

5.0 Part 5 – Development Control Strategy

5.1 Introduction

This part of the Precinct Plan contains specific development standards for urban design, built form and environmental management. These standards are designed to ensure that the development principles and key elements of the framework plan and environmental strategies identified in the preceding sections of the Precinct Plan are implemented.

5A Urban Structure & Subdivision

5.2 Street Types

The Central Precinct street network is to be developed in accordance with the requirements of SREP 30 and the EPS, namely establishment of a permeable grid and legible street hierarchy that reinforces the neighbourhood structure. The design principles for the road hierarchy are contained in Section 4.6.

The future street hierarchy in the Central Precinct reflects the street typologies developed in collaboration with Penrith City Council. The location of external road connection points and internal roads, as shown in the Framework Plan (see Figure 11) serve as an indication of the urban structure of the site. Detailed design and placement of these roads will need to take into consideration the drainage regime of the site and the configuration and layout of lots to promote flexibility at DA stage.

Table 2 outlines the street types to be provided in the Central Precinct. This table also refers to relevant street sections included in Appendix C which illustrate how these controls are to be implemented.

Table 2 – Street Types to be provided in the Central Precinct

Street Type		Carriageway				Verge			
		Travel Lanes	Median	On-street Cycle Lane No.	Parking	Carriageway Width	Verge Width	Total Reserve	Footpath
Collector Road									
C1	Collector with parking both sides	7 (3.5+3.5m)	0	0	5 (2.5+2.5m)	12	8 (4m each side)	20m	3 (1.5+1.5m)
C2	Collector with median and parking both sides	7 (3.5+3.5m)	4	0	5 (2.5+2.5m)	16	8 (4m each side)	24m	4 (1.5+2.5m)
C3	Collector Main Street with parking and cycle lanes	7 (3.5+3.5m)	0	2	5 (2.5+2.5m)	14	12 (6m each side)	26m	8 (4+4m)
C4	Collector Main Street with angle parking and median	7.4 (3.7+3.7m)	4	0	11.2 (5.6m each side for 45 degree)	22.6	12 (6m each side)	34.6m	8 (4+4m)

Tree pits may be incorporated into the carriageway width to delineate parking and define pedestrian priority zones and crossing points or other nodes along the main street. When this occurs, the kerb will be brought out and around the tree to integrate the planting with the verge.

Street Type		Carriageway				Verge			
		Travel Lanes	Median	On-street Cycle Lane No.	Parking	Carriageway Width	Verge Width	Total Reserve	Footpath
Local Street									
L1	Minor Local Street with parking both sides	3	0	0	5 (2.5+2.5m)	8	7.6 (3.8+3.8m)	15.6m	3 (1.5+1.5m)
L2	Pedestrian Priority Local Street with parking both sides (inc. tree pits, defined pkg, dish drain and double tree planting)	3	0	0	5 (2.5+2.5m)	8	8.6 (4.8+3.8m)	16.6m	4 (2.5+1.5m)
L3	Local Street possible bus route with parking both sides	6	0	0	5 (2.5+2.5m)	11	8.6 (4.8+3.8m)	19.6m	4 (2.5+1.5m)
L4	Pedestrian Priority Local Street	6 (3.0+3.0m)	0	0	5.0 (2.5+2.5m)	11.0	7.6-8.4 (3.8-5.0m)	18.6-19.8m	3 (1.5/2.5m)

This is the predominant street type, allowing for a range of use patterns, and fostering pedestrian priority. These streets connect Collector Roads with open spaces through the residential neighbourhoods. On some roads, tree pits will be incorporated into the carriageway width. This will also help to soften the character of the street. When this occurs, the kerb will be brought out and around the tree to integrate the planting with the verge.

Street Type		Carriageway				Verge			
		Travel Lanes	Median	On-street Cycle Lane No.	Parking	Carriageway Width	Verge Width	Total Reserve	Footpath
Accessway									
A1	Accessway (rear loaded no parking)	3.5	0	0	0	3.5	5 (2.5+2.5m)	8.5m	0
A2	Accessway parking one side (parkland)	3.5	0	0	2.5	6	3.5 (2.5+1m)	9.5m	0
A3	Accessway (rear loaded no parking)	5.5	0	0	0	5.5	1 (0.5+0.5m)	6.5m	0

Accessways provide rear access to allotments along roads with limitations on front driveway access

Street Type		Carriageway				Verge			
		Travel Lanes	Median	On-street Cycle Lane No.	Parking	Carriageway Width	Verge Width	Total Reserve	Footpath
Employment									
E1	Employment Street with parking both sides	8 (4+4m)	0	0	5 (2.5+2.5m)	13	7.6 (3.8+3.8m)	20.6m	3 (1.5+1.5m)

General Notes:

- 1) Cyclepaths are to be provided as per the Pedestrian and Cycle Network Plan in the Precinct Plan, and may be on street or off road. On street cycle lane 1m wide each direction. Off road share hike and bike trail 2.5m wide and adds 1m to road reserve total width.
- 2) Median adds 4m to road reserve and allows central tree planting.
- 3) Angle parking can be used for high intensity activity areas such as the Village Centre, Regional Open Space and Regional Park access points.
- 4) Option for 1 sided footpath on local streets.
- 5) Local Street one sided parking reduces pavement width by 1.5m.
- 6) Upright kerb to be used, higher kerb to be used along parkland edges.

5.3 Public Domain

This section details the proposed landscape characters, landscape presentations, and public domain materials and treatments.

5.3.1 Landscape Characters

The landscape character of the open space areas within the Central Precinct as identified in the Open Space Masterplan in Section 4.8 and is to reflect one of the following landscape characters:

- Bushland;
- Woodland;
- Parkland;
- Open Space Water; and
- Urban Plazas / Squares.

Bushland Character

The Bushland character is the key landscape theme for open spaces within the Precinct due to its context surrounding by the Regional Park. This will provide a direct visual and ecological link to the plant communities of the Regional Park, and its deployment through the development open space will provide green corridor linkages of flora and fauna habitat, and fauna movement. This will be the dominant landscape character through the public realm in the Central Precinct.

The Bushland character will generally be associated with low levels of recreational use, pedestrian cycle access paths being the key use other than interpretive / educational access. The bushland environments will generally be self-sustaining in terms of maintenance (other than weed monitoring and bushfire management).

Woodland Character

The Woodland character provides a transition from Bushland areas to Parkland character. Woodland generally retains a strong visual context to the native bushland of the Regional Park through its retention and enhancement of native tree canopy. The Woodland areas will focus on understorey regimes incorporating trees in native grass and groundcover understorey. This is aimed at maintaining sightlines for safety and security and reducing understorey level fuels for bushfire risk.

Built form may be incorporated through the use of structures and awnings to provide shade and shelter, along with high quality paving, street furniture, lighting, signage, public art and water elements.

Parkland Character

The Parkland character will vary between open spaces based on existing features, their context within the urban development, and usage. The essential elements of the Parkland character will be trees in maintained grass, predominantly native canopy to further reflect the indigenous bushland context of the Regional Park. Non-native trees may be used in select locations such as parks within denser urban areas to provide winter solar access. Parkland character will involve recurrent maintenance of recreational grassed areas. Sports fields may also be irrigated.

Built form may be incorporated in these areas and may include change rooms, public amenities, structures and awnings to provide shade and shelter, along with high quality paving street furniture, lighting, signage, and public art.

Open Space Water

A variety of water bodies and elements are proposed as part of the open space network as part of Water Sensitive Urban Design, landscape and stormwater management measures. The Open Space Water character will be located adjacent to other landscape character abutting open space water bodies. The designs of Open Space Water will vary to include both soft and hard edge designs. The selection of options will be based on habitat corridors, maintenance requirements and salinity constraints.

Urban Plazas / Squares

The Urban Plazas / Squares character aims to complement the village centre by providing urban spaces for the relevant density of built form and range of uses and will seek to provide a focus for community gatherings and events and may be developed as an integrated public access with commercial sites.

The maintenance of these structured landscapes will be inherently higher commensurate with their higher intensity of usage.

Deciduous trees may be used in select locations (such as civic spaces) to provide winter solar access.

5.3.2 Landscape Presentation

The landscape presentation reflects the level of landscape detail that is proposed to embellish open space areas. The presentation is typically linked to landscape character. There are three landscape presentations proposed, Urban Presentation, Suburban Presentation, and Natural Presentation. The presentation and maintenance standards for these are detailed in the separate Landscape Maintenance and Handover Plan at **Appendix R**.

Urban Presentation

The Urban Presentation is proposed in the Parkland, Plazas/Squares, and Open Space Water Landscape Characters, or a combination of these.

The Urban Presentation will apply to those open space areas within the Precinct that lie within the denser development zones, and which serve a higher intensity and recurrence of community use.

The levels of presentation are higher than other spaces to meet the usage demands and to compliment the urban character of their locations. Parks within the Precinct that would fall within the urban presentation category include:

- Selected area of Park E at the Village Centre interface.

Suburban Presentation

The Suburban Presentation is proposed in the Woodland, Parkland and Open Space Water Landscape Characters, or a combination of these.

It will apply in to active and passive recreational use spaces catering for moderate levels of usage including family use, social gatherings, fitness and exercise activities, and playgrounds. The level of presentation will be dependent upon the character type and level of usage it receives.

It will also apply to Bushfire Protection Zones where recurrent maintenance is required to address fuel management requirements.

Open Space / Parks within the Precinct that would fall within the suburban presentation category include:

- Neighbourhood Parks generally; and

- Local and Pocket Parks not adjoining vegetation corridors or the Regional Park (eg Park 10).

Natural Presentation

The Natural Presentation is proposed in the Bushland, Woodland and Open Space Water Landscape Characters, or a combination of these.

It applies to low level and intensity of use spaces that incorporate and adjoin natural systems. Green corridors and interface areas adjoining parks fall into this category. Retention of existing vegetation and revegetation (where applicable) with indigenous species will provide a generally self-sustaining landscape with low recurrent maintenance demands.

Open space within the Precinct that would include (but generally not solely comprise) the natural presentation category include:

- Selected areas of Local and Pocket Parks adjoining vegetation corridors of the Regional park (eg Parks 8, 9, E and F)

5.3.3 Public Domain Materials and Treatments

Objectives

- Enhance the visual and functional elements of public domain areas through the appropriate provision of street furniture.
- Enhance the character, identity and appearance of the public domain whilst minimising ongoing maintenance requirements for public domain materials and treatments.
- Enhance the identity and character of the public domain and landscape through the integration of public art.

Controls

- Provide street furniture items, including seats, bins, and picnic tables at locations where users are most likely to require them, including open space areas identified in the Central Precinct Open Space Masterplan.
- Signage, street furniture and lighting is to be:
 - designed to reinforce the distinct identity of the development;
 - coordinated in design and style; and
 - located so as to minimise visual clutter and obstruction of the public domain.
- Footpath and cycle path paving should provide a hard wearing, cost effective and maintainable surface. The range of materials should be limited to make maintenance, renewal and extension works cost effective. Potential paving materials include quality stone, asphalt and exposed aggregate.
- Opportunities for integration of public art into the public domain should be identified through on-going design at the relevant DA stage.

5.3.4 Street Tree Planting

Objectives

- To reinforce the street hierarchy with appropriate native and cultural street tree planting considering scale, form, arrangement and amenity.

- To ensure landscape treatments reflect the civic and visual importance of collector streets and their role in the street hierarchy.

Controls

- Landscape treatment of streets is to:
 - be consistently used to distinguish between public and private spaces and between different street types within the road hierarchy.
 - minimise risk to utilities and services.
 - be durable and suited to the road environment and, wherever practicable, include endemic native species.
 - maintain adequate lines of sight for vehicles and pedestrians, especially around driveways and street corners.
- Collector streets should incorporate a strong/formal avenue planting of a larger, evergreen tree species that reinforce the higher order of these streets in the hierarchy and that provide visual continuity and legibility of the route throughout the development.
- Local streets should incorporate native tree species that are of an height and form that reinforce the lower order of these streets in the hierarchy.
- The landscape treatment should provide a continuous street tree canopy located within the road reserve between the footpath and the kerb.
- Ground surfaces to verges and medians are to vary from maintained native grasses (adjoining the Regional Park) to maintained garden bed, pavement or turf. Soft landscape treatments, where provided, should be kept simple to reduce recurrent maintenance needs.
- Design features such as blisters and neck downs can be used to provide additional space for landscaping and tree planting, where appropriate.

5.3.5 Lighting

Objectives

- Provide adequate lighting to streets to ensure pedestrian and traffic safety.
- To ensure a high quality, functional, safe and attractive public domain reinforced with appropriate lighting.

Controls

- Vehicular street lighting is to meet relevant RTA and Austroads standards.
- Pedestrian lighting should be provided close to footpath lighting, typically 3.5 to 4.5 metres at 20 metre intervals, to provide optimum illumination.
- Pedestrian lighting is to be pole mounted to meet relevant Australian Standards.
- Major cycle routes and pedestrian access paths are to be lit for night time usage.

5.4 Character Areas

Future Character Areas are shown in **Figure 13** and outlined in Section 4.3:

- Village Centre Character; and
- Urban Area/Neighbourhood Character.

The Urban Area/Neighbourhood Character is further defined by Location Criteria, which is land defined as:

- Adjoining land identified for Public Recreation or land that is separated from land identified for Public Recreation only by a public road; or
- Adjoining land identified for special infrastructure and is set aside for Drainage and Riparian Corridor or educational purposes, or land that is separated from land identified for special infrastructure and is set aside for Drainage and Riparian Corridor or educational purposes only by a public road, and in either instance within 400m of land approved for a neighbourhood centre, local centre or village centre; or
- Adjoining land identified for a neighbourhood centre, local centre, village centre or mixed use or land that is separated from land identified for neighbourhood centre, local centre, village centre or mixed use only by a public road.
- Within 400m of a public transport connection such as bus stop.

Land within the Central Precinct that meets this Location Criteria is indicatively identified in **Figure 13** as:

- Bushland Edge;
- Parkland Node;
- Riparian Corridor Edge; and
- Regional Open Space Edge.

Table 3 outlines the Planning and Design Principles for each Character Area.

5.5 Concept Plans

A concept plan showing the indicative urban structure of the Precinct is required to be submitted with the first subdivision DA for the Precinct. The concept plan shall demonstrate indicative information relating to:

- Road layout and subdivision pattern.
- Pedestrian and cycle network.
- Open space network.
- Location and type of non-residential uses.
- Development staging.

The concept plan shall be revised, as required, and lodged with subsequent relevant subdivision DAs as agreed with Council.

Table 3 – Planning and Design Principles for Urban Character

	Village Centre	Urban Area / Neighbourhood Character
		Location Criteria Areas (LC)*
Character	Urban scale, higher density and diverse built form resulting from pattern of use.	Residential scale and character. LC: Residential scale and character with the ability to provide higher densities to take advantage of adjacent amenity in areas with Location Criteria as defined below.
Predominant Land Uses	Mixed use with residential, commercial, retail, community and educational use.	Residential.
Typical Built Form Typology and Design	Range of attached and detached dwellings, multi-dwelling housing, manor homes and strata studios, shop-top, warehouse and urban sleeve dwellings, apartments, retail and commercial shops, education and community buildings. Building frontages to address public space and promote passive surveillance and active streets.	Range of attached to detached dwellings. Dwellings to be designed to address the public domain including: streets, parks and open space to enhance passive surveillance. LC: Range of attached to detached dwellings including compact housing (with a min lot size of 225m ² and a BEP), multi-dwelling housing, manor homes and strata studios Dwellings to be designed to address the public domain including: streets, parks and open space to enhance passive surveillance.
Typical Building Heights	Up to 8 storeys	1-2 storeys LC: 1-3 storeys
Open Space	Regional Open Space adjacent to the village centre	Local / neighbourhood parks generally within 5min walk. LC: Adjacent to local / neighbourhood parks, regional parkland and central regional open space.
Public Transport	Generally within 400m walking distance of a bus stop.	Generally within 400m walking distance of a bus stop.

Table 4 – Subdivision Approval Process

Approval Pathway	DA for Subdivision	DA for Subdivision with Building Envelope Plan	DA for Integrated Housing (Integrated assessment with subdivision prior to construction of dwellings)	DA for Integrated Housing
	Pathway A1	Pathway A2	Pathway B1	Pathway B2
Preferred Character Areas	<ul style="list-style-type: none"> ▪ Urban Areas ▪ Urban Areas with Location Criteria ▪ Village Centre 	<ul style="list-style-type: none"> ▪ Urban Areas ▪ Urban Areas with Location Criteria ▪ Village Centre 	<ul style="list-style-type: none"> ▪ Urban Areas with Location Criteria ▪ Village Centre 	<ul style="list-style-type: none"> ▪ Urban Areas with Location Criteria ▪ Village Centre
Application	Lots equal to or greater than 270m ² (existing DCS)	Lots less than 270m ² and equal to or greater than 225m ² in area, and with a frontage width equal to or greater than 9m	Dwelling construction involving detached or abutting dwellings on: Lots less than 225m ² , or Lots with a frontage width less than 9m	Dwelling construction involving common walls (ie. attached dwellings) on: Lots less than 225m ² , or Lots with a frontage width less than 9m
Dwelling Plan Required	As part of future DA or CDC	As part of future DA or CDC	Yes, as part of subdivision application	Yes, as part of subdivision application
Dwelling Design 88B restriction required	No	Yes, but only in accordance with BEP	Yes, only approved dwelling can be built	Yes, only approved dwelling can be built
Timing of Subdivision (release of linen plan)	Pre-construction of dwellings	Pre-construction of dwellings	Prior to the issue of the CC	Post-construction of dwelling slab, subject to survey

5B Built Form Housing

Housing diversity is a key element of a vibrant and sustainable urban neighbourhood. A broad mix of housing types can be developed through the provision of a range of lot sizes and flexible development standards and by providing, where appropriate, the opportunity for some higher density housing types.

Flexible development standards enable responsive to evolving market demands, thereby facilitating housing supply and choice. Housing choice builds into the community the opportunity for various levels of affordability, house size and family structure to be accommodated. Allowing for a range of housing and building types also facilitates the creation of a well-integrated and cohesive community tuned to appropriate Character Areas.

To achieve these outcomes the Central Precinct will provide a mixture of the following dwelling types:

- Detached dwellings (front and rear access);
- Semi-detached dwellings (front and rear access);
- Attached dwellings (front and rear access);
- Integrated Housing;
- Studio Units;
- Multi-dwellings;
 - Strata Four Pack (rear access)
 - Manor Homes (side/rear access);
- Gallery Lot dwellings/Duplex Lots/Patio Homes (front and side/rear access);
- Apartments;
- Urban sleeve dwellings;
- Live/Work dwellings; and
- Shop-top dwellings.

The applicable controls for these dwelling types are outlined in **Tables 5A** and **5B**, which details the requirements for a range of lot sizes, frontages and dimensions, private open space requirements, setbacks, height and car parking. This table should be read in conjunction with the information provided below regarding each typology. The figures appended in **Appendix D** illustrate how these controls may be applied relevant to each dwelling type.

Further design guidelines for all home typologies are provided in Section 5.6, covering such issues as materials, landscaping, privacy, fences and walls, garages, safety, solar access, energy efficiency, servicing and adaptability.

Table 5A – Proposed Controls by Character Area

Village Centre Character										
Housing Type	Apartment	Urban Sleeve/Urban Lofts	Shop Top	Live / Work	Manor Home	Multi-Dwelling (MDH)	Attached (terraces)	Semi-detached/ Gallery Lots (Zero Lot)	Strata Four Pack	Detached (Standard)
Typical Lot Characteristics										
Minimum Lot Size (m2)	N/A	80m2	120m2	150m2	600m2	375m2	125m2	125m2	450m2 (225m2 each lot)	225m2
Minimum Frontage (m)	N/A	5 +	6 +	5 +	20 +	12.5 +	4.5 +	4.5 +	13 +	7 +
Depth (m)	N/A	8+	20+	20+	30+	30+	25+	15+	28+	14+
Setbacks										
Front Setback (m)	2	0	0	0	3	3	3	3	3	3
Articulation Zone (m)	1	N/A	-1.5	N/A	2	2	2	2	2	2
Articulation Setback (m)	1	N/A	0	N/A	1	1	1	1	1	1
Garages										
Street Setback (m)	2.5	0.5	0.5	0.5	N/A	N/A	5.5	5.5	N/A	5.5
Setback to dwelling (m)	0	0	0	0	N/A	N/A	1	1	N/A	1
Setback to Secondary Street (m)	2.5	0.5	0.5	0.5	1	1	1	2	N/A	2
Setback to Rear Lane (m)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	N/A	0.5
Rear Setbacks (m)	0.9	0	N/A	0	N/A	N/A	3	3	N/A	3
Secondary Street Setback (m)	2	0	0	0	1	1	1	1	1	1
Minimum Side Setbacks (m)	0	0	0	0	0	0	0	0	0	0/0.9
Zero Lot Length (m)	N/A	N/A	N/A	N/A	N/A	N/A	15m	13	13	13
Max Height (storeys)	8	4	8	2(3)	2	2	2(3)	2	2	2
Open Space										
PPOS (m2)	10	15%	10%	10%	15	15	15	15	15	15
Min. width (m)	2.5	3	2.5	2.5	3	3	3	3	3	3
Parking (spaces)*					1 per dwelling	1 per dwelling	1 to 2	1 to 2	1 to 2	1 to 2
Overall				2						
1 bed	1	1	1							
2 bed	1	1	1							
3 bed	2	2	2							
visitor	1/5 dwgs									

*Car ports or other structures are not permitted forward of garages provided on-site.

Table 5B – Proposed Controls by Character Area

Urban Area / Neighbourhood Character inc. Location Criteria (LC)									
Housing Type	Manor Home (LC only)	Multi-Dwelling (MDH) (LC only)	Attached (terraces) (LC only)	Semi-detached/Gallery Lots (Zero Lot)	Patio Homes	Strata Four Pack	Detached (Standard)	Detached (Large Lot)	Detached (Large Lot+)
Typical Lot Characteristics									
Minimum Lot Size (m2)	600m2 min.	375m2 min.	125m2	450m2 (225m2 each lot)	450m2 (250m2 each lot)	540m2 (225m2 each lot)	225m2	501m2	1000m2
Minimum Frontage (m)	20 +	12.5 +	4.5+	9 + LC: 8.5 +	13+	13+	9+ LC: 8.5 +	16+	20+
Depth (m)	30 +	30 +	25 +	15 +	15 + LC: 13 +	28 +LC: 13 +	25 + LC: 20 +	25 +	30
Setbacks									
Front Setback (m)	3m	3m	3m	4.5m LC: 3m	4.5m LC: 3m	4.5m LC: 3m	4.5m LC: 3m	4.5m	6m
Articulation Zone (m)	2m	2m	2m	3.5m LC: 2m	3.5m LC: 2m	3.5m LC: 2m	3.5m LC: 2m	3.5m	5m
Articulation Setback (m)	1m	1m	1m	1m	1m	1m	1m	1m	2m
Garages									
Street Setback (m)	N/A	N/A	5.5	5.5	5.5	5.5 LC: N/A	5.5	5.5	7
Setback to dwelling (m)	N/A	N/A	1	1	1	1 LC: N/A	1	1	1
Setback to Secondary Street (m)	N/A	N/A	2	2	2	2 LC: N/A	2	2	4
Setback to Rear Lane (m)	0.5	0.5	0.5	0.5	0.5	N/A	0.5	N/A	N/A
Rear Setbacks (m)	N/A	N/A	3	3	3	N/A	3	3	6
Secondary Street Setback (m)	1	1	1	1	1	1	1	1	1
Minimum Side Setbacks (m)	0	0	0	0	0	0	0/0.9	0.9/1.5	1.5/1.5
Zero Lot Length (m)	N/A	N/A	15m (ex. rear loaded garage)	N/A LC: 13m	13	13	13	13	13
Height (storeys)	2	2	2 (up to 3 storeys)	2 LC: up to 3 storeys	2	2	2	2	2
Open Space									
PPOS (m2)	15	15	15	15	15	15	20 LC: 15	20	30
Min. width (m)	3	3	3	3	3	3	3	3	3
Parking (spaces)*	1 per dwelling	1 per dwelling	1 to 2	1 to 2	1 to 2	1 to 2	1 to 2	2	2-3

*Car ports or other structures are not permitted forward of garages provided on-site.

5.6 Dwelling Types

5.6.1 Detached Dwellings

The detached housing typology includes a wide range of residential types and configurations, including loft type housing, gallery lots, villas and courtyard homes. The lot sizes suitable for this dwelling type range from 150 square metres to 1,000+ square metres and may include houses with zero lot line setbacks on single side boundaries to houses with dual frontages with garages as part of the rear entry to the property. The broad range of lot sizes and associated development standards are aimed at providing the flexibility that permits the development of houses with varying degrees of affordability able to suit a range of family types.

Detached dwellings with rear access are to incorporate a primary pedestrian access from the street, where visitor parking may be located, and secondary access from the rear access way or driveway. Zero lot line dwellings may require maintenance easements, to be controlled through s.88B covenants. Detached dwellings are suitable for all Character Areas. Detached dwellings on 150 – 250sqm lots will be provided in groups of 2 or more and subject to a single DA.

Typical configuration and building footprints for detached dwellings are shown in Figures D5 to D14 in Appendix D.



5.6.2 Semi-Detached Dwellings

Semi-Detached dwellings comprise 2 individual dwellings which share a common wall, providing an affordable alternative to traditional detached dwelling options. This form of housing is well suited to all areas of the Central Precinct, but is particularly well suited to (but not limited to) corner sites within the development pattern and areas of increased density such as the Village Centre and Parkland Node Character Areas. Semi-detached dwellings have distinct entries for each dwelling which may be located on different street frontages.

The garage for each dwelling may also be accessed from different sides of the building, such as a primary and secondary street or can be rear loaded. Semi-detached dwellings with rear access are to incorporate a primary pedestrian access from the street, where visitor parking may be located, and secondary access from the rear access way, lane or driveway. Semi-detached dwellings are suitable for all Character Areas. Semi-detached dwellings will be integrated and subject to a single DA.

Typical configuration and building footprints for semi-detached dwellings are shown in Figure D3 and D4 in Appendix D.

5.6.3 Attached Dwellings

Attached housing includes traditional row houses, nano homes, terrace homes (front and rear loaded), dwellings with ground floor home business uses, and shop-house style housing with ground floor retail/ commercial uses.

Attached dwellings are characterised by buildings built to a zero-lot line on both side boundaries and may provide for parking with a rear loaded garage accessed from a mews, street, parking court or a driveway. Attached dwellings with rear access are to incorporate a primary pedestrian access from the street, where visitor parking may be located, and where possible a secondary access from the rear access way, lane or driveway. Attached dwellings with front access may be provided as an opportunity to increase densities without always requiring a rear access lane, to enable the integration of private open space with living areas, and to provide the opportunity to deliver housing choice and affordability.

Attached housing may be provided in groups of 2 or more dwellings if such groups are the subject of a single DA. Where a zero-lot line is created for attached housing adjacent to another lot, a maintenance easement may be required on the affected property to be controlled through s.88B covenants.

Attached housing is suitable for all Character Areas, but is particularly well suited to areas of increased density such as the Village Centre and Parkland Nodes. Typical configuration and building footprints for attached housing are shown in Figure D1 and D2 in Appendix D.



5.6.4 Integrated Housing

Integrated Housing refers to dwelling types that require a single DA for subdivision to create the allotment and construction of the dwelling. These include attached dwellings on 125-300m² lots, semi-detached dwellings on 125-350m² lots and detached dwellings on 150-269m² lots.

Integrated housing types provide smaller lot products that deliver greater housing choice and contribute to more affordable housing stock.

Given their smaller lots, integrated housing products are intended to be predominantly located in the Village Centre and Parkland Node Character Areas, where higher densities and a more urban scale are envisaged.

However, integrated housing could also be considered in other character areas. Where proposed in other areas, consideration should be given to the following locational and design criteria:

- Integrated housing is most suitable for corner lots in order to create a built form that positively addresses both street frontages;
- Integrated housing is most suitable for lots oriented north-south on an east-west street to maximise solar access to living areas and private open space;
- There should be consistency in architectural language between the dwellings, however, identical repetition of elevations is to be avoided; and
- All frontages to the street should be articulated with a variety of design elements such as windows, balconies and verandahs, and adequate landscape treatment provided.



5.6.5 Studio Units

Detached, semi-detached and attached dwellings with rear access may also incorporate a studio unit above the ground level garage at the rear of the lot in appropriate locations in order to provide additional housing diversity. They also provide the opportunity to increase passive surveillance opportunities of streets.

Studio units should:

- Provide a varied elevation where attached;
- Have a minimum size of 45m², but contain no more than 1 bedroom;
- Have 825m² of private open space;
- Provide 1 car space;
- Be a maximum of 1 floor above garage;
- Meet BCA standards.

5.6.6 Multi Dwelling (MDH)

Multi-dwelling housing means three or more (attached or detached) dwellings on one lot of land (not an individual lot in a strata plan or community title scheme). Each dwelling has access at the ground level, but does not include a residential flat building.

a. Strata Four Pack

The Strata Four Pack typology includes four separate strata titled dwellings on the one lot. The design involves a ground storey with two apartments and a second storey with two apartments. Apartments are generally two bedrooms, with each dwelling having a single rear loaded garage.

b. Manor Home

Manor homes are similar in style to the Strata Four Pack housing typology, except with only three dwellings, and are therefore classified as multi-dwelling housing. These are best suited to a corner lot where frontages can be to either street front. Access to each dwelling is on the ground floor. Provision of no more than 3 separate garages on site and these are typically accessed from a rear lane.

5.6.7 Gallery Lots/Duplex Lots/Patio Homes

Gallery Lots comprise 2 individual residential dwellings, either detached or semi attached, on a single larger corner site within the subdivision development pattern, and areas of increased density such as the Village Centre and Parkland Node Character Areas.

Gallery dwellings have distinct entries for each dwelling which may be located on different street frontages, creating a better consistent streetscape on both frontages. The garage for each dwelling may also be accessed from different sides of the building, such as a primary and secondary street or can be rear loaded. Gallery dwellings with rear access are to incorporate a primary pedestrian access from the street, where visitor parking may be located, and secondary access from the rear access way, lane or driveway.

Gallery dwellings are suitable for all Character Areas. Gallery dwellings will be integrated and subject to a single DA. Gallery Lots are dual occupancy development meaning the development of two dwellings on a single allotment which may not be further subdivided.

Duplex Lots comprise 2 individual semi-attached residential dwellings on mid-block sites within the subdivision development pattern, and areas of increased density such as the Village Centre and Parkland Node Character Areas. Duplex dwellings have distinct entries for each dwelling with at least one entry fronting the street. The second dwelling entry may be obscured from street view or accessed from the rear where the site is rear loaded. Similarly, the garage for each dwelling may be accessed from the same street or from different streets when the site is rear loaded. Duplex dwellings with rear access may incorporate a primary pedestrian access from the street, where visitor parking may be located, and secondary access from the rear access way, lane or driveway.

Duplex dwellings are suitable for all Character Areas. Duplex dwellings will be integrated and subject to a single DA. Duplex Lots may be further subdivided.

Typical configuration and building footprints for gallery dwellings are shown in Figure D3 and D4 in Appendix D.

5.6.8 Apartments

Apartments are appropriate in the Village Centre Character Area on sites where a greater density is appropriate and desirable for the creation of a more balanced and vibrant community. Apartments are suited to areas of higher amenity and locations in proximity to parks, bus stops, amenities and services.

The provision of apartments allows the creation of housing options for people looking for a low maintenance, urban, and potentially more affordable housing alternatives to traditional detached house forms. Apartments can be provided in a range of sizes from one bedroom apartments up to three plus bedroom family apartments.

The scale of apartment buildings is to be compatible with the mass and character of adjacent building types. Articulation of facades is required to mitigate the bulk and mass of apartment buildings.

Apartments are to be designed to accommodate parking on site, including underground where appropriate. Typical configuration and building footprints for apartments are shown in Figure D18 in Appendix D.



5.6.9 Urban Sleeve Dwellings

The Urban Sleeve dwellings will generally be located in the Village Centre Character Area adjacent to non-residential built form, shielding inactive frontages from areas of public access including streets, lanes and parking lots with the intention of activating these frontages and creating a more diverse village centre. These building typologies will also provide opportunities for local business and enterprise.

Urban sleeve dwelling provide additional options for occupants to live and work within the same dwelling with a larger, more formalised work space on the ground level and private uses on upper levels. In some instances urban sleeve dwellings will have dual frontages, and if so garages will be located on the secondary frontage. Private open space may be located on terraces above street level.

Groups of Urban Sleeve dwellings will be the subject of a single DA. Subdivision of groups of Urban Sleeve Dwellings is to be approved as part of the single DA. Typical configuration and building footprints for urban sleeve dwellings are shown in Figures D16 in Appendix D.

5.6.10 Live/Work Dwellings

Live/Work Dwellings will:

- Be appropriately located, generally within the Village Centre Character Area with the intention of supporting functional, liveable, and safe live/work environment.
- Encourage building design that emphasizes the pedestrian realm and interface with the street through reduced front setbacks and well-articulated frontages.
- Be urban in character and add to the diversity and mix of allotments, creating variety and interest in the streetscape and increasing housing choice to a broad range of families.
- Encourage flexibility of use which will accommodate either residential or business uses.

Live/work dwellings are proposed to accommodate a wide array of uses. Uses that could affect the amenity of surrounding residential areas with noise, vibration or odour are strongly discouraged. Potential amenity impacts are to be considered during the assessment of any development application for a live/work dwelling.

Typical configuration and building footprints for live/work dwellings are shown in Figure D17 in Appendix D.

5.6.11 Shop Top Dwellings

The shop top dwelling typology will:

- Be provided above retail and other commercial uses in the Village Centre Character Area to add to the activity and vitality within this area.
- Have a range of dwelling sizes to cater for a variety of households and opportunity for affordable housing options.
- Have a distinct and clear entry for the dwellings, located on the primary street frontage wherever possible to add to the activity in the locality.
- Locate Private Open Space on terraces and balconies above street level and in locations that can add to the passive surveillance of the locality.

Articulation of building frontages over the public footway may be permitted subject to there being a suitable agreement with Council. Building articulation and street tree placement would be coordinated to remove potential conflict



5.7 General Housing Siting and Design Controls

General planning and design controls for residential dwellings are provided in the following sections. These controls are relevant to all residential development in the Central Precinct.

5.7.1 External Built Form and Materials – Private Domain

Dwelling facades should display a variety of materials, colours and shading structures, with garages integrated into the overall architectural form and design.

The Design Guidelines to be administered by the Joint Venture developer will address material and finishes for use for such items as fences, walls, garages, paving, planting, roofs and building colour schemes. The Building and Siting Guidelines will be enforced under the developer covenants, and details of external materials and finishes are to be submitted with a DA. Further detail on specific elements is also provided in the following sections.

5.7.2 Landscaping

Objectives

- Landscaping is to contribute to effective management of stormwater, biodiversity, energy efficiency and to improve visual amenity.
- Encourage the use of native species of flora and low maintenance landscaping.
- Retain and integrate existing landscape elements such as vegetation and topographic features, where appropriate, in the design of new development.

Controls

- Trees planted on the north side of private open space areas and habitable rooms are encouraged to be deciduous.
- A minimum of one tree is to be provided where possible within the front setback area of every residential allotment. This may include existing trees that are to be retained within the front setback area.
- Planting of vegetation at the front of higher density development must consider the need for passive surveillance. Excessively dense vegetation that creates a visual barrier should be avoided.
- A Landscape Plan is to be lodged with all DAs for dwellings, and is to provide the following details:
 - the location of any existing trees on the property, specifying those to be retained and those to be removed.
 - the position of each shrub and tree species proposed to be planted.

Each plant is to be identified by a code referring to a plant schedule on the plan.

5.7.3 Visual and Acoustic Privacy

Objectives

- Ensure buildings are designed to achieve acceptable levels of visual and acoustic privacy.

- Protect visual privacy by minimising direct overlooking of habitable rooms and private open space.
- Contain noise within dwellings and minimise noise from outdoor areas.

Controls

- Direct overlooking of main habitable areas and private open space should be minimised through building layout, window and balcony location and design, and the use of screening devices, including landscaping.
- As far as practicable the windows of habitable rooms shall be screened or adequately separated from walkways, footpaths, communal areas, driveways, windows of other dwellings and balconies above. Courtyard walls, walls of the building, screen walls and the like are an acceptable method of screening of windows.
- Where overlooking of habitable rooms and private open space cannot be avoided, additional visual privacy may be achieved by:
 - offsetting adjacent windows;
 - fixed window screens;
 - providing sill heights of at least 1.5 m above floor level; or
 - providing fixed obscure glazing.
- The design of attached dwellings must minimise the opportunity for sound transmission through the building structure, with particular attention given to protecting bedrooms and living areas.
- Living areas and service equipment must be located away from bedrooms of neighbouring dwellings.
- 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.
- Noise sensitive areas are to be located away from noise emitting sources.

5.7.4 Fences and walls

Objectives

- To ensure fences and walls improve amenity for existing and new residents and contribute positively to streetscape and adjacent buildings.
- To ensure boundary fences and walls between allotments provide visual privacy without affecting the amenity of those allotments in terms of views, sunlight and air movement.
- To ensure materials used in fences and walls are in keeping with the existing streetscape character and character of the dwelling type.
- To ensure fences and walls are sympathetic to the topography.

Controls

- Front fences and walls must not be higher than 1.5 metres.
- The design and materials of front fences and walls is to be compatible with the desired character of the streetscape.
- Side and back fences and walls can be built up to 1.8 metres in height to achieve privacy for the rear yard.

5.7.5 Garages

Objective

- Design of garages must not dominate the frontage of the house.

Controls

- Double garages are permitted on lots having minimum width of 10m or greater. However, no more than two 10m frontage lots with double garages are permitted side by side, and a maximum of 4 homes with 10m wide lots and double garages are permitted on any one side of a street. Dwelling design for lots with double garages between 10-12m in width must be 2 storeys to enable the garage frontage to be recessed under a balcony to reduce garage dominance, and a habitable room above garage is required.
- Materials and colours should blend the garage doors into the main building.
- Garages are to be limited to a maximum capacity of two cars, with tandem garages permitted.
- Garages are to be set back behind the front most element of the house and fully integrated into the front facade.
- No car ports or structures are permitted forward of garages.

5.7.6 Safety

Objectives

- To ensure that the siting and design of buildings and spaces contributes to the actual and perceived personal and property safety of residents, workers and visitors and decreases the opportunities for committing crime in an area.
- To ensure development encourages people to use and interact in streets, parks and other public places without fear or personal risk.
- To increase the perception of safety in public and semi-public space including streets and parks.
- To maximise actual and perceived safety within the community.
- To encourage the incorporation of principles of crime prevention through urban design and landscaping into all developments.

Controls

- Dwellings should be designed to overlook streets and other public or communal areas to provide casual surveillance. Living areas, windows, access ways and balconies should be arranged to overlook recreation areas and other public areas.
- For residential dwellings, roller shutters are not be used on doors and windows facing the street. Security railings must be designed to complement the architecture of the building.
- Pedestrian and communal areas are to have sufficient lighting to ensure a high level of safety. These areas must be designed to minimise opportunities for concealment.
- All developments are to incorporate the principles of Crime Prevention Through Environmental Design, in accordance with Penrith City DCP 2006. When assessing applications, Council must give consideration to Planning NSW guidelines for Crime Prevention and the Assessment of Development Applications.

- Avoid the creation of areas for concealment and blank walls facing the street.

5.7.7 Bushfire and Asset Protection

Objective

- Dwellings should be constructed to meet the minimum bushfire protection standards

Controls

- Asset protection zones are to vary between 14m and 100m (the latter being a temporary APZ) depending on the lot location in relation to the subdivision boundary.
- No tree or tree canopy is to occur within 2 m of future dwelling rooflines.
- The presence of a few trees in the APZ is acceptable provided that they are well spread out and do not form a continuous canopy whereby single trees, or clumps of trees forming one canopy are separated by 2 to 5 m depending on the canopy size.
- Shrubs are to be limited to select and well managed garden beds that are located far enough away from future buildings so that they will not ignite the buildings by direct flame contact or radiant heat emission.
- A minimal ground fuel is to be maintained to include less than 4 tonnes per hectare of fine fuel (*fine fuel* means ANY dead or living vegetation of < 6 mm in diameter *e.g.* twigs less than a pencil in thickness. 4 t/ha is equivalent to a 1 cm thick layer of leaf litter).
- Access controls are to be implemented using the identified performance criteria in the approved Bushfire Protection Assessment Report
- Water supply is to use a ring main system for areas with perimeter roads. Fire hydrant spacing, sizing and pressures are to comply with AS2419.1-2005, or provision of a test report to the RFS, with no hydrants to be located within a road carriageway.
- All above ground water and gas services pipes external to a building are metal, including and up to any taps.
- Electricity supply should be underground wherever practicable. Where overhead transmission lines are installed, they are to use short pole spacing, unless crossing gullies, and no part of a tree should be closer to a power line than the specified distance in 'Guideline for managing vegetation near power lines' issues by the Department of Energy, Utilities and Sustainability in 2005.
- Gas services are to be installed and maintained in accordance with AS/NZS 1596:2008.

5.7.8 Solar Access

Objective

- Dwellings should be designed to maximise solar access.

Controls

- Areas of private outdoor space should receive at least 3 hours of sunlight between 9am and 3pm at the winter solstice.

- Dwellings should also be designed to avoid overshadowing of adjacent properties and to protect sunlight access to any habitable room or private outdoor living space of adjacent buildings to less than 4 hours between 9am and 3pm at the winter solstice (21 June).
- For integrated developments a minimum number of dwellings are to achieve solar access to either the principal private open space, or the main habitable room. 85% of dwellings designed to achieve 3 hours of sunlight on winter solstice to either PPOS or HR.

5.7.9 Energy and Water Efficiency

Objectives

- To ensure ecologically sustainable development.
- To incorporate best practice energy management and implement energy efficient principles to fulfil several objectives:
 - to maximise the benefits of passive solar design;
 - to improve the energy efficiency of dwellings;
 - to minimise the need for mechanical heating and cooling appliances;
 - to promote the installation of greenhouse responsive hot water systems and other energy efficient appliances; and
 - to maximise the use of natural light and limit energy use for interior lighting.
- To minimise unnecessary water production during design and construction.
- To recycle, reuse and reprocess waste locally.
- To minimise adverse impacts on air quality.

Controls

- BASIX Certificate is to accompany DAs for new dwellings.
- The design of dwellings should minimise heat loss and the absorption of heat through measures such as the use of insulation in walls and roofs.
- The design of dwellings should minimise heat loss and the absorption of heat by limiting the size of windows on the western facades of buildings.
- Dwellings should be designed to allow cross ventilation, where appropriate, by positioning windows and doors opposite each other within rooms and providing fans and alternative forms of mechanical ventilation (other than air conditioners).
- Dwellings should be designed to face living spaces to the north, sleeping areas to the east or south, and utility areas to the west or south.
- Dwellings should be designed with north facing windows.
- Dwelling design should consider shading of north, east and west facing windows through use of elements such as shading devices, including eaves, verandas, and pergolas.
- Dwellings should utilise energy efficient fixtures such as solar hot water systems or star rated appliances.
- Dwellings should utilise water efficient fixtures to ensure compliance with BASIX requirements.
- Dwellings should be designed so that:
 - hot water systems are located as close as possible to wet areas;

- wet areas are clustered to minimise pipe runs;
 - external clothes drying areas are provided, with access to sunlight and breezes; and
 - reflective or light coloured materials are used and/or dwellings are painted in light colours.
- Rainwater tanks are to be provided on lots greater than 400 square metres, subject to agreement being reached with the Department of Planning that the provision of recycled water to the Precinct obviates the need for the installation of rainwater tanks

5.7.10 Servicing

Objectives

- To ensure that adequate provision is made for site facilities.
- To ensure that site facilities are functional and accessible to all residents and are easy to maintain.
- To ensure that site facilities are thoughtfully integrated into development and are unobtrusive.

Controls

- Development must demonstrate that the design takes into account waste storage and collection without reducing the amenity of the dwelling or neighbouring lots.

5.7.11 Adaptability

Objective

- To provide practical and flexible housing and urban spaces that are designed and constructed to ensure durable and long-term adaptability to maximise access and liveability, consistent with AS 4299.

Controls

- Residential dwellings shall be designed with key design features that may achieve:
 - direct access;
 - spaces for car parking;
 - adequate access and circulation widths; and
 - main facilities at ground floor level.

5C Non Residential Built Form

5.8 Non Residential Buildings (Village Centre)

Non-residential built form in the Village Centre Character Area will include a variety of uses including retail, commercial, mixed use, and community and education buildings. Where such development takes place a number of principles will be observed in order to enhance the urban design outcomes in the village centre. These principles are listed below.

Mix of Uses

A range of uses including office, community, educational, residential and recreational uses may be considered within a mixed use building. Mixed uses can be arranged horizontally, vertically or in a combination. Horizontal mixed-use development in the Village Centre will locate retail and commercial uses along street frontages with residential use to the rear or along secondary streets and accessways. Vertical mixed-use development will locate retail and commercial uses at street level, so as to maximise street activation, with commercial and residential uses located on upper levels.

Conflict between uses will be minimised through appropriate siting or via the application of appropriate building materials to eliminate noise transmission and other conflicts. Loading bays, site storage and access points for waste collection will be located away from public spaces, streets and residential areas to minimise amenity issues associated with cooking exhausts, waste, plant rooms and service vehicles.

Street Frontages/Entrances

Non-residential uses will be located on the street with ground floor uses and upper floor windows facing the street to activate these edges and provide passive surveillance. Primary entrances will generally be provided off the main street. Access points will be compatible with the overall façade of the building but will be clearly defined and identifiable for vehicles and pedestrians.

Retail buildings will be designed to address the street to ensure high quality pedestrian connectivity between all uses in the Village Centre. Larger stores may be sleeved by smaller specialty shops and offices with frontages to surrounding streets. Vehicle access will be provided away from the main street frontage. Parking and passenger drop off will be located adjacent to building entrances. Car parking will be shared and co-located where possible to minimise land take and enhance walkability and maximise pedestrian connections.

Building Form

Buildings will be designed to face the street with particular attention paid to the rear of the building and its relationship to accessways and adjacent buildings. Built form should relate to the public domain and its form and scale. Façade treatment should avoid the use of blank walls and should break up excessive bulk and scale. The façade of large buildings will be articulated in terms of volume and surface treatments, to reflect the existing scale of the street and adjacent development.

Building Depth

Building depth should be adequate in order to maximise natural light, ventilation and circulation unless specific building use requires otherwise. This depth will allow optimum circulation and room layout while minimising artificial lighting at the building core.

5.9 Employment Zone Buildings

It is anticipated that the Employment Zone will provide a range of building types accommodating light industrial and manufacturing uses. Typical building types include warehouses/workshops and strata units.

The applicable controls for these building types are outlined in **Table 5**, which details the requirements for minimum lot sizes, frontages and dimensions, open space requirements, setbacks, height and car parking. The figures appended in **Appendix E** illustrate how these controls may be applied relevant to each building type.

Further design guidelines for Employment Zone buildings are provided in **Section 5.10**, covering such issues as building envelope and design, site access and parking, landscaping, signage, fences and walls, energy efficiency, and environmental management.

Table 6 – Employment Zone Development Controls

Allotment Type		Employment
Min. Allotment Size (m ²)		1000sqm Torrens Title and 150sqm Strata Title
Typical Frontage (m)		20m+
Typical Depth (m)		30m+
Setbacks		
Primary	Building Frontage	5m setback for up to 8.5m high and 7.5m setback for up to 12m high
	Articulation Setback	4/6.5m
Secondary	Building Frontage	4m
Side	Internal	0
Rear	Building	5m
Landscaping		
	Private	Min. 3.5m front and 2.5m secondary
Height		
	Max Wall Height	8.5m
	Max Total Height	12m
Parking (spaces)		Warehouse: 1 space/100 sqm GFA Factory Units: 1 space/75sqm GFA Office Component: 1 space per 40sqm GFA Ancillary Showroom: 1 space/45sqm GFA Daily Convenience Shop: 1 space per 30sqm GFA.
a) Non-residential developments including mixed-use developments with a construction cost of \$1 million or more are to demonstrate a commitment to achieving no less than 4 stars under the relevant Green Star and 4.5 stars under the Australian Building Greenhouse Rating (if applicable).		

5.10 General Employment Building Siting and Design Controls

5.10.1 Building Envelope and Design

Objectives

- To ensure the creation of a high quality streetscape character and hierarchy of streets.
- To ensure that building forms are of an appropriate scale for an employment area.

- To mitigate the visual impact of any large scale employment.
- To ensure that built form establishes a strong relationship to the Regional Open Space and Regional Park areas.
- To provide adequate distance between, buildings and street alignments for landscaping and vehicle manoeuvring.
- To provide adequate sight distance for safe traffic movement.
- To create a strong street presence, encouraging pedestrian activity and slower traffic speeds.
- To encourage passive surveillance of the street.
- To encourage a high standard of architectural design for employment buildings.
- To allow for the efficient use of land.
- To encourage attractive and visually coherent streetscapes.
- To encourage the use of building materials which are durable and which maintain a high standard of appearance over time.
- To promote energy efficient building orientation and envelopes.

Controls

- Building facades visible from street are to be of high visual quality (have colour and material variations, windows and articulation on walls to all street frontages). All facades should be articulated using architectural elements such as external structures, protrusions and penetrations, decorative features, textures and colours, with a variety of materials and finishes including brick, glass, steel, concrete, textured block work and pre-cast exposed aggregate panels.
- The office component of any development shall be incorporated into the overall design of the building, and located generally along the primary street frontage.
- Where zero lot should occur, adjoining buildings are to consider appropriate alignment, materials, finishes and selection, and proportion of facade to assist articulation and visual interest.
- Building form shall be articulated and where possible use roofs with eaves that project beyond external walls, dividing long walls into a series of forms, and emphasising pedestrian entry points.
- Minor encroachments, including projecting eaves and flagpoles, may project beyond maximum building height.
- Buildings shall address the primary street frontage of an allotment with a clear and well lit pedestrian entry.
- Where an allotment has frontage to more than one street, the building setback to the secondary street frontage(s) is to ensure that the building presents a satisfactory relationship to the street with good design and landscaping elements.
- Sun shading devices, such as awnings, shall be provided over all openings (other than loading docks).
- Rooftop structures (including plant rooms, air conditioning and ventilation systems) shall be incorporated into the design of the building.

5.10.2 Site Access & Parking

Objectives

- To ensure that adequate provision is made on each development site for parking.
- To improve the visual appearance of car parking areas.
- To separate truck and small vehicle traffic to create safe paths of travel for all vehicles.
- To provide for bicycle parking areas.

Controls

- Access routes to car parking areas are to be clearly identified.
- Car parking should generally be located at the side or rear of an allotment.
- Where located at the side or rear of an allotment with more than one street frontage, car parking areas should accommodate high quality landscaping along the secondary street frontage(s).
- Vehicular access, manoeuvring and loading areas should be separated from car parking areas on torrens title allotments, in order to separate pedestrian movement and heavy vehicles.
- Visitor parking is to be clearly marked and easily identifiable and be located to be closest to the building's main entry.
- On-grade parking should be within a landscaped setting.
- All car-parking spaces should be adequately drained, marked and designated upon the site.
- A dedicated area for bicycle parking shall be provided within the car park and should include bicycle racks for similar.

5.10.3 Loading & Servicing

Objectives

- To encourage the optimum efficiency of land use through the provision of shared parking, turning and access routes between neighbouring sites.
- To maximise the area available for landscaping.
- To ensure that adequate provision is made on each development site for access by cars and trucks and for the loading and unloading of materials and goods.
- To ensure that site facilities are functional and accessible and are easy to maintain.
- To ensure that site facilities are thoughtfully integrated into development and are unobtrusive.
- To ensure trucks and cars are separated to maximise on site safety.
- To allow for shared loading arrangements between neighbouring allotments.

Controls

- Vehicular access, manoeuvring and loading areas are to be separated from car parking areas on torrens title allotments.

- A minimum on-site driveway width of 8 metres is required for loading and servicing access. Cross-over widths should comply with the relevant Australian Standard.
- Where 2 battle axe handles adjoin, a shared driveway may be provided with reciprocal rights of access. The minimum width of the driveway should be 10m.
- Loading docks, loading areas and external storage areas should be appropriately located and/or screened so as to not be visible from the street and/or the Regional Park.

5.10.4 External Industrial Activities

Objective

- To mitigate the environmental and visual impact of external processing and storage of materials.

Controls

- External industrial processes and/or the storage of materials will not be permitted along a road frontage and must be separated or visually screened.
- Outdoor storage areas should be screened from public view through appropriate screening or a landscape buffer.
- Outdoor storage areas should not be located in front of primary building façade.
- Loading zone should be located in areas of low visibility such as side and rear of buildings.

5.10.5 Recycling & Waste Management

Objectives

- To reduce the amount of waste going to landfill.
- To encourage the recycling of industrial waste.

Controls

- Waste separation, recycling and reuse facilities should be provided on site.
- Waste facilities should be fully integrated with the design of the building and/or landscaping.

5.10.6 Landscaping

Objectives

- To mitigate the visual impact of employment buildings and hard stand areas through the use of landscaping.
- To create a strong landscape setting to the street frontage.
- To encourage the use of native flora and low maintenance landscaping.
- To assist in the management of salinity.
- To establish landscaped boundaries to employment sites.
- To enhance visual integration of urban development with the Regional Park bushland context.

Controls

- Landscaping on individual allotments is required within the front building line setback and contribute to effective management of stormwater, biodiversity, and energy efficiency; and improve visual amenity.
- Landscaping is required in the side and rear setbacks (where provided) if visible from a public place. In addition, the perimeter of open storage areas is to be landscaped as necessary to provide appropriate screening from public view.
- Car parking areas should be landscaped to provide shade and to soften the visual impact of parking facilities.
- Low water demand drought resistant vegetation should be used in landscaping areas, including native salt tolerant trees.
- Street tree planting, including endemic species, shall be provided to enhance the appearance of the street and pedestrian environment, including providing protection from the sun.
- Planting of vegetation should consider the need for passive surveillance.
- Excessively dense vegetation that creates a visual barrier must be avoided.

5.10.7 Signage

Objective

- To accommodate the need to identify and promote employment development whilst preventing the unnecessary proliferation of advertising signs or structures.
- To ensure that signage is designed to be sympathetic to the architectural treatment of the building and surrounding streetscape.
- To ensure signage does not detract from the visual appeal of the Ropes Creek Precinct.

Controls

- All advertising signage is to be:
 - Constructed of high quality, durable materials;
 - Considered in conjunction with the design and construction of buildings;
 - Restricted, generally, to one sign identifying the name of the occupants and/or products manufactured or produced on the site; and
 - Contained wholly within the site.
- In the case of multiple occupancy buildings:
 - Freestanding signage shall be limited to a single structure directory board listing each tenancy, located at the entry to the site from a public road, along the road frontage; and
 - One business identification sign not exceeding 2m by 0.6 m is permitted on each unit. Such signs are to be a uniform shape, size and design.
- Directional signage for car parking areas, loading docks, delivery areas and the like should be designed in an attractive manner and should be located at a convenient point close to the main access to the site.
- Roof signs are generally not permitted. In exceptional circumstances, a roof sign may be erected where it forms an integral part of the architecture of the building.

5.10.8 Fences and Walls

Objectives

- To provide security for property owners.
- To contribute to the amenity of the Central Precinct.
- To ensure fences and walls improve amenity for employees of existing and new development and that they contribute positively to adjacent buildings.
- To encourage pedestrian access to businesses from the street.
- To ensure boundary fences and walls between allotments provide security.
- To ensure materials used in fences and walls are of a high quality and in keeping with the character of the precinct.
- To ensure fences and walls are sympathetic to the topography of the precinct.

Controls

- The use, design and materials of fences and walls are to be compatible with attractive fences and walls in the streetscape.
- Side and rear fences and walls can be built to a maximum height of 1.8m to screen the rear of the allotment from adjacent sites.

5.10.9 Safety

Objectives

- To ensure that the siting and design of buildings and spaces contributes to the actual and perceived personal and property safety of residents, workers and visitors and decreases the opportunities for committing crime in an area.
- To ensure development encourages people to use and interact in streets, parks and other public places without fear or personal risk.
- To increase the perception of safety in public and semi-public space including streets, car parks and parks.
- To encourage the incorporation of principles of crime prevention through urban design and landscaping into all developments.

Controls

- Pedestrian and communal areas are to have sufficient lighting to ensure a high level of safety. These areas must be designed to minimise opportunities for concealment.
- All developments are to incorporate the principles of crime prevention through environmental design.
- The creation of areas for concealment and blank walls facing the street is to be avoided.

5.10.10 Energy Efficiency

Objectives

- To promote energy efficient building envelopes.
- To minimise the energy required for heating cooling and lighting.

Controls

- Natural lighting (e.g. translucent roof panels) shall be provided wherever possible.
- Buildings shall provide effective sun shading for windows, wall surfaces and building entries (other than loading docks) by the use of design elements such as overhanging eaves and awnings, undercrofts, colonnades and external sun shading devices including screens.
- Appropriate building insulation shall be incorporated so as to minimise heat loss.
- White or light beige roof colours should be used.
- Walls exposed to afternoon sun should either be shaded, or should be the lightest acceptable colour.
- East and west facing windows should be minimised due to the hot, low summer sun and should be fitted with shading devices, including blade walls, and thick vegetation.
- Consideration should be given to the use of clear polycarbonate panels in selected north facing walls to increase passive heat gains.
- Consideration should be given to installation of solar water heating systems wherever possible.
- Hot water tanks and hot water pipes should be insulated.

5.10.11 Water Use

Objective

- To minimise the use of potable water.

Controls

- Allotments shall be provided with a separate piped supply of treated effluent, subject to continuing negotiations with Sydney Water, and other appropriate measures such as rainwater tanks.
- Water saving devices should be used where possible including:
 - Use of 6 litre/3 litre dual flush toilets;
 - All staff amenity appliances to have water efficiency ratings of at least AA according to the rating issued by Water Services Association Australia;
 - Separate hot and cold water taps over basins and sinks in staff amenity areas; and
 - Aerators are fitted to hot and cold water taps over basins and sinks in staff amenity areas.

5.10.12 Air Quality

Objective

- To minimise adverse impacts on air quality through the implementation of appropriate measures.

Controls

- Any development application for a use that may have the potential for significant adverse impact on air quality, including odour, should include an air quality impact assessment report.
- Applicants must demonstrate that the most efficient means of minimising emissions are being used.
- All potentially airborne materials such as sand, soil, cement or the like should be stored, screened and contained to minimize any potential effects of airborne pollution.

5.10.13 Noise and Vibration

Objective

- To minimise the potential impacts of noise and vibration on surrounding land uses.

Controls

- Development applications are to consider the potential noise and vibration impacts of a proposed use, including the proposed hours of operation, and should reflect the relevant standards and guidelines.
- Plant and machinery should be installed on site to ensure that no vibration is transmitted outside the limits of the site.
- Any development application for a use that may have the potential for significant adverse impact through noise and vibration, should include a noise and vibration impact assessment report.