

Campbelltown City Council Growth Centre Precincts

Development Control Plan



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1.0

Introduction



1.1 Name and application of this plan

This Development Control Plan (DCP) is the Campbelltown Growth Centres Precinct (East Leppington) Development Control Plan 2013 (also referred to as the DCP). It has been prepared pursuant to the provisions of Section 72 of the *Environmental Planning and Assessment Act 1979*.

This DCP was adopted by the Deputy Director General Planning Strategies, Housing & Infrastructure (under delegation from the Director-General) of the Department of Planning & Infrastructure on 21 March 2013 and came into force on 3 April 2013. The South West Growth Centre Precincts are shown in **Figure 1-1**.

This DCP applies to land shown on the Land Application Map in **Figure 1-2**.

Note: *The East Leppington Precinct is partly within Campbelltown local government area, partly within Camden local government area and partly within Liverpool local government area. Applicants should ensure that they refer to the DCP applying to the local government area where their development is situated.*

A list of the amendments incorporating precincts where precinct planning has been completed into the Campbelltown Growth Centre DCP is provided below:

Section	Date adopted
Housing Diversity Amendment	13/08/2014
Lot Size Amendment	30/11/2016

1.2 Purpose of this plan

The purpose of this DCP is to:

- a. Communicate the planning, design and environmental objectives and controls against which the Consent Authority will assess development applications (DAs);
- b. Consolidate and simplify the planning controls for the Campbelltown Growth Centres Precinct (East Leppington) located in the South West Growth Centre;
- c. Ensure the orderly, efficient and environmentally sensitive development of the East Leppington Precinct as envisaged by the South West Growth Centre Structure Plan and *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* (the Growth Centres SEPP);
- d. Promote high quality urban design outcomes within the context of environmental, social and economic sustainability.

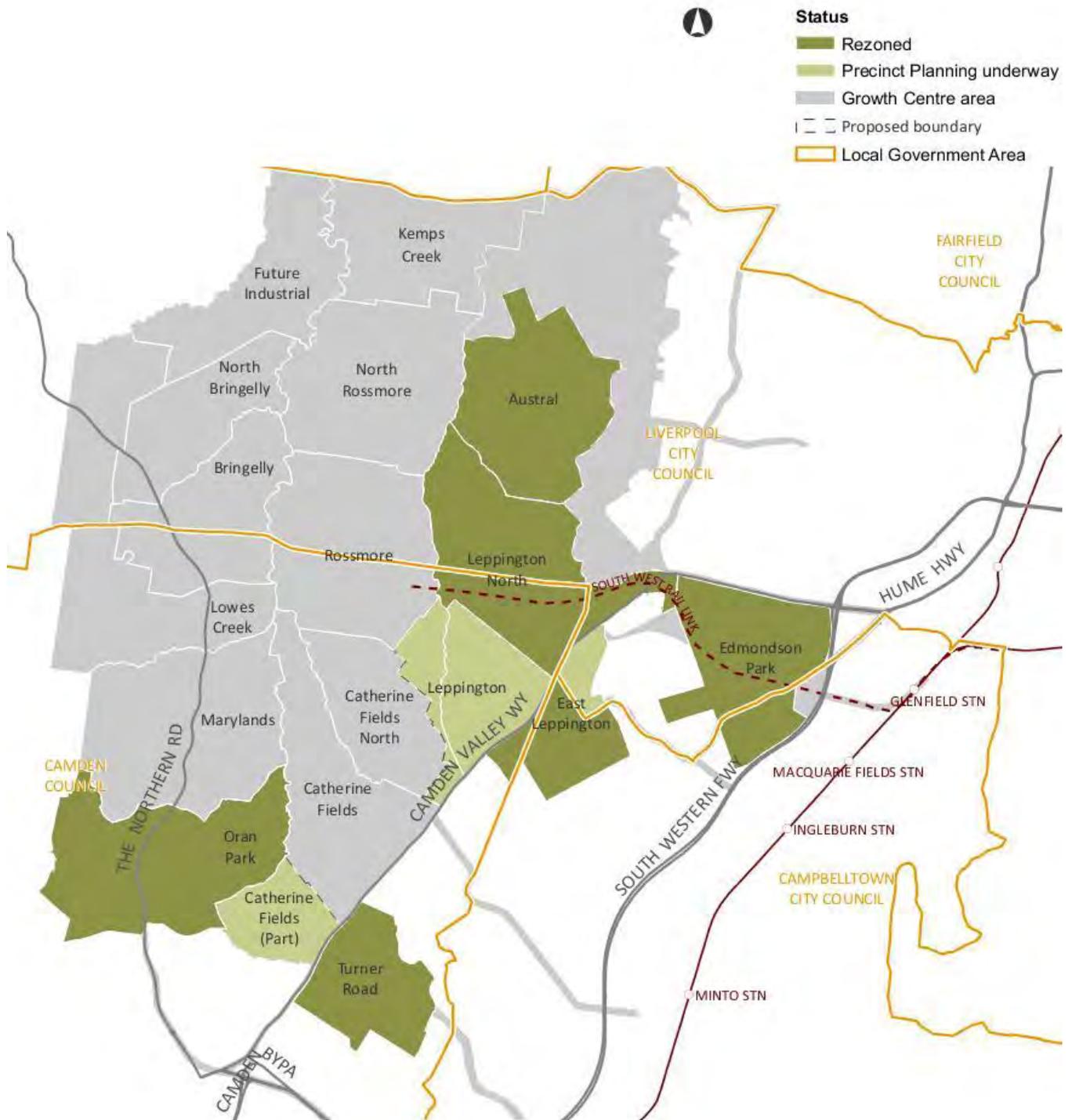
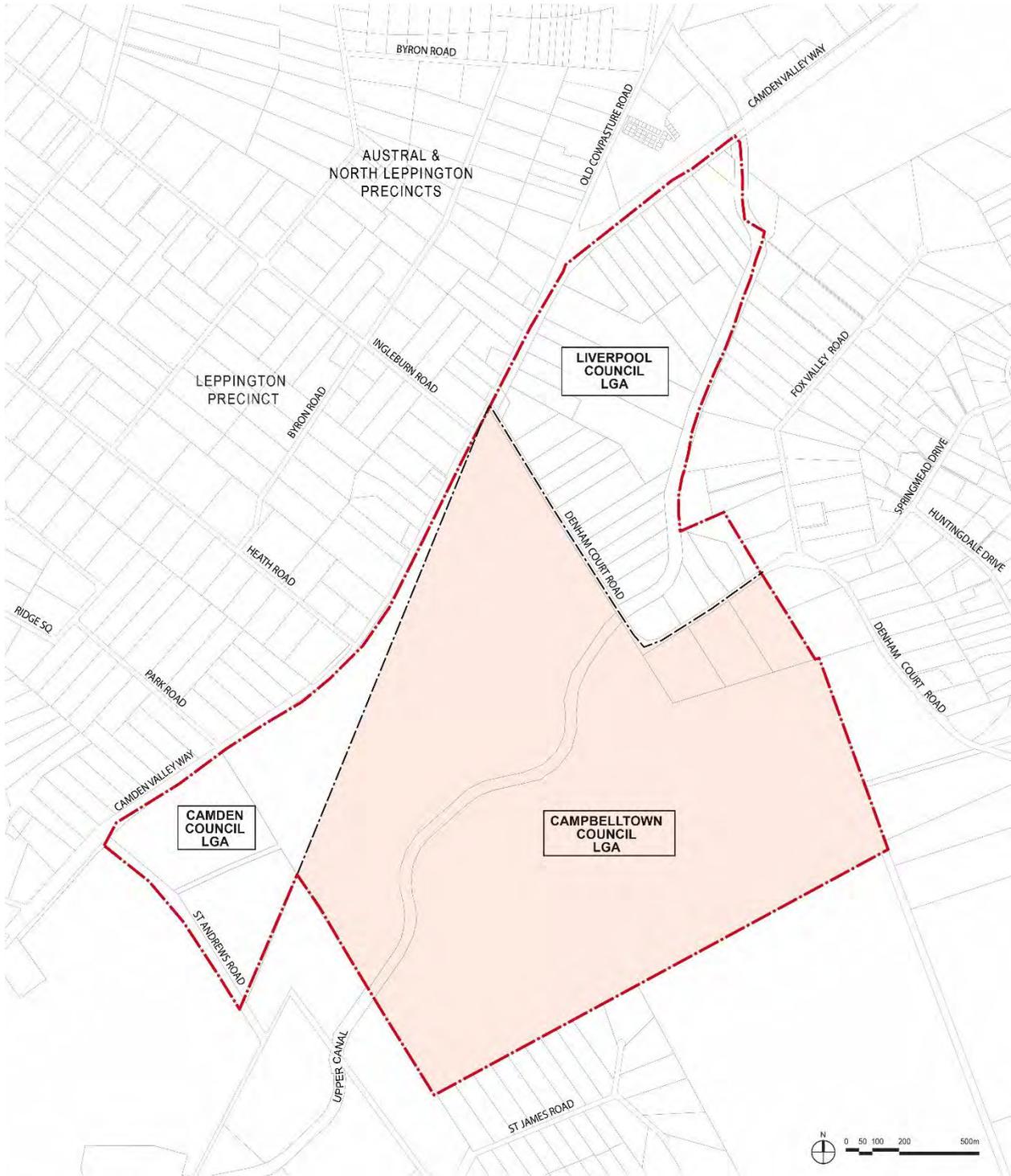


Figure 1-1: South West Growth Centre Precincts



Land Application Map

- East Leppington Precinct
- Land to which this DCP applies
- LGA Boundaries

Figure 1-2: Land Application Map

1.3 Using this DCP

1.3.1 Structure of this DCP

The DCP is structured in six sections containing objectives and controls which apply to all development in the Campbelltown Growth Centres Precinct Plan (East Leppington) to which this DCP applies. **Table 1-1** provides a summary of the content of each of the sections and the appendices.

Table 1-1: Structure of the DCP

Part	Summary
1 – Introduction	Sets out the aims and objectives of the DCP, identifies the land to which the DCP applies, explains the structure of the document, the relationship of the DCP to other planning documents, and explains procedures for exempt and complying development and submitting a development application.
2 – Precinct Planning Outcomes	Sets out the general structural elements of the Indicative Layout Plan which development should comply with. Also establishes matters to be addressed when carrying out a site analysis to inform the design of subdivisions and other developments. This part of the DCP provides the rationale for the more detailed and specific planning controls in the parts that follow.
3 – Neighbourhood and subdivision design	Provides objectives and controls related to residential subdivision design including the residential density and character, neighbourhood design, movement network, street and laneway design, the subdivision approval process and construction environmental management.
4 – Development in the residential zones	Establishes the objectives and controls that guide residential development, including dwelling houses, semi-detached, attached and abutting dwellings, multi unit housing, secondary and studio dwellings, dual occupancies, manor homes, residential flat buildings and shop top housing. Also covers residential amenity controls such as streetscape, safety, privacy, sustainable building design and fencing. This section also contains controls applying to non-residential development in residential zones, such as child care centres, neighbourhood shops, schools and community uses.
5 – Local Centre and Neighbourhood Centres Development Controls	Provides objectives, controls and design principles for the town centres and neighbourhood centres, including the core retail and commercial area and the mixed use fringe areas.
6 – Site Specific Controls	Provides controls to guide the development of industrial areas and business parks.
Precinct Schedules	A schedule for each Precinct that provides additional objectives and controls which are precinct specific, as well as precinct specific maps which are referred to throughout the main body of this DCP. Note that a separate schedule (Schedule 2) contains controls for the Leppington Major Centre. This is because it is the only major centre in the SWGC and requires specific controls.
Appendix A – Glossary	A schedule for each Precinct that provides additional objectives and controls which are precinct specific, as well as precinct specific maps which are referred to throughout the main body of this DCP. Note that a separate schedule (Schedule 2) contains controls for the Leppington Major Centre. This is because it is the only major centre in the SWGC and requires specific controls.
Appendix B – Riparian Protection Area Controls	Provides details of the management of the riparian zones along the main creek lines in the Precinct.
Appendix C – Salinity management plan	Provides details to guide subdivision and building development applications and works, to minimise the risk of developments increasing the risk of, and impacts from, soil and groundwater salinity.
Appendix D – Prescribed trees and preferred species	Identifies trees that are subject to the tree preservation provisions of the Precinct Plans, and provides a list of plant species that are preferred for use in landscaping within the Precinct.

Additional notes to readers are provided throughout this document. These notes are not part of the formal provisions of the DCP, but are intended to provide additional guidance and explanation of the provisions. If

further guidance is required on the interpretation of provisions in the DCP, readers should refer to the definitions or contact Council for advice.

1.3.2 How to use this DCP

Table 1-2 summarises the controls that are applicable to the main types of development that are permissible in this DCP.

Table 1-2: Guide to the controls in this DCP

Relevant DCP section	Residential Subdivision	Industrial Subdivision	Dwelling House	Dual Occupancy	Secondary Dwelling	Attached Dwelling	Semi-Detached Dwellings	Multi Dwelling Housing	Residential Flat Buildings	Non-residential Development **	Shop top Housing	Retail/ Commercial Development
Part 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Part 2	✓	✓										
Part 3	✓											
Section 4.1			✓	✓	✓	✓	✓	✓	✓	✓	✓	
Section 4.2			✓	✓	✓	✓	✓	✓	✓	✓	✓	
Section 4.3			✓	✓	✓	✓	✓	✓	✓	✓	✓	
Section 4.4			✓	✓	✓	✓	✓					
Section 4.5				✓	✓	✓		✓				
Section 4.6									✓		✓	
Section 4.7										✓		
Part 5											✓***	✓
Part 6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Appendices	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Notes:

** Applies to non-residential development in land within the Residential zones (R2 and R3)

*** If located on land zoned B2 Local Centre or B4 Mixed Use

1.4 Relationship to other planning documents

1.4.1 The Act and the Growth Centres SEPP

This DCP has been prepared under the *Environmental Planning and Assessment Act, 1979*. It has been prepared to provide additional objectives, controls and guidance to applicants proposing to undertake development in the Campbelltown Growth Centres Precinct Plan (East Leppington), and for Council reference in the assessment of development applications. It should be read in conjunction with the Growth Centres SEPP, in particular the specific Precinct Plans which are included as Appendices of the SEPP. The Growth Centres SEPP and the Campbelltown Growth Centres Precinct Plan (East Leppington) provide the statutory planning controls for development in the Precinct. This DCP is consistent with and supports those controls by providing more detail in relation to how development is to occur in the Precinct.

1.4.2 Campbelltown Council planning documents

The following Campbelltown Council planning documents do not apply to land that a Precinct Plan applies to:

- Campbelltown (Urban Area) Local Environmental Plan 2002;
- Campbelltown Local Environmental Plan No 209 - Exempt Development;
- Campbelltown Local Environmental Plan - District 8 (Central Hills Lands); and
- Campbelltown (Sustainable City) Development Control Plan.

except if specifically referred to in the Growth Centres SEPP and this DCP. Some other design standards and guidelines of Council do continue to apply, such as the Council's Engineering Design Guide for Development. Where existing policies, procedures and guidelines continue to apply to the Precinct, these are specifically referred to in the relevant sections of this DCP.

1.4.3 Growth Centres Biodiversity Certification

The *Threatened Species Conservation Act 1995* (the TSC Act) provides for the protection of threatened species, populations, endangered ecological communities, and critical habitat in NSW. Typically, threatened species issues are addressed during both the rezoning of land and when development applications are submitted and assessed by Council. However, the TSC Act also provides for planning instruments to be "Certified", meaning that the assessment of threatened species is done at the rezoning stage and does not need to be further considered at the development application stage. This approach provides for more strategic assessment and management of threatened species issues, and streamlines the development application process.

Biodiversity Certification was conferred upon the Growth Centres SEPP on 14 December 2007 via the gazettal of a Biodiversity Certification Order signed by the Minister for Climate Change and the Environment. The Order requires 2,000 ha of "existing native vegetation" (ENV) to be retained across the Growth Centres. Any clearance of ENV within Non-Certified Areas will be required to undertake a TSC assessment and vegetation removal may need to be offset in accordance with the Biodiversity Certification Ministerial Order.

The East Leppington Indicative Layout Plan, Precinct Plan and this DCP have been prepared in accordance with the Biodiversity Certification Order. The majority of land within the Growth Centre Precinct is certified, meaning that development can occur without the need for further assessment under the TSC Act. The Campbelltown Growth Centres Precinct Plan (East Leppington) contains controls to restrict the clearing of “Existing Native Vegetation” and this is the principle mechanism for ensuring consistency with the Biodiversity Certification Order. This DCP contains other objectives and controls in relation to the protection and enhancement of native vegetation, consistent with the Biodiversity Certification Order.

1.4.4 Summary of applicable planning documents

Applicants proposing to undertake development in the Precinct, and Council when assessing development applications, should refer to:

- the Growth Centres SEPP, as amended, including the Campbelltown Growth Centres Precinct Plan (East Leppington);
- this DCP;
- a relevant Section 94 Contributions Plan and/or Voluntary Planning Agreement; and
- the Growth Centres Biodiversity Certification Order, December 2007 and related amendments to the *Threatened Species Conservation Act 1995*.

1.5 Consent authority

Unless otherwise authorised by the *Environmental Planning and Assessment Act 1979* Campbelltown Council is the consent authority for all development in the Precinct to which this DCP applies on land that is within Campbelltown Local Government Area.

Council will use this DCP in its assessment of development applications.

1.6 Exempt and Complying Development

The *Environmental Planning and Assessment Act 1979* enables certain forms of development to be classified as either exempt development or complying development through Environmental Planning Instruments.

Exempt development is development of a minor nature that can be undertaken without the need for development consent.

Complying development is development that, providing it meets pre-determined development standards, can be assessed through the issuance of a complying development certificate.

The *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*, and the associated Housing Code provides controls for the siting and design of detached housing on lots 200m² and larger as well as alterations and additions to existing residential dwellings up to two storeys. Basements and

ancillary development are included as permitted forms of development. Development that meets the criteria in the Housing Code is complying development and this DCP does not apply. Where a development does not meet the requirements of the Housing Code, consent is required and this DCP applies.

The *NSW Commercial and Industrial Code* outlines how internal modifications to commercial and industrial premises in certain zones can meet the complying development criteria. Where a development does not meet the requirements of these Codes, consent is required and this DCP applies.

1.7 Development Application Process

1.7.1 Development Application Process

The development application process is summarised in **Figure 1-3**.

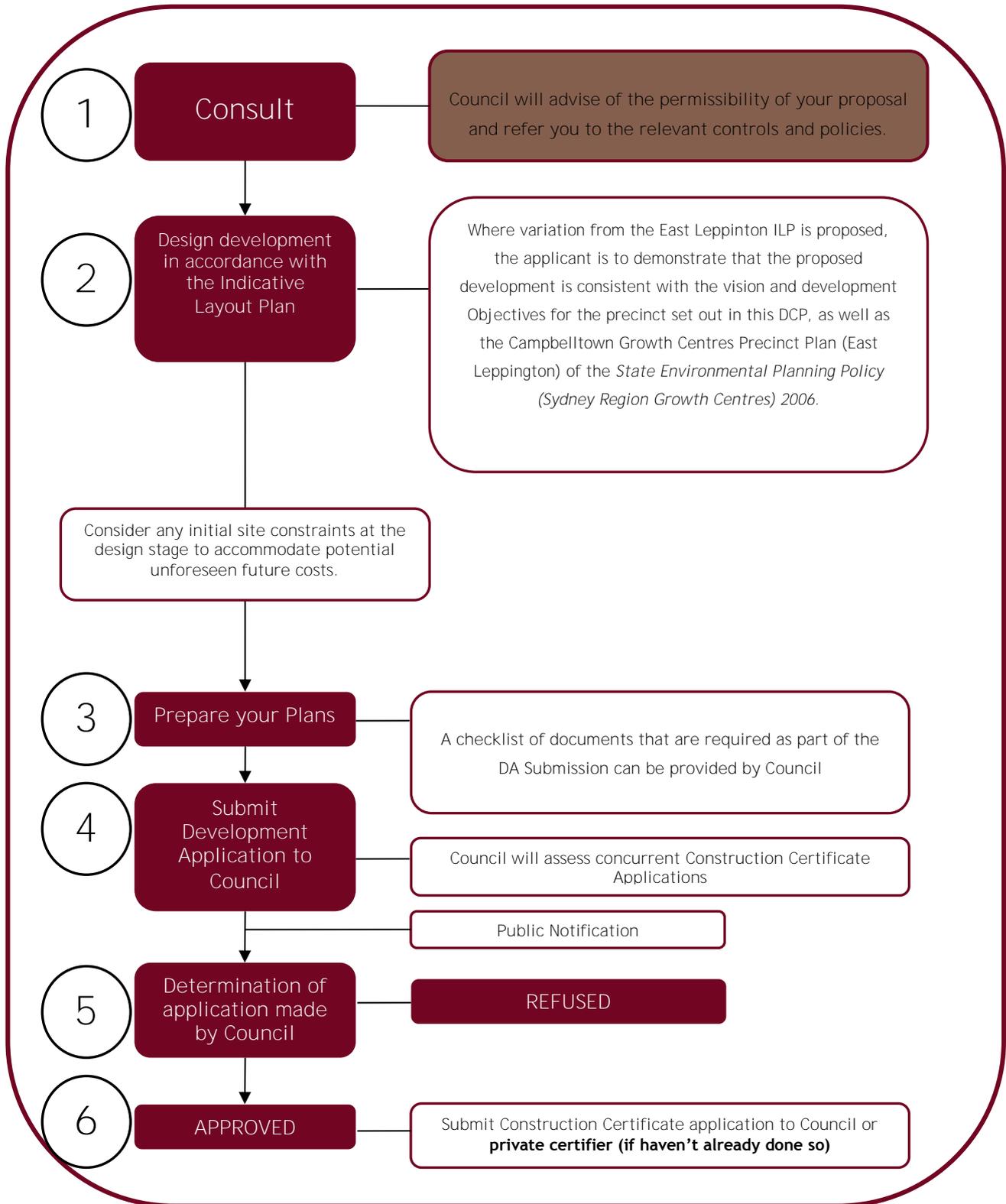


Figure 1-3: Development approval process

Notes:

Notification is where Council writes to those people identified as requiring notification, advising of the submission of a development application. Notification is for a minimum period of 14 days.

Advertising is where Council, in addition to writing to those people required to be notified, places an advertisement in a local newspaper advising of the submission of a development application. Advertising is for a minimum period of 14 days unless otherwise specified by legislation or Environmental Planning Instruments in the case of Integrated, Designated and Advertised Development.

Each Council has a Policy which establishes the types of development applications that will be notified or advertised.

1.7.2 Information to be submitted with Development Applications

Applicants are required to submit information with all development applications that clearly illustrates and describes the development proposal, and demonstrates consistency with the relevant planning controls particularly the Campbelltown Growth Centres Precinct Plan (East Leppington) and this DCP. The level of detail and the range of issues to be addressed by applicants vary depending on the type and scale of development that is proposed. Some information is required for all development applications, while more detailed or specific information is required only for some types of development.

Council's checklist for information required to be referred to prior to preparation of any application and is available at www.campbelltown.nsw.gov.au.

Considerable background work has been undertaken to inform the preparation of the ILP and planning controls for the Precinct. This information is available either by contacting Council or the Department of Planning and Infrastructure.

In some cases, Precinct Planning studies and reports may be sufficient for the purposes of lodging a Application, while for some properties or some development types, more detailed information may need to be prepared. Applicants should discuss the suitability of studies prepared as part of Precinct Planning with Council prior to preparing development application documentation, to determine if additional studies or documentation will be required.

The ILP and Planning Controls have been prepared based on the Precinct Planning studies. Where applications propose a development type or design that differs from the ILP or doesn't comply with the planning controls (refer to **Section 1.7.3**), additional technical studies are likely to be required to justify the non-compliance.

1.7.3 Variations to Development Controls and DCP Amendments

Compliance with the Indicative Layout Plan

The Precinct Indicative Layout Plan in **Figure 2-1** is intended to show how the overall Precinct will develop over time. It shows how the numerous developments, undertaken over numerous years, will come together to ensure the overall development of the Precinct is integrated, sustainable and attractive. However, it is recognised that some variation to the layout shown on the ILP may be reasonable to address new or more detailed information about the site, or other factors that might influence individual developments.

Council may grant consent to a proposal that differs from the Indicative Layout Plan (ILP), where the variation is considered to be minor and the proposal is demonstrated to be generally consistent with the ILP. Development applications will be considered on their merits, and applicants are required to demonstrate that the proposed variation is:

- Consistent with the Campbelltown Growth Centres Precinct Plan (East Leppington) under the Growth Centres SEPP;
- Consistent with the Precinct Planning Outcomes and Precinct Vision in Part 2 of this DCP;
- Not likely to significantly impact on the amenity, safety or environmental quality of adjoining lands, or the ability of adjoining development to occur generally in accordance with this DCP.

Where a proposed variation to the DCP does not meet the above requirements, Council may either:

- refuse consent for the application;
- condition the development consent to ensure the above requirements are achieved subject to compliance with any condition Council imposes; or
- request the applicant to demonstrate that amendment of the DCP is warranted and the relevant standard would not be eroded to enable the development to be approved.

Amendment of the DCP will only be considered where the amendment would not significantly alter the planning outcomes for the Precinct. Typically, DCP amendments will not be undertaken to address issues that relate only to a single development: these issues should be dealt with by addressing the criteria for ILP variations above. Amendments will usually only be considered where the change relates to an aspect of the ILP that is demonstrably unreasonable or unnecessary, or where amendments are appropriate to address issues that will affect development generally in the Precinct.

Compliance with Objectives and Controls in this DCP

Each section in this DCP contains **Objectives** and **Controls** relating to various aspects of development (for example, building setbacks, requirements for car parking, or minimum requirements for landscaping).

The Objectives enable Council and Applicants to consider whether a particular proposal will achieve the development outcomes established for the Precinct in the ILP.

The Controls establish consistent standards, which if met, mean that development should be consistent with the Objectives. However, in some circumstances, strict compliance with the controls may not be necessary, or may be difficult to achieve because of the particular characteristics of a development site. In these situations, Council may grant consent to a proposal that does not comply with the Controls in this DCP, providing the intent (i.e. the Objective/s) of the Controls is achieved. Where a variation is sought it must be justified in writing by indicating how the development will meet the Objectives of the relevant Control and/or is generally consistent with the ILP.

2.0

Precinct Planning Outcomes



2.1 Introduction

This Part of the DCP defines Precinct wide planning outcomes. The specific way the outcomes are to be achieved for the East Leppington Precinct is established by the Indicative Layout Plan. This part also outlines the matters to be considered when undertaking site analysis for subdivision planning. These controls should be considered during the initial stages of subdivision planning to determine the suitability and the development potential of land.

2.2 The Indicative Layout Plan

An **Indicative Layout Plan** (ILP) is contained in **Figure 2-1** below. The Indicative Layout Plan forms the basis for urban development in the Precinct by setting out:

- the road network;
- public transport routes;
- the open space and drainage networks;
- the locations of land uses including residential development, schools, community facilities, utilities, centres and employment lands;
- areas requiring protection because of environmental or heritage values;
- the density and types of housing that are preferred in various parts of the Precinct.

Objectives

- a. To ensure that development in the Precinct occurs in a coordinated manner consistent with the East Leppington Indicative Layout Plan.

Controls

1. All development applications are to be generally prepared in accordance with the Indicative Layout Plan.
2. When assessing development applications, Council will consider the extent to which the proposed development is consistent with the Indicative Layout Plan.
3. Any proposed variations to the general arrangement of the Indicative Layout Plan must be demonstrated by the applicant, to Council's satisfaction, to be consistent with the Precinct Planning vision in **Section 2.3** of this DCP.

2.3 East Leppington Precinct Vision

The vision for the East Leppington Precinct is to develop a series of new walkable residential neighbourhoods supported by local retail, community and recreation facilities in an environmentally sustainable manner.

The Precinct will provide:

- For a range of residential densities, housing types and affordability options to meet the needs of a diverse and growing community.
- Detached housing will comprise the majority of residential development, with medium density development located close to the local centre, along bus routes and areas of higher amenity with larger lots on the periphery of the Precinct.
- A Local Centre located at the 'gateway' of the East Leppington Precinct. The Local Centre will be the main retail centre, providing for a mix of retail, commercial and community services to cater for the needs of local residents. It will be highly accessible by all modes of transport, being located off Camden Valley Way and surrounded by medium density residential and mixed use development.
- A public domain that will include special places focused on important landscape and cultural features including the Leppington House archaeological site. Passive recreation opportunities will be maximised along the Bonds Creek riparian corridor whilst active recreation opportunities will be catered through the provision of sporting fields. Where possible, remnant vegetation will be retained in public parks and areas containing endangered ecological communities will be conserved. The visual and landscape quality of the Scenic Hills will be protected.
- For the incorporation of principles of ecological sustainability and measures to ensure that the important historic, environmental and visual elements of the Precinct are recognised and protected for future generations.

Note: This part sets out the precinct planning vision for East Leppington Precinct and includes figures that support the objectives, controls and design principles for subdivision planning and design in this section of the DCP.

2.4 Subdivision site analysis

The following sections contain matters to be addressed in relation to existing site characteristics, when planning new subdivisions.

2.4.1 Flooding

Objectives

- a. To manage the flow of stormwater from urban parts of the East Leppington Precinct to meet pre-development flows at specific locations,
- b. To define the flood constraints and standards applicable to development in the Precinct,
- c. To minimise the potential of flooding impacts on development, and
- d. To incorporate best practice stormwater management principles and strategies in development proposals.

Controls

1. The Council's Engineering Design Guide for Development applies unless otherwise specified.
2. The pattern of subdivision is to ensure that no new dwelling is required to be located within the post-development 1% AEP flood extent shown on the Flood Prone Land Figure (refer to **Figure 2-2**).
3. The 1% AEP flood extent may be varied based on more detailed flood studies that are prepared to the satisfaction of Council.
4. Pedestrian and cycle pathways and open space may extend within the 1% AEP flood level, provided the safe access criteria contained in the NSW Floodplain Development Manual are met. Reference should also be made to Appendix B (Riparian Protection Area controls). Figure 2-2 shows the approximate extent of the 1% AEP flood level.

Note: Where development is proposed within or adjacent to land that is shown in Figure 2-2, as being affected by the 1% AEP level, Council may require a more detailed flood study to be undertaken by the applicant to confirm the extent of the flood affectation on the subject land.

5. Roads adjoining Bonds Creek and its tributaries are to be located above the 1% AEP level.
6. Existing roads that are below the 1% AEP level may be retained or upgraded on the current vertical alignment, providing safe evacuation routes can be provided, where they provide access to existing development and where elevation of the road to achieve a higher level of flood immunity would:
 - Unreasonably restrict, or require significant modifications to access to properties; or
 - Restrict overland flow paths or the installation of stormwater pipes; or
 - Result in unacceptable flooding impacts on other properties; or
 - Upgrading of the road would require removal of Existing Native Vegetation mapped under the Growth Centres SEPP.

7. The design of the road network is to ensure that evacuation routes from existing development and/or adjoining properties are maintained, or suitable alternative evacuation routes are provided, for flood events up to and including the PMF flood event. Evacuation routes are to be identified during early planning of the road network.
8. In general, Council will not support development, including the filling of land, within the floodway due to its function as the main flow path for flood waters once the main channel has overflowed and the possibility of a significant threat to life and property in a major flood, unless in accordance with post-development flood levels (subject to Control 3)
9. An application lodged for development in a floodway (other than agriculture, cultivation and minor alterations to existing buildings) shall be accompanied by a survey plan to satisfactorily demonstrate that:
 - The development will not increase flood hazard or damage to other properties or adversely affect them in any way, by the provision of a report from a professional civil engineer experienced in hydraulics.
10. Applications may be required to indicate that permanent fail-safe, maintenance-free measures are incorporated in the development to ensure the timely, orderly and safe evacuation of people from the area should a flood occur. In addition, it may also be necessary to demonstrate that the displacement of these people during times of flood will not significantly add to the overall community cost and community disruption caused by the flood.
11. Applications may be required to indicate proposed flood proofing of the structure to the satisfaction of Council.



Figure 2-2: Flood prone land

2.4.2 Water cycle management

Objectives

- a. To avoid adverse impacts from stormwater runoff on other properties as a result of development in the catchment for all storm events up to and including a 100-year ARI event,
- b. To minimise potable water consumption and maximise re-use of stormwater within urban areas, and
- c. To maintain and enhance the quality of natural water bodies.

Controls

1. Stormwater within new subdivisions is to be managed through a gravity network of pipes and overland flows generally following streets where flow volumes exceed the capacity of pipes.

All new development is to be connected, via the network described in control 1 above, to the Council's trunk drainage system shown on the Key elements of the water cycle management and open space Figure (refer to

management of stormwater through easements will only be permitted by Council in exceptional circumstances where no other practical solution is available.

4. All outlet structures discharging to a creek system shall provide scour protection and energy dissipaters to minimise erosion of creek banks and beds. The number of outlet connections is to be minimised.

Roads on primary drainage lines shown on

basins located on other catchments. Water quality treatment is still required for these areas and is to be managed within the street network.

7. Management of 'minor' flows using piped systems for the minimum 20% AEP (residential land use) and 10% AEP (commercial land use) shall be in accordance with Council's Guide DCP Volume 2. Management measures shall be designed to:
 - prevent damage by stormwater to the built and natural environment,
 - reduce nuisance flows to a level which is acceptable to Council,
 - provide a stormwater system which can be economically maintained and which uses open space in a compatible manner,
 - control flooding,
 - minimise urban water run-off pollutants to watercourses.
8. Management of 'major' flows using dedicated overland flow paths such as open space areas, roads and riparian corridors for all flows in excess of the pipe drainage system capacity and above the 20% AEP shall be in accordance with Council's Engineering Design Guide for Development. Management measures shall be designed to:
 - Ensures flows satisfy safety requirements,
 - prevent both short term and long term inundation of habitable dwellings,
 - control flooding and enable access to lots, stabilise the land form and control erosion,
 - provide for the orderly and safe evacuation of people away from rising floodwaters.
9. Where practical, development shall attenuate up to the 50% AEP peak flow for discharges into the local tributaries.
10. The developed 1% AEP peak flow is to be maintained at pre-development flows through the incorporation of stormwater detention and management devices. Where subdivision works occur prior to the completion of required trunk drainage works, on site facilities will need to be provided in order to limit drainage volume and velocity to that experienced prior to development and to address water quality controls.
11. The trunk stormwater system is to be constructed in accordance with the Council's Engineering Design Guide, and to achieve the water quality targets in **Table 2-1**.
12. Where development is located on land that drains towards the Sydney Catchment Authority Upper Canal, specific water quality measures may be required to ensure that development does not adversely impact on the quality of water in the Upper Canal. Specific controls are contained in this DCP.
13. Where development on land affected by local runoff or local overland flooding – major drainage is proposed, it must be designed in accordance with Council's Engineering Design Guide for Development.

Table 2-1: Water quality and environmental flow targets

	WATER QUALITY % reduction in pollutant loads				ENVIRONMENTAL FLOWS Stream erosion control index¹
	Gross Pollutants (>5mm)	Total suspended solids	Total phosphorous	Total nitrogen	
Stormwater management Objective	90	85	65	45	2-5.0: 1
'Ideal' stormwater outcome	100	95	95	85	1:1

¹ *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. Where Stream Erosion Index can not be met armouring is to be constructed.*



Figure 2-3: Key elements of the Water Cycle Management and Open Space

2.4.3 Salinity and soil management

Objectives

- a. To manage and mitigate the impacts of, and on, salinity and sodicity,
- b. To minimise the damage caused to property and vegetation by existing saline soils, or processes that may create saline soils,
- c. To ensure development will not significantly increase the salt load in existing watercourses, and
- d. To prevent degradation of the existing soil and groundwater environment, and in particular, to minimise erosion and sediment loss and water pollution due to siltation and sedimentation.

Controls

1. Subdivision development applications, that include earthworks, on land with a moderate to high risk of salinity (identified in **Figure 2-4**), are to be accompanied by information detailing how the design and construction of the proposed subdivision intends to address salinity issues. All works are to comply with the Western Sydney Salinity Code of Practice 2004 (WSROC) and **Appendix C**.
2. Salinity and sodicity management related to **Appendix C** is to complement WSUD strategies, improving or at least maintaining the current condition, without detriment to the waterway environment.
3. All development must incorporate soil conservation measures to minimise soil erosion and siltation during construction and following completion of development. Soil and Water Management Plans, prepared in accordance with Managing Urban Stormwater - Soils and Construction (Landcom 3rd Edition March 2004 ('The Blue Book')) are to be submitted with each subdivision development application.
4. Salinity shall be considered during the planning, design and carrying out of earthworks, rehabilitation works and during the siting, design and construction of all development including infrastructure:
 - To protect development and other works from salinity damage; and
 - To minimise the potential impacts that development and other works may have on salinity.

Note: Reference should be made to Councils Development Application checklist, refer to Section 1.7.2.

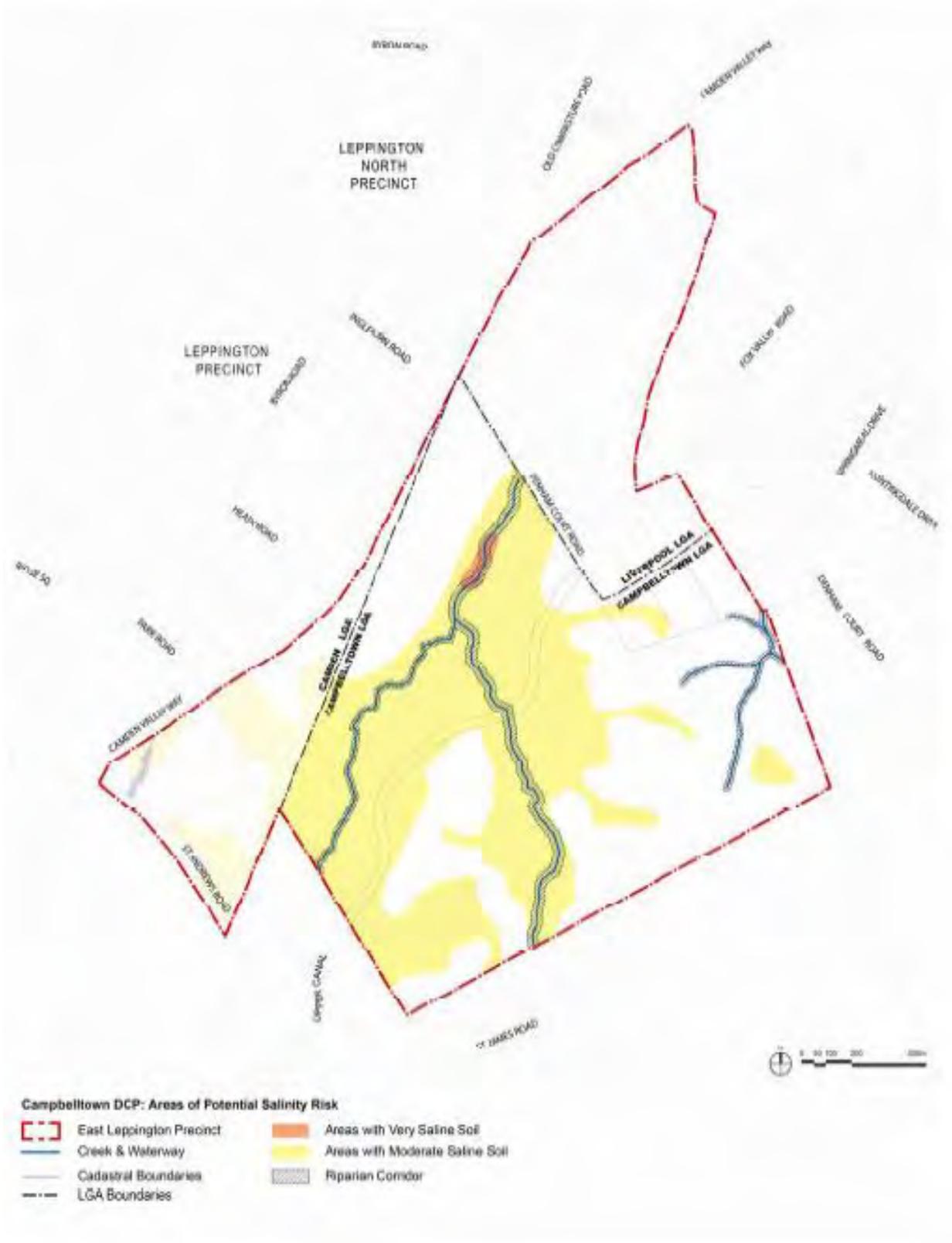


Figure 2-4: Areas of potential salinity risk

2.4.4 Native vegetation and ecology

Note: Reference should be made to the Growth Centres Biodiversity Certification under the NSW Threatened Species Conservation Act 1995 (TSC Act). Where land has been certified it enables development applications to be considered without the need for further assessment under section 5A of the Environmental Planning & Assessment Act 1979.

Objectives

- a. To conserve and rehabilitate the remaining native vegetation and trees within the East Leppington Precinct,
- b. To ensure that native vegetation contributes to the character and amenity of the East Leppington Precinct, and
- c. To conserve the ecological values of the Precinct, and ecological links to surrounding areas.

Controls

1. Native trees and other vegetation are to be retained where possible by careful planning of subdivisions to incorporate trees into areas such as private allotments, the public domain or within road reserves.
2. When assessing an application that proposes removal of a tree or trees, consideration will be given to whether the tree or trees:
 - Are listed on any Council register of significant trees.
 - Is prominent due to its height, size, position or age.
3. Buildings are to be set back a minimum of 3 metres from existing trees that are to be retained.
4. The design and location of access driveways should wherever possible be located to avoid or minimise removal of existing trees.
5. Council may consider alternative street cross section designs where the typical cross section would result in removal of existing trees that could otherwise be retained.
6. Where practical, prior to development commencing, applicants are to:
 - provide for the appropriate re-use of native plants; and
 - relocate native animals from development sites. Applicants should refer to OEH's *Policy on the Translocation of Threatened Fauna in NSW*.

Within land that is shown as Riparian Corridor in

8. Development on land that adjoins land zoned E2 Environmental Conservation is to ensure that there are no significant detrimental impacts to the native vegetation and ecological values of the E2 zoned land.

Note: Refer to the *Biodiversity Consistency Report 2013 for the East Leppington Precinct* for advice on the long term intent and appropriate management of land zoned E2 Environment Conservation.

9. All subdivision design and bulk earthworks are to consider the need to minimise weed dispersion and to eradicate weeds on site. If Council believes that a significant weed risk exists, a Weed Eradication and Management Plan outlining weed control measures during and after construction is to be submitted with the subdivision development application.

10. A **Landscape Plan** is to be submitted with all subdivision development applications that create a new road and/or more than 2 allotments, identifying:

- all existing trees on the development site and those that are proposed to be removed or retained;
- the proposed means of protecting trees to be retained during both construction of subdivision works and construction of buildings;
- proposed landscaping including the locations and species of trees, shrubs and ground cover to be planted as part of subdivision works;
- the relationship of the proposed landscaping to native vegetation that is to be retained within public land, including factors such as the potential for weed or exotic species invasion and the contribution of the proposed landscaping to the creation of habitat values and ecological linkages throughout the Precinct; and
- How bushfire risk has been managed, including requirements for Asset Protection Zones and how these relate to the proposed landscaping.

11. The selection of trees and other landscaping plants is to consider:

- Council's policies including *Campbelltown DCP No.114 Trees*, *Campbelltown Tree Planting Guide* and *Native Gardening Guide for the Campbelltown Local Government Area* and other applicable Council guidelines;
- The use of locally indigenous species where available;
- Bushfire risk;
- Contribution to the management of soil salinity, groundwater levels and soil erosion;
- Items of environmental heritage, heritage conservation areas, historic road alignments and significant view lines.

12. For the purposes of clause 5.9 of the Campbelltown Growth Centres Precinct Plan (East Leppington), prescribed trees include:

- Trees taller than the minimum height and greater than the minimum trunk diameter specified in **Appendix D** and;

- Tree species listed in **Appendix D**.



Figure 2-5: Example of retained significant trees in a local park

Note: Where applicable, clause 5.9 of the Campbelltown Growth Centres Precinct Plan (East Leppington) requires development consent or a permit to ringbark, cut down, top, lop, remove, injure or wilfully destroy any tree or other vegetation that is prescribed by this DCP, except where other requirements of clause 5.9 are met.

2.4.5 Bushfire hazard management

Objectives

- To prevent loss of life and property due to bushfires by providing for development compatible with bushfire hazard, and
- To encourage sound management of bushfire-prone areas.

Controls

- Reference is to be made to Planning for Bushfire Protection 2006 in subdivision planning and design and development is to be consistent with Planning for Bushfire Protection 2006.
- 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 Bushfire risk and Asset Protection Zone Requirements (refer to Figure 2-10). APZs and construction standards are to be accurately mapped and detailed for each affected lot on plans submitted with the development application.
- APZs:
 - are to be located wholly within the Precinct;
 - may incorporate roads and flood prone land,

- may be located within the vegetated buffer (subject to the Guidelines for Riparian Corridors prepared by the NSW Office of Water (as issued from time to time). Refer to **Appendix B**,
 - may be used for open space and recreation subject to appropriate fuel management,
 - are to be maintained in accordance with the guidelines in Planning for Bushfire Protection 2006,
 - may incorporate private residential land, but only within the building setback (no dwellings are to be located within the APZ),
 - are not to burden public land except where consistent with control 4 below, and
 - are to be generally bounded by a public road or perimeter fire trail that is linked to the public road system at regular intervals in accordance with Planning for Bushfire Protection 2006.
4. Indicative cross-sections for perimeter roads and properties adjacent to the Precinct boundary near St James Road are provided in **Figure 2-6** and **Figure 2-7**.
 5. Where an allotment fronts and partially incorporates an APZ 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.
 6. Temporary APZs, identified through a Section 88B instrument, will be required where development is proposed on allotments next to undeveloped land that presents a bushfire hazard. Once the adjacent stage of development is undertaken, the temporary APZ will no longer be required and shall cease.
 7. 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 2419.1-1994 Fire Hydrant Installations.
 8. Buildings adjacent to APZs are to be constructed in accordance with the requirements of **Appendix 3** of Planning for Bushfire Protection 2006 and Australian Standard 3959-1999-Construction of Building in Bushfire Prone Areas.

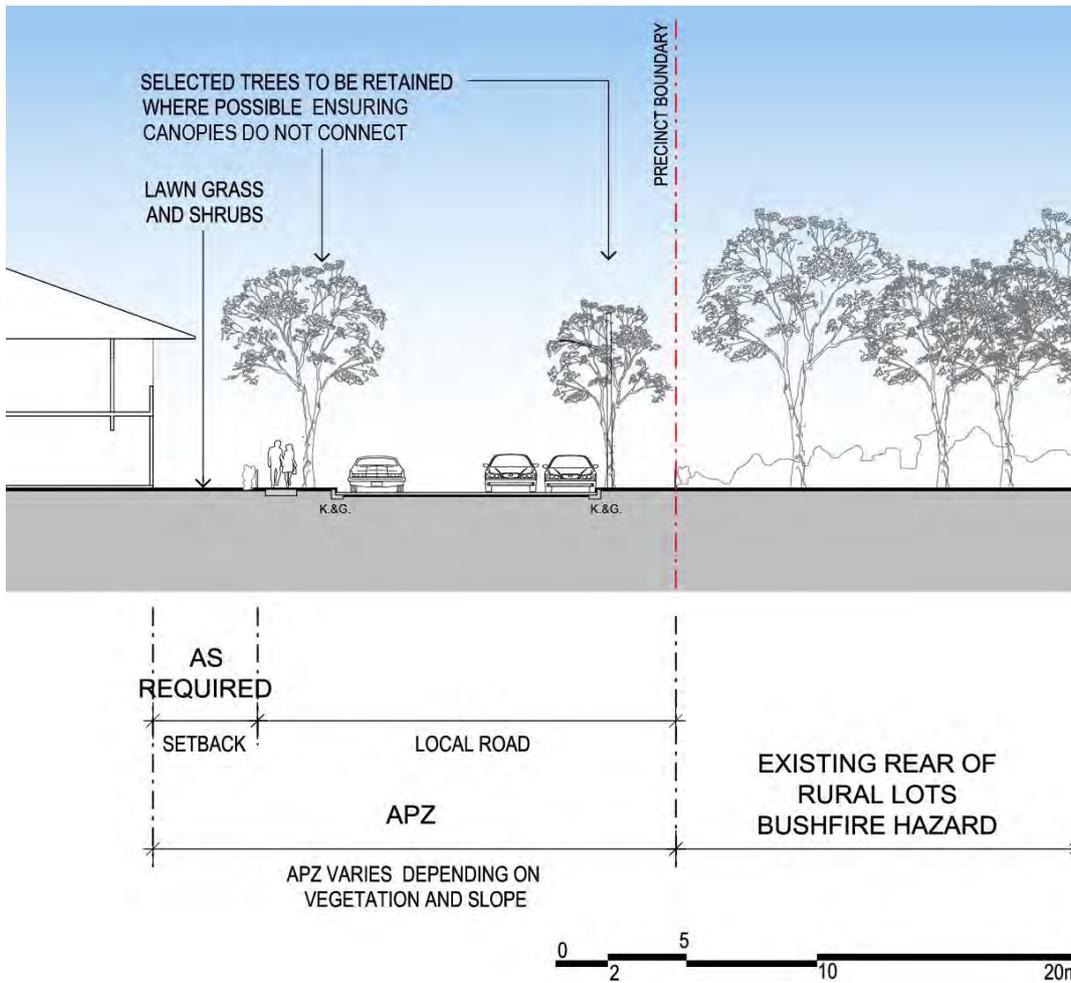


Figure 2-6: Indicative APZ Perimeter Road

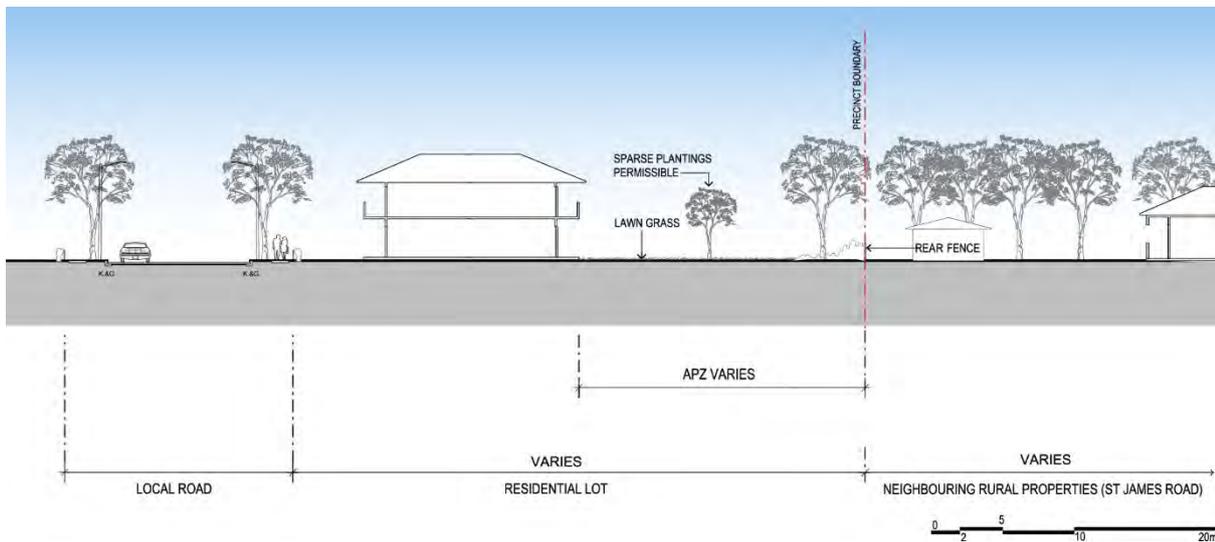


Figure 2-7: Indicative APZ along rear boundary adjacent to rural lots (St James Road properties)



Figure 2-8: Bushfire Risk and Asset Protection Zone Requirements

2.4.6 Site contamination

Objectives

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

Controls

1. All subdivision development applications (or for applications proposing a change of use to a more sensitive land use (eg. Residential, education, public recreation facility etc), shall be accompanied by a Stage 1 Preliminary Site Investigation prepared in accordance with the NSW EPA Contaminated Sites Guidelines, State Environmental Planning Policy 55 – Remediation of Land and the Contaminated Land Management Act, 1995 and relevant Council Policies.
2. Where the Stage 1 Investigation identifies potential or actual site contamination a Stage 2 Detailed Site Investigation must be prepared in accordance with the NSW EPA Contaminated Sites Guidelines, State Environmental Planning Policy 55 – Remediation of Land and the Contaminated Land Management Act, 1995 and relevant Council Policies. A Remediation Action Plan (RAP) will be required for areas identified as contaminated land in the Stage 2 Site Investigation.
3. Development applications for development in “high risk” areas of potential contamination Risk-ranking Figure in the East Leppington Preliminary Environmental Site Assessment (JBS Environmental, 2012) shall be accompanied by a Stage 2 Detailed Environmental Site Investigation prepared in accordance with the NSW EPA Contaminated Sites Guidelines, State Environmental Planning Policy 55 – Remediation of Land and the Contaminated Land Management Act, 1995 and Council’s Policy – Management of Contaminated Lands. If remediation is required, a Remediation Action Plan (RAP) is to be prepared and submitted as part of the DA that seeks consent for remediation. Council may require a Site Audit Statement (SAS) (issued by an NSW Accredited Site Auditor) during any stage of the investigation or remediation process.
4. All investigation, reporting and identified remediation works must be in accordance with the NSW EPA’s (now Office of Environment and Heritage) Guidelines for Consultants Reporting on Contaminated Sites and SEPP 55 – Contaminated Land and relevant Council policies.
5. Prior to granting development consent, the consent authority must be satisfied that the site is suitable, or can be made suitable, for the proposed use. Remediation works identified in any RAP will require development consent prior to the works commencing.
6. Council may require a Site Audit Statement (SAS) (issued by an NSW Accredited Site Auditor) to be provided at any stage of the contamination investigation, remediation or validation stages.

Notes:

All applicants should consider and assess contamination hazards on their land in accordance with the Contaminated Land Management Act, 1995 and State Environmental Planning Policy 55 – Remediation of Land, both of which override any controls in this DCP.

A site audit may be necessary when the Council believes on reasonable grounds that the information provided by the proponent is incorrect or incomplete, wishes to verify that information provided by the proponent adheres to appropriate standards, procedures and guidelines or does not have the internal resources to conduct its own technical review.

2.4.7 Development on and adjacent to electricity and gas easements

Objectives

- a. To ensure that development on or adjacent to land affected by major infrastructure easements does not impact on the continued operation of the infrastructure,
- b. To provide for the safety and amenity of residents living near infrastructure easements, and
- c. To encourage applicants to find appropriate uses for land burdened by an easement having regard to the particular circumstances in each case.

Controls

Subdivision of land that is affected by easements and land adjacent to easements, as shown in



1. **Figure 2-9**, is to be consistent with the controls in this part of the DCP.
2. Where development is proposed on land containing or adjacent to easements, applicants are to consult with the organisation responsible for management of the easement as part of the process of preparing subdivision or other development plans. Any written requirements of the infrastructure organisation are to

be submitted with the development application, and the development application documentation is to demonstrate how the requirements have been addressed in the design.

3. Road crossings over the easement are to be minimised, to be generally in the locations shown on the East Leppington Precinct Indicative Layout Plan (refer to **Figure 2-1**), and are to be designed in accordance with any requirements issued by the organisation responsible for management of the infrastructure.
4. Earthworks (excavation or filling) and landscaping within easements are subject to conditions and requirements of the infrastructure organisation.
5. Subdivision of easements is to be minimised.
6. Requirements of the infrastructure organisation in relation to access to easements for inspections and maintenance are to be addressed in the design of the development. Access to the easement from public land (eg. roads, open space or drainage land) is preferable.



Figure 2-9: Location of infrastructure easements

2.4.8 Noise

Objectives

- a. To minimise the impacts of noise from major transport infrastructure and employment areas on residential amenity, and
- b. To achieve an acceptable residential noise environment whilst maintaining well designed and attractive residential streetscapes.

Controls

- 1. **Figure 2-10** provides guidance to applicants on measures to mitigate the impacts of traffic noise within the Precinct.

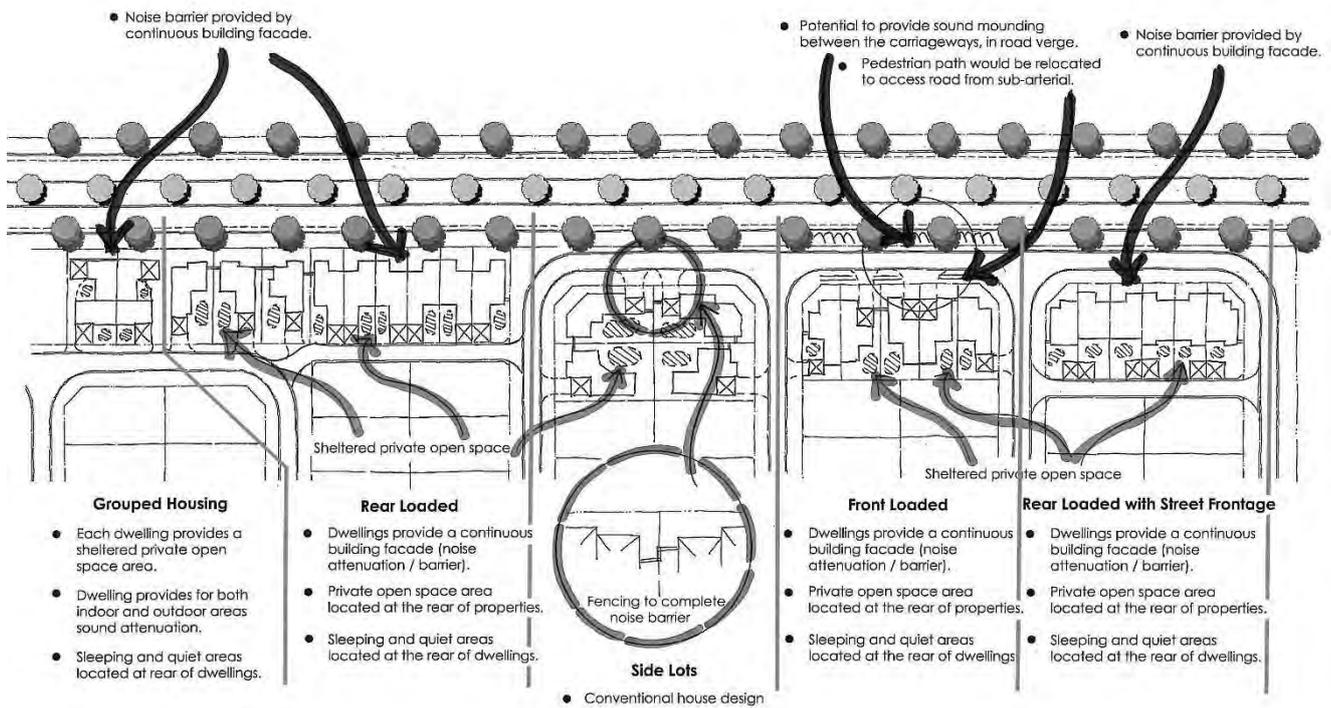


Figure 2-10: Measures to attenuate noise

2. Development will require an acoustic report where it is in a location such as:
 - adjacent to an arterial road and/or sub-arterial roads;
 - potentially impacted upon by a nearby employment area; or
 - potentially impacting upon sensitive receivers such as residences within the precinct and outside the precinct.
3. Subdivision design on land adjacent to significant noise sources is to consider and implement measures to attenuate noise within dwellings.
4. Physical noise barriers (ie. Noise walls or solid fencing) are not generally supported, and measures to attenuate noise through subdivision layout, such as setbacks, building orientation, and building design and materials selection should be implemented to achieve appropriate internal noise standards.

2.4.9 Odour assessment and control

Odour management is subject to the *Protection of the Environment Operations Act 1997*. 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 Growth Centre 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 Growth Centre 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 deemed by Council to be affected by an odour source 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 (refer to **Figure 2-11**). An odour assessment prepared by an appropriate qualified person in accordance with the EPA Draft Policy " Assessment and Management of Odour from Stationary Sources in NSW" and Technical Notes may be required to be submitted.



Figure 2-11: Odour

2.5 Demolition

Objectives

- a. To minimise waste generation and disposal to landfill,
- b. To ensure efficient storage and collection of wastes and recyclables during demolition and construction stages,
- c. To minimise adverse impact on adjoining premises, and
- d. To minimise release of contaminated materials.

Controls

1. Reference is to be made to the requirements in the EPA's Construction Guidelines.
2. All demolition work must comply with the Australian Standard AS2601 - 2001, The Demolition of Structures. A detailed work plan shall be prepared by a suitably qualified person in accordance with the above.
3. Sound pressure levels emanating from the site must comply with the Interim Guideline for Construction Noise (Office of Environment and Heritage).
4. A Waste Management Plan (WMP) is to be submitted with the development application. The WMP must include volume or area estimates and information about reuse, recycling and disposal options for all types of waste produced on-site, including excavation materials.
5. A dilapidation report may be required to be submitted with a development application for any demolition within the zone of influence of any other building.

2.6 Crime Prevention through Environmental Design

Principles of crime prevention through environmental design apply to all forms of development including residential, retail, commercial, industrial developments, public buildings, community facilities and the public domain including open space and recreation areas. The design requirements apply to all residential flat buildings and medium density developments. Many of the principles are also relevant to single dwelling houses and dual occupancies.

Objectives

- a. To ensure that the siting and design of buildings and spaces, through casual surveillance, decreases opportunities for crime,
- b. To ensure that development encourages people to use streets, parks and other public places without fear of personal risk, and
- c. To ensure the design of publicly accessible areas (eg parks, footpaths, etc) encourages a sense of community ownership of open and public spaces.

Controls

1. Buildings 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 also 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. For residential development, the 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.
4. Developments are to avoid creating areas for concealment and blank walls facing the street.
5. Pedestrian and communal areas are to have sufficient lighting to ensure a high level of safety. These areas must be designed to minimise opportunities for concealment.
6. 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.
7. All developments are to incorporate the principles of Crime Prevention Through Environmental Design (CPTED). Development applications for subdivision, public open space and community facilities may require a formal crime risk (CPTED) assessment.

2.7 Earthworks

Objectives

- a. To minimise cut and fill through site sensitive subdivision, road layout, infrastructure and building design,
- b. To develop finished ground levels that anticipate the siting of buildings so as to minimise the need for further modification to ground levels.
- c. To consider the extent of earthworks when designing building blocks and lots that minimises use of cut and fill, and retaining walls.
- d. To ensure that earthworks do not adversely impact local drainage patterns or increase flooding impacts, and
- e. To minimise the impacts of earthworks on the natural environment and on the visual character of the locality.

- f. To ensure that any imported fill material is not contaminated and does not adversely affect the fertility or salinity of soil, or the quality of surface water or groundwater.

Controls

1. Subdivision and building work is to be designed to respond to the natural topography of the site and wherever possible, minimise the extent of cut and fill.
2. Subdivision and building work shall be designed to ensure minimal cut and fill is required for the building construction phase of development.
3. The applicant is to demonstrate:
 - what the proposed finished surface levels and gradients will be for the site,
 - how these finished levels are integrated with nearby land, and
 - that the finished levels are consistent with the drainage strategy contained within the overall water cycle strategy for the precinct.
4. Preliminary building pad levels are to be constructed at the subdivision stage of development where site slopes exceed 5.0%.
5. All retaining walls on the boundaries of proposed lots are to be identified and proposed as part of the respective subdivision development application.
6. The maximum height of retaining walls to be constructed on the boundaries of proposed residential lots is 600mm.
7. A combined 1200mm maximum retaining wall height is permissible on a boundary between residential lots (2x600mm high retaining walls). Where terraced walls are proposed the minimum distance between each step is 1m.
8. A variation to maximum permissible retaining wall heights can be considered with supporting justification.
9. Where retaining walls are in proximity to or on property boundaries or adjacent to infrastructure such as drainage lines, a section 88B instrument is to create an easement for support on the subject lot and adjoining land.
10. All retaining walls that are proposed as part of a subdivision or early works shall be designed by a practicing Structural Engineer and be of masonry construction.
11. Retaining walls that front a public place are to be set back to allow screen planting in front of the walls.
12. Boundary retaining walls are to be designed and constructed to allow for installation of boundary fencing without impact on the structural soundness of the retaining wall and its footings.

13. Development on land having a natural gradient of 1:6.7 (15%) or greater shall not be approved unless a geotechnical study that includes guidelines for structural and engineering works on the land has been considered by Council.
14. For sites with existing water storage facilities (dams) the relevant development application must include a dam removal plan which addresses each of the following controls to Council's satisfaction and must also include details of:
 - A water quality and soil test which details any contaminants in both the water and soil at the base of the dam (all testing shall be undertaken by a qualified consultant and National Association of Testing Authorities accredited laboratory).
 - A salinity hazard test undertaken in accordance with the NSW Office of Water salinity site assessment guidelines.
12. Contaminated sites must follow the NSW Office of Environment and Heritage contaminated water or soil removal guidelines in the National Environment Protection (Assessment of Site Contamination) Measure 1999. Contaminated water should be disposed of at a liquid waste facility.
13. Uncontaminated water may be re-used on site or on other properties. Should there be no possible reuse option for the water; a controlled release into the creek may be possible.
14. Any controlled release of water into the receiving waters (creek) must ensure against any erosion impact.
15. It is recommended that any water release is undertaken during high flow events as creek water quality is reduced at this time.
16. 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.
17. All earthworks should be carried out in accordance with best practice measures for erosion and sedimentation control.

Note: the Council may require specific information to be submitted with development applications that propose earthworks. Applicants should consult with Council to identify information requirements prior to lodgement of an application.

3.0

*Neighbourhood and
subdivision design*



3.1 Residential Density and Subdivision

The Growth Centres are subject to minimum residential density targets as detailed in the Residential Density Maps in the SEPP. This section provides guidance on the typical characteristics of the residential density target bands.

Net Residential Density means the net developable area in hectares of the land on which the development is situated divided by the number of dwellings proposed to be located on that land. Net Developable Area means the land occupied by the development, including internal streets plus half the width of any adjoining access roads that provide vehicular access, but excluding land that is not zoned for residential purposes. Refer to **Figure 3-1** and Landcom’s “Residential Density Guide” and the Department of Planning and Environments’ “Dwelling Density Guide” for further information.



Figure 3-1: Example for calculating Net Residential Density of a subdivision application

Net Residential Density is an averaging statistic. The average dwelling density target in the SEPP should be achieved across the identified area with a diversity of lot and housing types. However, this does not mean that all streets offer the same housing and lot mix. Built form intensity should vary across a neighbourhood in response to the place: more intense around centres or fronting parks, less intense in quieter back streets. In lower density areas, there will be a higher proportion of larger lots and suburban streetscapes but there may also be some streets with an urban character. In higher density areas, urban streets with more attached housing forms will be more common but there will also be some suburban streetscapes.

In recognition of different objectives and street characters at varying densities, certain built form controls vary by density bands. Refer to the section Residential Development.

3.1.1 Residential Density

Objectives

- a. To ensure minimum density targets are delivered.
- b. To provide guidance to applicants on the appropriate mix of housing types and appropriate locations for certain housing types.
- c. To establish the desired character of the residential areas.
- d. To promote housing diversity and affordability.

Controls

1. All applications for residential subdivision and the construction of residential buildings are to demonstrate that the proposal meets the minimum residential density requirements of the relevant Precinct Plan and contributes to meeting the overall dwelling target in the relevant Precinct.
2. Residential development is to be generally consistent with the residential structure as set out in **Figure 3-2: Residential Structure**, and the typical characteristics of the corresponding Density Band in **Table 3-1**.

Table 3-1: Typical Characteristics of Residential Net Densities

Net Residential Density dw/Ha	Typical Characteristics
10 - 12.5 dw/Ha	<ul style="list-style-type: none"> • Generally located away from centres and transport. • Predominantly detached dwelling houses on larger lots with some semi-detached dwellings and / or dual occupancies. • Single and double storey dwellings. • Mainly garden suburban and suburban streetscapes. (See Figure 3-3).
15 -20dw/Ha	<ul style="list-style-type: none"> • Predominantly a mix of detached dwelling houses, semi-detached dwellings and dual occupancies with some secondary dwellings. • Focused areas of small lot dwelling houses in high amenity locations. • At 20dw/Ha, the occasional manor home on corner lots. • Single and double storey dwellings. • Mainly suburban streetscapes, the occasional urban streetscape. (See Figure 3-3).
25 - 30 dw/Ha	<ul style="list-style-type: none"> • Generally located within the walking catchment of centres, corridors and / or rail based public transport. • Consists of predominantly small lot housing forms with some multi-dwelling housing, manor homes and residential flat buildings located close to the local centre and public transport. • Generally single and double storey dwellings with some 3 storey buildings. • Incorporates some laneways and shared driveways. • Be designed to provide for activation of the public domain, including streets and public open space through the orientation and design of buildings and communal spaces. • Mainly urban streetscapes, some suburban streetscapes. (See Figure 3-3).
40+ dw/Ha	<ul style="list-style-type: none"> • Generally located immediately adjacent centres and / or rail based public transport • Consists of predominantly residential flat buildings, shop top housing, manor homes, attached or abutting dwellings and multi-dwelling housing • Generally double and multi-storey buildings • Predominantly urban streetscapes with minimal front setback; incorporates laneways and shared driveways. (See Figure 3-3).

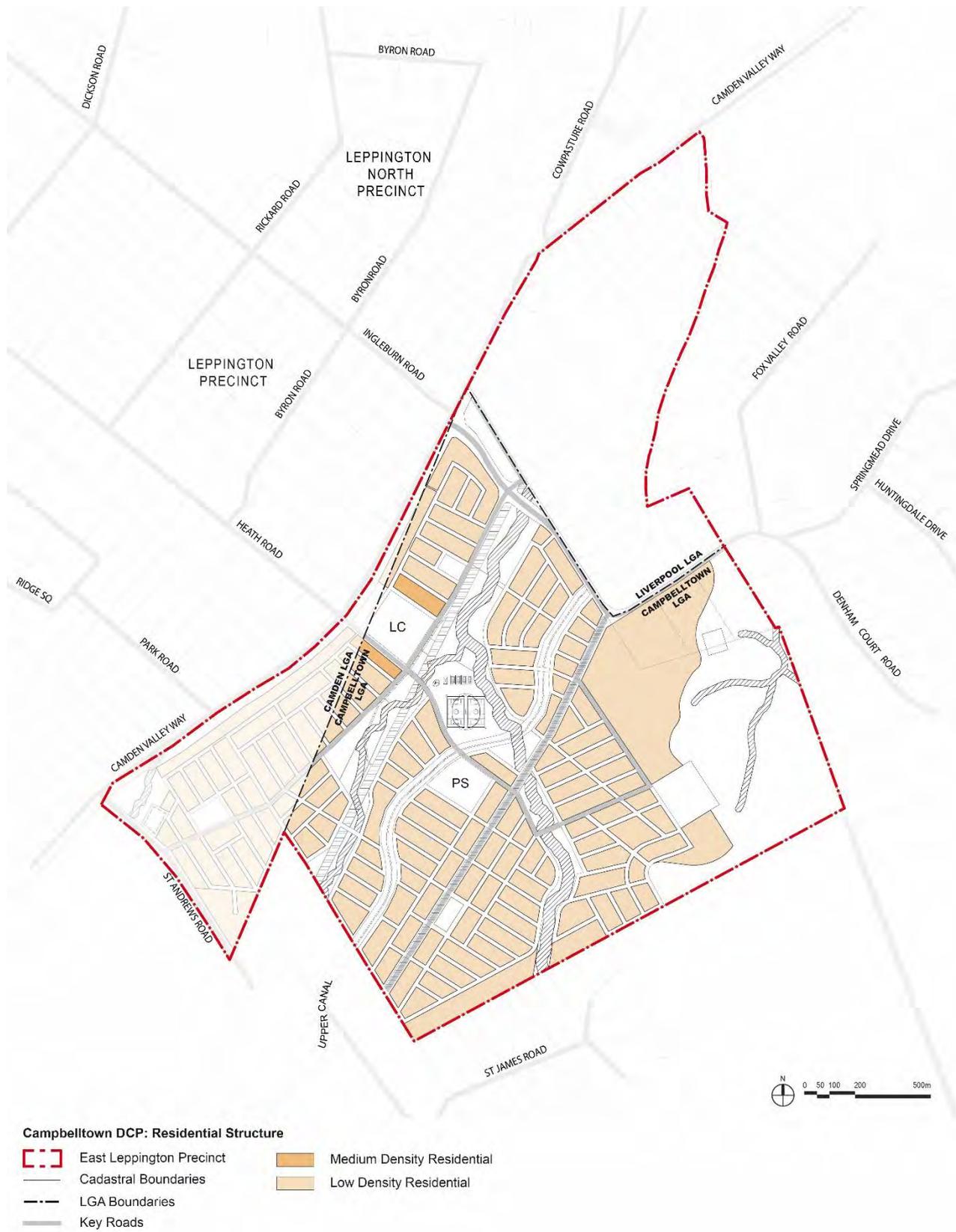


Figure 3-2: Residential Structure



Garden Suburban



Suburban



Urban

Figure 3-3: Distinct and coherent streetscapes occur in varying proportions in density bands.

3. Residential development in the Environmental Living area, on **Figure 3-2: Residential Structure**, is to:
- Consist primarily of single dwellings on larger lots, reflecting the environmental sensitivity and visual character of these parts of the Precincts.
 - Emphasise high quality housing design to make the most of the environmental characteristics of the surrounding area.
 - Be designed and located to minimise impacts on flood prone land, and risks to property from flooding.
 - Avoid impacts on Existing Native Vegetation and other remnant native vegetation.
 - Consider relationships to adjoining land uses including public open space and drainage infrastructure.
 - Be designed to respond to constraints from infrastructure corridors such as electricity lines, underground gas pipelines and any Sydney Catchment Authority infrastructure.
 - Consider views to and from the land and surrounding parts of the Growth Centre.
4. Non-residential development in the residential areas is encouraged where it:
- Contributes to the amenity and character of the residential area within which it is located.
 - Provides services, facilities or other opportunities that meet the needs of the surrounding residential population, and contributes to reduced motor vehicle use.
 - Will not result in detrimental impacts on the amenity and safety of surrounding residential areas, including factors such as noise and air quality.
 - Is of a design that is visually and functionally integrated with the surrounding residential area.

Note: *The relevant Precinct Plan permits certain non-residential development within the residential zones. Other parts of this DCP provides more detailed objectives and controls for these types of development.*

3.2 Block and Lot Layout

Objectives

- a. To establish a clear urban structure that promotes a 'sense of neighbourhood' and encourages walking and cycling.
- b. To efficiently utilise land and achieve the target dwelling yield for the relevant Precinct.
- c. To emphasise the natural attributes of the site and reinforce neighbourhood identity through the placement of visible key landmark features, such as parks, squares and landmark buildings.
- d. To optimise outlook and proximity to public and community facilities, parks and public transport with increased residential density.

- e. To encourage variety in dwelling size, type and design to promote housing choice and create attractive streetscapes with distinctive characters.
- f. To accommodate a mix of lot sizes and dwelling types across a precinct.
- g. To establish minimum lot dimensions for different residential dwelling types.

Controls

Blocks

1. Residential neighbourhoods are to be focused on elements of the public domain such as a school, park, retail, or community facility that are typically within walking distance.
2. Subdivision layout is to create a legible and permeable street hierarchy that responds to the natural site topography, the location of existing significant trees and site features, place making opportunities and solar design principles.
3. Pedestrian connectivity is to be maximised within and between each residential neighbourhood with a particular focus on pedestrian routes connecting to public open space, bus stops and railway stations, educational establishments and community/recreation facilities.
4. Street blocks are to be generally a maximum of 250m long and 70m deep. Block lengths in excess of 250m may be considered by Council where pedestrian connectivity, stormwater management and traffic safety objectives are achieved. In areas around neighbourhood and town centres, the block perimeters should generally be a maximum of 520m (typically 190m x 70m) to increase permeability and promote walking.

Lots

5. Minimum lot sizes for each dwelling type will comply with the minimum lot size provisions permitted by the Sydney Region Growth Centres SEPP, summarised here as **Table 3-2**. In certain density bands, variations to some lot sizes may be possible subject to clauses 4.1AD, 4.1AE and 4.1AF in the Sydney Region Growth Centres SEPP.
6. Minimum lot frontages applying to each density band will comply with **Table 3-3**. Lot frontage is measured at the street facing building line as indicated in **Figure 3-4**.

Table 3-2: Minimum lot size by density bands

	R2 Low Density Residential	R3 Medium Density Residential
Minimum Net Residential Target (dwellings/ Ha)	15	25
Dwelling House (base control)	300	300
With BEP	250	225
As Integrated DA	250	125
Locational criteria* (BEP or Integrated DA)	225	n/a
Studio Dwelling	No minimum lot size as strata development not subject to minimum lot size controls	
Secondary Dwelling	450	In principle lot
Dual Occupancy	500	400
Semi Detached Dwelling	200	125
Attached Dwelling	1500*	375
Multi Dwelling Housing	1500*	375
Manor Homes	Not permissible	600
Residential Flat Buildings	Not permissible	2000

* On land zoned R2 with a minimum residential density of 15d/ha, the minimum development lot size for the purposes of a dwelling house can be varied to 225m² in places that satisfy one of the following locational criteria. Attached dwellings and Multi dwelling housing is also permissible on land zoned R2 with a minimum residential density of 15d/ha that also satisfies one of these criteria:

- a) adjoining land within Zone RE1 Public Recreation or land that is separated from land within Zone RE1 Public Recreation only by a public road;
- b) adjoining land within Zone B1 Neighbourhood Centre, Zone B2 Local Centre or Zone B4 Mixed Use or land that is separated from land within Zone B1 Neighbourhood Centre, Zone B2 Local Centre or Zone B4 Mixed Use only by a public road;
- c) adjoining land that is set aside for drainage or educational purposes, or is separated from that land only by a public road; and is within 400m of land in Zone B1 Neighbourhood Centre or Zone B2 Local Centre.

Table 3-3: Minimum lot frontages by density bands

		Net Residential Density Target (dw/Ha)			
		10 to 12.5dw/Ha	15dw/Ha	20 to 45dw/Ha	
Minimum Frontages	Lot	Front Loaded	12.5m	9m	7m
	Rear Loaded	4.5m	4.5m	4.5m	

Note: The combination of the lot frontage width and the size of the lot determine the type of dwelling that can be erected on the lot, and the development controls that apply to that dwelling.

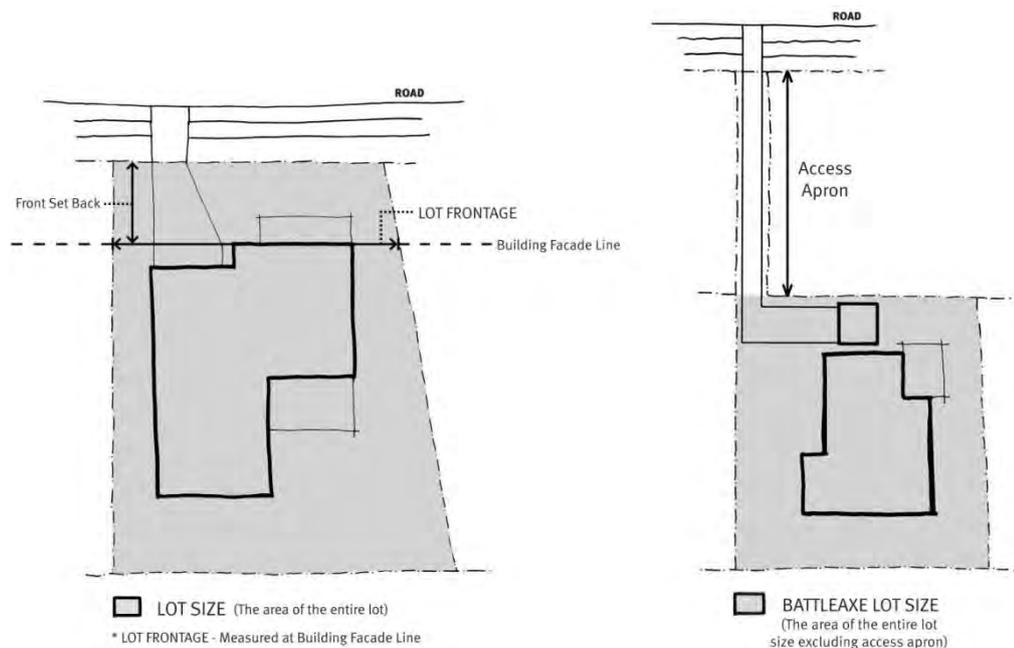


Figure 3-4: Measurement of minimum lot widths and lot area

7. A range of residential lot types (area, frontage, depth, zero lot and access) must be provided to ensure a mix of housing types and dwelling sizes and to create coherent streetscapes with distinctive garden suburban, suburban and urban characters across a neighbourhood.
8. In areas with a minimum residential density of $\leq 20dw/ha$ no more than 40% of the total residential lots proposed in any one street block may have a frontage of less than 10m wide. Lots subdivided using Subdivision Approval Pathway B1 or B2 (Integrated Housing) for attached or abutting dwellings are exempt from this control.

Note: A street block is defined as a portion of a city, town etc., enclosed by (usually four) neighbouring and intersecting streets.

9. In density bands $\leq 25dw/ha$, total lot frontage for front accessed lots $\geq 7m$ and less than 9m should not exceed 20% of any block length due to garage dominance and on-street parking impacts.
10. Lots should be rectangular. Where lots are an irregular shape, they are to be large enough and oriented appropriately to enable dwellings to meet the controls in this DCP.

11. Where residential development adjoins land zoned RE1 Public Recreation or SP2 Drainage, subdivision is to create lots for the dwelling and main residential entry to front the open space or drainage land.
12. The orientation and configuration of lots is to be generally consistent with the following subdivision principles:
 - Smallest lots achievable for the given orientations fronting parks and open space with the larger lots in the back streets;
 - Larger lots on corners;
 - North to the front lots are either the widest or deepest lots, or lots suitable for residential development forms with private open space at the front. Narrowest lots with north to the rear.
13. Preferred block orientation is established by the road layout on the Indicative Layout Plan in the relevant Precinct Schedule. Optimal lot orientation is east-west, or north-south where the road pattern requires. Exceptions to the preferred lot orientation may be considered where factors such as the layout of existing roads and cadastral boundaries, or topography and drainage lines, prevent achievement of the preferred orientation.
14. An alternative lot orientation may be considered where other amenities such as views and outlook over open space are available, and providing appropriate solar access and overshadowing outcomes can be achieved.

Note: *The combination of the lot frontage width and the size of the lot determine the type of dwelling that can be erected on the lot, and the development controls that apply to that dwelling.*

Zero Lot Lines

15. The location of a zero lot line 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 4-7**.
16. On all lots where a zero lot line is permitted, the side of the allotment that may have a zero lot alignment must be shown on the approved subdivision plan.
17. Where a zero lot line is nominated on an allotment on the subdivision plan, the adjoining (burdened) allotment is to include a 900mm easement for single storey zero lot walls and 1200mm for two storey zero lot walls to enable servicing, construction and maintenance of the adjoining dwelling. 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.

18. The S88B instrument for the subject (benefited) lot and the adjoining (burdened) lot shall include a note identifying the potential for a building to have a zero lot line. The S88B instrument supporting the easement is to be worded so that Council is removed from any dispute resolution process between adjoining allotments.

For more information, refer to the **Department of Planning and Environment Delivery Notes: Zero Lot Boundaries and Building Envelope Plans**.

Subdivision of Shallow Lots

19. Shallow lots (typical depth 14-18m, typical area <200sqm) intended for double storey dwellings should be located only in locations where it can be demonstrated that impacts on adjoining lots, such as overshadowing and overlooking of private open space, satisfy the requirements of the DCP. For lots over 225sqm where development is not Integrated Assessment, the Building Envelope Plan should demonstrate in principle how DCP requirements such as solar access and privacy to neighbouring private open spaces will be satisfied.

Subdivision for Attached or Abutting Dwellings

20. Subdivision of lots for Torrens title attached or abutting dwellings must take into account that construction will be in 'sets'. A 'set' is a group of attached or abutting dwellings built together at the same time that are designed and constructed independently from other dwellings.
21. The maximum number of attached or abutted dwellings permissible in a set is six.
22. The composition of sets needs to be determined in the subdivision design to take into account the lot width required for a side setback to the end dwellings in each set. Examples of lot subdivisions for sets are illustrated in **Figure 3-5**.

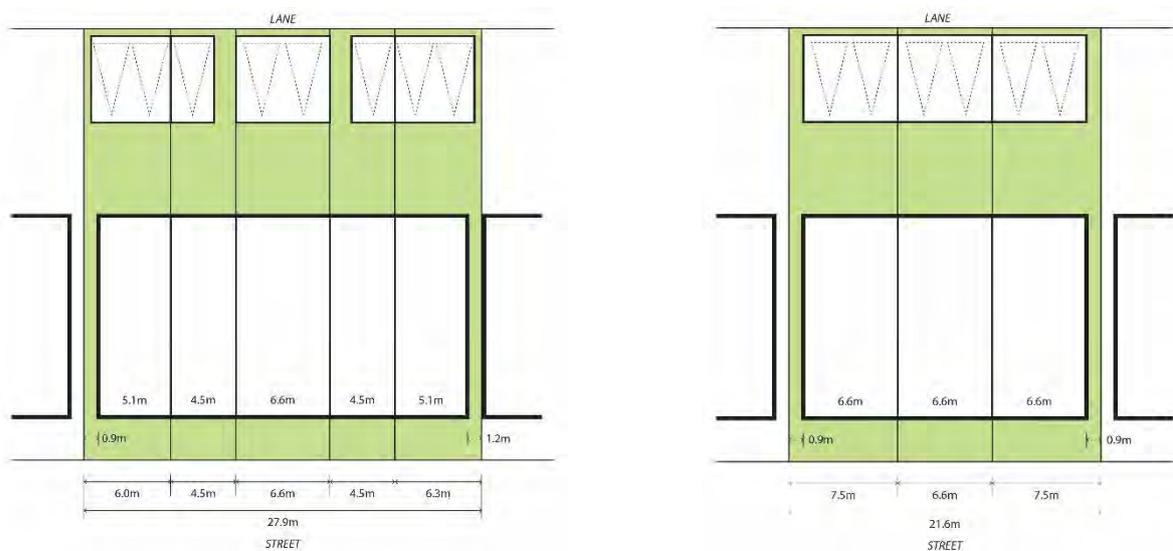


Figure 3-5: Two examples of lot subdivision for 'sets' of attached or abutting terraces.

Residential Flat Buildings

23. A person may not amalgamate two or more adjoining allotments after principle subdivision to create a larger lot that achieves the minimum lot size required for residential flat buildings.

3.2.1 Battle-axe lots

Objectives

- a. To limit battle-axe lots to certain circumstances.
- b. To ensure that where a battle-axe lot without public road or open space frontage is provided, their amenity and the amenity of neighbouring lots is not compromised by their location.
- c. To enable battle-axe shaped lots or shared driveway access to lots fronting access denied roads.

Controls

1. Principles for the location of battle-axe lots are illustrated at **Figure 3-6**.
2. Subdivision layout should minimise the use of battle-axe lots without public frontage to resolve residual land issues.

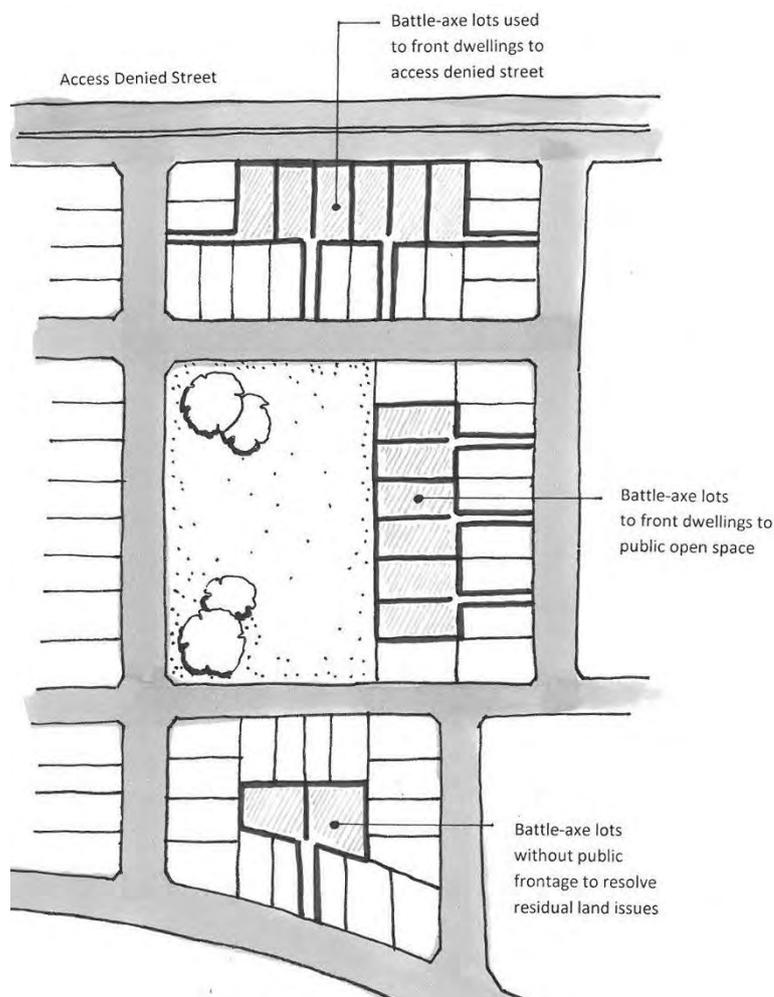


Figure 3-6: Examples of locations of battle-axe lots

3. In density bands 10, 15 and 20dw/Ha, the minimum site area for battle-axe lots without any street or park frontage is 500m² (excluding the shared driveway) and only detached dwelling houses will be permitted.

4. The driveway or shared driveway will include adjacent planting and trees, as indicated in **Figure 3-7**.
5. Driveway design, including dimensions and corner splays, is to be in accordance with Council's Engineering Specifications.

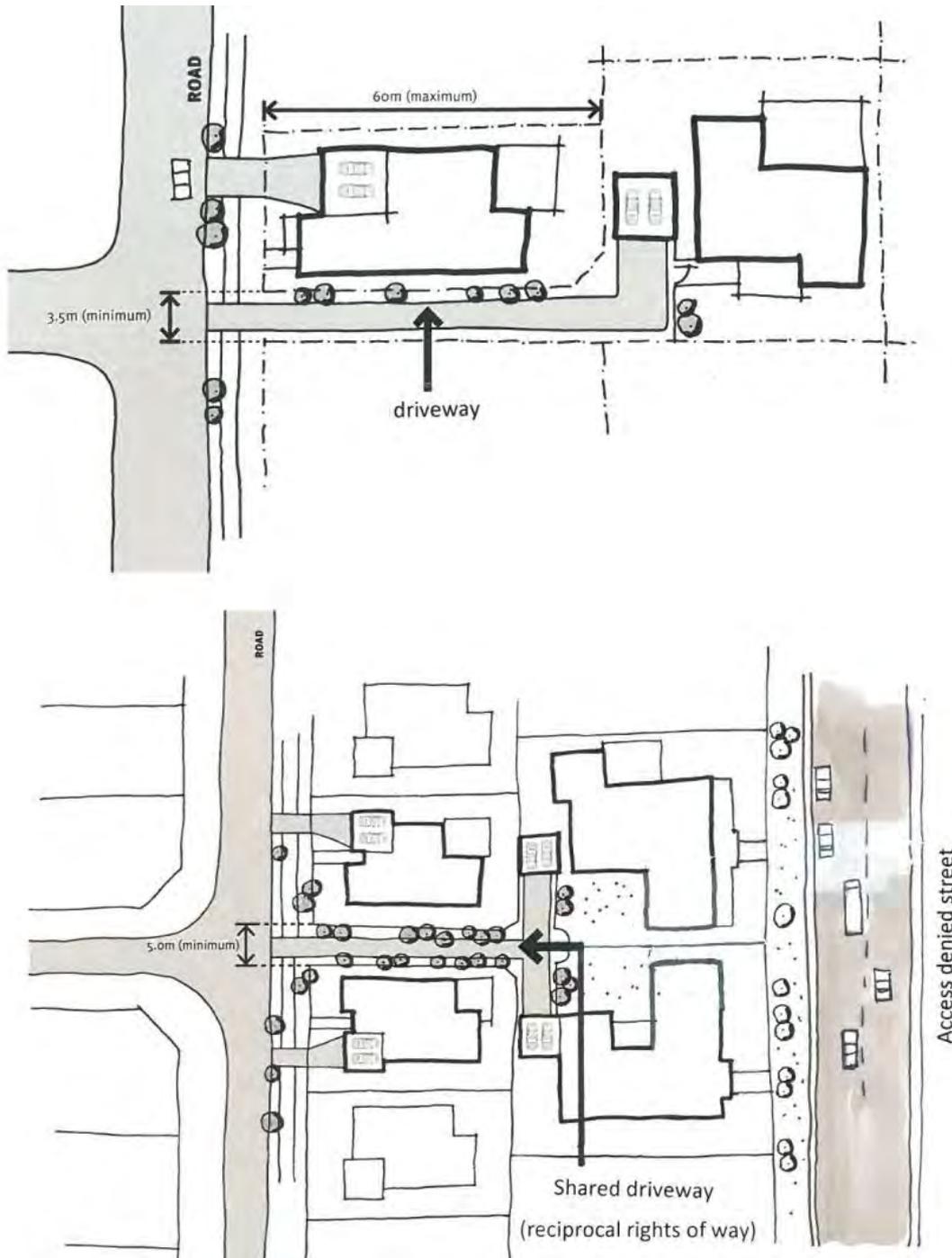


Figure 3-7: Examples of driveways and shared driveways for battle-axe lots

3.2.2 Corner Lots

Objectives

- a. To ensure corner lots are of sufficient dimensions and size to enable residential controls to be met.

Controls

1. Corner lots, including splays and driveway location, are to be designed in accordance with AS 2890 and Council's Engineering Specifications.
2. Corner lots are to be designed to allow dwellings to positively address both street frontages as indicated in **Figure 3-8**.
3. Garages on corner lots are encouraged to be accessed from the secondary street or a rear lane.
4. Plans of subdivision are to show the location of proposed or existing substations, kiosks, sewer man holes and/or vents affecting corner lots.

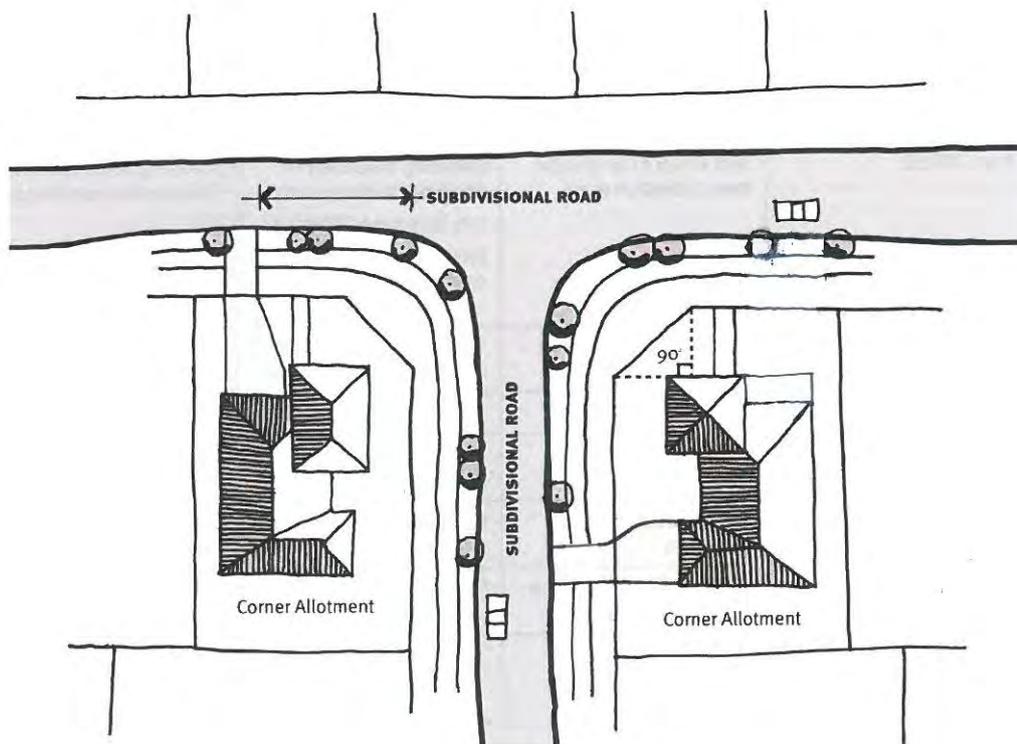


Figure 3-8: Corner lots

3.3 Subdivision Approval Process

Objectives

- a. To facilitate a diversity of housing sizes and products.
- b. To ensure that subdivision and development on smaller lots is undertaken in a coordinated manner.
- c. To ensure that all residential lots achieve an appropriate level of amenity.

Controls

1. The land subdivision approval process is to be consistent with the requirements of **Table 3-4**.
2. Subdivision of land creating residential lots less than 225m² or lots less than 9m wide shall include a dwelling design as part of the subdivision development application. The dwelling design is to be included on the S88B instrument attached to the lot.

Table 3-4: Subdivision Approval Process

Approval pathway	DA for Subdivision Pathway A1	DA for Subdivision with Building Envelope Plan Pathway A2	DA for Integrated Housing (Integrated Assessment with subdivision prior to construction of dwellings) Pathway B1	DA for Integrated Housing Pathway B2
Application	Lots equal to greater than 300m ²	Lots less than 300m ² and equal to or greater than 225m ² in area, and with a width equal to or greater than 9m*.	Dwelling construction involving detached or abutting dwellings on: lots less than 225m ² , or lots with a width less than 9m*.	Dwelling construction involving common walls (ie attached dwellings) on: lots less than 225m ² , or lots with a width less than 9m*.
Dwelling plans required	As part of future DA or CDC	As part of future DA or CDC	Yes as part of subdivision application	Yes as part of subdivision application
Dwelling Design 88B restriction required	No	Yes	Yes, only approved dwelling can be built	Yes, only approved dwelling can be built
Timing of subdivision (release of linen plan)	Pre-construction of dwellings	Pre-construction of dwellings	Prior to the issue of the CC	Post-construction of dwellings
Housing Code applicable	Yes	Yes (for 200m ² lots and above)	No	No

*Minimum lot width refer to **Figure 3-4**

3. Subdivision applications that create lots smaller than 300m² and larger than or equal to 225m² must be accompanied by a Building Envelope Plan (BEP). An example of a BEP is included at **Figure 3-9**.

The BEP should be at a legible scale (suggested 1:500) and include the following elements:

- Lot numbers, north point, scale, drawing title and site labels such as street names
- Maximum permissible building envelope (setbacks, storeys, articulation zones)
- Preferred principal private open space
- Garage size (single or double) and location
- Zero lot line boundaries

A BEP should be fit for purpose and include only those elements that are necessary for that particular lot. Other elements that may be relevant to show include:

- Special fencing requirements
- Easements and sewer lines
- Retaining walls
- Preferred entry/frontage (e.g. corner lots)
- Access denied frontages
- Electricity kiosks or substations
- Indicative yield on residue or super lots

For further information, refer to the **Department of Planning and Environment Delivery Note: Building Envelope Plans**.

4. Applications for subdivision using approval pathways A2, B1 and B2 require a Public Domain Plan (PDP) to be submitted as part of the application. The purpose of the PDP is to demonstrate how the public domain will be developed as a result of future development on the proposed lots. An example of a PDP is included at **Figure 3-10**.

The PDP should be a legible scale (suggested 1:500) and include the following elements:

- Lot numbers, north point, scale, drawing title and site labels such as street names.
- Indicative building footprints on the residential lots.
- Location of driveways and driveway crossovers.
- Verge design (footpath, landscape).
- Surrounding streets and lanes (kerb line, material surface where special treatments proposed).
- In laneways, indicative provision for bin collection.
- Street tree locations. (Sizes and species list can be provided on a separate plan).
- Demonstrated provision and arrangements for on-street car parking particularly in relation to street tree planting, driveways and intersections.*
- Extent of kerb line where parking is not permitted.*

* In principle, not as public domain works

Other elements that may be relevant to show include:

- Location and type of any proposed street furniture
- Location of retaining walls in the public domain
- Electricity substations
- Indicative hydrant locations at lane thresholds

Information on landscape treatment within the private lot is not required.

For further information, refer to the **Department of Planning and Environment Delivery Note: Public Domain Plans**.



Figure 3-9: Sample of a Building Envelope Plan (BEP)



Figure 3-10: Sample of a Public Domain Plan (PDP)

3.4 Movement Network

3.4.1 Street layout and design

Objectives

- a. To establish a hierarchy of interconnected streets that give safe, convenient and clear access within and beyond the Precinct,
- b. To assist in managing the environmental impacts of urban development including soil salinity and stormwater,
- c. To facilitate energy efficient lot and building orientation,
- d. To contribute to the creation of an interesting and attractive streetscape,
- e. Provide a safe and convenient public transport, pedestrian and cycleway network,
- f. To facilitate the development of street types which are particular to the East Leppington Precinct and give clear, safe and convenient access within and beyond the Precinct,
- g. To enable road design and construction to respond to particular site constraints or opportunities,
- h. To ensure that road construction on gas easements and adjacent development considers potential impacts on the integrity and safety of the gas pipeline,
- i. To ensure reasonable standards of public amenity and a high quality public domain in the vicinity of gas easements,
- j. To minimise risks to property and people associated with gas pipelines, and
- k. To retain, where possible significant trees in streets for landscape, cultural, aesthetic and ecological purposes.

Controls

1. The design and construction of streets in East Leppington is to be generally consistent with the relevant typical designs in **Figure 3-12** to **Figure 3-16** and Council's Engineering Design Guide.
2. All collector roads, sub-arterial roads, arterial roads and local streets which form part of a bus route identified by Transport for NSW, are to have at least one travel lane in each direction with a minimum width of 3.5 metres, suitable for buses. Intersections on bus routes are to be designed to accommodate bus manoeuvrability.
3. Alternative street designs for local streets and access ways may be permitted on a case by case basis if they preserve the functional objectives and requirements of the design standards.
4. Roads in the East Leppington Precinct are to be constructed in accordance with the hierarchy shown on the Precinct road hierarchy figure (refer to **Figure 3-11**).
5. The locations and alignments of all roads are to be generally in accordance with the locations shown on the **Figure 3-11**.

6. Where any variation to the residential street network indicated at the **Figure 3-11**, is proposed, the alternative street network is to be designed to:
- create a permeable network that is based on a modified grid system,
 - encourage walking and cycling,
 - minimise travel distances for all modes of transport,
 - maximise connectivity between residential areas and community facilities, open space and centres,
 - take account of topography and site drainage, and accommodate significant vegetation,
 - optimise solar access opportunities for dwellings,
 - provide frontage to and maximise surveillance of open space and drainage lands,
 - provide views and vistas to landscape features and visual connections to nodal points and centres,
 - maximise the effectiveness of water sensitive urban design measures,
 - ensure that noise impacts from major roads are considered and are able to be effectively mitigated without the use of noise walls. Should an exception arise the circumstances are to be fully justified to the satisfaction of Council.
 - comply with the requirements of Planning for Bushfire Protection 2006,
 - not detrimentally impact on access to adjoining properties,
 - provide for the management of stormwater to drain to Council's trunk drainage network, without negative impacts on other properties,
 - not impede the orderly development of adjoining properties in accordance with the Campbelltown Growth Centres Precinct Plan (East Leppington) and this Development Control Plan, and
 - not restrict the ability to provide water, sewer, electricity and other essential services to the development or to development on adjoining properties.



Figure 3-11: Precinct road hierarchy

Note: Refer also to **Figure 6-10:** European cultural heritage.

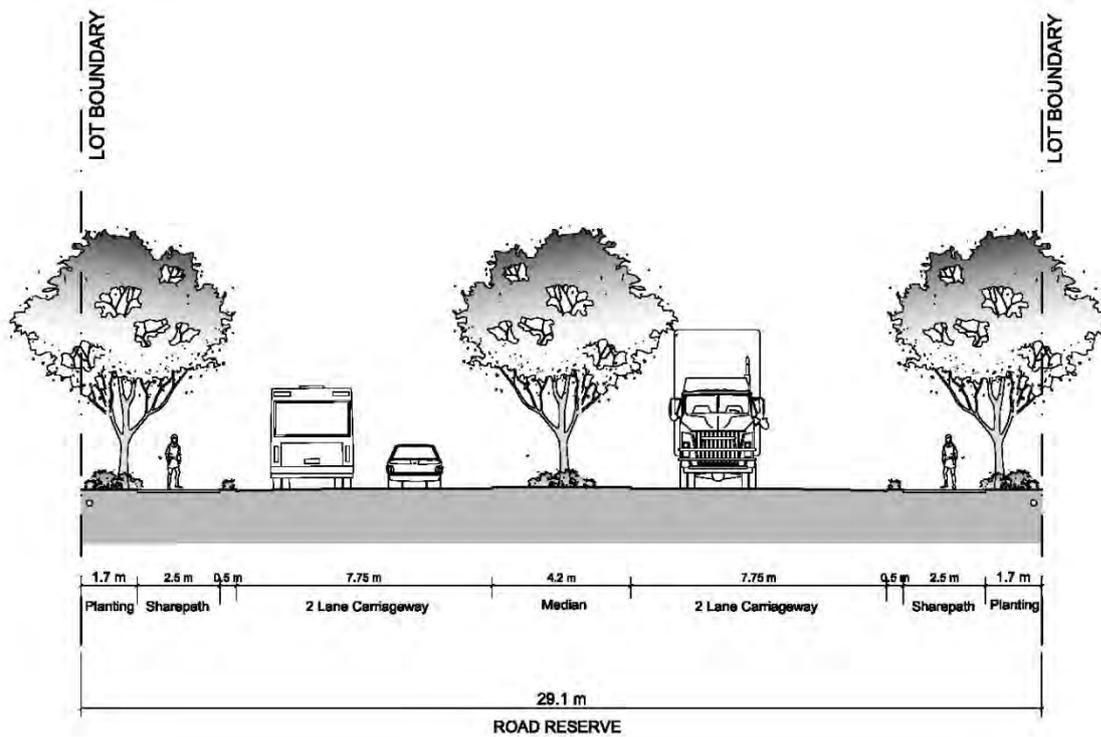


Figure 3-12: Typical sub-arterial road dimensions

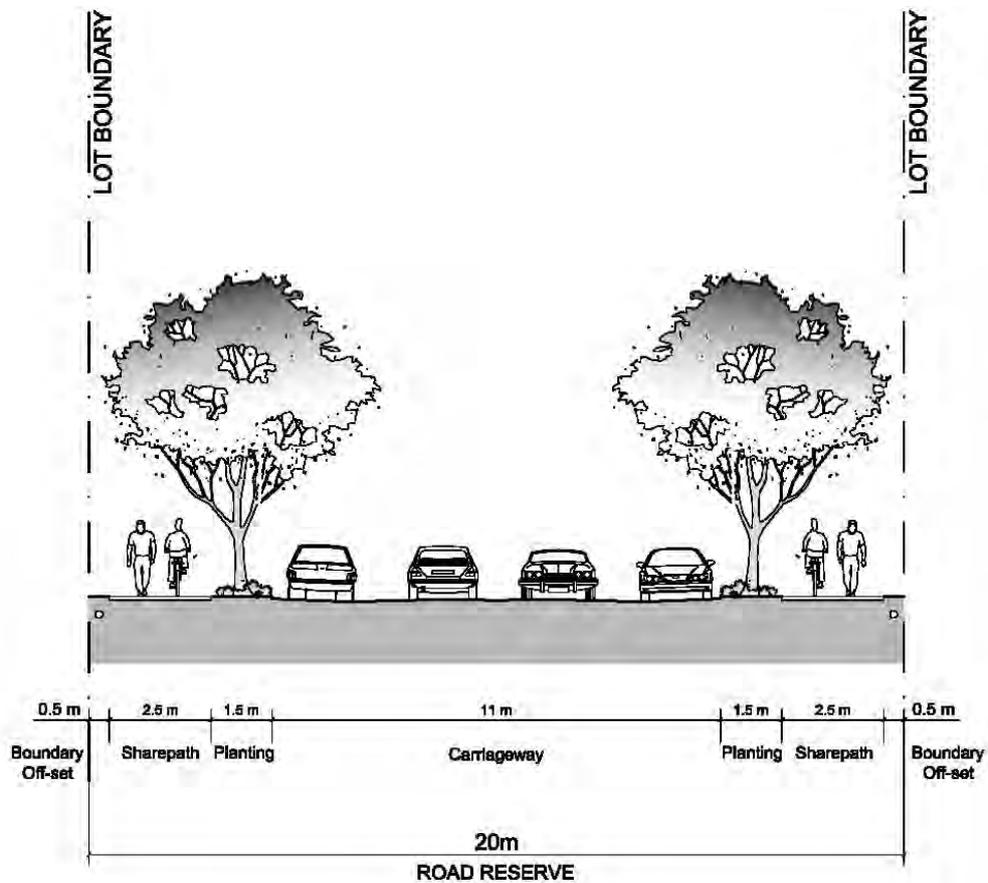


Figure 3-13: Typical collector road dimensions

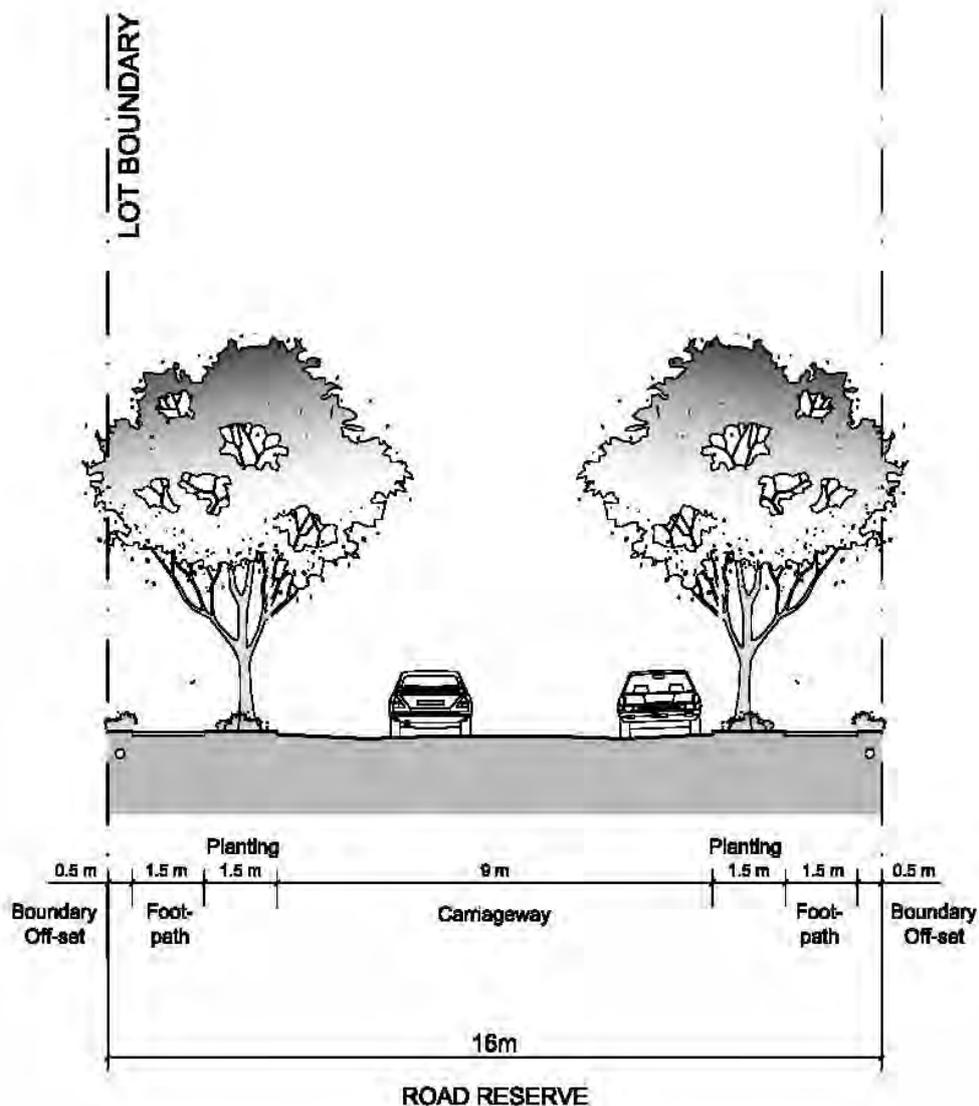


Figure 3-14: Typical local street dimensions

7. For changes to the proposed road system which Council considers minor, Council may write to affected property owners and consider any comments of those persons before determining the application. Applicants wishing to amend the proposed road pattern are advised to liaise with affected adjoining owners prior to the submission of the development application. By obtaining the prior agreement of adjoining owners to proposed road pattern changes, the time required by Council to determine the application may be reduced.
8. Where roads are adjacent to public open space or drainage land, or adjacent to arterial and sub-arterial roads, the verge width on the side adjacent to the open space, drainage land or major road may, in certain circumstances, be reduced to a minimum of 1m, subject to:
 - appropriate arrangements for the provision of public utilities,
 - provision of appropriate pedestrian access,

- compliance with road safety, and
 - acoustic attenuation, bushfire asset protection zone, and riparian corridor requirements
9. Where streets are proposed as part of an application for subdivision that are located adjacent to public recreation land, drainage land, community facilities or schools, the applicant will be responsible for construction of the full width of the street, unless Council specifies otherwise.
10. Except where otherwise provided for in this DCP, all streets and roundabouts are to be designed and constructed in accordance with the minimum requirements set out in Council's Engineering Design Guide for Development. Where a corner lot fronts a roundabout, the driveway shall be set back 10m from the splay.
11. Split level roads will only be considered where all other alternatives have been exhausted.
12. Residential roads, i.e. collector roads, local streets, access road/paths, and shareways shall be designed for and sign posted at a maximum of 50kph (i.e. traffic management must be considered at the subdivision application, with either road layout or speed reducing devices used to produce a traffic environment which reduces traffic speed).
13. Where four way intersections are proposed, traffic is to be controlled, where appropriate, by traffic lights, roundabouts, median strips or signage.
14. Street trees are required for all streets. Street planting is to:
- use the preferred species listed in **Appendix D**.
 - be consistently used to distinguish between public and private spaces and between different classes of street within the street hierarchy,
 - minimise risk to utilities and services,
 - be durable and suited to the street environment and, wherever appropriate, include endemic species,
 - maintain adequate lines of sight for vehicles and pedestrians, especially around driveways and street corners,
 - be located to minimise conflicts between trees and driveways,
 - provide appropriate shade in summer and solar access in winter,
 - provide an attractive and interesting landscape character and clearly define public and private areas, without limiting passive surveillance of the street,
 - not interfere with refuse collection and buried utilities, and
 - consider items of environmental heritage, heritage conservation areas, historic road alignments and significant view lines.
15. Street trees are to be provided with a minimum spacing of one tree for each residential lot, or one tree per 10 metres of road, whichever spacing is the greater.

16. Street trees may be permitted within the road carriageway subject to the findings of a Road Safety Audit.
17. While acknowledging the amenity benefit from trees within the carriageway, applications that propose carriageway trees will be assessed by Council with consideration given to:
 - access and manoeuvrability of garbage trucks, street sweepers and cars,
 - the impact of the root system on the carriageway and buried utilities;
 - ongoing maintenance of the tree and carriageway;
 - the relationship with future driveway access points; and
 - traffic safety.
18. Signage, street furniture and lighting is to be:
 - designed to reinforce the distinct identity of the development;
 - coordinated in design and style;
 - located so as to minimise visual clutter and obstruction of the public domain; and
 - consistent with any landscaping and public domain guidelines or policies specified by Council.
19. Locating entry signage and the like within a public road reserve is subject to Council agreement.
20. The location and design of signage and street furniture is to be indicated on the Landscape Plan and on engineering construction drawings.
21. Street lighting is to be designed to meet the current Australian Standards AS/NZS 1158 series.
22. Access streets (refer to **Figure 3-15**) may be used where:
 - The access street separates residential land from open space or drainage land or is adjacent to an arterial road, sub-arterial road or transit boulevard.
 - The road is not a through traffic route (ie. it provides access only to residences on it).
 - A maximum of 10 dwellings, between each intersection with another public road, have a frontage and vehicular access to the access street.
 - Adequate provision can be made for garbage trucks and other commercial vehicles
23. Access streets are to intersect with local roads only.
24. Where an access street has frontage to open space or drainage land, the footpath is to be constructed as part of the access street, and located within the verge adjacent to the open space or drainage land.
25. Where the access street is adjacent to a sub-arterial road and/or arterial road, the footpath is to be located within the verge adjacent to the residential development.

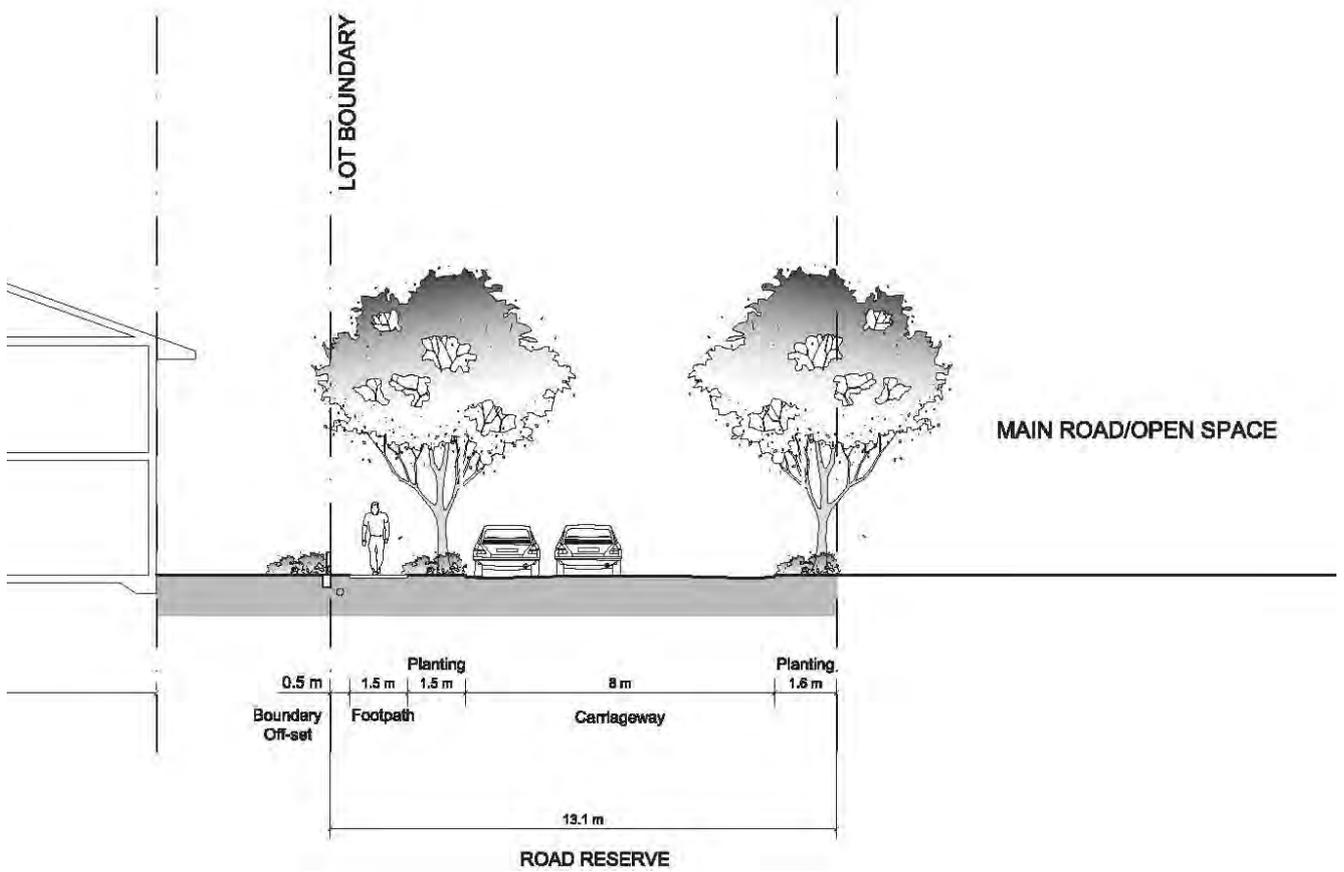


Figure 3-15: Typical access street dimensions

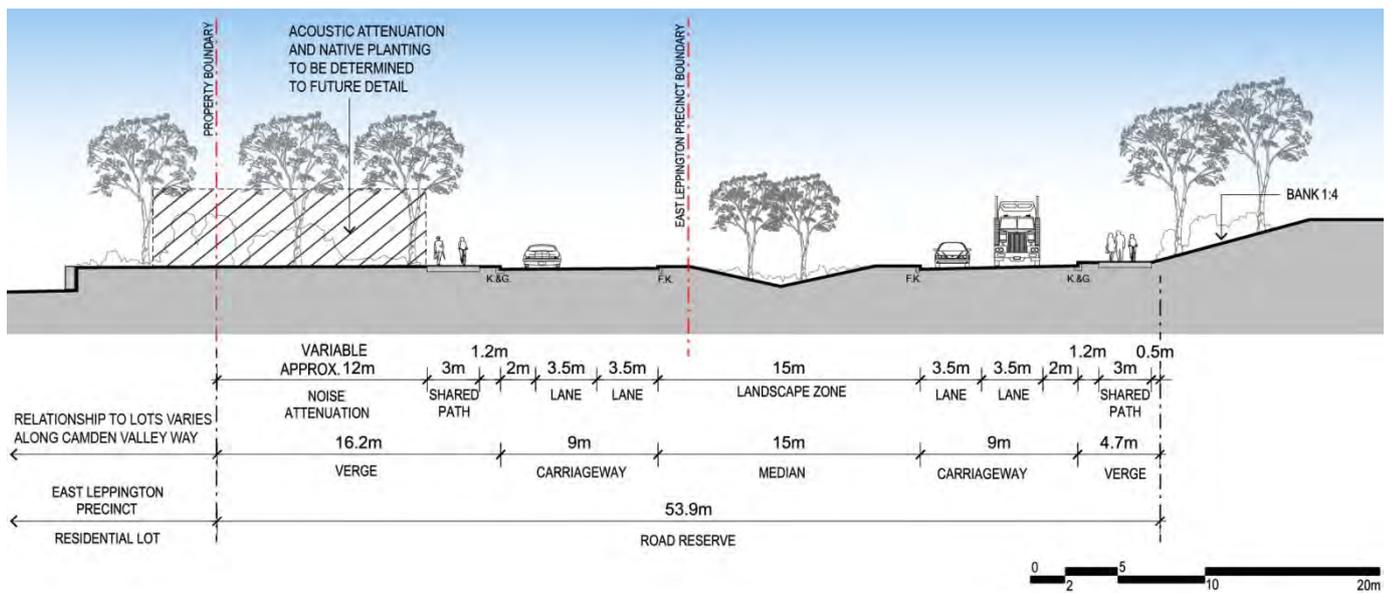


Figure 3-16: Camden Valley Way

Noise Attenuation

26. Noise attenuation is to be appropriately screened by native, low maintenance, landscape planting.
27. Where noise attenuation includes a structure, in addition to vegetation, the use of natural materials including gabions, stone, timber or similar is preferred.
28. Council may consider alternative, innovative noise attenuation measures that comply with the relevant Australian Standard and any other relevant agency guidelines.
29. Noise walls are not preferred.
30. Noise attenuation, where required, shall be in place prior to the occupation of any dwelling in the Precinct.

Noise Attenuation Camden Valley Way

In addition to the above, the following apply specifically to development adjoining Camden Valley Way:

31. Development adjacent to and along Camden Valley Way will require appropriate noise attenuation.
32. The design of the acoustic and landscape treatment to Camden Valley Way is to take into account the existing underground gas pipeline.

Note: Section 6.6 of this DCP should also be considered.

Utilities

33. Development within and adjacent to the easement must be referred to the relevant utility provider (Jemena, Gorodok or any other provider) for approval prior to any works being commenced, and evidence of the utility provider's agreement must be submitted with the development application.
34. Development and use of land within the easement is restricted by the conditions of the easement and applicants should demonstrate compliance with any restrictions imposed by the easement when submitting applications for development.
35. To the satisfaction of the utility provider, landscaping (including tree planting), other than groundcover, is not permitted within 5m of the pipelines.
36. At the subdivision stage any utility cross connections over roads should be identified.
37. An indicative design for the collector road in proximity to the gas easements is shown **Figure 6-14**.

Note: Section 6.5 Land adjacent to or affected by a Gas Easement should also be considered.

Historic Tree Row - Leppington House

38. The Historic Tree Row identified in **Figure 3-11** and **Figure 3-17** shall be incorporated into the public road reserve wherever possible. Where trees cannot be retained, they are to be replaced by new planting, spaced at similar intervals to maintain the historic and heritage integrity of these cultural landscape elements.
39. An Arborist Assessment shall be prepared by a suitably qualified professional and is to be submitted with any Subdivision Application involving development adjacent to any of the trees identified in the Historic Tree Row. The assessment shall include:

- Evaluation of the viability and safety of incorporating the trees within a road reserve, the public domain or within appropriate setbacks on individual lots;
- Recommendations for their retention, conservation, supplementation and/or reinstatement;
- Identification of protection measures for the retention of trees during adjacent construction works; and
- Recommendations for their maintenance regime.

Other trees

40. Other significant individual trees and tree rows are encouraged to be retained in the design of the public domain and the location of dwellings. The matters for consideration will include the health, species, size and viability of the tree along with other relevant matters determined by Council.

Note: Section 6.2 provides controls important to the Historic Tree Row and other significant plantings.



Figure 3-17: Significant trees along Leppington House Carriageway (Historic Tree Row)

3.4.2 Laneways

Laneways are public roads that are shareways, utilitarian thoroughways of the street network that provide rear vehicular access to compact or restricted access lots. The primary purpose of rear laneways is to create attractive front residential streets by removing garages and driveway cuts from the street frontages, improving the presentation of houses and maximising on street parking spaces and street trees. Laneways are a 'sacrificial' network device: while they should be neat and tidy, they should not be confused with streets in width, character or function.

A laneway is a shareway, designed to be shared by all users whether they are pedestrians, cyclists or drivers. Equal priority between all users reinforces the distinctive, slow speed environment for drivers.

In their design and subdivision of lots, laneways should be provided with casual surveillance from some second floor rooms and balconies over garages. Various building forms can provide this casual surveillance along the lane such as studio dwellings, secondary dwellings and rooms of the principal dwelling or lofts over garages. Separate titling of studio dwellings may affect servicing requirements. Generally there will be no underground services in the laneway (except for streetlights) as the studios will be strata titled so power, water, gas, sewer and communications will be located in the front street and reticulated from the front of the allotment through the lot to the rear studio.

Objectives

- a. To provide vehicular access to the rear or side of lots where front access is restricted or not possible, particularly narrow lots where front garaging is not permitted.
- b. To reduce garage dominance in residential streets.
- c. To maximise on-street parking spaces and landscaping in residential streets.
- d. To provide opportunities for affordable housing options.
- e. To reduce vehicular conflict through reduced driveway cross overs and focusing of traffic to known points.
- f. To enable garbage collection.
- g. To facilitate the use of attached and narrow lot housing to achieve overall higher neighbourhood densities.
- h. To create a slow speed shared zone requiring co-operative driving practices for the very low volume and frequency of vehicle movements that is distinctly different in character and materials to residential streets.

Controls

1. The design and construction of laneways is to be consistent with **Figure 3-18** and **Department of Planning and Environment Delivery Note: Laneways**.

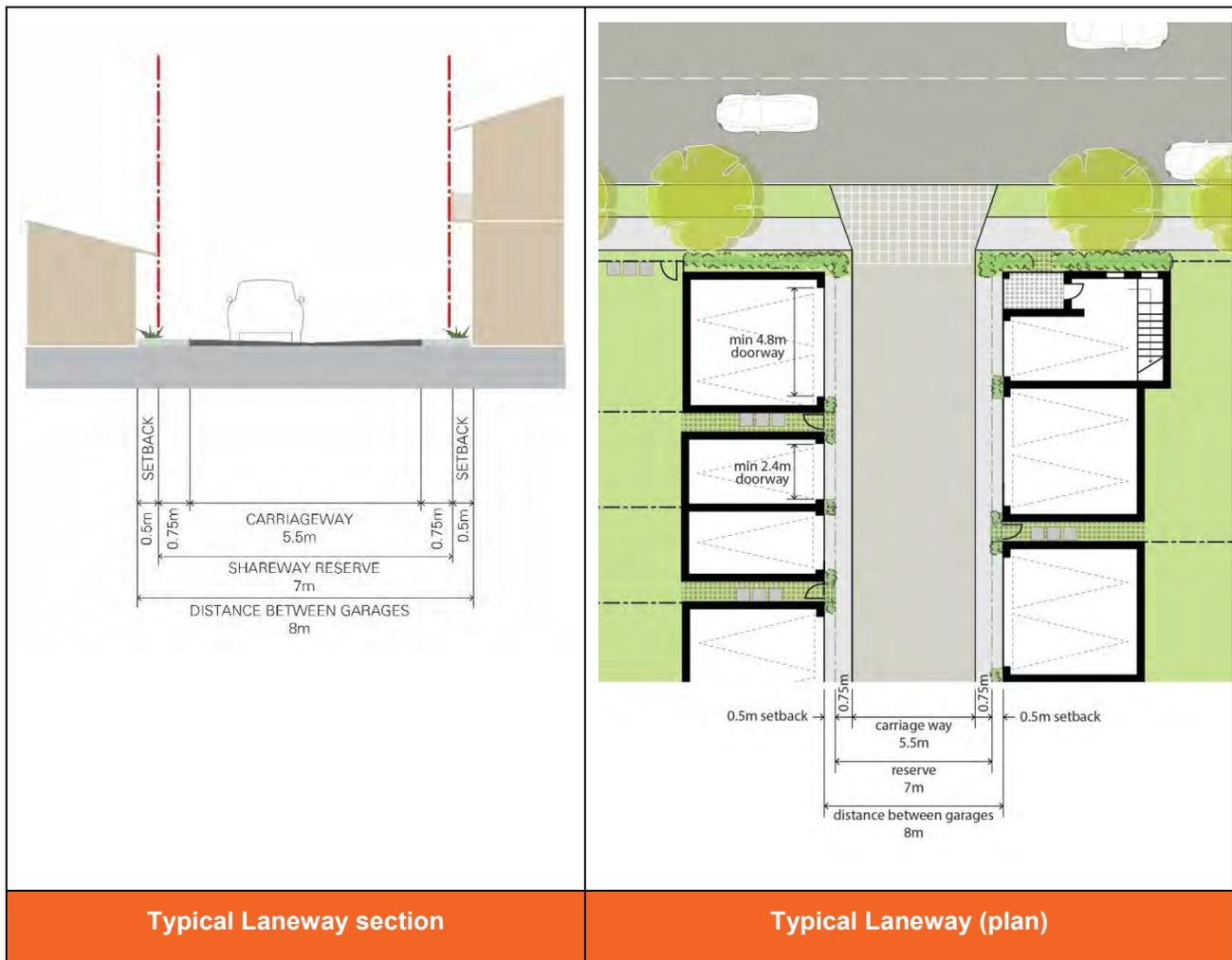


Figure 3-18: Laneway principles

2. The laneway is a public “shareway” as the paved surface is for cyclists, pedestrians, garbage collection, mail deliveries, cars etc, with a 10 km speed limit and driveway-style crossovers to the street rather than a road junction.
3. The minimum garage doorway widths for manoeuvrability in this laneway section are 2.4m (single) and 4.8m (double).
4. The configuration of the laneway, associated subdivision and likely arrangement of garages arising from that subdivision should create ordered, safe and tidy laneways by designing out ambiguous spaces and unintended uses such as casual parking, the storage of trailers, bin stacking etc.
5. The layout of laneways should take into account subdivision efficiency, maximising favourable lot orientations, intersection locations with streets, topography, opportunities for affordable housing, legibility and passive surveillance.
 - Generally, straight layouts across the block are preferred for safety and legibility, but the detailed alignment can employ subtle bends or secondary or studio dwellings over garages to add visual interest and avoid long distance monotonous views. “C” shaped layouts with the laneway length parallel to the front street can limit the views of laneways from residential streets to short sections.

However, if the laneway is used for garbage collection, any bends or intersections are to be sized for garbage truck movements. Suggested layouts are in **Figure 3-19**.

- Lanes on sloping land with significant longitudinal and/or cross falls require detailed design consideration to demonstrate functionality.

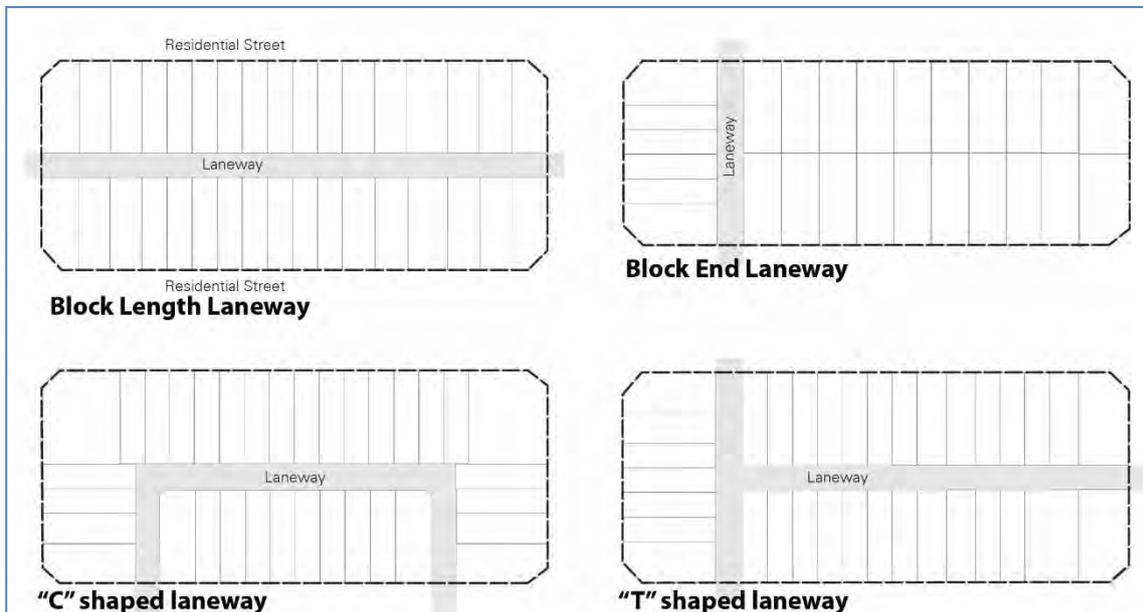


Figure 3-19: Sample lane layouts

- Laneways that create a 'fronts to backs' layout (front addressed principle dwellings on one side and rear accessed garages on the other side) are to be avoided.
- All lots adjoining a laneway should utilise the laneway for vehicular/garage access.
- Passive surveillance along the laneway from the upper storey rooms or balconies of secondary dwellings, studio dwellings, principal dwelling or lofts over rear garages is encouraged. Ground floor habitable rooms on laneways are to be avoided unless they are located on external corners (laneway with a street) and face the street to take advantage of the residential street for an address, shown in **Figure 3-20** as lane entry/street corner lots. **Figure 3-20** indicates mid-lane lots and internal corner locations (lane with another lane) where ground floor habitable rooms in secondary dwellings or strata studios (marked 'S') are to be avoided.
- A continuous run of secondary dwellings or strata studios along the lane is to be avoided, as it changes the character, purpose and function of the lane. No more than 25% of the lots adjoining lanes (excluding street corner lots with studio at the lane entry) are to have secondary dwellings or strata studios. See **Figure 3-20**.
- All lot boundaries adjoining the lane are to be defined by fencing or built form. The garage setback to the lane is minimal (0.5m) to allow overhanging eaves or balconies to remain in the lot without creating spaces where people park illegally in front of garages and/or on the laneway. Deeper balconies requiring larger garage setbacks (up to 2m) may be permitted occasionally along the laneway provided

the application demonstrates how the setback space will not create an opportunity for illegal parking, such as the presence of a supporting post or bollard.

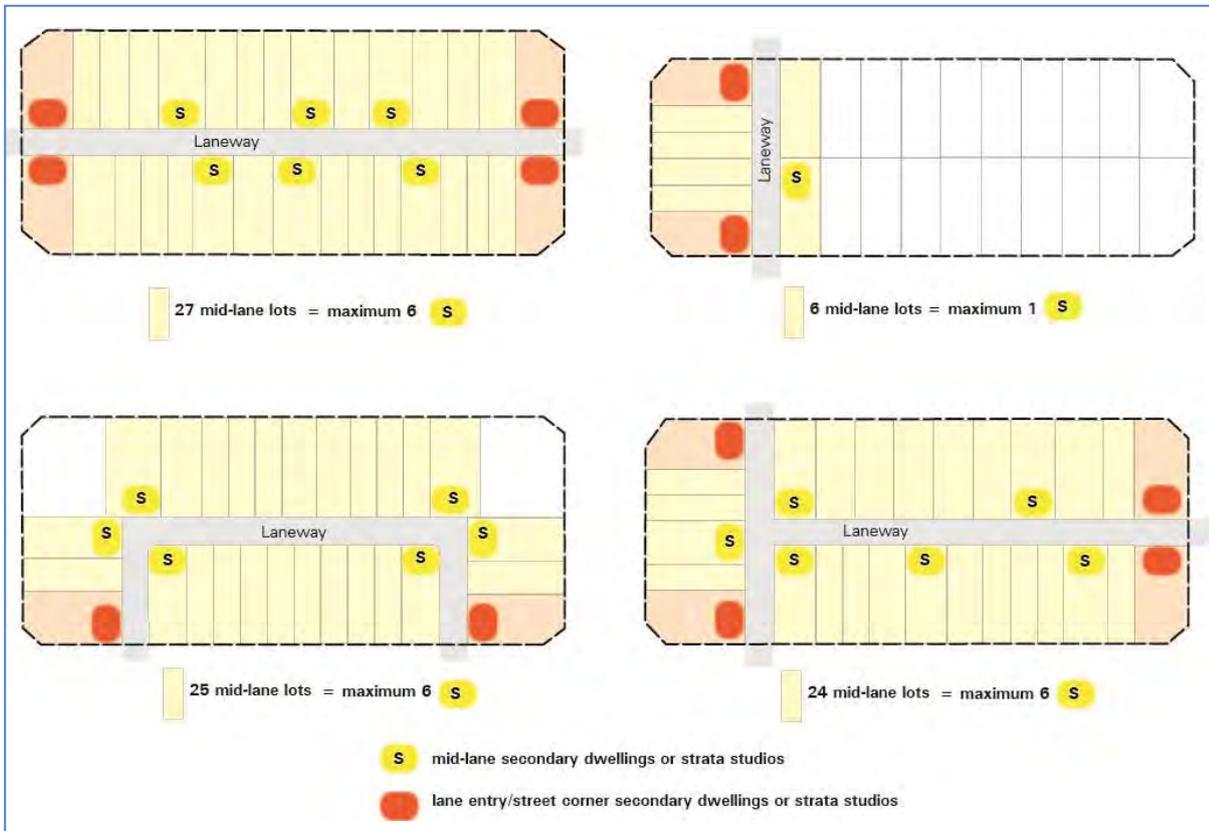


Figure 3-20: Sample laneways showing maximum number of secondary dwellings or strata studios

3.4.3 Shared Driveways

Shared driveways are privately owned and maintained driveways that serve two or more dwellings through a titling arrangement such as a reciprocal right of way or community title. Shared driveways are usually of minimal dimensions for vehicle access to lots with only a single access to the street network. Garbage collection is usually not a function. Shared driveways are a useful subdivision device for a small number of dwellings with otherwise difficult access or unavoidable block configurations, but are not a substitute in blocks designed with significant numbers of dwellings requiring rear access by laneways.

Objectives

- a. To minimise the impact of vehicle access points on the quality of the public domain and pedestrian safety.
- b. To provide safe and convenient access to garages, carports and parking areas.
- c. To clearly define public and private spaces, such that driveways are for the sole use of residents.
- d. To permit casual surveillance of private driveways from dwellings and from the street.

CONTROLS

1. Shared driveways are to be constructed as one of three general types, depending on block geometry and garages to be accessed. Refer to examples in **Figure 3-21**.
2. Shared driveways are to have the smallest configuration possible to serve the required parking facilities and vehicle turning movements.
3. The driveway crossing the verge between the property boundary and the kerb is to have a maximum width of 5.4 metres.
4. The location of driveways is to be determined with regard to dwelling design and orientation, street gully pits and tree bays and is to maximise the available on-street parking.
5. The maximum travelling distance from a public road to a garbage collection area within a shared driveway is 70m. Where garbage collection is required to occur within the shared driveway (i.e. when an alternative collection point is not available), the layout is to be designed such that no reversing movements are required to be undertaken to enable a garage truck to enter and leave in a forward direction. A minimum pavement width of 5m and a turning circle with sweep turning paths overlaid into the design plan shall be submitted to demonstrate compliance with this requirement.
6. Access to allotments in the vicinity of roundabouts and associated splinter islands shall not be provided within 10m of the roundabout.
7. Driveways are not to be within 0.5m of any drainage facilities on the kerb and gutter.
8. Shared driveways are to have soft landscaped areas on either side, suitable for infiltration.
9. Shared driveways must be in accordance with the shareway principles and vehicle manoeuvring requirements of the **Department of Planning and Environment Delivery Note: Laneways**.



Figure 3-21: Indicative examples of shared driveways

3.4.4 Pedestrian and Cycle Network

Objectives

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

Controls

1. Key pedestrian and cycleway routes are to be provided generally in accordance with the pedestrian and cycleway network figure (refer to **Figure 3-22**).
2. The design of footpaths and cycleways located within the road reserve is to be in accordance with **Figure 3-12 to Figure 3-15**.
3. The minimum width of off-street shared cycle and pedestrian pathways is to be 2.5m.
4. All pedestrian and cycleway routes and facilities are to be consistent with the Planning Guidelines for Walking and Cycling (DoP & RTA 2004), relevant Council pedestrian and cycling plans and policies, and Council Engineering Design Guidelines for Development.
5. Pedestrian and cycle routes and facilities in public spaces are to be safe, appropriately lit, clearly defined, functional and accessible to all.
6. Pedestrian and cycle pathways and pedestrian refuge islands are to be designed to be fully accessible by all in terms of access points and gradients, generally in accordance with Australian Standard 1428:1-4.
7. Detailed designs for pedestrian and cycle paths are to be submitted with subdivision development applications.
8. Pedestrian and cycle pathways that are within road verges or carriageways are to be constructed as part of the road construction works for each subdivision.



Figure 3-22: Pedestrian and cycle network

3.4.5 Temporary vehicular access

Objectives

- a. To enable development to progressively occur in Precincts where current land ownership or other development staging constraints temporarily limit road access to properties in accordance with this DCP,
- b. To ensure that appropriate vehicular access to properties is provided and maintained at all times during the development of the Precincts, and
- c. To ensure that temporary vehicular access arrangements do not compromise safety and the efficient operation of the road network.

Controls

10. Where necessary to ensure that access to residential properties is provided in the early stages of development, Council may consent to the construction and operation of temporary access roads.
11. Temporary access arrangements must comply with Council's Engineering Design Guide for Development.
12. Temporary access roads are to remain in operation only until such time as the road network has been developed to provide permanent access to all properties.
13. The plan of subdivision is to show the location and design of temporary access roads, and the means of transitioning to permanent access arrangements

Note: Specific controls in **Section 3.4.6** apply to temporary access to arterial roads and sub-arterial roads.

14. Temporary turning circles will be required where roads are to continue onto adjoining properties that are not yet developed. Temporary turning circles are to have a minimum radius of 8 metres and are to be sealed using the same materials as the rest of the road.
15. Half-width roads may be constructed to provide temporary access to residential development, in accordance with **Figure 3-23**. The applicant will cover all costs associated with the design of the full road width and construction of half the full width pavement, including adequate transitions to full width cross sections, plus a two way traffic configuration ensuring operational effectiveness and safety to relevant standards.
16. Half-width roads are only permitted where the road is located on the side boundary of the land to be developed.
17. The centreline (of the full-width road) is to be located on the boundary.
18. Where a half-width road terminates temporarily at the rear of a development, adequate arrangements for vehicles to turn (such as turning T heads or turning circles) must be shown on the plan of subdivision and the application must demonstrate how the transition to permanent arrangements will be managed.
19. The half-width road design is to ensure that runoff from the road pavement is directed to the kerb.

- 20. The development application plans are to show the vertical alignment of the half-width road relative to natural ground level on the adjoining property, and the applicant is to demonstrate how the half-width road will be integrated with adjoining land.
- 21. A minimum carriageway width of 6 metres is required for all half-width roads.

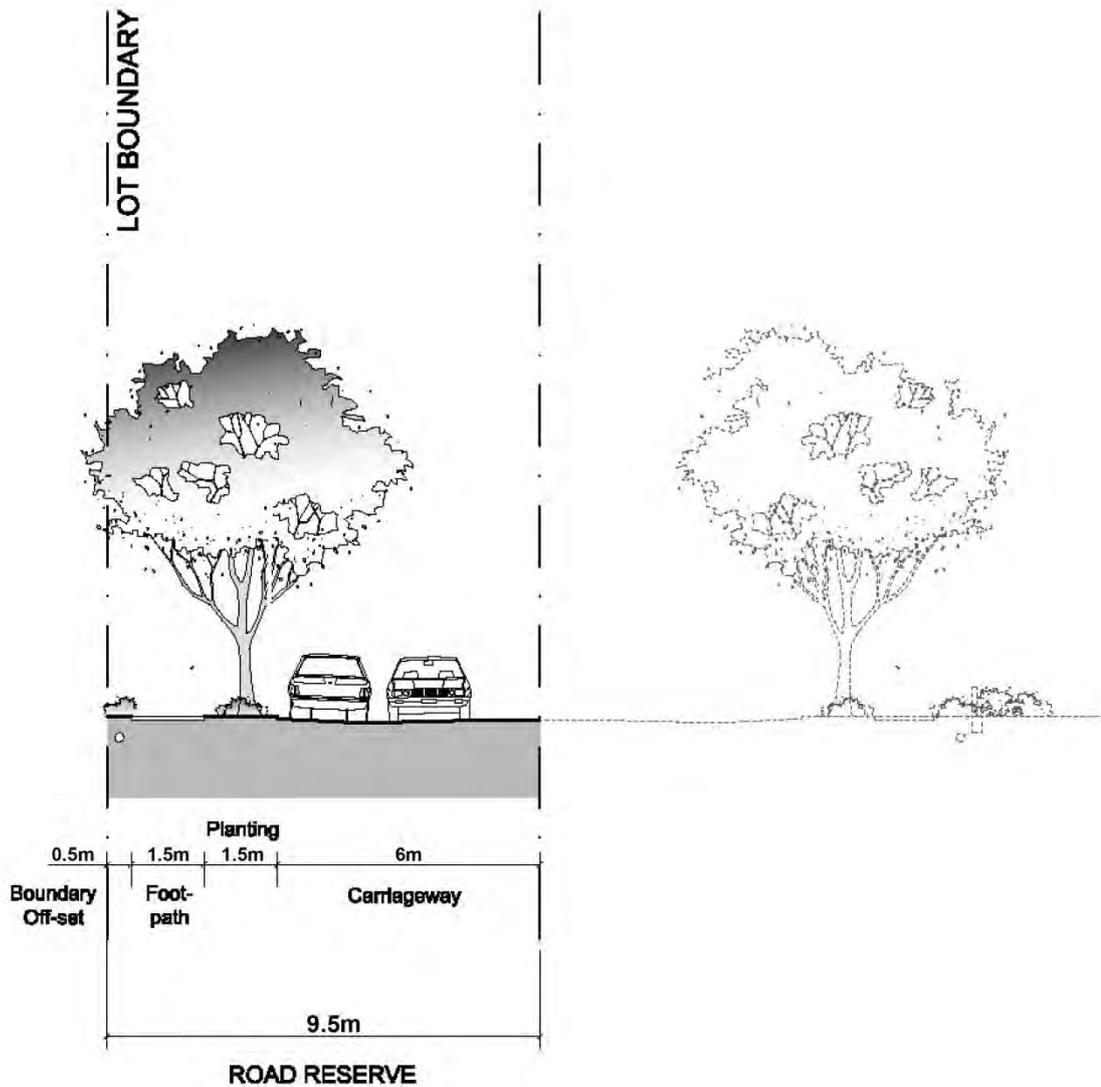


Figure 3-23: Temporary half road width construction

3.4.6 Access to arterial roads and sub-arterial roads

Objectives

- a. To restrict direct property access to higher order roads to provide for the safe and efficient movement of vehicles on these roads.

Controls

1. Vehicular access to arterial roads or sub-arterial roads shown on the Precinct Road Hierarchy figure (refer to **Figure 3-11**) may only be via another public road.
2. To enable the development of land, such as in situations where access across adjoining properties is required but not yet able to be provided, Council may allow temporary access to arterial roads or sub-arterial roads where:
 - subdivisional roads generally conform with the road pattern shown on the Indicative Layout Plan and the development is capable of being adapted to ensure alternative access when adjacent development occurs;
 - The arterial road or sub-arterial road is not yet upgraded to its ultimate configuration and/or traffic volumes on the road network are not sufficient to justify restricting direct access;
 - Council is satisfied that the carrying out of the development will not compromise traffic safety.
3. Where Council grants such consent, the temporary access must be constructed to Council's standards and conditions will be imposed that access to the designated road by way of the temporary access shall cease when alternative access becomes available.

Note: Approval from the RMS may also be required for any temporary access to a classified road.

3.5 Open Space Network

The open space network for East Leppington Precinct is shown in **Figure 3-24** and within the Campbelltown Growth Centres Precinct Plan (East Leppington).

Objectives

The objectives for the Open Space network in East Leppington Precinct include:

- a. To establish an open space network focused on the Bonds Creek and Bonds Creek South riparian corridor that provides for the passive and active recreation needs of the local community,
- b. To retain and enhance significant stands of remnant vegetation within the open space network wherever possible,
- c. To provide appropriate tree planting within key road corridors,

- d. To establish a public domain that responds to key environmental features of the Precinct, including prominent knolls and the Scenic Hills,
- e. To establish a public domain that respects and interprets the cultural heritage of the Precinct and its relationship to the former Leppington House archaeological site, and
- f. To establish a public domain that respects the Aboriginal cultural heritage of the Precinct including areas of high significance.

Controls

- 1. The open space network should be provided generally in accordance with **Figure 3-24**.
- 2. The minimum area for a local park is 0.6ha and parks should be located within walking distance (400m walking catchment) of most residential dwellings. Where appropriate, a children's' playground should be provided.
- 3. The open space network shall be connected via a network of pedestrian and cycle links focused along the riparian corridors as per **Figure 3-22**.
- 4. Passive recreation opportunities are to be maximised along Bonds Creek open space corridor by providing walking and cycling tracks, picnic and barbeque areas, seating and viewing areas.
- 5. Significant trees and remnant native vegetation are to be retained in open space wherever possible.
- 6. Where parks are to incorporate Aboriginal or European cultural heritage items, they shall be sensitively designed in accordance with the following provisions:
 - i) For Aboriginal Heritage, areas identified in **Figure 6-12** of this DCP.
 - i) For European Cultural Heritage, the Conservation Management Plan, Interpretation Plan and Vegetation Management Plan as described in **Section 6.2** of this DCP.
 - ii) All new plantings shall be in accordance with Council's Prescribed Trees and Preferred Species list contained in **Appendix D** of this DCP.
 - iii) Landscape materials and design should respond to an identified planting palette.
 - iv) Street furniture, lighting, paving etc. should be contemporary and reflect the local environmental character of the Precinct as well as interpretation initiatives (where appropriate).

Note: Council may require a detailed Public Domain Manual to be prepared for Campbelltown Growth Centres Precinct Plan (East Leppington) consistent with the requirements of this DCP at the subdivision stage. It is to include detailed provisions for the Leppington House Cultural Heritage Landscape Area.



Figure 3-24: Open Space Network

3.6 Construction Environmental Management

Objectives

- a. To ensure that the construction of subdivisions, new buildings and other structures and works is done in an environmentally responsible manner.

Controls

1. A Construction Environmental Management Plan (CEMP) is to be submitted to Council or the accredited certifier and approved prior to the issue of a construction certification for subdivision.
2. The CEMP is to detail the methods of ensuring the protection of the environment during construction, monitoring and reporting on construction activities, and procedures to be followed in the event of an incident that is likely to cause harm to the environment.
3. Construction activities are to be undertaken to ensure that water quality, soil stability, trees and vegetation cover, and heritage sites are protected in accordance with the development consent and to maintain the quality of the natural environment.
4. Applicants are to ensure that the management of construction activities is undertaken in accordance with Campbelltown Council Engineering Design Guide for Development and the Blue Book.
5. Preservation of trees and native vegetation during construction is to be in accordance with the development consent issued for the development, and with the native vegetation and tree preservation provisions of the Campbelltown Growth Centres Precinct Plan (East Leppington).
6. Trees to be protected must be enclosed within a 1.8m high protection fence installed to conform to a Tree Protection Zone (TPZ) that is consistent with current arboriculture industry standards.
7. A report which outlines the condition, dimensions and species of existing trees contained within a development site is to be included as part of any development application documents and is to be accompanied by a Tree Retention Management Plan which shows the dimension of any proposed TPZs and outlines any other protection/enhancement methods that are appropriate to encourage the viable retention of trees.
8. All reports pertaining to trees on development sites are to be prepared by a suitably qualified person.

4.0

*Development in the
Residential Zones*



This part of the DCP establishes the objectives and controls that guide residential development, including residential design controls for dwelling houses, attached or abutting dwellings, semi detached dwellings, multi unit housing, secondary dwellings, studio dwellings, dual occupancies, residential flat building, manor homes and shop top housing. This part also covers residential amenity controls such as streetscape, safety, visual and acoustic privacy, sustainable building design, fencing, waste management and site services.

4.1 Site Responsive Design

4.1.1 Site Analysis

Site analysis for each individual lot is an important part of the design process. Development proposals need to illustrate design decisions which are based on careful analysis of the site conditions and their relationship to the surrounding context. By describing the physical elements of the locality and the conditions impacting on the site, opportunities and constraints for development can be understood and addressed in the design.

The Site Analysis Plan should show the existing features of the site and its surrounding area, together with supporting written material. At a minimum the Site Analysis Plan must show the following features:

- the position of the proposed building in relation to site boundaries and any other structures and existing vegetation and trees on the site;
- any easements over the land;
- the location, boundary dimensions, site area and north point of the land;
- location of existing street features adjacent to the property, such as trees, planting, street lights;
- contours and existing levels of the land in relation to buildings and roads;
- whether the proposed development will involve any changes to existing site levels;
- location and uses of buildings on sites adjoining the land; and
- a stormwater concept plan (where required).

4.1.2 Cut and fill

Objectives

- a. To minimise the extent of cut and fill within residential allotments,
- b. To ensure that fill material is not contaminated and does not adversely affect the fertility or salinity of soil, or the quality of surface water or groundwater, and
- c. To ensure that the amenity of adjoining residential development is not adversely affected by earthworks.

Controls

1. Development applications relating to land within residential zones are to illustrate where necessary further to cut and/or fill is required and provide justification for the proposed changes to the ground levels.
2. Earthworks for dwelling construction (apart from earthworks completed as part of approved subdivision and/or early works) may be undertaken to a maximum of 500mm excavation or fill as measured from the sites existing ground levels.
3. Retaining walls are not to be constructed on side or rear boundaries of lots unless these are already approved as part of any previous subdivision or early works development application.
4. Retaining walls are to be located at least 900mm from side or rear lot boundaries and 1m from any registered easement (main) for sewer and water.
5. Council will assess proposals for excavation or fill greater than 500mm having regard to visual impacts, impacts on drainage and potential impacts on soil salinity and stability.
6. A Validation Report is required to be submitted to Council prior to the placement of imported fill on site. All fill shall comply with the NSW Office of Water – “Site Investigation for Urban Salinity” and the OEH Contaminated Sites Guidelines – “Guidelines for the NSW Site Auditor Scheme (2nd edition) – Soil Investigation Levels for Urban Development Sites in NSW”.
7. On significantly sloping sites, site disturbance is to be minimised by use of split level or pier foundation dwelling designs. Council will consider greater cut for basement garages.
8. Where cut or fill 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 or fill.
9. Retaining walls within residential lots are to be no greater than 600mm high and be of masonry construction.
10. The maximum height of building voids within individual lots is 3m, as illustrated in **Figure 4-1**.

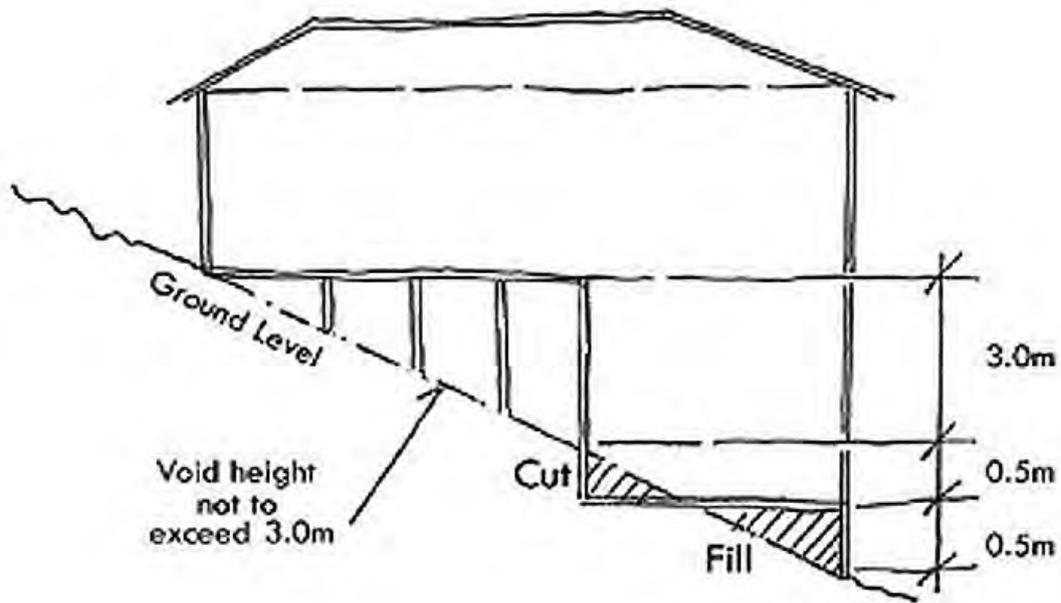


Figure 4-1: Maximum cut and fill within residential lots

4.1.3 Sustainable building design

Objectives

- a. To maximise microclimate benefits to residential lots,
- b. To enhance streetscape amenity and ensure an appropriate standard of landscaping,
- c. To minimise energy usage and greenhouse emissions and encourage the adoption of renewable energy initiatives,
- d. To minimise consumption of potable water for non-potable uses, minimise site runoff and promote stormwater re-use, and
- e. To minimise the use of non-renewable resources and minimise the generation of waste during construction.

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. Indigenous species are encouraged.
3. A landscape plan is to be submitted with every application for multi-dwelling housing and residential flat buildings.
4. The provisions of BASIX will apply with regards to water requirements and usage.
5. The design of dwellings is to maximise cross flow ventilation.
6. The positioning and size of windows and other openings is to take advantage of solar orientation to maximise natural light penetration to indoor areas and to minimise the need for mechanical heating and cooling.
7. Outdoor clothes lines and drying areas are required for all dwellings and can be incorporated into areas for multi-dwelling development and residential flat building developments.
8. Design and construction of dwellings is to make use of locally sourced materials where possible.
9. Residential building design is to use, where possible, recycled and renewable materials.

4.1.4 Salinity

Objectives

- a. To manage and mitigate the impacts of, and on, salinity.

Controls

1. All development must comply with the Salinity Management Plan at **Appendix C**.
2. Salinity shall be considered during the siting, design and construction of dwellings including: drainage, vegetation type and location, foundation selection and cut and fill activities, to ensure the protection of the dwelling from salinity damage and to minimise the impacts that the development may have on the salinity process.
3. In salinity prone areas materials for pipe infrastructure, foundations and brickwork must have sulphate resistant properties to cope with the saline conditions.

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 4.3**.

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 4-1** summarises the types of lots and housing. **Table 4-1** is diagrammatic only and directs readers to the relevant **Table 4-2 to Table 4-6** containing the main development controls.

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

Table 4-1: Summary of lot and dwelling types

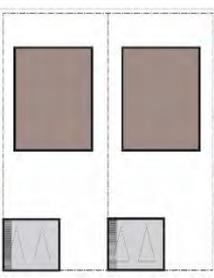
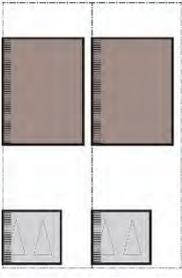
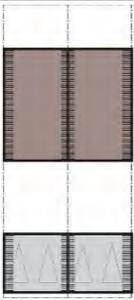
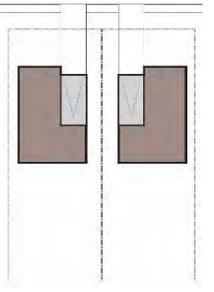
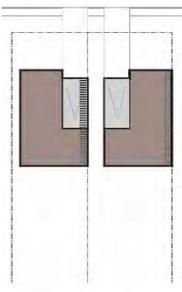
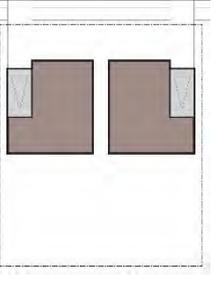
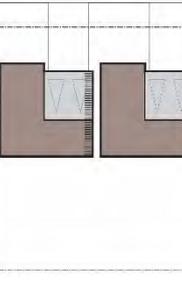
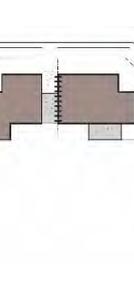
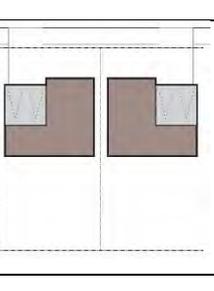
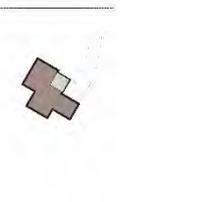
Access	Lot Width	Detached	Zero lot	Abutting/Attached	Controls Table
Rear access	≥4.5m				Table 4-2
Front access	7>9m				Table 4-3
	≥9≥15m				Table 4-4
	>15m				Table 4-5
	Environmental Living Zone				Table 4-6

Table 4-2: 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 5.3 (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 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: <ul style="list-style-type: none"> 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 4-3: 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 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: <ul style="list-style-type: none"> 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 4-4: 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 4-5: 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 4-6: Summary of key controls for lots in the **Environmental Living Zone**

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 4-2 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.



Garden Suburban



Suburban



Urban

Figure 4-2: 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.

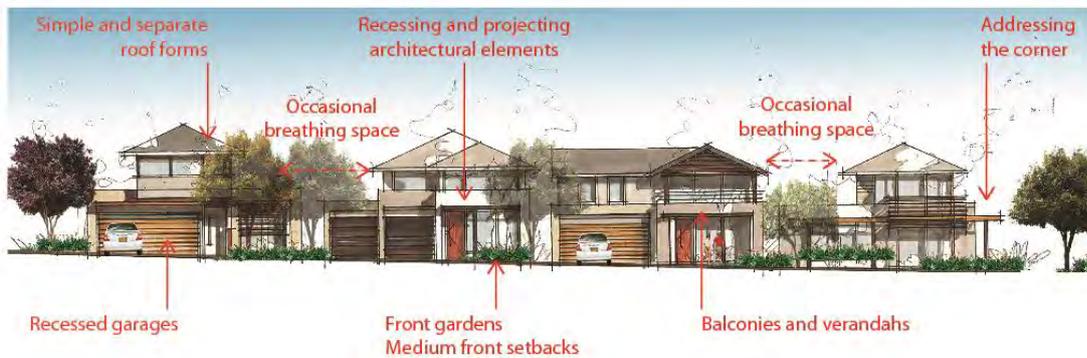
Controls

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 4-3**.



Garden Suburban streetscape principles



Suburban streetscape principles



Urban streetscape principles

Figure 4-3: 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 4-2 to Table 4-6, Figure 4-4 and Figure 4-5.**
2. On corner lots, front setback controls are to be consistent with **Figure 4-6.**
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 **Table 4-2 to Table 4-6** 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 4-4, Figure 4-5 & Figure 4-6**) include those items listed in **Control 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.

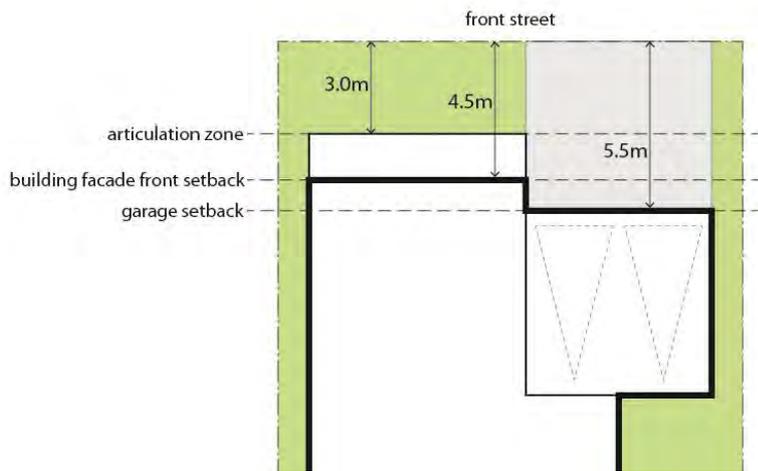


Figure 4-4: Minimum front setback distances

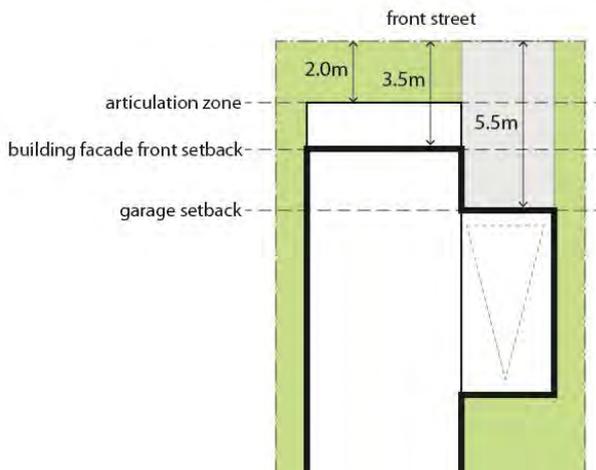


Figure 4-5: Minimum front setbacks for dwellings fronting open space or drainage land

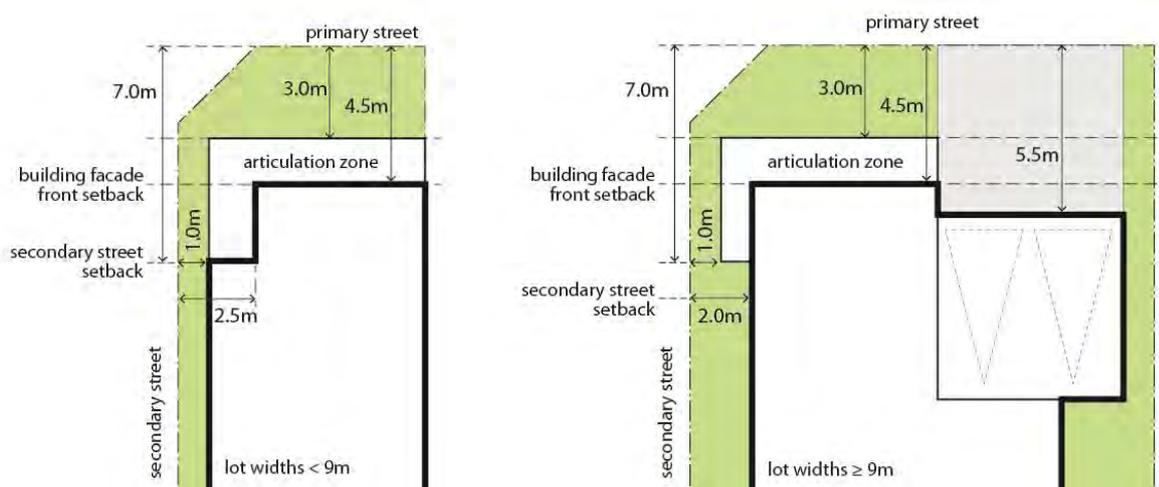


Figure 4-6: Minimum setbacks for corner lot dwellings

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 4-2 to Table 4-6** and principles in **Figure 4-7**.
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 4-7**.
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 Environmental Living zone.
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.

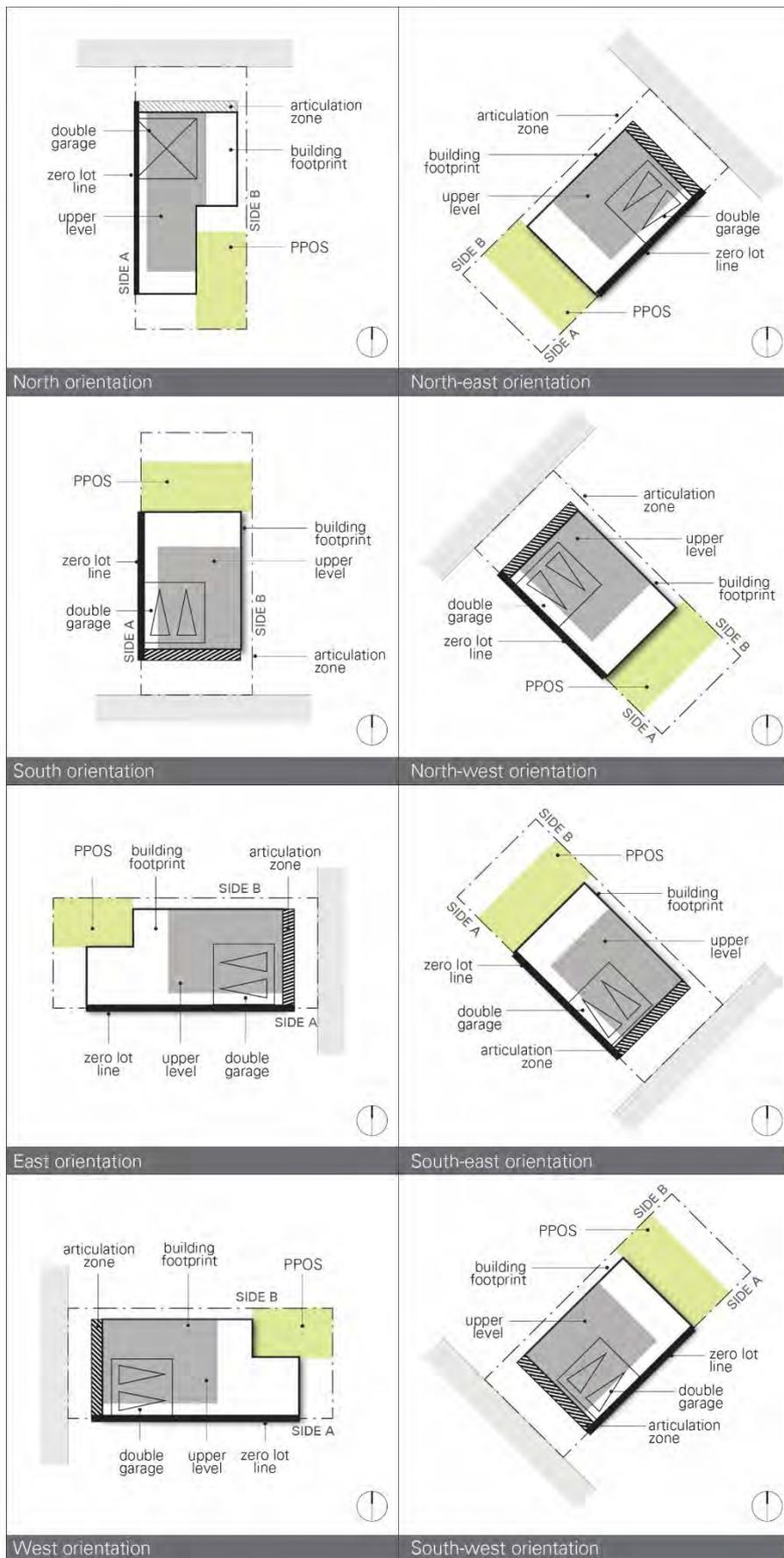


Figure 4-7: Dwelling and open space siting principles for different lot orientations

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 4-8**.
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 4.2.4** 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 4-9**.
11. For corner lots $\geq 15\text{m}$ lot width with shallow depths (ie. approximately square corner lots), the rear setback can be varied to be consistent with the side setbacks provided the minimum open space and solar access requirements to the proposed and adjoining properties are met.

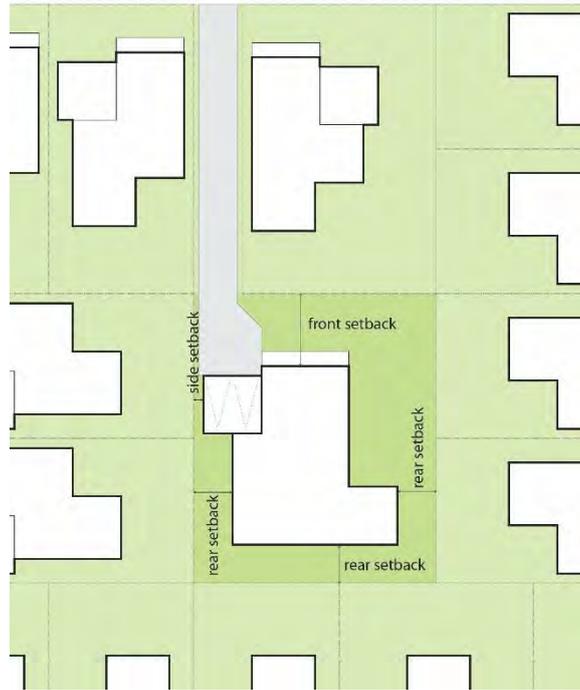


Figure 4-8: Battle axe lot (without any street frontage) example of setbacks

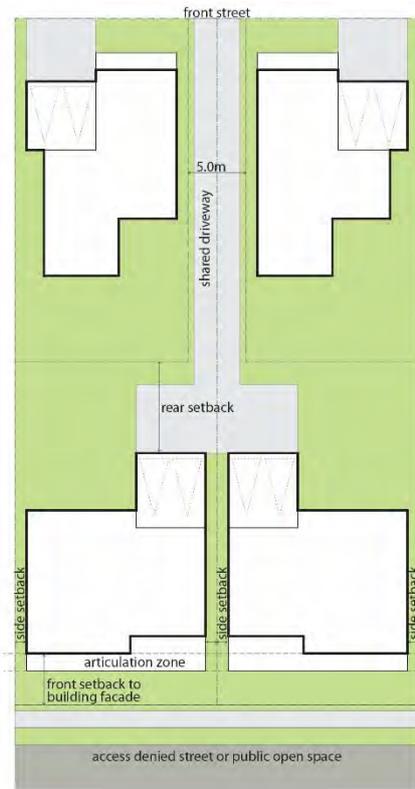


Figure 4-9: Battle axe lot (fronting access denied road) setbacks

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 4.3 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 4-2 to Table 4-6**.
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, all 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 4-2 to Table 4-6**. **Figure 4-10** 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.

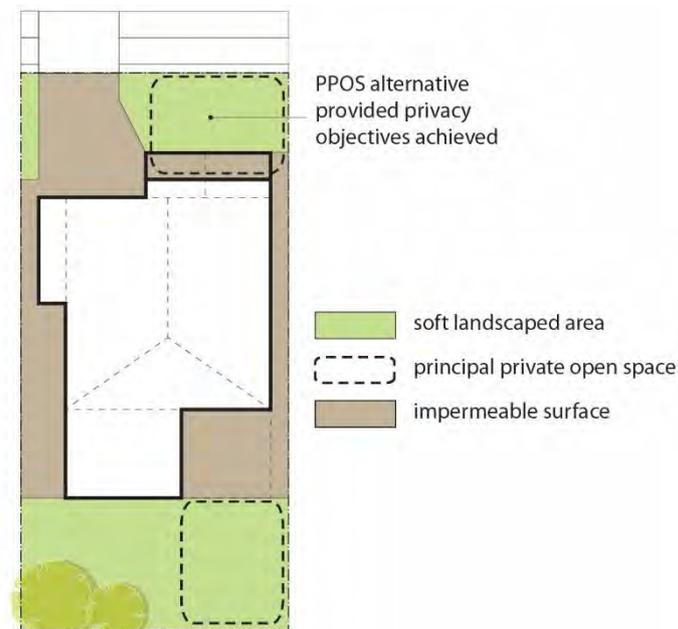


Figure 4-10: Soft landscaped area and principal private open space

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 4-2 to Table 4-6**.
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, 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 3.3** 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 3.2.2** and **Figure 3-8**.

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 4-2 to Table 4-6**.
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 Environmental Living and Large Lot Residential zones 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 **Department of Planning and Environment Delivery Note: Laneways**.

4.2.9 Visual and acoustic privacy

Objectives

- a. To site and design dwellings to meet user requirements for visual and acoustic privacy, while minimising the visual and acoustic impacts of development on adjoining properties, and
- b. To minimise the impact of noise of other non-residential uses such as parking and sport areas, restaurants and cafes and waste collection and goods deliveries.

Controls

1. Direct overlooking of main habitable areas and the private open spaces of adjoining dwellings should be minimised through building layout, window and balcony location and design, and the use of screening, including landscaping.
2. Living area windows with a direct sightline to principal private open space or to habitable room windows in an adjacent dwelling within 5 metres are to:
 - be obscured by fencing, screens or 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 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.
3. Balconies are not permitted on the first floor of the side and / or rear portion of the dwelling except where the balcony faces a public road, or land zoned for public recreation or drainage.
4. The design of dwellings must minimize the opportunity for sound transmission through the building structure, with particular attention given to protecting bedrooms and living areas.
5. In attached and semi-detached dwellings, bedrooms of one dwelling are not to share walls with living spaces or garages of adjoining dwellings, unless it is demonstrated that the shared walls and floors meet the noise transmission and insulation requirements of the Building Code of Australia.
6. No electrical, mechanical or hydraulic equipment or plant shall generate a noise level greater than 5dBA above background noise level measured at the property boundary during the hours 7.00am to 10.00pm and noise is not to exceed background levels during the hours 10.00pm to 7.00am.
7. Dwellings along sub-arterial or arterial roads or any other noise source, should be designed to minimize the impact of traffic noise, and where possible comply with the criteria in **Table 4-7**.

Note: Figure 4-11 provides guidance on measures to mitigate noise in residential buildings.

8. The internal layout of residential buildings, window openings, the location of outdoor living areas (i.e. courtyards and balconies), and building plant should be designed to minimise noise impact and transmission.

9. Development affected by traffic noise is to comply with *Development Near Rail Corridors and Busy Roads – Interim Guideline* (Department of Planning 2008).

Table 4-7: Noise criteria for residential premises impacted by traffic noise

	Sleeping areas	Living areas
Naturally ventilated/ windows open to 5% of the floor area (Mechanical ventilation or air conditioning systems not operating)	<p>LAeq 15 hours (day): 40dBA</p> <p>LAeq 9 hour (night): 35dBA</p>	<p>LAeq 15 hours (day): 45dBA</p> <p>LAeq 9 hour (night): 40dBA</p>
Doors and windows shut (Mechanical ventilation or air conditioning systems are operating)	<p>LAeq 15 hours (day): 43dBA</p> <p>LAeq 9 hour (night): 38dBA</p>	<p>LAeq 15 hours (day): 46dBA</p> <p>LAeq 9 hour (night): 43dBA</p>

Notes:

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

Where a naturally ventilated/windows open condition cannot be achieved, it is necessary to incorporate mechanical ventilation compliant with AS1668 and the Building Code of Australia.

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

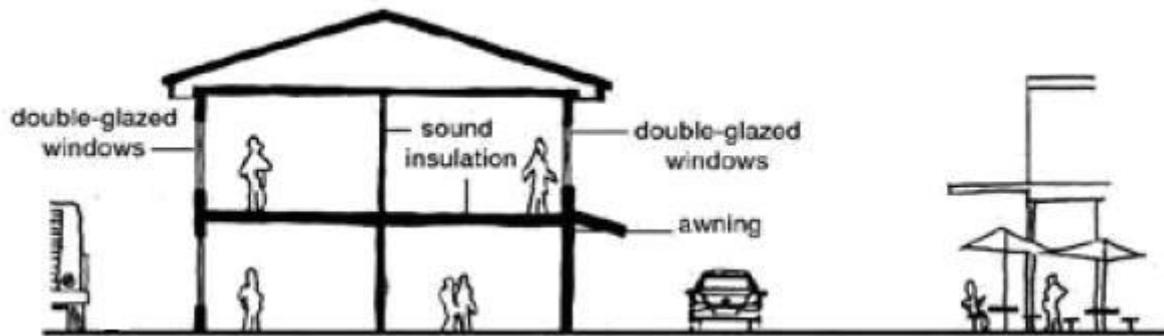


Figure 4-11: Strategies for minimising noise transmission

10. For residential development adjoining sub-arterial and collector roads, where external traffic noise level limits will be exceeded at the façade of the residential premises nearest to the noise source, the development will be deemed to comply if:
 - the principal private open space area of the residential premises complies with the relevant noise limit; and
 - the internal noise levels identified in **Table 4-7**.
11. Architectural treatments are to be designed in accordance with AS3671 - Traffic Noise Intrusion Building Siting and Construction, the indoor sound criteria of AS2107 - Recommended Design Sound Levels and Reverberation Times for Building Interiors.

4.2.10 Fencing

Objectives

- a. To ensure boundary fencing is of a high quality and does not detract from the streetscape,
- b. To encourage the active use of front gardens through provision of a secure area,
- c. To ensure that rear and side fencing will assist in providing privacy to private open space areas, and
- d. To ensure that fence height, location and design will not affect traffic and pedestrian visibility at intersections.

Controls

1. Front fencing shall be a maximum of 1m high.
2. Front fences and walls are not to impede safe sight lines for traffic.
3. Side and rear fences are to be a maximum of 1.8m high.
4. Side fences not on a street frontage are to be a maximum of 1m high to a point 2m behind the primary building façade.
5. On corner lots or lots that have a side boundary that adjoins open space or drainage, the front fencing style and height is to be continued along the secondary street or open space/drainage land frontage to at least 4m behind the building line of the dwelling. Principles for corner lots are illustrated at **Figure 4-12**.
6. On boundaries that adjoin open space or drainage land, fencing is to be of a high quality material and finish. The design of the fencing is to permit casual surveillance of the public space by limiting fence height to 1m or by incorporating see through materials or gaps for the portion of the fence above 1m high.
7. Pre-painted steel or timber paling or lapped/capped boundary fencing is not permitted adjacent to open space or drainage land or on front boundaries.
8. Fencing that adjoins mews or rear access ways is to permit casual surveillance.
9. Where there is a retaining wall on a front boundary of a lot the front fence should be setback 1m from the top of the retaining wall.
10. Consideration is to be given to potential loss of privacy and/or overshadowing to adjoining properties where side and/or rear boundary fences are to be located on top of retaining walls on the respective boundary.

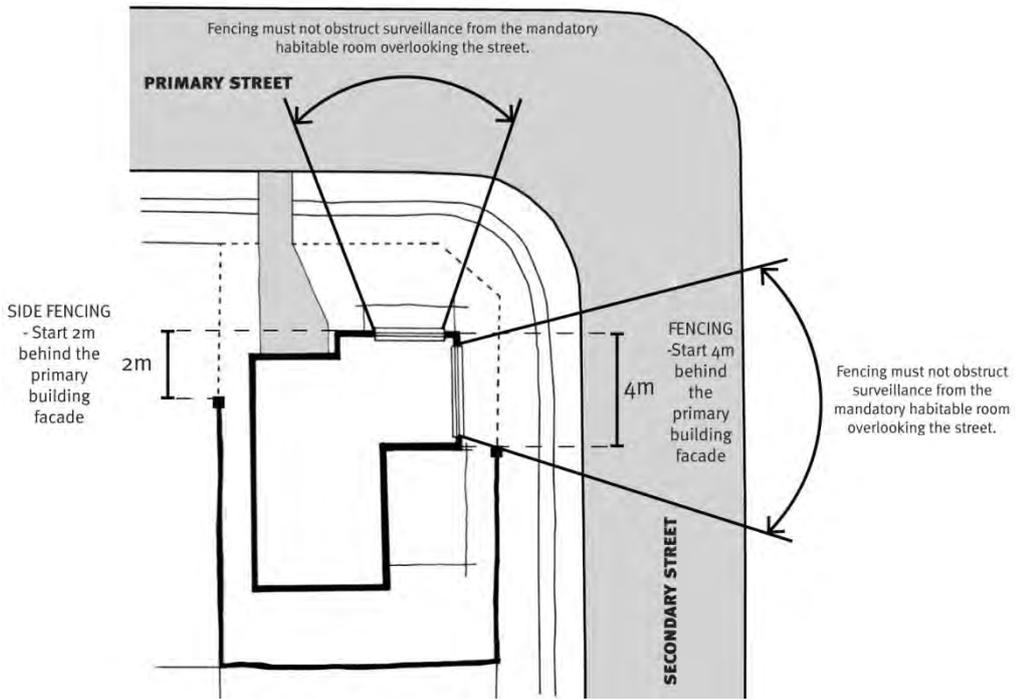


Figure 4-12: Fencing design for corner lots

4.3 Additional controls for certain dwelling types

4.3.1 Residential development adjacent to transmission easements

Objectives

- a. To minimise the visual and amenity impacts of transmission lines on surrounding residential areas,
- b. To provide for passive surveillance of land within and adjacent to transmission easements, and
- c. To maintain the privacy of dwellings adjacent to the easements.

Controls

1. Dwellings are to be set back as far as possible from the transmission easement.
2. Fencing that complies with the controls for front fences in **Section 4.2.10** is to be used on the property boundary facing the easement.
3. Side and rear fencing within easements is to allow for maintenance access to and along the easement.
4. Landscaping is to permit views into the easement at ground level.
5. The orientation of dwellings is to permit casual surveillance of the easement, while maintaining the privacy of occupants.
6. Balconies on upper floors facing the transmission easement are encouraged.
7. The principal private open space for the dwelling is to be screened from view from the transmission easement, preferably by being located behind the building line.

4.3.2 Attached or abutting dwellings

Additional controls for attached dwellings are outlined below, and should be read in conjunction with those in **Section 4.2**.

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.

4.3.3 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 4.2**, 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 4-8**.

3. The maximum site coverage control for upper floors in the relevant **Table 4-2 to Table 4-6** 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 4-8: 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 4.2**, 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 4-2 to Table 4-6** 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 4-2 to Table 4-6**, 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.

4.3.4 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 4-9**.
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 4-9: 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.

4.3.5 Controls for residential flat buildings and shop top housing

The controls in **clause 4.3.4** 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 Flat 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.

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 – Residential Flat Development; and
 - the primary controls set out in **Table 4-10**, 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 4-10: 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.	<i>Residential flat buildings:</i> 4.5m to building façade line <i>Shop top housing:</i> 0m for first floor 4m for floors above first floor
Corner lots secondary street setback (minimum)	3m	6m	2m	<i>Residential flat buildings:</i> 4.5m to building façade line <i>Shop top housing:</i> 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.

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
Car parking spaces	<p>1-2 bedrooms: 1 space (min)</p> <p>3 bedrooms or more: 2 spaces (min) – may be provided in a 'stack parking' configuration.</p> <p>Garages to be set back 1m behind the building line</p>	<p>1 space per dwelling, plus 0.5 spaces per 3 or more bedroom dwelling.</p> <p>May be in a 'stack parking' configuration.</p> <p>Car parking spaces to be located below ground or behind building line</p> <p>1 visitor car parking space per 5 apartments</p> <p>Bicycle parking spaces: 1 per 3 dwellings</p>	<p>1-2 bedrooms: 1 space (min)</p> <p>3 bedrooms or more: 2 spaces (min) – may be provided in a 'stack parking' configuration.</p>	<p>1 space per dwelling, plus 0.5 spaces per 3 or more bedroom dwelling.</p> <p>May be in a 'stack parking' configuration.</p> <p>Car parking spaces to be located below ground or behind the building</p> <p>1 visitor car parking space per 5 apartments (may be above ground)</p> <p>Bicycle parking spaces: 1 per 3 dwellings</p>
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)	<p>Covered: 3m x 5.5m</p> <p>Uncovered: 2.5m x 5.2m</p> <p>Aisle widths must comply with AS 2890.1</p>			

4.4 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. Reference should be made to the Campbelltown Growth Centres Precinct Plan (East Leppington) for the permissibility of specific non-residential uses in each zone, including the zoning table in Part 3 and the local provisions in Part 6. For some land uses, the local provisions in Part 6 specify additional requirements that must be met for Council to grant consent to these 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.

4.4.1 General requirements

Objectives

- a. To establish appropriate controls to minimise the adverse effects of non-residential development on surrounding residential development,
- b. 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,
- c. To ensure that non-residential development is appropriately located, and
- d. To avoid concentrations of non-residential uses in any particular area where the cumulative impact on residential amenity would be unacceptable.

Controls

1. Site analysis information as required by **Section 4.1.1** is to be submitted with all applications for non-residential development in residential zones.
2. 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.*

3. Non-residential development on residential zoned land is to comply with the requirements of **Sections 4.1.2 to 4.1.4 and Sections 4.2.9 and 4.2.10** of this DCP in relation to residential amenity and sustainable building design.
4. For all non-residential development, the controls relating to lots with frontages greater than 15 metres in the following sections of this DCP apply:
 - **Section 4.2.3** Front setbacks;
 - **Section 4.2.4** Side and rear setbacks;
 - **Section 4.2.5** Dwelling height, massing and siting; and
 - **Section 4.2.8** Garages, site access and parking.
5. Non-residential development is not permitted on battleaxe allotments.
6. The maximum site coverage of buildings is 60% of the total site area.
7. The minimum landscaped area for non-residential development is 20% of the total site area of the allotment.
8. 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.

9. Where a non-residential use is proposed as part of, or in association with, a dwelling (eg. a home business):
 - Parking and storage areas are to be located behind the building façade or be screened from view from the street by landscaping, and
 - Parking and storage areas are not to encroach on the private open space or landscaped area of the dwelling.
10. Where there is an inconsistency between the general requirements of this section and the specific controls in **Sections 4.4.3 to 4.4.6**, the specific controls prevail.
11. 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.
12. Non-residential development in residential zones should be similar in bulk, scale, height and siting to the surrounding buildings.
13. Finishes, materials, paving and landscaping are to be consistent with those of surrounding residential development.
14. Storage of materials and equipment is to be contained within internal storage areas or outdoor storage areas that are suitably screened, fenced and landscaped.

4.4.2 Exhibition Homes and Exhibition Villages

Objectives

- a. To ensure that exhibition homes and exhibition villages operate with minimal impact on surrounding residential areas, and
- 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 and the Campbelltown Precinct Plan under the Growth Centres SEPP.
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 at a rate of 3 spaces per exhibition dwelling.
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, and
 - 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 the relevant Council's Engineering Design Guide for Development.
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. Dedication of public roads to Council will be subject to satisfactory provision and maintenance of street landscaping.
19. 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.
20. Details of proposed signage are to be submitted with the development application.

Note: *When considering applications including signage, Council will refer to controls in other Council policies and planning controls that may be applicable.*

4.4.3 Child Care Centres

Objective

- a. To enable the provision of child care centres to address the needs of the local workforce within the zone.

Controls

1. A child care centre located on an allotment of land that is accessed from or has a boundary to Camden Valley Way or Denham Court Road will not be supported.
2. Applicants proposing child care centres should refer to Council's DCP (Part 7 (Child Care Centres) of the Campbelltown (Sustainable City) Development Control Plan 2009) for controls that are applicable to the development.

4.4.4 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, and
- 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 where possible, 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. A 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 4-11**, unless the applicant can demonstrate to the satisfaction of Council that lower rates of parking are reasonable for the particular development.

Table 4-11: 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 minimise 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 referred to in **Section 4.2.9** of this DCP.
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 (Noise Control Regulation)*. Applicants should also refer to the Office of Environment and Heritage website (<http://www.environment.nsw.gov.au>) for more information regarding noise control.

4.4.5 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, and
- 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. The minimum lot size for neighbourhood shops is 300 square metres.
 4. For neighbourhood shops, the controls relating to lots with frontages greater than 15 metres in the following sections of this DCP apply:
 - **Section 4.2.2** Streetscape and architectural design,
 - **Section 4.2.3** Front setbacks,
 - **Section 4.2.4** Side and rear setbacks,
 - **Section 4.2.5** Dwelling height, massing and siting, and
 - **Section 4.2.8** Garages, site access and parking.
 5. 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.
 6. 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.
 7. 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.
 8. 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.
 9. On corner sites, shop fronts are to wrap around the corner and zero setbacks are permitted.
 10. Entrances are to be visible from the street and well lit.
 11. The site should not gain direct access to:
 - A road with clearway or other parking restrictions; or
 - A restricted access road (sub-arterial or arterial).
 12. 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.

13. One car parking space is to be provided for every 30m² of gross floor area,
14. Parking spaces are to be provided on site or in dedicated on street parking constructed to Council's standards.
15. The design of the building and parking areas is to provide suitable access for people with disabilities and service deliveries.
16. Bicycle parking must be provided in a location that is secure and accessible with weather protection for employees.
17. Car parking must be clearly signposted to indicate its availability from the street.
18. Plant and equipment (particularly cooling or heating plant), is to be located so as to not cause noise annoyance to neighbours. A noise impact assessment may be required to be prepared and submitted to Council.
19. 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.
20. All goods storage is to be internal.

4.4.6 Seniors Housing

Objectives

- a. To ensure that the design of seniors housing is consistent with the character of surrounding residential areas.

Controls

1. Applications for seniors housing are to comply with the controls in **Section 4.3.4** of this DCP for multi-dwelling housing, or controls for residential flat buildings in **Section 4.3.5**, as appropriate to the proposed development.



5.0

*Centres Development
Controls*



5.1 Introduction

This Part of the DCP outlines principles, objectives and design controls to achieve quality, consistency and coordination in the development of the local centre. It applies to land identified in the Location of Centres figure (**Figure 5-1**).

The objectives of this Part of the DCP are to:

- a. Create vibrant, functional centres that are a focus for community activity and interaction;
- b. Establish design principles that achieve high quality coordinated urban design outcomes and high standards of amenity;
- c. Encourage social interaction and the development of places that are safe and desirable for all users;
- d. Provide flexible controls to accommodate change within the centres over time;
- e. Ensure that development in centres takes advantage of access to public transport;
- f. To establish the function of the Local Centre;
- g. To promote the northern section of Heath Road as the main activity spine;
- h. To ensure that the centres provide for a range of retail, commercial and community related uses that serve the needs of the local population;
- i. To ensure that centres are located to maximise viability and walkability; and
- j. To provide a hierarchy and function of local and neighbourhood centres (refer to **Figure 5-1**).



Figure 5-1: Location of Centres

5.2 Development principles

The following development principles apply to all centres to which this part of the DCP applies. The principles should be considered by applicants for all applications for development in centres. The controls in **Section 5.3** are based on these principles, and where an application does not comply with the controls, Council will consider whether the proposed development is consistent with the relevant development principles when determining the application.

5.2.1 General

1. The location of centres shall be in accordance with **Figure 5-1**.
2. The local centre is to be located within Campbelltown LGA and is to contain a mix of retail, commercial and community land uses.
3. A maximum gross floor area of 16,500m² applies to retail premises within the B2 Local Centre zone.
4. All local and neighbourhood centres are to contain a mix of large floorplate and specialty retail uses.
5. Neighbourhood shops, located outside the defined centres, are encouraged where they serve a particular market need and can be integrated with surrounding land uses. Out of centre retailing is not encouraged where it is inconsistent with the ILP or where it would jeopardise the function and viability of the local and neighbourhood centre.

5.2.2 Function and land use mix

- a. A range of retail, commercial, entertainment, recreation and community uses is encouraged to serve the needs of the wider community and promote active and vibrant centres.
- b. Mixed use developments containing residential uses on upper floors are located in the centre to take advantage of access to transport and services, and to increase levels of activity within the centre.
- c. Employment opportunities are maximised within the centre.
- d. The ground floor of all buildings is occupied by retail, commercial, community, entertainment or other active uses, particularly fronting the main street and all open space.
- e. Fine grained and intensive retail and commercial uses that present an active street frontage are located along the main street.

- f. Building design integrates internal spaces (i.e. the interior of shops and other businesses) and the public domain (i.e. the streets, plazas and parks), and facilitates active use of footpaths by cafes and the like.
- g. The needs of health and aged care providers, facilities for young people, civic and emergency services are met within the centres.

5.2.3 Design layout

- a. Any main street acts as the focal point for the retail and commercial activity in the centre and is of a width and design that encourages pedestrian activity and a low speed traffic environment.
- b. Large format retail premises (such as supermarkets and discount department stores) have pedestrian access to any main street, and do not present blank walls or inactive facades to any main street.
- c. The importance of car parking to the viability of retailing is recognised, but does not dictate the location and orientation of retail premises at the expense of an active public domain.
- d. The core retail areas and fringes are clearly defined by the mix of land uses and intensity of development that integrates with surrounding residential areas.
- e. Facilities including loading, waste storage, servicing and other infrastructure are to be co-located as much as possible to maximise the efficient use of space while ensuring these facilities do not adversely impact on the amenity of surrounding sensitive land uses.
- f. An interconnected street block network with small block sizes and mid-block connections maximises pedestrian movement and connections to key destinations including parks, plazas and transport nodes.
- g. Noise and amenity considerations inform the layout and location of various uses, particularly residential uses.
- h. The street network emphasises sight lines to local landscape features, places of key cultural significance, civic buildings and public open space.
- i. Opportunities for crime are minimised through appropriate design and maintenance, in accordance with the principles of Crime Prevention Through Environmental Design in **Section 2.6** of this DCP.

5.2.4 Public domain

- a. The streetscape creates a high amenity pedestrian environment through solar access, shade and shelter, good natural light, landscaping and footpath design, and management of vehicular traffic.
- b. Parks and plazas are a focal point for people, businesses and community activities and are designed to ensure adaptability and flexibility in use and function over time.
- c. High standards of design and landscaping, based on consistent public domain design standards, promote the character and attractiveness of the centre and create a sense of ownership and pride for businesses and residents.
- d. Activities that activate the streets, the park and plaza draw people to the centre not only to shop, but for entertainment and recreation, such as markets, concerts and outdoor community events.

5.2.5 Built form

- a. A range of building heights are permitted, up to maximum heights to control amenity and overshadowing, to create a varied skyline.
- b. Building heights transition around the fringes of the centre to integrate the built form with adjacent residential areas.
- c. Building heights and setbacks are related to street widths and functions to promote a comfortable urban scale of development.
- d. Building separation and orientation considers privacy and amenity, particularly for residents.
- e. Building heights take into account view lines and solar access to the public domain.
- f. Streets and open spaces are defined by buildings that are generally built to the street edge, have a consistent street wall height and provide a continuous street frontage, particularly along the main street and fronting the town square.
- g. A high quality built form and energy efficient architectural design promotes a 'sense of place' and contemporary character for the centre.

5.2.6 Transport

- a. The local centre is pedestrian and public transport orientated with walking and cycling taking priority over vehicles, while allowing for vehicle movement and access in a low speed traffic environment.

- b. Any main street carries sufficient traffic volumes, and has provision for on-street parking, to support retail and commercial uses that front it.
- c. Streets are wide enough to ensure pedestrians, cyclists and vehicles can move around the centre, to encourage activity on the street and to enable a clear relationship between development on either side of the road.
- d. Traffic signals and pedestrian crossings facilitate easy movement of pedestrians throughout the centre.
- e. The street layout allows easy access to and within the centre while allowing for regional traffic to by-pass the centre.
- f. Vehicle access to parking and loading areas is via secondary streets rather than the main street or other active streets.

5.3 Development controls

5.3.1 Streetscape and architectural design

Objectives

- a. To achieve high standards of streetscape amenity and building design, and a consistent streetscape,
- b. To encourage pedestrian activity in the streets of the local centre and other public spaces, and
- c. To clearly define the character of any main street and other elements of the public domain.

Controls - active frontage and street address

1. Active street fronts, built to the street boundary, are required on the ground level of all retail and commercial development fronting any main street and where applicable, public open space.
2. The initial development application for development in the local centre is to include a master plan showing:
 - The location of the proposed development site in the context of the overall local centre, and relative to key features of the centre including the main street and other public spaces such as parks, squares and plazas.
 - Active street frontages and safe pedestrian movements to and within the centre.
 - Proposed vehicle and pedestrian access routes within and to the centre and how the centre will connect with the bus network to encourage use of buses, walking and cycling.
 - Public domain landscape and urban design plan for the centre which establishes:

- i. Preferred materials, colours and finishes for paving and footpaths and other public spaces,
 - ii. Preferred street tree species,
 - iii. Specifications for street furniture including seating, lighting, signage, bike facilities, and
 - iv. Public art.
3. Residential, commercial and retail uses on the upper floors are to be designed to overlook streets and other public places to provide passive surveillance.
4. The ground and first floor of all buildings on active street frontages are to be built to the front property boundary (ie. a zero front setback) to define the street edge. If the first floor contains residential uses, internal spaces may be set back where balconies are built to the property boundary.
5. The primary means of pedestrian access to retail, commercial and upper floor residential uses is to be from the street rather than from the rear or internal areas of the building. Building entries should be prominent, clearly identifiable and accessible.
6. Vehicle access to basement level parking or parking located behind buildings must not be from active street frontages.
7. All large format retail premises and decked parking areas are to be sleeved with uses that provide an active frontage to the street.
8. Blank walls visible from the public domain are to be avoided.
9. Retail shops are to have a variety of shop frontage widths and articulation.
10. Restaurants, cafes and the like are encouraged to provide openable shop fronts and to make use of footpath areas on active streets.
11. On corner sites, active shop fronts are to wrap around the corner and address both street frontages.
12. Developments that have multiple street frontages are to consider entrances to internal/upper floor uses on each street frontage.
13. In mixed-use buildings, separate access from the street is required for retail, commercial and residential uses.
14. Entrances are to be visible from the street and well lit.
15. Security shutters and grilles are not encouraged and any proposed security devices are to be transparent or at least 80% open.
16. All buildings on active street frontages are to include awnings above the ground floor for the full length of the street frontage.

17. Parking is to be screened by buildings, from the main street and other streets with active frontages, or be below ground.

Controls – building facades and awnings

18. Building facades at street level on active frontage streets are to have a minimum of 80% glazing.
19. Translucent or obscured glazing is generally not permitted on active street frontages.
20. Signage and advertising material are not to obscure glazing where possible.
21. At night, internal lighting is to fall onto the footpath, or under-awning lighting is to be provided.
22. Solid elements are preferably to be finished with rendered masonry, tiles or face brick.
23. Coordinated colour schemes are required, and colours and materials are to be consistent with adjoining buildings and the general character of the street.
24. Façade articulation is encouraged above the ground floor through the incorporation of balconies, openings and other design elements that modulate the façade, providing rhythm and interest.
25. Articulated corners are to be provided to building facades on active street frontages. Articulated elements may include verandahs, awnings, upper level balconies, use of materials or roof designs that accentuate the corner. Articulation elements are to address street frontages.
26. Design of corner buildings on the ground floor is to facilitate free pedestrian movement. Open corners at ground level are encouraged.
27. Building height, massing, materials and parapet/roof expression should be used to accentuate corner elements. Council may consider proposals on street corners that do not meet relevant height controls where the design of the building accentuates the corner, creates a landmark and is well designed.
28. Awnings should be a minimum height of 2.7m (3.2m desirable) above footpath level and generally consistent in form with adjacent awnings.
29. The front fascia of the awning is to be set back a minimum of 500mm from the kerb of the street carriageway, including at street corners.
30. Awnings are generally to project horizontally from the building façade and be horizontal along the length of the façade. Stepped awnings are appropriate on sloping streets.
31. The design of awnings is to be generally consistent with adjoining buildings.

Note: Any awning over a public footpath will require a Public Road Activity Approval to be issued by the Consent Authority.

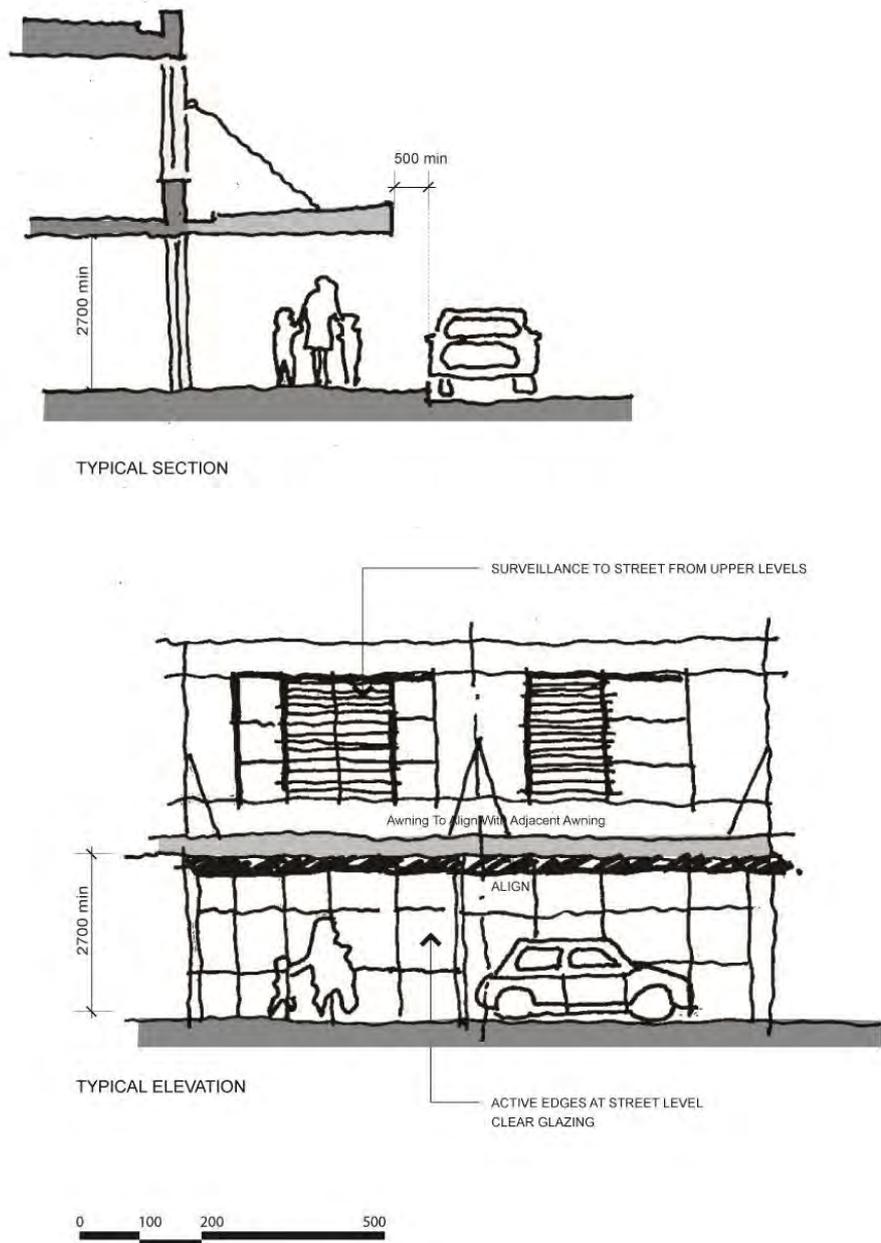


Figure 5-2: Awnings

Controls – Landscape design and public spaces

32. A public domain landscape and urban design plan for the centre is required which establishes:
- Preferred materials, colours and finishes for paving of footpaths and other public spaces,
 - Preferred street tree species,
 - Specifications for street furniture including seating, lighting, signage.

33. Development applications within the centre that propose works in public streets to be undertaken by the developer are to be consistent with the public domain landscape and urban design plan.
34. All signage and advertising is to be designed in a co-ordinated manner (refer to **Section 5.3.4** for detailed controls).
35. Parks and plazas are to act as a focal point for the centre and community activities and are to be designed to ensure adaptability and flexibility in use and function over time.
36. Plant selection should take into account the following:
 - species which complement remnant native vegetation,
 - level of on-going maintenance,
 - potential impacts on road and footpath pavements,
 - focus on hardy, drought tolerant, easily maintained species,
 - scale in relation to the function of the area,
 - solar access and shade, and
 - contribution to the character of the local centre.
37. Street tree and open space planting is to provide generous shade for pedestrians in summer and allow for sunlight penetration to street level in winter.
38. All paving materials must conform to relevant standards for durability, non-slip textures, strength and surface treatment to withstand use by light automobiles, service vehicles, pedestrians and bicycles.
39. Paving materials should also be certified colour stable for a period of at least 20 years to ensure a reasonable match to existing paving when damaged sections are replaced.
40. All paved areas should be adequately drained and follow 'best practises' in installation, including sub-surface preparation and stormwater management.
41. All paved areas must be properly designed to facilitate use by the elderly and disabled.

5.3.2 Solar access, weather protection and energy efficiency

Objectives

- a. To encourage energy efficient building design and operation that complies with statutory benchmarks in sustainable development,
- b. To minimise energy and resource consumption during construction and operation, and
- c. To consider local climatic conditions and ensure that the design of centres maximises amenity and activity within the public domain during a wide range of weather conditions.

Controls

1. Parks and plazas are to receive sunlight on a minimum of 50% of their site area between 11am and 2pm on June 21st.
2. Building envelopes are to allow for north-south streets to receive 2 hours sunlight between 9am-3pm on June 21st on a minimum of 50% of the eastern or western footpaths; and
3. Building envelopes are to allow for east-west streets to receive 2 hours of sunlight between 9am-3pm on June 21st on a minimum of 50% of the southern footpaths.
4. Continuous awnings are required to be provided along the ground floor street frontage on active street frontages in accordance with **Figure 5-2** and all buildings fronting public open space or squares.
5. The design of awnings is to comply with the controls in **Section 5.3.1**, and:
 - Ensure that the solar access controls in controls 1, 2 and 3 above are achieved.
 - Ensure that protection from rain and summer sun is provided to a minimum of 75% of footpath areas.
6. The design and orientation of buildings is to consider prevailing south-westerly winds in winter, and active frontages are to be located to maximise shielding from strong winds by buildings.
7. Uses that are likely to occupy footpaths should be generally located on the southern or western sides of active streets to take advantage of winter sun and protection from winter winds.
8. Loading, parking and service areas are preferably to be located on the southern or western sides of buildings, except where the western or southern side of a development site adjoins an active street.
9. Residential development within the local centre is to be generally oriented with living areas and balconies facing north.
10. Residential development within the local centre is to be designed to maximise natural cross-ventilation.
11. Large expanses of west-facing glazing, or open shop-fronts facing west, are to be avoided unless the glazing or shop-front is shielded from afternoon sun in summer and cold winter winds by other buildings or awnings.
12. Each retail or commercial tenancy is to be separately metered or sub-metered for electricity, gas and water (hot and cold).
13. Hot water is to be supplied from solar or heat pump systems. Where these systems can not deliver sufficient hot water to meet demand (eg. If the roof area is insufficient), gas water heating is preferred. Rainwater collected from roof areas is to be used for non-potable uses including toilet flushing, laundries and cleaning.

14. All new and refurbished Retail, Commercial and Mixed Use development over the value of \$10 million, shall achieve a minimum Greenstar rating of 6 stars as per the applicable Green Building Council of Australia “as built” rating tool.
15. To achieve ESD objectives for new development referred to in control 15:
 - An accredited Greenstar Professional from Green Building Council of Australia (GBCA) is to be engaged on the project.
 - A schedule of achievable Greenstar credits prepared and certified by the accredited Greenstar Professional is to be provided at the lodgement of the development application.
 - Proposed Greenstar measures must be shown on the development application documents.
 - Where the development consists of mixed uses, non residential components of the development shall achieve a minimum NABERS rating of 4 Stars.
 - Certificates from suitably qualified structural, hydraulic and mechanical consultants must be provided certifying the ability to incorporate the Green Star and or NABERS commitments at the lodgement of the development application.
16. External pedestrian circulation areas are encouraged, rather than internal mall-type buildings. Development that includes internal pedestrian circulation areas should be designed to enable natural ventilation and lighting when weather conditions are appropriate. This may include measures such as openable windows, louvres, skylights and openings on the building perimeter to facilitate natural air circulation. Temporary, moveable or adjustable shade structures are encouraged to provide protection to outdoor or semi-indoor pedestrian circulation areas.
17. Retail and commercial tenancies are to be capable of natural ventilation and have access to natural light.
18. External glazing or shade structures to commercial and retail development shall be capable of controlling solar ingress into internal spaces. Where necessary, solar ingress control systems shall be dynamically operable via climate control systems for individual tenancies.
19. Materials used for construction shall have low Volatile Organic Compounds (VOC) emissions content.
20. Timber building materials should be sourced from sustainable suppliers such as products certified by the Forestry Stewardship Council (FSC).
21. For construction of developments with a value more than \$10 million, a Construction Environmental Management Plan is to be submitted prior to the issue of a construction certificate, detailing:
 - Measures to reduce the consumption of materials and resources during construction.
 - The use of recycled or reclaimed materials in construction.

- Construction waste minimisation measures, including opportunities to re-use materials on site.
- Measures to minimise the use of water and maximise water re-use during construction.
- The embodied energy of the main construction materials, options considered to reduce the embodied energy of materials and (if applicable) the reasons for not choosing materials with the least embodied energy.
- Training, monitoring and reporting on the compliance of construction contractors with the requirements of the CEMP.

5.3.3 Building bulk, scale and design

Objectives

- To ensure a high standard of building design,
- To ensure that buildings are appropriate to the scale and character of the centre, and
- To provide for appropriate air circulation and solar access, and to maintain view corridors to and through the centre.

Controls

- The maximum allowable depth of residential building envelopes is 22m (max 18m glass line to glass line).
- Floors above the second floor are to be set back a minimum of 4 metres from the boundary of the property with any public street.
- Larger upper floor setbacks from the street may be required to:
 - achieve adequate solar access at street level;
 - maintain the privacy of dwellings;
 - maintain view corridors; or
 - minimise the bulk of the building.
- Zero side setbacks are required on the ground floor and first floor and the side wall shall contain no windows or other openings (except where the side setback is to a public street, where the façade controls in **Section 5.3.1** apply).

Note: Control 2 above prevails in relation to setbacks to secondary streets in floors above the second floor.

- Where windows, balconies or other openings are to be provided on upper floors, the minimum side setback for upper floors is 6 metres from the side property boundary and the minimum separation distance between habitable rooms or balconies is 12 metres.

6. For floors above the fourth floor, the minimum separation distance between buildings is to be 18 metres.
7. Buildings are to include distinctive roof forms that contribute to the architectural design of a building. Elements such as parapets, skillion roofs and eaves should be utilised where appropriate.
8. Roof forms should not result in excessive bulk or overshadowing.
9. All plant and lift over-runs are to be concealed within roof forms to minimise visual impact.
10. The use of roof areas for private / communal open space and gardens is encouraged. Such spaces should be designed to minimise privacy impacts on neighbours.
11. Ground floors are to have a minimum floor to ceiling height of 3.3 metres.
12. First floor commercial and retail spaces are to have a minimum floor to ceiling height of 3.0 metres.

5.3.4 Signs

Objectives

- a. To ensure that signs and advertising structures are unobtrusive and coordinated in their appearance and design, and complement buildings and the streetscape, and
- b. To limit the purposes for which signs may be erected to those that identify businesses and buildings.

Controls

1. Signs are permitted within centres where they advertise the business carried on at a particular property or identify the name of a building.
2. Signs that advertise particular products, whether they are for sale within the premises or not, are not permitted.
3. Signs are to be designed and located to:
 - Be visually interesting and have a high level of design quality,
 - Be integrated with the architecture and structure of the building on which they are located;
 - Be consistent with the scale of the building or the property on which they are located.
 - Consider existing signs on the building, adjoining buildings or elsewhere in the streetscape, and not obscure views of existing signs or the potential for signs to be viewed on adjoining premises;
 - Not cover glazed surfaces;
 - Project minimally from the building.

4. Signs are not to be supported from, hung from or placed on other signs.
5. The preferred locations for business or building identification signs are shown on **Figure 5-3** and include:
 - Fascia signs, located on the front or side fascia of an awning;
 - Under-awning signs;
 - Flush wall mounted signs (e.g. above windows or doors);
 - Projecting wall signs, where there is no awning or the fixture of the sign to the awning is not appropriate due to the style of the awning.
6. Awning fascia signs are not to project within 500mm of the kerb.
7. The minimum clearance from the footpath to the bottom of any sign (apart from flush mounted wall signs) is 2.4 metres.
8. Projecting wall signs and under-awning signs are to be perpendicular to the building façade and horizontal.
9. Above awning signs are not permitted.
10. Flush mounted building identification signs are permitted above the first floor on the building parapet only where they are integrated with the design of the building and where they do not project more than 100mm from the building. The maximum area of the sign face is 3m².
11. The maximum number of signs on each façade of any retail or commercial tenancy is three, and only one sign of each type (fascia, under-awning, projecting wall or flush mounted) is permitted on each façade.
12. Under-awning or projecting wall signs are to be a minimum of 3.5 metres apart.
13. Free standing signs (signs that are not affixed to a building) are not permitted on active street frontages.
14. Flashing, animated or bright neon signage is not permitted.
15. All buildings are to have clearly displayed and legible street numbering.
16. The location of signs is not to obscure views of traffic signs or traffic signals, or have the potential to cause confusion with traffic signs or signals (e.g. signs that look like traffic signals or stop signs located near a public road).

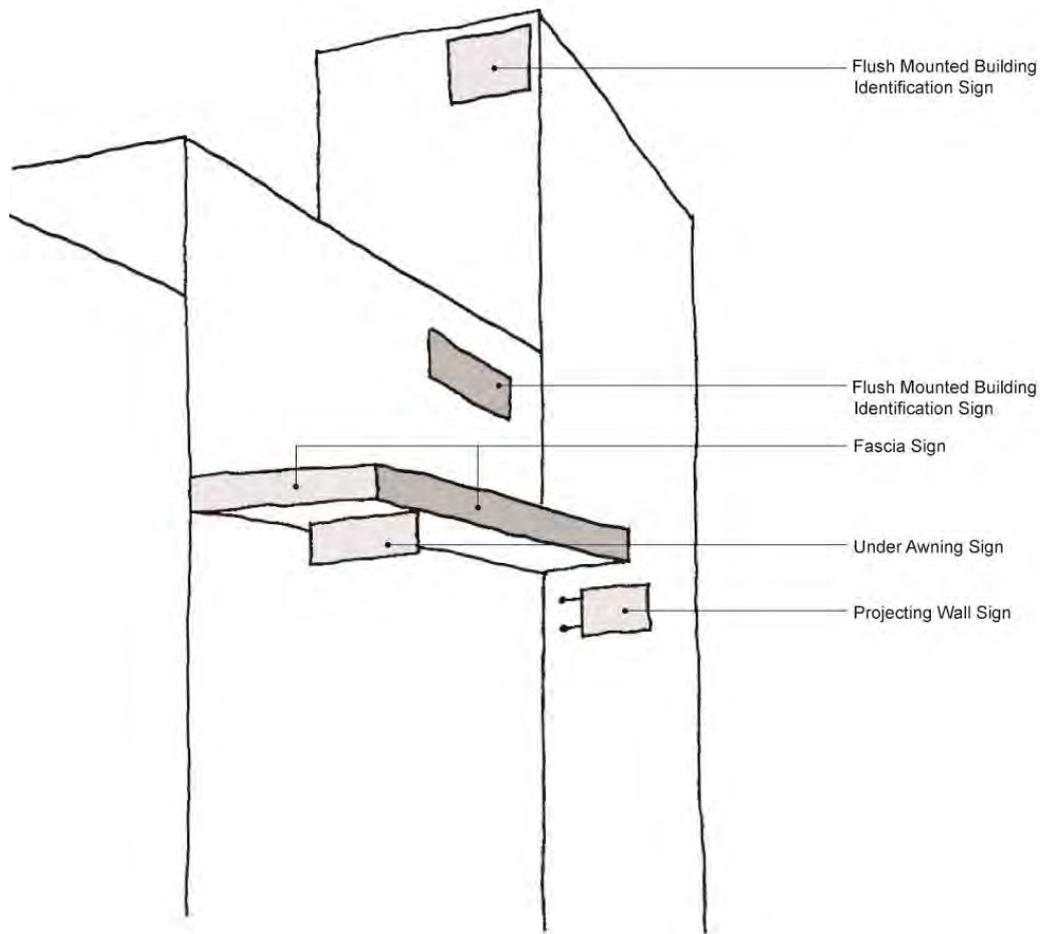


Figure 5-3: Preferred locations for signs

5.3.5 Acoustic and visual privacy

Objectives

- a. To ensure that appropriate standards of amenity and privacy are maintained for residents in the local centre, and
- b. To ensure that noise sources such as road and rail traffic do not impact on the amenity of residents or detract from the character of the local centre.

Controls

1. Development in the local centre must comply with the Office of Environment and Heritage noise attenuation requirements and the controls for visual and acoustic privacy in **Section 4.2.9**.
2. A combination of the following measures is to be used to mitigate the impacts of road traffic noise within the centre:
 - setbacks and service roads;

- internal dwelling layouts that are designed to minimise noise in living and sleeping areas;
- changes in landform;
- higher than standard fencing constructed with a suitably solid mass; and
- locating courtyards and principal private open space areas that will comply with the criteria in **Section 4.2.9** away from the noise source.

5.3.6 Safety, surveillance and maintenance

Objectives

- To provide for a safe and attractive local centre with high levels of activity and amenity, and
- To ensure that the design quality and amenity of the centre is maintained.

Controls

- The principles of Crime Prevention through Environmental Design (CPTED) are applicable to all development within centres.
- Balconies, terraces and other private open spaces are to be oriented to public open spaces to optimise casual surveillance.
- The design of all buildings, fences and landscape elements shall take sight lines, both horizontal and vertical, into consideration to minimise blind spots and promote a sense of security.
- All streets, alleys, bike paths and pedestrian walkways must be adequately lit at all times.
- Lighting is to be installed on all circulation routes and major pedestrian thoroughfares, including under-awning lighting on all awnings.
- Large open areas such as parking lots and public open spaces are to be floodlit.
- Lights should be positioned so that they highlight landmarks and other special building features.
- Lighting fixtures must be sturdy, durable, vandal resistant and easily maintained.
- Fixtures visible from the public domain should be mounted at a height of at least 2.7 metres, and their appearance should complement the architectural and landscape character of the location.
- The installation of lighting should take into account and minimise its impacts on surrounding commercial premises and residential properties.
- Durable and easily cleaned materials should be selected in all areas exposed to the public, and all masonry surfaces to a height of 3 metres should be protected with an approved anti-graffiti treatment.
- Fencing and street plantings should be designed to achieve a balance between screening and security/surveillance.
- Traffic calming measures are to be installed to ensure pedestrian safety.

14. Safety features such as tactile surfaces and handrails are to be provided in appropriate locations.

5.3.7 Site servicing

Objectives

- a. To ensure that servicing of premises within the centre is efficient, and
- b. To minimise the amenity impacts of servicing activities including loading/unloading, waste storage and collection.

Controls

1. Services and structures such as transformers, waste collection, storage and deposit areas, and loading bays are generally to be located to the rear of the property. Where this cannot be achieved services must be integrated into the overall design of buildings and landscaping of the street front through screening measures.
2. Service areas are not permitted on active street frontages or adjacent to public parks, plazas or squares.
3. Service/delivery vehicles should access service and loading areas using secondary streets.
4. The following controls relate to the screening of services:
 - All services, transformers, storage and deposit areas, and wheeled rubbish bins must be effectively screened from view.
 - Screening walls or plant masses shall be at least 2.4 metres high.
 - All screening shall be designed to allow free and easy access to the facilities, as required to permit maintenance and checking by all relevant parties, including service authorities, Council officials, tenants and property owners.
 - Screening wall materials and plants shall be selected which have no adverse impacts on the operation of the facilities.
5. Service access is permitted from rear lanes, side streets and right of ways for the use of parking, loading docks and waste collection areas.
6. Adequate space should be provided for the movement, unloading and loading of service vehicles. Council will discuss the likely size of vehicles attending the site with the applicants as part of pre-application planning.
7. Structures shall be painted according to the required standards of the relevant service authority, in colours that limit their visual impact.

8. All air conditioners must be located in areas where any noise and dripping condensation will have minimal impact on the public domain. No roof or wall mounted air conditioners shall be visible from public areas.
9. Television antennas and other telecommunication devices are not to be visible from the street.

5.3.8 Traffic circulation, parking and access

Objectives

- a. To ensure that vehicular traffic (including cars, public transport and service vehicles) is able to access the Centre, including retail destinations, service areas and railway stations or other transport interchanges,
- b. To minimise conflicts between the pedestrian oriented areas of the centre and those areas required for vehicular traffic, and
- c. To minimise the land area required for car parking and to encourage the efficient utilisation of car parking for multiple purposes.

Controls

1. On-site car and bicycle parking is to be provided in accordance with the standards set out in **Table 5-1**.

Table 5-1: Car parking requirements in centres

Land use	Car parking requirements
Business premises/office premises	1 space per 35m ² GFA
Retail premises	1 space per 30m ² GFA
Food and drink premises	1 space per 20m ² GFA
Residential development	Refer to Section 4.6.1

2. In mixed use developments, dedicated on-site parking is to be provided for the residential component of the development in accordance with the controls in **Section 4.10**.
3. Secondary streets, rear lanes and right of ways are to be used to provide access to parking areas, loading docks and waste collection areas. Lanes will need to accommodate heavy vehicles where access to loading areas and waste collection is required.
4. On-street parking is to be provided on all streets to create a buffer between pedestrian and street traffic and promote casual surveillance.
5. Basement, semi-basement or decked parking is preferred over large expanses of at-grade parking.
6. At grade or decked parking areas are to be located behind building lines. 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.

7. Outdoor parking areas are to be screened and landscaped to minimise their visual dominance within the centre.
8. At grade car parks must contain shade tree plantings using tree species and spacing of trees to demonstrate that tree canopies are capable of covering 50% of the car space surface area (excluding car park travel lanes). Submitted plans are to illustrate the estimated extent of tree canopies at maturity.
9. Bicycle parking is to be in secure and accessible locations. Bicycle parking for employees is to have weather protection.
10. The parking area per vehicle is to be in accordance with AS 2890:1.
11. Streets that have active frontages are to be designed generally in accordance with **Figure 5-4**, and are to have the following minimum dimensions:
 - Footpaths (from back of kerb to the boundary of the road reserve) are to be a minimum of 4.5 metres wide.
 - Carriageways are to be a minimum of 6.5m wide with sufficient capacity for kerbside parking/cycle lanes and at least one traffic lane with a minimum width of 3.5 metres.
12. The design of the local centre streets is to effectively transition from the design required within the local centre to the design required in the surrounding urban areas.
13. Where the kerb side lane is a dedicated parking lane (ie. not used as a traffic lane during peak periods), the kerb and footpath is to extend into the parking lane at signalised intersections and key pedestrian crossing locations.

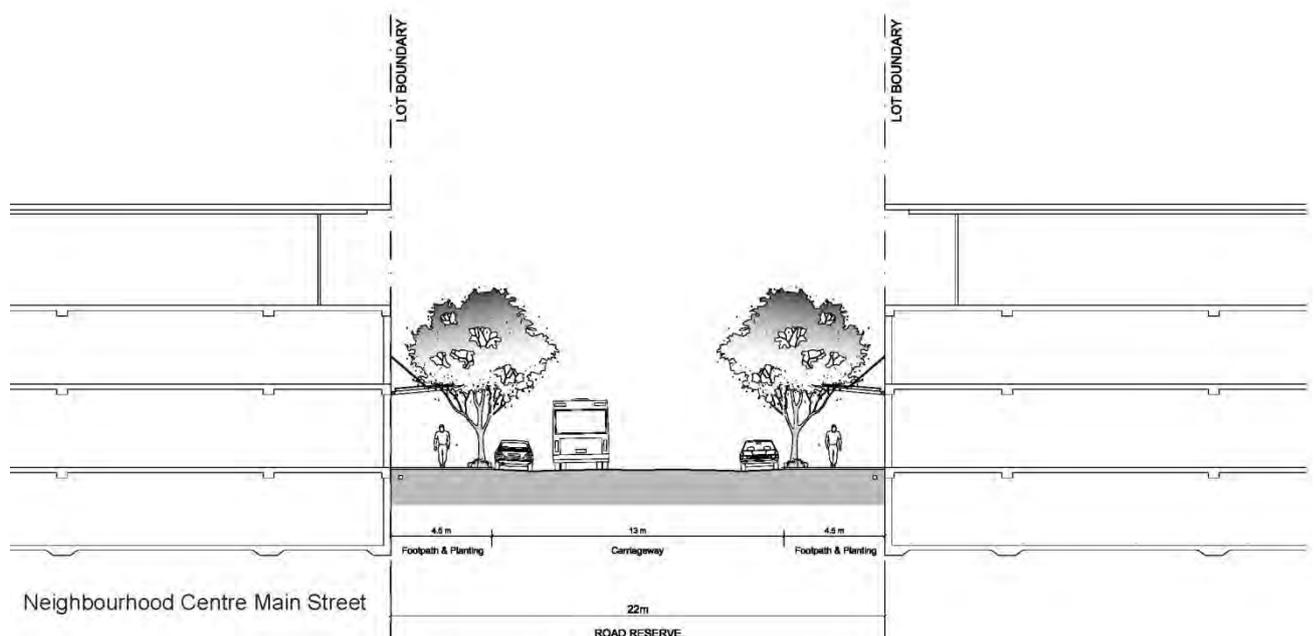


Figure 5-4: Design of main streets

5.3.9 East Leppington Local Centre

Objectives

- a. To facilitate the development of local centre retail, mixed use areas and other commercial and community uses which provide access to shopping, employment and services for residents of the East Leppington Precinct,
- b. To provide a visual gateway to the East Leppington Precinct,
- c. To encourage a high standard of development and a quality and attractive environment within the local centre,
- d. To create an urban form then encourages pedestrian linkages and active street frontages, and
- e. To identify key urban design principles for the local centre.

Controls

1. The design, layout and configuration of the local centre should be consistent with the relevant objectives of the DCP and be to the satisfaction of Council.

Built Form and Land Use

2. The local centre is to be located to the north of the Heath Road entry and act as a visual 'gateway' to the Precinct.
3. The local centre (zone B2 Local Centre) shall have a maximum retail gross floor area of 16,500m².
4. Active street frontages are encouraged to be provided to Heath Road. Public places within the centre are encouraged to be defined by active frontages.
5. Built form adjacent to Bonds Creek riparian corridor is to address the creek corridor to maximise amenity and contribute to passive surveillance.
6. Development on the southern side of the local centre is to respond to the Heath Road major Precinct entry.
7. Residential uses within the local centre are encouraged to include shop top housing, for the purpose of providing active street frontages only.

Transport, Access and Parking

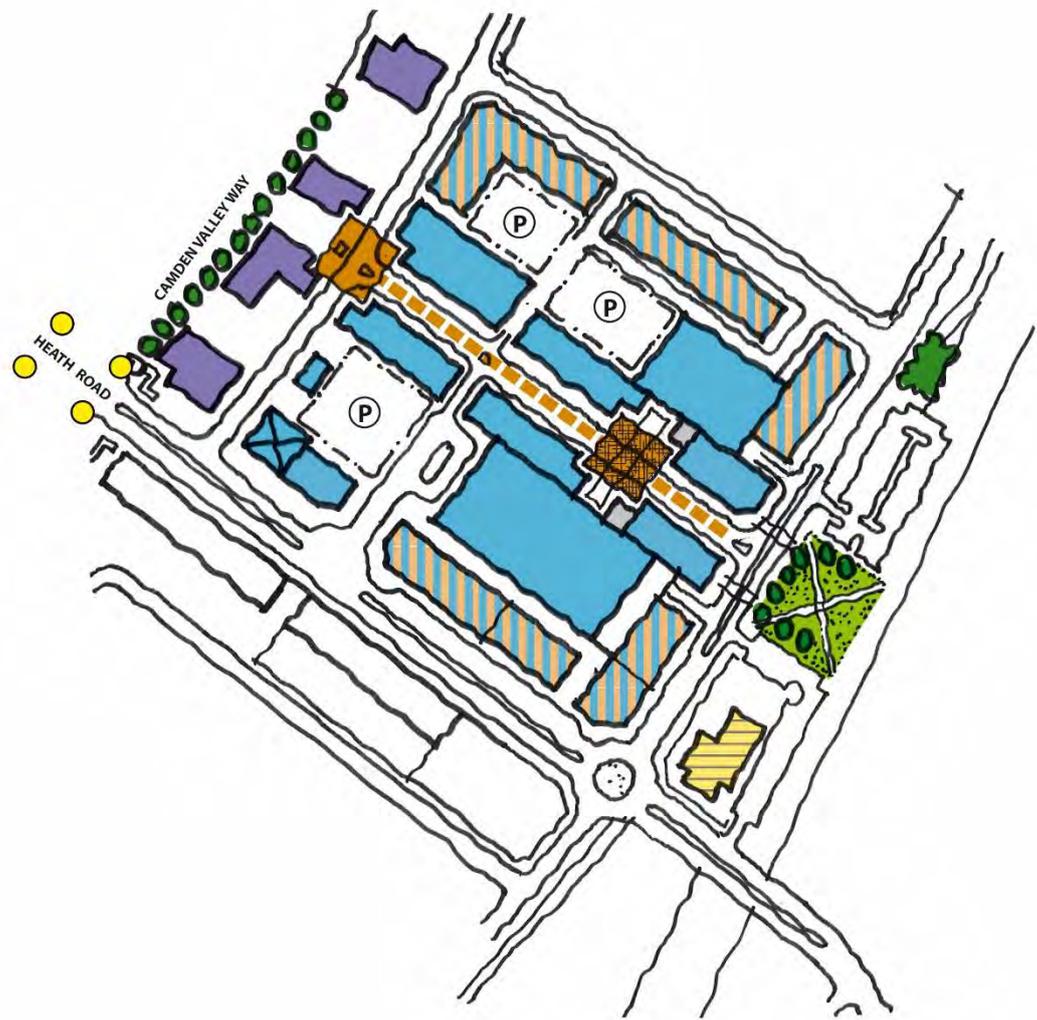
8. Where possible, a retail Street shall be provided within the local centre.
9. An east-west link is encouraged to be provided within the local centre and link retail activity to public open spaces.

10. View corridors to open space, riparian corridors and the community centre shall be considered in the design of the local centre.
11. On-street parking shall be provided on any internal retail street, except where turning lanes or bus bays prevent parking.
12. Vehicular access to the local centre is to be primarily via perimeter streets.
13. Loading areas that are adjacent to residential zoned lands are to include visual and acoustic screening to protect the amenity of residents.
14. Off-street parking areas are to be appropriately screened from public streets and residential areas.
15. Off-street, surface parking areas are to provide an adequate amount of shade, either by trees, canopy shades or possibly being located in undercroft spaces, to provide amenity and minimise microclimate (heat island) impacts.

Public Domain

16. Public open spaces should be provided and located to maximise solar access to the public domain. Refer to **Figure 5-5**.
17. A wider footpath or increased setback should be considered on the southern side of the east-west link, to maximise solar access and opportunities for outdoor retail activities (such as outdoor cafes and dining).
18. Street tree planting may include appropriate use of exotic species in key locations to provide contrast to the 'rural, native character established elsewhere throughout the Precinct.
19. Good quality street furniture, lighting, paving, planting and the like should be provided.

Note: A possible layout for the Local Centre is provided in **Figure 5-5**.



Example of Local Centre Layout

- | | | | | | |
|---|--------------------|---|-------------------------|---|---------------|
|  | Retail / Shops |  | Public Space |  | Open Car Park |
|  | Mixed Use |  | Town Park | | |
|  | Possible Mixed Use |  | East-West Link | | |
|  | Community Centre |  | Signalised Intersection | | |

Figure 5-5: Example of Local Centre layout

6.0

Site Specific Controls



Site Specific Controls

6.1 Scenic Hills and Associated Visual Impacts

Objectives

- a. To ensure *'The Scenic Hills Area'* is protected and retains its existing rural, visual character as viewed from east of the Major Ridge line shown in **Figure 6-1**,
- b. To provide appropriate development controls for *'Land Associated with the Scenic Hills'* as shown in **Figure 6-1**,
- c. To ensure residential development in the Land Associated with the Scenic Hills is developed in a manner that does not adversely impact the visual quality of the Scenic Hills Area,
- d. To ensure that urban development in proximity to the Scenic Hills Area responds to the natural environment and visual sensitivity of the place, and
- e. To ensure development maintains key view corridors from lookout Point, Lookout Knoll, the Leppington House Archaeological Site and the intersection of Heath Road and Camden Valley Way east to Lookout Knoll.



Figure 6-1: The Scenic Hills Area and Land Associated with the Scenic Hills

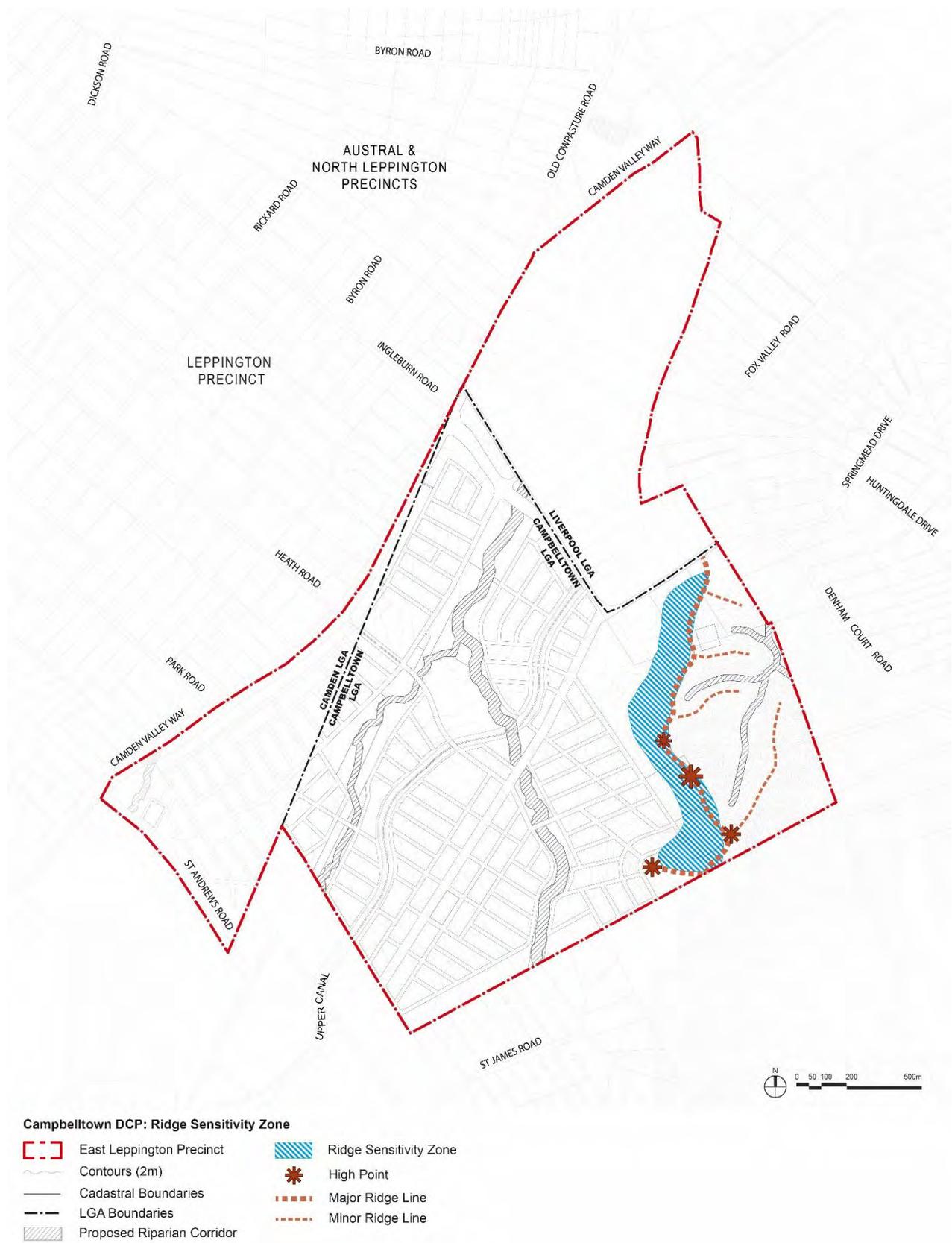


Figure 6-2: Ridge Sensitivity Zone

Controls

1. A detailed road and lot layout plan is to be prepared for lands identified as '*Land associated with The Scenic Hills*' shown in **Figure 6-1**, which responds to the significant natural features and associated heritage elements.
2. Any development within the 'Lands associated with the Scenic Hills' and 'Ridge Sensitivity Zone' must demonstrate that it will not result in adverse impacts on the visual and scenic quality of the Scenic Hills Area particularly when viewed from the portion of Denham Court Road as identified in **Figure 6-1**.
3. A Landscape and Visual Impact Assessment (LVIA) prepared by a suitably qualified technical consultant and to be approved by Council and submitted with the first development application for 'Land associated with the Scenic Hills'. The LVIA is to:
 - i. Demonstrate that development of this land will not have an adverse impact on the visual and scenic qualities of the Scenic Hills Area, particularly when viewed from the portion of Denham Court Road identified in Figure 6-1. Specifically this must illustrate that buildings will not protrude above the Major Ridgeline;
 - ii. Consider and determine the suitable location, type and scale of development on this land and what measures are required to be implemented to mitigate any visual and landscape impacts to the land; and
 - iii. Include a Landscape and Public Domain Plan relating to the land which must be prepared with consideration of any Council endorsed Conservation Management Plan (CMP) for the Precinct (see **Section 6.2** of this DCP).
4. The Landscape and Public Domain Plan and the recommended measures in the LVIA are to be considered and implemented as part of any development within the Land Associated with the Scenic Hills.
5. The appearance of external materials, colours and finishes of development within the Land Associated with the Scenic Hills must complement and blend in with the landscape as much as possible with low reflectivity, particularly for roof elements. Contrasting or bright colours and reflective surfaces or highly reflective materials are not acceptable.
6. Where land is of a gradient of more than 1 in 6 (16%) development must demonstrate the following principles:
 - i. Dwelling and landscape elements are sensitively designed to respond to natural topography;
 - ii. No adverse impacts on the visual character of the Scenic Hills Area;
 - iii. The length of the dwelling is sited along the contour;

- iv. Split level design; and
 - v. Natural materials such as local stone and timber are used for construction of retaining walls.
7. Any proposed dwelling within the Ridge Sensitivity Zone (RSZ) (see **Figure 6-2**) is to be designed to mitigate any adverse impacts on the visual amenity of Scenic Hills Area based on the following principles:
- i. Dwellings are not located on 'Lookout Knoll' or any other area of high visual exposure;
 - ii. Dwellings do not protrude above the skyline along the Major Ridgeline as seen from Denham Court Road;
 - iii. Dwellings are generally low density and single storey, unless it can be demonstrated that dwellings that are low density and of a two storey configuration will have no adverse visual impact on the character of the Scenic Hills;
 - iv. The use of non-reflective and muted landscape colours is encouraged; and
 - v. Communication devices (such as antennae and satellite dishes) are not to be visible above the Major Ridgeline when viewed from Denham Court Road.
8. Development within the '*Land Associated with Scenic Hills*', shall maintain and interpret the significant visual and physical links associated with the Scenic Hills shown in **Figure 6-1** and be based on the following principles:
- i. The view corridor between the Heath Road entry from Camden Valley Way and the prominent "Lookout Knoll" is maintained and interpreted in the urban subdivision pattern;
 - ii. Impacts on significant regional views from Lookout Knoll, Lookout Point and the Leppington House Archaeological Site are minimised;
 - iii. The impacts on significant views between "Lookout Knoll" and the Leppington House Archaeological Site are minimised;
 - iv. The Major Ridgeline is maintained in its natural form; and
 - v. Key existing view corridors shown in **Figure 6-3** are to be recognised.
9. An example of an indicative ridgeline pedestrian and cycle path and cross-sections are provided in **Figure 6-8** and **Figure 6-9** and are supported along the Major Ridgeline.
10. In considering any relevant development application that relates to development in the '*Land Associated with the Scenic Hills Area*', the following matters are to be addressed:
- i. Proposed landscape elements respond to the natural environmental character of the area;
 - ii. Native vegetation planting in proximity to the Ridge Sensitivity Zone is considered as it would have the potential to screen new development;

- iii. Pedestrian and cycle path system along the major ridgeline is considered; and
 - iv. Signature landmark planting (e.g. of spire trees such as Hoop Pine) in association with the Leppington House archaeological site is considered (Refer to **Section 6.2**).
11. A Vegetation Management Plan (VMP) is to be prepared and submitted with any relevant subdivision development application relating to land within the '*Land Associated with the Scenic Hills*'.

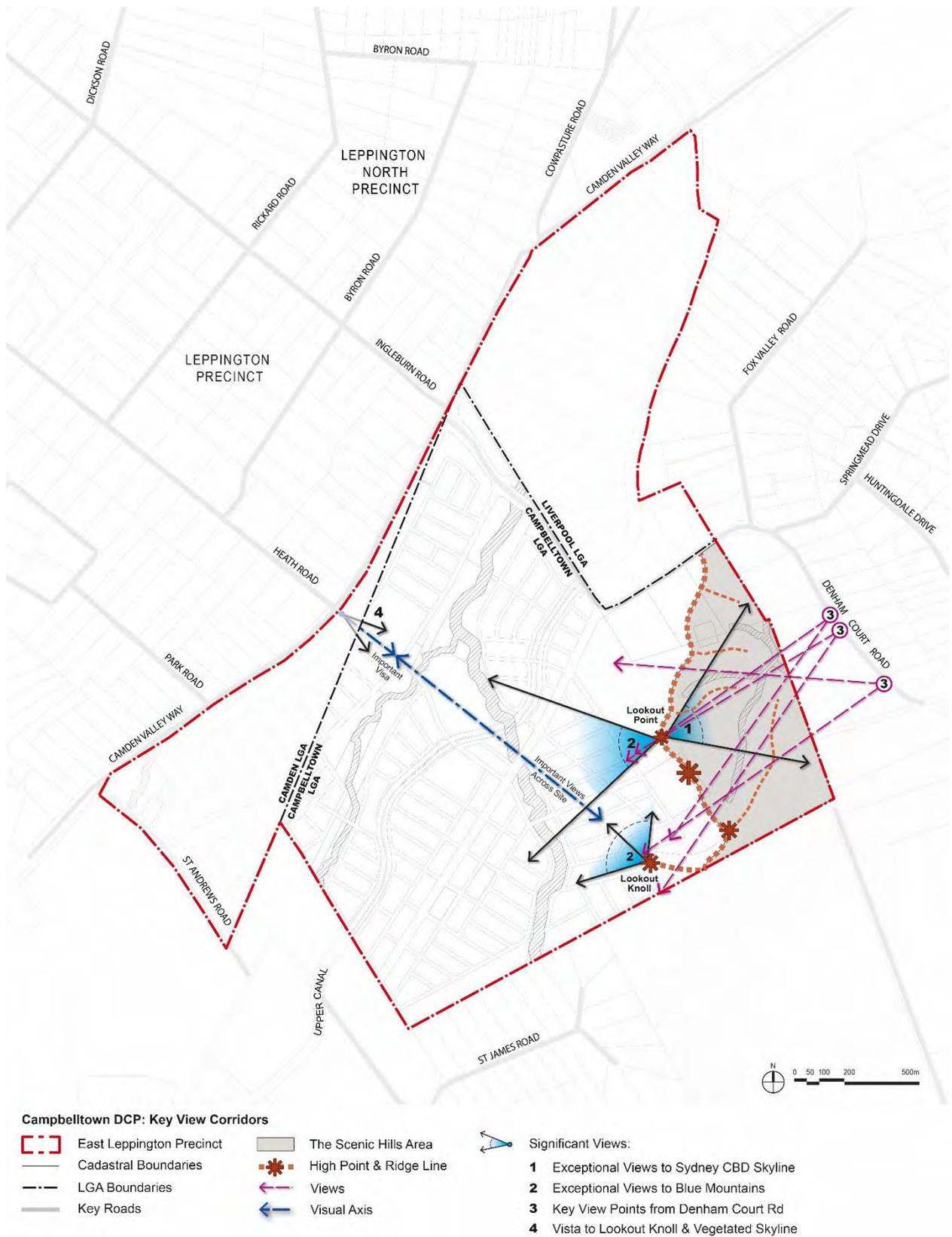


Figure 6-3: Key view corridors



Figure 6-4: View of Sydney CBD skyline from Lookout Point



Figure 6-5: View of Scenic Hills from Denham Court Road



Figure 6-6: View from Lookout Knoll

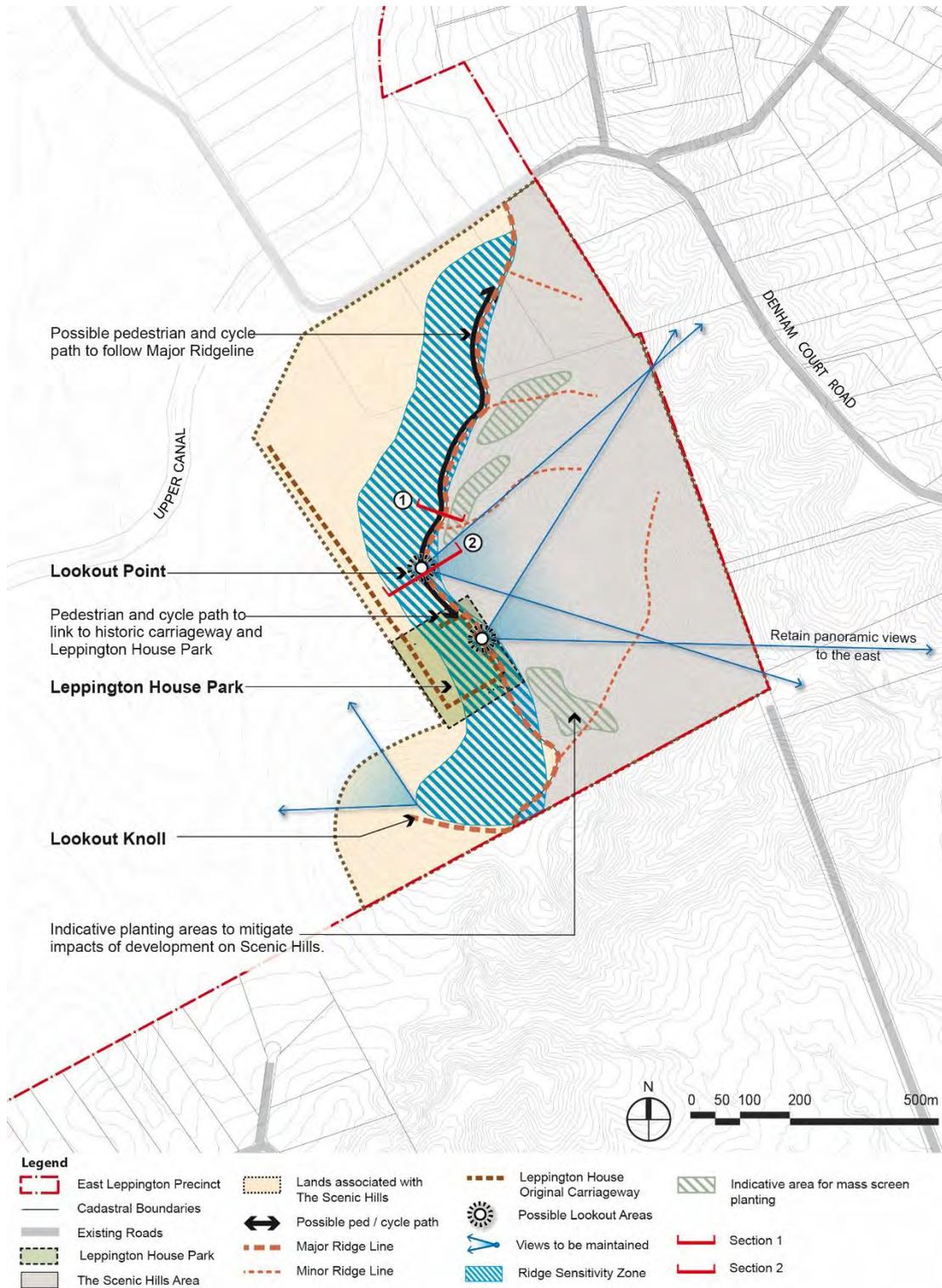


Figure 6-7: Example of ridgeline path and planting layout

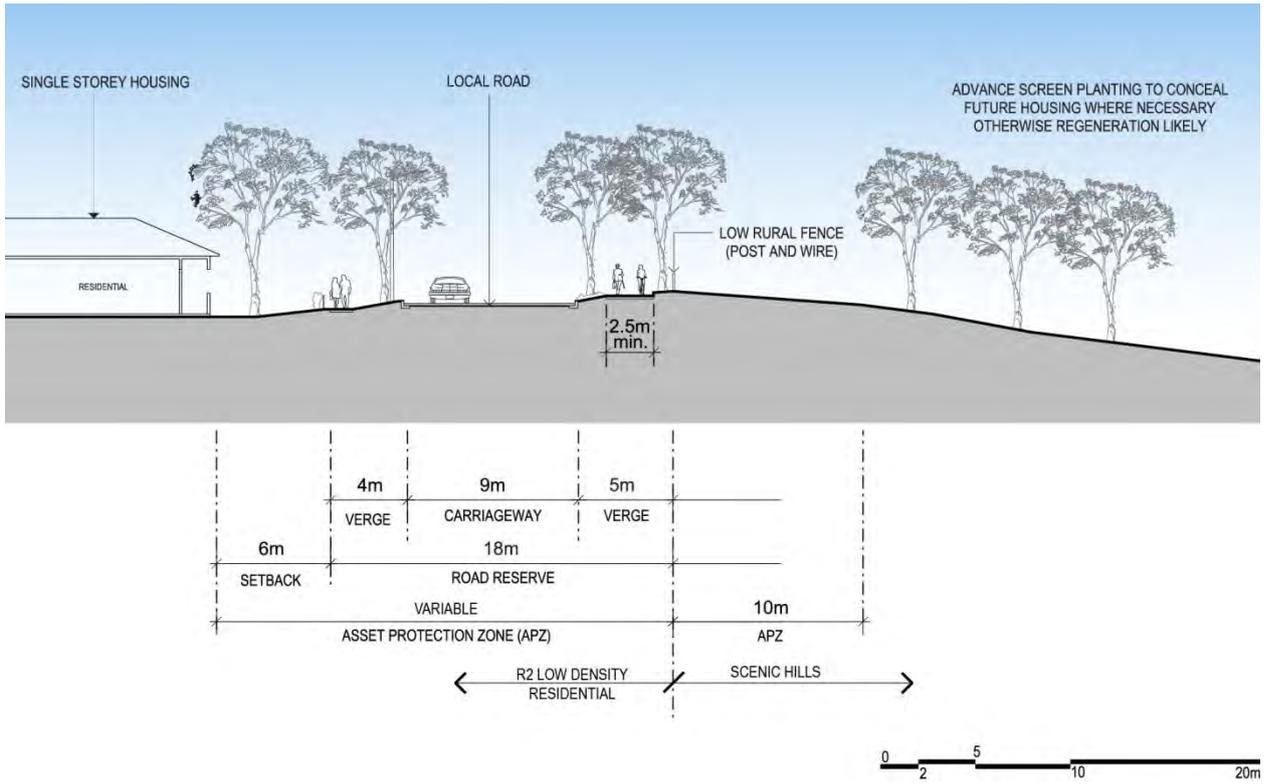


Figure 6-8: Indicative section (1) across ridgeline (refer to Figure 6-7 for section location)

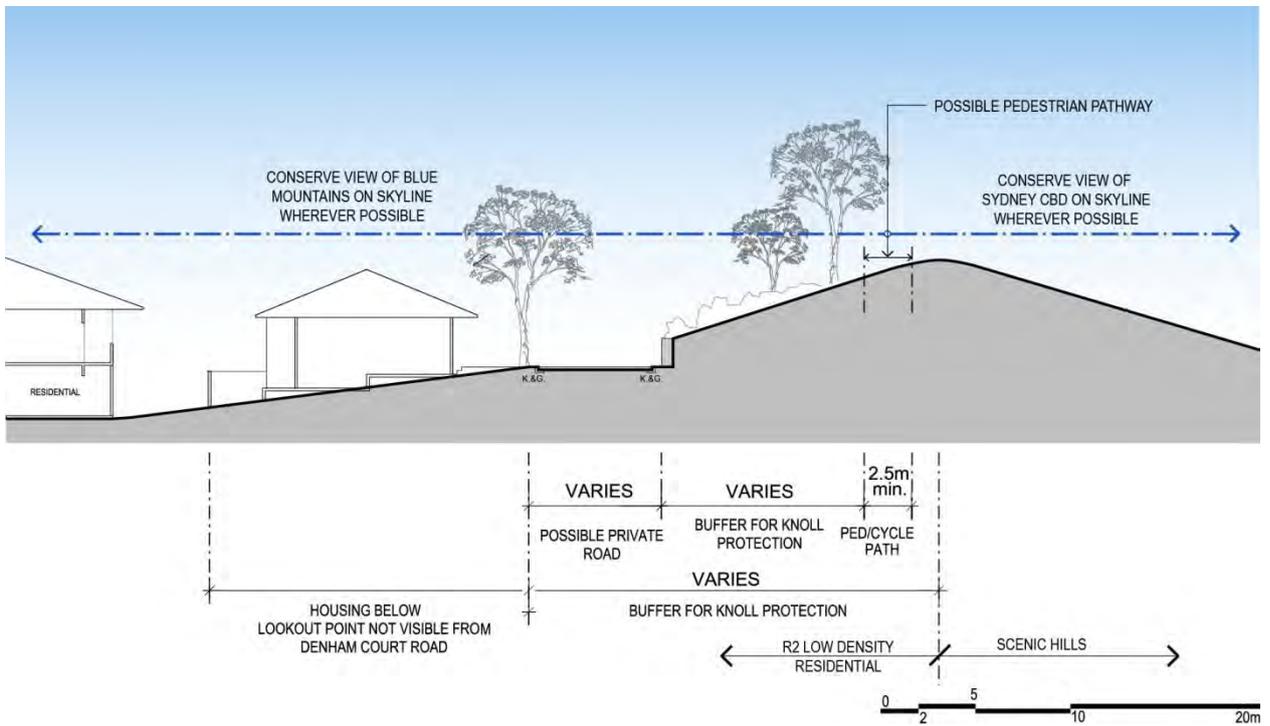


Figure 6-9: Indicative section (2) across ridgeline at Lookout Point

Note: Refer to *Figure 6-7* for section location.

6.2 European Heritage

Objectives

- a. To ensure areas identified as archaeologically or culturally significant are managed appropriately,
- b. To ensure the Leppington House Archaeological Site (LHAS) is protected, enhanced and appropriately conserved,
- c. To ensure the cultural heritage elements of the second paddock associated with the LHAS are conserved, enhanced and appropriately interpreted,
- d. To ensure the significance of the LHAS and second paddock associated with the LHAS are considered in any future development of the Precinct, and
- e. To establish a public domain and urban character that respects and interprets the cultural heritage of the archaeological site and context.

Note: *The Leppington House archaeological site is identified on the Growth Centres SEPP Heritage Map as a heritage item and has been assessed as being of State heritage significance.*

Controls

1. Applications for subdivision and building on the land identified in **Figure 6-10** are to be accompanied by a report from a suitably qualified heritage consultant detailing the results of archaeological investigations undertaken to confirm the presence of archaeological material relating to the land. Where archaeological material is identified, the proposal is to address the requirements of the *Heritage Act 1977*.
2. A Conservation Management Plan (CMP) and Interpretation Plan for the LHAS and second paddock associated with Leppington House as shown in **Figure 6-11** is to be submitted with the first development application relating to land within this area for endorsement by Council. All subsequent development relating to this land is to be developed in accordance with the Council endorsed CMP and Interpretation Plan.
3. The CMP is to:
 - i. Demonstrate that the heritage significance of the LHAS and its curtilage are suitably conserved;
 - ii. Address heritage elements associated within the LHAS and associated second paddock and ensure suitable interpretation; and
 - iii. Inform any Interpretation Plan prepared for the archaeological site, its curtilage and associated second paddock.
4. In assessing a development application for land associated with and in the vicinity of the LHAS, the following matters are to be considered:

- i. The proposed subdivision design and layout as it relates to the LHAS;
- ii. Conservation of the LHAS within a publicly accessible parkland setting;
- iii. Incorporation and/or interpretation of the former carriageway and associated historic tree row (including the double-tree row) and any other significant plantings in the subdivision design and layout;
- iv. Retention of the former carriageway, Historic Tree Row and other significant plantings where possible and subject to the recommendations of a report by a suitably qualified arborist (see **Figure 6-10**);
- v. Where other significant plantings cannot be retained in the public domain, retention within the setbacks of residential lots is encouraged;
- vi. Retention and interpretation of the cultural heritage features located on the land associated with and in the vicinity of the LHAS should be considered in the proposed subdivision pattern including and in relation to:
 - Reinforcing the former carriageway and home paddock boundaries including adaptive reuse of the carriageway wherever possible.
 - Reinforcing of the original land grant boundaries, paddock layout including the 'second paddock' and other significant plantings.
- vii. Maintenance of the exceptional views from the alignment of the LHAS (refer to Section 6.1);
- viii. Appropriate height, siting, setbacks and fence controls for any proposed adjacent residential development;
- ix. Succession planting that includes interpretation and reinstating of heritage significant trees and other plantings including 'spire' trees such as the Hoop Pine on the LHAS, through new plantings of the same species;
- x. Application of heritage interpretation measures within the open space network (i.e. signage and public artwork) as per the endorsed Interpretation Plan;
- xi. An appropriate curtilage for the LHAS consistent with the approved CMP; and
- xii. Any proposed building on the second paddock associated with the LHAS is to be designed to provide an appropriate buffer area to the archaeological site and its setting based on the following principles:
 1. Dwellings are generally single storey unless it can be demonstrated that two storey dwellings will have no adverse impact on the context of the heritage item and subject to the Ridge Sensitivity Zone.
 2. Larger lots provide the setting for dwellings on this land.

3. Non-reflective and muted landscape colours are used for dwellings on this land consistent with any design guidelines prepared for the land.
5. A detailed, site specific assessment shall be undertaken by a qualified arborist to address the viability and safety of the Historic Tree Row and other significant plantings. This assessment is to be submitted for approval by Council with the first development application relating to land associated with and in the vicinity of the LHAS.

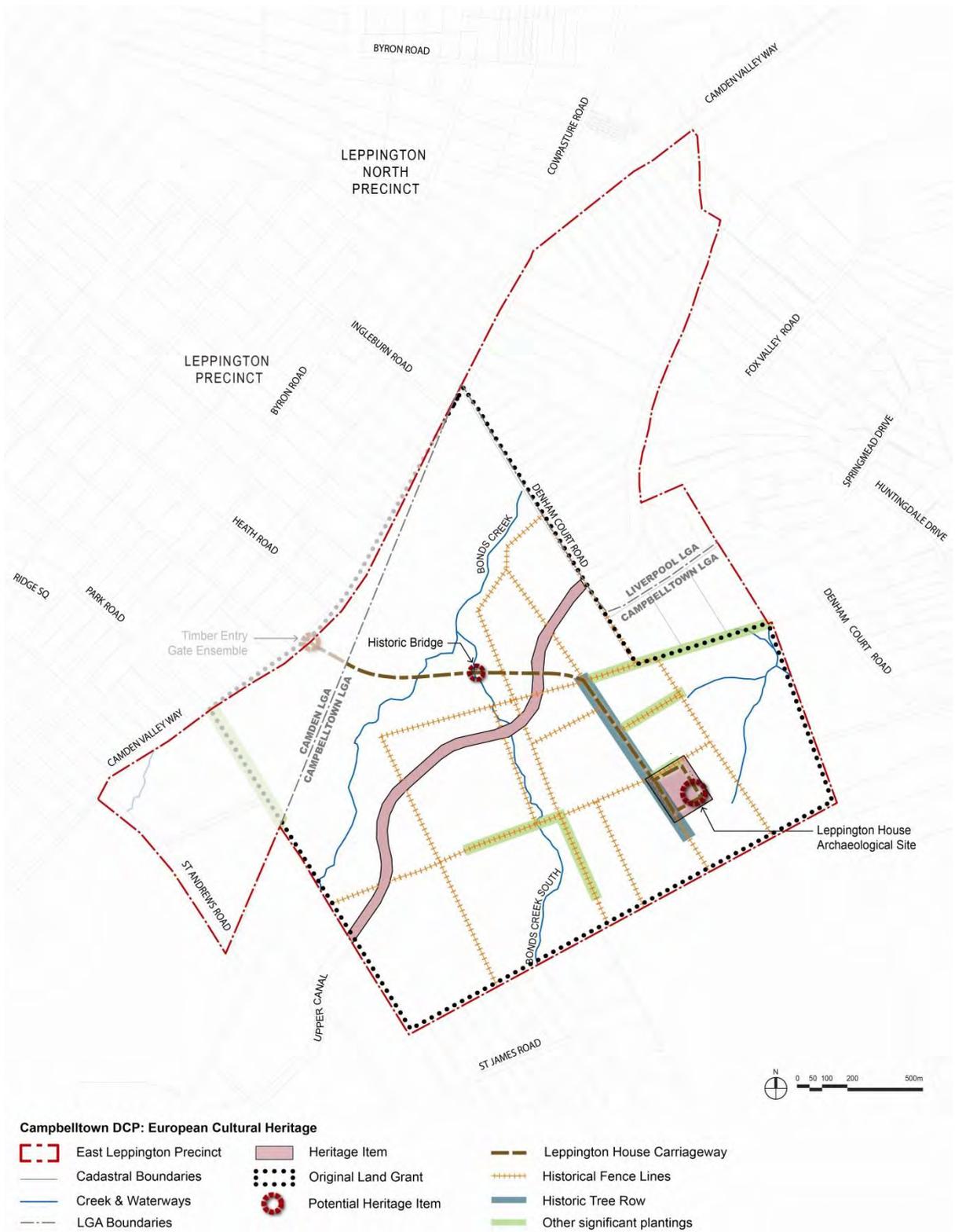


Figure 6-10: European cultural heritage

Note: See **Figure 6-11** for the northern home/second paddock associated with Leppington House. See also **Figure 3-11:** Precinct road hierarchy.

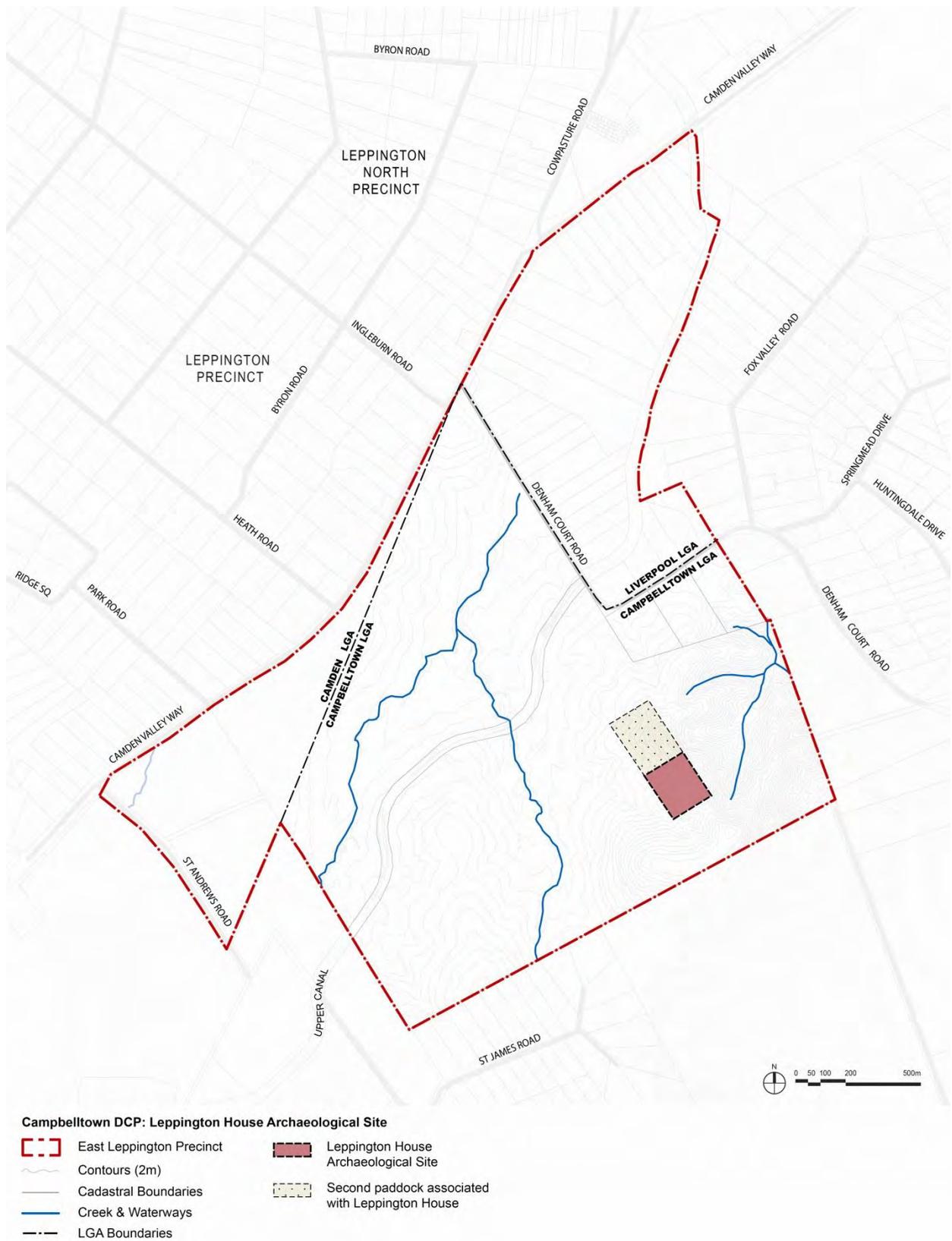


Figure 6-11: Leppington House Archaeological Site

6.3 Aboriginal Cultural Heritage Management Areas

Objectives

- a. To ensure future development does not adversely impact Aboriginal cultural heritage conservation areas or sites of Aboriginal heritage value,
- b. To ensure identified conservation areas and areas of high Aboriginal cultural heritage value are protected and conserved,
- c. To ensure appropriate management and mitigation measures are implemented for identified Aboriginal conservation areas and Aboriginal heritage sites of moderate heritage value,
- d. To manage Aboriginal heritage values to ensure enduring conservation outcomes, and
- e. To ensure areas identified as archaeologically or culturally significant are managed appropriately.

Controls

1. Development applications must identify any areas of Aboriginal heritage value that are within or adjoining the area of the proposed development, including any areas within the development site that are to be retained and protected (and identify the management protocols for these) (refer to **Figure 6-12**).
2. For land that has not been subject to detailed Aboriginal heritage surveys as part of the Precinct Planning Process (refer to East Leppington Precinct Planning Indigenous and Non-Indigenous Heritage Assessment prepared by GML 2012) an Aboriginal Heritage Assessment is to be carried out by a suitably qualified professional and submitted with the development application.
3. Suggested mitigation measures for Aboriginal heritage management areas are identified in the technical Heritage Report. Refer to East Leppington Precinct Planning Indigenous and Non-Indigenous Heritage Assessment prepared by GML 2012.
4. Mitigation measures for Aboriginal heritage sites are to be identified and implemented in consultation with the Office of Environment and Heritage as part of the development application.
5. Where archaeological excavation of high or moderate heritage value deposits is required, sites are to be adequately fenced and clearly signposted with zero soil impact during site works.
6. A Plan of Management (PoM) is to be prepared to address all Aboriginal heritage management areas and is to be submitted with relevant development applications. The PoM is to be prepared by a suitably qualified professional and developed in consultation with the relevant Aboriginal communities and the Office of Environment and Heritage.
7. Developments or other activities that will impact on Aboriginal heritage may require consent from the NSW Office of Environment and Heritage (OEH) under the *National Parks and Wildlife Act 1974* and consultation with the relevant Aboriginal community.

8. Any development that is within or adjacent to land that contains a known Aboriginal cultural heritage site, as indicated on the Aboriginal cultural heritage sites Figure (refer to **Figure 6-12**) must consider and comply with the requirements of the *National Parks and Wildlife Act 1974*.
9. *Where the necessary consents under the National Parks and Wildlife Act 1974 have been obtained, the development application must demonstrate that the development will be undertaken in accordance with the requirements of that consent.*

Notes:

*Any works, development or other activity that will impact on a known site of Aboriginal cultural heritage significance may require approval under the National Parks and Wildlife Act, 1974, in addition to any approval requirements of Council under the Campbelltown Growth Centres Precinct Plan (East Leppington). Applicants should consult with the Office of Environment and Heritage (OEH) to determine requirements for assessment and approval where developments or other works are to be carried out on or near Aboriginal heritage sites identified on the **Aboriginal cultural heritage sites** figure (**Figure 6-12**).*

Council or the OEH may require additional investigations to be undertaken as part of a development application to confirm the presence of Aboriginal cultural heritage on the land.

Where works uncover items that may be Aboriginal cultural heritage, the applicant is to consult with the OEH to determine an appropriate course of action.

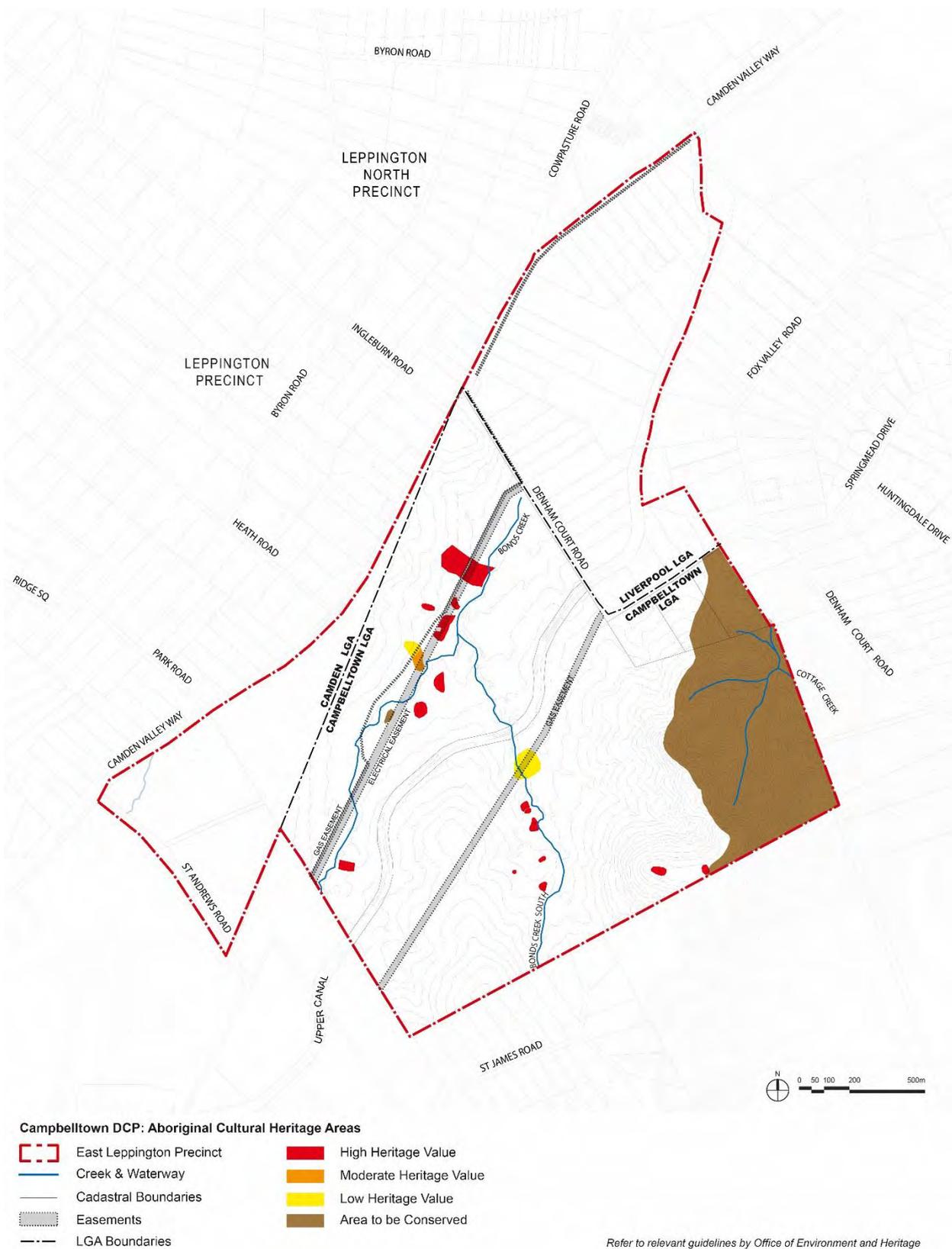


Figure 6-12: Aboriginal cultural heritage

6.4 Development near or on Electricity Easements

Objectives

- a. To ensure that development on or near electricity easements considers potential impacts on the integrity and safety of electricity infrastructure,
- b. To ensure reasonable standards of public amenity and a high quality public domain in the vicinity of electricity easements, and
- c. To ensure reasonable standards of residential amenity and a high quality residential environment in the vicinity of the electricity easement.

Controls

1. Wherever possible electrical easements are to be located within open space corridors in accordance with the ILP.
2. Council may consider accepting dedication of land within the electrical easement where the subdivision is in accordance with the ILP.
3. Restrictions apply to planting and erection of raised public domain elements (such as lightpoles) and are identified in the *Mains Maintenance Instruction MMI 0015 - Management of Endeavour Energy's electrical easements (Endeavour Energy, 2011)* or as revised for design requirements.
4. All proposed activities within electricity easements require approval from the relevant utility providers. Applicants should consult with these agencies and obtain the relevant approvals prior to submitting a development application to Council. Evidence of approval is to be submitted with the development application.
5. Subdivision of residential land containing easements is to be minimised.

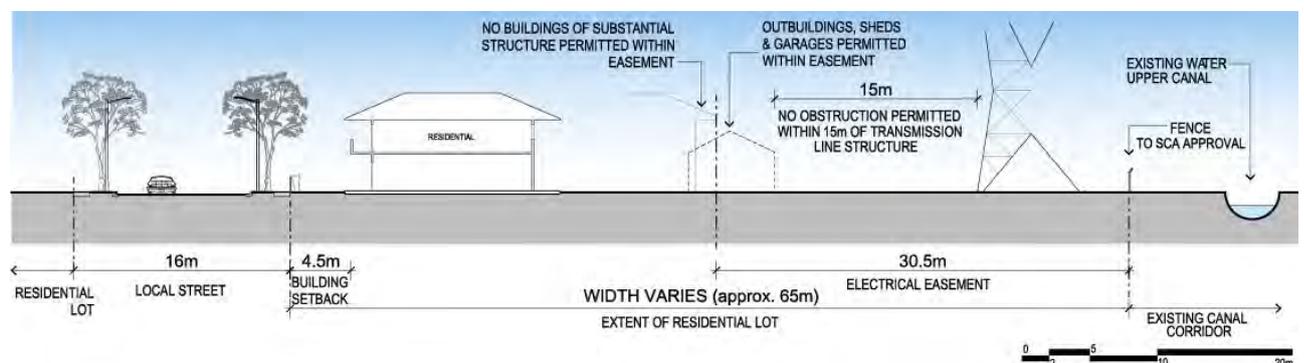


Figure 6-13: Preferred layout for land affected by Endeavour Energy electricity easement

6.5 Land adjacent to or affected by a Gas Easement

Objectives

- a. To ensure reasonable standards of residential amenity, safety and a high quality residential environment in the vicinity of high pressure gas easements.

Controls

1. Development and use of land within the easement is restricted by the conditions of the easement and applicants should demonstrate compliance with any restrictions imposed by the easement when submitting applications for development.
2. The following development within the easement must be referred to the relevant Utility Provider for approval prior to any works being commenced, and evidence of the Utility Provider's agreement must be submitted with the development application:
 - i) Excavation, blasting or other earthworks.
 - ii) Any improvements or installations (e.g. Buildings, roads, footpaths fencing or other structures).
 - iii) Transport or parking of heavy vehicles.
 - iv) Planting or cultivating trees within five metres of the pipeline.
3. Dwellings and other buildings are to be located outside the easement.
4. The easement may be located in backyards or at the side of dwellings providing that access to the easement for inspections and maintenance is not unduly restricted and with the approval of the relevant Utility Provider, where necessary.
5. Subdivision of land containing easements should be minimised, however battle-axe lots and 'four-pack' lots may be appropriate in some locations to maximise the development potential of land while avoiding impacts on the easement.
6. Reference should be made to AS2885 in relation to sensitive land uses that may be restricted within a certain distance (referred to as the Zone of Influence) of the gas pipeline. Sensitive land uses include (but are not limited to) schools, hospitals, aged care facilities and community facilities. Applicants should consult with the organisation responsible for the gas pipeline to determine specific requirements.
7. Development shall be to the satisfaction of the relevant Utility Provider.
8. An indicative design for the collector road in proximity to the gas easements is shown **Figure 6-14**.

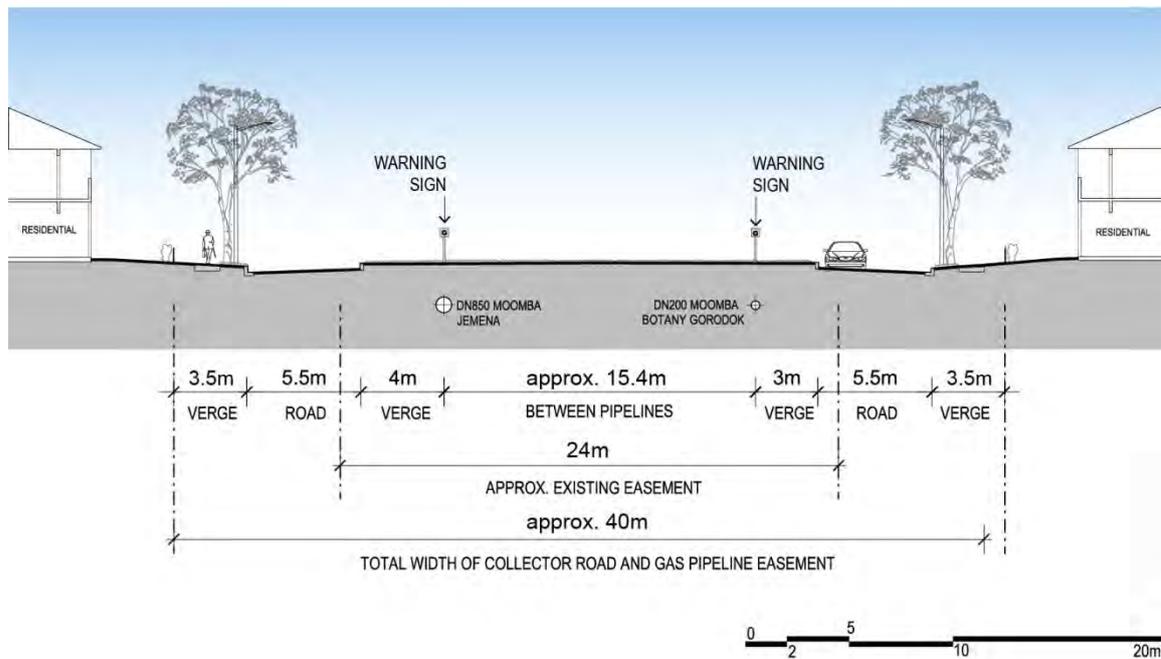


Figure 6-14: Indicative Gas Easement Road Section

6.6 Lands adjacent to Camden Valley Way

Objectives

- a. To ensure appropriate access to residential lands located on Camden Valley Way,
- b. To ensure reasonable standards of residential amenity and a high quality residential environment in the vicinity of Camden Valley Way, and
- c. To ensure residential dwellings are not adversely impacted by traffic noise.

This section should be read in conjunction with **Sections 3.3** and **4.2.9** of this DCP.

Controls

1. Driveway access to residential lots is not permitted from Camden Valley Way. Lots adjoining Camden Valley Way shall be accessed via adjacent local roads.
2. Development is to comply with *Development Near Rail Corridors and Busy Roads – Interim Guideline (Department of Planning 2008)*.
3. The siting of the dwelling shall be consistent with **Figure 6-15** and the following controls:
 - i. Dwellings must address the local street;
 - ii. The rear setback to Camden Valley Way must be sufficient to ensure that both internal and external acoustic amenity is achieved for future residents, while also ensuring that the principal private open space area of dwellings

receive the levels of solar access and amenity as required elsewhere in this DCP; and

- iii. Noise attenuation devices along the rear boundary to Camden Valley Way (in accordance with **Section 3.3** of this DCP) should be effectively screened by native landscape planting, and deeper lots may be required to ensure that such plantings can be provided without impacting on the principal private open space requirements of this DCP and sufficient separation to the noise source is achieved to Councils satisfaction.
4. Dwellings shall be designed to minimise the impact of traffic noise to acceptable levels. Possible design solutions include:
- i. Locating noise sensitive areas such as bedrooms and living rooms away from the noise source and less sensitive areas such as bathrooms, laundries, kitchens and storage closest to the noise source.
 - ii. Providing for double-glazed windows.
 - iii. Minimising the number of doors and openable windows on the noisy side of the dwelling.
5. Architectural treatments are to be designed in accordance with AS2107 – Traffic Noise Intrusion Building siting and Construction, the interior sound criteria of AS2107 – Recommended Design Sound Levels and Reverberation Times for Building Interiors.

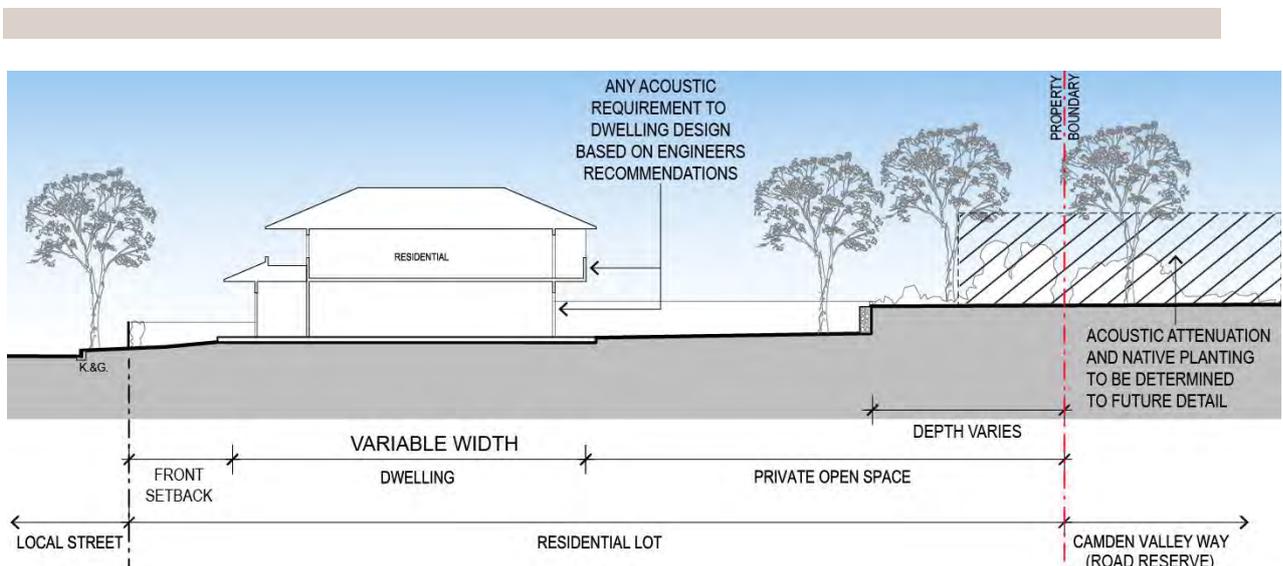


Figure 6-15: Camden Valley Way section

6.7 Lands adjacent to Denham Court Road

Objectives

- a. To ensure appropriate access to residential lands located on Denham Court Road.
- b. To ensure reasonable standards of residential amenity and a high quality residential environment in the vicinity of Denham Court Road.
- c. To ensure that residential development addresses Denham Court Road to define the streetscape and provide for passive surveillance.

Controls

1. Driveway access to residential lots is not permitted from Denham Court Road. Lots adjoining Denham Court Road shall be accessed from the local road system. Refer to **Figure 6-16** and **Figure 6-17**.
2. Dwellings are to address Denham Court Road with the following elements:
 - i) Pedestrian entrances;
 - ii) Front fencing with a maximum height of 1.2m and at least 50% visually permeable, which is to return to the building line.
 - iii) Landscape planting;
 - iv) Articulated street facades; and
 - v) Actively used spaces, such as kitchens and family rooms, should be oriented toward the street to maximise passive surveillance, if possible.
3. Dwellings are to be designed to minimise the impact of traffic noise to acceptable levels. Refer to **Sections 4.2.9** and **2.4.8**.



Figure 6-16: Possible access denied lot layout - Option 1

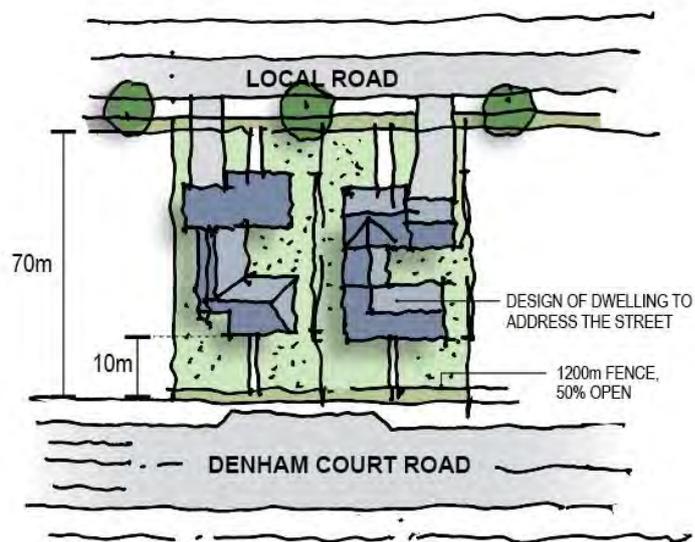


Figure 6-17: Possible access denied lot layout - Option 2

6.8 Land adjacent to the Sydney Catchment Authority Upper Canal

Objectives

- a. To ensure that the Upper Canal is taken into account in siting, designing and constructing any proposed development adjoining or in the vicinity of the Canal,
- b. To ensure that development adjacent to the Upper Canal corridor does not impact on the continued operation of the Canal infrastructure,
- c. To provide for the safety and amenity of the public living or visiting areas adjacent to the Upper Canal, and
- d. To protect water quality by preventing stormwater or other pollutants entering the Upper Canal system.

Controls

1. Where major development (including subdivision) is proposed adjacent to the Upper Canal corridor, applicants shall consult with the Sydney Catchment Authority (SCA) as part of the process of preparing the development application. Development is to be consistent with the SCA publication "*Guidelines for development adjacent to the Upper Canal and Warragamba Pipelines*". Any written requirements of the SCA shall be submitted with the DA and the DA documentation shall show how the requirements have been addressed.
2. Prior written approval shall be obtained from the SCA for any access that may be required to the Upper Canal corridor during the investigation and construction phases. .
3. Access points to the Upper Canal for SCA staff and contractors to carry out inspections and maintenance shall be retained or provided in accordance with SCA requirements.
4. Site preparation and construction works carried out adjacent to or crossing the Upper Canal shall avoid impacting on water quality and damaging the Canal infrastructure, in accordance with SCA requirements.
5. Stormwater systems serving development adjacent to the Upper Canal shall be designed to ensure that stormwater does not enter the Canal. Stormwater management measures shall accommodate and not impede upstream flows from any systems that convey stormwater across, along or under the Upper Canal. Detailed plans showing the proposed stormwater management and runoff from development are to be submitted with the development application. The plans must demonstrate that stormwater will be managed up to the 1 in 100 year flood event to prevent runoff from within the Precinct entering the Canal.
6. Shareways may be located to the front or side boundary of a lot. Where shareways are to the side boundary, fences are to be maximum 1.8m high to the rear yard only. Side fences are to be 1.2m to corners.

7. Appropriate security fencing shall be provided, or existing fencing retained along the length of development boundaries that directly adjoin the Upper Canal corridor, in accordance with SCA requirements.
8. Road, pedestrian and cycleway crossings of the Upper Canal shall be minimized and located and designed in accordance with SCA requirements.
9. A local road, shareway or pedestrian/ cycle way is to be provided, between development and the Upper Canal corridor (refer to **Figure 6-18**). Wherever possible a road is to contain a landscaped verge between the carriageway and Upper Canal corridor. A footpath is not required to be constructed on the Canal side road verge as part of subdivision of adjoining land.
10. The State Heritage status of the Upper Canal should be taken into account when designing development adjacent to the Canal corridor.

Note: The Upper Canal is owned and managed by the Sydney Catchment Authority and is located on land classified as a controlled area under the Sydney Water Catchment Management Act 1998. The Canal begins at Pheasants Nest Weir on the Nepean River and transfers water from the Upper Nepean dams to the Prospect Water Filtration Plant to supply a significant part of Sydney's drinking water. The Upper Canal is historically significant having functioned as part of Sydney's main water supply system for more than 120 years and is listed on the State Heritage Register.

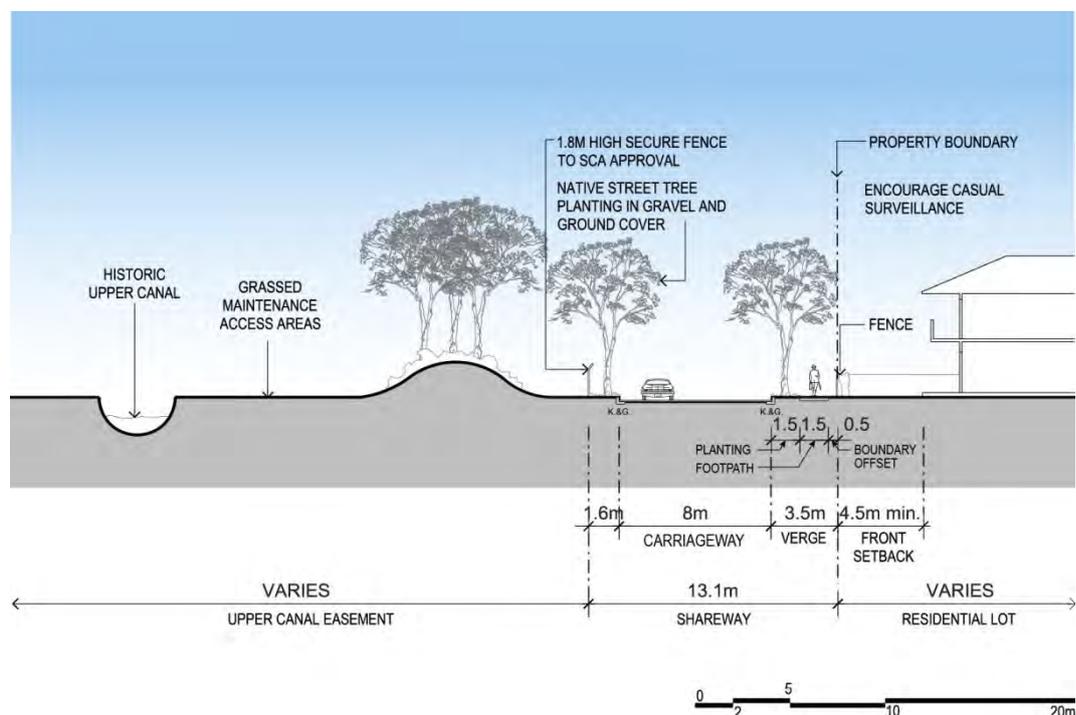


Figure 6-18: Indicative shareway along Sydney Catchment Authority Upper Canal

APPENDIX A

GLOSSARY

Note: definitions for terms are also included in the Dictionary contained within the Growth Centres SEPP, and in the event of any inconsistency, the definition in the Growth Centres SEPP takes precedence over the definitions in this DCP.

“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**.

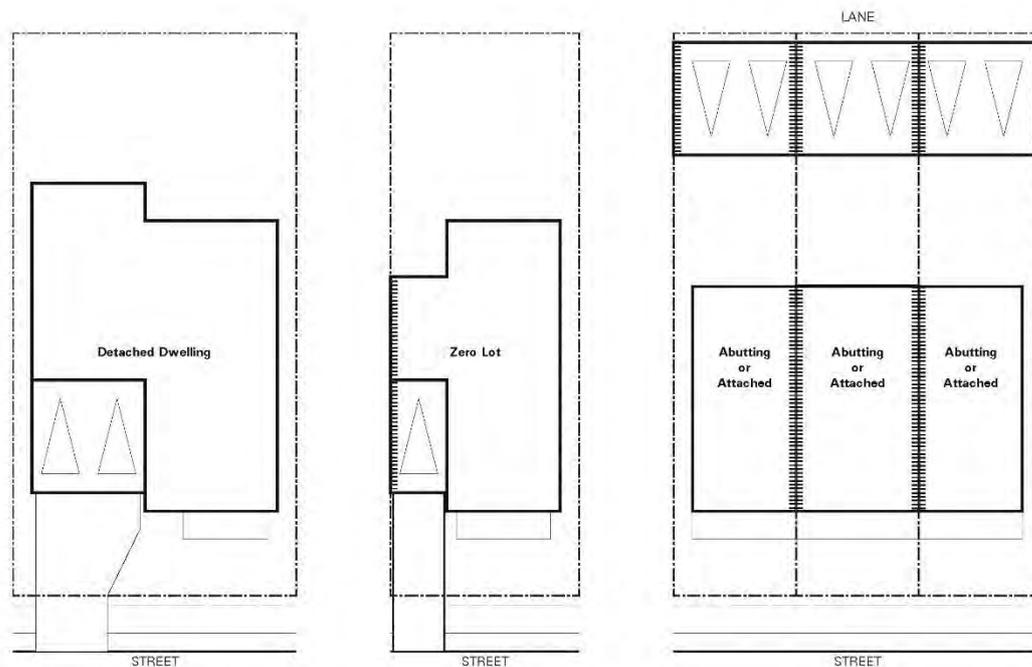


Figure 1: Detached, zero lot line, abutting and attached dwellings

“Access Streets and Laneways” provide local residential access to a small number of dwellings and serve a shared vehicular-pedestrian-cyclist use. They are intended to encourage a safe, low vehicle speed environment in which the residential function is dominant. Access streets function at the lowest level of the road hierarchy. They generally have development on one side and are located along drainage or open space reserves or along access-denied roads. The construction and dedication of access streets is the responsibility of the developer.

“Articulation zone” includes verandahs, porches, awnings, shading devices, bay windows, pergolas and the like. A carport is not considered part of the articulation zone.

“Active Frontages” are defined as one or a combination of the following:

- entrance to retail;
- shop front;
- glazed entries to commercial and residential lobbies;
- café or restaurant if accompanied by an entry from the street;
- active office uses, such as reception, if visible from the street; and
- public building if accompanied by an entry.

“**Attic**” means a room within the main roof space of a building that has a 1.5m minimum wall height at edge of the room, a minimum 30 degree ceiling slope and does not incorporate or access a balcony.

“**Attached dwellings**” are defined in the Dictionary to the Growth Centres SEPP and comprise 3 or more dwellings on separate allotments that are joined by at least one common wall. See **Figure 1**.

“**Arterial roads**” are roads marked as such on the **Precinct Road Hierarchy** figure in the relevant Precinct Schedule. They are major roads that carry the majority of inter-regional traffic. Vehicular access from adjacent land is denied to ensure both the efficiency of the road and the safety of road users.

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

“**Campbelltown Growth Centres Precinct Plan (East Leppington)**” means Appendix 10 to *State Environmental Planning Policy (Sydney Region Growth Centres) 2006*.

“**Collector roads**” are roads marked as such on the **Precinct Road Hierarchy** figure in the relevant Precinct Schedule. They are the main internal roads that carry local traffic through the residential neighbourhoods to the sub-arterial and arterial roads, and provide access to major attractors within the precinct such as retail, commercial and educational facilities.

“Detached Dwelling” is a building containing one dwelling, on a single block of land that is not attached to any other dwelling. See Figure 2.

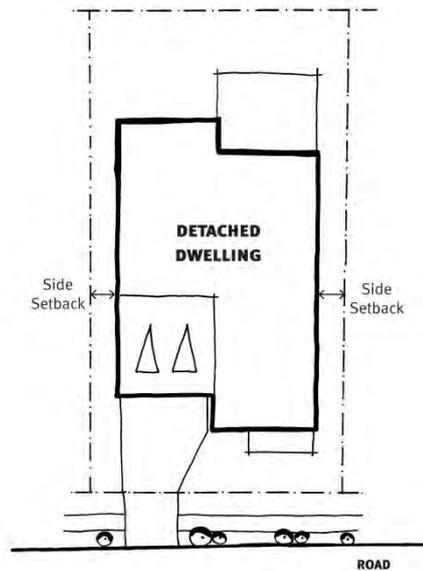


Figure 2: Detached dwelling

Dual Occupancy is defined in the Dictionary to the Growth Centres SEPP. A dual occupancy comprises two dwellings on a single allotment of land. The dwellings may be attached to each other or separate and detached.

Dual occupancy housing includes:

- the alteration or addition to an existing dwelling-house erected on an allotment so as to create two dwellings;
- the erection of another detached dwelling-house in addition to one already erected on an allotment, but only if not more than two dwellings will be created as a result of the development being carried out;
- the erection of a single building containing two dwellings on one allotment.
- the erection of two detached dwellings on one allotment. The dwelling may or may not be strata subdivided. See **Figure 3**.

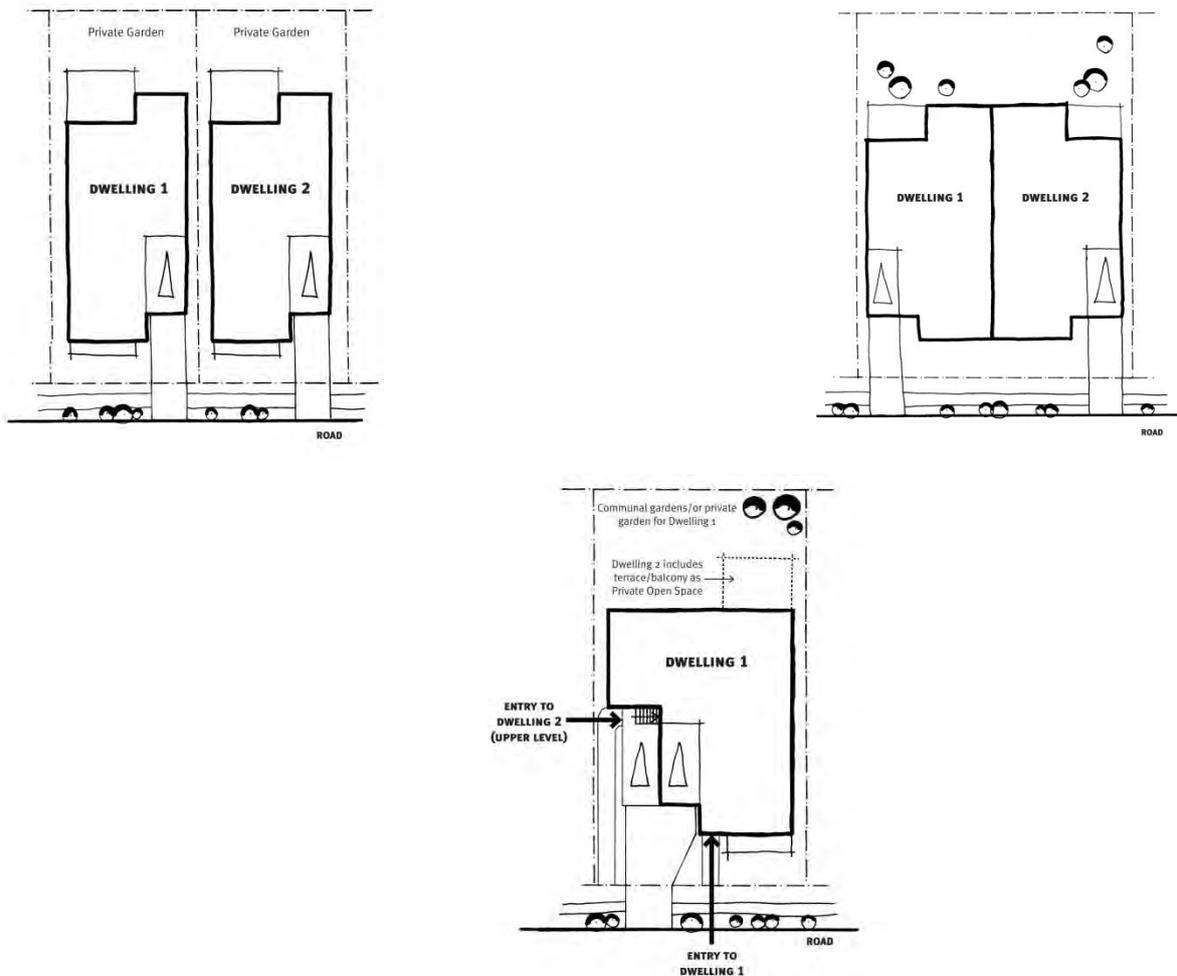
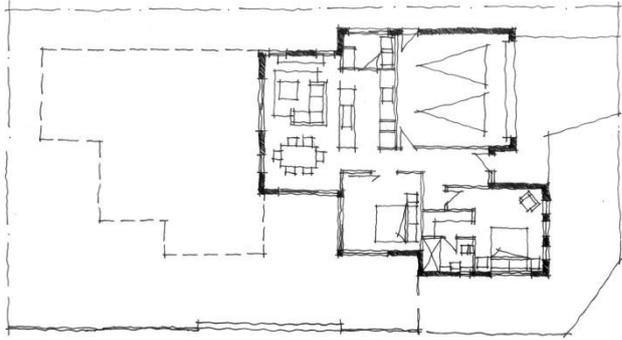


Figure 3: Dual Occupancy Dwellings – detached; attached; two storey

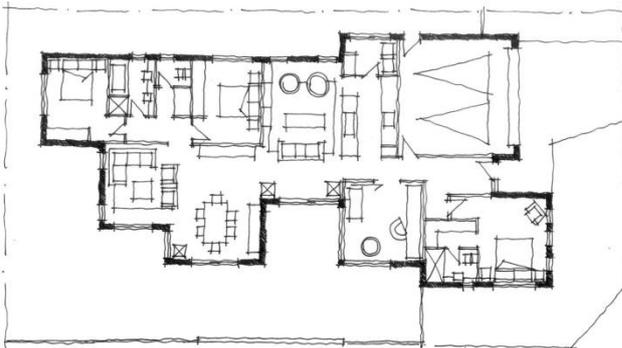
“Dual Occupancy – Lifehouse Dwellings” - The life house is a housing initiative that is designed to facilitate the changing lifestyle needs of the home buyer. When built, the Lifehouse can respond to the current need of the resident. In time, as the residents’ needs change, the dwelling can grow/downsize according to their needs, without them having to go through the expense of relocating. See **Figure 4**.

Lifehouse dwellings:

- can only occur on corner lots where eventual dual access will be possible to both dwellings;
- can be built on a single level, on split level or on as two storey dwellings. The development of Stage 2 must comply with separation controls nominated in Australian Standards and the Building Code of Australia (BCA), enabling the final dual occupancy division of Stage 3 to progress without major works.
- must have all stages of the development designed and approved as part of the initial DA regardless of the proposed staging of construction and subdivision.



Phase 1: establish the home



Phase 2: grow to suit occupant



Phase 3: downsize and strata subdivide to suit occupant (Optional)

Figure 4: Lifehouse Dwelling (single level)

“**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.

“**Habitable room**” means any room or area used for normal domestic activities, including living, dining, family, lounge, bedrooms, study, kitchen, sun room, home entertainment room, alfresco room and play room.

“Non-habitable” room spaces of a specialised nature not occupied frequently or for extended periods, including bathrooms, toilets, pantries, walk-in wardrobes, corridors, lobbies, photographic darkrooms and clothes drying rooms.

“Landscaped area” means any part of a site, at ground level, that is permeable and consists of soft landscaping, turf or planted areas and the like. It does not include driveways, parking areas, hard paved drying yards or other service areas, swimming pools, tennis courts, undercroft areas, roofed areas (excluding eaves <450mm to fascia board), outdoor rooms, balconies, rooftop gardens, terraces, decks, verandahs and the like.

“Local roads” are roads marked as such on the **Precinct Road Hierarchy** figure in the relevant Precinct Schedule. The function of the subdivisional roads, which may include minor loop roads and culs-de-sac, is to provide access to residential properties.

“Manor House” 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.

“Outdoor room”, also known as an ‘alfresco room’ is a semi enclosed space (at least 1 side open) located adjacent a living / dining / kitchen area of a dwelling that sits within the main roof line of a dwelling.

“Pervious area” means the parts of the site where water is able to permeate the soil, and excludes any areas that are paved, roofed or otherwise covered with impervious materials.

“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.

“Riparian Corridor” means the riparian protection area as shown on the Riparian Protection Areas map under the Growth Centres SEPP.

“Secondary Dwellings” - Secondary dwellings are defined in the Dictionary to the Growth Centres SEPP. They are dwellings that are on the same parcel of land as another dwelling, but are separate to the principal dwelling, have a separate access and have a maximum internal floor area as specified in the Campbelltown Growth Centres Precinct Plan (East Leppington).

Secondary dwellings must form a part of the DA submission for the main dwelling. A secondary dwelling that has its own separate access and parking can be strata subdivided at the time of DA approval or after the dwelling has been established.

Types of secondary dwelling:

- On grade studio unit (at ground level – See **Figures 5 and 6**) within the principle dwelling lot. This is only permitted within detached dwelling lots;
- Above garage (See **Figures 7 and 8**). This is only permitted on lots that have garages with rear access.

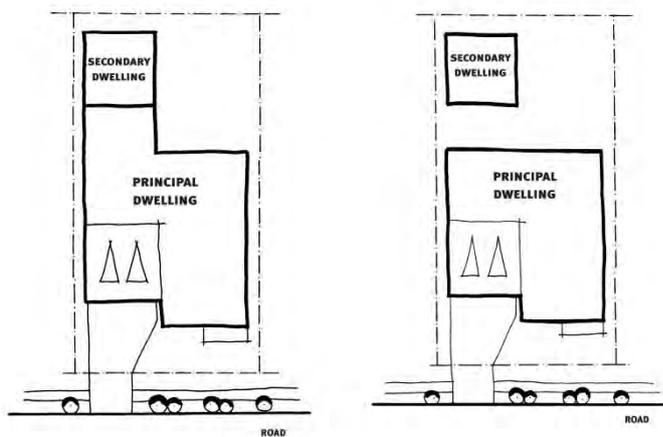


Figure 5: Secondary Dwelling (at ground level)

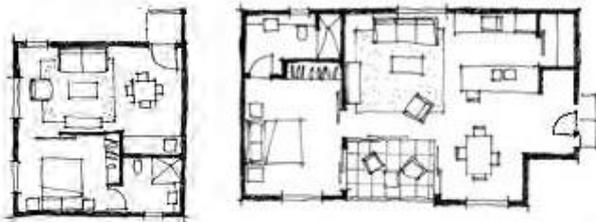


Figure 6: Indicative example of a secondary dwelling – on ground level

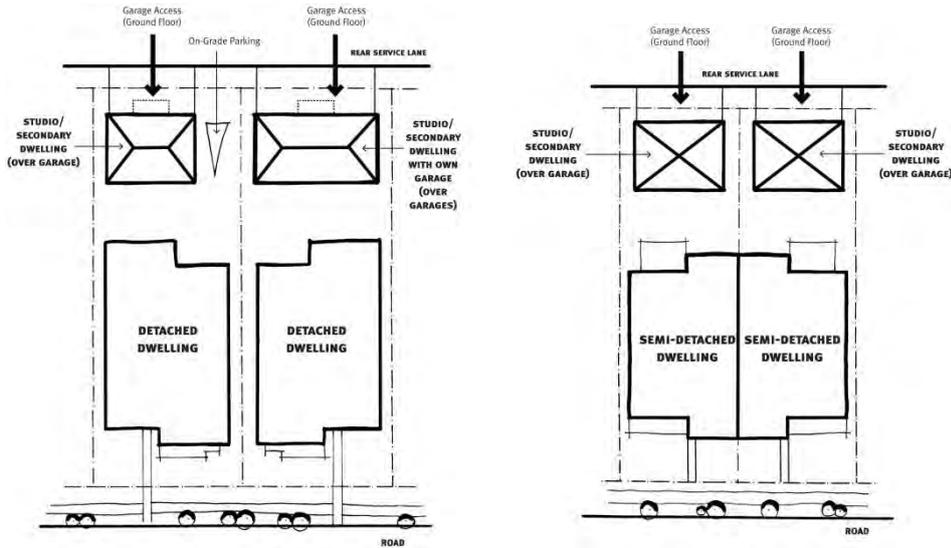


Figure 7: Secondary or Studio Dwellings (above garages)

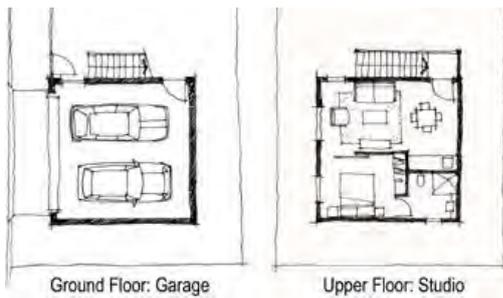


Figure 8: Indicative example of a secondary dwelling above a garage

“Semi-detached dwellings” is defined in the Dictionary to the Growth Centres SEPP. They comprise two dwellings that share one common wall. The external appearance should have continuance of material and style so the two dwellings combine to appear as one large house. Refer to **Figure 9**.

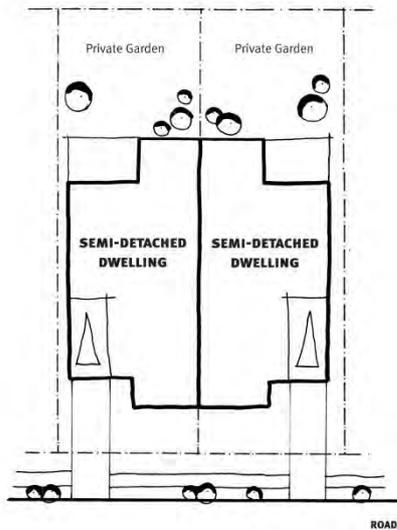


Figure 9: Semi-Detached Dwelling

“**Site cover**” refers to the percentage of the site area that is occupied by the building footprint, including any outdoor room and garages.

“**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. Refer to **Figures 7 & 10**.

but does not include a demi-detached dwelling.

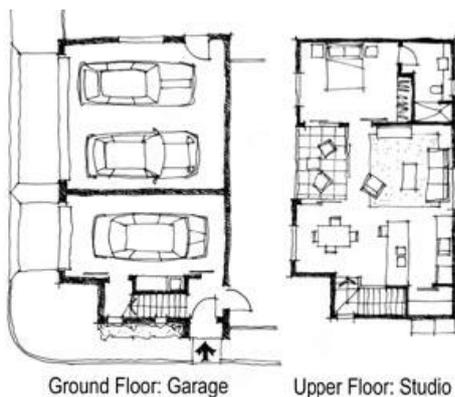


Figure 10: Indicative example of a studio dwelling above a garage

“**Sub-arterial roads**” are roads marked as such on the **Precinct Road Hierarchy** figure in the relevant Precinct Schedule. Sub-arterial roads link regional and local traffic routes. Access from private properties is generally denied to these roads (except in special circumstances) for reasons of traffic safety and to maintain the capacity and efficiency of the road system. Council is normally responsible for the acquisition and construction of sub-arterial roads.

“Town Centre Streets” are roads marked as such on the **Precinct Road Hierarchy** figure in the relevant Precinct Schedule. They are specially designed to create a pleasant and comfortable pedestrian environment. Amenity and safety is to be maintained through wide shaded footpaths, traffic calming measures and pedestrian crossings.

“Walking Distance” is typically 400m or a 5 minute walk from a local destination or bus stop, or 800m or a 10 minute walk from a train station.

“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**.

APPENDIX B

RIPARIAN PROTECTION AREA CONTROLS

1.0 Introduction

1.1 Land to which these Controls Apply

This Appendix applies to the land that contains, or is adjacent to, a riparian corridor, as defined in this DCP.

1.2 Controls

Applications are to refer to the Guidelines for Riparian Corridors prepared by the NSW Office of Water, July 2012. These guidelines contain the outcomes and requirements for development on land containing a riparian protection area in the South West Growth Centre Precincts, to which the Campbelltown Growth Centres Precinct Plan (East Leppington) DCP applies.

APPENDIX C

SALINITY MANAGEMENT GUIDELINES

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The Department acknowledges Douglas Partners Pty Ltd and Sydney Environmental and Soil Laboratory, Blacktown City Council and Landcom for sections of this document taken from the Salinity Management Report for Second Ponds Creek (1998).

1 Introduction

This Salinity Management Guideline contains background information, salinity risk mapping and management recommendations to control the effects of urban dryland salinity for proposed residential development within the Campbelltown Growth Centre Precinct Plan (East Leppington) in the South West Growth Centre.

This Management Plan is based on the findings of relevant studies undertaken for Precinct Planning, relevant guidelines and policies in relation to urban salinity management and examples of salinity management plans prepared for other western Sydney urban release areas. In particular, these guidelines adopt the approach taken in the Salinity Management Plan prepared for the Second Ponds Creek release area in north-western Sydney. This guideline includes:

- general information on the causes and effects of urban salinity;
- findings and conclusions from GeoEnviro's Geotechnical, Salinity and Acid Sulphate Soil Investigation for the Austral and Leppington North Precincts (2011).
- Recommendations, measures and general guidelines for site development and construction, covering water management, site development and buildings.

The aim of this guideline is to present practical recommendations about how to manage and, where possible, mitigate the existing saline conditions on site, so as to:

- limit any impact of salinity on roads, buildings, vegetation, underground services, water courses and storages; and
- limit the impacts of development in the precinct on the processes of salinity and the impacts of salinity on the environment.

1.1 Background

1.1.1 Proposed Development

Planning for South West Growth Centre is expected to provide for up to 110,000 new homes, developing progressively over the next 25 to 30 years, together with essential facilities and open space. The Precincts will be supported by Town Centres and smaller neighbourhood centres will provide local retail and community services. Several infrastructure upgrades are planned including new road crossings and the South West Rail Link which will improve regional links to surrounding areas.

1.1.2 Salinity Risk Maps

A review of the Department of Natural Resources Map of Salinity Potential in Western Sydney (2002) indicates that much of the South West Growth Centre is prone to salinity risks to varying degrees, including significant areas that are classified as either Moderate or High Salinity Risk. The general risk assessment has been

supplemented by specific salinity risk assessments for Growth Centre Precincts that have been released for Precinct Planning.

1.2 The Causes of Urban Salinity

Soils containing salts occur naturally in western Sydney due to underlying geological formations. In undisturbed areas the salts are generally stored below the plant root zone where they have minimal impact. The development of Western Sydney has disturbed the soil profile, altered hydrological processes and, in some areas, led to concentrations of salts on soil surfaces, in building materials, and waterways. Some Precincts are located within an area that is predisposed to developing salinity issues.

Although saline soils and groundwater are a natural part of the Australian landscape, land management practices are now increasingly recognised as significant contributors to the expansion of salt affected areas. In particular, urban salinity is increasingly occurring around populated areas due to clearing and site development.

Salinity occurs when salts found naturally in the soil or groundwater are mobilised. Capillary rise and evaporation concentrate the salt on, and close to, the ground surface. Urban salinity becomes a problem when the natural hydrogeological balance is disturbed by human interaction. This may occur in urban areas due to changes to the water balance, increases in the volume of water into a natural system altering subsurface groundwater flows and levels, exposure of saline soils, and removal of deep rooted vegetation reducing rates of evapotranspiration. Even small changes in sensitive areas can result in the balance being irrecoverably altered and salinisation occurring.

Some building methods may also contribute to the process of urban salinity. In particular, compacted surfaces and filling can restrict groundwater flow and result in a concentration of salt in one area. Cutting into slopes for building can result in saline soils or ground water being exposed and intercepted. The use of imported fill material may be an additional source of salt or the filling may be less permeable, preventing good drainage. These issues may also result in problems with the design and construction of roads. In particular, the building of embankments and the compaction of layers can interfere with groundwater flow. Also the inappropriate positioning, grading and construction of drains can result in surface and groundwater mixing and stagnant pools forming that evaporate leaving salt encrusted ground.

Salinity issues may also arise as the result of cumulative impacts. A common example is from the gradual removal of vegetation across a site, which can contribute to a change in the hydrological regime from reduced evapotranspiration, a consequential rise in the ground water table, and subsequent salinity problems. Where vegetation is gradually removed the water table rises as a result of a smaller volume of water being used by the plants, allowing salts to be mobilised. Of more relevance in an urban landscape is the potential for an increase in water inputs into the hydrological regime. These increased inputs commonly come from watering of gardens and playing fields, infiltration of storm water and sewage and other service leakage.

These inputs may seem minor on their own but their cumulative effects over time produce an elevated groundwater table and eventually high levels of salinity.

Figure 1 (from "Good Housekeeping to Manage Urban Salinity" by the Department of Infrastructure Planning and Natural Resources) illustrates the urban salinity process and identifies situations where salinity problems can develop due to inappropriate planning and design.

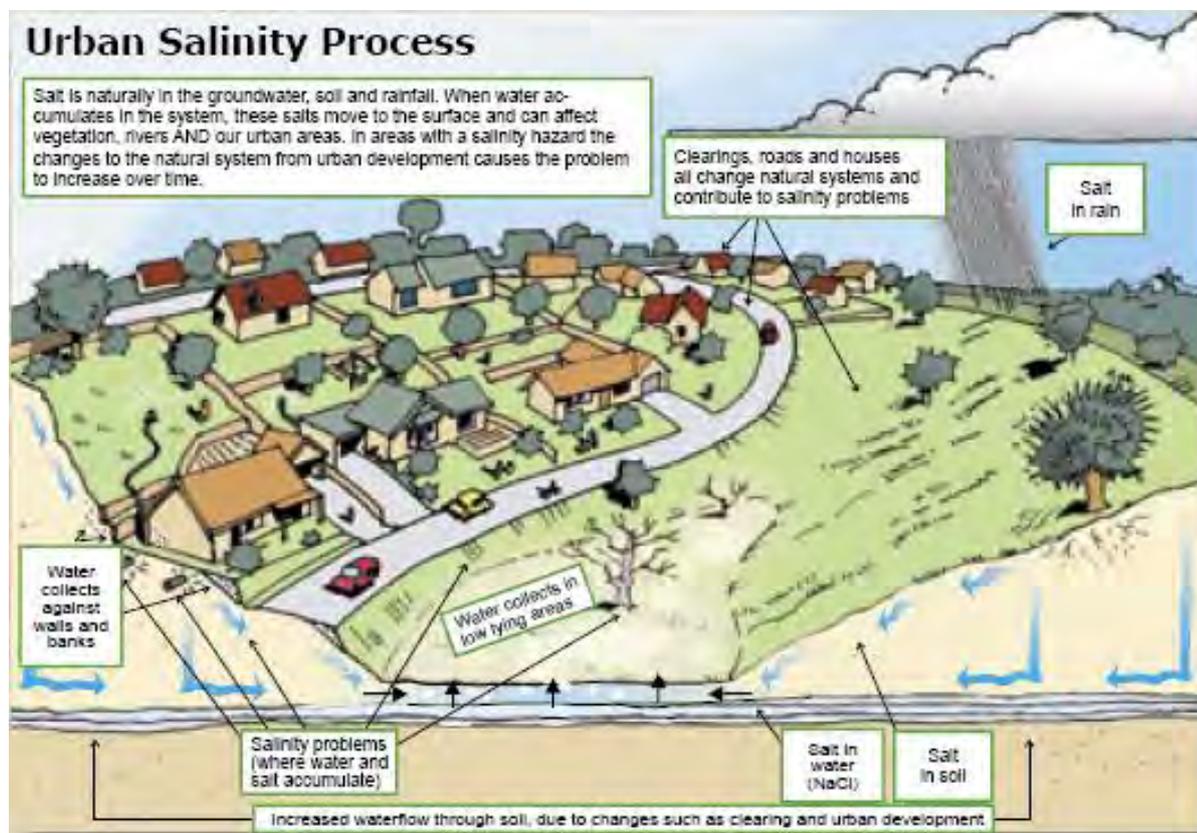


Figure 1: The Urban Salinity Process (DIPNR)

1.3 Effects of Salinity in an Urban Environment

Excess salinity in an urban environment can result in significant problems. It can manifest itself in a number of ways.

The effects of salinity can be observed in damage to building materials, infrastructure including pipework and roads and in death or poor health of vegetation. The effect of urban salinity is the result of both physical and chemical actions of the salt on concrete, bricks and metals. Salt moves into the pores of concrete and bricks and becomes concentrated when the water evaporates and can result in breakdown of materials and corrosion. Evidence of this may include crumbling, eroding or powdering of mortar or bricks, flaking of brick facing and cracking or corrosion of bricks.

High levels of salinity can result in damage to and even death of plants. Signs that vegetation is under stress from salinity include the discolouration and wilting of leaves and the death of less salt tolerant plant species. It may also be hard to establish lawns in areas that are subject to high salinity.

High levels of salinity may also affect soil structure, chemistry and productivity. This can reduce plant growth which in turn alters soil structure, chemistry and nutrient levels. As soils become more saline, plants and micro-organisms decline and soil structure deteriorates.

Water logging may also occur following a decline in nutrient levels. Over time, the alteration of soil structure can lead to the formation of gullies and other forms of soil erosion.

Salinity may also result in the corrosion of steel pipes, structural steel and reinforcement and can damage underground service pipes resulting in significant financial costs.

While limited groundwater was observed during the site investigations, these conditions may potentially change in periods of heavy downpour. Damage to pipes has the potential to exacerbate the problem by further recharging the aquifer.

Salinity can also have a significant effect on buildings and associated infrastructure where cutting and filling exposes buildings/structures to elevated salinity levels. This may include:

- degradation of bricks, concrete, road base and kerbing materials leading to expansion, cracking, strength and mass loss;
- corrosion of reinforcement and loss of structural integrity;
- rising/falling damp; and
- non-structural impacts, such as efflorescence on bricks.

These impacts can be prevented, minimised, or mitigated by the implementation of appropriate management measures as outlined in the Salinity Management Plan in **Section 3**.

2 Salinity Hazard Assessment

Salinity assessments undertaken as part of Precinct Planning are based on broad scale analysis of potential salinity risks including limited field sampling. These results are based on limited sampling and the findings summarised in this section are indicative only of salinity conditions in the precinct. Further detailed salinity assessment investigation is required across much of the Precincts to confirm salinity conditions and to identify appropriate management measures.

Salinity risk varies across the Growth Centres, and is often related to elevation, topography and the presence of watercourses. Saline groundwater is also an issue in most locations, although depth to ground water (below current surface level) varies considerably.

2.1 Salinity Risk Map

A **Salinity Risk Map** is included in the Campbelltown Growth Centres Precinct (East Leppington) DCP and is divided into:

- Low Risk Areas: The salinity of the area is considered typical of western Sydney. Precautionary measures may be considered.
- Moderate or High Risk Areas: The salinity risk of the area is considered typical for creek line, floodplain or other low relief areas in western Sydney. These areas have a moderate or high risk of being affected by salinity and precautionary measures should be taken.

In addition, areas of mild to moderately aggressive soils may be indicated on the map. Precautionary measures must be taken in these areas and these are discussed in **Section 3.4**.

Note: *Studies are by no means detailed or comprehensive. Maps are an indication only and site specific studies at the DA stage are required (as specified by this DCP) to determine salinity conditions and appropriate management measures.*

3 Salinity Management Guidelines

3.1 Introduction

The Salinity Management Guidelines contain:

- general measures to consider across the site;
- measures applying to high risk areas;
- appropriate management strategies for the management of groundwater, site design and urban development;
- measures to be taken at various stages of development; and
- strategies and measures for specific works.

3.2 General Measures

The following general measures apply to all development within the Campbelltown Growth Centre Precinct (East Leppington). Where there is an inconsistency, the specific controls in the following sections take precedence. All development should be in line with the Western Sydney Salinity Code of Practice 2004.

Note that the practices for managing salinity will differ depending on the type of land use that is proposed on the site. For example, practices for land zoned Open Space and Recreation will require different approaches than practices within the Local Centre and residential zones.

1. Filling areas are to be graded, revegetated and adequate surface drainage infrastructure installed as soon as practical to avoid excessive infiltration, minimise salt leaching and soil erosion.
2. Drainage infrastructure in vulnerable areas is to be installed as soon as practical to avoid excessive water infiltration, ponding of water on-site and salt leaching.
3. Watering or irrigation practices are to be managed to avoid excessive infiltration and water logging.
4. Pipes used for stormwater drainage should be sealed to minimise the risk of leakage.
5. Concrete of suitable strength and reinforcement cover is to be used for drainage structures and wherever contact with water and increased soil moisture is expected.
6. Exposure and disturbance of subsoil material must be reduced by minimising cut and fill.
7. Natural drainage patterns are to be maintained as far as practical.
8. Imported soil should be tested for salinity to avoid importing saline soils to the site.

9. Native plant species with minimal water requirements, tolerant to EC levels of 4000 μ S/cm to be selected for revegetation or plantings.
10. Drainage, sewerage and water infrastructure is to be regularly maintained and repaired to prevent leakages.
11. Groundwater extraction does not occur on the site.
12. Design and construction to be carried out in accordance with relevant Australian Standards, Building Codes and current 'Industry Best Practice' in regard to urban salinity.
13. Any imported fill must have its salinity levels tested and must not exceed a level of 2 deci-siemens per centimetre. Soils exceeding this level must not be imported onto the site.
14. Reversing or mixing the soil profile when undertaking cut and fill activities must be avoided. Soils must be replaced in their original order.
15. Native vegetation must be retained or restored on site where possible.
16. In seepage and discharge areas or areas with a high potential sulphate resistant building materials must be used.
17. In areas with sodic or saline B Horizons disturbance to the soil should be reduced and the exposure of building materials to the corrosive elements in these soils minimised. Appropriate construction techniques such as suspended slab or piling to encourage ventilation and prevent soil moisture from being forced up the walls of the structure should be used.
18. In case of all building materials the manufacturer's advice must be complied with regarding durability and correct use.
19. Sulphate resistant materials should be used for underground surfaces and roads or paving.
20. Roads must have well designed sub surface drainage.
21. Roads and shoulder areas must be designed to drain surface water such that there is no excessive concentration of runoff or ponding which may result in water logging or additional recharge or groundwater. Road shoulders must also be sealed.
22. Surface drains should be provided along the top of batter slopes or greater than 2.5 metres height to reduce the potential for concentrated flows of water flows slopes which may cause scour. Well graded subsoil should be provided at the base of all slopes where there are road pavements below the slope to reduce the risk of water logging.
23. The addition of salts in the materials, fill or water used during construction must be limited.

24. A waterproof seal must be used on roads to minimise evaporation and the concentration of salt.
25. Road alignments should not intercept known salt affected or water logged areas.
26. Roads should not be designed in a manner that impedes the sub-soil flow or creates hydraulic pressure causing groundwater discharge.
27. Natural drainage patterns and infiltration rates must be maintained as far as practicable.
28. Drainage should not be designed to discharge to groundwater or salinity affected areas that is likely to cause increased water logging adjacent to the road or that concentrated surface runoff.
29. Detention basins and other measures must not leak and cause localised damp soil conditions or recharge to the groundwater.
30. Stormwater detention structures and other measures must be constructed with impermeable liners and avoid the infiltration of water into the surrounding landscape or groundwater above that which would naturally occur. If using a clay lining the possibility that on site clays may be saline should be investigated before they are used for this purpose. In these situations an impermeable geotech fabric may be preferable.
31. Materials and waters used in the construction of roads and fill embankments should be selected to contain minimal or no salt. Where it is difficult a capping layer of either topsoil or sandy materials should be placed to reduce capillary rise, act as a drainage layer and also reduce the potential for dispersive behaviour in the sodic soils.
32. Batter slopes should be compacted with control of the moisture content to optimum moisture content plus 2 per cent or otherwise over-filled, compacted and then trimmed back to the final alignment to minimise infiltration through the exposed filling betters and the potential resulting flushing of salts from the filling. If the later is to be carried out, the outer zone (3 metres) of the fill should be placed at optimum moisture content plus 2 per cent.

3.3 Groundwater Management

The key to controlling salinity is to minimise the concentration of salinity by evaporative processes. Care should also be taken to avoid raising the groundwater tables, as this is likely to result in an increased surface expression of salinity and may lead to water logging and groundwater infiltration into underground infrastructure.

1. Some general measures to reduce the volume of discharge into the aquifer and reduce risk of rising groundwater tables are:
2. Avoid over-watering of lawns, parks and other landscaped areas.
3. Minimise the number of shallow open pools that can readily dry out;

4. Plant native vegetation that utilises rainfall efficiently and minimise lawn areas on land not required for recreational uses. Landscape with native trees, shrubs and grasses that require little irrigation.
5. Appropriate design, construction and maintenance of water supply, sewage and stormwater pipes to avoid leaking.
6. Ensure an appropriate ratio of hard (impermeable) and permeable surfaces to avoid rainwater runoff infiltrating the ground in large volumes at any given location.
7. Direct runoff from paved areas into lines stormwater drains rather than along grassed channels as necessary.
8. Line or locate any ponds higher in the landscape to avoid recharge where proximity to the water table is likely to create groundwater mounding.
9. Avoid or minimise the use of on site stormwater detention.
10. Ensure any trunk stormwater detention infrastructure is appropriately designed and constructed.
11. Ensure adequate surface drainage for all development, including proper geotechnical assessments of planned drainage basins, artificial wetlands and recreational waterbodies.

3.4 High Risk Areas

In areas identified as having a high salinity risk (refer to Section 2 of this DCP and **Figure 2-4**) or site specific studies or for development in close proximity to creek lines the following measures must be taken:

1. Detailed sampling and testing of soils and groundwater is required to confirm current salinity conditions and identify any risks that may be posed by development, as part of the design of subdivisions. A salinity assessment report is to be submitted with subdivision DA's in high risk areas.
2. Reduced development densities are to be considered to reduce pressure on groundwater in catchment areas.
3. Unless site specific testing shows otherwise and/ or other management measures can be shown to achieve sufficient protection, floor slabs are to:
 - be elevated above ground level; and
 - have a minimum concrete strength of 32MPs.
4. Existing riparian corridors are to be maintained and revegetated.
5. Detailed salinity investigations are to be undertaken prior to development or the installation of infrastructure and the recommended management measures are to be implemented.

3.5 Site Design

Control methods for management of salinity during site development should start with adherence to careful stripping and separation of non-saline topsoil from slightly and moderately saline subsoils. Soils must be replaced in the original order where possible to avoid bringing salts to the surface.

The A and top of the B (i.e. B1) horizon are generally not saline and should be recovered and stockpiled separately. The lower B (i.e. B2) and C horizons are generally the more saline layers and where exposed need to be covered with say 100 - 200 mm of B1 then 100 - 200 mm of topsoil (A) for landscape finishes. Building platforms should be capped with 100 - 200 mm of B1 horizon non saline subsoil.

Precautionary measures in subdivision design to reduce the potential for salinity problems include:

1. avoiding water collecting in low lying areas, along shallow creeks, floodways, in ponds, depressions, or behind fill embankments or near trenches on the uphill sides of roads. This can lead to water logging of the soils, evaporative concentration of salts, and eventual breakdown in soil structure resulting in accelerated erosion;
2. roads and the shoulder areas should be designed to be well drained, particularly with regard to drainage of surface water. There should not be excessive concentrations of runoff or ponding that would lead to water logging of the pavement or additional recharge to the groundwater. Road shoulders should be included in the sealing program;
3. surface drains should generally be provided along the top of batter slopes of greater than 2.5 m height to reduce the potential for concentrated flows of water down slopes possibly causing scour. Well graded subsoil drainage should be provided at the base of all slopes where there are road pavements below the slope to reduce the risk of water logging;
4. where possible materials and waters used in the construction of roads and fill embankments should be selected to contain minimal or no salt. This may be difficult for cuts and fills in lower areas where saline soils are exposed in cut or excavated then placed as filling. Under these circumstances where salinisation could be a problem, a capping layer of either topsoil or sandy materials should be placed to reduce capillary rise, act as a drainage layer and also reduce the potential for dispersive behaviour in the sodic soils;
5. to minimise infiltration through the exposed filling batters and the potential resulting flushing of salts from the filling, it is suggested that the batter slopes be specifically compacted to the requirements as described above but with control of the moisture content to OMC + 2% or otherwise over-filled, compacted and then trimmed back to the final alignment. If the later is to be carried out, the outer zone (say 3 m wide) of the filling should be placed at OMC + 2%;
6. gypsum should be mixed into filling containing sodic soils and cuts where sodic soils are exposed on slopes to improve soil structure and to minimise erosion potential;

7. consideration could be given to planning to use deeper infrastructure service lines, deeper than say 1.2 m, to promote subsurface drainage by incorporating slotted drainage pipes fitting into the stormwater pits in lower areas where pipe invert levels are within about 1 m of existing groundwater levels. This is probably likely to be more appropriate where good drainage can be planned as in certain situations poorly graded subsoil drainage and water collecting in pits may make things worse raising the water table and increasing the risk of salinisation;
8. salt tolerant grasses and trees should be considered close to the creek and in areas of moderate and greater salinity to reduce soil erosion and to stabilise the soils and creek banks as well as maintain the existing evapotranspiration and groundwater levels. Reference should be made to an experienced landscape planner or agronomist. Advice from landscape technologists is that a wide range of indigenous and native species are available that will tolerate the anticipated level of salinity.

3.6 Residential and Other Buildings

Figure 3 presents diagrammatically a selection of salinity management tips for domestic dwellings.

The extent of measures adopted during construction in particular the concrete and masonry requirements should depend on the particular level of salinity of aggressivity at the actual site. Based on measurements and observations to date, it is anticipated that extreme salinity protection measures, such as increased durability concrete, barrier membranes, pier and beam, etc will not be required over most of the building areas. Nevertheless, for the construction of buildings on moderately or more saline sites, the following controls are to be implemented:

1. Soil from building sites in areas suspected to be more than slightly saline ($EC_e > 4$ dS/m) should be sampled, tested and classified for soil salinity and aggressivity. This should preferably be carried out by a geotechnical consultant at the same time the site is classified for soil reactivity (shrink – swell behaviour as described in Australian Standard 2870 – 1996 Residential slabs and footings). The salinity classification would involve limited additional testing of soil or water samples for pH, electrical conductivity, total dissolved solids (TDS), sodicity, and possibly sulphates and chlorides.
2. On moderately or more saline sites, a thick layer of sand (say 100 mm minimum) followed by a membrane of thick plastic should be placed under the concrete slab to act as a moisture barrier and drainage layer to restrict capillary rise under the slab. Alternatively concrete grade of at least N25 and minimum 45 mm reinforcement cover should be adequate in moderately saline areas increasing to N32 and 50 mm cover respectively for very saline (EC_e from 8 to 16 dS/m) areas.
3. The need for higher than normal strength concrete and use of sulphate resistant cement should be considered in potentially highly saline ($EC_e > 16$ dS/m) or aggressive areas in order to reduce the risk reinforcement corrosion in concrete slabs. A minimum of 55 mm of concrete cover on slab reinforcement, proper compaction and curing concrete are also suggested to produce a dense low permeability concrete.
4. As an alternative to slab on ground construction, suspended slab or pier and beam construction should be considered, particularly on sloping sites as this will minimise exposure to potentially corrosive soils and reduce the potential cut and fill on site which could alter subsurface flows.
5. Other measures that can be considered to improve the durability of concrete in saline environments should be considered. These include reducing the water cement ratio (hence increasing strength), minimising cracks and joints in plumbing on or near the concrete, reducing turbulence of any water flowing over the concrete and using a quality assurance supplier.
6. It is essential that in all masonry buildings that a brick damp course be properly installed so that it cannot be bridged either internally or externally. This will prevent moisture moving into brick work and up the wall.
7. As there are various exposure classifications and durability ratings for the wide range of masonry available, reference should be made to the supplier in choosing suitable bricks of at least exposure quality. Water proofing agents can also be added to mortar to further restrict potential water movement.

8. In high salinity areas, bricks that are not susceptible to damage from salt water should be used. These are generally less permeable, do not contain salts during their construction and have good internal strength so that they can withstand any stress imposed on them by any salt encrustation.
9. As indicated on **Figure 3**, service connections and stormwater runoffs should be checked to avoid leaky pipes which may affect off site areas lower down the slope and increase groundwater recharge resulting in increases in groundwater levels.

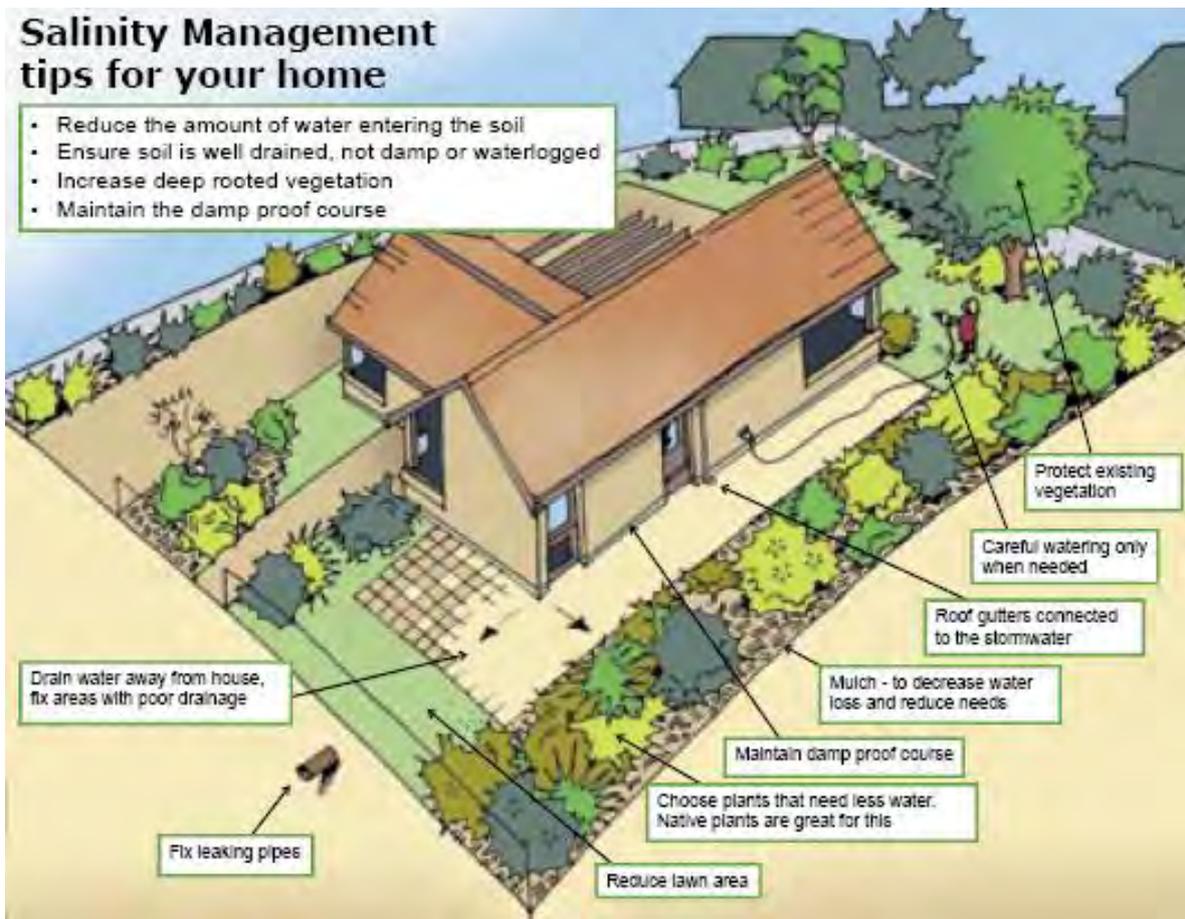


Figure 3: Salinity Management at Home (DIPNR)

3.7 Measures for Specific Assets

Table 1 summarises salinity management measures that are to be applied to the planning, design and construction of specific categories of assets in the Campbelltown Growth Centres Precinct (East Leppington).

Table 1: Salinity management measures for specific assets

Asset	Stage	Measure
Infrastructure and Utilities (Road Pavement, Drainage, Pipes, Structures, Pits, Substations, Duct Crossings, Sewer and Water Pipes)	Precinct Planning	<ul style="list-style-type: none"> ▪ Consider appropriate site selection to prevent structural degradation; and ▪ Avoid low lying areas and areas near creek lines.
	DA	<ul style="list-style-type: none"> ▪ Design and size drainage infrastructure to reduce the intensity of local and regional flooding. ▪ Ensure appropriate embankment designs. ▪ Design systems to avoid the interception of surface flow or groundwater recharge.
	DA/construction	<ul style="list-style-type: none"> ▪ Avoid the use of materials such as clay and brass for piping. ▪ Ensure sufficient clearance to groundwater. ▪ Install appropriate subsoil drainage. ▪ Use materials of appropriate strength and cover for reinforcement. ▪ Avoid the disturbance of natural drainage patterns where possible. If this is not possible then realign drainage lines as close to natural patterns as possible.
	Post-development	<ul style="list-style-type: none"> ▪ Maintain and repair to minimise leakages.
Landscaping and Existing Vegetation	DA/Construction/ Post Development	<ul style="list-style-type: none"> ▪ Retain and/or establish the use of native salt-tolerant species, especially if deep rooted to minimise irrigation requirements. ▪ Line waterbodies to minimise groundwater discharge. ▪ Avoid overwatering of lawns, gardens and parklands. ▪ If possible, use 'smart' sprinkler systems or subsoil drip/capillary action systems and maintain them regularly. ▪ Carry out site specific investigations into the potential impacts of recycled water use and implement the recommendations of these studies. ▪ Ensure that existing riparian corridors are maintained.

Asset	Stage	Measure
Miscellaneous (Floor Slabs, Masonry Walls, Foundations, Carparks)	DA/Construction	<ul style="list-style-type: none"> ▪ Ensure sufficient clearance to groundwater or install subsoil drainage. ▪ Avoid disturbance of the natural drainage pattern. ▪ Damp proof courses and vapour barriers are to be properly installed where applicable and maintained to ensure they are not breached by later additions. ▪ Use admixtures for waterproofing and corrosion prevention. ▪ On ground level, provide a sand/gravel layer of sufficient depth under the slab. ▪ Install appropriate membranes under slabs and ensure that they are extended to the outside face of the external edge beam up to the finished ground level. ▪ Use concrete of appropriate strength and cover for reinforcement. ▪ For floor slabs, ensure that concrete is of the appropriate strength and cover for reinforcement and are properly cured. The following requirements apply: <ul style="list-style-type: none"> ▪ minimum strength of 25MPs where the slab is at ground level ▪ cover must be at a reinforcement height of: <ul style="list-style-type: none"> ▪ 50mm from unprotected ground ▪ 30mm from a membrane in contact with the ground ▪ 50mm for strip footings and beams irrespective of the use of a damp proof membrane ▪ Ensure that damp proof course consists of adequate material and is correctly placed. ▪ Ensure that exposure class masonry units are used below any damp proof course, including for strip footings, and that appropriate mortar and mixing ratios are used. ▪ Select foundation type and material in according with Australian Standards with consideration of soil aggressivity. ▪ Allow for sufficient corrosion of steel or install the appropriate protective systems. ▪ Use permeable paving where practical.

Asset	Stage	Measure
Earthworks (Excavations, Cut and Fill, Re-contouring and Stockpiling)	Construction	<ul style="list-style-type: none"> <li data-bbox="735 203 1433 271">▪ Revegetate and provide surface drainage as quickly as practical <li data-bbox="735 293 1433 360">▪ Install adequate erosion controls such as silt fences during excavation and until site stabilisation. <li data-bbox="735 383 1433 450">▪ Avoid excavation intersecting the groundwater, where possible. <li data-bbox="735 472 1433 506">▪ Ensure imported fill is non/slightly saline. <li data-bbox="735 528 1433 595">▪ Place cut materials in the original in-situ order, or if this is not possible, bury the most saline soil underneath less saline soil. <li data-bbox="735 618 1433 685">▪ Monitor runoff from stockpiles and conduct the appropriate tests to determine whether gypsum should be added. <li data-bbox="735 707 1433 775">▪ Ensure that stockpiles have adequate controls in place for erosion, covering and stabilisation.

4 References

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APPENDIX D

PRESCRIBED TREES and PREFERRED SPECIES

1 Prescribed Trees and Preferred Species

1. A prescribed tree is identified as:

- having more than 4 metres in height and having a trunk diameter of more than 200 millimetres when measured at height of 1 metre from the ground.
- a tree identified as one of the species listed in **Table 1**.

2. Consent is not required:

- for clearing species listed in **Table 2** or any other species which have been declared as noxious plants under the *Noxious Weeds Act 1993*;
- for the removal of torn limbs or dead wood, such as individual branches, but not including whole trees, or
- for pruning of less than 10% of the canopy or root system up to once every growing season and only of branches less than 100 millimetres in diameter, or
- for pruning of more than 10% but less than 25% of the canopy, where the work will be undertaken by a suitably qualified person and Council has been notified of the work, and up to once every growing season, or
- when inserting root barriers, when this will result in less than 10% of the root system being removed and up to once every growing season,

3. Pruning of prescribed trees is only acceptable if:

- all work complies with the Australian Pruning Standards AS 4373-1996, and
- any pruning will not result in harm to the health of the tree.

Table 1: Preferred Species

Scientific Name	Common Name	Mature Height	Mature Spread	Native
Prescribed Trees				
Acer buergeranum	Trident Maple	6m	3m	X
Agonis flexuosa	Willow Myrtle	14m	6m	√
Angophora floribunda	Rough Barked Apple	20m	6m	√
Banksia integrifolia	Coastal Banksia	20m	6m	√
Casuarina glauca	Swamp She-Oak	15m	5m	√
Corymbia maculata	Spotted Gum	30m	8m	√
Eucalyptus amplifolia	Cabbage Gum	30m	5m	√
Eucalyptus crebra	Narrow Leafed Red Ironbark	30m	8m	√

Scientific Name	Common Name	Mature Height	Mature Spread	Native
<i>Eucalyptus microcorys</i>	Tallow-wood	40m	8m	√
<i>Eucalyptus moluccana</i>	Grey Box	30m	8m	√
<i>Eucalyptus tereticornis</i>	Forest Red Gum	40m	4m	√
<i>Fraxinus 'Raywoodii'</i>	Claret Ash	20m	8m	X
<i>Jacaranda mimosifolia</i>	Jacaranda	20m	8m	X
<i>Melaleuca linarifolia</i>	Snow In Summer	10m	4m	√
<i>Melaleuca nodosa</i>	Ball Honeymyrtle	4m	2.5m	√
<i>Melaleuca stypheloides</i>	Prickly Paperbark	10m	3m	√
<i>Melia azedarach</i>	White Cedar	15m	5m	X
<i>Sapium sebiferum</i>	Chinese Tallow Tree	7m	3m	X
Shrubs				
<i>Agapanthus orientalis</i>	Agapanthus	0.75m	0.4m	X
<i>Acemena smithii 'Hedge Master'</i>	Lilly Pilly	2m	1m	√
<i>Anigozanthos flavidus</i>	Tall Kangaroo Paw	2m	1m	√
<i>Banksia spinulosa</i>	Hairpin Banksia	3m	2m	√
<i>Brunoniella australis</i>	Blue Trumpet	0.3m	0.4m	√
<i>Bursaria spinosa</i>	Tasmanian Christmas Bush	10m	6m	√
<i>Callistemon linariifolius</i>	Narrow-leaved Bottlebrush	3.5m	2m	√
<i>Crinum pedunculatum</i>	Crinum Lily	2.5m	2.5m	√
<i>Dietes bicolor</i>	Fortnight Lily	1.0m	0.75m	X
<i>Doryanthes excelsa</i>	Gynea Lily	3m	2m	√
<i>Dodenea viscosa</i>	Giant Hop Bush	3m	3m	√
<i>Gardenia augusta</i>	Common Gardenia	1.5m	1.0m	X
<i>Grevillea poorinda "Royal Mantle"</i>	Grevillea	1.5m	1.5m	√

Scientific Name	Common Name	Mature Height	Mature Spread	Native
Hakea sericea				
Kunzea ambigua	Silky Hakea	6m	3m	√
Micromyrtus ciliata	Tick Bush	2.5m	2m	√
Phormium tenax "Purpureum"	Fringed Heath Myrtle	0.15m	1.5m	√
Thryptomene saxicola	NZ Purple Flax	1.0m	1.0m	X
Westringia fruticosa	Rock Thryptomene	1m	0.5m	√
	Coastal Rosemary	2.0m	1.5m	√
Ground Cover				
Aspidistra elatior	Cast Iron Plant	1m	0.8m	X
Brachycome multifida	Cut Leaf Daisy	0.3m	1m	√
Dichondra repens	Kidney Weed	0.1m	0.3m	√
Grevillea 'Bronze Rambler'	Grevillea cultivar	0.3m	0.4m	√
Hardenbergia violaceae	Purple Coral Pea	climbs to 1.5m	1.5m	√
Trachelospermum jasminoides	Star Jasmine	climbs to 6m	1.5m	X
Viola hederacea	Native violet	0.2m	0.5m	√
Wahlenbergia gracilis	Australian Bluebell	0.3m	0.25m	√
Grasses				
Aristida ramosa	Wire Grass	0.5m	0.5m	√
Danthonia tenuior	Wallaby Grass	0.3m	0.3m	√
Imperta cylindrica	Cogon Grass	0.5m	0.5m	√
Liriope muscari	Turf Lily	0.6m	0.5m	X
Microlaena stipoides var. stipoides	Microlaena	0.5m	0.3m	√
Ophiopogon japonicus				

Scientific Name	Common Name	Mature Height	Mature Spread	Native
Pennisetum alopecuroides	Mondo Grass	0.35m	0.3m	X
Poa labillardieri	Fountain Grass	1m	1m	√
Themeda australis	Poa	0.4m	0.25m	√
	Kangaroo Grass	1m	0.3m	√
Sedges/Rushes				
Carex appressa	Tall Sedge	1m	0.5m	√
Dianella caerulea	Flax Lily	0.5m	0.3m	√
Dianella revolute	Flax Lily	1m	1m	√
Gahnia aspera	Saw Sedge	1m	0.4m	√
Isolepis nodosa	Nobby Clubrush	1m	1m	√
Lomandra longifolia	Mat Rush	0.7m	1m	√
Lomandra multiflora	Many Flowered Mat Rush	0.7m	0.7m	√
Juncus usitatus	Common Rush	1m	0.4m	√
Turf				
Cynodon dactylon	Couch (improved types)	-	-	X

Note: It is important to note that this plant list is indicative only to provide a guide on the range of suitable plants for the region with consideration of functional, aesthetic, salt tolerance and horticultural requirements. The selection of species is expected to vary over time as a result of species availability, site conditions, and plant viability.

2 Undesirable species

Table 2: Undesirable Species

Scientific Name	Common Name
Bambusa	Bamboo
Eriobotrya	Loquat
Ficus Elastica	Rubber tree
Ligustrum	Large and small leaf Privet
Musa	Banana plant
Toxicodendron Succedaneum	Rhus or Wax tree
Morus	Mulberry
Arecastrum romanzoffianum Schefflera	Umbrella tree
Persea	Avocado
Ailanthus	Tree of heaven
Lagunaria Patersonia	Norfolk Island hibiscus
genus Cotoneaster	Cotoneaster
genus Erythrina	Coral tree
Cinnamomum camphora Ligustrum spp.	Camphor Laurel
Pinus radiata, Pinus elliotii	Radiata Pine
genus Salix	Willow
Mangifera Indica	Mango tree