1.2.5. Safety and Security (Principles of Crime Prevention through Environmental Design)

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. When development is appropriately designed, it can reduce the likelihood of crimes being committed.

There are four main principles of CPTED– natural surveillance, access control, territorial reinforcement and space management. Incorporating these four principles of CPTED can help to create a safe and secure environment that encourages activity, vitality and viability, enabling a greater level of security. They can also assist in minimising the incidence of crime and contribute to perceptions of increased public safety.

Applicants should use this section as a tool in the design of developments. However, not all measures outlined below will be relevant for all types of development. For dwelling houses and dual occupancy developments, the CPTED principles may be delivered by simple measures such as:

- Installing a peephole in the front door;
- Locating a window of a living area to face the street; and
- Maintaining the property, particularly the landscaping.

B. Referrals and Required Information

Council is committed to ensuring that developments reduce the potential for crime. As such, Council has developed and entered into a protocol with the NSW Police Service which stipulates what type of developments will be referred to the Police and associated timeframes for response. The following developments will generally be referred to the Police:

- Multi dwelling housing and residential flat buildings, where there are more than 15 dwellings.
- Mixed use developments that include 15 or more dwellings.
- Major new or upgrading of commercial premises (business, office or retail premises).
- New industrial complexes with or without multiple industrial units comprising 1,000m² or more in floor space.
- New educational establishments or significant upgrading of existing educational establishments.
- New railway stations or significant upgrading of existing railway stations.
- Large recreational facilities and community facilities such as community centres.
- Large child care centres.
- New registered clubs or pubs including applications for extended hours of operation, gaming rooms and nightclubs.
- Highway service centres, service stations and some food and drink premises including drive through restaurants.
- New health services facilities and residential care facilities, including hospitals, nursing homes and medical centres and larger upgrades to these facilities.
- Unusual developments such as brothels and amusement centres.

- New public housing estates or significant upgrades to existing estates.
- Automatic Teller Machines which are located on the street and or near openings of buildings.

Generally all of the information listed below will be required to be submitted with your development application if you are lodging one of the above types of development:

- Measures that have been taken to ensure compliance with this section of the DCP.
- Results of any community safety assessments/audits, crime risk assessments or consultation that has been undertaken prior to the lodgement of the application.
- Community Safety Management plans for commercial premises such as hotels, clubs, sex industry premises and any other development that has the potential to attract members of the public either as paying or non-paying customer/visitor.
- Information from the NSW Police that may be requested as part of the approvals process and/or undertaken by way of Council/Police protocol.

In some cases, Council may request this information with other types of development application if it is considered warranted.

C. Principles

Principle 1: Natural Surveillance

Providing opportunities for effective surveillance, both natural and technical, can reduce the attractiveness of crime targets. Good surveillance means that people can see what others are doing thereby deterring 'would-be offenders' from committing crime in areas with high levels of surveillance. From a design perspective, 'deterrence' can be achieved by:

- Locating public services in areas of high activity;
- Providing clear sightlines between public and private places;
- Avoiding blind corners in pathways, stairwells, hallways and car parks;
- Ensuring that the range of land uses within a building increases opportunities for natural surveillance;
- Providing natural surveillance into communal and public areas;
- Locating entries that are clearly visible from the street;
- Designing fences that maximise natural surveillance from the street to the building and from the building to the street, and minimise opportunities for intruders to hide;
- Installing security grilles, shutters and doors that allows natural observation of the street;
- Installing effective lighting in public places that does not produce glare or dark shadows; and
- Ensuring that landscaping does not obstruct natural surveillance or provides a place to hide or entrap victims

Clear sight lines to encourage natural surveillance



Clear building entrance not obscured by vegetation



Principle 2: Access Control

Physical and symbolic barriers can be used to attract, channel or restrict the movement of people, and in turn, minimise opportunities for crime.

Effective access control can be achieved by:

- Ensuring buildings are clearly identified by street number;
- Providing clear entry points;
- Creating landscapes and physical locations that channel and group pedestrians into target areas;
- Using vegetation as barriers to deter unauthorised access;
- Using building materials/security that reduces the opportunity for intruder access;
- Designing public spaces that attract rather than discourage people from gathering;
- Restricting access to internal areas or high-risk areas such as loading or service areas;
- Ensuring there are appropriate security measures in place commensurate for the range of land uses within a building/development; and
- Ensuring that parking areas are clearly identified by signage to prevent unintended access and to assist persons trying to find their car.

Controlled access



Clear sight lines



Principle 3: Territorial Reinforcement

This principle relies on the users of spaces or areas feeling that they have some ownership of public space and therefore are more likely to gather and enjoy that space. The ownership of space increases the likelihood that people who witness crime in or adjacent to that space will respond by quickly reporting it or by attempting to prevent it.

Territorial reinforcement can be achieved in the design of the development by:

- · Having distinct transitions/boundaries between the public and private areas; and
- Clearly defining spaces to express a sense of ownership and reduce illegitimate use/entry.

Permeable barrier





Principle 4: Space Management

Public space that is attractive and well maintained is inviting to users and becomes a well used space. Linked to the principle of territorial reinforcement, space management ensures that the space is appropriately utilised and well cared for.

Space management includes:

- Creating a 'cared for' image through proper maintenance regimes;
- Rapid repair of vandalism and graffiti, the replacement of burned out pedestrian and car park lighting and the removal or refurbishment of decayed physical elements;
- Using materials that reduce the opportunity for vandalism; and
- Encouraging design that promotes pride and a sense of place for the community.

Removal of graffiti

Encouraging a 'cared for' space



D. Controls

- 1) Lighting: Lighting plays a vital role in crime prevention and personal safety as you can see and respond to what is around you and ahead of you. Others can also see you, which further reduces the likelihood of a crime being committed.
 - a) All areas intended to be used at night should allow appropriate levels of visibility.
 - b) Pedestrian pathways, lane ways and access routes in outdoor public spaces should be lit to the minimum Australian Standard of AS1158. Lighting should be consistent in order to reduce the contrast between shadows and illuminated areas. Lighting should be designed in accordance with AS4282 – Control of the obtrusive effects of outdoor lighting.
 - c) Lighting should have a wide beam of illumination, which reaches to the beam of the next light, or the perimeter of the site or area being traversed. Lighting should clearly illuminate the faces of users of pathways.
 - d) Streetlights should shine on pedestrian pathways and possible entrapment spaces as well as on the road.
 - e) Lights should be directed towards access/egress routes to illuminate potential offenders, rather than towards buildings or resident observation points.
 - f) Lighting should take into account all vegetation and landscaping that may act as an entrapment spot.
 - g) Lighting should be designed so that it is "vandal tough" or difficult for vandals to break.
 - h) Where appropriate, use movement sensitive and diffused lights.
 - i) Avoid lighting spillage onto neighbouring properties as this can cause nuisance and reduce opportunities for natural surveillance.
 - j) Illuminate possible places for intruders to hide.
 - k) As a guide, areas should be lit to enable users to identify a face 15m away.
 - I) All lighting should be maintained and kept in a clean condition with all broken or burnt out globes replaced quickly.
 - m) Use energy efficient lamps/fittings/switches to save energy.
- **Note:** Please refer to the Public Domain Section for further controls on lighting which may need to be incorporated into the development application.

Well lit pedestrian pathways



Appropriate lighting of a footpath and street



Wide circle of illumination that meets the next

Lighting that considers the vegetation to ensure that the area of illumination is maximised





Lighting that respects the neighbouring property owners by not causing a lighting nuisance



- 2) Fencing: If fencing is too high or made of inappropriate materials it reduces the opportunity for casual surveillance of the street and for users of the public domain to see what activities are taking place on your site. This then further increases the likelihood of a crime being committed.
 - a) Fence design should maximise natural surveillance from the street to the building and from the building to the street, and minimise the opportunities for intruders to hide.
 - b) Front fences should preferably be no higher than 1.2m. Where a higher fence is proposed, it will only be considered if it is constructed of open materials e.g. spaced pickets, wrought iron etc. Fences greater than 1.2m will require the consent of Council.
 - c) If noise insulation is required, install double-glazing at the front of the building rather than a high solid fence (greater than 1m).

Note: Please be aware that Council has several other sections within this Plan which relate to fencing which you may also need to refer to.

Fencing design that promotes natural surveillance

Greater than 1.2m in height is open.





Double-glazing at the front of the property to allow surveillance



- **3) Car Parking:** Poorly designed car parks whether underground or not can be a dangerous environment for their users. Through the provision of some basic design elements, such as lighting and signage these spaces can be made safer.
 - a) Car parks, aisles and manoeuvring areas shall be:
 - i) designed with safety and function in mind, and
 - ii) have dimensions in conformity with Australian Standards 2890 Parking Facilities. Relevant parts of this standard are:
 - AS2890. 1 Off-street parking.
 - AS2890.2 Commercial vehicle facilities.
 - AS2890.3 Bicycle parking facilities.
 - b) Where parking spaces are to be provided for people with disabilities, these spaces are to:
 - i) be suitably located near entrances to the building and lifts/ access ramps, if required;
 - ii) be provided in accordance with Australian Standards 1428.1 Design for access and mobility; and
 - iii) have appropriate signage and tactile pavement treatments, where required.

- c) The design of car parking areas should incorporate the following elements:
 - i) provision of a safe and convenient vehicle entry and exit that avoids traffic/pedestrian conflict and impacts on the surrounding road; and
 - ii) the internal (vehicular) circulation network is free of disruption to circulating traffic and ensures pedestrian safety.
- d) The movement of pedestrians throughout the car park should be clearly delineated by all users of the car park and minimises conflict with vehicles.
- e) The design of the car park should ensure that passive surveillance is possible and where appropriate, incorporate active measures such as cameras and security patrols. Car parks should be designed to minimise dark areas through the provision of appropriate lighting.
- f) Large car parks should incorporate communication devices such as:
 - i) Intercoms
 - ii) Public address systems
 - iii) Telephones
 - iv) Emergency alarms.
- g) To ensure users of large car parks are easily able to determine their location, exit and access points, security intercoms and the like, appropriate signage is to be included.
- h) All surfaces in the car park should be painted in light coloured paint or finished in light grey concrete to reflect as much light as possible.
- i) All potential entrapment points should be avoided, e.g. under stairs, blind corners and wide columns. Adequate lighting and mirrors should be used when certain design features are unavoidable.

Note: Please be aware that Council has several other sections in this Plan relating to car parking which you may also need to refer to. :

Disabled car space provided

Safe movement of pedestrians promoted







- 4) Entrapment spots and blind corners: Entrapment spots and blind corners provide opportunities for perpetrators of crime to hide and or commit crime.
 - a) Pathways should be direct. All barriers along pathways should be permeable including landscaping, fencing etc.
 - b) Consider the installation of mirrors to allow users to see ahead and around corners. The installation of glass or stainless steel panels in stairwells can also assist in this regard.
 - c) Entrapment spots adjacent to main pedestrian routes such as a storage area or small alley should be eliminated from all designs.
 - d) If entrapment spots are unavoidable they should be well lit with aids to visibility such as convex mirrors and locked after hours.
 - e) To eliminate excuse making for individuals to loiter, avoid placement of seating near or adjacent to ATM's, public phone boxes, toilets, corridors and isolated locations.

Permeable barrier

Mirrors that allow viewing around the corner



Glass panels used in stairwells to promote visibility

No seats outside toilets to minimise opportunity for loitering



- **5) Landscaping:** Trees and shrubs that are inappropriately located can easily reduce surveillance opportunities and provide entrapment spots and blind corners.
 - a) Avoid medium height vegetation with concentrated top to bottom foliage. Plants such as low hedges and shrubs, creepers, ground covers and high-canopied vegetation are good for natural surveillance.
 - b) Trees with dense low growth foliage should be spaced or crown raised to avoid a continuous barrier.
 - c) Use low ground cover or high-canopied trees with clean trunks.
 - d) Avoid vegetation, which conceals the building entrance from the street.
 - e) Avoid vegetation screening of all public use toilets.
 - f) Avoid vegetation that impedes the effectiveness of public and private space lighting. Use "green screens" (wall hugging vegetation that cannot be hidden behind) if screening large expanses of fencing to minimise graffiti.

Note: Refer to the Public Domain Section for more information on lighting.



High and low vegetation

Green screen to minimise opportunity for graffiti

Clear building entrance not obscured by vegetation.



- 6) Communal/Public Areas: Communal or public open space areas that do not have adequate natural surveillance are a risk to personal safety.
 - a) Position active uses or habitable rooms with windows adjacent to main communal/public areas e.g. playgrounds, swimming pools, gardens, car parks etc.
 - b) Communal areas and utilities e.g. laundries and garbage bays should be easily seen and well lit.
 - c) Where elevators or stairwells are provided, open style or transparent materials are encouraged on doors and/or walls of elevators/stairwells.
 - d) Waiting areas and entries to elevators/stairwells should be close to areas of active uses, and should be visible from the building entry.
 - e) Seating should be located in areas of active uses.

Windows adjacent to public areas

Well lit public areas



Transparent elevators

Seating in active areas



- 7) Movement predictors: Movement predictors are routes which people move through on a regular and predictable basis such as a pedestrian underpass. Careful design is needed to ensure that they are not included in a development or are appropriately treated where included to reduce the risk. Through site links are another type of movement predictor, however, unlike under passes these can provide a benefit to the community if designed appropriately to ensure safety.
 - a) Pedestrian underpasses should not be included in new developments. Where existing developments, which include underpasses, are being redeveloped all efforts should be made to remove them.
 - b) Where movement predictors are used the users of it should have clear site lines so they can see what is ahead and behind at all times.
 - c) Lighting of movement predictors is essential. Natural lighting should be used where possible with consideration given to wall and ceiling materials to help reflect light.
 - d) Emergency intercoms, telephones and security videos should be included in the design of movement predictors. Adequate consideration should be given to who will be monitoring such equipment.
 - e) No entrapment spots should be included in any movement predictor.



Bridge instead of underpass

Movement predictor well lit



- 8) Entrances: Entrances to all types of development that are not visible from the public domain provide an opportunity for perpetrators of crime to hide and or commit crime. Entrances to all types of development need to be clearly visible and legible so that the users can obtain entry quickly and expediently.
 - a) Entrances should be at prominent positions and clearly visible and legible to the users.
 - b) Design entrances to allow users to see into the building before entering.
 - c) Entrances should be easily recognisable through design features and directional signage.
 - d) Minimise the number of entry points no more than 10 dwellings should share a common building entry.
 - e) If staff entrances must be separated from the main entrance, they should maximise opportunities for natural surveillance from the street.
 - f) Avoid blank walls fronting the street.
 - g) In industrial developments, administration/offices should be located at the front of the building.



Entrance clear and visible



Entry points minimised

Blank walls avoided to minimise opportunity for graffiti





Offices at front of building



- **9) Site Building and Layout:** Buildings should be sited so that they address the street and promote surveillance of the street from the dwelling and of the dwelling.
 - a) For single dwellings and dual occupancies, orientate the main entrance towards the street or both streets if located on a corner.
 - b) For townhouses/villas/multiple units, ensure that part of the building addresses the street or both streets if located on a corner.
 - c) Position habitable rooms with windows at the front of the dwelling.
 - d) Garages and carports should not dominate the front façade of the building.
 - e) Access to dwellings or other uses above commercial/retail development should not be from rear lanes.
 - f) Offset windows, doorways and balconies to allow for natural observation while protecting privacy.

Dwellings addressing the street



Garages at rear

Residential above commercial



10) Building Identification: Adequate building identification is essential to ensure that people can easily find a destination and do not have to walk up and down the street searching for it.

For commercial development:

- a) Street numbers should be at least 7cm high, and positioned between 1m and 1.5m above ground level on the street frontage.
- b) Street numbers should be made of durable materials preferably reflective or luminous, and should be unobstructed (e.g. by foliage).
- c) Location maps and directional signage should be provided for larger developments.

For residential development:

- a) Each individual dwelling should be clearly numbered.
- b) Unit numbers should be clearly provided on each level.
- c) Each building entry should clearly state the unit numbers accessed from that entry.

ber size and Location board for larger developments

Street number size and positioning

75 MAIN ST -1-15 m MAIN ST MAI

Clear identification of units



- **11) Security:** A crucial part of a crime prevention strategy is the use of security hardware and/or personnel to reduce opportunities for unauthorised access.
 - a) Install intercom, code or card locks or similar for main entries to buildings including car parks.
 - b) Main entry doors for apartment buildings should be displayed requesting residents not to leave doors wedged open.
 - c) Australian Standard 220 door and window locks should be installed in all dwellings.
 - d) Consider installing user/sensor electronic security gates at car park entrances, garbage areas and laundry areas etc, or provide alternative access controls.
 - e) Entry to basement parking should be through security access via the main building.
 - f) External storage areas should be well secured and well lit.
 - g) Install viewers on entry doors to allow residents to see who is at the door before it is opened.
 - h) If security grilles are used on windows they should be operable from inside in case of emergencies.
 - i) Ensure skylights and/or roof tiles cannot be readily removed or opened from outside.
 - j) Consider monitored alarm systems.
 - k) Provide lockable gates on side and rear access.
 - I) Consider building supervisors or security guards.

Note: If you are proposing security gates to control access, you will need to liaise with the emergency service providers such as Police, Fire Brigade and Ambulance to ensure that they can gain access.

Security cards used where necessary

Doors not to be wedged open





Secure car park

Well - lit storage area





Security camera at entrance to allow viewing of visitors



12) Ownership and Space Management: It is important that people have a sense of ownership of a place whether it is residential or commercial as a person who feels attached to a place is more likely to watch out for it and the other users of it.

- a) Ensure that dwellings or groups of dwellings are readily recognizable by the residents through the use of design features such as colouring, roof forms, vegetation, paving, artworks, fencing, furniture etc.
- b) Physical and/or psychological barriers, e.g. fences, gardens, lawn strips, varying textured surfaces can be used to define different spaces.
- c) Ensure the speedy repair or cleaning of damaged or vandalised property.
- d) Provide for the swift removal of graffiti.
- e) Provide information advising where to go for help and how to report maintenance or vandalism problems.
- f) Council, through its Community Safety Partnership Initiatives can provide residents with Community Safety advice on how to enhance property and personal safety and how to promptly report criminal or inappropriate behaviour to relevant authorities.

Note: The Penrith Community Safety Partnership oversees the implementation of the Penrith Community Safety Plan. Strategies in the Community Safety Plan include the conducting of Community Safety Audits.

An initiative of the partnership is to provide commercial property owners with some general "good amenity" tips to contribute to overall presentation of specific neighbourhoods. This document will be provided to all commercial properties prior to and/or at the conclusion of community safety audits/assessments surrounding their premises to promote "self rectification" and neighbourhood responsibility.

Distinctive entrance and style for different parts of a development





Removal of graffiti

Process to report vandalism





13) Way finding/ finding help: The ability to escape, communicate or find help when in danger can be assisted through improved signage and legible design. Moreover,

knowing where you are in a large open space or shopping centre contributes to a feeling of safety.

- a) Signs should be large and legible, with strong colours, standard symbols (e.g. for washrooms) and simple graphics. They should indicate where to go for help or assistance.
- b) Signs should be strategically located at entrances and near activity nodes such as intersections of corridors or paths.
- c) Signs should indicate how to report maintenance problems in the complex.
- d) The main pedestrian route through a large building, sets of building or areas of open public space should be indicated as such with appropriate signage.
- e) Where exits to pedestrian routs are closed after hours this should be indicated at the entrance to the route and information on alternative routes should clearly advised.
- f) Signs that provide way finding information should not be relied upon solely, the overall legibility of the design needs to be well considered. Users of the space need to be able to intuitively understand where they are within the complex or area and how they can get away.

Clear signage and way finding devices incorporated into the development





1.2.6 Maximising Access and Adaptability

A. Background

New developments and the spaces around them should be accessible and useable to all people. Developments should be designed and constructed beyond their initial or first use to

ensure that buildings are durable and capable of adaptability in the future. The 'whole of building approach' should consider how the building design, finishes and materials used in the construction phase affect the amenity and safety of future occupants of the building. This approach maximises the liveability and longevity of the buildings by ensuring that adaptability and accessibility is integral to the design and construction of the development. For example, houses could be designed with reinforced shower walls will allow for future installation of grab rails. Wider doorways can facilitate easier movement of less able occupants. Lever taps and door handles are designed for easier use by both young children and older people. Similar principles can apply to commercial and industrial developments. Designing flexibility into a building will increase the lifespan and marketability of the development.

B. Principles

There are a number of principles of universal design which, when considered in the planning and design stage, add very little to the cost of the development but make a great deal of difference to the overall useability of the development. These principles can be applicable to both external and internal areas. (The principles go beyond the requirements of the Australian Standard for Adaptable Housing (AS 4299-1995)).

- a) Principle 1 Equitable use: The design is useful and marketable to people with diverse abilities.
- **b) Principle 2 Flexibility in use:** The design accommodates a wide range of individual preferences and abilities.
- c) Principle 3 Simple and intuitive use: Use of the design is easy to understand regardless of the individual's experience, knowledge, language skills or current concentration levels.
- d) Principle 4 Perceptible information: The design communicates useable information effectively to the user regardless of ambient conditions or the user's sensory abilities.
- e) Principle 5 Tolerance for error: The design minimises hazards and the adverse consequences of accidental or unintended actions.
- f) **Principle 6 Low physical effort:** The design can be used effectively and comfortably with a minimum of fatigue.
- g) Principle 7 Size and space for approach and use: Appropriate size is provided for approach, manipulation and use regardless of users body size, posture or mobility.

C. Controls

Dwellings

The Australian Network for Universal Design (ANUHD) recommends the following minimum criteria for inclusion in a universally designed home:

- 1) Easy access: People of all ages and abilities are able to gain easy access to the dwelling from the front boundary or car park to the entrance of the dwelling.
- 2) At least one level entrance: The dwelling includes at least one level entrance to enable all home occupants to enter and exit the dwelling with ease.
- **3)** Bathroom, living space and bedroom on the entrance level: The level entry to the dwelling provides a living space, bathroom and toilet, and a bedroom space or space capable of accommodating a bedroom space.

- **4)** Bathrooms designed for easy adaption: The bathroom provides a hobless shower and accommodates more generous internal circulation spaces to enable future adaptation.
- 5) Reinforcement of bathroom walls: Walls in the bathroom and shower are reinforced to enable future installation of grab rails, if required by home occupants.
- 6) Kitchen access: The kitchen design enables all home occupants to easily manoeuvre within the kitchen area and between fixed kitchen benches.
- 7) Easy access to doors and corridors: The internal passages and doorways within the dwelling facilitate ease of movement between rooms and accommodate the circulation needs of all home occupants.
- 8) Consistent installation of switches, power outlets and window controls: Light switches, power outlets and other operational devices are installed at a consistent height to ensure ease of access for all home occupants.
- 9) Easy operable door, tap and window controls: Door and window operating hardware is easy to manipulate and can be operated by the home occupants regardless of age or ability.
- **10)** Slip resistance of floor surfaces: Kitchens, bathrooms and laundries feature flooring which provides slip resistance in both wet and dry conditions.

Development involving frequent public use

It is more important that development which involves frequent public use conforms to the principles of Universal Design, wherever practical, as it is this form of development where equity of access is most critical. This type of development includes (but is not limited to):

- Public halls;
- Entertainment facilities;
- Function centres, restaurants, registered clubs and the like;
- Large retail centres (including bulky goods development); and
- Large office buildings.

Development applications for any of the above uses should address the principles of Universal Design in the Statement of Environmental Effects.

D. Lifting the Bar

The following represent some ways in which applicants can demonstrate additional commitment to the principles expressed in this Section. Demonstration of this commitment may lead to Council considering variation of development controls.

- a) Adopt high quality building design that is visually attractive, innovative and improves sustainability outcomes through its design, including the management of vegetation and landscape, water, land and waste in accordance with this Plan;
- b) Address impacts on sensitive adjacent land uses through careful site planning, building design and landscape treatment; and
- c) Reduce the use of timber from old growth forests, rainforests and forests/plantations which do not have certified environmentally responsible forest management practices. Applicants need to demonstrate that a significant percentage of the timber and composite timber products used in the building and construction works has Forest Stewardship Council Certification (see <u>www.fsc.org</u>), utilises reused or recycled timber or is specified using the Friends of the Earth 'Good Wood Guide' 9th Edition.