		See 'Chemicals manufacture and use'
Dry cleaning		Trichlorethylene and 1,1,1-trichloroethane Carbon tetrachloride Perchloroethylene
Electrical		PCBs (transformers and capacitors), solvents, tin, lead, copper, mercury
Engine works	Hydrocarbons Metals Solvents Acids/Alkalis Refrigerants Antifreeze	Chlorofluorocarbons, hydrochlorofluorocarbons, hydrofluorocarbons Ethylene glycol, nitrates, phosphates, silicates
Foundries	Metals Acids	Particularly aluminium, manganese, iron, copper, nickel, chromium zinc, cadmium and lead, and oxides, chlorides, fluorides and sulphates of these metals Sulphuric and phosphoric Phenolics and amines Coke/graphite dust
Gas works	Inorganics	Ammonia, cyanide, nitrate, sulphide, thiocyanate Aluminium, antimony, arsenic, barium, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, selenium, silver, vanadium, zinc
	Organics	BTEX, phenolics, PAHs and coke
Iron and steel works		BTEX, phenolics, PAHs, metals and oxides of iron, nickel, copper, chromium, magnesium manganese and graphite

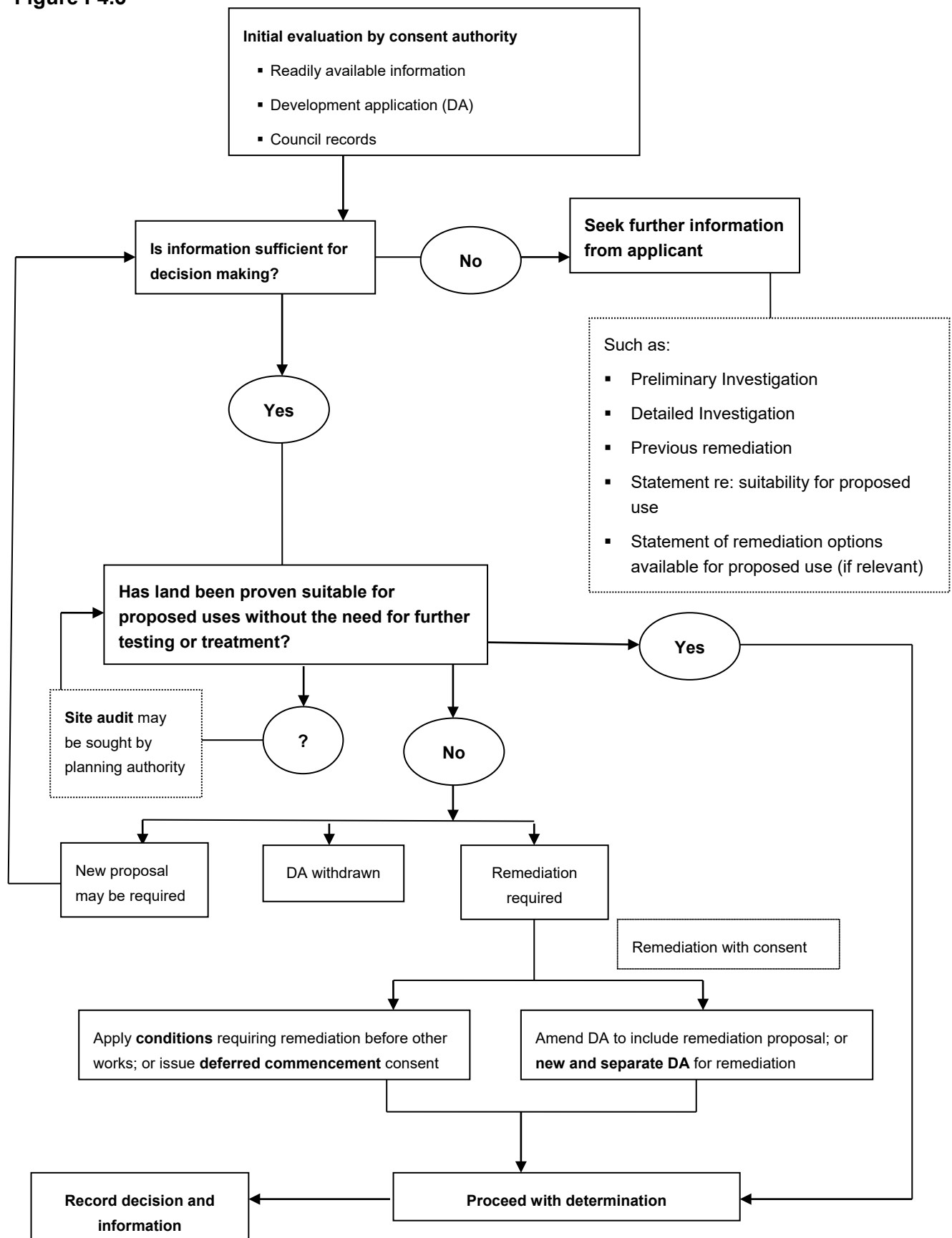
Industry	Type of Chemical	Associated Chemicals
Landfill sites		Alkanes and ammonia, sulphides, heavy metals, organic acids
Marinas	Antifouling paints	See engine works, electroplating metals under 'Metal treatments' Copper, tributyltin (BTB)
Metal treatments	Electroplating - Metals - Acids - General Liquid carburizing baths	Nickel, chromium, zinc, aluminium, copper, lead, cadmium, tin Sulphuric, hydrochloric, nitric, phosphoric Sodium hydroxide, 1,1,1-trichloroethane, tetrachloroethylene, toluene, ethylene glycol, cyanide compounds Sodium, cyanide, barium, chloride, potassium chloride, sodium chloride, sodium carbonate, sodium cyanate
Power stations		Asbestos, PCBs, fly ash metals, water treatment chemicals
Printing shops		Acids, alkalis, solvents, chromium (see photography)
Railway yards		Hydrocarbons, arsenic, phenolics (creosote), heavy metals, nitrates and ammonia
Scrap yards		Hydrocarbons, metals, solvents
Service stations and fuel storage facilities		Aliphatic hydrocarbons BTEX (i.e. benzene, toluene, ethylbenzene, xylene) PAHs Phenols Lead
Sheep and cattle dips		Arsenic, organochlorines and organophosphates, carbamates, and synthetic pyrethroids
Smelting and refining		Metals and the fluorides, chlorides and oxides of copper, tin, silver, gold, selenium, lead, aluminium

Industry	Type of Chemical	Associated Chemicals
Tanning and associated trades	Metals General	Chromium, manganese, aluminium Ammonium sulphate, ammonia, ammonium nitrate, arsenic phenolics, formaldehyde, sulphide, tannic acid
Water and sewerage treatment plants	Metals	Aluminium, arsenic, cadmium, chromium, cobalt, lead, nickel, fluoride, lime and zinc
Wood preservation	Metals	Chromium, copper, arsenic Naphthalene, ammonia, pentachlorophenol, dibenzofuran, anthracene, biphenyl, ammonium sulphate, quinoline, boron, creosote, organochlorine pesticides

Source: Appendix 1 of the Australian Standard AS4482.1 – 2005 – Guide to the investigation and sampling and investigation of potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds.

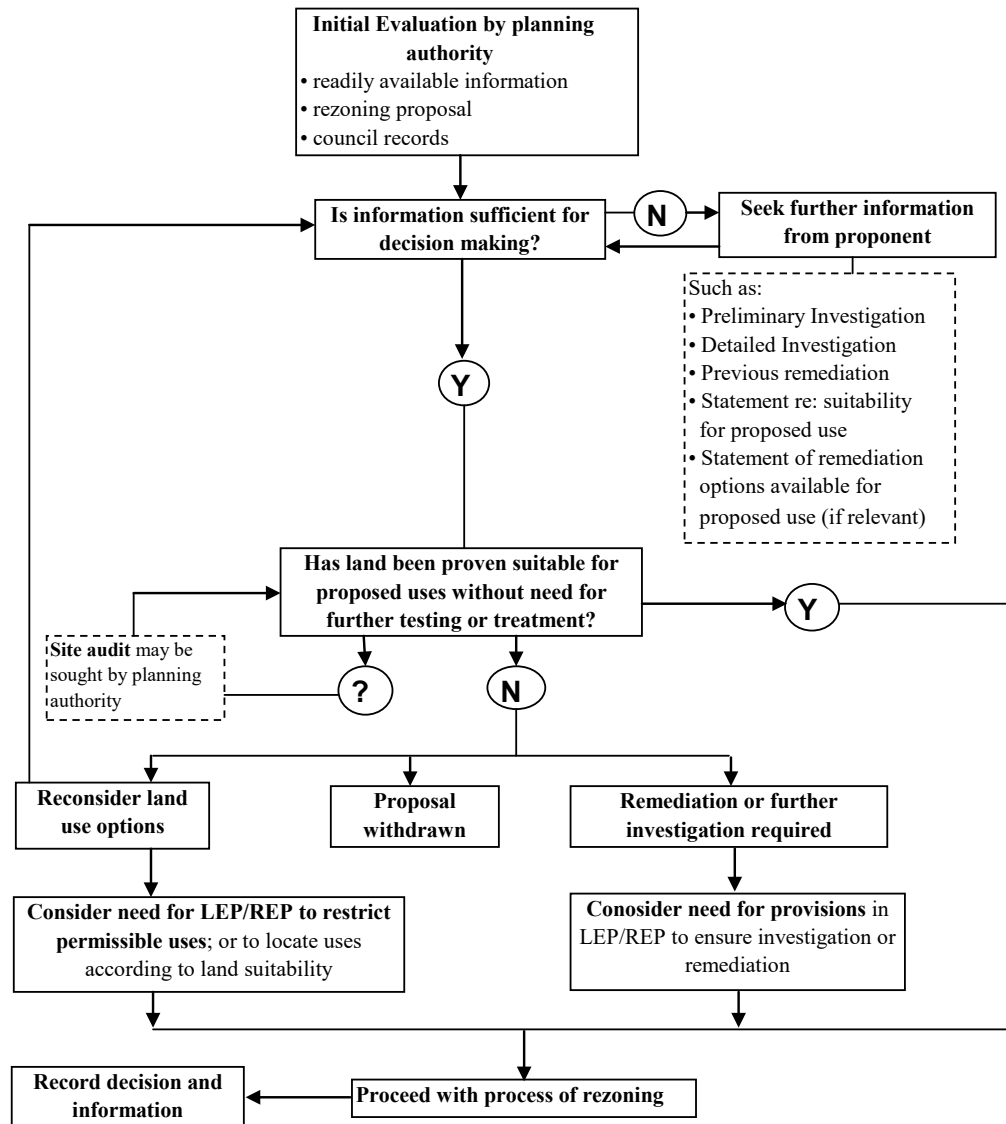
2.11.3 Options available in the development application process

Figure F4.5



2.11.4 Options available in the rezoning process

Figure F4.6



2.12 Waste Generation Rates

Generation Rates – Construction

When estimating wastes for a waste management plan, it is important to remember that no two building sites are the same and that the volumes of waste generated depend on factors such as the design of the building, the waste minimisation practices in place, and the skill of the tradespersons involved.

It is for this reason that applicants are only required to provide estimate volumes on the waste management plan. These estimates can be later checked against recycling and disposal receipts.

There are many techniques that can be used to estimate volumes for construction and demolition wastes. The method detailed below is a simple yet accurate method of estimating waste quantities for a waste management plan:

- a) Quantify materials for the project;
- b) Use margins normally allowed for ordering; and
- c) Copy these quantities across to your waste management plan.

Generation Rates – Residential

The volumes in Table F4.7 are provided as a general guide to assist in the estimation of wastes for the ongoing use of a residential development.

It is recommended that applicants confirm details of Council's current waste and recycling services prior to designing waste storage areas.

Table F4.7

Waste Stream	Allowance
Garbage	80 L/Unit/Week
Co-mingled Recycling	40 L/Unit/Week
If paper and containers are collected separately	
Paper Recycling	25 L/Unit/Week
Containers Recycling	15 L/Unit/Week

Generation Rates - Commercial

The volumes in Table F4.8 are provided as a general guide to assist in the estimation of wastes for the ongoing use of various commercial type developments.

Table F4.8

Type of Premises	Waste Generation	Recycling Generation
Backpackers accommodation	40L/occupant/week	20 litres/occupant/week
Boarding house, Guest house	60L/occupant/week	20 litres/occupant/week
Hotel or motel accommodation	5L/bed/day 50L/100m ² /bar area/day 10L/1.5m ² /of dining area/day	50L/100m ² /of bar and dining areas/day
Registered club	50L/100m ² /bar area/day 10L/1.5m ² /dining area/day	50L/100m ² /of bar and dining areas/day
Food Premises		
- Butcher	80L/100m ² floor area/day	Discretionary
- Delicatessen	80L/100m ² floor area/day	Discretionary
- Fish shop	80L/100m ² floor area/day	Discretionary
- Greengrocer	240L/100m ² /day	120L/100m ² /day
- Restaurants	10L/1.5m ² floor area/day	2L/1.5m ² /day dining
- Supermarket	240L/100m ² floor area/day	240L/100m ² /day
- Takeaway	80L/100m ² floor area/day	Discretionary
Offices	10L/100m ² /day	10L/100m ² /day
Retail		
(other than food sales)	50L/100m ² floor area/day	25L/100m ² floor area/day
Shop less than 100m ² floor area	50L/100m ² floor area/day	50L/100m ² floor area/day
Shop over 100 m ² floor area	60L/100m ² floor area/day	Discretionary
Showrooms	40L/100m ² floor area/day	10L/100m ² floor area/day

3. Other Guidelines, Documents and Technical Information

Penrith DCP 2014 makes reference to a range of publications and other technical information produced by organisations and agencies other than Penrith City Council. The following is not an exhaustive or definitive list of available information, however, serves as a starting point for meeting the requirements of Penrith DCP 2014.

3.1. NSW State Legislation

The primary legislation for planning in New South Wales is the *Environmental Planning and Assessment Act 1979*, with further administrative and operational information detailed in the *Environmental Planning and Assessment Regulation 2000*.

In addition, there is a range of New South Wales (and Commonwealth) legislation and/or regulation that may be relevant to your land use or development. All legislative requirements for your land use or development must be met. Information about the currency and status of legislation is available from the NSW Parliamentary Counsel's Office. The official NSW Government site for online publication of legislation is www.legislation.nsw.gov.au. Each NSW Government Department is able to advise of the legislation it administers, and of the requirements under that legislation. You should therefore contact the relevant Department directly. Information about NSW Government Departments can be obtained from the NSW Government Directory on www.directory.nsw.gov.au.

3.2. Commonwealth Legislation

A number of Commonwealth Acts such as the *Environment Protection and Biodiversity Conservation Act 1999* may be relevant. See <http://www.comlaw.gov.au/>.

3.3. State Environmental Planning Policies (SEPP)

State Environmental Planning Policies are environmental planning instruments prepared by the NSW Department of Planning and Environment and made by the Minister for Planning. Unless otherwise stated, the requirements of a SEPP will generally have precedence over Local Environmental Plans (LEPs) or Development Control Plans (DCPs).

The SEPP documents can be obtained from the NSW Government legislation website (www.legislation.nsw.gov.au).

Questions in relation to a particular SEPP should be referred to the NSW Department of Planning and Environment.

3.4. Residential Flat Design Code 2002

Residential Flat Design Code 2002 is available from the NSW Department of Planning and Environment and may also be accessed from www.planning.nsw.gov.au.

The Residential Flat Design Code is a resource to enable councils, planners, developers and architects to improve residential flat design. The Code sets broad parameters for good residential flat design by illustrating the use of development controls and consistent guidelines.

The Design Code supports the ten design quality principles identified in *State Environmental Planning Policy No. 65 — Design Quality of Residential Flat Development*. It supplies detailed information about how development proposals can achieve these principles.

With the other Design Quality Program initiatives, the Residential Flat Design Code provides comprehensive guidance to improving the design quality of residential flat buildings.

3.5 Certification Systems

3.5.1 National Australian Built Environment Rating System

NABERS is a national rating system that measures the environmental performance of Australian buildings, tenancies and homes. NABERS measures the energy efficiency, water usage, waste management and indoor environment quality of a building or tenancy and its impact on the environment. For information on NABERS, see www.nabers.gov.au.

3.5.2 Green Star

Green Star is an environmental rating scheme that provides formal accredited evaluation of the environmental design and achievements of buildings across nine categories (management, indoor environment quality, energy, transport, water, materials, land use and ecology, emissions, innovation). Green Star provides certified ratings of 4, 5 or 6 Stars. Information about Green Star is available from <http://www.gbca.org.au/green-star/>.

The Green Star certification system was developed and is administered by the Green Building Council of Australia, a not-for-profit organisation.

3.5.3 Building Sustainability Index (BASIX)

Information about BASIX is available from www.basix.nsw.gov.au. BASIX is online program that assesses a house or unit design, and compares it against energy and water reduction targets. The design must meet these targets before a BASIX Certificate can be printed. Every development application for a new home must be submitted to Council with a BASIX Certificate.

BASIX uses information such as site location, house size, type of building materials and fittings for hot water, cooling and heating. It is important to realise that the commitments made during the BASIX process are shown on the final certificate and must be marked on the plans, and adhered to during the building process. Any changes made to the house design means another BASIX assessment must be completed and a new BASIX Certificate submitted to Council.

BASIX was introduced by the NSW Government to ensure homes are built to be more energy and water efficient. BASIX is free and allows users to determine how they will meet targets from a wide range of options such as rainwater tanks, water-saving fixtures, improved insulation, passive solar orientation, natural lighting and native plants for gardens.

3.6 Native Vegetation of Western Sydney

The Native Vegetation of the Cumberland Plain Maps and Interpretation Guidelines were prepared by the NSW National Parks and Wildlife Service (part of the Office of Environment and Heritage). The maps and guidelines can be downloaded from the OEH website (www.environment.nsw.gov.au).

3.7 Threatened Species Assessment Guidelines – The Assessment of Significance (2007)

The *Threatened Species Assessment Guidelines – The Assessment of Significance* are designed to help applicants of a development or activity with interpreting and applying the factors of significance assessment. The aim of the guidelines is to help ensure that a consistent and systematic approach is taken when determining whether an action, development or activity is likely to significantly affect threatened species, populations or ecological communities, or their habitats either directly or indirectly. These guidelines are available from the OEH website (www.environment.nsw.gov.au).

3.8 Significant Impact Guidelines 1.1 - Matters of National Environmental Significance (2009)

The Significant Impact Guidelines provide overarching guidance on determining whether an action is likely to have a significant impact on a matter protected under national environment law; i.e. the *Environment Protection and Biodiversity Conservation Act 1999*. These guidelines are available from the Commonwealth Department of Environment website (www.environment.gov.au).

3.9 Planning for Bushfire Protection

Prepared by the NSW Rural Fire Service, 'Planning for Bushfire Protection' provides information on the planning matters that must be considered when developing residential uses in residential, rural residential, rural and urban locations on sites in close proximity to areas likely to be affected by bushfire events. The Rural Fire Service 'Guidelines for Single Dwelling Development Applications' has been designed to assist applicants meet the requirements of 'Planning for Bushfire Protection' when submitting a development application for a single dwelling. These documents can be downloaded from the Rural Fire Service website (www.rfs.nsw.gov.au).

3.10 Water extraction licenses and approvals

The NSW Office of Water is responsible for the overall management of freshwater resources in NSW including water in rivers, streams and lakes (surface water), and water held under the ground in aquifers (groundwater). For further information, see www.water.nsw.gov.au.