



4.0

RESIDENTIAL DEVELOPMENT

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4.1 Site Responsive Design

4.1.1 Cut and Fill

OBJECTIVE

- a. To minimise the extent of cut and fill within residential allotments.
- b. To protect and enhance the aesthetic quality of the area by controlling the form, bulk and scale of land forming operations.
- c. To ensure that filling material is satisfactory and does not adversely affect the fertility or salinity of soil, or the quality of surface water or groundwater.
- d. To ensure that the amenity of adjoining residents is not adversely affected by any land forming operation.

CONTROLS

1. Development Applications are to illustrate where it is necessary to cut and/or fill land and provide justification for the proposed changes to the land levels.
2. Proposals requiring significant moving and filling of earth will be considered if they contribute to the overall quality of the development and the urban design outcomes for the area. A Validation Report will be required to be submitted to Council prior to the placement of imported fill on site. All fill shall comply with the Department of Natural Resources (now OEH) – “Site Investigation for Urban Salinity” and the DECC (now OEH) Contaminated Sites Guidelines – “Guidelines for the NSW Site Auditor Scheme (2nd edition) - Soil Investigation Levels for Urban Development Sites in NSW.”
3. Earth moved from areas containing noxious weed material must be disposed of at an approved waste management facility, and transported in compliance with the *Noxious Weeds Act 1993*.
4. No earthworks shall be undertaken whereby excavation exceeds 500 mm or fill exceeds 500 mm from the present surface level of the property without approval from Council.
5. On sloping sites, site disturbance is to be minimised by use of split level or pier foundation housing designs. Council will consider greater cut for basement garages.
6. Retaining walls within residential allotments are to be no greater than 500 mm high at any point on the edge of any residential allotment. A combined 1 m maximum retaining wall height is permissible between residential lots (2 x 500 mm).
7. Where terraced walls are proposed the minimum distance between each step is 0.5 m.
8. A variation to the retaining wall heights can be considered with supporting justification.
9. The maximum height of voids within individual allotments is 3 m (see **Figure 33**).
10. All retaining walls proposed for the site are to be identified.

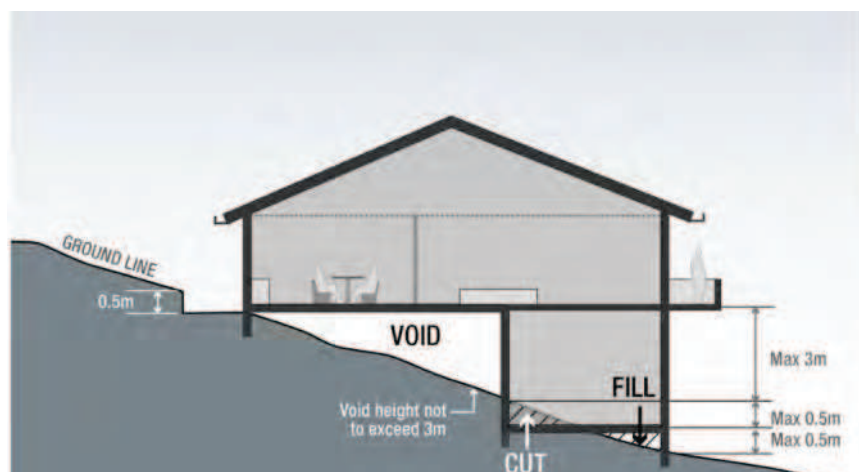


Figure 33 Maximum cut and fill with residential blocks

4.1.2 Safety and Surveillance

OBJECTIVES

- a. To ensure that the siting and design of buildings and spaces decreases the opportunities for committing crime through casual surveillance.
- b. To ensure that development encourages people to use streets, parks and other public places without fear of personal risk.

CONTROLS

1. Dwellings should be designed to overlook streets, lanes and other public or communal areas to provide casual surveillance. In the case of corner lots habitable windows are to be oriented to overlook the side street.
2. The design of all development, in particular, the public domain and community facilities is to enhance public surveillance of public streets and open space/conservation areas.
3. Encourage a sense of community ownership of open and public spaces (eg parks, footpaths, etc) through appropriate design of publicly accessible areas.
4. Use of roller shutters other than garages is not permitted on doors and windows facing the street. Any security railings must be designed to complement the architecture of the building.
5. Developments are to avoid the creation of areas for concealment and blank walls facing the street.
6. 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.
7. All development should aim to provide casual surveillance of the street as a means of passive security. This should be achieved by maximising outlooks and views, but minimising the overlooking of neighbouring properties. Opportunities for casual surveillance from dwellings / studios are to be incorporated into the design of shared driveways and where rear access is proposed from laneways.

8. All developments are to incorporate the principles of Crime Prevention through Environmental Design (CPTED).

4.1.3 Sustainable Building Design

OBJECTIVES

- a. To ensure that developments are environmentally sustainable in terms of energy and water use
- b. To reduce consumption of potable water and waste water discharge.
- c. To maximise opportunities for natural ventilation in residential development.
- d. To prevent further air pollution or disturbance to amenity of nearby residents from the use of open fire places and slow combustion stoves.

CONTROLS

1. New residential dwellings, including a residential component within a mixed use building and serviced apartments intended or capable of being strata titled are to be accompanied by a BASIX Certificate and are to incorporate all commitments stipulated in the BASIX Certificate.
2. Buildings and developments not affected by BASIX are to achieve a 40% reduction of baseline potable water consumption. Where the building or development is water intensive (i.e. high water user), specific water conservation objectives must be resolved with Council.
3. Building envelopes, depths and internal layouts of all residential development is to facilitate natural ventilation.
4. Open fire places and slow combustion stoves are prohibited.

4.2 Dwelling design controls

Under the provisions of the Precinct Plan, development consent is generally required for all dwellings in all residential zones, except where applications meet the criteria for complying development. This section establishes objectives and controls for the following types of residential accommodation as defined in the Growth Centres SEPP:

- dwelling houses;
- semi-detached dwellings;
- attached dwellings;
- abutting dwellings;
- multi-dwelling housing;
- dual occupancy dwellings;
- manor homes;
- residential flat buildings;
- secondary dwellings; and
- studio dwellings.

Additional controls for attached or abutting dwellings, secondary dwellings, studio dwellings, dual occupancies, multi-dwelling housing, manor homes, residential flat buildings and shop top housing are contained in **Section 5.0**.

It is acknowledged that innovative dwelling designs are evolving particularly on lots <300sqm, and design solutions may be developed that meet the objectives but do not comply with the relevant controls. In density bands $\geq 25dw/Ha$, there is the opportunity to vary the dwelling design controls where agreed to as part of an integrated housing development application at subdivision approval. .

Note: Reference should be made to the Glossary for descriptions of the various dwelling types, and to the relevant Precinct Plan for statutory definitions of land uses.

4.2.1 Summary of Key Controls

The following **Table 11** summarises the types of lots and housing. **Table 11** is diagrammatic only and directs readers to the relevant **Tables 12 to 16** containing the main development controls.

The key controls should be read in conjunction with the controls in the clauses that follow.

Table 11 Summary of lot and dwelling types

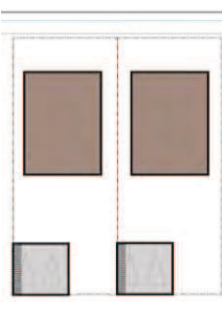
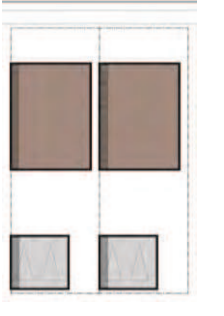
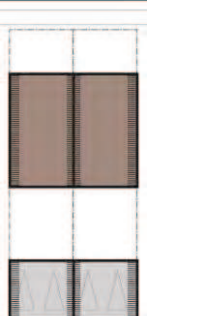
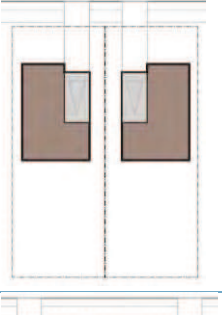
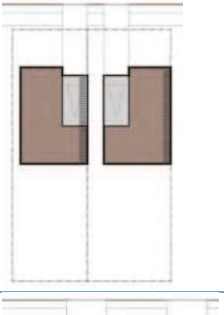
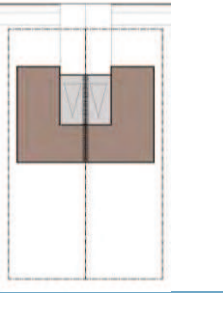
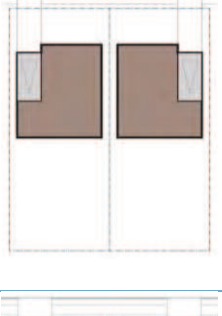
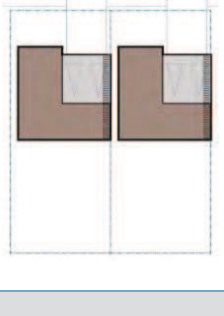
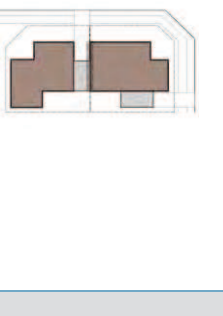
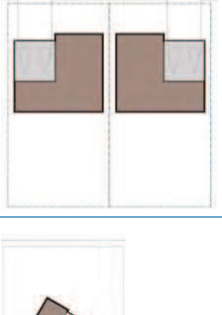
Access	Lot Width	Detached	Zero lot	Abutting/Attached	Controls Table
Rear access	≥4.5m				Table 12
	7>9m				Table 13
	≥9≥15m				Table 14
	>15m				Table 15
Front access	Ridge Area				Table 16

Table 12 Summary of key controls for lots with frontage width $\geq 4.5\text{m}$ for rear accessed dwellings

Element	Control	
Front setback (min)	4.5m to building facade line; 3.5m to building façade fronting open space 3.0m to articulation zone; 2.0m to articulation zone fronting open space.	In density bands $\geq 25\text{dw}/\text{Ha}$ 3m to building façade line, 1.5m to articulation zone.
Side setback (min)	Zero Lot, Attached or Abutting Boundary (benefited lot) Ground floor: 0m Upper floor: 0m	Detached Boundary 0.9m. If lot burdened by zero lot boundary, side setback must be within easement: 0.9m (single storey zero lot wall) 1.2m (double storey zero lot wall)
Maximum length of zero lot line on boundary	Attached/abutting house: 15m (excludes rear loaded garages) upper levels only. No limit to ground floor.	Zero lot house: 15m (excludes rear loaded garages)
Rear setback (min)	0.5m (rear loaded garages to lane)	
Corner lots secondary street setback (min)	1.0m	
Building height, massing and siting	In density areas $\leq 20\text{dw}/\text{Ha}$: 2 storeys maximum (3rd storey subject to clause 4.2.5 (1))	In density areas $\geq 25\text{dw}/\text{Ha}$: 3 storeys maximum
Site Coverage	Upper level no more than 40% of lot area. Refer also clause 5.2(3)	
Soft landscaped area	Minimum 15% lot area. The first 1m of the lot measured from the street boundary (excluding paths) is to be soft landscaped.	
Principal Private Open Space (PPOS)	In density areas $\leq 20\text{dw}/\text{Ha}$: Min 16m ² with minimum dimension of 3m.	In density areas $\geq 25\text{dw}/\text{Ha}$: Min 16m ² with minimum dimension of 3m. 10m ² per dwelling if provided as balcony or rooftop with a minimum dimension of 2.5m.
Solar access	In density areas $\leq 20\text{dw}/\text{Ha}$: At least 3 hours of sunlight between 9am and 3pm at the winter solstice (21 June) to at least 50% of the required PPOS of both the proposed development and the neighbouring properties.	In density areas $\geq 25\text{dw}/\text{Ha}$: At least 3 hours of sunlight between 9am and 3pm at the winter solstice (21 June) to at least 50% of the required PPOS of: - all affected neighbouring properties and, - at least 70% of the proposed dwellings.
	For alterations and additions to existing dwellings in all density areas, no reduction in the existing solar access to PPOS of the existing neighbouring properties.	
Garages and car parking	Rear loaded garage or car space only for lots of this type. Minimum garage width 2.4m (single) and 4.8m (double). 1-2 bedroom dwellings will provide at least 1 car space. 3 bedroom or more dwellings will provide at least 2 car spaces.	

Table 13 Summary of key controls for lots with frontage width $\geq 7\text{m}$ and $< 9\text{m}$ for front accessed dwellings

Element	Control	
Front setback (min)	4.5m to building facade line; 3.5m to building façade fronting open space 3.0m to articulation zone; 2.0m to articulation zone fronting open space 5.5m to garage line and minimum 1m behind the building line	
Side setback (min)	Zero Lot, Attached or Abutting Boundary Ground floor: 0m Upper floor: 0m	Detached Boundary 0.9m. If lot burdened by zero lot boundary, side setback must be within easement: 0.9m (single storey zero lot wall) 1.2m (double storey zero lot wall)
Maximum length of zero lot line on boundary	15m	
Rear setback (min)	4m (ground level) and 6m (upper levels)	
Corner lots secondary street setback (min)	1.0m	
Building height, massing and siting	In density areas $\leq 20\text{dw}/\text{Ha}$: 2 storeys maximum (3rd storey subject to clause 4.2.5 (1))	In density areas $\geq 25\text{dw}/\text{Ha}$: 3 storeys maximum
Site Coverage	Upper level no more than 50% of lot area	
Soft landscaped area	Minimum 15% lot area. The first 1m of the lot measured from the street boundary (excluding paths) is to be soft landscaped.	
Principal Private Open Space (PPOS)	In density areas $\leq 20\text{dw}/\text{Ha}$: Min 16m ² with minimum dimension of 3m.	In density areas $\geq 25\text{dw}/\text{Ha}$: Min 16m ² with minimum dimension of 3m. 10m ² per dwelling if provided as balcony or rooftop with a minimum dimension of 2.5m.
Solar access	In density areas $\leq 20\text{dw}/\text{Ha}$: At least 3 hours of sunlight between 9am and 3pm at the winter solstice (21 June) to 50% of the required PPOS of both the proposed development and the neighbouring properties.	In density areas $\geq 25\text{dw}/\text{Ha}$: At least 3 hours of sunlight between 9am and 3pm at the winter solstice (21 June) to at least 50% of the required PPOS of: - all affected neighbouring properties and, - at least 70% of the proposed dwellings.
	For alterations and additions to existing dwellings in all density areas, no reduction in the existing solar access to PPOS of the existing neighbouring properties.	
Garages and car parking	Single width garage or car space only. Carport and garage minimum internal dimensions: 3m x 5.5m. 1-2 bedroom dwellings will provide at least 1 car space. 3 bedroom or more dwellings will provide at least 2 car spaces. The garage must be less than 40% of the total area of the front façade.	
Layout	Driveway locations must be paired to preserve on-street parking spaces in front of lots. In density bands $\leq 25\text{ dw}/\text{Ha}$, total lot frontage of this lot type not to exceed 20% of the block length due to garage dominance and on-street parking impacts.	

Table 14 Summary of key controls for lots with frontage width $\geq 9\text{m}$ and $\leq 15\text{m}$ for front accessed dwellings

Element	Control	
Front setback (min)	4.5m to building facade line; 3.5m to building façade fronting open space or drainage land 3.0m to articulation zone; 2.0m to articulation zone fronting open space or drainage land 5.5m to garage line and 1m behind the building line	
Side setback (min)	Detached boundary: Ground Floor: 0.9m Upper Floor: 0.9m	Lots with a zero lot boundary (side A): Ground Floor: 0m (Side A), 0.9m (Side B) Upper Floor: 1.5m(Side A), 0.9m (Side B)
Length of zero lot line on boundary	11m	
Rear setback (min)	4m (ground level) and 6m (upper levels)	
Corner lots secondary street setback (min)	2.0m	
Building height, massing and siting	2 storeys maximum (3rd storey subject to clause 4.2.5 (1))	
Site coverage	Single storey dwellings: 60% Lot $\leq 375\text{sqm}$, upper level no more than 40% of lot area. Lot $> 375\text{sqm}$, upper level no more than 35% of lot area.	
Landscaped area	Minimum 25% of allotment area	
Principal Private Open space (PPOS)	Minimum 20m^2 with minimum dimension of 4.0m. 50% of the area of the required PPOS (of both the proposed development and adjoining properties) should receive at least 3 hours of sunlight between 9am and 3pm at the winter solstice (21 June)	
Garages and car parking	Lots $\geq 9\text{m}$ and $< 12.5\text{m}$: Where front accessed, single width garages only. Rear lane or side street accessed double garages permitted. Max. carport and garage door width not to exceed 3m (single) or 6m (double)	Lots $\geq 12.5\text{m}$ and $\leq 15\text{m}$: Front or rear accessed single, tandem or double garages permitted Triple garages are not permitted.
	1-2 bedroom dwellings will provide at least 1 car space. 3 bedroom or more dwellings will provide at least 2 car spaces.	

Table 15 Summary of key controls for lots with frontage width > 15m for front accessed dwellings

Element	Control
Front setback (min)	4.5m to building facade line 3.5m to building façade fronting open space or drainage land 3.0m to articulation zone 2.0m to articulation zone fronting open space or drainage 5.5m to garage line and 1m behind the building line
Side setback (min)	Ground Floor: 0.9m (Side A), 0.9m (Side B) Upper Floor: 0.9m (Side A), 1.5m (Side B)
Rear setback (min)	4m (ground level) and 6m (upper levels)
Corner lots secondary street setback (min)	2.0m
Building height, massing and siting	2 storeys (3rd storey subject to clause 4.2.5 (1))
Site coverage	Single storey dwellings: 50% Two storey dwellings: 50% at ground floor and 30% at upper floor
Landscaped area	Minimum 30% of the allotment area
Principal Private Open Space (PPOS)	Minimum 24m ² with minimum dimension 4m 50% of the area of the required principal private open space (of both the proposed development and adjoining properties) should receive at least 3 hours of sunlight between 9am and 3pm at the winter solstice (21 June).
Garages and car parking	Front or rear loaded double and tandem garages permitted Maximum garage door width 3m (Single) and 6m (Double) Triple garages are not permitted. 1-2 bedroom dwellings will provide at least 1 car space. 3 bedroom or more dwellings will provide at least 2 car spaces.

Table 16 Summary of key controls for lots in the **Ridge Area**

Element	Control
Front setback (min)	4.5m to building facade line Façade articulation is to be behind the front setback Garage setback 1m behind the building façade line
Side setback (min)	Ground Floor: 1.5m Upper Floor: 1.5m (Side A), 3m (Side B)
Rear setback (min)	10m
Corner lots secondary street setback (min)	4.5m
Building height, massing and siting	2 storeys (3rd storey subject to clause 4.2.5 (1))
Site coverage	Single storey dwellings: 35% Two (or more) storey dwellings: 25% ground floor and 15% upper floors
Landscaped area	Single storey dwellings: Minimum 55% of the allotment area Two or more storey dwellings: Minimum 60% of the allotment area
Principal Private Open Space (PPOS)	Minimum 24m ² with minimum dimension 4m 50% of the area of the required principal private open space (of both the proposed development and adjoining properties) should receive at least 3 hours of sunlight between 9am and 3pm at the winter solstice (21 June).
Garages and car parking	Front or rear loaded double and tandem garages permitted Maximum garage door width 3m (Single) and 6m (Double) where garages front a public road. Triple garages permitted where at least one garage door is not visible from the street or where the total width of the garages is less than 50% of the total width of the building façade. 1-2 bedroom dwellings will provide at least 1 car space. 3 bedroom or more dwellings will provide at least 2 car spaces.

4.2.2 Streetscape and architectural design

Growth Centres neighbourhoods will be composed of a variety of streets with different but equally appealing characters and built form intensity. In low density precincts, suburban streetscapes will be most common but there will also be some streets with a more urban village character. In higher density precincts, urban village streets will be more common but there will also be some suburban streetscapes. The objective is to avoid a monoculture of the one type of street which is neither a successful suburban or urban street.

Figure 34 illustrates how the designed combination of built form, lot size, setbacks, garaging and landscaping can create distinctive streetscape characters ranging from the low intensity 'garden suburban' character based on landscaped private space around buildings to the built form intensity and public landscapes of urban streets.



Figure 34 The combination of built form, lot size, garaging and landscaping creates different streetscapes.

OBJECTIVES

- a. To ensure that buildings are designed to enhance the built form and character of the neighbourhood by encouraging innovative and quality designs that contribute to unified streetscapes.
- b. To encourage a diversity of house types.
- c. To provide a clear distinction between private and public space and to encourage casual surveillance of the street.
- d. To reinforce significant street intersections particularly on open space and other key strategic areas through articulation of corner buildings.

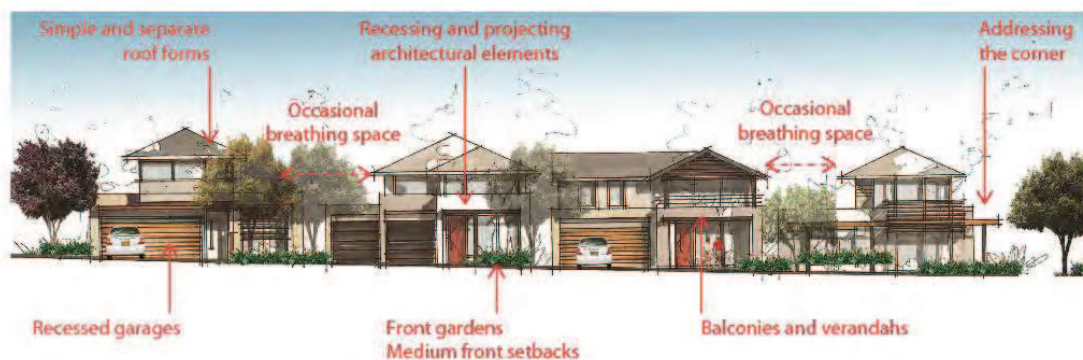
CONTROLS

1. The primary street facade of a dwelling should address the street and must incorporate at least two of the following design features:
 - entry feature or porch;
 - awnings or other features over windows;
 - balcony treatment to any first floor element;
 - recessing or projecting architectural elements;
 - open verandah;
 - bay windows or similar features; or
 - verandahs, pergolas or similar features above garage doors.
2. Corner lot development should emphasise the corner. The secondary street facade for a dwelling on a corner lot should address the street and must incorporate at least two of the above design features. Landscaping in the front setback on the main street frontage should also continue around into the secondary setback.
3. Modulation of the façade should be integral to the design of the building, rather than an unrelated attached element.
4. Eaves are to provide sun shading and protect windows and doors and provide aesthetic interest. Except for walls built to the boundary, eaves should have a minimum of 450mm overhang (measured to the fascia board). Council will consider alternative solutions to eaves so long as appropriate sun shading is provided to windows and display a high level of architectural merit.
5. The pitch of hipped and gable roof forms on the main dwelling house should be between 22.5 degrees and 35 degrees. Skillion roofs, roofs hidden from view by parapet walls, roofs on detached garages, studios and ancillary buildings on the allotment are excluded from this control.
6. Front facades are to feature at least one habitable room with a window onto the street.
7. Carports and garages are to be constructed of materials that complement the colour and finishes of the main dwelling.
8. Streets should be fronted with similar housing types to create a consistent street character. For example, a 'garden suburban' street character will be created where most dwellings are detached on lot widths $\geq 15\text{m}$, perhaps with deeper lots allowing for larger front setbacks and generous landscaping around dwellings. A suburban street character will be created where most dwellings are front loaded, detached or zero lotted on lot

widths between 9-15m. An urban street character will be created where most dwellings are zero lotted, attached/abutting on lot widths less than 9m with rear garages. Streetscape design principles are illustrated at **Figure 35**.



Garden Suburban streetscape principles



Suburban streetscape principles



Urban streetscape principles

Figure 35 Streetscape design principles

4.2.3 Front setbacks

OBJECTIVES

- a. To enable the integration of built and landscape elements to create an attractive, visually consistent streetscape.
- b. To encourage simple and articulated building forms.
- c. To ensure garages do not dominate the streetscape.

CONTROLS

1. Dwellings are to be consistent with the front setback controls and principles in the relevant **Table 12 to Table 16, Figure 36 and Figure 37**.
2. On corner lots, front setback controls are to be consistent with **Figure 38**.
3. To achieve a desired streetscape character, the building façade front setback for a series of lots can be more or less than the setbacks shown in **Tables 12 to 16** where agreed to as part of the preparation of a Building Envelopes Plan or integrated housing development application at subdivision approval and the front setbacks are attached to the lot titles. However, the front setback to garages must be a minimum of 5.5m.
4. Elements permitted in the articulation zone (shown on **Figure 36, Figure 37 & Figure 38**) include those items listed in Control Streetscape and architectural design 4.2.2 (1).
5. Except for rear loaded garages, garages are to be setback at least 5.5m from the street boundary and at least 1m behind the building line of the dwelling.
6. Any building along Windsor Road must have a minimum setback of 20 m from this road.

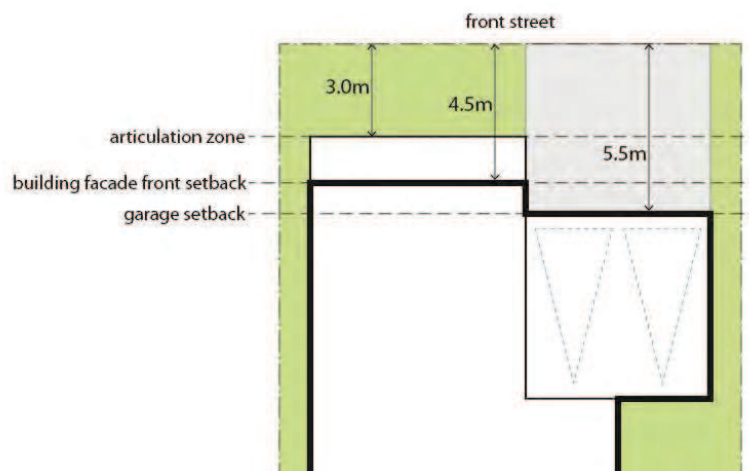


Figure 36 Minimum front setback distances

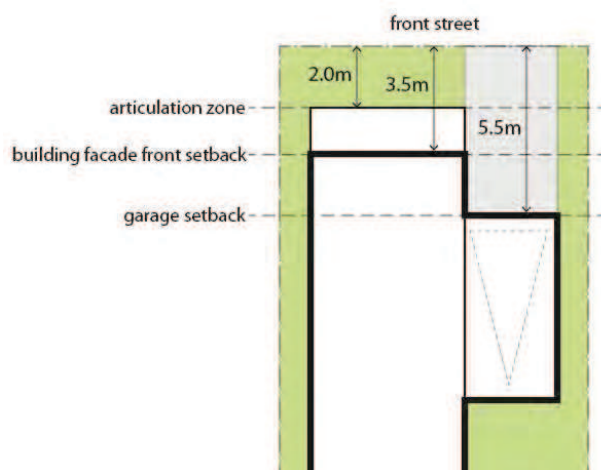


Figure 37 Minimum front setbacks for dwellings fronting open space or drainage land

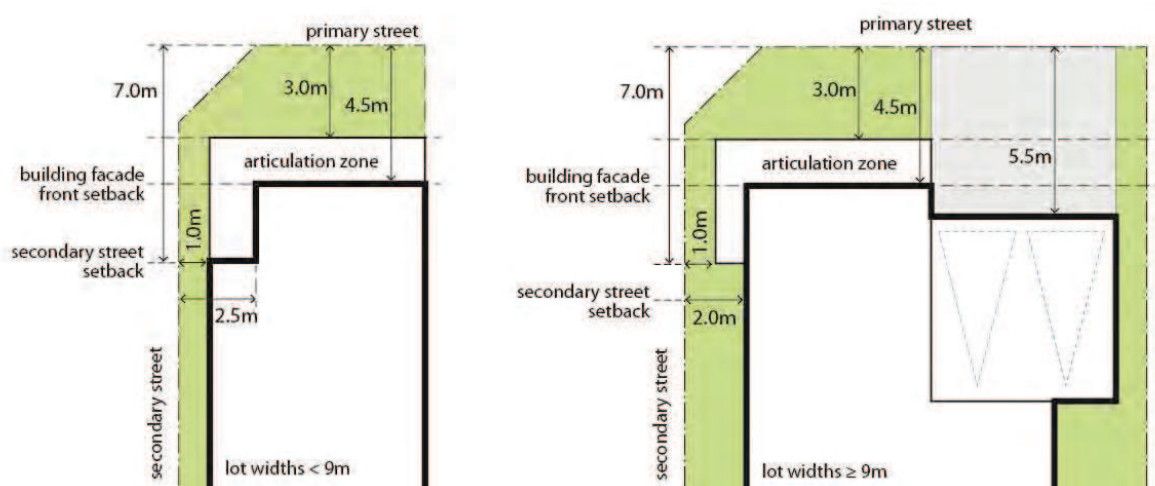


Figure 38 Minimum setbacks for corner lot dwellings

4.2.4 Side and rear setbacks

OBJECTIVES

- a. To create an attractive and cohesive streetscape that responds to the character areas.
- b. To minimise the impacts of development on neighbouring properties.
- c. To provide appropriate separation between buildings.
- d. To create opportunities for articulation on the side walls.

CONTROLS

1. All development is to be consistent with the side and rear setback controls in the relevant **Table 12 to Table 16** and principles in **Figure 39**.
2. The location of a zero lot line (Side A) is to be determined primarily by topography and should be on the low side of the lot to minimise water penetration and termite issues. Other factors to consider include dwelling design, adjoining dwellings, landscape features, street trees, vehicle crossovers and the lot orientation as illustrated at **Figure 39**.
3. For attached or semi-detached dwellings the side setback only applies to the end of a row of attached housing, or the detached side of a semi-detached house.
4. Pergolas, swimming pools and other landscape features/structures are permitted to encroach into the rear setback.
5. The minimum setback to dwellings from a side boundary that adjoins Public Recreation or Drainage land shall be:
 - 3m in the R2, R3 and R4 zones.
 - 4.5m in the Ridge Area.
6. For dwellings with a minimum 900mm side setback, projections permitted into side and rear setback areas include eaves (up to 450 millimetres wide), fascias, sun hoods, gutters, down pipes, flues, light fittings, electricity or gas meters, rainwater tanks and hot water units.
7. No overhanging eaves, gutters or services (including rainwater tanks, hot water units, air-conditioning units or the like) of the dwelling on the benefited lot will be permitted within the easement. Any services and projections permitted under **Clause 4.2.4 (6)** within the easement to the burdened lot dwelling should not impede the ability for maintenance to be undertaken to the benefitted lot.

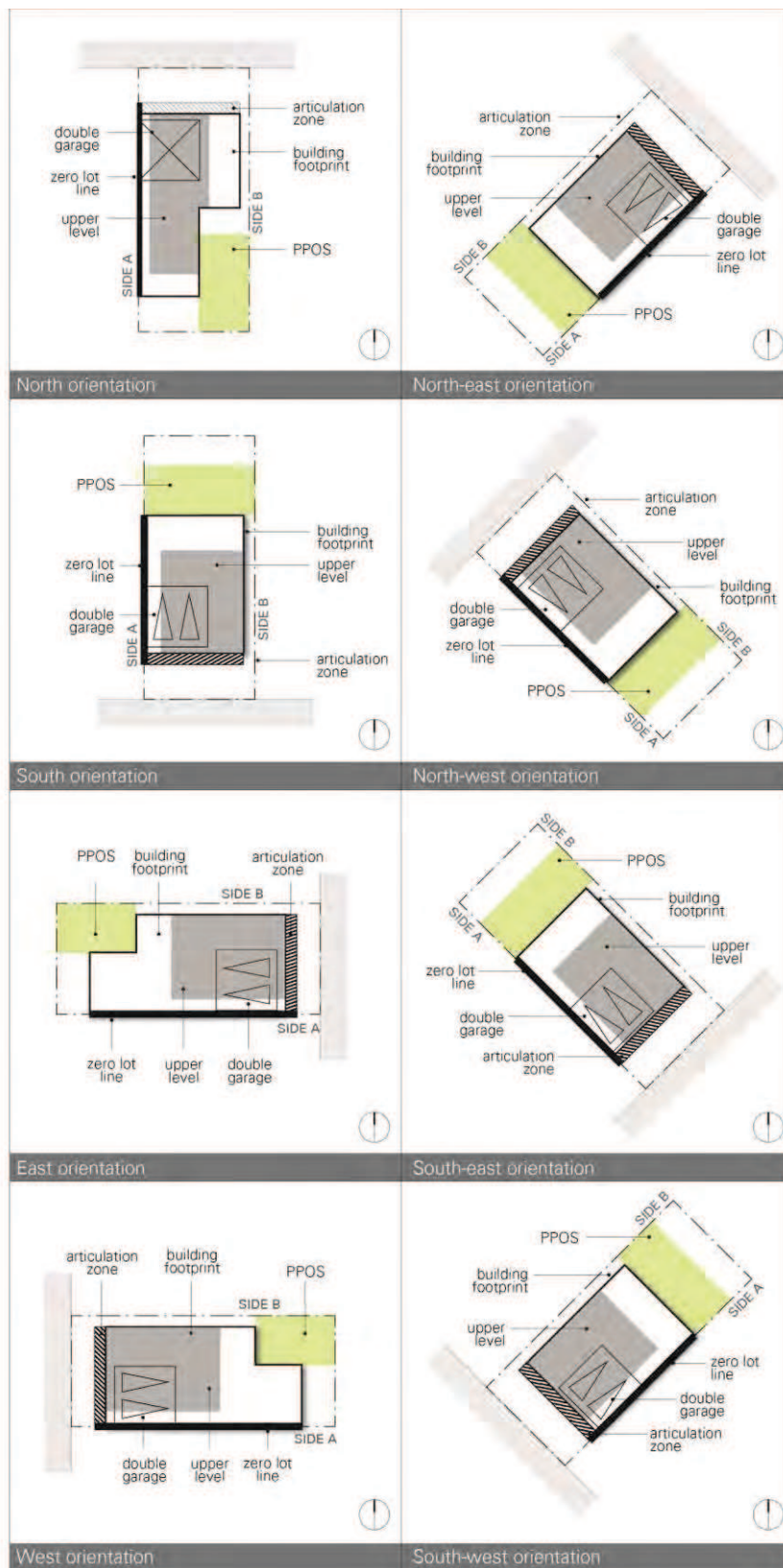


Figure 39 Dwelling and open space siting principles for different lot orientations

8. For battle-axe lots without a street facing elevation setbacks are to be determined in the context of surrounding lots, built form and the location of private open space. An example is shown in **Figure 40**.
9. The upper floor of dwellings on battle-axe lots must be setback so as not to impact adversely on the existing or future amenity of any adjoining land on which residential development is permitted, having regard to overshadowing, visual impact and privacy.
10. For a battle-axe lot with direct frontage to land zoned for a public purpose or a street facing elevation (such as access denied lots), the front setback controls in **Section 4.2.3** are to apply to the lot boundary adjoining the public purpose zone, and side and rear setbacks are to apply to lot boundaries determined relative to the front setback boundary as shown in **Figure 41**.
11. For corner lots $\geq 15\text{m}$ lot width with shallow depths (i.e. approximately square corner lots), the rear setback can be varied to be consistent with the side setback in **Table 14** and **Table 15** provided the minimum private open space and solar access requirements to the proposed and adjoining properties are met.



Figure 40 Battle axe lot (without any street frontage) example of setbacks

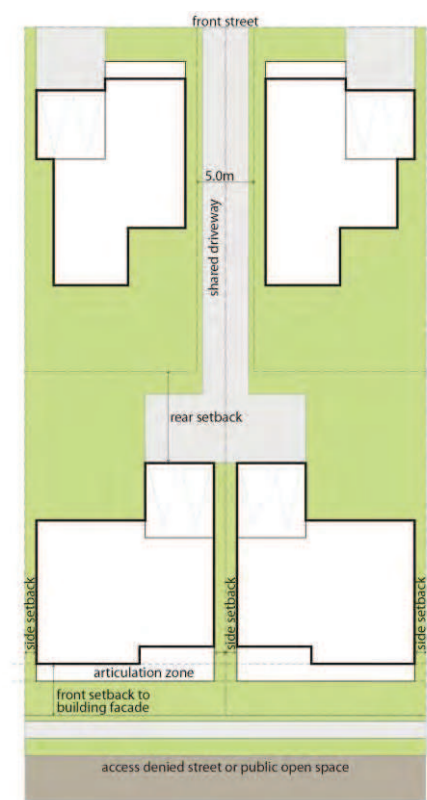


Figure 41 Battle axe lot (fronting access denied road) setbacks

4.2.5 Dwelling Height, Massing and Siting

OBJECTIVES

- a. To ensure development is of a scale appropriate to protect residential amenity.
- b. To ensure building heights achieve built form outcomes that reinforce quality urban and building design.

CONTROLS

1. Dwellings are to be generally a maximum of 2 storeys high. Council may permit a 3rd storey if it is satisfied that:
 - the dwelling is located on a prominent street corner; or
 - the dwelling is located adjacent to a neighbourhood or local centre, public recreation or drainage land, a golf course, or a riparian corridor; or
 - the dwelling is located on land with a finished ground level slope equal to or more than 15%, and is not likely to impact adversely on the existing or future amenity of any adjoining land on which residential development is permitted, having regard to overshadowing, visual impact and any impact on privacy; or
 - the third storey is within the roof line of the building (i.e. an attic).

Note: Reference should be made to clause 4.2.3 of the relevant Precinct Plan for statutory height limits.

2. All development is to comply with the maximum site coverage as indicated in the relevant **Table 12 to Table 16**.
3. Site coverage is the proportion of the lot covered by a dwelling house and all ancillary development (e.g. carport, garage, shed) but excluding unenclosed balconies, verandahs, porches, al fresco areas etc.
4. The ground floor level shall be no more than 1m above finished ground level.
5. Dwellings on a battle-axe-lot without public open space or street frontage are to be a maximum of 2 storeys high.

4.2.6 Landscaped Area

Landscaped area is defined as an area of open space on the lot, at ground level, that is permeable and consists of soft landscaping, turf or planted areas and the like.

OBJECTIVES

- a. To encourage the use of native flora species and low maintenance landscaping.
- b. To contribute to effective stormwater management, management of micro-climate impacts and energy efficiency.
- c. To ensure a balance between built and landscaped elements in residential areas.
- d. To create the desired street character.

CONTROLS

1. The minimum soft landscaped area within any residential lot is to comply with the controls and principles in the relevant **Table 12 to Table 16**. **Figure 42** illustrates areas of a lot that can contribute towards the provision of soft landscaped area and principal private open space.
2. Plans submitted with the development application must indicate the extent of landscaped area and nominate the location of any trees to be retained or planted.
3. Surface water drainage shall be provided as necessary to prevent the accumulation of water.
4. Use of low flow watering devices is encouraged to avoid over watering. Low water demand drought resistant vegetation is to be used for the majority of landscaping, including native salt tolerant trees.

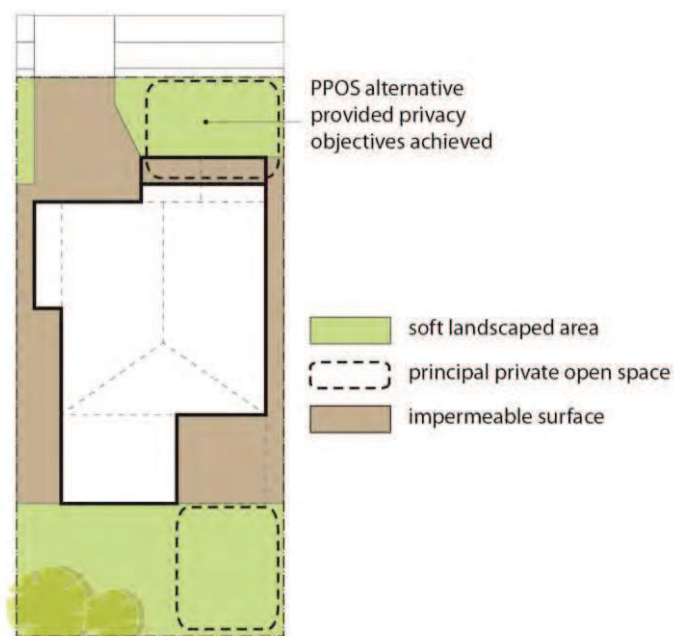


Figure 42 Soft landscaped area and principal private open space

4.2.7 Private Open Space

OBJECTIVES

- a. To provide a high level of residential amenity with opportunities for outdoor recreation and relaxation.
- b. To enhance the spatial quality, outlook, and usability of private open space.
- c. To facilitate solar access to the living areas and private open spaces of the dwelling.

CONTROLS

1. Each dwelling is to be provided with an area of Principal Private Open Space (PPOS) consistent with the requirements of the relevant **Table 12 to Table 16**.
2. The location of PPOS is to be determined having regard to dwelling design, allotment orientation, adjoining dwellings, landscape features, topography.
3. The PPOS is required to be conveniently accessible from the main living area of a dwelling or alfresco room and have a maximum gradient of 1:10. Where part or all of the PPOS is permitted as a semi-private patio, balcony or rooftop area, it must be directly accessible from a living area.
4. Open space at the front of the dwelling can only be defined as PPOS where this is the only means of achieving the solar access requirements of control 1 above. PPOS at the front of a dwelling must be designed to maintain appropriate privacy (for example raised level above footpath or fencing or hedging) and be consistent with the streetscape design controls in **Section 4.2.2**.

4.2.8 Garages, Storage, Site Access and Parking

OBJECTIVES

- a. To control the number, dimensions and location of vehicle access points. To reduce the visual impact of garages, carports, and parking areas on the streetscape.
- b. To provide safe, secure and convenient access to parking within garages, carports and parking areas, with casual surveillance of private driveways from dwellings and from the street.
- c. To minimise conflict between pedestrians and vehicles at the junction of driveways and footpaths.
- d. To provide predominantly on-site parking for residents.

CONTROLS

1. 1-2 bedroom dwellings will provide at least 1 car space.
2. 3 bedroom or more dwellings will provide at least 2 car spaces.
3. At least one car parking space must be located behind the building façade line where the car parking space is accessed from the street on the front property boundary.

Note: A car space may include a garage, carport or other hard stand area constructed of materials suitable for car parking and access. The required car parking spaces specified above may be provided using a combination of these facilities, including use of the driveway (within the property boundary only) as a parking space.

4. Vehicular access is to be integrated with site planning from the earliest stages of the project to eliminate/reduce potential conflicts with the streetscape requirements and traffic patterns, and to minimise potential conflicts with pedestrians.
5. Driveways are to have the smallest configuration possible (particularly within the road verge) to serve the required parking facilities and vehicle turning movements and shall comply with AS2890.
6. The location of driveways is to be determined with regard to dwelling design and orientation, street gully pits and trees and is to maximise the availability of on-street parking.

Notes: Section 3.2 requires plans of subdivision to nominate driveway locations and preferred building envelopes. The design of dwellings should refer to the approved subdivision plans and be consistent with the nominated driveway locations to the greatest practical extent.

Controls for driveways and access to corner lots are contained in **Section 3.1.4 and Figure 11**.

7. Driveways are not to be within 1m of any drainage facilities on the kerb and gutter.
8. Planting and walls adjacent to driveways must not block lines of sight for pedestrians, cyclists and motorists.
9. Driveways are to have soft landscaped areas on either side, suitable for water infiltration.
10. Garages are to be designed and located in accordance with the controls in relevant **Table 12 to Table 16**.
11. Garage design and materials are to be consistent with the dwelling design.

FOR FRONT LOADED GARAGES:

12. Single garage doors should be a maximum of 3m wide and double garage doors should be a maximum of 6m wide.
13. Minimum internal dimensions for a single garage are 3m wide by 5.5m deep and for a double garage 5.6m wide by 5.5m deep.
14. Garage doors are to be visually recessive through use of materials, colours, and overhangs such as second storey balconies.
15. Three car garages are only permitted in the Ridge Area where:
 - At least one of the garage doors is not directly visible from a public road; or
 - One of the car spaces is in a stacked configuration; or
 - The total width of the garage is not more than 50% of the length of the building facade.

FOR GARAGES ACCESSED FROM A LANEWAY OR SHARED DRIVEWAY:

16. Minimum garage door width of 2.4m (single) and 4.8m (double).
17. All garages, site access and parking will be designed in accordance with the Growth Centres Practice Note: Laneways.
18. All garages, site access and parking will be designed in accordance with the **Department of Planning and Environment Delivery Note: Laneways**

4.2.10 Visual and Acoustic Privacy

OBJECTIVES

- a. To site and design dwellings to meet projected user requirements for visual and acoustic privacy, whilst minimising visual and acoustic impacts of development on adjoining properties.

CONTROLS

1. Direct overlooking of main habitable areas and private open spaces should be minimised through building layout, window and balcony location and design, and the use of screening devices, including landscaping.
2. Habitable room windows with a direct sightline to the habitable room windows in an adjacent dwelling within 9 metres are to:
 - be obscured by fencing, screens or appropriate landscaping; or
 - be offset from the edge of one window to the edge of the other by a distance sufficient to limit views into the adjacent window; or
 - have a sill height of 1.7 metres above floor level; or
 - have fixed obscure glazing in any part of the window below 1.7 metres above floor level; or
 - second storey windows on side elevations are only to be located at the rear or front of the dwelling.
3. The design of dwellings must minimise the opportunity for sound transmission through the building structure, with particular attention given to protecting bedrooms and living areas.
4. In attached dwellings, bedrooms of one dwelling are not to share walls with living spaces or garages of adjoining dwellings, unless it is demonstrated that the shared walls and floors meet the noise transmission and insulation requirements of the Building Code of Australia.
5. Living areas and service equipment such as air conditioning units must be located away from bedrooms of neighbouring dwellings.
6. Dwellings along arterial and sub-arterial roads should be designed to minimise the impact of traffic noise.

4.2.11 Fencing

OBJECTIVES

- a. To ensure boundary fencing is of a high quality and does not detract from the streetscape.

CONTROLS

1. Front fencing shall be in harmony with the street, consistent in design and style with its dwelling and a maximum of 1m high. Front fences shall not be made of Colorbond. Separate application is to be made for fences higher than 1m and for courtyard walls. Side and rear fencing are to be a maximum of 1.8 m high. Front fences and walls are to not impede safe sight lines for traffic.
2. On corner lots the preferred outcome is for the dwelling to front both street frontages providing a better overall streetscape presentation. Where fencing to the secondary street frontage is proposed, it is not to exceed 1.8 m high for more than one third of the length of the secondary road frontage, if relevant.
3. On corner lots the front fencing style is to be continued along the secondary street frontage to at least 1 m behind the building line of the dwelling. Side fences higher than 1 m are not to extend past the Building Facade Line or Garage Building Line.
4. Where a dwelling is located adjacent to open space, boundary fencing is to be of a high quality material and finish. The design of the fencing is to permit casual surveillance of the open space and provide the dwelling with outlook towards the open space. Fencing that adjoins mews or rear access ways is to permit casual surveillance. Colorbond or timber paling or lapped/capped fencing can only be used internally between dwelling lots.
5. Where cut is proposed on the boundary of a lot, retaining walls are to be constructed with side fence posts integrated with its construction (relevant construction details are required with retaining wall approval). Otherwise retaining walls must be located a minimum of 450mm from the side or rear boundary of the lot containing the cut.

5.0 Additional controls for certain dwelling types

5.1 Attached or abutting dwellings

Additional controls for attached or abutting dwellings are outlined below, and should be read in conjunction with those in **Section 4.1.2**.

OBJECTIVES

- a. To ensure that the development of attached or abutting dwellings creates an architecturally consistent street character.

CONTROLS

1. It is preferred that garages for attached dwellings are located at the rear of the lot. Where attached dwellings have frontage to a collector road, all vehicle access and parking is to be located at the rear of the lot.
2. Attached or abutting dwellings should have a pleasing rhythm and order when seen together as a group, rather than appear as a random arrangement of competing dwellings. Each dwelling should benefit from the unified design of the whole form, a co-ordinated style and base colour palette. Individuality can be added as small details or accent colours, rather than strikingly different forms.

5.2 Secondary dwellings, studio dwellings and dual occupancies

Controls for secondary dwellings, studio dwellings or dual occupancies are in part determined by whether the secondary, principal or dual occupancy dwelling is proposed at the time of the application or at some point in the future to be strata subdivided. Strata subdivisions create the need for separate or common property dwelling entries, parking and open space to service each dwelling.

The **Glossary** of this DCP provides further explanation and examples of secondary dwelling, studio dwellings or dual occupancy types. The controls that follow apply to all forms of secondary dwellings, studio dwellings and dual occupancies.

OBJECTIVES

- a. To enable the development of a diversity of dwelling types.
- b. To contribute to the availability of affordable housing.
- c. To promote innovative housing solutions that are compatible with the surrounding residential environment.
- d. To provide casual surveillance to rear lanes.

CONTROLS - SECONDARY DWELLINGS AND STUDIO DWELLINGS

1. Secondary dwellings and studio dwellings are to comply with the controls in **Section 4**, except where the controls in this clause differ, in which case the controls in this clause take precedence.
2. Secondary dwellings and studio dwellings are to comply with the key controls in **Table 17**.
3. The maximum site coverage control for upper floors in the relevant **Table 12 to Table 16** may be exceeded by the combined upper floor coverage of the secondary or studio dwelling and principal dwelling, providing that:
 - The privacy of the principal dwelling and dwellings on adjoining land is not compromised; and

- Solar access to the principal private open space of neighbouring lots is not significantly reduced.
- 4. The maximum gross floor area of a studio dwelling is 75m².
- 5. The finishes, materials and colours of the secondary dwelling or studio dwelling are to complement the principal dwelling in its construction features.
- 6. For secondary dwellings, windows and private open spaces must not overlook the private open space of any adjacent dwellings. For studio dwellings, windows and private open spaces must not overlook the private open space of any adjacent dwellings including the principal dwelling. Windows that potentially overlook adjacent lots must either have obscured glazing, be screened or have a minimum sill height of 1.5m above floor level.
- 7. Secondary or studio dwellings and associated garages may have a zero lot setback to one side boundary and may be attached to another garage/secondary dwelling on an adjoining lot, particularly where the secondary or studio dwelling is associated with an attached or semi-detached dwelling.

Table 17 Key controls for secondary dwellings and studio dwellings

Element	Secondary Dwelling	Studio Dwelling (strata)
On-site car parking	No additional car parking space required.	One additional dedicated on-site car parking space. Car parking space to be located behind building facade line of principal dwelling. Car parking space not to be in a stacked configuration.
Principal Private open space	No separate private open space required.	Balcony accessed directly off living space having minimum size of 8.0m ² with minimum dimension of 2m -
Subdivision	Subdivision from principal dwelling not permitted.	Strata title subdivision only from the principal dwelling on the land
Access	Separate direct access to a street, laneway or shared driveway way not required.	Access to be separate from the principal dwelling and is to front a public street, lane or shared private access way or Combined access for the principal dwelling and secondary dwelling to be through communal land as shown on the strata plan.
Services and facilities	No separate services or facilities required.	Provision for separate services, such as mail delivery and waste collection, and an on-site garbage storage area so that bins are not visible from public street or laneway. To be located on a street address that is able to be accessed by garbage collection and mail delivery services. May be serviced from the front residential street via the principal dwelling lot.

- 8. Where the secondary or studio dwelling is built to a zero lot line on a side boundary, windows are not to be located on the zero lot wall unless that wall adjoins a laneway, public road, public open space or drainage land.
- 9. Studio dwellings are to have balconies or living areas that overlook laneways for casual surveillance.

10. Rear garages with secondary or studio dwellings may have first level balconies facing the lane provided the balcony remains within the lot boundary. Where 2m deep, overhanging balconies for private open space requirements of studio dwellings are located along a lane, the application must demonstrate how garages setback underneath avoid creating an overly wide lane and ambiguous space opportunities for illegally parked cars, trailers, bins etc.
11. Where a secondary or studio dwelling is built over a rear garage and separated from the upper levels of the principal dwelling, there must be a minimum separation of 5m between the upper floor rear façade of the principal dwelling and the secondary or studio dwelling.
12. Studio dwellings are to be located at the rear of the lot only where the lot has access from a rear lane or secondary street on a corner lot.
13. Studio dwellings must comply with separation controls nominated in Australian Standards and the National Construction Code.
14. Studio dwellings are not permitted where the principal dwelling is an attached dwelling, unless:
 - The studio dwelling is located above a rear loaded garage; and
 - The studio dwelling has direct access to a public road or laneway; and
 - Garbage and mail facilities are accessible by residents and by service vehicles.

CONTROLS – DUAL OCCUPANCIES

1. Dual occupancies are to comply with the controls in **Section 4**, except where the controls in this clause differ, in which case the controls in this clause take precedence.
2. The maximum site coverage control for second storeys in the relevant **Table 12 to Table 16** may be exceeded by the combined 2nd storey coverage of both dwellings in a dual occupancy, providing that:
 - The privacy of the principal dwelling and dwellings on adjoining land is not compromised; and
 - Solar access requirements for the principal private open space can be met for the principal dwelling and dwellings on adjoining lots.
3. The design of both dwellings in a dual occupancy development is to be consistent in construction features, finishes, materials and colours.
4. Detached dual occupancy dwellings are not to include zero lot lines for the second dwelling where the second dwelling is located at the rear of the lot.
5. Dual occupancy development is not permitted on a lot that contains an attached dwelling.
6. Dual occupancy dwellings are permitted at the rear of lots (i.e. behind a dwelling that has frontage to a principal street, whether attached or detached to that dwelling) only where:
 - Each dwelling has direct pedestrian and vehicle access to a public road; and
 - Garbage and mail facilities are accessible by service vehicles and by the occupants of the dwellings.
7. Dual occupancy development referred to in control 6 above is preferred to be located on corner lots.
8. For dual occupancies on corner lots, the rear setback can be varied to be consistent with the side setbacks in **Section 4.2.4** provided the minimum private open space and solar access requirements to the proposed and adjoining properties are met.

9. Where the dual occupancy dwellings are to be strata subdivided:
 - private open space is to be provided for each dwelling in accordance with the relevant controls in **Table 12 to Table 16**, or
 - shared private open space is to be provided equivalent to 15% of the site area and shown as communal space on the strata plan, and a minimum area of private open space of 10m² with a minimum dimension of 2.5m is to be provided for each dwelling.
10. The minimum landscaped area on a lot containing a dual occupancy development is to be 20% of the site area.
11. Where practical for front loaded driveway access, shared driveway crossings of the nature strip are to be provided to service both dwellings.

5.3 Multi dwelling housing

OBJECTIVES

- a. To ensure that the design of multi-dwelling housing is consistent with the character of residential areas within the Precinct.
- b. To ensure the quality of multi-dwelling housing is of a high quality and contributes to the amenity of residents.

CONTROLS

1. Multi-dwelling housing sites are to have direct frontage to a public road (i.e. not on battle-axe lots).
2. Multi-dwelling housing is to comply with the controls in **Table 18**.
3. Controls for adaptable dwellings (requirement triggered by minimum number of dwellings in development, located elsewhere in DCP) also apply to multi-dwelling housing. Adaptable dwellings are preferably to be single level accommodation at ground level and be located on the street frontage.
4. A landscape plan is to be submitted with every application for multi-dwelling housing.
5. Where a multi dwelling housing development includes a studio dwelling with rear lane vehicle access, the controls for a studio dwelling shall apply.

Table 18 Key controls for multi dwelling housing

Element	Controls
Site coverage (maximum)	50%
Landscaped area (minimum)	30% of site area
Principal Private open space (PPOS)	Min 16m ² with minimum dimension of 3m. 10m ² per dwelling if provided as balcony or rooftop with a minimum dimension of 2.5m.
Front setback (minimum)	4.5m to building façade line; 3.0m to articulation zone
Corner lots secondary street setback (min)	2m
Side setback (minimum)	Ground floor 0.9m. Upper floor 0.9m
Rear setback (minimum)	4m (excluding rear lane garages or studio dwellings) 0.5m to rear lane (garages or studio dwellings)
Zero lot line (minimum)	Not permitted on adjacent lot boundaries (except rear lane garages and studio dwellings)
Internal building separation distance (minimum)	5m (unless dwellings are attached by a common wall)
Car parking spaces	1 car parking space per dwelling, plus 0.5 spaces per 3 or more bedroom dwelling, plus 1 visitor space per 5 dwellings. Car parking spaces to be behind building line or garages fronting the street to be set back a minimum of 1m from the building setback Where garages front the street, the maximum width of a garage door is 6m and each garage is to be separated by a dwelling façade or landscaped area.
Garages and car parking dimensions (minimum)	Covered: 3m x 5.5m Uncovered: 2.5m x 5.2m Aisle widths must comply with AS 2890.1 1-2 bedroom dwellings will provide at least 1 car space. 3 bedroom or more dwellings will provide at least 2 car spaces.

5.4 Controls for residential flat buildings, manor homes and shop top housing

The controls in **Clause 5.3** do not apply to residential flat buildings, manor homes and shop top housing, unless specifically referenced in the provisions that follow. The following clauses set out the controls for these types of housing. Additional controls for residential flat buildings and shop top housing may be contained in *SEPP 65 – Design Quality of Residential Apartment Development*.

OBJECTIVES

- a. To establish a high quality residential environment where all dwellings have a good level of amenity.
- b. To encourage a variety of housing forms within residential areas.
- c. To ensure the provision of housing that will, in its adaptable features, meet the access and mobility needs of any occupant.
- d. To ensure shop top housing and mixed use developments are appropriate in terms of form and scale for their location.
- e. To ensure shop top housing and mixed use developments reflect the role of centres as articulated within Council's Centres Direction.

CONTROLS

1. In density areas of 20dw/Ha and 25dw/Ha, manor homes may only be located on corner lots.
2. Residential flat buildings are to:
 - be located on sites with a minimum street frontage of 30m, and
 - have direct frontage to an area of the public domain (including streets and public parks), and
 - not adversely impact upon the existing or future amenity of any adjoining land upon which residential development is permitted with respect to overshadowing impact, privacy impact or visual impact.
3. All residential flat buildings are to be consistent with:
 - the guidelines and principles outlined in *SEPP No. 65 – Design Quality of Residential Apartment Development*; and
 - the primary controls set out in **Table 19**, which take precedence over the above where there is any inconsistency.
4. In all residential flat building developments containing 10 dwellings or more, a minimum of 10% of all apartments are to be designed to be capable of adaptation for access by people with all levels of mobility. Dwellings must be designed in accordance with the Australian *Adaptable Housing Standard (AS 4299-1995)*, which includes 'pre-adaptation' design details to ensure visitability is achieved.
5. Where possible, adaptable dwellings are to be located on the ground floor. Dwellings located above the ground level of a building may only be provided as adaptable dwellings where lift access is available within the building. The lift access must provide access from the basement to allow access for people with disabilities.

6. The development application must be accompanied by certification from an accredited Access Consultant confirming that the adaptable dwellings are capable of being modified, when required by the occupant, to comply with the *Australian Adaptable Housing Standard (AS 4299-1995)*.
7. Car parking and garages allocated to adaptable dwellings must comply with the requirements of Australian Standards for disabled parking spaces.
8. A landscape plan is to be submitted with every application for residential flat buildings.

Table 19 Key controls for residential flat buildings, manor homes and shop top housing

Element	R2, R3 zones (shop top housing only)	R3, R4 zones (residential flat buildings)	R2, R3, R4 zones Manor home	B1, B2, B3 and B4 zones
Site coverage (maximum)	50% of site area	50%	50% of site area	N/A
Landscaped area (minimum)	30% of site area	30% of site area	30% of site area	N/A
Communal open space	15% of site area where the development includes 4 or more dwellings	15% of site area	Not required	15% of site area. This control is able to be varied where the applicant demonstrates the development has good access to public open space or where the area of private open space is more than the minimum specified below.
Principal Private open space (PPOS)	Min. 8m ² per dwelling with min. dimension of 2.0m	Min. 10m ² per dwelling with min. dimension of 2.5m	Minimum 16m ² per dwelling with min. dimension of 3.0m; or Min. 8m ² per dwelling with min. dimension of 2.0m if provided as balcony or rooftop.	Min. 8m ² per dwelling with min. dimension of 2.0m
Front setback (minimum)	Determined by ground floor setback	6m Balconies and other articulation may encroach into the setback to a maximum of 4.5m from the boundary for the first 3 storeys, and for a maximum of 50% of the façade length.	4.5m to building façade line. 3m to articulation zone. 5.5m to garage line and 1m behind the building line.	Residential flat buildings: 4.5m to building façade line Shop top housing: 0m for first floor 4m for floors above first floor

Element	R2, R3 zones (shop top housing only)	R3, R4 zones (residential flat buildings)	R2, R3, R4 zones Manor home	B1, B2, B3 and B4 zones
Corner lots secondary street setback (minimum)	3m	6m	2m	Residential flat buildings: 4.5m to building façade line Shop top housing: 0m for first floor 4m for floors above first floor
Side setback (minimum)	2m	Buildings up to 3 storeys: 3m Buildings above 3 storeys: 6m	Buildings up to 2 storeys 1.5m	Refer to Other Part of DCP regarding B zonings.
Rear setback (minimum)	4m (excluding garages)	6m	4m (excluding rear garages)	8m
Zero lot line (minimum)	Not permitted	Not permitted	Not permitted to adjacent lots	Permitted on side boundaries only
Habitable room/balcony separation distance (minimum) for buildings 3 storeys and above	12m	12m	N/A	Refer to Other Part of DCP regarding B zonings.
Car parking spaces	1-2 bedrooms: 1 space (min) 3 bedrooms or more: 2 spaces (min) — may be provided in a 'stack parking' configuration. Garages to be set back 1m behind the building line	1 space per dwelling, plus 0.5 spaces per 3 or more bedroom dwelling. May be in a 'stack parking' configuration. Car parking spaces to be located below ground or behind building line 1 visitor car parking space per 5 apartments Bicycle parking spaces: 1 per 3 dwellings	1-2 bedrooms: 1 space (min) 3 bedrooms or more: 2 spaces (min) — may be provided in a 'stack parking' configuration.	1 space per dwelling, plus 0.5 spaces per 3 or more bedroom dwelling. May be in a 'stack parking' configuration. Car parking spaces to be located below ground or behind the building 1 visitor car parking space per 5 apartments (may be above ground) Bicycle parking spaces: 1 per 3 dwellings
Garage Dominance	N/A	A maximum of two garage doors per 20m of lot frontage facing any one street frontage.	A maximum of two garage doors facing any one street frontage.	N/A
Garages and car parking dimensions (min)	Covered: 3m x 5.5m Uncovered: 2.5m x 5.2m Aisle widths must comply with AS 2890.1			

Element	R1 and R4 zones (shop top housing and residential flat buildings as mixed use developments)	R4 zone (residential flat buildings)	R4 zone (manor homes)	B2 zone (shop top housing)
Building and ceiling height	The applicable height of buildings standard under Clause 6.6 of the North Kellyville Precinct Plan equates to the following maximum building heights in storeys: 7 metres: 2 storeys Minimum floor to ceiling heights are: 3.3m for commercial floors 2.7m for residential floors	N/A	N/A	The applicable height of buildings standard under Clause 6.6 6.8 of the North Kellyville The Hills Growth Centre (Box Hill) Precinct Plan equates to the following maximum building heights in storeys: 7 metres: 2 storeys 10 metres: 3 storeys 20 metres: 6 storeys Minimum floor to ceiling heights are: 3.3m for commercial floors 2.7m for residential floors
Site coverage (maximum)	N/A	50%	50% of site area	N/A
Landscaped area (minimum)	Required within setbacks and common open space areas	30% of site area	30% of site area	Required within setbacks and common open space areas
Communal open space	20m² per dwelling where the development includes 5 or more dwellings 75% must be provided at ground level and well landscaped Common open space must only be accessible by the residents of the development	15% of site area	Not required.	20m² per dwelling where the development includes 5 or more dwellings 75% must be provided at ground level and well landscaped Common open space must only be accessible by the residents of the development
Principal Private open space (PPOS)	Ground level 4m x 3m Min 10m² per dwelling with minimum dimension 2.5m	Min. 10m ² per dwelling with min. dimension of 2.5m	Minimum 16m² per dwelling with min. dimension of 3.0m; or Min. 8m² per dwelling with min. dimension of 2.0m if provided as balcony or rooftop.	Ground level 4m x 3m Min 10m² per dwelling with minimum dimension 2.5m

Element	R1 and R4 zones (shop top housing and residential flat buildings as mixed use developments)	R4 zone (residential flat buildings)	R4 zone (manor homes)	B2 zone (shop top housing)
Front setback (minimum)	Zero if active frontage provided 3m if no active frontage provided 3m for residential floors above the first level	6m Balconies and other articulation may encroach into the setback to a maximum of 4.5m from the boundary for the first 3 storeys, and for a maximum of 50% of the façade length.	4.5m to building façade line. 3m to articulation zone. 5.5m to garage line and 1m behind the building line.	Zero if active frontage provided 3m if no active frontage provided 3m for residential floors above the first level
Corner lots secondary street setback (minimum)	As per front setbacks	6m	2m	As per front setbacks
Side setback (minimum)	6m where adjoining low density residential development 3m where not adjoining low density residential development Zero setback may be considered where the development adjoins a business zone or a public road or laneway	Buildings up to 3 storeys: 3m Buildings above 3 storeys: 6m	Buildings up to 2 storeys 1.5m	6m where adjoining low density residential development 3m where not adjoining low density residential development Zero setback may be considered where the development adjoins a business zone or a public road or laneway
Rear setback (minimum)	As per side setbacks	6m	4m (excluding rear garages)	As per side setbacks
Zero lot line (minimum)	N/A	Not permitted	Not permitted to adjacent lots	N/A
Habitable room/balcony separation distance (minimum) for buildings 3 storeys and above	12m	12m	N/A	Refer to Other Part of DCP regarding B zonings.
Access and entries	Separate site and building access points are to be provided for the residential and commercial components of developments.	N/A	N/A	Separate site and building access points are to be provided for the residential and commercial components of developments.
Apartment size and mix	Refer to The Hills DCP 2012 Part B Section 4—Residential Flat Building			Refer to The Hills DCP 2012 Part B Section 4—Residential Flat Building

Element	R1 and R4 zones (shop top housing and residential flat buildings as mixed use developments)	R4 zone (residential flat buildings)	R4 zone (manor homes)	B2 zone (shop top housing)
Car parking spaces	In accordance with The Hills DCP 2012 Part C Section 1 – Parking Preferred location for parking is within a basement or to the rear of developments	1 space per dwelling, plus 0.5 spaces per 3 or more bedroom dwelling. May be in a 'stack parking' configuration. Car parking spaces to be located below ground or behind building line 1 visitor car parking space per 5 apartments Bicycle parking spaces: 1 per 3 dwellings	1-2 bedrooms: 1 space (min) 3 bedrooms or more: 2 spaces (min) – may be provided in a 'stack parking' configuration.	In accordance with The Hills DCP 2012 Part C Section 1 – Parking Preferred location for parking is within a basement or to the rear of developments
Garage Dominance	N/A	A maximum of two garage doors per 20m of lot frontage facing any one street frontage.	A maximum of two garage doors facing any one street frontage.	N/A
Garages and car parking dimensions (min)	Covered: 3m x 5.5m Uncovered: 2.5m x 5.2m Aisle widths must comply with AS 2890.1			
Other controls	Refer to the Residential Flat Building or Business Sections of The Hills DCP 2012 for controls relating to unit size/mix, visual privacy, solar access, private open space, ventilation, storage and waste management.	N/A	N/A	Refer to the Residential Flat Building or Business Sections of The Hills DCP 2012 for additional controls relating to unit size/mix, visual privacy, solar access, private open space, ventilation, storage and waste management.

5.4.1 Site Servicing

OBJECTIVES

- a. To ensure that site facilities are functional and accessible to all residents and are easy to maintain.
- b. To ensure that site facilities are thoughtfully integrated into the development and are visual and physically unobtrusive.
- c. To minimise the impact of service access on pedestrians and retail, commercial and residential frontage.
- d. To minimise the visual and acoustic impact of site servicing.

CONTROLS FOR RESIDENTIAL FLAT BUILDINGS AND MULTI DWELLING HOUSING:

1. Garbage, mail box structures, service meters and the like are to be integrated with the overall design of the buildings and/or landscaping. Garbage storage areas are not permitted at the front of the development.
2. Provide communal or individual laundries to every dwelling and at least one external clothes drying area per building. Laundries are not permitted in front setbacks and must be appropriately screened from view if located in the side setback.
3. Loading facilities must be at the rear of each development.
4. Service access is permitted from rear lanes, side streets or right of ways.

5.5 Adaptable housing

OBJECTIVES

- a. To ensure a sufficient proportion of dwellings include accessible layouts and features to accommodate changing requirements of residents.
- b. To ensure the provision of housing that will, in its adaptable features, meet the access and mobility needs of any occupant.

CONTROLS

1. 10% of all apartments, multi dwelling housing and Residential Flat Buildings are to be designed to be capable of adaptation for disabled or elderly residents. Dwellings must be designed in accordance with the Australian Adaptable Housing Standard (AS 4299-1995).
2. Where possible, adaptable dwellings are to be located on the ground floor, for ease of access. Dwellings located above the ground level of a building may only be provided as adaptable dwellings where lift access is available within the building. The lift access must provide access from the basement to allow access for people with disabilities.
3. The development application must be accompanied by certification from an accredited Access Consultant confirming that the adaptable dwellings are capable of being modified, when required by the occupant, to comply with the Australian Adaptable Housing Standard (AS 4299-1995).
4. Car parking and garages allocated to adaptable dwellings must comply with the requirements of the relevant Australian Standard for disabled parking spaces.

5.6 Other development in residential areas

The residential zones within the Precinct Plan permit a range of non-residential land uses which, depending on their scale, suitability, location and design, may be compatible with adjoining residential uses. The Precinct Plan recognises that allowing non-residential development in the residential zones is appropriate providing controls are in place to minimise the negative impacts of noise, loss of privacy, traffic, and parking on residential amenity.

The controls for non-residential development consist of:

- General requirements, which apply to all non-residential development in residential zones.
- Specific provisions covering land uses such as child care centres, neighbourhood shops, educational establishments and places of public worship, in addition to, or overriding, the general requirements.

Notes: *In the event of an inconsistency between the general and specific provisions in this section of the DCP, the specific controls will prevail.*

These controls are not intended to apply to home occupations.

Council may require the submission of additional information to demonstrate that the development will not adversely affect the existing or future amenity of the surrounding residential area. Such information may include a noise impact assessment, advice on traffic generating potential and parking provision, solar access and evidence that the proposed land use will contribute to the amenity, character and liveability of the residential area in which it is to be located. Applicants should consult with Council prior to submitting a development application to determine specific information requirements.

5.6.1 General requirements

OBJECTIVES

1. To establish appropriate controls to minimise the adverse effects of non-residential development on surrounding residential development.
2. To maintain consistency in development standards between non-residential and residential land uses and ensure that buildings are similar in height, bulk and scale to surrounding buildings.
3. To ensure that non-residential development is appropriately located.
4. To avoid concentrations of non-residential uses in any particular area where the cumulative impact on residential amenity would be unacceptable.

CONTROLS

1. Except as provided for in the specific controls below, non-residential development on residential zoned land is to be located on allotments that have a frontage width of greater than 15 metres.

Note: *The relevant Precinct Plan specifies minimum site area development standards for some non-residential land uses within residential zones.*

2. Non-residential development on residential zoned land is to comply with the requirements of **Section 4.11** of this DCP in relation to sustainable building design.
3. For all non-residential development, the controls relating to lots with frontages greater than 15 metres in the following clauses of this DCP apply:
 - Clause 4.2.3 Front setbacks;
 - Clause 4.2.5 Dwelling massing and siting; and
 - Clause 4.2.6 Landscape area.
4. Non-residential development is not permitted on battle-axe allotments.
5. The maximum site coverage of buildings is 60% of the total site area.
6. The minimum landscaped area for non-residential development is 20% of the total site area of the allotment.
7. Provision of car parking for non-residential uses will be assessed by Council on an individual basis, and with reference to local policies that may establish relevant parking requirements, but must be sufficient to meet demand generated by staff and visitors.
8. Where a non-residential use is proposed as part of, or in association with, a dwelling (e.g, a home business):
 - Parking and storage areas are to be located behind the building facade or be screened from view from the street by landscaping.
 - Parking and storage areas are not to encroach on the private open space or landscaped area of the dwelling.
9. Council will have particular regard to the effects of non-residential development in the residential zones. Council will consider whether:

- the proposed development will be out of character with surrounding residential development, particularly in relation to the height and/or scale of any proposed buildings the proposed development will contribute to an undesirable clustering of that type of development, or non-residential uses in general, in the area;
 - an undesirable effect on the amenity of the surrounding area will be created;
 - the proposed use will draw patronage from areas outside of the surrounding neighbourhood, and the extent to which that patronage might impact on the amenity of residents through factors such as traffic generation, noise or the overall scale of the non-residential use;
 - a noise nuisance will be created;
 - the development will generate traffic out of keeping with the locality;
 - adequate facilities are provided for the purposes of parking, loading and deliveries;
 - adequate provision is made for access by disabled persons.
10. Non-residential development in residential zones should be similar in bulk, scale, height and siting to the surrounding buildings
11. Finishes, materials, paving and landscaping are to be consistent with those of surrounding residential development.

5.6.2 Exhibition homes and Exhibition Villages

OBJECTIVES

- a. To ensure that exhibition homes and exhibition villages operate with minimal impact on surrounding residential areas.
- b. To ensure that exhibition homes and exhibition villages operate for a limited time after which they revert to a conventional residential environment.

CONTROLS

1. Any subdivision of land shall be in accordance with the requirements for dwellings in this DCP.
2. Any proposed street within an exhibition village may be held as one lot within the development until the cessation of the operation of the exhibition village. Subdivision and dedication of roads to Council must be completed prior to the use of dwellings for residential accommodation.
3. Exhibition villages should be located on Collector Roads or as close to Collector Roads as possible, with vehicle access from a Collector Road.
4. Exhibition homes / exhibition villages are not permitted:
 - where access is from a street with a carriageway width of less than 9.0 metres.
 - on streets which are cul-de-sacs.
5. Car parking for exhibition homes shall be provided off street. However, on-street car parking may be considered where there are no privately occupied dwellings opposite or adjoining the individual exhibition homes.

6. Internal streets may be closed out of hours of operation only where the streets are not yet dedicated as public roads.
7. During the operation of an exhibition home / exhibition village additional measures to maintain the privacy of adjoining residential development may be required.
8. The hours of operation shall be limited to 7am to 7pm each day.
9. Buildings used for such uses as providing home finance, materials display or take-away food and the like shall cease to operate when the exhibition home / exhibition village ceases unless separate approval is obtained to enable the continued operation of these uses.
10. Temporary buildings used for providing home finance, materials display or take-away food shall be removed and the site made good.
11. When the use of the dwelling ceases to be an exhibition home, any garage that has been used as a sales office is to be reinstated as a functioning garage with an appropriate garage door and associated driveway, prior to the occupation of the dwelling for residential purposes.
12. When the exhibition village / home ceases to operate, all signs and structures etc associated with the exhibition home / village shall be removed to ensure the site has a residential appearance.
13. Security lighting shall be provided in such a way to minimise any adverse impact on adjoining residential areas.
14. The operation of the exhibition village (including the use of designated off-street car parks) shall not cause offensive noise or affect the acoustic amenity of adjoining residents.
15. Waste disposal facilities shall be provided. These shall be located adjacent to the driveway entrance to the site.
16. Any structure involving waste disposal facilities shall be located as follows:
 - Set back one metre from the front boundary to the street.
 - Landscaped between the structure and the front boundary and adjoining areas to minimise the impact on the streetscape.
 - Not be located adjacent to an adjoining residential property.
17. All works affecting public roads, including new driveways, access roads and intersection works are to be in accordance with the requirements of this DCP and Council's engineering specifications.
18. Landscaping of streets is to be in accordance with the requirements of this DCP, and street landscaping is to be maintained for the duration of operation of the exhibition home / village.
19. Dedication of public roads to Council will be subject to satisfactory provision and maintenance of street landscaping.
20. Dwellings located near future sources of noise are to incorporate appropriate noise attenuation measures when designed and constructed, to ensure that future residents are afforded an appropriate level of amenity.
21. Details of proposed signage are to be submitted with the Development Application. Signage is to be located on public roads at or near the entry to the exhibition home / village. Internal signage within the exhibition village is to be visible only from within the village (not from surrounding residential properties). When considering applications including signage, Council will refer to controls in other Council policies and planning controls that may be applicable.

5.6.3 Child Care Centres

Please refer to The Hills DCP 2012 Part B Section 6 - Business (Appendix E).

5.6.4 Educational Establishments and Places of Worship

OBJECTIVES

- a. To ensure appropriate provision and equitable distribution of educational establishments and places of public worship within the Precinct.
- b. To ensure that buildings are not out of character with the type, height, bulk and scale of surrounding buildings.
- c. To encourage the appropriate location of facilities to create community focal points, centres of neighbourhood activity and enhance community identity.
- d. To mitigate the impacts of noise, privacy, increased traffic and nuisance on surrounding residential development.
- e. To foster iconic and landmark building design within each Precinct.

CONTROLS

1. Places of worship are to be located within centres or co-located with other community facilities in residential areas so as to create a community focal point, to share facilities such as parking, and to minimise impacts on residential areas.
2. Places of public worship and educational establishments are preferably to be located on land with frontage to a collector road. Corner sites are preferred.
3. In assessing applications, Council will consider the following:
 - the privacy and amenity of adjoining developments;
 - the need and adequacy for provision of buffer zones to surrounding residential development;
 - urban design;
 - location;
 - the size of the land where the development is proposed;
 - traffic generation and the impacts of traffic on the road network and the amenity of nearby residents;
 - the availability of parking;
 - the scale of buildings and their capacity; and
 - hours of operation and noise impacts.
4. traffic and transport report/statement is to accompany the Development Application addressing the impact of the proposed development on the local road system and defining car parking requirements.

Note: Due to the high level of traffic generation and peak nature of traffic volumes accessing these types of land uses, assessment of traffic impacts and pedestrian requirements is required and mitigation measures may need to be incorporated in the design. Such measures may include pedestrian crossings, speed control devices, pedestrian refuges on streets to which the development fronts and the provision of bus and drop off bays. School zones will require additional safety measures such as school crossings, 40 km/h school speed zones and flashing lights in accordance with RMS requirements.

5. A landscape plan and associated documentation is to be submitted with the Development Application identifying existing vegetation and community plant species and/or existing design elements of the site layout, and the proposed landscaping treatment of the development.
6. Car parking spaces shall be provided on site in accordance with **Table 20**, unless the applicant can demonstrate to the satisfaction of Council that lower rates of parking are reasonable for the particular development.

Table 20 Car parking requirements for places of public worship and educational establishments

Land Use	Parking requirement
Places of Public Worship	1 space per 6 seats, plus 1 bicycle and 1 motorcycle space per 25 car parking spaces in excess of the first 25 car parking spaces
Schools	1 space per staff member Plus 1 space per 100 students Plus 1 space per 5 students in Yr 12 (based on estimated capacity for year 12 students to be specified in the Development Application)
Tertiary and Adult Educational Establishments	1 space per 5 seats Or 1 space per 10m ² of floor area (whichever is greater)

7. For certain uses, the provision of overflow parking may be necessary particularly where such developments incorporate halls used for social gatherings. Overflow parking areas could be provided on open grassed areas and need not be formally sealed or line-marked. Proposed overflow parking areas are to be clearly shown on plans submitted with the Development Application.
8. Development must be designed to minimize the possibility of noise impacts to the occupants of adjoining or neighbouring dwellings.
9. Where it is likely that a development may cause an adverse noise impact on nearby residential areas, an acoustic report will be required to be submitted to council with the Development Application,
10. Development must comply with Office of Environment and Heritage noise guidelines.
11. Where appropriate, buffers should be put in place to limit noise impacts on the surrounding area. Extensive noise walls along most or all of a property boundary are not appropriate and other measures should be used to mitigate noise.
12. Sources of noise such as garbage collection, machinery, parking areas and air conditioning plants are sited away from adjoining properties and screened / insulated by walls or other acoustic treatment. Noise levels are not to exceed specified limits at the most affected point of the property boundary.

13. The general hours of operation for places of public worship and educational establishments are between 7am and 9pm.
14. Variation to the approved hours of operation may be approved by Council subject to other requirements or a merit assessment.

Note: Legislation covering noise impacts and hours of operation is the *Protection of the Environment Operations Act 1997* and the *Protection of the Environment (Noise Control) Regulation 2000*. Applicants should also refer to the Office of Environment and Heritage website (<http://www.environment.nsw.gov.au>) for more information regarding noise control.

5.6.5 Neighbourhood Shops

OBJECTIVES

- a. To ensure the appropriate provision of retail uses to serve the needs of the local community.
- b. To minimise the impacts of retail activities on surrounding residential areas.
- c. To ensure that retail activities in residential areas do not detract from the function or viability of nearby centres.
- d. To ensure the appropriate location of neighbourhood shops

CONTROLS

1. Neighbourhood shops in the R2 and R3 zones may only be developed on an allotment of land with a frontage width of 15 metres or more.
2. Neighbourhood shops in the R2 and R3 zones are to be located:
 - adjoining land zoned RE1 or SP2 or that is separated from land zoned RE1 or SP2 only by a public road, or
 - with frontage to a collector road, or
 - within 90 metres of public transport stop, or
 - adjoining an educational establishment or a community facility or separated from an educational establishment or a community facility only by a public road.
3. For neighbourhood shops, the controls relating to lots with frontages greater than 15 metres in the following clauses of this DCP apply:
 - Clause 4.2.2 Architectural design and streetscapes;
 - Clause 4.2.3 Front setbacks;
 - Clause 4.2.5 Dwelling massing and siting; and
 - Clause 4.2.6 Site coverage and landscape area.
4. Shops fronts are to encourage active and interactive street frontages that are sympathetic to the streetscape with similar materials to adjoining buildings to be used.
5. Any area of land between the front property boundary and the building alignment, exclusive of approved driveways and parking areas, is to be landscaped to the satisfaction of Council.

6. Address and entry points for any residential use on the same allotment of land are to be separate from the retail use access points and be readily identifiable.
7. Design of the building frontage, front and side setbacks are to include safe and convenient pedestrian facilities such as weather protection, shade, seating and landscaping.
8. On corner sites, shop fronts are to wrap around the corner and zero setbacks are permitted.
9. Entrances are to be visible from the street and well lit.
10. The site should not gain direct access to:
 - A road with clearway or other parking restrictions; or
 - A restricted access road (sub-arterial, arterial or Transit Boulevard). Any proposed development should not to create a traffic hazard. However, corner sites are preferred in terms of reducing potential for impacts on neighbouring properties, and for allowing side access for customer parking and deliveries.
11. One car parking space is to be provided for every 30m² of Gross Floor Area,
12. Parking spaces are to be provided on site or in dedicated on street parking constructed to Council's standards.
13. The design of the building and parking areas is to provide suitable access for people with disabilities and service deliveries.
14. Bicycle parking must be provided in a location that is secure and accessible with weather protection for employees.
15. Car parking must be clearly signposted to indicate its availability from the street.
16. Plant and equipment (particularly cooling or heating plant), is to be located so as to not cause noise annoyance to neighbours) - noise impact assessment may be required to be prepared and submitted to Council.
17. Waste storage areas must be designed to minimise visual impact and should be screened and properly positioned so as to not to attract pests and cause odour problems for neighbours.
18. All goods storage is to be internal.

5.6.6 Seniors Housing

SEPP (Housing for Seniors or People with a Disability) 2004 is the primary environmental planning instrument controlling seniors housing. Applicants considering development of this kind should refer to that SEPP for specific controls and to determine the permissibility of seniors housing.



6.0

EMPLOYMENT AREAS

6.0 EMPLOYMENT AREAS

6.1 Lot Subdivision

6.1.1 Lot Size and Orientation

OBJECTIVES

- a. To ensure adequate opportunity for landscape design that accommodates perimeter planting and attractive buildings located around entrances and visible areas
- b. To allow for a range of allotment sizes that caters for a diversity of land uses and employment opportunities within the Precincts
- c. To ensure allotments are oriented to ensure buildings appropriately address the public domain.

CONTROLS

1. Lots are to be relatively regular in shape to meet a range of land uses. These may range from those requiring wide street frontages and a minimum depth to those that require less frontage but a greater depth. Irregular shaped allotments with narrow street frontages should be avoided, particularly where several of these are proposed in an adjoining manner.
 - Lots should be orientated and aligned:
 - so that future buildings can face the local streets to increase visual surveillance and to avoid streetscapes with loading docks and long blank walls;
 - to facilitate solar efficiency;
 - to encourage building design that has frontage to landscaped areas and riparian corridors.
2. Access to lots shall be sited to ensure that sight lines are unimpeded when entering and exiting the lot.
3. Subdivisional roads should incorporate a road hierarchy that will accommodate the anticipated traffic volumes and vehicle types and be practical and legible for users.
4. Where a residue lot is created through subdivision, the applicant must demonstrate that future development of that residue lot can meet the controls in this DCP.

6.1.2 Site Coverage and Landscaped Area

OBJECTIVES

- a. To ensure a balance between built form and landscape in order to provide a high level of amenity and landscape character.
- b. To ensure an integrated design solution which takes into consideration the provision of deep soil planting, shade/solar access and drainage.
- c. To allow for future tree planting.

CONTROLS

The site coverage for any development must comply with **Table 21**.

Table 21 Site coverage

Employment Area	Maximum site coverage
B7 Business Park zones	50%
IN2 Light Industrial / B6 Enterprise Corridor zones	65%

1. For buildings in the Windsor Road Business Park, the minimum building footprint shall be 1,500 m².
2. Deep soil planting must be provided in accordance with **Table 22** below.

Table 22 Deep soil planting

Employment Area	Minimum Deep Soil Planting Area
B7 Business Park zones	25% of total site area
IN2 Light Industrial / B6 Enterprise Corridor zones	10% of total site area

3. The minimum width of landscaped areas is 2 m, with the exception of landscaping within battle axe handles. The minimum width of landscaped areas within battle axe handles is 0.5m on each side of the handle.
4. For development in the Windsor Road Business Park, one area of at least 20 m x 20 m must be provided as part of the deep soil planting requirement.
5. Landscaped areas are required between buildings (i.e. within the building separation zone).

6.1.3 Strata or Community Title

CONTROLS

1. Where a Strata or Community Title subdivision is proposed, any space for parking or other purposes forming part of a sole occupancy unit required by Council must be included in the same strata lot as the unit. All landscaping, access areas and directory board signs not forming part of an individual unit will be required by Council to be included in any strata plan of subdivision as common property.

6.2 Built form

6.2.1 Setbacks

OBJECTIVES

- a. To define building envelopes within each allotment by specifying minimum setbacks.
- b. To achieve attractive streetscapes.
- c. To ensure buildings present an acceptable scale and bulk when viewed from the public domain.

CONTROLS

GENERAL

1. In employment areas, no building or hardstand area (concrete or bitumen pavement) other than a public utility undertaking shall be erected within any setback.
2. All setback areas should be landscaped and maintained.
3. Pedestrian access should be provided to all landscaped setback areas for maintenance and security purposes, but is not to be included in the designated landscape setback area.
4. No storage of any kind is permitted within the landscaped setback areas.
5. The landscape setback areas should be designed to create attractive views from the public domain and reduce the bulk and scale of development.
6. Council may increase the minimum setback where the proposed development is of a bulk and scale out of character with existing development within the zone, or where the proposed landscape techniques are not sufficient to ameliorate the visual impact of the proposed development.

FRONT SETBACKS

7. All development is to be consistent with the front setback controls and principles **Table 23**, **Figure 43** and **Figure 44**.

Table 23 Front setbacks

Employment Area	Building façade line	Articulation zone
R1 General Residential	Zero setback to Terry Road	
B7 Business Park zones	20 m from Annangrove Road 21 m setback for all buildings with direct frontage to Windsor Road (refer Figure 43) 5 m setback to all other streets	
IN2 Light Industrial / B6 Enterprise Corridor zones	20 m from roads fronting residential areas and Annangrove Road (refer Figure 43) 7m to all other boundaries	Offices and showrooms may be set back a minimum of 2m from the boundary as shown in Figure 43

8. Front setback areas to public roads are to be landscaped and maintained as open areas only, so as to enhance the streetscape appearance of all employment areas.



Figure 43 Location of 20 m and 21m front setbacks in employment areas

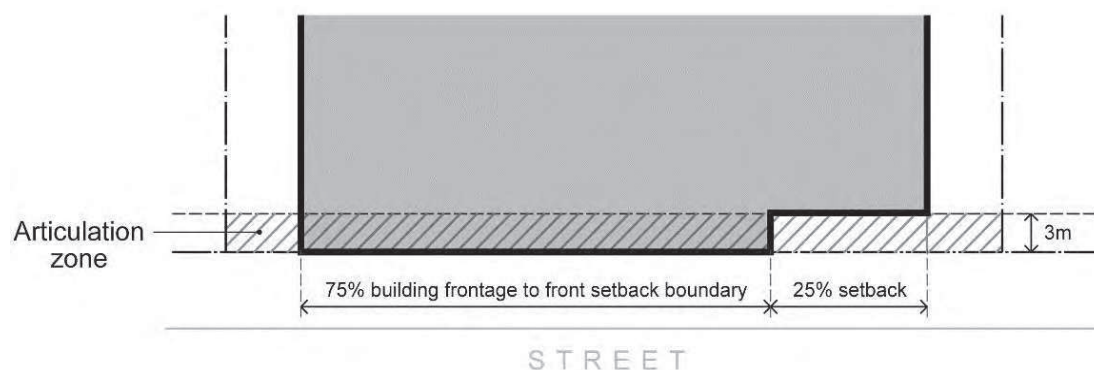


Figure 44 Front setbacks in Windsor Road Business Park

SIDE AND REAR SETBACKS

9. All development is to be consistent with the side and rear setback controls in **Table 24**.

Table 24 Side and rear setbacks

Employment Area	Side setback	Rear setback
R1 General Residential* and B7 Business Park zones	6 m	6 m
IN2 Light Industrial / B6 Enterprise Corridor	3 m	3 m
IN2 Light Industrial / B6 Enterprise Corridor adjoining a residential street	20m	6m

*Applies to developments comprising only commercial uses. Refer to Table 19 for controls relating to shop top housing in the R1 General Residential zone.

10. A maximum 2 m width of paved area will be permitted within side and rear setbacks for the purposes of providing for pedestrian links through properties.

6.3 Building Layout and Orientation

OBJECTIVES

- a. To provide a variety of building orientation.
- b. To ensure buildings maximise aspect and take advantages of views within and beyond the Precincts.
- c. To optimise building orientation and siting to natural elements such as topography, wind and sunlight.
- d. To create defined streetscapes.
- e. To activate streets with building frontages.

CONTROLS

R1 GENERAL RESIDENTIAL AND B7 BUSINESS PARK ZONES

1. West facing elevations must provide for effective sun shading.

IN2 LIGHT INDUSTRIAL AND B6 ENTERPRISE CORRIDOR ZONES

2. The layout and orientation of buildings should be in a manner that minimises lengthy or deep areas of car parking along the street front, as well as lengthy loading areas facing residential areas. Refer to **Figure 45**.

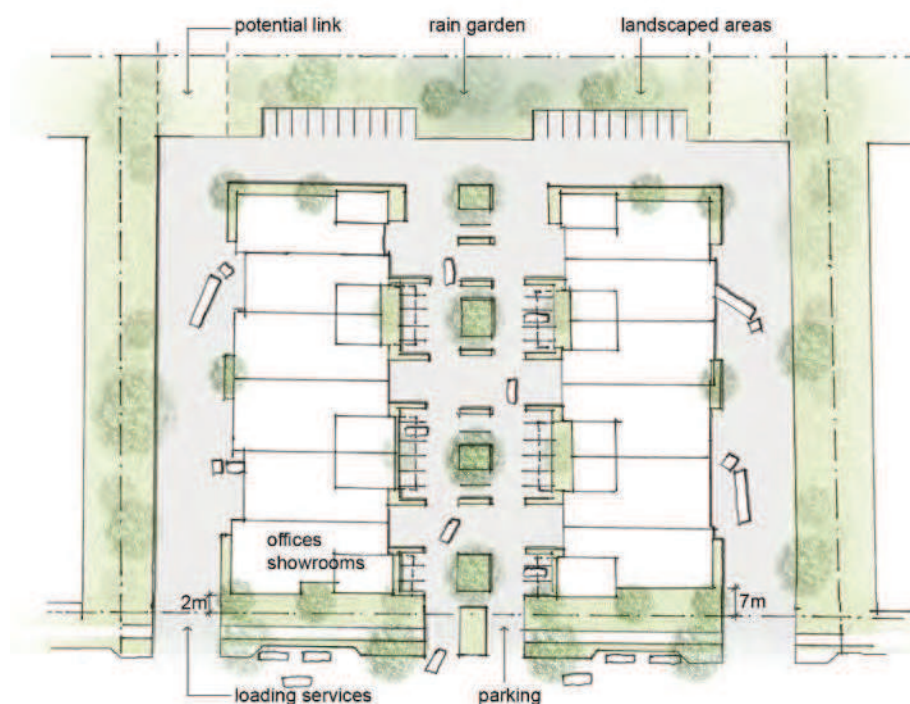


Figure 45 Typical building layout in Annangrove Road Employment Area

6.3.1 Building Separation

OBJECTIVES

- To allow solar access to buildings and communal areas.
- To allow for deep soil planting between buildings.
- To provide a visual break between buildings and reduce the perceived bulk and scale of the built environment.
- To provide outlook from buildings.
- To allow for adequate air flow between buildings particularly in odour affected areas.

CONTROLS

- Building separation must comply with the following **Table 25**:

Table 25 Building separation

Employment Area	Minimum Building Separation
B6 Enterprise Corridor, B7 Business Park zones and IN2 Light Industrial zone	20 m separation between buildings facing each other within a site. 12 m separation between buildings perpendicular to each other within a site where the width of the facing facades does not exceed 26 m. 10 m separation between buildings perpendicular to each other within a site where the width of the facing facades is 20 m or less.

- Separation between buildings must be sufficient so as to enable solar access, as shown in **Figure 46**.

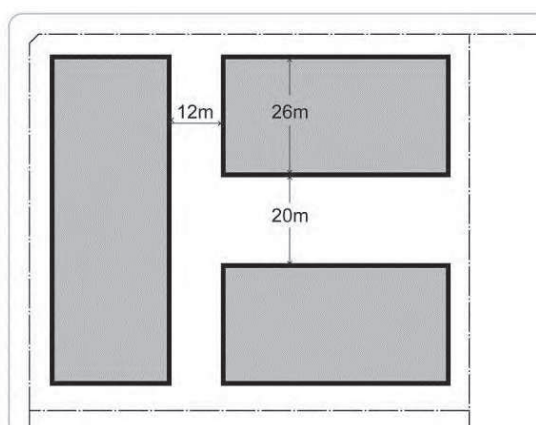


Figure 46 Building separation

6.3.2 Floor to Ceiling Height

OBJECTIVES

- a. To encourage creative and innovative building design of a high architectural standard that reflects the natural, functional and aesthetic opportunities.
- b. To encourage quality and consistency in the treatment of facades, external finishes and the like.
- c. To ensure sufficient visual relief is achieved on facades visible from adjoining sites and the public domain, including major thoroughfares.
- d. To achieve an appropriate mix of scale and form.

CONTROLS

The minimum floor to ceiling height of buildings are to comply with **Table 26**.

Table 26 Floor to ceiling height

Employment Area	Minimum Ceiling Height
R1 General Residential and B7 Business Park zones	Ground level – 3.6 m Upper levels – 2.7 m
IN2 Light Industrial zone and B6 Enterprise Corridor zones	Ground level – 3.6 m

6.3.3 Sustainable Building Design

OBJECTIVES

- a. To ensure that developments are environmentally sustainable in terms of energy and water use.
- b. To minimise consumption of potable water and waste water discharge.
- c. To maximise opportunities for natural ventilation where appropriate in the Windsor Road Business Park.
- d. To ensure that development incorporates water conservation and re-use measures into design and operation.
- e. To ensure building depth allows for adequate solar access.

CONTROLS

1. New commercial buildings must achieve a minimum 4 star Green Star rating from the Green Building Council of Australia. Refer to both GBCA's 'Green Star – Office As Built Technical Manual' and the 'Green Star Office As Built Technical Manual'.
2. New industrial and light industrial buildings must achieve a minimum 4 star Green Star rating from the Green Building Council of Australia from such time that an Industrial Tool has been adopted.
3. Buildings must install rainwater tanks to meet a portion of supply such as outdoor use, toilets or laundry. Tanks should provide a minimum of 85 litres per square metre of vegetated areas (including grass).
4. The roof area should be directed to a rainwater tank and should be maximised to both increase the effectiveness and reliability of the reuse system.
5. Development shall incorporate water efficient fixtures such as taps, showerheads, and toilets. The fixtures must be rated to at least AAA under the National Water Conservation Rating and Labelling Scheme. Where the building or development is water intensive (ie. high water user), specific water conservation objectives must be resolved with Council.
6. Appropriate use of energy efficient materials during construction is to be demonstrated.
7. Development should incorporate energy efficient hot water systems, air-conditioning, lighting and lighting control systems.
8. Any commercial building with a depth greater than 20 m shall have an atrium to permit solar access and natural ventilation, unless it is demonstrated that at least 60% of the Net Lettable Area (NLA) has a Daylight Illuminance (DI) of 250 lux.

6.3.4 Architectural Design

OBJECTIVES

- a. To enhance the visual quality of development in the Precincts through the selection of appropriate materials and colours.
- b. To encourage the use of materials that minimise impact on the environment.
- c. To ensure that any reflective materials are used with sensitivity to neighbouring development, vehicular traffic and public domain areas.
- d. To ensure that ancillary buildings, storage and service areas are considered part of the overall design, and do not detract from the amenity and appearance of the development.
- e. To create distinctive high quality gateways to the Precincts.
- f. Create identifiable, attractive and safe entrances to buildings.
- g. To use fencing to define boundaries and provide security, as well as contribute to streetscape and amenity of the Precincts.
- h. To ensure that signage and lighting supports the visual appearance of the building and the visual appeal of the Precincts.

CONTROLS

BUILDING DESIGN AND SITING

1. Building designs within the Windsor Road Business Park and Annangrove Road Employment Area will be assessed based on aesthetic merit and technology, based on the following design principles:
 - Buildings should provide variety to facades by the use of projecting upper storeys over building entries, upper storey display windows, emphasising street corners and varying roof forms.
 - Buildings should provide effective sunshading 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 sunshading devices including screens.
 - Building design should be integrated with landscape elements;
 - The bulk and scale of the building should minimise impact on district views;
 - Building facades should be articulated by elements such as:
 - External structures, finishes, etchings and recessed patterns;
 - Decorative features, textures and colours;
 - Locating offices and highlighting entries within front facades;
 - Emphasised customer entries and service access doors;
 - Protrusions and penetrations in building elements.
 - Buildings with dual street frontage should be designed to ensure:

- The building addresses the primary street frontage; and
 - Distinctive identifying architectural elements are incorporated to provide sufficiently interesting and varied facades;
 - The building design should consider the amenity of any adjoining landscaped areas;
 - The location of roller shutters, loading docks and other building openings should be so that they do not detract from the overall appearance of the building. Where possible, roller shutters and the like should not be located on the primary street frontage; and
 - Roof design should be visually interesting and provide for natural lighting, and compatibility with the overall building design. Where visible from a public area, all rooftop or exposed structures (lift motor rooms, plant rooms etc), must be suitably screened and integrated with the building.
2. Blank building facades facing the primary street frontage are not permitted.

EXTERNAL BUILDING MATERIALS AND COLOURS

3. Applicants are required to submit with all Development Applications a materials sample board detailing external colours and finishes.
4. External finishes should be constructed of durable, high-quality and low maintenance materials.
5. All external walls of buildings used for office/showroom purposes should be constructed of brick, glass, steel, concrete, textured block work, pre-cast exposed aggregate panels or other materials approved by Council.
6. External finishes should contain a combination of materials.
7. Any wall visible from the public domain must be finished with a suitable material to enhance the appearance of that façade.
8. Building materials should be selected such that reflection is minimised and will not adversely affect adjacent development, vehicular traffic and public domain areas.
9. The following should be considered in the choice of building materials in all developments:
- energy efficiency;
 - use of renewable resources;
 - low maintenance;
 - recycled or recyclable;
 - non-polluting; and
 - minimal PVC content.
10. Materials that are likely to contribute to poor internal air quality and those containing Volatile Organic Compounds (VoCs) should be avoided.
11. Any application for development within the light industrial area must provide details of proposed external colours, materials, finishes and landscaping and any other supporting documentation in order to demonstrate

how the development will minimise visual impact upon Rouse Hill House and views between Rouse Hill House and Box Hill House.

ENTRANCE TREATMENT

12. Entrances should be clearly visible, well sign posted, well lit and landscaped.
13. Entries to buildings should be clearly visible to pedestrians and motorists and be integrated into the form of the building.
14. Architectural features are to be provided at ground level giving an entrance element to the building and addressing the primary street frontage.
15. All entrance treatments, such as directory boards, must be located on private property, with appropriate positive covenants and restrictions on title to ensure the ongoing management of such treatments.
16. No form of advertising will be permitted on any entrance treatment facility.

6.3.5 Ancillary Buildings, Storage and Service Areas

OBJECTIVES

- a. To ensure that site facilities are functional and accessible and are easy to maintain.
- b. To ensure that site facilities are thoughtfully integrated into the development and are visual and physically unobtrusive.
- c. To minimise the impact of service access on pedestrians and industrial, commercial and retail frontage.
- d. To minimise the visual and acoustic impact of site servicing.

CONTROLS

1. Ancillary buildings and storage sheds are to be located behind the setback lines and be consistent with the design of the main building.
2. Details of any proposed ancillary buildings, open storage and services areas must be submitted with all Development Applications.
3. Where possible, storage areas should be located within the confines of the primary building. Appropriate screening must be provided otherwise.
4. Above ground open storage areas visible from the public domain are not permissible.
5. Above ground open storage areas should not compromise truck or vehicle manoeuvring and car parking areas.
6. Vehicular access to loading facilities is to be provided from secondary and tertiary streets where possible.
7. Rubbish and recycling areas must be provided in accordance with Site Waste Management and Minimisation provisions contained in The Hills Development Control Plan. These areas must:
 - be integrated with the development
 - minimise the visibility of these facilities from the street

- be located away from openable windows to habitable rooms.
- 8. Barrier free access is to be provided to all shared facilities.
- 9. Provide at least one shower and changing facility that is accessible to the building users.
- 10. The following information must be provided at Development Application stage for outdoor storage areas:
 - Size of outdoor storage area
 - Maximum storage height
 - Types of goods, materials and equipment being stored outdoors; and
 - Details on landscaping and screening structures.
- 11. Sunken loading docks should be avoided.
- 12. A minimum 225 mm clearance is required between finished floor level and finished ground level.
- 13. Above ground water tanks must not be located forward of the front façade of the primary buildings. They should not be visible from the public domain and must be suitably screened. Details (including elevations) of all water tanks must be submitted with the Development Application.

6.3.6 Fencing

- a. Low feature walls are encouraged at entry driveways. These walls should be used for retaining purposes, as garden beds or as landscaped features and should be integrated into the overall design of the development.
- b. Front and side boundary fences forward of the building line shall consist of an open wrought iron palisade style fence, finished in either dark green or black.
- c. Side fencing behind the building line may comprise chain wire mesh or similar open style fence, plastic coated in dark green or black.
- d. Pre-painted solid metal fencing and other solid fencing is not permissible.
- e. Fencing must be set back 1 m from the property boundary.
- f. Fencing should be sited so it does not impede sightlines for drivers.
- g. Fencing along boundaries should not exceed a height greater than 3 m, measured from finished ground level.
- h. Pedestrian fencing within the road reserve is to be RMS Type 1, without embellishment and black in colour.
- i. The use of timber fencing or bollards within public reserves or roads is not permitted

6.3.7 Signage and Lighting

Refer to The Hills Development Control Plan for Signage and Lighting.

6.4 Landscape Design

Refer to The Hills Development Control Plan 2012 Part C Section 3 – Landscaping for Landscape Design.

6.4.1 Common Open Space

OBJECTIVES

- a. To ensure adequate open space areas are provided within development sites for the use and enjoyment of employees and visitors; and
- b. To ensure the size, location, configuration and embellishment of common open space areas encourages use by employees and visitors.

CONTROLS

1. Each development shall be provided with at least 1 common open space area for the use and enjoyment of employees and visitors to that development. The area shall be suitably landscaped and accessible from the main office component of the development.
2. Provision of common open space must comply with **Table 27**.
3. Open spaces must include soft landscaping and a deep soil area of at least 40% of its area.

Table 27 Open space provision

Employment Area	Open spaces area as % of total site area
R1 General Residential* and B7 Business Park zones	5%
IN2 Light Industrial zone and B6 Enterprise Corridor zones	1%

*Applies to developments comprising only commercial uses. Refer to Table 19 for controls relating to shop top housing in the R1 General Residential zone.

4. Small pockets of open space designed to enhance the appearance of the development will not be counted in the common open space allocation, neither will car parking areas, manoeuvring areas, or landscaped setback areas.
5. In locating common open space areas, consideration should be given to the outlook, natural features of the site, and neighbouring buildings.
6. Common open space areas shall be embellished with appropriate shade, paving, tables, chairs and the like.
7. Common open space areas shall be relatively flat and not contain impediments which divide the area or create physical barriers which may impede use.
8. The area should be screened so it is not directly visible from the public domain but is provided with adequate sunlight access.

9. Appropriate shading is to be provided so that common open spaces are useable during summer.
10. Common open spaces are to incorporate the primary deep soil area where possible. The planting of courtyard spaces is to provide for the growth of mid to large size trees.

6.5 Access and Parking

6.5.1 Pedestrian Access

OBJECTIVES

- a. To ensure pedestrian permeability throughout the Employment Areas, particularly in the Windsor Road Business Park.

CONTROLS

1. The following controls apply only to the Windsor Road Business Park:
 - The vertical clearance for pedestrian links is to be a minimum of 3.6 metres.
 - Pedestrian through site links are to be publicly accessible between the hours of 6am and 7pm.
 - Pedestrian through-site links are to be continuous, straight and with clear views from street to street.
2. Where pedestrian through-site links are adjacent to a courtyard or public space, the design of the pedestrian link is to be integrated with the design of the open space and access is provided between the two spaces.
3. Where pedestrian through-site links are provided between and through buildings, a high level of transparency is to be provided between the internal ground floor space of the building and the pedestrian link.
4. Active ground level uses are encouraged along pedestrian through-site links.
5. Disabled access must be provided along through-site links.
6. Through-site links that encourage a diverse built form and create interesting ground floor spaces are encouraged.

6.5.2 Vehicular Access

OBJECTIVES

- a. To ensure that vehicles can enter and exit premises in a safe and efficient manner in a forward direction.
- b. To minimise the impact of vehicle access points on the quality of the public domain and pedestrian safety.
- c. To provide off-street manoeuvring, loading and docking facilities that are adequate for the operational needs of the activity and use.

CONTROLS

1. A site specific Traffic and Car Parking Study must be prepared in accordance with **Tables 2 and 3** in **Section 1.8.2** of this DCP.
2. Vehicular driveway access is denied along Mt Carmel Road and Terry Road.

BUSINESS PARKS

3. Vehicular access should be designed to avoid conflicts with pedestrians.
4. Adequate space shall be provided within any development site for the loading and unloading of service vehicles. The standard of loading facilities required will depend upon the nature of the development and the uses to be carried out.
5. For certain developments Council may require the provision of parking for courier vehicles. Where possible loading facilities should be located at the rear of developments.
6. Vehicular movements associated with loading facilities and customer parking should be separated wherever possible and all pedestrian movements should be segregated from vehicular movements to avoid possible conflict and congestion.
7. Ingress to and egress from a site should be located where they will cause least interference with vehicular and pedestrian movement on public roads. Direct access will not be permitted off higher order roads. Road access to parking areas will not be permitted in close proximity to traffic signals, intersections or where sight distance is inadequate.
8. The potential for on-street queuing should be eliminated by the provision of sufficient standing areas on-site for vehicles entering the car parking and loading areas. Provision is to be made for all vehicles to enter and leave a site in a forward direction.

INDUSTRIAL AND ENTERPRISE CORRIDOR AREAS

9. Applicants are required to submit plans and details of proposed vehicular access and circulation for Council's approval with the Development Application. Details must specifically relate to vehicular movement, layout and turning circles.
10. Adequate vehicular entry to and exit from the development is to be provided and designed in order to provide safety for pedestrians and vehicles using the site and adjacent roadways. In some cases combined ingress and egress will be permitted.
11. Vehicular ingress and egress to the site must be in a forward direction at all times.
12. Driveway crossover accesses by heavy vehicles should be a minimum of 9m wide, when measured at the kerb alignment.
13. Turning circles will not be permitted to encroach upon any building.
14. Adequate space is to be provided within the site for the loading, unloading and fuelling (if applicable) of vehicles. These areas may need to be screened from the road.
15. All parking areas and access roadways must be provided with a drainage system comprising surface inlet pits. Details of pipe sizes (with calculations) and drainage layouts (including discharge points) must be submitted with the Development Application.

MANOEUVRING, LOADING AND DOCKING

16. Loading and docking facilities should be located and designed to minimise interference with internal traffic circulation.
17. Loading and docking facilities are to allow the forward entry to and exit from the site for all vehicles.

6.5.3 Car parking

OBJECTIVES

- a. To provide an appropriate level of on-site car and bicycle parking provision in Box Hill and Box Hill Industrial Precincts.
- b. To minimise the visual impact of on-site parking.
- c. To integrate parking facilities with the overall site planning and landscape.
- d. To encourage the use of other modes of transport including bicycles and public transport.

CONTROLS

1. The provision of car parking must comply with The Hills Development Control Plan 2012 Part C Section 1 – Parking.
2. 2 male and 2 female showers are to be provided for cyclists in buildings above 1000 m². 1 male and 1 female shower is to be provided for cyclists in buildings under 1000 m².
3. Refer to The Hills Development Control Plan 2012 for general guidelines and principles for car parking, including design, materials, signs and monetary contributions.
4. Safe and secure 24 hour access to car parking areas is to be provided for building users.

AT-GRADE PARKING

5. At-grade parking areas are to be located so as to minimise visual impacts from the street, public domain and communal open space areas, using site planning and appropriate screen planting or structures.
6. Large parking areas are to be located generally behind front building lines.
7. In the Windsor Road Business Park and Annangrove Road Employment Area, parking areas must not be located within the front setback area.
8. In the Windsor Road Business Park and Annangrove Road Employment Area, parking will not be permitted forward of the front façade line of the building unless it can be demonstrated that parking will be appropriately located so as to not dominate the streetscape and will occupy a maximum of 40% of the front setback.
9. Provide safe and direct access from parking areas to building entry points.
10. Provide appropriate mature vegetation between parking bays to provide shade and enhance visual impact.

BASEMENT PARKING

11. Basement parking areas are to be located primarily under building footprints to maximise opportunities for deep soil areas. Refer to **Figure 47**.

12. Basement parking areas must not extend forward of the building line along a street. Refer to **Figure 48**.
13. Along active frontages, basement parking must be located fully below the level of the footpath. Refer to **Figure 48**.
14. The minimum level at the apex of the driveway into the basement should be above 17.9 m to protect the entry of rain and surface water (1:100 year flood or overland flow).
15. Semi-basement parking must protrude no more than 1.2 m above ground level for no more than 60% of the building frontage along a public street. Refer to **Figure 49**.
16. Ventilation grills or screening devices of car park openings are to be integrated into the overall façade and landscape design of the development.
17. An Emergency Flood Evacuation Warning System must be installed.
18. The lowest basement level must not be lower than the natural ground water level.
19. The basement level stormwater pumps must discharge via a stormwater treatment device to prevent the discharge of pollutants into streams.

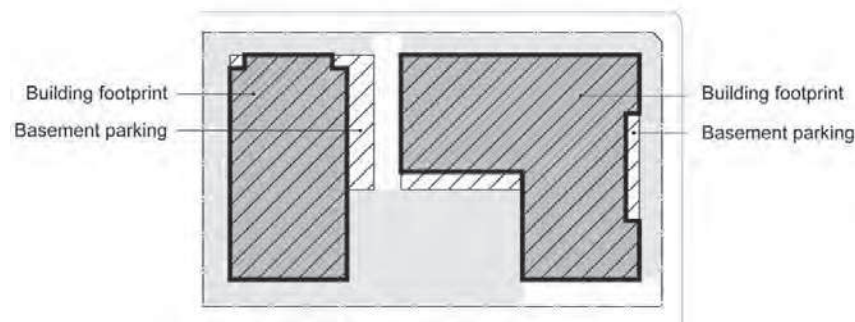


Figure 47 Basement parking located primarily under building footprints

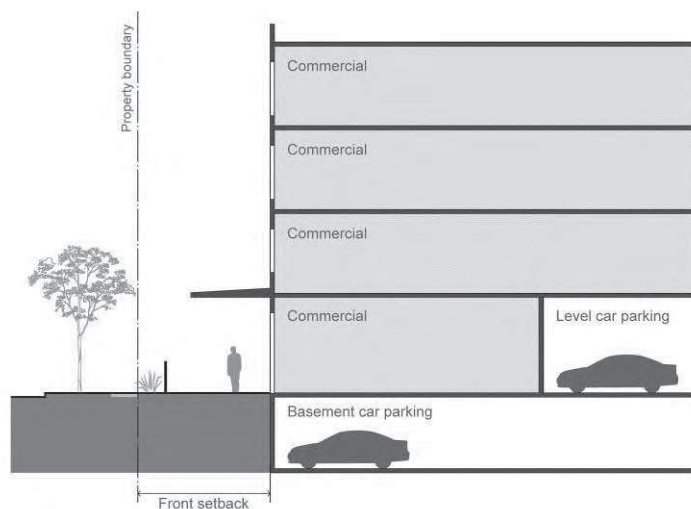


Figure 48 Basement parking behind front building line and located fully below footpath

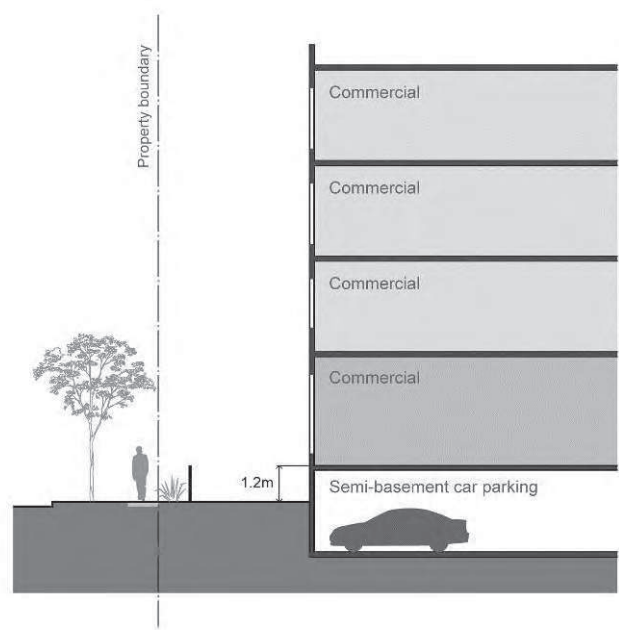


Figure 49 Semi-basement parking

6.6 Safety and Surveillance

OBJECTIVES

- a. To ensure personal safety for workers and visitors to the development.
- b. To ensure design minimises the opportunity for crime and maximises opportunities for passive surveillance.

CONTROLS

1. A Crime Risk Assessment Report must be prepared for each development in accordance with **Table 2** and **Table 3** in **Section 1.8.2** of this DCP.
2. Buildings should be designed to overlook public domain areas and provide casual surveillance.
3. Building entrances should be orientated towards the street to ensure visibility between entrances, foyers, car parking areas and the street.
4. Appropriate lighting should be provided to all cycle and pedestrian paths, bus stops, car parks and buildings.
5. Development should provide clear sight lines and well-lit routes between buildings and the street, and along pedestrian and cycle networks within the public domain.
6. Consideration should be given to the use of landscape elements so as to not compromise the perceived level of safety.



7.0

MANAGING THE ENVIRONMENT

7.0 MANAGING THE ENVIRONMENT

This section outlines the objectives and development controls relating to general Environmental Management of issues that apply across the entire Box Hill and Box Hill Industrial Precincts including conservation areas, integrated stormwater management, Aboriginal and European heritage, bushfire hazard management, tree and bushland protection, contamination, earthworks, soils and salinity, waste, riparian corridors and acoustics.

7.1 Integrated Stormwater Management

OBJECTIVES

- a. To ensure that appropriate stormwater management measures are implemented to maximise opportunities.
- b. To maintain and enhance the quality and integrity of urban waterways through both the construction and occupation phases of development.
- c. To encourage and create an urban form where risks to life and property, as a result of either minor or major flooding, are minimised.
- d. To maximise opportunities for a best practice Water Sensitive Urban Design approach at the individual lot, overall development and regional scales.
- e. To ensure urban development within the Precincts meets the required water quality objectives prior to discharge to the receiving waterways.
- f. To ensure that stormwater runoff is treated as a valuable resource and that its use for non-potable purposes is maximised.
- g. To minimise the impact of nuisance flooding to a level acceptable to the community.
- h. To reduce the impacts typically associated with urbanisation on receiving waterways, including a reduction in streamflow erosion potential.

CONTROLS

1. All development proposals are to provide for integrated stormwater management measures in accordance with the publication "Box Hill and Box Hill Industrial Precincts - Water Cycle Management Strategy Report" (BHBI WCMSR) (J. Wyndham Prince, February 2011) and updated by Water Cycle Management Post Exhibition Strategy Report (J. Wyndham Prince, May 2012) (BHBI PEWCMSR) and Water Cycle Management Post Re-Exhibition Strategy Report (J. Wyndham Prince, November 2012) (BHBI PREWCMSR). These documents embody the Floodplain Management Strategy referred to in the Box Hill & Box Hill Industrial Precinct Plan under the Growth Centres SEPP.
2. All habitable rooms shall have floor levels of a minimum of 500 mm above the Post Climate Change 1 in 100 year Annual Recurrence Level (ARI) flood levels indicated in the Development Control Map in the Growth Centres SEPP.
3. All stormwater drainage designs are to comply with the most up to date revision of Council's "Design Guidelines Subdivisions/Developments".

4. Post-construction (occupation) phase stormwater management objectives are to be achieved by all development through implementation of the Water Sensitive Urban Design (WSUD) strategy outlined in the BHBI WCMSR, BHBI PEWCMSR, BHBI PREWCMSR. Alternative innovative application of WSUD is permitted as long as it meets the performance objectives outlined in **Table 28** below.
5. WSUD is to be adopted throughout all development to provide sustainable and integrated management of land and water resources, incorporating best practice stormwater management, water conservation and environmental protection measures.
6. The WSUD strategy prepared for all development is to take into account water quality and stream erosivity objectives, together with attenuating flow rates and runoff volumes to acceptable levels following urban development.
7. 5. Design methodologies for WSUD infrastructure elements are to generally be consistent with the following publications:
 - Australian Runoff Quality (Engineers Australia 2005)
 - Water Sensitive Urban Design Technical Guidelines for Western Sydney (NSW Government Stormwater Trust and UPRCT, May 2004)
8. The overall water quality and stream erosivity performance objectives applicable to the Box Hill and Box Hill Industrial Precincts have been provided by the NSW OEH. Those performance objectives are set out in **Table 28**.

Table 28 Water quality and stream erosivity performance objectives for the North West Growth Centres

	WATER QUALITY % reduction in pollutant loads ¹				ENVIRONMENTAL FLOWS Stream Erosion Control Ratio
	Gross Pollutants (>5mm)	Total Suspended Solids	Total phosphorus	Total Nitrogen	Post-development duration of above 'stream forming flow': Natural duration of above 'stream forming flow' ¹
Stormwater management objective	90	85	65	45	3.5 – 5.0:1 ²
'Ideal' stormwater outcome	100	95	95	85	1:1

Source: DECCW, 2010

1. For the purposes of these objectives, the 'stream forming flow' is defined as 50% of the 50% AEP flow rate estimated for the catchment under natural conditions.
2. This ratio should be minimised to limit stream erosion to the minimum practicable. Development proposals should be designed to achieve a value as close to one as practicable, and values within the nominated range should not be exceeded. A specific target cannot be defined at this time.

9. Water quality modelling undertaken to support development proposals within the Precincts shall utilise MUSIC Version 5 (or later) and adopt the modelling parameters outlined in Attachment B of the BHBI WCMSR.

10. All buildings must install rainwater tanks to meet a portion of supply such as outdoor use and toilets. All residential dwellings are required to provide a (minimum) 3,000 litre (3 KL) rainwater tank as part of the WSUD strategy, and such tank is to be connected for use in toilet flushing and external uses. Larger tanks than the minimum requirement are permitted.
11. Each rainwater tank is to be provided with potable water trickle top-up with a back flow prevention device, complying with Sydney Water requirements.
12. In accordance with the recommendations made in the publication "Guidance on the Use of Rainwater Tanks" (enHealth, Commonwealth Government 2004), diversion of the "first flush" of up to 180 litres is to be incorporated into the design of the rainwater tank and associated plumbing based on a minimum first flush of 1L/m^2 of roof area.
13. Fencing within the riparian corridors has the potential to collect debris and inhibit the free passage of flood waters. Fences crossing the riparian corridor within the Ridge Area and the E2 Environmental Conservation must be designed so as not to impede the free passage of flood water either through the materials used in their construction or by providing sufficient open area within their form that the waterway area within corridor is not significantly reduced.
14. Industrial/commercial developments within the Precincts are required to manage the pollutant loads from each separate allotment to ensure compliance with the performance objective listed in **Table 28** above prior to discharge to any adjoining drainage system.
15. The design of the road systems within the areas of the Precincts that are affected by a Regional Probable Maximum Flood (i.e. Below R.L 26.4m AHD), should provide a "continuous rising grade" to ensure the safe evacuation of affected occupants within these areas. All designated evacuation routes as identified in **Figure 50** are to be designed to ensure that they remain functional and safe during a 500 year ARI local storm event.
16. The filling of flood affected land as shown in **Figure 51** is required to facilitate the urban development of the Precinct and shall to be to a minimum of 100 year ARI flood levels in the adjacent creeks. Habitable floor levels are to be in accordance with control 2 above.
17. For these flood affected areas shown in **Figure 51**, a site specific investigation may be required to demonstrate that the localised site filling does not have adverse impacts on adjoining land/s or result in a localised flood levels increase within the adjoining creeklines. Potential impacts are to be assessed against The Hills Shire Council guidelines and industry standards. There may be a need to advance the riparian corridor upgrades works as part of any development that results in offsite impacts (localised changes to flood depth, flow velocity or flood hazard) or if a development adjoins a riparian corridor as defined in the ILP.
18. Gross pollutant traps to be provided prior to discharge to any of the Precinct's water quality devices or riparian corridors.
19. Pipe outlets to bio-retention devices should provide for a minimum 50 mm drop to the devices bed levels.
20. If at the time of the development, the Water Cycle Management strategy that formed part of the BHBI WCMSR, BHBI PEWCMSR or BHBI PREWCMSR, is not fully implemented or development is proposed that is not in sequence with the anticipated development scenario as presented in Figure 9.1 of BHBI PEWCMSR, then a site specific assessment will be needed. The assessment will need to demonstrate that the development does

not adversely affect adjoining land or the downstream receiving waters from a flood depth, flow velocity or flood hazard perspective. Flows, flood depth and flood hazards are to be reported at the discharge point from the development, Precinct discharge point (Confluence of Boundary Road and Killarney Chain of Ponds or Second Ponds creek) and any at major confluence points within the catchment relevant to the development. This assessment is to ensure impacts are in accordance with The Hills Shire Council guideline/s or industry standards. The mitigation of any potential adverse impacts may be achieved by interim measures until upstream controls are implemented.

21. For those areas shown in **Figure 52** that do not drain directly to Precinct based water quality devices, the existing / interim devices that are present within the catchment at the time of the development, are to be assessed to ensure stormwater runoff from that development meets the water quality targets list in **Table 28**. An assessment of water quality targets is required at the Precinct's discharge point (i.e. at Boundary Road or discharge point to Second Pond Creek). The mitigation of any potential adverse water quality impacts may be achieved by interim measures until upstream controls are implemented. Any interim assessment needs to demonstrate compliance with this requirement.
22. Flow management may be implemented as per Section 6.10 BHBI WCMSR or Section 9.0 of BHBI PEWCMSR. Council can provide the applicant with the Precinct wide base water quality and water quantity models to facilitate the assessment process.
23. During the construction phase of development, the relevant Stormwater Management Objectives for New Development as set out in the most up to date revision of "Managing Urban Stormwater: Soils and Construction" (NSW Department of Housing) must be complied with in full.
24. Erosion and sediment control measures are to be implemented and regularly maintained on site, while sediment trapping measures are to be located at all points where stormwater runoff can enter inlets to stormwater systems, or where runoff may leave the construction site.

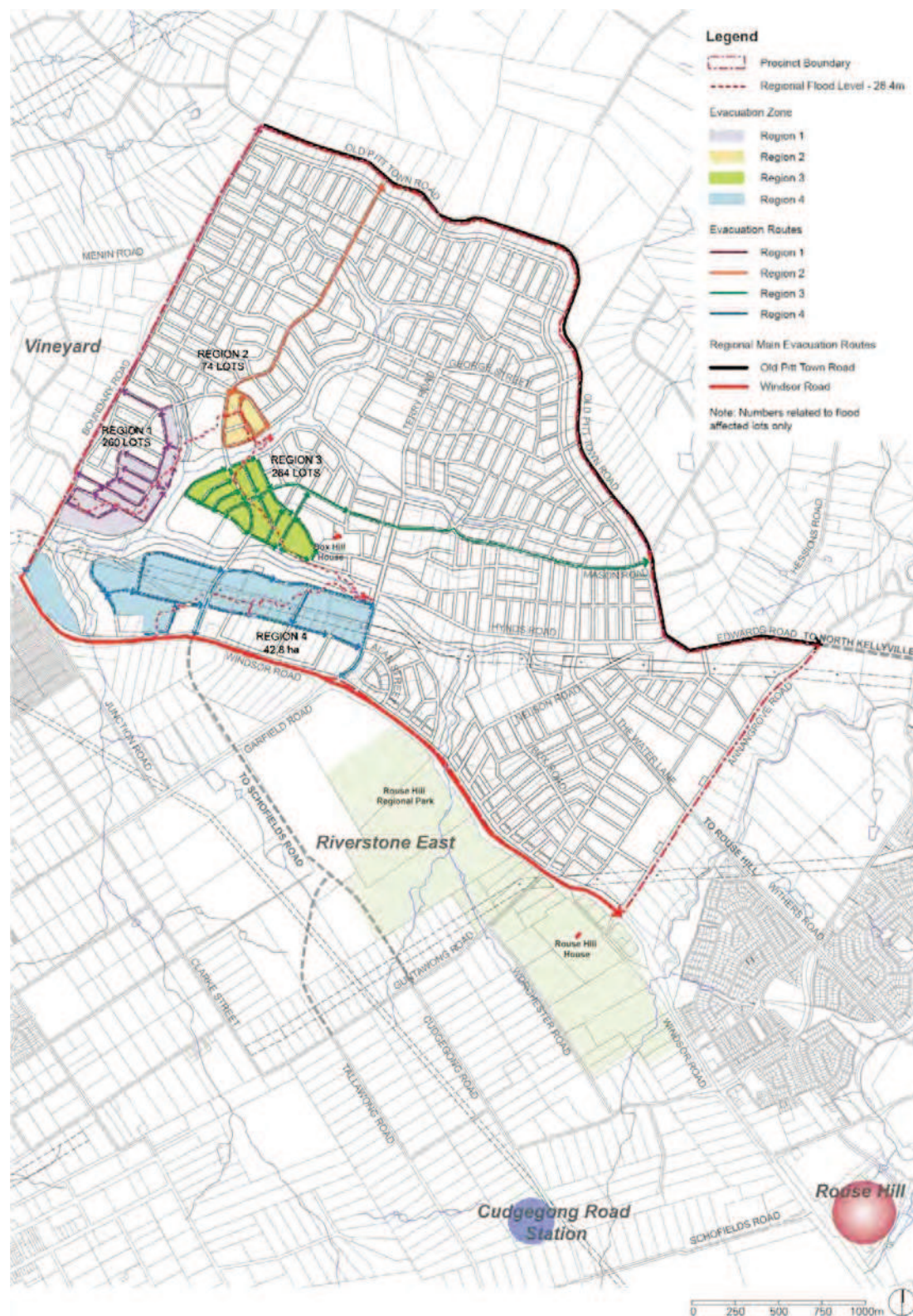


Figure 50 Evacuation plan for regional PMF event



Figure 51 Flood Affected areas with Potential to be Filled

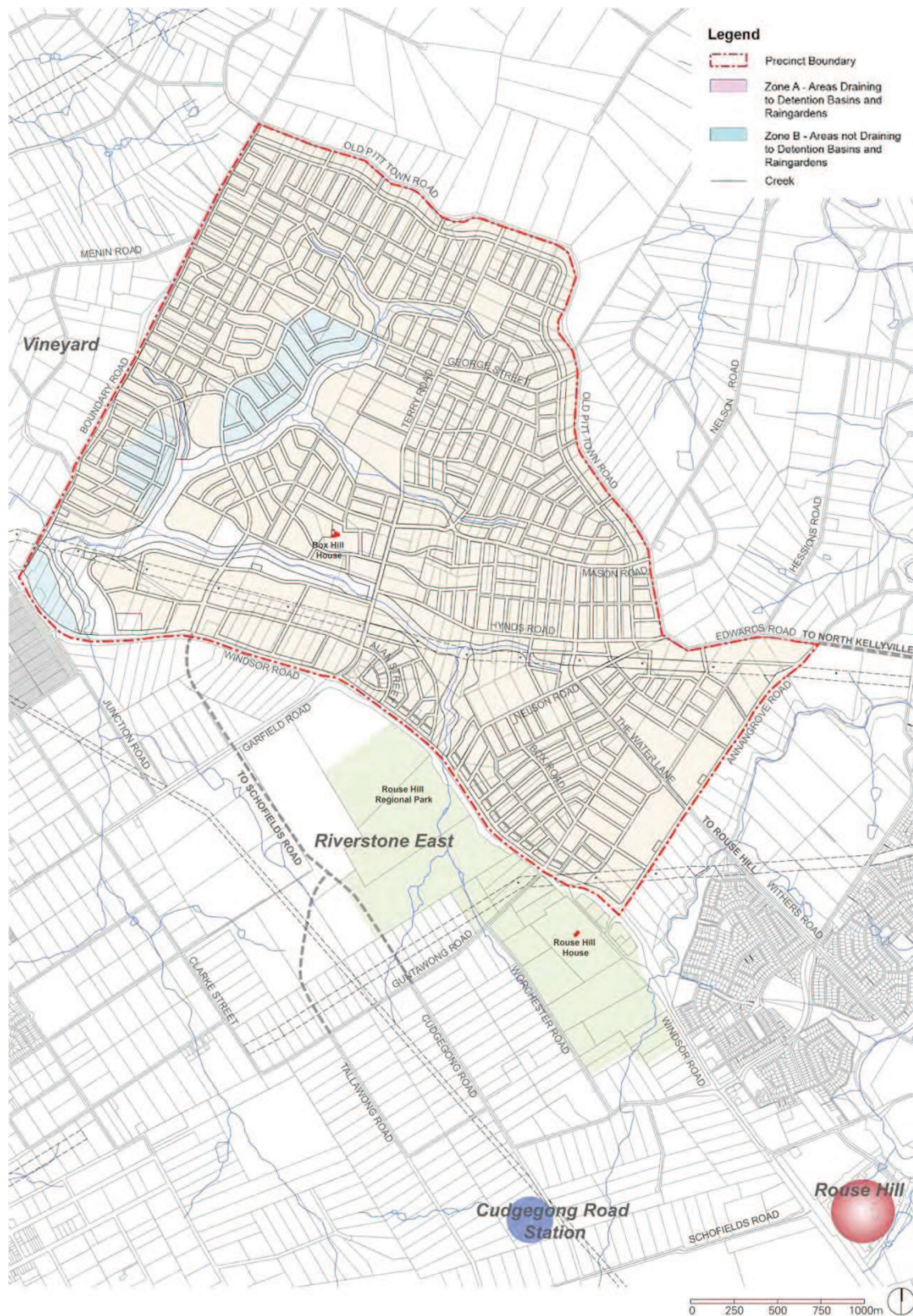


Figure 52 Catchments that bypass stormwater management devices

7.2 Aboriginal Heritage

OBJECTIVES

- a. To protect and manage the known and potential Aboriginal heritage values of the Box Hill and Box Hill Industrial Precincts.

CONTROLS

1. Known Aboriginal archaeological sites within the Precincts are shown in yellow in **Figure 53**. An Aboriginal Heritage Impact Permit (AHIP) issued under Part 6 of the *National Parks and Wildlife Act 1974* (NPW Act) is required for any works which directly affect these sites.
2. Previously recorded areas of Potential Archaeological Deposit (PAD) within the Precincts are shown as black-hatched in **Figure 53**.
3. Development within these areas should not proceed without archaeological test excavation. Test excavation is to be carried out in accordance with the relevant code of practice stipulated in the *National Parks and Wildlife Regulation 2009* (NPW Regulation). If Aboriginal objects are encountered during test excavation, an AHIP issued under Part 6 of the NPW Act will be required. Consultation with Aboriginal stakeholders is required under DECCW policy when an application for an AHIP is considered.
4. Areas of high archaeological sensitivity as shown in **Figure 53** warrant archaeological test excavation. Test excavation is to be carried out in accordance with the relevant code of practice stipulated in the NPW Regulation. If Aboriginal objects are encountered during test excavation, an AHIP issued under Part 6 of the NPW Act will be required. Consultation with Aboriginal stakeholders is required under OEH policy when an application for an AHIP is considered.
5. Areas of moderate archaeological sensitivity as shown in **Figure 53** warrant an Aboriginal archaeological due diligence assessment. This assessment is to be conducted in accordance with the relevant code of practice stipulated in the NPW Regulation.
6. Areas of low archaeological sensitivity as shown in **Figure 53** do not contain any known Aboriginal heritage constraints. However, Aboriginal objects may still occur in these areas. If any Aboriginal objects are encountered during development, an AHIP issued under Part 6 of the NPW Act will be required. Excluded from this control are those areas of low sensitivity that fall within the boundaries of previously recorded areas of PAD.

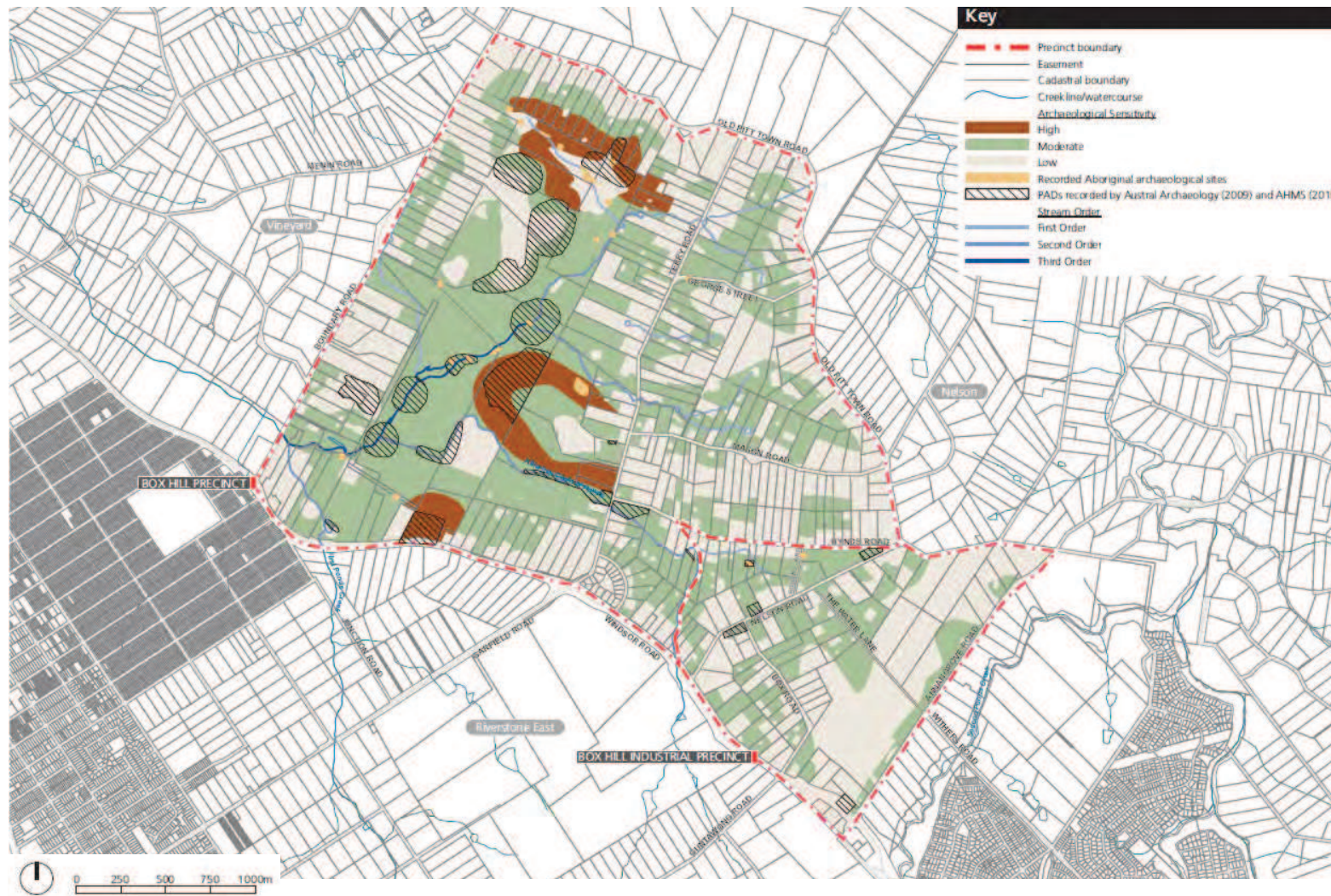


Figure 53 Sensitive Aboriginal archaeological areas

7.3 European Heritage

OBJECTIVES

- a. To conserve and protect identified items of heritage significance and a building, relic or structure that is considered by Council to be of heritage significance.
- b. To protect the archaeological potential of the area.
- c. To ensure the archaeological potential is adequately managed.

CONTROLS

1. Development on land within 50 metres of a heritage site is not to detract from the identified significance of the place, its setting, nor obstruct important views to and from the site.
2. New structures proposed on land adjoining a heritage building should be of similar scale and proportions to the heritage building.
3. Where development is proposed within 50 metres of a heritage site, the following matters must be taken into consideration:
 - the character, siting, bulk, height and external appearance of the development;
 - the visual relationship between the proposed development and the heritage site;
 - the potential for overshadowing of the heritage site;
 - the colours and textures of materials proposed to be used in the development;
 - the landscaping and fencing of the proposed development;
 - the location of car parking spaces and access ways into the development;
 - the impact of any proposed advertising signs or structures;
 - the maintenance of the existing streetscape, where the particular streetscape has particular significance to the heritage site;
 - the impact the proposed use would have on the amenity of the heritage site; and
 - the effect the construction phase will have on a heritage building.
4. Refer to **Section 8.0** for Special Area Controls for Box Hill House, Box Hill Inn, Marklye and The Hunting Lodge.

BYPASSED SECTION OF OLD PITT TOWN ROAD

5. The location of the Bypassed Section of Old Pitt Town Road is shown in **Figure 54**.
6. No road is to be created off the Bypassed Section of Old Pitt Town Road.
7. Prior to any development that affects the Bypassed Section of Old Pitt Town Road, a Heritage Impact Statement is to be prepared, including impacts to archaeological potential.

BOX HILL / NELSON COMMUNITY HALL

8. The location of the Box Hill / Nelson Community Hall is shown in **Figure 54**.

IDENTIFIED ARCHAEOLOGICAL SITES

9. The location of identified potential archaeological sites is shown in **Figure 54**.
10. Prior to granting consent for development that will be carried out on archaeological sites that have non-Aboriginal heritage significance the consent authority must:
- consider a Heritage Impact Statement explaining how the proposed development will affect the conservation of the site and any relic known or reasonable likely to be located at the site, and
 - Be satisfied that any necessary excavation permit required by the Heritage Act 1977 has been granted.

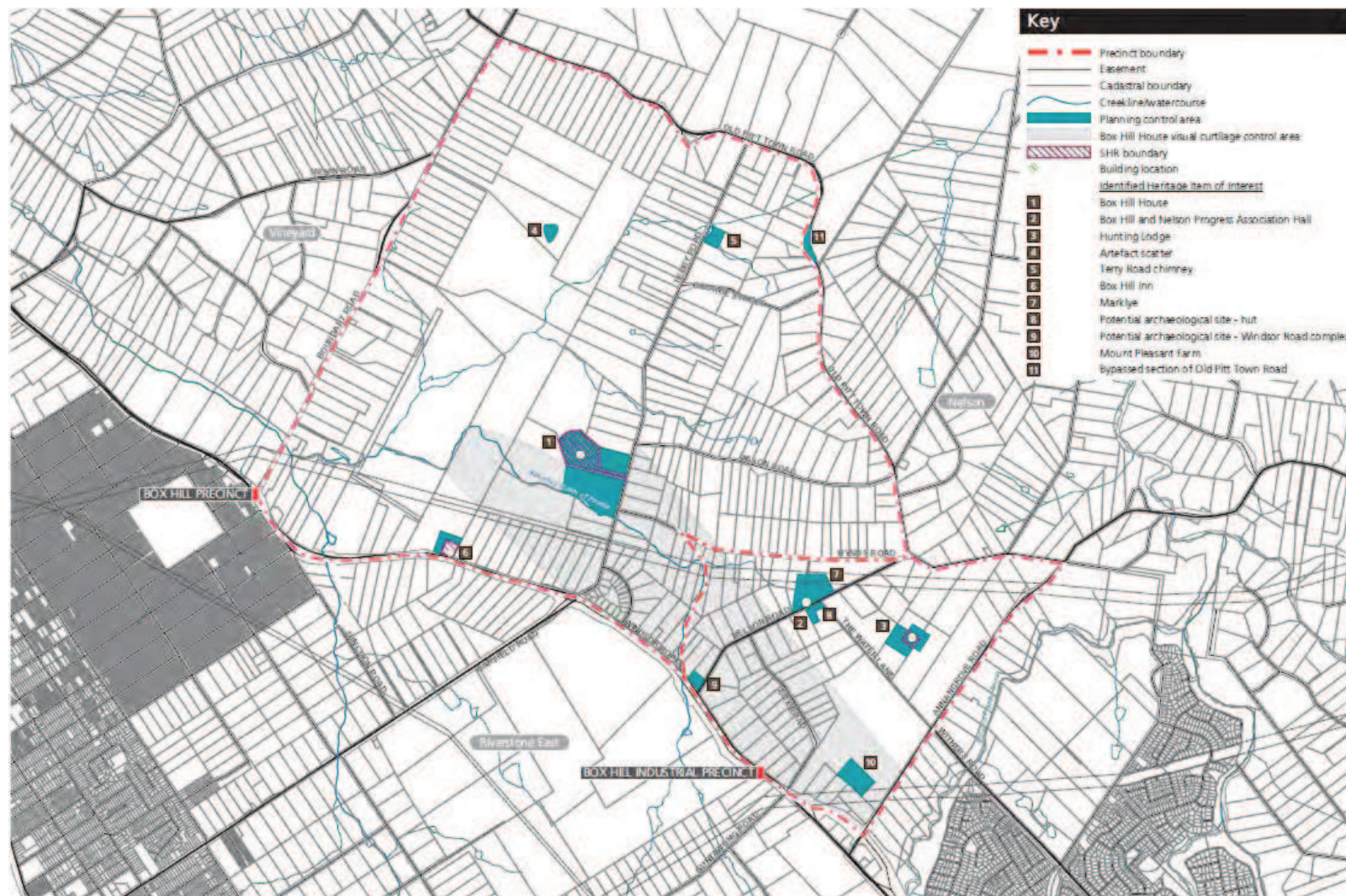


Figure 54 Location of heritage items

7.4 Bush Fire Hazard Management

OBJECTIVES

- a. To prevent loss of life and property due to bushfires, by discouraging the establishment of incompatible uses in bushfire-prone areas.
- b. To ensure adequate fuel management of asset protection zones in accordance with the Rural Fire Service (RFS) fuel management standards.
- c. To define construction standards that applies to lots within 100 m of bushfire prone vegetation.

CONTROLS

1. Subject to detailed design at Development Application stage, the indicative location and widths of Asset Protection Zones (APZs) are to be provided generally in accordance with the following:
 - are to be located wholly within the Precincts;
 - may incorporate roads and flood prone land,
 - are to be located wholly outside of vegetation shown in the Core Riparian Zone of the riparian corridors and fuel management not impacting on vegetation within these areas in any way,
 - may be used for open space and recreation subject to appropriate fuel management,
 - are to be maintained in accordance with Planning for Bushfire Protection 2006 (NSW Rural Fire Service),
 - may incorporate private residential land, but only within the building setback,
 - are not to burden public land, and
 - are to be generally bounded by a perimeter fire trail/road that is linked to the public road system at regular intervals in accordance with Planning for Bushfire Protection 2006.
2. Reticulated water is to meet the standards contained within *Planning for Bushfire Protection 2006*. Water supply is to be via a ring main system, engineered to the requirements of Australian Standard AS 2419.1 – Fire Hydrant Installations.
3. Vegetation management within public parks and community title areas is to be subject to completion of a Fuel Management Plan that is to be integrated within the Park Plan of Management.
4. Landscaping and property maintenance for lots within 100 m of bushland are to be in accordance with measures described in Appendix 5 of *Planning for Bushfire Protection 2006*.
5. Buildings adjacent to APZs (refer **Figure 55**) are to be constructed in accordance with the requirements of Appendix 3 of *Planning for Bushfire Protection 2006* and Australian Standard 3959-2009 - Construction of Buildings in Bushfire Prone Areas.
6. Where an allotment fronts and partially incorporates an APZ (refer **Figure 55**) it shall have an appropriate depth to accommodate a dwelling with private open space and the minimum required APZ. The APZ will be identified through a Section 88b instrument.

7. Temporary APZs, identified through a Section 88b instrument, will be required where development is proposed on allotments next to undeveloped land. Once the adjacent stage of development is undertaken, the temporary APZ will no longer be required and shall cease.
8. Roads are to be designed in accordance with acceptable solutions as defined within *Planning for Bushfire Protection 2006*.

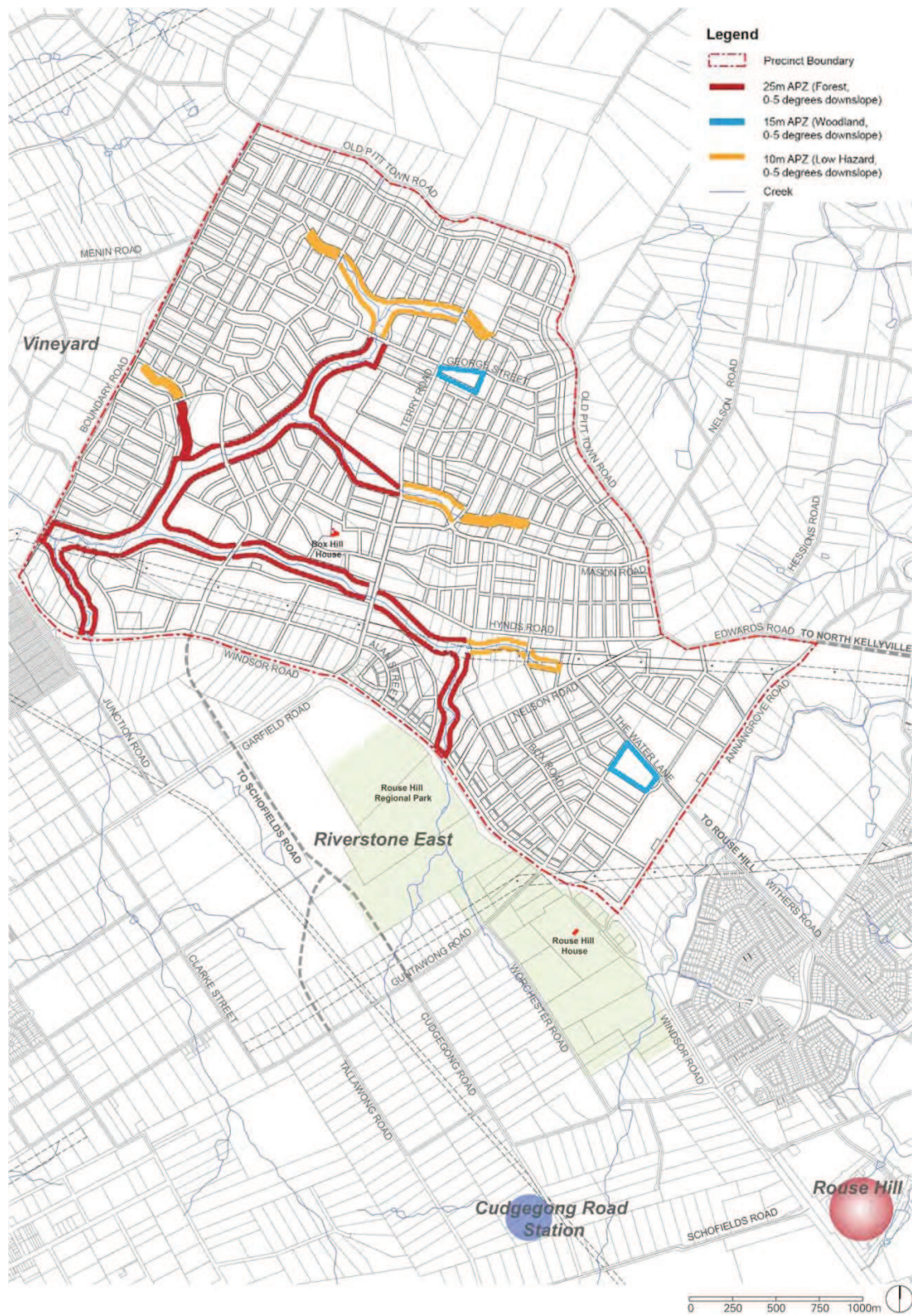


Figure 55 Indicative APZ requirements

7.5 Tree and Bushland Protection

The retention of trees and bushland in new development areas provides a range of benefits including a contribution to the character of the neighbourhood, spatial definition and environmental values.

OBJECTIVES

- a. To ensure bushland is substantially retained and protected and that development enhances and complements this bushland.
- b. To ensure through appropriate protection mechanisms that development and subdivision adjacent to bushland do not detrimentally affect the continued survival of that bushland.
- c. Provide a basis for increasing lot areas and altering lot shapes to enable the retention of trees and bushland.

CONTROLS

1. Where it is likely that mature trees will be removed either through the creation of a residential lot or through its subsequent development Council will require:
 - The lot area to be increased beyond the minimum lot size so as to ensure mature tree(s) are retained; or
 - The lot boundaries to be rearranged to ensure mature tree(s) are retained; or
2. Prior to submission of a development application for the purposes of subdivision, the applicant is to prepare a Tree Management Plan utilising the services of a qualified arborist. This report will ensure an understanding of the condition of existing trees, which will assist in analysing the site opportunities, and is to be submitted at subdivision application stage. The Tree Management Plan must incorporate a survey of all trees as defined under Council's Tree Management Plan and all bushland, as defined by SEPP 19 - Bushland in Urban Areas.
3. Protective fencing is to be provided around trees and bushland to be retained to prevent damage. Fences are to be constructed at the drip-line of existing vegetation as a minimum to prevent damage within the drip-line/protection zone by limiting access into it.

7.6 Contamination Management

OBJECTIVES

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

CONTROLS

1. For all proposed development a Stage 1 – Preliminary Site Contamination Investigation is required unless it can be demonstrated that such an investigation is not required, such as in bushland areas where it can be established that there has been no previous development. A Stage 2 assessment will be required where the Stage 1 report identifies that the site is potentially contaminated. A Remediation Action Plan (RAP) will be required for areas identified as contaminated land in the Stage 2 Investigation.
2. An assessment for asbestos should be undertaken on all properties prior to residential development. An Asbestos Management Plan may be required for the site to guide demolition works and also during ground excavations for construction.
3. All investigation, reporting and identified remediation works must be in accordance with the protocols of the NSW EPA's (now OEH) Guidelines for Consultants Reporting on Contaminated Sites and SEPP 55 – Contaminated Land.
4. Prior to granting development consent, the Council must be satisfied that the site is suitable, or can be made suitable, for the proposed use. As detailed under SEPP 55, Category 1 remediation works identified in any Remediation Action Plan (RAP) requires Council consent prior to the works commencing; and Category 2 remediation works require Council to be notified.
5. Council may require a Site Audit Statement (SAS) (issued by an OEH Accredited Site Auditor) where remediation works have been undertaken to confirm that a site is suitable for the proposed use.
6. Council may require a Hazardous Material Survey to be prepared and included with the development application where there are existing buildings, sheds and structures on site.

7.7 Geotechnical

OBJECTIVES

- a. To ensure proposed development does not result in movement or slip.
- b. To ensure soil movement or land slip does not adversely affect proposed development.
- c. To ensure that buildings are designed to respond to limitations in relation to land capability.

CONTROLS

1. A geotechnical assessment must be prepared and submitted with a Development Application as per **Tables 2 and 3** in **Section 1.8.2**.
2. The localised steep banks of the water courses should undergo individual assessments where they are to be upgraded;
3. Where heavy structures such as bridges and culverts are required in the flood plain of the Killarney Chain of Ponds specific geotechnical testing will be required once the construction proposal is known, as any proposed works in this area will potentially encounter water table issues and soft soils. A structural engineer should take into consideration the Land Capability, Salinity and Contamination Project, Box Hill Precincts prepared by WSP Environment and Energy dated February 2011.
4. Where drainage works are proposed to existing natural drainage lines, the following issues must be considered:
 - any realignment of the existing natural drainage will require back filling and remediation work, which must include removing all soft strata from the drainage line;
 - remedial works should ensure that in future wet periods, the backfill does not become any wetter than the adjacent natural ground;
 - the backfill should not be compacted to an extent that it will act as a barrier to sub-surface and groundwater flow, resulting in waterlogging and salinity impacts; and
 - alluvial clayey silt should not be used as a structural fill for recompaction.
5. When filling in areas of the flood plain the following issues must be considered and development specific geotechnical testing may be required:
 - Any proposed filling should not inhibit creek flow in wet periods;
 - Topsoil must be excluded from the area;
 - The influence of the water table and its variations from wet to dry seasons on the overlying fill must be considered; and
 - Some strata at depth in the flood plain / low lying areas is only soft to firm, which may not have sufficient strength to support the proposed new loads applied from retaining walls, fill loads and structural loads.

6. Development applications on land where existing dams are present will require the submission of a geotechnical assessment to establish the suitability of land for the proposed development, as well as back filling of the dams and remediation work.

7.8 Subdivision Earthworks

OBJECTIVES

- a. To minimise topsoil and vegetation removal and “land-shaping” on land where residential subdivisions are being constructed.

CONTROLS

1. Earthworks shall be minimised to locations where the construction of roads require earthworks to be undertaken.
2. Such earthworks may extend into the proposed allotments for the purpose of providing suitable vehicle access to the identified building platform referred to in **Section 4**.
3. Vegetation and topsoil are not to be removed or disturbed in areas outside of the above areas of proposed construction.
4. All proposed public open space areas are to be fenced and are not to be disturbed or used for any purpose during the construction of a subdivision.
5. Subdivision applications must provide a plan showing the existing pre-development and proposed finished ground levels to enable an assessment of the extent of earthworks proposed and assessment of the relationship between the finished road levels and proposed building platform levels.

7.9 Cut and Fill

OBJECTIVES

- a. To provide a landform that is capable of supporting a range of residential, business and industrial uses.
- b. To minimise the impact of earthworks on the stormwater regime, salinity and groundwater.
- c. To ensure that the extent of cut and fill required for large scale development does not detract from the appearance and design.
- d. To ensure that development is capable of visual integration with the surrounding environment.
- e. To ensure that any imported fill material to a site is clean and complies with the contamination and salinity provisions of this section.
- f. To ensure land is appropriately stabilised and retained.
- g. To ensure that the extent of cut and fill does not encroach within, or adversely affect the efficiency, integrity and stability of any open space area.
- h. To minimise the need to cut and fill at the subdivision phase of development.
- i. To ensure accessibility where necessary.

CONTROLS

1. Fill will only be permitted in the designated areas shown in **Figure 51** and **Section 7** of this DCP for the floodplain.
2. A Fill Plan must be prepared in accordance with **Tables 2 and 3** in **Section 1.8.2** of this DCP.
3. A cut and fill works shall be in accordance with Council's Design Guidelines Subdivisions/ Developments and Works Specification Subdivisions/ Developments
4. All landfilled areas must comprise clean material free from contamination. Imported material shall be certified "Virgin Excavated Natural Material (VENM)".
5. Landfilled areas must be suitably compacted and stabilised with density tests to verify that compaction was achieved in accordance with Council requirements.
6. Land filled areas must be revegetated where appropriate.
7. Embankment batters shall have a maximum slope of 1:6.
8. Embankment batters and retaining walls are to be landscaped to reduce erosion and provide a suitable screen. They should be vegetated preferably with native ground covers and small native trees with mature height of up to 10 m.

7.10 Salinity Management

OBJECTIVES

- a. To manage and mitigate the impacts of development on salinity and vice versa;
- b. To maintain a natural water balance;
- c. To maintain good drainage;
- d. Avoid disturbance or exposure of sensitive soils;
- e. Retain or restore native vegetation on areas with high groundwater recharge potential or where protecting salt affected land in potential discharge zones; and
- f. Implement building controls and engineering response where appropriate.

CONTROLS

1. Applications are required to demonstrate an understanding of the site salinity in order to prepare appropriate strategies for developing the site.
2. Erosion is to be mitigated and managed during the construction stage of development as detailed in Sections 4 and 5 of the Landcom (2006) *Managing Urban Stormwater, Soils and Construction – Volume 1, 4th Edition* document.
3. Given the saline nature of the groundwater it is considered that extraction for irrigation purposes should not occur within the Precincts.
4. Stormwater and drainage impacts on salinity are to be managed as follows:
 - Implementation of measures to avoid the infiltration of storm water;
 - Permanent surface water infrastructure such as water features, ponds and dams should be lined and regularly maintained to limit infiltration;
 - Underground water carrying pipes are to be properly installed to eliminate leaks. Existing pipes and systems should be checked for damage or leaks. Rubber sealed pipes or superior equivalent should be used for water carrying pipes to minimise the risk of leakage;
 - Avoid over irrigation with the installation of an efficient irrigation system, apply 'waterwise' principles with procedures designed to avoid excessive infiltration through the soil;
 - Consideration given to salinity and infiltration when designing and installing swimming pools;
 - Minimise the disturbance to natural drainage patterns;
 - Infrastructure such as slabs, foundations and retaining walls should be designed to allow good drainage and minimise water logging. The design and layout of retaining walls, driveways and underground services should have minimal cut, minimise impediment of natural groundwater flow and provide good drainage. Design and construction is to be carried out in accordance with Australian Standards and Building Codes, to ensure current best practices are occurring; and
 - Guttering and down pipes are to be properly connected and maintained.

5. The impact of vegetation and landscaping on salinity is to be managed as follows:
 - Areas of established vegetation should be maintained as much as practical. Deep-rooting, salt tolerant plants, and water efficient turf should be planted to use the groundwater source and reduce infiltration;
 - Landscaping plans apply to 'waterwise' gardening principles. However, procedures designed to encourage excessive infiltration through the soil should be avoided. In certain landscaping situations, infiltration measures to be incorporated may include a subsurface drain and liner when rapid infiltration to groundwater is likely to occur;
 - Irrigation systems should be properly installed to avoid leakage and 'smart' sprinkler systems should be considered; and
 - Damp proof courses should be properly installed during the construction of infrastructure, and maintained throughout construction and landscaping.
6. During construction impacts to salinity are to be managed as follows:
 - Consideration should be made to use salt resistant bricks and construction materials as a preventative measure for infrastructure degradation. Susceptible construction material, such as seconds and porous material should be avoided;
 - Areas of cut and fill on sites should be restricted to building envelope;
 - Existing areas of water logging and poor drainage should be avoided or remediate, with consideration to shrink swell hazard;
 - Erosion / disturbance are to be minimised and re-vegetated with appropriate species. Construction techniques should minimise site disturbance and the exposure of sensitive soil material;
 - Damp proof membrane should be installed under slabs;
 - Reduce the exposure of materials to corrosive soils; and
 - Implementation of mitigation measures to address potential soil erosion during construction due to sodic and exposed soils.

MANDATORY BUILDING REQUIREMENTS:

7. The following measures must be used for house slabs and footings: For slab on ground construction, a layer of sand at least 50 mm deep under the slab must be provided;
8. A damp proof membrane (rather than a vapour proof membrane) must be laid under the slab (NSW BCA 3.2.2.6);
9. The damp proof membrane must be extended to the outside face of the external edge beam up to the finished ground level. (*as per clause 3.2.2.6 and figure 3.2.2.3 of the BCA*);
10. Class 32 Mpa (N32) concrete must be used OR a sulphate resisting Type SR cement with a water cement ratio of 0.5 must be used;
11. Slabs must be vibrated and cured for a minimum of three days

12. The minimum cover to reinforcement must be 50 mm from unprotected ground;
13. The minimum cover to reinforcement must be 30 mm from a membrane in contact with the ground;
14. The minimum cover to reinforcement must be 50 mm for strip footings and beams irrespective of whether a damp proof membrane is used;
15. Admixtures for waterproofing and/or corrosion prevention may be used.
16. The following measures must be used for brickwork:
 - The damp proof course must consist of polyethylene or polyethylene coated metal and be correctly placed; (SA BCA 3.3.4.4);
 - Exposure class masonry units must be used below the damp proof course including for strip footings; (Clause 3.3.1.5 (b) and Table 3.3.1.1 of the BCA);
 - Appropriate mortar and mixing ratio must be used with exposure class masonry units; (clause 3.3.1.6 and Table 3.3.1.2 of the BCA);
 - Admixtures for waterproofing and/or corrosion prevention may be used.
 - The following measures must be used for all buildings:
 - Once installed the damp proof course or the vapour barrier must not be breached by any later works or additions such as; steps, verandahs, walls, rendering, bagging, pointing, paving or landscaping.
 - Appropriate sub-soil drainage must be installed for all slabs, footings, retaining walls and driveways;
 - The dwelling must be designed to suit the sites existing topography and any cut and fill required must not exceed 500 mm (unless approved in the Development Application).

RECOMMENDED FOR ALL LANDSCAPED AREAS:

- Landscaping and garden designs should not be placed against walls and minimise the use of water on the site.
- Low water requiring plants and water-wise garden designs are preferred.
- The use of grey water for the watering of lawns and gardens should be monitored to avoid water logging, as grey water can be high in salts. The use of low salt detergents is recommended.

7.11 Waste Management

OBJECTIVES

- a. To ensure sufficient storage and collection of wastes and recyclables during demolition and construction stages of development.
- b. To minimise waste generation and disposal to landfill via use of the waste hierarchy and careful source separation, reuse and recycling.
- c. To ensure the provision of adequate and appropriate storage areas for waste and recyclables.

CONTROLS

1. A Waste Management Plan is to be submitted with all development, with the exception of single dwelling housing. The Plan is to address:
 - best practise recycling and reuse of construction and demolition materials.
 - how recycled material, garbage and other waste generated by clearing, excavation and construction are to be stored and controlled,
 - the type and volume of waste expected to be generated during construction, and
 - handling methods and location of waste storage areas, including that such handling and storage has no negative impact on the streetscape, building presentation or amenity of occupants and pedestrians.
2. Provide adequate space within the main building for separation of waste material for recycling. Locate such facilities away from windows to habitable rooms.
3. Garbage storage areas must be located so as to not cause any negative impacts, in terms of visual appearance, noise or smell, to adjoining properties, or to the street.
4. Separate garbage from recycling chutes so that waste is divided into separate waste streams in order to recycle materials.
5. Where present, rear lanes are to be used for garbage collection.
6. Utilise ventilation stacks wherever possible to vent shops and basements.

7.12 Riparian Corridors and Environmental Conservation Areas

OBJECTIVES

- a. To protect, restore and enhance the environmental values and functions of water courses and riparian corridors.
- b. To ensure that the development has a neutral or beneficial impact on the quality and quantity of water and water courses.
- c. To allow for some limited use of riparian corridor buffers for low impact recreation activities such as walking and cycling.
- d. To maintain a stable naturally functioning watercourse that supports a viable naturally occurring local aquatic community.
- e. To provide, restore, rehabilitate and maintain the riparian corridor with the local provenance vegetation community.
- f. To provide a continuous riparian corridor that links to established stands of remnant vegetation and provides extensive habitat and connectivity for naturally occurring terrestrial fauna.
- g. To ensure vegetation in the CRZ is at a density that would occur naturally for the riparian ecotone.
- h. To minimise the number of road crossings to maintain riparian connectivity.
- i. To maintain riparian connectivity through the use of pierced crossings on Category 1 watercourses (other than for utilities).

CONTROLS

1. Riparian corridors are to be provided in accordance with **Figure 56** and designed in accordance with the specific objectives and controls set out in **Table 29**.
2. Maintain a stable naturally functioning watercourse that supports a viable naturally occurring local aquatic community.
3. A Vegetation Management Plan (as described in **Table 3**) is to be submitted to Council as part of the residential subdivision DA for any land within a lot that has or partly has an E2 zoning. Where wetlands are proposed, a wetland management plan outlining, initial condition, maps, design specifications, monitoring, management and maintenance requirements, techniques, timelines, pest management, ownership, ongoing management, annual maintenance costs and initial development costs shall be submitted with any development application.
4. Infrastructure services, stormwater infrastructure, water quality treatment ponds, flood compatible activities (ie playing fields), pedestrian and cycleways, and asset protection zones are to be located outside of the CRZ. These uses are permitted within the vegetated buffer if the impact on riparian functions is minimal and its integrity maintained. Water quality treatment devices are permissible within the CRZ providing that they are vegetated dry basins, are above top of bank and do not increase flood levels.
5. Minimise the number of watercourse crossings to maintain riparian connectivity. It is recommended that both during construction and post construction the following measures be undertaken to reduce impacts:

- Minimise the disturbance footprint during construction (offsets may be required to any impacts on ENV outside of the road corridor)
 - Fencing to minimise the area disturbed during construction and operation
 - Weed control and management
 - Erosion and sediment control
 - Revegetation and rehabilitation of disturbed areas using local provenance species
1. Locate access ways to and within a riparian protection area so that they do not compromise the environmental objectives for that watercourse or stream bed and / or be stability and are also consistent with NSW State Government Guidelines (e.g. protection of fish habitat, water quality, water stability).
 2. All CRZs are to be rehabilitated and revegetated with appropriate native vegetation having regard to its drainage function and vegetation management for bushfire protection. Vegetation within the CRZ is to be at a density that would occur naturally for the riparian ecotone.
 3. The riparian corridor is to remain, or become vegetated, with native vegetation (trees, shrubs and groundcover species) according to the appropriate local provenance vegetation community.
 4. Environmental protection works, drainage (outlet pipes only) and crossings (e.g. roads, service utilities and paths) are permitted with consent within the riparian protection area.
 5. The APZ, or any part of the APZ, must not be located within the Core Riparian Zone.
 6. Stormwater runoff must be treated before being discharged into riparian zones or watercourses.
 7. Structures for water quality and flood detention purposes must be located outside the riparian corridor unless otherwise approved by ORH. It must also be demonstrated that the impact on riparian functions is minimal and its integrity maintained. Unless it can be demonstrated that they can be fully vegetated, and the intent of the riparian corridor is not compromised, all water quality structures must be located outside the riparian corridors.
 8. Measures to contain and attenuate low flow events (less than 5 year) are permitted providing they are fully vegetated and it can be demonstrated that the required environmental outcomes can be achieved.
 9. Development consisting of crossings of riparian protection areas or watercourses, includes but is not limited to roads, paths, cycleways and the laying of service utilities. Each of these activities must be minimised and designed and constructed in accordance with OEH guidelines to minimise ecological impacts. For all lands located within the riparian protection areas a VMP must be prepared. The plan must include a monitoring and maintenance strategy which must be prepared collaboratively by key stakeholders. A report on the monitoring and maintenance of the works must be submitted to council at six monthly intervals for the first year and then yearly intervals for the following year or for a period of time that is to the satisfaction of all parties.
 10. No battering is permitted within the riparian corridor unless within approved online detention areas.
 11. All works proposed in, on or under “waterfront land” as defined under the *Water Management Act 2000* must comply with the requirements of the Act and may require a “controlled activity” approval from the NSW Office of Water.

12. Waterway crossings are required to have a minimum opening width equating to 50% of the width of the relevant riparian corridor.

Development within the E2 Environmental Conservation Zone

13. Permitted uses under the Growth Centres SEPP, except essential infrastructure such as road crossings and Sydney Water works should only be located in areas outside the Riparian Protection Area as illustrated in **Figure 56** and **Figure 57**.
14. Perimeter roads as illustrated in the Indicative Layout Plan are the preferred development option along the edge of the Riparian Corridors. Refer to **Figure 58**.

Table 29 Riparian corridors objectives and controls

Specific objectives	Specific controls
Category 1	
(1) To provide a continuous, riparian corridor for the movement of flora and fauna species through and beyond the catchment. (2) To provide extensive habitat and connectivity for naturally occurring terrestrial fauna. (3) To maintain the viability of native riparian vegetation.	(1) For the Killarney Chain of Ponds and First Ponds Creek is a riparian corridor of at least 100 m width (50 m each side of watercourse), including Core Riparian Zone (CRZ) of an average 80 m measured from top of bank (TOB), 20 m Vegetated Buffer (VB) and an additional width that equals the width of the channel between the top of banks. (2) Links to established stands of remnant vegetation where possible (3) Restore and rehabilitate the CRZ with local provenance native vegetation. (4) Ensure vegetation in the CRZ and vegetated buffer is at a density that would occur naturally. (5) Minimise the number of road crossings. (6) Maintain riparian connectivity by using pierced crossings (other than for utilities). (7) Ensure lateral connectivity for in-stream function.
Category 2	
(1) To maintain and restore the natural functions of a stream and its aquatic and terrestrial qualities. (2) To maintain the viability of native riparian vegetation. (3) To provide extensive habitat and connectivity for naturally occurring terrestrial fauna.	(1) For Category 2 watercourses is a riparian corridor of at least 60m width (30m each side of watercourse), including Core Riparian Zone (CRZ) of an average 20m measured from top of bank (TOB) and an additional width that equals the width of the channel between the top of banks. For the upstream section of Killarney Chain of Ponds this it to be increased to a 40m CRZ and 10m VB each side of the channel, measured from the top of bank. (2) Links to established stands of remnant vegetation where applicable (3) Restore and rehabilitate the CRZ with local provenance native vegetation. (4) Ensure vegetation in the CRZ and vegetated buffer is at a density that would occur naturally. (5) Minimise the number of road crossings and ensure riparian connectivity is maintained. (6) Provide lateral connectivity for in-stream function.
Category 3	
(1) To retain, maintain and restore where possible the natural functions of a stream, including bed and bank stability to protect local water quality. (2) To provide extensive habitat and connectivity for naturally occurring terrestrial fauna.	(1) For category 3 watercourses is a riparian corridor of at least 20m width, including 10m CRZ each side measured from the TOB and an additional width that equals the width of the channel between the top of banks. (2) Links to established stands of remnant vegetation where applicable. (3) Emulate or preserve, wherever possible, a naturally functioning stream. (4) Engineered drainage solutions are to be used as a last resort within CRZs with the appropriate WSUD approaches to be used within sensitive areas.



Figure 56 Riparian corridors



Figure 57 Land with some Development Potential in the E2 Environmental Conservation Zone

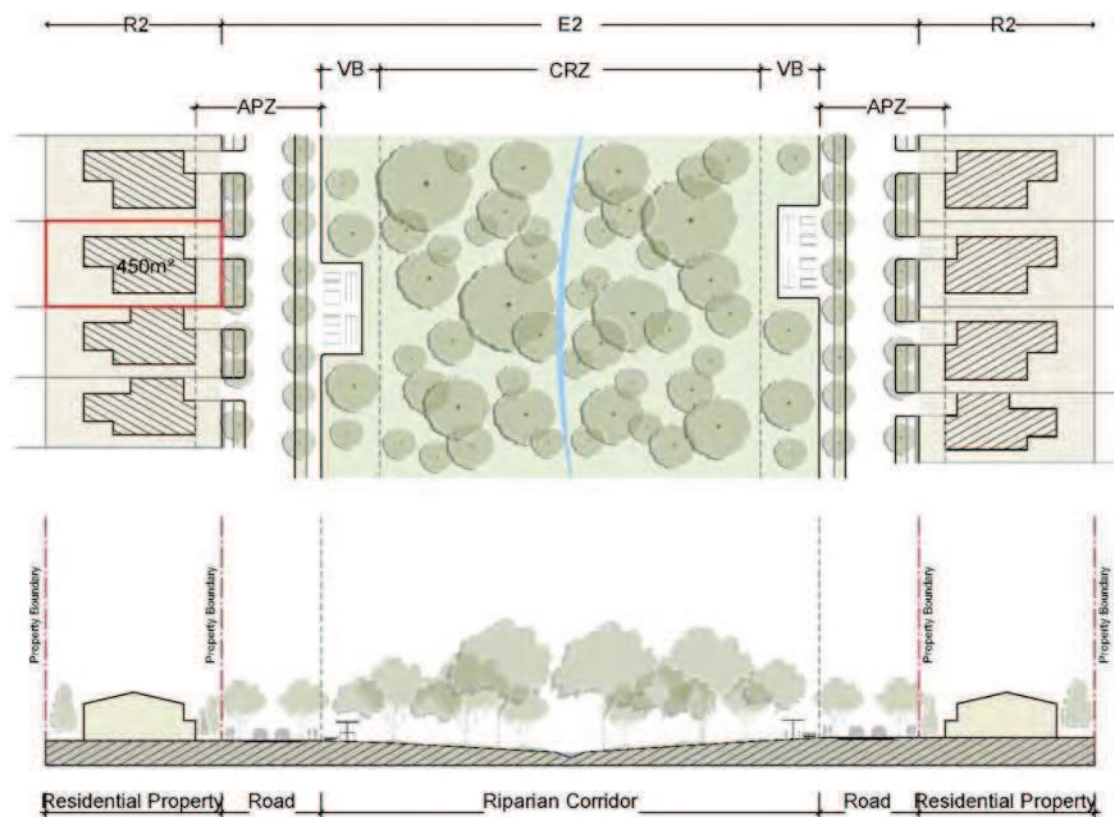


Figure 58 Perimeter roads and subdivision pattern along Riparian Corridors

7.13 Noise and Vibration

OBJECTIVES

- a. To minimise the impact of noise and vibration and minimise adverse impacts on surrounding land uses.
- b. To ensure that development is designed to protect occupants from noise and vibration from the proposed development and surrounding uses.
- c. To ensure that development is designed in a manner that minimises the impact of noise and vibration.

CONTROLS

1. A noise assessment or acoustic report as detailed in **Table 3** is to be submitted where:
 - new development is proposed that will create noise and or vibration impacts either during construction or operation that impacts on adjoining developments;
 - a new noise-sensitive development is proposed in an area where existing noise sources are present or identified within the ILP (**Figure 59**) including development adjacent to arterial roads, sub-arterial roads and collector roads (**Figure 60**); and
 - a new development that will generate traffic that may create noise and or vibration impacts on adjoining developments.
2. A Construction Noise and Vibration Management Plan (CNVMP) is to be submitted with development applications that have the potential to adversely impact existing receiver locations, in particular heritage items. The CNVMP should be prepared as described in **Table 3** of this DCP.
3. Noise impacts from road traffic noise onto residential development should be assessed in accordance with the OEH's ECRTN. **Table 30** and **Figure 61** through to **Figure 65** identifies planning strategies for minimising road traffic noise.
4. Road traffic noise impact for sensitive development should be in accordance with OEH's ECRTN and **Table 31**.
5. Road traffic noise impact for commercial / industrial development should be in accordance with AS2107:2000.
6. Industrial noise
 - Noise emission from all industrial noise generating development should be assessed in accordance with the OEH's Industrial Noise Policy (INP) document.
 - The amenity goals for individual industrial developments should be set to 10dB below the Acceptable Noise Amenity levels so as to ensure cumulative impacts meet the 'acceptable' noise levels in Table 2.1 of the INP. Consideration however may be given to alternative amenity noise goals with provision of a detailed acoustic report (e.g. the number of industrial developments with the potential to impact upon nearby receiver locations may be considered for specific cases).

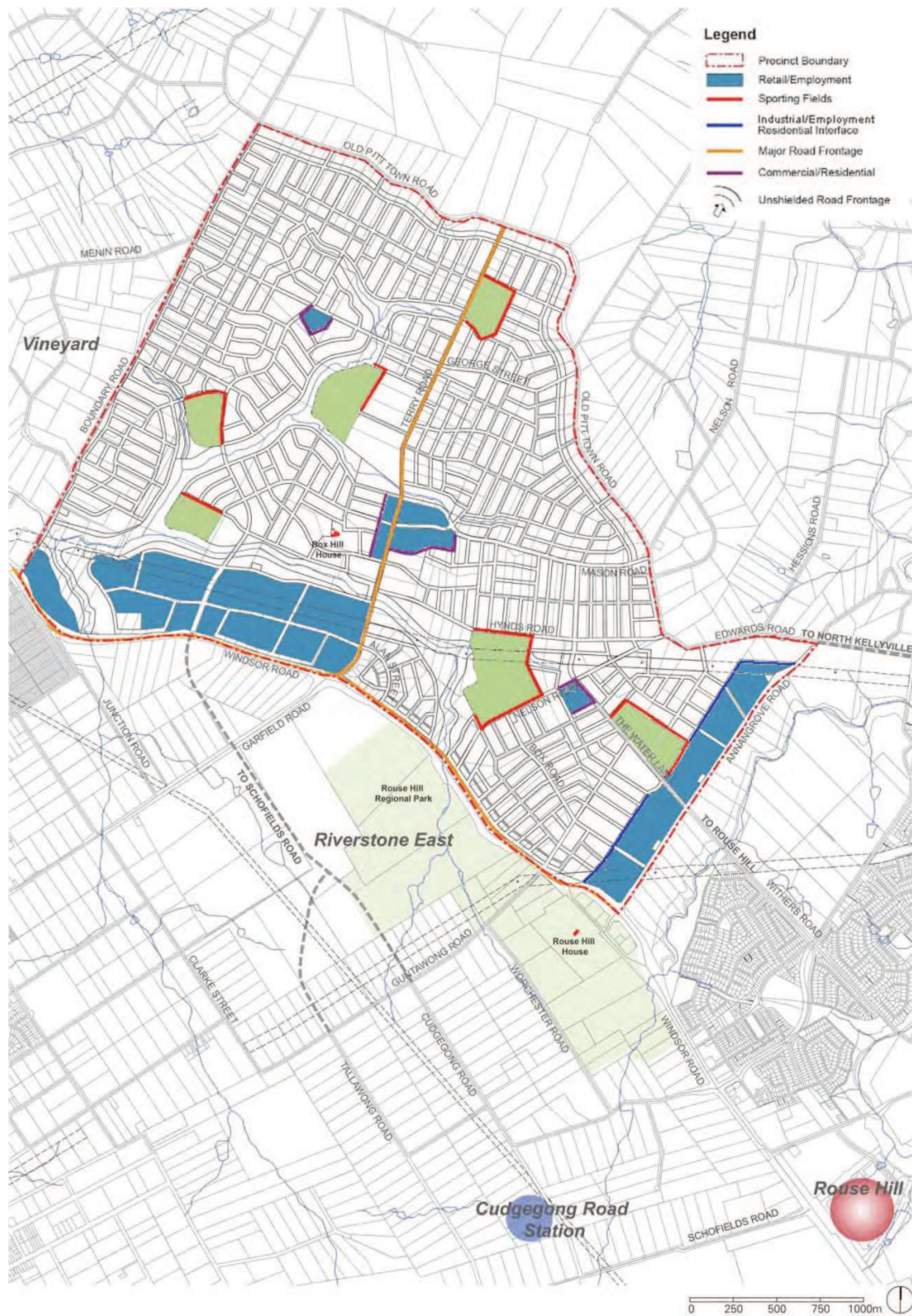


Figure 59 Location of existing and potential future noise sources



Figure 60 Sub-arterial and collector roads

Table 30 Road traffic noise planning strategies

Principle	
Land use planning	
(1)	Situate less sensitive buildings in particular high rise developments and land uses along the busy road corridor.
(2)	Situating higher density, particularly less sensitive uses along the road corridor can provide acoustic shielding and substantial buffer distance to sensitive developments behind.
Building setbacks	
(1)	Building setback may not be sufficient to reduce noise impacts to satisfactory levels without the use of other methods.
(2)	If used in combination with a noise barrier (solid boundary fence), may provide satisfactory and usable outdoor amenity on the 'affected' side of the building.
(3)	Reduce implications of necessary building construction upgrades.
Earth mounds as a noise barrier	
(1)	Continuous lengths of earth mounds can be the ideal solution where moderate reductions of traffic noise are required and external areas are sited on the 'affected' side of lots (refer to Figure 65).
Building orientation and layout	
(1)	Locate less sensitive areas on 'affected' side of building (refer Figure 61 , Figure 62 , Figure 63 and Figure 64).
(2)	Where sensitive uses are ideally located on the affected side of building (for other design aspects), give provision for ventilation from opposite side of the dwelling to minimise potential requirements for mechanical ventilation.
(3)	Negative impacts of lot orientations are best addressed during subdivision layout stages to ensure site access permits improved outcomes for dwelling layout.
(4)	Use of standard height boundary fences should be considered when determining building orientation.
(5)	A continuous frontage (using a solid wall to extend to the boundary if necessary) is one way to lower noise levels across the rest of the property (refer to Figure 58).
(6)	Ancillary buildings such as sheds, garages etc may be used to acoustically shield internal courtyards.
Building envelope construction	
(1)	According to the OEHs ECRTN, building treatment should only be considered for dwellings where the set external criteria ('base' criteria) is exceeded and other noise mitigation measures are either exhausted or are not cost effective.
(2)	Minimise extent of glazing and other openings on the noise affected facades.
(3)	Where external noise levels are less than 10dB(A) above the ECRTN 'base' criteria, the internal 'base' criteria may be achieved with windows closed.
(4)	Where external noise levels are more than 10dB(A) above the ECRTN 'base' criteria, acoustic grade seals would need to be installed on windows and perimeter doors exposed to road traffic.
(5)	Upgraded windows and glazing and the provision of solid core doors may also be required on the facades exposed to the road.

Figure 3.5: Single Dwelt from road noise

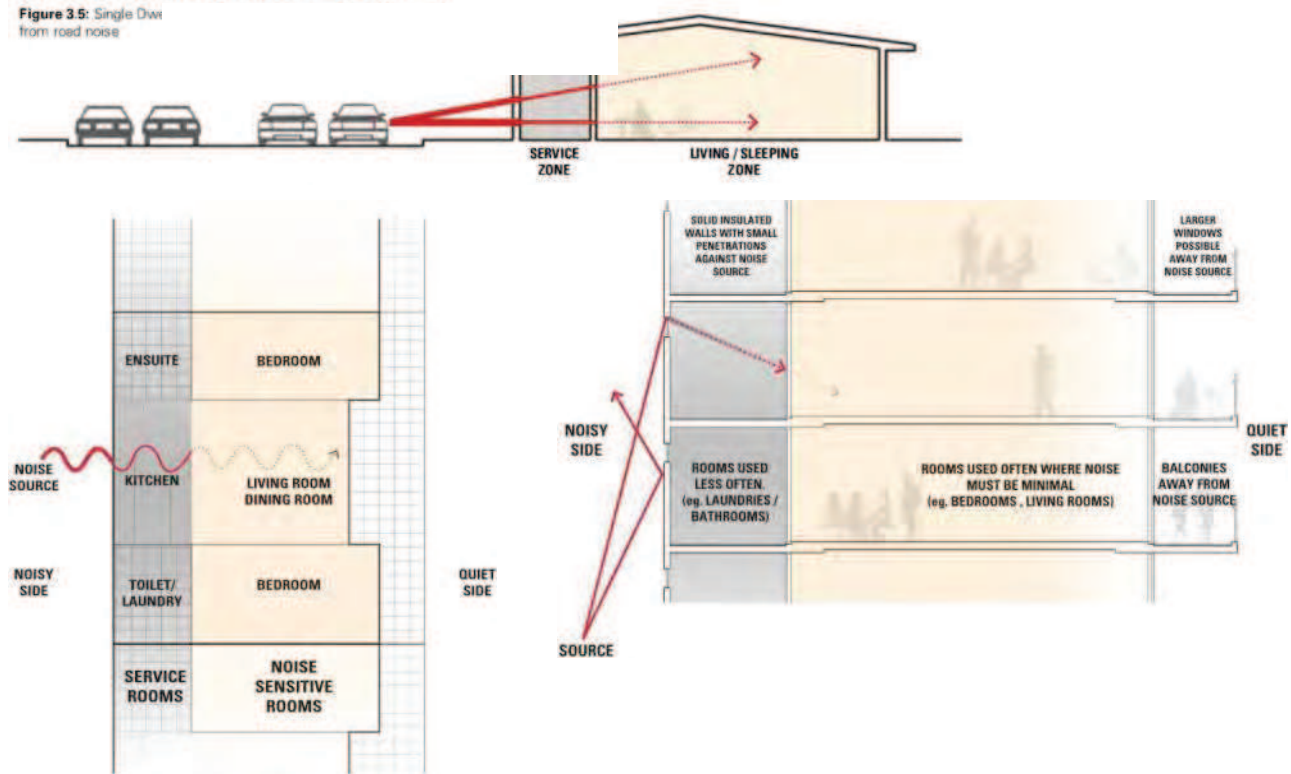


Figure 61 Locating noise sensitive rooms away from the noise source



Figure 62 Single storey residences



Figure 63 Double storey residences

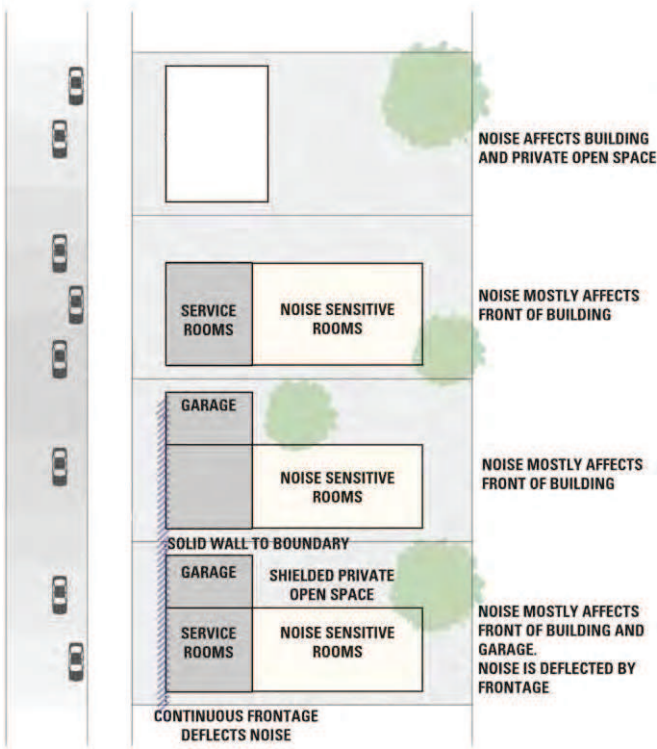


Figure 64 Continuous non-sensitive use frontage



Figure 65 Service road for buffer and access to residential premises

Table 31 Guidelines for sensitive development

Specific development	Specific controls
Licensed premises	(1) Premises with a liquor licence are required to comply with the standard noise criteria issued by the Office of Liquor Gaming and Racing (OLGR).
School facilities	(1) Reference should be made to the NSW INP for activities within the school buildings. (2) The location of outdoor play areas and sporting fields should be separated from common boundaries of residential premises. (3) Access for buses and car drop off should be separated from common boundaries of residential premises.
Child care centres	(1) Refer to The Hills Development Control Plan 2012 Part B Section 6 - Business (Appendix E).
Multi purpose-halls	(1) Reference should be made to the intrusive criteria in Section 2.1 of the NSW INP and Section 2.4.1 of the NGLG December 2004 to assess potential noise impacts at nearby residential receiver locations. (2) Where entertainment is to be provided reference should be made to the standard noise criteria issued by the OLGR.

7.14 Odour

Odour is legislated by the *Protection of the Environment Operations Act 1997* and managed by the NSW Government. Currently the only methods of controlling odour impacts are applying buffers around odour generating activities and Industry Best Management Practices.

Prior to the commencement of this DCP the Precincts were mostly zoned for rural purposes. The Precincts, and nearby rural areas, contain a number of existing rural uses that have the potential to generate odour and other associated impacts that may affect the amenity of nearby urban areas.

While these activities may cease operation at some point in the future (such as when the land is rezoned and developed for urban purposes) the timing of cessation of odour generating land uses is not known nor able to be controlled by Council or the Department of Planning & Infrastructure. Developers and buyers of property within the Precincts should be aware that their property may be subject to odour impacts from these uses for an indeterminate period of time.

Where land is affected by an odour buffer or adjacent to odour generating activities Council will consider whether the type of development in this area is appropriate and will also consider the need for the applicant to provide additional supporting information with the Development Application.



8.0

SPECIAL AREA CONTROLS

8.0 SPECIAL AREA CONTROLS

8.1 Centres

Special Area Controls outline the objectives and design principles relating to areas that require detailed planning including the Box Hill Town Centre, Mt Carmel Village, Box Hill Inn Village, Nelson Road Village and Neighbourhood Centres.

8.1.1 Overall controls

The overall controls apply to the retail and commercial development within Box Hill Town Centre, Mt Carmel Village, Box Hill Inn Village, Nelson Road Village and Neighbourhood Centres.

8.1.1.1 Active Street Frontages and Address

OBJECTIVES

- a. To promote pedestrian activity and safety in the public domain.
- b. To maximise active street fronts in the local, village and neighbourhood centres.
- c. To define areas where active streets are required.
- d. To provide an identifiable and desirable street address to residential buildings outside of areas where active street fronts are required.
- e. To clearly and consistently define the street edge.
- f. To allow for outlook to and surveillance of the street.

CONTROLS

ACTIVE STREET FRONTAGES

1. Active frontage uses are defined as any of the following at street level:
 - entrance to retail,
 - shop front,
 - glazed entries to commercial and residential lobbies occupying less than 50% of the street frontage, to a maximum of 12 m frontage,
 - café or restaurant if accompanied by an entry from the street,
 - active office uses, such as reception, if visible from the street, and/or
 - public building if accompanied by an entry.
2. Active street fronts, built to the street alignment, are required on the ground level of all retail and commercial development, and on areas identified in **Figure 66** through to **Figure 69**.
3. Large format retail such as supermarkets and parking areas are to be sleeved or hidden by retail and commercial uses as shown in **Figure 66**.

4. Ground floor residential uses (other than entries to lobbies to residential uses above ground level) are not permitted on the town centre Main Street.
5. Active ground floor uses are to be at the same general level as the footpath and be accessible directly from the street.
6. Restaurants, cafes and the like are to consider providing openable shop fronts.
7. Only open grill or transparent security shutters (at least 50% visually transparent) are permitted to retail and commercial frontages.
8. On corner sites, shop fronts are to wrap around the corner.
9. Entrances are to be visible to the street and well lit.

STREET ADDRESS

10. Street address is defined as:
 - a building that is not raised more than an average of 700 mm above street level, up to a maximum of 1 m,
 - contains entries, lobbies and habitable rooms with clear glazing overlooking the street, and
 - excludes car parking areas.
11. Provide multiple entrances for large developments including an entrance on each street frontage.
12. Provide direct 'front door' access to ground floor residential units.
13. Residential buildings are to provide not less than 65% of the lot width as street address.
14. In mixed-use buildings, a separate street address is required to retail, commercial and residential uses.

8.1.1.2 Awnings

OBJECTIVES

- a. To provide shelter for public streets where most pedestrian activity occurs.
- b. To address the streetscape by providing a consistent street frontage in the centres.

CONTROLS

1. Provide continuous street frontage awnings to all new commercial and retail developments within the town centre and village centres.
2. Wrap awnings around corners on street corner buildings.
3. Cantilever awnings from buildings are to have a minimum soffit height of 3.6 m and a maximum of 4 m.
4. Low profile awnings with slim vertical fascias and/or eaves (not to exceed 300 mm) are encouraged.
5. Awnings are to be a minimum of 3 m deep (dependant on street width) and setback from the kerb a minimum of 1.2 m to allow clearance for street furniture, trees etc.
6. Awnings must be complementary to each other and maintain continuity.
7. Steps for design articulation or to accommodate sloping streets are to be integrated with the building design and should not exceed 700 mm.
8. Vertical canvas drop blinds are permissible along the street edge, but they are not to carry advertising or signage.
9. Provide under awning lighting to facilitate night use as well as improve public safety. Lighting is to be recessed into the soffit of the awning, or wall mounted onto the building.
10. Any under awning signage is to maintain a minimum clearance of 2.8 m from the level of the pavement.
11. All residential buildings are to be provided with awnings or other weather protection at their main entrance area.

8.1.1.3 Signage

OBJECTIVES

- a. To permit adequate identification and business advertising that achieves a very high level of design quality in terms of graphic design, its relationship to the architectural design of buildings and the character of streetscapes.
- b. To promote signage that complements the scale and character of a building.
- c. To avoid the creation of visual clutter on buildings and streetscapes.
- d. To ensure compatibility with the desired urban character of adjacent land uses.
- e. To consider the amenity of residential development and the visual quality of the public domain.
- f. To ensure that advertising signs do not adversely affect the safety of motorists and other road users.

CONTROLS

GENERAL SIGNAGE

1. Signage must be integrated into the building façade and achieve a high degree of compatibility with the architectural design of the supporting building having regard to its composition, fenestration, materials, finishes, and colours. Architectural features of the building are not to be obscured.
2. One under-awning sign is permitted on each shop or commercial premises at a rate of one sign per 8m of shop front.
3. Signs including real estate signs and temporary signs are not allowed to stand on the top of awnings.
4. The total area of all signs is not to exceed 1 m² of advertising area per 1 m of shop frontage. This includes signs painted on blinds or windows.
5. Signs that contain additional advertising promoting products or services not related to the approved use of the premises or site (such as the logos of brands or products) are not permitted.
6. Signs painted on, or applied to the roof, are prohibited.
7. Signs in excess of a total of 50 m² in area are to be considered on their merits.
8. Directional signage and public notices are to have a coordinated appearance and help to establish the town centre as a unique destination and place.

ILLUMINATED SIGNS

9. Illumination (including cabling) of signs is to be:
 - concealed, or
 - integral with the sign, or
 - provided by means of carefully designed and located remote or spot lighting.
10. The ability to adjust the light intensity of illuminated signs is to be installed where the consent authority considers necessary.

11. Restricted hours shall be imposed on the operation of illuminated signs where continuous illumination is considered to impact adversely on the amenity of residential buildings, serviced apartments or other visitor accommodation, or have other adverse environmental effects.
12. Up-lighting of signs is prohibited. Any external lighting of signs is to be downward pointing and focussed directly on the sign and is to prevent or minimise the escape of light beyond the sign.

SIGNAGE AND ROAD SAFETY

13. Signs are regarded as prejudicial to the safety of road users if they:
 - obscure or interfere with road traffic signs and signals or with the view of a road hazard, oncoming vehicles, or any other vehicle or person, or an obstruction which should be visible to drivers or other road users,
 - give instructions to traffic by use of the word 'stop' or other directions, which could be confused with traffic signs,
 - are of such a design or arrangement that any variable messages or intensity of lighting impairs drivers' vision or distracts drivers' attention, and
 - are situated at locations where the demands on drivers' concentration due to road conditions are high such as at major intersections or merging and diverging lanes.

8.1.1.4 Parking

OBJECTIVES

- a. To provide an appropriate level of on-site car and bicycle parking provision in Box Hill Growth Centre Precincts to cater for a mix of development types and location.
- b. To minimise the visual impact of on-site parking.
- c. To integrate parking facilities with the overall site planning and landscape.
- d. To encourage the use of bicycles.

CONTROLS

1. On-site car and bicycle parking is to be provided in accordance with the standards set out in **Table 32** and **Table 33**.
2. The parking area per vehicle is to be in accordance with AS 2890:1.
3. All outdoor parking areas shall be appropriately screened by planting and/or fencing.
4. At grade car parks shall provide landscaping and tree planting in accordance with The Hills DCP 2012 Part C Section 1 - Parking.
5. Basement parking must be provided for Mixed Use Development. Basements are not to be raised more than 1 m above ground level.

6. In the local centre and neighbourhood centres, parking and servicing is to be located to the rear of buildings, or below grade, to minimise impacts on the streetscape and pedestrian amenity.
7. Above ground parking structures are not permitted except in the central mixed use blocks in the local centre. Where fronting a street or public space (excluding service lanes), above ground parking is to be set a minimum of 8 m behind the building façade.
8. Rear lanes should be utilised where possible to access parking areas.
9. All bicycle parking is to be in secure and accessible locations. Bicycle parking for employees is to have weather protection.
10. Refer **Section 5.4** of this DCP for residential flat building and multi dwelling housing parking provisions.
11. [Refer to The Hills DCP 2012 Part C Section 1 – Parking for shop top housing parking provisions.](#)

Table 32 On site car parking for commercial/retail premises

Use	Requirement
Retail Uses	1 space per 25 m ² GFA (Gross Floor Area) for supermarkets and Discount Department Stores. 1 per 50 m ² GFA for main street, village centre and other retail.
Commercial	1 space per 50 m ² GFA.
Educational Establishments	1 space per full-time employee or classroom, whichever is greater, plus 1 space per 10 students over the age of 17 years. Where development includes the provision of a church or community facilities in conjunction with a school, additional parking must be provided at half the applicable rate.

Table 33 On site bicycle parking for commercial/retail premises

Use	Requirement
Retail	Provide the following minimum rates of bicycle parking. Supermarkets: 1 space per 750 m² of GFA for employees. 1 space per 1000 m² of GFA for shoppers. Speciality shops: 1 space per 300 m² of GFA for employees. 1 space per 300 m² of GFA for shoppers. Neighbourhood shops: 8 bicycle spaces minimum.
Commercial	Provide the following minimum rates of bicycle parking. Employee: 1 space per 150 m² of GFA. Visitor: 1 space per 750 m² of GFA.
Community Centres	6 bicycle spaces at the community centre.
Parks	16 bicycle spaces at sports grounds.

Primary and High Schools	One bicycle space per 5 students above Grade 4 at primary and high schools.
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8.1.1.5 Site Servicing

OBJECTIVES

- a. To ensure that site facilities are functional and accessible to all residents and are easy to maintain.
- b. To ensure that site facilities are thoughtfully integrated into the development and are visually and physically unobtrusive.
- c. To minimise the impact of service access on pedestrians and retail, commercial and residential frontage.
- d. To minimise the visual and acoustic impact of site servicing.

CONTROLS

COMMERCIAL / RETAIL PREMISES AND MIXED USE DEVELOPMENT

1. Garbage, mail box structures, service meters and the like are to be integrated with the overall design of the buildings and/or landscaping. Garbage storage areas are not permitted along the primary street frontage.
2. Provide adequate space within any new development for the unloading and loading of service vehicles.
3. Loading facilities must be located to the rear of each development.
4. Ventilation stacks are to be utilised wherever possible to vent shops and basements.
5. All service areas are to be screened from existing developments.
6. Service access is permitted from rear lanes, side streets or right of ways.
7. Vehicles must be able to enter/exit in a forward direction.
8. Provide truck turning facilities.

8.1.2 Box Hill Town Centre

OBJECTIVES

- a. To create a vibrant Town Centre that provides amenity to the Box Hill and Box Hill Industrial Precincts.
- b. To ensure that the detailed design of the Town Centre is undertaken in a coordinated manner in order to achieve a high quality urban design outcome.
- c. To create a sense of place through the relationship of the Town Centre to the landscape.
- d. To promote a pedestrian friendly main street through the Town Centre.
- e. To ensure that the Town Centre is centrally located and easily accessible by pedestrians, cyclists and public transport users.
- f. To ensure that the Box Hill Town Centre is well served by public transport and has connections to the major transport nodes of Rouse Hill and Riverstone.
- g. To provide a good range of retail and commercial services for the future communities of the Precincts whilst minimising risk of oversupply and adverse economic impact on existing centres.
- h. To promote a Town Centre that is financially viable and easy to stage.

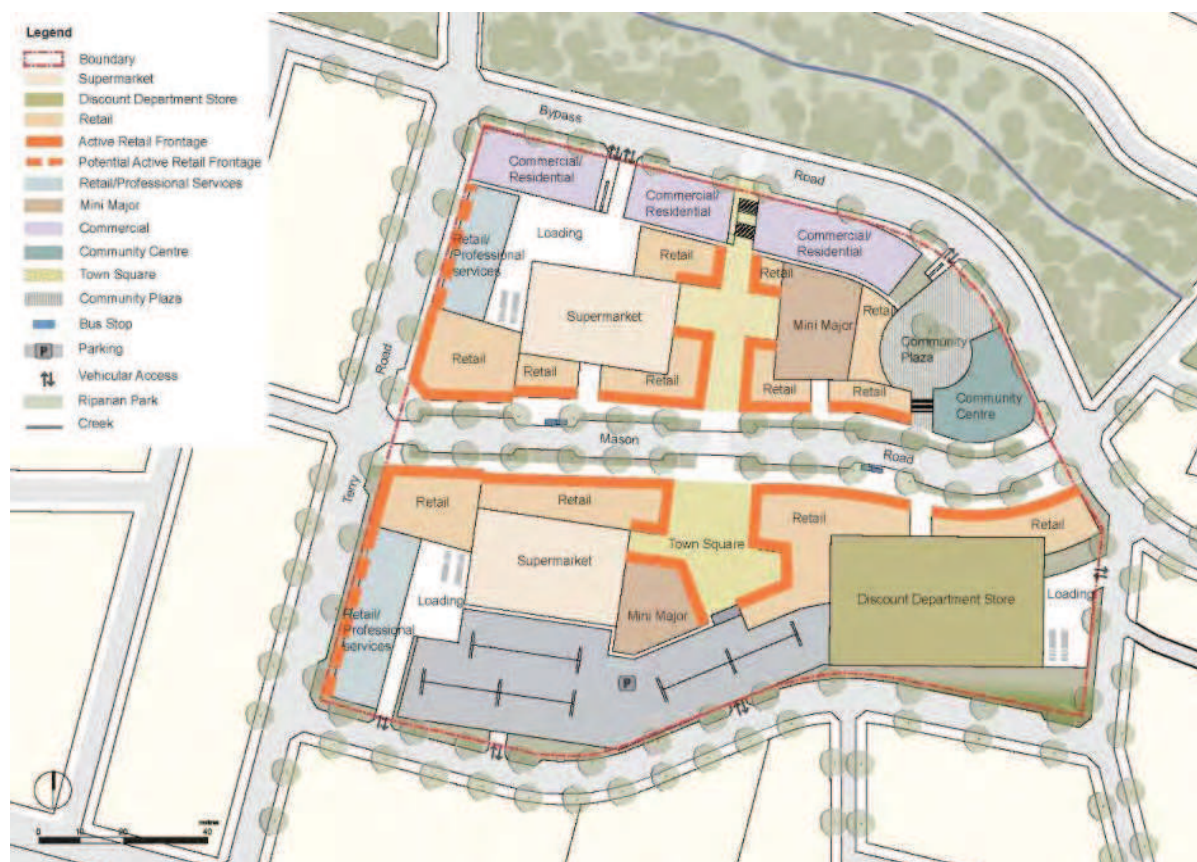


Figure 66 Indicative layout of Box Hill Town Centre

CONTROLS

1. The Box Hill Town Centre is to be located generally in accordance with **Figure 2**. An indicative layout plan of the Town Centre is shown at **Figure 66**.
2. The Town Centre is to be consistent with the following principles.

FUNCTION AND USES

3. A maximum of 30,000 m² GFA for retail and commercial premises (note: additional floor space for retail and commercial premises and/or other employment uses will be considered subject to an assessment of demand as part of any future application).
4. Incorporate a range of retail and commercial uses to serve the needs of the community.
5. Incorporate higher density housing and mixed use development.
6. Concentrate intensive retail uses along and fronting Mason Road.
7. Locate active uses at ground floor throughout the Town Centre, in particular fronting the Main Street.
8. Provide a mix of uses that promote an active and vibrant town centre.

BUILT FORM

9. Provide a range of building heights, up to a maximum of six storeys with a transition in heights to surrounding residential areas.
10. Relate building heights to street widths and functions to promote a comfortable urban scale of development.
11. Define streets and open spaces with buildings that are generally built to the street edge, have a consistent street wall height and provide a continuous street frontage along all key streets.
12. Sleeve all large format retail premises and decked parking areas with active uses. Blank walls visible from the public domain are to be avoided.
13. Promote diversity and activity along the main street with a variety of frontage widths for retail shops.
14. Building heights are to take into account view lines and solar access to the public domain.
15. Residential and mixed use development is to be consistent with the guidelines and principles outlined in *SEPP No. 65 – Residential Flat Development and the Residential Flat Design Code* (Urban Design Advisory Service and Planning NSW 2002).
16. A high quality built form and energy efficient architectural design that promotes a 'sense of place' and modern character for the Town Centre.
17. Waste storage and collection areas are to be accommodated and designed appropriately to minimise impacts, in particular within mixed use development.

PARKING AND ACCESS

18. Access to parking, loading docks and waste collection areas must not be provided from Mason Road (Main Street) frontages.
19. Basement, semi-basement or decked parking is preferred over large expanses of at-grade parking.
20. At grade parking areas are to be generally located behind building lines and within the centre of street blocks away from street corners. Notwithstanding this, Council will consider transitional arrangements for parking where an application is supported by a staging plan that indicates compliance with the above desired parking location principles upon ultimate development.
21. Parking is to be provided in accordance with The Hills Development Control Plan 2012 Part C Section 1 - Parking. Opportunities for shared parking provision for complementary uses within the town centre are to be provided.
22. On-street parking is to be provided on all streets within the Town Centre to contribute to street life and surveillance and designed in accordance with AS 2890.5-1993.

PUBLIC DOMAIN

23. Parks and plazas are to act as a focal point for the Town Centre and community activities and are to be designed to ensure adaptability and flexibility in use and function over time.
24. Incorporate a town square / civic plaza, adjacent to the main street which provides an urban landscape setting and a civic focus for the community.
25. Provide high amenity, pedestrian streets with generous footpath widths.
26. Incorporate the principles of Crime Prevention Through Environmental Design (CPTED) and Safer by Design (NSW Police) into all development within the Town Centre.
27. Weather protection for pedestrians is to be provided in key locations.
28. Provide a high quality landscape design including a co-ordinated package of street furniture and lighting that enhances the character of the Town Centre.
29. Provide street tree and open space planting that establishes generous shade for pedestrians.
30. Design all signage and advertising in a co-ordinated manner.
31. Site servicing and loading facilities, waste storage and other infrastructure are to be designed to minimise visual impact on the public domain and impacts on neighbours.

8.1.3 Mt Carmel Village

OBJECTIVES

- a. To create a vibrant, mixed use village that provides a range of small-scale retail, business and community uses which serve the needs of people who live and work in the surrounding area.
- b. To ensure that the detailed design of the village is undertaken in a co-ordinated manner in order to achieve a high quality urban design outcome.
- c. To create a vibrant village adjacent to residential areas and a school.

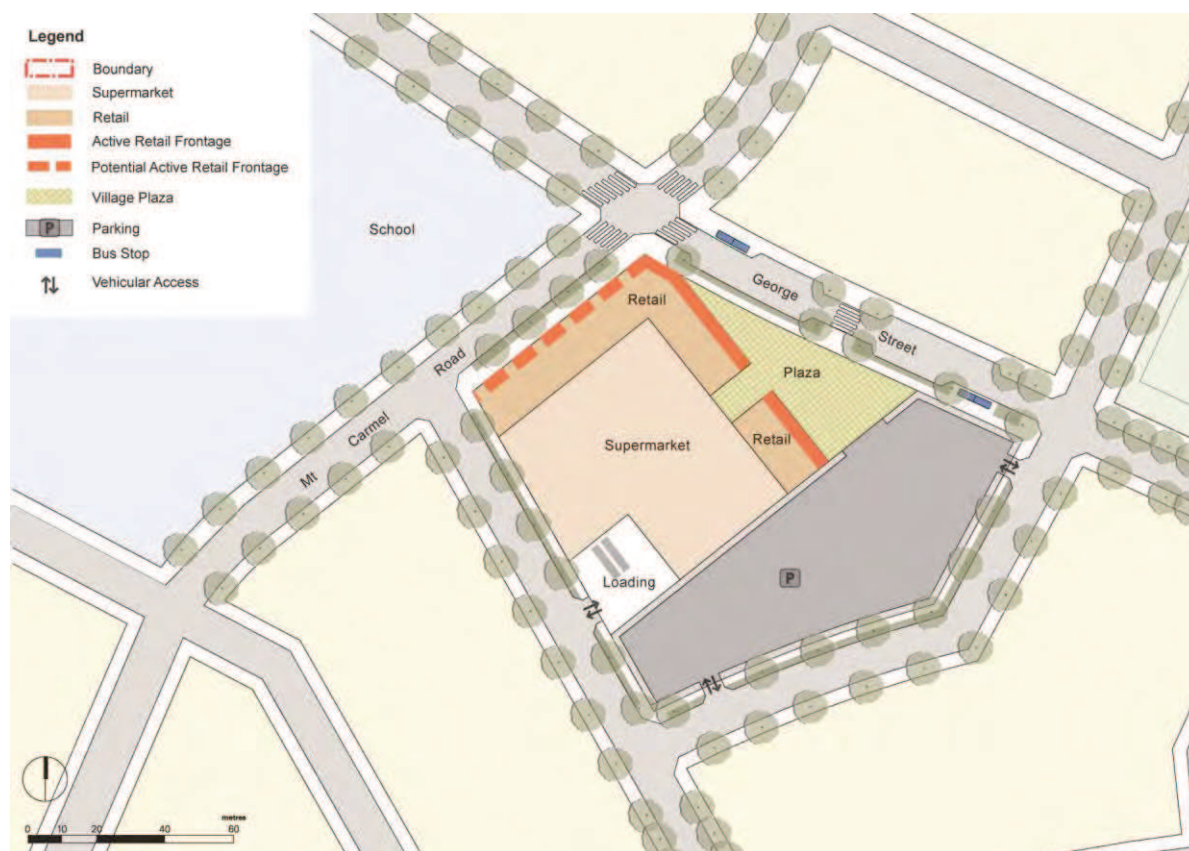


Figure 67 Indicative layout of Mt Carmel Village

CONTROLS

1. The Mt Carmel Village is to be located generally in accordance with **Figure 2**.
2. The village is to be consistent with the indicative layout shown in **Figure 67** and the following principles -

FUNCTION AND USES

3. Provide for a maximum of 6,000m² GFA for retail and commercial premises within the village centre to cater for the needs of the local population.
4. Incorporate a range of local retail, commercial and community uses to serve the needs of the local community.

BUILT FORM

5. Provide a range of building heights, up to a maximum of ~~four~~ three storeys.
6. Buildings are to define the entry to the residential areas and open spaces adjacent to the village and are to be generally built to the street edge.
7. Avoid blank walls visible from surrounding streets and the public domain. Large format retail premises are to be sleeved where appropriate with active uses.
8. Residential and mixed use development is to be consistent with the guidelines and principles outlined in *SEPP No. 65 – Residential Flat Development* and the *Residential Flat Design Code* (Urban Design Advisory Service and Planning NSW 2002).
9. Establish a high quality built form and energy efficient architectural design that promotes a 'sense of place' and modern character for the village.

PARKING AND ACCESS

10. Locate at grade parking areas generally behind building lines and screened from streets and public open space.
11. Opportunities for shared parking provision for complementary uses within the village centre are to be provided.
12. On-street parking is to be provided within the village centre and designed in accordance with AS 2890.5-1993.

PUBLIC DOMAIN

13. Provide a high quality landscape design including a co-ordinated package of street furniture and lighting that enhances the character of the village.
14. Provide street tree and open space planting that establishes generous shade for pedestrians.
15. Incorporate the principles of Crime Prevention through Environmental Design (CPTED) and Safer by Design (NSW Police) into all development within the village centre.
16. Site servicing and loading facilities, waste storage and other infrastructure are to be designed to minimise visual impact on the public domain and impacts on neighbours.

8.1.4 Box Hill Inn Village

OBJECTIVES

- To create a vibrant, mixed use village that provides a range of small-scale retail, business and community uses which serve the needs of people who live and work in the surrounding area.
- To provide local services for the Business Park and surrounding area.
- To ensure that the detailed design of the village is undertaken in a co-ordinated manner in order to achieve a high quality urban design outcome.



Figure 68 Indicative layout plan of Windsor Road Village

CONTROLS

- The village is to be located generally in accordance with **Figure 2**.
- The village is to be consistent with the indicative layout shown in **Figure 68** and the following principles.

FUNCTION AND USES

3. Provide for a supermarket as part of a maximum of 7,000 m² GFA for retail premises within the village to cater for the needs of the local area.
4. Incorporate a range of local retail, and community uses to serve the needs of the Business Park and local community.

BUILT FORM

5. Maximum building height is ~~four~~ three storeys stepping back to ~~three~~ two storeys in the vicinity of Windsor Road Village.
6. Buildings are to define the entry to the Business Park area surrounding the village and are to be generally built to the boundary.
7. Avoid blank walls visible from surrounding streets and the public domain.
8. Residential and mixed use development is to be consistent with the guidelines and principles outlined in *SEPP No. 65 – Residential Flat Development* and the *Residential Flat Design Code* (Urban Design Advisory Service and Planning NSW 2002).
9. Establish a high quality built form and energy efficient architectural design that promotes a 'sense of place' and modern character for the village.

PARKING AND ACCESS

10. Access to parking, loading docks and waste collection areas must not be provided from Windsor Road.
11. Parking is to be provided in accordance with The Hills Development Control Plan 2012 Part C Section 1 - Parking. Opportunities for shared parking provision for complementary uses within the village are to be provided.
12. On-street parking is to be provided within the village and designed in accordance with AS 2890.5-1993.

PUBLIC DOMAIN

13. Provide street tree and open space planting that establishes generous shade for pedestrians.
14. Incorporate the principles of Crime Prevention through Environmental Design (CPTED) and Safer by Design (NSW Police) into all development within the village.
15. Site servicing and loading facilities, waste storage and other infrastructure are to be designed to minimise visual impact on the public domain and impacts on neighbours.

8.1.5 Nelson Road Village

OBJECTIVES

- a. To create a vibrant, mixed use village that provides a range of small-scale retail, business and community uses which serve the needs of people who live and work in the surrounding area.
- b. To ensure that the detailed design of the village is undertaken in a co-ordinated manner in order to achieve a high quality urban design outcome.
- c. To create a vibrant village adjacent to residential areas and a school.



Figure 69 Indicative layout plan of Nelson Road Village

CONTROLS

1. The Nelson Road Village is to be located generally in accordance with **Figure 2**.
2. The village is to be consistent with the indicative layout shown in **Figure 69** and the following principles.

FUNCTION AND USES

3. Provide for a maximum of 6,000 m² GFA for retail and commercial premises within the village to cater for the needs of the local population.
4. Incorporate a range of local retail and commercial uses to serve the needs of the local community.

BUILT FORM

5. Provide a range of building heights, up to a maximum of three storeys.
6. Buildings are to define the entry to the residential areas and open spaces adjacent to the neighbourhood centre and are to be generally built to the street edge.
7. Avoid blank walls visible from surrounding streets and the public domain. Large format retail premises are to be sleeved where appropriate with active uses.
8. Residential and mixed use development is to be consistent with the guidelines and principles outlined in *SEPP No. 65 – Residential Flat Development* and the *Residential Flat Design Code* (Urban Design Advisory Service and Planning NSW 2002).
9. Establish a high quality built form and energy efficient architectural design that promotes a 'sense of place' and modern character for the village.

PARKING AND ACCESS

10. Locate at grade parking areas generally behind building lines and screened from streets and public open space.
11. Opportunities for shared parking provision for complementary uses within the village are to be provided.
12. On-street parking is to be provided within the village and designed in accordance with AS 2890.5-1993.

PUBLIC DOMAIN

13. Provide a high quality landscape design including a co-ordinated package of street furniture and lighting that enhances the character of the village.
14. Provide street tree and open space planting that establishes generous shade for pedestrians.
15. Incorporate the principles of Crime Prevention through Environmental Design (CPTED) and Safer by Design (NSW Police) into all development within the village.
16. Site servicing and loading facilities, waste storage and other infrastructure are to be designed to minimise visual impact on the public domain and impacts on neighbours.

8.1.6 Neighbourhood Centres

OBJECTIVES

- a. To provide a walkable local centre for the provision of services for the surrounding area.
- b. To ensure that the detailed design of the Neighbourhood Centre is undertaken in a co-ordinated manner in order to achieve a high quality urban design outcome.
- c. To create a vibrant Neighbourhood Centre adjacent to residential areas.

CONTROLS

1. Neighbourhood Centres are to be located generally in accordance with **Figure 2**.
2. The Neighbourhood Centre is to be consistent with the following principles.

FUNCTION AND USES

3. Provide for a maximum of 1,000 m² GFA for retail and commercial premises within the Neighbourhood Centre to cater for the needs of the local population.
4. Incorporate a range of local retail, commercial and community uses to serve the needs of the local community.

BUILT FORM

5. Provide a range of building heights, up to a maximum of two storeys.
6. Buildings are to define the entry to the residential areas and open spaces adjacent to the Neighbourhood Centre and are to be generally built to the street edge.
7. Avoid blank walls visible from surrounding streets and the public domain. Large format retail premises are to be sleeved where appropriate with active uses.
8. Residential and mixed use development is to be consistent with the guidelines and principles outlined in *SEPP No. 65 – Residential Flat Development* and the *Residential Flat Design Code* (Urban Design Advisory Service and Planning NSW 2002).
9. Establish a high quality built form and energy efficient architectural design that promotes a 'sense of place' and modern character for the Neighbourhood Centre.

PARKING AND ACCESS

10. Access to parking, loading docks and waste collection areas must not be provided from Boundary Road.
11. Locate at grade parking areas generally behind building lines and screened from streets and public open space.
12. On-street parking is to be provided within the Neighbourhood centre and designed in accordance with AS 2890.5-1993.

PUBLIC DOMAIN

13. Provide a high quality landscape design including a co-ordinated package of street furniture and lighting that enhances the character of the Neighbourhood Centre.
14. Provide street tree and open space planting that establishes generous shade for pedestrians.
15. Incorporate the principles of Crime Prevention through Environmental Design (CPTED) and Safer by Design (NSW Police) into all development within the Neighbourhood Centre.
16. Site servicing and loading facilities, waste storage and other infrastructure are to be designed to minimise visual impact on the public domain and impacts on neighbours.

8.1.7 Box Hill House

OBJECTIVES

- a. To conserve the heritage significance of Box Hill House.
- b. To protect the heritage curtilage of Box Hill House.
- c. To ensure that the development around Box Hill House respects the heritage value of the building and landscape.

CONTROLS

1. Development within the Box Hill House State Heritage Register curtilage should be in accordance with the requirements of the NSW *Heritage Act 1977* and will require concurrent approval of the Heritage Council. Additionally, development should take into account the heritage provisions of the Growth Centres SEPP.
2. Development within the State Heritage Register curtilage and the Precinct Plan Control Area (**Figure 70**) should be accompanied by a Heritage Impact Statement as described in **Table 2** to address the significance of the House. The following matters must be considered in the Heritage Impact Statement:
 - The character, siting, bulk, height and external appearance of the development;
 - The visual relationship between the proposed development and Box Hill House;
 - The colours and textures of materials proposed to be used in the development;
 - The landscaping and fencing of the proposed development;
 - The location of car parking spaces and access ways into the development;
 - The impact of any proposed advertising signs or structures; and
 - The impact the proposed use would have on the amenity of Box Hill House.
3. Development within the Precinct Plan Control Area should respect the character of Box Hill House in accordance with the general principles of the height limitations in **Figure 71** and the Height of Buildings map in the Growth Centres SEPP.
4. The visual impact of structures within the Precinct Plan Control Area should be minimised through appropriate siting, landscaping and use of materials. Roof and wall colours are to be selected from the colour pallet in Appendix C. Prior to development within the Precinct Plan Control Area, archival recording should be undertaken to capture the current views and landscape setting. The recording must be in accordance with the guidelines issued by Heritage Branch, Department of Planning & Infrastructure *How to prepare archival records* (Heritage Office 1998) and *Photographic Recording of Heritage Items using Film or Digital Capture* (Heritage Office 2006).



Figure 70 Precinct Plan Control Area for Box Hill House

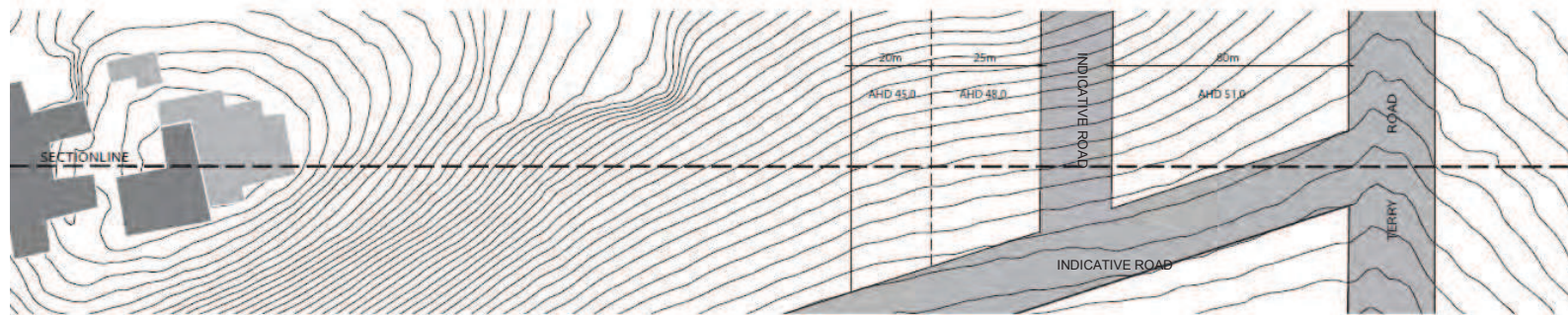
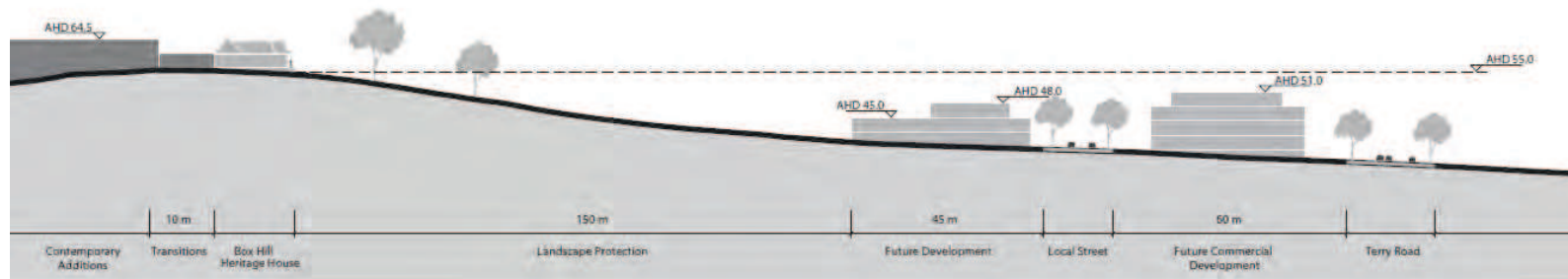


Figure 71 Cross section of Box Hill House to Rouse Hill House

8.1.8 The Hunting Lodge

OBJECTIVES

- a. To conserve the heritage significance of The Hunting Lodge.
- b. To protect and enhance the heritage curtilage of The Hunting Lodge.
- c. To ensure that the development around The Hunting Lodge respects the heritage value of the building.
- d. To encourage the maintenance of the Hunting Lodge through an appropriate use.

CONTROLS

1. Development in and around The Hunting Lodge should be in accordance with the requirements of the NSW *Heritage Act 1977* and will require concurrent approval from the Heritage Council. Additionally, development should take into account the heritage provisions of the Growth Centres SEPP.
2. Development within the State Heritage Register curtilage and the Precinct Plan Control Area should be accompanied by a Heritage Impact Statement addressing the impact to the significance of The Hunting Lodge. The following matters must be considered in the Heritage Impact Statement:
 - The character, siting, bulk, height and external appearance of the development;
 - The visual relationship between the proposed development and the Hunting Lodge;
 - The potential for overshadowing of the Hunting Lodge;
 - The colours and textures of materials proposed to be used in the development;
 - The landscaping and fencing of the proposed development;
 - The location of car parking spaces and access ways into the development;
 - The impact of any proposed advertising signs or structures;
 - The impact the proposed use would have on the amenity of the Hunting Lodge; and
 - The effect the construction phase will have on the Hunting Lodge.
3. Housing to the north and east of the Hunting Lodge, across the proposed road, should be set back 5 m from the property boundary.
4. The visual impact of structures within the Precinct Plan Control Area of The Hunting Lodge should be minimised through appropriate siting, landscaping and use of materials.
5. Consideration will be given to applications to alter the use of The Hunting Lodge to allow for commercial, retail or community uses.
6. Development, including subdivision within the Precinct Plan Control Area of The Hunting Lodge must comply with that outlined in **Figure 72**, unless accompanied by a Heritage Impact Statement demonstrating the merits of the proposed alternative.



Figure 72 Precinct Plan Control Area for the Hunting Lodge

8.1.9 Box Hill Inn

OBJECTIVES

- a. To conserve the heritage significance of the Box Hill Inn.
- b. To protect and enhance the heritage curtilage of the Box Hill Inn.
- c. To ensure that the development around the Box Hill Inn respects the heritage value of the building.
- d. To encourage the maintenance of the Box Hill Inn through an appropriate use.

CONTROLS

1. All development in and around Box Hill Inn should be in accordance with the requirements of the *NSW Heritage Act 1977* and will require concurrent approval from the Heritage Council. Additionally, development should take into account the heritage provisions of the Growth Centres SEPP.
2. Development within the State Heritage Register curtilage and the Precinct Plan Control Area (**Figure 73**) should be accompanied by a Heritage Impact Statement to address the significance of the Hunting Lodge and the following matters:
 - The character, siting, bulk, height and external appearance of the development;
 - The visual relationship between the proposed development and the Box Hill Inn;
 - The potential for overshadowing of the Box Hill Inn;
 - The colours and textures of materials proposed to be used in the development;
 - The landscaping and fencing of the proposed development;
 - The location of car parking spaces and access ways into the development;
 - The impact of any proposed advertising signs or structures;
 - The impact the proposed use would have on the amenity of the Box Hill Inn;
 - The archaeological potential and impact; and
 - The effect the construction phase will have on the Box Hill Inn.
3. Development respecting the character of the Box Hill Inn is encouraged in the Precinct Plan Control Area and should be limited to three storeys within 20 metres of the State Heritage Register curtilage.
4. It is recommended that development within the Precinct Plan Control Area should be limited or placed on the northern boundary. Surrounding development should be set back from the curtilage to create an area of open space and a plaza around the Box Hill Inn.
5. The Inn on the west, north and east sides should not be fenced to encourage a sense of integration with the surrounding development and to allow unimpeded access.
6. The visual impact of structures within the Precinct Plan Control Area of Box Hill Inn should be minimised through appropriate siting, landscaping and use of materials. A materials and colour palette is included in **Appendix C**.

7. Consideration is to be given to applications to alter the use of Box Hill Inn to allow for commercial, retail or community users.

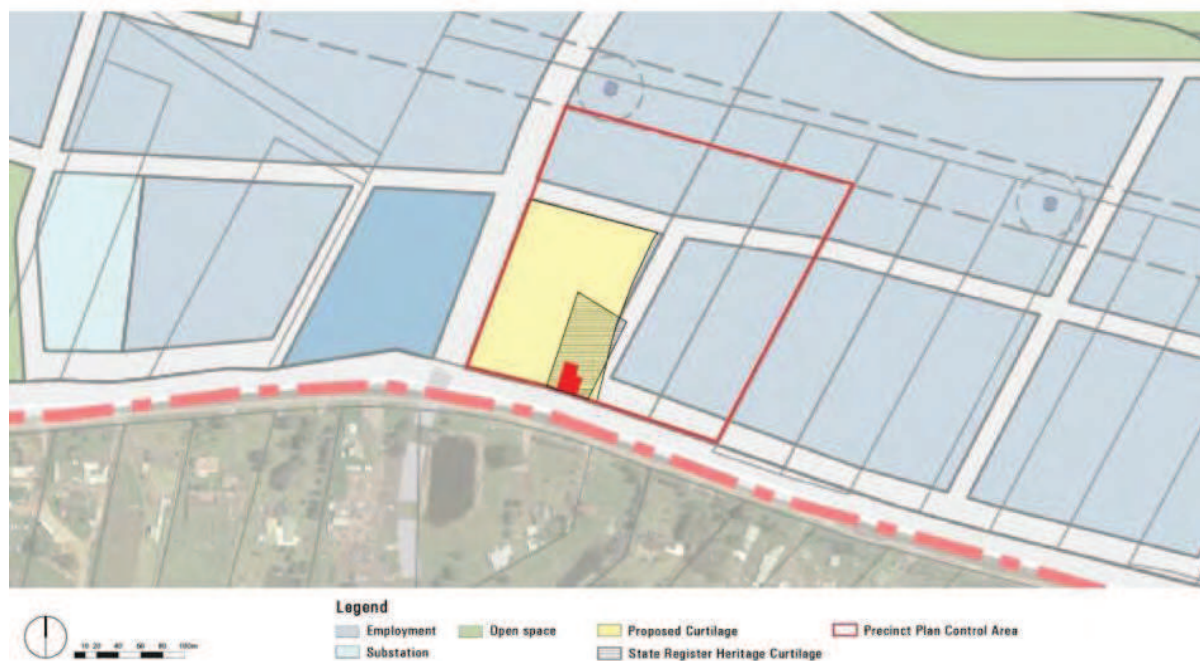


Figure 73 Precinct Plan Control Area for Box Hill Inn

8.1.10 Marklye

OBJECTIVES

- a. To conserve the heritage significance of 18 Nelson Road, Marklye.
- b. To protect the heritage curtilage of Marklye.
- c. To ensure that the development around Marklye respects the heritage value of the building.

CONTROLS

1. Development within the Precinct Plan Control Area (**Figure 74**) should be accompanied by a Heritage Impact Statement to address the significance of Marklye and the following matters:
 - The character, siting, bulk, height and external appearance of the development;
 - The visual relationship between the proposed development and Marklye;
 - The potential for overshadowing of Marklye;
 - The colours and textures of materials proposed to be used in the development;
 - The landscaping and fencing of the proposed development;
 - The location of car parking spaces and access ways into the development;
 - The impact of any proposed advertising signs or structures;
 - The impact the proposed use would have on the amenity of Marklye;
 - The archaeological potential and impacts; and
 - The effect the construction phase will have on Marklye.
2. The visual impact of structures around Marklye should be minimised through appropriate siting, landscaping and use of materials. A suggested colour palette is provided in Appendix C.

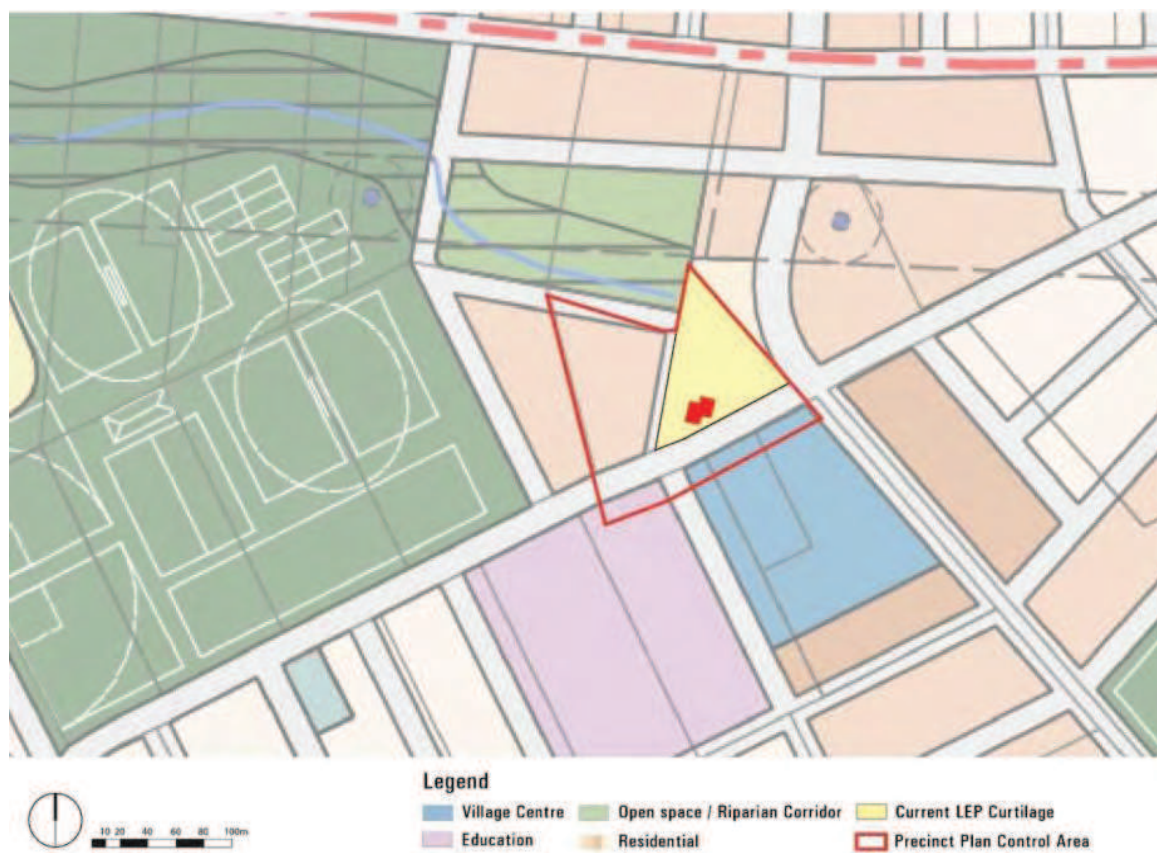
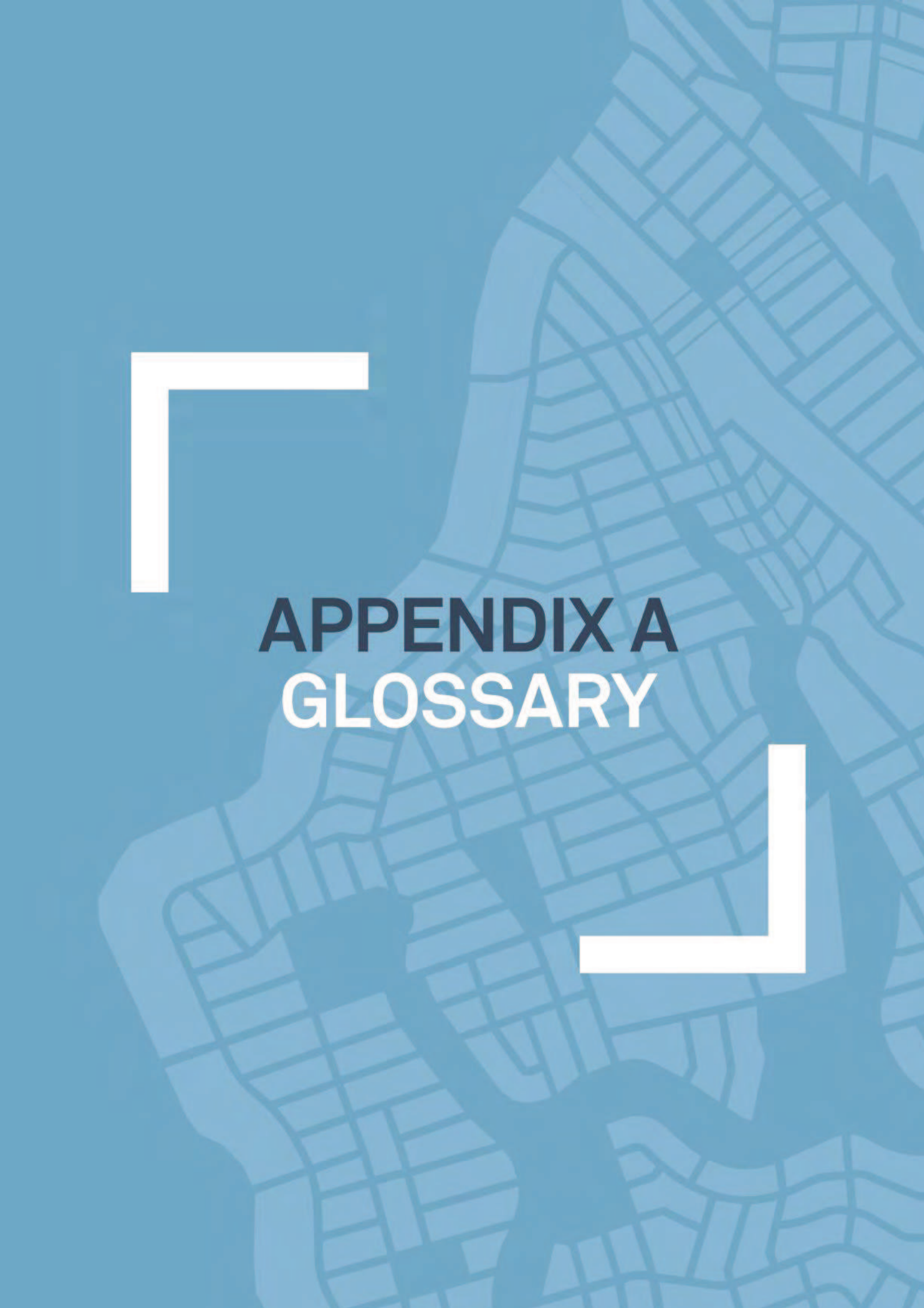
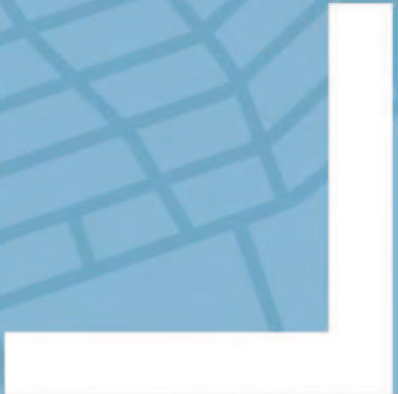


Figure 74 Precinct Plan Control Area for Marklye



APPENDIX A **GLOSSARY**



APPENDIX A: Glossary

Note: definitions for terms are also included in the Dictionary contained within the Growth Centres SEPP.

“Abutting Dwelling” is a building containing one dwelling, on a single block of land, that is designed and constructed on a zero lot line immediately adjacent to another dwelling on a different lot that is also built to the zero lot line and is structurally independent of any other dwelling. See **Figure 1**.

“Articulation Zone” is the area that provides relief from blank facades and can include verandahs, porches, awnings, shading devices, bay windows, pergolas and the like. A carport is not considered part of the articulation zone.

“Building footprint” means the area of land measured at finished ground level that is enclosed by the external walls of a building.

“Detached Dwelling” is a building containing one dwelling, on a single block of land, that is not attached to any other dwelling. See **Figure 1**.

“Flood Planning Levels (FPLs)” are the combinations of flood levels (derived from significant historical flood events or floods of specific AEPs) and freeboards selected for floodplain risk management purposes, as determined in management studies and incorporated in management plans. Flood planning area is the area of land below the FPL and thus subject to flood related development controls. The concept of flood planning area generally supersedes the ‘flood liable land’ concept in the 1986 Manual. Flood Prone Land is land susceptible to flooding by the PMF event. Flood Prone Land is synonymous with flood liable land.

“Gross floor area” means the sum of the floor area of each storey of a building measured from the internal face of external walls, or from the internal face of walls separating the building from any other building, measured at a height of 1.4 metres above the floor, and includes:

- a. the area of a mezzanine within the storey, and
- b. habitable rooms in a basement, and
- c. any shop, auditorium, cinema, and the like, in a basement or attic,
- d. but excludes:
- e. any area for common vertical circulation, such as lifts and stairs, and
- f. any basement:
 - storage, and
 - vehicular access, loading areas, garbage and services, and
- g. plant rooms, lift towers and other areas used exclusively for mechanical services or ducting, and
- h. car parking to meet any requirements of the consent authority (including access to that car parking), and
- i. any space used for the loading or unloading of goods (including access to it), and
- j. terraces and balconies with outer walls less than 1.4 metres high, and
- k. voids above a floor at the level of a storey or storey above.

“Manor Home” means a 2-storey building containing 4 dwellings, where:

- (a) each storey contains 2 dwellings, and
- (b) each dwelling is on its own lot (being a lot within a lot within a strata scheme or community title scheme), and
- (c) access to each dwelling is provided through a common or individual entry at ground level,

but does not include a residential flat building or multi-dwelling housing.

“Net Residential Density” means the ratio of the number of dwellings to the area of land they occupy including internal access lanes and half the width of adjoining access roads that provide vehicular access to the relevant dwellings, but excluding public open space and drainage corridors.

“Principal dwelling” means the largest dwelling house on a lot, measured by gross floor area.

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

“Private open space” means the portion of private land which serves as an extension of the dwelling to provide space for relaxation, dining, entertainment and recreation. It includes an outdoor room.

“Residential net developable area” means the land occupied by development, including internal streets plus half the width of any adjoining access roads that provide vehicular access, but excluding public open space and other non-residential land.

“Studio Dwelling” means a dwelling that:

- (a) Is established in conjunction with another dwelling (the *principal dwelling*), and
- (b) Is on its own lot of land, and
- (c) Is erected above a garage that is on the same lot of land as the principal dwelling, whether the garage is attached to, or separate from, the principle dwelling.

but does not include a demi-detached dwelling.

“Zero lot line dwelling” is a building containing one dwelling, on a single block of land, that is constructed with an exterior wall on one of its side boundaries but is not attached or abutting to any other dwelling. See **Figure 1**.

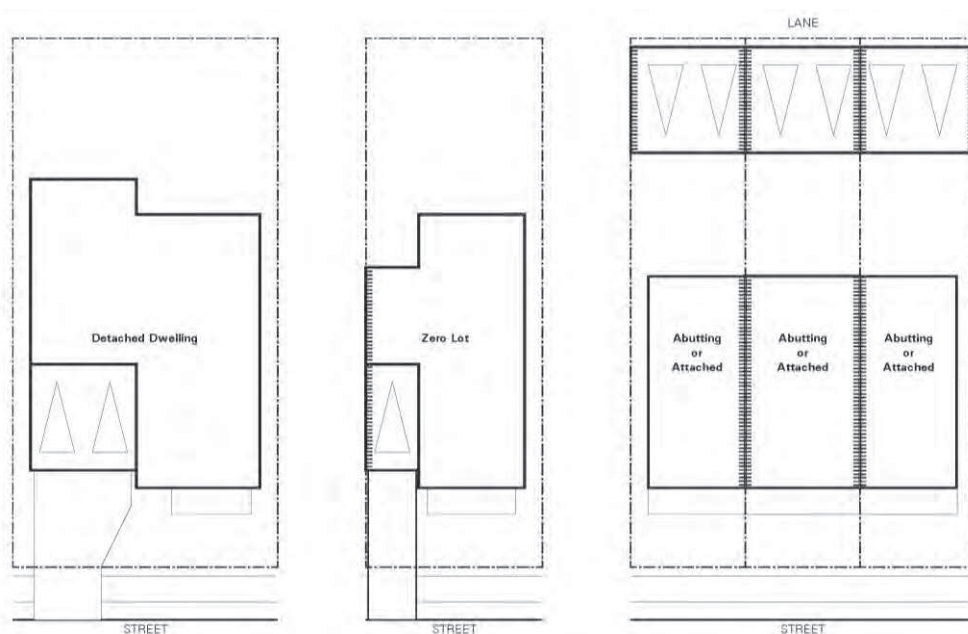
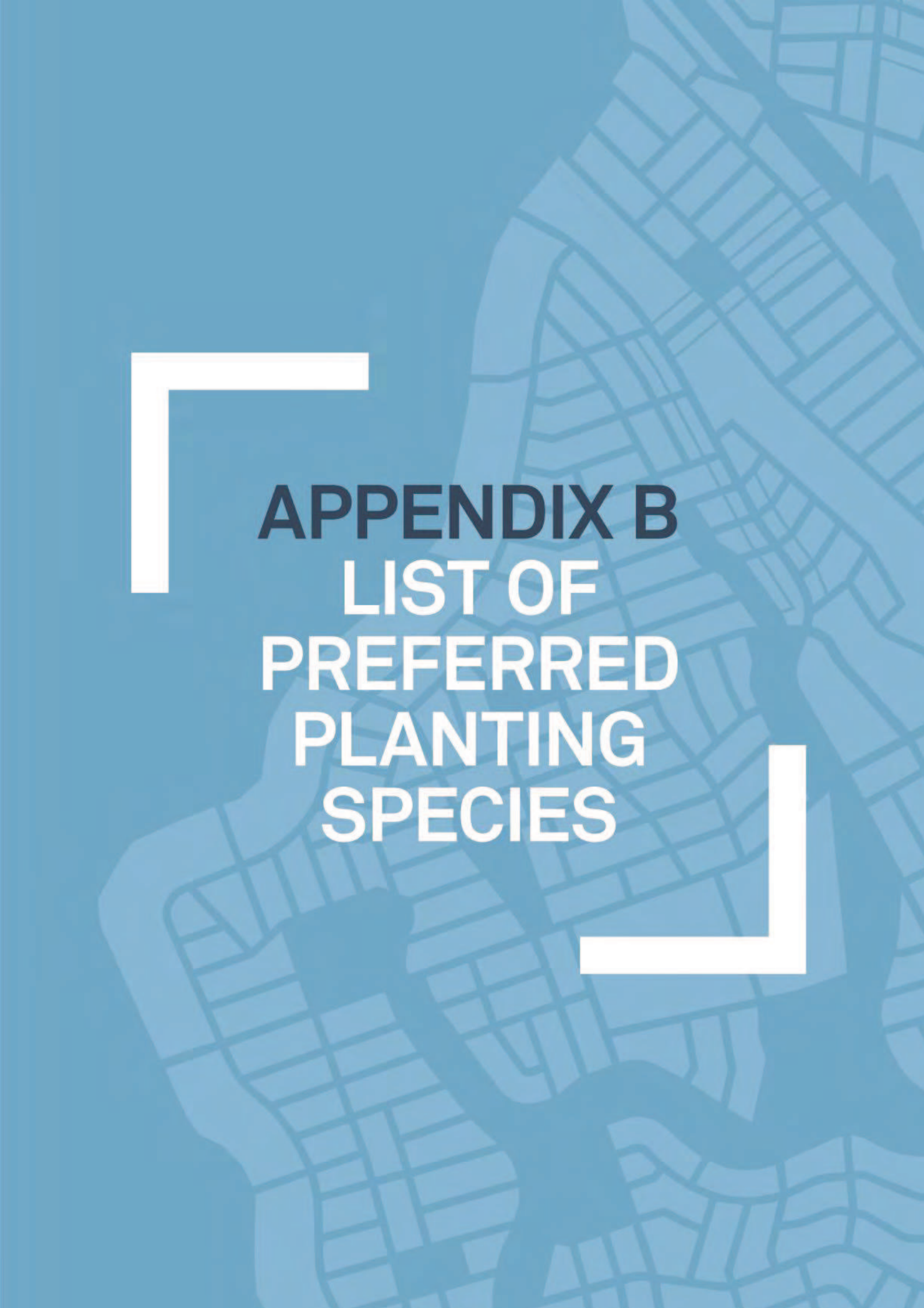


Figure 1 Detached, zero lot line, abutting and attached dwellings



APPENDIX B

LIST OF PREFERRED PLANTING SPECIES

Table B1: Preferred Species for General Planting

Indigenous Species Suitable for Planting in the Hills Shire						
Botanical Name	Common Name	Plant Community				
		Bird Attracting	Shale Cap Forest	Sandstone Soils	Cumberland Plain Woodland	Transition Forest
<i>Allocasuarina littoralis</i>	Black She-Oak			■	■	■
<i>Allocasuarina torulosa</i>	Forest Oak		■	■		■
* <i>Angophora costata</i>	Sydney Red Gum	■		■		■
<i>Angophora floribunda</i>	Rough-barked Apple	■	■	■		■
<i>Banksia serrata</i>	Old Man Banksia	■		■		
<i>Casuarina cunninghamiana</i>	River She Oak				■	
<i>Casuarina glauca</i>	Swamp She Oak			■	■	
* <i>Ceratopetalum gummiferum</i>	NSW Christmas Bush	■		■		
<i>Corymbia gummifera</i>	Red Bloodwood	■		■		
* <i>Corymbia maculata</i>	Spotted Gum					■
* <i>Elaeocarpus reticulatus</i>	Blueberry Ash	■	■			
<i>Eucalyptus crebra</i>	Narrow-leafed Ironbark	■			■	■
<i>Eucalyptus fibrosa</i>	Broad-leafed Ironbark	■			■	■
<i>Eucalyptus gummifera</i>	Red Bloodwood	■		■		
* <i>Eucalyptus haemastoma</i>	Scribbly Gum	■		■		
<i>Eucalyptus moluccana</i>	Grey Box	■			■	■
<i>Eucalyptus paniculata</i>	Grey Ironbark	■	■	■		■
<i>Eucalyptus pilularis</i>	Blackbutt	■	■	■		
* <i>Eucalyptus punctata</i>	Grey Gum	■		■		■

Indigenous Species Suitable for Planting in the Hills Shire						
Botanical Name	Common Name	Plant Community				
		Bird Attracting	Shale Cap Forest	Sandstone Soils	Cumberland Plain Woodland	Transition Forest
<i>Eucalyptus robusta</i>	Swamp Mahogany	■		■		
<i>Eucalyptus saligna</i>	Sydney Blue Gum	■	■	■		
<i>Eucalyptus tereticornis</i>	Forest Red Gum	■			■	■
<i>Melaleuca decora</i>	White Feather Honey Myrtle	■			■	
<i>Syncarpia glomulifera</i>	Turpentine	■	■	■		■
* <i>Tristaniaopsis laurina</i>	Water Gum	■		■		
<i>Shrubs</i>						
* <i>Acacia binervia</i>	Wattle			■		
* <i>Acacia decurrens</i>	Sydney Green Wattle				■	■
* <i>Acacia elata</i>	Mountain Cedar Wattle			■		
* <i>Acacia floribunda</i>	White Sallow Wattle			■	■	
* <i>Acacia implexa</i>	Hickory		■	■	■	■
* <i>Acacia longifolia</i>	Sydney Golden Wattle			■		
* <i>Acacia parramattensis</i>	Parramatta Green Wattle			■	■	■
<i>Banksia spinulosa</i>	Hairpin Banksia	■		■		■
* <i>Callicoma serratifolia</i>	Black Wattle			■		
<i>Callistemon citrinus</i>	Crimson Bottlebrush	■		■		
<i>Callistemon linearis</i>	Narrow-leafed Bottlebrush	■		■	■	
<i>Callistemon pinifolius</i>	Bottlebrush	■		■		
<i>Callistemon salignus</i>	Willow Bottlebrush	■		■		
<i>Davesia ulicifolia</i>	Pea			■		■
<i>Dodonaea triquetra</i>	Common Hop Bush			■	■	

Indigenous Species Suitable for Planting in the Hills Shire						
Botanical Name	Common Name	Plant Community				
		Bird Attracting	Shale Cap Forest	Sandstone Soils	Cumberland Plain Woodland	Transition Forest
<i>Dodonaea viscosa</i>	Hop Bush				■	
* <i>Grevillea mucronulata</i>	Green Spider Flower	■		■		
* <i>Grevillea linearifolia</i>	White Spider Flower	■		■		
* <i>Hakea salicifolia</i>	Willow-leaved Hakea	■		■		
* <i>Hakea sericea</i>	Bushy Needlebush	■		■	■	■
<i>Hibbertia diffusa</i>	Guinea Flower				■	
* <i>Indigofera australis</i>	Indigofera		■	■	■	■
<i>Kunzea ambigua</i>	Tick Bush	■		■		■
<i>Leptospermum polygalifolium</i>	Lemon-scented Tea Tree	■		■	■	
<i>Leucopogon juniperus</i>	Bearded Heath		■			■
* <i>Lomandra longifolia</i>	Mat Rush		■	■	■	■
<i>Melaleuca linearifolia</i>	Snow In Summer	■		■	■	
<i>Melaleuca nodosa</i>	Ball Honey Myrtle	■		■	■	
<i>Melaleuca styphelioides</i>	Prickly-leaved Paperbark	■		■	■	
<i>Melaleuca thymifolia</i>	Honey Myrtle	■		■	■	
<i>Oxylobium ilicifolium</i>	Native Holly			■		
<i>Pimelia linifolia</i>	Rice Flower			■		■
* <i>Pittosporum revolutum</i>	Sweet Pittosporum	■		■		
* <i>Polyscias sambucifolia</i>	Elderberry Panax	■		■		

Indigenous Species Suitable for Planting in the Hills Shire						
Botanical Name	Common Name	Plant Community				
		Bird Attracting	Shale Cap Forest	Sandstone Soils	Cumberland Plain Woodland	Transition Forest
<i>Pultanaea villosa</i>	Bush Pea				■	■
Groundcovers						
<i>Adiantum aethiopicum</i>	Maidenhair Fern		■	■		
<i>Danthonia</i> sp.	Wallaby Grass			■	■	■
* <i>Dianella caerulea</i> var <i>caerulea</i>	Blue Flax Lily	■		■	■	■
* <i>Dianella revoluta</i>	Mauve Flax Lily	■		■	■	
<i>Dichelachne crinita</i>	Longhair Plume Grass			■	■	
<i>Dichelachne micrantha</i>	Shorthair Plume Grass			■	■	
<i>Gahnia aspera</i>	Saw Sedge	■		■		
<i>Gahnia clarkei</i>	Saw Sedge	■		■		
<i>Gahnia melanocarpa</i>	Saw Sedge	■		■		
<i>Gahnia seiberana</i>	Saw Sedge	■		■	■	
<i>Geranium solanderi</i>	Native Geranium			■	■	
<i>Lepidosperma laterale</i>	Sword Sedges			■		
<i>Microlaena stipioides</i>	Weeping Meadow Grass		■	■	■	■
<i>Poa</i>	Tussock Grass		■	■		
<i>Pratia purpurascens</i>	Pratia			■	■	
<i>Stipa</i> sp.	Spear Grass			■	■	
<i>Themeda australis</i>	Kangaroo Grass		■	■	■	■
<i>Viola</i> sp.	Native Violet			■	■	

Indigenous Species Suitable for Planting in the Hills Shire						
Botanical Name	Common Name	Plant Community				
		Bird Attracting	Shale Cap Forest	Sandstone Soils	Cumberland Plain Woodland	Transition Forest
Wahlenbergia communis	Native Bluebell			■	■	
Climbers						
*Clematis aristata			■	■	■	
*Clematis glycinoides	Old Mans Beard			■	■	
Glycine clandestina	Love Creeper		■			■
Hardenbergia violacea	False Sarsaparilla		■	■	■	■
Hibbertia scandens	Golden Guinea Flower		■			
Kennedia rubicunda	Dusky Coral Pea			■	■	
*Pandorea pandorana	Wonga Wonga Vine		■	■		

Non-Indigenous Species Suitable for Planting in the Hills Shire	
Botanical Name	Common Name
Trees	
<i>Agonis flexuosa</i>	Willow Myrtle
<i>Banksia integrifolia</i>	Coastal Banksia
<i>Bauhinia purpurea</i>	Butterfly Tree
<i>Betula penula</i>	Silver Birch
<i>Brachychiton populneus</i>	Kurrajong
<i>Callistemon viminalis</i>	Weeping Bottlebrush
<i>Callitris columellaris</i>	White Cypress Pine
<i>Callitris rhomboidea</i>	Port Jackson Cypress
<i>Calodendron capense</i>	Cape Chestnut
<i>Casuarina littoralis</i>	Black She-Oak
<i>Cornus florida</i>	Flowering Dogwood
<i>Cupressus glabra</i>	Arizona Cypress
<i>Cupressus semperviens 'Stricta'</i>	Italian Cypress
<i>Eucalyptus cladocalyx 'Nana'</i>	Dwarf Sugar Gum
<i>Eucalyptus elata</i>	Willow Peppermint
<i>Eucalyptus eximia</i>	Yellow Bloodwood
<i>Eucalyptus ficifolia</i>	Scarlet-flowering Gum
<i>Eucalyptus leucoxylon</i>	White Ironbark
<i>Eucalyptus melliodora</i>	Yellow Box
<i>Eucalyptus nicholii</i>	Willow-leaf Peppermint
<i>Eucalyptus scoparia</i>	Willow Gum
<i>Fraxinus Americana</i>	White Ash
<i>Fraxinus excelsior 'Aurea'</i>	Golden Ash
<i>Fraxinus 'Raywoodii'</i>	Claret Ash
<i>Hakea laurina</i>	Pin-cushion Hakea
<i>Leptospermum petersonii</i>	Lemon-scented Tea Tree
<i>Leptospermum laevigatum</i>	Coastal Tea Tree
<i>Magnolia grandiflora</i>	White Magnolia

Non-Indigenous Species Suitable for Planting in the Hills Shire	
Botanical Name	Common Name
<i>Malus floribunda</i>	Flowering Crab Apple
<i>Melaleuca armillaris</i>	Giant Honey Myrtle
<i>Melaleuca liniifolia</i>	Flax-leaf Paper Bark
<i>Melaleuca stypheloides</i>	Prickly Paper Bark
<i>Nyssa sylvatica</i>	Tupelo
<i>Photinia glabra</i> 'Robusta'	Photinia
<i>Photinia glabra</i> 'Rubens'	Red-leaf Photinia
<i>Quercus coccinea</i>	Scarlet Oak
<i>Quercus ilex</i>	Holly Oak
<i>Quercus palustris</i>	Pin Oak
<i>Schinus molle</i> var <i>ariera</i>	Peppercorn Tree
<i>Ulmus parvifolia</i>	Chinese Elm
<i>Shrubs</i>	
<i>Abelia grandiflora</i>	Glossy Abelia
<i>Aucuba japonica</i>	Japanese Laurel
<i>Azalea</i> sp.	Azalea
<i>Bauera rubroides</i>	Native Dog Rose
<i>Berberis thunbergii</i> 'Atropurpurea'	Japanese Berberis
<i>Boronia floribunda</i>	Pink Boronia
<i>Brunfelsia latifolia</i>	Yesterday, Today and Tomorrow
<i>Callistemon citrinus</i>	Crimson Bottlebrush
<i>Callistemon speciosus</i>	Albany Bottlebrush
<i>Choisya ternata</i>	Mexican Orange Blossom
<i>Coleonema pulchrum</i>	Pink Diosma
<i>Coprosma repens</i>	Mirror Bush
<i>Correa alba</i>	White Correa
<i>Cyathea cooperii</i>	Rough-barked Tree Fern
<i>Daphne odora</i>	Winter Daphne
<i>Epacris longiflora</i>	Fuchsia Heath

Non-Indigenous Species Suitable for Planting in the Hills Shire	
Botanical Name	Common Name
<i>Epacris obtusifolia</i>	Bluntleaf Heath
<i>Gardenia</i> sp.	Gardenia
<i>Grevillea</i> hybrids	
<i>Hebe</i> 'Blue Gem'	Veronica
<i>Hibiscus rosa-sinensis</i>	Chinese Hibiscus
<i>Hydrangea macrophylla</i>	Hydrangea
<i>Juniperus chinensis</i> 'Japonica'	Chinese Juniper
<i>Juniperus communis</i> 'Hibernica'	Irish Juniper
<i>Lagerstroemia indica</i>	Crepe Myrtle
<i>Lambertia formosa</i>	Mountain Devil
<i>Leptospermum scoparium</i>	Manuka
<i>Leptospermum squarrosum</i>	Peach Flowered Tea Tree
<i>Magnolia soulangeana</i>	Japanese Magnolia
<i>Melaleuca bracteata</i>	
<i>Melaleuca incana</i>	Grey Honey Myrtle
<i>Melaleuca nesophila</i>	
<i>Michelia figo</i>	Port Wine Magnolia
<i>Murraya paniculata</i>	Orange Jessamine
<i>Rhododendron indicum</i>	Rhododendron
<i>Russelia equisetiformis</i>	Coral Bush
<i>Thuja occidentalis</i>	Common Yew
<i>Viburnum tinus</i>	Laurestinus
<i>Westringia fruticosa</i>	Coastal Rosemary
<i>Acacia brownii</i>	Heath Wattle
<i>Coprosma kirkii</i>	
<i>Grevillea fasciculata</i>	Grevillea
<i>Grevillea</i> 'Gaudichaudi'	Grevillea
<i>Grevillea</i> 'Poorinda Royal Mantle'	Grevillea
<i>Juniperus conferta</i>	Shore Juniper

Non-Indigenous Species Suitable for Planting in the Hills Shire	
Botanical Name	Common Name
Parthenocissus quinquefolia	Virginia Creeper
Pyrostegia venusta	Orange Trumpet Creeper
Trachelospermum jasminoides	
Viola hederacea	Native Violet
Wistaria sinensis	Wistaria

Table B2: Preferred Species for Street Tree Planting

Indigenous Species to The Hills Shire				
Tree Species	Common Name	Plant where No Footpath	Plant next to Footpaths & Cycleway	Soils
<i>Acmena smithii</i>	Lilly Pilly (Not CVs)		✓	Clay loams adaptable to sand
<i>Angophora floribunda</i>	Thin-Leaved Stringybark	✓		Clay loam and adaptable
<i>Backhousia citriodora</i>	Lemon Myrtle		✓	Clay loam to sandy loam
<i>Backhousia myrtifolia</i>	Grey Myrtle		✓	Alluvial soils and clay loams
<i>Brachychiton populneum</i>	Kurrajong		✓	Sand or sandy loam
<i>Callistemon 'Kings Park Special'</i>	Weeping bottlebrush		✓	Sandy loam
<i>Callistemon salignus</i>	White Bottlebrush		✓	Sandy loam
<i>Callitris columnaris</i>	White Cypress Pine		✓	Sandy to transitional soils
<i>Callitris rhomboidea</i>	Port Jackson Pine		✓	Sandy to transitional soils
<i>Cupaniopsis anacardioides</i>	Tuckeroo	✓		Sandy soils adapted to clay loams
<i>Elaeocarpus eumundii</i>	Eumundi Quandong	✓		Well drained loam
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	✓		Adaptable
<i>Eucalyptus crebra</i>	Narrow-Leaved Ironbark	✓		Clay and sandy loams
<i>Eucalyptus elata</i>	River Peppermint	✓		Alluvial soils
<i>Eucalyptus eugenioides</i>	Thin-Leaved Stringybark	✓		Clay loam adaptable to sandstone
<i>Eucalyptus fibrosa</i>	Broad-leaved Ironbark	✓		Clay loam to heavy clay, tolerates sandy soils
<i>Eucalyptus microcorys</i>	Tallow wood	✓		Adaptable
<i>Eucalyptus moluccana</i>	Grey Box	✓		Clay loams

Indigenous Species to The Hills Shire				
Eucalyptus paniculata	Grey Ironbark	✓		Heavy clay and transitional soils
Eucalyptus punctata	Grey Gum	✓		Transitional
Eucalyptus tereticornis	Forest Red Gum	✓		Adaptable
Glochidion ferdinandii	Cheese Tree		✓	Sandy loam adaptable clay loam
Jacaranda mimosifolia	Jacaranda		✓	
Leptospermum petersonii	Tea Tree		✓	Sandy and clay loams
Leptospermum polygalifolia	Tantoon		✓	Sandy and clay loams
Lophostemon confertus	Queensland Box		✓	Adaptable
Melaleuca bracteata 'Revolution'	Revolution Green	✓		Sandy Loam
Melaleuca decora	Feather Honey Myrtle		✓	Heavy clay
Melaleuca lineariifolia	Snow in Summer	✓		Clay loam
Melaleuca styphelioides	Prickly Paperbark		✓	Sandy loam, adaptable to clay loam
Michelia doltsopa	Sweet Michelia	✓		Sandy to clay loam
Syzygium luehmannii	Riberry		✓	Clay loam to Alluvial - Adaptable
Tristaniopsis laurina	Water Gum	✓		Sandy loam adaptable to heavy clay
Tristaniopsis laurina 'Luscious'	Watergum - Luscious		✓	
Waterhousia floribunda	Weeping Lilli Pilli	✓		

Non-Indigenous Species Suitable for Planting in The Hills Shire

Tree Species	Common Name	Plant where No Footpath	Plant next to Footpaths & Cycleways	Soils
Medium Size				
Acer buergeranum			✓	
Acer platanoides 'Crimson Sentry'	Maple		✓	

Indigenous Species to The Hills Shire				
Acer rubrum 'October Glory'	October Glory	✓		
Acer x freemanii 'Jeffersred'	Maple	✓		
Angophora bakeri			✓	Sandstone soils
Angophora costata	Sydney Red Gum	✓		Sandstone and Transitional soils
Calodendrum capense	Cape Chestnut		✓	
Flindersia australis	Australian Teak	✓		
Franklinia axilaris	Fried egg plant		✓	
Fraxinus pennsylvanica 'Urbidell'- Urbanite™	Ash		✓	
Fraxinus Raywood	Claret Ash	✓		
Lagerstroemia indica	Crepe Myrtle		✓	
Nyssa sylvatica	Tupelo	✓		
Pistacia chinensis	Chinese pistachio	✓		
Prunus campanulata			✓	
Prunus cerasifera 'Oakville Crimson Spire'	Ornamental Plum Fastigate CV		✓	
Prunus x blireana	Flowering plum		✓	
Pyrus calleryana 'Capital'	Ornamental Pear	✓		
Pyrus salicifolia	Weeping Pear		✓	
Quercus palustris 'Pringreen' Green Pillar®	Fastigate Pin Oak	✓		
Syncarpia glomulifera	Turpentine	✓		Adaptable
Ulmus parvifolia 'Todd'	Chinese Weeping elm	✓		
Zelkova serrata		✓		

APPENDIX C
MATERIALS
AND FINISHES
COLOUR
PALETTE

APPENDIX C: Materials and finishes colour palette

