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Part B – Glenmore Park Stage 2

7.4 Glenmore Park Stage 2

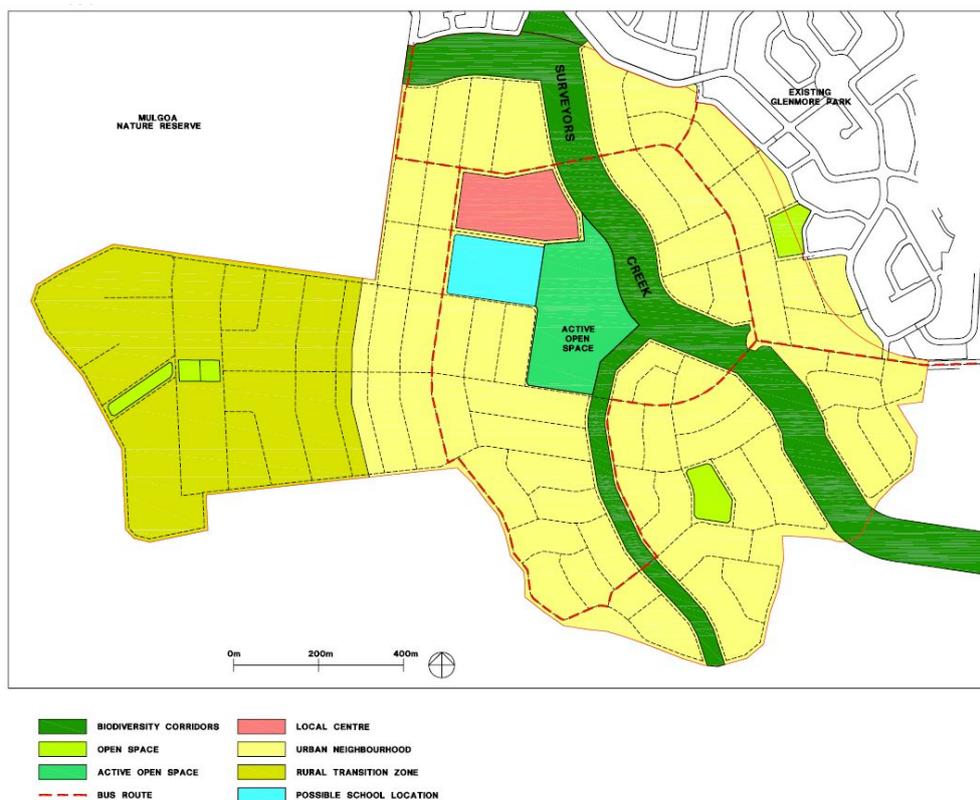
7.4.1 Preliminary

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.

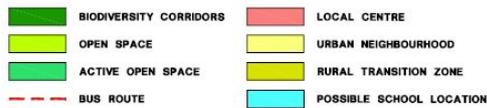
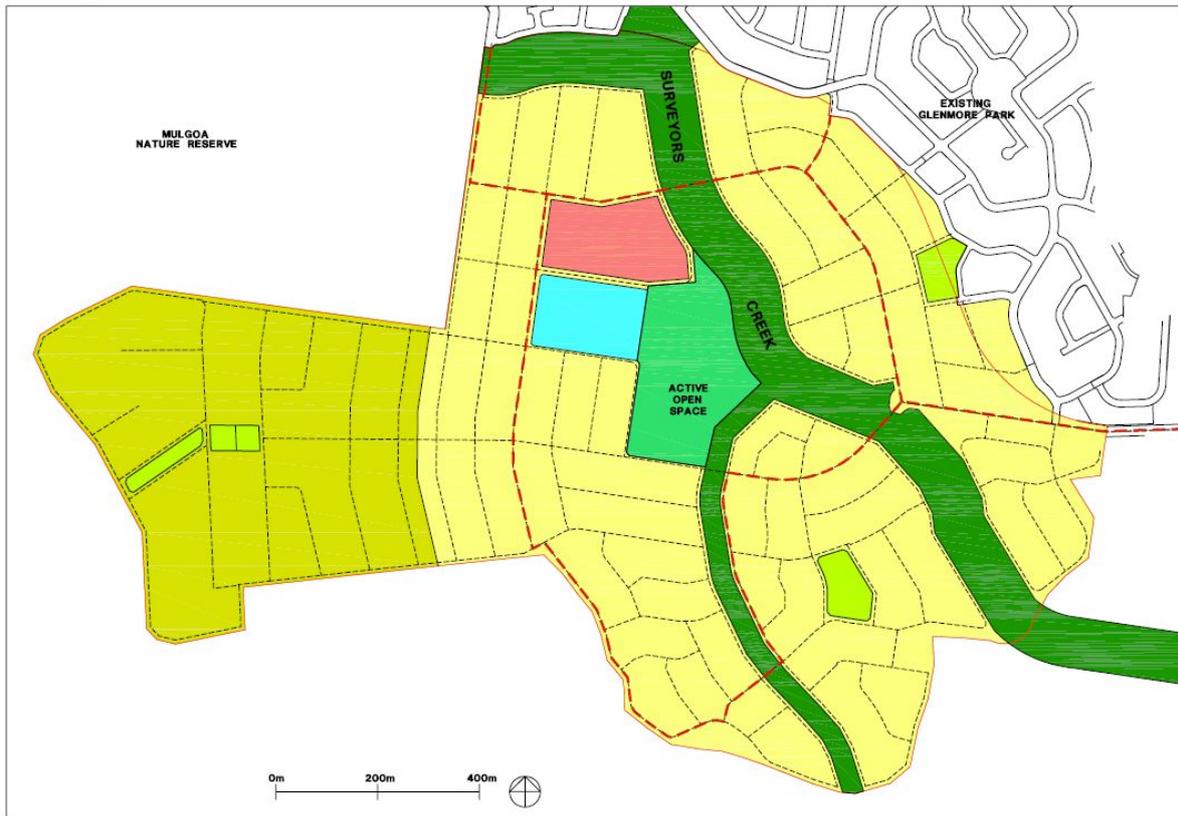
B. Objectives

- 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

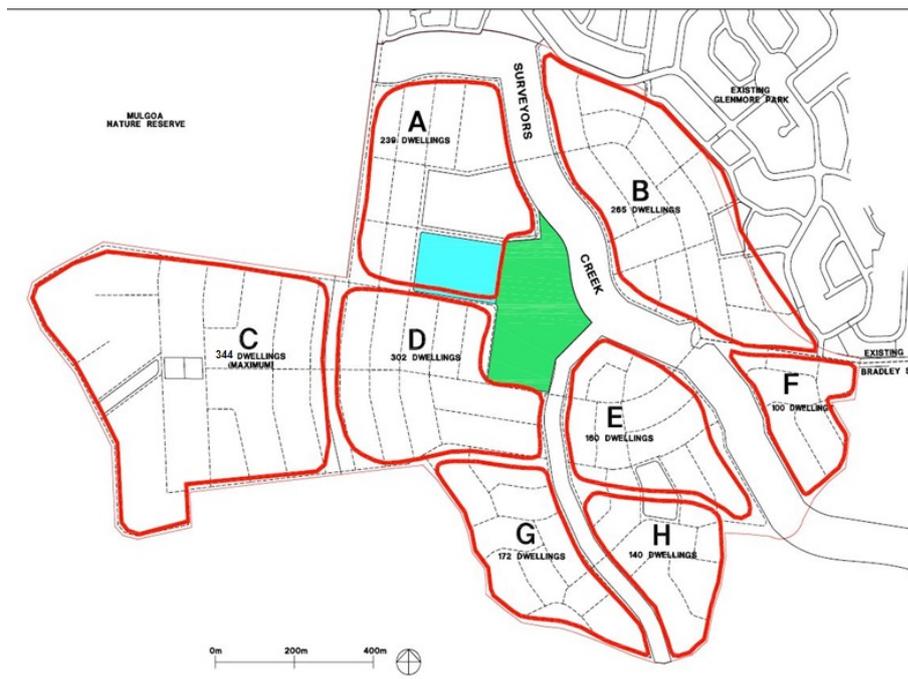
- a) To achieve ensure efficient use of zoned land and required infrastructure is achieved
- b) To sustain services and facilities required for diverse urban communities, including public transport.
- c) To promote a diverse range of housing types which will accommodate a wide demographic profile.
-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

B. Development Controls

- 1) A minimum of 1,628 dwellings is delivered across the entire release area.
- 2) 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

- a) To conserve biodiversity by providing linkages between significant natural vegetation units within the City.
- b) To ensure that important natural features inform the urban structure of the place.
- c) To provide high amenity areas for residents.
- d) 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

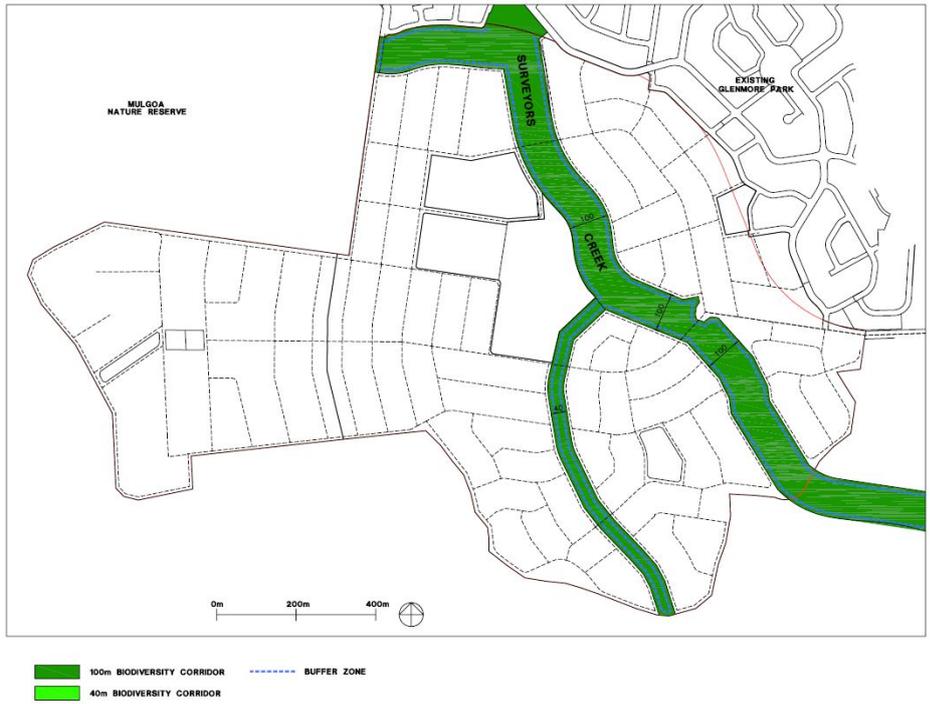


Figure E7.18: Corridor Profile Plan

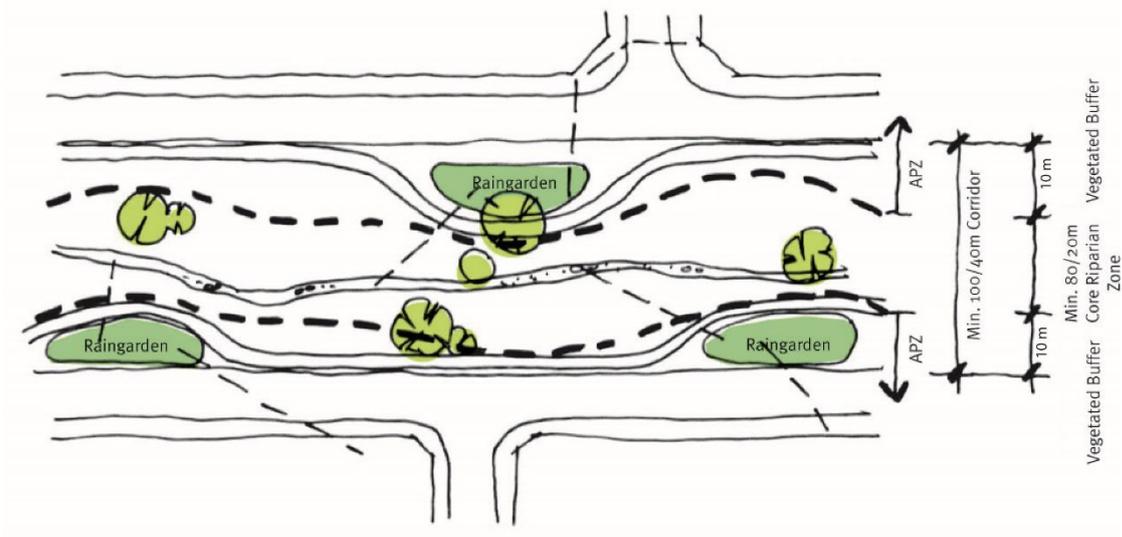
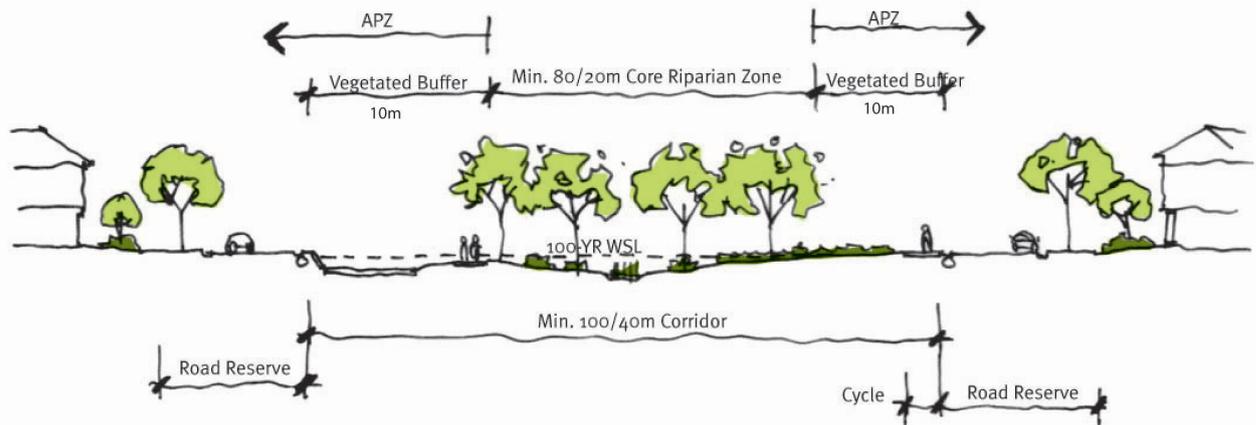


Figure E7.19: Corridor Profile Section



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.

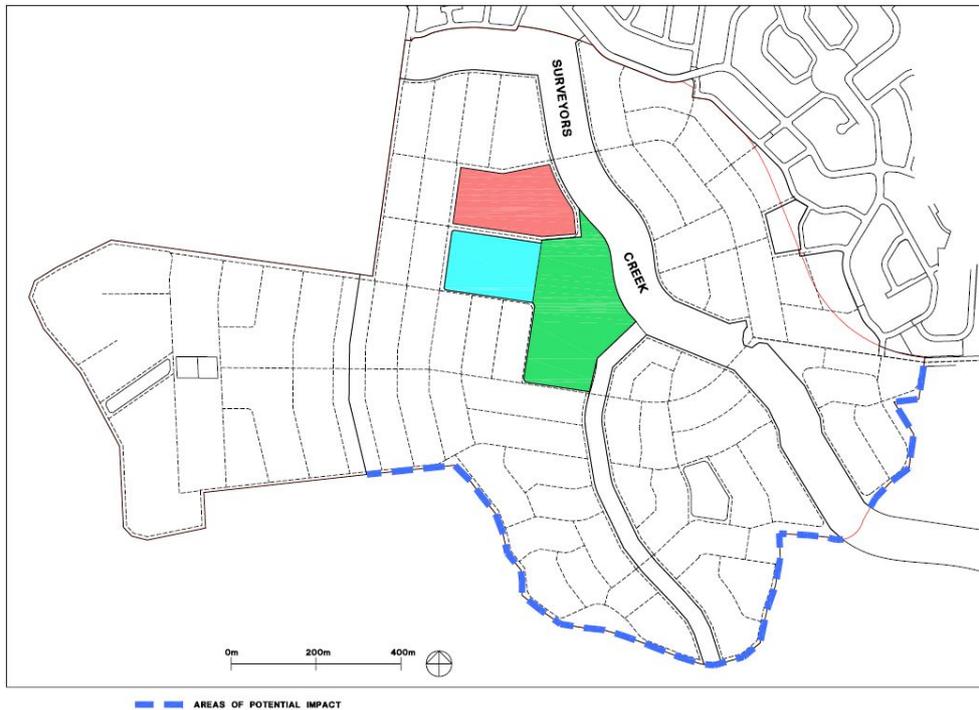


Figure E7.20: Areas of Potential Views from The Northern Road

7.4.3.2 Access and Movement

7.4.3.2.1 Urban Structure

A. Objectives

- To provide a clear urban framework for the entire release area that informs the location of land uses.
- To identify a clear hierarchy for movement within the subject lands and adjacent urban areas.
- 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 Vehicular Movement

A. Objectives

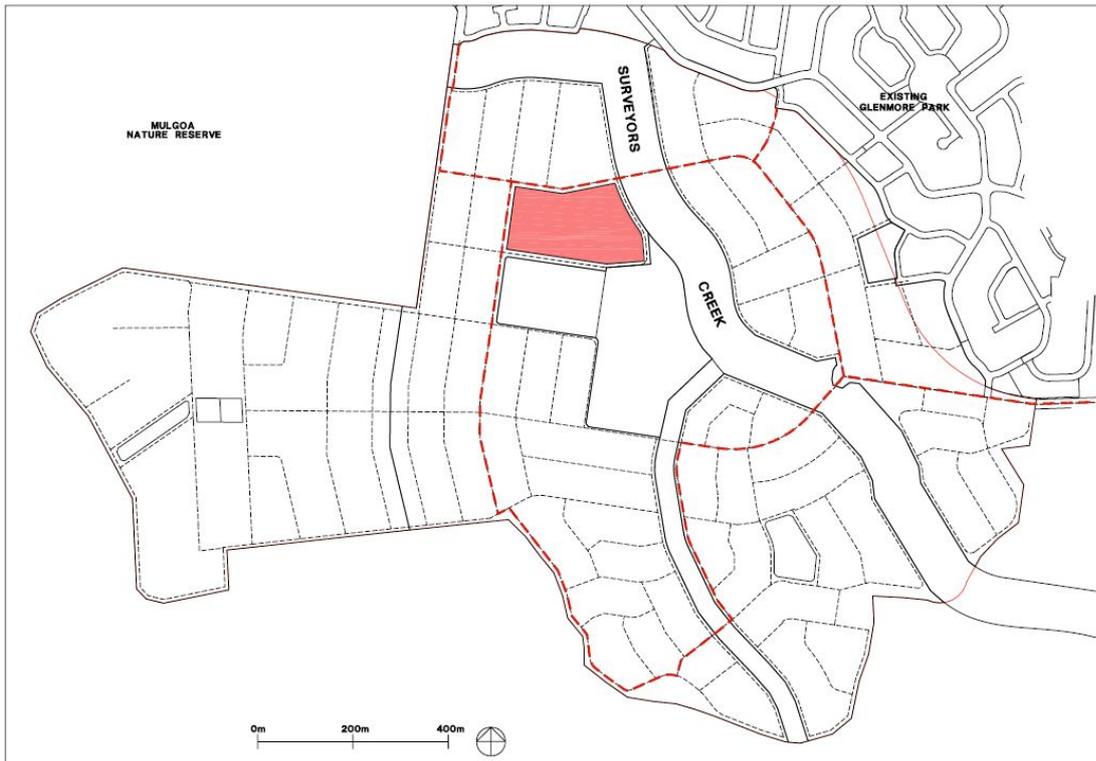
- a) To create a legible road hierarchy.
- b) To provide a high degree of connectivity within the site and between the site and the adjoining areas.
- c) To minimise the negative impacts of through traffic.

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

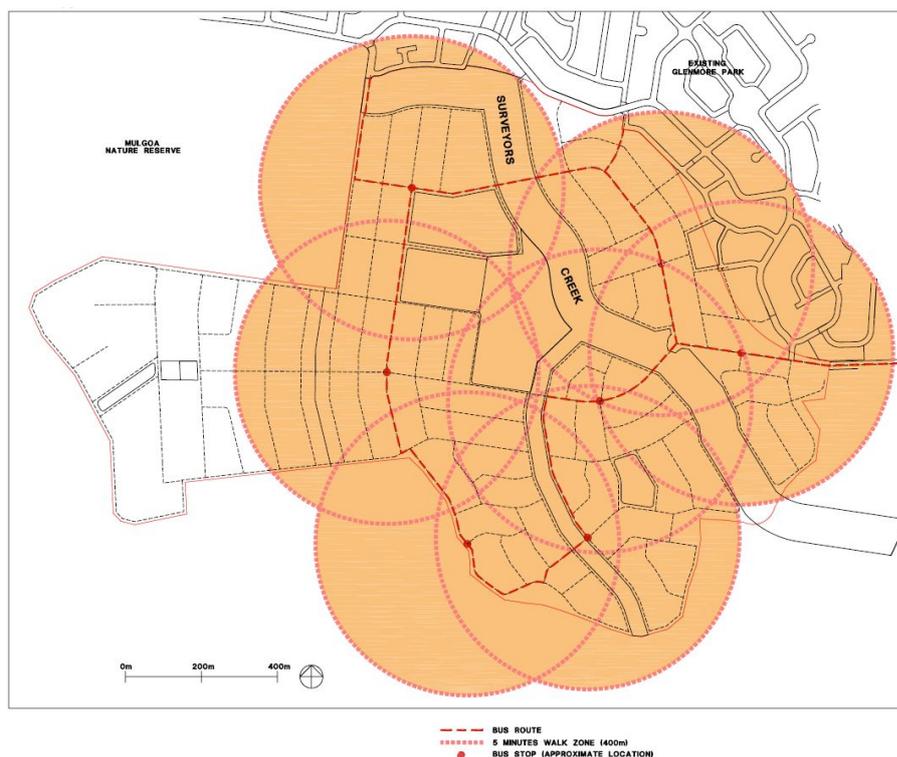
These objectives may be achieved where:

- 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

- a) 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.
- b) To promote an active and healthy lifestyle.
- c) To promote casual social interaction among neighbours.
- d) To promote Universal Design principles in all new facilities.

B. Performance Measures

These objectives may be achieved where:

- 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 E7.23.
- 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) 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



- 2.5m DEDICATED SHARED PATHWAY IN CORRIDOR
- 2.5m PATHWAY PROVIDED IN ROAD RESERVE (EXTENDED WIDTH FOOTPATH ON VERGE)
- CYCLE MOVEMENT ACCOMMODATED IN CARRIAGEWAY
- FOOTBRIDGE

7.4.3.3 Streetscapes

7.4.3.3.1 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 is appropriate to the character and constraints of each locality.

B. Performance Measures

These objectives may be achieved where:

- a) The release area landscape includes streets lined with tall tree species.
- b) Landscaping is provided to create a character that is distinct to each Precinct.
- c) 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.

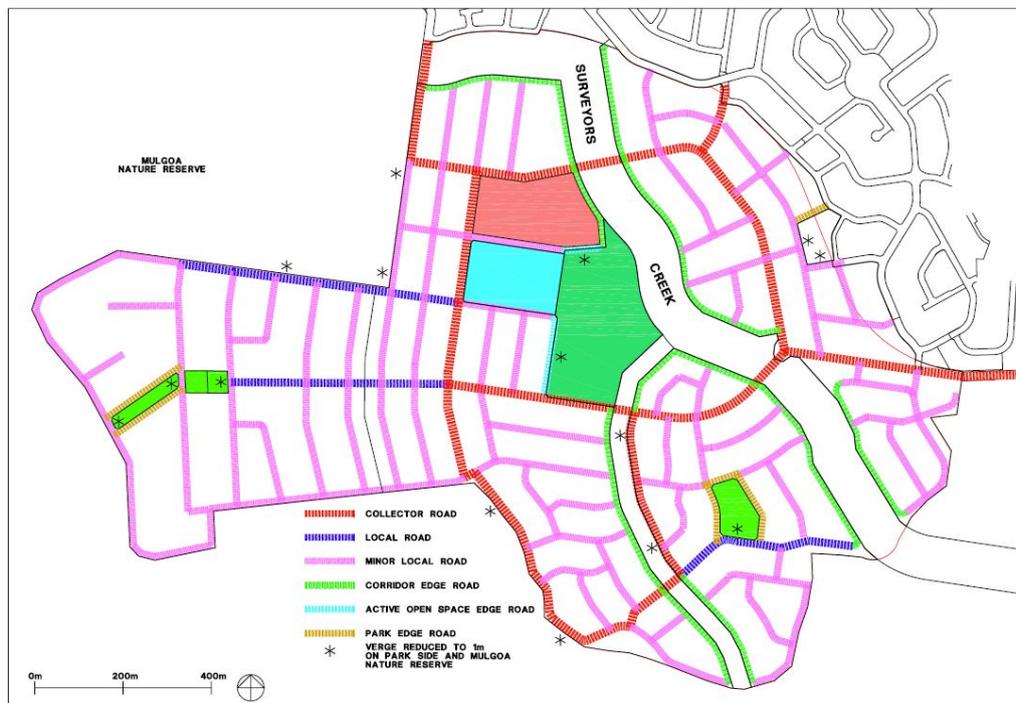
B. Performance Measures

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

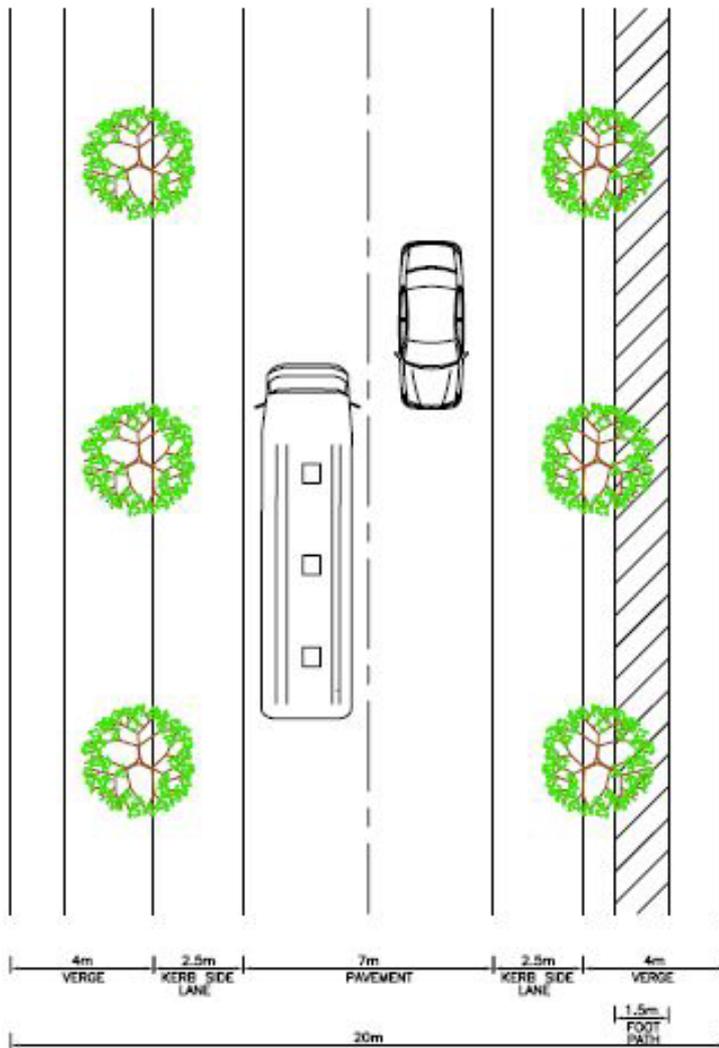
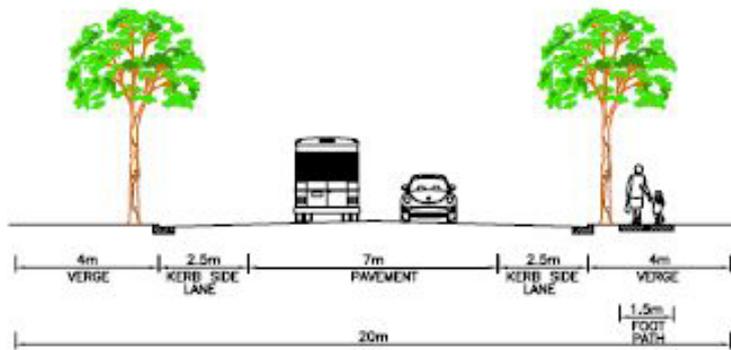
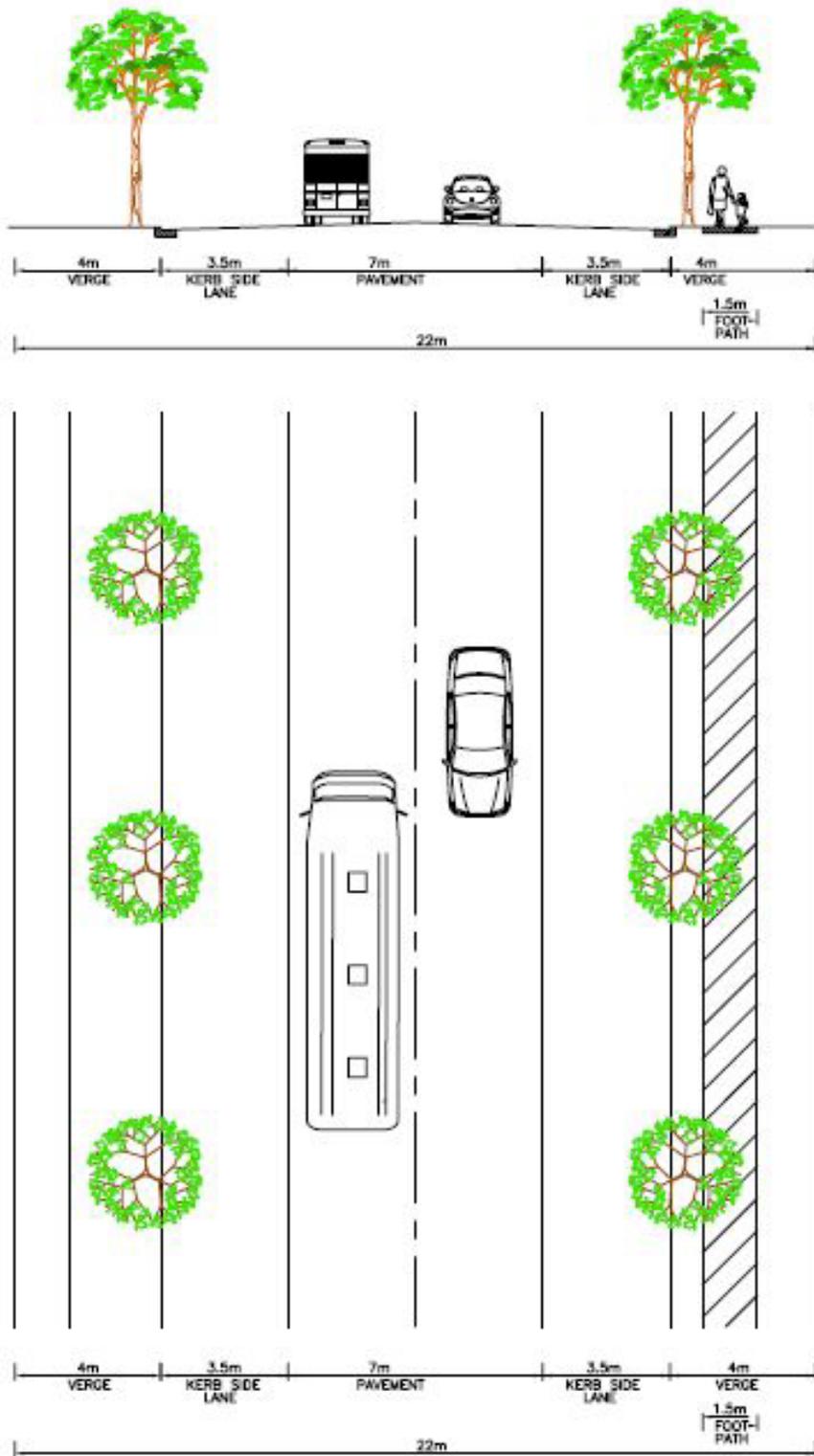


Figure E7.26: Bradley Street – Urban Area



2) Collector Roads

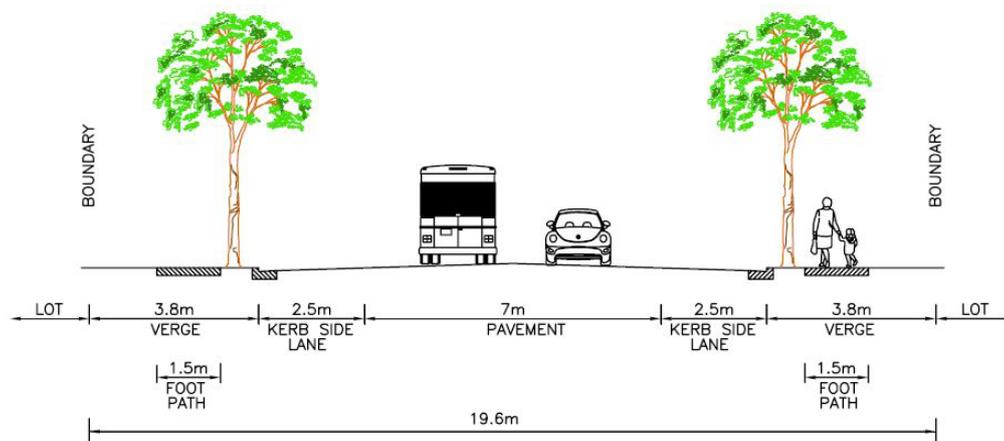
A. Performance Measures

- 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

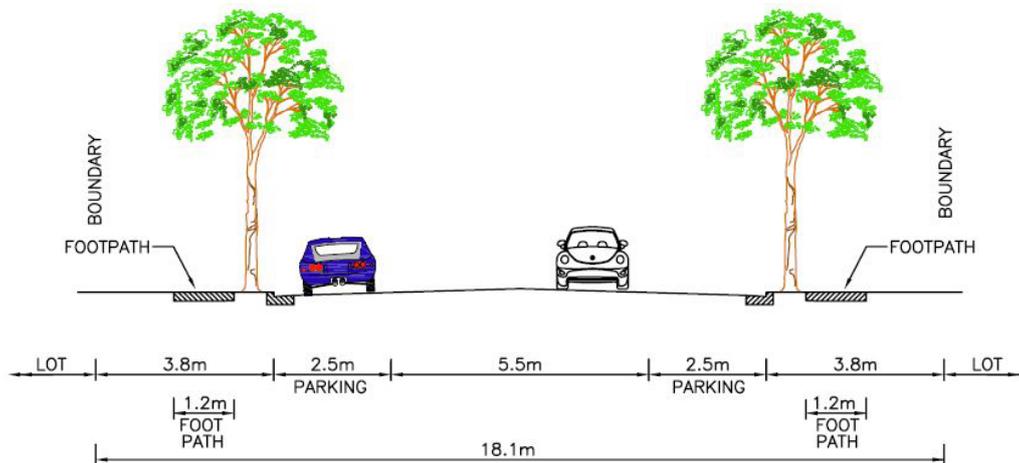
- a) Provide high levels of accessibility between the loop road and adjoining precincts.
- b) Roads are designed to allow a reasonable free flow of traffic at lower speeds.
- c) Occasional, minor delays or the need for driver co-operation due to vehicles parking on local roads is an acceptable, traffic 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.

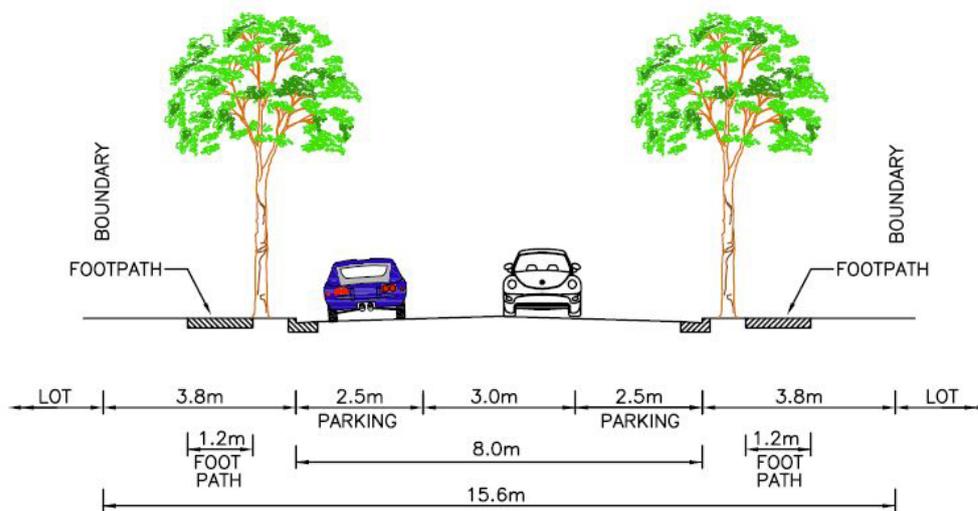


Figure E7.29: Minor Local Road

5) Lane Ways

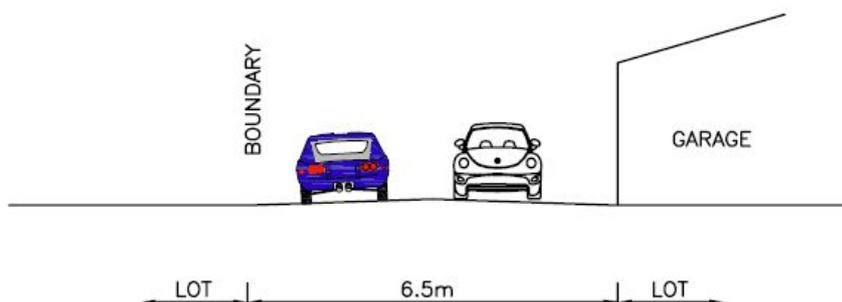
A. Performance Measures

- 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

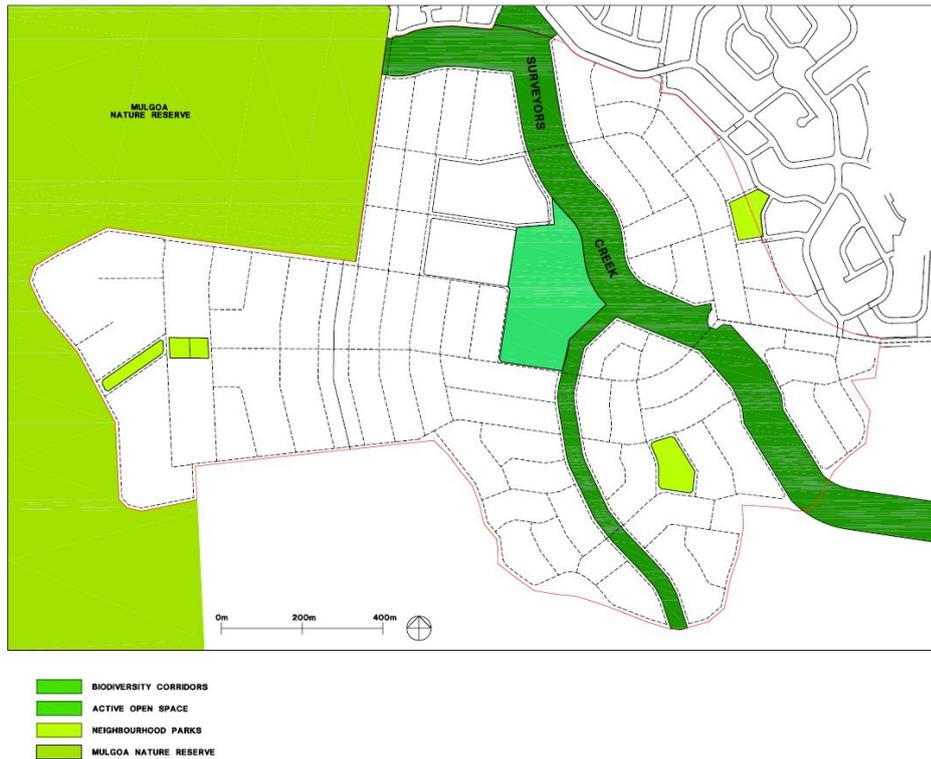


Figure E7.32: Active Open Space Layout



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 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.

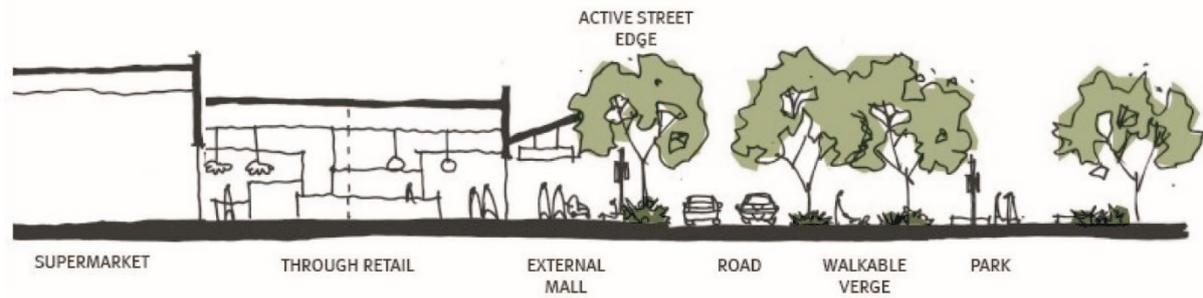
B. Development Controls

- 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

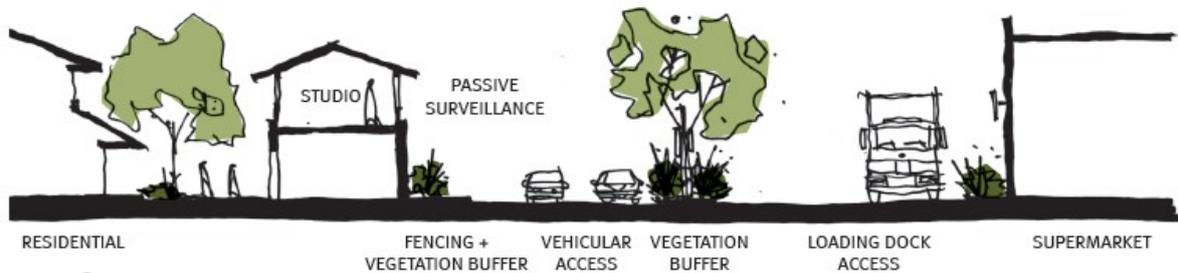


A

SECTION

B

Figure E7.35: Section for the Neighbourhood Centre Main Street (2)

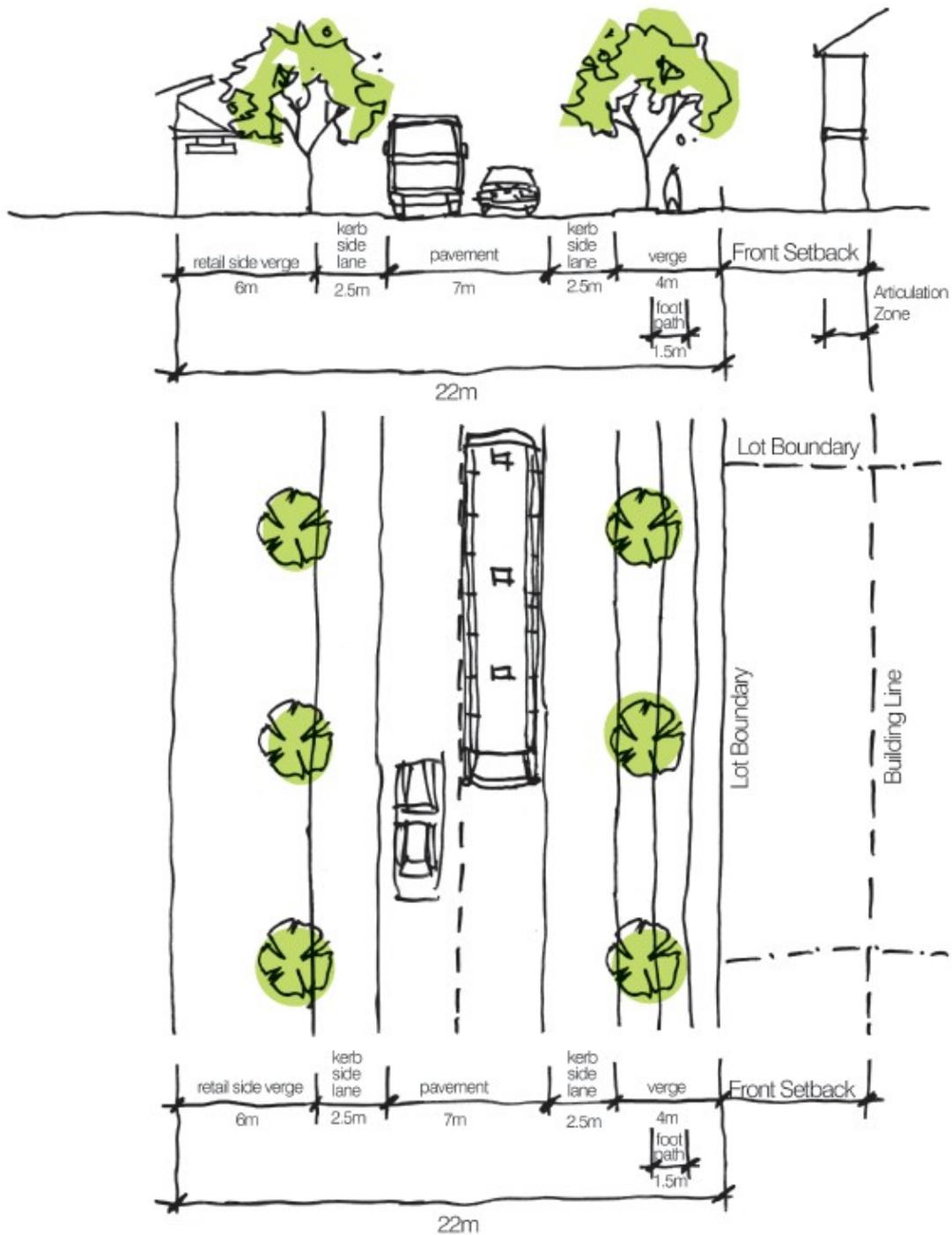


C

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

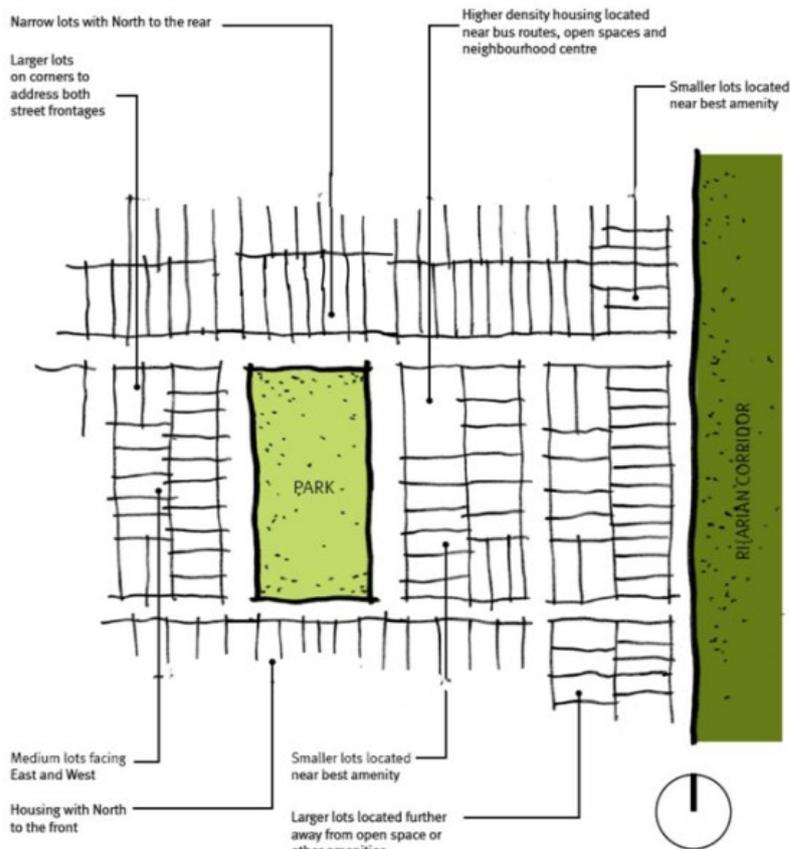
- a) Blocks and lots are generally rectilinear.
- b) Lots are oriented to facilitate siting of dwellings and private open space to take advantage of winter solar access and summer sun deflection.
- c) Lots identified to accommodate higher density housing forms will be focused on or around:
 - i) Open 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.

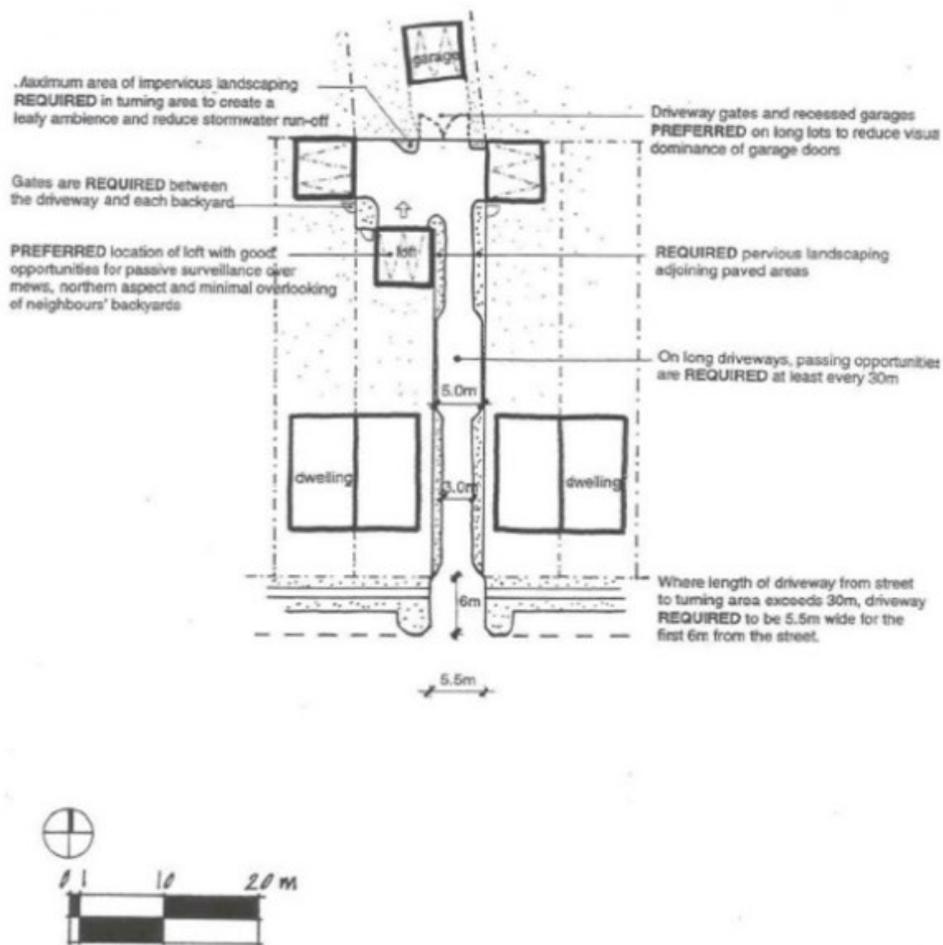
C. Development Controls

- 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

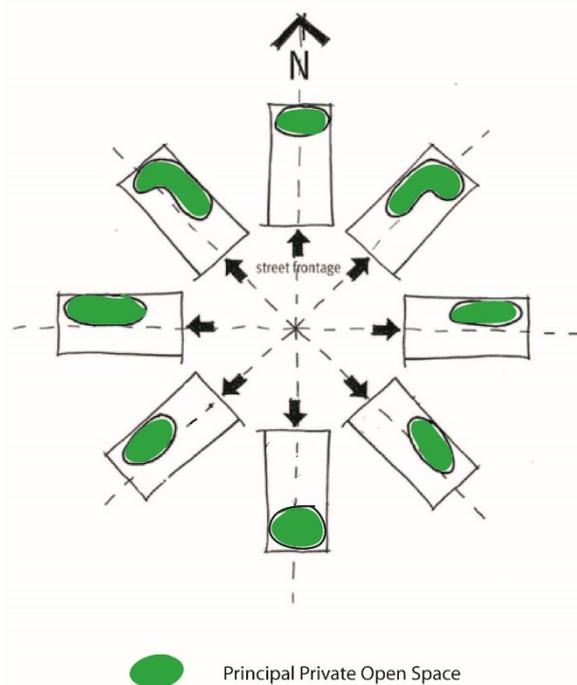
- Principal private open spaces are the primary organising element of site planning and dwelling design.
- Private open spaces should be located at ground level in rear yard areas that maximise opportunities to obtain solar access for all dwelling types other than apartments.
- Development with a northern 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

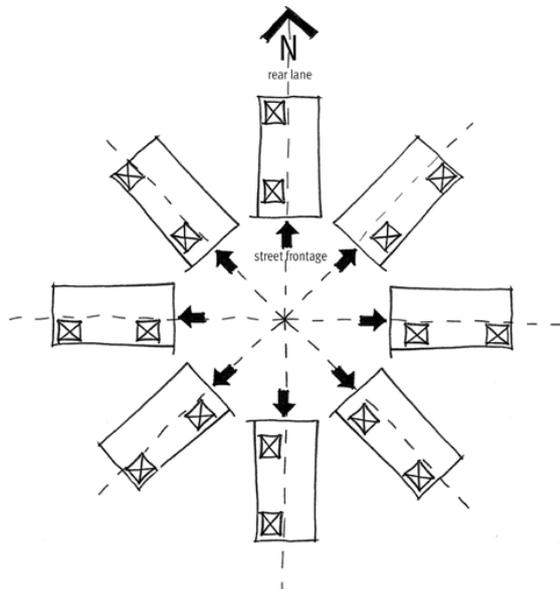
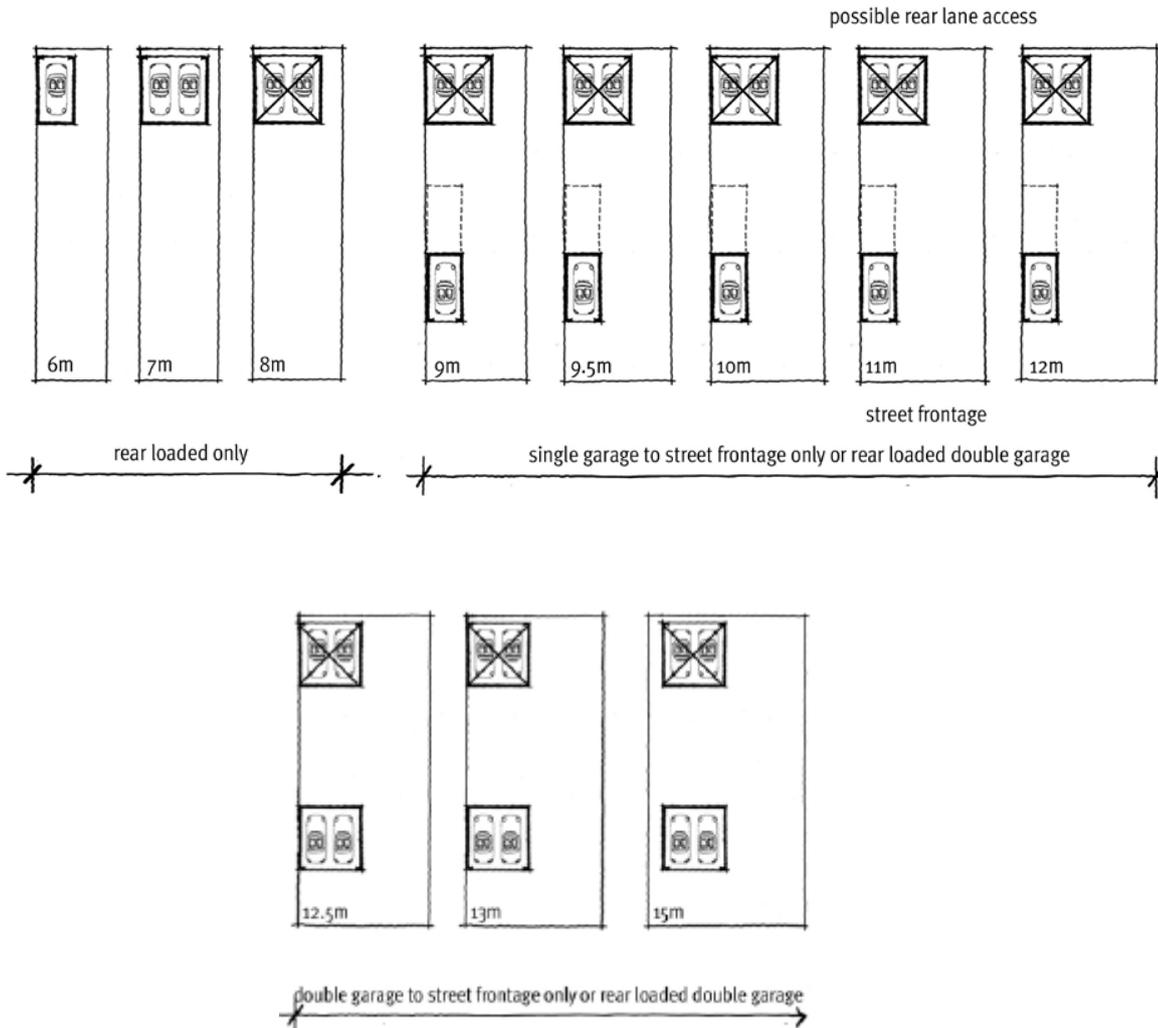


Figure E7.42: Maximum Garage Size



7.4.4.3.3

Building Footprints

A. Objectives

- a) To provide a variety of streetscapes that reflect 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 to allow tall trees in the rear yard area to provide a vegetated backdrop to the development.

C. Development Controls

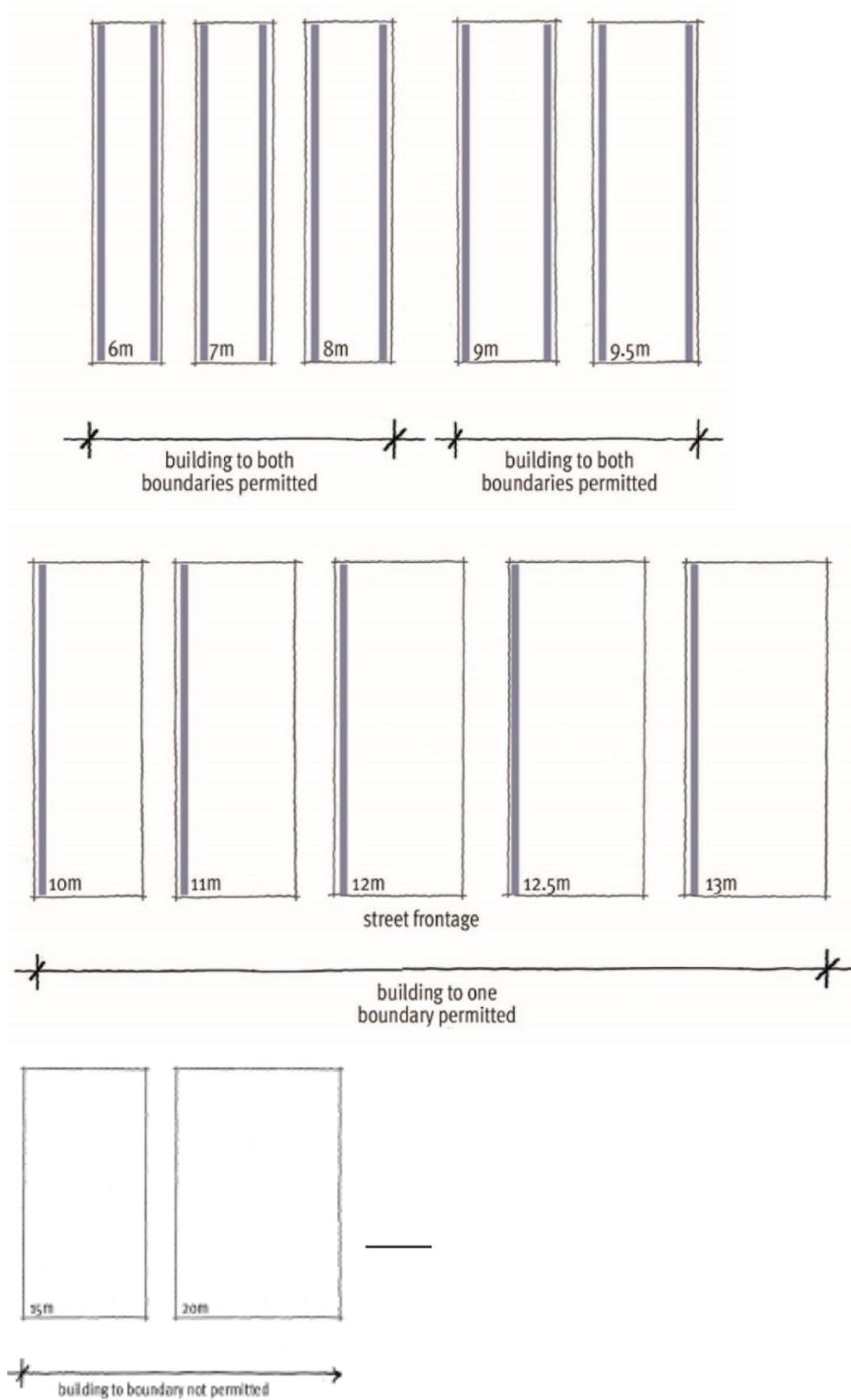
1) Front Setbacks

- 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

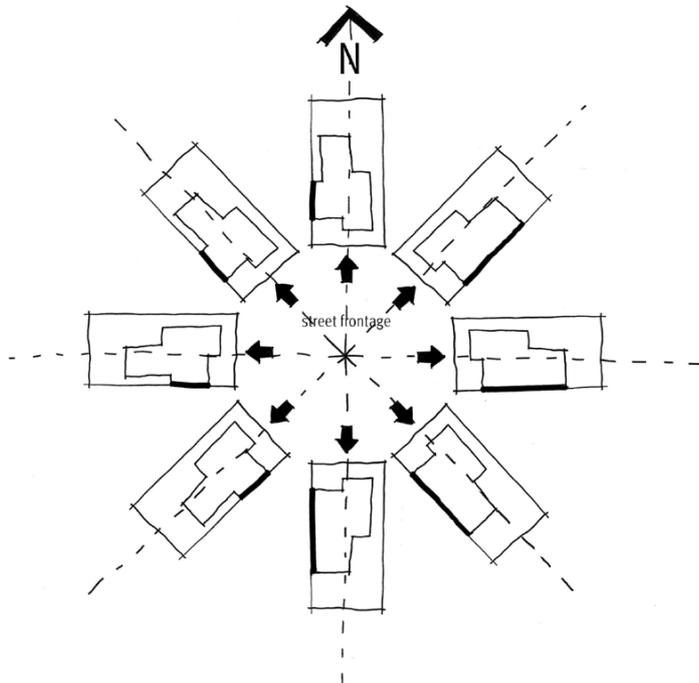


ATTACHED DWELLINGS

SEMI-DETACHED AND BUILDING TO BOUNDARIES DWELLINGS

DETACHED DWELLINGS

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.

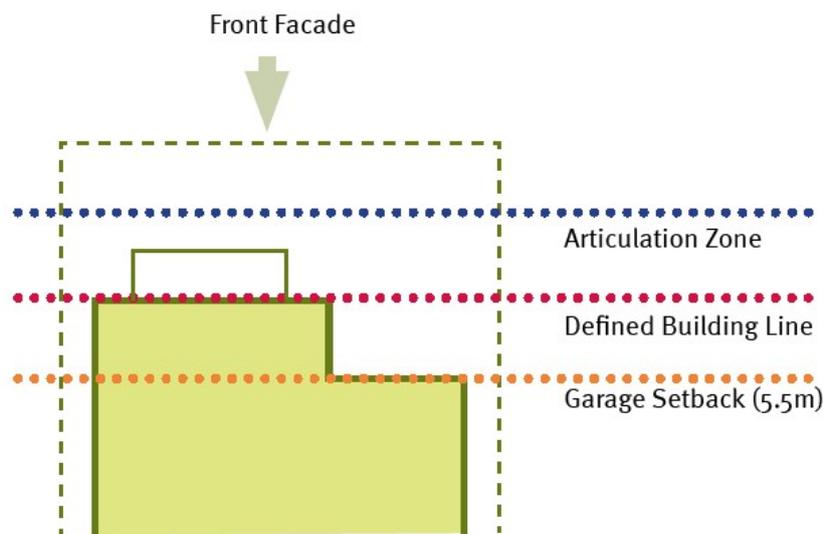
B. Performance Measures

- 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.

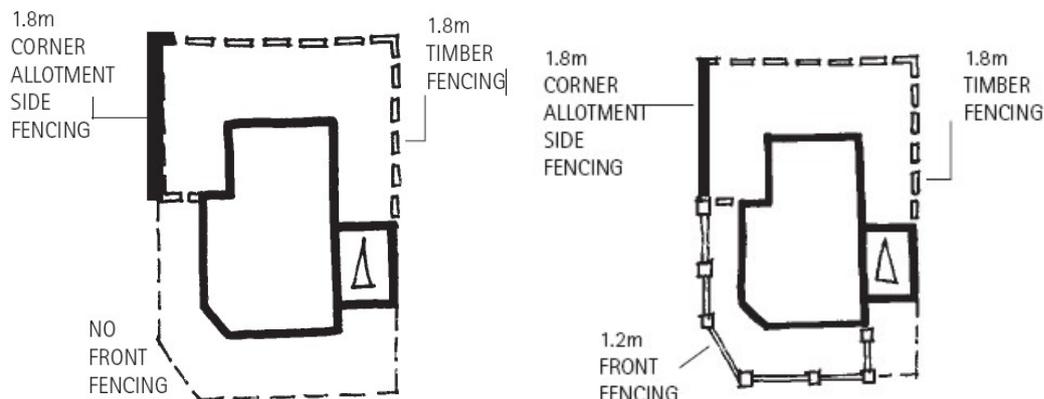
B. Performance Measures

- 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

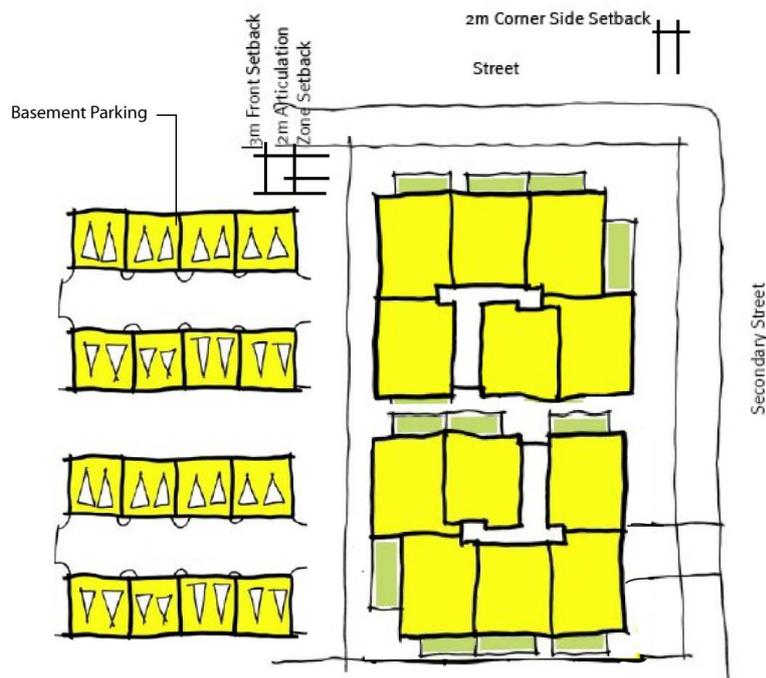
A. Performance Measures

- 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

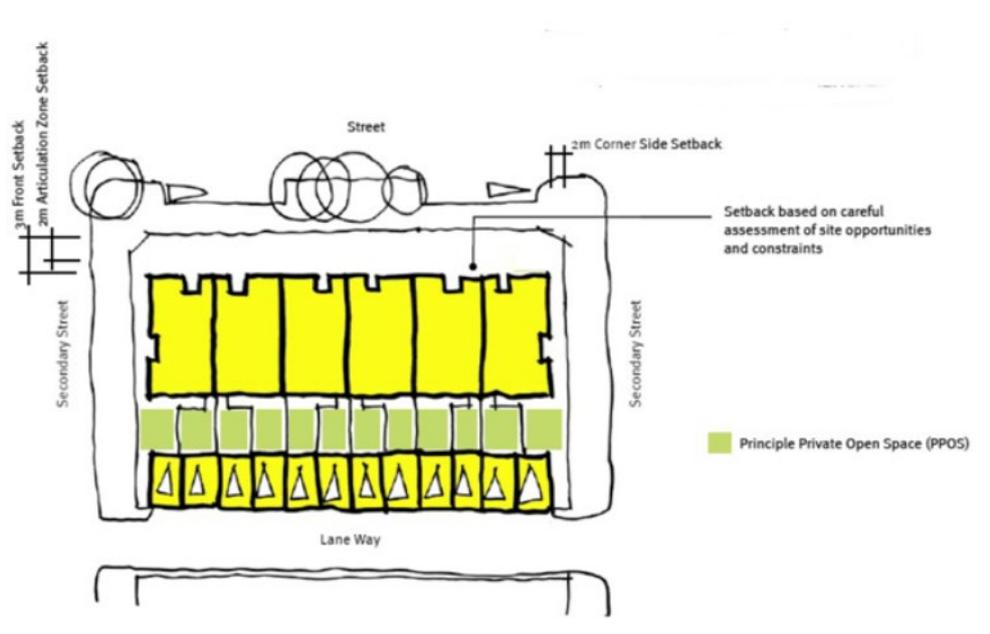
- a) Development is designed to:
 - i) Provide for parking with a rear loaded garage accessed from a rear lane or shared driveway.
 - ii) Rear of lot is generally orientated to the north.
 - iii) Integrated studio units located above a ground level garage or at ground level, located at the rear of the 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

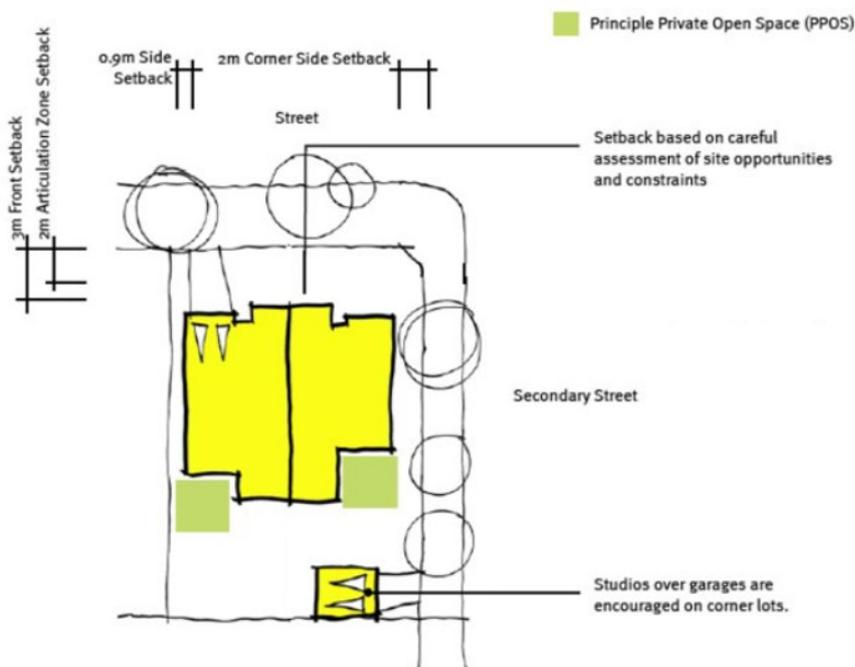
- a) Have the appearance of a larger home, but are comprised of 2 dwellings (3 dwellings including studio opportunity) on separate Title.
- b) When located at a corner, have distinct entries for each unit usually located on different street frontages.
- c) When located at a corner, provide vehicle access of different street frontages.
- d) 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

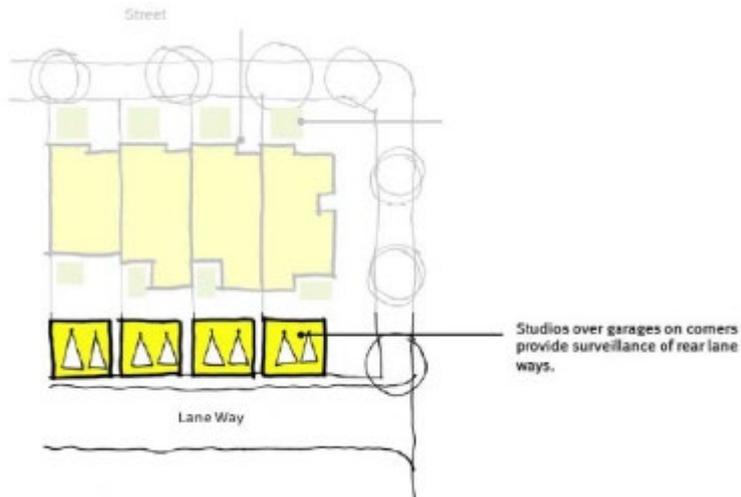
A. Performance Measures

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

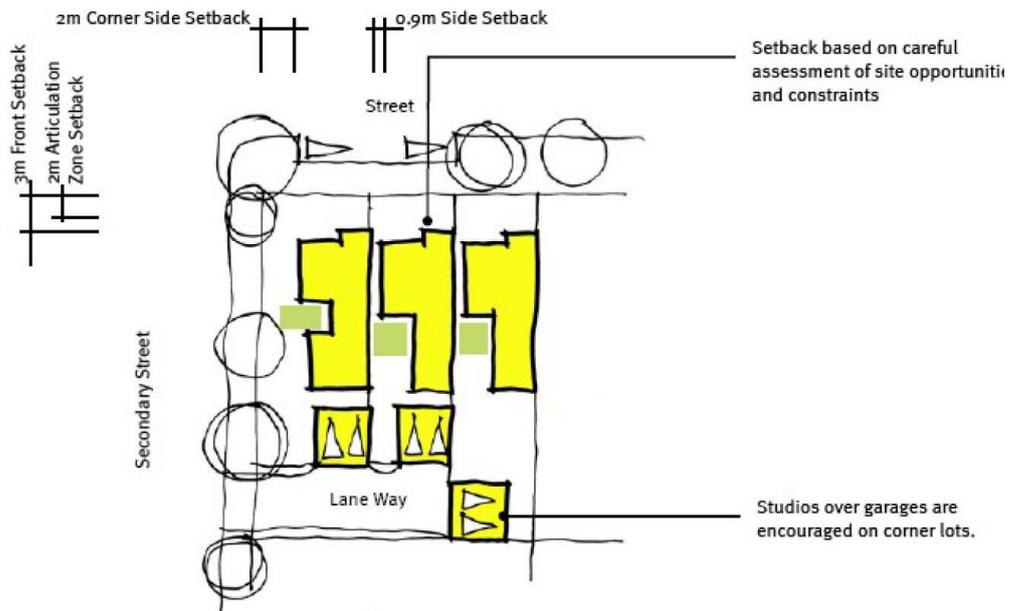
A. Development Controls

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

- Dwellings shall have a maximum height of 2 storeys.

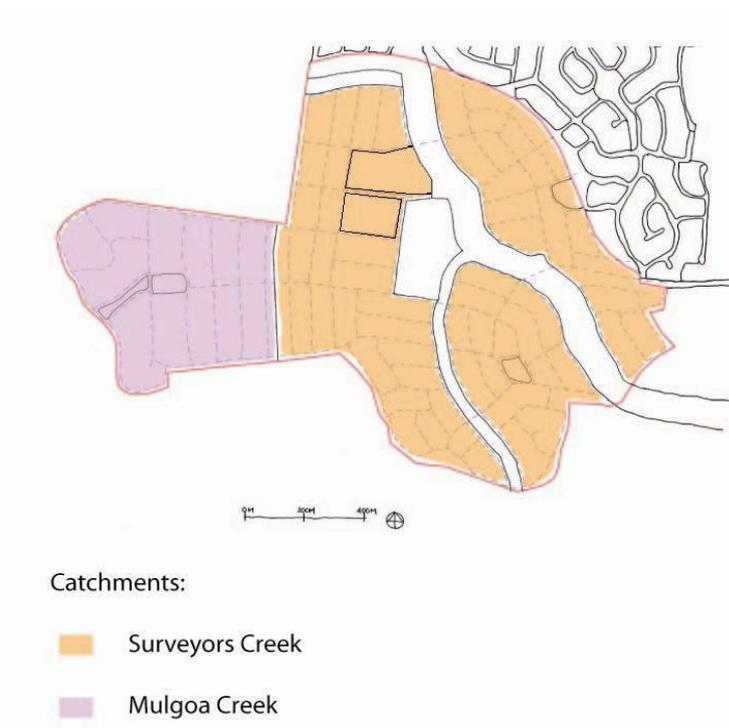
Figure E7.51: Built to Boundary Dwelling Design Principles



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

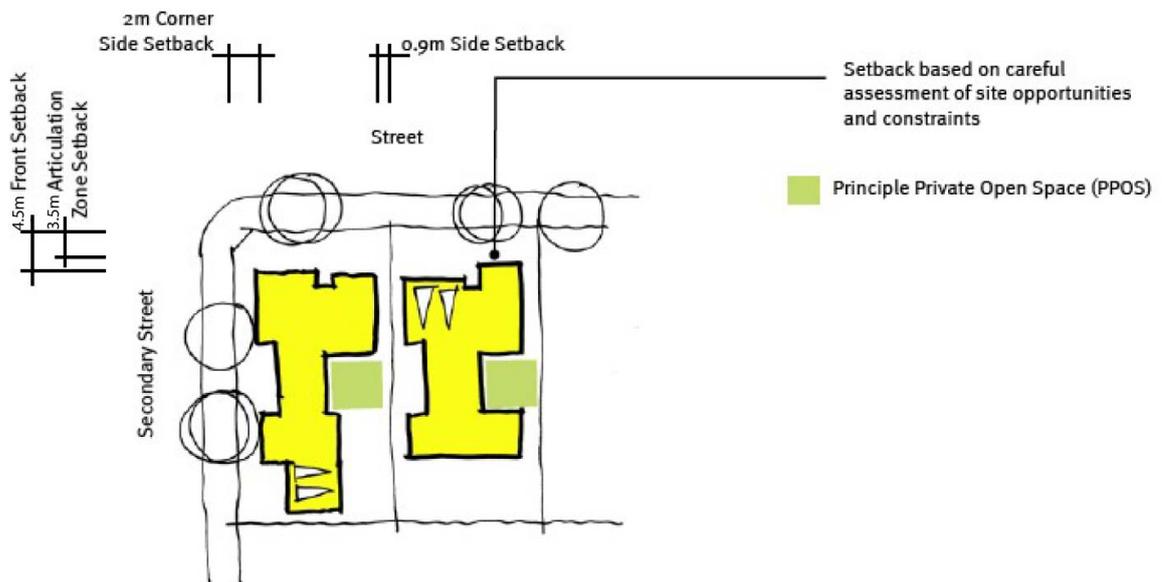


Figure E7.54: Three Storey Development at Key Intersections

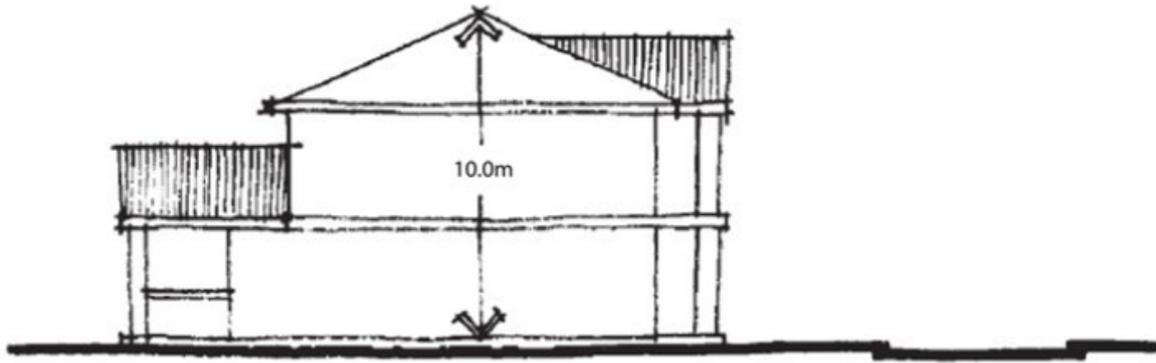
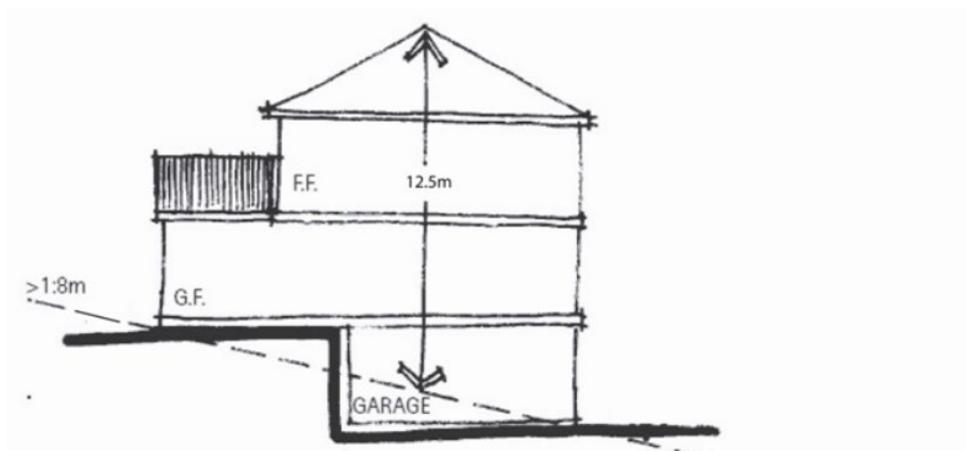


Figure E7.55: Three Storey Development on Lands With Grade >8:1



7.4.5.6.2 Mulgoa Creek Catchment

A. Performance Measures

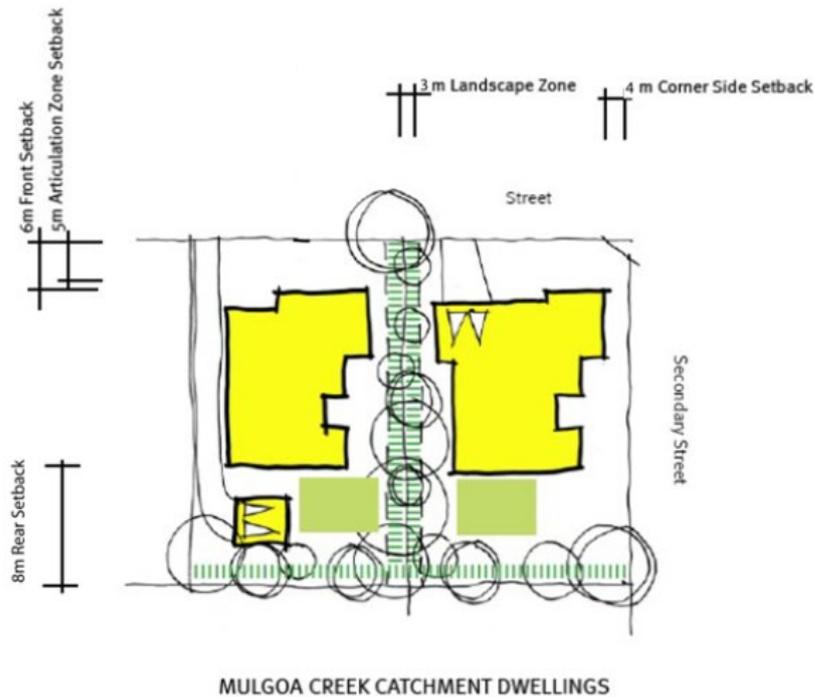
- a) Allow for landscaped side setbacks to provide visual separation between dwellings and a more spacious streetscape environment.
- b) Reflect the semi - rural character in road detailing, landscaping and fencing details.
- c) Lot sizes are to transition from the smaller lots in the Surveyors Creek 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 <600m²	600m²- 1,000m²	Lots >1,000m²
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.