

INTRODUCTION

Introduction - How to use this DCP

1A Preliminary

- 1A.1 Purpose of this DCP
- 1A.2 Name of this DCP
- 1A.3 Commencement Date
- 1A.4 Land affected by this DCP
- 1A.5 General aims of the DCP
- 1A.6 Relationship to Ku-ring-gai Local Environmental Plan
- 1A.7 Relationship to State Environmental Planning Policies
- 1A.8 Relationships to other DCPs
- 1A.9 Schedule of Amendments

1B Dictionary

- 1B.1 Definitions
- 1B.2 Abbreviations

INTRODUCTION

What is a Development Control Plan?

A Development Control Plan (DCP) is a planning document which provides detailed guidance for the siting, design and assessment of new development.

This DCP establishes a framework for future development in the Ku-ring-gai Local Government Area under the Ku-ring-gai Local Environmental Plan (KLEP).

The intent of the DCP is to provide more detailed provisions for development to achieve the purpose of the KLEP, while not being inconsistent with the provisions of the KLEP.

How to use this DCP

The planning framework contained in this DCP adopts a place-based planning approach. This is supported by design and environmental **objectives** and detailed **controls** aimed at achieving a high quality built environment, landscape setting and community spaces. These are supported by diagrams and photos.

The numbering of objectives and controls within this DCP are indicative only. The order does not imply any rating or weighting of the objective/control.

1. Objectives

The objectives contained in this DCP outline the outcomes that proposed developments are required to achieve. In order to gain consent, developments need to demonstrate that they have fulfilled the relevant objectives for each element.

2. Controls

The design controls demonstrate the preferred ways in which the objectives are to be achieved for improving site and building design. The controls focus on building performance/functionality, form, layout, sustainability and residential amenity.

Council may consider alternate solutions to the controls provided in this DCP where:

- i) the alternate solution is considered to be a reasonable planning outcome; and
- ii) the alternate solution achieves the aims and objectives of that design element.

Note: Before preparing and submitting a development application, applicants **are to** consult Council's Development Application (DA) Guide. The DA Guide is a comprehensive, step-by-step guide to what applicants need to know and do before lodging an application. All DAs submitted to Council **are to** conform to the requirements of the DA Guide.

3. Diagrams and Photos

Diagrams and photos are used to illustrate particular elements sought by the controls. There may be other elements within the photos or diagrams that are not consistent with other controls in the DCP as they are drawn from a variety of locations and development types, not always consistent with the objectives for Ku-ring-gai. The photos and diagrams should therefore only be used for guidance about the particular elements.

INTRODUCTION (continued)

4. Hyperlinks

To facilitate easy referencing between different Sections and Parts, hyperlinks in the e-version of the DCP are provided within the coloured boxes at the top of pages, or directly underneath topic headings. The colour of the box is the same as the signature colour of the Section being referenced as indicated in the diagram below.

Further controls that may apply:		
SECTION A PART 2 – Site Analysis	SECTION B PART 19 – Heritage Conservation Areas	SECTION C PART 21 – General Site Design

How is the DCP set out?

Following this Introduction and Preliminary Part 1, this DCP is set out in three (3) Sections: A, B and C, each with a number of Parts.

The Sections are designed to be used together to inform the design process. Refer to *Figure 1-1* for a visual representation of the relationship between the Sections and Parts to help with the use of the DCP. This diagram is included at the start of the Contents pages.

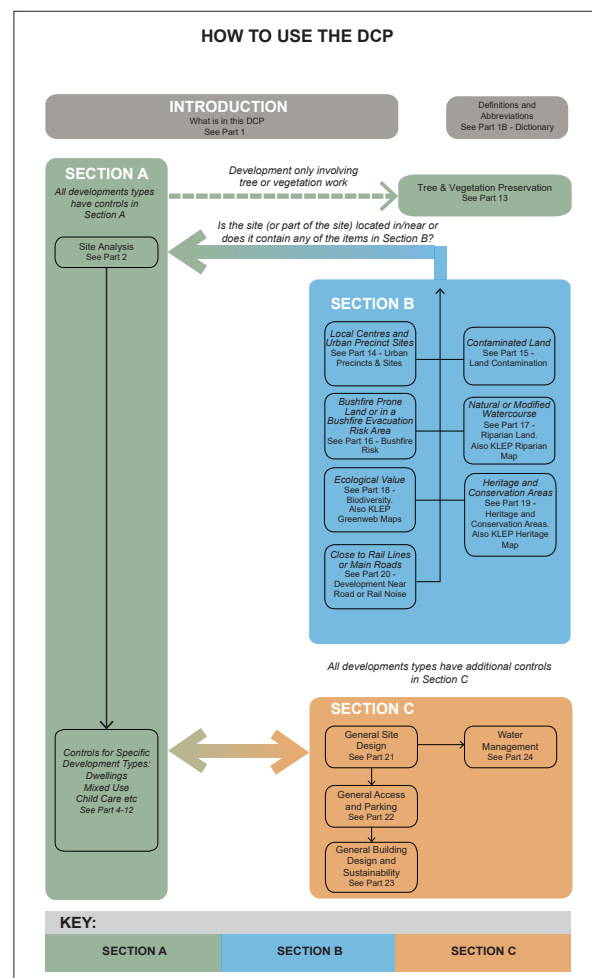


Figure 1-1:
Illustrated Guide to the DCP

INTRODUCTION (continued)

Structure of the DCP

This DCP comprises of twenty-six Parts. The parts are divided into a Part explaining the use of the DCP, followed by three sections A, B and C. A summary of all the Parts are provided below.

Introduction

Part 1 applies to all development types and is critical in:

- i) understanding how to navigate through the DCP,
- ii) understanding the relationship between this DCP and other statutory documents; and
- iii) understanding terms within the DCP.

Part 1A: Preliminary

This Part contains general statutory information about how the DCP was prepared, the general aims of the DCP and its relationship to the Ku-ring-gai Local Environmental Plan (KLEP) and other planning and design documents.

Part 1B: Dictionary

This part includes definitions to clarify terms used in this DCP. Terms used in the dictionary of the KLEP also apply to this DCP.

This Part also includes a list of the abbreviations used in the DCP.

SECTION A - applies to all development types

Section A comprises Part 2-13

Part 2 applies to all development types critical in:

- i) project feasibility assessment; and
- ii) the beginning of the design process

Part 2 is to be read in conjunction with the Parts of Section B that are applicable to the site.

Parts 3-13 contain detailed provisions that apply to the main development types likely to be proposed on land covered by the KLEP. Where a particular development type is not included in Section A, the objectives and controls in Section C will apply.

Parts 3-13 set parameters within which good building design can occur by illustrating the use of development controls and consistent guidelines for site and building design, which focus on building performance, functionality, form, layout and residential amenity.

Parts 3-13 are intended to be read in conjunction with the relevant parts in Section C.

The order of provisions within all the Parts is generally consistent with the order of the design process, although it is recognised that this will not be the same for all designers. It is also important to recognise that the design

INTRODUCTION (continued)

process is inherently iterative, as shown in Figure 1-1, and that some Parts will need to be reviewed more than once.

Part 2: Site Analysis

This Part outlines the requirements for a site analysis. A site analysis is required for all development proposals. A thorough analysis of the site and its context enables the consideration of relevant issues at the earliest stage of the design process. This helps to minimise costs and delays while supporting good location based design.

Part 3: Land Amalgamation and Subdivision

This Part provides guidance on amalgamation of multiple lots preventing isolation of lots; and, guidance on subdivision of lots. The controls provide detail on specific objectives and controls which are to be taken into account when amalgamating and/or subdividing lots.

Part 4: Dwelling House

This Part contains provisions for single dwelling houses and ancillary structures built in the R2 - Low Density Residential, C4 - Environmental Living, R3 - Medium Density Residential and R4 - High Density Residential zones.

Part 5: Secondary Dwellings

This Part provides detailed provisions for secondary dwellings which are permissible in R2 - Low Density Residential and C4 - Environmental Living zones under the KLEP. These controls are to be read in conjunction with the relevant objectives and controls for dwelling houses in Part 4.

Part 6: Multi-Dwelling Housing

This Part provides guidance for multi-dwelling housing developments being built within R3 - Medium Density Residential and R4 - High Density Residential zones. Dwelling types can include detached and attached townhouse dwellings or villas.

Part 7: Residential Flat Buildings

This Part contains guidance for residential flat buildings which are permissible in the R1 - General Residential, R4 - High Density Residential and MU1 - Mixed Use zones. Where commercial premises are permitted on the ground floor under Schedule 1 of the KLEP, also refer to Part 8 and Section B Part 14.

Part 8: Mixed Use Development

The main focus of this Part is the provision for mixed use buildings within the E1 - Local Centre zone and MU1 Mixed Use zone. As defined in the KLEP, a mixed use building is one which contains 2 or more uses. In the context of Ku-ring-gai, mixed use buildings will typically contain the following uses:

- i) retail or other commercial uses at ground and lower levels; and
- ii) residential apartments and/or offices on upper levels.

This Part also guides refurbishment and new business and retail development in the E1 - Local Centre and MU1 - Mixed Use zone.

INTRODUCTION (continued)

These developments will typically be alterations and additions to existing retail or business premises, or single storey retail or business premises, that do not wish to provide residential development in the upper levels at this time.

Guidance is also provided for the development and operation of commercial premises in residential flat buildings, where they are permitted by Schedule 1 (Additional Permitted Uses) of the KLEP.

In the case of any inconsistency between the controls in Part 8 and those in Section B Part 14, the controls in Section B Part 14 will prevail to the extent of that inconsistency.

Part 9: Non-Residential and Office Buildings

This Part includes controls for all non-residential building developments including offices, within the **E1** - Local Centre, **MU1** - Mixed Use, **E3 Productivity Support**. For mixed use buildings, it applies to those parts of the building to be used for non-residential and office purposes.

Part 10: Child Care Centres

This Part contains the provisions to guide the development of Child Care Centres. This part complements the provisions of the *Children (Education and Care services National Law Application Act 2010* and the *Education and Care Services National Regulations 2011*.

Part 11: Sex Industry Premises

This Part provides specific planning controls for Sex Services Premises and Home Occupation (Sex Services) Premises.

Under KLEP, Sex Services Premises and Home Occupation (Sex Services) Premises are permissible with consent in the **E1** - Local Centre, **MU1**- Mixed Use and B7 - Business Park zones. This Part of the KLEP which places further restrictions on the location of sex services premises of the DCP is to be read in conjunction with KLEP.

Part 12: Signage and Advertising

This Part includes objectives and controls for signage and advertising structures. This Part of the DCP is to be read in conjunction with **State Environmental Planning Policy (Industry and Employment), Chapter 3 Advertising and Signage**, and Schedule 2 of the KLEP which makes certain signage and advertising permissible as exempt development.

Part 13: Tree and Vegetation Preservation

This Part of the DCP contains requirements for the preservation of trees and vegetation on all land covered by the KLEP. This Part is made in accordance with **Chapter 2 of State Environmental Planning Policy (Biodiversity and Conservation) 2021** and prescribes the trees and vegetation to which **Part 2.3** applies. It replaces the Tree Preservation Order for the lands to which KLEP applies.

This Part provides controls in relation to the protection, management and long term survival of Ku-ring-gai's tree and vegetation resource, both native and exotic. Tree and vegetation works that do not require Council consent are also listed. This Part establishes a framework for the submission of applications for tree and vegetation works in Ku-ring-gai.

Where trees are located on a Heritage Item property or within a Heritage Conservation Area, this Part should be read in conjunction with Clause 5.10 of KLEP and Section B Part 20 of this DCP.

INTRODUCTION (continued)

SECTION B - applies to relevant site aspects

Section B contains objectives and controls in relation to special circumstances or values that may apply to a site or area, regardless of the zoning or the development type.

It is important to be aware of Council's expectations very early in the development feasibility or design stage in matters such as urban precincts and sites, potential land contamination, the management of bushfire risk, the natural environment, cultural heritage, and safety and amenity close to railways or busy roads amongst others.

In the case of any inconsistency between the controls in Sections A, B and C, the controls in Section B will prevail to the extent of the inconsistency.

Part 14: Urban Precincts and Sites

This Part is structured to provide guidance for development on land identified as an "urban precinct or site". There are a number of components:

- Precincts
- Community Infrastructure
- Building Setbacks
- Built Form
- Public Domain and Pedestrian Access
- Building Entries, Car Parking and Service Access

For each of the urban precincts or sites a set of site-specific performance-based provisions are provided to guide development in addition to the other development controls in Sections A, B and C of this DCP.

Part 15: Land Contamination

This Part requires the applicant to consider whether the site is contaminated. It contains provisions to ensure that the site is suitable, or can be made suitable, for the proposed development. It supplements *State Environmental Planning Policy (Resilience and Hazards) 2021 – Chapter 4 Remediation of Land*

Part 16: Bushfire Risk

This Part applies to land that is identified on Council's Bush fire Prone Lands Map and Bush fire Risk Evacuation Map. It includes objectives and design controls to ensure that any development on these lands manages risk to life and property while protecting the ecological values of the site and surrounds. It complements *Planning for Bush fire 2019*.

Part 17: Riparian Lands

This Part supports the provisions of Clause 6.4 of the KLEP. It applies to all land identified within the Riparian Lands and Watercourse Map in the KLEP.

This part provides general guidance for development in riparian lands (including waterways) as well as additional guidance for development within specific categories of riparian lands identified on the Riparian

INTRODUCTION (continued)

Lands Map.

Part 18: Biodiversity Controls

This Part supports the provisions of Clause 6.3 of the KLEP. It applies to all land identified as 'Biodiversity' on Terrestrial Biodiversity Map in the KLEP as well as to development that will have an impact on those lands.

It also applies to land identified as "Canopy Remnants" on the Greenweb maps at Part 18R.1. Applicants are required to check both the KLEP and DCP maps to determine whether a site is affected by this Part.

In combination, these lands are referred to as the Greenweb for the purposes of this DCP.

Part 19: Heritage Items and Heritage Conservation Areas

Part 19 applies to any development that is:

- i) on a Heritage Item listed under Schedule 5 Environmental Heritage in KLEP;
- ii) in a Heritage Conservation Area (HCA) identified in KLEP;
- iii) in the vicinity of a Heritage Item identified in KLEP.

This Part includes objectives and design controls to ensure that any development involving a Heritage Item conserves and enhances the Item. It also seeks to mitigate any potential adverse impacts of new development on the setting of Heritage Items and the Heritage Conservation Areas.

Part 20: Development near Rail Corridors and Busy Roads

This Part contains objectives and controls to ensure that development adjacent to major infrastructure corridors is located and designed to protect the infrastructure from damage; and, the users of the development from noise, vibration and other impacts related to development adjoining major road and rail infrastructure.

INTRODUCTION (continued)

SECTION C - applies to all development

Section C contains general development controls which address planning issues that are applicable across a range of sites and across different types, forms and densities of development. To ensure a consistent approach to issues, this Part applies to all types of development.

The Parts in this Section are to be read in conjunction with the Parts of Section B relevant to the specific site, and the controls under the same heading in Section A for the specific development type.

Part 21: General Site Design

This Part provides Council's controls concerning site design and layout, with particular attention to the relationship with the site analysis, and to landscaping, earthworks and slope. The Part provides controls which minimise the impact of the development on the site's native vegetation natural landscape and bushland, manages excavation and any earth works on a site, and ensures appropriate designing for sloping sites.

Part 22: General Access and Parking

Issues addressed in this Part includes equitable access and pedestrian movements; vehicle and bicycle access and parking.

Part 23: General Building Design and Sustainability

This Part provides general development controls for Building Design and Sustainability. This section aims to provide information for all building types on issues including green buildings, building services, waste management, social impact, sustainability of building materials and colours, roof terraces and podiums, construction, demolition and waste disposal.

Part 24: Water Management

This Part aims to ensure that the water management techniques employed for any given development are appropriate to both the site location and the development type as identified in Section B of this DCP. It therefore applies different controls to different situations and is to be followed from the start of the design process.

This Part supports Clause 6.5 of the KLEP. The controls cover stormwater management, design and water quality, water recycling and reuse (where reuse for water conservation is not covered by BASIX), subsurface water management and flood control and minimisation. This Part of the DCP is also intended as a complementary document to BASIX.

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- 1A.3 Commencement Date
- 1A.4 Land affected by this DCP
- 1A.5 General aims of the DCP
- 1A.6 Relationship to Ku-ring-gai Local Environmental Plan
- 1A.7 Relationship to State Environmental Planning Policies
- 1A.8 Relationships to other DCPs
- 1A.9 Schedule of Amendments



1A PRELIMINARY

1A.1 Purpose of this DCP

This DCP has been prepared in accordance with Section 3.43 of the *Environmental Planning and Assessment Act 1979* and **Division 2** of the *Environmental Planning and Assessment Regulation 2021*. The DCP provides more detailed guidance to facilitate the aims and objectives in the KLEP and to facilitate development permissible within the KLEP.

Under Section 4.15 of the Act, the consent authority is required to take into consideration the relevant provisions of this DCP in determining an application for development in the Ku-ring-gai local government area.

1A.2 Name of this DCP

This Development Control Plan (DCP) is the Ku-ring-gai Development Control Plan.

1A.3 Commencement Date

This Development Control Plan was adopted by Council and came into effect 23 May 2022. It is subject to amendments, which are listed in the Schedule of Amendments at the end of Section 1A.9.

1A.4 Land affected by this DCP

This Development Control Plan applies to all land to which KLEP applies.

1A.5 General aims of the DCP

The general aims of this DCP are as follows:

- i) Establish a future character for Ku-ring-gai, and ensure that development across the Local Government Area positively contributes to the existing character of the residential areas;
- ii) Ensure high quality sustainable urban design and architectural design of buildings;
- iii) Provide high quality public spaces and streets;
- iv) Ensure buildings and other development have a good relationship with neighbouring developments, the public domain and the landscape qualities of the locality;
- v) Encourage the provision of a range of building types which provide for increased housing choice, diversity of employment opportunities, access to retail and commercial services and other activities that contribute to a sustainable vibrant community;
- vi) Encourage the development of a variety of housing types which do not dominate, but harmonises with and contributes to the treed landscape and is sympathetic to the street and land on which it is proposed.
- vii) Ensure a high level of residential amenity in building design for the occupants of buildings, including daylight access, acoustic

1A PRELIMINARY (continued)

control, privacy protection, natural ventilation, design for safety, outdoor living, landscape design, indoor amenity and storage provision;

- viii) Promote the principles of ecologically sustainable development including water sensitive urban design, climate responsive building design, energy efficiency, and selection/use of building materials;
- ix) Ensure buildings and landscaping are designed for all age groups and degrees of mobility;
- x) Promote increased use of public transport, walking and cycling;
- xi) Ensure the heritage significance of the Heritage Items and Heritage Conservation Areas is conserved, and encourage development which respects that significance;
- xii) Promote and support biodiversity conservation, riparian restoration and ecological integrity;
- xiii) Ensure the long term survival of Ku-ring-gai's native and exotic tree and vegetation cover;
- xiv) Ensure the appropriate management of risks, such as flooding, bush fire and land contamination;
- xv) Ensure that the process of notifying development applications allows public participation that is proportionate to the potential impact;
- xvi) Provide traffic control measures and outcomes that manage and improve local traffic impacts and promote pedestrian safety.

1A.6 Relationship to Ku-ring-gai Local Environmental Plan

This DCP conforms to the provisions of the KLEP and is to be used in conjunction with that document for the assessment of all development applications. If there is any inconsistency between this DCP and the KLEP, the KLEP will prevail.

Compliance with the provisions of this DCP does not necessarily guarantee that consent to a Development Application (DA) will be granted. Each DA will be assessed having regard to the LEP, this DCP, other matters listed in Section 4.15 of the EP&A Act and any other policies adopted by Council.

Council may consider alternate solutions to the controls provided in this DCP where:

- i) the alternate solution is considered to be a reasonable planning outcome; and
- ii) the alternate solution achieves the aims and objectives of that design element.

1A PRELIMINARY (continued)

1A.7 Relationship to State Environmental Planning Policies

This DCP is to be read in conjunction with relevant State Environmental Planning Policies (SEPPs), including SEPP (Housing) 2021 and the Apartment Design Guide (ADG). If there is any inconsistency between this DCP and any relevant SEPP, the provisions of the SEPP will prevail.

1A.8 Relationships to other DCPs

All Development Control Plans applying to the land to which this Plan applies and to other land cease to apply to the land to which this Plan applies.

1A.9 Schedule of Amendments

No.	Effective Date	Amendment
1	27 August 2021	General housekeeping amendments to correct, clarify and strengthen controls.
2	01 October 2021	New Part 14L - part 62 and 64-66 Pacific Highway, Roseville
3	23 May 2022	Revised Part 14E/14E.11 - Lindfield Hub
4	05 October 2022	New Part 14M - 47 Warrane Road, Roseville Chase
5	03 March 2023	New Part 14N - 8a, 14, 16 Buckingham Road, Killara
6	TBD	Housekeeping amendment to correct, clarify, strengthen controls and improve built form and landscape outcomes

1B	Dictionary
1B.1	Definitions
1B.2	Abbreviations

1B.1 DEFINITIONS

In this DCP the following definitions apply. Terms used in the dictionary of the KLEP also applies to this DCP.

accessible car parking

car parking that is designed and built in accordance with the provisions in AS2890.6 to accommodate the needs of occupants with mobility impairment.

acoustic privacy

a measure of sound insulation between apartments, between apartments and communal areas, and between external and internal spaces.

active street frontage

building street frontages at street level that provide direct and level entry and openings to allow physical and visual access that encourage interaction between the inside of a building and the external areas adjoining the building, including footpaths, road reserves or public spaces. Active street frontages support pedestrian safety and amenity and provide an interface between the public and private domain.

Note: See the definition of 'street frontage' and 'street level' in this dictionary.

adjoining land

land that has a boundary in common with the site on which the development is proposed or that is separated from the site by not more than a pathway, driveway, laneway, roadway or similar thoroughfare.

advertisement

has the same meaning as in the **KLEP 2015**.

Note: The term is defined as follows:

the term is defined as a sign, notice, device or representation in the nature of an advertisement visible from any public place or public reserve or from any navigable water.

advertising structure

has the same meaning as in the **KLEP 2015**.

Note: This term is defined as follows:

the term is defined as a structure used or to be used principally for the display of an advertisement. Advertising structures are a type of signage - **see the definition of signage in this Dictionary**.

afflux

the rise in water level in a stream, channel or flow path caused by a constriction or impediment downstream.

amalgamated development site

two or more a number of lots joined to form a single development site for the purposes of a development application.

amenity

the 'liveability' or quality of a place which makes it pleasant and agreeable to be in for individuals and the community. Amenity is important in both the public and private domain and includes the enjoyment of sunlight, views, privacy and quiet.

ancillary

in the context of residential development, includes but is not limited to, such related facilities as a swimming pool, outbuilding, pergola, patio, pathway, driveway or tennis court.

aquatic habitat

the natural home of marine or freshwater animals, plants or organisms.

articulation zone

the area of three dimensional modelling at the periphery of the building, including any changes in façade alignment, balconies, bay windows and sun shading devices.

at-grade

on ground level (not on a building structure).

1B.1 DEFINITIONS (CONTINUED)

average recurrence interval	the long term average number of years between floods which will equal or exceed the selected event.
backwater	that part of a stream, channel or flowpath where the water is kept back due to some controlling influence or obstruction downstream.
back-up facility	means a facility that assists in the operation of the child care centre including cot rooms, child-accessible toilet areas, nappy change areas and bottle preparation areas.
balcony	any unenclosed platform (with balustrades) located at the height of 0.3 metres or more above adjacent finished ground level either cantilevered or supported over open space, which is attached to a dwelling and used for the exclusive enjoyment of the occupants.
bank	the primary bank of a waterbody.
barrier free access	approach and entry of a facility which is accessible by persons with disabilities (eg. grade level entry).
basement	has the same meaning as set out in the KLEP. Note: The term is defined as follows: basement means the space of a building where the floor level of that space is predominantly below ground level (existing) and where the floor level of the storey immediately above is less than 1 metre above ground level (existing).
bay window	a large window or series of windows projecting from the outer wall of a building and forming a recess within.
bedroom	any habitable room, which in the opinion of Council, is capable of being used as a bedroom.
biodiversity corridor	an area to facilitate the connection and maintenance of native flora and fauna habitats. Within the urban landscape, biodiversity corridors may be broken by roads and other urban elements and may include remnant trees and associated native and exotic vegetation.
blank wall	an expanse of wall that does not contain any openings. Walls with advertising or facade modelling, which have no openings, are considered blank walls.
building height	has the same meaning as in the KLEP. Note: The term is defined as follows: building height (or height of building) means the vertical distance between ground level (existing) and the highest point of the building, including plant and lift overruns, but excluding communication devices, antennae, satellite dishes, masts, flagpoles, chimneys, flues and the like.
building line or setback	has the same meaning as in the KLEP. Note: The term is defined as follows: building line or setback means the horizontal distance between the property boundary or other stated boundary (measured at 90 degrees from the boundary) and: (a) a building wall, or (b) the outside face of any balcony, deck or the like, or (c) the supporting posts of a carport or veranda roof, whichever distance is the shortest.

1B.1 DEFINITIONS (CONTINUED)

building identification sign

has the same meaning as in the KLEP 2015.

Note: The term is defined as follows:

means a sign that identifies or names a building and that may include the name of a building, the street name and number of a building, and a logo or other symbol but does not include general advertising of products, goods or services. Building identification signs are a type of signage—see the definition of signage in this Dictionary.

building sustainability index (BASIX)

State Environmental Planning Policy (Sustainable Buildings) 2022.

building zone

the area within which a building can be built, usually represented in plan and section.

built-upon area

the area of a site containing any built structure (whether covered or uncovered, above ground or below ground), any building, carport, terrace, hard-surface, paving, porous paving, artificial grass, pathway, gravel area, swimming pool, tennis court, driveway, parking area, or any like structures, but excluding minor landscape features such as informal seating, an open garden arch (<4sqm), and ponds (<4sqm).

bush fire hazard

bush fire prone land identified as “bush fire prone vegetation Category 1” or “bush fire prone vegetation Category 2” on the Ku-ring-gai Bush fire Prone Lands Map.

bushland

land on which there is vegetation which is either a remainder of the natural vegetation of the land or, if altered, is still representative of the structure and flora of the natural vegetation.

business identification sign

has the same meaning as in the KLEP 2015.

Note: The term is defined as follows:

business identification sign means a sign;

- a) that indicates
 - i) the name of the person or business, and
 - ii) the nature of the business carried on by the person at the premises or place at which the sign is displayed, and
- b) that may include the address of the premises or place and a logo or other symbol that identifies the business,

but that does not contain any advertising relating to a person who does not carry on business at the premises or place. Business identification signs are a type of signage - see the definition of that term in this Dictionary.

busy road

a freeway, a tollway or a transitway or any other road with an annual average daily traffic volume of more than 20,000 vehicles and that the consent authority considers is likely to be adversely affected by road noise or vibration.

Note: Also see definition of major roadway.

catchment

an area of land from which all runoff water flows to the same low point in a waterbody or drainage depression (creek, river, harbour, etc) and always relates to a specific location.

character item

A character item is a building with a commercial streetscape that has a significant facade that warrants retention within the street wall. A character item is not a heritage item.

1B.1 DEFINITIONS (CONTINUED)

clinical waste	any waste having the potential to cause infection and that has been generated by medical, nursing, dental, veterinary, pharmaceutical or other related activities, includes infectious substances, pathogenic substances, pharmaceutical's and pharmaceutical residues, cytotoxic substances and wastes from the production and preparation of pharmaceutical products.
commercial waste	refuse or waste material arising from any trade or industry but excludes liquid waste, demolition waste, building waste, contaminated waste, green waste or recyclable waste.
common area	that part of the site not subject to exclusive or private use by any particular residents or occupants of the building(s) and which is under the control of a body corporate. Common area includes setback areas and communal open spaces that provide landscaping and deep soil areas.
communal open space	<p>outdoor open space within the common area with shared facilities such as barbeque, seating, etc. for recreation, relaxation and social activities of residents and occupants of a development.</p> <p>Communal Open Space is not for the exclusive use of individual residents or occupants of any single dwelling. It does not include private open space.</p>
community land development	community land development within the meaning of the <i>Community Land Development Act 2021</i> .
compatible use	a use for a heritage item which involves no change to its culturally significant fabric, changes which are substantially reversible or changes which make a minimal impact
compost	vegetative material capable of being converted to humus by a biological decay process.
conservation (general)	the use, management and protection of resources so that they are not degraded, depleted or wasted and are available on a sustainable basis for present and future generations.
conservation (of a Heritage Item)	All the processes of looking after an item so as to retain its cultural significance. It includes maintenance and may, according to circumstances, include preservation, restoration, reconstruction and adaptation and will be commonly a combination of more than one of these
conservation management strategy	a document that identifies conservation strategies and management strategies that are appropriate to enable the general significance of a heritage item to be retained.
contaminated waste	waste which has the potential to cause injury, infection or offence. Sources include medical, nursing, dental veterinary, pharmaceutical and similar facilities engaged in treatment, investigation, teaching or research. Domestic sources include sharps and associated medical waste generated as a result of home based treatment of a medical condition (such as those associated with a diabetes sufferer or dialysis patient).

1B.1 DEFINITIONS (CONTINUED)

contributory property

contributory properties are buildings and sites within a HCA which are deemed to exhibit one or more of the following characteristics:

- i) buildings and sites that make an important contribution to the character and significance of the HCA. They can be from a key historical layer, true to an architectural type, style or period, or highly or substantially intact including their garden setting. Where subdivision has occurred, the subdivision is within the key historical period or the area.
- ii) buildings and sites which are altered from their original form but are recognisable and could be reasonably reinstated to that condition or the alterations are not considered to be detrimental to the integrity of the building; for example, a building that has been rendered or painted or where the roof cladding has been replaced but the form is otherwise legible.
- iii) buildings and sites with new layers/additions sensitive to the style, form, bulk, scale and materials of the original building.

Note: Contributory buildings do not necessarily need to be high-quality buildings but should represent the key historical period of the HCA. An HCA may also contain high-quality buildings which are not necessarily from the key historical period.

convective or stack effect/solar chimney air convection

results from hot air being pushed up and out of the dwelling by denser cold air which is drawn in at a lower level. Convective current air flow/air pressure improves natural ventilation but does not provide natural cross ventilation.

core (relating to a building)

component of building for vertical circulation (eg. lift, stairs).

corner dwellings

a dwelling with aspects at least 90 degrees apart. Corner dwellings are located only on the outermost corners of buildings.

cornice

a decorative horizontal moulding at the top of a building which 'crowns' or finishes the external façade.

coved

to make in an inward curving form. A concave surface forming a junction between a ceiling and a wall.

cross-over dwelling

a dwelling with two opposite aspects that has more than one level or a change in levels between one side of the dwelling and the other.

cross-through dwelling

a dwelling which is on one level with two opposite aspects.

curtain wall

a non-bearing wall, often of glass and steel, fixed to the outside of a building and serving especially as cladding.

dangerous goods

has the same meaning as in the *Dangerous Goods Act 1975*.

datum or datum line

a significant point or line in space established by the existing or desired context, often defined as an Australian Height Datum.

daylight

consists of both diffused light from the sky (sky light) and sunlight.

Note: See the definition of 'sunlight' in this dictionary.

dead tree

a tree is considered dead when it has no living vascular tissue.

deck

an external platform, usually elevated, usually located alongside and accessible from an interior space or around a swimming pool, and often made of timber.

1B.1 DEFINITIONS (CONTINUED)

deep soil landscaping

the soft landscaped part of the site area:

- i) that is not occupied by any structure, whether above or below the surface of the ground, except for minor structures such as:
 - paths to 1.2m wide;
 - storm water pipes of 300mm or less in diameter;
 - lightweight fences;
 - bench seats;
 - lighting poles;
 - drainage pits with a surface area less than 1m².
- ii) that has a minimum width of 2m;
- iii) that is not used for car parking;
- iv) may be used for water sensitive urban design, provided it does not compromise the ability to achieve the screen and canopy planting required by this DCP.

Note: For the purposes of calculating deep soil landscaping and landscaped areas, any access handle on battle axe sites is excluded.

demolition (heritage)

The damaging, defacing, destroying or dismantling of a heritage item or a component of a heritage conservation area, in whole or in part.

designated development

has the same meaning set down in the *Environmental Planning and Assessment Act 1979*.

development

has the same meaning set down in the *Environmental Planning and Assessment Act 1979*.

development application

has the same meaning set down in the *Environmental Planning and Assessment Act 1979*.

development assessment officer

the Council officer with primary responsibility for assessing the development application.

development assessment team leader

a Council officer with responsibility for a group of development assessment officers.

drainage easements

the legal rights attached to land whereby another parcel of land has the right to use part or all of the land for the purpose of draining water.

drainage reserves

the lands vested in Council for drainage purposes.

dripline of a tree

the horizontal extent of the canopy of the tree.

dual aspect dwelling

a dwelling which has unobstructed external door and window openings in major external walls facing in different directions, including corner, cross over and cross through dwellings.

dual-use facility

means a child care centre and another independent use or a child care centre within a residential dwelling house where both uses are located on a single site but uses are separated.

earthworks

has the same definition as in the KLEP.

Note: The term is defined as follows:

earthworks means excavation or filling.

INTRODUCTION

1B.1 DEFINITIONS (CONTINUED)

edge effects

the detrimental impacts on natural areas at the interface with urbanised environments. An increased proportion of edge increases the potential for:

- Weed invasion;
- Predation by companion animals;
- Disturbance by humans and animals;
- Dumping of garden refuse;
- Wind and light penetration.

Reducing edge effects can assist with maintaining species diversity and composition, community dynamics, and ecosystem functioning.

effective slope

has the same meaning as in *Planning for Bush Fire Protection 2019*.

Note: The term is defined as follows:

the effective slope is considered to be the slope under the vegetation which will most significantly influence the bush fire behaviour for each aspect.

erosion control devices

measures to assist in minimising erosion and downstream sedimentation.

excavation

has the same meaning as set down in the KLEP.

Note: The term is defined as follows:

excavation means the removal of soil or rock, whether moved to another part of the same site or to another site, but does not include garden landscaping that does not significantly alter the shape, natural form or drainage of the land.

external collection point

usual (or agreed) point on the footpath/roadway, where waste and recyclables are loaded onto vehicles. The waste and recycling containers are placed on the footpath, by the occupant of the property, just prior to the collection day and removed after the waste is picked up by Council's contractors. Applicable to residential development where the number of units is less than 6.

façade

the external face of a building.

family day care

means a service that provides care for up to 7 children aged less than 12 years in the home of the family day care provider. Family day care providers are governed by the management structure of a family day care scheme.

fascia sign

a type of business identification sign located on the fascia of the awning of a building.

fill

has the same meaning as set down in the KLEP.

Note: The term is defined as follows:

fill means the depositing of soil, rock or other similar extractive material obtained from the same or another site, but does not include:

- (a) the depositing of topsoil or feature rock imported to the site that is intended for use in garden landscaping, turf or garden bed establishment or top dressing of lawns and that does not significantly alter the shape, natural form or drainage of the land, or
- (b) the use of land as a waste disposal facility.

finished ceiling level (FCL)

the level of the lower surface of the relevant ceiling.

finished floor level (FFL)

the level of the upper surface of the relevant floor.

1B.1 DEFINITIONS (CONTINUED)

firearms outlet	premises used for the display, exhibition or sale of goods which require a license under Section 7 of the <i>NSW Firearms Act (1996)</i> .
fire egress	a path or opening for going out (ie. an exit) in a fire or emergency situation.
flood	a relatively high stream flow that overtops the natural or artificial banks in any part of a stream, river, estuary, lake or dam, and/or overland runoff before entering a waterbody.
flood standard conveyance zone	the zone in a plan view of the 1:100 year flow through the property.
french (or juliet) balcony	a small projecting balcony, generally ornamental or only large enough for one person standing.
furnishing	the furniture, appliances, and other movable articles in an outdoor dining area, but excludes planter boxes, utensils, dining sets and the like.
gold level	the intermediate highest level of housing within the <i>Livable Housing Guidelines</i> . It features design elements allowing ageing in place and accommodating people with higher mobility needs. Note: Refer to www.livablehousingaustralia.org.au
green building	is one that incorporates design, construction and operational practices that significantly reduce or eliminate the negative impact of development on the environment and building occupants.
green star rating	is an internationally-recognised assessment of the sustainable attributes of a development which enable it to minimise its impact upon the environment. The Green Building Council of Australia (GBCA) provides a formal certification process for ratings of Four Star Green Star ('Best Practice') and above; this service provides for an independent third party review of buildings and their sustainable attributes and initiatives.
green waste	organic garden waste. This includes any waste material that in its raw form comprises vegetation (such as grass, leaves, mulch, plants, branches, twigs and tree loppings). Green waste does not refer to wood wastes such as tree stumps or kitchen vegetable scraps.
greenweb	Greenweb includes: <ol style="list-style-type: none"> 1. All land identified on the Greenweb map in Part 19 of this Development Control Plan and includes land identified as: <ol style="list-style-type: none"> i) Core Biodiversity Lands; ii) Support for Core Biodiversity Lands; iii) Landscape Remnant; iv) Biodiversity Corridors and Buffer Areas; v) Canopy Remnants 2. Other lands that meet the criteria for Greenweb in accordance with the methodology contained within the Ku-ring-gai Biodiversity and Riparian Lands Study Version 5.
greywater	household wastewater that has not come into contact with toilet waste.
gross pollutant	litter and debris that is transported by urban runoff and that is not less than 5mm in diameter and/or is retained by a 5mm mesh screen.

INTRODUCTION

1B.1 DEFINITIONS (CONTINUED)

gross pollutant trap (GPT)

a structure that acts as a water pollution control measure by intercepting and retaining gross pollutants (coarse sediment, trash and debris).

ground level

has the same meaning as the KLEP.

Note: The term is defined as follows:

ground level (existing) means the existing level of a site at any point.

ground level (finished) means, for any point on a site, the ground surface after completion of any earthworks (excluding any excavation for a basement, footings or the like) for which consent has been granted or that is exempt development.

ground level (mean) means, for any site on which a building is situated or proposed, one half of the sum of the highest and lowest levels at ground level (finished) of the outer surface of the external walls of the building

habitable room

any room or enclosed space 4sqm or greater used for normal domestic activities, including living, dining, family, lounge, bedrooms, study, kitchen, sun room and play room – but excludes bathrooms, separate toilets, laundries, pantries, walk-in robe, corridors and hallways.

hazardous waste

any waste that because of its physical, biological or chemical properties, is capable of causing a danger to the life or health of any living thing if it is released into the environment, and/or is, or contains a substance described in the *Protection of the Environment Operations Act 1997* e.g. can include dangerous goods, poisons, liquids and other waste containing hazardous components. If in doubt contact the NSW Environment Protection Authority or Council.

high side

the site slopes upwards from the Primary street.

holding berm

a small bank for retaining water.

hopper

a fitting into which waste is placed and from which it passes into a chute or directly into a waste container. It consists of a fixed frame and hood unit (the frame) and a hinged or pivoted combined door and receiving unit.

hydraulics

the study of flow of fluid. In civil engineering, this concerns mainly flow of water in waterways – in particular, the changes in flow parameters such as water level and velocity.

hydrology

the study of water as it relates to rainfall and the runoff process – in particular, catchment behaviour, flow rates and volumes.

illuminated wall sign

any sign that is internally or externally illuminated.

impervious

land or material that is not readily penetrable by water.

in the vicinity (of a Heritage Item or HCA)

not only means immediately adjoining a heritage item or HCA, but depending on site context, can be extended to include other sites with a high visual presentation due to landform, size or location of a heritage item or HCA

internal collection point

a designated hard stand area suitable in size for the number and type of containers utilised by the development. Waste and recyclable materials are placed at the collection point, by the occupant, for collection of the day of service and are then returned to the designated waste storage area. Applicable to residential development where the number of units is more than 4 and for commercial and industrial development.

intervening lot

any lot that is located on the bush fire hazard side of the lot to be subdivided, and may be directly adjoining or separated by a public or private road, pathway, access handle to another lot or the like.

the lowest point of a channel or gutter, or the internal base of a pipe.

1B.1 DEFINITIONS (CONTINUED)

key vegetation community

Key vegetation communities contain significant vegetation. These are defined as:

- communities currently listed under the NSW Threatened Species Conservation (TSC) Act 1995, NSW Fisheries Management (FM) Act 1994 and / or the Environmental Protection and Biodiversity Conservation (EPBC) Act 1999.
- Coastal Shale Sandstone Forest (this community type 92% cleared as listed in the VIS Classification Database. That is, has less than 8% of its estimated distribution prior to 1750 remaining in the catchment area.

Vegetation condition is a key factor determining the inclusion of remnant vegetation as a threatened ecological community, under the TSC Act, FM Act and EPBC Act. In order to recognise that future variations in federal and state scientific committee determinations and their interpretation may occur, Key Vegetation Communities have been based upon vegetation community not condition. As such Key Vegetation Communities may include areas outside the scope of conditions required to meet the determination.

NSW Office of Environment and Heritage, VIS (Vegetation Information Systems) Classification Database available at www.environment.nsw.gov.au/research/Visclassification.htm

Ku-ring-gai Natural Area

all Council managed lands classified as community land and categorised as 'Natural Areas' under the NSW Local Government Act 1993, and crown land under *Crown Lands Act 1989* (under care control and management of Ku-ring-gai Council as a natural area).

landmark building

a building of high quality and unique architectural style designed to be highly responsive to a specific site and its features, and utilizes architectural elements to be easily seen and recognised as a point of reference and navigating tool for pedestrians, cyclists and vehicles.

landscaped area

has the same meaning as in the KLEP.

Note: The term is defined as follows:

landscaped area means a part of a site used for growing plants, grasses and trees, but does not include any building, structure or hard paved area.

L_{Aeq}

The equivalent continuous noise level. The level of noise equivalent to the energy average of noise levels occurring over a measurement period.

L_{A90}

The A-weighted sound pressure level that is exceeded for 90 per cent of the time over which a given sound is measured. This is considered to represent the background noise.

light shelf

a horizontal element attached to a window that reflects sunlight up onto a ceiling surface.

light spill

light that escapes from the area requiring to be lit and lights up adjoining areas.

lightwell

a shaft for air or light, enclosed on all sides or which has the potential to be enclosed by future adjoining development, and either open to the sky or glazed.

living room

is to be one room of either lounge or dining room, or open plan living areas including eat-in kitchen areas; and it **is not to** include bedrooms, bathrooms, storage areas, laundries or separate toilets.

INTRODUCTION

1B.1 DEFINITIONS (CONTINUED)

local fauna habitat

an area of structured vegetation, or alluvial or estuarine vegetation, which provides important habitat for threatened and non-threatened fauna species. Local fauna habitat areas provide stepping stone connections between larger protected areas (including regional fauna habitats and Ku-ring-gai Natural areas). This connection may be direct or through biodiversity corridors. For more detail, see Ku-ring-gai Council (Ku-ring-gai Biodiversity and Riparian Lands Study) .

locally indigenous

native vegetation plant species that occurs in the Ku-ring-gai area.

local provenance

plant or seed stock of local origin or seed, used to maintain the patterns of variation exhibited by a species over its range, reflecting its evolutionary history.

local road

a street with a prime function to provide access to adjacent land uses.

low side

the site slopes downwards from the Primary street.

maisonette

a two-storey apartment, where the storeys are vertically stacked.

main road

a road that is declared to be a main road by an order in force under section 46 of the Roads Act 1993.

1B.1 DEFINITIONS (CONTINUED)

major roadway

Note: A major roadway for the purposes of this DCP includes:

- Archbold Road
- Bobbin Head Road (between Pacific Highway to Burns Road)
- Boundary Street (between Pacific Highway and Clive Street/ Eastern Valley Way)
- Burns Road (between Eastern Road and Warrimoo Avenue)
- Eastern Arterial Road
- Eastern Road (between Burns Road and Junction Road)
- Comenarra Parkway
- Fox Valley Road (between Pacific Highway and Comenarra Parkway)
- Horace Street
- Illoura Avenue (Between the railway bridge to Millewa Avenue)
- Junction Road
- Killeaton Street (between Warrimoo Avenue and Mona Vale Road)
- Kissing Point Road (between Pacific Highway to The Comenarra Parkway)
- Lindfield Avenue (between Havilah Road and Tryon Road)
- Lady Game Drive
- Link Road
- M1 Motorway
- Main Road 328: Section of Boundary Street between Pacific Highway and Babbage Road; Babbage Road; Warringah Road
- Mona Vale Road
- Pacific Highway
- Railway Avenue
- Redleaf Avenue
- Ryde Road
- Secondary Road 2043: Section of Horace Street, Link Road, Killeaton Street between Stanley Street and Benaroon Avenue
- Telegraph Road
- Yanko Road

Note: The list above is by no means exhaustive. Council may order that air, noise and/or soil testing be carried out or that a report be prepared demonstrating the impacts that traffic generated by the centre will have on the roadway where child care centres are proposed in the vicinity of other roads that carry a high Section of traffic.

Note: Also see definition of *busy road*.

medium tree

is a tree capable of achieving 8-12m in height on shale derived soils and 8-10m on sandstone derived soils in the location proposed.

mobile phone base station

a device used for the transmission of signals through the mobile (or cellular) telephone network by way of Radio Frequency Electromagnetic Radiation (RF EME).

mobile care service

means a child care service that visits specific premises at specific times. The age of children cared for depends on the type of service provided.

1B.1 DEFINITIONS (CONTINUED)

multi-use facility

a child care centre and other child-related activities or services (commercial or not-for-profit) operating on a single site often sharing facilities.

native vegetation

means any of the following types of plants native to New South Wales:

- a) trees (including any sapling or shrub or any scrub);
- b) understorey plants;
- c) groundcover (being any type of herbaceous vegetation);
- d) plants occurring in a wetland.

A plant is native to New South Wales if it was established in New South Wales before European settlement. Species of plants native to New South Wales can be identified using Plantnet “official” database.

<https://plantnet.rbgsyd.nsw.gov.au/search/simple.htm>

natural cross ventilation

natural ventilation which allows air to flow between positive pressure on the windward side of a building to the negative pressure on the leeward side of a building, with openable windows on dual aspects that enables effective volumes and velocity of air to flow through the dwelling to provide a greater degree of comfort and amenity for occupants.

A dwelling is considered to be naturally cross ventilated where all living spaces, all bedrooms and other habitable rooms are on a clear, unobstructed air flow ventilation path within the dwelling. Natural cross ventilation is achieved with dual aspect dwelling types including cross-through, cross-over and corner dwelling types.

natural ventilation

fresh air that enters a room via openings in its external walls on the outer perimeter of a building without mechanical assistance.

neighbouring land

any land, other than adjoining land, within the Ku-ring-gai local government area, the enjoyment of which the assessment team leader considers may be detrimentally affected by the development proposal.

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.

north facing

between 30 degrees east and 20 degrees west of true solar north.

notification

written information provided to potential stakeholders by the Council in the form of a letter, e-mail, information on Council’s website or a sign that may be viewed from a public place.

nutrients

substances that provide nourishment to another organism. In the context of stormwater, they consist primarily of Total Phosphorus (filterable phosphorus and particulate phosphorus) and Total Nitrogen (nitrates, nitrites, ammonium compounds and organically bound nitrogen compounds).

obvert

the internal top of the pipe or other enclosed drainage system.

occupier

a person who lives on the land.

on-site detention

a device used to control the rate of stormwater runoff in order to reduce peak discharges during storm events.

on-site retention

a device that controls the rate and volume of stormwater runoff to reduce peak and total volume discharges during and after storm events by ensuring that water is reused on the site.

1B.1 DEFINITIONS (CONTINUED)

open plan	dwelling layouts where spaces are not divided into discrete rooms, but are open and connected to allow flexibility of use (typically living, dining, kitchen and study areas).
operable wall	an internal wall which can be moved, for example by sliding, folding, or pivoting, to allow for different room configurations.
operable window or door	window or door which can open to the outside.
orifice	a narrow opening into a pipe or cavity.
Out of School Hours (OOSH) Care	means a service that provides care for school aged children under 12 years old, usually before or after school hours, on pupil-free days or during school holidays. Centres are usually located on school grounds or in community halls.
overshadowing	shadows caused by a proposed structure, together with any existing structures to be retained, but not including shadows cast by trees, vegetation or boundary fences.
owner	has the same meaning as in the <i>Environmental Planning and Assessment Act 1979</i> .
painted sign	a sign that is painted directly onto the building fabric.
parapet	a horizontal low wall or barrier at the edge of a balcony or roof. Often taken to refer to the decorative element which establishes the street wall height of heritage buildings (see also Cornice).
part thereof	in the calculation of the number of items (apartments, parking spaces etc) required, the overall requirement figures are to be rounded up to the nearest whole number.
passive surveillance	the casual surveillance of public spaces and streets by the users of the local area or adjoining land.
peak discharge	the maximum discharge occurring during a flood event.
permitted site discharge	the controlled rate of runoff allowed from a site.
pervious	land or material that is penetrable by water.
Planning for Bush fire Protection	the publication produced by the NSW Rural Fire Service and Planning NSW to provide guidance to Councils, planners, fire authorities, developers and home owners with regard to bush fire protection strategies.
platinum level	the highest level of housing within the <i>Livable Housing Guidelines</i> . It features design elements allowing ageing in place and accommodating people with higher mobility needs. Note: Refer to www.livablehousingaustralia.org.au
pole (or pylon) sign	a type of business identification sign that is erected on one or more poles or pylons independent of any building or other structure.
pollutant	a substance that adversely affects the physical, chemical or biological properties of the environment.
portico	a porch or walkway with a roof supported by columns, often leading to the entrance of a building.
potable	drinkable.
potentially contaminated land	land which may have been associated with potentially contaminating activities, as described in Council's Contaminated Land Policy.

INTRODUCTION

1B.1 DEFINITIONS (CONTINUED)

primary street

the street or streets (where there is more than one primary street) to which the front of a dwelling house, or a main building, on a lot faces or is proposed to face, and/or which typically forms the main address of the lot or property and/or has the wider carriageway or carries the greater volume of traffic. Primary streets include highways, main roads and local streets.

primary communal open space

the main consolidated communal open space, providing facilities for recreation, relaxation and social activities such as seating and barbeque facilities.

principal active frontage

is located on primary streets within the centres and supports a wide variety of uses and activities on the ground floor and has a very open and public presence (i.e. windows and doors).

Note: Also see *Part 8C-14*.

private courtyard

private open space which may be on a structure (eg. podium, parking deck) or at ground level.

private open space

has the same meaning as set down in the KLEP.

Note: The term is defined as follows:

private open space means an area external to a building (including an area of land, terrace, balcony or deck) that is used for private outdoor purposes ancillary to the use of the building.

public exhibition

is where a development application is made available for inspection, by any person, at the office of Council, and such other places to be determined by Council for a period not less than fourteen (14) calendar days.

public street

- i) any road that is opened or dedicated as a public road, whether under the *Roads Act 1993* or any other Act or law, and
- ii) any road that is declared to be a public road for the purposes of the *Roads Act 1993*.

putrescible waste system

food or animal matter (including dead animal parts) or unstable or untreated biosolids.

rainscaping

directing runoff from hardstand areas to a garden or lawn area. This includes the following: the garden or lawn **must** be at least 0.02m below the hardstand area and relatively flat to allow the flow to spread across its full area.

rating background level

The overall single figure background level representing each assessment period (day/evening/night) over the whole monitoring period (as opposed to over each 24hr period used for the assessment background level). This is the level used for assessment purposes. It is defined as the median value of:

- all the day assessment background levels over the monitoring period for the day;
- all the evening assessment background levels over the monitoring period for the evening; or
- all the night assessment background levels over the monitoring period for the night.

rear boundary

the boundary furthest from and generally parallel to the street boundary. On corner sites, the rear boundary is the furthest from the Primary Street boundary. On battleaxe sites, the rear (and all other boundaries) are to be nominated for the development.

1B.1 DEFINITIONS (CONTINUED)

recognised public drainage	a common stormwater drainage system that conveys public stormwater and that generally includes one or more of the following: street drainage comprising surface systems (formed and unformed kerb and gutter, earth channels); underground systems (pipes, road pits, headwalls, inlets and outlets); natural and constructed open channels
reconstruction (of a Heritage Item)	Returning a place as nearly as possible to a known earlier state by the introduction of new or old materials into the fabric (not to be confused with conjectural reconstruction).
recyclable	material capable of being reprocessed into useable material and includes any item collected by Council's Recycling Service (e.g. plastic, vegetation, paper etc).
regional fauna habitat	an area generally of structured vegetation, or alluvial or estuarine vegetation, which provides important regional habitat for threatened and non-threatened fauna species. These areas are directly connected to or within large formal reserves within or adjoining the Ku-ring-gai LGA. For more detail, see Ku-ring-gai Council (2014) Ku-ring-gai Biodiversity and Riparian Lands Study .
regionally significant species, populations and habitat	flora and fauna species, populations, ecological communities and habitat identified as regionally significant in Council's Biodiversity Strategy.
remnant	locally native vegetation occurring within fragmented landscapes. Remnants may be small to medium sized patches of vegetation surrounded by highly modified land, used for urban development and associated infrastructure.
residential apartment building	has the same meaning as Residential Flat Building under <i>Ku-ring-gai Local Environmental Plan</i> .
restoration (of a Heritage Item)	Returning the existing fabric of a place to a known earlier state by removing accretions or by reassembling existing components without introducing new material.
riparian land	land adjoining a waterway (including a piped waterway) and the waterway itself, but not including land adjoining an artificial waterbody. This includes all land identified within the Riparian Lands Map in KLEP.
road verge	that part of land between the property boundary line and the roadway edge, usually owned by a public authority.
roof or sky advertisement	an advertisement that is displayed on, or erected on or above, the parapet or eaves of a building.
runoff	rainfall that ends up as stormwater.
Section 4.55(1) modifications	are modifications by Council to consents that involve minor errors, misdescriptions or miscalculations in accordance with Section 4.55(1) of the <i>Environmental Planning and Assessment Act 1979</i> .
Section 4.55(1A) modifications	are modifications by Council to consents that involve minimal environmental impact in accordance with Section 4.55(1A) of the <i>Environmental Planning and Assessment Act 1979</i> .
Section 4.55(2) modifications	are other modifications by Council to consents that may have an environmental impact in accordance with Section 4.55(2) of the <i>Environmental Planning and Assessment Act 1979</i> .

1B.1 DEFINITIONS (CONTINUED)

Section 4.56 modifications

are modifications made by consent authorities to consents granted by the Land and Environment Court, in accordance with Section 4.56 of the *Environmental Planning and Assessment Act 1979*.

secondary street

a street that is not a primary street and is typically a local road or lane.

secondary communal open space

a smaller communal open space than the Primary Communal Open Space.

sediment

solid material, either mineral or organic, that is in suspension, is being transported, or has been moved from its site of origin by air, wind, water or gravity.

setback

has the same meaning as in the KLEP.

Note: setback has the same meaning as 'building line or setback'. See the definition of the term in this dictionary.

setting (of a Heritage Item)

the immediate or extended environment of a place that is part of, or contributes to, its heritage significance and distinctive character

sewerage

the arrangement of pipes that transport sewage.

shopfront

the front side of a store facing the street; usually contains display windows.

signage

signage structure has the same meaning as in the KLEP.

Note: means any sign, notice, device, representation or advertisement that advertises or promotes any goods, services or events and any structure or vessel that is principally designed for, or that is used for, the display of signage, and includes any of the following:

- a) an advertising structure;
- b) a building identification sign;
- c) a business identification sign;

but does not include a traffic sign or traffic control facilities.

significant tree

a tree which

- i) is visible over a wide area due to its size; or
- ii) is a large specimen in a prominent location; or
- iii) has ecological values because it forms part of the remnant vegetation of the area and contributes to the gene flow, has habitat hollows, provides food for wildlife; or
- iv) is a rare species in good condition; or
- v) exhibits exceptional form; or
- vi) is associated with the history of a place; or
- vii) forms part of an avenue of trees.

Note: Refer to Section 19.7 for a description of significant trees in key vegetation community (KVCs).

1B.1 DEFINITIONS (CONTINUED)

significant urban vegetation

vegetation, both native and exotic, on private property that is generally mature and/or prominent in the landscape, or has specific historical or cultural value in Ku-ring-gai. It includes vegetation that contributes to the overall character and enjoyment of the surroundings and contributes to a sense of wellbeing. Significant Urban Vegetation:

- can be located over an entire property or be an individual tree or small group of trees;
- provides shade and shelter for humans and important habitat for wildlife; and
- may also preserve biodiversity values and natural landforms.

significant vegetation

native vegetation including threatened and non-threatened species and communities, trees, shrubs, groundcovers and vines including dead trees or hollow logs, that:

- have ecological value and provide important habitat or food for native wildlife;
- contribute to the long-term survival of native fauna species dependent on the vegetation;
- contribute to the preservation of natural landforms, bushlands, ridgelines and steep slopes;
- provide unique and valuable habitat for native flora and fauna species; and are unique to Ku-ring-gai and NSW.

sill height

the vertical height of a window sill above the finished floor level which it serves.

silver level

the basic level of housing within the *Livable Housing Guidelines*. It features design elements allowing ageing in place and accommodating people with higher mobility needs.

Note: Refer to www.livablehousingaustralia.org.au

single aspect dwelling

a dwelling with one predominant aspect and unobstructed external door and window openings in only one direction. Doors and windows facing into notches, slots and indentations are considered to be obstructed. (A single aspect dwelling does not achieve natural cross ventilation).

site coverage

has the same meaning as set down in the KLEP.

Note: The term is defined as follows:

site coverage means the proportion of a site area covered by buildings. However, the following are not included for the purpose of calculating site coverage:

any basement,

any part of an awning that is outside the outer walls of a building and that adjoins the street frontage or other site boundary,

any eaves,

unenclosed balconies, decks, pergolas and the like.

Note: The definition of 'site coverage' uses a calculation of the 'site area'. Site area in the KLEP states in part '...does not include the area of any land on which development is not permitted to be carried out under this Plan.'

skylight

an overhead window, as in a roof, admitting daylight.

small tree

is a tree capable of achieving 5–8m in height in the location proposed.

INTRODUCTION

1B.1 DEFINITIONS (CONTINUED)

snorkel window

a window that is not visible in its entirety from all points within a habitable room.

soffit

the underside of a part of a building (such as an arch, overhang, staircase, cornice or beam etc).

soft landscaping

the area planted with gardens, trees, lawns and/or includes remnants of the natural landscape.

staff / parent accessible area

means any area of the child care centre that restricts unsupervised access by children or is not intended for use by children.

stepping stone

geographically isolated remnant that functions as habitat islands facilitating the movement of flora and fauna and genetic resources within a modified landscape.

storage space

within dwellings, storage space can be in the form of cupboards in halls, living rooms and laundries. Storage in kitchens, bedrooms or bathrooms do not count towards this requirement. Storage space may be partially provided as lockable areas affiliated with the dwelling (within basement parking).

stormwater

untreated rain water that runs off the land onto which it falls.

strata title

is a system for owning units and dwellings, which generally have a combination of private property (known as the 'lot') and common property. Common property includes elements such as driveways, gardens, fencing, vehicle access as well as staircases, foyers and lifts.

In a strata title, all the rights and responsibilities of lot owners are clearly set out. The strata title gives legal proof of a person's ownership of parts of a building and site.

street frontage

the building elevation that is directly in front of, and visible from, any street at the property boundary.

street level

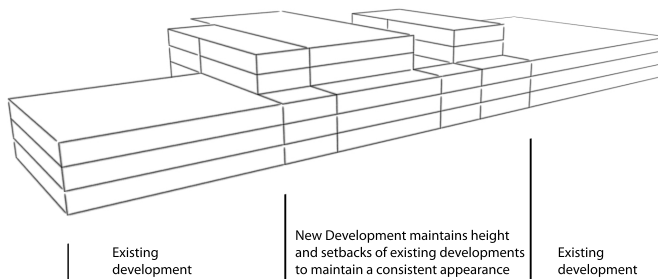
the finished floor level of the pavement or road reserve in front of the property boundary from which access into the site is generally provided.

streetscape

the character of the locality (whether it be a street or precinct) defined by the spatial arrangement and visual appearance of built and landscape features when viewed from the street.

street wall

the wall of the building from street level to the top of the podium, which faces the street or public domain. A street wall is created when the facades of consecutive buildings are aligned along the edge of a street. An ideal street wall offers a sense of consistency and formality and includes a continuous variety of ground floor businesses.



string course

a shallow moulding continued across a whole facade which may be defined by its position.

1B.1 DEFINITIONS (CONTINUED)

structural root zone

has the same meaning as in the Australian Standard 4970.

Note: the area around the base of a tree required for the tree's stability in the ground. The woody root growth and soil cohesion in this area are necessary to hold the tree upright. The SRZ is nominally circular with the trunk at its centre and is expressed by its radius in metres.

This zone considers a tree's structural stability only, not the root zone required for a tree's vigour and long-term viability, which will usually be a much larger area.

studio dwelling

a residential dwelling including one main room which is used as a bedroom, living room and dining room, and with no separate bedrooms.

a single room apartment consisting of one main room used as a bedroom, living and dining area and a kitchen/kitchenette and bathroom.

subsurface water (SSW)

any moving or stationary body of water or moisture occurring underneath the land surface, but not below the geological basement.

subterranean room

a room within a residential dwelling that has an external wall to any part of the room (habitable and non habitable), including external storage, below the adjacent finished ground level and/or in direct contact with soil and/or requiring physical or spatial tanking.

sunlight

direct beam radiation from the sun.

Note: See the definition of 'daylight' in this dictionary.

supporting active frontage

is located on primary streets or secondary streets or lanes. This frontage will support active uses at ground level however it is acknowledged that vehicle and service access will be a requirement.

Note: Also see *Part 8C-14*.

sustainable building management

a sustainable building is one that addresses social, economic and environmental issues to ensure the long-term viability of that building.

sustainable waste

managing and controlling the generation of waste so that the needs of the current generation are met without limiting the options and capacity of future generations to meet their own needs.

tall tree

is a tree capable of the height prescribed within the relevant DCP control and with a canopy spread of at least 8 metres.

terrace (outdoor area)

an unroofed and usually paved area connected to a dwelling and accessible from at least one room. May be on-grade or on a structure (podium).

terrestrial habitat

the natural habitat of organisms that live on land

threatened ecological community

an ecological community listed as an 'endangered ecological community' or 'critically endangered ecological community' under the *NSW Threatened Species Conservation Act (1995)* or the *Commonwealth Environmental Protection of Biodiversity Conservation Act (1999)*.

top hamper sign

a type of business identification sign located above a display window or attached to the transom of a doorway or display window of the building.

total suspended solids

are the inorganic and organic particles suspended in the water column. They can be defined as the filterable residue retained on a 2.0 µm pore size filter dried at 105°C.

INTRODUCTION

townhouse

a dwelling included in multi-dwelling housing development, being a dwelling that has a separate ground floor entrance door directly accessible from the circulation pathway from the street or entry point into the main living area or its adjacent foyer and which has a private courtyard area at ground level which is at the same level as the floor level of the living areas within the dwelling.

transmitter

see 'mobile phone base station'

tree

- i) a perennial plant with at least one self-supporting woody, fibrous stem, whether native or exotic, which is 5 metres or more in height; or
- ii) a plant that has a trunk diameter of 150mm or more measured at ground level.

tree protection zone

has the same meaning as in the Australian Standard 4970.

Note: A specified area above and below ground and at a given distance from the trunk set aside for the protection of a tree's roots and crown to provide for the viability and stability of a tree to be retained where it is potentially subject to damage by development.

tripartite building

a method of visually organising the façade of a building by dividing it into three sections (base, middle, roof).

trunk drainage

the stormwater drainage system that links property, interallotment and street drainage with the receiving waters.

unencumbered indoor play space

means useable play space that excludes items such as passage ways or thoroughfares, door swing areas, cot rooms, toilets or shower areas located in the building or any other facility, such as cupboards, that inhibits opportunity for play.

unencumbered outdoor play space

means useable play space that excludes items such as car parking areas, storage sheds and other fixed items that prevent children from using the space or that obstruct the view of staff supervising children in the space.

under awning sign

a type of business identification sign that is suspended below the awning of a building.

unrestricted deep soil area

the soft landscaped part of the site area that is not occupied by any structure above or below the surface of the ground, except for storm water pipes of 300mm or less in diameter.

urban forest

the urban forest of Ku-ring-gai includes the entirety of the trees and large woody shrubs (both naturally occurring and planted) that grow on public and private land excluding:

- i) Office of Environment and Heritage protected areas (e.g. Nature Reserves and National Park listed under the National Parks and Wildlife Act 1974 (NSW)(NPW Act))
- ii) Ku-ring-gai Natural Areas as categorised under the Local Government Act 1993 (NSW)

villa

a townhouse which has only one storey.

visitable	a place that can be accessed from the carpark all the way into the apartment by people who use wheelchairs, in that there must be at least one wheelchair accessible entry and accessible path of travel to the living area and to a toilet that is either accessible or visitable as defined by AS 4299.
visually prominent sites	sites that are situated on highly visible locations and include ridge top locations, escarpments, environmentally sensitive sites on sloping land, elevated allotments, corner sites, road bends, vista end points and any site that has the potential to dominate the visual amenity.
volume reduction equipment	devices which reduce the volume of waste or recyclable material, including compressing devices such as compactors, balers and shredding, pulverising or crushing devices.
wall sign	a type of business identification sign that is flat mounted on the exterior of a building, boundary or fence wall.
walking distance	the shortest distance between two points measured along a route that may be safely walked by a pedestrian using, as far as reasonably practicable, public footpaths and pedestrian crossings.
waste	as defined by the <i>Protection of the Environment Operations Act 1997</i> (POEO Act) includes: <ul style="list-style-type: none"> i) any substance (whether solid, liquid or gaseous) that is discharged, emitted or deposited in the environment in such volume, constituency or manner as to cause an alteration in the environment, or ii) any discarded, rejected, unwanted, surplus or abandoned substance, or iii) any otherwise discarded, rejected, unwanted, surplus or abandoned substance intended for sale or for recycling, reprocessing, recovery or purification by a separate operation from that which produced the substance, or iv) any substance prescribed by the regulations to be waste for the purposes of this Act. v) a substance is not precluded from being waste for the purposes of the POEO Act merely because it can be reprocessed, re-used or recycled.
waste and recycling room	a designated room or a combination of designated rooms upon the site (can be located inside or outside) of a building for the housing of approved containers to store all waste material (including recyclable material) likely to be generated by the buildings' occupants.
waste cupboard	a temporary storage area that is designed to hold at least a single days waste. The waste cupboard is typically located in the kitchen. It should be designed to enable some separation of recyclables and non-recyclables.
waste service compartment	located on each floor of a building for interim storage of recyclables with access to a hopper and providing a fire rated compartment around garbage chute hoppers.

INTRODUCTION

wastewater

sewage, greywater or water that is contaminated by human or commercial processes, and includes water from a domestic pool.

window sign

a type of business identification sign located on the window of a building.

written submission

a submission in writing in the form of a letter, report, facsimile transmission, petition, e-mail or other like form.

1B.2 ABBREVIATIONS

LIST OF ABBREVIATIONS

ACA	Australian Communications Authority
ACIF	Australian Communications Industry Forum
ADG	Apartment Design Guide
AFS	Australian Forestry Standard
AHD	Australian Height Datum
ARI	Average Recurrence Interval
ARPANSA	Australian Radiation Protection and Nuclear Safety Agency
AS	Australian Standard
BASIX	Building Sustainability Index
BCA	Building Code of Australia
CMP	Conservation Management Plan
DA	Development Application
DA guide	Ku-ring-gai Council's Development Application Guide (available from Council's Customer Service Centre)
DCP	Development Control Plan
DEC	Department of Education and Communities
DoCS	NSW Department of Community Services (as it was then)
EFM	Electromagnetic Field Exposure
ESD	Ecologically Sustainable Design
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EV	Electric Vehicle
FSC	Forest Stewardship Council
GBCA	Green Building Council of Australia
GFA	Gross Floor Area
HCA	Heritage Conservation Area
ICNIRP	International Commission on Non-ionising Radio Protection
L	Litre(s)
LHA	Livable Housing Australia
KCP 2010	Ku-ring-gai Contributions Plan 2010
KL	Kilolitres
KLEP	Ku-ring-gai Local Environmental Plan
KPDP 2010	Ku-ring-gai Public Domain Plan 2010

1B.2 ABBREVIATIONS (CONTINUED)

m	Metre(s)
max	Maximum
min	Minimum
MGB	Mobile Garbage Bin
NSW EPA	NSW Environment Protection Authority
OSD	on-site detention
OSR	on-site retention
PEFC	Programme for the Endorsement of Forest Certification
PoEO Act 1997	Protection of the Environment Operations Act 1997
RMS	Roads and Maritime Services
SEPP	State Environmental Planning Policy
SHI	Statement of Heritage Impact
Sydney Water	Sydney Water Corporation
VPA	Voluntary Planning Agreement
WMP	Waste Management Plan

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LANDCONSOLIDATIONANDSUBDIVISION

Introduction

3A General Controls for Consolidation and Subdivision

3A.1 Lot Shape, Orientation and Design

3A.2 Minimum Lot Depth for Bush fire Prone Land

3A.3 Building Footprint

3A.4 Trees and Vegetation

3A.5 Access

3A.6 Infrastructure

3B Land Consolidation

3C Strata and Community Title Subdivision

3R References

3R.1 Minimum Lot Depth Maps

INTRODUCTION

This part provides guidance on consolidation of multiple lots and subdivision of lots in order to meet the aims and objectives within the KLEP.

Part 3A outlines matters that need to be addressed for both consolidation and subdivision, and is to be read in conjunction with the Parts of Section B relevant to the site. It also includes guidance on infrastructure provision and design.

Part 3B provides guidance on land consolidation, in particular, when land consolidation is required.

Part 3C provides controls in relation to strata and community title subdivision.

3A General Controls for Consolidation and Subdivision

- 3A.1 Lot Shape, Orientation and Design
- 3A.2 Minimum Lot Depth for Bush fire Prone Land
- 3A.3 Building Footprint
- 3A.4 Trees and Vegetation
- 3A.5 Access
- 3A.6 Infrastructure



3A.1 LOT SHAPE, ORIENTATION AND DESIGN

Further controls that may apply

SECTION B PART 19 - Heritage Items and Heritage Conservation Areas

Objectives

- 1 *To ensure consolidation and subdivision create usable and regularly shaped lots that relate to the site conditions and the context.*
- 2 *To limit the impact of new development on natural, environmental, cultural and historical significance of the site and the amenity of adjoining properties.*
- 3 *To ensure that any new lot created has sufficient area for private open space, drainage, utility services and vehicular access to and from the site.*
- 4 *To ensure subdivision patterns, building footprints and siting respect the characteristic street address rhythm and built form spacing of its locality.*
- 5 *To provide lots that are oriented to optimise solar access to facilitate micro-climate management and energy conservation.*
- 6 *To ensure management of risks, such as bush fire or flooding are considered early in the design phase.*
- 7 *To ensure development adjacent to urban bushland is sympathetic and safe.*
- 8 *To ensure the design of residential development encourages engagement with the surrounding community.*

Controls

- 1 The lot shape, orientation and design of consolidated and subdivided lots is to demonstrate the following:
 - i) Ability for the lot to support the land use permitted under the zoning;
 - ii) Protection of habitat and distinctive environmental features including:
 - Cliffs and rock outcrops
 - Remnant bushland and trees
 - Tree hollows
 - Natural watercourses
 - iii) Sharing of views;
 - iv) Avoiding the location of development on steep lands;
 - v) Protection and enhancement of the amenity, solar access, privacy, open space and views of the neighbouring lots;
 - vi) Minimisation of impacts of the development (including any asset protection zones required) on riparian or Greenweb lands;

Note: *SEPP (Biodiversity and Conservation)* may also apply.

 - vii) Incorporation of the principles of water sensitive urban design;
 - viii) Easements and servicing requirements;
 - ix) Vehicular, pedestrian and bicycle access;
 - x) Respect for and conservation of cultural heritage including any Aboriginal place or site of heritage significance; and

Note: Refer to Part 20 for Subdivision and Consolidation for new development on a Heritage Item or a HCA.

 - xi) Minimisation of the need for bush fire hazard reduction, while protecting life and property.

Note: See Part 17 Bush fire Risk for example design scenarios.
- 2 The block width, dimension, orientation and layout are to consider the existing subdivision pattern of the locality.
- 3 New lot/s created are to be such that each lot with street frontage allows for the siting of a development which will address the street.
- 4 Gated communities will not be permitted.

3A.2 MINIMUM LOT DEPTH FOR BUSH FIRE PRONE LAND

Objectives

- 1 Apply lot depths that allow for the creation of adequate bush fire setbacks within a lot.
- 2 Provision of adequate setbacks within subdivisions to reduce bush fire risk to life and property.
- 3 Ensure development facilitates lot depths that minimise impacts to the environment on private and public land.

Controls

This part applies to the subdivision of land identified on the “Minimum Lot Depth Map” (Refer to maps in 3R.1 of this Part).

New lot/s created on land containing bush fire hazard

- 1 For any new lot/s created on land containing a bush fire hazard, where the effective slope is within the range identified in Figure 3A.2-1, the distance between the bush fire hazard and the furthest boundary **must** not be less than the distance specified within this Figure. See Figures 3A.2-2 and Figure 3A.2-3.

Effective Slope	Distance (m)
Upslope/flat to 5°	60
More than 5° to 10°	65
More than 10°	85

Figure 3A.2-1. Effective slope and the distance between bush fire hazard and boundary.

Note: These minimum lot depth distances are calculated from *Planning for Bushfire Protection 2019*, based on a BAL-29 bushfire construction rating.

Note: Refer to *Planning for Bush Fire Protection 2019* Appendix 1(A1.4-1.5) and RFS Guidelines for Single Dwelling Development Applications Part C (www.rfs.nsw.gov.au) for more detail on how to determine effective slope.

Note: Refer to *Planning for Bush Fire Protection 2019* for guidance on landscaping in bush fire prone areas.

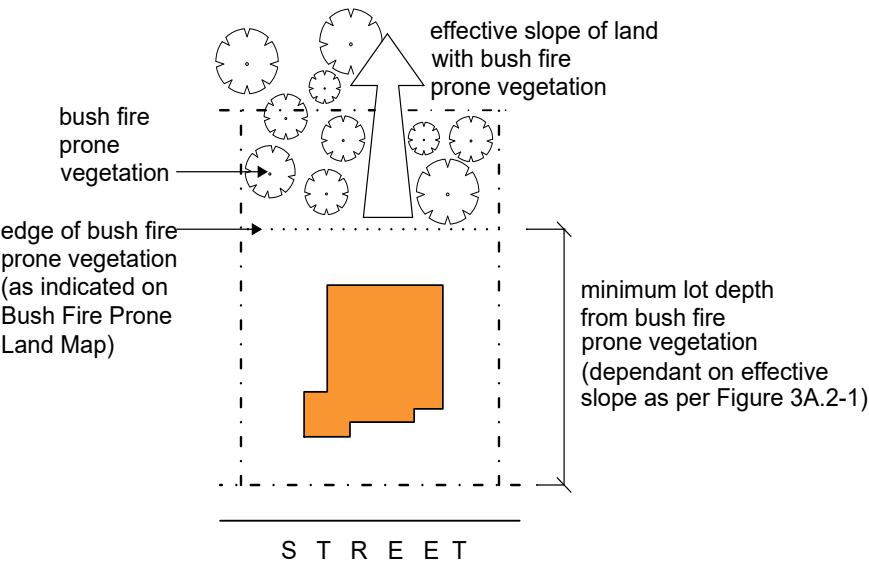


Figure 3A.2-2. Example of new lot on land containing bush fire prone vegetation.

3A.2 MINIMUM LOT DEPTH FOR BUSH FIRE PRONE LAND

Controls

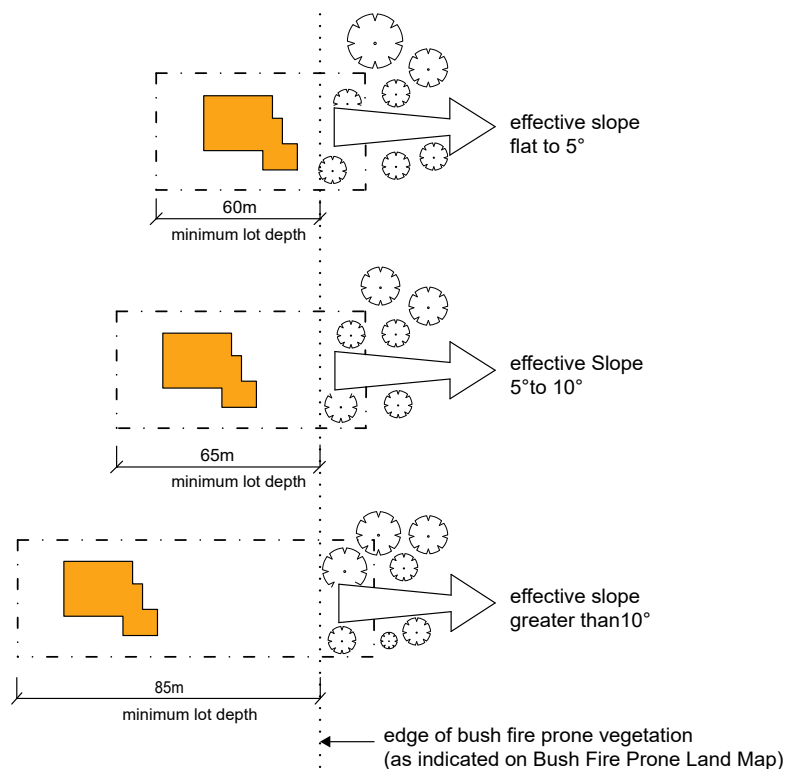


Figure 3A.2-3. Minimum lot depth related to effective slope.

New lot created on land that does not contain a bush fire hazard

- 2 For any new lot created on land that does not contain a bush fire hazard, where the effective slope is within the range identified in Figure 3A.2-1, the distance between the common or closest boundary of an intervening lot and the furthest boundary of the new lot **must** not be less than the distance specified within this Figure. See Figure 3A.2-4, Figure 3A.2-5 and Figure 3A.2-6.

Note: An intervening lot is deemed to be any lot that is located on the bush fire hazard side of the lot to be subdivided, and may be directly adjoining or separated by a public or private road, pathway, access handle to another lot or the like.

- 3 These controls do not apply to any lot comprising association property within the meaning of the *Community Land Development Act 2021*.

3A.2 MINIMUM LOT DEPTH FOR BUSH FIRE PRONE LAND

Controls

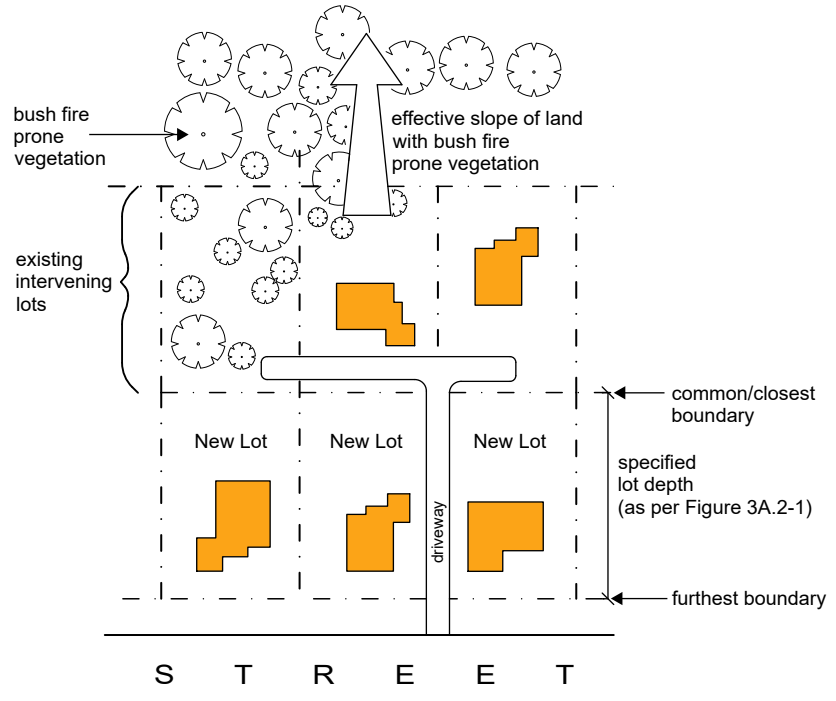


Figure 3A.2-4. Example of the recommended lot depth for new lots separated from bush fire prone vegetation by an existing intervening lot.

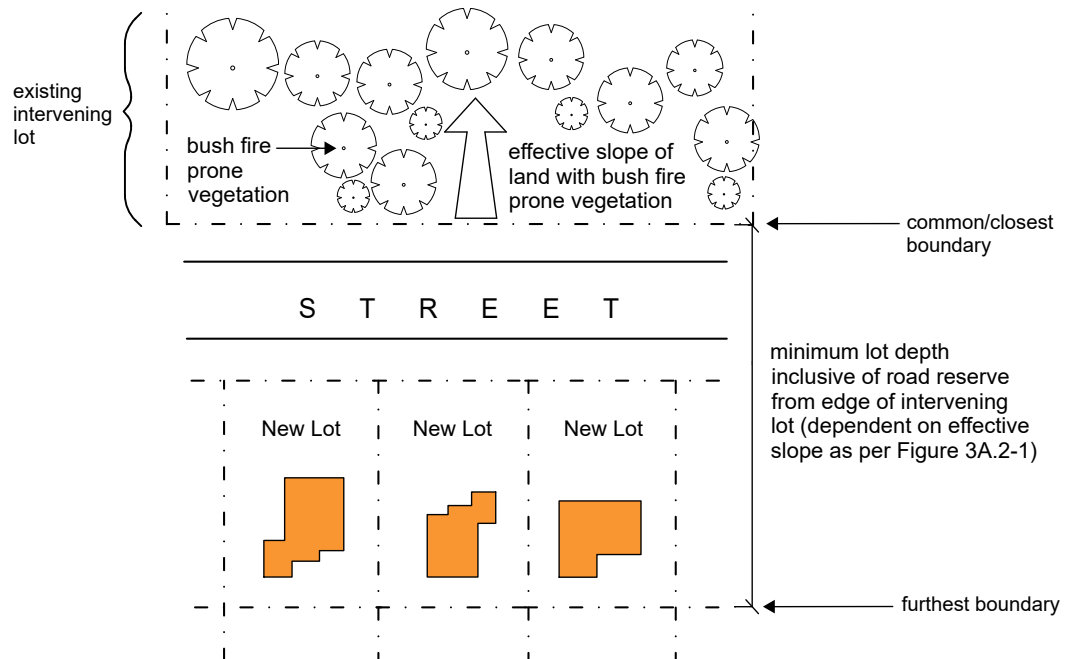


Figure 3A.2-5. Example of the recommended lot depth for new lots separated from bush fire prone vegetation by an existing road.

3A.2 MINIMUM LOT DEPTH FOR BUSH FIRE PRONE LAND

Controls

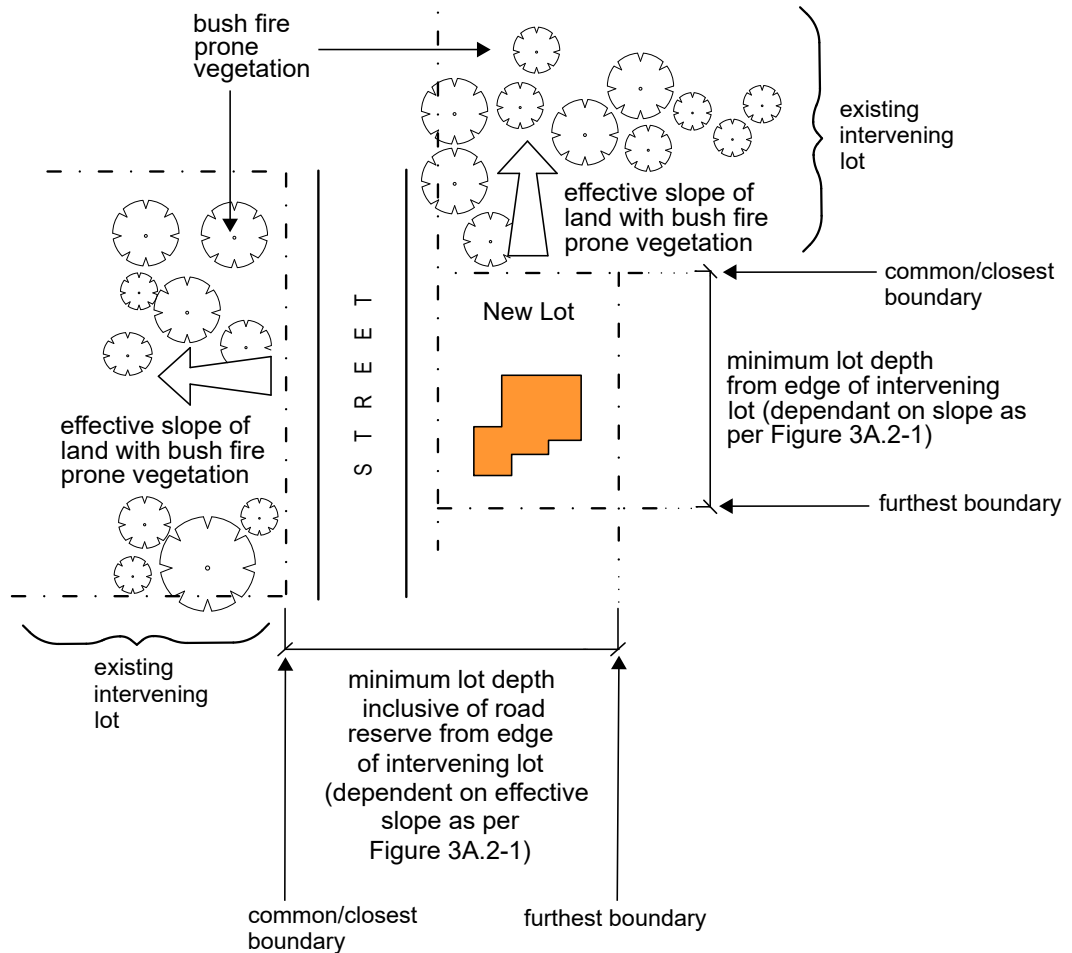


Figure 3A.2-6. Example of the recommended lot depth for new lots where bush fire prone vegetation is located along more than one edge.

3A.3 BUILDINGFOOTPRINT

Further controls that may apply		
		SECTION C PART 24- Water Management

Objectives

- 1 *To ensure new allotments have a suitable area for proposed development, associated structures and open space.*
- 2 *To protect the amenity of adjoining properties.*
- 3 *To ensure development is suited to the site.*
- 4 *To minimise risks from landslip, flooding and bush fire.*
- 5 *To ensure building footprints have minimal impact on existing trees and areas of ecological or heritage significance.*

Controls

- 1 Potential building footprints are to be identified on the site plan of all consolidation and subdivisions.
- 2 Building footprints are to be located outside areas of ecological or heritage significance and to avoid the loss of trees.
- 3 The footprint is to be located in an accessible and practical location, preferably with relatively flat terrain, stable soil and geology.
Note: A geotechnical report may be required for steeper sites.
- 4 The building footprint **must** be located and designed so as to allow useable open space that satisfies the open space requirements of the particular development type.
- 5 The footprint is to be applied in accordance with the minimum building setbacks.
- 6 Practical and suitable access is to be provided from a public road to the building footprint.
- 7 The building footprint **must** be located in accordance with the requirements in Part 24 of this DCP.

3A.4 TREES AND VEGETATION

Objectives

- 1 *To protect established trees and vegetation on sites and road verges.*
- 2 *To protect the ecological, cultural and aesthetic values of the site and surrounds.*
- 3 *To ensure the appropriate planting of street trees in subdivisions involving new roads.*
- 4 *To ensure that street trees are located to minimise the impact on services.*

Controls

General

- 1 Any subdivision or consolidation proposal **must** demonstrate that the location and design of:
 - i) building footprints;
 - ii) access ways;
 - iii) roadways, including perimeter roads or trails;
 - iv) services;
 - v) inter-allotment drainage easements; and
 - vi) asset protection zones
 maximises the retention of, and minimises impacts on existing significant trees and vegetation on or adjacent to the site.
- 2 For the purposes of 3A.4 (1) above, significant trees and vegetation includes but is not limited to cultural plantings, large and visually prominent trees, bushland and endangered ecological communities.
- 3 Where a site is particularly constrained a more detailed layout of the potential development may be required.

Street trees

- 4 Street trees are to be planted where new roads are proposed or where the likely location of driveway crossings will result in loss of existing street trees.
- 5 Trees are to be located:
 - i) to avoid conflict with the positioning of underground services;
 - ii) a minimum of 0.6m behind the kerbline to allow access to vehicles;
 - iii) no closer to street lights than the radius of the tree canopy at maturity. The location of trees in relation to street lights is to consider the height of the tree and the radius of the canopy at maturity to ensure that lighting is not obscured by the vegetation.

See Figures 3A.6-1 & 3A.6-2.

Note: In some circumstances, trees on one side of the road only may be acceptable, in order to meet the above controls.

- 6 The canopy is to be capable of being maintained at a minimum of 4.3 metres above the road surface to provide clearance for larger vehicles.
- 7 Species are to be selected to minimise leaf drop and to avoid blockage of drainage systems.

3A.5 ACCESS

Further controls that may apply		
		SECTION C PART 24D - Existing Drainage System PART 24E - Road and Trunk Drainage Design

Objectives

- 1 To ensure adequate and safe vehicular access.
- 2 To ensure the pedestrian and bicycle needs of residents and visitors are considered with particular regard to access requirements, safety and security.
- 3 To ensure that public utilities and services can be provided without unnecessary visual clutter and with regard to the streetscape and character of the area.
- 4 To ensure all road works conform with Council's standard specifications.
- 5 To ensure all newly constructed roads are adequately designed for the scale of the development and the road hierarchy.
- 6 To protect life and property from bush fire risk.
- 7 To minimise the impacts on bushland from urban development.
- 8 To enable ease of access for service vehicles, including waste collection and removalist vehicles
- 9 To ensure adequate signage of roads.

Controls**Vehicular Access**

- 1 Each lot **must** provide access from a constructed or dedicated public road. Where access is proposed to a section of unconstructed public road, the newly created lot will need to provide lawful, constructed access to Council's satisfaction.
- 2 The minimum width of an access handle to a battle-axe allotment is 4.6 metres. This may be increased where length, number of lots and or topography necessitate. Access to multiple dwellings could require a wider access handle to accommodate passing bays.
Note: Australian Standard 2890.1 2004 Off Street Car Parking applies.
- 3 The maximum number of lots to be served by a single access handle connected to a public road is 3 lots.
- 4 Access for service vehicles, emergency vehicles and waste collection vehicles **must** be available.
Note: If access is to be provided from a main road it **must** be in compliance with the Roads and Maritime Services requirements.

Pedestrian and Bicycle Access

- 5 Movement areas are to incorporate convenient, obvious and safe pedestrian and bike links from the lot to public transport services and local facilities.
- 6 The design and location of footpaths and driveways are to provide opportunities for surveillance and allow safe movement of residents and visitors.

3A.5 ACCESS (continued)

Controls

Roads

- 7 Street and footpath design and on street car parking are to be provided and designed in accordance with AMCORD Guidelines: Element 2.1 Street Design and On-Street Car Parking.
- 8 Road design is to consider the incorporation of water sensitive urban design elements (see Figure 3A.5-2).

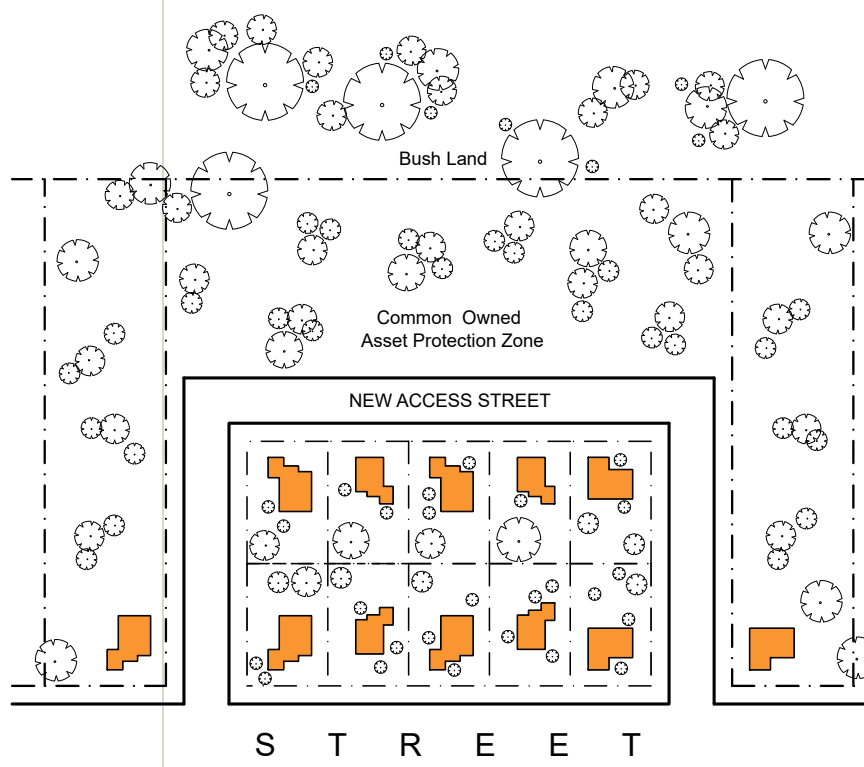


Figure 3A.5-1. Subdivision of lots, sharing access road between development and APZ

Road Grades

- 9 The desirable minimum gradient **is to** be 1.5% and only in exceptional circumstances will an absolute minimum of 1% be permitted, in which case adequate precautions **must** be taken to avoid silting of gutters and pavement flooding. Short sections in vertical curves may be below 1.5%, but **must** have a minimum crossfall of 3%.
Note: Drainage calculations will be required to check the water flow on the road.
- 10 The desirable maximum gradient **is to** be 12% on straight sections of road or on the inner edge of pavement on curves. Under exceptional circumstances, an absolute maximum of 20% may be considered for a distance not exceeding 75 metres.

3A.5 ACCESS (continued)

Controls

Note: Use of grades over 15% between horizontal curves to meet this clause will not be accepted.

Note: The absolute maximum grade for heavy vehicles, (waste trucks), is 15%. Grades over 15% on straight sections of road **must** provide a waste bin pick-up area, where the truck is not required to use the 15% grade.

Note: If the road grade is over 12%, the applicant **must** demonstrate that driveway grades between the kerb and boundary will not exceed 5%.

Turning circles

- 11 Turning circles are to meet the following minimum requirements:
 - i) road diameter minimum 21 metres kerb to kerb;
 - ii) a 28 metre diameter is required from boundary to boundary, or 7m larger than kerb to kerb, where the road is wider than 21 metres;
 - iii) central island – 6 metres diameter kerb to kerb; and
 - iv) maximum crossfall of 5%.

Note: Topographical and alignment constraints may require additional verge width. Consultation with Council at the pre-development application stage may be required.

Names of Roads

- 12 Names of new roads are to be selected by the applicant and submitted to Council for approval. Street name plates **is to be** constructed in accordance with Council's standards and erected at each intersection.

Location and design of roads

- 13 Where four or more lots adjoin bushland or parkland, a perimeter road is to be built separating the subdivision from the bushland or parkland and no dwelling house or business premises will be permitted to be built on the side of the perimeter road where it adjoins bushland or parkland.
- 14 Any fire trails, perimeter and access roads on bush fire prone lands are to be located between the urban development and bush fire prone vegetation. These accessways encourage passive recreation provide bushland views and support the provision of a defensible space. Managed Asset Protection Zones (APZ) **must** be located to the bush fire prone vegetation side of these access ways. Refer to Figure 3A.5-1.
- 15 Subdivision is not to interfere with an existing fire trail. Fire trails are to be kept clear of obstruction and vehicular access should be maintained at all times.
- 16 Where perimeter roads are constructed at the edge of bushland and riparian lands they are to incorporate water sensitive urban design to minimise negative impacts of stormwater run-off.



Figure 3A.5-2.
Raingarden retrofit to
roadway - Mentone,
Melbourne (www.wsud.org)

3A.6 INFRASTRUCTURE

Objectives

- 1 *To ensure that services are provided to new lots.*
- 2 *To encourage the undergrounding of electrical transmission and communication wires in Bush Fire Prone lands and when a new road is constructed.*
- 3 *To ensure any required street lighting is provided according to Council's specifications.*
- 4 *To ensure that street trees are located to minimise the impact on services.*

Controls

Services

- 1 All lots **are to** be provided services such as electricity, gas, town water supply, sewerage and communications. **For subdivisions in bush fire prone land or which include new road construction, these services are to be underground.** Services are to be located in accordance with Figures 3A.6-1 & 3A.6-2.
Note: In Bush fire Prone Lands, services are to be provided in accordance with the requirements of Planning for Bush Fire Protection (PBP).
- 2 Existing or planned allocation of services and street trees **must** be identified on the plan.
- 3 Street lighting is to be provided in accordance with luminance levels found in AS 1158 - Lighting for Roads and Public Spaces.
- 4 Street lighting is to be located at intervals of 80 – 100 metres on straight sections of road or every second pole where there is existing overhead power supply. Where power is located underground, street lighting is to be located as required to meet the minimum lighting requirements.
- 5 Street lighting is to comply with Ausgrid standards. The lighting plan is to be prepared by a suitably qualified and experienced lighting designer accredited with Ausgrid.
Note: Ongoing responsibility for the supply, depreciation and maintenance of street lights which do not comply with Ausgrid standards will lie with the landowner or as agreed at the time of approval and installation.
- 6 Water management facilities, such as:
 - i) interallotment drainage for low level lots;
 - ii) on site detention for new roads and driveways;
 - iii) raingardens or bioretention basins are to be provided as required by Part 24 of this DCP.

3A.6 INFRASTRUCTURE (continued)

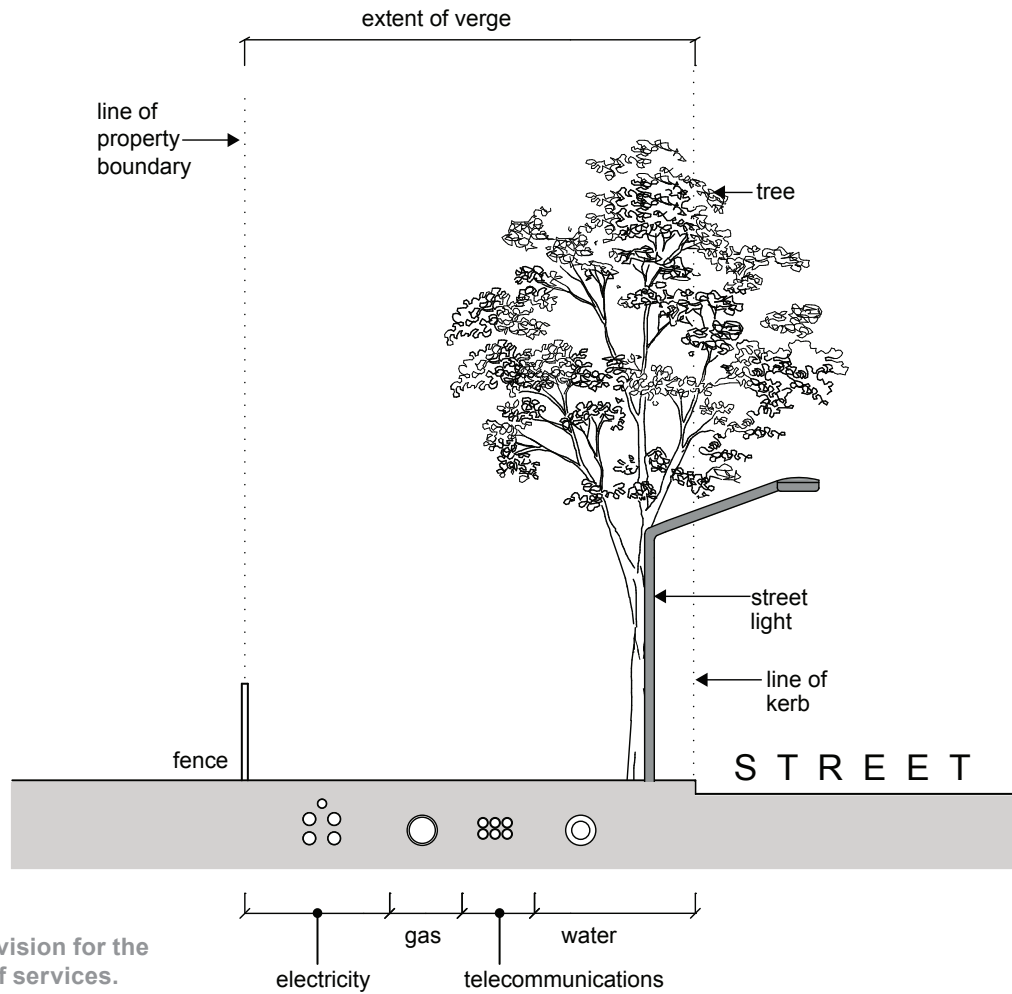


Figure. 3A.6-1 Provision for the undergrounding of services.

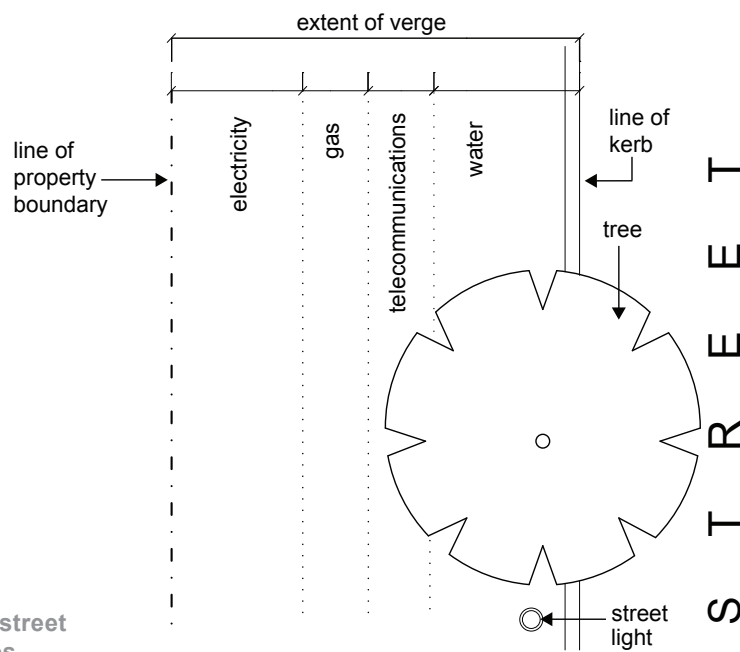


Figure. 3A.6-2 Spacing of street lighting, trees and services

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3B Land Consolidation



3B LAND CONSOLIDATION

Objectives

- 1 To encourage lot size and shape that supports a practical and efficient layout to meet the intended use.
- 2 To ensure consolidation patterns create usable allotments which relate to the site conditions and allow for development which is suited to the site, its context and strategic intent.
- 3 To achieve orderly and economic development.
- 4 To prevent sites from becoming isolated and unable to be developed in accordance with KLEP.
- 5 To encourage consolidation of sites to enable efficiency through shared facilities and services, such as car parking, recycling and waste collection.
- 6 To consolidate corner lots into sites large enough to create corner buildings with a cohesive built form.
- 7 To provide workable building footprints that allow future development that meets the requirements of this plan.

Controls

- 1 Land consolidation is to increase the width of the street frontage and avoid irregular lot configuration.
- 2 Where development is proposed to cross lot boundaries, consolidation of the subject lots will be required.
- 3 Within an **Employment** zone, Medium density and High density residential zone, sites are to be consolidated to avoid isolating an adjoining site or sites. In particular potential redevelopment of the adjoining site or sites in accordance with its zoning **must** not be compromised.
- 4 Lot consolidation is to avoid creating:
 - i) a primary street frontage less than that required by KLEP;
 - ii) a lot size less than that required by KLEP; and/or
 - iii) a highly constrained site.

Note: 4 (i) and (ii) only apply to some zones and development types.

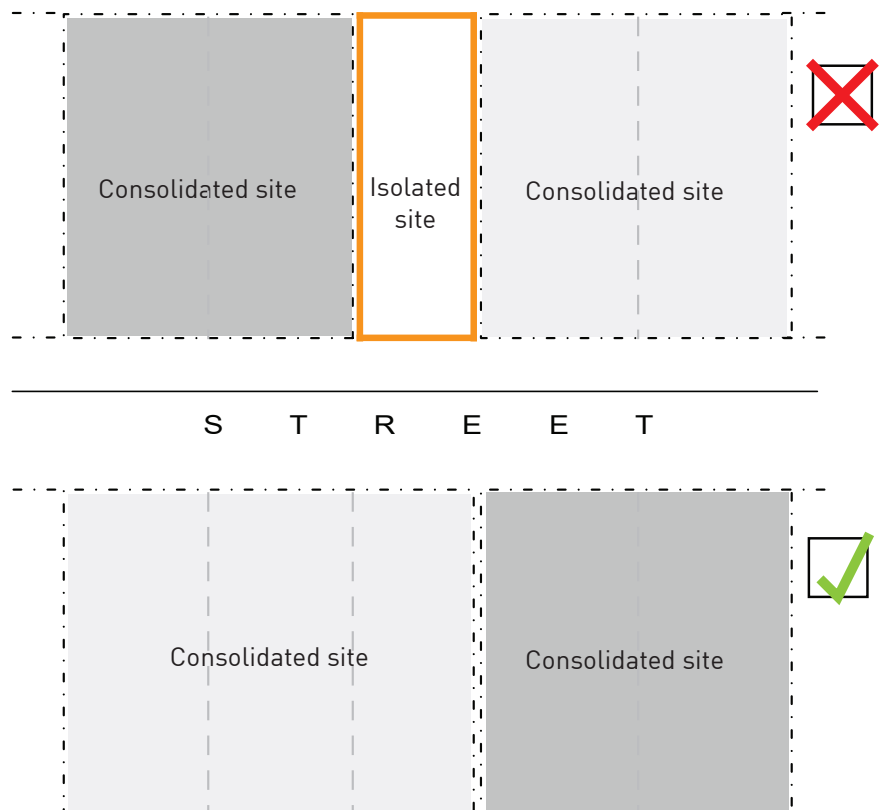


Figure 3B-1
Lot consolidation **must** avoid isolating small sites.

3B LAND CONSOLIDATION (continued)

Controls

- 5 For the purposes of this section, a 'highly constrained site' is a lot or lots where heritage, riparian or biodiversity values significantly reduce the development potential of the lot or lots.
- 6 Where a development proposal results in an isolated site, as described in 4 above, the applicant **must** demonstrate that:
 - i) Negotiations between the owners of the lots have commenced prior to the lodgement of the development proposal. Where a satisfactory result cannot be achieved the development proposal should include details of the negotiations, demonstrating that a reasonable offer has been made to the owner of the isolated site: and
 - ii) Both the isolated site and the development site can be orderly and economically developed in accordance with the provisions of KLEP and this DCP, including:
 - achieving an appropriate urban form for the location, and
 - having an acceptable level of amenity.

Note: A reasonable offer, for the purposes of determining the development application and addressing the planning implications of an isolated lot, is to be based on at least one recent independent valuation and may include other reasonable expenses likely to be incurred by the owner of the isolated property in the sale of the property. To assist in this assessment, applicants are to submit details and diagrams of development for the isolated site, that is of appropriate urban form and amenity. The diagram is to indicate height, setbacks and resultant footprint (both building and basement). This should be schematic but of sufficient detail to understand the relationship between the subject application and the isolated site and the likely impacts of the developments. Important considerations include solar access, deep soil landscaping, privacy impacts for residential development and the traffic impacts of separate driveways if the development is on a main road. The application may need to include a setback greater than the minimum requirement in the relevant planning controls. Or the development potential of both sites may need to be reduced

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3C Strata And Community Title Subdivision

3C STRATA AND COMMUNITY TITLE SUBDIVISION

- 1 *To ensure essential amenities and services are provided for in any strata subdivision and community title.*
 - 2 *To ensure that the provision of shared facilities such as communal open space, allocated car parking, recycling and waste collection are all situated on common property.*
- 1 Any subdivision **must** retain the relationship between the building and/or dwelling and its associated:
 - i) communal open space(s);
 - ii) parking spaces (visitor and allocated);
 - iii) water management devices; and
 - iv) waste and recycling facilities.
 - 2 Any buildings included in a subdivision **must** comply with the relevant fire safety provisions for that building in relation to each relevant lot proposed within the development.

3R References

3R.1 Minimum Lot Depth Maps

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DWELLING HOUSES

Introduction

4A Site Design

- 4A.1 Local Character and Streetscape
- 4A.2 Building Setbacks
- 4A.3 Built-Upon Area
- 4A.4 Landscaping

4B Access and Parking

- 4B.1 Vehicle Access
- 4B.2 Car Parking Provision
- 4B.3 Carports and Garages

4C Building Design and Sustainability

- 4C.1 Building Envelopes
- 4C.2 Building Facades
- 4C.3 First Floor Design and Roof Forms
- 4C.4 Private Open Space
- 4C.5 Solar Access
- 4C.6 Natural Ventilation
- 4C.7 Ancillary Facilities
- 4C.8 Fencing
- 4C.9 Waste Management
- 4C.10 Materials and Finishes

INTRODUCTION

This Part applies to development for a detached dwelling house and development ancillary to a dwelling house. This Part guides development for dwelling houses to be consistent with the aims and objectives within KLEP. This Part also guides dual occupancy development permitted under Schedule 1 of KLEP.

The aims of this Part are to:

- i) Encourage development which does not dominate, but harmonises with and contributes to the treed landscape and is sympathetic to the street and locality in which it is proposed.
- ii) Ensure that with each development sufficient landscaping is provided to contribute to the conservation and replenishment of the tree canopy of Ku-ring-gai, including locally occurring native tree species suited to the site.
- iii) Protect and minimise the impact of development on adjoining properties
- iv) Protect and minimise the impact of development on the natural environment
- v) Ensure development that minimises the depletion of raw materials and non-renewable resources
- vi) Ensure that development meets the needs of the present without compromising the ability of future generations to meet their own needs
- vii) Encourage housing of the highest possible architectural, environmental and amenity standards.
- viii) Manage residential development in a way that embraces innovative design and contemporary lifestyles
- ix) Ensure that there are more certain outcomes for applicants and the community.
- x) Ensure that, where permitted, dual occupancy development is in keeping with the garden character of Ku-ring-gai and is consistent with the built form of the low density area and streetscape it is located within.

4A Site Design

- 4A.1 Local Character and Streetscape
- 4A.2 Building Setbacks
- 4A.3 Built-Upon Area
- 4A.4 Landscaping

READ WITH
SECTION A PART 2 – Site Analysis
SECTION B PART 15 – Land Contamination PART 16 – Bushfire Risk PART 17 – Riparian Lands PART 18 – Biodiversity PART 19 – Heritage and Conservation Areas PART 20 – Development Near Road or Rail Noise
SECTION C PART 21 – General Site Design 21.2: Landscape Design PART 24 – Water Management



4A.1 LOCAL CHARACTER AND STREETScape

Further controls that may apply:

SECTION B
PART 19– Heritage items and Heritage Conservation Areas

SECTION C
PART 21 – General Site Design

Objectives

- 1 *To ensure the development is sensitive to the landscape setting, environmental conditions and established character of the street and locality.*
- 2 *To ensure the development conserves and enhances the visual character of the street with particular reference to integration of:*
 - i) *architectural themes;*
 - ii) *building scale and setbacks;*
 - iii) *landscape themes; and*
 - iv) *fencing styles.*
- 3 *To ensure development provides a positive contribution to the public domain and all areas shared by the community.*
- 4 *To ensure that the visual, scenic and environmental qualities on visually prominent sites are maintained.*

Controls

Visual Character

- 1 Design components of new development are to be based on the existing predominant and high quality visual character of the local neighbourhood.
- 2 The appearance of the dwelling is to maintain the local visual character by considering the following elements:
 - i) visibility of on-site development when viewed from the street, public reserves and adjacent properties; and
 - ii) relationship to the scale, layout and character of the tree dominated streetscape of Ku-ring-gai.
- 3 The prominent and high quality characteristics of the neighbourhood are to be identified and considered as part of the site analysis.

Note: Visual character or streetscape is created by many features including: lot sizes, fencing, kerbs, setbacks, building separation and spaces between buildings, separation, access arrangements, street tree planting, tall tree canopy backdrop to the horizon, native vegetation and private gardens, as well the architecture of individual residences and their associated structures.

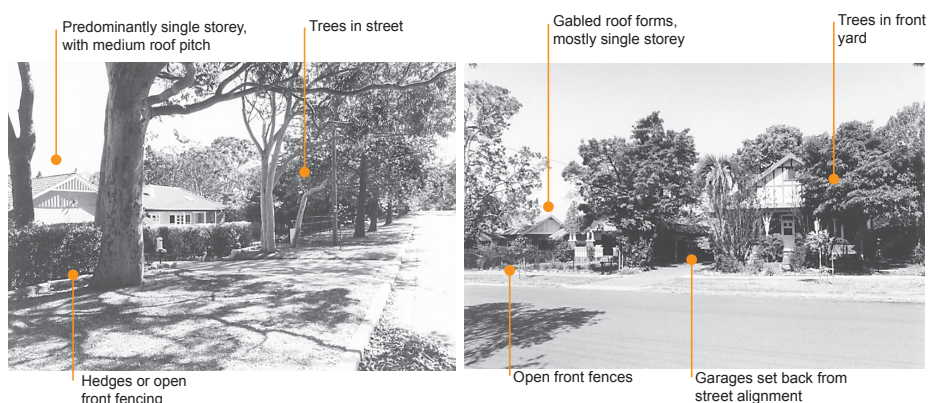


Figure 4A.1-1:
Qualities of visual character.

4A.1 LOCAL CHARACTER AND STREETScape (continued)

Controls

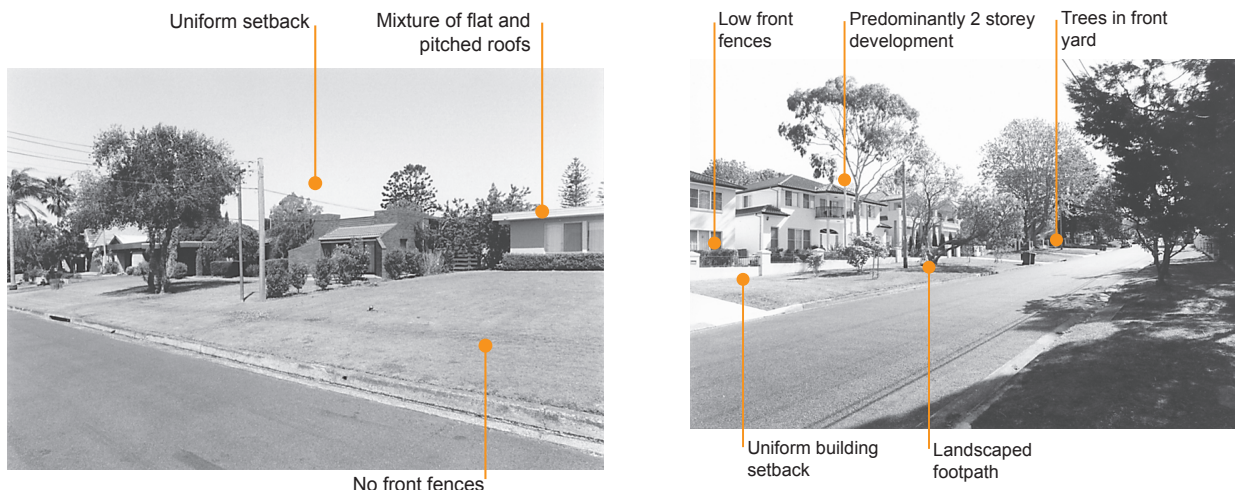


Figure 4A.1-2:
Qualities of visual character.

Public Domain and Communal Space

- 4 Development is to integrate with surrounding sites by:
 - i) being of an appropriate scale retaining consistency with the surrounds when viewed from the street, public domain or adjoining development and not exceeding two storeys;
 - ii) minimising overshadowing; and
 - iii) integrating built form and soft landscaping (gardens and trees) within the tree canopy that links the public and private domain throughout Ku-ring-gai.

Visually Prominent Sites

Note: Visually prominent sites are situated in highly visible locations and include ridge top sites, escarpments, environmentally sensitive sites on sloping land, elevated corner allotments, road bends, vista end points, and any site that has the potential to dominate and impact visual amenity.

5. Development on visually prominent sites is to:
 - i) be integrated into the existing landscape through the site planning process and avoid tall and bulky structures;
 - ii) have a selection of external colours and finishes that are sensitive to the site and locality;
 - iii) retain significant landscape and vegetation elements;
 - iv) consider views to the site as well as those from the site; and
 - v) soften visual impact by extensive landscaping including larger trees and shrubs.
- 6 Colours of materials used in sites adjoining or in close proximity to bushland areas and conservation areas **must** be in harmony with the built and natural landscape elements of the area.

4A.2 BUILDING SETBACKS

Further controls that may apply:

SECTION B
PART 16 – Bushfire Risk
PART 17 – Riparian Lands

Objectives

- 1 To ensure that the appearance of new development is of a high visual quality, enhances the streetscape and complements good quality surrounding development.
- 2 To ensure development is appropriately located on site and
 - i) maintains streetscape character;
 - ii) ensures the amenity of neighbouring properties is maintained or enhanced;
 - iii) allows for the provision of landscaping and provide room for additional tree plantings to grow to maturity;
 - iv) facilitates solar access, daylight access and ventilation;
 - v) protects significant vegetation;
 - vi) facilitates efficient use of the site; and
 - vii) minimises bush fire hazard by preserving a “fuel free” zone (where development is adjacent to high bush fire hazard areas).
- 3 To enable landscaping to be provided between neighbouring buildings, particularly where there are two storey structures.

Controls

Building Line (Front Setback)

- 1 **Basement areas are to be consolidated under the building footprint and meet all building setback requirements.**
- 2 The location of development on the site is to demonstrate its consideration of
 - i) the existing setback of adjoining properties;
 - ii) the setback pattern of its street block; and
 - iii) Council's minimum and average setback requirements.
- 3 Minimum and average front setbacks are to be provided in accordance with the following table and illustrated in *Figure 4A.2-1*.

Single Storey:	
Street	Minimum
Low side	9 metres
High side	12 metres

Two Storey:		
Street	Minimum	Average
Low side	9 metres	11 metres
High side	12 metres	14 metres

Note: Refer to Part 1B Dictionary for definitions of Low side and High side.

- 4 Reduced setbacks may be considered on the low side of the street where gradients averaged over the front setback exceed 20 degrees.
- 5 Buildings are to be located so that at least 75% of the front elevation of the building is set back not less than the specified average setbacks, and the balance of the building frontage (not more than 25%) may be located up to the minimum setback.

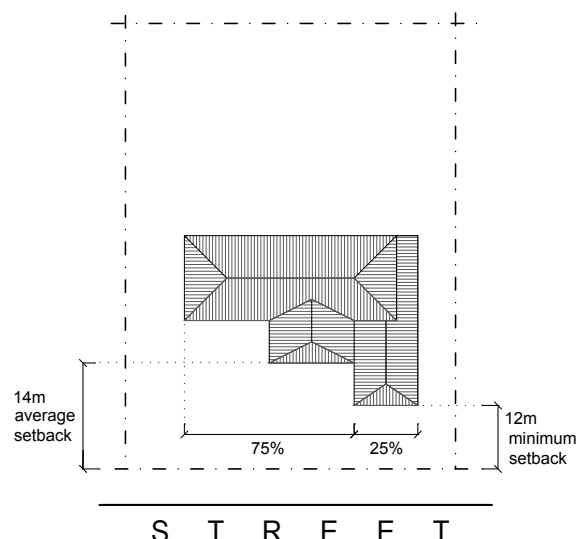


Figure 4A.2-1: Average and minimum front setbacks for two storey dwellings on high side of street

4A.2 BUILDING SETBACKS (continued)

Objectives

- 4 *To provide privacy and soften the visual appearance when viewed from the street and from the neighbouring property.*
- 5 *To maintain visual amenity and solar access of private open space.*
- 6 *To ensure that side setbacks provide adequate solar access and day light access.*
- 7 *To ensure dwellings on battle-axe lots are sited to have minimum impact on the amenity of private open spaces and living areas on neighbouring properties.*
- 8 *To ensure adequate privacy and amenity for each dual occupancy dwelling.*

Controls

- 6 Dual occupancy dwellings are to meet the controls 4A.2-1 to 4A.2-8.
- 7 Where a dual occupancy development involves a corner allotment, the second dwelling or dwelling furthest from the primary street frontage is to have a minimum building line setback of 7m for 75% of the building frontage and a minimum building line setback of 5m for not more than 25% of the front elevation of the building.
- 8 Where dual occupancy is permitted under Schedule 1 of KLEP, separation between detached dual occupancy dwellings is to be a minimum of 7m.

Building Line (Rear Setbacks)

- 9 For sites with a depth greater than 48m, a minimum 12m rear setback is to be provided.
- 10 Where sites have a depth of less than 48m, a minimum rear setback of 25% of the average site depth is to be provided.

Building Line (Side Setbacks)

- 11 The minimum distances to a side boundary are as per the following table and illustrated in Figure 4A.2-2 to 4A.2-3:

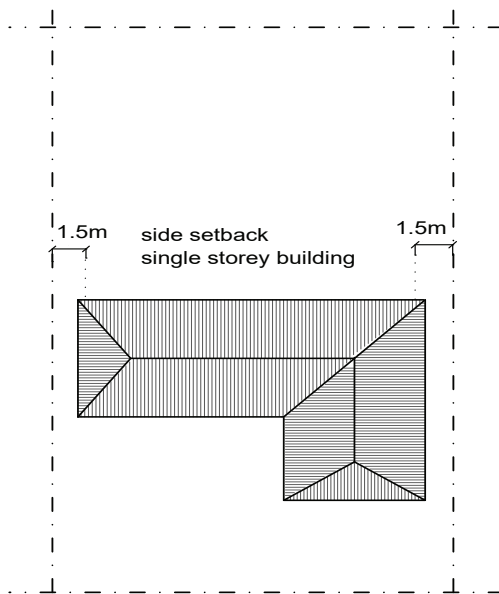
Site Width	Single Storey Building Setback - including single storey elements of two storey buildings	Two Storey Building Setback - including any upper level
Less than 20m	1.5m	2m
20m or more	9% of site width	12% of site width

- 12 Side setbacks are to accommodate a pathway and at least 0.6m of landscaping width for single storey buildings, and 1.1m for 2 storey houses. Where sites are of greater widths (over 20m) larger side setbacks should be progressively provided.
- 13 Side setbacks are to accommodate shrubs to a height of 3-4m for two storey houses, and 2-3m for single storey houses.

4A.2 BUILDING SETBACKS (continued)

Controls

Figure 4A.2-2: Side setbacks
– Single Storey dwellings for
sites less than 20m width



S T R E E T

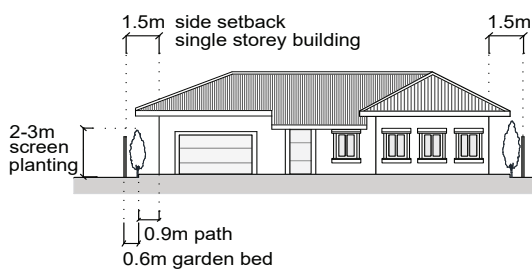
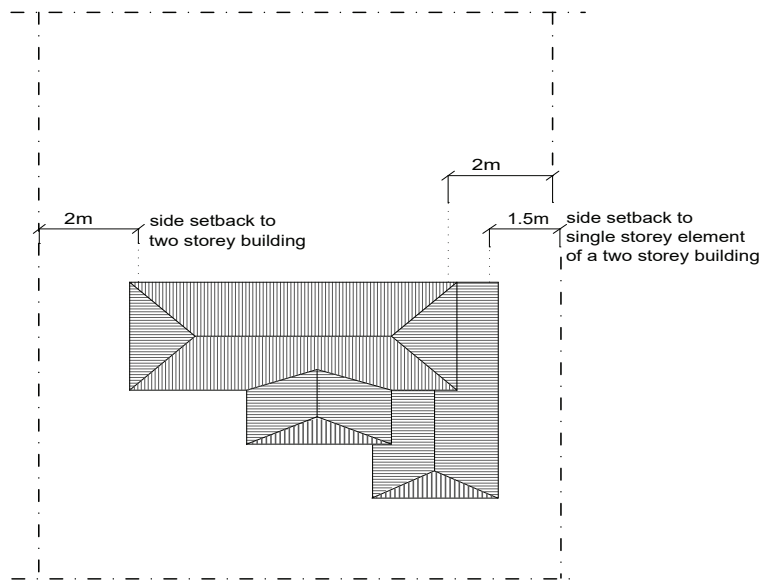
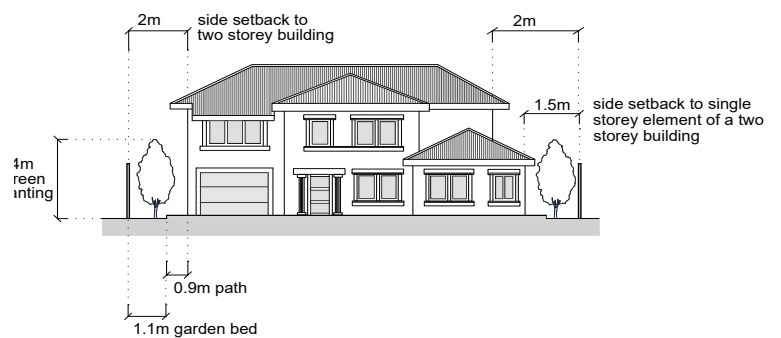


Figure 4A.2-3: Side setbacks
– Two Storey dwellings for
sites less than 20m width



S T R E E T



4A.2 BUILDING SETBACKS (continued)

Controls

Corner and Dual Frontage Sites Setbacks

- 14 For building sites with a corner frontage, the front and rear boundary setbacks apply to the Primary street frontage as illustrated in Figure 4A.2-4.
- 15 Where a development seeks to change the secondary frontage into the primary frontage then the new primary frontage is to provide all setbacks in accordance with section 4A.2 Building Line (front setback).

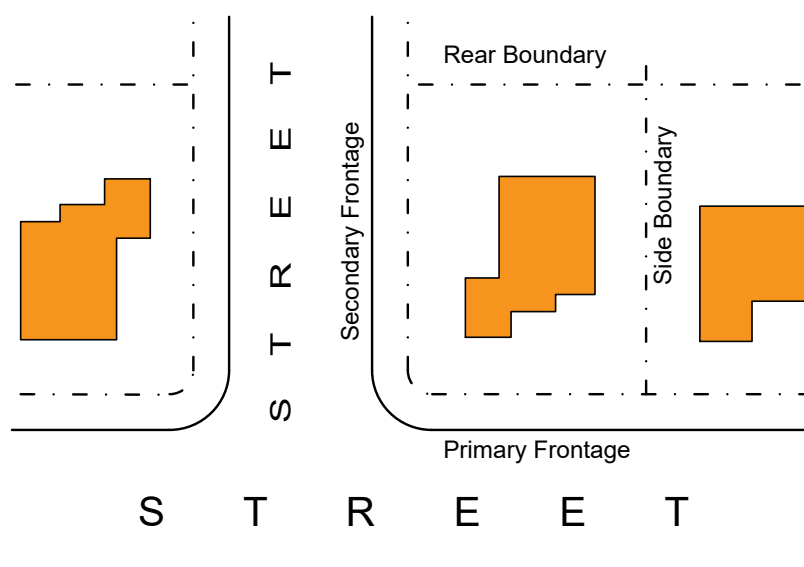


Figure 4A.2-4: Primary and Secondary Street Frontages

- 16 The minimum and average setbacks to the secondary street frontage on corner sites are as per the following table and illustrated in Figure 4A.2-5.

	Minimum	Average
Setback	3.8m	4.5m

- 17 On secondary street frontages, buildings are to be located so that not more than 50% of the secondary front elevation of the building is set back not less than 3.8m, and at least 50% of the secondary front elevation of the building is to be located to average a 4.5m setback.
- 18 Setbacks to side and rear boundaries are to be in accordance with the minimum setbacks applying to dwellings which are not on corner lots.

4A.2 BUILDING SETBACKS (continued)

Controls

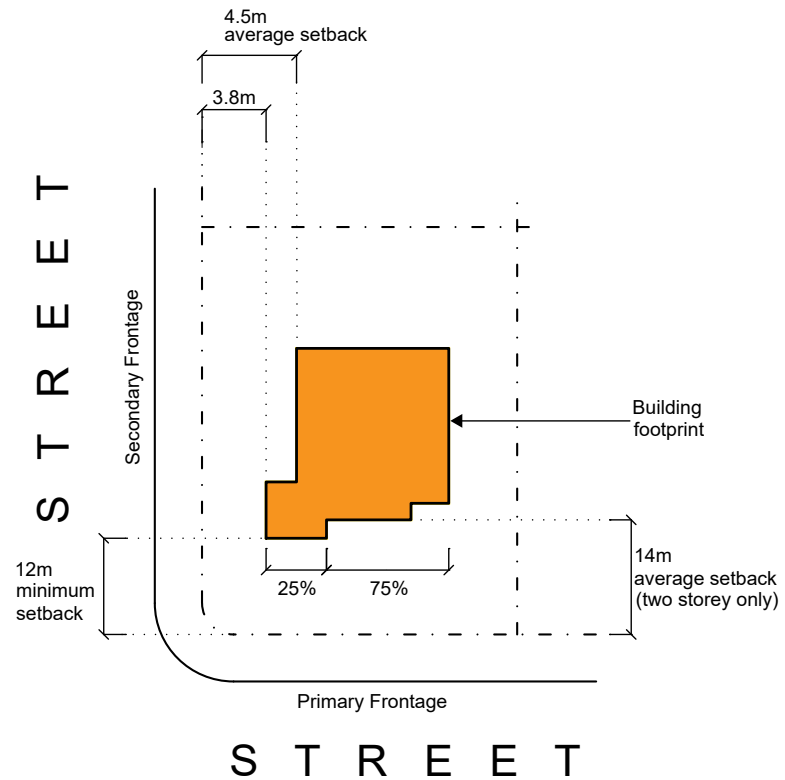


Figure 4A.2-5: Setback for corner sites of a two story house on the high side of the street

4A.2 BUILDING SETBACKS

Controls

Battle-Axe Lots

- 19 Rectangular battle-axe blocks (excluding the access handle) are to provide the following minimum setback as illustrated 4A.2-6:
- the setbacks from the two long boundaries is to be a minimum of 15% of the site width or 3m, whichever is the greater.
 - the setback from any boundary excluding the two long boundaries, is to be a minimum of 12m for sites with a depth greater than 48m. Where sites have a depth of less than 48m, a minimum setback of 25% of the average site depth is to be provided.

Note: For irregular blocks or particularly narrow blocks, or in special cases (e.g. the dwelling is single storey) Council may vary these figures, provided it can be shown that the objectives have been met.

Note: Where there is potential conflict with uses on neighbouring lots, greater side setbacks are to be provided.

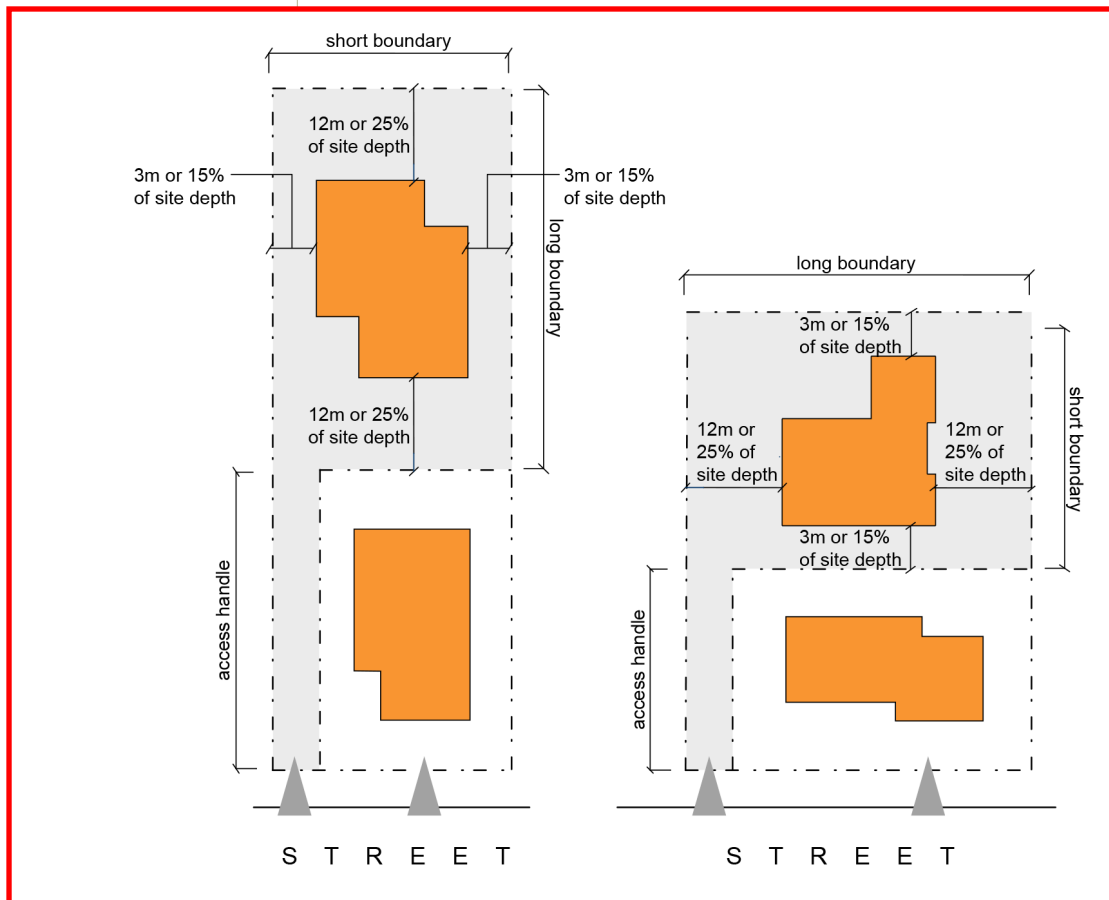


Figure 4A.2-6 Setback battle-axe lots

4A.3 BUILT-UPON AREA

Further controls that may apply:

SECTION B PART 15 – Land Contamination

SECTION C PART 24– Water Management

Objectives

- 1 To ensure that development is consistent with the local built and landscape character.
- 2 Ensure the built form is in scale with the tree canopy.
- 3 To provide sufficient soft landscaped area for the planting and retention of tall trees.
- 4 To provide an appropriate balance between the natural and built elements of the site.
- 5 To retain areas for habitat, connectivity and locally occurring native vegetation.
- 6 To minimise impervious surfaces generating storm water runoff.
- 7 To provide useable high quality open space.
- 8 To provide adequate space for screen planting between buildings.

Controls

- 1 All sites, except those within the C4 Environmental Living zone and dual occupancy permitted under Schedule 1 of KLEP, are to meet the following standards:
 - i) sites with the following sizes are to have a maximum built-upon area (BUA) as follows:

Site Area m ²	Maximum Built-upon Area %	
	Single storey	Two storey
Less than 800m ²	60	58
800-899m ²	58	56
900-999m ²	56	54
1000-1199m ²	54	52
1200 -1500m ²	52	50
Greater than 1500m ²	50	50

- ii) for alterations and additions, on sites where the existing BUA is greater than that listed above, the maximum BUA is the existing BUA, however, a reduction in BUA is desirable.
 - iii) the proposal is to include a reasonable provision of built elements, normally associated with a residential property, such as pathways, and show consideration of these elements at an early stage of the design process
- 2 Sites zoned C4 Environmental Living are to meet the following standards:
 - i) sites with the following sizes are to have a maximum built-upon area (BUA) as follows:

Site Area m ²	Maximum Built-upon Area %
Less than 850m ²	Site Area x 0.5
850m ² -2050m ²	Site Area x [0.5 -(SA-850)/6,500]
Greater than 2050m ²	645m ² and subject to merit consideration

Example: The built upon area for a 1100m² lot is as follows: 1100 x [0.5 - (1100 - 850)/6500]
 = 1100 x [0.5 - (250)/6500]
 = 1100 x [0.5 - 0.038]
 = 1100 x 0.467
 = 508 m²

4A.3 BUILT-UPON AREA (continued)

Controls

- ii) for alterations and additions on sites where the existing BUA is greater than that listed above, the maximum BUA is the existing BUA, however, a reduction in BUA is desirable.
 - iii) the proposal is to include a reasonable provision of built elements, normally associated with a residential property, such as pathways, and show consideration of these elements at an early stage of the design process.
- 3 Where dual occupancy is permitted under Schedule 1 of KLEP the following standards are to be met:
- i) sites with the following development type **are to** have a maximum built-upon area (BUA) as follows:

Development Type (Applies to both attached and detached dual occupancy development)	Maximum Built-upon Area
2 x 1 storey dwellings	50% of site area
1 x 1 storey and 1 x 2 storey dwellings	45% of site area
2 x 2 storey dwellings	40% of site area

Note: Applicants should make reasonable provisions for built elements such as pathways normally associated with a residential property as part of the built upon area. Council will also include elevated pathways as structures and built upon areas

- 4 The front setback for any development for a dwelling house is to have a maximum BUA of 30% (see Figure 4A.3-1).



Figure 4A.3-1: Maximum Built Upon Area in the front setback

4A.4 LANDSCAPING

Further controls that may apply:

SECTION A

PART 13 – Tree and Vegetation Preservation

SECTION B

PART 18 – Biodiversity

PART 19 – Heritage Items and Heritage Conservation Areas

PART 20 – Development Near Road or Rail Noise

SECTION C

PART 21.2 – Landscape Design

Objectives

- 1 To ensure that the built form does not dominate views from adjacent streets, parks and neighbouring properties.
- 2 To provide habitat and connectivity for locally occurring native plants and animals and contribute to biodiversity.
- 3 To provide sustainable landscaped areas with high quality and amenity.
- 4 To protect and enhance the tree canopy and landscape character of Ku-ring-gai

Controls

Tree retention

- 1 Landscape proposals are to retain existing trees, where possible. This may be achieved by:
 - i) minimising changes to existing ground levels within Tree Protection Zones;
 - ii) confining building works where appropriate to pre-existing building footprints.

Tree replenishment and planting

- 2 All lots are to support a minimum number of trees capable of attaining a minimum height of 13m on shale and transitional soils and 10m on sandstone derived soils as per the table below. Council may in special circumstances, consider the reduction of this standard.

Lot size	Number of trees
Less than 850m ²	3
850m ² to 1,000m ²	5
1,001 m ² to 1,500m ²	7
Over 1,500m ²	10 or as directed

- 3 Landscaping is to include tall trees, small trees, shrubs and ground covers. Continuous rows of monoculture planting and high hedging to boundaries is to be avoided.
- 4 Landscape designs are to reflect the prevailing landscape character of the area and relate to the existing streetscape in terms of scale and planting style.
- 5 New trees are to be distributed across the site and are to be located to accommodate the mature growth of both new and existing trees.
- 6 Hedges near boundaries are not to impact the amenity of adjoining properties by blocking significant district, bushland or water views or unreasonably shading neighbours' private open space or living areas in winter. Hedges are not to grow to excessive height and are to be maintained at a height below 2m.

4B Access and Parking

4B.1 Vehicle Access

4B.2 Car Parking Provision

4B.3 Carports and Garages

READ WITH
SECTION B PART 19- Heritage Items and Heritage Conservation Areas
SECTION C PART 22 - General Access and Parking 22.2: General Vehicle Access PART 24 - Water Management



4B.1 VEHICLE ACCESS

Further controls that may apply:

SECTION B
PART 19 - Heritage Items and
Heritage Conservation
Areas

SECTION C
PART 22.2 - General Vehicle Access
PART 24 - Water Management

Objectives

- 1 To encourage the integrated design of vehicle access and functional car parking facilities to minimise adverse visual and environmental impacts on the streetscape.
- 2 To minimise stormwater run-off from driveway surfaces.
- 3 To minimise the extent of hard surfaces forward of the building line.
- 4 To reduce potential conflict with street traffic and pedestrians and optimise safety of vehicular movement.
- 5 To create functional, safe driveways that
 - i) minimise hard surface run off from the site;
 - ii) are not visually intrusive on the existing streetscape; and
 - iii) have minimal impact on existing trees.
- 6 To avoid excavation and alteration of existing ground lines.

Controls

Vehicular Access

- 1 Wherever possible, driveways **must** be located so that driver and pedestrian sight lines are clear.
- 2 The driveway **must** be designed so that vehicles may exit the property in a forward direction where:
 - i) the access is located on a major roadway; or
 - ii) the property is a battle-axe allotment; or
 - iii) sight lines are restricted (such as at curves or crests).

Driveways

- 3 Not more than one driveway is to be provided on any property with a street frontage width of less than 18m.
- 4 A maximum of two driveways may be provided on any property with a street frontage more than 18m.
- 5 The maximum crossing width for any driveway, as measured at the front site boundary, is 3.5m. Council may allow a narrower width where trees may be adversely affected. Council may allow a wider width if site conditions require car parking accommodation to be provided close to the street boundary.
- 6 The location and construction of driveways and driveway crossings are to **minimise** disturbance (including altered soil level) to the **Tree Protection** Zones beneath the canopy of trees protected by Part 13 of this DCP.
- 7 Where long driveways are proposed, consideration is to be given to curving the entrance to the street.
- 8 Measures that reduce water runoff on driveways are encouraged. These can include:
 - i) porous driveways;
 - ii) directing runoff from driveways onto vegetated areas;
 - iii) use of planting strips down the centre of the driveway.
- 9 Driveways within the property are to be designed in accordance with AS 2890.1 (2004) *Off Street Car Parking*.

4B.2 CAR PARKING PROVISION

Objectives

- 1 To encourage the provision of functional car parking facilities.
- 2 To minimise adverse visual and environmental impacts on the streetscape.
- 3 To ensure car spaces are of sufficient size to accommodate a standard vehicle.

Controls

Number of car spaces

- 1 The number of on-site parking spaces provided should be in accordance with *Section C Part 22R of this DCP*.
- 2 Single occupancy dwellings are to provide 2 spaces on-site as determined by *Section A Part 4B.3(5)*
- 3 Provision of more than 2 car spaces is discouraged in locations where there is availability of public transport.
- 4 Where more than 2 car spaces are proposed, triple (or greater width) garage openings within the front elevation are not permitted.
- 5 The minimum dimensions of a residential parking space **are** to be as follows and as illustrated in Figure 4B.2-1
- 6 Internal access to car parking and the required car parking area is to be no greater than 31sqm. Car parking and access to that car parking, exceeding the requirements of this control will not be excluded from the gross floor area as defined in KLEP 2015.

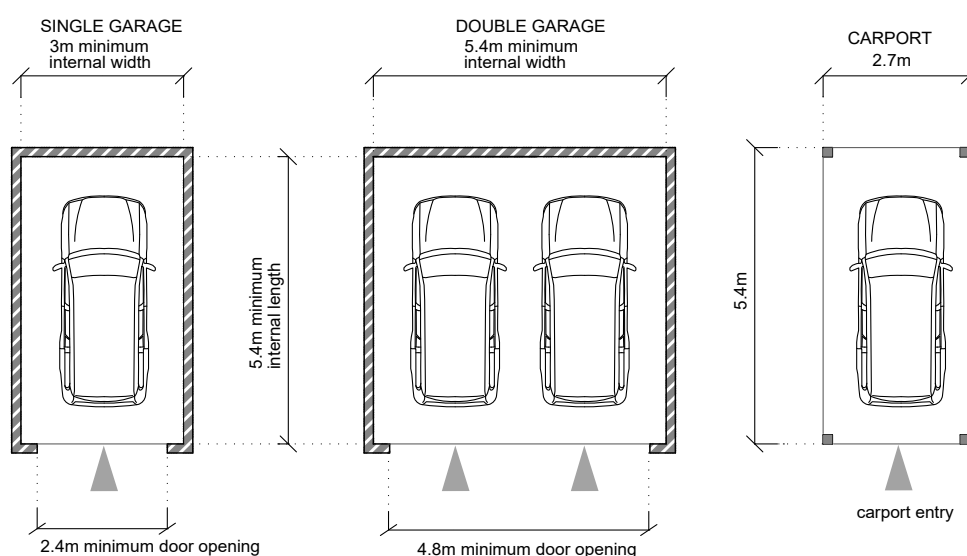


Figure 4B.2-1 Minimum dimensions for unobstructed garage and open carport (AS 2890.1)

4B.3 CARPORTS AND GARAGES

Further controls that may apply:

SECTION C
PART 22 - General Access and Parking

Objectives

- 1 To encourage the design of functional car parking facilities that are integrated with the built form of the dwelling.
- 2 Carports and garages are to present as complementary and sympathetic visual elements within the streetscape.
- 3 To ensure the garages and carports are not the primary built form when viewing the dwelling from the street or public domain.
- 4 To ensure the location of carports and garages considers existing trees, structures on adjacent sites, streetscape and visual character.
- 5 To minimise impacts of excavation on the built environment and the streetscape.
- 6 To minimise 3 storey streetscape building appearances in low density residential areas.
- 7 To avoid excavation in the front setback area and maintain existing ground levels to the street.

Controls

Design of Carports and Garages

- 1 The car parking spaces, whether covered or uncovered, are to be located at or behind the required front setback as specified in Part 4A.2(2) & (15) of this DCP, or behind the front building line defined by the existing dwelling where the dwelling is being retained, whichever is the lesser.
- 2 The scale and design of carport and garage structures are:
 - i) to be sympathetic to existing development on-site;
 - ii) to consider adjacent buildings;
 - iii) to consider proximity to drainage systems;
 - iv) to be integrated into the building design; and
 - v) not to dominate the site, dwelling and landscape, or the streetscape.
- 3 Alterations and additions should not prevent the future ability of the site to accommodate two car spaces behind the building line.
- 4 Council may consider a reduced setback for parking spaces on steeply sloping sites.
- 5 Where it is not possible to locate the parking structure space behind the minimum permissible setback or the building line due to topographical constraints or side setback space of less than 3m, structure is to comply with the following:
 - i) the structure is to be open sided;
 - ii) the structure is to be located at the maximum possible distance from the front property boundary; and
 - iii) the design of the structure is to be of a scale and form that is compatible with the streetscape character.
- 6 The width of any detached or attached carport/garage visible from the street is not to be greater than 6m, as measured to the outer face of the exterior walls/column/posts (refer to Fig 4B.3-1).
- 7 Basement garages are only permitted on sloping land and where no more than 1m excavation is required for driveway access.

4B.3 CARPORTS AND GARAGES (continued)

Controls



Figure 4B.3-1- Maximum widths of garages and carports

Location of Parking Structures

- 8 Location of all new driveways and services are to enable preservation of existing site or street trees to which Part 13 of this DCP applies.
- 9 Where a site has a frontage to more than one road and/or service lane, access is to be obtained from:
 - i) the road or service lane that is lower on the road hierarchy, and/ or
 - ii) the road or service lane that carries the lower volume of traffic.

Note: Road hierarchy and traffic volumes will be determined by Council at its discretion.

Detached Carports and Garages

- 10 Detached garages are to be single storey and set back 1.5m minimum from side and rear boundaries.
- 11 Detached carports are to be single storey and set back 0.6m minimum from side and rear boundaries.

Note: Where there is any inconsistency between this Part and Part 22 of this DCP in relation to vehicular access, car parking or garages, this section prevails to the extent of the inconsistency.

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4C Building Design and Sustainability

- 4C.1 Building Envelopes
- 4C.2 Building Facades
- 4C.3 First Floor Design and Roof Forms
- 4C.4 Private Open Space
- 4C.5 Solar Access
- 4C.6 Natural Ventilation
- 4C.7 Ancillary Facilities
- 4C.8 Fencing
- 4C.9 Waste Management
- 4C.10 Materials and Finishes

READ WITH
SECTION B PART 20 - Development Near Road or Rail Noise
SECTION C PART 21 – General Site Design 21.1: Earthworks and Slope 21.2: Landscape Design PART 23 – General Building Design and Sustainability 23.7: Acoustic Privacy 23.8: Visual Privacy 23.3: Sustainability of Building Materials PART 24 – Water Management 24C: On-site Stormwater Management 24D.5: Tennis Courts and Other Sporting Surfaces 24D.7: Swimming Pools and Spas 24F: Onsite Wastewater Management



4C.1 BUILDING ENVELOPES

Further controls that may apply:

SECTION C

PART 21 - General Site Design

PART 23.7 - General Acoustic Privacy

PART 23.8 - General Visual Privacy

Objectives

- 1 To limit the height and bulk of buildings so that they do not dominate the natural landscape or the tree canopy.
- 2 To ensure that buildings are responsive to the site.
- 3 To maintain the integrity of the existing streetscape.
- 4 To provide for quality interior spaces while considering the external building form requirements.
- 5 To limit the extent of visual and noise intrusion on the private spaces of neighbouring properties.
- 6 To allow adequate daylight, sunlight and ventilation to habitable rooms and private open spaces for new and neighbouring dwellings of the site and of neighbouring sites.
- 7 To ensure that significant views from neighbouring dwellings and public reserves are not adversely impacted.

Controls

- 1 The maximum height of a dwelling is 9.5m (including any garage, basement or the like) and present as a 2 storey dwelling house as illustrated in Figure 4C.1-1

Note: Standards (in metres) for the external height of the building are set within KLEP.

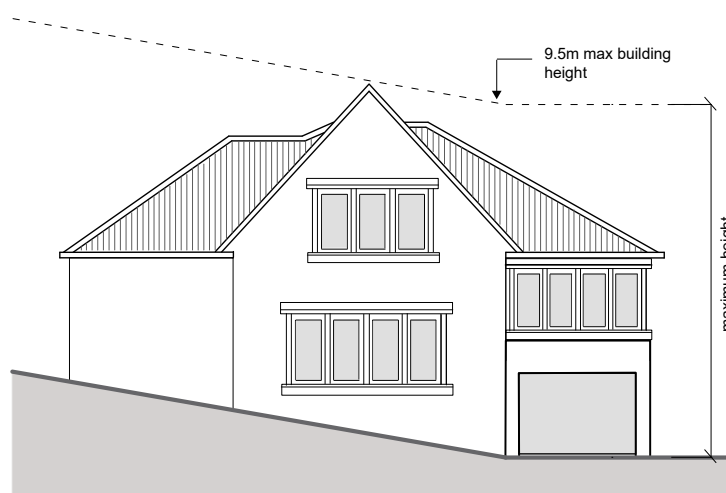


Figure 4C.1-1: Maximum height of dwelling

- 2 The following matters are to be considered with regard to the potential impact on neighbouring properties and local character:
 - i) opportunities to minimise overshadowing of living and private open space areas and solar panels;
 - ii) opportunities to minimise overlooking of living and private open space areas;
 - iii) opportunities to minimise adverse impacts on any significant bushland, or distant views;
 - iv) the relationship with the streetscape.
- 3 Development is to avoid the creation of an overbearing effect upon adjoining development by:
 - i) ensuring appropriate side setbacks and landscaping are incorporated in the design;
 - ii) ensuring all built structures are within the building height plane as illustrated in Figure 4C.1-2;
 - iii) the relationship with the streetscape.

4C.1 BUILDING ENVELOPES (continued)

Controls

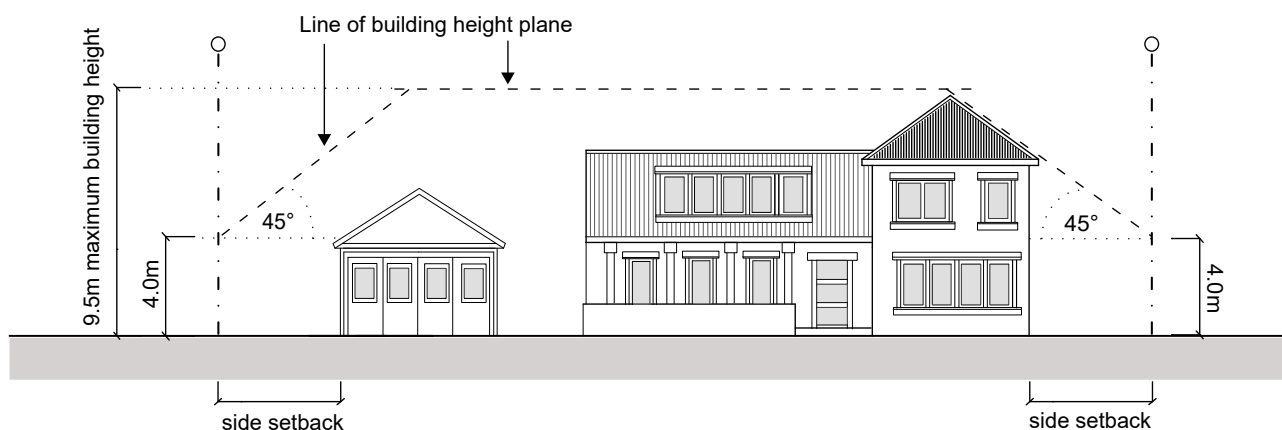


Figure 4C.1-2: Building height plane.

8 To minimise 3 storey streetscape building appearances and maintain a low density domestic scale in residential areas.

9 To avoid excavation outside the building line and ensure deep soil provision.

4 Basements are to be:

- i) consolidated under the building footprint.
- ii) minimised and no habitable spaces are permitted;
- iii) include a maximum ceiling height of 2.2m to all non-habitable rooms.
- iv) limited to a maximum 50% of the building footprint where rooms, excluding the garage, have no door to the building exterior.

5 Excavation for a basement garage or other rooms on land that is not steeply sloping is not permitted.

Note: Conditions of Consent will prohibit future use of cellar, storage, and/or garage areas as habitable rooms.

4C.2 BUILDING FACADES

Further controls that may apply:

SECTION B

PART 20 – Development Near Road
or Rail Noise

SECTION C

PART 23.3 - Sustainability of
Building Materials

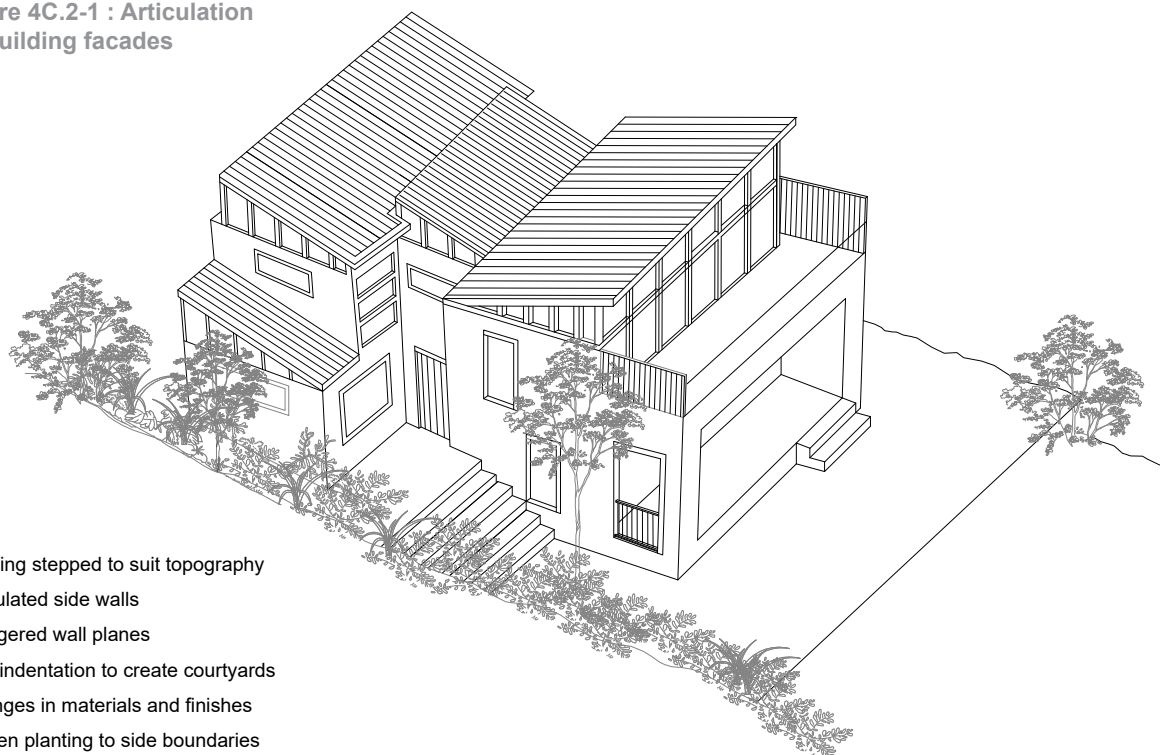
Objectives

- 1 To encourage well designed, attractive and site responsive buildings.
- 2 To minimise the bulk and scale of the built form.
- 3 To avoid massive and unrelieved walls to side boundaries

Controls

- 1 Extensive blank or unarticulated walls to street frontages will not be permitted.
- 2 All external facades are to be articulated to reduce the apparent building mass and present a human scale. This may be achieved through the use of bay window openings, window awnings, chimney and alcove features, verandas, pergolas, balconies, entry porches, staggered wall planes, a combination of materials and finishes, decorative architectural elements including brick corbelling, banding and recesses.
- 3 The maximum length for an unrelieved wall is 12m. Where walls exceed 4m in height, the maximum length for an unrelieved wall is 8m.
- 4 Side elevations are to avoid unrelieved walls. This may be achieved by:
 - i) dividing walls into sections, bays or modules;
 - ii) separating wall sections with recesses or courtyards.

Figure 4C.2-1 : Articulation
of building facades



- Building stepped to suit topography
- Articulated side walls
- Staggered wall planes
- Wall indentation to create courtyards
- Changes in materials and finishes
- Screen planting to side boundaries

4C.2 BUILDING FACADES (continued)

Objectives

- 4 *To ensure the integration of alterations and additions into an existing building so that the building continues to appear as a single dwelling.*
- 5 *To ensure high impact elements such as noise sources are considered early in the design stage.*

Controls

- 5 Alterations and additions to an existing dwelling are to be:
 - i) designed so that they are integrated into the existing building;
 - ii) result in the new and old structures appearing as one building from the street. This may be achieved through the choice of materials, detailing, building proportion and configuration.
- 6 Building design is to integrate soft landscaping and natural site features and make provision for tall shrub plantings.
- 7 **Where dwellings are located near a busy road or railway line, the requirements of Part 20.1 of this DCP are to be included.**

Corner Sites

- 8 Corner sites are to address both primary and secondary street frontages using building and landscaping elements such as feature windows, or other treatments to wall surfaces.

Note: Refer to 4A.1 (5-6) and 4A.2 of this Part.

4C.3 FIRST FLOOR DESIGN AND ROOF FORMS

Objectives

- 1 *To integrate the first floor of dwellings into the design of the development.*
- 2 *To avoid an overbearing bulk and scale relationship with neighbouring properties, particularly on sloping sites.*
- 3 *To allow adequate daylight, sunlight and ventilation to living area and private open spaces of new and neighbouring dwellings.*
- 4 *To encourage view sharing.*
- 5 *To encourage use of attic rooms within the roof space for habitable purposes as an alternative to a second storey, particularly in neighbourhoods that are predominantly single storey dwellings.*

Controls

First Floor Design

- 1 Dwelling design is to avoid an overbearing bulk/scale relationship with neighbouring properties. Consideration is to be given to avoiding large vertical wall surfaces by stepping back upper levels and containing within the existing/proposed roof space.
- 2 The placement of windows in first floor walls facing side boundaries are to respect the privacy of neighbouring properties.

Attic Rooms

- 3 Attic room designs are to avoid:
 - i) increasing the bulk of the building;
 - ii) causing undue overshadowing of adjacent properties and open spaces;
 - iii) causing loss of significant views from adjacent properties; or
 - iv) being excessive in scale and bulk relative to the rest of the building.
- 4 The form and placement of any windows is to respect the privacy of neighbouring properties.
- 5 Attic rooms are to be located within the existing roof forms and retain the streetscape appearance of the existing buildings. In some cases depending on location of building and shape of roof, higher roof forms for attics may be considered.

Roof Line

- 6 Roof structures are to be designed to minimise bulk and overshadowing of neighbouring buildings and open spaces by:
 - i) considered selection of material, colour and pitch;
 - ii) use of low-angled pitched roofs providing that they are compatible with existing development and the streetscape character; or
 - iii) inclusion of habitable rooms within the roof space.

Gables

- 7 Unless otherwise consistent with the form of development within the immediate locality, gables are:
 - i) to be positioned a minimum of 0.2m below the main roof ridge height;
 - ii) not to occupy any more than 40% of the face of any gable wall and not occupy more than 20% of the face of any roof or slope for a gable window;
 - iii) not extend beyond the external wall of the dwelling.

4C.3 FIRST FLOOR DESIGN AND ROOF FORMS (continued)

Controls

Dormers

- 8 Dormer windows are to be located and have a size, bulk and scale that do not dominate the roof form or add excessively to the bulk of the building.
- 9 Dormer windows may only be provided on buildings with an architectural character or style that is suitable for dormer features.
- 10 Unless otherwise consistent with the form of development within the immediate locality, the configuration of dormer windows **must** satisfy the following:
 - i) be positioned a minimum of 0.2m below the main roof ridge height;
 - ii) not to extend beyond the external wall of the dwelling;
 - iii) be set back from the sides of the roof by a minimum of 500mm.
- 11 Dormers occurring in the same roof plane **must** be similarly sized and configured, and arranged symmetrically.

Clerestory Windows and Skylights

- 12 The location, size, configuration and layout of clerestory windows and skylights **must** be sympathetic to the overall design of the dwelling and the streetscape.

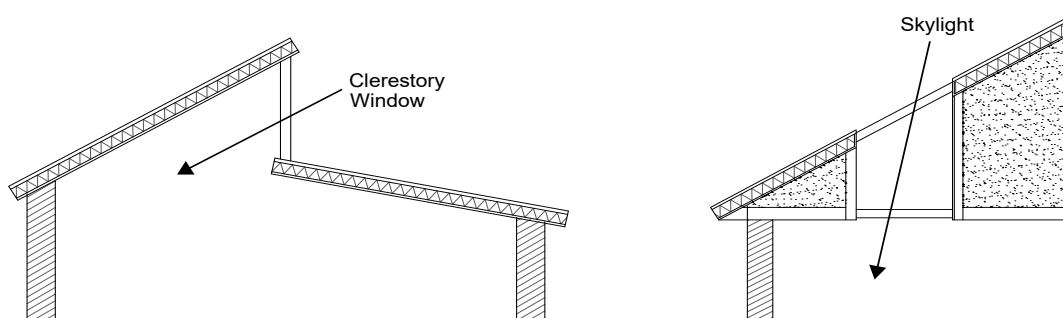


Figure 4C.3-1 Clerestory window and skylight

Mechanical Equipment

- 13 Plant and equipment is to be integrated into the overall design of the roof and be contained within the roof form or screened behind parapet walls. These elements include lift overruns, plant equipment and air conditioning.

4C.4 PRIVATE OPEN SPACE

Further controls that may apply:

SECTION C
PART 21.2 – Landscape Design
PART 23.8 – General Visual Privacy

Objectives

- 1 To ensure development proposals provide useable *private open* spaces as part of the overall design.

Controls

- 1 At least one area of useable private open space which has a minimum depth of 5m and a minimum area of 50m² is to be provided on each site. On steep sites Council may consider a reduction in the minimum depth requirement.
- 2 On constrained sites (biodiversity, riparian, steep topography) Council may consider decks as open space.
- 3 Landscape areas are to provide functional outdoor areas that:
 - i) are useable and relate well to indoor living areas;
 - ii) have a character that is consistent with or enhances the landscape character of the area;
 - iii) are located in consideration of noise, temperature, shade and screening;
 - iv) are not dominated by adjoining development (in terms of overshadowing and overlooking);
- 4 Private open space is to constitute at least one north facing area providing adequate solar access. Refer to 4C.5 of this Part.

4C.5 SOLAR ACCESS

Objectives

- 1 *To ensure the design and siting of new development maintains a reasonable level of daylight and sunlight to habitable rooms, private open space, and solar collectors of new and neighbouring development.*

Controls

- 1 Solar access to habitable areas, **private open** space and solar collectors on the site and on neighbouring sites is to be preserved by:
 - i) consideration of siting and orientation of buildings;
 - ii) use of setbacks which increase with building heights;
 - iii) landscape design and location of vegetation including deciduous or tall trees;
 - iv) consideration of window locations and size.
- 2 A building is to be designed and sited to maintain solar access to adjoining properties of at least 4 hours between 9am and 3pm on 21st June to north facing windows and all living areas (family rooms, rumpus, lounge and kitchen) and the principal private open space recreational areas, such as swimming pools and patios.
- 3 Dwelling design and orientation is to provide at least 4 hours between 9am and 3pm on 21st June to north facing windows and all living areas (family rooms, rumpus, lounge and kitchen) and the principal private open space including swimming pools and patios, to the proposed dwelling.
- 4 Where shadows cast by existing buildings preclude satisfying the above requirements, sunlight during winter solstice (21st June) should not be reduced by more than 20%.
- 5 Development is to consider the use of sun protection devices that preserve internal amenity. These can include window shades and awnings, roof and eave overhangs, use of pergolas and landscaping for shading of openings.
- 6 Professionally prepared Shadow Diagrams **must** accompany all applications for new dwellings and alterations/additions exceeding one storey. Refer to Council's DA Guide.

Note: See Council's website for DA guide at www.krg.nsw.gov.au

4C.6 NATURAL VENTILATION

Objectives

- 1 *To ensure a high level of internal amenity for all occupants with direct access to fresh air for all habitable rooms.*
- 2 *To create a breeze path to let in fresh air and flush out stale air.*
- 3 *To enable areas of the dwelling to be closed off to reduce areas requiring heating and cooling.*

Controls

- 1 Building design is to incorporate measures for natural cross ventilation. This may be achieved by:
 - i) locating openings such as windows, sky lights, doors in opposite walls;
 - ii) include open plan living areas;
 - iii) include doors that can section off heating and cooling living areas;
 - iv) include vents above or in internal doors to facilitate cross ventilation;
 - v) elevate the house so that air can circulate beneath it;
 - vi) positioning of opening to control air flow, for example, use clerestory windows, roof ventilators and vents in ridges, eaves and ceilings to create convection currents; and
 - vii) carports and garages should be placed so that they do not block ventilation into the house.

4C.7 ANCILLARY FACILITIES

Further controls that may apply:

SECTION A
PART 13 – Tree and Vegetation Preservation

SECTION B
PART 20 – Heritage and Conservation Areas

SECTION C
PART 21 - General Site Design
21.1: Earthworks and Slope
21.2: Landscape Design
PART 23.7 - General Acoustic Privacy
PART 24 - Water Management
24C: On-site Stormwater Management
24D.5: Tennis Courts and Other Sporting Surfaces
24D.7: Swimming Pools and Spas

- 1 To ensure that ancillary facilities are integrated into the landscape and are unobtrusive to neighbours and the public domain.
- 2 To ensure ancillary facilities are adequate, and well designed and located.
- 3 To ensure reasonable provision is made on site and within the site plan for the provision of ancillary facilities.
- 4 To prevent access to pool areas other than through the gate.

Swimming Pools, Spas, Equipment & Fences

- 1 The swimming pool/spa and/or enclosure is to consider the location, design, finish and colour to minimise the impact on the landform when viewed from adjacent public domain and private property.
- 2 The swimming pool/spa and/or enclosure is to be designed and located so that there is sufficient area adjacent to the property boundary for substantial landscape planting to:
 - i) minimise potentially adverse impacts such as glare, and visual intrusion;
 - ii) minimise the impact on existing trees both on site and on adjoining properties.
- 3 The swimming pool/spa coping, **decking, paving or the like** is to be sited a minimum of 2m from a property boundary and not be more than 0.5m above existing ground level at any point. On steeply sloping sites, levels greater than 0.5m will be considered subject to increased setbacks and landscaping to protect the amenity and privacy of neighbouring properties.
- 4 Pool excavation should not be beneath the canopy of trees protected by Part 13 of this DCP.
- 5 The swimming pool/spa is to be sited and designed to ensure that pool waters do not discharge to stormwater drains, natural waterways, natural bushland, or neighbouring private property by using the following methods:
 - i) connecting backwash to the sewer;
 - ii) installing a surface drain to collect overflow stormwater; or
 - iii) ensure the immediate pool surrounds slope toward the pool; or
 - iv) other acceptable design solutions approved by Council.

Note: Refer to AS 1926 Swimming Pool Safety for requirements on pool fencing and landscaping to Non-Climbable Zones.

Note: Refer Part 24D.7 Swimming Pools and Spas of this DCP.

Note: Refer to Council's Policy Swimming Pool Safety (new pools or existing pools).

Objectives

Controls

- 6 All mechanical equipment, including filters, pumps and heaters associated with the swimming pool and/or spa are housed within an enclosure. The enclosure is to be sound-proofed to the extent that noise from the operation of the mechanical equipment does not exceed 5dB(A) above the background noise (LA90, 15 min) level during the day when measured at the boundary of the nearest potentially affected residential occupancies and is not audible in habitable rooms of any residences at night (from 8.00pm to 7.00am). The background (LA90, 15 min) level is to be determined without the noise source present.

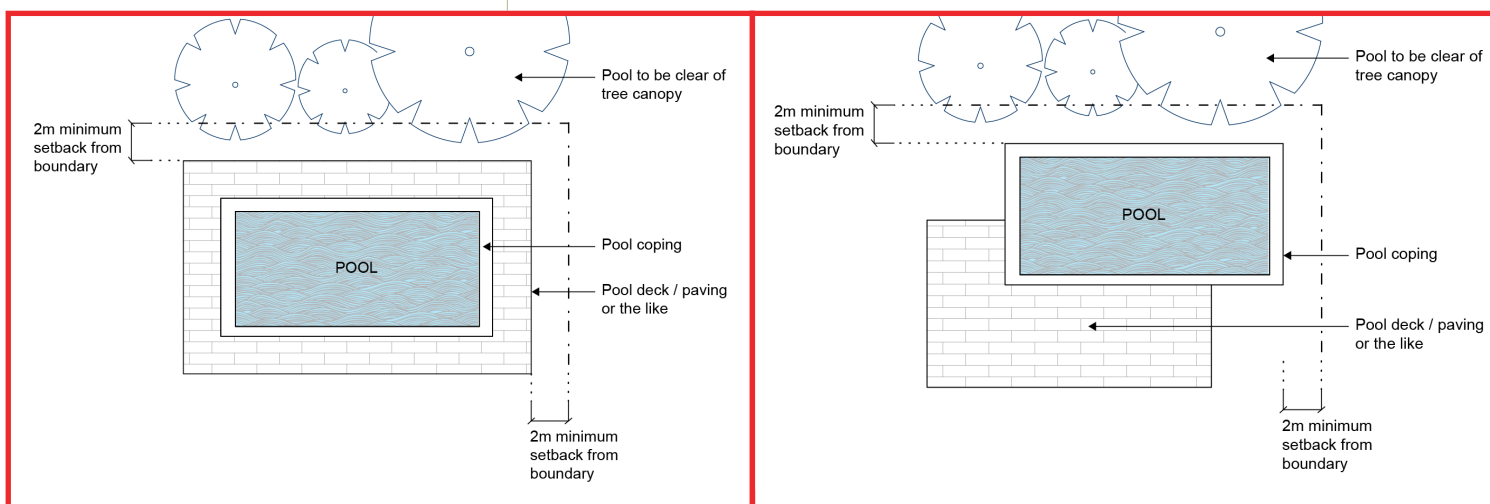


Figure 4C.7-1: Swimming pool controls.

- 5 To ensure tennis courts are located with sufficient area between the court and the property boundary to:

- i) Minimise adverse impacts such as noise, overlooking and visual intrusion.
- ii) Provide sufficient area for appropriate landscaping.
- iii) Minimise impacts to existing trees.

Tennis Courts

- 7 Tennis courts are to be located at the rear of properties. For corner allotments, or where the property has two street frontages, the location of tennis court is not to be in the primary frontage.
- 8 Noise and overlooking to neighbouring properties is to be minimised by:
- i) ensuring a distance of at least 3m between the court and the property boundary;
 - ii) ensuring the finished tennis court level is not more than 1m above existing ground level at any point; and
 - iii) planting trees and tall shrubs between the tennis court and the property boundary.
- 9 On steeply sloping sites, tennis courts with a finished court level higher than 1m above existing ground level will be considered subject to increased setbacks and landscaping to protect the amenity and privacy of neighbouring properties.
- 10 The increase of runoff associated with tennis courts is to be avoided by ensuring that an on-site stormwater detention system is provided, and utilising WSUD and filtration pits.

4C.7 ANCILLARY FACILITIES (continued)

Objectives

6 *To maintain amenity of surrounding properties in terms of noise, particularly at night.*

7 *To ensure outbuildings and utility areas are sympathetically positioned on the site and do not detract from the visual quality of the area.*

Controls

- 11 Earthworks associated with the construction of a tennis court are not to unreasonably alter the natural topography of the land or alter the natural groundwater table. (Refer to Part 21.1 Earthworks and Slope of this DCP.)
- 12 The materials used in the construction of a tennis court, including the type and colour of court surfaces, are to be carefully selected to complement natural bushlands and any adjacent Heritage Item.
- 13 Tennis courts are to be sited having regard to the location of habitable rooms both on-site and on adjoining properties, and to the maintenance of appropriate private open space areas. This is to be achieved by maintaining a minimum distance of 5m between the tennis court fence boundary and habitable rooms of any dwelling.
- 14 Lighting of tennis courts for night tennis will not be permitted.
- 15 Tennis hit-up walls will not be permitted.
- 16 The tennis court is to be sited to minimise the visual impact of the structure when viewed from the adjacent public domain and private property, and minimise the impact on the landform.
- 17 Conversions of grass tennis courts to impervious surfaces are to consider impact to built-upon area, water management and existing trees.

Note: Refer to Council's Tennis Court Policy

Outbuildings

- 18 Outbuildings including studios, hobby rooms, storage structures, cubby houses or cabanas, are to be located on the site having regard to the relationship with existing development on-site and on adjoining properties.
- 19 Consideration is to be given to the position of windows associated with habitable rooms and the potential impact of noise, fumes, loss of light, and ventilation.
- 20 Out-buildings are not to exceed a single storey. All out-buildings will be included in both floor space ratio calculations and built upon area calculations.
- 21 A minimum setback of 2m from boundaries is to apply for any outbuilding with a wall height exceeding 2m relative to the ground level at the boundary.

Note: For detached garages see part 4B.3

4C.7 ANCILLARY FACILITIES (continued)

Controls

Other Site Facilities

- 22 The location and design of facilities such as mail boxes, utility poles, bin storage and enclosures, clothes drying areas are to be an integrated and sympathetically designed as part of the site design and development. This may be achieved by:
- i) the undergrounding of utilities;
 - ii) ensuring that clothes lines are not visible from the street; and
 - iii) provision of bin enclosures.
- 23 For requirements on noise levels associated with air conditioning, kitchen, bathroom, laundry ventilation, or other mechanical ventilation systems and other plant refer to Part 23.8 of this DCP.

4C.8 FENCING

Objectives

- 1 Front fences are to maintain the streetscape character by being consistent with the established pattern of fences.



Figure 4C.8-1:
Combination of hedges,
metal picket and solid
masonry.

Controls

Front Fences

- 1 Fences are to:
 - i) restrict visually solid forms (such as masonry, lapped and capped timber or brushwood) to 0.9m in height above existing ground level;
 - ii) restrict the height of visually transparent fences (such as metal grille or timber picket) to 1.2m, (a transparent fence has an open to solid ratio of not less than 1:3).
- 2 Front fences in excess of 1.2m will only be permitted in areas where they are compatible and consistent with the streetscape. All such fences are to be set back at least 1m from the street boundary with provision of low maintenance screen planting in the setback area.
- 3 Front fencing is not encouraged in areas where it does not form part of the overall streetscape. In such areas, the front boundary can be defined by low hob walls, by garden beds or planting.
- 4 Front fencing is to enable outlook from dwellings to the street for safety and surveillance and should be generally low and visually permeable.
- 5 Shrub plantings on boundaries are desirable; however, hedges along the entire front boundary are **to be no higher than the allowable fence height**.
- 6 The footings of a fence within the **Tree Protection Zone** of a tree **are not to adversely affect the health of the tree**.

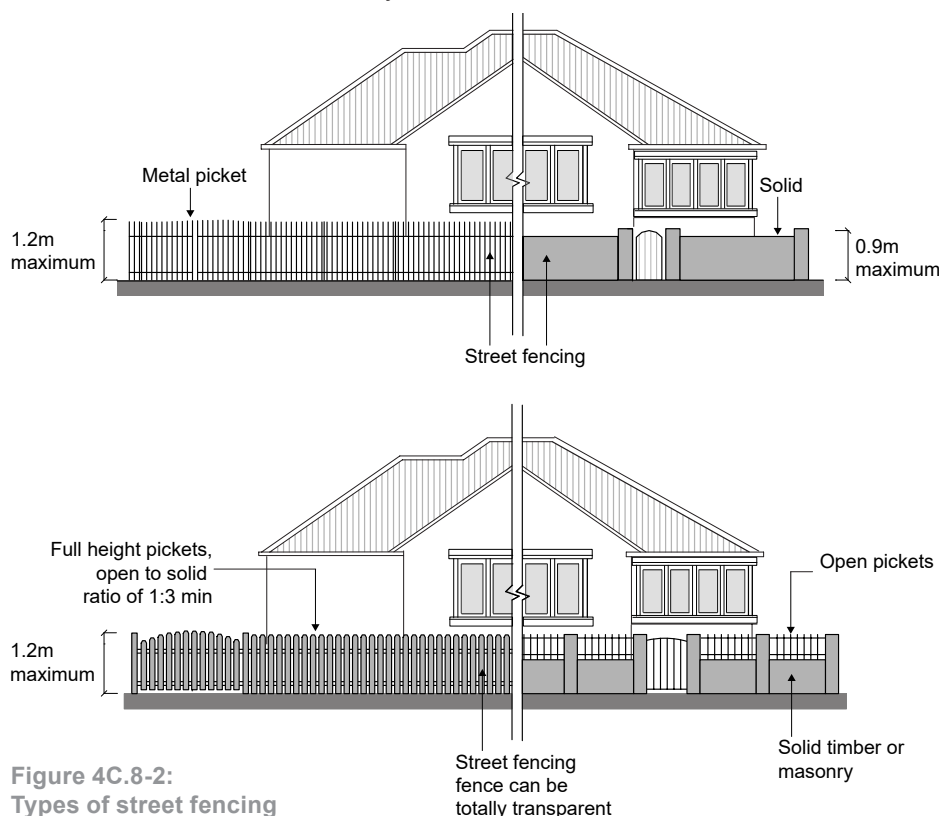


Figure 4C.8-2:
Types of street fencing

4C.8 FENCING (continued)

Controls

Side and rear fences

- 7 Side fences forward of the front building line are to be unobtrusive and allow for continuity of landscape vista between adjoining properties. Where this character predominates it **must** be respected in new developments.
- 8 Side fences on corner sites are to be designed and located so as to:
 - i) maintain the streetscape character;
 - ii) be consistent with the established pattern of fences;
 - iii) ensure an adequate amount of useable private open space; and
- 9 Side fences forward of the front building line should be compatible with the established front fencing in the street.

Note: The provisions of the Dividing Fences Act 1991 also apply.

Note: Common boundary fencing proposals require the consent of the adjoining land owner.

- 10 The footings of a fence within the structural root zone of a tree **are** not to adversely affect the health of the tree.

Fences adjoining bushland

- 11 Fences adjoining bushland should protect the bushland from domestic animals, blend harmoniously with the bushland setting, and allow movement of small fauna species where appropriate.

4C.9 WASTE MANAGEMENT

Further controls that may apply:

SECTION C

PART 23.3- Sustainability of Building Materials

PART 24F - On-site Wastewater Management

Objectives

- 1 To enable efficient, effective and sustainable waste management practices.
- 2 To ensure waste collection and storage within the site that does not affect the amenity of residents with regard to odour, visual appearance or noise disturbance.
- 3 To ensure waste and recycling storage areas are designed and constructed to meet the requirements of the building's use and its occupants.
- 4 To ensure design and management of waste and recycling facilities protect public health and the local environment.
- 5 To ensure the design of the development incorporates effective waste minimisation principle.

Controls**General**

- 1 During the design of the development, construction waste is to be minimised by:
 - i) using recycled materials, selecting materials that reduce waste or do not require disposal, or can be reused or recycled in the future;
 - ii) designing with minimal site disturbance by avoiding unnecessary excavation or fill.
- 2 Council's standard waste and recycling service is:

Waste Type	Bin Type
Waste (garbage)	1 x 120L
Co-mingled recycling (glass, steel and aluminium cans and plastic)	1 x 240L
Recycling of paper and cardboard	1 x 240L
Green waste	1 x 360L

- 3 Developments is to allocate, within each property boundary, an area for storing Council specified waste and recycling bins, preferably located at the rear of the premises to minimise visual clutter. The storage area is to be a minimum of 3m from openable windows and integrated with the landscaping. Refer to 23R.5 of this Part for bin characteristics.
- 4 An on-site area for composting of green and food waste is to be allocated and indicated in the development application plan.

4C.10 MATERIALS AND FINISHES

Further controls that may apply:

SECTION C
PART 23.3 - Sustainability of Building Materials

Objectives

- 1 To reflect and reinforce the local character of Ku-ring-gai.
- 2 To complement the streetscape and natural environment.
- 3 To promote the use of high quality materials, finishes and colours for building facade articulation design and visual interest.
- 4 To ensure the use of materials, finishes and colours creates well proportioned facades and minimises the visual bulk.
- 5 To encourage the use of a subdued palette of colours and limited range of hues for building consistency across the LGA.

Controls

- 1 External walls **must** be constructed of high quality and durable materials and finishes.
Note: Material and finishes selection is to be made in accordance with objectives and controls as stated in Part 23.4 of this DCP to ensure low environmental impact.
- 2 Reuse or recycling of existing local materials such as sandstone and brick is encouraged.
- 3 Large, unbroken expanses of any single material and finish (rendered or not) to building facades **must** be avoided.
Note: Refer to Parts 6-10 of this DCP for relevant building facade articulation controls.
- 4 New development is to avoid extensive use of highly reflective or gloss materials on the exterior of buildings.
- 5 The exterior finish material (e.g. sandstone or brick) **must** be integral to the overall building facade design and **must** not appear to be cosmetic.
- 6 Where louvres are used, they are to be an integral element in the building facade design.
- 7 Where additions and alterations are proposed, external materials and finishes **must** complement the existing building.

Colours

- 8 The selection of a colour scheme for new development and in the restoration of existing facades is to comply with the following guidelines:
 - i) base colours for major areas of building facade are to be light in tone (e.g. earth tone) with minimal colour intensity (or hue) e.g. off white or grey colours. Larger expanses of bold colour, black and white **must** be avoided, as these detract from the prominence of other facade details. Contrasting tints, tones and shades are to be restricted to small areas.
 - ii) highlight colours to window and door mouldings, string courses, parapet details and the like, are to be in sufficient contrast to the base colour. Strong colours to large sections of the building **must** be avoided. Details should be finished in a matt to semi-gloss range.
- 9 Natural earth tones are to be used on building facades in close proximity to bushland.

MULTI-DWELLING HOUSING

Introduction

6A Site Design

- 6A.1 Local Character and Streetscape
- 6A.2 Site Layout
- 6A.3 Building Setback
- 6A.4 Building Separation
- 6A.5 Site Coverage
- 6A.6 Deep Soil Landscaping

6B Access and Parking

- 6B.1 Vehicle Access
- 6B.2 Car Parking Provision
- 6B.3 Bicycle Parking Provision

6C Building Design and Sustainability

- 6C.1 Communal Open Space
- 6C.2 Private Open Space
- 6C.3 Solar Access and Daylight
- 6C.4 Natural Ventilation
- 6C.5 Dwelling Mix and Accessibility
- 6C.6 Dwelling Placement and Room Design
- 6C.7 Building Entries and Internal Pathways
- 6C.8 Building Facades and Articulation
- 6C.9 Building Storeys
- 6C.10 Top Storey Design and Roof Forms
- 6C.11 Internal Ceiling Heights
- 6C.12 Visual and Acoustic Privacy
- 6C.13 Storage
- 6C.14 External Air Clothes Drying Facilities
- 6C.15 Fencing
- 6C.16 Services

6R References

- 6R.1 Design Quality Principles

INTRODUCTION

The objectives and controls in this Part guide the medium density residential development in meeting the aims and objectives within the KLEP.

Multi-dwelling housing, as defined in the KLEP, is to be located in the R3 Medium Density Residential zone. It includes all residential developments with 3 or more dwellings on one lot in the form of detached or attached town houses or villas.

Where a multi-dwelling housing development involves refurbishment works or alterations/additions to existing buildings, new elements are to meet the requirements of this Part.

All multi dwelling developments are to achieve the following nine Design Quality Principles detailed in Part 6R Design Quality Principles at the end of this Part:

- i) Principle 1: Context and neighbourhood character
- ii) Principle 2: Built form and scale
- iii) Principle 3: Density
- iv) Principle 4: Sustainability
- v) Principle 5: Landscape
- vi) Principle 6: Amenity
- vii) Principle 7: Safety
- viii) Principle 8: Housing diversity and social interaction
- ix) Principle 9: Aesthetics

INTRODUCTION (continued)

The aims of this Part are to:

- i) Ensure that development is in keeping with the garden character of Ku-ring-gai where the tree canopy dominates the landscape by making provision for quality deep soil landscaping, including: tall trees to the streetscape; in-between and to all elevations of buildings on the development site; inbetween buildings on the development site and on adjacent sites.
- ii) Encourage development which does not dominate, but harmonises with and contributes to the treed landscape and is sympathetic to the street and locality in which it is proposed.
- iii) Ensure that with each development sufficient landscaping is provided to contribute to the conservation and replenishment of the tree canopy of Ku-ring-gai, including locally occurring native tree species suited to the site.
- iv) Protect and minimise the impact of development on adjoining properties
- v) Protect and minimise the impact of development on the natural environment
- vi) Ensure development that minimises the depletion of raw materials and non-renewable resources
- vii) Ensure that development meets the needs of the present without compromising the ability of future generations to meet their own need.
- viii) Encourage housing of the highest possible architectural, environmental and amenity standards.
- ix) Manage residential development in a way that embraces innovative design and contemporary lifestyles
- x) Ensure that there are more certain outcomes for applicants and the community.

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- 6A

Site Design
- 6A.1

Local Character and Streetscape
- 6A.2

Site Layout
- 6A.3

Building Setback
- 6A.4

Building Separation
- 6A.5

Site Coverage
- 6A.6

Deep Soil Landscaping

READ WITH
SECTION A PART 2 - Site Analysis
SECTION C PART 21 - General Site Design 21.2: Landscape Design PART 23 - General Building Design and Sustainability 23.6: Building Services

REFER TO
LIVABLE HOUSING DESIGN GUIDELINES



6A.1 LOCAL CHARACTER AND STREETScape

Further controls that may apply:

SECTION A

PART 2 – Site Analysis

SECTION C

PART 21 – General Site Design

PART 23.6 – Building Services

Objectives

- 1 *To improve the design quality of multi-dwelling housing.*
- 2 *To provide a successful transition between higher and lower density development.*
- 3 *To ensure that the development contributes to the greater Ku-ring-gai landscaped character of buildings within a landscaped garden setting and surrounded by tall trees.*
- 4 *To provide developments that are sensitive to, conserves and enhances the built environment, landscape setting, environmental conditions and established character of the street and locality with particular reference to integration of:*
 - i) *architectural themes;*
 - ii) *building scale and setbacks; and*
 - iii) *landscape themes.*
- 5 *To ensure development provides a positive contribution to the public domain and all areas shared by the community.*
- 6 *To maintain the visual, scenic and environmental qualities on visually prominent sites.*

Controls

- 1 All multi dwelling housing developments are to be designed by an architect registered with the NSW Architects Registration Board.
- 2 All multi dwelling housing developments are to demonstrate how they provide:
 - i) a garden setting with buildings surrounded by landscaped gardens, including tall trees, on all sides;
 - ii) a transition in built form between single dwelling residential buildings and high density apartment buildings.
- 3 Design components of new development are to be based on the existing predominant and high quality characteristics of the local neighbourhood.
- 4 The appearance of the development is to maintain the local visual character by considering the following elements:
 - i) visibility of on-site development when viewed from the street, public reserves and adjacent properties; and
 - ii) relationship to the scale, layout and character of the tree dominated streetscape of Ku-ring-gai.
- 5 The predominant and high quality characteristics of the local neighbourhood are to be identified and considered as part of the site analysis at Part 2 of the DCP.

Note: Local character and streetscape is created by many features including, but not limited to: kerbs, setbacks, footpath treatment, building separation and spaces between buildings, access arrangements, street tree planting, tall tree canopy backdrop to the horizon, native vegetation and gardens, topography, site and street geometry, as well the architecture.
- 6 Development is to integrate with surrounding sites by:
 - i) being of an appropriate scale retaining consistency with the surrounds when viewed from the street, public domain or adjoining development;
 - ii) minimising overshadowing; and
 - iii) integrating built form and soft landscaping (gardens and trees) within the tree canopy that links the public and private domain throughout Ku-ring-gai.

6A.1 LOCAL CHARACTER AND STREETScape (continued)

Controls

Visually Prominent Sites

- 7 Development on visually prominent sites is to:
- i) be of high architectural and aesthetic quality;
 - ii) be integrated into the existing landscape through the site planning process and avoid tall and bulky structures;
 - iii) have a selection of external colours and finishes that are sensitive to the site and locality;
 - iv) retain significant landscape and vegetation elements;
 - v) consider views to the site as well as those from the site; and
 - vi) soften visual impact by extensive landscaping including larger trees and shrubs.
- Note:** Refer to Part 1B Dictionary for definition of Visually Prominent Site.
- 8 Colours of materials used in sites adjoining or in close proximity to bushland areas and Heritage Conservation Areas are to be in harmony with the built and natural landscape elements of the area.



Figure 6A.1-1:
Townhouse development

6A.2 SITE LAYOUT

Further controls that may apply

SECTION A
PART 2 - Site Analysis

SECTION B
**PART 20 - Development Near Road
or Rail Noise**

SECTION C
PART 21 - General Site Design
**PART 23.7 - General Acoustic
Privacy**

Objectives

- 1 *To ensure fundamental design decisions are appropriate to the site.*
- 2 *To ensure detailed design decisions are founded on an appropriate site strategy determined through site analysis.*
- 3 *To ensure that site planning for multi-dwelling housing responds to site attributes such as streetscape character, existing vegetation and topography, and addresses associated opportunities and constraints.*
- 4 *To ensure high impact elements such as noise sources are considered early in the design stage.*
- 5 *To ensure provision of a clear and legible address for the development.*
- 6 *To soften built form with soft landscaping.*
- 7 *To achieve a high standard of amenity for future residents.*
- 8 *To minimise impacts on the amenity of neighbouring sites.*
- 9 *To reduce the appearance of building mass and scale.*
- 10 *To ensure driveways are not a dominant feature of the development.*

Controls

- 1 The site layout is to demonstrate a clear and appropriate design strategy and arrangement of building mass in response to the Site Analysis in Part 2 Site Analysis of this DCP. Demonstration of design strategies to address opportunities and constraints based on a Site Analysis are to include:
 - i) building location and orientation on the site optimising northern aspect; relationship with neighbouring developments; geographical aspect; views; access etc;
 - ii) response of building development in maintaining site characteristics within the subject site, such as topography, vegetation, significant trees, any special features, etc;
 - iii) building separations and internal layouts of buildings that respond to (i) above and be consistent with the requirements of the DCP.
- 2 A drawing and supporting written information is to demonstrate how the building and its layout has applied and responded to the site analysis conducted in Part 2 of this DCP.
- 3 For requirements on development near noise sources refer to Part 20 Development Near Rail Corridors and Busy Roads in this DCP.
- 4 Any dwelling with a frontage to the street is to address that street with entry doors, windows, verandas and such like.
- 5 Where a site has two or more frontages, the buildings are to address and provide dwelling door entry points from all street frontages.
- 6 Soft landscaping, including tall trees, is to be provided between onsite buildings, fences and courtyard walls.
- 7 Hard landscaping is to be minimised to maximise opportunities for landscape planting.
- 8 Long straight driveways are not permitted except where necessary for battle-axe sites. Driveways are to be designed to be of minimal visual impact.
- 9 Provide a single pedestrian entry point into the development from the street. Other entries may be permitted where several dwellings address the street along an extended street or dual frontage sites.
- 10 All development is to have a building alignment parallel to the street, or in alignment with existing setback patterns where the pattern is not likely to change, as in *Figure 6A.2-2*.
- 11 Stair lifts, open platforms and inclinator are not permitted. This includes any setback area and/or elsewhere within the site.

Note: Permitted are fully-enclosed, weather-protected lifts within a constructed lift shaft. Their location must satisfy setback requirements.

6A.2 SITE LAYOUT (continued)

Objectives

- 11 To provide a safe and continuous pathway from the street to the entry point of each dwelling.
- 12 To ensure buildings address the public domain and give direct access from both primary and secondary streets and any other street on the property boundary.
- 13 To maintain the alignment and rhythm of the built form on the street.
- 14 To ensure high quality site design with integrated methods of pedestrian and vehicular access that support the visual character of the streetscape and locality.
- 15 To ensure visual and acoustic amenity is preserved to neighbouring developments.

Good Examples of Site Layout

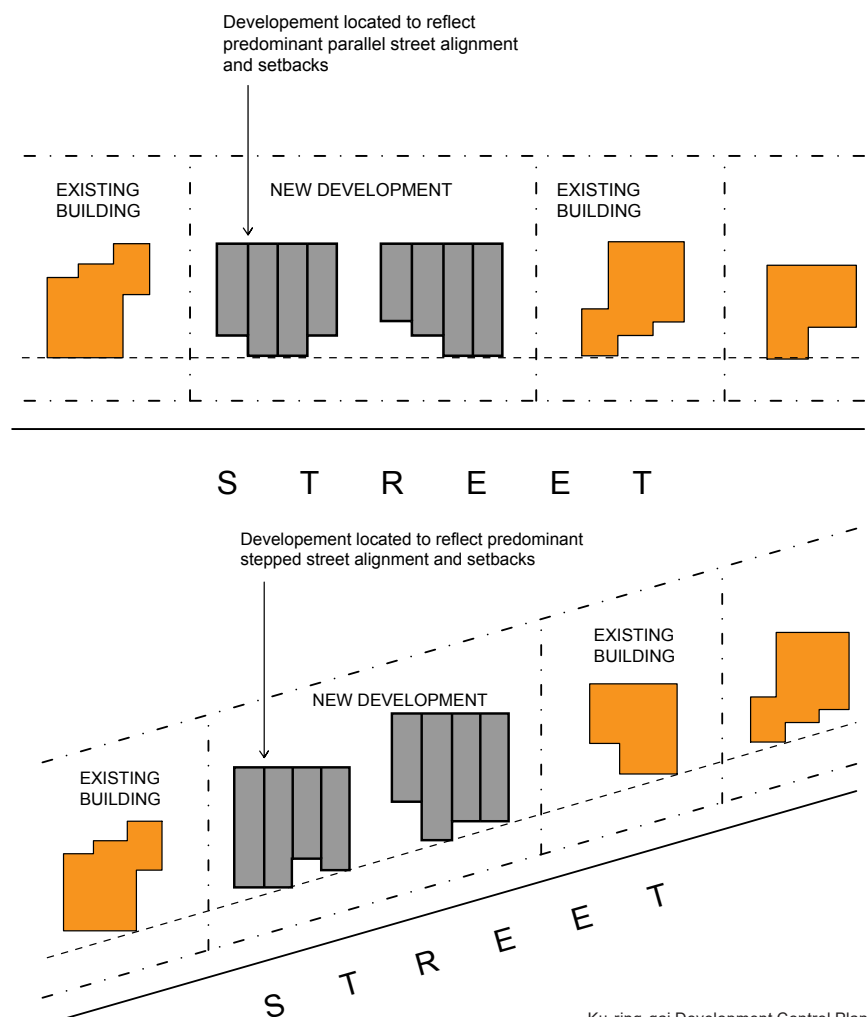


Figure 6A.2-2:
New development sited parallel to prevailing building line.

6A.3 BUILDING SETBACK

Objectives

- 1 To ensure buildings are situated within a garden setting dominated by tall trees.
- 2 To soften the built form and maintain the garden character of Ku-ring-gai.
- 3 To ensure deep soil areas within setbacks areas are clear of elements that compromise planting and growth of tall trees.
- 4 To ensure adequate space between buildings to enable effective landscaping and to soften the built form.
- 5 To protect existing trees and provide areas for the planting of tall trees, especially at the front and rear of the development.

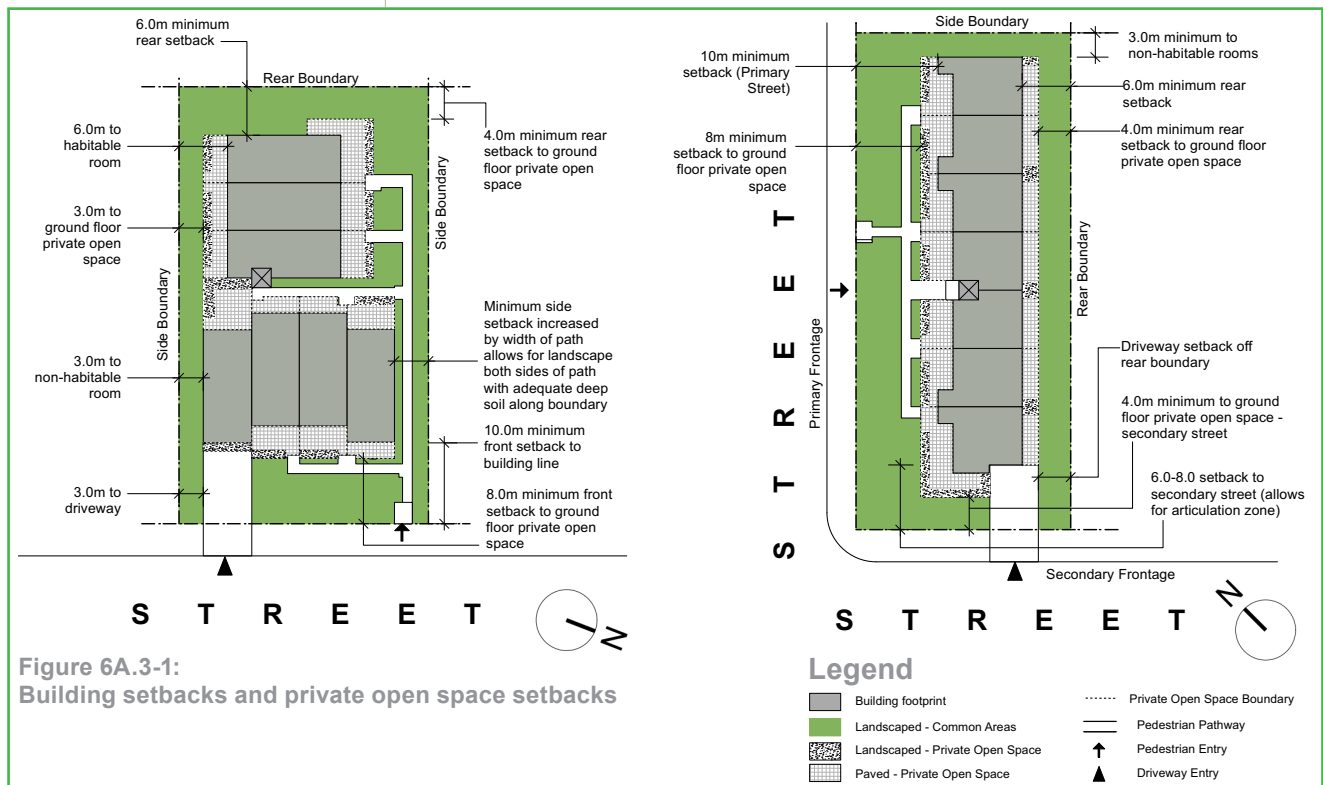
Controls

Street setback

- 1 Multi-dwelling housing developments are to meet the following street setback requirements, as in Figure 6A.3-1:
 - i) a minimum of 10.0m from the Primary street boundary;
 - ii) on corner sites a minimum of 8.0m from the Secondary street boundary with a 6.0-8.0m articulation zone. No more than 40% of the articulation zone is to be occupied by the building.

Side and rear setbacks

- 2 A minimum setback of 3.0m is to be provided from any side boundary where the side elevation has non-habitable rooms only. Where a pedestrian pathway is located within this side setback, the setback is to be increased by the width of that path.
- 3 Where the dwellings are oriented towards side boundaries and/or have openings to habitable rooms towards side boundaries, the setback is to be a minimum of 6.0m.
- 4 A minimum setback of 6.0m is to be provided from the rear boundary. For corner sites one boundary is to be nominated as a rear boundary.



6A.3 BUILDING SETBACK (continued)

Objectives

- 6 *To provide adequate amenity including visual and acoustic privacy, solar access and natural ventilation.*
- 7 *To reduce the visual bulk of buildings from the street.*
- 8 *To maintain the rhythm of the built form to the streetscape.*
- 9 *To ensure access pathways do not compromise the privacy of onsite or adjacent dwellings.*

Controls

Setbacks to parking

- 5 Basement areas are to be consolidated under the building footprint and meet the same building setback.
- 6 No driveways are to be located in side or rear setback areas including within the side setback areas in front of the building line.

Battle axe blocks

- 7 Sites with no clear street frontage are to nominate front, side and rear boundaries and comply with the associated setbacks.

Encroachments

- 8 Ground floor private terraces/courtyards may encroach into the required street, side and rear setback areas only where deep soil landscaping requirements are met. The encroachments are to retain a minimum setback to the courtyard wall of:
 - i) 8.0m from the Primary street boundary;
 - ii) 4.0m from the Secondary street boundary;
 - iii) 3.0m from any side boundary; and
 - iv) 4.0m from the rear boundary;

Note: The requirements for deep soil planting along side boundaries are outlined in 6A.5 of this Part.
- 9 Balconies may encroach only into front and rear setbacks provided they project no more than 1.5m from the building line.
- 10 The following elements may encroach into the setback areas only where they do not increase the apparent bulk of the building:
 - i) eaves;
 - ii) open pergolas;
 - iii) blades, fins, columns.

Communal Pathways

- 11 All primary pathways located between buildings or private open space must accommodate a minimum width of 2.4m to allow for a path width of at least 1.2m and at least 1.2m of landscape in common ownership. Landscape may be as 0.6m both sides of the path or a single width of 1.2m. See Figure 6C.1-1.

6A.4 BUILDING SEPARATION

Objectives

- 1 To ensure buildings are set within a garden setting dominated by tall trees which soften the built form and maintain the garden character of Ku-ring-gai, particularly to the street frontage.
- 2 To provide effective deep soil areas that enable a garden setting, including tall trees and canopy, to all sides of the building within the site.
- 3 To reduce the visual bulk of buildings within the site when viewed from the street.
- 4 To provide residential amenity including visual and acoustic privacy, natural ventilation, solar access, daylight and outlook.
- 5 To provide suitable areas for communal open spaces, private open spaces and deep soil zones.

Controls

- 1 The minimum separation between residential buildings on the same development site is to comply with the following controls, as in Figure 6A.4-1:
 - i) 12.0m between habitable rooms/balconies;
 - ii) 9.0m between habitable room/balcony and non-habitable room;
 - iii) 6.0m between a habitable room and a blank wall;
 - iv) 6.0m between non-habitable rooms;
 - v) 6.0m between a blank wall and a non-habitable room;
 - vi) 4.0m between blank walls. The building separation requirements

Note: Any variations must demonstrate superior amenity and site outcomes compared to a development that satisfies control 6A.4 (1).

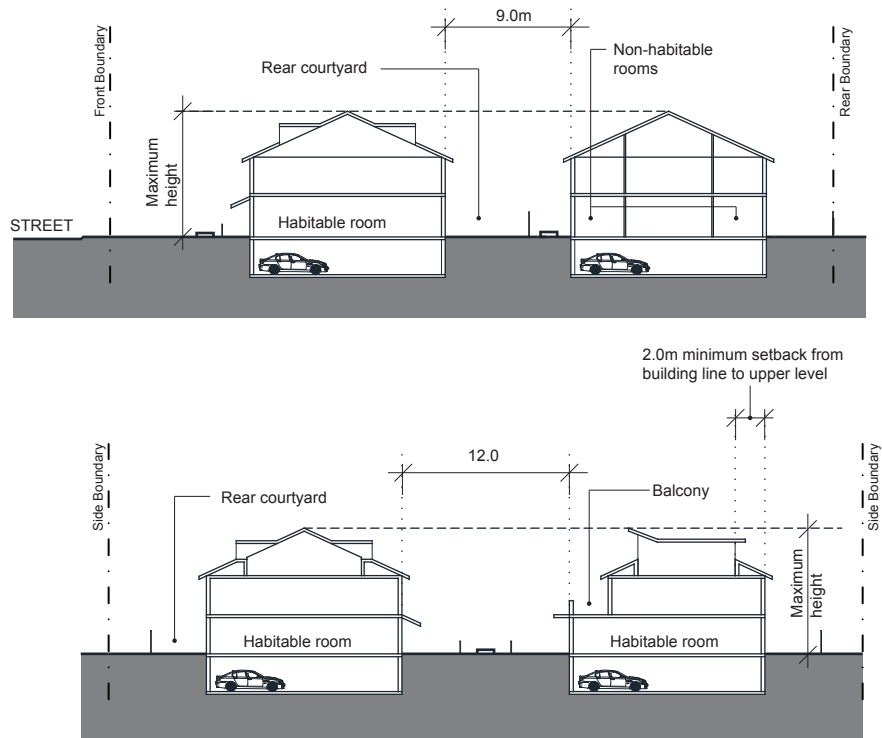


Figure 6A.4-1:
Minimum building separation controls for multi-dwelling housing development up to 3 storeys.

6A.5 SITE COVERAGE

Objectives

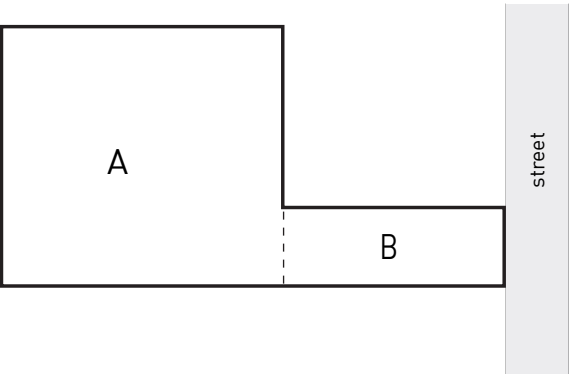
- 1 To ensure development is consistent with the landscape character of the area.
- 2 To protect and improve the tree canopy within Ku-ring-gai.
- 3 To provide adequate space for the planting of tall trees and other landscaping.
- 4 To provide a balance of built form and soft landscaped area.
- 5 To minimise impervious surfaces that generate storm water runoff.

Controls

- 1 The site coverage for multi dwelling housing may be up to a maximum site coverage as outlined in *Figure 6A.5-1* and *6A.5-2*, provided that the deep soil landscaping requirements in Part 6A.5 can be met.

Basement Parking	
Maximum site coverage for standard site	Maximum site coverage for site with access handle
40%	40% less 40% of any access handle

Figure 6A.5-1:
Maximum site coverage controls.



Maximum site coverage for townhouses
= [(A+B) x 40%]m² - (B x 40%)m²

Figure 6A.5-2:
Maximum site coverage controls.

- 2 When a site comprises land in an R3 Medium Density Residential and/or R4 High Density Residential zone and land in another zone, only the R3 and/or R4 zone land is to be included in calculating site area.

Note: Site coverage is not the inverse of deep soil landscaping. Refer to Part 1B Dictionary for clarification of site coverage.

6A.6 DEEP SOIL LANDSCAPING

Further controls that may apply

SECTION C
PART 21.2 - Landscape Design

Objectives

- 1 To provide quality landscaping that contributes to the garden character and tree canopy of Ku-ring-gai.
- 2 To provide consolidated deep soil zones of adequate dimensions in all residential development sites especially in the front and rear setbacks.
- 3 To ensure deep soil landscaping is located within common areas that surround the building to provide effective landscape screening between the development and neighbouring properties.
- 4 To provide viable deep soil landscaped areas for the retention and/or planting of tall and medium sized trees:
 - to provide shade and amenity;
 - to soften the built form;
 - to capture carbon;
 - for the sustainable maintenance and enhancement of the Ku-ring-gai tree canopy.
- 5 To provide landscaping that provides habitat for native indigenous plants and animals and contributes to biodiversity in the area.

Controls

Design

- 1 Multi-dwelling housing development is to have a minimum deep soil landscaping area of 40% of the site area provided within common areas only.
- 2 For the purposes of calculating deep soil landscaping and landscaped areas, any access handle on battle axe sites is excluded.
- 3 Deep soil zones are to be configured to retain healthy and significant trees on the site and adjoining sites.
- 4 Deep soil areas for tree and screen planting are to be as follows:
 - i) provided within setback areas to all side and front boundaries;
 - ii) be a minimum width of 4m along the rear boundary. This is to be within the common area if it is located at the rear of the development.
- 5 Deep soil landscaping is to support the planting of tall trees to the streetscape.
- 6 Screen planting is to soften and reduce dominance of walls and fences.
- 7 Driveways are not to dominate the street setback area. Deep soil landscaping areas in the street setback are to be maximised.
- 8 Where the site has an access handle, deep soil calculation are to exclude that access handle.

Tree Replenishment and planting

- 9 Lots are to support a minimum number of tall trees capable of attaining a mature height of at least 13m on shale, transitional soils or 10m on sandstone derived soils, as detailed in *Figure 6A.6-1*:

Lot Size	Number of Tall Trees
1,200m ²	1 per 400m ² of site area or part thereof
1,201m ² - 1,800m ²	1 per 350m ² of site area or part thereof
1,801m ² +	1 per 300m ² of site area or part thereof

Figure 6A.6-1:
Lot size and numbers of tall trees

6A.6 DEEP SOIL LANDSCAPING (continued)

Objectives

- 6 *To ensure that deep soil is provided to allow infiltration of rain water to the water table and to reduce stormwater runoff.*

Controls

- 10 In addition to the tall trees, a range of medium trees, small trees and shrubs are to be selected to ensure:
- i) that the streetscape presents as buildings within a tall tree canopy setting;
 - ii) that vegetation creates a garden setting and can be viewed from the buildings onsite.
- 11 On sites within areas mapped under Council's Green web categories, the percentage of all tree planting is to be as per the biodiversity controls in Part 19 of this DCP. On all other sites, at least 30% of all tree planting are to be locally occurring species.



Figure 6A.6-2:
Deep soil landscaping

6B

Access and Parking

- 6B.1

Vehicle Access
- 6B.2

Car Parking Provision
- 6B.3

Bicycle Parking Provision

READ WITH
<div>SECTION A</div> <div>PART 6 - Multi Dwelling Housing</div> <div>6A.1: Site Layout</div>
<div>SECTION C</div> <div>PART 22 - General Access and Parking</div> <div>22.1: Equitable Access</div> <div>22.2: General Vehicle Access</div> <div>22.3: Basement Parking</div> <div>22.4: Visitor Parking</div> <div>22.6: Pedestrian Movement within Car Parks</div> <div>22.7: Bicycle Parking and Facilities</div> <div>22R.1: Car Parking Rates</div> <div>PART 23 - General Building Design and Sustainability</div> <div>23.4: Materials, Finishes and Colours</div> <div>23.5: Roof Terraces and Podiums</div> <div>23.6: Building Services</div> <div>23.8: General Visual Privacy</div> <div>PART 25 - Waste Management</div>

REFER TO
<div>LIVABLE HOUSING</div> <div>DESIGN GUIDELINES</div>



6B.1 VEHICLE ACCESS

Further controls that may apply		
SECTION A PART 6A.1 - Site Layout		SECTION C PART 22.2 - General Vehicle Access
		PART 25 - Waste Management

Objectives

- 1 To ensure landscaping adequately separates driveways from neighbouring properties.
- 2 To provide well located and designed vehicle entrances.
- 3 To facilitate pedestrian amenity and safety.
- 4 To ensure that driveways do not dominate the streetscape.
- 5 To ensure vehicular and service access do not detract from the visual character of the streetscape.
- 6 To minimise hard surfaces on the site.
- 7 To provide convenient and safe vehicular movements onsite.

Controls

- 1 Driveways are to be located at least 3m from any side boundary and be separated from the boundary by a continuous landscaped verge and screen planting to the neighbouring development.
- 2 Not more than one driveway is to be established on any property.
- 3 On sites with dual street frontage, one additional driveway may be considered.
- 4 Driveways are to be designed to avoid a straight, gun barrel appearance by using appropriate landscaping and variations in alignment.
- 5 On-site vehicle turning areas are to be located within the basement.
- 6 On-site vehicle turning areas are to be designed to permit turning in a single reversing movement.

6B.2 CAR PARKING PROVISION

Further controls that may apply

SECTION C

PART 22.3- Basement Car Parking

PART 22.4- Visitor Parking

PART 22.6- Pedestrian Movement
within Car Parks

PART 22.7- Bicycle Parking and
Facilities

PART 22R.1- Car Parking Rates

Objectives

- 1 To locate and design car parking which is integrated with the site and building design and which does not increase the bulk and scale of the building.
- 2 To provide adequate car parking for the development's residents and visitors.
- 3 To ensure pedestrian access, from dwellings to parking areas is direct and convenient.
- 4 To ensure car parking does not compromise deep soil landscaping provisions.
- 5 To ensure safety and convenience for all vehicle users within car parks.
- 6 To ensure car parking achieves a high quality streetscape and does not detract from the landscape character of Ku-ring-gai.
- 7 To provide adequate accessible car parking.
- 8 To provide for future transport options including Electric Vehicle charging stations, e-bicycles and the like.

Controls

Car parking design

- 1 All multi dwelling housing development is to provide on-site parking within the basement.
- 2 Basement car park areas are to be consolidated under building footprints. See *Figure 6B.2-1*.
Note: Basements may be permitted to extend under the space between buildings on the site provided deep soil requirements have been met.
- 3 The basement car park is not to project more than 1.0m above existing ground level.
Note: Basements greater than 1.0m above the natural existing ground level are counted as a storey for the purposes of this DCP and will be included in the floor space ratio calculation as well as any control based on the number of storeys.

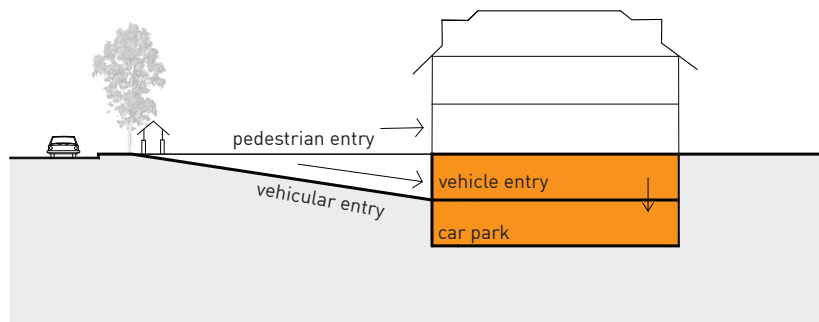


Figure 6B.2-1:
Car park is housed within the building basement

- 4 The use of single lane tunnels and single lane spiral ramps is not permitted. Double lane spiral ramps may be allowed where there are no other options, but can only link a maximum of 2 basement levels.
- 5 Single lane aisles, straight ramps and tunnels are to be a maximum of 12.0m in length.
- 6 Direct access is to be provided from basement car parks to dwelling entry points; and, wherever possible direct access is to be provided from basement parking into each individual dwelling.
- 7 Car park entry is to be integrated within the building and located behind the building line.

6B.2 CAR PARKING PROVISION (continued)

Controls

- 8 Battle axe site driveways along access handles, as in *Figure 6B.2-3*, are to:
- be a maximum of 3.0m width;
 - provide passing bays for two way traffic;
 - provide 1.0m wide planter beds to side boundaries (less where passing bays are located);
 - provide screen planting to neighbouring properties.

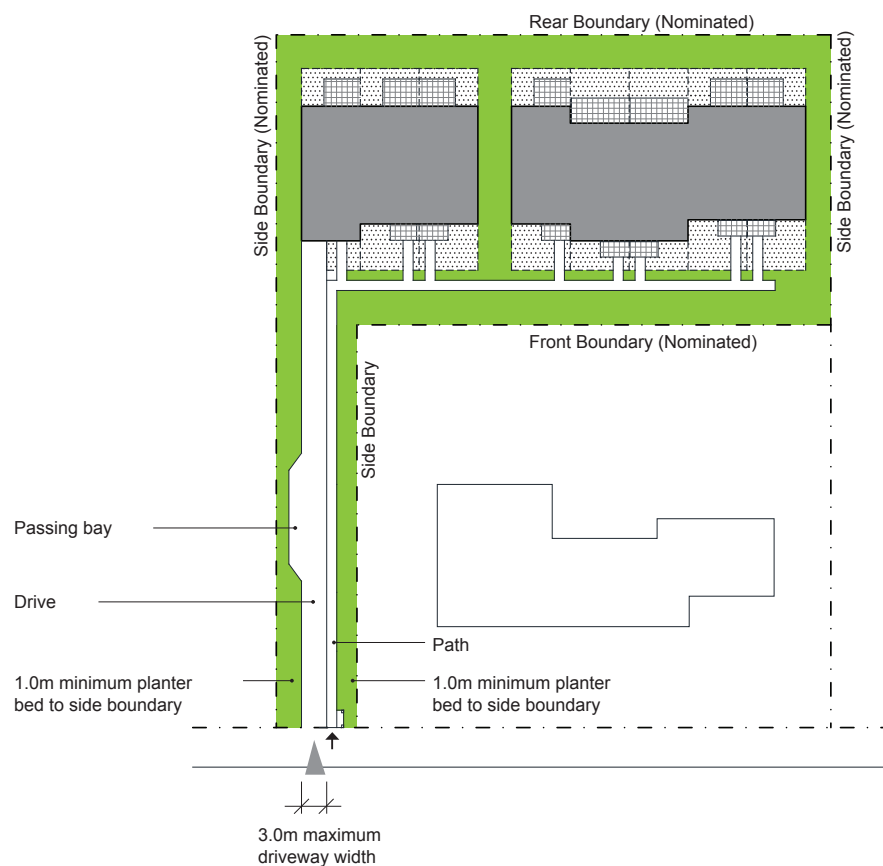


Figure 6B.2-3:
Battle axe site access handles

- 9 Every Platinum Level unit requires an accessible car space designed to Australian Standard 2890.6.

Note: All common areas and paths of travel are to be accessible in line with the requirements of the National Construction Code.

6B.2 CAR PARKING PROVISION (continued)

Controls

Car parking rates

- 10 The following parking ranges apply to multi-dwelling housing on sites within **800m** walking distance of a railway station entry:

Dwelling Size	Minimum number of parking spaces per dwelling	Maximum number of parking spaces per dwelling
One bedroom	1 space	1 space
Two bedrooms	1 space	1.5 spaces
Three or more bedrooms	1 space	2 spaces

Car parking exceeding the requirements of the parking controls in this DCP will not be excluded from the Gross Floor Area as defined in the KLEP.

- 11 For all other locations, car parking is to be provided in accordance with the parking rates in Part 22R.1.
- Note:** A *Traffic Impact Assessment* is to accompany Development Applications that seek to vary the parking rates. This includes commercial or strata funded car share schemes in lieu of parking spaces.
- 12 At least one visitor car space is to be provided within the site for every 4 dwellings or part thereof.
- 13 At least one visitor parking space is to be accessible and comply with the dimensional and locational requirements of AS2890.6.
- 14 One visitor parking bay is to be provided with a tap, to make provision for on-site car washing.
- 15 A clearly signposted space for temporary parking of service and removalist vehicles is to be provided. The space is to have a minimum dimension of 3.5m x 6.0m and a minimum manoeuvring area 7.0m wide. Where a separate space is not provided, one of the visitor spaces may be used if it meets these dimensions and provides signage for dual usage.
- 16 All parking bays are to be EV ready with design and construction (provision for conduits, switchboards, electrical capacity etc) to enable installation of electric vehicle charging points that are linked to each individual dwelling electricity meter.

6B.3 BICYCLE PARKING PROVISION

Further controls that may apply		
		SECTION C PART 22.7- Bicycle Parking and Facilities

Objectives

- 1 To provide adequate bicycle parking that is safe and easily accessible.
- 2 To encourage the use of bicycles.

Controls

- 1 Where basement parking is provided, the following rates of onsite secure bicycle parking spaces and storage is to be provided at the following rates:

Residents	Visitors
1 bicycle parking space per dwelling within the residential car park area - in the form of an individual locker or secure room as per AS2890.3.	1 bicycle parking space per 10 units or part thereof within the visitor car park area - in the form of a bicycle parking device or rack as per AS2890.3.

6C	Building Design and Sustainability
6C.1	Communal Open Space
6C.2	Private Open Space
6C.3	Solar Access and Daylight
6C.4	Natural Ventilation
6C.5	Dwelling Mix and Accessibility
6C.6	Dwelling Placement and Room Design
6C.7	Building Entries and Internal Pathways
6C.8	Building Facades and Articulation
6C.9	Building Storeys
6C.10	Top Storey Design and Roof Forms
6C.11	Internal Ceiling Heights
6C.12	Visual and Acoustic Privacy
6C.13	Storage
6C.14	External Air Clothes Drying Facilities
6C.15	Fencing
6C.16	Services

READ WITH
SECTION A PART 6 - Multi-Dwelling Housing 6A.2: Site Layout 6A.4: Building Separation 6C.6: Dwelling Placement and Room Design.
SECTION C PART 22 - General Access and Parking 22.1: General Equitable Access PART 23 - General Building Design and Sustainability 23.5: Roof Terraces and Podiums 23.6: Building Services 23.7: General Acoustic Privacy 23.8: General Visual Privacy PART 25 - Waste Management
REFER TO
LIVABLE HOUSING DESIGN GUIDELINES

6C.1 COMMUNAL OPEN SPACE

Further controls that may apply

SECTION C
PART 23.5- Roof Terraces and Podiums

Objectives

- 1 *To provide adequate, useable, attractive, highly visible, safe and accessible communal open space with good amenity for larger developments.*
- 2 *To provide communal open space that is responsive to the site and its context, and is well integrated within the development.*
- 3 *To ensure high quality communal open space that adds to the amenity of the development and facilitates social interaction.*

Controls

- 1 Where more than 10 dwellings are proposed, one Primary communal open space is to be provided as follows:
 - i) have a minimum area of 64.0m² ; and
 - ii) have a minimum dimension of 8.0m.
- 2 Where more than 10 dwellings but less than 20 dwellings are proposed, an additional 6m² is to be provided per dwelling.
- 3 Where more than 20 dwellings are proposed, 144m² of communal open space is to be provided with a minimum dimension of 8.0m. This may be provided as:
 - i) a single Primary communal open space; or
 - ii) a Primary communal open space, with minimum requirements as per 6C.1(1) and a Secondary communal open space with minimum dimension of 8.0m.
- 4 Shared facilities such as barbecue facilities, shade structures, play equipment and seating, are to be provided within the Primary communal open space. Placement of these facilities are to consider the privacy and amenity of dwellings adjacent to the communal open space. Seating is to be provided within the Secondary communal open space.
- 5 All communal open space is to be located at ground level behind the building line and be screened from the street by the built form.
- 6 Access to all communal open spaces is to be provided for people with a disability in accordance with Part 2 Section 7 of AS1428.
- 7 The location and design of communal open spaces is to optimise opportunities for social and recreation activities, solar access, orientation, summer shade, visibility and outlook; and consider the privacy of the adjacent onsite residents and the neighbours to the development site.
- 8 At least 50% of the area of the Primary and Secondary communal open space is to receive direct sunlight for at least three hours between 9am and 3pm at mid winter.
- 9 Communal open spaces are to be co-located and integrated with any natural feature(s) of the site and soft landscaping areas.
- 10 All communal open spaces are to be capable of surveillance from at least two dwellings for safety reasons.

6C.1 COMMUNAL OPEN SPACE (continued)

Controls

- 11 Communal open spaces are to be designed to avoid concealment or entrapment areas.

Note: Communal open spaces are to be well lit with an energy efficient lighting system to be used in conjunction with timers or daylight controls. All light spill is prohibited.

- 12 Garden maintenance storage areas, drainage and connections to water taps are to be provided within the Primary communal open space. Secondary communal open spaces are to have adequate connections to water for maintenance purposes.

Note: Proposals are to demonstrate entry and access to communal open spaces and common areas for maintenance purposes.

6C.2 PRIVATE OPEN SPACE

Objectives

1. To provide adequately sized private outdoor areas with a high level of amenity for residents to enjoy outdoor living.
2. To provide private open spaces that are integrated into the overall design of the development.
3. To ensure that private open space design allows views and passive surveillance of the street and communal areas.
4. To provide for the safety, visual and acoustic privacy of residents both within the development site and between neighbouring properties.
5. To ensure the site character is not dominated by dividing fences, walls and access paths and the internal site character is one of dwellings within a predominantly landscaped setting.

Controls

1. A minimum private open space of 25.0sqm internal dimension is to be provided to each dwelling within the multi-dwelling housing development, as in Figure 6C.2-1. The private open space is to:
 - i) have a minimum internal dimension of 4.0m;
 - ii) have direct level access from the living/dining area;
 - iii) provide a consolidated paved area of 12.0sqm and a minimum width of 3.0m;
 - iv) accommodate a table and 6 chairs directly accessible from the living/dining area with no obstructions including stairs; and
 - v) provide a 4.0sqm minimum landscaped area/planter bed for gardening.

Note: Variations must demonstrate superior amenity and site outcomes compared to a development that satisfies 6C.2 (2).

Note: Access from living/dining rooms is to have no obstructions including stairs.

Note: A step at the threshold for compliance with waterproofing requirements is acceptable.

Note: However, thresholds to the primary private open space are to be accessible for all Platinum Level dwellings.
2. The private open space to each dwelling may be provided as a maximum of two separate spaces only if the Primary private open space is a minimum 20sqm in area, and meets all the criteria in 6C.2(1)i-iv. The remaining Secondary private open space is to have a minimum internal dimension of 2m and be clear of obstructions including stairs.
3. All private open space area requirements are exclusive of any areas for the provision of services such as fixed drying areas.

Note: Pull out lines are acceptable within the private open space.
4. Ground level private open space (outdoor) is to be differentiated from common areas by:
 - i) a change in level; and/or
 - ii) screen planting, such as hedges and low shrubs; and/or
 - iii) a fence/wall to a maximum height of 1.8m. Any solid wall component is to be a maximum height of 1.2m with at least 30% transparent component above.
5. Where practical, a gate is to be provided between the private open space and common areas to allow access into common areas.

6C.2 PRIVATE OPEN SPACE (continued)

Controls

- 6 Private open space, courtyard and terrace wall and fence heights are not to exceed:
- 1.2m to any street frontage;
 - 1.8m to any side or rear boundary, with a maximum 1.2m high solid component and a minimum 30% transparent component above.

Note: Changes in ground levels between private open spaces and common areas and paths provide alternative opportunities to achieve required visual privacy that minimise reliance on fencing to maximise landscape and site character outcomes.

- 7 A water outlet is to be provided within the Primary private open space.

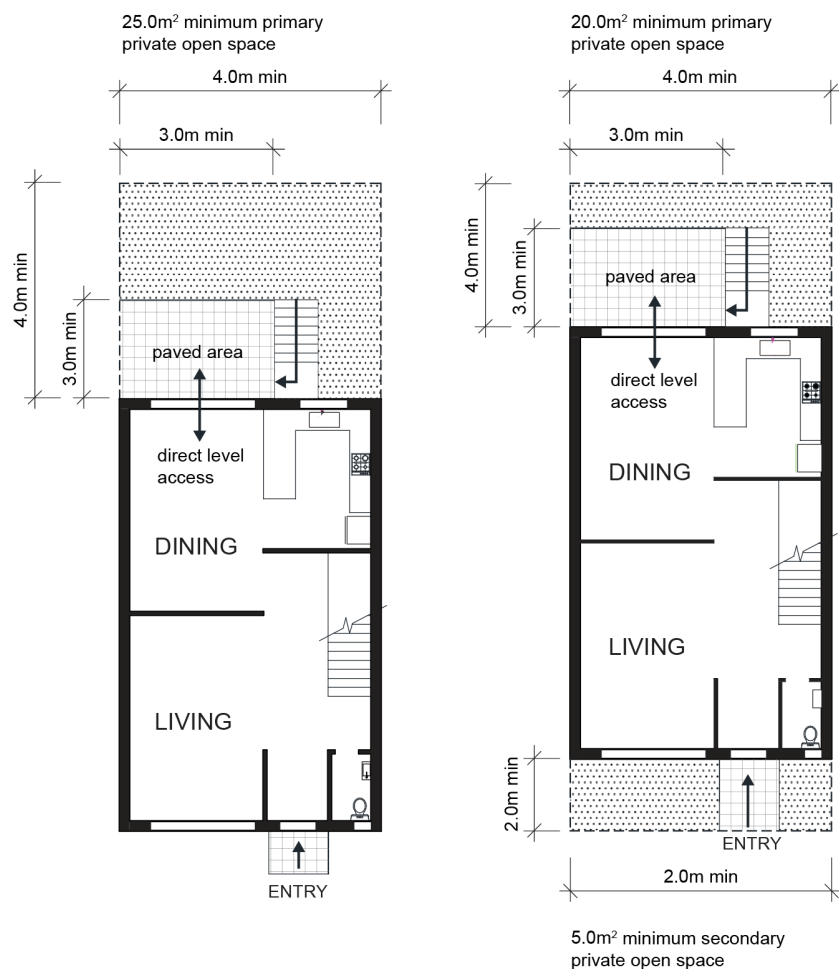


Figure 6C.2-1:
Private open space.

6C.3 SOLAR ACCESS AND DAYLIGHT

Objectives

- 1 *To provide adequate sunlight to all dwellings.*
- 2 *To ensure a high level of internal amenity for occupants.*
- 3 *To provide adequate access to daylight in all habitable rooms.*
- 4 *To minimise overshadowing of living areas and private and communal open space areas within neighbouring developments.*
- 5 *To minimise the impact of development on existing solar collection devices.*
- 6 *To provide adequate shading in summer.*

Controls

- 1 Buildings are to be oriented to optimise the northern aspect.
- 2 All dwellings are to receive a minimum of three hours direct sunlight to the living room and/or dining room, and to the Primary private open space between 9am and 3pm on 21st June.
Note: Shadows cast by trees and fences are excluded from this calculation.
Note: Shadows cast by adjacent buildings or those in the vicinity likely to impact the development site are to be included. Where future development is anticipated under existing land-use zones, building envelopes under the relevant controls are to be included.
- 3 All habitable rooms are to have a window in an external wall that is directly visible from every part of the room. Snorkel windows are not permitted.
Note: Refer to Part 1B.1 for definition of snorkel window.
- 4 The use of lightwells, skylight, or high level windows as a primary source of daylight in habitable rooms is not permitted.
- 5 Notches, slots or indents in the perimeter of the building are to be at least as wide as they are deep.
- 6 All developments are to allow the retention of at least three hours of sunlight between 9am and 3pm on 21st June to the living areas and the private open spaces and communal open spaces of multi-dwelling housing and any low density residential development on adjoining lots.
- 7 If the proposal will significantly reduce the solar access of existing dwellings on a neighbouring site, building setbacks are to be increased beyond the minimums to reasonably alleviate the impact.
Note: Overshadowing is not to compromise the development potential of the adjoining yet-to-be-developed site(s).
- 8 Developments are to allow the retention of a minimum of 4 hours direct sunlight between 9am to 3pm on 21st June to all existing neighbouring solar collectors and solar hot water services.

Sun Shading

- 9 All developments are to utilise shading and glare control. Design solutions include:
 - i) providing external horizontal shading to north-facing windows, such as eaves, overhangs, pergolas, awnings, colonnades, upper floor balconies, deciduous vegetation;
 - ii) providing vertical shading to east and west windows, such as sliding screens, adjustable louvres, blinds and shutters;
 - iii) providing shading to glazed and transparent roofs.
- 10 All shading devices are to be integrated into the building facade design.

6C.4 NATURAL VENTILATION

Further controls that may apply

SECTION A
PART 6C.6 - Dwelling
Placement and
Room Design

Objectives

- 1 To provide adequate natural cross ventilation to all dwellings.
- 2 To provide adequate access to fresh air for all habitable rooms.
- 3 To provide a high proportion of naturally ventilated kitchens.
- 4 To minimise reliance on mechanical ventilation.
- 5 To ensure the building footprint delivers dwellings with optimal aspect, air quality, human comfort and internal amenity by avoiding back to back dwellings with single aspect.

Controls

- 1 All dwellings are to have natural cross ventilation. Building designs (plans, sections) are to demonstrate the potential for cross ventilation.
- 2 Dwellings are required to be dual aspect. Dwellings can be corner, cross-through and cross-over dwellings where unobstructed external door and window openings are oriented at least 90 degrees apart. Dwellings with only a single predominant aspect are not permitted.
Note: Natural cross ventilation is best achieved by minimising interruptions in air flow - the more corners or rooms airflow has to negotiate, the less effective the natural ventilation.
- 3 All habitable rooms are to have a window or door in an external wall that can be opened and closed for natural ventilation. The use of lightwells, skylights, or high level windows as a primary source of ventilation in habitable rooms is not permitted.
- 4 At least 25% of all kitchens are to be immediately adjacent to an operable window in an external wall.
- 5 Notches, slots or indentations cannot be relied upon to achieve natural cross ventilation unless they meet the minimum building separation requirements. Notches, slots or indentations in the perimeter of the building are to be at least as wide as they are deep.

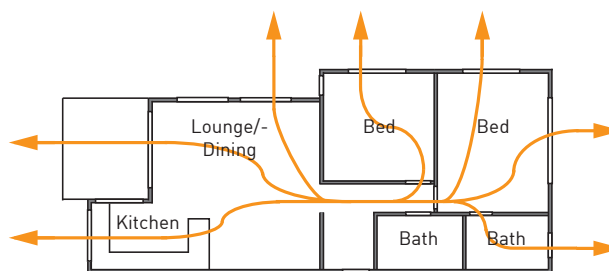


Figure 6C.4-1: Building layout that facilitates cross ventilation.

6C.5 DWELLING MIX AND ACCESSIBILITY

Objectives

- 1 To provide dwellings to cater for a range of household types.
- 2 To increase housing diversity and housing choice within Ku-ring-gai.
- 3 To increase the housing choice for seniors, people with disabilities and families.
- 4 To promote flexible housing for all community members and for changing household requirements now and in the future as needs change due to ageing and disability.
- 5 To ensure all developments and dwellings incorporate *Livable Housing Design Guideline* provisions and *National Construction Code* accessibility requirements regardless of steepness of a site.

Controls

- 1 A range of dwelling sizes and a mix of types which includes two, three and four bedroom dwellings are to be provided within the development

Accessible Housing

- 2 All units in the multi-dwelling housing development are to be of Silver Level, and 15% of those are to be of Platinum Level, with standards as indicated in the *Livable Housing Design Guideline*.

Note: For details on the *Livable Housing Design Guideline* refer to www.livablehousingaustralia.org.au

- 3 All developments are required to meet the *KDCP Livable Housing Design Guideline* provisions and *National Construction Code* accessibility requirements regardless of steepness of site.

Note: This control applies to development on all sites including those that are steeper than 1:14.

- 4 All development is to provide an accessible path of travel:
 - i) from the street entry to the front door of each dwelling; and
 - ii) from the basement carparking to the dwelling entry; and
 - iii) from the dwelling to the primary communal open space and each type of room or space for use in common by the residents.

Note: Provision is to be made for wheelchair turning circles where required.

Note: The control above applies to all development regardless of the steepness of the site.

- 5 For Platinum level units with more than one level, an internal lift is to be provided to allow access to all levels.

Note: Provision of a lift is not in lieu of accommodating Platinum Level provisions required at the dwelling entry level.

- 6 Chair lifts, platform lifts and the like are not permitted on internal and external communal/shared paths and circulation areas. Where lifts are required, they are to be constructed within lift shafts with full weather protection for users.

6C.6 DWELLING PLACEMENT AND ROOM DESIGN

Further controls that may apply

PART 1B - Dictionary

SECTION C
PART 21.1 - Earthworks and Slope

Objectives

- 1 To ensure adequate outlook, daylight access and natural ventilation to all dwellings.
- 2 To minimise on site excavation for multi-dwelling developments.
- 3 To assist in preventing dampness and water ingress into buildings and to enable effective long term maintenance and servicing to all external walls of dwellings.
- 4 To enable pleasant outdoor private open space that has good daylight and ventilation.
- 5 To enable connection and access to common areas from private open areas.

Controls

Relationship to Ground Line

- 1 Subterranean rooms are not permitted to any part of the dwelling. The floor level of all rooms is to be located above finished ground level.
Note: Refer to Part 1B Dictionary for the definition of subterranean rooms.
- 2 No dwellings are to be accommodated as a result of excavation.
Note: Refer to Part 21.1 Earthworks and Slope.
- 3 No part of any wall used to accommodate any residential dwelling uses, including storage areas inside and outside the dwelling:
 - i) is to be located below any adjacent ground level;
 - ii) is to be in direct contact with soil;
 - iii) is to have any form of tanking, including spaces that act as tanking, separating the dwelling from external ground levels.**Note:** Tanking is only acceptable to basement parking levels.
- 4 Tanking may only be provided to basement parking levels. Where basement storage is located adjacent to external walls, it is to be separated from the tanked wall by an accessible maintenance passage. (See Figure 6C.6-1)
- 5 The internal finished floor level of any part of a ground floor dwelling and/or private open space is not to be more than 0.9m below existing ground level at the building line.
- 6 Where the internal finished floor level of a ground floor dwelling and/or private open space is not more than 0.9m below the existing ground level at the building line, the ground level adjacent to the building is to be levelled to the finished floor level for a distance of 3.0m from the building line (see Figure 6C.6-1).
Note: A step at the threshold for compliance with waterproofing requirements is acceptable, however thresholds to the primary private open space are to be accessible for all Platinum Level dwellings.
- 7 No obstructions, such as retaining walls or fences, are permitted to project beyond a 45° control plane, drawn from the finished ground level at the building line. Plants may project beyond the 45° control plane (see Figure 6C.6-1).
- 8 Ground floor dwellings are to consider noise attenuation measures where the dwellings may be impacted by adjoining common areas, communal open space and the public domain.

6C.6 DWELLING PLACEMENT AND ROOM DESIGN (continued)

Controls

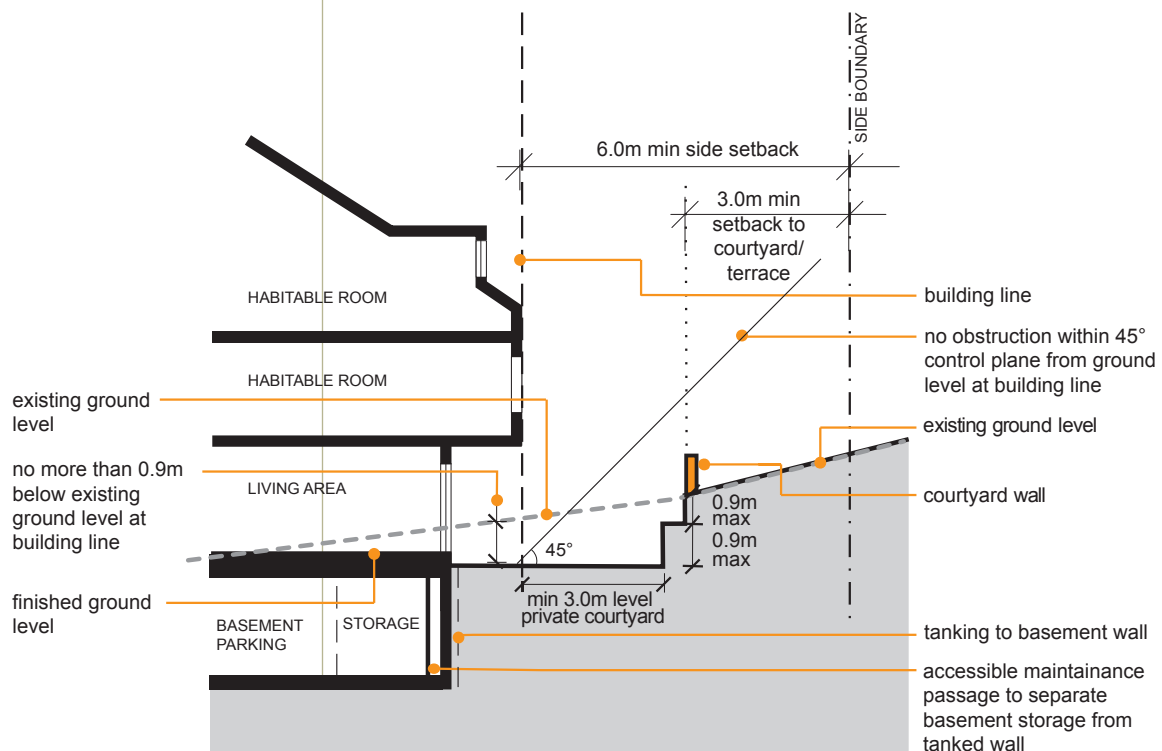


Figure 6C.6-1:
Dwelling relationship to ground line

- 6 To provide dwellings with well proportioned and functional rooms of adequate dimension.
- 7 To ensure safety of movement on stairs for all age groups.
- 8 To ensure the provision of separate living, dining and kitchen areas within each dwelling, and generous areas where open plan living is provided.
- 9 To ensure kitchens have adequate areas to facilitate food preparation for the entire household.
- 10 To ensure adequate daylight access and natural ventilation.
- 9 Ground and podium level dwellings are to have private outdoor areas differentiated from communal areas. A gate is to be provided from the private open space of each dwelling into common areas where possible.

Dwelling and Room Design

- 10 The maximum habitable room depth is 8.0m from a window in an external wall.
- 11 The maximum internal plan depth of a dwelling is to be 14.0m from glass line to glass line, as in Figure 6C.6-2.
- 12 The living area is to have a minimum internal plan dimension of 4.0m, as in Figure 6C.6-2.
- 13 The dining area is to have a minimum internal plan dimension of 4.0m, as in Figure 6C.6-2.
- 14 Where living and dining rooms are combined in an open plan, a minimum internal plan dimension of 8.0m is to be provided across both areas, with the secondary plan dimension remaining at 4.0m as in Figure 6C.6-2 to Figure 6C.6-4.
- 15 Where kitchen areas are included within open plan dining and living areas, the kitchen area and the circulation area for the kitchen is to be separate and excluded from the measurement of living room and dining room area dimensions in 6C.6(14).

6C.6 DWELLING PLACEMENT AND ROOM DESIGN (continued)

Controls

11 To ensure adequate storage in bedrooms.

12 To provide bathing options for a variety of household compositions.

16 All bedrooms are to have a minimum internal plan dimension of 3.0m, as in Figure 6C.6-3.

17 All minimum internal plan dimensions are exclusive of storage and wardrobe space.

Room Design

18 Dwellings are to provide the following minimum dwelling sizes and bathroom provisions according to the number of bedrooms provided:

Dwelling	Minimum Size (m ²)	Bathrooms
Studio	50	1 bathroom
1 bedroom	70	1 bathroom
2 bedrooms	95	2 bathrooms
3 bedrooms	115	3 bathrooms
4 bedrooms	130	3 bathrooms

19 Built in wardrobes of minimum 0.6m deep and 1.8m long are to be provided to the following:

- i) all studio dwellings
- ii) all bedrooms in one and two bedroom dwellings;
- iii) at least two bedrooms in dwellings of three or more bedrooms.

20 Where more than one bathroom is provided, one bathroom is to be fitted with a bathtub.

21 No winders are to be provided in staircases.

22 All kitchens are to provide a minimum clear workbench surface of 0.6x2.0m. This may be provided as two surfaces of minimum 0.6x1.0m each.

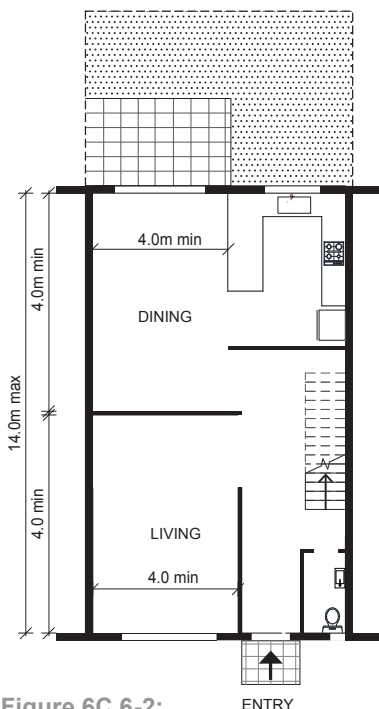


Figure 6C.6-2:
Maximum internal plan depth controls.

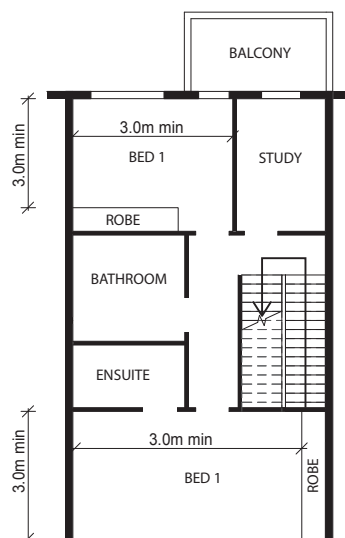


Figure 6C.6-3:
Minimum dimension controls for bedrooms - Level 1

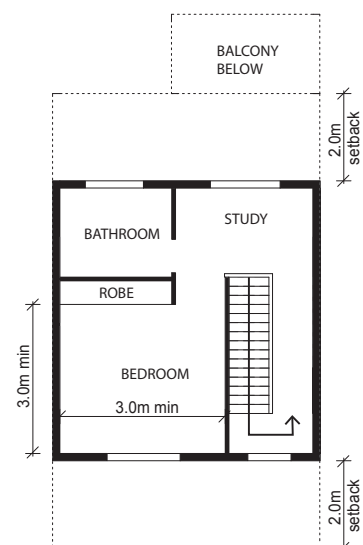


Figure 6C.6-4:
Minimum dimension controls for bedrooms - Level 2

6C.7 BUILDING ENTRIES AND INTERNAL PATHWAYS

Further controls that may apply		
SECTION A PART 6A.1 - Site Layout		SECTION C PART 22.1 - Equitable Access

Objectives	Controls
<p>1 To ensure the site and building entry is clear and provides an identifiable element in the street.</p> <p>2 To ensure the building entry contributes positively to the streetscape and building facade design.</p> <p>3 To ensure dwelling entries are close to and relate to natural ground line at street level and within the site.</p> <p>4 To ensure that a high level of amenity is provided to pedestrian links within the development.</p> <p>5 To ensure the amenity of adjoining building courtyards is not compromised by pedestrian flow through the site.</p> <p>6 To soften the impact of hard landscaping within the site.</p> <p>7 To ensure all pathways are safe and accessible.</p>	<p>1 The entry into the multi-dwelling housing development is to be directly accessible and visible from the street.</p> <p>2 All ground floor entries to dwellings are to be located no more than 1.0m above natural ground level. Any falls in the ground level are to be accommodated within the design of the dwelling by utilising split levels.</p> <p>3 Building entry pathways are to be minimum 1.2m wide and located within the common area with a minimum dimension of 1.2m on either side for landscape planting. All other internal pathways are to be minimum 1.2m wide with a minimum dimension of 0.6m on either side for landscape planting.</p> <p>Note: A building entry path is any path that provides a line of travel from the street, or lift/stair from the carparking, to the front entry of each dwelling.</p> <p>4 All paths are to provide extra widths to allow effective turning and to allow easy passing between pedestrians.</p> <p>5 Where any path is included in the side setback, then the setback is to be increased by the width of the path.</p> <p>6 Provide clear sightlines to the entries of all dwellings. Provide way-finding signs on large development sites comprising multiple buildings.</p> <p>7 All street and individual dwelling entry areas are to be well lit and designed to avoid any concealment or entrapment areas. All light spill is prohibited.</p> <p>8 Individual dwelling entries are to be integrated into the building facade design and be articulated with awnings, porticos, recesses or projecting bays for clear identification.</p> <p>9 All pathways are to be designed to avoid blind corners, dark alcoves and narrow passageways dominated by internal fencing or structures.</p>



Figure 6C.7-1:
Entrances to individual townhouses are clearly identifiable with the use of porches/verandahs.

6C.8 BUILDING FACADES AND ARTICULATION

Further controls that may apply

PART 1B - Dictionary

SECTION C

PART 23.6 - Building Services

PART 23.7 - General Acoustic Privacy

PART 23.8 - General Visual Privacy

Objectives

1. To ensure multi-dwelling development does not appear as 3 story residential flat buildings in their shape and structure.
2. To create high quality streetscapes of buildings with individual character, diversity and interest.
3. Provide an individual identity for each dwelling building.
4. To promote well-designed buildings of high architectural quality that contribute to the local character.
5. To design building facades that reduce the bulk and scale of the building.
6. To create building facades that are environmentally responsive.
7. To integrate building elements into the overall building form and facade design.
8. To ensure air conditioning and telecommunication devices are concealed and do not detract from or clutter the buildings visual quality.



Controls

1. Buildings are to express the scale and mass of townhouse and villa development.
2. Building design and finish is to provide a variety of architectural character within the streetscape.
3. All facades are to achieve well-proportioned compositions utilising suitable architectural elements and treatments, including a variety of window openings.
4. All building elevations are not to exceed 36.0m in length.
5. All external walls longer than 14.0m are to be articulated by having a minimum 0.6m step in the building facade alignment (projection or indentation). Facades consisting of a single predominant finish or material and/or limited articulation will not be accepted.
6. All building facades are to be modulated and articulated with wall planes and architectural elements that vary in depth and reduce bulk and scale of the building. Large flat walls, undifferentiated window openings, applied treatments and inarticulated facades will not be accepted. Articulation that is integrated into the building may include:
 - i) well designed elevations utilising architectural elements to make the buildings unique with changes of material, texture, colour that are integrated into the building;
 - ii) defining a base, middle and top related to the overall proportions of the building;
 - iii) expressing internal building layout or structure, such as vertical bays or party walls;
 - iv) using a variety of window types to create a rhythm or express the building uses;
 - v) using recessed balconies and deep windows to add visual depth;
 - vi) sun shading devices to openings.

Note: Facades are to be designed to minimise weathering and ongoing maintenance by selecting appropriate robust materials/finishes; and including appropriate building edge, balcony edge, sill head and parapet detailing that demonstrates protection from prevailing weather and harsh solar aspects.
7. All building elements, including shading devices and awnings, are to be coordinated and integrated into the overall facade design.

Figure 6C.8-1:

Well articulated building facade with the use of balconies. Sun shading devices incorporated into the balcony design for solar access control.

6C.8 BUILDING FACADES AND ARTICULATION (continued)

Controls

9 To provide distinct building articulation on corner sites that reinforce the street intersection.

10 To ensure that building facade design contributes to the safety of the public domain.

- 8 Telecommunication structures are to be located within roof structures or basements and not be visible from any street or public domain area.
- 9 Balconies that run the full length of the building facade are not permitted.
- 10 Balconies are not to project more than 1.5m from the outermost wall of the building facade and be integrated into the overall building design and composition of the elevations.
- 11 Blade walls are not to be the sole element used to articulate the facade.
- 12 Overhead ducts and services at the basement parking entry are to be concealed and not be visible from the street.
- 13 Street corners are to be addressed through the use of architectural elements that give visual prominence to parts of the building facade, such as a change in building modulation, material, colour, roof expression or height.
- 14 Building elevations are not to create snorkel windows to any part of the building.

Note: Refer to Section A Part 1B Dictionary for definition of snorkel window.

6C.9 BUILDING STOREYS

Objectives

- 1 To ensure that buildings are responsive to the site.
- 2 To provide for quality dwelling interior spaces and private open space areas.
- 3 To ensure roof articulation, lift overruns and services are incorporated into the allowable building height.
- 4 To ensure additional height is available at the ground level to integrate the relationship of the building with the topography.

Controls

- 1 Multi-dwelling housing is to have a maximum of 3 storeys as illustrated in *Figure 6C.9-1*.
Note: The 1st storey is measured from a maximum 1m above the existing ground line.
- 2 On steep sites, the size of the floor plate is to reflect the topographic constraints. Subterranean dwellings at ground level are not permitted.
Note: Smaller stepping floor plates can assist to negotiate the topography.
- 3 Attic levels cannot be located above the third storey.

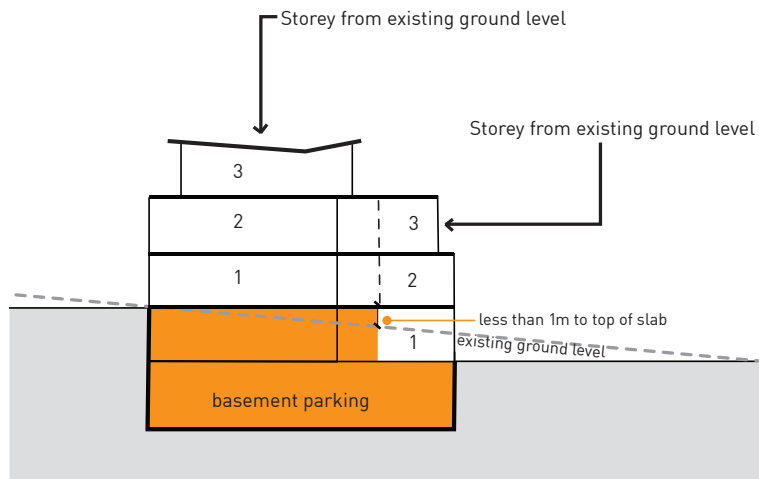


Figure 6C.9-1
Building Storeys

6C.10 TOP STOREY DESIGN AND ROOF FORMS

Objectives

- 1 To encourage a scale and character of development that provides a transition between residential flat buildings and single dwellings.
- 2 To minimise the visual bulk of buildings.
- 3 To contribute to the overall design and environmental performance of buildings.
- 4 To ensure multi-dwelling development does not have the appearance of a 3 story residential flat building.
- 5 To manage overlooking and privacy of dwellings and private open spaces within and adjacent to the multi-dwelling housing development.



Figure 6C.10-1:
Top floor setback with
recessive colour scheme to
minimise the bulk and scale.



Figure 6C.10-2
Broken roof forms on
townhouses

Controls

- 1 The top storey of the building is to be incorporated into the roof space to make an attic floor level where possible. Where a flat roof is proposed, the design is not to resemble a residential apartment building form.
- 2 Service elements such as drainage pipes and communication devices are to be integrated into the overall design of the roof and not be visible from the public domain or any surrounding development.
- 3 Roof design is to enable solar access to openings in winter and shading to openings in summer.
- 4 Roof forms are to be modulated or broken, especially for long facades (see Figure 6C.10-2).
- 5 Where solar panels are provided they are to be integrated into the roof line.
- 6 Balconies and terraces are not permitted above the ground and first floor levels of the building except to the street frontage.

Attic Floor Top Storey

- 7 Where the top storey is incorporated into the roof space to form attic rooms, dormer windows are to be provided. Skylights to habitable rooms will not be permitted.
- 8 Dormer windows to attics are to be no higher than the height of the main roof of the building and are not to incorporate or access a balcony or terrace.

Flat Roof Top Storey

- 9 Where the top storey is not incorporated within the roof form, it is to stepback as follows:
 - i) a minimum of 2.0m from the front and rear building line of the floor below;
 - ii) a minimum of 0.6m from the building line of the floor below at the end walls, where the end walls at the top storey has no openings; where end walls have openings, the stepback is to be a minimum of 2.0m from the building line of the floor below;
 - iii) access to balconies or terraces at the top storey may only be provided to the street elevation.
- 10 Flat roofs and terraces are not to be used for plant and service equipment, all such equipment is to be concealed within the buildings roof structure and basements.

6C.11 INTERNAL CEILING HEIGHTS

Objectives

- 1 *To ensure that adequate internal ceiling height is provided.*
- 2 *To ensure the internal ceiling height is coordinated with external building form requirements.*
- 3 *To ensure all dwellings are designed to facilitate a 'sense of space' and natural light and ventilation into rooms.*
- 4 *To ensure all servicing elements are incorporated within the building structure.*

Controls

- 1 All multi-dwelling housing developments are to comply with the following minimum ceiling heights, measured from finished floor level (FFL) to finished ceiling level (FCL):
 - i) 2.7m for all habitable rooms (minimum 3.1m floor to floor height);
 - ii) 2.4m for all non-habitable rooms (minimum 2.8m floor to floor height with 0.4m clearance for structure, services and finished).
- 2 Architectural plans are to indicate service ducts between floors for drainage pipes and building services.

6C.12 VISUAL AND ACOUSTIC PRIVACY

Further controls that may apply		
SECTION A PART 6A.3 - Building Separation		SECTION C
		PART 23.7 - General Acoustic Privacy PART 23.8 - General Visual Privacy

Objectives

- To ensure high standards of visual and acoustic privacy to habitable rooms and private open space both within the development and to neighbouring developments.*
- To ensure building elements are well designed and integrated into the overall building form.*

Controls

- Buildings are to be designed to ensure privacy to other onsite dwellings and to neighbouring properties. In addition to design options outlined in Part 23.8 and Part 23.9, design measures may also include:
 - off-setting balconies in relation to adjacent balconies;
 - using recessed balconies and/or vertical fins between adjacent private balconies;
 - using louvres/screen panels to windows and balconies;
 - incorporating planter boxes into walls or balustrades to increase the visual separation between areas;
 - utilising pergolas or shading devices to limit overlooking of lower building levels or common and private open space.
- Continuous transparent or translucent balustrades to private open spaces are not permitted to balconies/terraces/courtyards.
- Screening between dwellings is to be integrated into the overall building design.
- Landscaped screening is to be provided to neighbouring properties.
- Any screens for achieving visual privacy to habitable rooms cannot be fixed in place and impede their function of the opening to provide daylight, ventilation or outlook from the internal space.
- For requirements on noise levels associated with air conditioning, kitchen, bathroom, laundry ventilation, or other mechanical ventilation systems and other plant refer to Part 23.8 of this DCP.



Figure 6C.12-1:
Operable louvres to all balconies to provide enhanced privacy.

6C.13 STORAGE

Further controls that may apply

SECTION C
PART 23.8 - General Visual Privacy
PART 25 - Waste Management

Objectives

- 1 *To ensure all dwellings have adequate, appropriate, convenient and accessible storage for everyday household items.*

Controls

- 1 Storage space is to be provided at the following minimum volumes:
 - i) 10m³ for two bedroom dwellings; and
 - ii) 12m³ for dwellings with three or more bedrooms.

Note: Internal service ducting is not to impact on storage area provisions.
- 2 At least 50% of the storage space is to be provided within the dwelling.

Note: Storage space within dwellings are to be in the form of cupboards. These cupboards can be located in circulation spaces, living rooms, laundries, flexible spaces (which can also be used as studios/media rooms etc). Storage in kitchens, bedrooms or bathrooms will not count towards this requirement.

Note: Storage within laundries is to exclude the space required to accommodate a washing tub, washing machine and dryer.
- 3 Storage space provided outside the dwellings within basements and such like, are to be separately allocated and identified as belonging to the relevant dwelling.
- 4 Storage space outside dwellings is to be provided as dedicated storerooms within the basement adjacent to designated parking bays.

6C.14 EXTERNAL AIR CLOTHES DRYING FACILITIES

Objectives

- 1 To maximise the opportunities for sun and wind drying of clothes and reduce the use of electric dryers.
- 2 To provide external air clothes drying areas that do not detract from the visual appearance of the building and common areas.

Controls

Private drying facilities

- 1 Provide one external air clothes drying area for each dwelling.
Note: Clothes drying areas do not form part of the required 25sqm private open space.
- 2 The external air clothes drying area is not to be located at the street frontage and is to be screened from all public domain areas and common areas.

Shared drying facilities

- 3 Where shared air clothes drying lines are provided, they are to be located within common areas, but are not to form part of any communal open space and is not to be visible from any public domain.

6C.15 FENCING

Objectives

- 1 To ensure fencing design responds to the character of the streetscape in terms of:
 - i) open landscape quality;
 - ii) visibility and security;
 - iii) materials selection;
 - iv) solid or transparent qualities;
 - v) height;
 - vi) vertical and horizontal composition of the materials;
 - vii) location of entries and gates;
 - viii) noise sources;
 - ix) topography.
- 2 To ensure that fencing does not detract from the overall visual amenity and character of the area.
- 3 To ensure onsite fencing and courtyard walls are integrated with the built form and provide separation and privacy to private open areas.

Controls

- 1 Front boundary fences and walls (to a public street/public domain) and side boundary fences within the street setback are not to be higher than:
 - i) 0.9m if of closed construction (such as masonry, lapped and capped timber or brushwood fences); or
 - ii) 1.2m if of open construction (such as open paling and picket fences).

Note: Open fencing includes panels set into a timber frame or between brick piers, where any solid base is not taller than 0.4m, and panels are spaced pickets, palings, or lattice.
- 2 Closed front fences with a maximum height of 1.8m may be considered where the site fronts a busy road or other sources of undesirable noise. These fences are to be set back at least 2.0m from the front boundary and screened by landscaping.

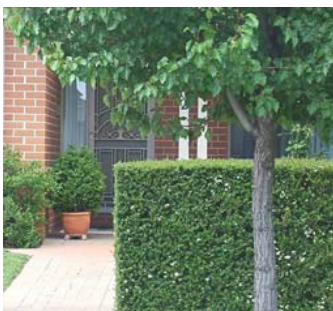
Note: Rendered masonry boundary walls are generally inappropriate to the landscape character of Ku-ring-gai.
- 3 Fences and walls are to step down and follow the natural contours of the site.
- 4 All fencing is to be designed to highlight entrances, and be compatible with buildings and letterboxes.
- 5 Fence design fronting a street and/or other public domain is to relate to the overall building design and materials, connecting design elements to the street level.
- 6 Internal fencing is to integrate with the building design, character and material selections.
- 7 External finishes for fencing is to be robust and graffiti resistant.



Figure 6C.15-1:
Open style fencing to maintain visual link.



Figure 6C.15-2:
Use of hedges as fencing.



6C.16 SERVICES

Further controls that may apply		
		SECTION C PART 23.6 - Building Services PART 25 - Waste Management

Objectives	Controls
<p>1 All developments are to design and locate utility infrastructure to minimise their impact on the streetscape.</p>	<p>1 All developments are to make provision for waste and recycling storage and collection within the building basement.</p> <p>2 Building services, including within basements and on rooftops, are not to be visible from the public domain.</p>

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6R	References
6R.1	Design Quality Principles

6R.1 DESIGN QUALITY PRINCIPLES

The following are Design Quality Principles which are to be achieved by all multi-dwelling developments:

Principle 1: Context and neighbourhood character

Good design responds and contributes to its context. Context is the key natural and built features of an area, their relationship and the character they create when combined. It also includes social, economic, health and environmental conditions. Responding to context involves identifying the desirable elements of an area's existing or future character. Well designed buildings respond to and enhance the qualities and identity of the area including the adjacent sites, streetscape and neighbourhood. Consideration of local context is important for all sites, including sites in established areas, those undergoing change or identified for change.

Principle 2: Built form and scale

Good design achieves a scale, bulk and height appropriate to the existing or desired future character of the street and surrounding buildings. Good design also achieves an appropriate built form for a site and the building's purpose in terms of building alignments, proportions, building type, articulation and the manipulation of building elements. Appropriate built form defines the public domain, contributes to the character of streetscapes and parks, including their views and vistas, and provides internal amenity and outlook.

Principle 3: Density

Good design achieves a high level of amenity for residents and each dwelling, resulting in a density appropriate to the site and its context. Appropriate densities are consistent with the area's existing or projected population. Appropriate densities can be sustained by existing or proposed infrastructure, public transport, access to jobs, community facilities and the environment.

Principle 4: Sustainability

Good design combines positive environmental, social and economic outcomes. Good sustainable design includes use of natural cross ventilation and sunlight for the amenity and liveability of residents and passive thermal design for ventilation, heating and cooling reducing reliance on technology and operation costs. Other elements include recycling and reuse of materials and waste, use of sustainable materials and deep soil zones for groundwater recharge and vegetation.

Principle 5: Landscape

Good design recognises that together landscape and buildings operate as an integrated and sustainable system, resulting in attractive developments with good amenity. A positive image and contextual fit of well designed developments is achieved by contributing to the landscape character of the streetscape and neighbourhood. Good landscape design enhances the development's environmental performance by retaining positive natural features which contribute to the local context, co-ordinating water and soil management, solar access, micro-climate, tree canopy, habitat values and preserving green networks. Good landscape design optimises

6R.1 DESIGN QUALITY PRINCIPLES (continued)

useability, privacy and opportunities for social interaction, equitable access, respect for neighbours' amenity and provides for practical establishment and long term management.

Principle 6: Amenity

Good design positively influences internal and external amenity for residents and neighbours. Achieving good amenity contributes to positive living environments and resident well being. Good amenity combines appropriate room dimensions and shapes, access to sunlight, natural ventilation, outlook, visual and acoustic privacy, storage, indoor and outdoor space, efficient layouts and service areas and ease of access for all age groups and degrees of mobility.

Principle 7: Safety

Good design optimises safety and security within the development and the public domain. It provides for quality public and private spaces that are clearly defined and fit for the intended purpose. Opportunities to maximise passive surveillance of public and communal areas promote safety. A positive relationship between public and private spaces is achieved through clearly defined secure access points and well lit and visible areas that are easily maintained and appropriate to the location and purpose.

Principle 8: Housing diversity and social interaction

Good design achieves a mix of dwelling sizes, providing housing choice for different demographics, living needs and household budgets. Well designed developments respond to social context by providing housing and facilities to suit the existing and future social mix. Good design involves practical and flexible features, including different types of communal spaces for a broad range of people and providing opportunities for social interaction among residents.

Principle 9: Aesthetics

Good design achieves a built form that has good proportions and a balanced composition of elements, reflecting the internal layout and structure. Good design uses a variety of materials, colours and textures. The visual appearance of a well designed development responds to the existing or future local context, particularly desirable elements and repetitions of the streetscape.

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RESIDENTIAL FLAT BUILDINGS

Introduction

7A Site Design

- 7A.1 Local Character and Streetscape
- 7A.2 Site Layout
- 7A.3 Building Setbacks
- 7A.4 Building Separation
- 7A.5 Site Coverage
- 7A.6 Deep Soil Landscaping

7B Access and Parking

- 7B.1 Car Parking Provision
- 7B.2 Bicycle Parking Provision

7C Building Design and Sustainability

- 7C.1 SEPP (Housing) 2021 and Apartment Design Guide Requirements
- 7C.2 Communal Open Space
- 7C.3 Ground Floor Apartments
- 7C.4 Apartment Mix and Accessibility
- 7C.5 Building Entries
- 7C.6 Building Form and Facades
- 7C.7 Building Storeys
- 7C.8 Top Storey Design and Roof Forms
- 7C.9 Laundry and Air Clothes Drying Facilities
- 7C.10 Fencing
- 7C.11 Acoustic Privacy
- 7C.12 Services

INTRODUCTION

The objectives and controls in this Part guide development for residential flat buildings in meeting the aims and objectives within the KLEP.

Residential flat buildings, as defined in the KLEP, may be located within the R4 High Density Residential and R1 General Residential zones.

The development of residential flat buildings in the **MU1** Mixed Use zone is covered by this Part of the DCP.

Where a development only involves refurbishment works or alterations/ additions to existing buildings, new elements are to meet the requirements of this Part.

Where residential uses are provided to any part of the ground floor street frontage within a **MU1** Mixed Use zone, then the development is to be treated as a Residential Flat Building and meet the standards of this Part.

SEPP (Housing) 2021, stipulates nine design quality principles which are to be achieved by residential flat developments. These are as follows:

- i) Principle 1: Context and neighbourhood character
- ii) Principle 2: Built form and scale
- iii) Principle 3: Density
- iv) Principle 4: Sustainability
- v) Principle 5: Landscape
- vi) Principle 6: Amenity
- vii) Principle 7: Safety
- viii) Principle 8: Housing diversity and social interaction
- ix) Principle 9: Aesthetics

In addition, the following aspects of residential flat building development are to be consistent under *(Housing) 2021* and the associated sections of the *Apartment Design Guide*: visual privacy, solar and daylight access, natural ventilation, ceiling heights, apartment size and layout, private open space and balconies, common circulation and spaces, and storage.

INTRODUCTION (continued)

The aims of this Part are to:

- i) Ensure that development is in keeping with the garden character of Ku-ring-gai where the tree canopy dominates the landscape by making provision for quality deep soil landscaping, including: tall trees to the streetscape; in-between and to all elevations of buildings on the development site; in-between buildings on the development site and on adjacent sites.
- ii) Encourage development which does not dominate, but harmonises with and contributes to the treed landscape and is sympathetic to the street and locality in which it is proposed.
- iii) Ensure that with each development sufficient landscaping is provided to contribute to the conservation and replenishment of the tree canopy of Ku-ring-gai, including locally occurring native tree species suited to the site.
- iv) Protect and minimise the impact of development on adjoining properties
- v) Protect and minimise the impact of development on the natural environment
- vi) Ensure development that minimises the depletion of raw materials and non-renewable resources
- vii) Ensure that development meets the needs of the present without compromising the ability of future generations to meet their own need.
- viii) Encourage housing of the highest possible architectural, environmental and amenity standards.
- ix) Manage residential development in a way that embraces innovative design and contemporary lifestyles
- x) Ensure that there are more certain outcomes for applicants and the community.

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- 7A

Site Design
- 7A.1

Local Character and Streetscape
- 7A.2

Site Layout
- 7A.3

Building Setback
- 7A.4

Building Separation
- 7A.5

Site Coverage
- 7A.6

Deep Soil Landscaping

READ WITH
SECTION A PART 1B - Dictionary PART 2 - Site Analysis PART 3 - Land Amalgamation and Subdivision
SECTION B PART 14 - Urban Precinct and Sites
SECTION C PART 21 - General Site Design 21.2 - Landscape Design

REFER TO
LIVABLE HOUSING DESIGN GUIDELINES

REFER TO
SEPP (HOUSING) 2021
APARTMENT DESIGN GUIDE



7A.1 LOCAL CHARACTER AND STREETScape

Further controls that may apply:

SECTION A PART 2 – Site Analysis

SECTION C PART 21 – General Site Design

Objectives

- 1 *To improve the design quality of residential flat buildings.*
- 2 *To ensure that the development contributes to the greater Ku-ring-gai landscaped character of buildings within a landscaped garden setting and surrounded by tall trees.*
- 3 *To ensure the development is sensitive to, and conserves and enhances the existing built environment, landscape setting, environmental conditions and established character of the street and locality with particular reference to integration of.*
 - i) *architectural themes;*
 - ii) *building scale and setbacks; and*
 - iii) *landscape themes.*
- 4 *To ensure development provides a positive contribution to the public domain and all areas shared by the community.*
- 5 *To ensure that the visual, scenic and environmental qualities on visually prominent sites are maintained.*

Controls

- 1 All Residential Flat Buildings are to be designed by an architect registered with the NSW Architects Registration Board.
- 2 All residential flat buildings are to demonstrate how they provide a garden setting with buildings surrounded by landscaped gardens, including tall trees, on all sides.
- 3 Design components of new development are to be based on the existing predominant and high quality characteristics of the local neighbourhood.
- 4 The appearance of the development is to maintain the local visual character by considering the following elements:
 - i) visibility of on-site development when viewed from the street, public reserves and adjacent properties; and
 - ii) relationship to the scale, layout and character of the tree dominated streetscape of Ku-ring-gai.
- 5 The predominant and high quality characteristics of the local neighbourhood are to be identified and considered as part of the site analysis at Part 2 of the DCP.

Note: Local character and streetscape is created by many features including, but not limited to: kerbs, setbacks, footpath treatment, building separation and spaces between buildings, access arrangements, street tree planting, tall tree canopy backdrop to the horizon, native vegetation and gardens, topography, site and street geometry, as well the architecture.



Figure 7A.1-1:
Qualities of visual character

7A.1 LOCAL CHARACTER AND STREETScape (continued)

Controls

- 6 Development is to integrate with surrounding sites by:
- i) being of an appropriate scale retaining consistency with the surrounds when viewed from the street, public domain or adjoining development;
 - ii) minimising overshadowing; and
 - iii) integrating built form and soft landscaping (gardens and trees) within the tree canopy that links the public and private domain throughout Ku-ring-gai.

Visually Prominent Sites

- 7 Development on visually prominent sites is to:
- i) be of high architectural and aesthetic quality;
 - ii) be integrated into the existing landscape through the site planning process and avoid tall and bulky structures;
 - iii) have a selection of external colours and finishes that are sensitive to the site and locality;
 - iv) retain significant landscape and vegetation elements;
 - v) consider views to the site as well as those from the site; and
 - vi) soften visual impact by extensive landscaping including tall and medium trees and shrubs.

Note: Refer to Part 1B Dictionary for definition of *Visually Prominent Site*.

- 8 Colours of materials used in sites adjoining or in close proximity to bushland areas and Heritage Conservation Areas are to be in harmony with the built and natural landscape elements of the area.



Figure
7A.1-2:
Qualities
of visual
character

7A.2 SITE LAYOUT

Further controls that may apply

SECTION A PART 2 - Site Analysis

SECTION B PART 20 - Development Near Rail Corridors and Busy Roads

SECTION C PART 21- General Site Design PART 23.7 - General Acoustic Privacy

Objectives

- 1 *To ensure fundamental design decisions are appropriate to the site.*
- 2 *To ensure detailed design decisions are founded on an appropriate site strategy determined through site analysis.*
- 3 *To ensure that site planning for residential flat buildings responds to site attributes such as streetscape, character, existing vegetation and topography and address site opportunities and constraints.*
- 4 *To ensure high impact elements such as noise sources are considered early in the design stage*
- 5 *To soften built forms through use of soft landscaping.*
- 6 *To achieve a high standard of amenity for future residents.*
- 7 *To minimise impacts on the amenity of neighbouring sites.*
- 8 *To reduced the appearance of building mass and scale.*
- 9 *To ensure driveways blend into a landscaped setting and are not a dominant feature of the development*
- 10 *To ensure provision of a clear and legible address for the development.*

Controls

- 1 The site layout is to demonstrate a clear and appropriate design strategy and arrangement of building mass in response to the Site Analysis in Part 2 Site Analysis of this DCP. Demonstration of design strategies to address opportunities and constraints based on Site Analysis are to include:
 - i) building location and orientation on the site optimising northern aspect; relationship with neighbouring developments; building setbacks; geographical aspect; views; access etc;
 - ii) response of building development in maintaining site characteristics within the subject site, such as topography, vegetation, significant trees, any special features, etc.
 - iii) building separation and internal layouts of buildings that respond to (i) above and be consistent with the requirements of the DCP.
 - iv) limited apartments with no direct sunlight.
- 2 A drawing and supporting written information is to demonstrate how the building and its layout has applied and responded to the site analysis conducted in Part 2 of this DCP.
- 3 For requirements on development near noise sources refer to Section B Part 20 Development Near Rail Corridors and Busy Roads in this DCP.
- 4 Any building with a frontage to the street is to address that street.
- 5 Where a site has two or more frontages, the buildings are to address and provide building entry points from all street frontages.
- 6 Soft landscaping, including tall trees, is to be provided between onsite buildings, fences and courtyard walls.
- 7 Hard landscaping is to be minimised and to maximise opportunities for landscape planting.
- 8 Long straight driveways are not permitted, except where necessary for battle-axe sites. Driveways are to be designed to be of minimal visual impact.
- 9 Provide a single pedestrian entry point into the development from the street. Other entries may be permitted where several buildings address the street along an extended street or where there are dual frontage sites.

7A.2 SITE LAYOUT (continued)

Objectives

- 11 To provide safe and continuous pathway from the street to the ground floor entry point of the apartment building.*
- 12 To ensure buildings address the public domain and give direct access from all street frontages: primary, secondary and any other streets to the boundary line of the development.*
- 13 To minimise the negative impact of overshadowing on living areas and private and communal open space areas of neighbouring buildings.*
- 14 To minimise the impact of development on existing solar collection devices.*

Controls

- 10 Three hours of direct sunlight between 9am and 3pm on 21st June is to be maintained to the living rooms, primary private open spaces and any communal open spaces within:
 - i) existing residential flat buildings and multi-dwelling housing on adjoining lots;
 - ii) residential development in adjoining lower density zones.

Note: Where an adjoining property does not currently receive the required hours of solar access, the proposed building is to ensure that solar access to neighbours is not reduced by more than 20%.
- 11 Overshadowing should not compromise the development potential of the adjoining yet to be redeveloped sites.
- 12 Developments are to allow the retention of a minimum of 4 hours direct sunlight between 9am to 3pm on 21st June to all existing solar collectors and solar hot water services on neighbouring buildings.

7A.3 BUILDING SETBACKS

Further controls that may apply		
SECTION A PART 1B - Definitions PART 7A.5 - Deep Soil Landscaping	SECTION B PART 14 - Urban Precinct and Sites	

Objectives

- 1 To ensure buildings are situated within a garden setting dominated by tall trees.
- 2 To soften the built form and maintain the garden character of Ku-ring-gai.
- 3 To provide effective deep soil areas that are able to create a garden setting, including medium and tall trees, to all sides of the building.
- 4 To reduce the visual bulk of buildings from the street.



Figure 7A.3-7:
Landscaped street setback to provide effective softening.



Figure 7A.3-8:
Smaller landscaped street setback with upper level setback for development near the commercial core area.

Controls

Street setback

- 1 Residential flat buildings are to meet the following street setback requirements (see Figure 7A.3-1):
 - i) 10.0m from the street boundary;
 - ii) on corner sites, or sites with multiple street frontages, the street boundary setback in 1(i) above applies on all street frontages.

Note: Greater setbacks may be required where the site has significant existing trees.
- 2 Residential flat buildings on the sites identified in Part 14 Urban Precincts and Sites of this DCP are to meet the following street setback requirements:
 - i) street setbacks as specified in the Building Setback maps in Part 14 Urban Precincts and Sites of this DCP;
 - ii) a minimum of 8.0m from the street boundary to the fourth storey and above;
 - iii) on corner sites, or sites with multiple street frontages, the street boundary setback in 2(ii) above applies on all street frontages.
- 3 Residential flat buildings are to provide a 2.0m articulation zone behind the street setback, and no more than 40% of this zone (in plan) is to be occupied by the building (see Figure 7A.3-1).

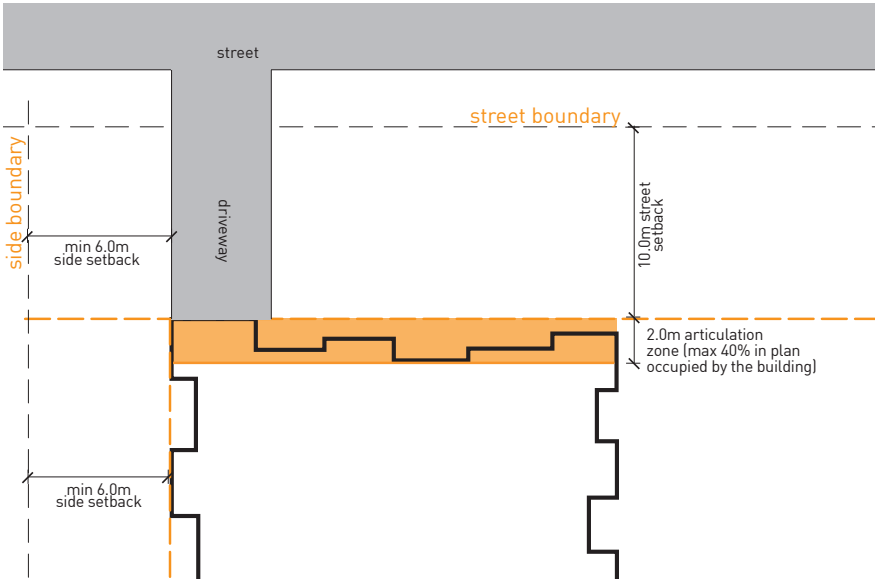


Figure 7A.3-1: Setback and articulation zone controls.

7A.3 BUILDING SETBACKS (continued)

Objectives

- 5 To maintain the alignment and rhythm of the built form on the street.
- 6 To ensure driveways do not compromise the landscape setting or neighbouring amenity.
- 7 To ensure adequate separation space between neighbouring sites to enable effective deep soil landscaping and tree planting which enhances the Ku-ring-gai landscape character.
- 8 To ensure that building separation distances are met on smaller sites.
- 9 To provide a transition to adjoining sites zoned differently for lower density residential development.
- 10 To ensure building setbacks at all levels respond to site conditions, and the local topography.
- 11 To ensure side and rear setbacks allow for deep soil landscaping including tall and medium trees that are able to screen blank facades and facades with openings to non-habitable rooms and service areas.
- 12 To ensure common area is retained to all boundaries, and that they are viable for deep soil landscaping.
- 13 To minimise bulk and scale impacts on neighbouring development.

Controls

- 4 The building line to any street is to be parallel to the prevailing building line in the streetscape. For angled sites, a stepped façade may be appropriate (see Figure 7A.3-2).

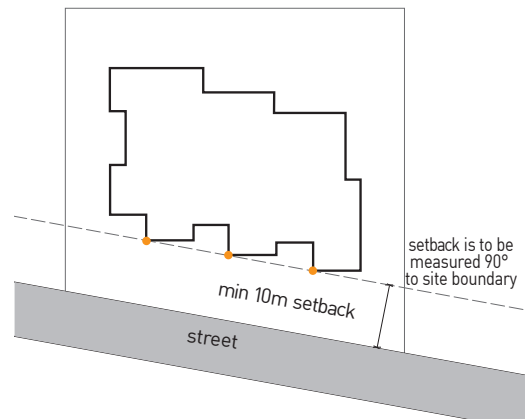


Figure 7A.3-2:
Setback controls on angled sites.

Side and Rear setbacks

- 5 Residential flat buildings are to meet the following side and rear setback requirements to ensure deep soil, landscaping and tall trees are accommodated to all sides of the building:
 - i) a minimum of 6m from the side boundary for all levels up to the fourth storey (see Figure 7A.3-3);
 - ii) a minimum of 9m to the fifth storey and above (see Figure 7A.3-3).

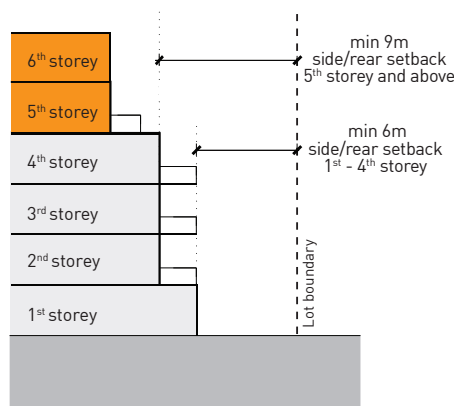


Figure 7A.3-3:
Setback controls on side & rear.

- 6 For buildings of 3 storeys or less on sites less than 1800m², a minimum of 3m from the side boundary may be provided, however Building Separation requirements are to be met as stated in Part 7A.4.

7A.3 BUILDING SETBACKS (continued)

Controls

- 14 To ensure setback areas limit elements that compromise deep soil planting and growth of tall trees.
- 15 To ensure that new development is of a scale that supports the desired area character with appropriate massing and spaces between buildings.
- 16 To protect existing trees.

- 7 Side setback areas behind the building line are not to be used for driveways or for vehicular access into the building (see Figure 7A.3-1).
- 8 Driveways are to be set back a minimum of 6m from the side boundary within the street setback to allow for deep soil planting (see Figure 7A.3-1).

Side and rear setbacks at a zone interface

- 9 Setbacks are to respond to the attributes identified in the site analysis, conducted as required by Section A Part 2 Site Analysis of this DCP, including consideration of the location of adjoining buildings and views of the site.
- 10 Residential flat buildings are to provide the following side and rear setbacks to land which is zoned differently for lower density residential development:
 - i) a minimum of 9m from the side and rear boundary up to the fourth storey (see Figure 7A.3-4);
 - ii) a minimum of 12m from the side and rear boundary for the fifth storey and above (see Figure 7A.3-4);
 - iii) greater setbacks may be required where the residential flat building is located upslope from a lower density zone (see Figure 7A.3-5)

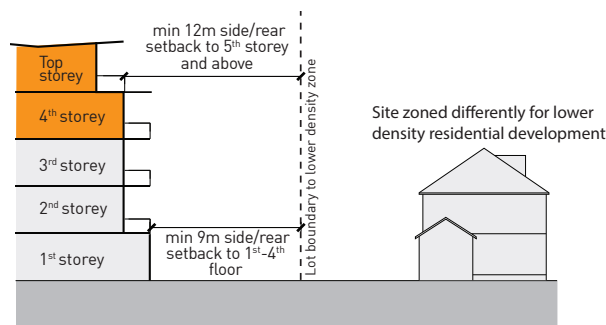


Figure 7A.3-4:
Sites adjoining lower density zones

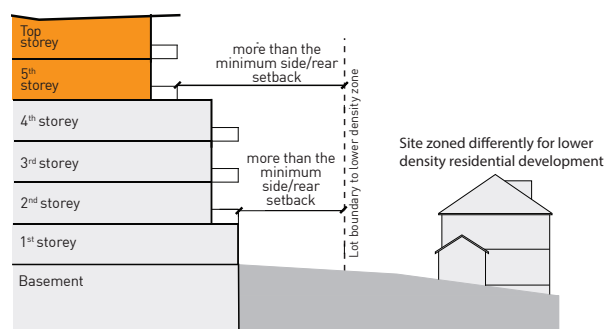


Figure 7A.3-5:
On steep sites adjoining lower density zones, setbacks may need to be more generous.

7A.3 BUILDING SETBACKS (continued)

Controls

Encroachments

- 11 Basements are not to encroach into the street, side and rear setbacks.
- 12 Ground floor private terraces/courtyards may encroach into the setback areas (see Figure 7A.3-6) provided there is a minimum setback to the terrace edge/courtyard wall of:
 - i) 8m from the street boundary;
 - ii) 4m from the side and rear boundaries;
 - iii) 7m from the side and rear boundaries where adjoining land is zoned differently for lower density residential development.
- 13 On sites less than 1800m² no encroachments into the setback areas is permitted.
- 14 No encroachments are permitted where minimum setbacks have not been achieved.

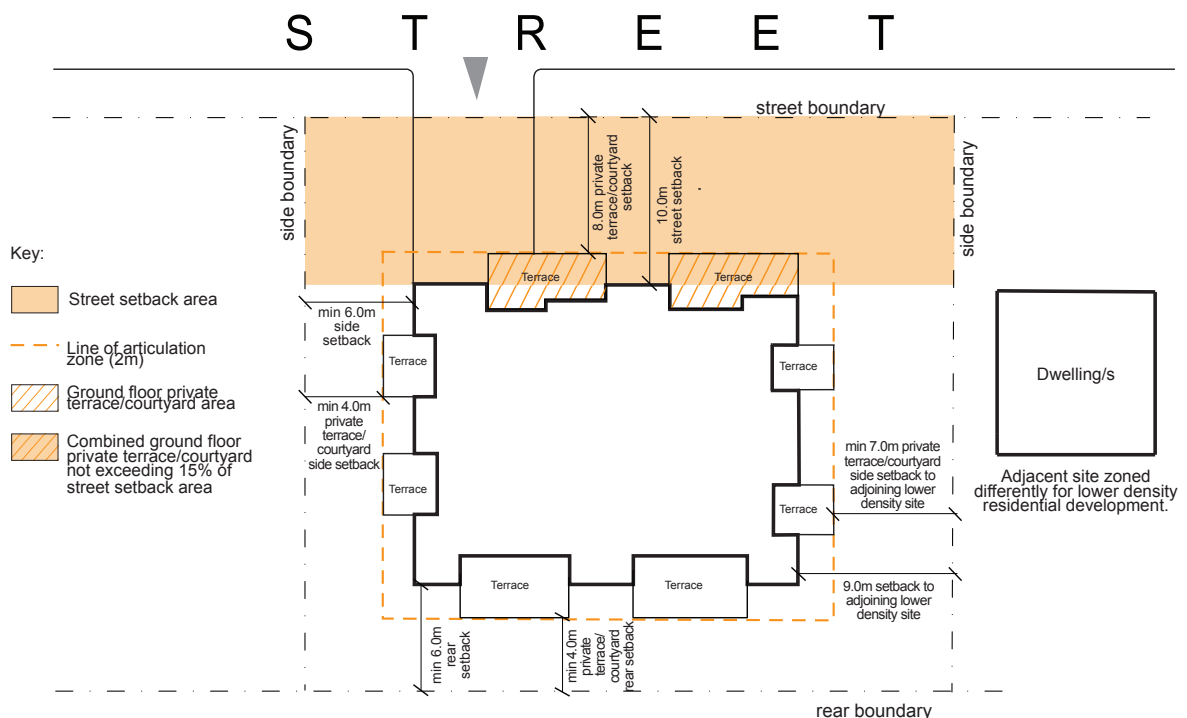


Figure 7A.3-6:
Setback controls for ground floor private terrace/courtyard and controls for ground floor terrace area encroachment to the street setback area.

- 15 No more than 15% of the total area of the street setback area is to be occupied by private terraces/courtyards (see Figure 7A.2-6).
- 16 In addition to the above encroachments, the following elements may encroach into the setback areas where they do not increase the apparent bulk of the building or create visual clutter:
 - i) eaves;
 - ii) open pergolas;
 - iii) blades, fins, columns.

7A.4 BUILDING SEPARATION

Further controls that may apply

SECTION A
PART 1B - Dictionary

SECTION B
PART 14 - Urban Precinct and Sites

Objectives

- 1 *To provide deep soil areas capable of supporting tall trees in between buildings on the same development site so the Ku-ring-gai garden and tree canopy character is enhanced.*
- 2 *To ensure that new development scaling, massing and spaces between buildings support the desired area character.*
- 3 *To configure buildings that facilitate the provision of useable communal open space, private open space and landscape area.*
- 4 *To maximise view sharing and view corridors into landscaped gardens in-between the buildings onsite, and within the setback areas.*

Controls

- 1 Residential buildings on the same development site are to include areas of deep soil in between the buildings that are capable of housing substantial vegetation and tall trees.
- 2 The minimum separation between residential buildings on the development site is to comply with the following controls:

Up to 4th Storey

- i) 12.0m between habitable rooms/balconies;
- ii) 9.0m between habitable rooms/balconies and non-habitable rooms;
- iii) 6.0m between non-habitable rooms.

5th Storey and above

- iv) 18.0m between habitable rooms/balconies;
 - v) 13.5m between habitable rooms/balconies and non-habitable rooms;
 - vi) 9.0m between non-habitable rooms.
- 3 Buildings are to be located so that apartments benefit from views into and through onsite landscaped gardens.

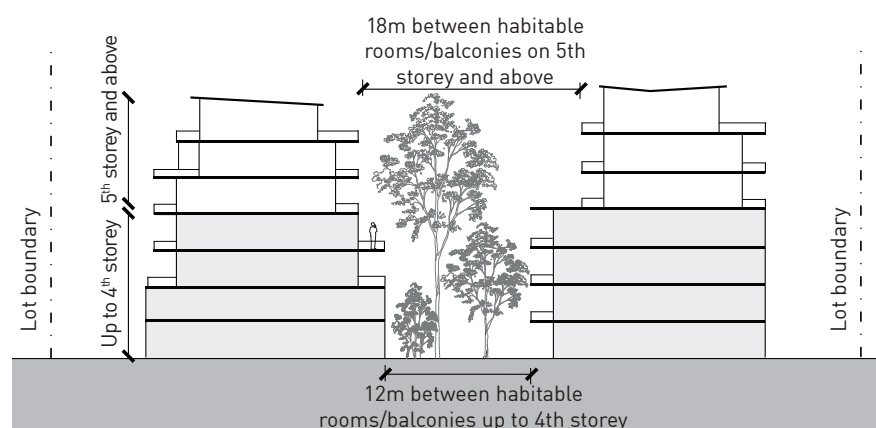


Figure 7A.4-1:
Minimum building separation controls.

7A.5 SITE COVERAGE

Further controls that may apply

SECTION A PART 1B - Dictionary

SECTION B PART 14 - Urban Precinct and Sites

Objectives

- 1 To ensure development is consistent with the desired future landscape and built character of the area.
- 2 To protect and improve the tree canopy within Ku-ring-gai.
- 3 To provide viable deep soil landscaping within developments and between residential developments on neighbouring sites.
- 4 To minimise impervious surfaces that generate stormwater runoff.
- 5 To provide adequate spaces between buildings for common areas that support quality gardens around the building.

Controls

- 1 The site coverage may be up to a maximum of 30% of the site area, provided that the deep soil landscaping requirements in Section A Part 7A.6 Deep Soil Landscaping can be met.

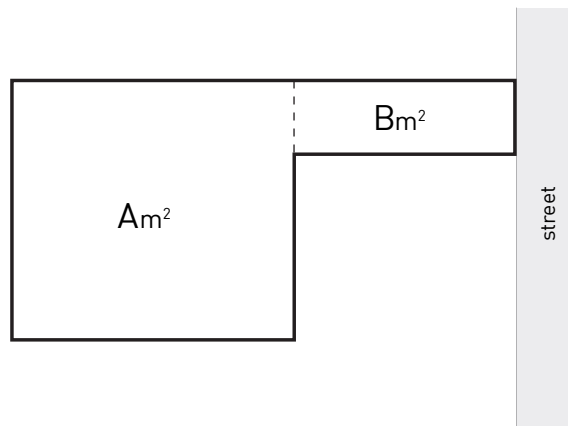
Note: Site coverage is not the inverse of deep soil landscaping. Refer to Part 1B Dictionary for clarification of site coverage.

Note: Certain sites in **E1** and **MU1** zones have reduced maximum site coverage. Refer to Section B Part 14 Urban Precincts and Sites.

- 2 Where a site incorporates an access handle/s, the site coverage is not to exceed 30% of the total site area less 30% of the access handle/s (refer to *Figure 7A.5-1*).

Note: The definition of 'site coverage' uses a calculation of the 'site area'. 'Site area in KLEP states in part:

'...does not include the area of any land on which development is not permitted to be carried out under this Plan.'



$$\text{Maximum site coverage} = [(A+B) \times 30\%]\text{m}^2 - (B \times 30\%)\text{m}^2$$

Note: This is equivalent to $[A \times 30\%]\text{m}^2$

Figure 7A.5-1:

Site coverage controls for Residential Flat Buildings

7A.6 DEEP SOIL LANDSCAPING

Further controls that may apply

SECTION A
PART 1B.1 - Dictionary

SECTION B
PART 14 - Urban Precinct and Sites

SECTION C
PART 21.2 - Landscape Design

Objectives

- 1 To ensure landscape areas contribute to the garden character and canopy of the Ku-ring-gai locality.
- 2 To provide consolidated deep soil zones of adequate area in all residential development sites through quality planning and building design.
- 3 To provide landscaped areas that are appropriate to the scale and context of the development.
- 4 To retain areas that provide habitat for native indigenous plants and animals and contributes to biodiversity in the area.
- 5 To create high quality landscaped areas through retention and/or planting of tall and medium sized trees particularly at the street frontage.
- 6 To ensure that deep soil landscaping is within common areas.
- 7 To ensure spaces between buildings provide deep soil landscaping that can sustain large trees that contribute to Ku-ring-gai's garden character.
- 8 To ensure that deep soil is provided to allow infiltration of rain water to the water table and to reduce stormwater runoff.

Controls

Design

- 1 Residential flat development is to have a minimum deep soil landscaping area as follows:

Site Area	Minimum Deep Soil Landscaping
Less than 1800 m ²	40% of the site
1800 m ² or more	50% of the site

Note: For the purpose of this section, the site excludes any access handle.

Note: Certain sites in the **E1** and **MU1** zones have a reduced maximum deep soil landscaping area. Refer to Section B Part 14 Urban Precinct and Sites.

- 2 Deep soil zones are to be configured to retain healthy and significant trees on the site and adjoining sites, where possible.
- 3 Deep soil zones are to be configured to allow for required tree planting including tall tree planting and garden and screen planting at front, side and rear boundaries.
- 4 Deep soil landscaping is to be provided in the common areas as a buffer between buildings that softens the bulk and scale of the buildings.
- 5 Driveways are not to dominate the street setback area. Deep soil landscaping areas in the street setback are to be maximised.
- 6 Where the site has an access handle, deep soil calculation is to exclude that access handle.

Tree Replenishment and Planting

- 7 Lots with the following sizes are to support a minimum number of tall trees capable of attaining a mature height of at least 18m on shale, transitional soils and 15m on sandstone derived soils.

Lot Size	Number of Tall Trees
1,200m ² (or less)	1 per 400m ² of site area or part thereof
1,201m ² - 1,800m ²	1 per 350m ² of site area or part thereof
1,801m ² +	1 per 300m ² of site area or part thereof

- 8 In addition to the tall trees, a range of medium trees, small trees and shrubs are to be selected to ensure that vegetation softens the building form and creates a garden setting. At least 50% of all tree plantings are to be locally occurring trees and spread around the site.

Note: Refer to Section A Part 1B Dictionary for definition of common area.

7A.6 DEEP SOIL LANDSCAPING (continued)

Controls

- 9 Trees are to be planted within all setback areas. At least 30% of the required number of tall trees are to be planted within the front setback.



Figure 7A.6-1:
Landscape design for the
communal open space area.

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7B

Access and Parking

7B.1

Car Parking Provision

7B.2

Bicycle Parking Provision

READ WITH
<div>SECTION C</div> <div>PART 22 - General Access and Parking</div> <div>22.3: Basement Parking</div> <div>22.4: Visitor Parking Design</div> <div>22.6: Pedestrian Movement within Car Parks</div> <div>22.7: Bicycle Parking and Facilities</div> <div>22R.1: Car Parking Rates</div>

REFER TO
LIVABLE HOUSING DESIGN GUIDELINES

REFER TO
SEPP (HOUSING) 2021
APARTMENT DESIGN GUIDE



7B.1 CAR PARKING PROVISION

Further controls that may apply

SECTION C

PART 22 - General Access and Parking

PART 22.3 - Basement Parking

PART 22.4 - Visitor Parking

PART 22.6 - Pedestrian Movement within Car Park

PART 22R.1 - Car Parking Rates

Objectives

- 1 To locate and design car parking which is integrated with the site and building design and which does not increase the bulk and scale of the building.
- 2 To ensure car parking does not detract from the landscape character of Ku-ring-gai and supports the garden setting of the residential flat building.
- 3 To ensure car parking does not compromise deep soil landscaping provisions.
- 4 To provide adequate car parking for the development's residents and visitors.
- 5 To ensure safety and convenience for all vehicle users and pedestrians within the car park areas.
- 6 To ensure provision of suitable clearance and manoeuvrability for service vehicles.
- 7 To provide adequate accessible parking.
- 8 To provide for future transport and vehicle options including Electric Vehicle charging stations, e-bicycles and the like.

Controls

Car parking design

- 1 All residential flat developments are to provide on-site car parking within basements.
- 2 Basement car park areas are to be consolidated under building footprints.
- 3 The use of single lane tunnels and single lane spiral ramps is not permitted. Double lane spiral ramps may be allowed where there are no other options, but can only link a maximum of 2 floor levels.
- 4 The basement car park is not to project more than 1.0m above existing ground level.
Note: Basements greater than 1m above the natural existing ground level are counted as a storey for the purposes of this DCP and will be included in the floor space ratio calculation as well as any control based on the number of storeys.
- 5 Single lane aisles, straight ramps and tunnels are to be a maximum of 12.0m in length.
- 6 Direct and continuous internal pedestrian access from basement car parks is to be provided to each level of the building.
- 7 Car park entry is to be integrated within the building and located behind the building line.
- 8 Every Platinum Level unit requires an accessible car space designed to Australian Standard 2890.6.

Note: All common areas and paths of travel are to be accessible in line with the requirements of the National Construction Code.

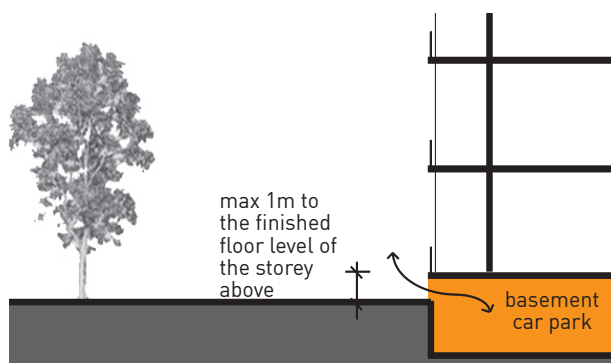


Figure 7B.1-1:
Controls for basement car park projection above existing ground level.

7B.1 CAR PARKING PROVISION (continued)

Controls

Car parking rates

- 9 The following parking ranges apply to residential flat developments on sites within 800m walking distance of a railway station entry:

Apartment Size	Minimum number of parking spaces per dwelling	Maximum number of parking spaces per dwelling
Studio	0 spaces	0.5 spaces
One bedroom	0.6 spaces	1 space
Two bedrooms	1.0 space	1.25 spaces
Three or more bedrooms	1.4 spaces	2 spaces

Car parking exceeding the requirements of the parking controls in the above table will not be excluded from the Gross Floor Area as defined in the KLEP.

- 10 For all other locations, car parking is to be provided in accordance with the parking rates in Section C Part 22R.1.
- Note:** A Traffic Impact Assessment is to accompany Development Applications that seek to vary the parking rates. This includes commercial or strata funded car share schemes in lieu of parking spaces.
- 11 At least one visitor car space is to be accessible and be provided within the site for every 6 apartments or part thereof, and is to comply with the dimensional and locational requirements of AS2890.6.
- 12 One visitor parking bay is to be provided with a tap, to make provision for on-site car washing.
- 13 A clearly signposted parking bay for temporary parking of service and removalist vehicles is to be provided. The space is to have the following standards:
- i) a minimum dimension of 3.5m x 6m;
 - ii) a minimum manoeuvring area 7m wide.
- Note:** Where a separate space can not be provided, one of the visitor spaces may be used as the service/removalist parking spaces provided it meets the dimensions stated in 13(i) and 13(ii) above.
- 14 At least one car share space is to be provided in the basement per 90 dwellings, or part thereof.
- Note:** any proposed reduction in car parking on the basis of providing car share space/s is to be justified by the proponent through supporting studies.
- 15 All parking bays are to be EV ready with design and construction (provision for conduits, switchboards, electrical capacity etc) to enable installation of electric vehicle charging points that are linked to each individual dwelling electricity meter.

7B.2 BICYCLE PARKING PROVISION

Further controls that may apply		
		SECTION C PART 22.7 - Bicycle Parking and Facilities

Objectives

- 1 To provide adequate bicycle parking that is safe and easily accessible.
- 2 To encourage the use of bicycles.

Controls

- 1 Onsite secure bicycle parking spaces and storage within basements is to be provided at the following rates:

Residents	Visitors
1 bicycle parking space per dwelling within the residential car park area - in the form of an individual locker or secure room as per AS2890.3.	1 bicycle parking space per 10 units or part thereof within the visitor car park area - in the form of a bicycle parking device or rack as per AS2890.3.

7C Building Design and Sustainability

- 7C.1 SEPP (Housing) 2021 and Apartment Design Guide Requirements
- 7C.2 Communal Open Space
- 7C.3 Ground Floor Apartments
- 7C.4 Apartment Mix and Accessibility
- 7C.5 Building Entries
- 7C.6 Building Form and Facades
- 7C.7 Building Storeys
- 7C.8 Top Storey Design and Roof Forms
- 7C.9 Laundry and Air Clothes Drying Facilities
- 7C.10 Fencing
- 7C.11 Acoustic Privacy
- 7C.12 Services

READ WITH
SECTION A PART 1 - Introduction 1B.1: Dictionary PART 7 - Residential Flat Buildings 7A.5: Building Separation PART 12 - Signage and Advertising
SECTION C PART 22 - General Access and Parking 22.1: Equitable Access PART 23 - General Building Design and Sustainability 23.3: Sustainability of Building Materials 23.4: Materials, Finishes and Colours 23.6: Building Services 23.7: General Acoustic Privacy 23.8: General Visual Privacy PART 25 - Waste Management

REFER TO
SEPP (Housing) 2021 APARTMENT DESIGN GUIDE PART 3F - Visual Privacy PART 4A - Solar and Daylight Access PART 4B - Natural Ventilation PART 4C - Internal Ceiling Heights PART 4D - Apartment Size and Layout PART 4E - Private Open Space PART 4F - Common Circulation and Spaces PART 4G - Storage

REFER TO
LIVABLE HOUSING DESIGN GUIDELINES



7C.1 SEPP (HOUSING) 2021 AND APARTMENT DESIGN GUIDE REQUIREMENTS

SEPP (Housing) 2021 APARTMENT DESIGN GUIDE

Part 3F - Visual Privacy
Part 4A - Solar and Daylight Access
Part 4B - Natural Ventilation
Part 4C - Ceiling Heights
Part 4D - Apartment Size and Layout
Part 4E - Private Open Space and Balconies
Part 4F - Common Circulation and Spaces
Part 4G - Storage

Objectives

- 1 To ensure that aspects of development controlled by SEPP (Housing) 2021 Apartment Design Guide comply with those standards.

Controls

- 1 All residential flat buildings are to comply with the objectives, Design Criteria and Design Guidance of the following *Apartment Design Guide* sections:
 - 3F Visual Privacy
 - 4A Solar and Daylight Access
 - 4B Natural Ventilation
 - 4C Ceiling Heights
 - 4D Apartment Size and Layout
 - 4E Private Open Space and Balconies
 - 4F Common Circulation and Spaces
 - 4G Storage

Note: Refer to SEPP (Housing) 2021 <https://legislation.nsw.gov.au/view/html/inforce/current/epi-2021-0714>

Note: Refer to Apartment Design Guide at <https://www.planning.nsw.gov.au/apartmentdesignguide> "SEPP (HOUSING) 2021" on page 19

7C.2 COMMUNAL OPEN SPACE

Further controls that may apply

SECTION A
PART 1B - Dictionary

Objectives

- 1 *To provide adequate safe, useable, attractive and accessible communal open spaces for residents.*
- 2 *To provide communal open space that adds to the amenity of the development and facilitates social interaction.*
- 3 *To provide communal open space that is responsive to the site and its context.*
- 4 *To ensure high quality communal open space that is well integrated within the development.*
- 5 *To provide a Primary communal open space that is of a size conducive to outdoor activities by families and groups.*
- 6 *To ensure that the design of communal open space protects the privacy of onsite and neighbouring residents.*
- 7 *To ensure occupants have direct access to sunlight within areas of communal open space.*
- 8 *To ensure early consideration of storage of equipment, access to water, ease of rubbish removal and effective drainage for garden maintenance.*

Controls

- 1 At least 10% of the site area is to be provided as communal open space. Each parcel of communal open space is to have a minimum dimension of 5m.
- 2 At least one single parcel of Primary communal open space is to be provided with the following requirements:
 - i) a minimum area of 80m²; and
 - ii) a minimum dimension of 8m.
- 3 The Primary communal open space is to be directly accessible from the internal common circulation areas.
- 4 The Primary communal open space is to be located at or above finished ground level behind the building line. Roof top Primary communal open space may be provided where the ground level cannot meet performance requirements or is undesirable.
- 5 Secondary communal open spaces are to have a minimum dimension of 5.0m and may be provided on roof tops.
- 6 Access to and within the Primary communal open space is to be provided for people with a disability Part 2 Section 7 of AS1428.
- 7 The location and design of the Primary communal open space is to optimise opportunities for active and passive social and recreation activities, solar access and orientation, summer shade, outlook, and maintain the privacy of residents on adjoining sites zoned differently for lower density residential development sites.
- 8 At least 50% of the area of the Primary communal open space and any Secondary communal open space are to receive direct sunlight for at least two hours between 9am and 3pm on 21st June.
- 9 Communal open space is to be integrated with any significant natural feature(s) of the site and soft landscaping areas.
- 10 The communal open space is to have surveillance from at least two onsite apartments for safety reasons.
- 11 Communal open space design is to avoid creation of concealment or entrapment areas.

Note: Communal open space is to be well lit with an energy efficient lighting system to be used in conjunction with timers or daylight controls. All light spill is prohibited.

7C.2 COMMUNAL OPEN SPACE (continued)

Objectives

- 9 *To prevent subterranean communal open areas.*

Controls

- 12 Shared facilities such as barbecue facilities, shade structures, play equipment and seating, are to be provided within the Primary communal open space.

Note: Selected items within communal open spaces are to be appropriate to the space and demonstrate consideration of the amenity of nearby apartments.

- 13 Garden maintenance storage areas, drainage and connections to water taps are to be provided with the Primary communal open space. Secondary communal open spaces are to have adequate connections to water for maintenance purposes.

Note: Proposals are to demonstrate entry and access to communal open spaces and common areas for maintenance purposes.

Note: Refer to Section A Part 1B Dictionary for definitions of Communal Open Space and Common Area.



Figure 7C.2-1:
Communal open space overlooked by adjacent apartments for casual surveillance.



Figure 7C.2-2:
Well designed communal open space with lighting and seating.

7C.3 GROUND FLOOR APARTMENTS

Further controls that may apply		
SECTION A PART 1B.1 - Dictionary		SECTION C PART 21.1 - Earthworks and Slope

Objectives

- 1 To ensure adequate outlook and amenity is preserved to all ground floor apartments and their private open space.
- 2 To enable access to private open areas from the common area.
- 3 To minimise excavation on the site for residential apartments.
- 4 To ensure ground floor apartments are designed to limit noise impacts of activities from adjacent areas.
- 5 To assist in preventing dampness and water ingress into buildings and to enable effective long term maintenance and servicing to all external walls of apartments.

Controls**Relationship to Ground Line**

- 1 Ground floor apartments are to be separated from noise sources such as common areas, communal open space and the public domain.
- 2 Ground and podium level apartments are to have private outdoor areas differentiated from communal areas by at least one of the following:
 - i) a change in level;
 - ii) walls to deflect noise;
 - iii) planting, such as hedges and low shrubs;
 - iv) a fence/wall to a maximum height of 1.8m. Any solid wall component is to be a maximum height of 1.2m with at least 30% transparent component above.
- 3 A gate is to be provided from each ground floor apartment private open space into common areas where practical.
- 4 Subterranean rooms are not permitted to any part of any apartment.
Note: Refer to Part 1B Dictionary for the definition of subterranean room.
- 5 No ground floor apartments are to be accommodated as a result of excessive excavation.
Note: Refer to Part 21.1 Earthworks and Slope for excavation, earthworks and retaining walls.
- 6 No part of any wall used to accommodate any residential apartment uses, including storage areas outside the apartment, is to be in direct contact with soil or rely on any form of tanking including spaces that act as tanking.
Note: Tanking is only acceptable to basement parking levels.
- 7 Tanking may only be provided to basement parking levels. Where basement storage is located adjacent to external walls, they are to be separated from the tanked wall by an accessible maintenance passage. (See Figure 7C.3-2)



Figure 7C.3-1
Level area outside living
space on sloping site

7C.3 GROUND FLOOR APARTMENTS (continued)

Controls

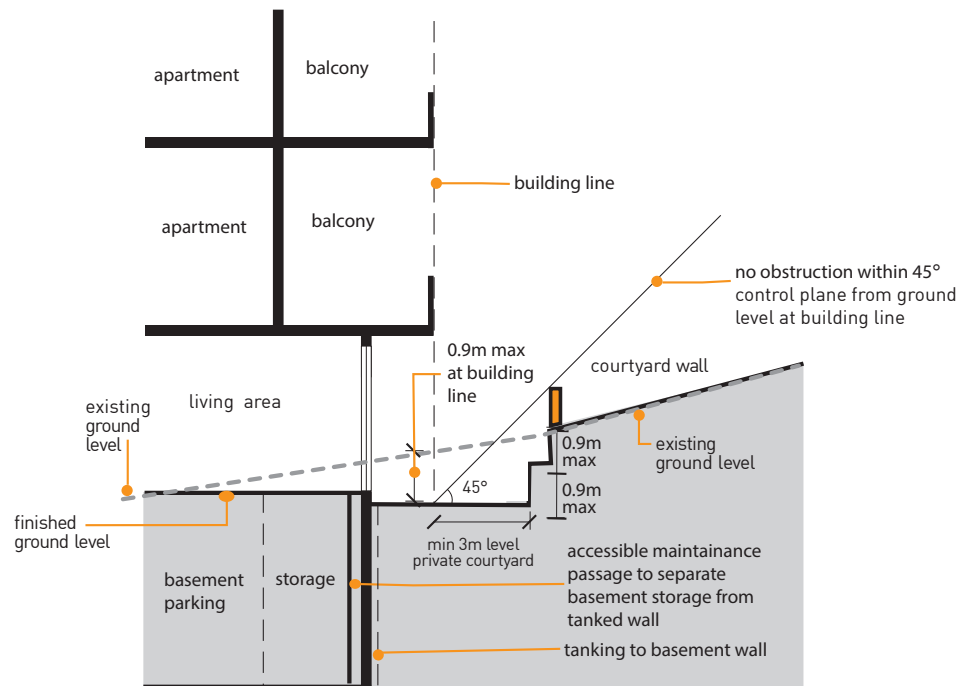


Figure 7C.3-2:
Ground floor apartments located below ground level

- 8 The internal finished floor level of any part of a ground floor apartment and/or private open space is not to be more than 0.9m below existing ground level at the building line.
- 9 Where the internal finished floor level of a ground floor apartment and/or private open space is not more than 0.9m below the existing ground level at the building line, the ground level adjacent to the building is to be levelled to the finished floor level for a distance of 3.0m from the building line (see Figure 7C.3-2).

Note: A step at the threshold for compliance with waterproofing requirements is acceptable.

Note: Thresholds to the primary private open space are to be accessible for all Platinum Level dwellings.
- 10 All obstructions, such as retaining walls or fences, are to be located below a 45° control plane, drawn from the finished ground level at the building line. Landscaping plants may project beyond the 45° control plane (see Figure 7C.3-2).

7C.4 APARTMENT MIX AND ACCESSIBILITY

Further controls that may apply

SECTION A
PART 1B.1 - DictionarySECTION C
PART 22.1 - Equitable access

Objectives

- 1 To increase housing diversity and choice within Ku-ring-gai through provision of a range of apartment sizes and types.
- 2 To increase the housing choice for seniors, people with disabilities and for families.
- 3 To promote flexible housing for all community members and for changing household requirements now and in the future as needs change due to ageing and disability.
- 4 To ensure all developments and dwellings incorporate Livable Housing Design Guide provisions and National Construction Code accessibility requirements, to and within dwellings, regardless of the steepness of a site.

Controls

- 1 A range of apartment sizes (one, two, three bedroom) and a mix of types are to be included within the development.
- 2 A mix of one, two and three-bedroom apartments are to be located on the ground level.

Accessible Housing

- 3 All units in the residential flat building development are to be of Silver Level, and 15% of those are to be of Platinum Level as indicated in the *Livable Housing Design Guideline*.

Note: For details on the *Livable Housing Design Guideline* refer to www.livablehousingaustralia.org.au.

- 4 All developments are required to meet the KDCP Livable Housing Design Guideline provisions and National Construction Code accessibility requirements regardless of steepness of site.

Note: This control applies to development on all sites including those that are steeper than 1:14.

- 5 All development is to provide an accessible path of travel:
 - i) from the street entry to the front door of each dwelling; and
 - ii) from the basement carparking to the dwelling entry; and
 - iii) from the dwelling to the primary communal open space and each type of room or space for use in common by the residents.

Note: Provision is to be made for wheelchair turning circles where required.

Note: The control above applies to all development regardless of the steepness of the site.

- 6 Where the internal finished floor level of a ground floor dwelling and/or private open space is not more than 0.9m below the existing ground level at the building line, the ground level adjacent to the building is to be levelled to the finished floor level for a distance of 3.0m from the building line.

Note: A step at the threshold for compliance with waterproofing requirements is acceptable, however thresholds to the primary private open space are to be accessible for all Platinum Level dwellings.

- 7 For Platinum level units with more than one level, an internal lift is to be provided to allow access to all levels.

Note: Provision of a lift is not in lieu of accommodating Platinum Level provisions required at the dwelling entry level.

- 8 Chair lifts, platform lifts and the like are not permitted on internal and external communal/shared paths and circulation areas. Where lifts are required they are to be constructed within lift shafts with full weather protection for users.

7C.5 BUILDING ENTRIES

Further controls that may apply

SECTION C
PART 22.1 - Equitable access

Objectives

- 1 To ensure the building entry and address is a clear and identifiable element in the street and is safely accessible to all.
- 2 To ensure the building entry contributes positively to the streetscape and building facade design.
- 3 To provide direct legible, safe and pleasant entry to internal circulation spaces.
- 4 To provide adequate common circulation spaces to allow for the easy removal of furniture and to satisfy access and egress.
- 5 To ensure mail boxes are appropriately located.
- 6 To soften the impact of hard landscaping within the site.



Figure 7C.5-1:
Extensive use of glazing to stairway area assists to identify entries.

Controls

- 1 The residential flat building entry is to be clearly expressed using appropriate architectural elements.
- 2 Buildings are to address the street by providing visible entry points with the following:
 - i) main building entrances that are level and directly accessible from the street; or,
 - ii) where site configuration is conducive to having a side entry, the path to the building entrance is readily visible from the street, and the building entrance is signalled with appropriate architectural elements.
- 3 Entry foyers are to be no more than 1m above ground level. Any ramped access required is to be integrated into the design of the building or landscape. Mechanical chairlifts and the like will not be accepted.
- 4 Buildings are to have a clearly visible building entry for each vertical circulation core with clear way-finding signs integrated into the external circulation pathway system.
- 5 The building entry is to be legible and integrated with horizontal and vertical building facade architectural elements. At street level, the entry is to be articulated with awnings, porticos, recesses or projecting bays for clear identification.
- 6 All entry areas are to be well lit and designed to avoid any concealment or entrapment areas and avoid dog leg entry foyers. All light spill is prohibited.



Figure 7C.5-2:
Clear signage to building entry.



Figure 7C.5-3:
Clear signage to apartments.

7C.5 BUILDING ENTRIES (continued)

Controls

- 7 Lifts are to be directly visible from the building entry doorway.
- 8 Lockable mail boxes are to be:
 - i) provided close to the street; and
 - ii) be at 90 degrees to the street and to Australia Post standards; and
 - iii) integrated with front fences or building entries.
- 9 On large development sites comprising multiple separate buildings, each building is to have its own clear entry with good sightlines. Way-finding signs are to be provided.
- 10 All entries are to be integrated into the external circulation pattern of the development.
- 11 Buildings on corner sites are to address both street frontages and provide entry points and direct level access from both street frontages.
- 12 Building entry paths are to be minimum 1.2m wide and located within the common area with a minimum dimension of 1.2m on either side for landscape planting. Paths are to provide extra width at building entries to allow easy passing between pedestrians and to allow effective turning.

Note: This may result in increased side setbacks.
- 13 All common circulation corridors are to be at least 1.5m wide, and the area outside lifts is to be at least 1.8m wide.



Figure 7C.5-4:
Well defined residential
entry integrated with
the building facade
design.

7C.6 BUILDING FORM AND FACADES

Further controls that may apply

PART 1B - Dictionary
PART 12 - Signage and
Advertising

SECTION C
PART 23 - General Building Design
and Sustainability
PART 23.3 - Sustainability of
Building Materials
PART 23.4 - Materials, Finishes
and Colours
PART 23.6 - Building Services

Objectives

- 1 To promote well-designed buildings of high architectural quality that contribute to the desired local character.
- 2 To ensure the 3-dimensional built form and the setback is clearly articulated to reduce the bulk and scale of the building.
- 3 To limit the unarticulated length of buildings.
- 4 To create a garden setting for the building, in keeping with the Ku-ring-gai landscape character.
- 5 To create building facades that are environmentally responsive.
- 6 To integrate building elements into the overall building form and facade design.
- 7 To ensure air conditioning and tele communication devices are concealed and do not detract from, or clutter the building's visual quality.
- 8 To ensure that building facade design contributes to the safety of the public domain.
- 9 To demonstrate appropriate levels of architectural detail that will achieve the desired urban character of Ku-ring-gai.

Controls

- 1 All building facades at ground level are to be designed to avoid the creation of entrapment areas.
- 2 No single wall plane is to exceed 81m² in area.
- 3 The following are to be avoided on all building elevations:
 - i) large flat walls;
 - ii) undifferentiated window openings;
 - iii) applied treatments;
 - iv) one single predominant finish or material.
- 4 All facades are to place entries, habitable room windows, and balconies so that they maximise outlook and passive surveillance of the street and to common areas surrounding the building.
- 5 All building elements including shading devices, signage, drainage pipes awnings/colonnades and communication devices are to be coordinated and integrated into the overall facade design.
Note: Refer to Section A Part 12 Signage and Advertising for other signage controls.
- 6 Telecommunication structures are to be located within roof structures or basements and not be visible from any road or public domain area.
- 7 Screening between adjacent apartments is to be integrated into the overall building design.
- 8 Notches, slots or indentations in the perimeter of the building are to be at least as wide as they are deep.
- 9 Facade elements that result in poor architectural design outcomes for internal spaces, such as snorkel windows, are not permitted.
Note: Refer to Section A Part 1B Dictionary for definition of snorkel window.
- 10 All facades are to be designed to minimise on-going maintenance and weathering through measures such as:
 - i) selecting appropriate robust materials/finishes; and
 - ii) including appropriate building edge, balcony edge, sill, head and parapet detailing that demonstrates protection from prevailing weather and harsh solar aspects.

Objectives

- 10 To enable the building facade openings to directly relate to the street frontage and to the common open landscaped gardens around the building.
- 11 To provide private open spaces that are integrated into the overall design of development.
- 12 To co-locate sustainable design features as integrated building elements which enhance the buildings appearance.
- 13 To ensure openings and articulation on the elevations do not compromise the liveability of the internal areas.
- 14 To provide distinct building articulation on corner sites that reinforce the street intersection and create a unique memorable building that supports urban wayfinding.

Controls

Facade Articulation

- 11 All building facades are to be articulated with wall planes varying in depth by not less than 0.6m, and supplemented with architectural elements.
- 12 Facade articulation is to be well composed with attractive proportions and coherent rhythms and integrated into the building form and structure. Methods of achieving articulated facades include:
 - i) defining a base, middle and top relating to the overall proportion of the building;
 - ii) expressing the internal building layout or structure, such as vertical bays or party walls;
 - iii) using a variety of window types to create rhythm or express the building uses;
 - iv) using recessed balconies and deep windows to add visual depth;
 - v) use of eaves, louvres and sun shading devices to openings.
 - vi) using elements that cast shadow and accentuate the appearance of depth;
 - vii) using changes of material, texture and colour integrated with the building articulation to break down large or repetitive facades and reduce the bulk and scale of the building.
- 13 Blade walls are not to be the sole element used to provide articulation.
- 14 All developments are to utilise shading/glare control devices to articulate the facade and contribute to the streetscape. Design solutions can include:
 - i) providing external horizontal shading to north-facing windows, such as eaves, overhangs, pergolas, awnings, colonnades, upper floor balconies, and/or deciduous vegetation;
 - ii) providing vertical shading to east and west windows, such as sliding screens, adjustable louvres, blinds and/or shutters;
 - iii) providing shading to glazed and transparent roofs;
 - iv) integration of shading devices with solar energy collection technology.



Facade articulation to be 0.6-2.5m in depth.

Single wall plane to be 81m² or less in area.

Figure 7C.6-1:
Controls for building facade articulation.

7C.6 BUILDING FORM AND FACADES (continued)

Controls

Building Length

- 15 The continuous length of a single building on any elevation is not to exceed 36m.
- 16 The length of a single building elevation facing the side or rear boundary may exceed 36m provided that:
 - i) the façade is recessed in depth and width to appear as distinctive and separate building bays or wings; and
 - ii) the recess is retained as common area with landscaping which includes at least one medium tree (at least 8m canopy diameter at maturity).

Balconies

- 17 Balcony or terrace design may incorporate building elements such as pergolas, sun screens, shutters, operable walls and the like to respond to the street context, building orientation and residential amenity. The use of such building elements are not to enable the balcony or terrace to be used as a habitable room.
- 18 Balconies that run the full length of the building facade are not permitted.
- 19 Continuous transparent or translucent balustrades are not permitted to balconies or terraces.
- 20 Balconies are not to project more than 1.5m from the outermost wall of the building facade.

Note: Refer to Part 23.4 Materials and Finishes, Control 22 for further requirements on balconies.

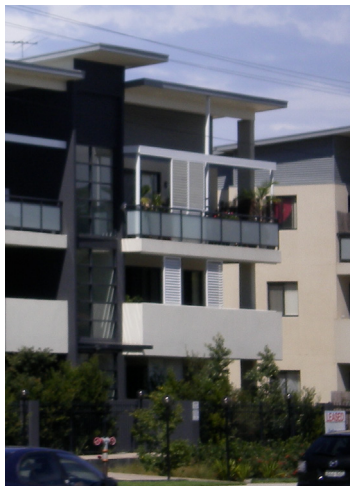


Figure 7C.6-2:
Building layout expressed through vertical facade articulation and elements.



Figure 7C.6-3:
Well articulated building facade with the use of balconies. Sun shading devices incorporated into the balcony design for solar access control.



Figure 7C.6-4:
Good building facade proportion created by a distinctive base.

7C.6 BUILDING FORM AND FACADES (continued)

Controls

Corner Sites

- 21 Street corners are to be emphasised architecturally by accentuating parts of the building facade. This may be through:
- i) changes in height, colour or facade materials;
 - ii) changes at the corner;
 - iii) change in building articulation;
 - iv) facade orientation;
 - v) change in roof expression;
 - vi) splayed setbacks or curves;
 - vii) providing corner building entries.



Figure 7C.6-5:
Partially recessed balconies add visual interest to the facade.



Figure 7C.6-6:
Distinct form to highlight the building corner.

7C.7 BUILDING STOREYS

Objectives

- 1 To ensure that buildings are responsive to the site.
- 2 To provide for quality dwelling interior spaces and private open space areas.
- 3 To ensure roof articulation, lift overruns and services are incorporated into the allowable building height.
- 4 To ensure additional height is available at the ground level to solve the relationship of the building to the topography.

Controls

- 1 Sites with the following maximum building heights under the KLEP are to have a maximum number of storeys above the basement as in the table below and illustrated in Figure 7C.7-1:

Maximum building height (m)	Maximum number of storeys
11.5	3
14.5	4
17.5	5
20.5	6
23.5	7

Note: The 1st storey is measured from a maximum 1m above the existing ground level.

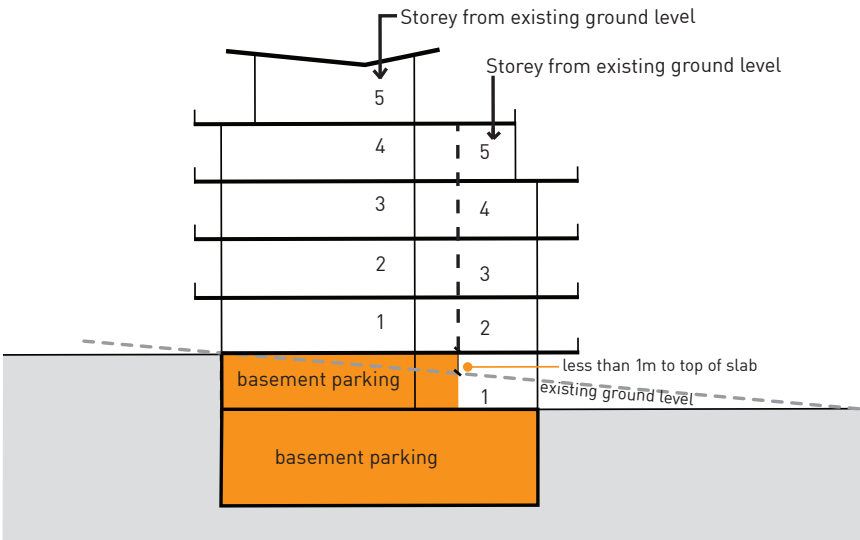


Figure 7C.7-1
Building Storeys

- 2 On steep sites, the size of the floor plate is to reflect the topographic constraints.

Note: Smaller stepping floor plates can assist to negotiate the topography.

Note: Accomodating building storey levels through excavation and creation of subterranean rooms to ground floor apartments will not be accepted

7C.8 TOP STOREY DESIGN AND ROOF FORMS

Objectives

- 1 To ensure that the design of the top floor of buildings minimises visual bulk.
- 2 To ensure that the design and location of the top floor minimises overshadowing.
- 3 To contribute to the overall design and environmental performance of buildings.
- 4 To differentiate the visual appearance of the top floor of the residential flat building from the floors below.



Figure 7C.8-3:
The upper storeys of the building articulated with mezzanine penthouse.



Figure 7C.8-4:
Distinctive roof design.

Controls

- 1 The top storey of a building is to be designed so that:
 - i) the GFA of the top storey of a residential flat building does not exceed 60% of the GFA of the storey immediately below it (see Figure 7C.8-1); and
 - ii) for the purposes of this section, the top storey applies to the building as a whole and does not apply to the top level of each part of a stepped building (see Figure 7C.8-2).

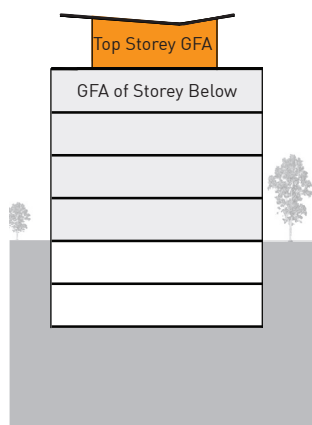


Figure 7C.8-1:
Top storey floor area calculation for level sites.

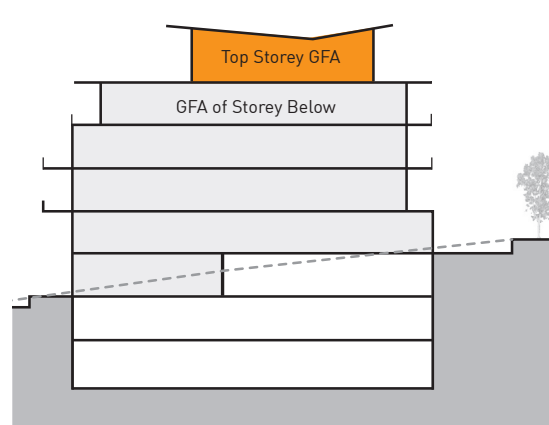


Figure 7C.8-2:
Top storey floor area calculation for sloping sites.

- 2 The top storey of a building is to be set back a minimum of 2.4m from the outer face of the floors below on all sides (roof projection is allowed beyond the outer face of the top storey).

Note: Lift cores are to be located internally within the building to facilitate the top storey setback
- 3 The upper storeys of residential buildings are to be articulated with differentiated roof forms, maisonettes or mezzanine penthouses and the like.
- 4 Service elements are to be integrated into the overall design of the roof and not be visible from the public domain or any surrounding development. These elements include lift overruns, plant equipment, air conditioning units, chimneys, vent stacks, water storage, communication devices and signage.
- 5 Roof design is to respond to solar access and prevailing weather with the use of eaves, skillion roofs, awnings and the like with a minimum overhang of 0.6m.
- 6 Where solar panels are provided they are to be integrated into the roof line or elevation.
- 7 Lightweight pergolas, sun screens, privacy screens and planters are permitted on the roof or podium, provided they are integrated with the building and facade design and do not increase the bulk of the building, create visual clutter or impact on significant views from adjoining properties.
- 8 Roof top gardens for private or communal use are encouraged.

7C.9 LAUNDRY AND AIR CLOTHES DRYING FACILITIES

Objectives

- 1 To ensure buildings maximise the opportunities for sun and wind drying of clothes and reduce the use of electric dryers.
- 2 To provide external air clothes drying areas that do not detract from the visual appearance of the building and common areas.

Controls

- 1 Each apartment is required to have access to an external air clothes drying area, such as a screened balcony, a terrace or clothes lines within the common area (see Figure 7C.9-1).
- 2 All external air clothes drying areas are to be screened and not be visible from any public domain area.
- 3 Storage volume calculation within laundries is to exclude the space required to accommodate a washing tub, washing machine and dryer.
- 4 Where clothes drying is provided within private open space within a communal open space, its area is to be additional to that required for the private open space or communal open space.

Screened area is concealing clothes line from public domain



Figure 7C.9-1:
Screened balconies for external air clothes drying area.

7C.10 FENCING

Objectives

- 1 *To ensure fencing design responds to the character of the streetscape in terms of:*
 - i) *open landscape character;*
 - ii) *visibility and security;*
 - iii) *materials selection;*
 - iv) *solid or transparent qualities;*
 - v) *height;*
 - vi) *vertical and horizontal composition of the materials; and/or*
 - vii) *location of entries and gates.*
 - viii) *noise sources*
 - ix) *topography*
- 2 *To ensure that fencing does not detract from the overall visual amenity and character of the area.*
- 3 *To ensure on site fencing and courtyard walls are integrated with the built form and provide separation and privacy to the private open areas.*

Controls

- 1 Front boundary fences and walls (to a public street) and side boundary fences within the street setback are not to be higher than:
 - i) 0.9m if of closed construction (such as masonry, lapped and capped timber or brushwood fences); or
 - ii) 1.2m if of open construction (such as open paling and picket fences).

Note: Open fencing includes: panels set into a timber frame or between brick piers, where any solid base is not taller than 0.9m, and panels are spaced pickets, palings, or lattice.
- 2 Closed front fences with a maximum height of 1.8m may be considered where the site fronts a busy road or other sources of undesirable noise. These fences are to be set back at least 2m from the front boundary and screened by landscaping.

Note: Rendered masonry boundary walls are generally inappropriate to the landscape character of Ku-ring-gai.
- 3 Fences and walls are to step down and follow the natural contours of the site.
- 4 Hedges and shrub planting are preferred to the street frontage, but no higher than 1.2m along the entire front boundary, or 1.8m on a site fronting a busy road.
- 5 All fencing is to be designed to highlight entrances, and be compatible with buildings and letterbox areas.
- 6 External finishes for fencing are to be robust and graffiti resistant.
- 7 Groundfloor private open space, courtyard and terrace wall and fence heights are not to exceed
 - i) 1.2m to any street frontage
 - ii) 1.8m to any side or rear boundary with a maximum 1.2m high solid component and a minimum 30% transparent component above.

7C.11 ACOUSTIC PRIVACY

Further controls that may apply

SECTION C
PART 23.7 - General Acoustic
Privacy

Objectives

- 1 *To ensure high standards of acoustic privacy to habitable rooms and private open space both within the development and to neighbouring development.*

Controls

- 1 For requirements on noise levels associated with air conditioning, kitchen, bathroom, laundry ventilation, or other mechanical ventilation systems and other plant refer to Part 23.8 of this DCP.

7C.12 SERVICES

Further controls that may apply		
		SECTION C PART 23.6 - Building Services PART 25 - Waste Management

Objectives

- 1 All developments are to design and locate utility infrastructure to minimise their impact on the streetscape.

Controls

- 1 All developments are to make provision for waste and recycling storage and collection within the building basement.
- 2 Building services, including within basements and on rooftops, are not to be visible from the public.

MIXED USE DEVELOPMENT

Introduction

8A Site Design

- 8A.1 Local Character and Streetscape
- 8A.2 Site Layout
- 8A.3 Building Setbacks
- 8A.4 Building Separation
- 8A.5 Wind Impact
- 8A.6 Site Coverage
- 8A.7 Deep Soil Landscaping

8B Access and Parking

- 8B.1 Vehicle and Service Access and Loading Facilities
- 8B.2 Car Parking Provision
- 8B.3 Bicycle Parking and Support Facilities Provision

8C Building Design and Sustainability

- 8C.1 Solar Access and Daylight
- 8C.2 Natural Ventilation
- 8C.3 Room Sizes
- 8C.4 Apartment Mix and Accessibility
- 8C.5 Building Entries
- 8C.6 Internal Common Circulation Areas
- 8C.7 Roof Forms and Podiums
- 8C.8 Communal Open Space
- 8C.9 Building Facades and Articulation
- 8C.10 Ground Floor Commercial Uses
- 8C.11 Awnings
- 8C.12 Colonnades
- 8C.13 Internal Ceiling Heights
- 8C.14 Visual Privacy
- 8C.15 Acoustic Privacy
- 8C.16 Late Night Trading
- 8C.17 External Air Clothes Drying Facilities

8C.18 Services

INTRODUCTION

The objectives and controls in this Part guide development of retail, business and mixed use buildings in meeting the aims and objectives within the KLEP.

Mixed use buildings, as defined in the KLEP, are located within the **E1** Local Centres, **MU1** Mixed Use and B1 Neighbourhood Centres, and are composed of a mixture of two or more of the following uses:

- i) retail or business premises at ground and lower levels; and
- ii) residential apartments on upper levels; and/or
- iii) offices on upper levels.

Mixed use developments provide for a variety of uses and activities within a building. They encourage use of the locality, particularly at street level, outside the working day, adding vibrancy and life to the streets and increased levels of surveillance and safety. A mix of uses within the same building are best located when retail and business activity at ground level and lower levels to street frontages assist street activation, and residential uses requiring privacy and noise mitigation are located on upper levels.

Mixed Use developments are to consider the controls and objectives within Part 14 Urban Precincts and Sites. Where there is an inconsistency between the controls in this Part 8 and Part 14, then the latter prevails to the extent of the inconsistency.

Where a development in the **E1** Local Centre, or **MU1** Mixed Use, is proposed to only incorporate commercial uses with no residential component, the proposal is to comply with and will be assessed under the controls for Non-Residential and Office Buildings in Part 9 of this DCP.

Where a proposed development only incorporates residential purposes, it is considered as a Residential Flat Building and is to comply with and will be assessed under Part 7 of this DCP.

If a proposed mixed use development provides residential dwellings to any part of the ground floor street frontage, then it will be considered a Residential Flat Building and assessed under Part 7 of this DCP. To be considered as a Mixed Use building, the development has to provide commercial uses to the entire ground floor street frontage with associated active street frontage.

Single use developments are not to compromise the achievement of the projected land use and density envisaged by the KLEP for the medium term.

Where a development only involves refurbishment works or alterations/additions to existing buildings, new elements are to meet the requirements of this Part.

INTRODUCTION (continued)

SEPP (Housing) 2021, stipulates nine design quality principles which are to be achieved by the residential component of mixed-use buildings. These are as follows:

- i) Principle 1: Context and neighbourhood character
- ii) Principle 2: Built form and scale
- iii) Principle 3: Density
- iv) Principle 4: Sustainability
- v) Principle 5: Landscape
- vi) Principle 6: Amenity
- vii) Principle 7: Safety
- viii) Principle 8: Housing diversity and social interaction
- ix) Principle 9: Aesthetics

In addition, the following aspects of residential flat building development are to be consistent under *(Housing) 2021* and the associated *Apartment Design Guide*: visual privacy, solar and daylight access, natural ventilation, ceiling heights, apartment size and layout, private open space and balconies, common circulation and spaces, and storage.

The aims of this Part are to:

- i) Ensure that development is in keeping with the garden character and high quality built environment of Ku-ring-gai by making provision for quality landscaping, including tall trees to the streetscape.
- ii) Encourage development which harmonises with and contributes to the landscape and is sympathetic to the street and locality in which it is proposed.
- iii) Ensure that with each development the public domain aspect supports and contributes to the conservation and replenishment of the tree canopy of Ku-ring-gai, including locally occurring native tree species suited to the site.
- iv) Protect and minimise the impact of development on adjoining properties
- v) Protect and minimise the impact of development on the natural environment
- vi) Ensure development that minimises the depletion of raw materials and non-renewable resources
- vii) Ensure that development meets the needs of the present without compromising the ability of future generations to meet their own need.
- viii) Encourage development of the highest possible architectural, environmental and amenity standards.

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8A

Site Design

8A.1

Local Character and Streetscape

8A.2

Site Layout

8A.3

Building Setbacks

8A.4

Building Separation

8A.5

Wind Impact

8A.6

Site Coverage

8A.7

Deep Soil Landscaping

READ WITH
SECTION A PART 2 - Site Analysis
SECTION B PART 21 - General Site Design

REFER TO
LIVABLE HOUSING DESIGN GUIDELINES

REFER TO
SEPP (HOUSING) 2021 APARTMENT DESIGN GUIDE



8A.1 LOCAL CHARACTER AND STREETScape

Further controls that may apply:

SECTION A

PART 2 – Site Analysis

SECTION C

PART 21 – General Site Design

Objectives

- 1 *To ensure the development is sensitive to the landscape setting, environmental conditions and established character of the street and locality.*
- 2 *To ensure the development conserves and enhances the visual character of the street with particular reference to integration of:*
 - i) *architectural themes;*
 - ii) *building scale and setbacks; and*
 - iii) *landscape themes.*
- 3 *To ensure development provides a positive contribution to the public domain and all areas shared by the community.*
- 4 *To ensure that the visual, scenic and environmental qualities on visually prominent sites are maintained.*

Controls

- 1 All mixed use developments are to be designed by an architect registered with the NSW Architects Registration Board.

Visual Character

- 2 Design components of new development are to be based on the existing predominant and high quality characteristics of the local neighbourhood.
- 3 The appearance of the development is to maintain the local visual character by considering the following elements:
 - i) visibility of on-site development when viewed from the street, public reserves and adjacent properties; and
 - ii) relationship to the scale, layout and character of the streetscape of Ku-ring-gai.
- 4 The predominant and high quality characteristics of the local neighbourhood are to be identified and considered as part of the site analysis at Part 2 of the DCP.

Note: Local character and streetscape is created by many features including, but not limited to: kerbs, setbacks, footpath treatment, building separation and spaces between buildings, access arrangements, street tree planting, tall tree canopy backdrop to the horizon, native vegetation and gardens, topography, site and street geometry, as well the architecture.

Public Domain and Communal Space

- 5 Development is to integrate with surrounding sites by:
 - i) being of an appropriate scale retaining consistency with the surrounds when viewed from the street, public domain or adjoining development;
 - ii) minimising overshadowing; and
 - iii) integrating built form and soft landscaping (gardens and trees) within the tree canopy that links the public and private domain throughout Ku-ring-gai.

8A.1 LOCAL CHARACTER AND STREETScape (continued)

Controls

Visually Prominent Sites

- 6 Development on visually prominent sites is to:
- i) be of high architectural and aesthetic quality;
 - ii) be integrated into the existing landscape through the site planning process and avoid tall and bulky structures;
 - iii) have a selection of external colours and finishes that are sensitive to the site and locality;
 - iv) retain significant landscape and vegetation elements;
 - v) consider views to the site as well as those from the site; and
 - vi) soften visual impact by extensive landscaping including tall and medium sized trees and shrubs.
- Note:** Refer to Part 1B Dictionary for definition of Visually Prominent Sites.
- 7 Colours of materials used in sites adjoining or in close proximity to bushland areas and Heritage Conservation Areas are to be in harmony with the built and natural landscape elements of the area.

8A.2 SITE LAYOUT

Further controls that may apply

SECTION A PART 2 - Site Analysis

SECTION B PART 20 - Development Near Rail Corridors and Busy Roads

SECTION C PART 21 - General Site Design PART 23.7 - General Acoustic Privacy

Objectives

- 1 *To ensure fundamental design decisions are appropriate to the site.*
- 2 *To ensure detailed design decisions are founded on an appropriate site strategy determined through site analysis.*
- 3 *To ensure that site planning for mixed use buildings responds to site attributes such as streetscape, character, existing vegetation and topography.*
- 4 *To ensure high impact elements such as noise sources are considered early in the design stage*
- 5 *To achieve a high standard of amenity for future residents.*
- 6 *To minimise impacts on the amenity of neighbouring sites.*
- 7 *To reduce the appearance of building mass and scale.*
- 8 *To ensure driveways blend into a landscaped setting and are not a dominant feature of the development.*
- 9 *To ensure provision of a clear and legible address into the development.*
- 10 *To provide safe and continuous pathway from the street to the ground floor dwelling entry point*

Controls

- 1 The site layout is to demonstrate a clear and appropriate design strategy and arrangement of building mass in response to the Site Analysis in Part 2 Site Analysis of this DCP. Demonstration of design strategies based on Site Analysis is to include:
 - i) building location and orientation on the site optimising the northern aspect, and relating to neighbouring developments, geographical aspect, views, access etc;
 - ii) response of building development in maintaining site characteristics within the subject site, such as topography, vegetation, significant trees, any special features, etc.
 - iii) internal layouts of buildings that respond to (i) above and be consistent with the requirements of the DCP
 - iv) limited apartments with no direct sunlight.
- 2 A drawing and supporting written information is to demonstrate how the building and its layout has applied and responded to the site analysis conducted in Part 2 of this DCP.
- 3 For requirements on development near noise sources refer to Section B Part 21 Development Near Rail Corridors and Busy Roads in this DCP
- 4 Any building with a frontage to the street is to address that street.
- 5 Where a site has two or more frontages, the buildings are to address and provide entry points from all street frontages.
- 6 Onsite buildings and fences/courtyard walls are to be staggered and provide landscaping, including canopy trees, in between them.
- 7 Hard landscaping is to be minimised and to maximise opportunities for landscape planting.
- 8 Long straight driveways are not permitted. Driveways are to be designed to be of minimal visual impact and minimal heat emission.
- 9 Provide a single pedestrian entry point from the street. Other enteries may be permitted where several buildings address the street along an extended street or dual frontage sites.

Note: Councils Standard Conditions are imposed on every development consent. Consideration early in the design process is to be given to incorporating these into the development proposal. .

8A.2 SITE LAYOUT (continued)

Objectives

- 11 *To ensure building facades address the public domain and give direct access from both primary and secondary streets.*
- 12 *To ensure mixed use developments contribute to the streetscapes through high quality and varied elevations.*
- 13 *To ensure developments provide architectural merit and variation to the street elevation.*

Controls

8A.3 BUILDING SETBACKS

Further controls that may apply

SECTION A PART 2 - Site Analysis

SECTION B PART 14 - Urban Precincts and Sites

Objectives

- 1 To reinforce the urban character of the commercial areas.
- 2 To ensure a consistent streetscape character along the main commercial streets.
- 3 To reduce the visual bulk of buildings from the street.
- 4 To maintain the alignment and rhythm of the built form on the street.
- 5 To ensure building setbacks at all levels respond to site conditions, the local topography and views through the site.
- 6 To ensure that new development is of a scale that supports the desired area character with appropriate massing and spaces between buildings.

Controls

Street setbacks

- 1 In **E1** and **MU1** zones, mixed use buildings are required to be built to the street alignment with a zero setback, except when variations are stated in Part 14 Urban Precincts and Sites. These variations facilitate building articulation, modulation, the provision of landscaped setbacks and the development of appropriate building forms. Setbacks within **E1** zones warrant merit consideration.
- 2 Mixed use buildings on sites in the R4 zone where commercial uses are permitted under Schedule 1 of the KLEP, are to provide street setbacks as specified in Part 14 Urban Precincts and Sites of this DCP.

Side and rear setbacks

- 3 In **E1** and **MU1** zones, mixed use buildings are generally not required to provide side and rear setbacks, except where variations are required as specified in Part 14 Urban Precincts and Sites of this DCP. These variations are designed to facilitate building articulation, modulation and the provision of new or widened streets and through-site pedestrian walkways.
- 4 Where building separation is provided for residential components, it is to meet building separation controls under Part 8A.4.
- 5 Mixed Use buildings on sites in the R4 zone where commercial uses are permitted under Schedule 1 of the KLEP, are to provide minimum 6.0m side and rear setbacks and meet the building separation requirements of Part 8A.4 of this DCP



Figure 8A.3-1:
Consistent building alignment at the street level in the commercial area.

8A.4 BUILDING SEPARATION

Objectives

- 1 To ensure that the new development scaling, massing and spacing between buildings support the desired local area character and the Ku-ring-gai landscaped garden character.
- 2 To provide building form and layout that minimises overshadowing of adjacent properties and open space.
- 3 To provide building configuration that facilitates the provision of useable communal open space, private open space landscaping and view corridors.
- 4 To maximise view sharing.
- 5 To configure buildings to protect and enhance visual and acoustic privacy for occupants and adjacent residents.

Controls

- 1 The minimum separation between a residential component of the building and any neighbouring building on the development site is to comply with the following controls:

Buildings up to 4 storeys over the podium (see *Figure 8A.4-2*)

- i) 12m between habitable rooms/balconies;
- ii) 9m between habitable rooms/balconies and non-habitable rooms;
- iii) 6m between non-habitable rooms.

Buildings of 5 to 8 storeys over the podium (see *figure 8A.4-2*)

- iv) 18m between habitable rooms / balconies;
- v) 13.5m between habitable room / balcony and non habitable room;
- vi) 9m between non-habitable rooms.

Buildings 9 storeys or more over the podium

- vii) 24m between habitable rooms
- viii) 18m between habitable room / balcony and non habitable room;
- ix) 12m between non-habitable rooms.

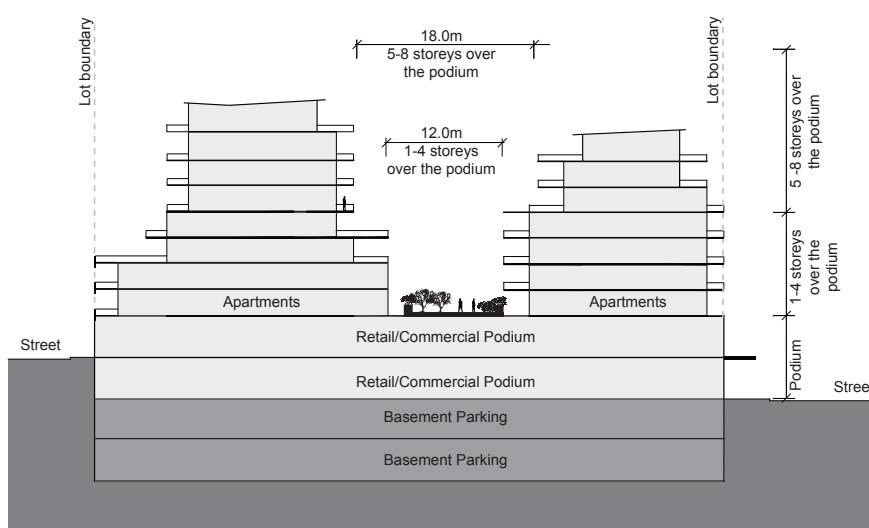


Figure 8A.4-1:
Minimum building separation controls for residential buildings of 1-4 storeys and 5-8 storeys (over commercial podium).

8A.4 BUILDING SEPARATION (continued)

Controls

- 2 For all non-residential developments adjacent to residential developments:
 - i) the retail, office and commercial balconies are to be treated as habitable rooms and provide the same building separation required in 8A.4(1);
 - ii) the service and plant areas are to be treated as non-habitable rooms and provide the same building separation required in 8A.4(1);

Note: refer to section 8C.15 Acoustic Privacy.
- 3 Office developments adjacent to residential developments are to demonstrate that the adjoining residential development retains adequate visual and acoustic privacy, access to sunlight, outlooks and that the massing of the building is appropriate to the character of the locality.



Figure 8A.4-2:
Adequate separation between buildings to ensure visual and acoustic privacy.

8A.5 WIND IMPACT

Further controls that may apply

SECTION A

PART 8C.7 - Roof Forms and Podiums

PART 8C.8 - Communal Open Space

Objectives

- 1 To ensure that new developments maintain comfortable and safe conditions at street level for pedestrians.
- 2 To ensure useability of open terraces and balconies within developments.

Controls

- 1 New buildings are to be located and designed to ensure public pedestrian areas, recreation facilities, podiums, terraces and communal open areas are protected from wind generation and strong wind speed caused by the development.
- 2 Developments are to integrate wind deflection features to preserve the useability and amenity of open spaces within and around the development.

Methods of achieving wind impact mitigation include (see Figure 8A.5-1):

- i) Use of building facade design and setbacks to deflect downwards drafts;
- ii) Awning and colonnade design to deflect winds away from footpaths, podiums, terraces and communal open spaces;
- iii) Use of vegetation and tree canopy as buffer to the street level from winds.

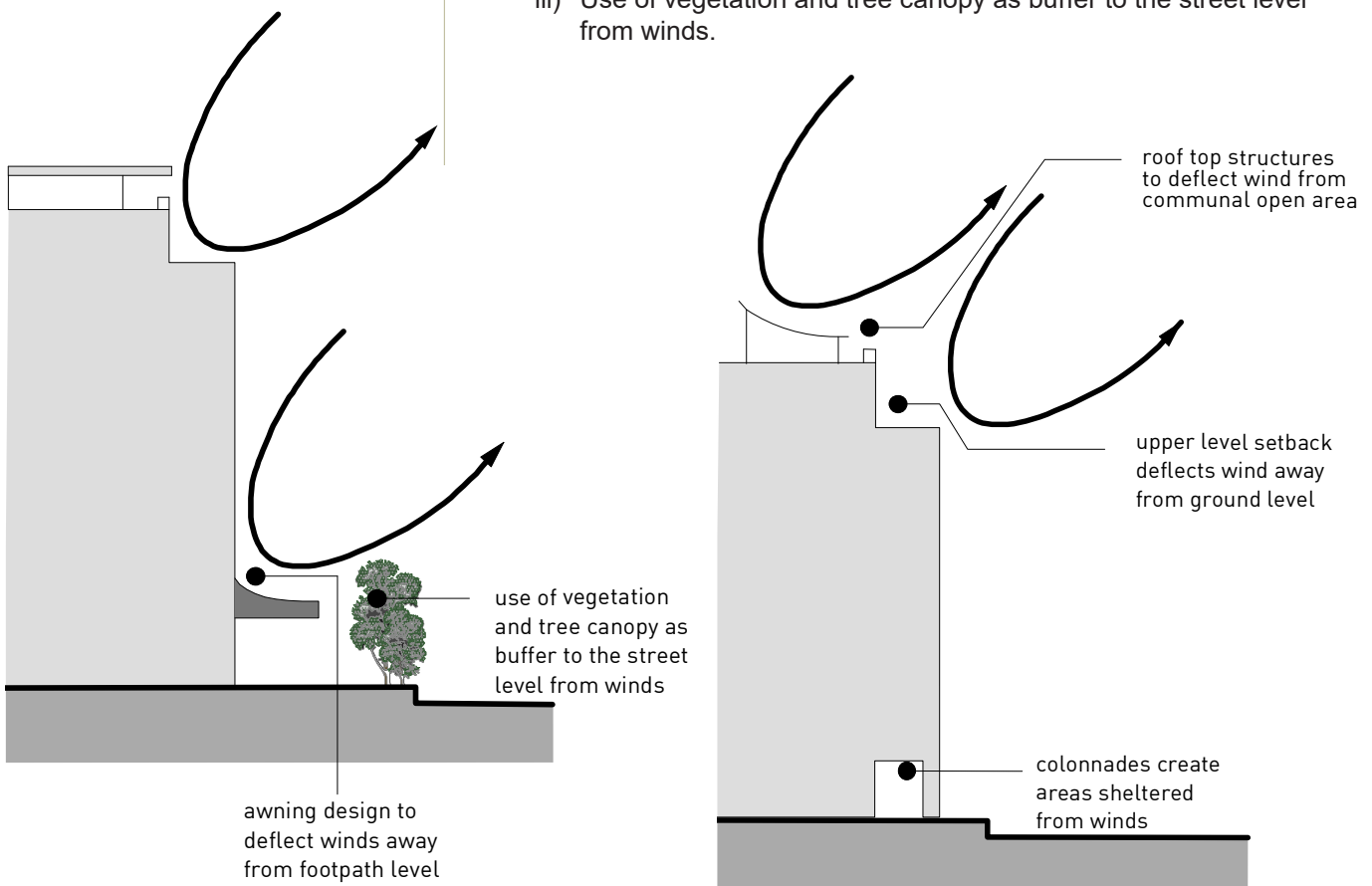


Figure 8A.5-1:
Examples of wind mitigation measures.

8A.6 SITE COVERAGE

Further controls that may apply		
SECTION A PART 1B.1 - Dictionary	SECTION B PART 14 - Urban Precinct and Sites	

Objectives

- To ensure a pattern of built form and landscaped areas that is consistent with the planned future character of the area.*
- To protect and improve the tree canopy within Ku-ring-gai.*
- To provide viable deep soil landscaping within developments and between residential developments on neighbouring sites.*
- To minimise impervious surfaces that generate storm water runoff.*
- To provide adequate spaces between buildings for common areas that support quality gardens around the building.*

Controls

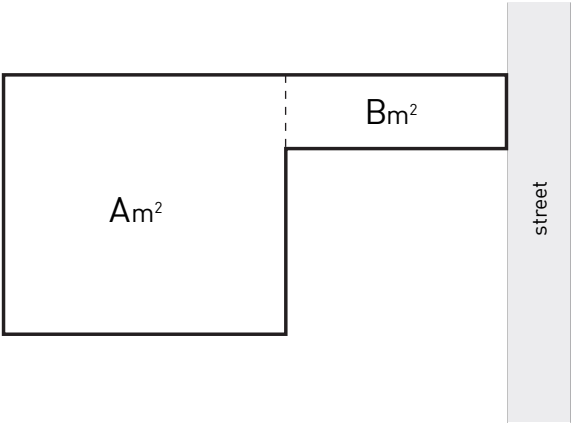
- The following controls are applicable only to mixed use buildings in R4 High Density Residential zones:
- The site coverage is to be up to a maximum of 30% of the site area, provided that the deep soil landscaping requirements in Part 8A.7 can be met.

Note: Site coverage is **not** the inverse of deep soil landscaping. Refer to Section A Part 1B Dictionary for clarification of site coverage.

Note: Certain sites in **E1** and **MU1** zones have reduced maximum site coverage. Refer to Section B Part 14 Urban Precincts and Sites.
 - Where a site incorporates an access handle/s, the site coverage is not to exceed 30% of the total site area less 30% of the access handle/s (refer to Figure 8A.6-1).

Note: The definition of 'site coverage' uses a calculation of the 'site area'. 'Site area in KLEP states in part:

'...does not include the area of any land on which development is not permitted to be carried out under this Plan.'



Maximum site coverage = $[(A+B) \times 30\%]m^2 - (B \times 30\%)m^2$
 Note: This is equivalent to $[A \times 30\%]m^2$

Figure 8A.6-1:
Site coverage controls for Residential Flat Buildings

8A.7 DEEP SOIL LANDSCAPING

Further controls that may apply

SECTION A
PART 1B.1 - Dictionary

SECTION B
PART 14 - Urban Precinct and Sites

SECTION C
PART 21.2 - Landscape Design

Objectives

- 1 *To ensure landscape areas contribute to the garden character and canopy of the Ku-ring-gai locality.*
- 2 *To provide consolidated deep soil zones of adequate dimensions in all residential development sites through quality planning and building design.*
- 3 *To provide landscaped areas that are appropriate to the scale and context of the development.*
- 4 *To retain areas that provide habitat for native indigenous plants and animals and contributes to biodiversity in the area.*
- 5 *To create high quality landscaped areas through retention and/or planting of tall and medium sized trees particularly at the street frontage.*
- 6 *To ensure that deep soil landscaping is within common areas.*
- 7 *To ensure spaces between buildings provide deep soil landscaping that can sustain large trees that contribute to Ku-ring-gai's garden character.*
- 8 *To ensure that deep soil is provided to allow infiltration of rain water to the water table and to reduce stormwater runoff.*

Controls**Design**

- 1 This section applies to all development that:
 - i) does not provide commercial uses to the entire ground floor street frontage with associated active street frontages;
 - ii) provides any residential dwelling on the ground floor street frontage;
 - iii) is a mixed use building within the R4 High Density Residential zone.
- 2 The development is to have minimum deep soil landscaping area as follows:

Site Area	Minimum Deep Soil Landscaping
Less than 1800 m ²	40% of the site
1800 m ² or more	50% of the site

Note: For the purpose of this section, the site excludes any access handle.

Note: Certain sites in the **E1** and **MU1** zones have a reduced maximum deep soil landscaping area. Refer to Section B Part 14 Urban Precinct and Sites.

- 3 Deep soil zones are to have a minimum dimension of 6m and be configured to retain healthy and significant trees on the site and adjoining sites.
- 4 Deep soil zones are to be configured to allow for required tree planting including tall tree planting and garden and screen planting at front side and rear boundaries.
- 5 Deep soil landscaping is to be provided in the common areas as a buffer between buildings that softens the bulk and scale of the buildings.
- 6 Driveways are not to dominate the street setback area. Deep soil landscaping areas in the street setback are to be maximised.
- 7 Where the site has an access handle, deep soil calculation are to exclude that access handle.

Tree Replenishment and Planting

- 8 Lots with the following sizes are to support a minimum number of tall trees capable of attaining a mature height of at least 18m on shale, transitional soils and 15m on sandstone derived soils

8A.7 DEEP SOIL LANDSCAPING (continued)

Controls

Lot Size	Number of Tall Trees
1,200m ² or less	1 per 400m ² of site area or part thereof
1,201m ² - 1,800m ²	1 per 350m ² of site area or part thereof
1,801m ² +	1 per 300m ² of site area or part thereof

- 9 In addition to the tall trees, a range of medium trees, small trees and shrubs are to be selected to ensure that vegetation softens the building form and creates a garden setting. At least 50% of all tree plantings are to be locally occurring trees and spread around the site.
- Note:** Refer to Section A Part 1B Dictionary for definition of common area.
- 10 Trees are to be planted within all setback areas. At least 30% of tall trees are to be planted within the front setback.

- 8B

Access and Parking
- 8B.1

Vehicle and Service Access and Loading Facilities
- 8B.2

Car Parking Provision
- 8B.3

Bicycle Parking and Support Facilities Provision

READ WITH
<div>SECTION C</div> <div>PART 22 - General Access and Parking</div> <div>22.2: General Vehicle Access</div> <div>22.3: Basement Parking</div> <div>22.4: Visitor Parking</div> <div>22.5: Parking For People With A Disability</div> <div>22.6: Pedestrian Movements within Car Parks</div> <div>22.7: Bicycle Parking and Facilities</div> <div>22R.2: Car Parking Rates</div> <div>PART 23 - General Building Design and Sustainability</div> <div>PART 25 - Waste Management</div>

REFER TO
LIVABLE HOUSING DESIGN GUIDELINES

REFER TO
SEPP (HOUSING) 2021
APARTMENT DESIGN GUIDE



8B.1 VEHICLE AND SERVICE ACCESS AND LOADING FACILITIES

Further controls that may apply

SECTION B
PART 14 - Urban Precincts and Sites

SECTION C
PART 22.2 - General Vehicle Access
PART 25 - Waste Management

Objectives

- 1 To ensure that vehicle access points are suitably designed and located.
- 2 To ensure clear demarcation of parking areas for different uses within mixed use buildings.
- 3 To provide adequate and accessible on-site service areas and loading facilities.
- 4 To provide service areas and loading docks in a quantity and size appropriate to the scale and intensity of the proposed use.
- 5 To ensure that loading facilities do not detract from the amenity of nearby public spaces and residential areas.
- 6 To locate and design car parking which is integrated with the site and building design and which does not increase the bulk and scale of the building.
- 7 To provide a suitable level of safety and accessibility.
- 8 To provide suitable clearance for service vehicles.

Controls

Vehicle access

- 1 Vehicle access points are not to be located along principal active street frontages unless otherwise specified in *Part 14 of this DCP*.
- 2 All developments are to provide a shared vehicle entry/exit point for different uses (eg. retail, commercial and residential).
Note: Any proposal seeking to provide separate vehicle entry/exit points on large developments **is to** justify this variation by demonstrating the combined effect does not dominate the building facade or streetscape.
- 3 Where retail, commercial and residential uses share the same vehicle entry/exit, clear demarcation of parking areas is to be made. Residential parking is to be secure and separate from retail/commercial parking. See *Figure 8B.1-1*.
Note: Refer to Section C Part 22.2 of this DCP for vehicle access design controls.
- 4 Basement car park areas are to be consolidated under building footprints.
- 5 The use of single lane tunnels and single spiral ramps are not permitted in developments of more than 4 apartments, and can only link a maximum of 2 floor levels.

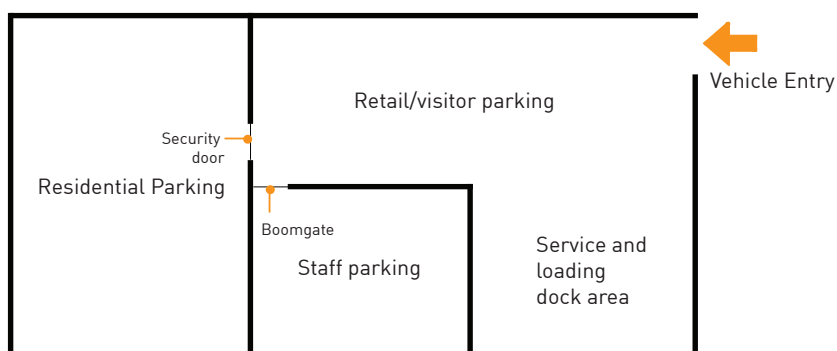


Figure 8B.1-1:
Separate parking zones for different uses.

8B.1 VEHICLE AND SERVICE ACCESS AND LOADING FACILITIES (continued)

Controls

Service access

- 6 On-site service vehicle access is to be provided and designed in accordance with the following:
 - i) a driveway is to be established that is of adequate strength, width and design for the intended service vehicle characteristics;
 - ii) the driveway is to be designed such that service vehicle movement is in a forward direction, both when entering and exiting the site;
 - iii) entrance heights are to allow access for service vehicles;
 - iv) service ducts, pipes and other overhead obstructions are to be located to maintain minimum finished ceiling heights required for service vehicle access; and
 - v) on-site manoeuvrability is to be unimpeded for all site users.
- 7 Generally service vehicle access is to be combined with parking access. Separate access may be required in major non-residential retail/commercial developments.

Note: Refer to Part 14 of this DCP for relevant controls within each urban precinct.
- 8 Where a waste and recycling room is provided within the basement, the minimum finished ceiling height may be required to be 4.5m along the path of travel from the street to the commercial waste collection and manoeuvring area, and 2.6m to the residential waste collection room and manoeuvring area. This clearance is to be kept free of any overhead ducts, services or other obstructions.

Note: Refer to *Part 3.4 of this DCP* for waste requirements.

Loading facilities

- 9 On-site internal loading facilities are to be provided for all developments with loading and unloading requirements.
- 10 Loading docks are to be:
 - i) accessed via a rear lane or secondary streets where these are available, and accessible to heavy vehicles;
 - ii) conveniently located in such a way that minimises conflict with pedestrians and other traffic; and
 - iii) screened from the public street.

Note: Refer to RMS guidelines.
- 11 Service vehicles turning into or out of a road or driveway are to be able to complete their turning manoeuvres without crossing the centre line of the public road.
- 12 Gradients in service areas are to be kept to a minimum. The maximum gradient measured in any direction at any one point, is to be 1:6.5 (15.4%) where only forward movement is to take place or 1:8 (12.5%) where reverse manoeuvres will occur.

8B.1 VEHICLE AND SERVICE ACCESS AND LOADING FACILITIES (continued)

Controls

- 13 Circulation roadways and loading area dimensions are to comply with the provisions in *AS2890.2: Off-Street Parking (Part 2:Commercial Vehicle Facilities)*.
- 14 The design of the apron area in front of the loading dock(s) is to take into account the type of vehicle to be used. Reference **is to** be made to *AS2890.2* for apron dimensions.
- 15 Turning provisions are to be made within the site for the manoeuvring of vehicles using the loading and unloading facilities in accordance with *AS2890.2* Turning Templates.

8B.2 CAR PARKING PROVISION

Further controls that may apply		
		SECTION C PART 22 - General Access and Parking PART 22.3 - Basement Parking PART 22.4 - Visitor Parking PART 22.5 - Parking For People with a Disability PART 22.6 - Pedestrian Movement within Car Parks PART 22R.1 - Car Parking Rates

Objectives

- 1 To ensure the provision of unobstructed and accessible principal active street frontages.
- 2 To provide safe and convenient vertical circulation for building users.
- 3 To provide for future connections between adjacent basement car parks where required.
- 4 To ensure that streetscapes are active and attractive, and that above ground parking does not compromise the public domain.
- 5 To ensure that above ground car parking can be adapted for future use.
- 6 To provide adequate car parking for the building's users and visitors.
- 7 To ensure the location and design of car parking is integrated with the site and building design.
- 8 To encourage walking and public transport use.
- 9 To enable future connections between adjacent basement car parks.

Controls**Car parking design**

- 1 All car parking areas are to be provided within the basement of a development.
- 2 The basement car park areas are not to project above finished ground level along the principal active street frontage. On supporting active street frontages the car park may project above existing ground level by a maximum of 1m to the floor level of the storey immediately above.
- 3 Separate and direct lift/stair access is to be provided from basement car parks to apartments, to commercial units and to retail facilities. Where this is not possible, it is to be demonstrated that there is no conflict or danger in the use of shared lifts/stairs.
- 4 Every Platinum Level unit requires an accessible car space designed to Australian Standard 2890.6.
Note: All common areas and paths of travel are to be accessible in line with the requirements of the National Construction Code.
- 5 For the non-residential component of the development, car parking spaces, circulation aisles, roadways and ramps are to comply with AS2890.1 - *Parking Facilities - Off street car parking*.
- 6 Knock-out panels are to be provided in perimeter walls of the basement car park where adjacent sites are narrow or isolated.
- 7 Car park design is to include the following:
 - i) the car park layout is to be adaptable to provide logical circulation within the car park, and between adjacent car parks, once connectivity is achieved.
 - ii) the connection between car parks is to remain open permanently and not closed by shutters/gates.
 - iii) the connection between car parks it to be made for the same user group, preferably connecting adjacent customer/public parking levels.

8B.2 CAR PARKING PROVISION (continued)

Controls

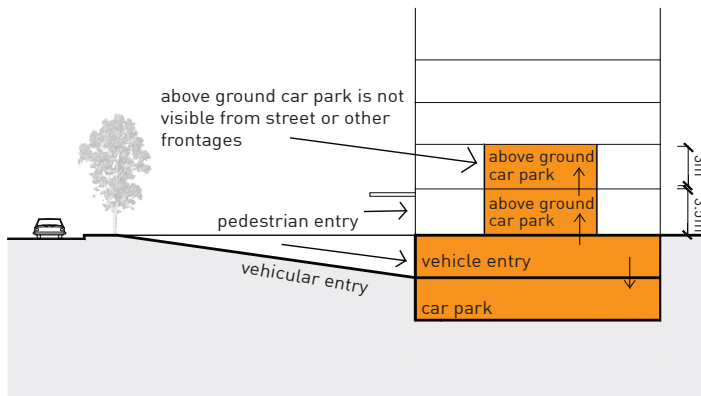


Figure 8B.2-1:
Multi-storey above ground car park is housed within the building to facilitate active street frontages.

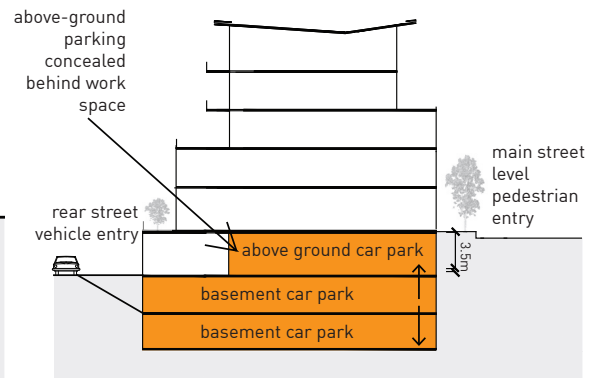


Figure 8B.2-2:
Above ground car parking is permitted on steep sites where it is screened from view.



Figure 8B.2-3:
Projection of basement car parking along the principal active street frontage is prohibited.

- 8 Above-ground car parking may be permitted where it is housed entirely within the building, leaving external walls for active uses (see *Figure 8B.2-1 and 8B.2-2*).
- 9 Above ground car parks are to have a minimum floor to ceiling height of 3.0m-3.5m to enable flexibility for a future change in use. Refer to *Figure 8B.2-2*.

Car parking rates

- 10 The following car parking ranges apply to office, business premises and shops, where the development is within 800m walking distance of a train station entry and within a commercial centre:

Premises	Parking Space Requirement
Office and business premises	1 space per 33m ² GFA to 1 space per 45m ² GFA Suggested split: 90% employee 10% visitors
Shops, including restaurants and cafes	1 space per 26m ² GFA to 1 space per 33m ² GFA

Car parking exceeding the requirements of the parking controls in the above table will not be excluded from the Gross Floor Area as defined in the KLEP.

- 11 For all other locations or uses, car parking is to be provided for retail and commercial uses as well as any recreational/tourist uses and health/community uses in accordance with the parking rates in *Part 22R of this DCP*.

Note: A Traffic Impact Assessment is to accompany development applications that seek to vary the parking rates. This includes commercial or strata funded car share schemes in lieu of parking spaces.

- 12 For retail/commercial parking, specific areas of the total parking quantum are to be set aside for employee/long term parking. As a

8B.2 CAR PARKING PROVISION (continued)

Controls

guide, 20% of retail parking and 90% of commercial parking could be set aside as employee/long term parking.

- 13 Visitor parking for each separate use is to be provided within the main parking area allocated for that use.
- 14 The following car parking requirements only apply to the residential component within 800m walking distance of a train station entry within mixed use developments.

Apartment Size	Minimum number of parking spaces per dwelling	Maximum number of parking spaces per dwelling
Studio	0 spaces	0.5 spaces
One bedroom	0.6 spaces	1 space
Two bedrooms	0.9 spaces	1.25 spaces
Three or more bedrooms	1 space	2 spaces

Car parking exceeding the requirements of the parking controls in the above table will not be excluded from the Gross Floor Area as defined in the KLEP.

- 15 Residential visitor parking is to be provided within the site at the rate of one space per 6 apartments or part thereof.
- 16 At least one visitor parking space is to comply with the dimensional and locational requirements of AS2890.6.
- 17 One visitor parking bay is to be provided with a tap, to make provision for on-site car washing.
- 18 At least one car share space is to be provided in the basement per 90 dwellings, or part thereof.

Note: any proposed reduction in car parking on the basis of providing car share space/s is to be justified by the proponent through supporting studies.

- 19 All parking bays are to be EV ready with design and construction (provision for conduits, switchboards, electrical capacity etc) to enable installation of electric vehicle charging points that are linked to each individual dwelling electricity meter.

10 To provide for future transport and vehicle options including Electric Vehicle charging stations, e-bicycles and the like.

8B.3 BICYCLE PARKING AND SUPPORT FACILITIES PROVISION

Further controls that may apply

SECTION C
PART 22.7 - Bicycle Parking and
Facilities

Objectives

- 1 To provide sufficient and accessible bicycle parking.
- 2 To encourage the use of bicycles.

Controls

- 1 Onsite secure bicycle parking spaces and storage within basements is to be provided at the following rates for the retail and commercial component of the development:

Staff	Visitors
1 bicycle parking space per 600sqm of gross floor area for staff – in the form of an individual locker or secure room as per AS2890.3.	1 bicycle parking space per 2500sqm of gross floor area for visitors – in the form of a bicycle parking device or rack as per AS2890.3.

- 2 Onsite secure bicycle parking spaces and storage within basements is to be provided at the following rates for the residential component of the development:

Staff	Visitors
1 bicycle parking space per dwelling within the residential car park area – in the form of an individual locker or secure room as per AS2890.3.	1 bicycle parking space per 10 units within the visitor car park area – in the form of a bicycle parking device or rack as per AS2890.3.

- 3 Retail or commercial development is to provide employees with 1 shower cubicle with ancillary change rooms per 10 bicycle spaces, including a minimum of 1 shower each for both females and males. Signs to showers are to be provided at bicycle parking locations.

8C Building Design and Sustainability

- 8C.1 Solar Access and Daylight
- 8C.2 Natural Ventilation
- 8C.3 Room Sizes
- 8C.4 Apartment Mix and Accessibility
- 8C.5 Building Entries
- 8C.6 Internal Common Circulation Areas
- 8C.7 Roof Forms and Podiums
- 8C.8 Communal Open Space
- 8C.9 Building Facades and Articulation
- 8C.10 Ground Floor Commercial Uses
- 8C.11 Awnings
- 8C.12 Colonnades
- 8C.13 Internal Ceiling Heights
- 8C.14 Visual Privacy
- 8C.15 Acoustic Privacy
- 8C.16 Late Night Trading
- 8C.17 External Air Clothes Drying Facilities
- 8C.18 Services

READ WITH

SECTION A

PART 8 - Mixed Use Development
 8A.2: Building Separation
 8C.3: Room Sizes

SECTION B

PART 14 - Urban Precinct and Sites
PART 20 - Development Near Road or Rail Noise

SECTION C

PART 22 - General Access and Parking
 22.1: Equitable Access
PART 23 - General Building Design and Sustainability
 23.5: Roof Terrace and Podiums
 23.7: General Acoustic Privacy
 23.8: General Visual Privacy
PART 25 - Waste Management

REFER TO

SEPP (HOUSING) 2021
APARTMENT DESIGN GUIDE

REFER TO

LIVABLE HOUSING DESIGN GUIDELINES

8C.1 SOLAR ACCESS AND DAYLIGHT

Objectives

- 1 To ensure a high level of internal amenity and comfort for all occupants:
- 2 To ensure building occupants have access to daylight within the building.
- 3 To minimise the negative impact of overshadowing on living areas and private and communal open space areas of residential neighbouring development.
- 4 To minimise the impact of development on existing solar collection devices.
- 5 To ensure that development controlled by SEPP (Housing) 2021, Apartment Design Guide is deferred to in these standards.



Figure 8C.1-1:
Internal atrium space provided to promote daylight access.

Controls

Non-residential component

- 1 Buildings are to be oriented to optimise the northern aspect.
- 2 All office workspaces are to be within 10m and in direct line of sight of a perimeter window.
- 3 Notches, slots or indentations in the perimeter of the building are to be at least as wide as they are deep to allow daylight that enables functional use of interior areas.
- 4 Overshadowing is not to compromise the development potential of adjoining yet to be developed sites.
- 5 Developments are to allow the retention of a minimum four hours direct sunlight between 9am and 3pm on 21st June to all existing solar collectors and solar hot water services on neighbouring buildings.
- 6 Three hours of direct sunlight between 9am and 3pm on 21st June is to be maintained to the living rooms, primary private open spaces and any communal open spaces within residential developments on adjoining sites.



Figure 8C.1-2:
Retractable shading devices to the windows for solar access control.



Figure 8C.1-3:
Photovoltaic cells integrated into the awning design.

8C.1 SOLAR ACCESS AND DAYLIGHT (continued)

Controls

Residential component

- 7 Developments are to be designed to optimise solar and daylight access into apartments and private open spaces within the mixed use development as stipulated in SEPP (Housing) 2021, Apartment Design Guide Part 4A - Solar and Daylight Access.

Sun shading

- 9 All shading devices are to be integrated with building facade design (see Figure. 8C.1-2).
- 10 Consideration is to be given to the integration of solar shading with solar energy collection technology (see Figure 8C.1-3).
- 11 All developments are to utilise shading and glare control. Design solutions include:
- i) providing external horizontal shading to north-facing windows, such as eaves, overhangs, pergolas, awnings, colonnades, upper floor balconies, and/or deciduous vegetation;
 - ii) providing vertical shading to east and west windows, such as sliding screens, adjustable louvres, blinds and/or shutters;
 - iii) providing shading to glazed and transparent roofs;

-

8C.2 NATURAL VENTILATION

Further controls that may apply

SECTION A
PART 8 - Mixed Use
Development
PART 8C.3: Room Sizes

Objectives

- 1 To ensure a high level of internal amenity for all building occupants.
- 2 To ensure direct access to fresh air for building occupants.
- 3 To provide workspaces with opportunities for natural ventilation.
- 4 To minimise odour from commercial sources.
- 5 To ensure that development controlled by *(Housing) 2021* Apartment Design Guide is deferred to in these standards.

Controls

Non-residential component

- 1 At least 25% of window area to each external wall surface within office workspaces are to have operable windows or doors.
- 2 Where possible, provide dual aspect floorspace to office workspaces to aid natural cross ventilation.
- 3 The use of open plan office floor areas is encouraged to minimise interruptions in airflow by partitions and furniture.
- 4 The use of courtyard/atrium/thermal chimneys is encouraged to allow warm air to be drawn up and escape through roof ventilation.
- 5 Ground floor spaces are to be adaptable with provision for internalised exhaust stacks to the highest point of the building.
- 6 Where commercial facilities are unable to provide natural ventilation, a mechanical system is to be incorporated to ensure air change and flow within internal areas.
- 7 Notches, slots or indentions cannot be relied upon to achieve natural cross ventilation unless they meet the minimum building separation requirements. Notches, slots or indentations in the perimeter of the building are to be at least as wide as they are deep to allow daylight and ventilation.

Residential component

- 8 Buildings are to be designed to optimise natural ventilation within apartments, as stipulated in *(Housing) 2021* Apartment Design Guide 4B - Natural Ventilation.

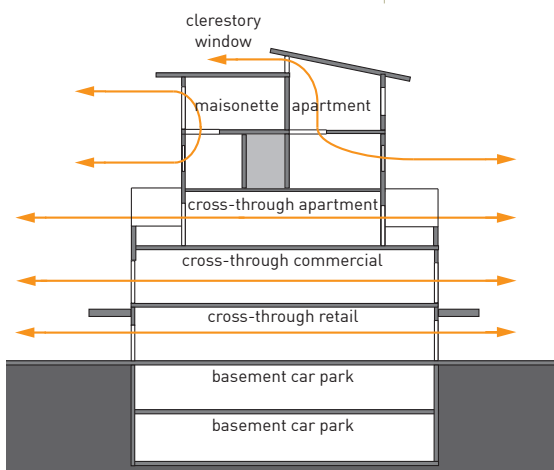


Figure 8C.2-1:
Natural ventilation
improves the quality of
air within living space
and work environment.

8C.3 ROOM SIZES

Objectives

- 1 To provide workspaces that are naturally ventilated and maximise access to natural light.
- 2 To ensure adequate floor areas for non-residential use that enable flexibility of use.

Controls

Non-residential component

- 1 For the non-residential component within a mixed use development the following controls apply:
 - i) office floors are to be a maximum of 10m from glass line to an internal face of wall. Refer to Figure 8C.3-1.
 - ii) all non-residential uses are to have a minimum internal dimension of 8m within any tenancy unit.
- 2 Circulation, services and storage areas are to be located at the centre of the building to maximise opportunities for external openings for daylight access and views.
- 3 Where atriums and courtyards are utilised, they are to have a height to width ratio of no narrower than 3:1, with a minimum dimension of 6.0m.

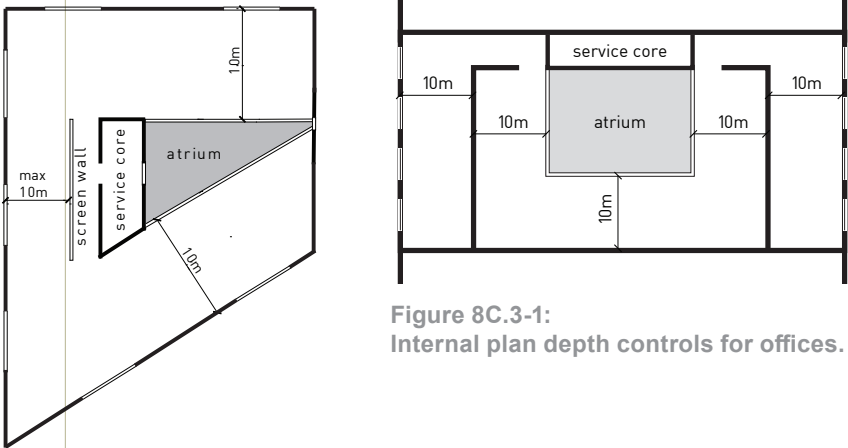


Figure 8C.3-1:
Internal plan depth controls for offices.

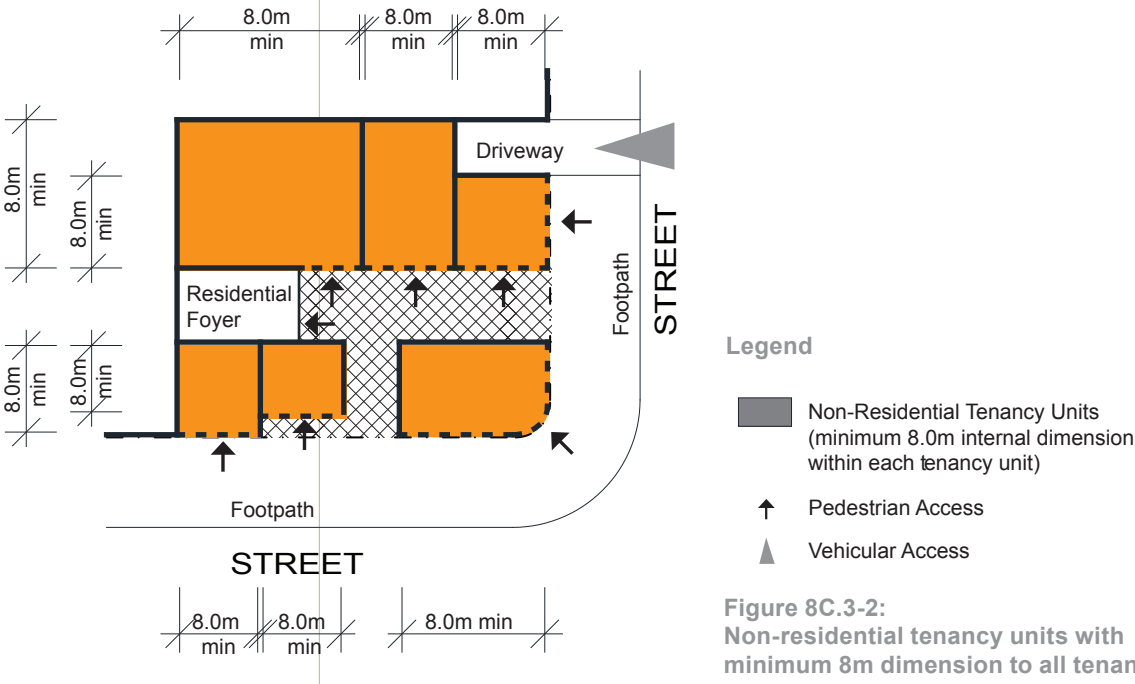


Figure 8C.3-2:
Non-residential tenancy units with
minimum 8m dimension to all tenancies.

8C.3 ROOM SIZES (continued)

Controls

Residential component

- 3 To ensure that development controlled by SEPP (Housing) 2021 Apartment Design Guide is deferred to in these standards.
- 4 Apartments are to have minimum internal areas and layouts as stipulated in SEPP (Housing) 2021 Apartment Design Guide 4D - Apartment Size and Layout.
- 5 Apartments are to include private open space in the form of courtyards, balconies, terraces as stipulated by SEPP (Housing) 2021 Apartment Design Guide Part 4E - Private Open Space.
- 6 Apartments are to provide storage space as stipulated in SEPP (Housing) 2021 Apartment Design Guide Part 4G - Storage.

8C.4 APARTMENT MIX AND ACCESSIBILITY

Further controls that may apply

SECTION A
PART 1B.1 - Dictionary

SECTION C
PART 22.1 - Equitable access

Objectives

- 1 To increase housing diversity and choice within Ku-ring-gai through provision of a range of apartment sizes and types.
- 2 To increase the housing choice for seniors, people with disabilities and for families.
- 3 To promote flexible housing for all community members and for changing household requirements now and in the future as needs change due to ageing and disability.
- 4 To ensure all developments and dwellings incorporate *Livable Housing Design Guide* provisions and *National Construction Code* accessibility requirements, to and within dwellings, regardless of the steepness of a site.

Controls

- 1 A range of apartment sizes (one, two and three bedroom) and a mix of types are to be included within the development.



Figure 8C.4-1:
A variety of apartment types, sizes and layouts within the same development.

Accessible Housing

- 2 All units in the mixed-use development are to be of Silver Level, and 15% of those are to be of Platinum Level as indicated in the *Livable Housing Design Guideline*.
- Note:** For details on the *Livable Housing Design Guideline* refer to www.livablehousingaustralia.org.au.
- 3 All developments are required to meet the KDCP Livable Housing Design Guideline provisions and National Construction Code accessibility requirements regardless of steepness of site.
- Note:** This control applies to development on all sites including those that are steeper than 1:14.
- 4 All development is to provide an accessible path of travel:
 - i) from the street entry to the front door of each dwelling; and
 - ii) from the basement carparking to the dwelling entry; and
 - iii) from the dwelling to the primary communal open space and each type of room or space for use in common by the residents.

Note: Provision is to be made for wheelchair turning circles where required.

Note: The control above applies to all development regardless of the steepness of the site.

8C.4 APARTMENT MIX AND ACCESSIBILITY (continued)

Controls

- 5 Where the internal finished floor level of a ground floor dwelling and/or private open space is not more than 0.9m below the existing ground level at the building line, the ground level adjacent to the building is to be levelled to the finished floor level for a distance of 3.0m from the building line.
Note: A step at the threshold for compliance with waterproofing requirements is acceptable, however thresholds to the primary private open space are to be accessible for all Platinum Level dwellings.
- 6 For Platinum level units with more than one level, an internal lift is to be provided to allow access to all levels.
Note: Provision of a lift is not in lieu of accommodating Platinum Level provisions required at the dwelling entry level.
- 7 Chair lifts, platform lifts and the like are not permitted on internal and external communal/shared paths and circulation areas. Where lifts are required they are to be constructed within lift shafts with full weather protection for users.

8C.5 BUILDING ENTRIES

Further controls that may apply		
	SECTION C PART 14 - Urban Precincts and Sites	SECTION C PART 22.1 - Equitable Access

Objectives

- 1 To ensure the building entry and address is a clear and identifiable element in the street and is safely accessible to all.
- 2 To ensure the building entry contributes positively to the streetscape and building facade design.
- 3 To provide entries that relate to the street and pedestrian movement and promote pedestrian activity along building frontages.
- 4 To provide legible, safe and pleasant circulation spaces at the buildings street interface.
- 5 To ensure changes in levels between the street and the development are integrated and maintain physical and visual activation and accessibility.
- 6 To provide separate, secure and identifiable entry paths for residential occupants of the building.

Controls

- 1 Access to and within both commercial and residential developments are to be in accordance with the *Disability Discrimination Act 1992*.
- 2 Buildings are to address the street by providing:
 - i) level and direct main entrances to lift/building directly accessible and visible from the street; or
 - ii) with the path to the building entry readily visible from the street where site configuration is conducive to having a side entry.
- 3 Buildings with street frontages over 18m long **are to** have multiple entries to activate the street frontages.
- 4 Building entries from principal active street frontages are to provide a flush transition with adjoining frontages.
- 5 Street footpath levels are not to be changed. All level adjustments are to occur on private land behind the shopfront glazing/entry doorway. Ramping, escalators, stairs and such like within arcades, malls and shopping centres are to be positioned so that the access and interface from the street is maximised, and street activation is to be preserved. .



Figure 8C.5-1:
Separate entries to commercial and residential premises in a mixed use development. Use of clear glazing enables passive surveillance.



Figure 8C.5-2:
Well defined residential entry that is easily distinguished from the shopfronts.

8C.5 BUILDING ENTRIES (continued)

Controls

- 6 The building entry is to be legible and integrated with horizontal and vertical building facade architectural elements. At street level, the entry is to be articulated with awnings, porticos, recesses or projecting bays for clear identification.
- 7 Entries to upper level uses **are not to** dominate ground floor shopfronts. These entries **are not to** occupy more than 20% of the principal active street frontage.
- 8 Entries and lobbies to apartments are to be separated from commercial entries and are to be clearly demarcated and provide direct access from the street.
- 9 All entry areas **are to** be well lit and designed to avoid any potential concealment or entrapment areas.
- 10 Fire egress **is not to** face the principal active street frontage. If this is unavoidable, the fire egress **is to** be integrated into the lobby entrance or shopfront design.
- 11 Lockable mail boxes are to be:
 - i) provided close to the street; and
 - ii) be at 90 degrees to the street and to Australia Post standards; and
 - iii) integrated with building entries.
- 12 Entries are to have street numbering that is clearly visible from the street.
- 13 Buildings with dual street frontage are to provide a building entry to both street frontages that meets the requirements of Part 14 Urban Precincts and Sites of this DCP.

8C.6 INTERNAL COMMON CIRCULATION AREAS

Objectives

- 1 To provide accessible, safe and pleasant circulation spaces for all building occupants and users.
- 2 To minimise ongoing maintenance costs by providing natural ventilation, natural light, efficient lighting and appropriate materials to circulation areas.
- 3 To ensure that development controlled by SEPP (Housing) 2021 Apartment Design Guide is deferred to in these standards.



Figure 8C.6-1:
Generous ceiling height to lift lobby to promote daylight access.

Controls

Non-Residential Component

- 1 The design of internal common circulation **is to** provide adequate pedestrian mobility and access space, and comply with the provisions in AS1428.1 and AS1428.2 - *Design for Access and Mobility*.
- 2 All common circulation areas including foyers, lift lobbies and stairways **are to** have:
 - i) appropriate levels of lighting with a preference for natural light where possible;
 - ii) short corridor lengths that give clear sight lines;

Note: Fire doors within corridors are not considered to shorten corridors.

 - iii) clear signage showing the location of commercial facilities, apartments, common areas as well as general direction finding;
 - iv) natural ventilation;
 - v) low maintenance and robust materials.
- 3 Where artificial lighting is required energy efficient lights are to be used in conjunction with timers or daylight controls.
- 4 Building design is to avoid blind corners or dark alcoves near lifts and stairwells, at entrances, along corridors and walkways and within car parks and provide opportunities for passive surveillance of circulation spaces.
- 5 Separate access points (via lift or stairs) **are to** be provided for each different use. Both commercial and residential **are to** have its own entry.
- 6 Seating areas are to be provided within the foyer/atrium of commercial components and are encouraged in common circulation areas near workspaces.

Residential Components

- 7 Common circulation spaces are to comply with the requirements stipulated by SEPP (Housing) 2021 Apartment Design Guide Part 4F - *Common Circulation and Spaces*.



Figure 8C.6-2:
Generous open common circulation space for commercial uses on upper floor levels.

8C.7 ROOF FORMS AND PODIUMS

Further controls that may apply

SECTION A PART 8A.4 - Wind Impact

SECTION C PART 23.5 - Roof terraces and podiums

Objectives

- 1 To provide well designed and articulated upper floor forms.
- 2 To prevent any increased overshadowing of adjoining properties.
- 3 To contribute to the overall design and environmental performance of buildings.
- 4 To encourage the use of podiums for open space.
- 5 To minimise visual impacts of service facilities on roof tops.
- 6 To ensure the design of communal open space protects the amenity of nearby residents.

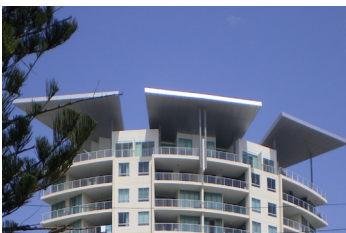


Figure 8C.7-1:
Articulated upper stories

Controls

- 1 The upper storeys of mixed use buildings are to be articulated with differentiated roof forms, maisonettes or mezzanine penthouses or similar (see Figures 8C.7-1).
- 2 Service elements are to be integrated into the overall design of the roof so as not to be visible from the public domain or any surrounding development. These elements include lift overruns, plant equipment, chimneys, vent stacks, water storage, communication devices and signage.
- 3 Roof design is to respond to solar access and prevailing weather with the use of elements such as eaves, skillion roofs, awnings or recesses with a minimum overhang of 0.6m.
- 4 Where solar panels are provided they are to be integrated into the roof line.
- 5 The incorporation of green roofs or green podiums is encouraged.
- 6 Lightweight pergolas, sun screens, privacy screens and planters are permitted on the roof or podium, provided they are integrated with the building and facade design and do not increase the bulk of the building, create visual clutter or impact on significant views from adjoining properties.
- 7 Podiums and roof terraces used for communal open space are to protect privacy within the development and neighbouring properties. In these circumstances planter boxes are to be incorporated into walls or balustrades for privacy and amenity (see Figure 8C.7-2). In some cases these may need to be set back from the building edge to protect neighbouring privacy.
- 8 The location of air intake vents and exhaust discharge points are to be in accordance with AS 1668.2.

Note: Architectural plans are to show the locations of air intake vents and exhaust discharge points proposed as part of the development, such as those associated with air supply and exhaust systems for basement carparks, plant rooms and waste storage rooms.

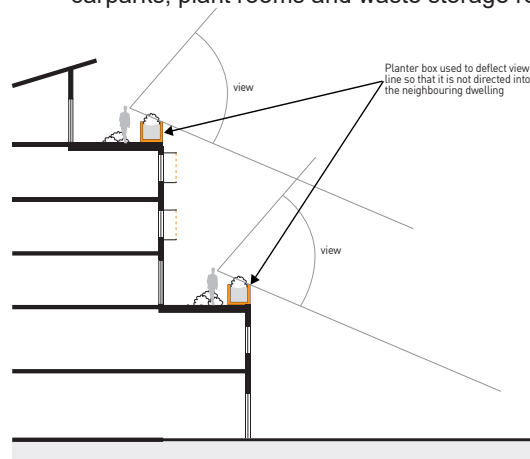


Figure 8C.7-2:
Incorporation of planter boxes into walls or balustrades of podiums and terraces.

8C.8 COMMUNAL OPEN SPACE

Further controls that may apply

SECTION A
PART 8A.4 - Wind ImpactSECTION C
PART 23.5 - Roof terraces and
podiums

Objectives

- 1 To ensure occupants have direct access to sunlight within areas of communal open space.
- 2 To ensure early consideration of storage of equipment, access to water, ease of rubbish removal and effective drainage for garden maintenance.
- 3 To provide communal open space that adds to the amenity of the development and facilitates social interaction.
- 4 To provide communal open space that is responsive to the site and its context.
- 5 To ensure high quality communal open space that is well integrated within the development.
- 6 To ensure the design of communal open space protects the amenity of nearby residents.
- 7 To ensure useability of open terraces and balconies within developments.
- 8 To provide safe, useable, attractive and accessible communal open space for residents.

Controls

- 1 Access to any communal open space is to be provided for people with a disability in accordance with Part 2 Section 7 of AS 1428.
- 2 The location and design of the Primary communal open space is to optimise opportunities for active and passive social and recreation activities, summer shade, solar access and orientation, summer shade, outlook, and maintain the privacy of residents on adjoining lower density residential dwelling sites.
- 3 To encourage use, communal open space is to incorporate:
 - i) shared facilities such as barbecue facilities, drinking water taps, play equipment and seating;
 - Note:** Facilities are to be appropriate to the space and demonstrates consideration to the amenity of nearby residents.
 - ii) sun shading devices and wind screens;
 - iii) landscape elements, including small to medium trees.
- 4 Concealment or entrapment areas are not to be created within the communal open space.
- 5 Any residential communal open space is to be separate and secure from non-residential uses. Separate communal open spaces for non-residential uses are encouraged.
- 6 For safety reasons, the communal open space (except for roof terraces) is to be capable of surveillance from at least two apartments and from at least two business units where communal spaces are provided for non-residential uses.



Figure 8C.8-1:
Communal open space overlooked by adjacent
apartments for passive surveillance.

8C.8 COMMUNAL OPEN SPACE (continued)

Controls

- 7 Garden maintenance storage areas and connections to water and drainage are to be provided to communal open space.

Note: Proposals are to demonstrate entry and access to communal open spaces and common areas for maintenance purposes.

Residential Components

- 8 A minimum of 10m² of communal open space per dwelling is to be provided. This can be provided on the podium or roof area.

Note: Roof top communal open space(s) may be required in circumstances where a ground level or podium level communal open space cannot meet performance requirements.

- 9 At least one single area of Primary communal open space for the residents is to be provided with the following requirements:
- i) a minimum area of 80m²; and
 - ii) a minimum dimension of 8m; and
 - iii) access to direct sunlight for at least two hours between 9am and 3pm on 21st June, to at least 50% of the space, and
 - iv) directly accessible from the internal common circulation/lobby area.
- 10 Where additional parcels of communal open space are required to meet 8C.8(7) above, a minimum dimension of 5m is required.



Figure 8C.8-2:
Use of roof terrace for communal open space in a mixed use development.



Figure 8C.8-3:
Use of roof terrace for community garden in communal open space

Further controls that may apply

SECTION A

PART 8C.11 - Awnings

PART 8C.14 - Ground Floor Commercial Uses

SECTION B

PART 14 - Urban Precinct and Sites

SECTION C

PART 23.3 - Sustainability of Building Materials

PART 23.4 - Materials and Finishes

PART 23.6 - Building Services

Objectives

- 1 To create a coherent street character on the Pacific Highway and Mona Vale Road retail strips and other active street frontages in the urban precincts.
- 2 To promote buildings of high architectural quality that contribute to the planned future character.
- 3 To ensure a continuous and aligned façade to the street.
- 4 To encourage pedestrian activity at street level.
- 5 To ensure awnings are:
 - i) integrated with the continuous street wall; and
 - ii) avoid transparent and translucent materials which are difficult to clean and provide limited shade to the footpath.

Figure 8C.9-2:
Street Wall Awning

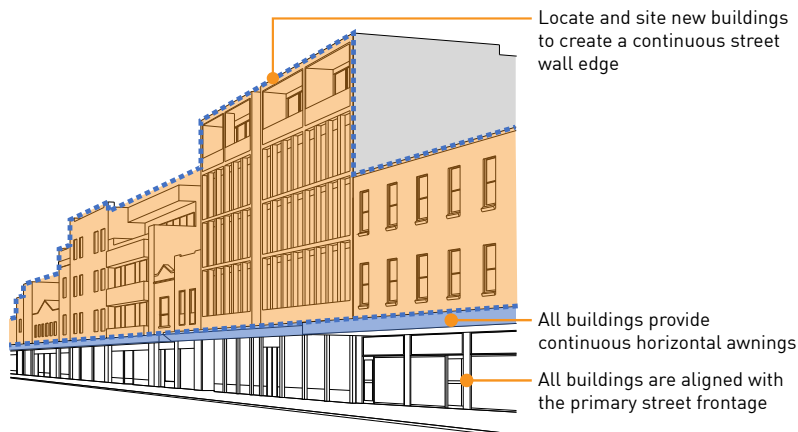
Controls

Street Walls

- 1 Mixed use building façades are to be aligned to the front lot boundary of the primary street frontage, to create a continuous street wall edge. See Figure 8C.9-1 and Figure 8C.9-2.
- 2 Street wall requirements do not apply to:
 - i) mixed use buildings in R4 zones where commercial uses are permitted under Schedule 1 of the KLEP; and
 - ii) where alternate site specific controls are applied under Part 14 Urban Precincts of this DCP.
- 3 Continuous opaque horizontal awnings are to be provided to the full length of the Primary Street frontage Street Wall. Glass awnings are not permitted. Refer to Figures 8C.9-1 and 8C.9-2.



Figure 8C.9-1:
Consistent 3 storey street wall facade to complement the traditional 'main street' facade.



8C.9 BUILDING FACADES AND ARTICULATION (continued)

Objectives

- 6 To integrate building elements (such as balconies, terraces, openings) into the overall building form and facade design.
- 7 To create building facades that are environmentally responsive.
- 8 To demonstrate appropriate levels of architectural detail that will achieve the desired urban character of Ku-ring-gai.
- 9 To enable the building facade, entries and openings to directly relate to the street frontage.
- 10 To ensure that private open space design allows views and passive surveillance of the street while providing for safety and visual privacy of residents.
- 11 To ensure openings and articulation on the elevations do not compromise the liveability of the internal areas.
- 12 To provide distinct building articulation on corner sites that reinforce the street intersection and create a unique memorable building that supports urban wayfinding.
- 13 To reinforce street intersections and create landmarks.

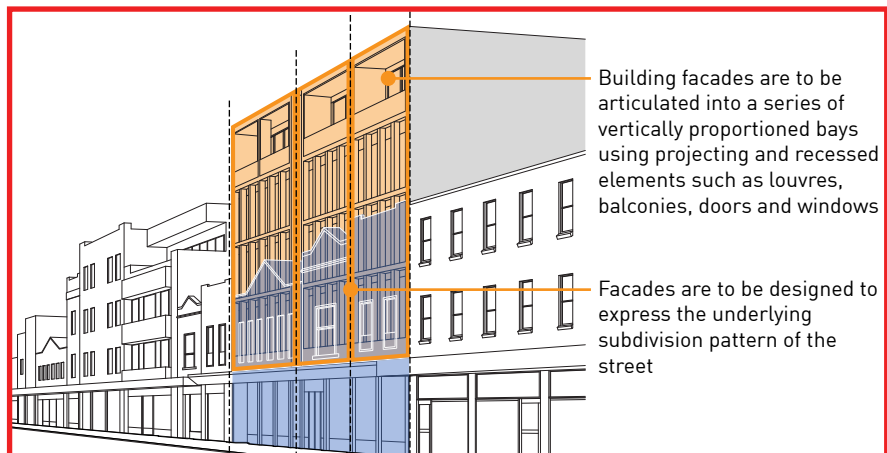
Controls

Facade Articulation

- 5 Façades are to be designed to express the underlying fine grain subdivision pattern of the street. See Figure 8C.9-3 and Figure 8C.9-4.



Original building (blue) fabric of development site comprises 3 subdivided lots each with separate buildings.



Consolidated development (orange) lot includes vertical articulation of the original 3 subdivision patterns.

Figure 8C.9-3:

Building articulation and modulation based on existing fine grain subdivision patterns.

- 6 Building façades are to focus on vertically proportioned bays using projecting and recessed elements and architectural details such as louvers, balconies, doors and windows. See Figure 8C.9-3 and Figure 8C.9-4.

8C.9 BUILDING FACADES AND ARTICULATION (continued)

Controls



Figure 8C.9-4:

Façades with architectural details and materials that create shadows and depth that achieve a three dimensional quality and vertical articulation.

- 7 Façades are to include a tripartite building articulation that distinguishes the building's base, middle and top. This may be achieved through projections, recesses, architectural elements or changes in proportions, materials and finishes. Refer to Figure 8C.9-5.

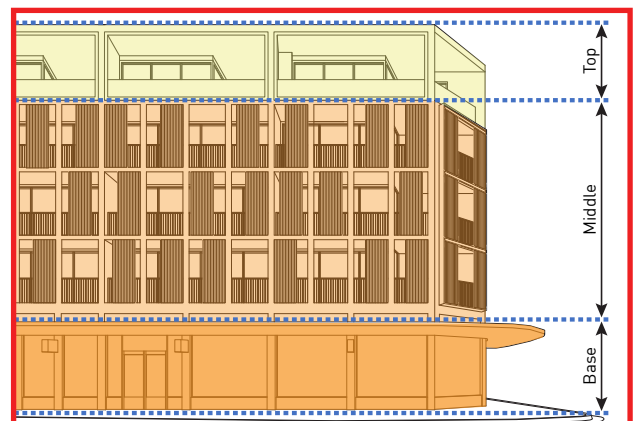


Figure 8C.9-5:

Tripartite building articulating base, middle and top of a building.

8C.9 BUILDING FACADES AND ARTICULATION (continued)

Controls

- 8 Windows to a habitable room are to be situated to create opportunities for passive surveillance of the street. Snorkel windows are not permitted.
- 9 All facades are to be designed to minimise on-going maintenance and weathering by:
 - i) selecting appropriate robust materials/finishes;
 - ii) including appropriate building edge, balcony edge, sill head and parapet detailing that demonstrates protection from prevailing weather and harsh solar aspects.

Note: Refer to *Part 23.4 Materials, Finishes and Colours* of this DCP.

- 10 Subterranean rooms for residential and non-residential purposes are not permitted.
- 11 Building facades are to be designed to respond to solar access by using solar protection elements such as eaves, louvres and other sun shading devices as environmental controls.
- 12 All building elements including shading devices, signage, drainage pipes, awnings/colonnades, solar devices and communication devices are to be coordinated and integrated with the overall facade design.

Note: See Part 12 of this DCP for other signage requirements.

Balconies

- 13 Balconies that run the full length of the building facade are not permitted.
- 14 Balconies are not to project more than 1.5m from the outermost wall of the building facade unless they are an integrated part of the building composition.

Note: Setback and building separation requirements apply to balcony projections.

Note: Refer to *Part 23.4 Control 20* for further requirements on balconies.

8C.9 BUILDING FACADES AND ARTICULATION (continued)

Controls

Corner Sites

- 15 Street corners are to be emphasised architecturally by articulating parts of the building and façade, including:
 - i) chamfered, splayed or rounded façades extending through the height of the building;
 - ii) variations in building height to express the corner;
 - iii) variations in materials and finishes;
 - iv) changes in building roof form;
 - v) projecting or recessed balconies.
- 16 Buildings located on corner sites are to turn the corner and address both street frontages equally, including at street level with active street frontages by utilising:
 - i) glazed shopfronts displaying goods or internal activities to all ground floor facades;
 - ii) building entries on the corner.

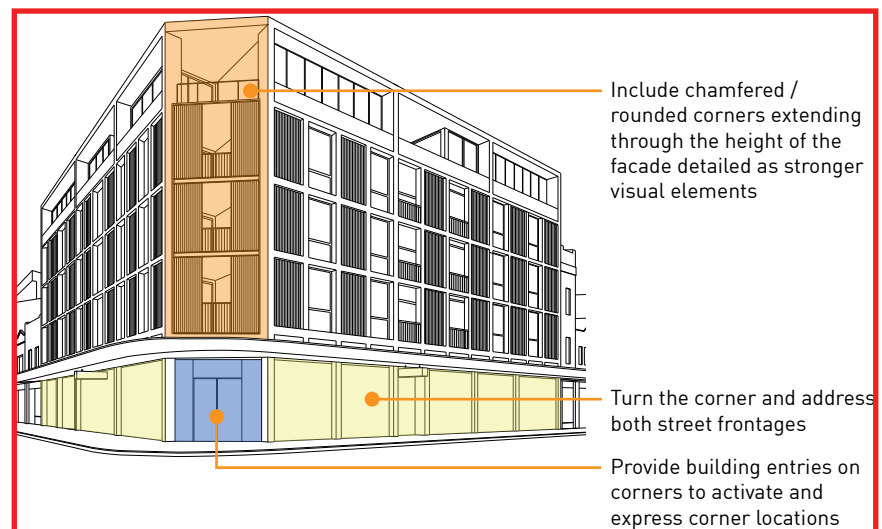


Figure 8C.9-6:
Corner site articulation

8C.10 GROUND FLOOR COMMERCIAL USES

Objectives

- 1 *To support accessible pedestrian activity and enhance the amenity, safety and surveillance of the public domain.*
- 2 *To provide direct physical and visual connection between the private and public domain.*
- 3 *To ensure activation and surveillance at street level.*
- 4 *To provide visual interest at street level.*
- 5 *To provide internal ventilation systems that contribute to flexibility and adaptability of use in the future.*

Controls

- 1 Building entries to each individual commercial premises are to be level with adjoining footpaths, with openings (doors and windows) that allow a direct visual connection between the building and the street. See Figure 8C.10-4.

Note: Variations may be permitted on very steep streets.



Figure 8C.10-1:
Level access to all shopfronts.

- 2 Building slabs are to be stepped on sloping sites to ensure ground floor level does not exceed 0.3m above or below finished footpath level.
Note: Variations may be permitted on very steep streets.
- 3 Ground floor street frontages are to provide for active uses that contribute to the active street frontage.
- 4 Buildings on principal active street frontages are to:
 - i) maintain active frontage to 80% of the length of the building facade at the street level;
 - ii) support a mix of activities, including after hour activities;
 - iii) provide facades that address the street and public domain with appropriate facade treatments at street level that respond to the pedestrian scale;
 - iv) contain well articulated pedestrian entrances at frequent intervals;
 - v) provide continuous awnings;
 - vi) avoid the incorporation of vehicle access points; and
 - vii) not have projecting basements.

8C.10 GROUND FLOOR COMMERCIAL USES (continued)

Controls



Figure 8C.10-3:
Openable shopfronts with merchandise creates interest and engages the passer-by.



Figure 8C.10-4:
Cafe with an openable shopfront contributes to street activity.

- 5 Buildings on supporting active street frontages (including mixed use buildings in R4 - High Density Residential zones) are to:
 - i) minimise the extent of blank walls and incorporate modulation or changes in texture and materials to reduce their impact;
 - ii) support dispersed pedestrian-oriented activities with well articulated entrances;
 - iii) provide facades that address the street and public domain and integrate vehicle access where provided; and
 - iv) provide awnings, especially at key pedestrian entry points.
- 6 Ground floor building design articulation for retail/commercial uses are to avoid the creation of dark alcoves or entrapment areas.
- 7 The sill height of street frontage windows are not to be more than 1.2m above the adjacent street paving at any point. See Figure 8C.10-2.



Figure 8C.10-2:
Sill height controls for ground floor commercial premises to achieve an active street frontage.

- 8 External finishes at street level are to be robust and graffiti resistant, eg. ceramic tiles and metal.
- 9 Clear glazing is to be provided to all windows of active street frontage.
- 10 Security roller shutters are not permitted on the external face of the building. Where they are deemed necessary, grilles or transparent security shutters may only be used behind the window display.
- 11 Openable shopfronts for restaurants and cafes are to be provided where practicable. See Figure 8C.10-3 and Figure 8C.10-4.
- 12 No residential dwellings are permitted on the street level frontage. Where dwellings are provided on the street level frontage, the development is considered to be a Residential Flat Building and is to comply with all controls in Part 7 Residential Flat Buildings.
- 13 All new development **is to** be designed to include an internal ventilation shaft to ensure future alterations do not place the shaft in an unsuitable location.

8C.11 AWNINGS

Objectives

- 1 To ensure that awnings are in scale with development and overall design.
- 2 To ensure that awnings are designed to be consistent throughout Ku-ring-gai and with adjacent developments awning structures.
- 3 To provide high levels of pedestrian amenity with sun and rain protection.
- 4 To create well lit, visible street frontages that deter vandalism.
- 5 To create a pedestrian scale at street level.



Figure 8C.11-1:
Awning stepped to express building entry

Controls

- 1 Continuous awning is to be provided to the full length of the principal active street frontage.
- 2 Provide awnings along the supporting active street frontages (including mixed use buildings in R4 - High Density Residential zones) wherever practical, especially at key pedestrian entrances.
- 3 Awning design is restricted to suspended steel box section type along the principal active street frontages. Variations may be permitted in certain situations such as corners and building entries.
- 4 Glass awnings are not permitted.
- 5 Awning heights are to be between 3m and 3.5m except where integration with an adjoining property's awning(s) is desired, in which event awning height is not to be greater than 4.2m. Refer to Figure 8C.11-2.
- 6 Awnings are to be set back a minimum of 0.6m from the face of the kerb and to wrap around the corner on corner sites. Where street trees are required, the entire length of the awning is to be set back from the inside edge of the tree hole. Cut outs for trees and light poles in awnings are not permitted.

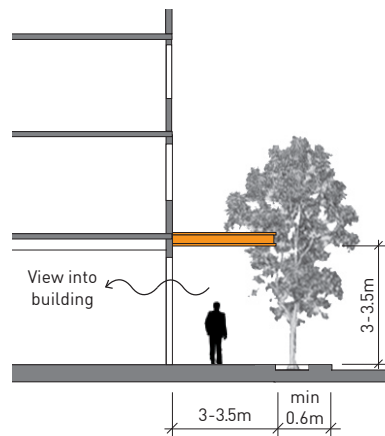


Figure 8C.11-2:
Awnings dimension controls.



Figure 8C.11-3:
Suspended steel box section awning with under awning lighting.

- 7 Awning depths are to be between 3 and 3.5m along the principal active street frontages. Refer to Figure 8C.11-2.
- 8 Steps within an awning for design articulation or to accommodate sloping streets are to be integrated with the building design and architectural composition of the elevations. The step is not to exceed 0.7m in height. See Figure 8C.15-1.
- 9 Vertical canvas drop blinds are not permitted along the outer edge of awnings.
- 10 Provide under awning lighting recessed into the soffit of the awning or wall mounted on the building.
- 11 Under awning lighting is to achieve luminance levels consistent with community safety and security in AS1228.1-2001. Evendebe taturi

8C.12 COLONNADES

Objectives

- 1 To ensure that colonnades are safe, accessible and in keeping with desired streetscape character and appropriate to the development in scale and overall design.
- 2 To ensure that colonnades respond to the pedestrian scale of the street.
- 3 To provide colonnades that increase pedestrian amenity with sun and rain protection.
- 4 To provide colonnades that facilitate opportunities for outdoor dining.
- 5 To ensure that colonnade areas are well lit and have high visibility.

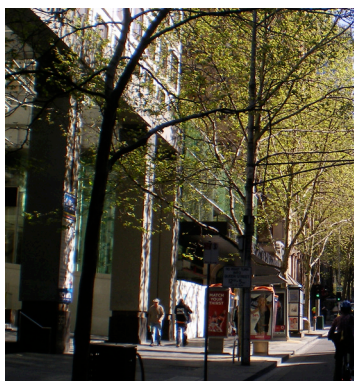


Figure 8C.12-1:
Colonnade space within
property boundary.



Figure 8C.12-3:
Colonnade space used for
outdoor dining.

Controls

- 1 All colonnade spaces are to be within the property boundary.
- 2 Colonnades are to have a height/width ratio no less than 1.5:1, a minimum width of 2.4m, and a minimum soffit height of 3.6m.

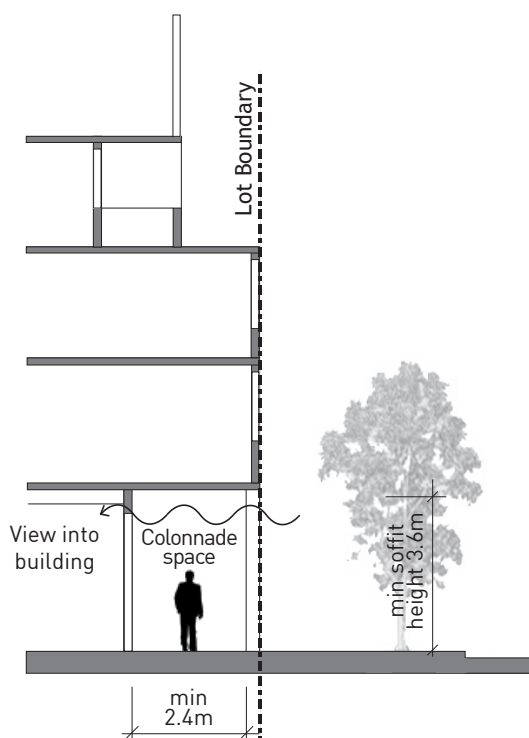


Figure 8C.12-2:
Colonnade space activates street level.

- 3 Colonnade heights and widths are to be continuous along a block, and should readily allow extension into neighbouring sites.
- 4 The size and spacing of supports are to be designed to allow pedestrian circulation and views of ground floor activity from the street, and avoid concealment areas.
- 5 On sloping sites an access point with a flush transition is to be provided between the colonnade area and adjoining footpaths.
- 6 Provide under colonnade lighting recessed into the soffit of the colonnade or wall mounted on the building, ensuring shadowed recesses are not created as potential entrapment areas.
- 7 Under colonnade lighting is to achieve luminance levels consistent with community safety and security in AS1228.1-2001.
- 8 Vertical canvas drop blinds are not permitted along edge of colonnades.

Objectives

- 1 To ensure that internal ceiling heights are coordinated with external building form requirements.
- 2 To provide internal ceiling heights that contribute to flexibility and adaptability of use in the future.
- 3 To create buildings that facilitate a 'sense of space' by maximising natural light and ventilation.
- 4 To ensure that development controlled by SEPP (Housing) 2021 Apartment Design Guide is deferred to in these standards.



Figure 8C.13-1:
Internal ceiling height
responded to the parapet line
of adjoining heritage building.

8C.13 INTERNAL CEILING HEIGHTS

Controls

Non-Residential Component

- 1 For all new buildings in the **E1** Local Centre zone, the **MU1** Mixed Use zone, and sites within the R4 High Density Residential zone where commercial development is permitted under Schedule 1 of the KLEP, the minimum ceiling heights, measured from finished floor level (FFL) to finished ceiling level (FCL), are to be:
 - i) 4.0m for ground floor cafe/restaraunt uses (or 4.4m from FFL to next floor FFL);
 - i) 3.3m for ground floor and first floor retail or commercial uses (or 3.7m from FFL to next floor FFL);
 - ii) 3m for non-residential uses on all other floors (or 3.4m from FFL to next floor FFL).
- 2 Internal ceiling heights and slab levels **are to** be coordinated with external height requirements and key datum lines. External building elements requiring coordination is to include:
 - i) datum lines and parapet lines set by the context or the Built Form controls in Part 14 Urban Precincts and Sites;
 - ii) the cornices and string courses of adjacent heritage buildings; and/or
 - iii) existing exterior awning levels or colonnade heights.

Residential Component

- 3 The minimum ceiling heights for all areas within the residential flat building are to comply with the ceiling heights stipulated in **SEPP (Housing) 2021 Apartment Design Guide Part 4C - Ceiling Heights**.

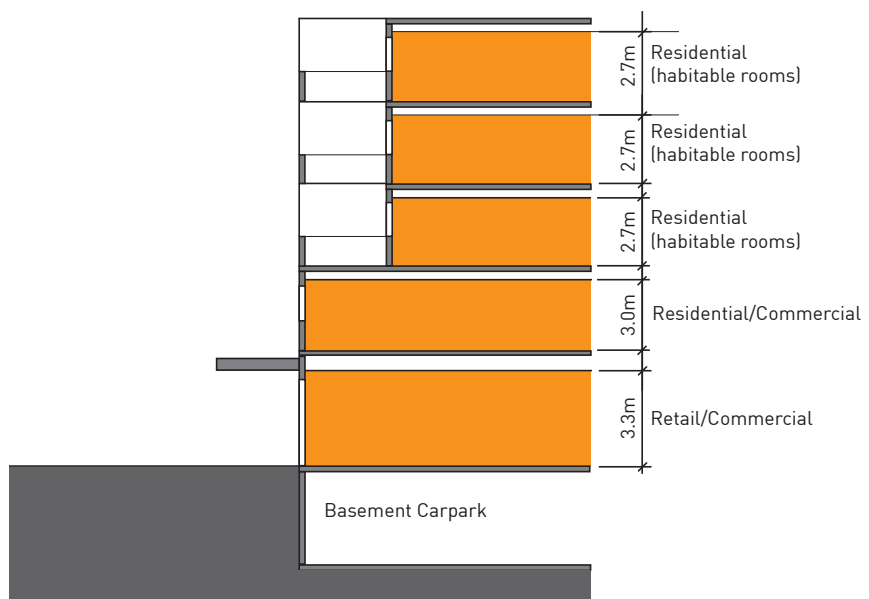


Figure 8C.13-2:
Internal ceiling height requirements for mixed use buildings.

8C.14 VISUAL PRIVACY

Further controls that may apply

SECTION A
PART 8A.4 - Building Separation

SECTION C
PART 23.8 - General Visual Privacy

Objectives

- 1 To ensure high standards of visual privacy for all occupants within the development.
- 2 To minimise the impact of development on the visual privacy of neighbouring occupants of residential dwellings.
- 3 To ensure that development controlled by SEPP (Housing) 2021 Apartment Design Guide is deferred to in these standards.



Figure 8C.14-1:
Use of different types of balustrades.



Figure 8C.14-2:
Balconies with sliding panels to increase visual privacy.

Controls**Non-Residential Component**

- 1 Buildings are to be designed to ensure privacy for residents of the development and of the neighbouring site. In addition to design options outlined in Section C Part 3.5 of this DCP, design measures may also include:
 - i) off-setting balconies in relation to adjacent balconies;
 - ii) using recessed balconies and/or vertical fins between adjacent private balconies;
 - iii) using solid or semi-transparent balustrades to balconies (see Figure 8C.18-1);
 - iv) using louvres/screen panels to windows and balconies (see Figure 8C.18-2);
 - v) incorporating planter boxes into walls or balustrades to increase the visual separation between areas;
- 2 Residential uses including residential entry foyers from street level, and apartments at podium level are to be separated from non-residential common areas, communal open space and the public domain. Examples include the use of:
- 3 Continuous transparent balustrades are not permitted to balconies or terraces for the lower 3 storeys.
- 4 Screening between apartments is to be integrated with the overall building design.

Residential Component

- 5 Buildings are to be designed to ensure privacy for residents of the development and of the neighbouring site as stipulated in SEPP (Housing) 2021 Apartment Design Guide Part 3F - Visual Privacy

8C.15 ACOUSTIC PRIVACY

Further controls that may apply

SECTION B

PART 20 - Development Near Road or Rail Noise

SECTION C

PART 23.7 - General Acoustic Privacy

Objectives

- 1 To ensure high standards of acoustic privacy for occupants and neighbours of the development.
- 2 To ensure that mixed use development is designed and constructed to minimise the impact of external noise and facilitate comfortable living conditions for residents/ occupants.
- 3 To ensure that development within mixed use zones incorporates measures to protect the amenity of existing residents.
- 4 To minimise noise impacts of late night operation of mechanical equipment on nearby or adjoining residents.
- 5 To avoid a concentration of high noise generating premises within close proximity to residential uses.

Controls

- 1 Buildings are to be designed to minimise the impact of noise through planning, construction and materials in accordance with the relevant acoustic standards in relation to noise transmission between and within buildings, including AS2107-2000: *Acoustics- Recommended design sound levels and reverberation for building interiors*.
- 2 In addition to specific noise sources such as traffic or rail lines, proposed developments are to consider:
 - i) the specific nature of the premises, (eg. pub, restaurant, hairdressers, laundromat; supermarket) and any associated outdoor areas;
 - ii) the proposed hours of operation;
 - iii) the late night operation of equipment (such as coolrooms and generators) and services within premises (such as drycleaners, cafes, restaurants, entertainment facilities, etc);
 - iv) any tonal, low frequency, impulsive, or intermittent noise resulting from the development;
 - v) the existing hours of operation of surrounding business uses;
 - vi) the size and patron capacity of the premises;
 - vii) the cumulative impact of the premises on the mix, diversity and possible concentration of late night uses in the locality.
- 3 The maximum internal LAeq 15 minute noise levels of any development **is not to** exceed the noise levels as set out in Figure 8C.15-1.

Note: Council requires an acoustic assessment be undertaken by a suitably qualified acoustic consultant to assess compliance with the above criteria. Recommended noise attenuation measures **are to** be included in this report where applicable.

Amenity Criteria		
	Recommened LAeq Noise Level, dB(A)	
Time of day ¹	Maximum noise level -Windows open	Maximum noise level -Windows closed
Day	60	50
Evening	50	40
Night	45	35

Figure 8C.15-1 Source: NSW EPA Industrial Noise Policy

Day¹: From 7:00am to 6:00pm Monday to Saturday; or 8:00am to 6:00pm on Sundays and public holidays

Evening: The period from 6:00pm to 10:00pm

Night: The remaining time periods.

- 4 For requirements on noise levels associated with air conditioning, kitchen, bathroom, laundry ventilation, or other mechanical ventilation systems and other plant refer to Part 23.8 of this DCP.

8C.15 ACOUSTIC PRIVACY (continued)

Controls

- 5 Noise reduction measures to achieve these outcomes may include, but are not limited to the following design criteria:
- incorporating appropriate noise shielding or attenuation techniques into the design and construction of the building. In particular, noise shielding will be required between uses, walls and floors;
 - using noise barrier planning principles such as using the building mass to shield noise (eg using podiums to shield noise from below); and locating non-habitable rooms towards the noise source and habitable rooms oriented to quieter areas on the site; minimising the size and number of windows and balconies oriented to the noise source.
- Note:** Refer to Part 20 Development Near Rail Corridors and Busy Roads.
- enclosing plant rooms;
 - locating plant in basements;
 - minimising the amount of shared walls between apartments, commercial occupancies and/or plant;
 - locating building services (laundries/ storage areas) and circulation zone apartment entries away from noise sensitive areas (ie. bedrooms) to provide a buffer from noise generators, such as traffic, mechanical plant equipment, and service and loading vehicle entries (see Figure 8C.15-2);
 - recessing balconies and fitting sound absorption materials (see Figure 8C.15-3);
 - fitting out building services, (including plant, piping and ducting) with appropriate acoustic insulation; (comment delete as it is required by BCA);
 - replacing conventional roof design with eaves by a flat roof with parapets where requirements for weather protection are otherwise achieved;
 - using solid core doors, thicker window glass, double glazing, baffles to openable windows.

Service and circulation areas used to buffer noise sensitive areas.

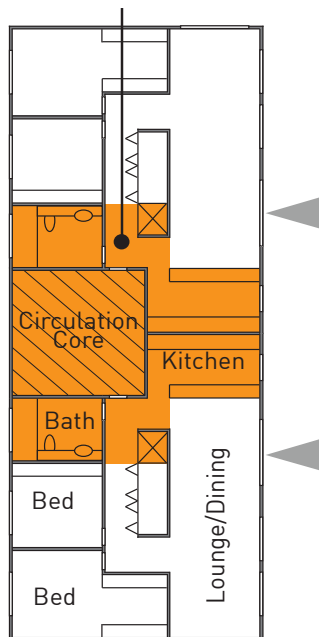


Figure 8C.15-1:
Provision of buffer zone to minimise noise impacts within a dwelling.

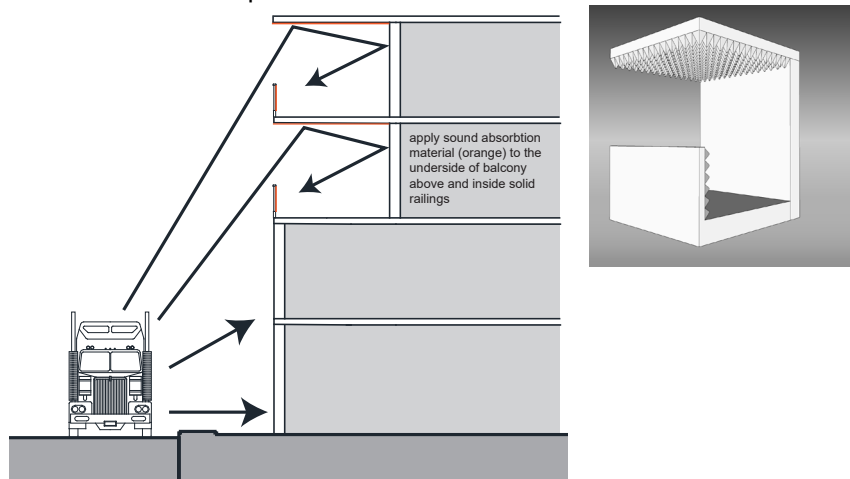


Figure 8C.15-2:
Limiting reflected noise on high rise balconies and within adjacent rooms.

Ku-ring-gai Development Control Plan

8C.15 ACOUSTIC PRIVACY (continued)

Controls

Commercial uses in residential zones

- 6 Commercial uses, where permitted in R4 (High Density Residential) zones, are to only operate within the following hours:
 - i) 9:00am to 6:00pm weekdays;
 - ii) 9:00am to 4:00pm Saturdays; and
 - iii) 9:00am to 1:00pm Sundays.
- 7 Use of mixed use buildings in R4 (High Density Residential) zones providing medical services outside of the above hours and on public holidays will be permitted in the case of emergency services.

Commercial Uses in business zones

- 8 Commercial uses, where permitted in **E1** (Local Centre) zones are to only operate within the following hours:
 - i) 7:00am to 10:00pm weekdays and Saturdays; and
 - ii) 8:00am to 9:00pm Sundays and public holidays.
- 9 Loading docks associated with commercial uses in **E1** (Local Centre) zones are to operate within the following hours:
 - i) 6:00am to 8:00pm weekdays; and
 - ii) 8:00am to 5:00pm Saturdays;
 - iii) 8:00am to 2:00pm Sundays and Public Holidays.

8C.16 LATE NIGHT TRADING

Objectives

- 1 *To ensure that late night premises provide adequate safety and security for patrons, nearby or adjoining residents/occupants and the general public within the vicinity.*
- 2 *To ensure that late night trading premises are designed, constructed and managed to minimise the impact of noise on nearby residents/ occupants.*
- 3 *To reduce the potential for anti-social behaviour and promote positive social activities.*
- 4 *To avoid a concentration of high noise late night trading premises in close proximity to residential uses.*



Figure 8C.16.1
Well lit night time street
activity.

Controls

- 1 Development for late night trading premises are to be designed to minimise the impacts of noise production on nearby and adjoining premises.
- 2 In particular, proposed developments are to consider:
 - i) the size and patron capacity of the premises, including for associated outdoor areas;
 - ii) the proposed hours of operation;
 - iii) the existing hours of operation of surrounding business uses;
 - iv) the cumulative impact of the premises on the mix, diversity and possible concentration of late night uses in the locality;
 - v) measures to ensure adequate safety, security and crime prevention both on the site and in the public domain immediately adjacent to, and surrounding, the premises;
 - vi) the accessibility and frequency of public transport during the late night trading hours.
- 3 Crime reduction measures to achieve these outcomes may include, but are not limited to the following:
 - i) lighting at entry, exits and outdoor areas;
 - ii) locating late night trading entries, exits and outdoor areas away from noise sensitive areas (eg bedrooms);
 - iii) minimising the size and number of residential windows and balconies oriented towards the entries, exits and outdoor areas associated with the late night premises;
 - iv) providing windows from residential living areas that overlook the development to provide passive surveillance of the street.
 - v) providing unobstructed sightlines within and around the development.
- 4 Development applications for late night trading premises are to be accompanied by a detailed plan of management which addresses amenity, safety and security and demonstrates a strong commitment to effectively managing potential noise impacts on adjoining and surrounding land uses.

Note: Proposals for smaller late night premises may not be required to provide a plan of management. A pre-lodgement meeting with Council is recommended for any proposal that includes late night trading.

8C.17 EXTERNAL AIR CLOTHES DRYING FACILITIES

Objectives

- 1 *To ensure buildings maximise the opportunities for sun and wind drying of clothes.*
- 2 *To provide external air clothes drying areas that do not detract from the visual appearance of the building and common areas.*

Controls

- 1 Each apartment is required to have access to an external air clothes drying area, eg. a screened balcony, a terrace or common area.
- 2 External air clothes drying areas are to be screened from public and common open space areas. Refer to Figure 8C.17-1.
- 3 Where provided in common areas, drying facilities, including clothes lines, are to be provided.

Screened area is
concealing clothes line
from public domain



Figure 8C.17-1:
Screened balconies for external air clothes drying facilities.

8C.18 SERVICES

Further controls that may apply		
		<div>SECTION C</div> <div>PART 23.6 - Building Services</div> <div>PART 25 - Waste Management</div>

Objectives

- 1 All developments are to design and locate utility infrastructure to minimise their impact on the structure.

Controls

- 1 All developments are to make provision for waste and recycling storage and collection within the building basement.
- 2 Building services, including within basements and on rooftops, are not to be visible from the public.

NON-RESIDENTIAL AND OFFICE BUILDINGS

Introduction

9A Site Design

- 9A.1 Building Setbacks
- 9A.2 Building Separation
- 9A.3 Deep Soil Landscaping

9B Access and Parking

- 9B.1 Service Access and Loading Facilities
- 9B.2 Car Parking Provision
- 9B.3 Bicycle Parking Provision

9C Building Design and Sustainability

- 9C.1 Solar Access
- 9C.2 Natural Ventilation
- 9C.3 Floor Depth
- 9C.4 Building Entries
- 9C.5 Internal Common Circulation
- 9C.6 Roof Forms, Terraces and Podiums
- 9C.7 Communal Open Space
- 9C.8 Building Forms and Facades
- 9C.9 Corner and Landmark Building Articulation
- 9C.10 Ground Floor Frontage
- 9C.11 Awnings and Colonnades
- 9C.12 Internal Ceiling Heights
- 9C.13 Visual Privacy
- 9C.14 Acoustic Privacy
- 9C.15 Fencing
- 9C.16 Services

INTRODUCTION

This Part is to be read in conjunction with KLEP. This section applies to all non-residential and office building developments within the **E1**, **MU1** and **E3** zones.

Where a development involves refurbishment works or alterations/ additions to existing buildings, new elements are to meet the requirements of this Part.

The objectives and controls in this Part guide the development of office buildings in meeting the aims and objectives within the LEP.



- 9A **Site Design**
- 9A.1 Building Setbacks
- 9A.2 Building Separation
- 9A.3 Deep Soil Landscaping

READ WITH
SECTION A PART 8 - Mixed Use Development 8A.4: Building Separation
SECTION B PART 14 - Urban Precinct and Sites
SECTION C PART 21 - General Site Design



9A.1 BUILDING SETBACKS

Further controls that may apply

SECTION A PART 8A.3 - Building Setbacks

SECTION B PART 14 - Urban Precinct And Sites

Objectives

- 1 *To create cohesive streetscapes with consistent building alignments and setbacks.*
- 2 *To facilitate building modulation and articulation of facades.*
- 3 *To ensure adequate areas to enable effective street tree planting and setback landscaping where appropriate.*
- 4 *To protect the privacy and amenity of any adjoining residential land uses.*
- 5 *To ensure adequate separation between buildings on different sites for sun access, acoustic control and natural ventilation.*

Controls

- 1 Buildings are to conform with established street and boundary setback pattern and distance and comply with relevant setback controls in Part 14 and Part 8A.1
- 2 Buildings are to comply with relevant setback controls as follows:
 - i) specific masterplanned sites – apply the setbacks in Part 14 Urban Precincts and Sites;
 - ii) mixed use development – apply the setbacks in Part 8A.3;
 - iii) where the above 2(i) and 2(ii) do not apply, minimum side and rear setbacks are to be provided as indicated in Figure 9A.1-1.
- 3 The following elements may encroach into setback areas within MU1 zones:
 - i) eaves;
 - ii) pergolas; and
 - iii) blades, fins, columns.
- 4 Basements are not to encroach into the street, side or rear setbacks.
- 5 Surface parking is not permitted within the street setback.

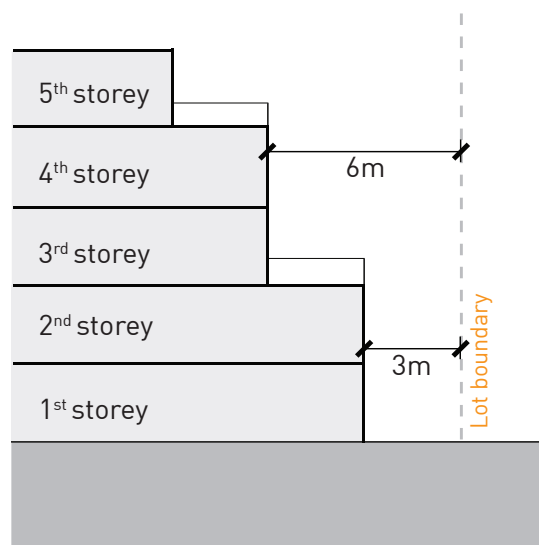


Figure 9A.1-1:
Minimum side and rear setback controls for non-residential buildings.

9A.2 BUILDING SEPARATION

Further controls that may apply

SECTION A
PART 8A.4 - Building
Separation

SECTION B
PART 14 - Urban Precinct And Sites

Objectives

- 1 *To ensure that new development supports the desired character of the area with appropriate massing and spaces between buildings.*
- 2 *To ensure building configuration protects and enhances visual and acoustic privacy for occupants.*
- 3 *To provide building form and layout that minimises overshadowing of adjacent properties and open space.*
- 4 *To provide building configuration that facilitates the provision of useable communal open space, landscaping and view corridors.*
- 5 *To provide building form and layout that maximises view sharing.*

Controls

- 1 Buildings within **E1**, **MU1** and **E3** zones are to comply with the relevant building separation controls in *Part 14 and Part 8A.2*.
- 2 Separation distances between building elements within a development and between adjoining properties are to be:
 - i) Three to five storeys:
 - a minimum of 9m between commercial uses and habitable rooms or balconies of dwellings;
 - a minimum of 6m between commercial uses and commercial uses or non-habitable rooms of dwellings
 - ii) Six storeys and above:
 - 9m between commercial uses and commercial uses or non-habitable rooms of dwellings.

Nothing in this provision reduces the required setback in Part 9A.1.
- 3 Office developments adjacent to existing residential flat buildings built prior to 2004 or commercial buildings built prior to 2013 (ie prior to current setback requirements), are to demonstrate that the adjoining development retains adequate visual and acoustic privacy, access to daylight and views and that the massing of the building is appropriate to the character of the locality.



Figure 9A.2-1:
Landscaped open space as separation between office buildings.

9A.3 DEEP SOIL LANDSCAPING

Objectives

- 1 *To provide landscaping that is appropriate to the scale and context of the development.*
- 2 *To retain significant trees.*
- 3 *To minimise impervious surfaces that generate storm water runoff.*
- 4 *To soften the built form.*
- 5 *To provide amenity for the users of the site and its neighbours.*
- 6 *To provide shade for users of the site and for carparking.*

Controls

- 1 Where setbacks are required deep soil landscaping is to be provided to at least half the setback.
- 2 Natural ground level is to be retained throughout any required setbacks, where possible.
- 3 Deep soil landscaping is also to be provided along side setbacks.
- 4 Deep soil zones are to be configured to retain healthy and significant trees on the site and adjoining sites, where possible.
- 5 Where landscaping is provided along the street alignment, a physical edge such as a planter box wall, is to be no higher than 1m from the finished level of adjacent public pathways.



Figure 9A.3-1:
Mixed planting in side setback includes tall trees

- 9B

Access and Parking
- 9B.1

Service Access and Loading Facilities
- 9B.2

Car Parking Provision
- 9B.3

Bicycle Parking Provision

READ WITH
<div>SECTION C</div> <div>PART 22 - General Access and Parking</div> <div>22.3: Basement Car Parking</div> <div>22.4: Visitor Parking</div> <div>22.5: Parking for People with a Disability</div> <div>22.7: Bicycle Parking and Facilities</div> <div>22R.2: Car Parking Rates</div> <div>PART 23 - General Building and Sustainability</div> <div>PART 25 - Waste Management</div>



9B.1 SERVICE ACCESS AND LOADING FACILITIES

Further controls that may apply

SECTION C
PART 25 - Waste Management

Objectives

- 1 *To provide adequate and accessible on-site service areas and loading facilities.*
- 2 *To provide size and number of service areas and loading docks in proportion to the scale and intensity of the proposed use.*
- 3 *To ensure that loading facilities do not detract from the street scape and the amenity of nearby public spaces and residential areas.*

Controls

Service access

- 1 On-site service vehicle access are to be provided and designed in accordance with the following:
 - i) a driveway is to be established that is of adequate strength, width and design for the intended service vehicle characteristics;
 - ii) the driveway is to be designed such that service vehicle movement is in a forward direction, both when entering and exiting the site;
 - iii) entrance heights are to allow access for service vehicles;
 - iv) service ducts, pipes and other overhead obstructions are to be located to maintain minimum finished ceiling heights required for service vehicle access; and
 - v) on-site manoeuvrability is to be unimpeded for all site users.
- 2 Generally, service vehicle access is to be combined with parking access. Separate access may be required in major office developments.
- 3 Where a waste and recycling room is provided within the basement, the minimum finished ceiling height is to be 4.5m along the path of travel from the street to the commercial waste collection and manoeuvring area. This clearance is to be kept free of any overhead ducts, services or other obstructions.

Loading facilities

- 4 Service vehicles turning into or out of a road or driveway are to be able to complete their turning manoeuvres without crossing the centre line of the public road.
- 5 On-site internal loading facilities is to be provided for all developments with loading and unloading requirements.

9B.1 SERVICE ACCESS AND LOADING FACILITIES (continued)

Controls

- 6 Loading docks are to be:
- i) accessed via a rear lane or side street where these are available, and accessible to heavy vehicles;
 - ii) conveniently located in such a way that minimises conflict with pedestrians and other traffic; and
 - iii) screened from the public street.

Note: Refer to RTA Guidelines (RMS).

- 7 Gradients in service areas are to be kept to a minimum. The maximum gradient measured in any direction at any one point, is to be 1:6.5 (15.4%) where only forward movement is to take place or 1:8 (12.5%) where reverse manoeuvres will occur.
- 8 Circulation roadways and loading area dimensions are to comply with the provisions in *AS2890.2: Off-Street Parking (Part 2:Commercial Vehicle Facilities)*.
- 9 The design of the apron area in front of the loading dock(s) is to take into account the type of vehicle to be used. Reference is to be made to *AS2890.2* for apron dimensions.
- 10 Turning provisions are to be made within the site for the manoeuvring of vehicles using the loading and unloading facilities in accordance with Austroads Design Vehicular and Turning Templates.

Note: Refer to RTA guidelines (RMS)- *RTA Guide to Traffic Generating Developments* and relevant Australian Standards.

9B.2 CAR PARKING PROVISION

Further controls that may apply

SECTION C

PART 22.3 - Basement Car Parking

PART 22.4 - Visitor Parking

PART 22.5 - Parking for People with a Disability

PART 22.8 - Surface Parking

PART 22R.1 - Car Parking Rates

Objectives

- 1 To provide adequate car parking for the building's users and visitors, with consideration of building type and proximity to public transport.
- 2 To locate and design car parking which is integrated into the design of the site and the building.
- 3 To locate multi-level car parking in a way that protects streetscape address and visual amenity.
- 4 To limit surface car parking and ensure it is incorporated into the landscape design of the development site.
- 5 To ensure shading of outdoor car park areas through the use of landscaping.

Controls

Car parking design

- 1 All car parking areas are to be provided within the basement of development.
- 2 Basement car parking areas are to be consolidated under building footprints.
Note: Basements may be permitted to extend under the space between buildings on the same site.
- 3 The basement car park is not to project more than 1m above existing ground level to the floor level of the storey immediately above. See *Figure 9B.2-1*

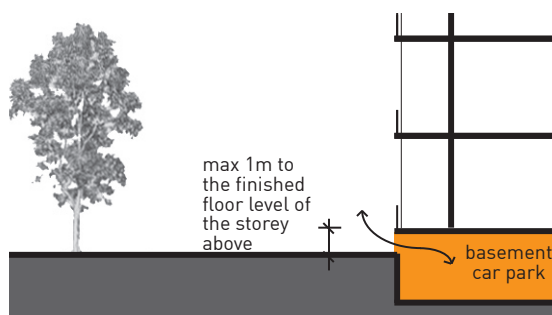


Figure 9B.2-1:

Controls for basement car park projection above existing ground level.

- 4 Car parking spaces, circulation areas, roadways and ramps are to comply with AS2890.1.
- 5 Multi-storey car parking above ground level may be permitted where it is housed within the building and concealed behind office or other active uses, so that the parking structure is not visible from the street or adjacent properties. Refer to *Figure 9B.2-1* and *9B.2-2*.
- 6 Multi-storey car parks are to have a minimum floor to ceiling height of 3.5m at ground or entry level, and 3m on any other above ground level, to enable flexibility for change in use. See *Figures 9B.2-2* and *9B.2-3*.
- 7 Any surface car parking is to comply with Part 22 of this DCP and requirements of AS2890.1.

9B.2 CAR PARKING PROVISION (continued)

Controls

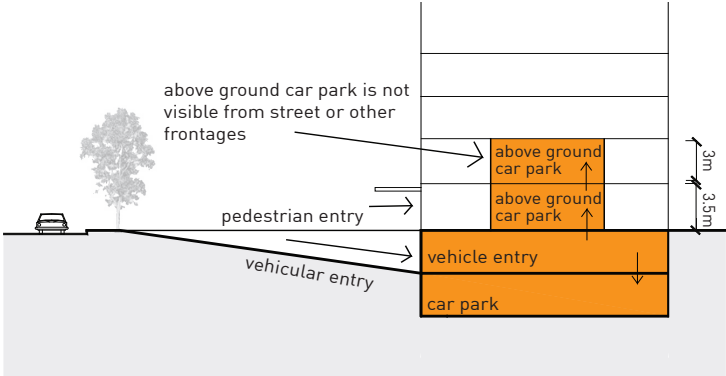


Figure 9B.2-2:
Multi-storey car park is housed within the building to facilitate active street frontages.

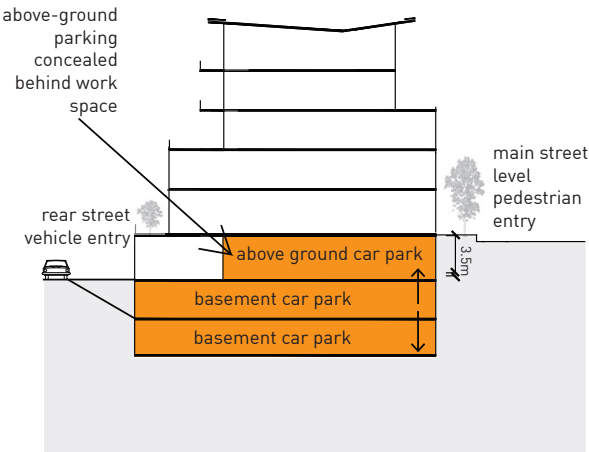


Figure 9B.2-3:
Above ground car parking is permitted on steep sites.

9B.2 CAR PARKING PROVISION (continued)

Controls

Car parking rates

- 8 For all non-residential development the parking provisions are to meet the requirements of *Part 22 of this DCP*.
- 9 The following car parking ranges apply to non-residential premises, where the development is within 800m walking distance of a train station entry and within a commercial centre located on the train line:

Premises	Parking Space Requirement Range
Office and business premises	1 space per 33m ² GFA to 1 space per 45m ² GFA Suggested division: 90% employee; 10% visitor Plus 1 space if resident/manager or caretaker Plus 1 courier space for development in excess of 200m ² GFA
Retail	1 space per 26m ² GFA to 1 space per 33m ² GFA Suggested division: 30% employee: 70% visitor

Car parking exceeding the requirements of the parking controls in the above table will not be excluded from the Gross Floor Area as defined in the KLEP.

- 10 For all non-residential development located more than 800m from a train station, car parking is to be provided in accordance with the parking rates in *Part 22R.1*.

Note: A Traffic Impact Assessment is to accompany development applications that seek to vary the parking rates. This includes commercial or strata funded car share schemes in lieu of parking spaces.
- 11 A minimum of 1 space or 1-2% (whichever is greater) is to be provided for accessible car parking for people with a disability.
- 12 10% of total parking within office developments is to be provided for visitors.
- 13 Consideration is to be given to accommodation of other road users, such as motor cycles and minibuses.

9B.2 CAR PARKING PROVISION (continued)

Controls

- 14 Parking provision at a rate less than 1 per 45m² GFA may be considered if accompanied by firm and ongoing proposals to encourage alternative means of transport. This may include strategies such as:
- i) Transport Access Guides (TAG);
 - ii) Staff discount/subsidy towards public transport costs;
 - iii) Dedicated shuttle bus between the development and railway station;
 - iv) Adoption and implementation of a car pool/car sharing scheme;
 - v) Use of taxis or public transport for work related journeys;
 - vi) Priority parking for staff who pool with 2 or more passengers.

Any proposed alternate scheme is to establish a plan with measurable targets and is to be regularly publicised and monitored.

- 15 At least one car share space is to be provided.

Note: any proposed reduction in car parking on the basis of providing car share space/s is to be justified by the proponent through supporting studies.



Figure 9B.2-4:
Broad canopy trees shading for at grade car parking.

9B.3 BICYCLE PARKING PROVISION

Further controls that may apply		
		SECTION C PART 22.7 - Bicycle Parking and Facilities

Objectives

- 1 To provide safe and easily accessible bicycle parking.
- 2 To provide amenities related to use of bicycles and public transport.

Controls

- 1 For all office buildings and office components of mixed use buildings, provide on-site, secure bicycle parking spaces and storage at the following rates:

Staff	Visitors
1 bicycle parking space per 200sqm of gross floor area for staff – in the form of an individual locker or secure room as per AS2890.3.	1 bicycle parking space per 750sqm over 1000sqm of gross floor area for staff – in the form of a bicycle parking device or rack as per AS2890.3.

- 2 At least one shower with changing and locker facilities is to be provided on each floor within office buildings and office components of mixed use buildings. .



Figure 9B.3-1: Bicycle Storage Area.

9C

Building Design and Sustainability

9C.1

Solar Access

9C.2

Natural Ventilation

9C.3

Floor Depth

9C.4

Building Entries

9C.5

Internal Common Circulation

9C.6

Roof Forms, Terraces and Podiums

9C.7

Communal Open Space

9C.8

Building Forms and Facades

9C.9

Corner Building Articulation

9C.10

Ground Floor Frontage

9C.11

Awnings and Colonnades

9C.12

Internal Ceiling Heights

9C.13

Visual Privacy

9C.14

Acoustic Privacy

9C.15

Fencing

9C.16

Services

READ WITH
SECTION A PART 1B: Dictionary PART 8 - Mixed Use Development 8C.14: Ground Floor Commercial Use 8C.15: Awnings 8C.16: Colonnades PART 12 -Signage And Advertising
SECTION B PART 14 - Urban Precinct and Sites PART 20 - Development Near Road or Rail Noise
SECTION C PART 23 - General Building and Sustainability 23.4: Material Finishes and Colours 23.5: Roof Terraces and Podiums 23.7: General Acoustic Privacy

9C.1 SOLAR ACCESS

Objectives

- 1 *To ensure a high level of internal amenity for all occupants with direct access to daylight.*
- 2 *To minimise the impact of overshadowing on living areas, and on private and communal open space areas of neighbouring buildings.*
- 3 *To minimise the impact of development on existing solar collection devices.*

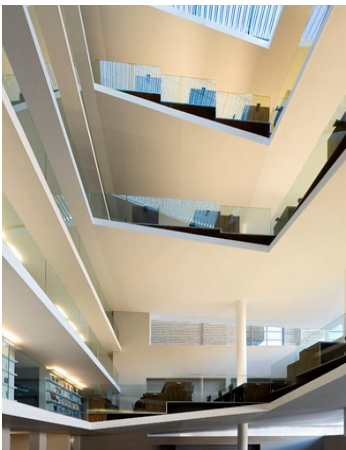


Figure 9C.1-1:
Internal atrium space to promote daylight access.

Controls

- 1 Buildings are to be oriented to optimise the northern aspect.
- 2 Use light shelves, reflectors, lightwells, skylights, atriums and clerestories where possible to maximise the quantity and quality of natural light within internal areas.
- 3 Developments are to allow the retention of a minimum of 4 hours direct sunlight between 9am to 3pm on 21st June to all existing neighbouring solar collectors and solar hot water services.

Office shading

- 4 At least 90% of all workspaces are to be within 10m and in direct line of sight of a perimeter window.
- 5 All developments are to allow the retention of at least three hours of sunlight between 9am and 3pm on 21st June to the living areas and the principal portion of the private and communal open space of any residential development on adjoining lots.
- 6 Where existing overshadowing by buildings is greater than this, sunlight is not to be reduced by more than 20%.

Sun shading

- 7 All developments are to utilise shading and glare control. For example:
 - i) provide external horizontal shading to north-facing windows, such as eaves, overhangs, pergolas, awnings, colonnades, upper floor balconies, and/or deciduous vegetation;
 - ii) provide vertical shading to east and west windows, such as sliding screens, adjustable louvres, blinds and/or shutters;
 - iii) provide shading to glazed and transparent roofs;
 - iv) use low glare high performance glass with an overall 3 star Window Energy Rating Scheme rating

Note: Refer to www.wers.net

- v) avoid the use of reflective films;
 - vi) use a glass with reflectance below 20%.
- 8 All shading devices are to be integrated with building facade design.
- 9 Consideration is to be given to the integration of solar shading with solar energy collection technology.

Objectives

- 1 To enable opportunities for natural ventilation.



Figure 9C.2-1:
Atrium to provide natural ventilation.

Controls

- 1 Wherever possible, provide dual aspect floor space to aid cross ventilation.
- 2 The use of open plan floor areas is encouraged to minimise interruptions in air flow by partitions and furniture.
- 3 Wherever possible, courtyard / atrium / thermal chimneys are to be provided to enable warm air to be drawn up and escape through roof ventilation.

Offices

- 4 All workspaces are to have operable windows or doors which open to at least 30% of the window or door areas.

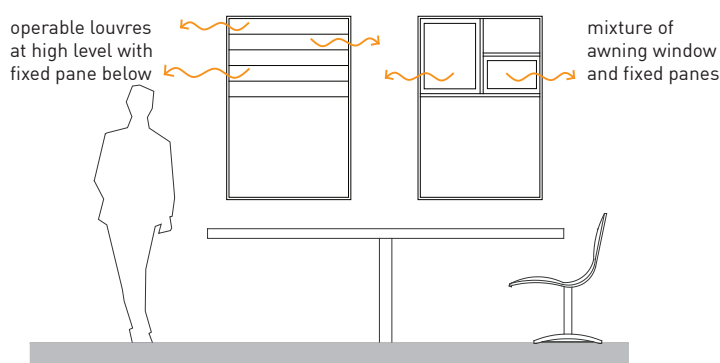


Figure 9C.2-2:
Operable windows enabling ventilation.

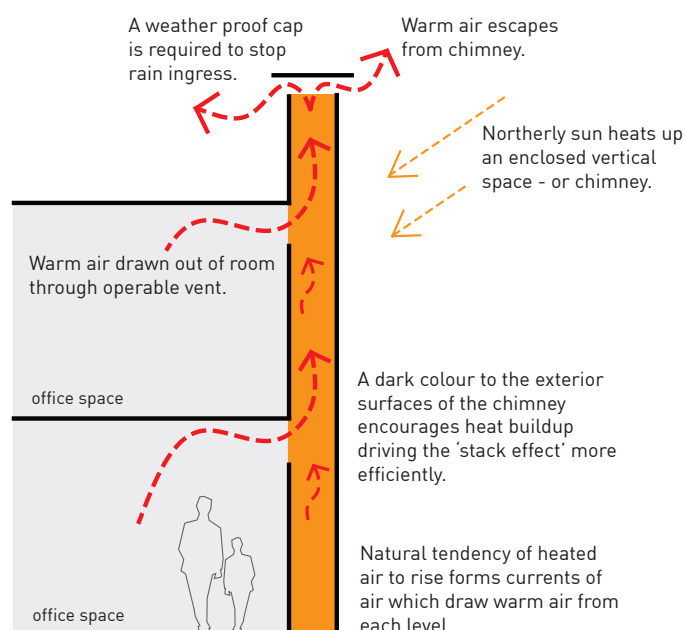


Figure 9C.2-3:
Section showing thermal chimney 'stack effect'.

9C.3 FLOOR DEPTH

Objectives

- 1 To provide good internal amenity for occupants through provision of sun access and natural ventilation.



Figure 9C.3-1:
Internal atrium space to promote daylight access.

Controls

- 1 Circulation, services and storage areas are to be located at the centre of the building to maximise opportunity for external openings for daylight access and views.
- 2 Atriums and courtyards are encouraged to promote access to natural light.

Offices

- 3 The maximum internal plan depth of office floors is to be 10m from glass line to internal face of wall. See *Figure 9C.3-2*.

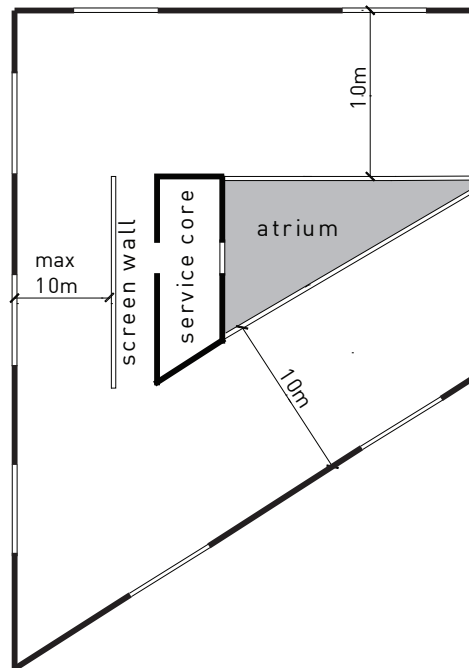
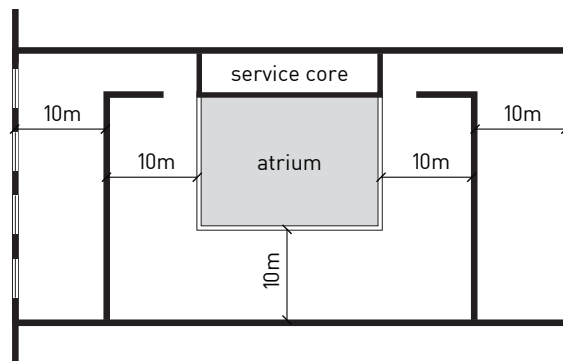


Figure 9C.3-2:
Internal plan depth controls for offices.

9C.4 BUILDING ENTRIES

Further controls that may apply

SECTION A

PART 8C.14: Ground Floor
Commercial
Uses

Objectives

- 1 To ensure that the building entry is clear and easily identifiable in the street, and is accessible to all.
- 2 To ensure that the building entry contributes positively to the building facade design, streetscape and enhances the active street frontage.

Controls

- 1 Provide access to and within all developments in accordance with the *Disability Discrimination Act 1992*.
- 2 Buildings are to address the street either:
 - i) with main entrances to lift lobbies directly accessible and visible from the street; or
 - ii) with the path to the building entry readily visible from the street where site configuration promotes a side entry.
- 3 Building entries are to be integrated into building facade design. At street level, the entry is to be articulated with awnings, porticos, recesses or projecting bays for clear identification.
- 4 Building entrances from primary street frontages are to be level with adjoining footpaths.

Note: Footpath levels are not to be changed. All level adjustments are to occur on private lands.
- 5 All entry ramps for disabled access are to be located inside the building facade and integrated into the lobby entrance design. Measures to enable disabled access are not to dominate the front facade.

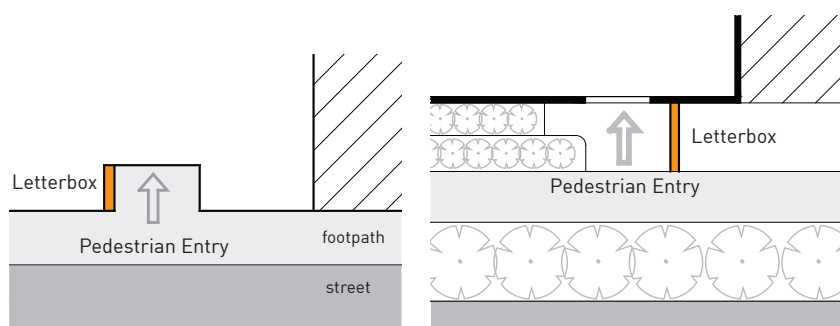


Figure 9C.4-2:
Letterbox to be positioned at 90° to the street.

9C.4 BUILDING ENTRIES (continued)

Controls

- 6 All entry areas are to be well lit and designed to avoid any potential concealment or entrapment areas.
- 7 Fire egress is not to face the primary street frontage. If this is unavoidable, the egress is to be integrated into the lobby entrance design.
- 8 Lockable mail boxes are to be provided close to the street and under a shelter. They are to be integrated with building entries at 90° to the street and to Australia Post standards.
- 9 Entries are to have street numbering that is clearly visible from the street.
- 10 Entries to ground floor retail development are to comply with *Part 8C.14*



Figure 9C.4-1:
Office building entry using different colour materials.

Objectives

- 1 To provide accessible, safe and pleasant circulation spaces for all occupants and users.
- 2 To minimise ongoing maintenance costs by providing natural light and efficient lighting to circulation areas.



Figure 9C.5-1
Well designed foyer/atrium
with seating areas provided.

9C.5 INTERNAL COMMON CIRCULATION

Controls

- 1 The design of internal common circulation space is to comply with the provisions in AS1428.1 and AS1428.2 to provide adequate pedestrian mobility and access.
- 2 All common circulation areas including foyers, lift lobbies and stairwells are to have:
 - i) appropriate levels of lighting with a preference for natural light where possible;
 - ii) short corridor lengths that give clear sight lines;
 - iii) clear signage to offices and facilities;
 - iv) natural ventilation; and
 - v) low maintenance and robust materials.
- 3 Where artificial lighting is required, energy efficient lights are to be used in conjunction with timers or daylight controls.
- 4 Building design is to avoid blind corner or dark alcoves near lifts and stairwells, at entrances, along corridors and walkways, and within car parks.

Offices

- 5 Seating areas are to be provided within the foyer/atrium and are encouraged in common circulation areas near workspaces.

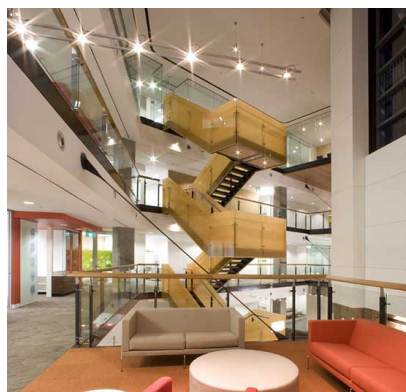


Figure 9C.5-2:
Well designed internal common circulation areas.

9C.6 ROOF FORMS, TERRACES AND PODIUMS

Further controls that may apply		
		SECTION C PART 23.5 - Roof Terraces and Podiums

Objectives

- 1 To ensure that the design of the top floor of buildings minimises visual bulk.
- 2 To provide articulation that prevents any increased overshadowing.
- 3 To encourage the use of the roof top areas for open space.
- 4 To contribute to the overall design and environmental performance.



Figure 9C.6-1:
Expressive roof form to articulate building.



Figure 9C.6-3:
Communal eating area on roof terrace.



Figure 9C.6-4:
Communal garden on terrace

Controls

- 1 Roof forms are encouraged to articulate and express building elements or location.
- 2 Service elements are to be integrated into the overall design of the roof so as not to be visible from the public domain or any surrounding development. These elements include lift overruns, chimneys, vent stacks, communication devices and signage.
- 3 Where solar panels are provided they are to be integrated into the roof line.
- 4 Flat roofs/roof terraces are to be used for communal open space for recreation use.
- 5 The incorporation of green roofs and podiums is encouraged.
- 6 Where podiums and roof terraces are used for open space, planter boxes are to be incorporated into walls or balustrades for privacy and amenity. See Figure 9C.6-5.

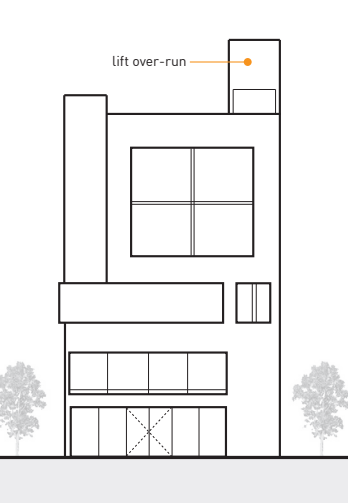


Figure 9C.6-2:
Lift over-run designed to complement building.

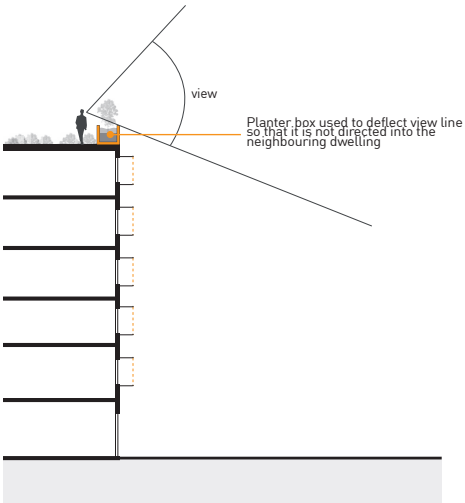


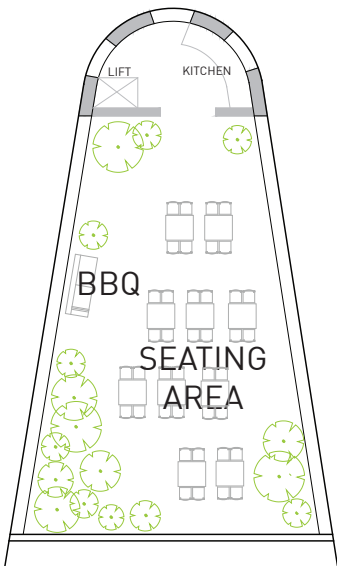
Figure 9C.6-5:
Incorporation of planter boxes into walls or balustrades of roof terraces

9C.7 COMMUNAL OPEN SPACE

Further controls that may apply		
		SECTION C PART 23.5 - Roof Terraces and Podiums

Objectives

- 1 To provide useable, attractive and accessible communal open space that adds to the amenity of the development and facilitates social interaction.
- 2 To provide communal open space that is responsive to the site and its context.
- 3 To ensure high quality communal open space that is well integrated within the development.



Controls

Offices

- 1 An area of communal open space is to be provided for staff recreation, appropriate to the needs of the particular premises.
- 2 Communal open space is to be located at ground level behind the building line or on roof terraces and podiums.
- 3 Access to communal open space is to be provided for people with a disability in accordance with Part 2 Section 7 of AS1428 Access within the largest area of communal open space is to be provided for people with a disability.
- 4 The location and design of communal open space is to optimise opportunities for social and recreation activities, solar access and orientation, summer shade, outlook and the privacy of adjoining residential sites.
- 5 Ground level communal open space is to be integrated with significant natural feature(s) of the site and soft landscaping areas.
- 6 The communal open space is to be capable of surveillance from workspaces for safety reasons.
- 7 Concealment or entrapment are not to be created within the communal open space.



Figure 9C.7-1:
Roof top garden used as communal open space.

9C.7 COMMUNAL OPEN SPACE (continued)

Controls

- 8 Communal open space is to be well lit with an energy efficient lighting system to be used in conjunction with timers or daylight controls. All light spill is prohibited.
- 9 Shared facilities such as barbecue facilities and seating are to be provided within the communal open space.
- 10 Garden maintenance storage areas and connections to water and drainage is to be provided to communal open space.
- 11 Where communal open space is provided on roof terraces and podiums, the design considerations are to include:
 - i) incorporating sun shading devices and wind screens to encourage usage;
 - ii) incorporating landscaping elements including small to medium trees;
 - iii) a maximum wind speed of 10m/sec. This may be achieved by:
 - Use of building facade design and setbacks to deflect downwards drafts;
 - Awning design to deflect winds away from footpath level;
 - Use of vegetation and tree canopy as buffer to the street level from winds..

9C.8 BUILDING FORMS AND FACADES

Further controls that may apply

SECTION A

PART 12 - Signage and Advertising

SECTION C

PART 23.4 - Materials, Finishes and Colours

PART 23.6 - Building Services

Objectives

- 1 To promote buildings of high architectural quality that contribute to the desired local character.
- 2 To create building facades that reduce the bulk and scale of the building.
- 3 To create building facades that are environmentally responsive.
- 4 To integrate building elements into the overall building form and facade design.
- 5 To ensure that building facade design contributes to the safety of the public domain.



Figure 9C.8-1:
Segmenting of building facade to create interesting elements.

Controls

- 1 Buildings are to have a maximum floor plate of 1200 sqm.
- 2 Where sites require larger floor plates, they are to be expressed as separate building elements of not more than 1200m².
- 3 The continuous length of a single building on any elevation is not to exceed 60m. Where the building length is proposed to be greater than 60m, a recessed or articulated area is to be provided sufficient to present to the street as a separate building.
- 4 All building facades at ground level are to engage with and contribute to the activities of the street principally through the use of glazed frontages.
Note: Refer to 9C.10 of this Part for ground floor frontage controls.
- 5 Monolithic structures with repetitive elements are to be avoided by segmenting building facades into vertical elements with individual modulations.
- 6 Building elements are to be expressed through use of rhythm and patterns of windows, material, colour and texture to create dynamic facades. For example, use of recessed balconies and deep windows to create contrasting areas giving the facade visual depth.
- 7 The building layout or structure is to be expressed within the facade.
- 8 Building facades are to be designed to respond to solar access by using solar protection elements such as overhangs and other sun shading devices as environmental controls.
- 9 All building elements including shading devices, signage, drainage pipes, awnings/colonnades and communication devices are to be coordinated and integrated within the overall facade design.
Note: See Part 12 of this DCP for signage requirements.
- 10 Balconies that run the full length of the building facade are not permitted.
- 11 Balconies are to be partially recessed and not project more than 1.2m from the outermost wall of the building facade.
- 12 Blade walls are not to be the sole element used to provide articulation.

9C.9 CORNER BUILDING ARTICULATION

Further controls that may apply

SECTION A PART 1B - Dictionary

Objectives

- 1 *To provide distinct building articulation on corner sites that reinforce the street intersection and create landmark.*
- 2 *To provide landmark buildings that are recognised from a distance.*

Controls

- 1 Corner buildings are to address both street frontages.
- 2 Street corners are to be emphasised by giving visual prominence to parts of the building facade. This may be achieved through
 - i) a change in building articulation
 - ii) a change in building material of colour
 - iii) a change in height
 - iv) roof expansion
 - v) staged setbacks or curves
 - vi) corner entry
- 3 Buildings in landmark positions are to be of a high architectural quality and contribute significantly to the local built environment.

Note: Refer to *Part 1B of this DCP* for the definition of a landmark building.



Figure 9C.9-1:
Corner articulation using height and colour changes.

9C.10 GROUND FLOOR FRONTAGE

Objectives

- 1 *To provide ground floor facades that enhance public domain amenity and safety.*
- 2 *To create active street frontages that facilitate direct physical and visual connection between the private and public domain.*
- 3 *To support pedestrian activity and enhance the amenity, safety and surveillance of the public domain.*

Controls

- 1 Buildings are not to have a continuous length of blank wall of more than 30% of the length of the building facade at the street level.
- 2 Ground floor building articulation is to be designed to avoid the creation of entrapment areas.
- 3 External finishes at street level are to be robust and graffiti resistant, eg. ceramic tiles and metal.
- 4 Provide predominantly clear glazing to all street frontage windows with a minimum 3 star Window Energy Rating Scheme rating.
Note: Refer to www.wers.net.
- 5 Security roller shutters are not permitted on the external face of the building. Where they are deemed necessary, grilles or transparent security shutters are to be located internally.
- 6 Where ancillary services such as cafes are provided, they are to be located within the foyer/atrium area and have good visual connection with the foyer and building entry.
- 7 Ground floor frontages to retail units are to comply with Part 8C.14.
- 8 Ground floor frontages are to provide for active uses that contribute to the active street frontage.
- 9 Building slabs are to be stepped on sloping sites to ensure ground floor level does not exceed 0.3m above or below finished footpath level.
Note: Variations may be permitted on very steep streets.
- 10 Building entries to each individual commercial premises are to be level with adjoining footpaths, with openings (doors and windows) that allow a direct visual connection between the building and the street.
Note: Variations may be permitted on very steep streets.

Objectives



Figure 9C.10-2:
Office building is to have active street frontage.

9C.10 GROUND FLOOR FRONTAGE (continued)

Controls

Offices

- 11 Office buildings within **E1** and **MU1** zones are to comply with *Part 8C.14 of this DCP*.

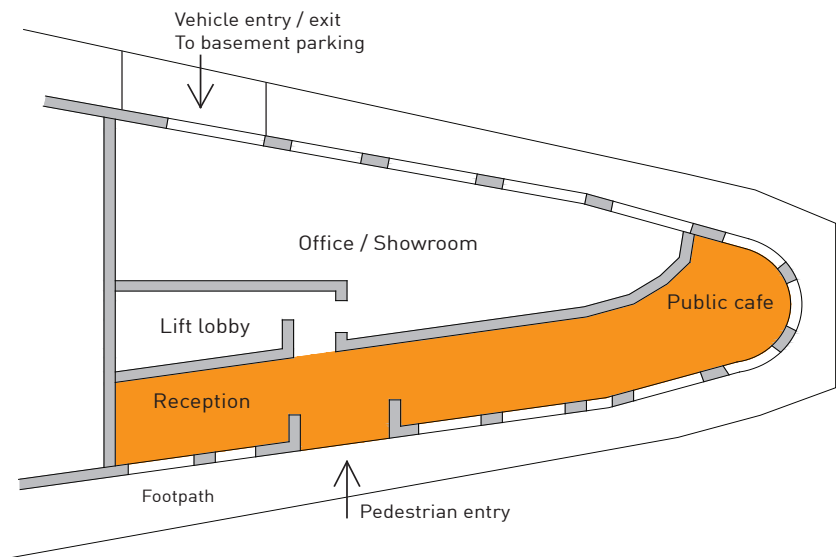


Figure 9C.10-1:
The use of glazed frontages on street level to provide passive surveillance.

9C.11 AWNINGS AND COLONNADES

Further controls that may apply

SECTION A
PART 8C.11 - Awnings
PART 8C.12 - Colonnades

SECTION B
PART 14 - Urban Precinct And Sites

Objectives

- 1 To ensure that awnings and colonnades are in keeping with desired streetscape character and with the overall development in scale and overall design.
- 2 To provide awnings and colonnades that increase pedestrian amenity with sun and rain protection.
- 3 To create well lit, visible street frontages that deter vandalism.

Controls

- 1 Where an awning is provided, under awning lighting is to be recessed into the soffit of the awning or wall mounted on the building.
- 2 Under awning lighting is to achieve luminance levels consistent with community safety and security in AS1228.1- 2001. The lighting is to be high energy efficiency with LED diode technology preferred unless an alternate technology with equivalent or higher energy efficiency is used.
- 3 All colonnade spaces are to be within the property boundary.
- 4 The size and spacing of supports are to be designed to allow pedestrian circulation and views of ground floor activity from the street.
- 5 On sloping sites a level access point is to be provided between colonnade area and adjoining footpaths.
- 6 Awnings and colonnades to retail units are to comply with Part 8C.15 and 8C.16.

Offices

- 7 Office buildings within **E1** and **MU1** zones are to comply with the controls within *Part 14, Parts 8C.15 and 8C.16 of this DCP*.

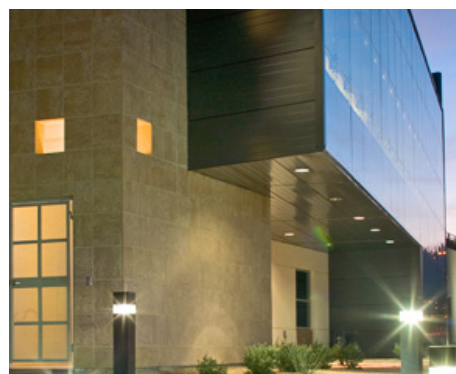


Figure 9C.11-1:
 Building form used as awning and colonnade.

9C.12 INTERNAL CEILING HEIGHTS

Objectives

- 1 To ensure internal ceiling heights that contribute to flexibility and adaptability of use in the future.
- 2 To ensure internal ceiling heights are appropriate for the intended use.

Controls

Offices

- 1 All office developments are to comply with the following minimum ceiling heights, measured from finished floor level (FFL) to finished ceiling level (FCL):
 - i) 3.5m for ground floor / street level retail or commercial uses;
 - ii) 3m for all other floors for commercial use.
- 2 Internal ceiling heights and slab levels are to be coordinated with external height requirements and key datum lines. External building elements requiring coordination include:
 - i) heights, datum and parapet lines set by the context or structure plan;
 - ii) cornices and string courses of adjacent heritage buildings;
 - iii) exterior awning levels or colonnade heights.

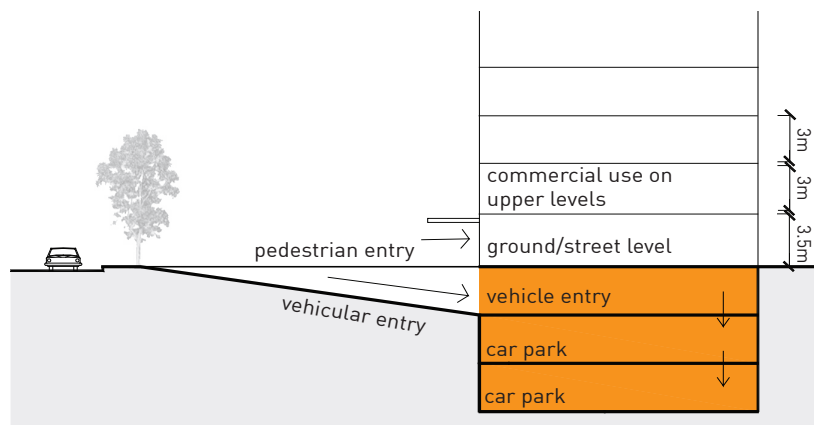


Figure 9C.12-1:
Finished floor levels to office buildings.

9C.13 VISUAL PRIVACY

Objectives

- 1 *To ensure high standards of visual privacy for residents and neighbours*

Controls

- 1 Buildings are to be designed to ensure privacy for neighbouring residents without compromising access to light and air. Measures to achieve this include:
 - i) off-setting windows in adjacent buildings;
 - ii) recessing balconies or providing vertical fins between adjacent balconies;
 - iii) using louvres/screen panels;
 - iv) providing vegetation as a screen between spaces;
 - v) incorporating planter boxes into walls or balustrades to allow plant screening;
 - vi) utilising pergolas or shading devices to limit overlooking of lower building levels or communal and private open space.



Figure 9C.13-1:
Operable external blinds to provide visual privacy and sun shading.

9C.14 ACOUSTIC PRIVACY

Further controls that may apply

SECTION B
PART 20- Development Near Road or
Rail Noise

SECTION C
PART 23.7 - General Acoustic
Privacy

Objectives

- 1 *To ensure high standards of acoustic privacy for all occupants of the development.*
- 2 *To mitigate the impact of noise and vibration from the operation of commercial development.*
- 3 *To ensure office building adjoining main roads are designed and constructed to minimise the impact of external noise on the occupants.*

Controls

- 1 Where an office development adjoins a residential development, mechanical plant equipment and building services are to be located away from the residential building and have appropriate acoustic insulation.
- 2 For requirements on noise levels associated with air conditioning, kitchen, bathroom, laundry ventilation, or other mechanical ventilation systems and other plant refer to Part 23.8 of this DCP.
- 3 The maximum LAeq (1 hour) noise levels as measured at the windows of commercial workspaces are not to exceed the following:

Day: 55 dB(A)

Night: 45 dB(A)

Note: Day is the period from 7:00am to 9:00pm Monday to Saturday; or 8:00am to 8:00pm on Sundays and public holidays.
Night is the remaining period.
- 4 Noise reduction measures to achieve these outcomes may include, but are not limited to the following:
 - i) incorporating appropriate noise shielding or attenuation techniques into the design and construction of the building. In particular, noise shielding will be required between uses, walls and floors;
 - ii) enclosing plant rooms;
 - iii) locating plant in basements;
 - iv) fitting out building services, (including plant, piping and ducting) with appropriate acoustic insulation;
 - v) minimising the amount of shared walls between commercial occupancies and/or plant;
 - vi) locating building services (laundries/ storage areas) and circulation zones) away from noise sensitive areas (ie. workspaces) to provide a buffer from noise generators, such as traffic, mechanical plant equipment, and service and loading vehicle entries
 - vii) using solid core doors, thicker window glass, double glazing, baffles to openable windows.
- 5 An Acoustic Impact Assessment report prepared by a suitably qualified and experienced acoustic consultant is to be submitted.

9C.15 FENCING

Objectives

- 1 *To provide an open landscaped street character.*

Controls

- 1 Street fencing is not supported. Where setbacks to the street are required, boundaries are to be delineated by soft landscaping including, but not limited to, shrubs and trees of varied mature height.
- 2 Where landscaping is provided along the street alignment, a physical edge, such as a planter box or retaining wall is to be no higher than 1m above finished ground level.
- 3 Side and rear fencing are to be avoided. If side or rear fencing is required, it is to be a maximum of 1.2m high and visually transparent. (A transparent fence has an open to solid ratio of not less than 1:3).

9C.16 SERVICES

Further controls that may apply		
		SECTION C PART 23.6 - Building Services PART 25 - Waste Management

Objectives

- 1 All developments are to design and locate utility infrastructure to minimise their impact on the streetscape.

Controls

- 1 All developments are to make provision for waste and recycling storage and collection within the building basement.
- 2 Building services, including within basements and on rooftops, are not to be visible from the public.

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CHILD CARE CENTRES

Introduction

- 10.1 Risk Assessment
- 10.2 Building Height and Setbacks
- 10.3 Parking and Access
- 10.4 Dual-Use and Multi-Use Facilities

REFER TO

SEPP Transport and Infrastructure 2021

REFER TO

Child Care Planning Guideline

INTRODUCTION

Child Care Centres to which this Part applies

This Part applies to all types of child care centres except the following services:

- i) Home Based Care
- ii) Family Day Care
- iii) Mobile Care Services
- iv) Out-of school-hours (OOSH) Care Services

Note: Child care services not covered by this Part may require Council approval prior to operation. Please contact Council's Community Service Department if you wish to obtain information relating to the establishment and operation of these services.

Note: Child care centres are regulated by the *Education and Care Services National Regulations 2011*, under the *New South Wales Children (Education and Care Services National Law Application) Act 2010*.

Note: Mobile and Occasional Care Services are regulated by the *Children (Education and Care Services) Supplementary Provisions Act 2011* and *Children (Education and Care Services) Regulation Provisions 2012*.

Note: Home Based Care services are now required to register with a family day care service

Note: For all definitions and abbreviations refer to Part 1B Dictionary.

Purpose of this Part

This Part has been created to guide the design development of high quality child care centres in Ku-ring-gai so as to:

- i) meet the aims and objectives within KLEP;
- ii) encourage a positive, proactive approach to identifying and responding to the child care needs of the community; and
- iii) provide a clear planning framework for guidance towards the establishment of centres that incorporate these aims.

Obtaining consent from Council

This Part complements the provisions of the *Children (Education and Care Services National Law Application) Act 2010* and the *Education and Care Services National Regulations 2011*.

All child care centres require consent from Council and a license from the Department of Education (DoE) before they may operate. In the consideration of a development application (DA), Council will assess matters such as the design of the centre and how the centre fits into its surrounding environment. DAs will be assessed against the *SEPP (Transport and Infrastructure) 2021*, the *Department of Planning and Environment (DPE) Child Care Planning Guideline*, and the controls of this DCP. The DA is to be prepared in accordance with Council's Development Application Guide.

Once Council has granted a consent, a license application is to be

INTRODUCTION (continued)

prepared and submitted to DoE (refer to the Regulations 2011 for details). In assessing the licence application, DoE will consider how the centre is likely to operate and the ability of the proposal to meet the provisions of the Regulations 2011. As DoE considers the licence application after consent has been granted, the applicants DA lodgement is required to include a signed statement, as required under Part 2.2 'Service Approvals' of the Regulation 2011.

Note: Part 2.2 'Service Approvals' of the Regulations 2011 states that applicants applying for a license from DoE are to provide the department with a statement in writing signed by the applicant and by a person who is entitled to use the title "architect", "architectural draftsmen" or architectural assistant" under the *Architects Act 1921* or who is accredited by the Building Designers Association of NSW Inc. In relation to the design of the class of building concerned, that the premises complies with the Part 4.3 'Physical Environment' facilities and equipment requirements of the Regulations 2011 applicable to centre based children's services. A statement of any respect in which the premises do not comply with these requirements signed in this manner is also to be provided.

It should be noted that compliance with the numerical controls contained in this Part does not necessarily guarantee that Council will grant consent to an application.

Obtaining further information

Information relating to the DoE requirements for establishing child care centres can be found at <https://education.nsw.gov.au/>.

State Environmental Planning Policy and Relevant Guideline

State Environmental Planning Policy (Transport and Infrastructure) 2021 determines that any development application for a child care centre facility is to comply with the requirements of the DPE *Child Care Planning Guideline* (Guideline) and certain provisions of Council's DCP.

The Guideline stipulates design quality principles to be achieved in child care centres as follows:

Principle 1 – Context

Design is to respond and contribute to context.

Principle 2 – Built form

Achieve a scale, bulk and height appropriate to the surrounding area.

Principle 3 – Adaptive learning spaces

Deliver high quality learning spaces for staff and children.

Principle 4 – Sustainability

Provide positive environmental, social and economic outcomes.

Principle 5 – Landscape

Integrated buildings and landscaping to provide context fit and amenity

Principle 6 – Amenity

Positively influence internal/external amenity for children, staff and neighbours.

Principle 7 – Safety

Reduce health/safety risk and optimise built/natural areas for learning and play.

10.1 RISK ASSESSMENT

Objectives

- 1 To protect health and safety of the facilities' users.
- 2 To avoid child care centres adversely affecting local traffic management and local amenity.
- 3 To ensure safe pedestrian movement within the child care centre.
- 4 To encourage child care centres in locations that enable safe access.
- 5 To ensure that centres above ground floor do not compromise the safety of the child care centre users.
- 6 To ensure the provision of safe outdoor areas with appropriate landscaping.
- 7 To ensure a safe, functional and educational environment for children of all ages.

Controls

Exposure to Radio Frequencies

- 1 New child care facilities within 500m of a mobile phone base station, as measured from the transmitter to the nearest point of the subject site, are to be accompanied by a report that demonstrates that the site is safe for use. The report is to:
 - i) show that the site will not be exposed to Radio Frequency fields in excess of the criteria stated in the Australian Radiation Protection and Nuclear Safety Agency's (ARPANSA) 'Radio Protection Standard – maximum exposure levels to radio frequency fields – 3kHz to 300GHz';

Note: For more information, visit the ARPANSA website at: www.arpansa.gov.au

 - ii) be prepared using the 'Radio Frequency EME Exposure Levels – Prediction' methodology; and
 - iii) be prepared by a suitably qualified person.
- 2 Proposals to establish new child care centres within 70m of a power line carrying in excess of 33 kilovolts (as measured from the ground point directly above an underground power line or directly below an overhead power line to the nearest point of the subject site) are to be accompanied by a report that demonstrates the site is safe for use. The report is to:
 - i) show that the site will not be exposed to Electromagnetic Field Exposure (EMF) in excess of the limits stated in the International Commission on Non-ionising Radio Protection's (ICNIRP) Guidelines for Limiting Exposure to Time-Varying Electric, Magnetic and Electromagnetic Fields (up to 300GHz);
 - ii) be prepared in accordance with the methodology set out in the guidelines; and
 - iii) be prepared by a suitably qualified person.

Note: The ARPANSA recommended publication 'Electromagnetic Fields and Human Health: Power Lines and FAQs' prepared by Professor John E Moulder states "depending on the type of line and its current, magnetic fields become less than those produced by a typical residence at a distance of 20-70m".

Note: 33 kilovolts is the typical voltage carried by a distribution line from a substation or transmission line to a neighbourhood area. Applicants should consult Transgrid and Integral Energy for information relating to the location of power lines and power line easements in excess of 33 kilovolts.

Note: For more information, visit the ICNIRP website at: www.icnirp.org

Roadways

- 3 Proposals to establish new child care centres within 125m of a major roadway is to be accompanied by reports that demonstrates the site is safe for use.

Note: The distance is to be measured from the edge of the road reserve, closest to the proposed site, to the nearest point of the subject site.

10.1 RISK ASSESSMENT (CONTINUED)

Controls

The reports is to:

- i) provide a comparison between the air, noise and soil qualities experienced by the centre and the guidelines set by the NSW Department of Environment and Conservation's Environment Protection Authority (EPA); and

Note: For more information, visit the EPA website at: <https://www.epa.nsw.gov.au>

- ii) be prepared by an environmental scientist and/or an environmental engineer.

Note: Refer to Part 1B Dictionary for definition of major road.

- 4 The applicant is to demonstrate that there will be no significant impact to safety and amenity due to vehicular manoeuvrability and traffic movement where a new child care centre is to be established
 - i) in a cul-de-sac or road with no through public access; and/or
 - ii) in a residential street,

- 5 New child care centres proposed on sites adjoining a major roadway (as listed in Part 10.1) are not to have vehicular access from that road unless it can be adequately demonstrated that alternative vehicular access to that development is neither practicable nor can be provided by another road (not being a road listed in Part 10.1)

Note: Depending on the size of the centre, such access arrangements may require the concurrence of Council's Traffic Committee and the Roads and Maritime Services.

Note: The list above is by no means exhaustive. Council requires that air, noise and/or soil testing be carried out for all proposals. Additionally where child care centres are proposed in the vicinity of roads that carry high traffic, a report is to be prepared demonstrating the impacts that traffic generated by the centre will have on the roadway.

- 6 Separate and safe pedestrian pathways are to be provided into the site and into the child care building. Pedestrian paths are not to be combined in a shared zone with vehicular access driveways.

Business Zones

- 7 The child care centre is to be located at ground level where achievable and in areas where the opportunity for natural landscaping comprising deep soil planting is possible.
- 8 Where child care centres are located on the first floor level (or above) the application is required to address child safety, privacy, and amenity impacts for both the child care centre occupants and premises.
- 9 Where centre facilities are provided for use by children above ground level:
 - i) a safe refuge area is to be provided which opens directly to a dedicated fire-isolated stair; and

10.1 RISK ASSESSMENT (CONTINUED)

Controls

- ii) the minimum floor area of refuge is to be calculated at the rate of 0.25m² per person (staff and children).

Outdoor Areas

- 10 No landscaped area within the child care centre is to contain plant species that have the following characteristics:
 - i) plants known to be poisonous or that produce toxins;
 - ii) plants with high allergen properties;
 - iii) plants with thorns, spikes or prickly foliage; and
 - iv) plant species that Council considers may place the health, safety and welfare of the centre's users at risk.
- 11 Outdoor play spaces are to be located away from public roads
 - i) in the side or rear setback of the site; and
 - ii) away from driveways, carparks and other sources of noise and fumes.

Note: Where it is not possible to locate outdoor play spaces in the side or rear setback of the centre, the applicant will be required to demonstrate that appropriate safety precautions have been implemented.
- 12 Separate outdoor play spaces are to be provided for children aged under 3 years and children aged between 3 and 5 years, with a clear line of sight for supervision of both areas.
- 13 The average noise level in the outdoor play spaces is not to exceed 55 dB(A) originating from external sources, during the centre's operating hours.

Note: Council requires an acoustic assessment be undertaken by a suitably qualified acoustic consultant that is to include recommended noise attenuation measures.



Figure 10.1-1
Example of good design of outdoor play areas

10.2 BUILDING HEIGHT AND SETBACKS

Objectives

- 1 To integrate the child care centre and ensure it is compatible with the scale and character of surrounding areas.
- 2 To be sympathetic to the amenity of neighbouring properties.
- 3 To provide attractive, site responsive and practical designs.
- 4 To support Ku-ring-gai's unique character of built form in a quality landscape setting, including canopy trees.
- 5 To ensure landscaped setbacks are compatible with the streetscape and adjoining residential properties.
- 6 To enable ground water infiltration to limit heat island effects and promote outdoor comfort within the site.

Controls

Building Heights

- 1 Building height is to be consistent with neighbouring dwellings, integrate with the predominant street character and minimise overlooking, bulk and scale impacts to neighbours.

Building Setbacks

- 2 Minimum side and rear setbacks are to comply with the setback requirements of the predominant adjoining residential development type of that location, as stated at:

Location	DCP Section
Low Density Residential areas	Part 4
Medium Density Residential areas	Part 6
High Density Residential areas	Part 7
High Density Mixed-Use and Business areas	Part 7, Part 8 and Part 9

Deep Soil Setbacks

- 3 The child care centre is to be designed to provide deep soil areas that protect and retain existing trees and mature vegetation within setback areas and across the site.
- 4 Deep soil setback areas are to incorporate planting style and species selection that is appropriate to the locality including:
 - i) screen planting that can attain heights of 4m for single storey centres. Screen planting may need to exceed 4m in height for centres that are more than one storey.
 - ii) medium size trees (6-8 metres) to tall trees (10-13 metres).

Low Density Residential Areas Deep Soil Provisions

- 5 Lots with the following sizes are to support a minimum number of medium sized trees (6-8 metres) to tall trees (10-13 metres):

Lot size	Number of trees
Less than 850m ²	1
850m ² to 1,000m ²	3
1,001m ² to 1,500m ²	5
Over 1,500m ²	7 or as directed

Note: Council may require street tree planting in accordance with the Public Domain Plan.

Note: Refer to *Section C Part 21.2* and *Section B Part 19* of this DCP for the proportion of trees required to consist of locally occurring native species, and other planting controls to protect biodiversity.

10.2 BUILDING HEIGHT AND SETBACKS (CONTINUED)

Controls

- 6 Where the child care site adjoins a low density residential area or land approved for use for a low density residential purpose, deep soil is to be provided within all as follows (refer to Figure 10.2-2):
- i) a minimum of 1 metre of **unrestricted deep soil area** is to be provided to each of the side boundaries; and
 - ii) a minimum of 2 metres of **unrestricted deep soil area, to be used by plants that require deep soil**, is to be provided to the rear boundary; and
 - iii) a minimum of 3 metres of **unrestricted deep soil area, to be used by plants that require deep soil**, is to be provided to the primary street frontage.

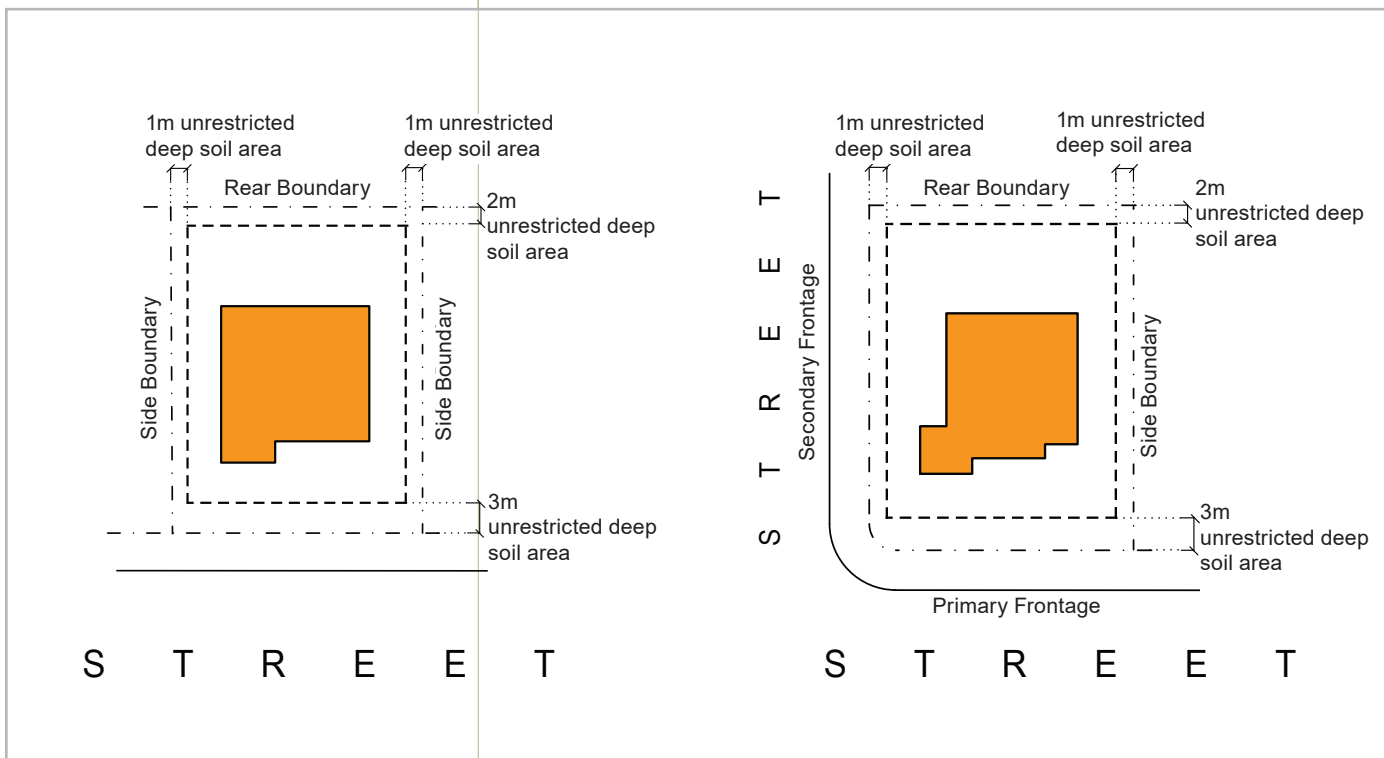


Figure 10.2-2:
Single frontage sites (left) and corner sites (right): minimum unrestricted deep soil area for low density residential areas

10.3 PARKING AND ACCESS

Further controls that may apply

SECTION C

PART 22.1 - Equitable Access

PART 22.2 - General Access and Parking

Objectives

- 1 To provide safe vehicular access and on-site manoeuvrability.
- 2 To provide car parking that satisfies the demand generated by the centre.
- 3 To design car parking areas that are compatible with the character of the surrounding area.
- 4 To locate and design car parking to minimise disruption to local traffic.
- 5 To ensure car parking does not affect the safety of the children.
- 6 To ensure car parking does not create adverse impact on the visual quality and character of low density residential areas.

Controls

- 1 Newly constructed child care centres are to provide car parking within the basement of the building.
- 2 The following car parking is to be provided on site:
 - i) 1 space per 2 staff; and
 - ii) 1 space per 6 children, of which at least one space is to be accessible for people with a disability. Refer to Section C Part 22.1.

Note: If the number of children and/or staff were to increase after approval, additional car parking space will be required.

Note: Car parking spaces, circulation areas, roadways and ramps are to comply with AS2890.1.
- 3 The following bicycle parking is to be provided on the site:
 - i) 1 space per 10 staff or part thereof.
 - ii) Consideration of a bicycle drop-off/pick-up area for parents.

Note: Bicycle parking provision are to comply with Austroads Guidelines and Australian Standards.
- 4 Driveway access for child care centres in low density areas are to be a maximum of 3.7m in width. Greater widths will be considered for child care centres with 50 or more children.
- 5 Child care centres located on a corner site proposing a one way loop road entering from and exiting to different roads are to be designed in a manner that discourages "shortcuts" being taken through the site.

Note: In order to achieve this, on-site traffic calming measures may be required.
- 6 Where a child care centre is located within a commercial building or mixed use development, the parking spaces are to be grouped together and conveniently located near the access point to the centre.



Figure 10.3-1
Childcare Centre parking and access

Objectives

- 1 To encourage multi-use facilities that are compatible with child care centres.
- 2 To encourage self-contained dwellings within dual-use facilities.
- 3 To maintain the amenity in both the residential and child care components of dual-use facilities.

10.4 DUAL-USE AND MULTI-USE FACILITIES

Controls

General

- 1 Any components of the multi-use and dual-use facility that are not part of the child care centre are to complement the operation of the child care centre. Such activities include toy libraries, baby health care services or the like.

Dual-Use facilities located on sites for residential purposes

- 2 Dual use facilities which involves a residential component may only be located on sites zoned for residential purposes.
- 3 The residential dwelling and child care centre component of the dual use facility is to be contained within a single building.
- 4 Any existing or proposed swimming pools are to be securely fenced, meeting the requirements of the Swimming Pools Act, 1992.
- 5 Clearly defined, separate entrances are to be provided for both the residential dwelling and the child care centre components of the building.
- 6 The dual use facility is to be designed so as to ensure a high level of amenity for the occupants of the residential dwelling. This is to be achieved by positioning living rooms, bedrooms and other habitable rooms away from common walls with the child care centre.
- 7 A minimum 25sqm of private open space is to be provided for the residential dwelling of the dual use facility.
- 8 The residential dwelling of the dual use facility is to be equipped with the following that are solely for use by the dwelling's occupants:
 - i) a kitchen;
 - ii) a laundry;
 - iii) a bathroom; and
 - iv) storage space that is to be in accordance with the storage requirements in this DCP for the relevant dwelling type.

Note: Access between the residential dwelling and child care centre of the dual use facility is permissible; however, this is to be designed so that children attending the centre cannot access the residence.
- 9 In addition to the parking requirements for the child care centre, a minimum of one off-street car parking space is to be provided for the exclusive use of the residential dwelling.

SIGNAGE

Introduction

- 12.1 Signage **Design**
- 12.2 **Building** Identification Signs
- 12.3 **Business** Identification Signs
- 12.4 Advertising Structures
- 12.5 Advertising on Heritage Items or in Heritage Conservation Areas
- 12.6 Advertising on Outdoor Dining Furniture and Footpath Trading Activities
- 12.7 Illumination of Signs
- 12.8 Special Signs
- 12.9 Temporary Signs
- 12.10 Maintenance

INTRODUCTION

Part 12 relates to signage for identification and advertising purposes.

Certain signage is also permitted under:

- *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*
- *State Environmental Planning Policy (Industry and Employment) 2021*

This Part aims to maintain a high quality built environment that supports Ku-ring-gai's character by:

- requiring well-designed signage that does not dominate the building or landscape; and
- controlling physical and visual clutter to maintain Ku-ring-gai's high quality streetscape and safe public domain areas; and
- limiting light spill impact on residential dwellings and bushland.

12.1 SIGNAGE DESIGN

Objectives

- 1 To ensure that signage and advertising communicate effectively and contribute to the character of the public domain.
- 2 To ensure signage and advertising do not dominate the building *on which they are located*.
- 3 To integrate signage with the building design by responding to scale, proportions and architectural detailing.
- 4 To ensure signage and advertising does not create physical and visual clutter that detracts from the quality of the streetscape.
- 5 To ensure signage and advertising structures do not disrupt vehicular or pedestrian traffic flow.

Controls

- 1 Signs are to be designed to integrate into the structure and architecture of the building they are located on. Building façade details, ventilated inlets/outlets and projecting features of the building are to remain **clear of any** signage **obstruction**.
- 2 All signage is to be constructed of non-combustible, graffiti resistant and easily cleaned materials.
- 3 The following signage is **discouraged**:
 - i) flashing signs, moving signs, balloon signs, inflatable signs or the like;
 - ii) **bunting, flag signs or those made of canvas, calico, textile or the like**;
 - iii) signs advertising a third party, activity or trade other than that associated with the building to which the sign is attached;
 - iv) hoarding signs, painted bulletins, poster/sticker or advertisement affixed to the exterior of a building;
 - v) signage above the awning level, except for building identification signs in employment and mixed use areas;
 - vi) signage affixed to or attached to telephone booths, trees, poles, signs, shelters, sheds, bins and the like;
 - vii) fluorescent colours on signs or buildings;
 - viii) roof, sky, or fin signs;
 - ix) internally and externally illuminated signs, other than those permitted within of this Part 12 of the DCP (**and** where internally lit signs do not **result in** any light **spill** to neighbouring properties **particularly residential dwellings and bushland** and proven not to detract from the amenity of the locality);
 - x) **painted signs**.



Figure 12.1-1:
Building identification sign

Objectives

- 1 To enable way finding for building users by *clearly identifying street numbers and/or building names.*
- 2 To integrate signage with the building design.
- 3 To limit the number and visual dominance of signage on buildings.



Figure 12.2-1:
Street name and number
displayed prominently near
the building entry

12.2 BUILDING IDENTIFICATION SIGNS

Controls

- 1 Building identification signs are to be provided follows:
 - i) a maximum of one sign per street frontage;
 - ii) the sign is to be in proportion to the building facade and a maximum of 5sqm;
 - iii) the sign cannot be an:
 - a) illuminated sign; or
 - b) painted sign.
- 2 The building identification sign is to be mounted flat against the exterior building wall and is not to protrude more than 300mm from the face of the wall.

Employment and Mixed Use Zones

- 3 The building identification sign (building number or building name) is to be displayed in a prominent position:
 - i) on the ground floor *adjacent to the building entry; or*
 - ii) on the awning fascia of the property; *or*
 - iii) at a location above the ground floor *that is architecturally integrated into the building design.*

Residential, Conservation, Recreation Zones

- 4 The building identification sign (building number or building name) is to be attached to gateways, fences or building facades only.

12.3 BUSINESS IDENTIFICATION SIGNS

Objectives

- 1 To encourage the effective identification of businesses and shops.
- 2 To control the number and quality of business identification signs.
- 3 To prevent physical and visual clutter resulting from multiple signs.

Controls

- 1 All business identification signs are to be of a size and shape that relates to the architectural design of the building with which they are associated/attached. The Signs must meet the minimum requirements stated in this section with other standards assessed on merit.
The following signs may be utilised to identify business premises:
 - i) Under awning signs.
 - ii) Top hamper signs.
 - iii) Fascia signs.
 - iv) Wall signs.
 - v) Free pole signs.
 - vi) Window signs.
- 2 Under awning signs are to:
 - i) be either illuminated or non-illuminated;
 - ii) be limited to one sign for each ground floor tenancy;
 - iii) have a minimum 2.6m clearance from ground/pavement to the underside of the sign;
 - iv) be in a horizontal location at a right-angle to the building facade;
 - v) be set back at least 600mm from the face of the kerb and do not project beyond the awning fascia.
- 3 Top hamper signs are to:
 - i) be non-illuminated;
 - ii) be attached flat to a wall surface for its entire length;
 - iii) not extend below the top level of the head of the doorway or display window above which it is located;
 - iv) not be more than 3.7m above the finished ground level;
 - v) have a maximum length of 4m;
 - vi) not project more than 150mm from the building façade;
 - vii) allow a proportion of wall surface area of the top hamper to be exposed.
- 4 Fascia Signs are to:
 - i) be non-illuminated;
 - ii) fit within the awning fascia;
 - iii) be limited to one sign per business per street frontage.
- 5 Wall Signs are to:
 - i) be non-illuminated;
 - ii) be a maximum of one sign per building elevation;
 - iii) be no more than 25% of the wall surface;

12.3 BUSINESS IDENTIFICATION SIGNS (continued)

Controls

- iv) not project beyond the building walls.
- 6 Free-standing poles/pylon signs are to:
 - i) be non-illuminated;
 - ii) have only one free standing sign per property per street frontage;
 - iii) be located outside the Tree Protection Zone of adjacent trees;
 - iv) be completely located within the boundary of the property to which the sign relates.
- 7 Window Signs are to
 - i) be non-illuminated;
 - ii) be a maximum of one sign per premises;
 - iii) have the following window coverage:
 - a) cover no more than 25% of the window area between the window sill and the level of the door lintel where the sign is a permanent window sign; or
 - b) cover no more than 60% of the window surface area, where the sign is temporary in nature (up to a fortnight).

Employment and Mixed Use Zones

- 8 A maximum of two business identification signs are permitted for each shopfront.
- 9 A co-ordinated presentation of signs is required where there are multiple occupancies or uses within a single building.
- 10 No pole/pylon signs are permitted in these locations (except in

Figure 12.3-1:
Two signs allowed for each
shopfront.



12.3 BUSINESS IDENTIFICATION SIGNS (continued)

Controls

service station sites).

Residential, Environmental, Recreation Zones

- 11 All business identification signs are to be non-illuminated.
- 12 A maximum of one business identification sign is permitted per site.
- 13 A business identification sign is not to be located more than 3m above the existing ground level.
- 14 Any pole/pylon sign is to be located:
 - i) wholly within the property boundary of the site to which the sign relates; and
 - ii) at a maximum height of 2m.

12.4 ADVERTISING STRUCTURES

Objectives

- 1 To *prevent physical and visual clutter*.
- 2 To maintain *Ku-ring-gai's high quality suburban character*.
- 3 To ensure that signs complement the architectural style and use of buildings.

Controls

- 1 Advertising structures of a portable nature such as sandwich boards, A-frames or the like are *discouraged, and only permitted on privately owned land*:
 - i) *in arcades where they do not obstruct path of travel; or*
 - ii) *in front of business premises where the business owns the land.*
- 2 Stationary vehicles *containing advertising*, including trailers, are not to be parked on public roads when used principally for the purpose of advertising other than:
 - i) directly in front of the business premises *to which the signs relate*;
 - ii) directly in front of the residential premises of the business owner.

Note: *Refer to Transport for NSW 'Instructions for the use of portable message signs' for further information.*

Note: Variable Message Signs (VMS) are only allowed under:

 - *State Environmental Planning Policy (Industry and Employment) 2021; and*
 - *Roads Act 1993.*
- 3 Painted signs on end walls facing residential properties are prohibited, and only be permitted where the wall:
 - i) *adjoins a public place provided there is only one sign per wall;*
 - ii) *there is no other sign on the wall including a building or business identification sign;*
 - iii) *there is no illumination;*
 - iv) *it is no more than 5sqm;*
 - v) *there is no projection beyond any part of the wall; and*
 - vi) *it does not extend over any window opening or architectural feature.*

12.5 ADVERTISING ON HERITAGE ITEMS OR IN HERITAGE CONSERVATION AREAS

Objectives

- 1 *To ensure the conservation of existing significant signage on Heritage Items and within HCAs.*
- 2 *To ensure new signage is compatible with, and does not detract from, the Heritage Item or HCA streetscape with minimum impact on built fabric.*

Controls

- 1 All signs on Heritage Items or in Heritage Conservation Area (HCAs) are to be:
 - i) of a design that is in sympathy with the character of the Heritage Item or HCA;
 - ii) appropriately located;
 - iii) located not to obscure or detract from significant fabric or views of the Heritage Item or HCA streetscape;
 - iv) of appropriate size and scale to the Heritage Item or HCA streetscape, and not be the dominant visual element on the building or in the HCA streetscape;
 - v) non-illuminated.
- 2 Installation of a sign on a Heritage Item or within an HCA is to be:
 - i) carried out in a reversible manner without damage to significant fabric;
 - ii) attached to fabric of lesser significance;
 - iii) freestanding pole signs may be permitted for Heritage Items to avoid adverse impacts on built fabric.
- 3 Original or significant signs on a Heritage Item or within an HCA are to be retained.
- 4 Painting of whole buildings, facades, windows and shopfronts in corporate colours is not permitted **within a Heritage Conservation Area or on a Heritage Item.**

Objectives

- 1 To encourage effective identification of businesses.
- 2 To allow limited advertising of third parties.
- 3 To maintain the character of *streetscapes and public domain*.

12.6 ADVERTISING ON OUTDOOR DINING FURNITURE **AND** FOOTPATH TRADING ACTIVITIES

Controls

- 1 Business identification and/or the third party advertising of one (1) advertiser may appear on the furnishings of the outdoor dining area.
- 2 Details of third party advertising on outdoor dining furnishings are to be submitted to Council with the application for an outdoor dining permit.
- 3 Where business identification signs are provided on planter boxes, they are to be fully incorporated into the design of the planter boxes.
- 4 Where display stands are provided on the footpath trading area, only business identification signage is permitted on the front face of the display stands. Third party advertising is not permitted.

Note: Refer to Council's *Ku-ring-gai Public Domain Plan Volume 3 - Technical Manual and Outdoor Dining Policy*.

12.7 ILLUMINATION OF SIGNS

Objectives

- 1 To protect the amenity of the users of nearby buildings, including the residential components of mixed use buildings.
- 2 To ensure signage contributes to the desired character of the public domain.
- 3 To ensure signage is energy efficient.
- 4 To ensure signage does not reduce safety for pedestrians or vehicles.
- 5 To avoid motorist distraction, confusion and misinterpretation.
- 6 To avoid illumination and light spill impacts on the night time amenity of residential areas and/ or areas where native wildlife fauna is prevalent.

Controls

Employment and Mixed Use Zones

- 1 Illuminated signage is only permitted under the awning.
- 2 Illuminated signs in the vicinity of residential dwellings require automatic timing devices to turn lights on/off at times designated by Council.
- 3 Illumination is to be concealed within, or be integral to the sign through:
 - i) the use of neon or an internally lit box; or
 - ii) sensitively designed external spot-lighting.
- 4 Illuminated signs are to use LED diode technology or a lighting source of equivalent or higher efficiency.
- 5 Illumination is not to
 - i) be hazardous;
 - ii) be a nuisance to pedestrians or vehicular traffic;
 - iii) produce any light spill into residential, environmental conservation or recreation areas.
- 6 Cabling to signs is to be concealed.
- 7 Use of illuminated red, green and amber colours in proximity to traffic signal intersections are not permitted.

Residential, Conservation, Recreation Zones

- 8 Illuminated signage is discouraged.

Objectives

- 1 *To control the number and quality of signs.*
- 2 *To encourage the effective identification of businesses.*
- 3 *To protect and enhance the visual quality of the streetscape.*

12.8 SPECIAL SIGNS

Controls

Office and Commercial Buildings

- 1 For corporate centres, signage is
 - i) restricted to the corporate logo only;
 - ii) **not to be** illuminated;
 - iii) **to be** erected on the main frontage of the building; **and**
 - iv) not to exceed 25% of the solid wall area at the top most level on which it is displayed, excluding glazed area.
- 2 Corporate logos are permitted on the facade of office and commercial buildings as building identification signage.

Service Station Signage

- 3 The following requirements apply to service station signage, including pole signs and emblem/price signs:
 - i) the top of the sign or pole is not to be higher than 6m above finished ground level; and
 - ii) the sign is to be totally contained within the **site's property boundary**.
- 4 Canopy fascia signs are to be limited to trade name details and corporate identification.
- 5 Subsidiary signs are to be of a number, size and style compatible with the size of the operation and to the satisfaction of Council. The details of all subsidiary signage is to be included in any application to Council.
- 6 Illuminated signs and floodlighting of work and service areas are not to be used outside of approved trading times, and are not to produce light spill at any time.
- 7 Total sign area for the site is not to exceed a total area calculated at a ratio of 1m² over 3m of lineal frontage to the primary street/road.

12.9 TEMPORARY SIGNS

Objectives

- 1 To provide opportunities for effective communication of events and property sales.
- 2 To avoid visual clutter.
- 3 To ensure signage does not dominate the public domain.
- 4 To ensure signage does not reduce pedestrian and vehicle safety.

Controls

- 1 Temporary signs for sporting and special events, such as cultural and entertainment activities, including banners, **bunting, canvas and flag signs**, will be considered on individual merit. Council recognises these activities as an important element in community use of commercial precincts and consideration will be given to allow departures from provisions of this DCP provided that such departures do not significantly impact on the locality.
- 2 Signs are not to be displayed prior to Council approval being obtained except for circumstances listed in Schedule 2 of the KLEP. No application fee is prescribed for genuine non-commercial advertising of cultural or community entertainment activities.
- 3 All applications are to contain the following information:
 - i) precise location of the proposed signage;
 - ii) type and nature of the sign;
 - iii) purpose of advertising;
 - iv) evidence showing the organisation is a local charitable or community service organisation; and
 - v) intended time of display.
- 4 Temporary signage may only be displayed for a period of not more than fourteen days prior to the event and be removed on the day following the event.
- 5 A maximum of two organisations **are** permitted to display **banner** signage on one set of approved banner poles.
Note: Banners on Council designated banner sites may be booked via Council's online booking system and in accordance with the *Ku-ring-gai Banner Policy*.
- 6 A maximum of four locations within the Ku-ring-gai area may be approved for display of signage by any one organisation or event. Approval may only be granted for display of advertising by recognised local organisations or a charitable or community service nature.
Note: All unauthorised advertising will be removed and impounded by Council.
- 7 Council may permit, in exceptional circumstances, signs not otherwise conforming to this DCP, subject to those signs being approved as temporary advertising structures.
- 8 Temporary signs are not to be erected or displayed on private land or public land visible from a public place unless a written application has been made to Council, and a written approval has been issued.

12.9 TEMPORARY SIGNS (continued)

Controls

- 9 Any conditions Council places on approvals for temporary advertising structures are to be complied with, or the approval will be cancelled by notice in writing and the sign removed within the time specified by the notice.
- 10 Temporary signs may only be given a maximum two months duration, and be subject to renewal, via Council, at the expiry of that period.
- 11 Applications for temporary advertising are to include the prescribed application fee to accompany each application.

Note: Refer to *Ku-ring-gai Local Environmental Plan 2015; Schedule 2 for Exempt Signage*.

Note: Refer to the *State Environmental Planning Policy (Exempt and Complying Code) 2008* for

- i) Real estate signs;
- ii) Temporary event signs;
- iii) Community notice and public information signs; and
- iv) Election signs.

12.10 MAINTENANCE

Objectives

- 1 *To maintain the character and safety of the public domain.*
- 2 *To ensure the ongoing high quality appearance of signage.*

Controls

- 1 A sign is not to be altered in any way (except for removal) after approval, unless permission in writing for such alteration is obtained beforehand from Council.
- 2 All signs are to be maintained to the satisfaction of Council at all times.

TREE AND VEGETATION PRESERVATION

Introduction

- 13.1 Tree and other vegetation works
- 13.2 Exemptions for tree and other vegetation works
- 13.3 Heritage items or heritage conservation areas
- 13.4 Application for tree and other vegetation works

INTRODUCTION

Further controls that may apply

SECTION B PART 19C - Development within HCAs: Alterations and Additions

Council has a vision for a healthy and livable place where people respect each other, conserve the magnificent environment and society for the children and grandchildren of the future (as set out in Ku-ring-gai Councils Strategic Community Plan 2030). Our urban forest is an integral component of that vision.

The established tree canopy and significant areas of bushland in Ku-ring-gai are defining characteristics and are essential to the areas 'look and feel'. Our urban forest is an asset that provides vital ecological, environmental, heritage, social, visual and physical amenity values.

Ku-ring-gai's urban forest includes both exotic and non-endemic native species as well as 24 native vegetation communities. These communities include seven threatened ecological communities listed under the NSW Biodiversity Conservation Act 2016 and four listed under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999. Ku-ring-gai's Urban Forest provides habitat for more than 700 native plant species and over 300 vertebrate species; including 18 threatened flora and 30 threatened fauna species; with many more considered transient visitors to the area.

Today Council reserves and natural spaces, the tree lined suburbs, parks and gardens provide important corridors between the three national parks and smaller reserves within and around Ku-ring-gai.

Under Ku-ring-gai LEP, a number of areas containing significant vegetation or habitats have been zoned **C1** - National Parks and Nature Reserves, **C2** – Environmental Conservation, **C4** – Environmental Living and/or are covered by the overlay clauses:

- i) Biodiversity protection Part 6.3 of KLEP and Biodiversity controls Part 18 of this DCP; or
- ii) Riparian land and adjoining waterways Part 6.4 of KLEP and Riparian Land Part 17 of this DCP.

There are also other remnant and scattered trees associated with threatened ecological communities and threatened species habitat throughout the local government area.

Tree and other vegetation works within these areas require consideration of the above mentioned zoning, LEP and DCP provisions, and threatened status to ensure ecological values are protected. This may include consideration under the *Biodiversity Conservation Act 2016*.

INTRODUCTION (continued)

This Part defines requirements and responsibilities with respect to the protection, retention and replacement of trees and other vegetation in Ku-ring-gai by:

- iii) providing controls in relation to the management and long term survival of Ku-ring-gai tree and other native vegetation resource; and
- iv) establishing a framework for the submission of applications for tree and other vegetation works in Ku-ring-gai.

This part is made pursuant to *Part 3 of State Environmental Planning Policy (Biodiversity and Conservation) 2021, Chapter 2, Vegetation in Non-Rural Areas, Part 2.3* and prescribes the trees and other vegetation to which these clauses apply.

A person who contravenes, or causes or permits to be contravened, the provisions the Act and of this Part are guilty of an offence under the provisions of the *State Environmental Planning Policy (Biodiversity and Conservation) 2021, Chapter 2, Vegetation in Non-Rural Areas*.

Injuring a tree or other vegetation does not require consent under this Part, where actions are required or authorised under separate legislation, including:

- bush fire hazard reduction work authorised by the Rural Fires Act 1997. Under Clause 5.11 of the KLEP, these works may be carried out without consent under this Part.
- Vegetation clearing under the 10/50 Vegetation Clearing Code of Practice (Rural Fires Act 1997 Part 4, Division 9).
Note: To determine if you are in a 10/50 area refer to the RFS website <https://www.rfs.nsw.gov.au> (this excludes Critically Endangered Ecological Communities).
- works prescribed by the *Electricity Supply Act 1995, Roads Act 1993, Biosecurity Act 2015* or the *Surveying and Spatial Information Act 2002*.
- approval to harm marine vegetation is provided under *Part 7 of the Fisheries Management Act 1994*.
- a license provided under the *Biodiversity Conservation Act 2016*.
- works required as part of other works for which a development application is required, the works will be assessed as part of the Development Application (approved under *Part 4 of the Environmental Planning and Assessment Act 1979*).
- works required as State Significant Infrastructure (approved under *Part 5.1 of the Environmental Planning and Assessment Act 1979*).

13.1 TREE AND VEGETATION WORKS

Objectives

- 1 *To manage Ku-ring-gai's tree and vegetation resources in a sustainable manner.*
- 2 *To protect and enhance biodiversity values and identify replenishment opportunities.*
- 3 *To recognise, protect and enhance the aesthetic and heritage values of trees.*
- 4 *To secure and maintain local character and amenity.*
- 5 *To sustain and enhance the tree canopy.*
- 6 *To prohibit unnecessary injury to, or destruction of, trees and vegetation.*
- 7 *To encourage responsible management of trees and vegetation within an urban environment.*
- 8 *To protect the stability of waterways.*

Controls

Prescribed Trees and Vegetation

- 1 The prescribed tree and vegetation that are protected by *Part 3 of State Environmental Planning Policy (Biodiversity and Conservation) 2021, Chapter 2, Vegetation in Non-Rural Areas, Part 2.3* and this section of the DCP include
 - tree
 - other vegetation
 - native vegetation:

Note: Refer to Part 1B Dictionary for definitions of "tree", "other vegetation", "native vegetation", "clearing".

Actions that cause injury

- 2 The injury of any tree(s) or other vegetation protected under this DCP is prohibited without the written consent of Council. Except in accordance with the exemptions prescribed in Part 13.2.
- 3 Actions that cause injury to tree(s) or other vegetation include:
 - i) removing including cut down, take away, clearing or transplant a tree(s) or other vegetation from its place of origin;
 - ii) pruning, damaging / tearing live branches and roots;
 - iii) lopping (height reduction) a tree;
 - iv) drilling or poisoning a tree or vegetation, including but not limited to:
 - the application of substances damaging to trees and other vegetation such as herbicides, other toxic chemicals; or
 - spilling and or directing contaminants such as oil, petroleum, paint, cement and similar to the root zone;
 - v) ringbarking, or otherwise damaging the bark, which may result in a detrimental impact on the tree health including but not limited to:
 - the attachment of objects using invasive fastenings, tree climbing spikes;
 - the fastening of materials around the trunk of trees.
 - vi) exotic vines growing to the trunk and branches of trees which is, or will result in, a detrimental impact on tree or vegetation health;
 - vii) damaging the root zone of a tree or other vegetation by way of compaction, including storage and stockpiling of materials;
 - viii) changing of ground levels within the root zone of a tree or other vegetation by way of excavation, trenching, filling or stockpiling;
 - ix) severing tree or other vegetation roots with a diameter of 50mm or greater.

13.2 EXEMPTIONS FOR TREE AND VEGETATION WORKS

Controls

This section explains when approval from Council is required to carry out tree or vegetation works, pursuant to *Part 3 of State Environmental Planning Policy (Biodiversity and Conservation) 2021, Chapter 2, Vegetation in Non-Rural Areas*. These exemptions do not apply on land that is a heritage item or within a heritage conservation area. Works on heritage items and within heritage conservation areas are addressed within Part 13.3.

Note: This exemption does not apply to clearing of:

- Threatened Ecological Communities as per mapping available on Council's web site (<https://www.krg.nsw.gov.au>).
- Native vegetation that is on land included on the Biodiversity Values Map, available through the Biodiversity Values Map and Threshold tool (<https://www.lmbc.nsw.gov.au/Maps/index.html?viewer=BOSETMap>). A copy of the vegetation mapping and biodiversity values map and threshold (BOSET) report (as generated from the tool) should be retained as proof of consideration.

Exemptions

The following are exempt works:

Tree branches directly over roof lines

- i) removal of tree branches which directly overhang the roof of a residence or commercial building, if pruned back to the nearest branch junction or collar to remove from the roofline;
- ii) detached garages, carports and ancillary buildings are not included in this exemption.

Note: Pruning **is to** be consistent with the Australian Standard for Pruning of Amenity Trees (AS4373-2007), and **is not to** result in a detrimental impact to the future health or stability of the tree or compromise the form of the tree. For example, removal of all branches from one side of a tree over a roof line would not be exempt.

1 Trees and other vegetation within 3m of an existing dwelling

- i) trees and other vegetation within 3m of any existing dwelling on the same property are exempt. The 3m distance is measured from the centre of the trunk of the tree / base of the plant at ground level to the external wall of the dwelling.
 - provided the owner of the land on which the trunk of the tree is located is in agreement and gives consent prior to the tree works.

Note: Trees (Disputes between Neighbours) Act 2006 may apply

- ii) trees and other vegetation within 3m of verandahs, carports, detached garages, and ancillary buildings, cantilevered and pier supported structures such as balconies and decks are excluded from this exemption.

2 Removal of tree branches near electrical wires

- i) removal of branches within 0.5m of electrical service lines to properties. This exemption applies to tree branches only, not tree trunks.

13.2 EXEMPTIONS FOR TREE AND VEGETATION WORKS (continued)

Controls

3 Minor pruning

- i) pruning of trees and other vegetation provided:
 - branches pruned, are not more than 50mm in diameter; and
 - roots pruned are not more than 50mm in diameter.

Note: pruning is consistent with the Australian Standard for Pruning of Amenity Trees (AS 4373-2007).

4 Removal of dead wood

- i) completely dead branches attached to tree(s) and other vegetation within the property may be removed.

Note: pruning is consistent with the Australian Standard for Pruning of Amenity Trees (AS 4373-2007).

5 Removal of dead or dying trees and other vegetation

- i) removal of completely dead or dying trees and other vegetation provided that prior to any work being carried out:
 - Council has advised the applicant of its satisfaction that the subject tree(s) or other vegetation is dead or are dying and is not required as the habitat of native fauna.

6 Removal of risk to human life or property

- i) the removal of tree(s) which is structurally unsound and or unstable, which displays a high degree of hazard, provided that prior to any work being carried out:
 - Council has advised the applicant, of its satisfaction that the subject tree(s) is posing an imminent risk to human life or property.

Note: an arborist's report and testing may be required for significant trees.

7 Trees and other vegetation on Council owned and managed land

- i) tree and other vegetation works may be undertaken by Council or Council's authorised agents, on Council owned or managed land, providing these works are consistent with Council's policies and internal guidelines.

13.2 EXEMPTIONS FOR TREE AND VEGETATION WORKS (continued)

Controls

8 Exempt tree and other vegetation species:

- i) removal of species listed on the [NSW State Priority Weeds list](#).

Note: Refer to the [Greater Sydney Regional Strategic Weed Management Plan 2023-2027](#).

- ii) within table below:

Note: This table does not apply for Heritage Items or in Heritage Conservation Areas

Common Name	Botanical Name
Queensland Silver Wattle	<i>Acacia podalyriifolia</i>
Golden Wreath Wattle	<i>Acacia saligna</i>
Box Elder	<i>Acer negundo</i>
Tree of Heaven	<i>Ailanthus altissima</i>
Evergreen Alder	<i>Alnus jorullensis</i>
Cocos Palm	<i>Syagrus romanzoffiana</i>
Nettle tree	<i>Celtis</i> spp.
Cotoneaster	<i>Cotoneaster</i> spp.
Loquat	<i>Eriobotrya japonica</i>
Common Coral Tree	<i>Erythrina crista-galli</i>
Indian Coral Tree	<i>Erythrina indica</i>
Coral Tree	<i>Erythrina x sykesii</i>
Rubber Tree	<i>Ficus elastica</i>
Liquidambar	<i>Liquidambar styraciflua</i> (only if less than 12m in height)
African Olive	<i>Olea europaea</i> subsp. <i>Africana</i>
Crested Wattle	<i>Paraserianthes lophantha</i>
Lombardy Poplar	<i>Populus nigra italica</i>
Firethorn	<i>Pyracantha</i> spp.
Black Locust	<i>Robinia pseudoacacia</i>
Golden Robinia	<i>Robinia pseudoacacia</i> "Frisia"
Umbrella Tree	<i>Schefflera actinophylla</i>
Broad-leaf pepper tree	<i>Schinus terbinthifolius</i>
Rhus	<i>Toxicodendron succedaneum</i>
Privet	<i>Ligustrum</i> sp.

13.3 HERITAGE ITEMS OR HERITAGE CONSERVATION AREAS

This section explains approval requirements to carry out tree or vegetation works on land that is or forms part of a heritage item or is in within a heritage conservation area.

To identify if your tree, vegetation or land has heritage significance please view: <http://maps.kmc.nsw.gov.au/PRODWebmap/index.html>

Under Clause 5.10 of the KLEP, development consent is required to undertake works in relation to a tree or vegetation that is or forms part of a Heritage Item or is within a Heritage Conservation Area. However, development consent may not be required in the following circumstances:

- 1 Works in relation to a tree or other vegetation may be carried out with the written consent of Council where Council is satisfied that:
 - i) the proposed works is of a minor nature,
 - ii) is for the maintenance of the Heritage Item or place within the Heritage Conservation Area; and
 - iii) would not adversely affect the heritage significance of the Heritage Item or Heritage Conservation Area.
- 2 For the purpose of 1i) above, the following tree works in relation to a tree or other vegetation that is or forms part of a Heritage Item or is within a Heritage Conservation Area may be regarded by Council as being of a minor nature:
 - i) Tree branches directly over roof lines
 - removal of tree branches which directly overhang the roof of a residence or commercial building, if pruned back to the nearest branch junction or collar to remove from the roofline. Detached garages, carports and ancillary buildings are not included.

Note: Pruning **is to** be consistent with the Australian Standard for Pruning of Amenity Trees (AS4373-2007) and **is not to** result in a detrimental impact to the future health or stability of the tree or compromise the form of the tree.

- ii) Minor pruning
 - pruning of trees and other vegetation provided:
 - branches pruned, are not more than 50mm in diameter, and
 - roots pruned are not more than 50mm in diameter.

Note: Pruning is consistent with the Australian Standard for Pruning of Amenity Trees (AS4373-2007).

13.3 HERITAGE ITEMS OR HERITAGE CONSERVATION AREAS (continued)

iii) Removal of dead wood

- removal of completely dead branches attached to a tree(s) and other vegetation within the property.

Note: Pruning is consistent with the Australian Standard for Pruning Amenity Trees (AS4373-2007)

iv) Dead or dying trees and other vegetation

- removal of completely dead or dying trees and other vegetation.

- 3 The removal of a tree(s) which is structurally unsound and or unstable, which displays a high degree of hazard, provided that prior to any work being carried out, Council has advised the applicant of its satisfaction that the subject tree(s) is posing an imminent risk to human life or property

Note: an arborist's report and testing may be required for significant trees

Note: Removal of branches within 0.5m of electrical service lines to properties under Work permitted under section 48 of the Electricity Supply Act 1995 do not require written consent from Council. However, this exemption does not apply to a property subject to an interim heritage order, or a listing on the State Heritage Register, under the Heritage Act 1977.

13.4 APPLICATION FOR TREE AND OTHER VEGETATION WORKS

Controls

- 1 An application is required to be completed and forwarded to Council for all works on trees or other vegetation where an exemption under Section 13.2 does not apply.

Note: A permit cannot be granted for the clearing of:

- i) native vegetation on land included on the Biodiversity Values Map except where the tree is assessed to be a risk;
- ii) vegetation that is or forms part of an Aboriginal object or that is within an Aboriginal place of heritage significance.

In these instances a Development Application or approval of Native Vegetation Panel is required.

- 2 Further information on types of applications, fees, assessment time frames and criteria for approvals, can be found on Council's web site www.krg.nsw.gov.au
- 3 The applications are only to be made by the owner of the site on which the vegetation or the trunk of the tree is located or their authorised agent (Council will require proof of authority to be submitted),
- 4 A Development Application is required where the proposed works:
 - i) are within the core riparian zone of Category 1 or 2 Riparian Lands and the works will disturb soil within 2m of the channel or within the channel itself;
 - ii) will affect large stands of trees or other vegetation; or
 - iii) are in relation to a tree or other vegetation that forms part of a heritage item or within a heritage conservation area.

Replacement trees and vegetation

- 5 Council will require the planting of replacement trees and/or vegetation and may specify the number, species, provenance, location and stock size of the replacement trees and vegetation.
- 6 In a mapped biodiversity area, trees and vegetation are to be replaced with suitable species from the ecological community.

Note: Refer to the *Ku-ring-gai Council Tree Replacement Planting List*.

Note: Check the *Ku-ring-gai Local Environmental Plan 2015 Biodiversity Mapping* on Council's website Map Viewer.

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14F Roseville Local Centre

- 14F.1 Roseville Local Centre Context
- 14F.2 Public Domain and Pedestrian Access
- 14F.3 Proposed Community Infrastructure
- 14F.4 Setbacks
- 14F.5 Built Form
- 14F.6 Building Entries, Car Parking and Service Access
- 14F.7 Precinct R1: Hill Street Shops
- 14F.8 Precinct R2: Pacific Highway Shops
- 14F.9 Precinct R3: Pacific Highway to Roseville Station



14F.2 PUBLIC DOMAIN AND PEDESTRIAN ACCESS

Objectives

- 1 To increase the pedestrian permeability of the local centre.
- 2 To improve pedestrian amenity by providing continuous sun and rain protection to footpath areas.
- 3 To provide a consistently high quality and visually pleasing streetscape environment.
- 4 To improve and enhance accessibility to the commercial precinct particularly for pedestrians, pram walkers, people with disabilities, cyclists and public transport users.
- 5 To improve commercial activity in the local centre by promoting street-level activity.
- 6 To facilitate opportunities for outdoor dining in quiet locations away from the highway.
- 7 To improve vehicle access and circulation around the centre through the creation and improvement of new rear lanes.
- 8 To improve safety and passive surveillance of the public domain by encouraging street-level activity.
- 9 To improve the overall pedestrian experience in the local centre, there by promoting active living.
- 10 To promote mid-block and through-site links as a way of improving permeability of the local centre.

Controls

- 1 All development within the Roseville local centre, as outlined in Figure 14F.2-1, is to be designed to support and enhance the planned future character of the centre. This is to be done through the Public Domain and Pedestrian Access requirements for each Precinct as stipulated in this DCP.



Figure 14F.2-1:
Public domain and pedestrian access plan.

Legend

- Pedestrian through site link
- Awnings
- Awnings where possible

Objectives

- 1 To create cohesive streetscapes.
- 2 To require building setbacks in appropriate locations to provide opportunities for street tree plantings or footpath widening.
- 3 To require building setbacks in appropriate locations to allow widening of roads, lanes and streets.
- 4 To allow for visual and acoustic privacy between the centres and adjoining residential zones.

14F.4 SETBACKS

Controls

Setbacks

- 1 All development within the Roseville local centre, as outlined in Figure 14F.4-1, is to be designed to support and enhance the planned future character of the centre. This is to be done through the Setback requirements for each Precinct as stipulated in this DCP.

Note: In all cases, where land dedication is required for a public purpose, such as a road or walkway, the affected land is to be excluded from deep soil calculations and included in setback requirements.

- 2 All properties within the R4 zone are to have standard setbacks with the following exceptions:
 - i) Properties nos.5-21 Larkin Street are to provide a 4 metre rear setback to Larkin Lane.
 - ii) Properties 3, 5 and 7 Roseville Avenue are to provide a 6 metre setback to Roseville Avenue.
 - iii) Properties 1 and 3 Hill Street are to provide a 6 metre setback to Hill Street.



Figure 14F.4-1:
Setbacks plan.

Legend

10m	- 10m setback	varies	- variable setback
6m	- 6m setback		
4m	- 4m setback		
			- Land dedication

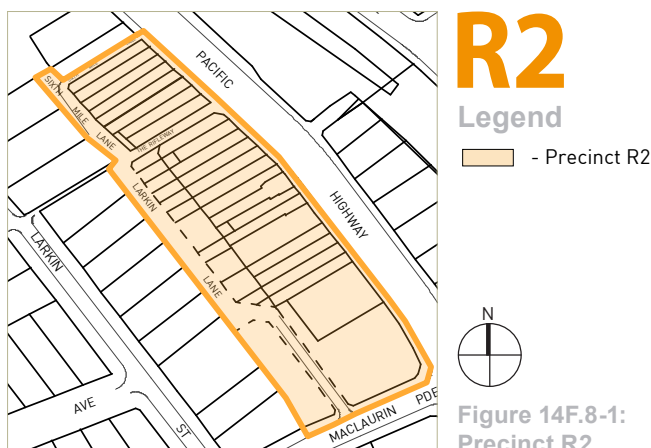
14F.8 PRECINCT R2: PACIFIC HIGHWAY SHOPS

Objectives

Refer to
Objectives and Controls
PART 14F.1
Urban Precincts

Controls

Planned Future Character



This precinct incorporates the traditional strip retail fronting the Pacific Highway and a Council car park on Larkin Lane. The shops have largely lost their role as local shops and the area has become established as an entertainment precinct with cafes, restaurants, and antique shops. Roseville cinema and the RSL club provide an anchor role for this precinct attracting people from across northern Sydney and beyond.

- 1 Development is to be designed to support and enhance the planned future character for the precinct, as following:
 - i) This precinct has potential to continue to grow and develop as a boutique entertainment precinct which offers an alternative to what is currently available in larger centres such as Chatswood.
 - ii) The character of this precinct will be preserved and enhanced. Small scale infill development or sympathetic adaptive re-use of existing character buildings will be encouraged.
 - iii) New low scale residential or commercial development may be located at the rear of the sites facing Larkin Lane.

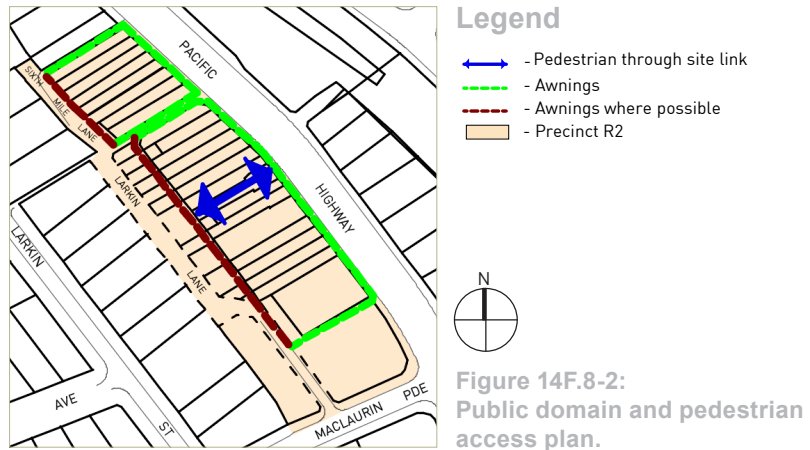
Objectives

Refer to
Objectives and Controls
PART 14F.2
Public Domain and
Pedestrian Access

14F.8 PRECINCT R2: PACIFIC HIGHWAY SHOPS (continued)

Controls

Public Domain and Pedestrian Access



- 2 Provide a new pedestrian arcade connecting the Pacific Highway with Larkin Lane.
- 3 Provide continuous awnings to Pacific Highway, Sixth Mile Lane, the Rifleway and the Memorial Park frontage.
- 4 Provide awnings to Larkin Lane where possible.

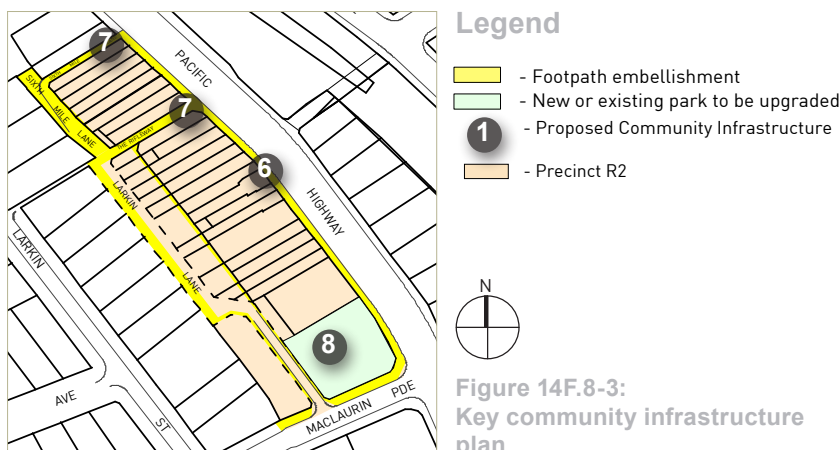
14F.8 PRECINCT R2: PACIFIC HIGHWAY SHOPS (continued)

Objectives

Refer to
Objectives and Controls
PART 14F.3
Proposed Community
Infrastructure

Controls

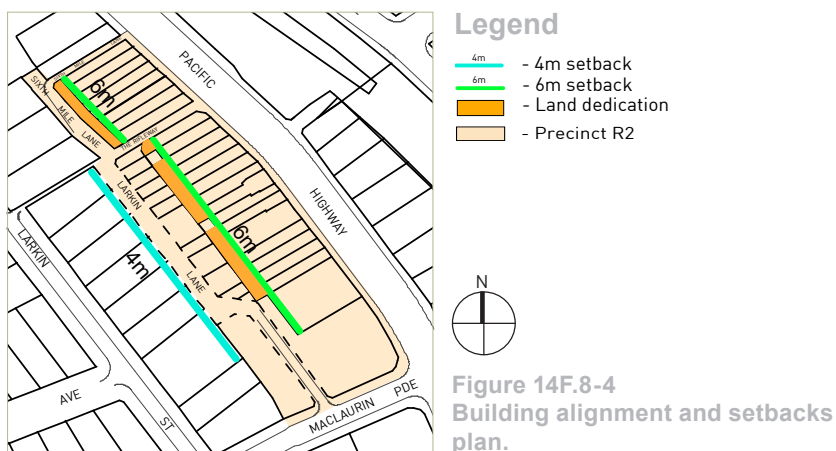
Proposed Community Infrastructure



5 The following development as indicated in *Figure 14F.8-3*, is to be included to support and compliment the provision of Key Community Infrastructure through the *Ku-ring-gai Contributions Plan 2010*, Voluntary Planning Agreement (VPA), or other delivery mechanism:

- 6 Embellishment of the public domain areas and footpaths on the Pacific Highway and Hill Street including underground power lines, new lighting, high quality paving and furniture.
- 7 Upgrade of existing pedestrian lane ways including Sixth Mile Lane and the Rifleway.
- 8 Embellishment of Roseville Memorial Park to urban park standard.

Setbacks



- 6 Building setbacks are to be in accordance with *Figure 14F.8-4*, and all buildings in the B2 zone are required to be built to the street alignment and with a zero setback with the following exceptions:
- i) 6 metre rear setback to Larkin Lane applying to properties nos.66-108 Pacific Highway for additional public parking. Land is to be dedicated to Council at no cost.

Refer to
Objectives and Controls
PART 14F.4
Setbacks

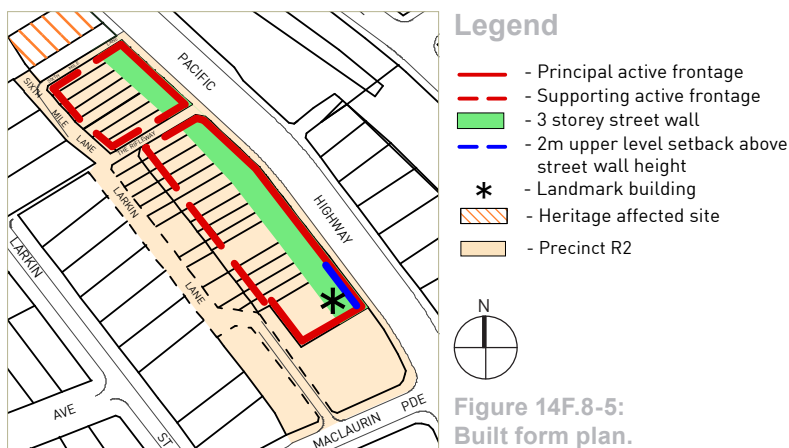
Objectives

Refer to
Objectives and Controls
PART 14F.5
Built Form

14F.8 PRECINCT R2: PACIFIC HIGHWAY SHOPS (continued)

Controls

Built Form



7 Buildings are to be designed in accordance with the Development Control Plan, *Figure 14F.8-1*, and as follows:

- Create a consistent 3 storey (11.5 metres) street wall that is built parallel to the street alignment of the Pacific Highway.
- 2 metre upper level setback to all levels above the street wall height along the frontages of properties 64-70 Pacific Highway.
- Provide active street frontages along the Pacific Highway and the frontage to Memorial Park.
- Provide active frontages addressing Larkin Lane (car park), the Rifleway and Sixth Mile Lane.
- Provide a highly activated interface between Memorial Park that encourages use of the park.
- Design a landmark corner building for the site adjoining Memorial Park.

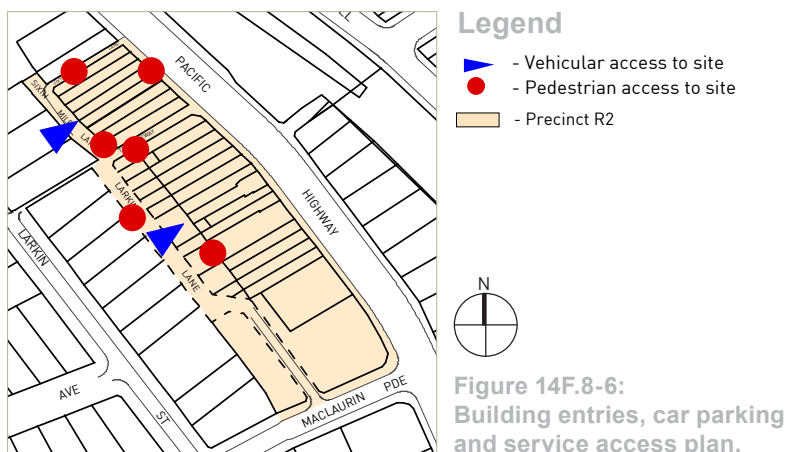
14F.8 PRECINCT R2: PACIFIC HIGHWAY SHOPS (continued)

Objectives

Refer to
Objectives and Controls
PART 14F.6
Building Entries, Car
Parking and Service
Access

Controls

Building Entries, Car Parking and Service Access



- 8 For the properties Nos.64-116 Pacific Highway vehicle and service access is to be provided via Larkin Lane or Sixth Mile Lane.
- 9 For the properties Nos.64-116 Pacific Highway residential and commercial lobbies and foyers are to be located off Larkin Lane, The Rifleway or Sixth Mile Lane.
- 10 For the properties Nos.64-108 Pacific Hwy, basement levels are permitted to extend to the Larkin Lane boundary subject to the provision of the following:
 - i) a minimum clear 3m soil depth for planting, lighting and pathways;
 - ii) a 6m setback to the building line from Larkin Lane;
 - iii) land dedication, at no cost to Council, of the parcel of land of the total frontage to Larkin Lane x 6m from Larkin Lane x 3m soil depth.

Pymble Business Park

- 14G.1 Urban Precinct
- 14G.2 Public Domain and Pedestrian Access
- 14G.3 Proposed Community Infrastructure
- 14G.4 Building Setbacks
- 14G.5 Built Form
- 14G.6 Heritage

PYMBLE BUSINESS PARK



**14G.1 URBAN PRECINCT:
PYMBLE BUSINESS PARK**

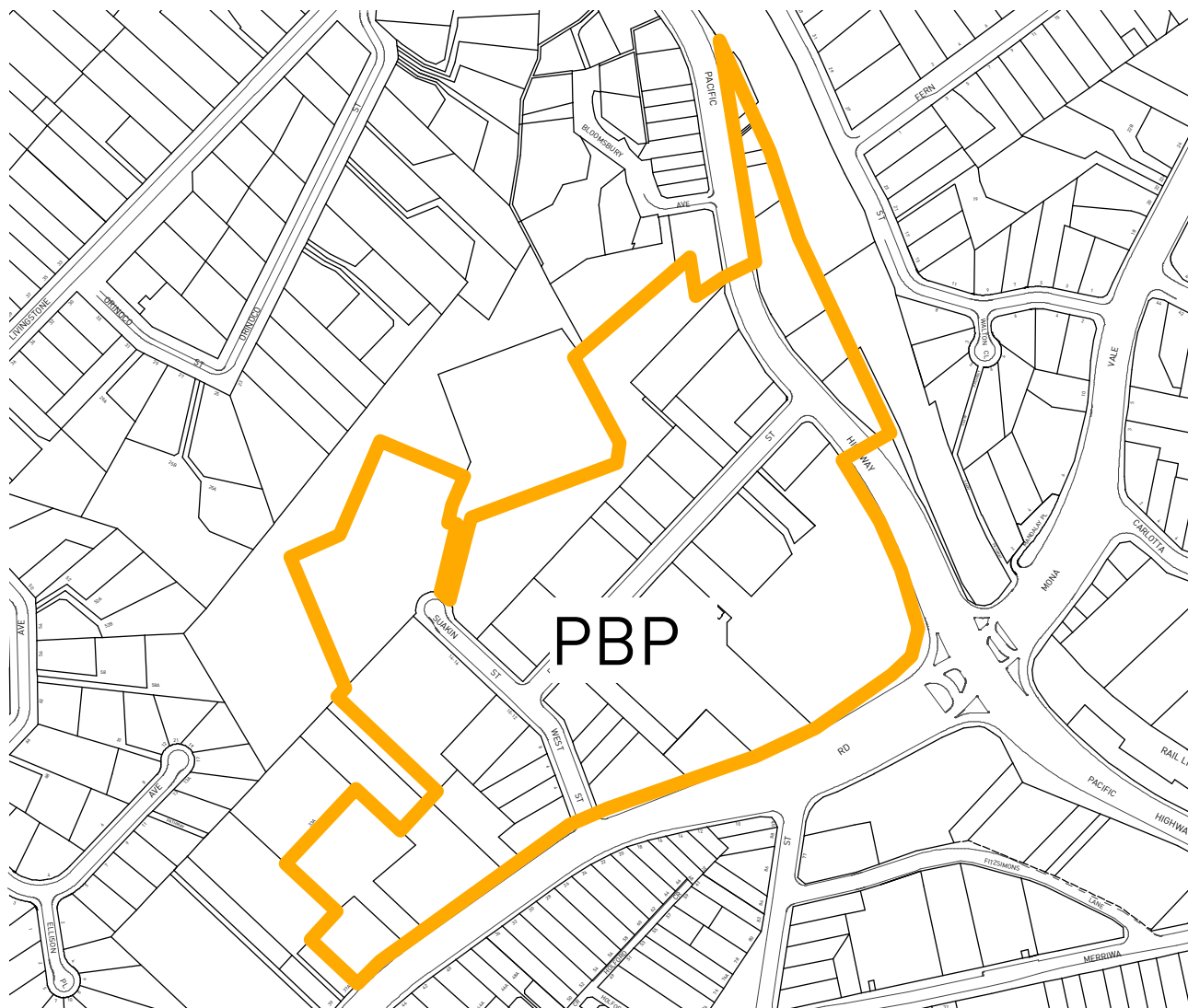



Figure 14G.1-1:
Urban Structure plan



Legend

 - Core Urban Precinct (B7 zone)

14G.1 URBAN PRECINCT: PYMBLE BUSINESS PARK (continued)

Objectives

- 1 *To create a vibrant precinct capable of attracting business investment and quality tenants.*
- 2 *To encourage the growth of local businesses that provide employment and support the local economy.*
- 3 *To promote development that provides an excellent working environment alongside associated services and facilities.*
- 4 *To ensure development contributes to the urban character, quality and amenity of the business precinct.*

Controls

Planned Future Character

- 1 All development within the Pymble Business Park precinct, as outlined in *Figure 14G.1-1*, is to be designed to support and enhance the planned future character of the precinct.

Pymble Business Park is a unique precinct within the Ku-ring-gai area. It has historically housed a concentration of business uses with associated ancillary facilities. It is a self contained precinct separated from residential development by the Pacific Highway, Ryde Road and E2 Environmental Conservation Lands. The exception to this is the established medium density housing to its north.

Pymble Business Park will be encouraged to consolidate its urban fabric and provide high quality buildings and an environment to create a green business precinct.

The planned future character for Pymble Business Park is one of commercial buildings that have good integration with the street character. Due to its topography and location the precinct has several pockets of differing character:

- i) Bridge Street is to have buildings with entries and frontages that contribute to the street activity through direct physical access and visual surveillance from ground floors of the buildings. It is to have a landscape character with well considered and planted front setbacks.
- ii) Development along the north of the Pacific Highway is to create a continuous urban character with buildings to the street boundary having a high ground floor visibility from adjacent roadways.
- iii) Development along the south of the Pacific Highway and to the north of Bridge Street is to respect the Heritage Item and ensure its continued prominence in that streetscape.
- iv) West and Suakin Streets are to have buildings built to the boundary with awnings and active frontages creating a neighbourhood character with shops and services at street level.
- v) Ryde Road is to have a landscaped character with large street setbacks allowing quality planting, and a landmark building at the corner of Ryde Road and Pacific Highway.

14G.2 PUBLIC DOMAIN AND PEDESTRIAN ACCESS

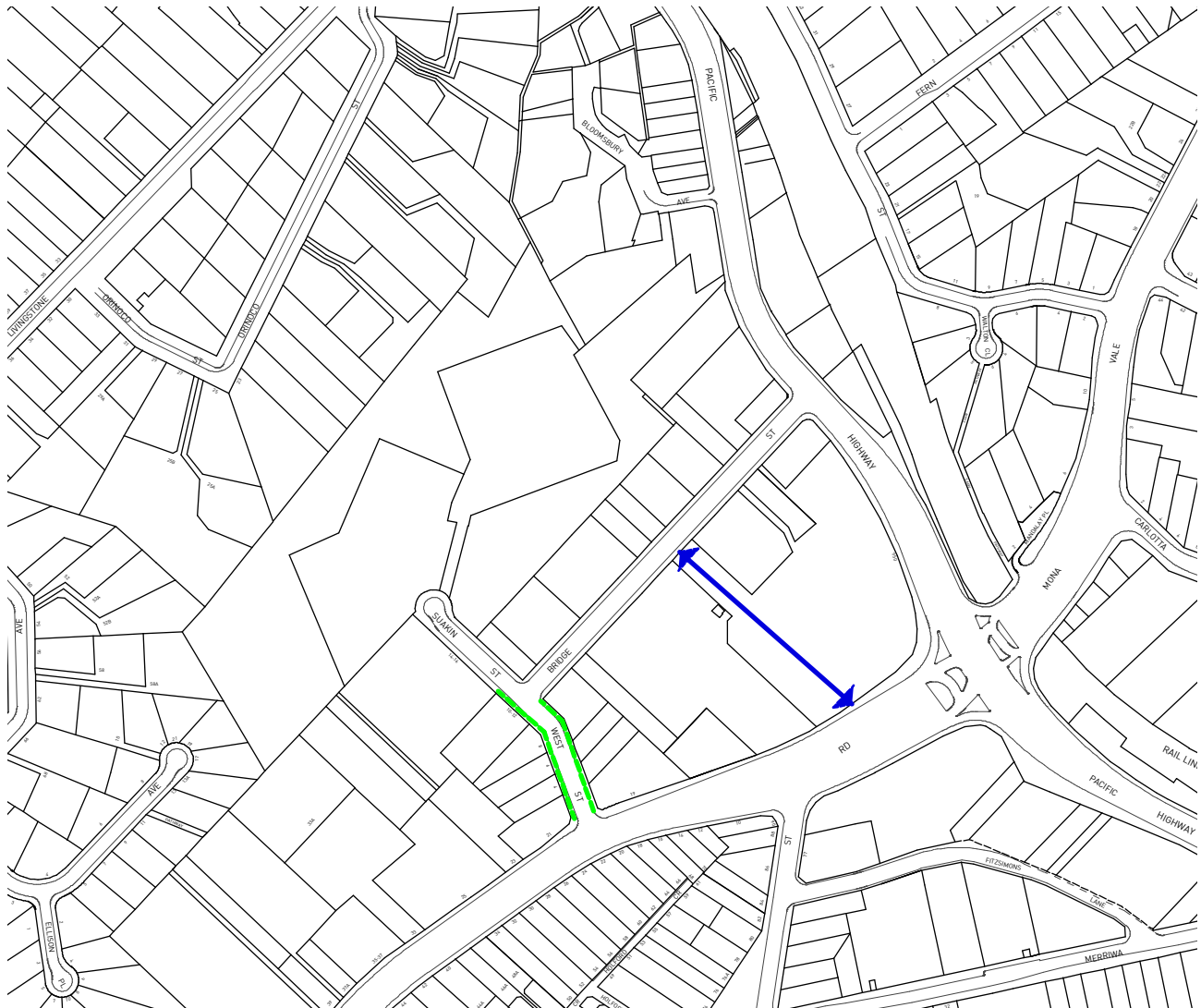




Figure 14G.2-1:
Public domain and pedestrian controls plan

Legend

-  - Pedestrian through site link
 - Awnings



14G.2 PUBLIC DOMAIN AND PEDESTRIAN ACCESS (continued)

Objectives

- 1 *To increase the pedestrian permeability within the Pymble Business Park.*
- 2 *To improve pedestrian amenity by providing continuous sun and rain protection to the footpath areas.*
- 3 *To improve the streetscape quality and character of the streets within the Pymble Business Park precinct.*
- 4 *To enable safe and active streets with good surveillance.*

Controls

Public Domain and Pedestrian Access

Enhancement of the public domain and improvement of pedestrian amenity is required to improve the pedestrian access and permeability through the area.

- 1 Provide a new public pedestrian laneway between Bridge Street and Ryde Road as illustrated in *Figure 14A.5-1*. The access way is to be open to the sky with natural light, and be publicly accessible during business hours.
- 2 Provide continuous awnings to West Street as illustrated in *Figure 14G.2-1*.

14G.3 PROPOSED COMMUNITY INFRASTRUCTURE

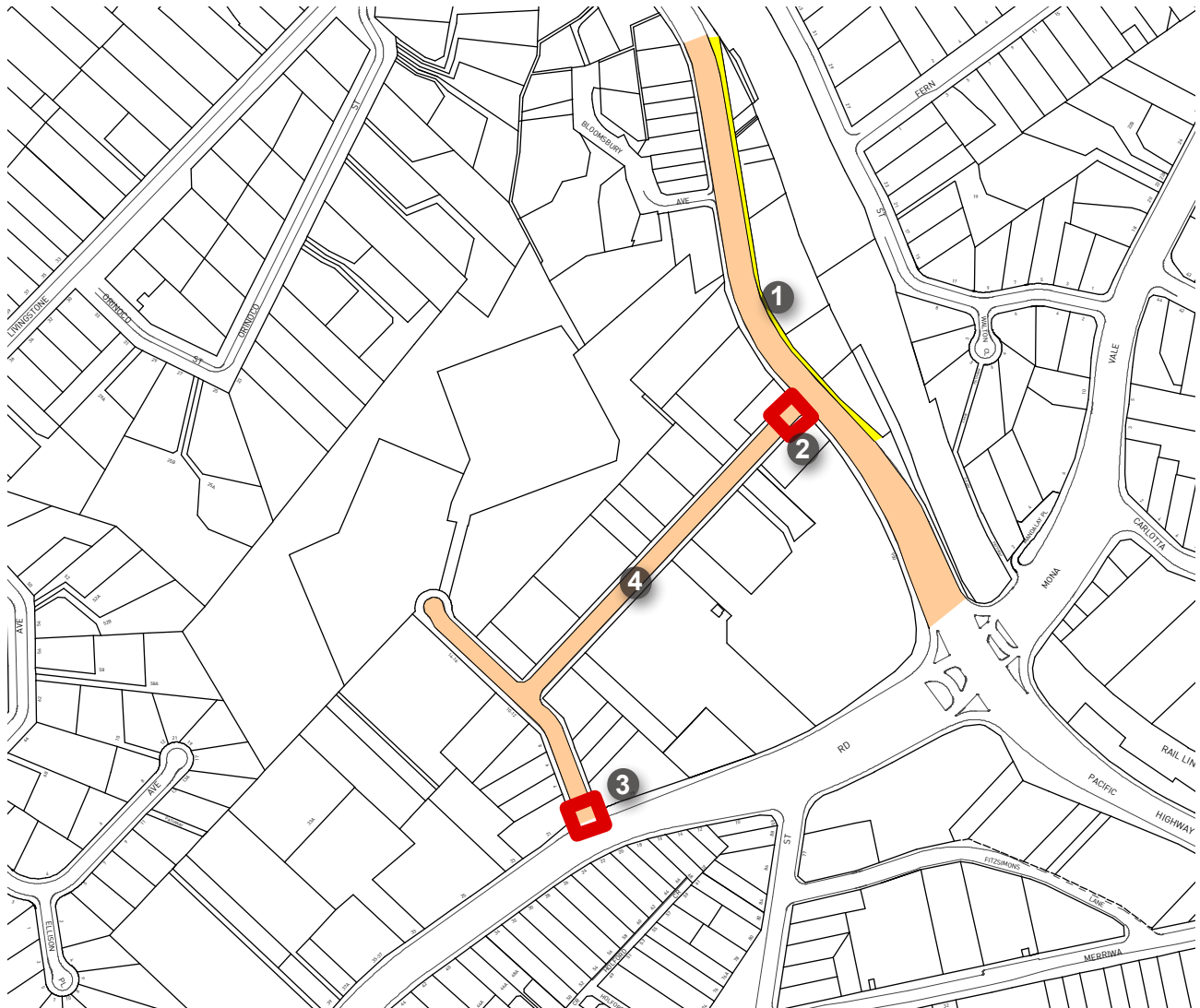


Figure 14G.3-1:
Community infrastructure plan.

Legend

- Footpath embellishment
- Traffic signal and road modification
- Street tree planting

14G.3 PROPOSED COMMUNITY INFRASTRUCTURE (continued)

Objectives

- 1 To implement the Works Programmes within the Ku-ring-gai Contributions Plan 2010.

Controls

- 1 Development is to be designed to support the provision of Key Community Infrastructure as stipulated in the Ku-ring-gai Contributions Plan 2010.

Key Community Infrastructure for Pymble Buiness Park is to be provided through the Ku-ring-gai Contributions Plan 2010 or by Voluntary Planning Agreement (VPA). The Ku-ring-gai Contributions Plan 2010 stipulates elements to be implemented. These are listed below and illustrated in *Figure 14G.3-1*.

- 1 Embellishment of the footpath areas on the northern side of the Pacific Highway including new lighting, high quality paving, furniture and street tree planting.
- 2 Modifications to the traffic signals and localised road alterations at the intersection of Bridge Street and the Pacific Highway.
- 3 Modifications to the traffic signals and localised road alterations at the intersection of West Street and Ryde Road to facilitate access into Pymble Business Park.
- 4 Street tree planting to the Pacific Highway, Bridge Street, Suakin Street/West Street.

14G.4 BUILDING SETBACKS

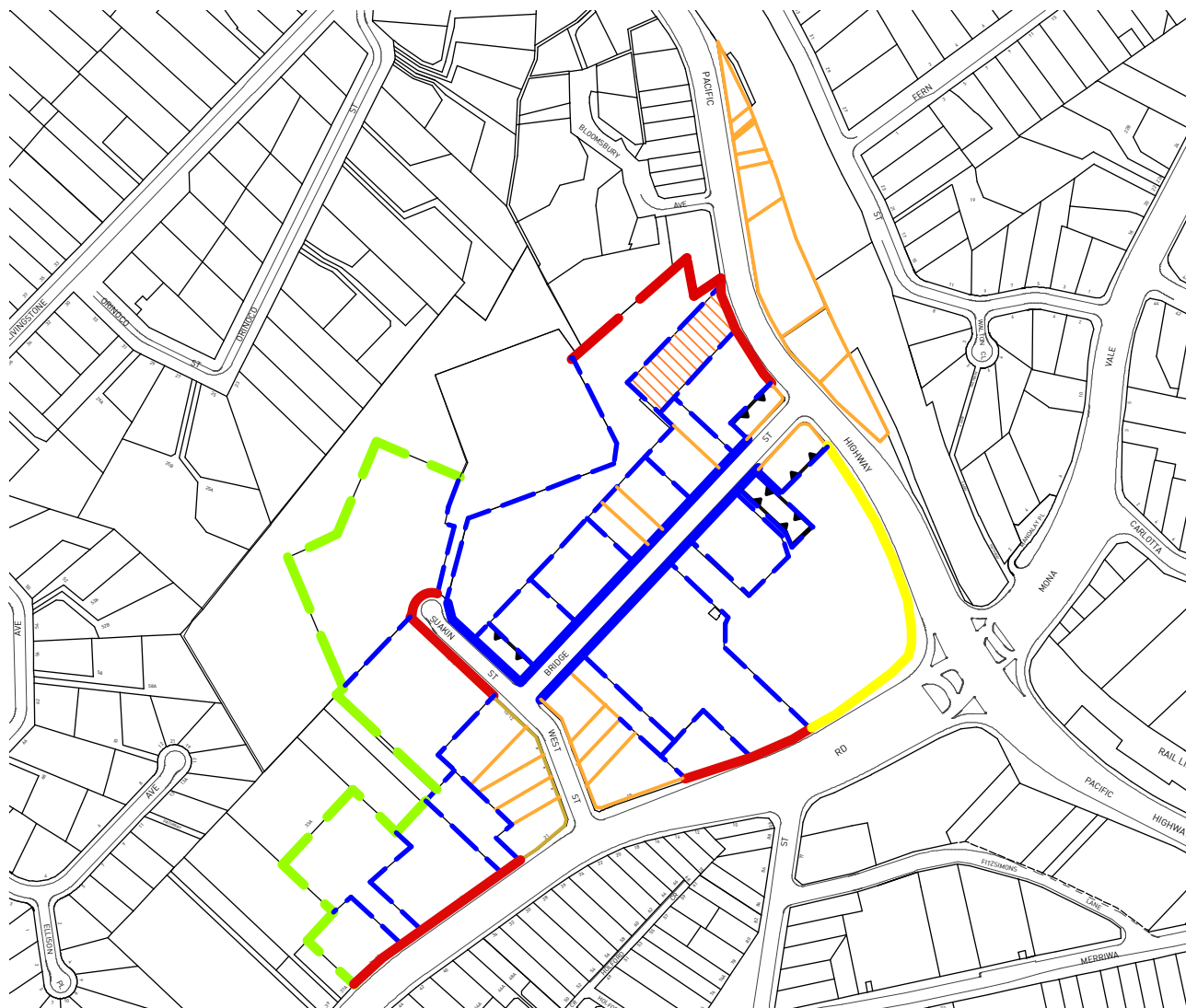











Figure 14G.4-1:
Building setbacks plan.

Legend

-  - Heritage affected site
-  - Setbacks to adjoining bushland to be merit-based to allow best fit on site and in accordance with biodiversity and riparian requirements
-  - Landscaped street setback 5m min
-  - Landscaped street setback 10m min
-  - Landscaped street setback 20m min
-  - Landscaped side/rear setback 5m min
-  - Landscaped side/rear setback 10m min
-  - Zero setback to boundary
-  - Zero setback to flagged side/rear of one property with 5m setback to other

14G.4 BUILDING SETBACKS (continued)

Objectives

- 1 *To create cohesive streetscapes with consistent building alignments and setbacks.*
- 2 *To provide opportunities for street tree planting and front setback planting where appropriate.*
- 3 *To facilitate building modulation and articulation of building facades.*

Controls

- 1 All buildings within the Pymble Business Park must comply with the setback controls illustrated in *Figure 14G.4-1*.
- 2 Setbacks on properties adjacent to the Heritage Item must comply with the controls in Part 19 of this DCP.
- 3 Building setbacks stipulated in *Figure 14G.4-1* respond to the location within the business park. They are:
 - i) zero setbacks to sites that are constrained or where an urban frontage would benefit the location;
 - ii) landscaped setbacks to sites where a landscaping element within the setback is required to enhance the character of the streetscape.

14G.5 BUILT FORM

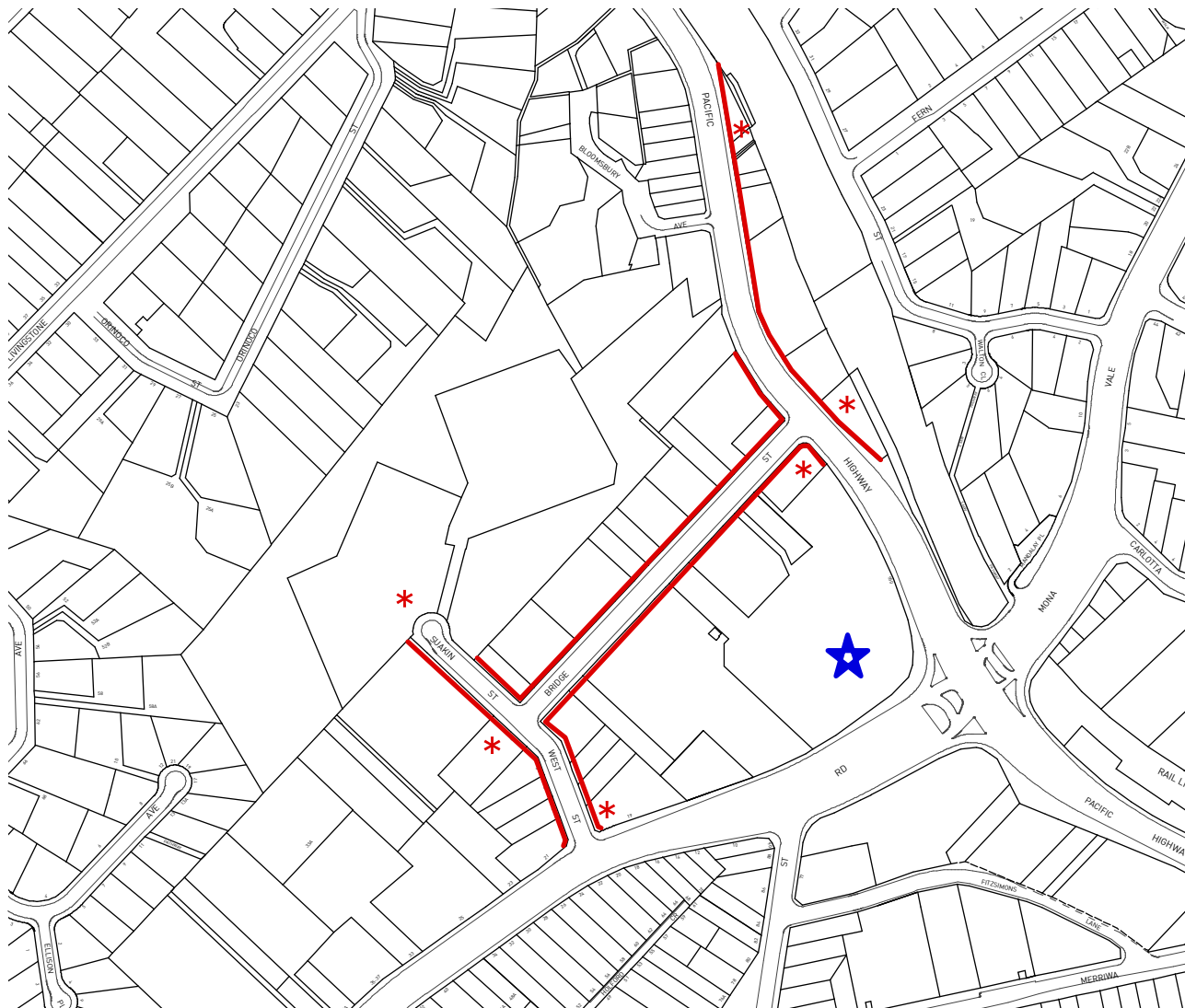


Figure 14G.5-1:
Built form plan

Legend

- - Primary active frontage
- * - Corner or visually prominent site
- ★ - Landmark site

14G.5 BUILT FORM (continued)

Objectives

- 1 To ensure building facades are well designed, articulated and address public streets, public spaces, footpaths, parks and reserves.
- 2 To provide active frontage to the main streets and lanes.
- 3 To support pedestrian activity and enhance the amenity, safety and surveillance of the public domain.
- 4 To enhance the quality and character of the public domain in the commercial precincts.
- 5 To contribute to the locality by creating distinctive buildings.

Controls

The topography and road orientation within Pymble Business Park creates a number of sites that are visually prominent. Many of these are either corner sites or sites at the end of a street. Building design at these locations have the potential to be unique and recognised due to their prominent location, therefore a high design quality is required. There is one landmark site at the corner of Ryde Road and Pacific Highway. This is a visually prominent site with the potential to serve as a memorable marker in this locality.

Buildings are to be designed in accordance with *Figure 14G.5-1*.


- 1 Provide active street frontages along Pacific Highway, Bridge Street, Suakin Street and West Street in line with *Part 9C.10 of this DCP*.
- 2 Ground floor frontages are to provide for active uses that contribute to the active street frontage.
- 3 Building slabs are to be stepped on sloping sites to ensure ground floor level does not exceed 0.3m above or below finished footpath level.
Note: Variations may be permitted on very steep streets.
- 4 Building entries to each individual commercial premises are to be level with adjoining footpaths, with openings (doors and windows) that allow a direct visual connection between the building and the street. See *Figure 8C.14-4*.
Note: Variations may be permitted on very steep streets.
- 5 Provide buildings on corner and visually prominent sites that have distinct articulation addressing their location in line with *Part 9C.9 of this DCP*.
- 6 The site is to have a landmark building that is unique and site responsive. The building design is to be visually prominent and distinctive in architectural form and identify the location of Pymble Business Park within the region.

14G.6 HERITAGE



Figure 14G.6-1:
Heritage plan

Legend

 - Heritage affected site

14G.6 HERITAGE (continued)

Objectives

- 1 *To conserve heritage items and ensure new buildings respond to the scale, design, and character of adjoining heritage buildings.*

Controls

The Pymble Business Park has a state listed Heritage Item located on the Pacific Highway as illustrated in *Figure 14G.6-1*. The Pymble Substation and Depot is significant as an example of a purpose-built infrastructure building designed in the inter-war period.

- 1 Conserve all details and the form of the external elevations.
- 2 Removal or alteration to any interior feature is generally not supported and must have an assessment as to the significance of remnant internal fabric relating to operations and internal detailing.
- 3 Front setbacks to buildings adjacent to the Heritage Item must ensure significant views from the Pacific Highway in both directions of the Heritage Items.
- 4 Front setbacks of buildings adjacent to the Heritage Item are to have a minimum front setback equal or greater than the front setback of the Heritage Item.



Figure 14G.6-2
Pymble Substation and Depot

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14R References

14R.1 Lindfield Library Site Masterplan

14R.2 Turramurra Community Hub Masterplan

RIPARIAN LANDS

Introduction

- 17.1 General
- 17.2 Category 1 Environmental Corridor
- 17.3 Category 2 Terrestrial and Aquatic Habitat
- 17.4 Category 3 Bank Stability and Water Quality
- 17.5 Category 3A Watercourse Restoration

INTRODUCTION

Creeks, aquatic habitats and the associated riparian environments are important systems which support water quality; maintain habitat, connectivity and biodiversity; and contribute to the character, amenity and aesthetics of the local area.

The impact of urban stormwater management systems has led to accelerated erosion, increased localised flooding, significant sediment deposition, increased pollution and weed proliferation as well as loss of habitat and biodiversity. This in turn has altered the way the community uses and values the waterways. For example, many creeks are now unfit for swimming or other forms of recreation.

Within Ku-ring-gai these changes are apparent within the streams and riparian systems that still exist within the local government area (LGA). Outside the LGA the impacts can be seen in the receiving water bodies such as Sydney Harbour, the Hawkesbury River and local coastal beaches.

This Part guides development on land identified within the Natural Resource – Riparian Lands Map in the KLEP (see clause 6.4) and supports the achievement of the aims and objectives within the LEP.

Further background on the riparian lands mapping is contained within the *Ku-ring-gai Biodiversity and Riparian Lands Study Version 5*.

Practical measures are provided to ensure multiple objectives are achieved without compromising planning, development, conservation and restoration needs.

This Part is set out as follows:

- i) 17.1 of this Part provides general controls for development within all riparian land.
- ii) 17.2 - 17.5 of this Part provide additional provisions for development within specific categories of riparian land as identified on the Natural Resource– Riparian Lands Map in the KLEP.

Both sections **are to** be addressed when preparing development applications.

The following specific riparian categories are applicable:

- i) Category 1 Riparian Land includes a 40m setback from the top of each bank which, together with the waterway, forms the core riparian zone (CRZ); and a buffer zone of a further 10m from the core riparian zone. Refer Figure 17.2-1.
- ii) Category 2 Riparian Land includes a 20m setback from the top of each bank which, together with the waterway, forms the CRZ; and a buffer zone of a further 10m from the core riparian zone. Refer Figure 17.3-1.
- iii) Category 3 Riparian Land includes a 10m setback from the top of each bank which, together with the waterway, forms the CRZ. Refer to Figure 17.4-1.
- iv) Category 3a Riparian Land includes the area 10m on each side of a discontinuous or piped watercourse. Refer to Figure 17.5-1.

Note: Development within 'waterfront land' may be Integrated Development. Integrated Development requires consent from at least one public body other than Council. See www.water.nsw.gov.au for links to guidelines for controlled activities on waterfront land from NSW DPI Office of Water.

17.1 GENERAL

Further controls that may apply

SECTION C

PART 21.2 - Landscape Design

PART 24D.5 - Tennis Courts and other
Sporting Surfaces

PART 24D.6 - Fences

Objectives

- 1 To maintain natural waterways and floodplain processes.
- 2 To protect natural features, functions and biodiversity within riparian land (including the waterway).
- 3 To manage edge effects appropriately at the riparian land/urban interface.
- 4 To maintain and enhance the viability of riparian vegetation and habitats.
- 5 To protect and enhance water quality and aquatic habitat within the waterway and downstream.
- 6 To improve the connectivity and continuity of riparian vegetation and habitat.
- 7 To re-instate where feasible the natural functions and characteristics of the core riparian zone including reconstruction of existing piped or channelised waterways and natural waterways.
- 8 To prevent further piping and channelisation of watercourses.
- 9 To integrate human access to waterways without compromising the protection of riparian processes.

Controls

Note: Where a site is subject to both a riparian category in *Part 17 Riparian lands*, and a Greenweb category in *Part 18 Biodiversity*, the higher planting percentage for locally indigenous trees and understory species are to be used.

- 1 Subdivisions and amalgamations **are to** provide for a development footprint outside the riparian land.
- 2 Subdivisions (via perimeter roads) **are to** front onto riparian land.
- 3 The provision of service infrastructure including stormwater and sewerage within the core riparian zone (CRZ) **is to** be minimised.
- 4 Despite the provisions of 17.2 to 17.5 of this Part, safety fences are permitted within the CRZ. Fences **are to** be set back an appropriate distance from the top of the bank, and be of an open design to minimise barriers to flora, fauna and water.
- 5 Encroachments onto riparian land may be permitted. In determining whether an encroachment is acceptable, the following **is to** be considered:
 - i) the location of existing hardstand structures to be retained within the riparian land;
 - ii) the scale of the development;
 - iii) the minimisation of any encroachment through the siting and design of the development;
 - iv) location above the 1% flood level;
 - v) enhancements proposed as part of the development such as offset areas;
 - vi) geomorphic and ecological values.

Note: Principal private open space should be provided for outside the CRZ.

Access

- 6 Opportunities for the community or residents to connect with and explore waterways are to be provided where appropriate.
- 7 Accessways **are not to** compromise the integrity of riparian land. Walkways, tracks, cycleways and general access points may be established in the riparian land, where:
 - i) they are designed and constructed to ensure minimum impact on the riparian land; and
 - ii) they contribute to the management of edge effects or ongoing riparian maintenance.

17.1 GENERAL (continued)

Controls

- 8 Any access to the waterway **is to** be located at strategic points where the ecological integrity of the existing riparian vegetation, stream bed and bank stability will not be compromised.
- 9 Crossings (ie. bridges) over natural waterbodies **are to** maintain riparian connectivity; retain natural stream bed and bank profile; prevent scour and erosion of the stream bed or banks during storm events; not restrict bankfull or floodplain flows and not inhibit natural sediment transport. This is to be achieved by:
 - i) minimising the number of crossings;
 - ii) minimising the width of the crossing to allow for pedestrian access. Vehicle crossings will only be considered where required;
 - iii) establishing crossings at right angles to the flow rather than at an oblique angle; and
 - iv) minimising disturbance to existing native riparian vegetation.

Note: Refer to the NSW DPI Office of Water - Guidelines for Watercourse Crossings on Waterfront Land www.water.nsw.gov.au

Design

- 10 Impervious surfaces within the CRZ **are to** be minimised. Where feasible, reduce the existing building footprint and impermeable surfaces within riparian lands.
- 11 The development **is to** be designed to ensure connectivity of vegetation, hydrological flows and fauna movement to, and within, the riparian land and waterway.
- 12 Riparian vegetation is to be retained and enhanced, where any works are proposed to be undertaken in the Core Riparian Zone a Vegetation Management Plan prepared by a suitably qualified person, is required

Note: Refer to the NSW DPI Office of Water - Guidelines for vegetation management plans on waterfront land www.water.nsw.gov.au
- 13 Planting of species listed in Council's Weed Management Policy will not be permitted within riparian lands.
- 14 Disturbance of soils within riparian land **is to** be minimised, except where required for rehabilitation or remediation of the waterway.

Watercourse and flood processes

- 15 Watercourse and riparian land management **is to** be integrated with flooding risk. Flood management studies **are to** consider the impacts of rehabilitation and remediation of riparian land in the assessment of risk and in any proposed mitigation strategies.
- 16 No works **are to** be undertaken on or near a natural waterway

17.1 GENERAL (continued)

Controls

or section of natural waterway that would cause straightening, significant relocation, widening, narrowing, piping or lining of the natural waterway.

- 17 No works **are to** be undertaken on or near an artificially modified waterway unless it involves maintenance of existing features or naturalisation or remediation to improve the condition of the waterway.

Note: Artificially modified waterways include those that have been modified by human activities such as relining with artificial materials and/or those that have been realigned (re-directed).

- 18 Stream bank stabilisation works should be by use of re-vegetation methods, or if necessary, be of a 'soft engineering' design.

- 19 All stormwater discharge is to be treated before it enters the waterway.

Note: Refer to Part 24 of this DCP for post- construction water quality standards.

- 20 Water quality and quantity treatments should not compromise the biodiversity objectives of this DCP or objectives of this Part.

Note: Council may require, as a condition of consent, that a restriction-on-use be placed over the riparian land. The terms of which do not permit any works or development including earthworks, construction, landscaping, removal of vegetation or changes to the waterway, without the written concurrence of Council.

- 21 Channel and bank stability within the CRZ is to be protected by avoiding the removal of natural stream structure, vegetation and woody debris, except where debris creates a flood hazard.

- 22 Development is to be designed to maintain or emulate a naturally functioning watercourse wherever possible.

- 23 Piped services through the CRZ **are to** be avoided. Where necessary use non-destructive techniques such as direct drilling, where no part of the pipe is above ground or above the bed of the waterway. In exceptional circumstances pierced crossings may be considered.

17.2 CATEGORY 1 ENVIRONMENTAL CORRIDOR

Further controls that may apply

SECTION B
PART 16 - Bushfire Risk

SECTION C
PART 24D.3 - Development Over or Adjacent to a Natural Waterbody, Open Channel or Drainage Depression

Objectives

- 1 To provide a corridor for the movement of flora and fauna species between reserves and areas of remnant vegetation.
- 2 To preserve and enhance the viability, condition, connectivity and extent of native riparian vegetation and allow for adaption to climate change.
- 3 To protect and/or provide habitat for terrestrial and aquatic fauna.
- 4 To protect and/or provide bank and bed stability.
- 5 To contribute to improved water quality within the catchment.
- 6 To provide a riparian buffer to counter edge effects on the urban interface.
- 7 To provide for bushfire asset protection zones outside the core riparian zone.

Controls

- 1 The general controls and objectives under Part 17.1 General are relevant to this category.
- 2 All parts of the development are to be located outside the core riparian zone (CRZ) of category 1 lands being 40m from the top of each bank.
- 3 All parts of the development are to be located outside the category 1 buffer, being 10m from the CRZ.
Note: Any variation to the prescribed distances in 17.2 (1&2) are to be applied in line with the considerations in 18.1(5) of this Part.
- 4 Any Asset Protection Zone (APZ) proposed for bushfire management is to be located outside the CRZ.
Note: Encroachments of APZs into the CRZ may be considered where existing hardstand development limits the ability to establish a riparian buffer or does not allow sufficient space to establish an APZ outside of the CRZ. Any such proposal is to include submission of a vegetation management plan in line with section 17.1(12) of this Part.
- 5 An APZ is permitted in the buffer.

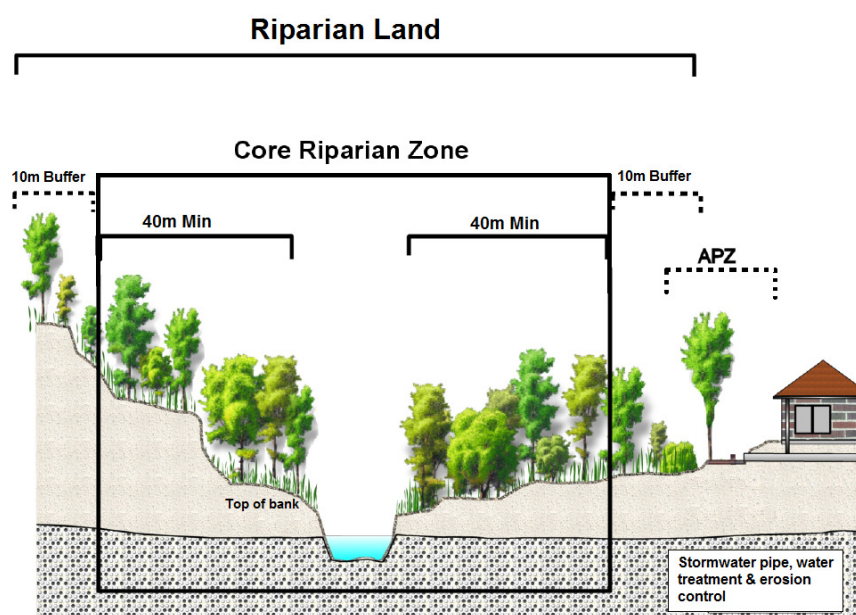


Figure 17.2-1:
Category 1 Riparian Land

17.2 CATEGORY 1 ENVIRONMENTAL CORRIDOR (continued)

Controls

Design

- 6 Where the riparian land within the CRZ or buffer has been disturbed or degraded, appropriate riparian vegetation is to be revegetated or rehabilitated. Local native vegetation assemblages, capable of supporting the long term ecological function of the riparian land, **is to** be used.
- 7 Where practicable, protection, regeneration and rehabilitation of vegetation in the CRZ is to retain or achieve a density that would occur naturally.

Note: Practicability will be considered on merit. For instance, within existing asset protection zones on bushfire prone lands, the density and design of vegetated areas will need to meet the requirements for Asset Protection Zones under Planning for Bushfire Protection 2019 rather than the above controls.
- 8 Particular emphasis is to be given to the retention, regeneration or revegetation of the CRZ in key locations. Including:
 - i) where two or more watercourses join;
 - ii) sites with significant erosion;
 - iii) stormwater outlets.
- 9 Plantings within the CRZ are to consist of 100% locally native species.
- 10 Planting within sites that include land identified as Category 1 buffer is to consist of:
 - i) not less than 70% locally native tree species and 30% locally native understorey species;
 - ii) species that reflect the relevant vegetation communities within the area;
 - iii) a mix of groundcover shrubs and trees and is to exclude monocultures.

Note: Council may support a variation to 8) or 9) above if suitable justification is provided.

17.3 CATEGORY 2 TERRESTRIAL AND AQUATIC HABITAT

Further controls that may apply

SECTION B PART 16- Bushfire Risk

SECTION C PART 24D.3 - Development Over or Adjacent to a Natural Waterbody, Open Channel or Drainage Depression

Objectives

- 1 To preserve and enhance the viability, condition, connectivity and extent of native riparian vegetation and allow for adaption to climate change.
- 2 To protect and/or provide habitat for terrestrial and aquatic fauna.
- 3 To protect and/or provide bank and bed stability.
- 4 To contribute to improved water quality within the catchment.
- 5 To provide a riparian buffer to counter edge effects on the urban interface.
- 6 To provide for bushfire asset protection zones.

Controls

- 1 The general controls and objectives under *Part 17.1 General* are relevant to this category.
- 2 All parts of the development are to be located outside the core riparian zone (CRZ) of category 2 lands being 20m from the top of each bank.
- 3 All parts of the development are to be located outside the Category 2 buffer, being 10m from the CRZ.
Note: Any variation of the prescribed distances in 18.3 (1&2) *is to* be applied in line with the considerations in 18.1(5) of this Part.
- 4 Any Asset Protection Zone (APZ) proposed for bushfire management *is to* be located outside the CRZ.
Note: Encroachments of APZs into the CRZ may be considered where existing hardstand development limits the ability to establish a riparian buffer or does not allow sufficient space to establish an APZ outside of the CRZ. Any such proposal *is to* include submission of a vegetation management plan in line with section 18.1(12) of this Part.
- 5 An APZ is permitted in the buffer.

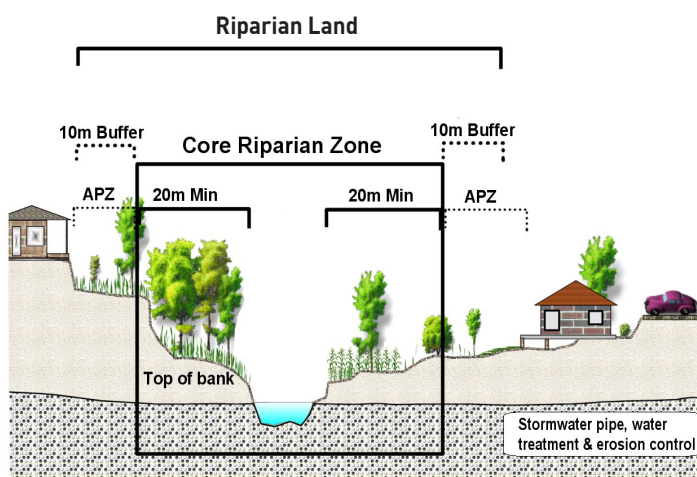


Figure: 17.3-1
Category 2 Riparian Land

17.3 CATEGORY 2 TERRESTRIAL AND AQUATIC HABITAT (continued)

Controls

Design

- 6 Where the riparian land within the CRZ or buffer has been disturbed or degraded, appropriate riparian vegetation is to be revegetated or rehabilitated. Local native vegetation assemblages, capable of supporting the long term ecological function of the riparian land, **is to** be used.
- 7 Where practicable, protection, revegetation and remediation of vegetation in the CRZ is to retain or achieve a density that would occur naturally.
Note: Practicability will be considered on merit. For instance, within existing asset protection zones on bushfire prone lands, the density and design of vegetated areas will need to meet the requirements for Asset Protection Zones under Planning for Bushfire Protection 2019 rather than the above controls.
- 8 Particular emphasis is to be given to the retention, regeneration or revegetation of the CRZ in key locations. Including:
 - i) where two or more watercourses join;
 - ii) sites with significant erosion;
 - iii) stormwater outlets.
- 9 Plantings within the CRZ are to consist of 100% locally native species.
- 10 Planting within sites that include land identified as Category 2 buffer is to consist of:
 - i) not less than 70% locally native tree species and 30% locally native understorey species;
 - ii) species that reflect the relevant vegetation communities within the area;
 - iii) a mix of groundcover shrubs and trees and is to exclude monocultures.

Note: Council may support a variation to 8) or 9) above if suitable justification is provided.

17.4 CATEGORY 3 BANK STABILITY AND WATER QUALITY

Further controls that may apply

SECTION B
PART 16- Bushfire Risk

SECTION C
PART 24D.3 - Development Over or Adjacent to a Natural Waterbody, Open Channel or Drainage Depression

Objectives

- 1 *To protect and/or provide bank and bed stability.*
- 2 *To contribute to improved water quality within the catchment.*

Controls

- 1 The general controls and objectives under *Part 17.1 General* are relevant to this category.
- 2 All parts of the development are to be located outside the core riparian zone (CRZ) of Category 3 Riparian Land being 10m from the top of each bank.
- 3 An Asset Protection Zone (APZ) proposed for bushfire management is permitted within the CRZ, only where no practical alternative exists.

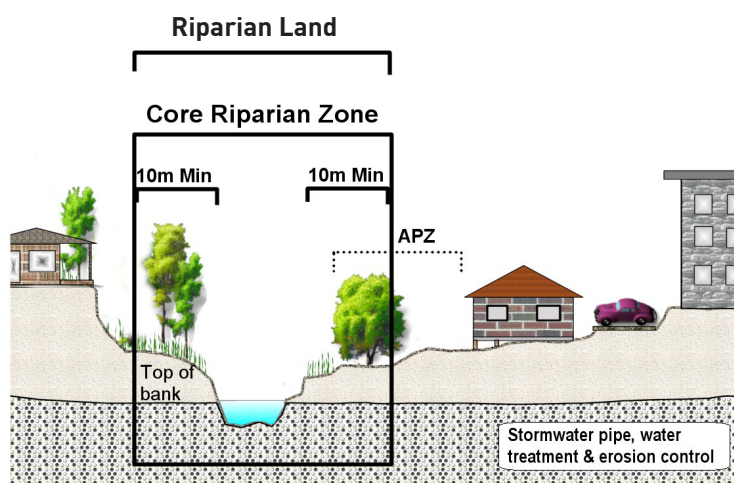


Figure: 17.4-1
Category 3 Riparian Land

17.4 CATEGORY 3 BANK STABILITY AND WATER QUALITY (continued)

Controls

Design

- 4 Where the CRZ has been disturbed or degraded, appropriate riparian vegetation is to be revegetated or rehabilitated. Locally native vegetation assemblages, capable of supporting the long term ecological function of the riparian land, **are to** be used.
- 5 Protection, revegetation and rehabilitation of vegetation in the CRZ to is achieve a density that would occur naturally, except where the zone is within bushfire prone land.
- 6 Particular emphasis is to be given to the retention, regeneration or revegetation of the CRZ in key locations. Including:
 - i) where 2 or more watercourses join;
 - ii) sites with significant erosion;
 - iii) stormwater outlets.
- 7 Planting within the channel and within 2 metres of the top of the bank is to consist of 100% locally native species. Species are to reflect the relevant vegetation communities within the area. A mix of groundcover, shrubs and trees is to be provided.
- 8 Planting within Category 3 lands more than 2 metres from the top of the bank is to consist of:
 - i) not less than 70% locally native tree species and 30% locally native understorey species;
 - ii) species that reflect the relevant vegetation communities within the area;
 - iii) a mix of groundcover shrubs and trees and is to exclude monocultures.

Note: Council may support a variation to 6) or 7) above if suitable justification is provided.

17.5 CATEGORY 3A WATERCOURSE RESTORATION

Further controls that may apply

SECTION B
PART 16- Bushfire Risk

SECTION C
PART 24D.3 - Development Over or Adjacent to a Natural Waterbody, Open Channel or Drainage Depression
PART 24D.2 - Flood studies and the Flood Design Standard

Objectives

- 1 To re-create the core riparian zone.
- 2 To emulate a naturally functioning watercourse, with associated riparian vegetation where possible.
- 3 To prevent development from compromising the ability to re-create the core riparian zone (including the watercourse) in the future.
- 4 To contribute to improved water quality within the catchment.

Controls

- 1 The general controls and objectives under *Part 17.1 General* are relevant to this category.
- 2 All parts of the development are to be located outside the CRZ on Category 3a Riparian Land.
- 3 The CRZ is up to 10 metres from the centreline of the watercourse.

In determining an appropriate width for the CRZ in category 3a the following **is to** be considered:

- i) drainage characteristics including flooding;

Note: the core riparian zone for category 3a should at a minimum cover the extent of any overland flow path. Determining this may require a flood study to be undertaken. See Part 24D.2

- ii) the location of the riparian land within the catchment;

Note: Land at the very top of the catchment may require a CRZ less than 10m wide.

- iii) the presence of existing open watercourses up and down stream within the site or adjacent land;
- iv) the type, condition and connectivity of existing vegetation;
- v) the scale of the proposed development; and
- vi) the location of existing development to be retained.

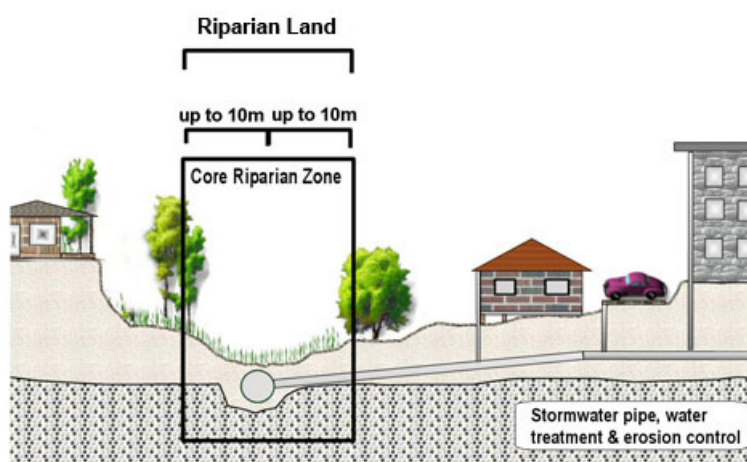


Figure 17.5-1:
Category 3a Riparian Land.

17.5 CATEGORY 3A WATERCOURSE RESTORATION(continued)

Controls

Access

- 4 Vehicular and pedestrian crossings over piped waterways **are to** comply with the easement provisions in Part 24D.4.

Note: Where a watercourse is re-created the general access controls apply

Design

- 5 Piped or channelised re-instatement of the watercourse to a more natural form is **only a mandatory consideration for land zoned R3 Medium Density Residential, R4 High Density Residential, or subdivisions into 3 or more lots, and is to be undertaken where feasible.** Feasibility of channel restoration is to be determined taking into consideration the factors outlined in the Controls in clause 17.5(2) of this Part.

Note: watercourse re-instatement is most likely to be feasible on larger developments where landscaping and drainage works are already significant and re-instatement of the watercourse can help achieve beneficial social and environmental outcomes

- 6 Where a watercourse is re-created the design controls for Category 3 apply.

Watercourse and flood processes

- 7 Piped waterways **are to** comply with the flooding and easement provisions in Part 24D.4.

Note: Where a watercourse is re-created the Watercourse and Flood Process Controls from Part 16.1 apply.



Figure 17.5-2:
Partially restored watercourse in
new residential development.

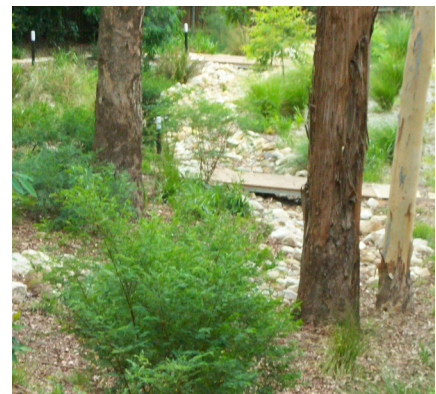


Figure 17.5-3:
Same partially restored watercourse
a few months later.

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BIODIVERSITY

Introduction

- 18.1 All Greenweb Categories
- 18.2 Category - Core Biodiversity Lands
- 18.3 Category - Support for Core Biodiversity Lands
- 18.4 Category - Landscape Remnant
- 18.5 Category - Biodiversity Corridors and Buffer Areas
- 18.6 Category - Canopy Remnant
- 18.7 No Net Loss of Biodiversity
- 18.8 Explanation of Greenweb Categories and Sub Categories

18R References

- 18R.1 Greenweb Maps (separate document)

INTRODUCTION

The urban forest, formal reserves and natural resources of Ku-ring-gai are fundamental elements of its character and support biodiversity of national, state, regional and local significance.

Greenweb (as shown on the Greenweb map - Part 18R.1) is Ku-ring-gai's Biodiversity mapping for the management of significant vegetation and habitat, biodiversity corridors and waterways throughout the LGA. The mapping facilitates a consistent and strategic approach to biodiversity management.

This includes lands mapped as 'areas of biodiversity significance' within the KLEP (Clause 6.3 Biodiversity Protection), broken down into four categories:

- i) Core Biodiversity Lands;
- ii) Support for Core Biodiversity Lands;
- iii) Landscape Remnant;
- iv) Biodiversity Corridors and Buffer Areas.

In addition to these, an additional category - 'Canopy Remnant' is also included within the DCP for the role these Canopy Remnant play in supporting ecological processes and other values.

Note: Further explanation and the methodology for identifying Greenweb categories is provided within Part 18.8 of this DCP and the Ku-ring-gai Biodiversity and Riparian Lands Study Version 5.

Lands excluded from Greenweb may still contain or provide habitat for threatened ecological communities, species or populations as listed under the NSW Biodiversity Conservation Act 2016, the NSW Fisheries Management Act 1994, and / or the Environment Protection and Biodiversity Conservation Act 1999. Absence of areas from the Greenweb does not remove the need for consideration and protection under these Acts.

The majority of areas within the Greenweb include native vegetation canopy. However some areas containing cleared, built or exotic vegetation have been included (See Part 18.8 Explanation of Greenweb Categories and Sub Categories). The inclusion of such areas facilitates the improvement of connectivity between core habitats and may provide additional functions such as protection of water quality. These measures will help to maintain and restore the health, diversity and connectivity of biodiversity within Ku-ring-gai and improve resilience under climate change.

Within Greenweb the potential for presence of a native soil seed bank is important. This is the natural storage of seeds that remains largely dormant until triggered by disturbance. Many plants can survive for decades as seeds stored in soil. Areas which may look visibly weedy or disturbed may contain a native seed bank and potential for restoration through fire, weed removal or other disturbance mechanisms.

Note: "The soil seedbank is the key to regeneration" (*Department of Environment and Climate Change NSW 2008, Protecting and Restoring Blue Gum High Forest*)

INTRODUCTION

The Greenweb maps should not be used at a scale finer than 1:2,000. There are considerable benefits to natural resource planning at this scale, however investigations at a site scale for individual proposals may identify inaccuracies or on ground changes.

Variations to Greenweb mapping as proposed by either Council or the proponent will be considered on merit, based on the methodology outlined in the Ku-ring-gai Biodiversity and Riparian Lands Study Version 5.

The objectives and controls in this Part applies to development activities or works that will have an impact on areas identified as Greenweb, mapped in this DCP. Within these areas, this Part guides the development activities or works in meeting the aims and objectives of the KLEP (Clause 6.3 Biodiversity Protection).

Where there are inconsistencies between this Part and Section C Part 1.1 (Landscaping) of this DCP, this Part prevails to the extent of any inconsistency.

This Part is set out as follows:

- i) Part 18.1 includes general objectives and controls that apply to all development on Greenweb lands;
- ii) Parts 18.2 – 18.6 provide objectives and controls for each of the five categories of Greenweb based on the main functions and objectives of each area;
- iii) Part 18.7 provides for no net loss of biodiversity and outlines mechanisms to achieve this;
- iv) Part 18.8 provides the explanation of Greenweb categories.

18.1 ALL GREENWEB CATEGORIES

Objectives

- 1 *To preserve the natural environment of Ku-ring-gai in the social, economic and environmental interest of the community.*
- 2 *To retain, consolidate and improve existing bushland, significant vegetation and habitat for flora and fauna.*
- 3 *To support the protection and recovery of critical habitat, regionally significant and threatened ecological communities, species and populations.*
- 4 *To capture carbon, contributing to climate control.*
- 5 *To allow for adaptation of native flora, fauna and ecological communities to climate change.*

Controls

Note: Where a site is subject to both a riparian category in *Part 17 Riparian Lands*, and a Greenweb category in *Part 18 Biodiversity*, the higher planting percentage for locally indigenous trees and understory species are to be used.

- 1 Development must be designed and sited to minimise impact on any distinctive environmental features and to conserve the areas of vegetation and/or habitat of the highest ecological value on and adjacent to the site, and to minimise fragmentation and edge effects.

The development design should also integrate consideration of bushfire, ecological impacts and management and include:

- i) consideration of buildings, access, stormwater and utilities;
- ii) choosing parts of the site to develop where features are not present;
- iii) modifying the size, layout or construction methods to minimise on and off site disturbance and impacts;
- iv) locating built structures to reduce fragmentation of open space areas and vegetation (including canopy);
- v) locating buildings to take advantage of environmental features;
- vi) implementing a soil and water management plan to limit impact;
- vii) avoiding importing soil from outside the site;
- viii) selecting native plant species that are present on site, preferably seeded from species on the site;
- ix) selecting plant species that enhance local fauna habitat.

Note: Habitat and distinctive environmental features may include:

- cliffs and rock outcrops;
- remnant bushland and trees;
- tree hollows; and
- natural watercourses.

Note: Council may require, as a condition of consent, that a restriction on use be placed over key areas of the site. Council may require suitable replacements for trees or vegetation removed.

- 2 Subdivision must not be permitted unless each proposed site contains a building envelope that allows compliance with this Part.
- 3 Trees adjacent to threatened ecological communities are to be retained as a buffer. This does not apply to trees listed in Council's Weed Management Policy.
- 4 The development must retain existing site drainage patterns and minimise excavation and fill within 3m of Greenweb lands.
- 5 Where the slope over the building footprint area is greater than 12.5%, site responsive methods such as stepping the building down the site, split level construction or pier and beam construction must be used.
- 6 The planting of species listed in Council's Weed Management Policy will not be permitted.

18.1 ALL GREENWEB CATEGORIES (continued)

Controls

- 7 Species used for planting in or directly adjacent to Greenweb areas should be of local provenance.
- 8 A flora and fauna assessment will be required where development within Greenweb lands impacts on connectivity, existing indigenous vegetation, fauna or habitat.

Note: This may be waived where an assessment has already been undertaken as part of a Biodiversity Development Assessment Report (BDAR) in accordance with Part 7 of the NSW Biodiversity Conservation Act 2016.

Note: Flora and fauna assessments must be undertaken by an appropriately qualified and experienced person. Council assessment provisions are available on Council's website (www.krg.nsw.gov.au).

Survey and assessments should be undertaken in accordance with guidelines from the NSW Environment, Energy and Science Group.

- 9 The introduction of imported soils and disturbance of local seed banks are to be avoided wherever possible.
- 10 Vegetation retention is to consider mature trees and hollow-bearing trees within biodiversity areas as a priority for retention.

18.2 CATEGORY - CORE BIODIVERSITY LANDS

Objectives

- 1 *To protect and regenerate core vegetation and fauna habitat.*
- 2 *To maintain and enhance ecological function and connectivity.*
- 3 *To support the protection and recovery of Key Vegetation Communities, threatened species, populations and their habitats.*



Figure 18.2-1: Examples of Core Biodiversity Lands

Controls

Core Biodiversity lands are areas containing a range of natural landforms, plant and animal species, habitats and ecosystems.

These areas include public lands managed for conservation, areas of regional biodiversity importance, and form the key foundation of the Greenweb (see Figure 18.2-1).

It is recognised that works may be required within this category for bushfire, land management and appropriate recreation. This may include trails, access roads, car parks and picnic areas.

Category	Sub Category
Core Biodiversity Lands	Office of Environment and Heritage protected areas
	Ku-ring-gai Natural Areas
	Regional Fauna Habitat

Figure 18.2-1 Areas identified as Core Biodiversity Lands

Note: See Part 18.8 for explanation of Greenweb categories.

- 1 Avoid locating development on land identified as Core Biodiversity Lands on the Greenweb map. (Refer to maps in 18R.1 of this Part)
- 2 Where work impacts on land within Core Biodiversity Lands, stabilisation and or rehabilitation with indigenous vegetation will be required to mitigate impacts.
- 3 Where the site includes land identified as Core Biodiversity Lands, works must be consistent with a management document (e.g. a Plan of Management under the Local Government Act 1993, a Vegetation Management Plan or equivalent).
- 4 Where no such plan exists, development and implementation of such a plan may be required. The plan must be prepared by a suitably qualified person and must identify ongoing initiatives to preserve, protect and promote the environmental values of the land.

Note: Guidelines for Vegetation Management Plans are available on Council's website (www.krg.nsw.gov.au).

- 5 Planting within land identified as Core Biodiversity Lands is to consist of:
 - i) locally native species;
 - ii) species that reflect the relevant vegetation communities within the area; and
 - iii) a mix of groundcover shrubs and trees, and is to exclude monocultures.

18.3 CATEGORY - SUPPORT FOR CORE BIODIVERSITY LANDS

Objectives

- 1 To support core areas of vegetation and fauna habitat.
- 2 To contribute to the protection and recovery of Key Vegetation Communities, threatened species, populations and their habitats.
- 3 To contribute to the protection, restoration and management of Biodiversity Corridors.
- 4 To contribute to the protection, restoration and management of vegetation and habitat in riparian lands.
- 5 To contribute to the net improvement of ecological function.

Controls

Land identified as Support for Core Biodiversity Lands provide a range of support values, including increased remnant size, reduced edge effects and connectivity between Core Biodiversity Lands (see Figure 18.3-1).

They also include patches of Local Fauna Habitat and/or of Key Vegetation Communities and support the health of waterways. This category includes vegetation where protection, restoration, rehabilitation or regeneration works are required to enhance overall biodiversity values.

Biodiversity Corridors have been located in positions of strategic importance, providing linkages between natural habitat areas such as formal reserves or remnant patches. Whilst these corridors typically contain barriers, including buildings, roads and infrastructure or discontinuous vegetation, they are important stepping stones or refuge sites for movement and dispersal of mobile species between more extensive habitat areas.

Note: Biodiversity Corridor area lacking vegetation are addressed in Category Biodiversity Corridor and Buffer Areas (Part 18.5).

Biodiversity Corridors play a vital role in improving the viability of otherwise isolated areas.

Linking core areas through an urbanised landscape by means of corridors:

- assists fauna movement by improving vegetation cover, decreasing predation risk and promoting food resources within a species foraging range;
- supports pollination, seed and gene dispersal, which may assist in the protection of high biodiversity values including endangered ecological communities and threatened flora and fauna.

Category	Sub Category
Support for Core Biodiversity Lands	Key Vegetation Communities (KVC), adjoining Core Biodiversity Lands
	Local Fauna Habitat
	Vegetation within Core Riparian Zones and KVC's adjoining
	All vegetation within Biodiversity Corridors

Figure 18.3-1 Areas identified as Support for Core Biodiversity Lands

Note: See Part 18.8 for explanation of Greenweb categories.

- 1 Avoid locating development on areas identified as Support for Core Biodiversity Lands on the Greenweb map. (Refer to maps in 18R.1 of this Part).
- 2 Where work impacts on land within Support for Core Biodiversity Lands, stabilisation and or rehabilitation with indigenous vegetation will be required to mitigate impacts.

18.3 CATEGORY - SUPPORT FOR CORE BIODIVERSITY LANDS (continued)

Controls

- 3 Vegetation retention and rehabilitation must be designed to enhance and link existing vegetation and habitat within the site and within adjacent sites, Biodiversity Corridors and riparian lands.
- 4 Where land within an allotment is identified as Support for Core Biodiversity Lands, works must be consistent with a management plan (e.g. vegetation management plan). Where no plan exists, Council may require preparation of a plan. This plan must be prepared by a suitably qualified person and must identify ongoing initiatives to preserve, protect and promote the environmental values of the land.

Note: Guidelines for Vegetation Management Plans are available on Council's website (www.krg.nsw.gov.au).

- 5 Planting within land identified as Support for Core Biodiversity Lands is to consist of:
 - i) 100% locally native tree and understorey species within Core Riparian Zones;
 - ii) not less than 70% locally native tree species and 30% locally native understorey species for all other areas;
 - iii) species that reflect the relevant vegetation communities within the area; and
 - iv) a mix of groundcover shrubs and trees and is to exclude monocultures.



Figure 18.3-1: Examples of Support for Core Biodiversity Lands

Objectives

- 1 To maintain smaller Key Vegetation Communities remnants as 'stepping stones', providing habitat, seedbank and pollination resources (facilitating gene flow) and supporting flora and fauna resilience.
- 2 To maintain and restore smaller remnants of Key Vegetation Communities across a range of topographies.
- 3 To protect trees within Key Vegetation Communities that provide food, shelter or nesting resources for native fauna, or that are of exceptional aesthetic value.



Figure 18.4-1: Examples of Landscape Remnants

18.4 CATEGORY - LANDSCAPE REMNANT

Controls

Landscape Remnant comprises areas that are more fragmented than Support for Core Biodiversity Lands, which nevertheless contain Key Vegetation Communities and support core areas (see Figure 18.4-1). These areas act as stepping stones or habitat islands to facilitate the movement of flora, fauna and genetic resources through the urban landscape and across a range of topographies. They also provide important community and aesthetic values.

Category	Sub Category
Landscape Remnant	Larger Key Vegetation Community (KVC) patches or KVC in good to moderate condition
	Significant trees within Key Vegetation Communities

Figure 18.4-1 Areas identified as Landscape Remnant

Note: See Part 18.8 for explanation of Greenweb categories.

- 1 Avoid locating development on land identified as - Landscape Remnant; on the Greenweb map. (Refer to maps in 18R.1 of this Part).
- 2 Vegetation retention and rehabilitation on sites that include land identified as Landscape Remnant must be designed to improve connectivity with existing vegetation and habitat.
- 3 Planting within land identified as Landscape Remnant on the Greenweb map is to consist of:
 - i) not less than 50% locally native species;
 - ii) species that reflect the relevant vegetation communities within the area; and
 - iii) a mix of groundcover, shrubs and trees, and is to exclude monocultures.
- 4 Where the site contains high species diversity or is dominated by weeds within any stratum, preparation of a Vegetation Management Plan by a suitably qualified person may be required. This plan must identify ongoing initiatives to preserve, protect and promote the environmental values of the land.

Note: Weeds are listed in Council's Weed Management Policy, with updated weed information available from the NSW Department of Primary Industries (www.dpi.nsw.gov.au).

Note: Guidelines for Vegetation Management Plans are available on Council's website (www.krg.nsw.gov.au).

18.5 CATEGORY - BIODIVERSITY CORRIDORS AND BUFFER AREAS

Objectives

- 1 *To manage areas providing a buffer to Core and Support for Core Biodiversity Lands.*
- 2 *To reduce edge effects and to improve the health, connectivity and function of local ecosystems.*
- 3 *To revegetate and restore Biodiversity Corridors, significant vegetation and habitat across the landscape.*

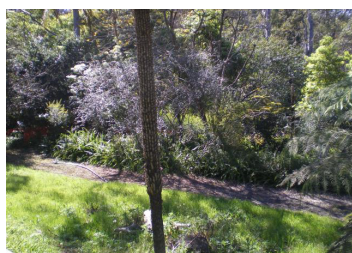


Figure 18.5-1: Examples of Biodiversity Corridors and Buffer Areas

Controls

Land identified as Biodiversity Corridors and Buffer areas (as outlined within Figure 18.5-1) includes both vegetation, cleared, disturbed or built areas.

Consideration of these lands provides an opportunity:

- to undertake revegetation, rehabilitation or regeneration works, to re-connect remnants with Greenweb, improving Biodiversity Corridors;
- increase remnant size and buffering edge effects.

This is an important aim as larger more consolidated remnants are more resilient than fragmented or linear remnants.

Category	Sub Category
Biodiversity Corridors and Buffer Areas	Buffer Areas for Core Biodiversity Lands & Support for Core Biodiversity Lands
	Biodiversity Corridor areas lacking vegetation

Figure 18.5-1 Areas identified as Biodiversity Corridors and Buffer Areas

Note: See Part 18.8 for explanation of Greenweb categories.

- 1 Within Biodiversity Corridors and Buffer Areas (refer to maps in 18R.1 of this Part):
 - i) The siting and design of development must minimise edge effects on Greenweb.
 - ii) Planting is to consist of :
 - not less than 50% locally native species;
 - species that reflect the relevant vegetation communities within the area; and
 - a mix of groundcover, shrubs and trees.
 - iii) Within Biodiversity Corridors (refer to maps in 18R.1 of this Part):
 - landscaping and revegetation must be designed to consolidate fragmented and linear vegetation and habitat areas within the site and adjacent sites.
 - the width of Biodiversity Corridors should be enhanced and gaps and barriers reduced or minimised

Objectives

- 1 *To protect smaller canopy remnant for habitat, species diversity and ecosystem services across a range of topographies.*
- 2 *To maintain trees for the services they provide to human well-being.*
- 3 *To improve air quality, prevent soil erosion, assist in improving water quality, carbon sequestration, storm water retention, energy conservation and noise reduction*



Figure 18.6-1: Examples of Canopy Remnant

18.6 CATEGORY - CANOPY REMNANT

Controls

Canopy Remnant comprise areas that contain Key Vegetation Communities have little to no understorey and are smaller than those mapped within the other four Greenweb categories included within the Biodiversity Map of KLEP (see Figure 18.6-1).

In addition to their intrinsic value as communities of high conservation priority, Canopy Remnant provide habitat for urban, transient or locally mobile species. They support species diversity and ecosystem services including maintenance of air and water quality, soil erosion, carbon storage.

Category	Sub Category
Canopy Remnant	Smaller Key Vegetation Community patches NOT in good to moderate condition

Figure 18.6-1 Areas identified as Greenweb Canopy Remnant

Note: See Part 18.8 for explanation of Greenweb categories.

- 1 Retain trees identified as Canopy Remnant on the Greenweb map (refer to maps in 18R.1 of this Part).
- 2 Planting within land identified as Canopy Remnant is to consist of:
 - i) not less than 30% locally native species;
 - ii) species that reflect the relevant vegetation communities within the area; and
 - iii) a mix of groundcover, shrubs and trees and is to exclude monocultures.

18.7 NO NET LOSS OF BIODIVERSITY

Objectives

- 1 *To ensure maintenance of vegetation (particularly) canopy within the LGA, Covering a range of habitats, species and age classes. In recognition of the social and ecosystem services provided.*
- 2 *To facilitate continuity of the ecological diversity currently alive in the locality.*
- 3 *To increase the level of security for significant vegetation and habitat.*
- 4 *To allow for reasonable development while maintaining and enhancing biodiversity and ecological integrity.*
- 5 *To provide a range of mechanisms to achieve no net loss of significant vegetation or habitat.*
- 6 *To ensure that where biodiversity values need to be offset, policy requirements are applied consistently across developments and in such a way as to enhance the ecological integrity across the LGA.*

Controls

- 1 Development proposals must seek to achieve no net loss of significant vegetation or habitat. Retention of vegetation and habitat in situ is the preferred method of biodiversity conservation. In the event that loss of vegetation is unavoidable, the loss must be mitigated and/or offset.
Note: Both informal compensatory measures and formal offsetting include a number of ecological, administrative and financial risks. The inclusion of such measures within a proposal does not preclude Council requiring redesign of, or refusing consent to, a proposal on grounds of biodiversity loss.
- 2 Any application for works within the Greenweb, must be accompanied by a proposal to protect, enhance or create habitat on or off site, where it:
 - i) requires the removal of native vegetation; or
 - ii) will negatively affect actual or potential habitat of fauna or flora; or
 - iii) is likely to cause degradation to vegetation or habitat.
- 3 No net loss of significant vegetation or habitat may be achieved by:
 - i) retention and protection of existing significant vegetation and habitat; or
 - ii) informal compensatory measures:
 - planting and habitat creation, especially where it improves connectivity;
 - rehabilitation of degraded areas; or
 - translocation of plants or soils;

Note: Where disturbance to intact, resilient natural soil profiles (that are likely to contain a healthy native seedbank) is to occur, translocation to and establishment within a viable recipient site is a key action towards no net loss of significant vegetation or habitat.

Note: In certain circumstances Council may request that native flora, fauna, natural features (e.g. rocks, logs) or viable soil profiles are translocated. This material may be used by the proponent, Council or other relevant authority to aid either in the offsetting site or other restoration program.

 - iii) formal offsetting measures:
 - application of the Biodiversity Offsets Scheme in accordance with Part 6 of the NSW Biodiversity Conservation Act 2016.

Note: Conditions will apply to how and where offset actions are applied, and these will be determined by Council.
- 4 In determining the appropriate measures a number of factors must be considered:
 - i) size and condition of the vegetation or habitat;
 - ii) vegetation or habitat significance, including its legislative status, and its Greenweb category;
 - iii) scale and duration of the impact;

18.7 NO NET LOSS OF BIODIVERSITY (continued)

Controls

- iv) current and future landscape context;
- v) level of uncertainty; and
- vi) any other mitigation measures proposed as part of the development.

Note: It is strongly recommended that for developments considering offsetting that pre-lodgement discussions are held with Council.

- 5 Any proposal involving an offsetting mechanism, on or off site, must be in accordance with the following principles:

i) Principle 1: Avoid, Minimise and Mitigate

- Offsetting will only be considered once all efforts to avoid, minimise or mitigate any negative impacts have been exhausted.

ii) Principle 2: Improve or Maintain Overall Biodiversity

- In order to achieve no net loss, offsetting must seek to improve or maintain overall biodiversity.
- Offsetting must not be used as a justification for granting approval to developments, where the cumulative impacts are greater than the benefit to be obtained from the offset action.
- Offset sites are to be identified and selected in accordance with regional and local conservation priorities. Offset sites and actions must be assessed according to their long-term viability.

iii) Principle 3: Like for Like

- The area which receives offset actions (the offset site) must contain or restore the same ecological community or threatened species/population habitat as the area which is being adversely impact by the development or activity (the impact site).
- Within areas where one vegetation community grades into another (ecotone areas) flexibility will be permitted. Similarly, Council will consider offsetting to adjoining vegetation communities where a benefit to the relevant community is demonstrated.
- Where a proposal will impact an area of known breeding or key habitat for threatened species, the offset site must include known habitat for that species (i.e. the species is known to be present).
- Offsets that are not like for like will only be considered where no suitable 'like for like' offset is available or the alternate offset will provide a net biodiversity benefit of equal or greater ecological significance within the bioregion.

iv) Principle 4: Supplement Existing Protection and Management

- Offsets must be supplementary and provide for increased extent, improved condition and/or protection.

18.7 NO NET LOSS OF BIODIVERSITY (continued)

Controls

v) **Principle 5: Enforceability**

- Offsets and their actions must be enforceable and include monitoring and reporting to ensure that the actions have been carried out, and are leading to positive biodiversity outcomes.

vi) **Principle 6: The Precautionary Principle**

- In conducting an offsetting action the precautionary principle must be applied. This principle requires that a conservation approach be taken, where there is uncertainty or lack of scientific confidence in an action and there are threats of serious or irreversible environmental damage.

6 An offsetting action will not be appropriate if:

- i) the applicant fails to adequately demonstrate to Council's satisfaction that all measures to address the offsetting principals in Clause 4 have been taken.
- ii) the proposed development is an inappropriate use of the land subject to the proposal, as assessed under the NSW Environmental Planning & Assessment Act 1979 and any local plans, policies or strategies.
- iii) the applicant has failed to adequately demonstrate to Council the need for the offsetting action.
- iv) the environmental impact in the development site is unacceptable. An example of how this may arise is where there is a likelihood of irreplaceable loss of biodiversity values that will not be adequately compensated by the proposed offsetting actions.

18.8 EXPLANATION OF GREENWEB CATEGORIES AND SUB CATEGORIES

Further background on this mapping, including a detailed mapping methodology is contained within the Ku-ring-gai Biodiversity and Riparian Lands Study Version 5.

Note: These categories are designed to be created in progressive order as listed below (from top to bottom) as data from one layer may be needed for those below. Where the criteria for an area fits within more than one category, the category listed first in the order shown below applies.

Core Biodiversity Lands	Office of Environment and Heritage Protected Areas Description: Formal reserves containing Office of Environment and Heritage estate managed for the purpose of biodiversity protection
	Ku-ring-gai Natural Areas Description: Formal reserves consisting of areas managed by Ku-ring-gai Council as Natural Areas under the NSW Local Government Act 1993 for the purpose of biodiversity protection.
	Regional Fauna Habitat Description: Regional Fauna Habitat as mapped by Ku-ring-gai Council consists of regionally important connected areas including private and public land. These areas provide resources for threatened and non-threatened fauna species and populations.
Support for Core Biodiversity Lands	Key Vegetation Communities (KVC) adjoining Core Biodiversity Lands Description: Areas of KVC directly adjoining lands mapped as Core Biodiversity Lands
	Local Fauna Habitat Description: Local Fauna Habitat as mapped by Ku-ring-gai Council is provided by isolated remnants located more centrally in the LGA. This includes areas within private and public land ownership.
	Vegetation within Core Riparian Zones and KVC's adjoining Description: All vegetation within Core Riparian Zones (see Part 18), including native and non-native species, with the exception of Riparian Category 3a (consisting of piped creeks). For Riparian Category 3a, mapped areas are limited to lands containing KVC's only AND KVC's adjoining vegetation within Core Riparian Zones identified above. Note: Only Core Riparian Zone areas are used. This excludes the 10m buffers applied to the Category 1 and 2 riparian lands.
	All vegetation within Biodiversity Corridors Description: All vegetation including non local / non-native species, within Biodiversity Corridors as mapped by Ku-ring-gai Council. Note: Areas lacking vegetation within biodiversity corridors are included within lands mapped as Biodiversity Corridors and Buffer Areas.

18.8 EXPLANATION OF GREENWEB CATEGORIES AND SUB CATEGORIES

(continued)

<div>Landscape Remnant</div>	<div> <div>Larger Key Vegetation Community (KVC) patches or KVC in good to moderate condition</div> <div>Description:</div> <div>Patches (areas of adjoining) KVCs that are ≥ 0.1ha in size;</div> <div>OR</div> <div>KVC vegetation of good or moderate condition.</div> <div>Note: Good condition vegetation, includes:</div> <div> <ul style="list-style-type: none"> Canopy, midstorey and understorey in good condition. Regeneration occurring within all layers. Native dominated within all layers. </div> <div>Moderate condition vegetation, includes:</div> <div> <ul style="list-style-type: none"> Native medium to dense tree overstorey, with native shrub and ground layers, and Native dominated within 2 layers. </div> </div>
	<div> <div>Significant trees within Key Vegetation Communities</div> <div>Description: Includes patches containing significant trees within KVCs identified by Ku-ring-gai Key Vegetation Community mapping. The mapping is not considered to capture every significant tree within the urban landscape. Factors considered in determining significance include; the presence of habitat (e.g. a hollow), provision of food for wildlife, and/or exceptional form or size.</div> </div>

<div>Biodiversity Corridors and Buffer Areas</div>	<div> <div>Buffer Areas for Core Biodiversity Lands and Support for Core Biodiversity Lands</div> <div>Description: Includes all areas within 8m of lands mapped as Core Biodiversity Lands or Support for Core Biodiversity Lands. Including both vegetated and non-vegetated areas that are not already included within categories listed above.</div> <div>Note: The buffering of Core Biodiversity Lands & Support for Core Biodiversity Lands required to create this layer, leaves a number of holes that are considered too small to inform planning decisions (less than 5 m²). These areas were removed.</div> </div>
	<div> <div>Biodiversity Corridor Areas Lacking Vegetation</div> <div>Description: This includes areas lacking vegetation, within Biodiversity Corridors as mapped by Ku-ring-gai Council.</div> <div>Note: Vegetated areas within biodiversity corridors are included within lands mapped as Support for Core Biodiversity Lands.</div> </div>

18.8 EXPLANATION OF GREENWEB CATEGORIES AND SUB CATEGORIES (continued)

<p><i>Canopy Remnant</i></p>	<p>Smaller Key Vegetation Community Patches NOT in good to moderate condition</p> <p>Description: Patches (areas of adjoining) KVC (excluding areas containing vegetation in good or moderate condition) that are <0.1ha in size.</p> <p>Note: Good condition vegetation includes:</p> <ul style="list-style-type: none"> • Canopy, midstorey and understorey in good condition. • Regeneration occurring within all layers. • Native dominated within all layers. <p>Moderate condition vegetation, includes:</p> <ul style="list-style-type: none"> • Native medium to dense tree overstorey, with native shrub and ground layers, and • Native dominated within 2 layers.
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18R References

18R.1 Greenweb Maps

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18R References

18R.1 Greenweb Maps



Ku-ring-gai Development Control Plan

Greenweb Map - Sheet Greenweb_001

DCP Greenweb Categories

- Core biodiversity lands
- Support for core biodiversity lands
- Landscape remnant
- Biodiversity corridors and buffer
- Canopy remnant

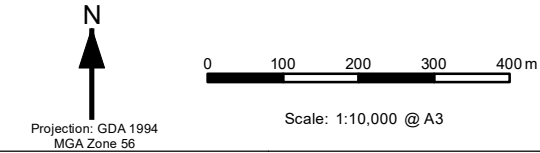
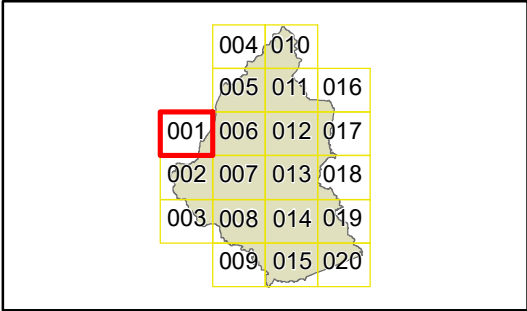
Biodiversity corridor

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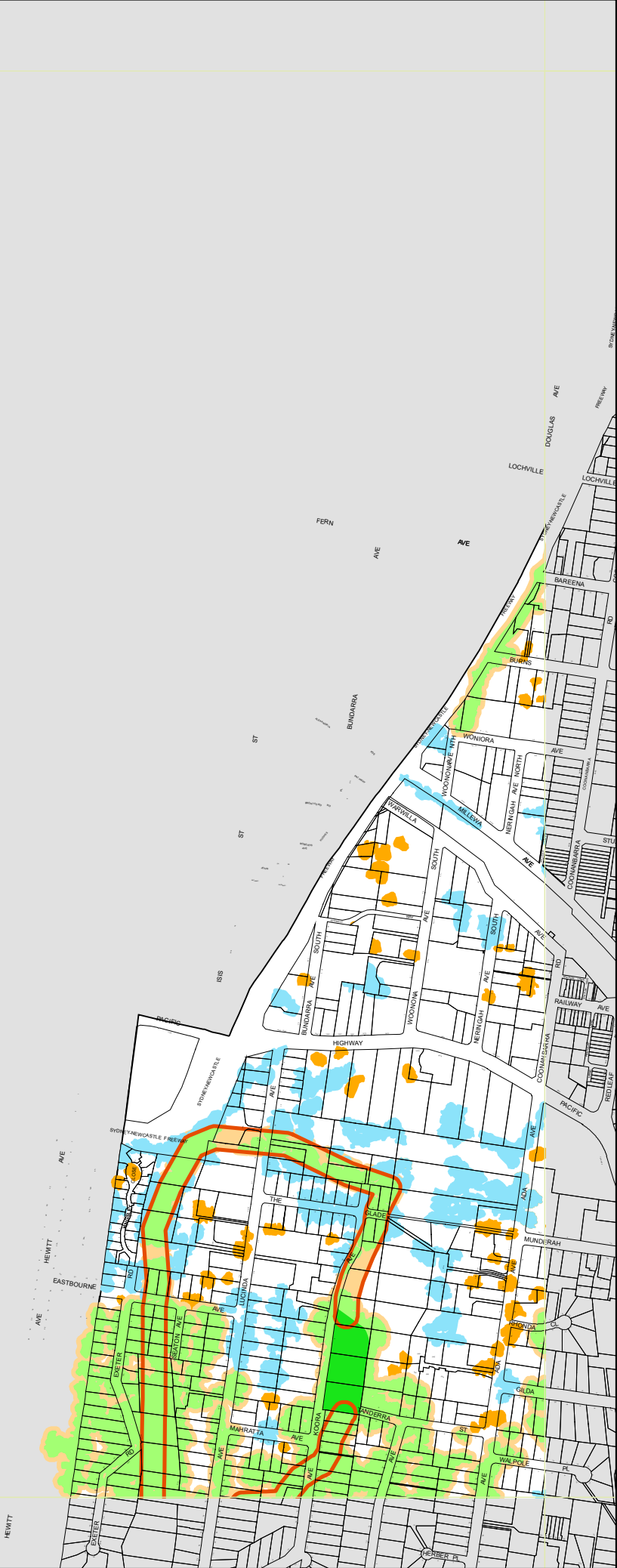
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Ku-ring-gai Development Control Plan

Greenweb Map - Sheet Greenweb_002


DCP Greenweb Categories

-  Core biodiversity lands
-  Support for core biodiversity lands
-  Landscape remnant
-  Biodiversity corridors and buffer
-  Canopy remnant

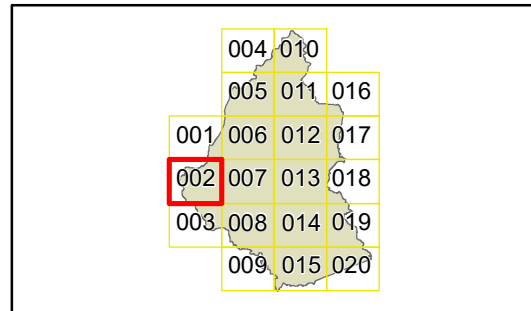
Biodiversity corridor

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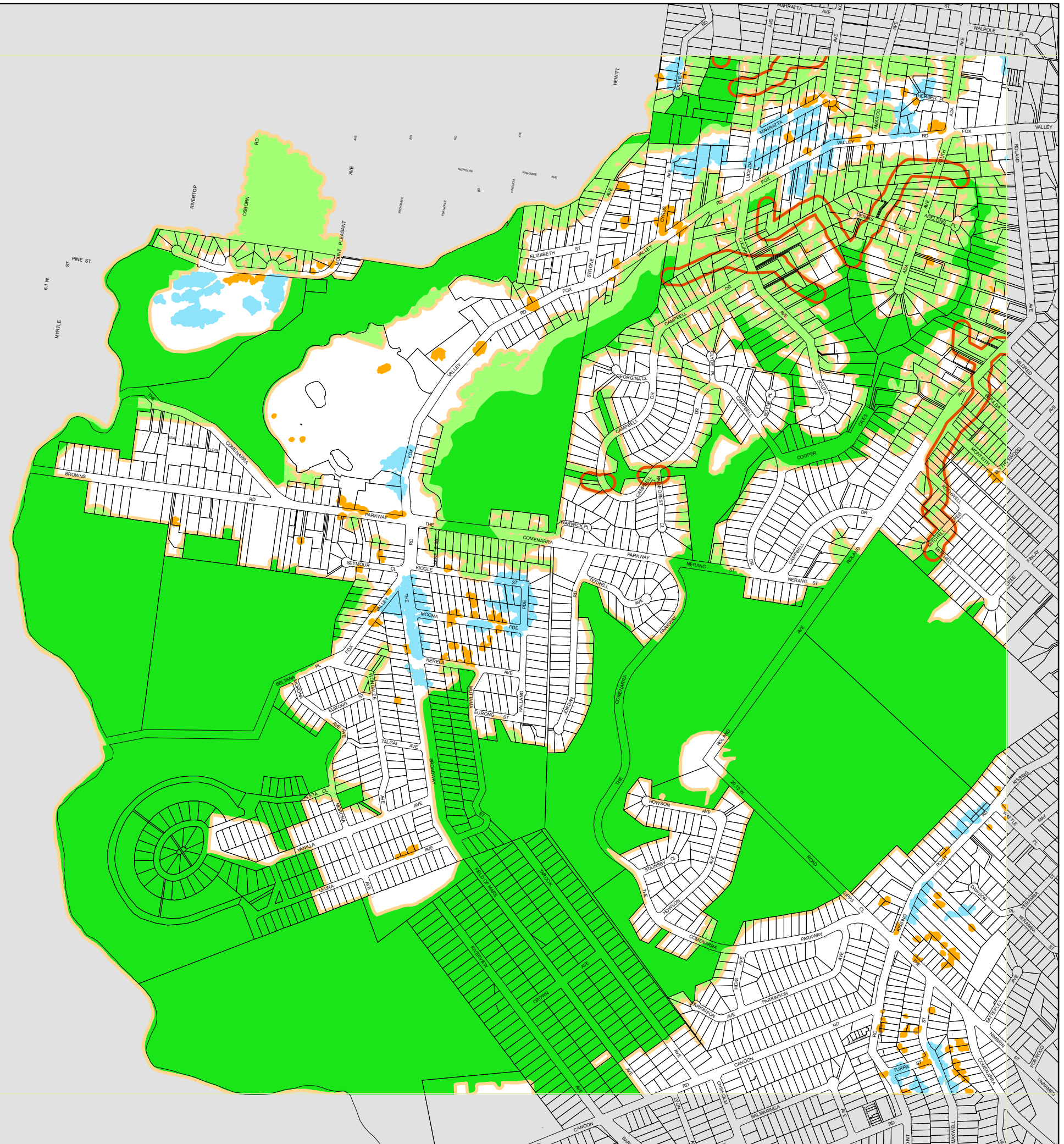
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MGA Zone 56

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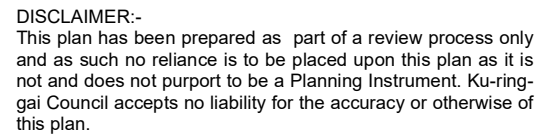
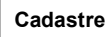
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DCP Greenweb Categories



Scale: 1:10,000 @ A3

Map identification number: 4500_COM_BIO_003_010_20210722





Ku-ring-gai Development Control Plan

Greenweb Map - Sheet Greenweb_004

DCP Greenweb Categories

- Core biodiversity lands
- Support for core biodiversity lands
- Landscape remnant
- Biodiversity corridors and buffer
- Canopy remnant

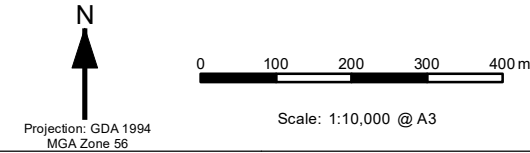
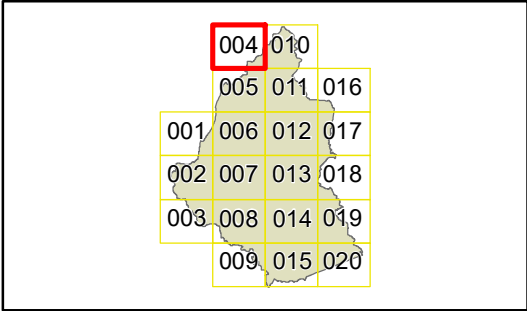
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Ku-ring-gai Development Control Plan

Greenweb Map - Sheet Greenweb_005

DCP Greenweb Categories

- Core biodiversity lands
- Support for core biodiversity lands
- Landscape remnant
- Biodiversity corridors and buffer
- Canopy remnant

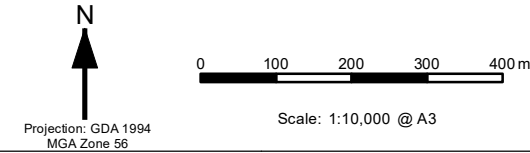
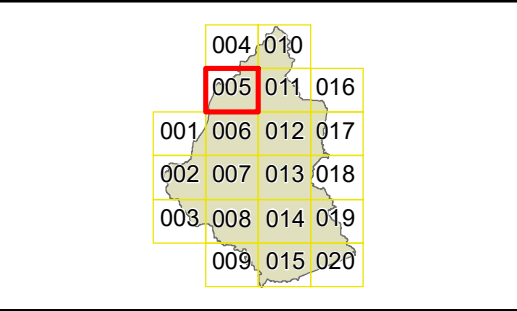
Biodiversity corridor

- Ku-ring-gai Bio & Riparian Lands Study - Version 5

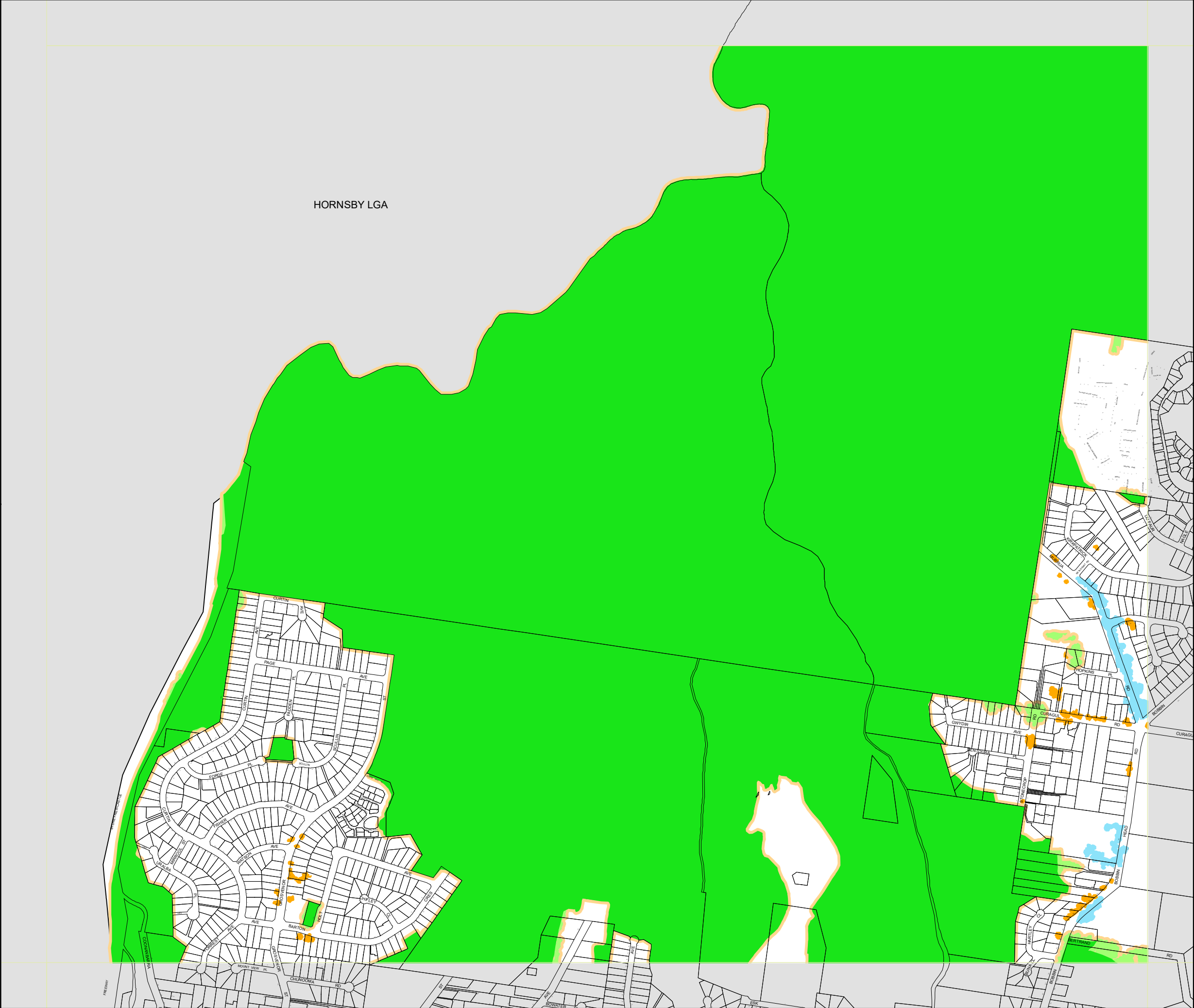
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Ku-ring-gai Development Control Plan

Greenweb Map - Sheet Greenweb_006

DCP Greenweb Categories

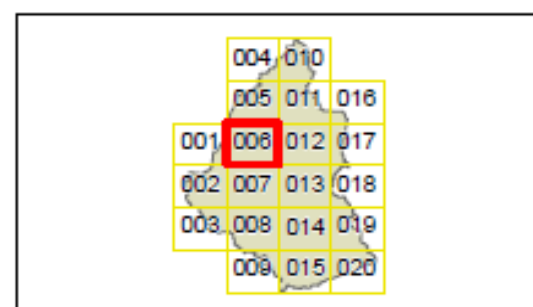
- Core biodiversity lands
- Support for core biodiversity lands
- Landscape remnant
- Biodiversity corridors and buffer
- Canopy remnant

Biodiversity corridor

- Ku-ring-gai Bio & Riparian Lands Study - Version 5

Cadastre

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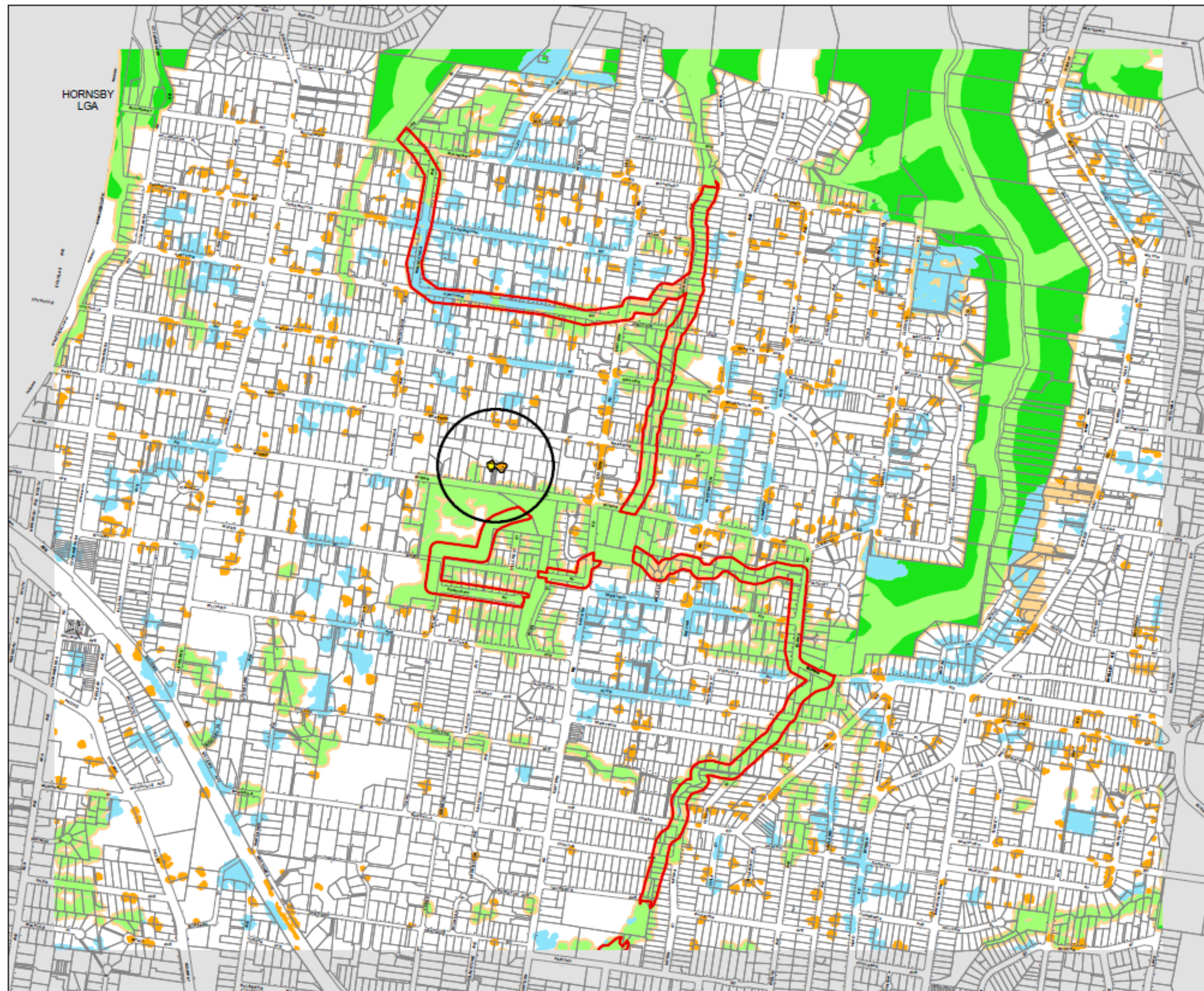
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Projection: GDA 1994
MGA Zone 58

Scale: 1:10,000 @ A3

Map identification number: 4500_COM_BIO_006_010_20230523











Ku-ring-gai Development Control Plan

Greenweb Map - Sheet Greenweb_007


DCP Greenweb Categories

-  Core biodiversity lands
-  Support for core biodiversity lands
-  Landscape remnant
-  Biodiversity corridors and buffer
-  Canopy remnant

Biodiversity corridor

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	009	015	020

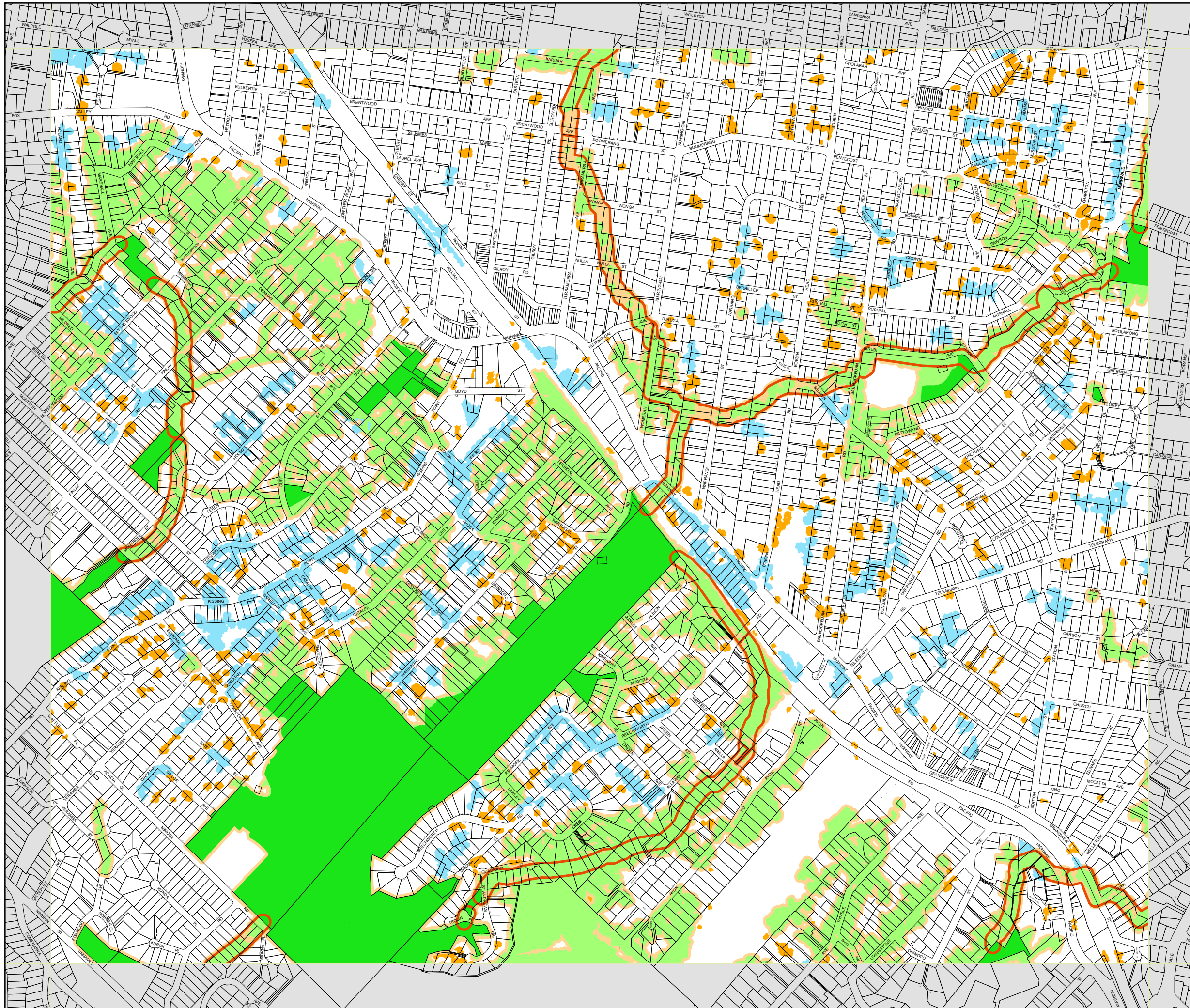


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Scale: 1:10,000 @ A3

Map identification number: 4500_COM_BIO_007_010_20210722





Ku-ring-gai Development Control Plan

Greenweb Map - Sheet Greenweb_008

DCP Greenweb Categories

- Core biodiversity lands
- Support for core biodiversity lands
- Landscape remnant
- Biodiversity corridors and buffer
- Canopy remnant

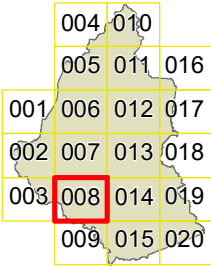
Biodiversity corridor

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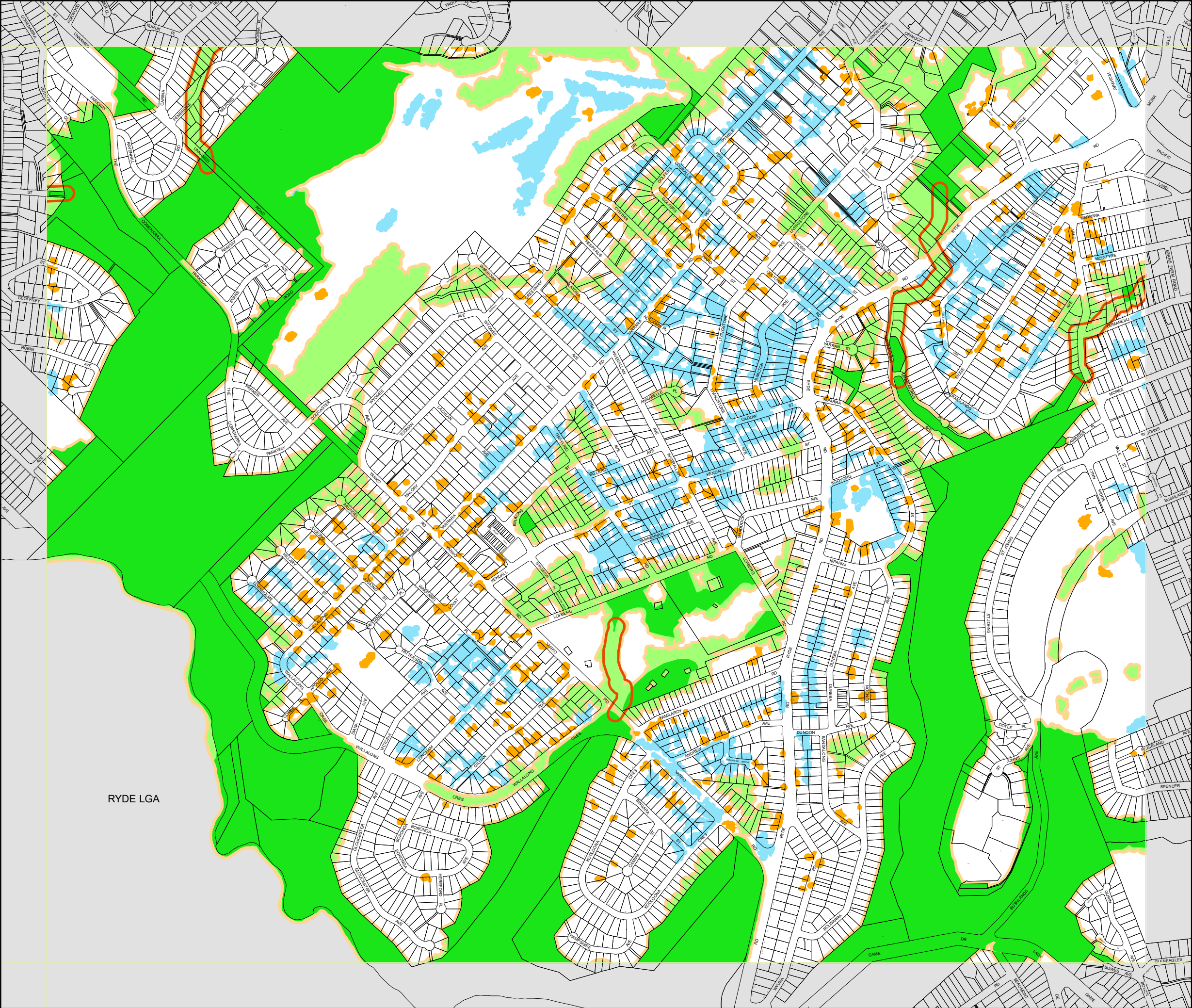


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Projection: GDA 1994
MGA Zone 56

Map identification number: 4500_COM_BIO_008_010_20210722











Ku-ring-gai Development Control Plan

Greenweb Map - Sheet Greenweb_009


DCP Greenweb Categories

-  Core biodiversity lands
-  Support for core biodiversity lands
-  Landscape remnant
-  Biodiversity corridors and buffer
-  Canopy remnant

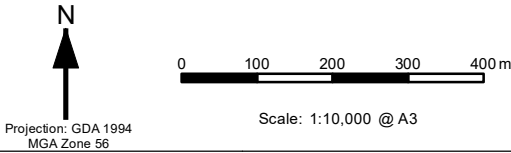
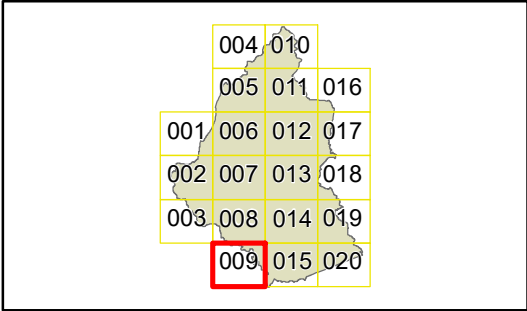
Biodiversity corridor

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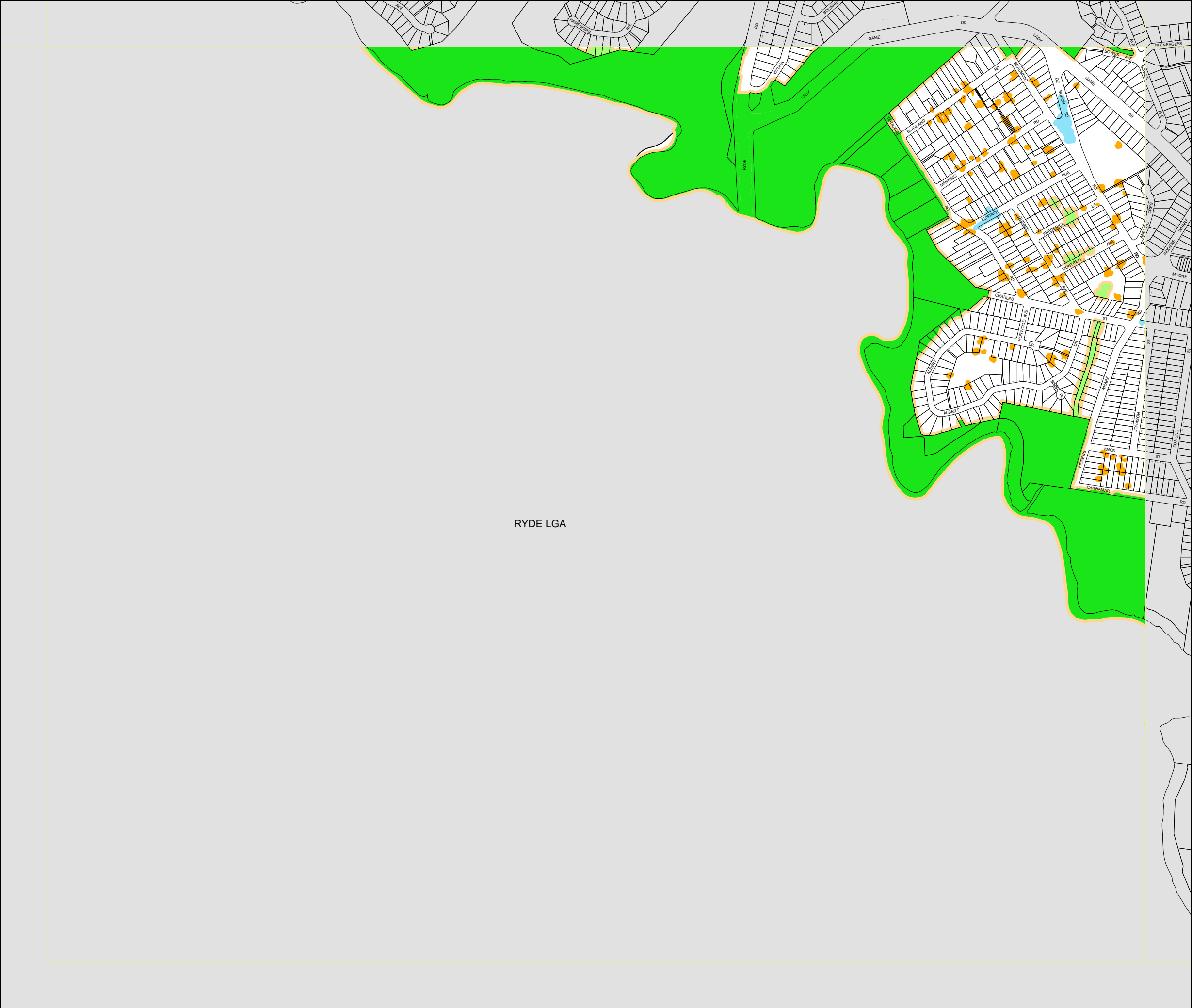
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Ku-ring-gai Development Control Plan

Greenweb Map - Sheet Greenweb_010

DCP Greenweb Categories

- Core biodiversity lands
- Support for core biodiversity lands
- Landscape remnant
- Biodiversity corridors and buffer
- Canopy remnant

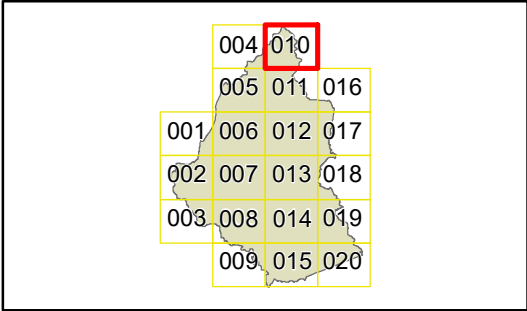
Biodiversity corridor

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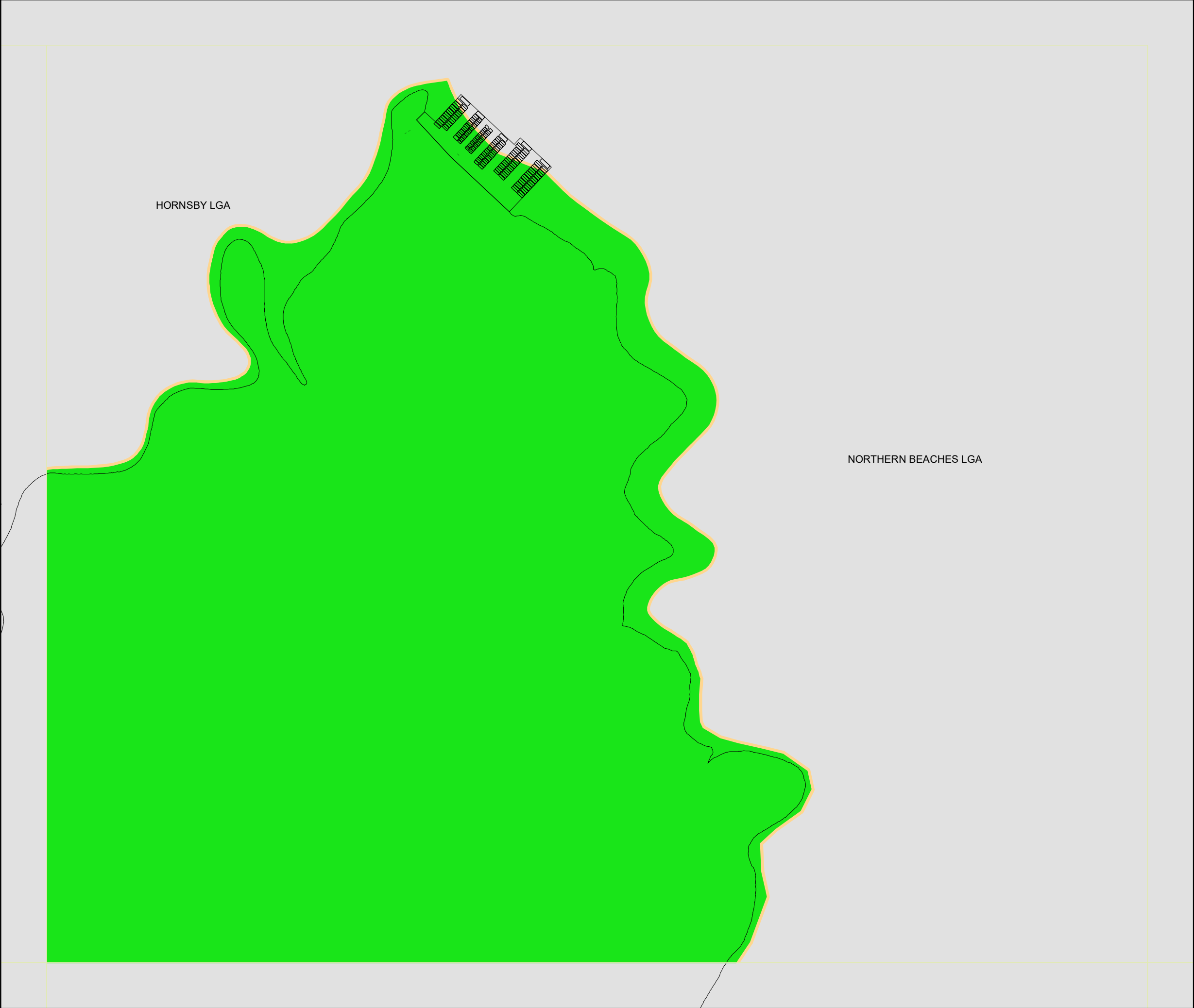


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MGA Zone 56

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Scale: 1:10,000 @ A3

Map identification number: 4500_COM_BIO_010_010_20210722











Ku-ring-gai Development Control Plan

Greenweb Map - Sheet Greenweb_011


DCP Greenweb Categories

-  Core biodiversity lands
-  Support for core biodiversity lands
-  Landscape remnant
-  Biodiversity corridors and buffer
-  Canopy remnant

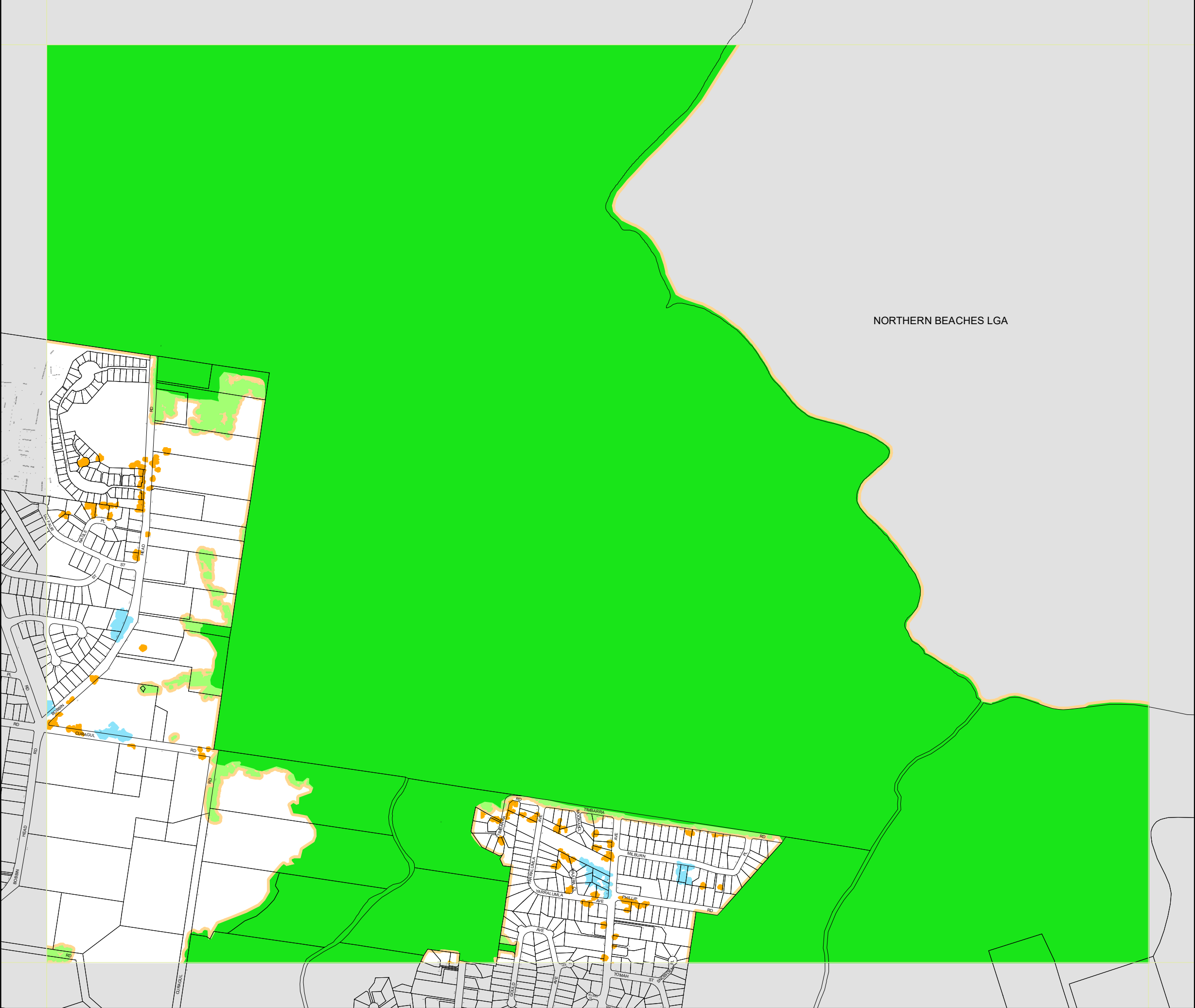
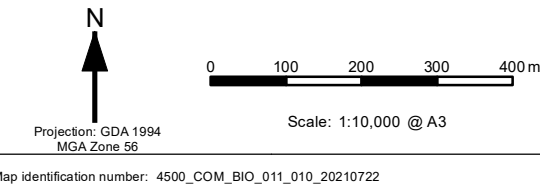
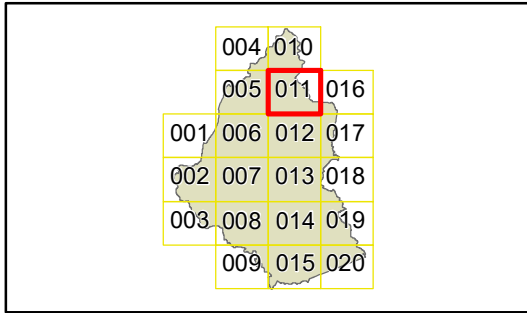
Biodiversity corridor

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Ku-ring-gai Development Control Plan

Greenweb Map - Sheet Greenweb_012


DCP Greenweb Categories

-  Core biodiversity lands
-  Support for core biodiversity lands
-  Landscape remnant
-  Biodiversity corridors and buffer
-  Canopy remnant

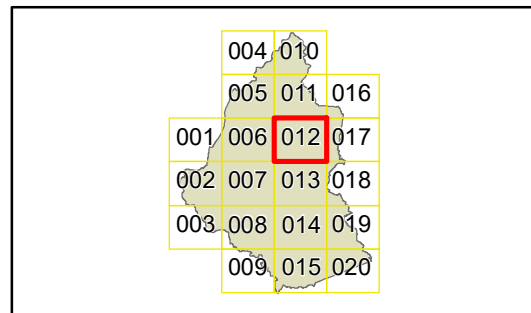
Biodiversity corridor

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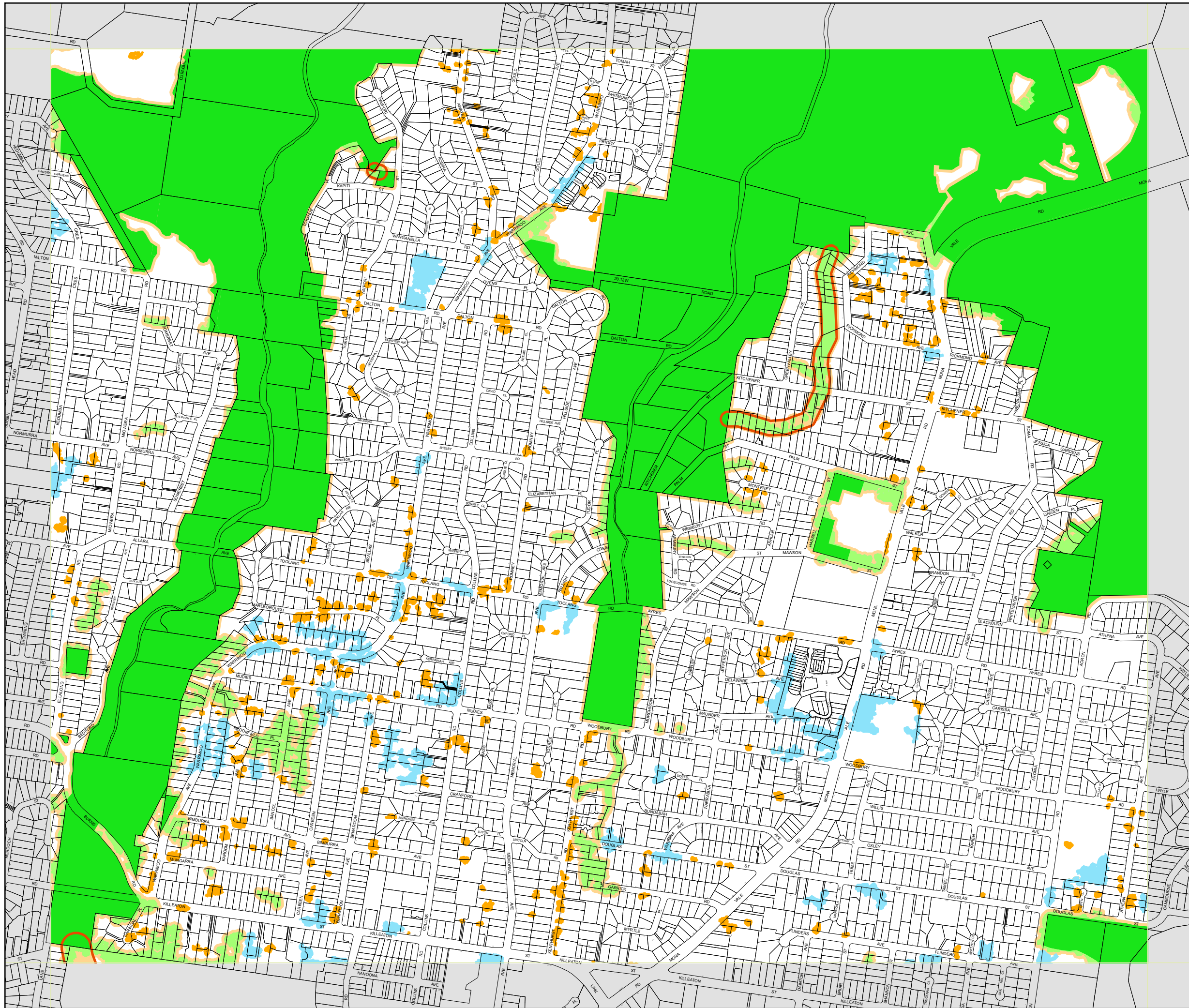


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MGA Zone 56

Scale: 1:10,000 @ A3

Map identification number: 4500_COM_BIO_012_010_20210722





Ku-ring-gai Development Control Plan

Greenweb Map - Sheet Greenweb_013

DCP Greenweb Categories

- Core biodiversity lands
- Support for core biodiversity lands
- Landscape remnant
- Biodiversity corridors and buffer
- Canopy remnant

Biodiversity corridor

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003	008	014 019
009	015	020

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Projection: GDA 1994
MGA Zone 58

Scale: 1:10,000 @ A3

Map identification number: 4500_COM_BIO_013_010_20230523








NORTHERN
BEACHES
LGA



Ku-ring-gai Development Control Plan

Greenweb Map - Sheet Greenweb_014


DCP Greenweb Categories

-  Core biodiversity lands
-  Support for core biodiversity lands
-  Landscape remnant
-  Biodiversity corridors and buffer
-  Canopy remnant

Biodiversity corridor

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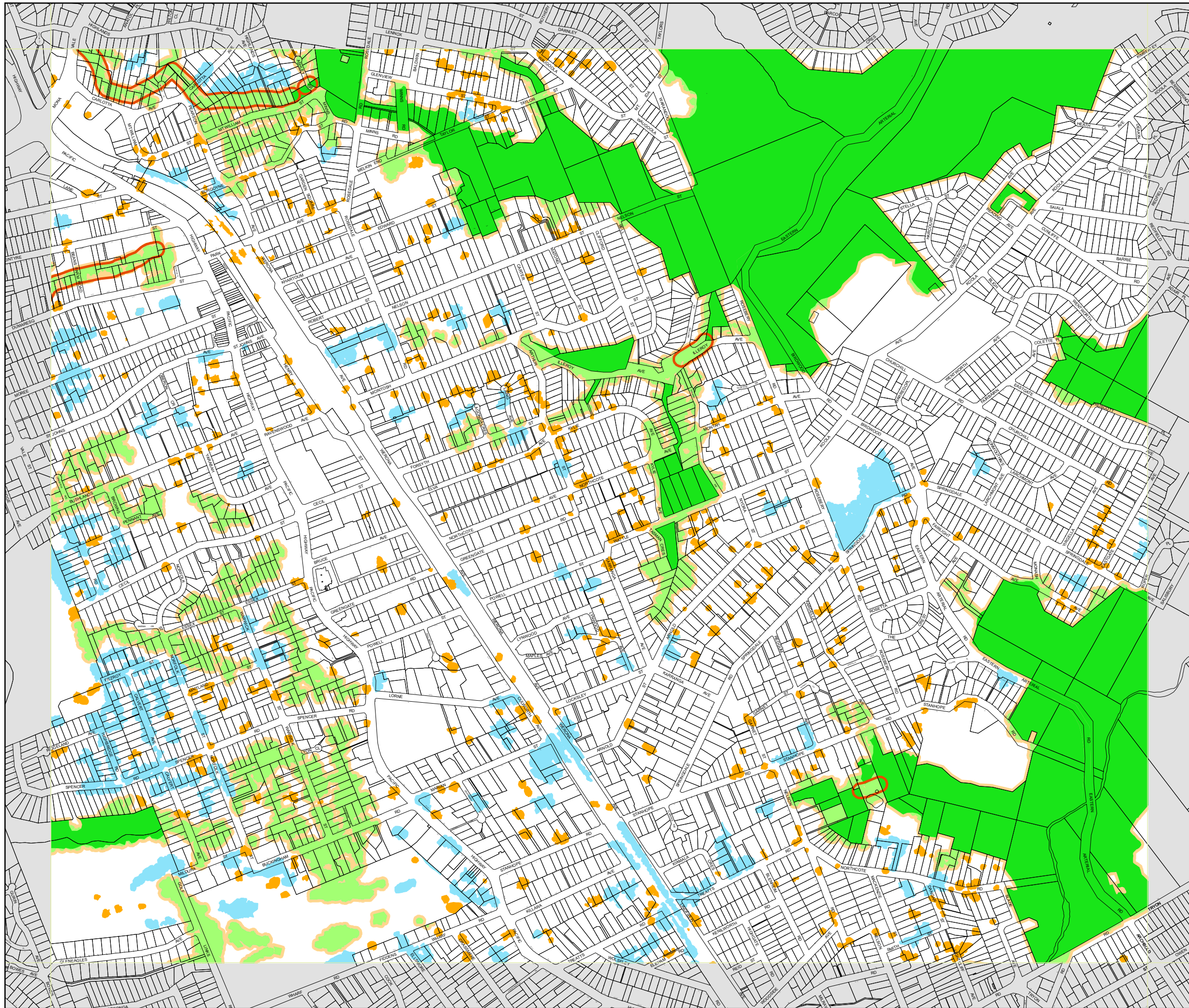


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MGA Zone 56

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Scale: 1:10,000 @ A3

Map identification number: 4500_COM_BIO_014_010_20210722











Ku-ring-gai Development Control Plan

Greenweb Map - Sheet Greenweb_015


DCP Greenweb Categories

-  Core biodiversity lands
-  Support for core biodiversity lands
-  Landscape remnant
-  Biodiversity corridors and buffer
-  Canopy remnant

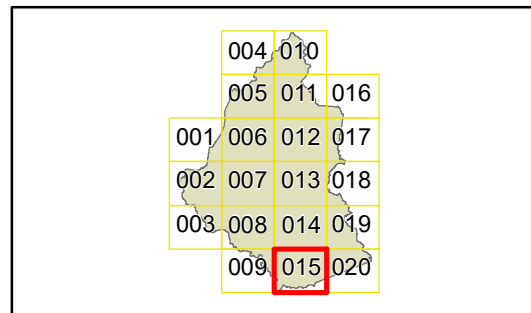
Biodiversity corridor

-  Ku-ring-gai Bio & Riparian Lands Study - Version 5

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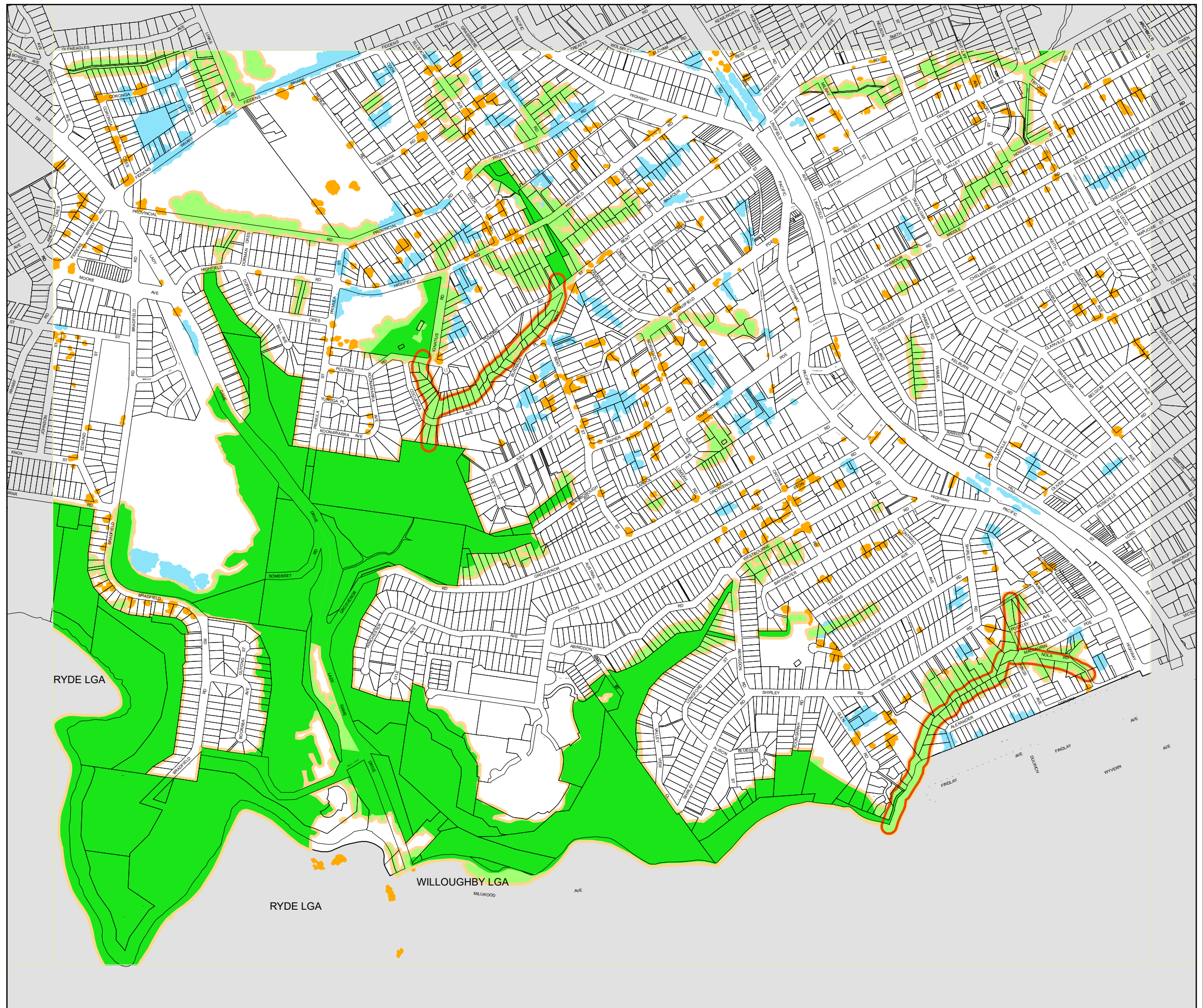


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MGA Zone 56

Scale: 1:10,000 @ A3

Map identification number: 4500_COM_BIO_015_010_20210722











Ku-ring-gai Development Control Plan

Greenweb Map - Sheet Greenweb_016


DCP Greenweb Categories

-  Core biodiversity lands
-  Support for core biodiversity lands
-  Landscape remnant
-  Biodiversity corridors and buffer
-  Canopy remnant

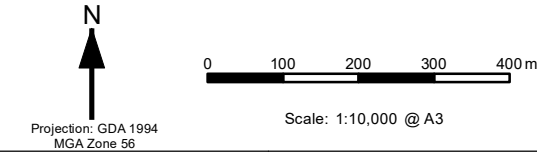
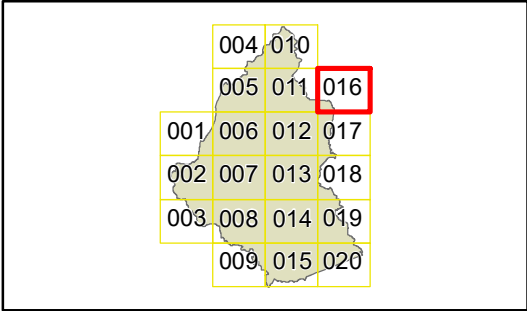
Biodiversity corridor

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NORTHERN BEACHES LGA











Ku-ring-gai Development Control Plan

Greenweb Map - Sheet Greenweb_017


DCP Greenweb Categories

-  Core biodiversity lands
-  Support for core biodiversity lands
-  Landscape remnant
-  Biodiversity corridors and buffer
-  Canopy remnant

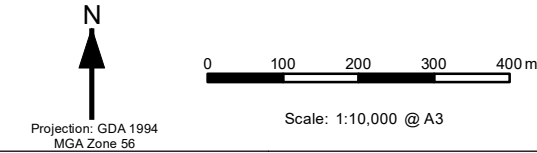
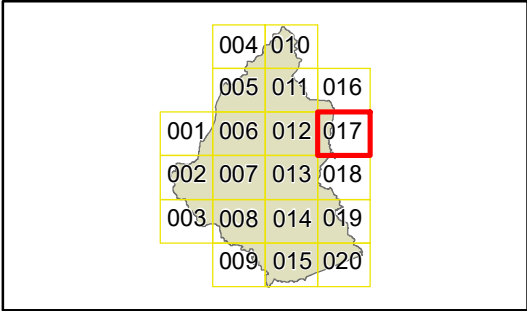
Biodiversity corridor

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Ku-ring-gai Development Control Plan

Greenweb Map - Sheet Greenweb_018

DCP Greenweb Categories

- Core biodiversity lands
- Support for core biodiversity lands
- Landscape remnant
- Biodiversity corridors and buffer
- Canopy remnant

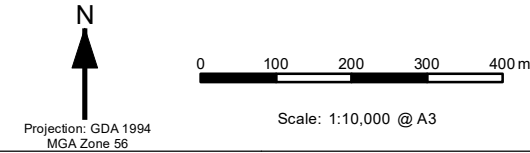
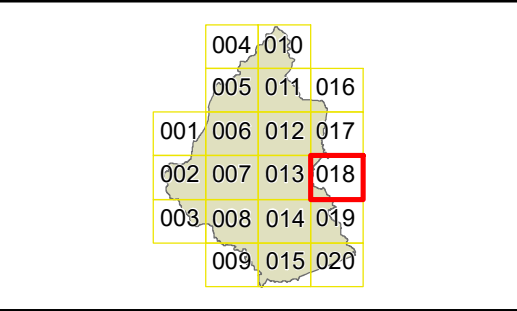
Biodiversity corridor

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Ku-ring-gai Development Control Plan

Greenweb Map - Sheet Greenweb_019

DCP Greenweb Categories

- Core biodiversity lands
- Support for core biodiversity lands
- Landscape remnant
- Biodiversity corridors and buffer
- Canopy remnant

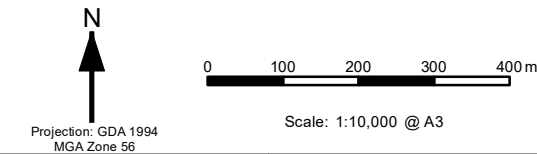
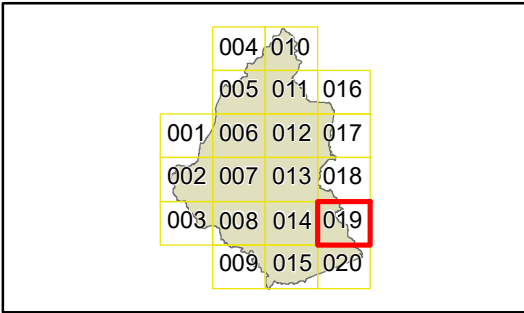
Biodiversity corridor

- Ku-ring-gai Bio & Riparian Lands Study - Version 5

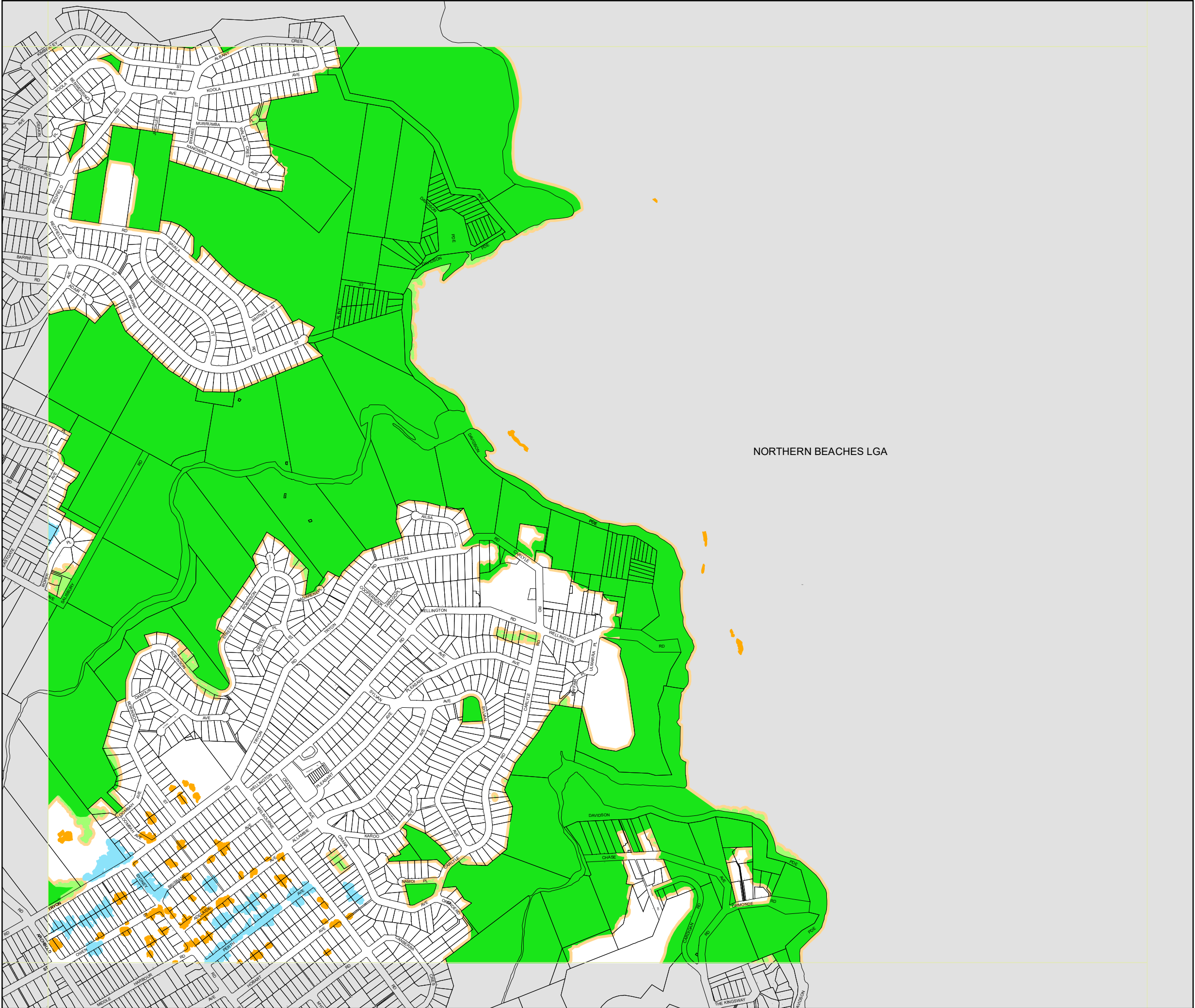
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Map identification number: 4500_COM_BIO_019_010_20210722











Ku-ring-gai Development Control Plan

Greenweb Map - Sheet Greenweb_020


DCP Greenweb Categories

-  Core biodiversity lands
-  Support for core biodiversity lands
-  Landscape remnant
-  Biodiversity corridors and buffer
-  Canopy remnant

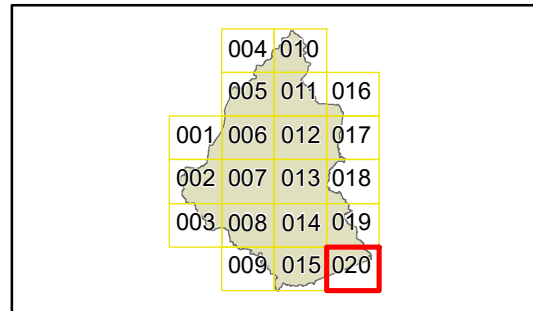
Biodiversity corridor

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0 100 200 300 400 m

Projection: GDA 1994
MGA Zone 56

Scale: 1:10,000 @ A3

Map identification number: 4500_COM_BIO_020_010_20210722



Heritage Items and Heritage Conservation Areas

Introduction

19A	Subdivision and Site Consolidation	19D	Heritage Items
			Introduction
19A.1	Subdivision and Site Consolidation for New Development within an HCA	19D.1	Adaptive Reuse
		19D.2	Setbacks and Building Separation
19A.2	Subdivision and Site Consolidation of a Heritage Item	19D.3	Gardens and Landscaping
		19D.4	Access and Parking
19B	Demolition	19D.5	Building Design
19B.1	Demolition within HCAs	19D.6	Outbuilding and Garden Structures (excluding garages and car ports)
19B.2	Demolition related to a Heritage Item	19D.7	Roof Forms and Structures Attached to Roofs
19C	Development within HCAs: Alterations and Additions and New Buildings	19D.8	Fencing
	Introduction	19E	Secondary Dwellings within HCAs and Heritage Items
19C.1	Local Character and Streetscape	19E.1	Secondary Swellings within HCAs and Heritage Items
19C.2	Setbacks and Building Separation	19F	Development in the Vicinity of Heritage Items or Heritage Conservation Areas (HCAs)
19C.3	Gardens and Landscaping		Introduction
19C.4	Access and Parking	19F.1	Local Character and Streetscape
19C.5	Building Design	19F.2	Building Setbacks
19C.6	Roof Forms and Structures Attached to Roofs	19F.3	Gardens and Landscaping
19C.7	Outbuilding and Garden Structures (excluding garages and car ports)	19F.4	Fencing
19C.8	Fencing		
19C.9	Secondary Dwellings within HCAs		

INTRODUCTION

Part 19 applies to any development associated with a Heritage Item or within a Heritage Conservation Area (HCA) identified on the KLEP Heritage Map. The controls in this Part are additional to those in Section A and C, and relevant Parts of Section B in this DCP.

The heritage controls in this Part of the Ku-ring-gai DCP aim to:

- i) retain, conserve and enhance the Heritage Items, HCAs and their associated settings;
- ii) ensure the heritage significance, streetscape and landscape character of HCAs are maintained;
- iii) ensure alterations and additions to Heritage Items and within HCAs respect those buildings and do not compromise the significance and character of the individual Heritage Items or the HCAs;
- iv) ensure new development in the vicinity of Heritage Items and HCAs respects the heritage context and is sympathetic in terms of form, scale, character, bulk, orientation, setback, colours and textures and does not mimic or adversely affect the significance of Heritage Items or HCAs and their settings.

This Part applies to any development that is:

- i) a Heritage Item listed under Schedule 5 Environmental Heritage within KLEP;
- ii) in a Heritage Conservation Area (HCA) identified in KLEP;
- iii) in the vicinity of a Heritage Item or HCA identified in KLEP.

For any development within the above categories, a pre-DA meeting is recommended prior to the lodgment of a Development Application.

Where there is inconsistency between the controls in Part 19 and controls in other parts of this DCP, the controls in Part 19 prevail. This part provides guidance to meet the objectives in the KLEP.

The application process allows a merit-based assessment to occur in relation to development affecting heritage items and heritage conservation areas. In the instance of a conservation area, this merit assessment will include the identification of an item, building or group of building's contribution to the wider conservation area. The grading of buildings is no longer pre-determined using any form of mapping or listing system.

Supporting Heritage Documentation

For any works within the above categories, a Heritage Impact Statement (HIS) is required. A Conservation Management Plan (CMP) may be required for works to a Heritage Item or significant works within an HCA. Heritage impact statements and CMPs are to be completed by an appropriately qualified and experienced heritage consultant.

Applicants are advised to refer to:

- i) Council's Heritage Inventory Sheets for Heritage Items and HCAs.

Note: Inventory Sheets have been prepared for each of Ku-ring-gai's HCAs and are considered by Council when assessing development applications for work within the Heritage Conservation Area.

Note: The Inventory Sheets are available via Council's website www.krg.nsw.gov.au

- ii) Australia ICOMOS Charter for Places of Cultural Significance 1999 (The Burra Charter).
- iii) Council's DA Guide available on Council's website www.krg.nsw.gov.au.
- iv) Council's heritage studies, available on Council's website and Gordon Library.

What is a Contributory Property?

This Part identifies various controls that specifically apply to contributory properties. For the purpose of this DCP, Contributory Properties are buildings and sites within a HCA which are deemed to exhibit one or more of the following characteristics:

- i) buildings and sites that make an important contribution to the character and significance of the HCA. They can be from a key historical layer, true to an architectural type, style or period, or highly or substantially intact including their garden setting. Where subdivision has occurred, the subdivision is within the key historical period or the area.
- ii) buildings and sites which are altered from their original form but are recognisable and could be reasonably reinstated to that condition or the alterations are not considered to be detrimental to the integrity of the building; for example, a building that has been rendered or painted or where the roof cladding has been replaced but the form is otherwise legible.
- iii) buildings and sites with new layers/additions sensitive to the style, form, bulk, scale and materials of the original building.

Note: Contributory buildings do not necessarily need to be high-quality buildings but should represent the key historical period of the HCA. An HCA may also contain high-quality buildings which are not necessarily from the key historical period.

Statement of Heritage Significance for Ku-ring-gai

The heritage significance of Ku-ring-gai and lies in:

- i) The evidence provided by its rich history and all its sequential layers - from Aboriginal occupation, very early timbergetting, the long period of relative isolation from built suburbia, orcharding and farming followed by the rapid growth of suburban development in response to elevated topography, "clean air" and the establishment of the railway.
- ii) The outstanding quantity, quality, depth and range of its twentieth-century architecture. It contains houses designed by many of Australia's prominent twentieth-century architects and these have in turn influenced the mainstream of Australian domestic architecture.

- iii) The evidence it provides of twentieth-century planning and conservation philosophies: the segregation of residential areas from other urban uses, subdivision patterns which reflect a range of suburban aspirations, the use of residential district proclamations to create and retain domestic environmental amenity, street tree planting and post-war neighbourhood planning.
- iv) The evidence offered by its built landscape and garden design incorporating a variety of horticultural styles and in harmony with the natural landscape, such as those in the large estate private gardens, the gardens at railway stations and well designed gardens of cultivated botanical species such as at Eryldene.
- v) The evidence of the area's natural heritage retained in its surrounding national parks, along its creek lines and in its public and private gardens, remnants of the original Turpentine, Blackbutt and Blue Gum forests and associated woodlands, under-storeys and dependent fauna.

- 19A Subdivision and Site Consolidation
- 19A.1 Subdivision and Site Consolidation for New Development within an HCA
- 19A.2 Subdivision and Site Consolidation of a Heritage Item

READ WITH
SECTION A - Part 2-13
SECTION B - All relevant parts
SECTION C - Part 21-24

Objectives

- 1 *To retain the historic subdivision patterns within HCAs, that reflect the age and circumstances of the early and later subdivisions including the characteristic rhythm and built form spacing.*
- 2 *To ensure that new development respects the established streetscape, and the historical patterns of development.*
- 3 *To ensure new subdivisions and lot consolidations do not have an adverse impact upon the curtilage of Heritage Items, the streetscape setting of significant buildings and the identified character of the HCA as a whole.*

19A.1 SUBDIVISION AND SITE CONSOLIDATION FOR NEW DEVELOPMENT WITHIN AN HCA

Controls

- 1 Applications for subdivision and site consolidation within an HCA is discouraged and will only be considered if the application:
 - i) will have no adverse affect the significance of the HCA;
 - ii) retains the typical block width characteristics and historic subdivision pattern of the area, including rear lanes;
 - iii) the setting and curtilage of Heritage Items or significant buildings in the vicinity, including important structures and landscape elements, are retained;
 - iv) vistas and views to and from Heritage Items and contributory properties, especially the principal elevations of buildings, are not interrupted or obscured;
 - v) the landscape quality of the streetscape is retained;
 - vi) the contours and any natural features of the site have been retained and respected;
 - vii) will not result in future development which will adversely affect the significance, character or appearance of the HCA.
- 2 Subdivision or consolidation will not generally be permitted where the setting or curtilage of any Heritage Items and contributory properties within or adjoining the site, would be compromised.
- 3 Applications for subdivision and site consolidation within an HCA will require a curtilage assessment.

19A.2 SUBDIVISION AND SITE CONSOLIDATION OF A HERITAGE ITEM

Objectives

- 1 *To ensure new subdivisions and lot consolidations do not have an adverse impact upon the curtilage and setting of Heritage Items.*
- 2 *To encourage the incorporation of Heritage Items into larger consolidated development sites.*
- 3 *To ensure that new development respects and conserves the Heritage Item, its garden setting, its streetscape and important views.*
- 4 *To avoid isolation of Heritage Items within new developments.*
- 5 *To provide a visual transition between medium/high density residential development and the Heritage Item.*

Controls

- 1 Subdivision of a Heritage Item will only be supported where:
 - i) the subdivision does not adversely affect the cultural significance of the Heritage Item;
 - ii) evidence of the historical setting, landscape and subdivision pattern can be recognised and/or retained.
- 2 Subdivision or consolidation will not be permitted where the curtilage and setting of a Heritage Item and significant buildings within or adjoining the site, would be compromised.

Note: Applications for subdivision and site consolidation of a Heritage Item will require a curtilage analysis within the Heritage Impact Statement with particular emphasis on the potential impact on garden settings.

Heritage Items within consolidated development sites zoned medium to high density

- 3 The following controls apply for consolidated sites that include a Heritage Item:
 - i) Consolidated development sites that include Heritage Items are to provide for conservation works to the building and its setting as part of the redevelopment.
 - ii) Isolation of a Heritage Item within the new development will not be supported. Refer to Figure 19A.2-1, 19A.2-2
 - iii) The distance or setback of new development from the Heritage Item is to consider the curtilage and setting of the item and informed by the CMP.
 - iv) Buildings, structures and garden settings that contribute to the significance of the Heritage Item are to be retained and sensitively incorporated into the development proposal.
 - v) The existing garden setting of the Heritage Item is to be enhanced and extended into the new development. Wherever possible, existing vegetation is to be retained, particularly along view corridors and street frontages.
 - vi) New development is to be broken down in bulk and scale to minimise dominance over the Heritage Item.
 - vii) New buildings to be articulated to respond to the significance of Heritage Items to achieve an appropriate transition in height, bulk and scale.
 - viii) The front setback of the new development is to be greater than that of the Heritage Item. Refer to Figure 19A.2-3
 - ix) Key views to and from the Heritage Item are to be conserved as part of the development. Refer to Figure 19A.2-3.

Note: An consolidated development site is defined for the purposes of the DCP as the joining of a number of lots to form a single site for the purposes of development.

Note: Under Clause 5.10 of KLEP, a CMP may be required to guide development to ensure that the significance of the Heritage Item is retained and conserved.

19A.2 SUBDIVISIONANDSITECONSOLIDATION OF A HERITAGE ITEM (continued)

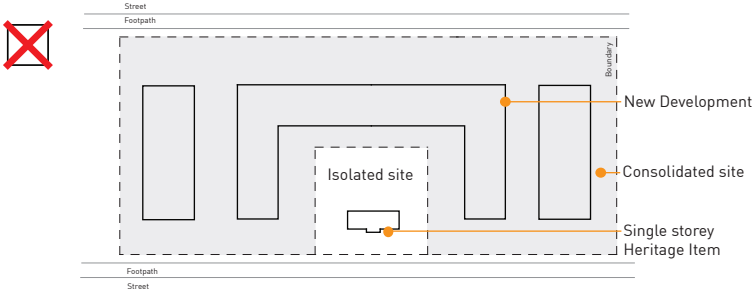


Figure 19A.2-1:
New development has excluded the Heritage Item and created an isolated site.

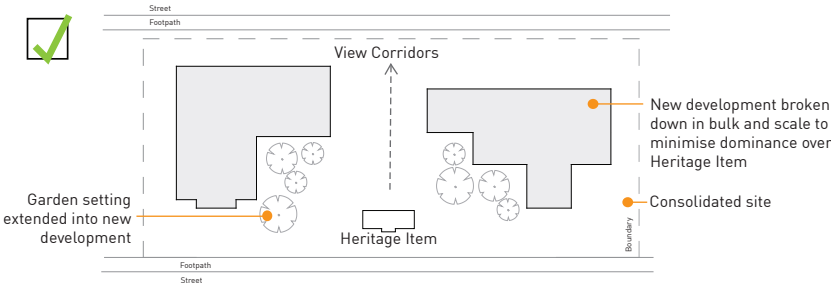


Figure 19A.2-2:
New development has integrated the Heritage Item into an consolidated site.

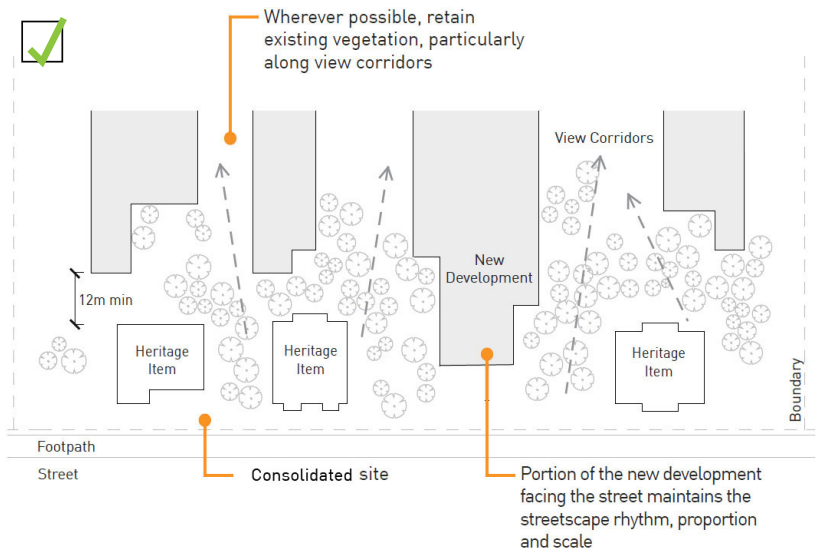


Figure 19A.2-3:
New development and Heritage Item integrated on an consolidated site.

- 19B

Demolition
- 19B.1

Demolition within HCAs
- 19B.2

Demolition related to a Heritage Item

READ WITH
SECTION A - Part 2-13
SECTION B - All relevant parts
SECTION C - Part 21-25

19B.1 DEMOLITION WITHIN HCAS

Objectives

- 1 *To ensure that sites, buildings and landscape features that contribute to the significance of an HCA are retained.*
- 2 *To provide a photographic record before and during major works within an HCA, including demolition.*

Controls

Demolition within HCAs

- 1 In accordance with the Ku-ring-gai Local Environmental Plan, development consent is required for demolishing or moving a building, work, relic or tree within a conservation area.
- 2 The demolition of Heritage Items and contributory properties within HCAs is not supported.
- 3 Whole demolition of buildings, structures and landscape features (including significant trees) is generally not supported unless the applicant can satisfactorily demonstrate:
 - i) demolition will not result in any adverse impacts on the streetscape or character of the HCA;
 - ii) retention and stabilisation of the building or structure is unreasonable;
 - iii) all alternatives to demolition have been considered with reasons provided why the alternatives are not acceptable;
 - iv) the replacement building is compatible with the identified significance and character of the streetscape and the HCA as a whole.
- 4 In considering applications for partial demolition of buildings, structures and landscape features (including significant trees) within HCAs, Council will assess:
 - i) the significance of the building part or structure and/or landscape feature and whether its retention is considered necessary;
 - ii) its contribution to the streetscape;
 - iii) potential for modifying and/or removing neutral and/or uncharacteristic elements that would re-establish the contributory status of the building or structure within the HCA;
 - iv) opportunities for adaptive re-use of the building.
- 5 Council may require reconstruction following any unauthorised removal of detail or important elements that contribute to the significance and character of the property and the HCA.

19B.2 DEMOLITION RELATED TO A HERITAGE ITEM

Objectives

- 1 *To ensure that Heritage Items and all significant elements of Heritage Items are retained and conserved.*
- 2 *To provide a photographic record of a Heritage Item before and during major works including demolition.*

Controls

- 1 In accordance with the Ku-ring-gai Local Environmental Plan, development consent is required for:
 - i) Demolishing, moving or altering the exterior of (including, in the case of a building, making changes to its detail, fabric, finish or appearance) an Aboriginal object or heritage item; and
 - ii) altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item.

Demolition of a Heritage Item

- 2 The demolition of a Heritage Item, including buildings, other structures, trees and landscape features, is not supported.
- 3 Council will only consider the demolition of a Heritage Item where an applicant can satisfactorily demonstrate:
 - i) retention and stabilisation of the building or structure is unreasonable, taking into consideration the following:
 - the heritage significance of the property;
 - whether the building constitutes a danger to the public.
 - ii) all alternatives to demolition have been considered with reasons provided as to why the alternatives are not acceptable.

Note: Council may require reconstruction following any unauthorised removal of detail or important elements that contribute to the significance and character of the Heritage Item.

Note: Plans for the replacement building are to be lodged concurrently so that the application can be assessed concurrently.

Partial Demolition of a Heritage Item

- 4 In considering applications for partial demolition of a Heritage Item (including parts of buildings and other structures, trees and landscape features), Council will assess:
 - i) the significance of the building part or structure and/or landscape features and whether its retention is considered necessary;
 - ii) its contribution to the significance of the Heritage Item as a whole;
 - iii) whether all alternatives to demolition have been considered with reasons provided as to why the alternatives are not acceptable.

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19C

Development within HCAs - Alterations and Additions and New Buildings

- Introduction
- 19C.1 Local Character and Streetscape
- 19C.2 Setbacks and Building Separation
- 19C.3 Gardens and Landscaping
- 19C.4 Access and Parking
- 19C.5 Building Design
- 19C.6 Roof Forms and Structures Attached to Roofs
- 19C.7 Outbuilding and Garden Structures (excluding garages and car ports)
- 19C.8 Fencing
- 19C.9 Secondary Dwellings within HCAs

READ WITH
SECTION A - Part 2-13
SECTION B - All relevant parts
SECTION C - Part 21-25

INTRODUCTION

This section applies to

- alterations and additions to existing development within an HCA;
- **new development within an HCA.**

This part provides guidance to meet the objectives in the KLEP.

The following controls are to be read in conjunction with the Heritage Inventory Sheets that have been provided for each of Ku-ring-gai's HCAs. The Inventory Sheets are considered by Council when assessing development application for work within HCAs, and are to be considered in developments. The Inventory Sheets are available via Council's website www.krg.nsw.gov.au

19C.1 LOCAL CHARACTER AND STREETSCAPE

Objectives

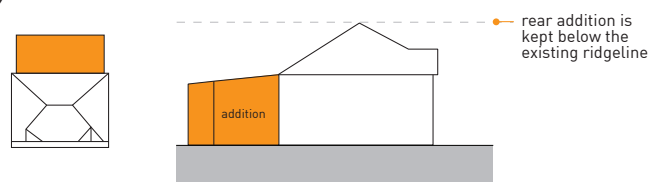
- 1 To ensure that sites, buildings and landscape features that contribute to the significance of an HCA are retained.
- 2 To conserve and enhance the character and significant elements of the HCA.
- 3 To ensure that additions or changes to contributory properties within HCAs respect their original, built form, architectural style and character.

Controls

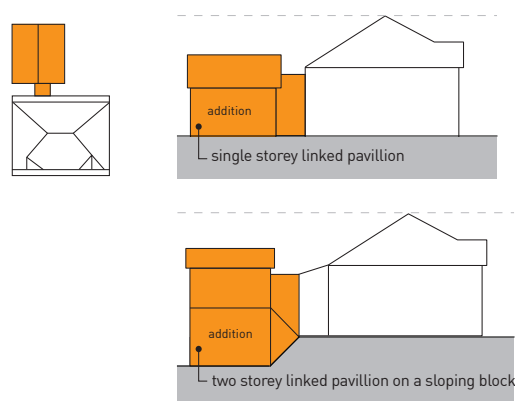
Built form

- 1 Where an HCA is characterised by single-storey development:
 - i) the single-storey character of the streetscape is to be retained;
 - ii) first-floor additions to contributory properties will generally not be permitted;
 - iii) attic rooms to extensions behind the main roof of the house may be allowed, subject to an assessment of the impact on the original building and buildings in the vicinity;
 - iv) additions to be kept at or below the existing roof ridge height. Refer to Figure 19C.1-1.
- 2 Where an HCA is characterised by a mix of one and two storey

i) Skillion or lean-to



ii) Linked pavilion



iii) Integrated wing

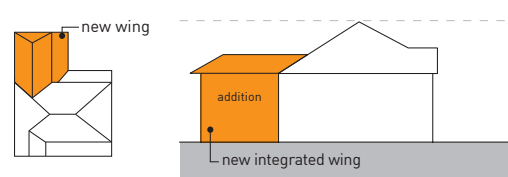


Figure 19C.1-1:
Possible forms for rear additions to single storey buildings.

19C.1 LOCAL CHARACTER AND STREETScape (continued)

Objectives

- 4 *To ensure the visual impact of new work is minimised through appropriate design, detail, proportion, scale and massing.*

Controls

buildings, proposed works to contributory properties are to:

- retain the original character of a building;
- match the scale and forms of the existing buildings within the streetscape (see Figure 19C.1-2).

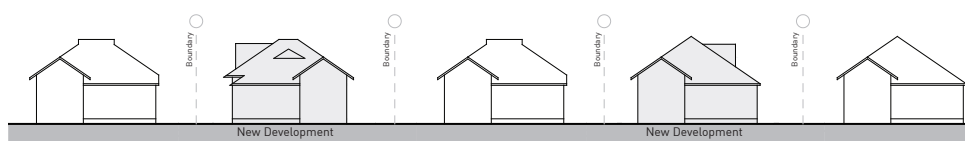


Figure 19C.1-2:

Good design: New 1.5 storey development is harmonious with the scale and mass of surrounding buildings with houses retaining a single storey character.

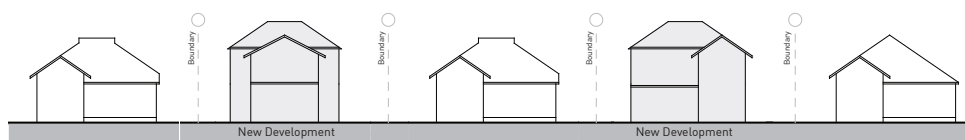


Figure 19C.1-3:

Poor design: New 2 storey development ignores existing single storey patterns by using uncharacteristic wall heights and bay widths.



- 5 *To promote high quality new design that complements the streetscape character and heritage significance of the HCA.*
- 6 *To ensure that new development retains the identified historic character of the HCA in which it is situated.*

- 3 Alterations and additions within an HCA are to respect the heritage significance and predominant architectural character of the HCA by having similar massing, style, form, proportions and arrangement of parts to the building itself, and to other contributory properties in the streetscape.

Additional Requirements for New Buildings

- 4 The scale and massing of new buildings is to be integrated into the established character of the HCA and respect the scale, form and character of adjacent or nearby development. They are to incorporate design elements such as the roof forms, facade and parapet heights, door, window and verandah proportions of contributory properties in the HCA, particularly neighbouring buildings from the same key development period.

19C.1 LOCAL CHARACTER AND STREETScape (continued)

Objectives

- 7 *To ensure that the impact of new work on the character of the HCA is considered from both street frontages.*
- 8 *To retain the significance and valuable contribution to the historic and landscape character Ku-ring-gai's rear lanes of an HCA.*

Controls

- 5 The design and character of any new buildings are to be informed by the:
 - i) date and style of contributory properties;
 - ii) scale and form of contributory properties;
 - iii) street and subdivision patterns of the HCA;
 - iv) setbacks of neighbouring contributory properties;
 - v) materials, building techniques and details used in the HCA; and
 - vi) views, vistas and skylines in the HCA.
- 6 Facades of new buildings are to be modulated to break down the scale of new development.
- 7 The height of new buildings is not to be higher than contributory properties.
- 8 New building roofs visible from the street are to reflect the size, shape, pitch, eaves and ridge heights, and bulk of contributory properties and roofs. They are to respect the complexity and patterns of predominant roof shapes and skylines of the HCA.
- 9 New buildings may be contemporary in design, however, their scale, form and detail is not to detract from the scale, form, unity, cohesion and predominant character of streetscape elements around it.
- 10 Where an HCA is characterised by single-storey development, single-storey development on infill sites is preferred. New two-storey houses will only be permitted where the upper floor is designed within the roof and where the new building is in keeping with the height, mass and proportions of contributory properties in the vicinity.

Corner Sites and Secondary Street Frontages

- 11 Development applications for corner sites and those with secondary street frontages are to consider the impact of proposals on both street frontages and take into account the following:
 - i) The significant elements of the original house is to be retained including its principal street frontage and secondary street frontage;
 - ii) Non-sympathetic rear additions generally do not require retention;
 - iii) The scale of additions and alterations are to respect the existing ridge or eaves heights;
 - iv) Where additions are attached, the proposed detailing (including finishes and materials) is to be appropriate to the original;
 - v) Original and early fencing to the secondary frontage is to be retained and conserved;
 - vi) Important views to and from the corner site are not adversely affected.

19C.1 LOCAL CHARACTER AND STREETSCAPE (continued)

Objectives

- 9 *To retain the significance and character of rear lanes which form an important factor and rare element of early subdivisions in Ku-ring-gai.*

Controls

- 12 Landscaping is required to both street boundaries, and where there are changes proposed to the landscape treatment of the street frontage, a landscaping concept is required with the submission of a Development Application.
- 13 New development or additions are to be located to minimise impact on existing prominent trees.
- 14 New side fences on corner sites should be designed and located to:
 - i) maintain the streetscape character and heritage significance of the property;
 - ii) be consistent with the established pattern of fences;
 - iii) ensure an adequate amount of useable private open space.

Development on Rear Lanes in Residential Areas

- 15 The existing subdivision pattern of early rear lane development is to be retained.
- 16 The predominant one-storey scale of rear lanes should be retained.
- 17 The established landscape character of rear lanes should be retained, including timber paling fences and rear garden landscaping.
- 18 New second-storey development to any lanes or paths at the rear lane boundary is to be avoided. Two-storey development is to have a minimum setback of 6 metres from the rear lane boundary.

19C.2 SETBACKS AND BUILDING SEPARATION

Objectives

- 1 To conserve and maintain the character and significance of individual properties and streetscapes in the HCA by maintaining the established pattern of front and side boundary setbacks.
- 2 To ensure the siting of new alterations and additions respect and contribute to the established streetscape patterns.
- 3 To ensure the location and siting of new development respects the established pattern of built elements in the streetscape and the HCA.
- 4 To ensure new development does not adversely impact on the immediate streetscape or significant views within the HCA.

Controls

Front and Side

- 1 The siting of alterations, additions and new buildings are to maintain the established streetscape pattern, including principal dwellings, garages, carports and garden structures. Refer to Figure 19C.2-1.

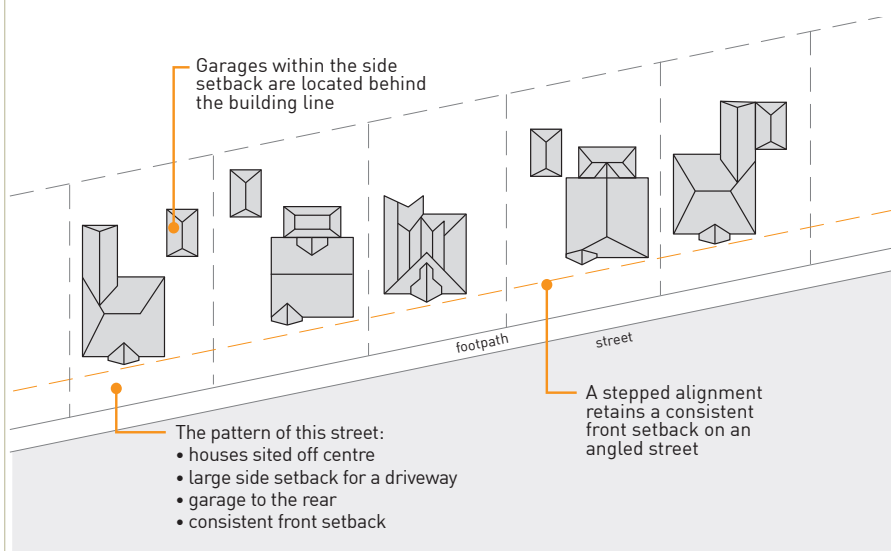


Figure 19C.2-1:
Retain the streetscape pattern of building siting.

- 2 Where there is a uniform building setback within streets, alterations and additions and new buildings are to respect the established pattern and not be located forward of adjacent buildings. Where variations in setback exist, the larger setback will apply. Side setbacks are to be consistent with historic patterns.
- 3 Where variations in setbacks exist within the immediate vicinity and the streetscape, the larger setback will apply.

Additional Requirements for New Buildings

- 4 New buildings are not to be orientated across sites contrary to the established alignment pattern.
- 5 The location of new buildings is to ensure that significant views to and from places within the HCA are retained.

19C.3 GARDENS AND LANDSCAPING

Objectives

- 1 *To retain the garden character of Ku-ring-gai's HCAs which is largely due to the deep frontages and large lots that support remnant trees, early surviving gardens with established introduced trees and built garden features such as fences, walls and paving. The street tree planting and pattern of soft and hard road verges also contribute to the landscape character.*
- 2 *To conserve, retain and enhance the significance of the garden and landscape character within individual properties, streetscapes and the HCA as a whole.*
- 3 *To ensure streetscapes within the HCAs are characterised by front gardens with substantial landscaped area and minimum hard surfaces.*
- 4 *To provide landscape screening to neighbouring properties.*

Controls

General

- 1 The established landscape character (height of the tree canopy, early gardens, remnant trees, historic tree plantings) that contributes to the significance of the streetscape and the HCA as a whole are to be retained and conserved in any new development. The reinstatement of original planting, where known, is encouraged.
- 2 Original garden features such as gates, paths, stonework, garden terracing, tiling, cement crazy paving, walling and garden edging are to be retained and conserved.
- 3 New paving and hard surfacing, particularly to front setbacks is to be limited.
- 4 Front gardens are to **avoid screening buildings from the street and:**
 - i) have a minimum of 70% landscaped area;
 - ii) include substantial tree and shrub planting along street frontages.
 - iii) **front boundary hedges are to be a maximum 1.2m.**

Note: Maintenance of hedge height of front boundary will be included as a Condition of Consent.
- 5 Materials for new garden paving or pathways are to be appropriate to the architectural style of the HCA, such as gravel for Federation style and sandstone flagging for Inter-war styles. Plain or stencilled concrete is not acceptable.
- 6 **New driveways are to provide landscaping on side boundaries.**
- 7 New, traditionally designed gardens that enhance historic and aesthetic character of the streetscape and the HCA as a whole are encouraged.
- 8 New gardens should be horticulturally and stylistically sympathetic to the period of the HCA. The use of similar materials such as sandstone, brick and gravel is encouraged.
- 9 The use of a variety of plant species to avoid mono-cultural plantings along street frontages and as screen planting is encouraged.

19C.4 ACCESS AND PARKING

Further controls that may apply		
SECTION A Part 4B.1 - Vehicle Access		SECTION C Part 22 - General Access and Parking
Objectives <ol style="list-style-type: none"> <i>To ensure that modifications to provide access do not adversely affect significant built fabric of either individual buildings or the HCA as a whole.</i> <i>To allow for on-site car parking where possible while retaining the character of the property, the streetscape and significance of the HCA.</i> <i>To ensure that driveways do not have any adverse visual impact on the immediate streetscape and historic patterns in the HCA.</i> <i>To minimise the visual impact of new car parking by locating it at the side or rear of properties, where possible.</i> <i>To ensure battle-axe driveways make a positive contribution to the streetscape and the HCA.</i> 	Controls <p><i>Equitable Access</i></p> <p><i>Additional Requirements for Alterations and Additions</i></p> <ol style="list-style-type: none"> Modifications and alterations to provide access and mobility are to: <ol style="list-style-type: none"> explore all options to achieve the statutory requirements in the least obtrusive manner possible; involve the least demolition of significant fabric; be reversible; preserve fabric of higher significance if a compromise is required. <p>Note: Access requirements apply for public buildings and residential flat buildings; they are not generally required for dwelling houses.</p> <p>Note: Access solutions will be unique to each property and will be assessed on their individual merits.</p> <p>Note: Refer to Disability Discrimination Act 1991.</p> <p>Note: Refer to Australian Standard 1428.</p> <p><i>Driveways</i></p> <ol style="list-style-type: none"> Original and existing rear lane or side entry vehicle access is to be retained and/or utilised where rear and side lanes exist. Where original concrete wheel strips exist, they are to be retained with grass in between. New parking areas, garages and driveways are to be designed carefully so that they do not dominate the principal elevations or detract from the immediate streetscape and incorporate provisions for landscaping. The siting of new driveways are to be consistent with the established pattern in the immediate streetscape and the HCA as a whole. Double garages should only be accessed by a single driveway. Finishes to new or refurbished driveways are to match original driveway finishes or be appropriate to the architectural style of the HCA. Painted, coloured, stamped or stenciled concrete, pavers, aggregate, pebblecrete or cobblestones are not to be used for new driveways or driveway elements. 	

19C.4 ACCESS AND PARKING (continued)

Objectives

- 6 To conserve the HCA streetscape by preventing level changes to the street presentation of buildings and their gardens.
- 7 To avoid uncharacteristic driveway excavation and new basements to street frontages.
- 8 To allow for on-site car parking where possible while retaining the character of the property, the streetscape and significance of the HCA.
- 9 To ensure that new garages and carports do not have any adverse visual impact on the immediate streetscape and historic patterns in the HCA.
- 10 To minimise the visual impact of new car parking by locating garages and carports at the side or rear of properties, where possible.
- 11 To ensure that car parking structures do not challenge the mass or bulk or mimic the architectural detailing of original buildings and the wider streetscape.
- 12 To retain and conserve original and early coach houses, stables and motor garage as they contribute to the setting of the house.

Controls

- 7 Swing gates are preferred to sliding gates. Sliding gates may only be acceptable where the driveway is **steeply** sloping upward from the street.
- 8 No excavation for a driveway is permitted in any front setback.
- 9 Excavation for a driveway is only permitted:
 - i) in the side setback, at a minimum 3m behind the front building line;
 - ii) a minimum 1m from the original building foundation;
 - iii) where side setback requirements in the DCP are met;
 - iv) only if a side gate is provided to hide the commencement of the excavated driveway slope.

Refer to Figure 19C.4-1

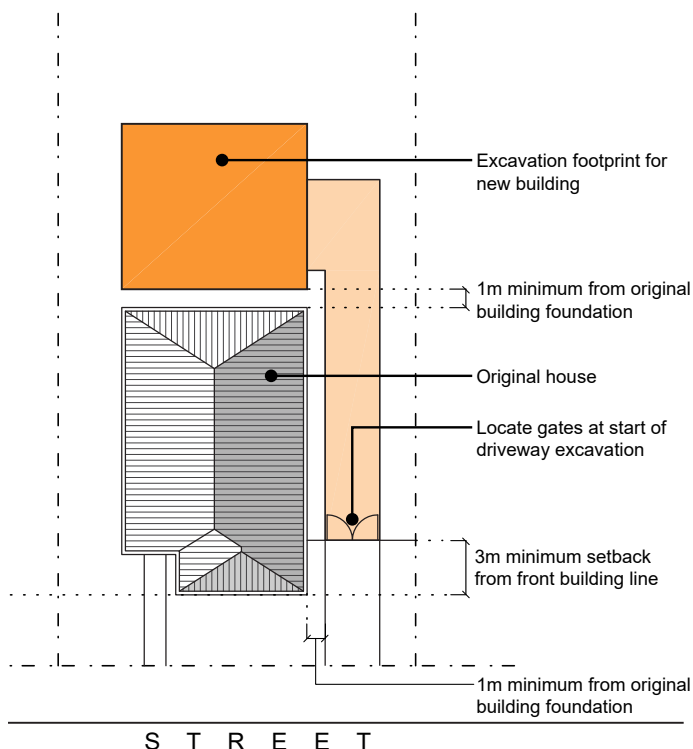


Figure 19C.4-1:
Excavation for a driveway in a Heritage Conservation Area

19C.4 ACCESS AND PARKING (continued)

Controls

Battle-axe Driveways

- 10 Battle-axe Driveways including battle-axe handles are to be constructed of materials such as bitumen, gravel, stone flagging or concrete wheel strips and incorporate provisions for landscaping.

New Garages and Carports

- 11 Where it is physically possible, new car parking is to be consistent with the historic placement of parking structures on the site.
- 12 Garages and carports are not permitted forward of the building line and are to be located at least 1m minimum behind the existing front building line, preferably to the rear of the main building.
- 13 New carport and structures **are to** pay regard to existing and original features of dwellings, such as windows, doors, string coursing.
- 14 Only in exceptional circumstances and where a dwelling has a side setback of less than 3m, a hard stand area forward of the building line formed of suitable materials may be considered appropriate.
- 15 New double garage doors are to be divided by a central mullion or constructed as two doors separated by a pier.
- 16 New double garages **are to** be located behind the rear building line to avoid being a visually dominant element within the streetscape.
- 17 Original existing building fabric, including verandahs and balconies, are not to be altered to provide a carparking structure or hard stand area.

Original Coach Houses, Stables and Garages

- 18 Where original and early garages, coach houses and stables survive, they should be retained and conserved.
- 19 Original garage doors, usually boarded timber, are to be retained and conserved, where possible. Where replacement doors are proposed to original or early garage structures, they are to be similar in colour, materials and detail of the original.

19C.5 BUILDING DESIGN

Objectives

- 1 To retain significant materials and details within HCAs.
- 2 To ensure that the materials and colours of new work **complements** the identified character of the HCA
- 3 To ensure that the selection of materials and colours for new work is based on an understanding of the materials, finishes and colours predominant within the HCA.
- 4 To encourage the removal of paint from originally unpainted surfaces.
- 5 To ensure new development respects the character of, and minimises the visual impact upon, the HCA and its streetscapes.
- 6 To encourage the recovery of the original character of contributory properties when undergoing additions and alterations

Controls

Materials, Colours and Details

- 1 Significant unpainted brickwork, sandstone and blockwork is not to be rendered, coated or painted.
- 2 The removal of later layers of paint from original face brickwork and stonework is encouraged. Chemical stripping of paint from face brickwork is encouraged.
- 3 Natural and recessive colour schemes are encouraged for rendered and painted finishes, especially on sites rated as neutral or uncharacteristic.
- 4 Contemporary materials are permitted for new work where the detailing, proportions, texture and colour range blend with the existing character of the HCA.

Additional Requirements for Alterations and Additions

- 5 Development applications for alterations and additions within an HCA require a materials board and details of the colour scheme and finishes to be submitted.
- 6 Significant materials and finishes such as decorative timber features, tiles, shingles, relief work, mouldings, incised designs in render, ashlar markings, tuckpointing and rough-cast stucco, are to be retained and repaired.
- 7 Significant materials, finishes and details are to be retained and repaired using traditional techniques where possible.

Additional Requirements for New Buildings

- 8 Materials used for new buildings are to be similar to, or compatible with, the original buildings in the HCA.
- 9 Development applications for new buildings are to provide a material board and details of colour scheme and finishes.
- 10 New buildings are to incorporate architectural language such as massing, proportions, coursing lines, materials and finishes, which are sympathetic to and complement the predominant character of the HCA.
- 11 New building colour schemes are not to detract from colour schemes in the streetscape and not to be in visual contrast with the colours of the contributory properties in the HCA. Recessive colours and traditional materials are preferred.

19C.5 BUILDING DESIGN (continued)

Objectives

7 To ensure the retention and encourage reinstatement of early verandah and balcony forms.

8 To protect the original fabric and details of doors and windows of contributory properties.

Controls

Repairs, Maintenance and Restoration

Requirements for Alterations and Additions

- 12 The repair and maintenance of contributory properties is encouraged.
- 13 The reconstruction of altered, missing or removed original features, details and elements is supported where evidence exists of the earliest state of the fabric.
- 14 In repairing the fabric of external surfaces, matching materials are to be used. Sourcing old and salvaged building materials for like-for-like matching of existing materials is preferred to the use of modern equivalents.
- 15 The removal of intrusive later additions is encouraged.

Note: Refer to KLEP Clause 5.10.

Note: Refer to SEPP (Exempt and Complying Development Codes).

Verandahs

Requirements for Alterations and Additions

- 16 In altering existing buildings, original verandahs and porches to the front and side elevations of contributory properties are to be retained where **contributing to the significance of the property**.
- 17 Reinstatement of open front verandahs, where they have been enclosed, is recommended.
- 18 New verandahs are not to compete with the importance of the original built form and are to be simple in design and based on existing detail or an understanding of appropriate designs for each period or style.
- 19 **Infilling or enclosure of verandahs and conversion to less reversible uses, such as bathrooms or kitchens, is not permitted.**

Doors and Windows

Requirements for Alterations and Additions

- 20 Original doors and windows to front and side elevations of contributory properties are to be retained **where contributing to the significance of the property** (Refer to figure 19C.5-1).
- 21 The repair and restoration of original doors and windows to front and side elevations of contributory properties is encouraged. Authentic reconstruction of missing doors and windows using traditional materials, styles and craftsmanship is encouraged.
- 22 New doors and windows in additions and alterations are to be compatible with the proportions, position, size and detailing of

19C.5 BUILDING DESIGN (continued)

Objectives

Controls

existing doors and windows.

- 23 New windows to front and side elevations of contributory properties are to be appropriate in form and material for the style of the house (based on original fabric or photographic evidence or on the evidence of original houses of the same style in the streetscape).
- 24 The retention, repair and restoration of original leadlight and coloured glass window and door panes is encouraged.
- 25 If sound attenuation is required, double glazing fitted to existing windows is encouraged. Alternatives to double-glazing, where there is no impact on principal elevations, are encouraged.

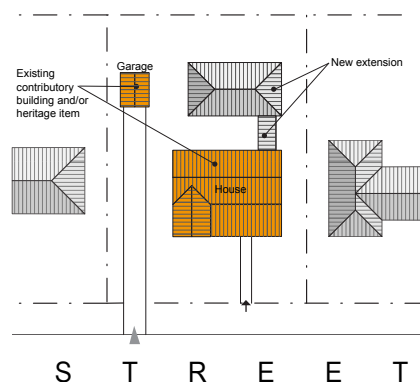
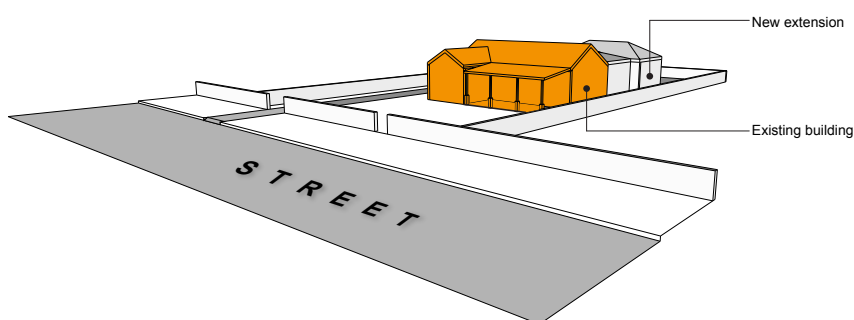


Figure 19C.5-1:

Retain original doors and windows to front and side elevations (coloured orange) of contributory properties.

- 26 Original sunhoods, blinds, awnings and skirts to principal elevations are to be retained and repaired.

Basements

- 27 Excavation in the front setback is not permitted.
- 28 No basement is to be located under or within 1m of the original building fabric.

9 To prevent excavation and alteration to existing ground levels in the front setbacks in the HCA.

10 To avoid the introduction of uncharacteristic elements, such as basements, basement garages and excavated driveways that alter the street presentation of the house and garden.

19C.5 BUILDING DESIGN (continued)

Objectives

- 11 *To discourage the use of window and door grilles and to encourage alternative security measures which do not detract from the appearance of individual buildings and the HCA as a whole.*

Controls

- 29 A Structural Management Plan is to be submitted for all basements to demonstrate it will be structurally sound and have no impact to the existing building or neighbouring buildings and to any structure or tree in the vicinity.

Security Grilles

- 30 Security bars, mesh or roller shutters to visible elevations are not permitted.
- 31 Traditional timber shutters may be acceptable if shutters were original to the building.
- 32 The removal of security bars, mesh or roller shutters to windows which detract from the streetscape is encouraged.
- 33 Where additional security is required, passive measures such as mortice deadlocks, window locks and alarm systems are to be used.
- 34 Where there is no alternative, the installation of external security bars is acceptable provided the design responds to the glazing bars of the window or door.

19C.6 ROOF FORMS AND STRUCTURES ATTACHED TO ROOFS

Objectives

- 1 *To retain the character of the original roof forms within the HCA.*
- 2 *To protect the original fabric and details of roofs and chimneys.*
- 3 *To ensure that structures attached to roofs do not have an adverse impact on the character and significance of individual buildings, the immediate streetscape and the HCA.*

Controls

Roofs, Chimneys and Dormers

- 1 Fireplaces and chimneys are important building elements within HCAs and are to be retained.
- 2 Roof forms and details vary widely according to building type and architectural style, and this variety of forms makes an important contribution to the visual complexity of the HCA and are to be retained.
- 3 The **original** principal roof form is to be retained to the extent that it can be interpreted. The roofs of alterations and additions are to have a separate linked section. New roof forms for new work will be considered where they are complementary in design, not visible from the public domain (see Figure 19C.6-1) and follow historic practices, such as rear skillion roofs (see Figure 19C.1-1).
- 4 Dormer windows are not to be used on the street-facing roof elevations. Skylights are to have a low profile and be flush with the roof surface.
- 5 Slate roofs are to be conserved, repaired and retained wherever possible, with complete replacement when necessary.
- 6 Where inappropriate retiling has occurred replacement of concrete roof tiling with unglazed terracotta Marseilles pattern roof tiling is encouraged.
- 7 Appropriate roofing materials are profiled terracotta tiles, slate and other original roofing materials. Replica flat slate and concrete roof tiles are not permitted.

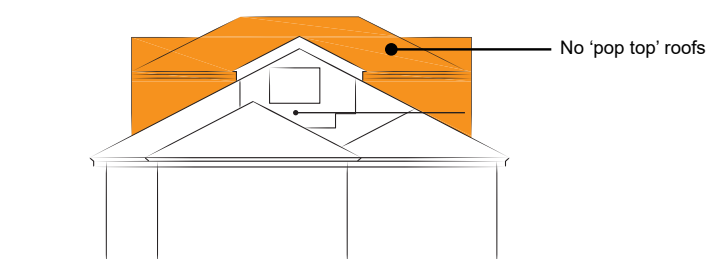


Figure 19C.6-1:
No 'pop top' roofs visible from public domain.

Additional Requirements for Alterations and Additions

- 8 On original buildings, new or replacement roof materials are to match, like-for-like, original roof materials in texture, pattern and colour.

19C.6 ROOF FORMS AND STRUCTURES ATTACHED TO ROOFS (continued)

Controls

Skylights, Solar Panels, Solar Water Heaters, Antennae and Other Roof Infrastructure

Note: For placement of solar panels, solar water heating, antennas etc on Heritage Items refer to Chapter 2, Division 4 of Part 2.3 of SEPP (Transport and Infrastructure) 2021.

19C.7 OUTBUILDINGS AND GARDEN STRUCTURES (EXCLUDING GARAGES AND CARPORTS)

Further controls that may apply

SECTION A Part 4C.7 - Ancillary Facilities

Objectives

- 1 *To ensure that new garden structures and of outbuildings do not detract from the significance of individual properties or the HCA through inappropriate siting or excessive scale, bulk or visibility*

Controls

Outbuildings and Garden Structures (excluding garages and carports)

- 1 Original and early outbuildings and garden structures are to be retained.
- 2 No new garden structures or outbuildings including pools, water tanks, gazebos, sheds, stores, cabanas are to be located within the front setback.
- 3 In considering any application for permission to erect an outbuilding or structure, the following will be considered:
 - i) the location of the proposed structure in relation to the principal building, boundaries and other details of the site;
 - ii) the proposed form, scale, materials and colours of the structure. In this regard, the scale of any outbuilding or structure is to be subservient to the main house, colours and materials should be recessive;
 - iii) the relative prominence and visibility of the proposed structure from the street frontage or frontages of the site;
 - iv) neighbouring properties, and requirement for landscaped screening or planting to ensure that the proposed structure is well integrated.

Note: Refer to SEPP (Exempt and Complying Development Codes) 2008.

19C.8 FENCING

Objectives

- 1 To retain early and original fences, gates and retaining walls where they survive, and where they reinforce the original landscape character of the garden and streetscape
- 2 To retain those streetscapes where front and side fencing do not form part of the original streetscape.
- 3 To encourage the reinstatement of the original form of fencing and gates, where known.
- 4 To encourage new front fences and gates which contribute to the streetscape character of the HCA by being consistent with the established pattern of existing original fences.

Controls

Original and Early Fences, Gates and Retaining Walls

- 1 Original and early fences, piers, gates and retaining walls are to be retained and conserved. The height of original and early fences is not to be altered.
- 2 Original face brick or sandstone fences are not to be rendered, coated or painted.
- 3 The configuration, finishes and details of original sandstone retaining walls that are located at the street front boundaries (whether identified as contributory properties or not) are to be retained and conserved.

Missing or Absent Fences

- 4 New front fencing and gates including vehicular access gates are not encouraged in areas where it does not form part of the streetscape. In such areas, the front boundary can be defined by low hob walls, by garden beds or planting to allow private gardens to merge with their neighbours and support the landscape character of the area.

New Front Fences and Gates

- 5 New front fencing, pedestrian and vehicular access gates are to match the architectural style of the house and the character of the immediate streetscape.
- 6 Replacement of unsympathetic fences, gates and walls with new elements of appropriate height, style and materials is encouraged.
- 7 Where historic records and physical evidence exists, new front fencing and gates, including vehicular access gates are to reinstate the original.
- 8 Where no evidence is available to guide reconstruction of missing fences and gates to contributory properties, new front fencing, pedestrian and vehicular access gates are to match the architectural style of the house, the period of construction and the character of the immediate streetscape. Refer to Figure 19C.8-1

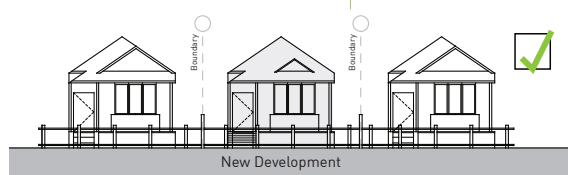


Figure 19C.8-1:
Good design: New development uses similar fencing detailing to existing.



Figure 19C.8-1:
Poor design: New development does not respect existing fencing patterns.

19C.8 FENCING (continued)

- 5 *To promote visual permeability with sightlines and visibility between the property and the public domain.*

- 9 Front fences, gates and vehicular access gates are to be of open construction and no higher than 1.2m. Closed, solid elements such as masonry walls are only to be included as plinths no higher than 300mm and piers.
- 10 No metal panel fencing is to be constructed on any boundary within an HCA.
- 11 New vehicular access gates **are to** promote views to all properties, especially to battle-axe allotments with reduced visual permeability.

Note: Refer to Dividing Fences Act 1991.

19C.9 SECONDARY DWELLINGS WITHIN HCAS

Objectives

- 1 *To ensure that new secondary dwellings respect the established streetscape, and the historical patterns of development within the HCA, including characteristic rhythm and built form spacing.*

Controls

- 1 Generally, proposals for a secondary dwelling within an HCA will only be considered if the proposal:
 - i) will have no adverse impact on the significance of the HCA;
 - ii) the rhythm of buildings in the streetscape is retained;
 - iii) the setting and curtilage of any Heritage Item or significant buildings in the vicinity, including important structures and landscape elements, are retained;
 - iv) vistas and views to and from Heritage Items and contributory properties in the vicinity, especially the principal elevation of the buildings, are not interrupted or obscured;
 - v) the landscape quality of the streetscape is retained;
 - vi) the contours and any natural features of the site have been retained and respected.
- 2 Applications for secondary dwellings within the HCA require a curtilage assessment within the Heritage Impact Statement, with particular emphasis on garden settings.

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19D Heritage Items

Introduction

19D.1 Adaptive Reuse

19D.2 Setbacks and Building Separation

19D.3 Gardens and Landscaping

19D.4 Access and Parking

19D.5 Building Design

19D.6 Outbuilding and Garden Structures (excluding garages and car ports)

19D.7 Roof Forms and Structures Attached to Roofs

19D.8 Fencing

READ WITH

SECTION A - Part 2-13

SECTION B - All relevant parts

SECTION C - Part 21-24

INTRODUCTION

This section applies to all Heritage Items.

The following controls are in addition to the controls in Part 19A to 19E and are to be read in conjunction with them. This part provides guidance to meet the objectives in the KLEP.

They are to be read in conjunction with the Heritage Inventory Sheets that have been prepared for Ku-ring-gai's Heritage Items. The Inventory Sheets are considered by Council when assessing development applications for work to Heritage Items and are to be considered in developments. The Inventory Sheets are available via Council's website on www.krg.nsw.gov.au

Development applications for works to a Heritage Item will require a Heritage Impact Statement (HIS) prepared by an experienced heritage consultant to be submitted as part of the application.

In addition, to ensure that Ku-ring-gai's Heritage Items are managed in accordance with heritage best-practice and Council's adopted heritage management documents, Council may require a Conservation Management Plan (CMP) prepared by an experienced heritage consultant to be submitted as part of the application.

The objectives and controls of Part 19D Heritage Items will prevail where there is any inconsistency with Part 19C, 19E or any other section of this DCP.

19D.1 ADAPTIVE REUSE

Objectives

- 1

To ensure that new uses for Heritage Items are compatible with the fabric and heritage significance of the Heritage Item.

Controls

- 1

Development involving adaptive reuse of a Heritage Item requires the preparation of a Conservation Management Plan (CMP) by an experienced consultant to guide change and ensure conservation of the Heritage Item.
- 2

In accordance with Clause 5.10.10 of the KLEP, Council will consider variations to other development standards, including car parking requirements, in order to achieve desirable heritage and planning outcomes.

Objectives

- To ensure new work to heritage items respects and contributes to character of the heritage item.*
- To ensure new development provides an interface of scale and bulk to preserve the amenity to the significant elements within the heritage curtilage.*
- To ensure new medium density development does not visually dominate the Heritage Item, where this type of development is considered appropriate.*
- The setbacks between an HCA or heritage item and any new building higher than one level is to be 12m.*
- The setback between a heritage item and a single storey residential dwelling addition or new build is to be a minimum of 6m.*

19D.2 SETBACKS AND BUILDING SEPARATION

Controls

- In addition to the side and rear setback controls in Section A of this DCP, new development on the site of a Heritage Item is to comply with the following:

i) building separation requirements to the nearest Heritage Item building element:

New Development Height	Building Separation Requirement
1 or 2 Levels	Minimum 6m
3 or more Levels	Minimum 12m

- ii) new adjacent development is not to exceed a facade height of 8m from existing ground level, including balustrades;
- iii) where new adjacent development has a façade height above 8m high from existing ground level, the façade is to be stepped back to provide additional building separation in accordance with Figure 19D.2 -1.

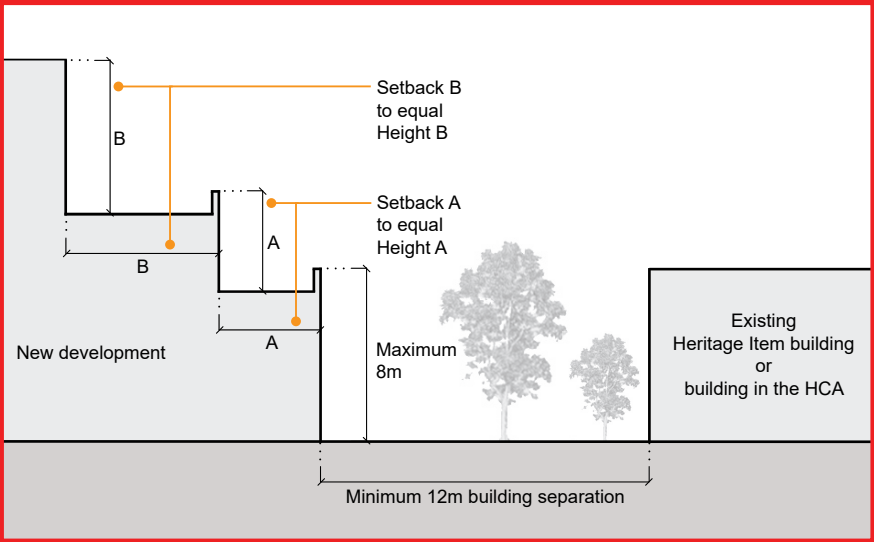


Figure 19D.2-1:
Building separation requirements for development greater than 8m high (2 levels) within a Heritage Item site.

19D.3 GARDENS AND LANDSCAPING

Objectives

- 1 *To retain and conserve the significance of a Heritage Item in its setting.*
- 2 *To retain and conserve the significant garden elements and structures of Heritage Items and to retain an appropriate garden setting.*
- 3 *To provide landscape screening to neighbouring properties.*

Controls

- 1 Trees, and garden elements and structures which contribute to the significance of the Heritage Item are to be retained and conserved. Examples of historic garden elements and structures can include, but are not limited to, tennis courts, croquet lawns, grottos, ferneries, garden terracing, lawn edgings etc.
- 2 New gardens should be horticulturally and stylistically sympathetic to the period of the Heritage Item. The use of similar materials such as sandstone, brick and gravel is encouraged.
- 3 The use of a variety of plant species to avoid mono-cultural plantings along street frontages and as screen planting is encouraged.
- 4 High solid hedges that screen buildings from the street are not permitted.
- 5 New driveways are to provide landscaping on side boundaries.
- 6 Front boundary hedges are to be a maximum 1.2m.

Note: Maintenance of front boundary hedge height will be included as a condition of consent.

19D.4 ACCESS AND PARKING

Objectives

- 1 *To ensure that modifications to provide access do not adversely affect significant built fabric.*
- 2 *To allow for on-site car parking where possible while retaining the character of the property.*
- 3 *To ensure that driveways do not have any adverse visual impact on the curtilage or setting of the heritage item.*
- 4 *To minimise the visual impact of new car parking by locating it at the side or rear of properties.*
- 5 *To ensure battle-axe driveways do not detract from the curtilage or setting of the heritage item.*
- 6 *To ensure that new garages and carports do not have any adverse impact on the curtilage or setting of the heritage item.*
- 7 *To ensure that car parking structures do not challenge the mass or bulk or mimic the architectural detailing of the heritage item.*
- 8 *To retain and conserve original and early coach houses, stables and motor garage as they contribute to the setting of the heritage item.*

Controls

Equitable Access

- 1 Modifications and alterations to provide access and mobility are to:
 - i) explore all options to achieve the statutory requirements in the least obtrusive manner possible;
 - ii) involve the least demolition of significant fabric;
 - iii) be reversible; and
 - iv) preserve fabric of higher significance if a compromise is required.

Note: Access requirements apply for public buildings and residential flat buildings; they are not generally required for dwelling houses.

Note: Access solutions will be unique to each property and will be assessed on their individual merits.

Note: Refer to Disability Discrimination Act 1991.

Note: Refer to Australian Standard 1428.

Driveways

- 2 Original and existing rear lane or side entry vehicle access is to be retained and/or utilised where rear and side lanes exist.
- 3 Where original concrete wheel strips exist, they are to be retained with grass in between.
- 4 New parking areas, garages and driveways are to be designed carefully so that they do not dominate the principal elevations or detract from the curtilage or setting of the heritage item.
- 5 Double garage should only be accessed by a single driveway. Finishes to new or refurbished driveways are to match original driveway finishes or be appropriate to the architectural style of the heritage item. Painted, coloured, stamped or stencilled concrete, pavers, aggregate, pebblecrete or cobblestones are not to be used for new driveways or driveway elements.
- 6 Swing gates are preferred to sliding gates. Sliding gates may only be acceptable where the driveway is **steeply** sloping upward from the street.
- 7 **Driveways requiring excavation and changes to existing ground levels are not permitted.**

Battle-axe Driveways

- 8 Battle-axe Driveways including battle-axe handles are to be constructed of materials such as bitumen, gravel, stone flagging or concrete wheel strips and incorporate provisions for landscaping.

19D.4 ACCESS AND PARKING (CONTINUED)

Controls

9 To conserve the streetscape by preventing level changes to the street presentation of Heritage Item buildings and their gardens.

10 To retain the existing street presentation of buildings and their gardens.

New Garages and Carports

- 9 Where it is physically possible, new car parking is to be consistent with the historic placement of parking structures on the site.
- 10 Garages and carports are not permitted forward of the building line and are to be located at least 1m minimum behind the existing front building line, preferably to the rear of the main building.
- 11 New carport and structures **are to** pay regard to existing and original features of dwellings, such as windows, doors, string coursing.
- 12 Only in exceptional circumstances and where a dwelling has a side setback of less than 3m, a hard stand area forward of the building line formed of suitable materials may be considered appropriate.
- 13 New double garages to heritage items are not considered to be appropriate.
- 14 Original existing building fabric, including verandahs and balconies, are not to be altered to provide a carparking structure or hard stand area.
- 15 **Excavation for basement parking on a Heritage Item site is not permitted.**

Original Coach Houses, Stables, Garages

- 16 **Where demolition extension or change of use for original garage, coach house or stable is justified, the proposal is to provide replacement parking in the same or alternate location that will maintain the significance of the Heritage Item including its setting.**
- 17 Where original and early garages, coach houses and stables survive, they should be retained and conserved.
- 18 Original garage doors, usually boarded timber, are to be retained and conserved, where possible. Where replacement doors are proposed to original or early garage structures, they are to be similar in colour, materials and detail of the original.

19D.5 BUILDING DESIGN

Objectives

- 1 *To ensure the significant external features of a Heritage Item and its setting are retained and new development is sympathetic in terms of bulk, form, style, character, scale, and materials.*
- 2 *To encourage the reinstatement of missing elements, where known, and the removal of later unsympathetic changes.*
- 3 *To ensure that the materials, finishes, and colours of new work enhances the identified significance of the Heritage Item*

Controls

Alterations and Additions – External

- 1 All works to a Heritage Item are to comply with the controls in this section regardless of whether the property is located in an HCA or not.
- 2 Development applications for works to a Heritage Item require a materials board and details of the colour scheme and finishes to be submitted.
- 3 New work to Heritage Items may be identifiable as new; however, works are to respect and have minimal impact on the property heritage significance.
- 4 All significant built features of a Heritage Item are to be retained and conserved.
- 5 Original materials, finishes and details are to be retained and their repair using traditional techniques is encouraged.
- 6 Alterations and additions are to respect the scale, form, height, location, materials and colours of the Heritage Item.
- 7 Alterations and additions are to be located at the rear or side of the building to maintain the integrity of the prominent elevations and streetscape contribution.
- 8 Extensions, alterations and additions are not to visually dominate or compete with the original scale of the existing buildings to which they are added.

19D.5 BUILDING DESIGN

Objectives

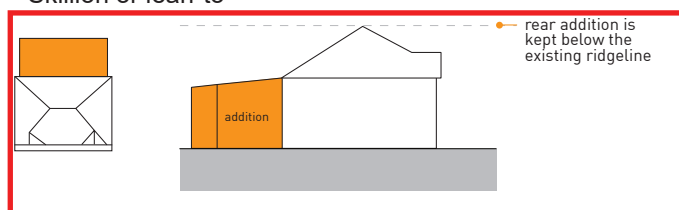
- 4 To ensure alterations and additions do not dominate the Heritage Item.
- 5 To ensure the significant internal spaces and features of a Heritage Item are identified, retained and conserved.
- 6 Encourage the re-instatement of missing elements, where known, and the removal of later unsympathetic changes.

- 7 To prevent excavation and alteration to existing ground levels in the front setbacks of heritage items that alter the street presentation of the house and garden.
- 8 To prevent the introduction of uncharacteristic elements, including basements and basement garages, on heritage item sites.

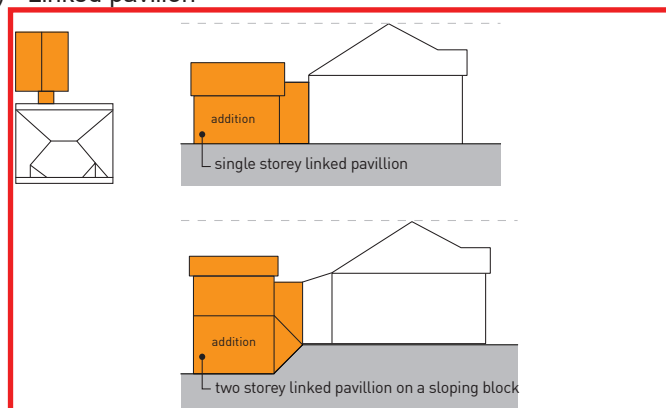
Controls

- 9 Alterations and additions to a Heritage Item site are to respect the heritage significance and predominant architectural character of the Heritage Item by having similar massing, style, form, proportions and arrangement of parts to the building itself. Extensions and additions are to be kept at or below the existing roof ridge height. Refer to Figure 19D.5-1.

i) Skillion or lean-to



ii) Linked pavilion



iii) Integrated wing

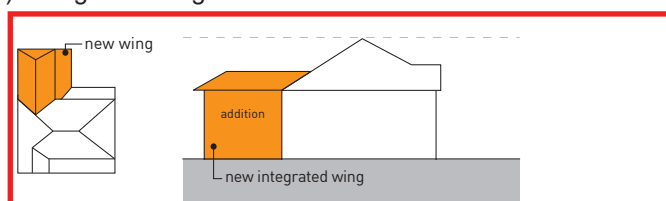


Figure 19D.5-1:
Examples of forms for rear additions to a Heritage Item.

- 10 The re-instatement of missing elements and details, where known, and the removal of past unsympathetic changes, is encouraged.

Alterations and Additions - Internal

- 11 Major internal alterations resulting in the loss of significant interior details, finishes, built fabric, room layout and original floor plan are unlikely to be supported unless it can be demonstrate that there is no adverse impact on heritage significance.
- 12 All significant interior spaces and fabric of Heritage Items are to be retained and conserved.
- 13 Original materials, finishes and details are to be retained and their repair using traditional techniques in encouraged.

19D.5 BUILDING DESIGN

Objectives

9 To ensure the retention and encourage reinstatement of early verandah and balcony forms.

10 To protect the original fabric and details of doors and windows of heritage items.

Controls

- 14 The re-instatement of missing elements and details, where known, and the removal of past unsympathetic changes, is encouraged.

Note: Refer to SEPP (Exempt and Complying Development Codes).

Note: Refer to KLEP Clause 5.10

Views

- 15 New development on the site of a Heritage Item is to demonstrate that it will not reduce or impair important views to and from the Heritage Item from the public domain.

Excavation

- 16 Excavation, including new or extended basements, are not permitted on Heritage Item sites.

Verandahs

- 17 Original verandahs and porches to the front and side elevations of contributory properties are to be retained where contributing to the significance of the property.
- 18 Reinstatement of open front verandahs, where they have been enclosed, is recommended.
- 19 New verandahs are not to compete with the importance of the original built form and are to be simple in design and based on existing detail or an understanding of appropriate designs for each period or style.
- 20 Infilling or enclosure of verandahs and conversion to less reversible uses, such as bathrooms or kitchens, is not permitted.

Doors and Windows

- 21 Original doors and windows to front and side elevations of heritage items are to be retained where contributing to the significance of the property (*Refer to figure 19D.5-2*).
- 22 The repair and restoration of original doors and windows to front and side elevations of heritage items is encouraged. Authentic reconstruction of missing doors and windows using traditional materials, styles and craftsmanship is encouraged.
- 23 New doors and windows in additions and alterations are to be compatible with the proportions, position, size and detailing of existing doors and windows.
- 24 New windows to front and visible side elevations of heritage items are to be appropriate in form and material for the style of the house (based on original fabric or photographic evidence or on the evidence of original houses of the same style in the streetscape).
- 25 The retention, repair and restoration of original leadlight and coloured glass window and door panes is encouraged.

19D.5 BUILDING DESIGN

Objectives

- 11 To discourage the use of window and door grilles and to encourage alternative security measures which do not detract from the appearance of the heritage item.

Controls

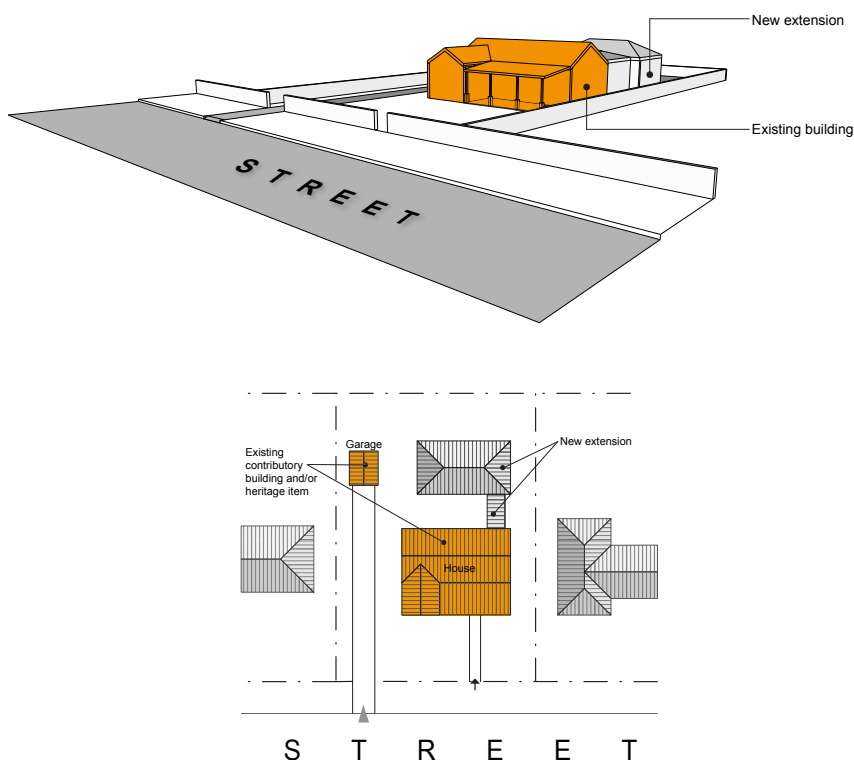


Figure 19D.5-2:
Retain original doors and windows to front and side elevations (coloured orange) of heritage items.

- 26 If sound attenuation is required, double glazing fitted to existing windows is encouraged. Alternatives to double-glazing, where there is no impact on principal elevations, are encouraged.
- 27 Original sunhoods, blinds, awnings and skirts to principal elevations are to be retained and repaired.

Security Grilles

- 28 Security bars, mesh or roller shutters to visible elevations are not permitted.
- 29 Traditional timber shutters may be acceptable if shutters were original to the building.
- 30 The removal of security bars, mesh or roller shutters to windows which detract from the streetscape is encouraged.
- 31 Where additional security is required, passive measures such as mortice deadlocks, window locks and alarm systems are to be used.
- 32 Where there is no alternative, the installation of external security bars is acceptable provided the design responds to the glazing bars of the window or door.

Objectives

- 1 *To ensure that new garden structures and of outbuildings do not detract from the significance of a heritage item through inappropriate siting or excessive scale, bulk or visibility.*

**19D.6 OUTBUILDINGS AND GARDEN
STRUCTURES (EXCLUDING
GARAGES AND CARPORTS)**

Controls

- 1 Original and early outbuildings and garden structures are to be retained.
- 2 No new garden structures or outbuildings including pools, water tanks, gazebos, sheds, stores, cabanas are to be located within the front setback.
- 3 In considering any application for permission to erect an outbuilding or structure, the following will be considered:
 - i) the location of the proposed structure in relation to the principal building, boundaries and other details of the site;
 - ii) the proposed form, scale, materials and colours of the structure. In this regard, the scale of any outbuilding or structure is to be subservient to the main house, colours and materials should be recessive; and
 - iii) the relative prominence and visibility of the proposed structure from the street frontage or frontages of the site.

19D.7 ROOF FORMS AND STRUCTURES ATTACHED TO ROOFS

Objectives

- 1 To retain the character of the original roof forms of the heritage item.
- 2 To protect the original fabric and details of roofs and chimneys.
- 3 To ensure that structures attached to roofs do not have an adverse impact on the character and significance of individual buildings, the immediate streetscape and the heritage item.

Controls

Roofs, Chimneys and Dormers

- 1 Fireplaces and chimneys are important building elements within heritage items and are to be retained.
- 2 Roof forms and details vary widely according to building type and architectural style, and this variety of forms makes an important contribution to the visual complexity of the heritage item and are to be retained.
- 3 The original principal roof form is to be retained to the extent that it can be interpreted. The roofs of alterations and additions are to have a separate linked section. New roof forms for new work will be considered where they are complementary in design, not visible from the public domain (see Figure 19D.7-1) and follow historic practices, such as rear skillion roofs (see Figure 19D.5-1).

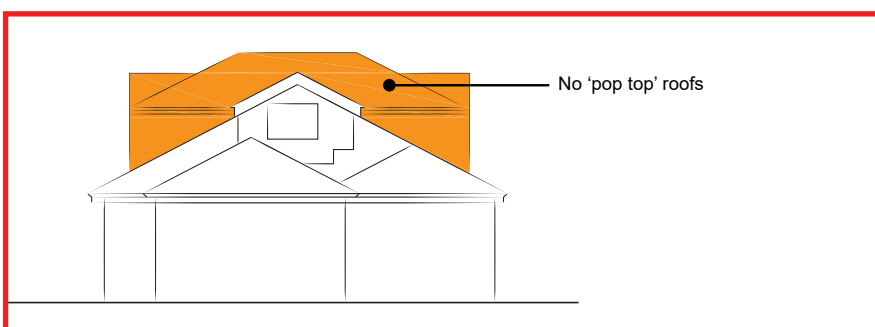


Figure 19D.7-1:
No 'pop top' roofs visible from public domain.

- 4 Dormer windows are not to be used on the street-facing roof elevations. Skylights are to have a low profile and be flush with the roof surface.
- 5 Slate roofs are to be conserved, repaired and retained wherever possible, with complete replacement when necessary.
- 6 Where inappropriate retiling has occurred replacement of concrete roof tiling with unglazed terracotta Marseilles pattern roof tiling is encouraged.
- 7 Appropriate roofing materials are profiled terracotta tiles, slate and other original roofing materials. Replica flat slate and concrete roof tiles are not permitted.
- 8 On heritage items, new or replacement roof materials are to match, like-for-like, original roof materials in texture, pattern and colour.

Skylights, Solar Panels, Solar Water Heaters, Antennae and Other Roof Infrastructure

Note: For placement of solar panels, solar water heating, antennas etc on Heritage Items refer to Chapter 2, Division 4 of Part 2.3 of SEPP (Transport and Infrastructure) 2021.

19D.8 FENCING

Objectives

- 1 *To retain early and original fences, gates and retaining walls where they survive, and where they reinforce the original landscape character of the garden and streetscape.*
- 2 *To retain those streetscapes where front and side fencing do not form part of the original streetscape.*
- 3 *To encourage the reinstatement of the original form of fencing and gates, where known.*
- 4 *To encourage new front fences and gates which contribute to the streetscape character of the HCA by being consistent with the established pattern of existing original fences.*

Controls

Original and Early Fences, Gates and Retaining Walls

- 1 Original and early fences, piers, gates and retaining walls are to be retained and conserved. The height of original and early fences is not to be altered.
- 2 Original face brick or sandstone fences are not to be rendered, coated or painted.
- 3 The configuration, finishes and details of original sandstone retaining walls that are located at the street front boundaries (whether identified as contributory properties or not) are to be retained and conserved.

Missing or Absent Fences

- 4 New front fencing and gates including vehicular access gates are not encouraged in areas where it does not form part of the streetscape. In such areas, the front boundary can be defined by low hob walls, by garden beds or planting to allow private gardens to merge with their neighbours and support the landscape character of the area.

New Front Fences and Gates

- 5 Replacement of unsympathetic fences, gates and walls with new elements of appropriate height, style and materials is encouraged.
- 6 Where historic records and physical evidence exists, new front fencing and gates, including vehicular access gates, are to reinstate the original.
- 7 Where no evidence is available to guide reconstruction of missing fences and gates to contributory properties, new front fencing, pedestrian and vehicular access gates are to match the architectural style and period of the house.
- 8 No metal panel fencing is to be constructed on any boundary to a heritage item.
- 9 New vehicular access gates **are to** promote views to all properties, especially to battle-axe allotments with reduced visual permeability.
- 10 Swing gates are preferred to sliding gates. Sliding gates may only be acceptable where the driveway is sloping upward from the street.

Note: Refer to Dividing Fences Act 1991

19E Secondary Dwellings within HCAs and Heritage Items

19E.1 Secondary Dwellings within HCAs and Heritage Items

Objectives

- 1 *To ensure new secondary dwellings respect the established streetscape, and the historical patterns of development within the HCA, including characteristic rhythm and built form spacing.*
- 2 *To ensure secondary dwellings do not dominate the Heritage Item and are designed to be complementary to the Item, including its setting.*

19E.1 SECONDARY DWELLINGS WITHIN HCAS AND HERITAGE ITEMS

Controls

General

- 1 Generally, proposals for a secondary dwelling within an HCA **or on the site of a Heritage Item** will only be considered if the proposal:
 - i) has no adverse impact on the significance of the HCA **or Heritage Item**;
 - ii) maintains the rhythm of buildings in the streetscape;
 - iii) retains the setting and curtilage **of the Heritage Item itself, or** any Heritage Item or significant buildings in the vicinity, including important structures and landscape elements;
 - iv) does not interrupt nor obscure vistas and views to and from Heritage Items and contributory properties in the vicinity, especially from the principal elevation of the buildings;
 - v) the landscape quality of the HCA streetscape **and Heritage Item setting** is retained;
 - vi) the contours and any natural features of the site have been retained and respected.
- 2 Applications for secondary dwellings within the HCA require a curtilage assessment within the Heritage Impact Statement, with particular emphasis on garden settings.

19F Development in the Vicinity of Heritage Items or Heritage Conservation Areas (HCAs)

Introduction

- 19F.1 Local Character and Streetscape
- 19F.2 Building Setbacks
- 19F.3 Gardens and Landscaping
- 19F.4 Fencing

READ WITH
SECTION A - Part 2-13
SECTION B - All relevant parts
SECTION C - Part 21-24

INTRODUCTION

This section applies to development on sites that either directly adjoin or are in the vicinity of a Heritage Item or an HCA. This part also applies to a situation where the Heritage Item is not incorporated into new consolidated development, as per 19A of this Part. This part provides guidance to meet the objectives in the KLEP.

The term “in the vicinity” not only means immediately adjoining a Heritage Item or HCA, but depending on site context, can be extended to include other sites with a high visual presentation due to landform, size or location of the Heritage Item.

The controls in this part are in addition to the controls in Sections 19A, 19B, 19C and 19D and are to be read in conjunction with them.

19F.1 LOCAL CHARACTER AND STREETScape

Objectives

- 1 To consider the impact on the historic curtilage and setting of the Heritage Item or HCA and related heritage features such as views, streetscape context, historical subdivisions, garden settings, alienated trees and other landscape features.
- 2 To retain the significance of Heritage Items or HCAs in their settings.
- 3 To ensure that the scale of new development does not dominate, detract from or compete with Heritage Items or HCAs in the vicinity.
- 4 To ensure that new development respects and conserves the significance of any nearby Heritage Items or HCA and their settings.
- 5 To ensure that new development does not visually dominate the adjoining or nearby Heritage Item or HCA.
- 6 To ensure that the scale of new development in the vicinity of a heritage item and HCA is in harmony with the streetscape and does not dominate, detract from or compete with the Heritage Item or HCA.

Controls

General

- 1 All development in the vicinity of a Heritage Item or HCA is to include a Heritage Impact Statement (HIS). The HIS is to address the effect of the proposed development on a Heritage Item or HCA and demonstrate that the proposed works will not adversely impact upon significance, including any related heritage features within the identified curtilage and setting.

Built form

- 2 Development on sites that either directly adjoin or are in the vicinity of a Heritage Item or an HCA is to have regard to:
 - i) the form of the existing building or buildings including height, roofline, setbacks and building alignment;
 - ii) dominant architectural language such as horizontal lines and vertical segmentation;
 - iii) proportions including door and window openings, bays, floor-to-ceiling heights and coursing levels;
 - iv) materials and colours;
 - v) siting and orientation;
 - vi) setting and context;
 - vii) streetscape patterns.

Retail/Mixed Use Setting

- 3 New development adjacent to or in the vicinity of a Heritage Item or HCA within a retail/mixed use setting such as an existing row of two-storey shops, are to:
 - i) retain the existing characteristics of the street including the setback, height and rhythm of facades, and is to be sympathetic to the materials and detailing of the earlier facades.
 - ii) retain a pedestrian building scale at the street level and to set back any levels that are higher than the adjacent Heritage Item or HCA.

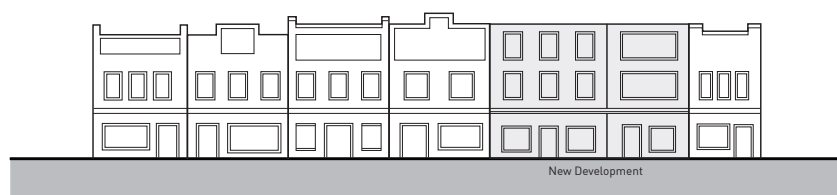


Figure 19F.1-1:
The infill building reinforces the street's rhythm of facades by re-interpreting the existing architectural lines such as parapet height, window openings, awnings and vertical segmentation to reflect existing building widths.

19F.1 LOCAL CHARACTER AND STREETSCAPE
(continued)

Objectives

- 7 *To protect significant views and vistas to and from the Heritage Item or HCA.*

Controls

Views

- 4 New development in the vicinity of a Heritage Item or HCA is to demonstrate that it will not reduce or impair important views to and from the Heritage Item from the public domain.

19F.2 BUILDING SETBACKS

Objectives

- 1
- To ensure new work in the vicinity of a Heritage Item or HCA respects and contributes to the established streetscape patterns through careful siting of new buildings.*
- 2
- To ensure new development provides an interface of scale and bulk to preserve the amenity to the adjacent Heritage Item or building within a HCA.*
- 3
- To ensure new medium and high density development does not visually dominate the Heritage Item or building within the HCA.*

Controls

Setbacks

- 1
- The front setback of development adjacent to a Heritage Item or buildings within an HCA is to be greater than that of the Heritage Item or building within the HCA. Where variations in setbacks exist, the larger setback will apply.

Residential Context

- 2
- All medium and high density development is to have a stepped facade to any common boundary with a Heritage Item or building within the HCA. The facade is to be stepped back above an 8m height from natural ground level as per Figure 19E.2-1. Facades greater than 8m high will not be permitted adjacent to a Heritage Item or building with an HCA.
- 3
- In addition to the side and rear setback controls in Section A of this DCP, new development adjacent to a Heritage Item or building within an HCA, is to comply with the following:

i)

adjacent developments are to have a minimum 12m building separation to the Heritage Item or building in the HCA (more if setback requirements are not met within the 12m) as per Figure 19D.3-1;

ii)

adjacent development is to not exceed a facade height of 8m from existing ground level, including balustrades;

iii)

adjacent development with a building mass above 8m high from existing ground level is to be stepped back an additional 6m from the Heritage Item as per Figure 19D.3-1;

Where variations in setbacks exist the larger setback will apply.

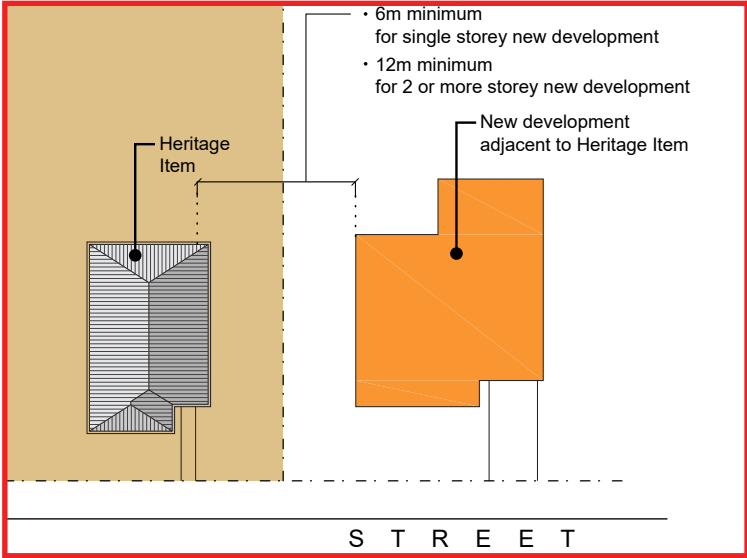
19F.2 BUILDING SETBACKS (continued)

Controls

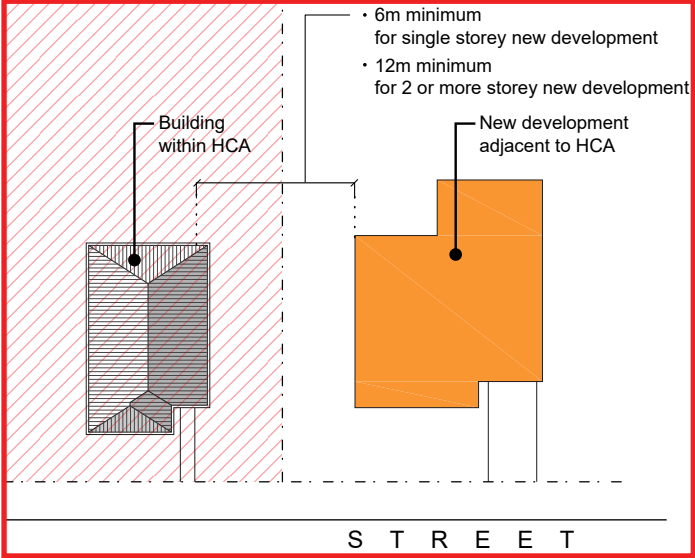
- 4 Any new development is to provide the following building separation to the building eaves or wall, whichever is closest, of:
- i) a neighbouring Heritage Item building; or
 - ii) a neighbouring building within a Heritage Conservation Area:

New Development Height	New Development Height
1 or 2 levels	Minimum 6m
3 or more levels	Minimum 12m

Refer to Figure 19F.2-1.



New Development adjacent to a Heritage Item



New Development adjacent to a building in the HCA

Figure 19F.2-1 Building separation of new development adjacent to Heritage Items and HCAs.

Controls

- 5
- Where the building separation requirements of this Part result in a greater setback requirements than stated in Section A of this DCP, the building separation controls of this Part prevail. Refer to Figure 19F.2-2.
- 6
- New development adjacent to a Heritage Item or adjacent to the HCA that has more than 2 levels or has a height more than 8m, is to step back the upper levels in accordance with Figure 19F.2-1.

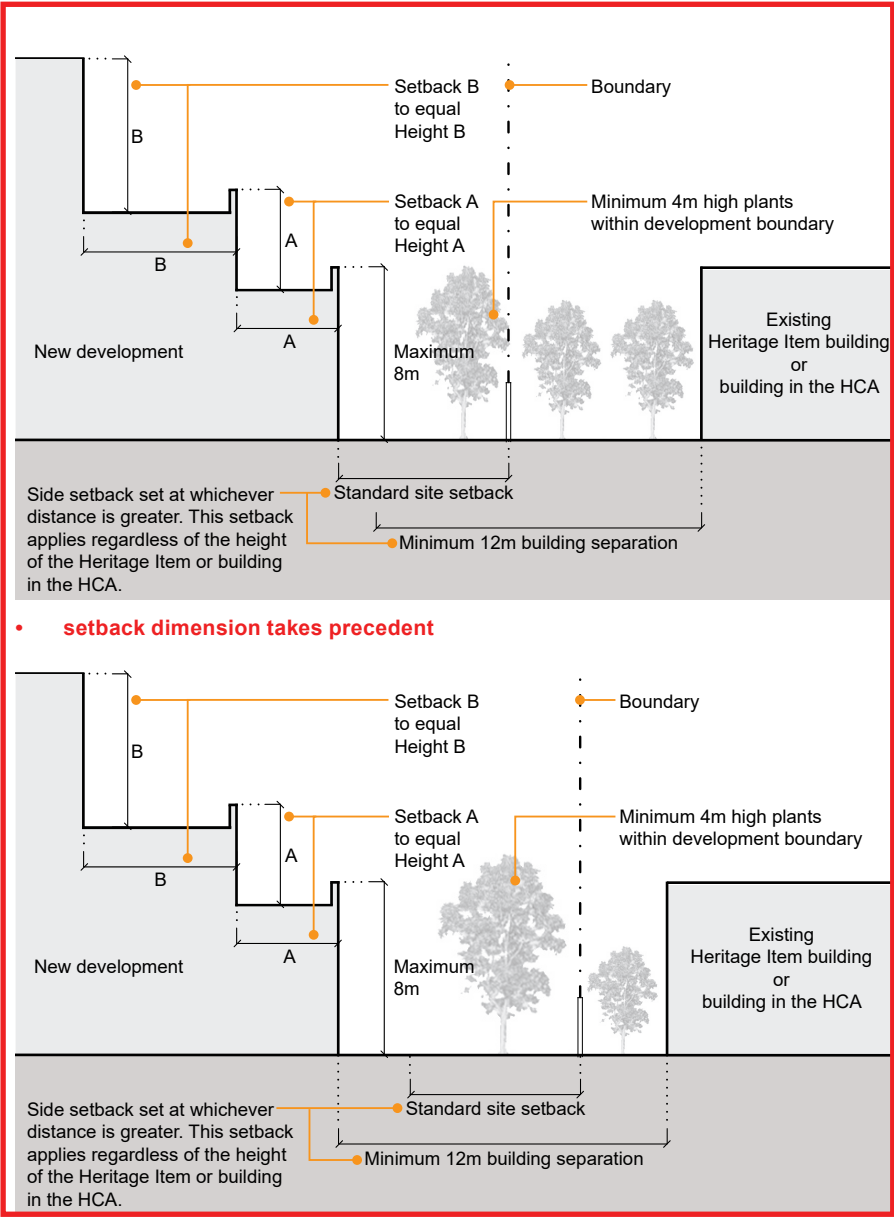


Figure 19F.2-2:
Building separation and building setback requirements for development greater than 8m high (2 levels) in the vicinity of a Heritage Item or Heritage Conservation Area.

19F.3 GARDENS AND LANDSCAPING

Objectives

- 1 *To ensure that new development does not impact on the landscape character and garden setting of any nearby Heritage Item or HCA.*

Controls

Gardens, Setting and Curtilage

- 1 Development in the vicinity of a Heritage Item or an HCA is to:
 - i) retain original or significant landscape features associated with the Heritage Item or HCA, or which contribute to its setting. In particular, garden settings in the vicinity are not to be adversely affected in terms of overshadowing or physical impacts on significant trees;
 - ii) retain the established landscape character of the Heritage Item or HCA including height of the tree canopy and density of boundary landscape plantings or otherwise reinstated them in the new development;
 - iii) include appropriate screen planting on side and rear boundaries.

Objectives

- 1 *To retain early and original fences, gates and retaining walls where they survive, and where they reinforce the original landscape character of the garden and streetscape.*
- 2 *To retain those streetscapes where front and side fencing do not form part of the original streetscape.*
- 3 *To encourage the reinstatement of the original form of fencing and gates, where known.*
- 4 *To encourage new front fences and gates which contribute to the streetscape character of the HCA by being consistent with the established pattern of existing original fences.*

19F.4 FENCING

Controls

Original and Early Fences, Gates and Retaining Walls

- 1 Original and early fences, piers, gates and retaining walls are to be retained and conserved. The height of original and early fences is not to be altered.
- 2 Original face brick or sandstone fences are not to be rendered, coated or painted.
- 3 The configuration, finishes and details of original sandstone retaining walls that are located at the street front boundaries (whether identified as contributory properties or not) are to be retained and conserved.

Missing or Absent Fences

- 4 New front fencing and gates including vehicular access gates are not encouraged in areas where it does not form part of the streetscape. In such areas, the front boundary can be defined by low hob walls, by garden beds or planting to allow private gardens to merge with their neighbours and support the landscape character of the area.

New Front Fences and Gates

- 5 Replacement of unsympathetic fences, gates and walls with new elements of appropriate height, style and materials is encouraged.
- 6 Where historic records and physical evidence exists, new front fencing and gates, including vehicular access gates, are to reinstate the original.
- 7 Where no evidence is available to guide reconstruction of missing fences and gates to contributory properties, new front fencing, pedestrian and vehicular access gates are to match the architectural style and period of the house.
- 8 No metal panel fencing is to be constructed on any boundary to a heritage item.
- 9 New vehicular access gates **are to** promote views to all properties, especially to battle-axe allotments with reduced visual permeability.
- 10 Swing gates are preferred to sliding gates. Sliding gates may only be acceptable where the driveway is sloping upward from the street
- 11 Sloping driveways to basement parking is not acceptable except if the gradient down begins behind the front building line and is less visible from the street.

Note: Refer to Dividing Fences Act 1991.

DEVELOPMENT NEAR ROAD OR RAIL NOISE

20.1 Development Near Road or Rail Noise

20.1 DEVELOPMENT NEAR ROAD OR RAIL NOISE

Objectives

- 1 To ensure that excavation, earthworks, demolition and construction does not adversely impact on the function or safety of the rail corridor or busy roads.
- 2 To ensure noise and vibration mitigation measures are implemented in development adjacent to rail and road corridors.
- 3 To address air quality issues associated with rail and road corridors, and minimise their effect upon adjacent development.
- 4 To ensure development does not reduce the safety of users of the site or the road or rail corridor.
- 5 To minimise the impact of external noise from road or rail corridors and facilitate comfortable living conditions for residents.
- 6 To deliver landscaped areas that facilitate screening of high fences to the streetscape.

Controls

- 1 All development that is in, or immediately adjacent to, the rail corridor or a busy road **is to** be designed in accordance with **the SEPP (Transport and Infrastructure) 2021**.
Note: Under **SEPP (Transport and Infrastructure) 2021**, busy roads include:
 - M1 Motorway;
 - North Connex;
 - Pacific Highway;
 - Ryde Road;
 - Mona Vale Road;
 - Main Road 328, Section of Boundary Street, between Pacific Highway and Babbage Road, within the Local Centre boundary; and
 - Secondary Road 2043, Section of Horace Street, Link Road, Killeaton Street within the Local Centre boundary.**Note:** Under **the SEPP (Transport and Infrastructure) 2021, Chapter 2**, the rail corridor refers to the North Shore rail line.
- 2 Buildings **are to** be designed to minimise the impact of noise through planning, construction and materials in accordance with the relevant acoustic standards in relation to noise transmission from traffic **and/ or trains prescribed at::**
 - i) **SEPP (Transport and Infrastructure) 2021 - CI 2.100 (Impact of rail noise or vibration on non-rail development).**
 - ii) **SEPP (Transport and Infrastructure) 2021 - CI 2.120 (Impact of road noise or vibration on non-road development).**
- 3 On lots adjoining the rail corridor and/or a busy road, landscaping is to be designed to:
 - i) create a setting for the building by planting tall trees which contribute to the tree canopy; and
 - ii) be durable and suited to the conditions of the road and railway environment.
- 4 Where dwellings are located on busy roads incorporate the following into the design of the development to reduce traffic noise within the dwelling:
 - i) cavity brick walls;
 - ii) double glazing;
 - iii) solid core doors;
 - iv) concrete floors;
 - v) recessed balconies;
 - vi) located habitable rooms (bedroom, living rooms) away from the road / noise source;
 - vii) use of landscaping mounds and vegetation as noise buffers.

20.1 DEVELOPMENT NEAR ROAD OR RAIL NOISE (continued)

Controls

- 5 Any multi-unit or residential flat building, on a busy road may include a maximum 1.8m high fence or masonry wall only if a maximum of 1.8m high, with a minimum 2m setback from the front boundary is provided for a street facing landscape zone. This landscape zone is to incorporate shrubs and trees that screen the wall from the road. Single low density dwellings on busy roads will be considered on a merit basis. Refer to Figure 20.1-1.

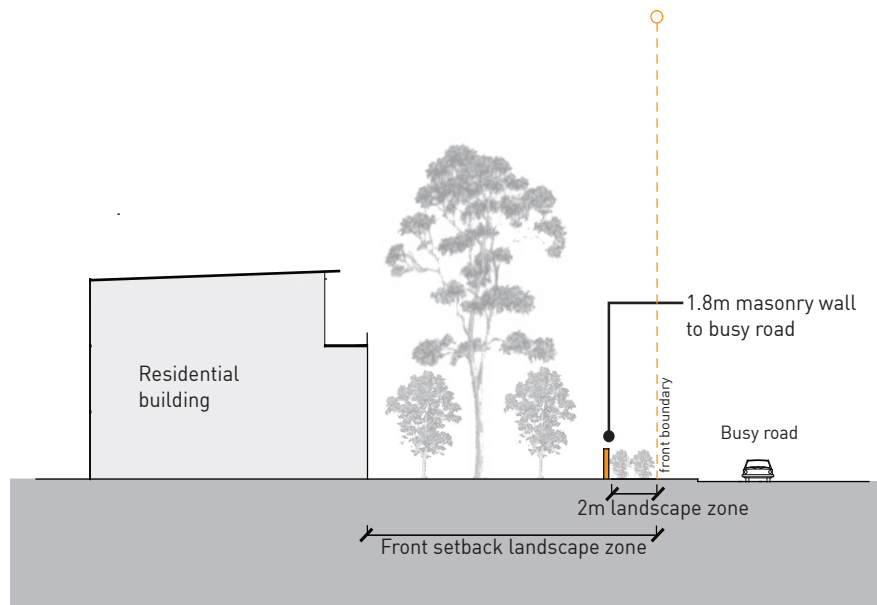


Figure 20.1-1:
Fencing for development facing a busy road.

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GENERAL SITE DESIGN

Introduction

21.1 Earthworks and Slope

21.2 Landscape Design

INTRODUCTION

This Part is to be read in conjunction with KLEP.

This Part applies to all types of development, and provides a consistent area wide approach to issues that all developments **are to** address and provides guidance on meeting the aims and objectives within the LEP.

This Part is closely related to Site Analysis in Section A Part 2.1 and outlines how development is to respond to the site and contextual attributes identified in the site analysis.

Part 21.1 - Earthworks and Slope guides developments in meeting some of the objectives and standards in Clause 6.2 Earthworks in the LEP.

In this Part, where a site contains land affected by bushfire (see Section B Part 16), riparian values (see Section B Part 17) the Greenweb (see Section B Part 18), or heritage values (see Section B Part 19) the controls in Section B apply to the extent of any inconsistency.

21.1 EARTHWORKS AND SLOPE

Objectives

- 1 To respect the natural topography of a site.
- 2 To maintain the health of existing trees.
- 3 To maintain subsurface and groundwater flows and direction.
- 4 To minimise downstream impacts from erosion and sedimentation or altered water flows due to site earthworks or retaining walls.
- 5 To ensure that development is designed considering the stability of the land on which it is located.
- 6 To prevent damage to buildings and structures on adjoining land.
- 7 To minimise excavated materials going off site.
- 8 To minimise land degradation, water pollution and damage to infrastructure from erosion and accumulated sediment.
- 9 To preserve the visual amenity and privacy of neighbouring properties.
- 10 To ensure excavation does not inhibit ground water movement.

Controls

- 1 Development **is to** be accommodated within the natural slope of the land. Level changes across the site are to be primarily resolved within the building footprint. This may be achieved by:
 - i) stepping buildings down a site; and
 - ii) locating the finished ground floor level as close to existing ground level as practicable.
- 2 Development is to minimise earthworks on steeply sloping sites. Sites with a slope in excess of 15% may require certification from a geotechnical engineer as to the stability of the slope in regard to the proposed design.
- 3 Landscape cut or fill should not be more than 600mm above or below natural ground line.

Note: Landscape cut or fill means cut or fill not required to accommodate building works such as footprints, driveways, swimming pools and the like.
- 4 A minimum 0.6m width is required between retaining walls to provide adequate soil area and depth to ensure that they do not read as a single level change, and for the viability of landscaping.

Note: A minimum width of 2m is required between retaining walls for this area to be included in deep soil calculations.
- 5 Existing ground level is to be maintained for a distance of 2m from any boundary.
- 6 Grassed embankments are not to exceed a 1:6 slope. Vegetated embankments, planted with soil stabilising species, may be to a maximum of 1:3.
- 7 Fill and excavation **is to be avoided** within sensitive environments, such as riparian lands, bushland, vegetation **or natural rock outcrops**.

Note: A plan demonstrating the extent of batters or shoring in the vicinity of sensitive environments prepared by a suitably qualified engineer, will be required.
- 8 Retaining walls, excavated and filled areas **are to** be located and constructed to have no adverse impact on:
 - i) structures to be retained on the site;
 - ii) structures on adjacent public or private land;
 - iii) trees **and vegetation** to be retained on site or on adjoining sites.

Note: A geotechnical / hydrogeological report may be required to demonstrate this.

Note: If the ground level is modified within the canopy spread, an arborist's report will be required to assess the impact of the proposed works. Refer to AS4970:2009 Protection of trees on development sites.
- 9 Excavated and filled areas are to be constructed so as not to redirect or concentrate stormwater or surface water runoff onto adjoining properties.

21.1 EARTHWORKS AND SLOPE (continued)

Controls

- 10 The design of the proposal **is to** consider the impacts of altered subsurface/groundwater flows or direction on groundwater dependent ecosystems or species.

Note: Riparian systems and a number of vegetation communities or species may be fully or partially dependent on subsurface/groundwater flows. A hydrogeological report may be required to address changes to groundwater. Details of measures proposed to mitigate such impacts are required.

- 11 For any dwelling house development, excavation within the building footprint **is not to** exceed 1.0m depth relative to ground level (existing), fill **is not to** exceed 1m relative to ground level, with a maximum level difference across the building footprint of 2m. See Figure 21.2-1.
- 12 Retaining walls on low and medium residential density sites **are not to** exceed 1m in height above existing ground level. Where greater level change over the site is required, the site should be terraced. See Figure 21.2-2.
- 13 Excavation for basements and subterranean rooms are not permitted on low density single dwelling sites unless on sloping site where no more than 1m excavation is required.

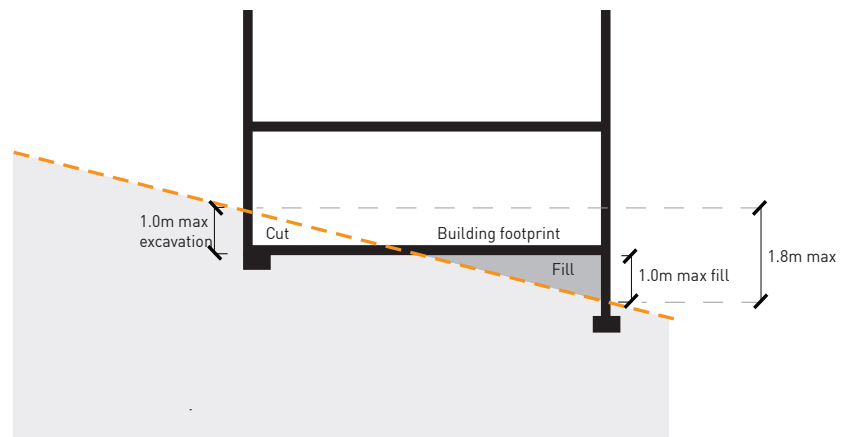


Figure 21.1-1:
Earthworks within the building footprint.

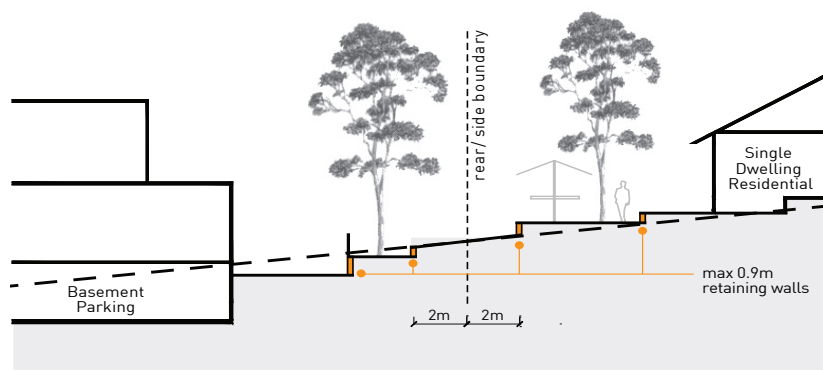


Figure 21.1-2:
Retaining walls, terraces and ground lines at boundaries.

21.2 LANDSCAPE DESIGN

Objectives

- 1 To contribute to the landscape character of Ku-ring-gai.
- 2 To ensure landscape design and species selection is suitable to the site and its context and considers the amenity of residents and neighbours.
- 3 To increase the resilience of significant vegetation and habitat, through the improvement of condition, extent and connectivity of vegetation.
- 4 To conserve landscaped settings for heritage items and components of heritage conservation areas.
- 5 To ensure that landscaping in the vicinity of heritage places does not detract from the heritage value of the place.
- 6 To integrate landscape design and biodiversity protection with bushfire management.



Figure 21.2-1:
Example of a rock outcrop.

Controls

Site Planning and Design

- 1 The site planning and design of developments **is to**:
 - i) retain and enhance indigenous vegetation, biodiversity corridors and existing natural features on the site including trees, shrubs and groundcovers, soils, rock outcrops and water features. These provide habitat, breeding sites, food and shelter for a wide variety of life forms and ecological processes that support life and define the character of the locality.

Note: Specific controls for the areas mapped for their biodiversity significance on the Greenweb map in Part 18R.1 are included in Part 6 of this DCP.

 - ii) retain significant and visually prominent trees and vegetation that contributes to neighbourhood character;
 - iii) Retain habitat within the site including:
 - drainage features and damp areas;
 - rock outcrops
 - hollow-bearing trees;
 - areas of leaf litter;
 - bushrock.
- 2 Landscape design **is to demonstrate consideration of**:
 - i) the proximity of trees to buildings, walls and other structures on site and on adjoining sites;
 - ii) the proximity of trees to stormwater, electricity, gas, sewer and other services; and
 - iii) the potential hazard of planting types and densities on sites prone to bushfire risk (refer to Planning for Bushfire Protection 2019).
- 3 The retention of existing appropriate screen planting is encouraged.
- 4 Disturbance of natural soil profiles **is to** be minimised.
- 5 Structures (including services) **are to** be located outside the **Tree Protection Zone** of trees to be retained. This applies to street trees, trees on site and on adjoining sites.
- 6 Existing ground level **are to** be maintained beneath the **Tree Protection Zone** of trees to be retained.

Note: If the ground level is modified by excavation or fill within the canopy spread, an assessment prepared by a suitably qualified arborist in accordance with AS 4970-2009 Protection of Trees on Development Sites, will be required.

21.2 LANDSCAPE DESIGN (continued)

Objectives

- 7 To support visual privacy.
- 8 To contribute to climate control by retaining and planting trees to capture carbon.
- 9 To promote climate change adaptation through landscape design which:
 - minimises water use
 - provides for summer shade
 - is resilient to storms
 - consolidates and interconnects vegetation, habitat and waterways, and
 - minimises bushfire risk.
- 10 To avoid species that result in boundary issues of shading, root invasion and growth that is out of character with the local area.



Figure 21.2-2:
Trees planted in groups are more resilient to storms

Controls

- 7 Vegetation retention **is to** consider the following:
 - i) healthy specimens that have a high Useful Life Expectancy are to be the first priority for retention;
 - ii) trees **and vegetation** within heritage items or heritage conservation areas are to be assessed in terms of heritage significance.

Planting

- 8 Artificial grass surfaces are to be avoided except in exceptional circumstances.
- 9 Continuous rows of monoculture planting (consisting of one species or variety) to boundaries are to be avoided. Planting is to include a diversity of species and heights including trees shrubs and ground covers.
- 10 Planting beds for screen planting **is to** be of adequate width to allow the plants to flourish.
Note: Screen planting should not be continuous on bushfire prone land.
- 11 The use of vigorous growing and dense species such as Bamboo and Leighton Green are to be avoided.
- 12 The height of planting within the front setback is to allow partial views to and from the dwelling or main building and beyond;
- 13 Where a property boundary is **within** 300m from bushland at least **55%** of the overall number of trees and shrubs **are to be locally indigenous vegetation**. Species are to reflect the relevant vegetation communities within the area.
- 14 For development on sites where single residential development is permitted, and all property boundaries are greater than 300m from bushland, at least 25% of the overall number of trees and shrubs **are to be locally indigenous vegetation**. Species are to reflect the relevant vegetation communities within the area.
- 15 The planting of species listed in Council's Weed Management Policy **and the Greater Sydney Regional Strategic Weed Management Plan** **is** not permitted.
Note: Council's Weeds Management Policy is available on Council's web site (www.krg.gov.nsw.au) and the Greater Sydney Regional Strategic Weed Management Plan is available on the NSW Local Land Services web site (www.lls.nsw.gov.au).
- 16 Species used for planting in or directly adjacent to areas with significant vegetation or habitat should be of local provenance.
Note: To enable this, propagation **is to** be started well before any construction begins. A list of appropriate species for native vegetation communities within Ku-ring-gai is available from Council and on the Council's website (www.krg.gov.nsw.au).

21.2 LANDSCAPE DESIGN (continued)

Controls

- 17 Siting and choice of planting is to consider amenity outcomes on the site such as shading and cooling.

Note: Seasonal temperature control and improved air quality can be achieved through effective landscape design:

- i) use of vegetation to protect the north, east and west facing windows against the hot summer sun;
- ii) use of deciduous vegetation to provide summer shade but allow winter sun to penetrate the building;
- iii) trees with dense foliage to create more shade;
- iv) vegetated courtyards to reduce temperatures in your courtyard and internal living spaces;
- v) vertical shading for east and west walls and windows to protect from hot summer sun at lower angles, for example trees, shrubs and vines supported on a frame;
- vi) horizontal shading for north facing windows, for example, deciduous vines grown over a pergola;
- vii) tall, evergreen trees should not be planted too close to north-facing windows to avoid overshadowing in winter;
- viii) use of ground cover planting, low growing shrubs, lawns and vegetated walls to reduce glare and surface temperature from paving, roofs and walls;
- ix) use of large dense shrubs as windbreaks to the south-west to counter cold winter winds and channel cooling summer breezes; and
- x) use of medium to large-sized shrubs or trees clipped to form a hedge to provide still air insulation and shading when grown close to a wall;
- xi) the positioning of low shrubs, lawn and ponds to the north to help cool hot summer winds.



Figure 21.2-3:
Tree used for shade.

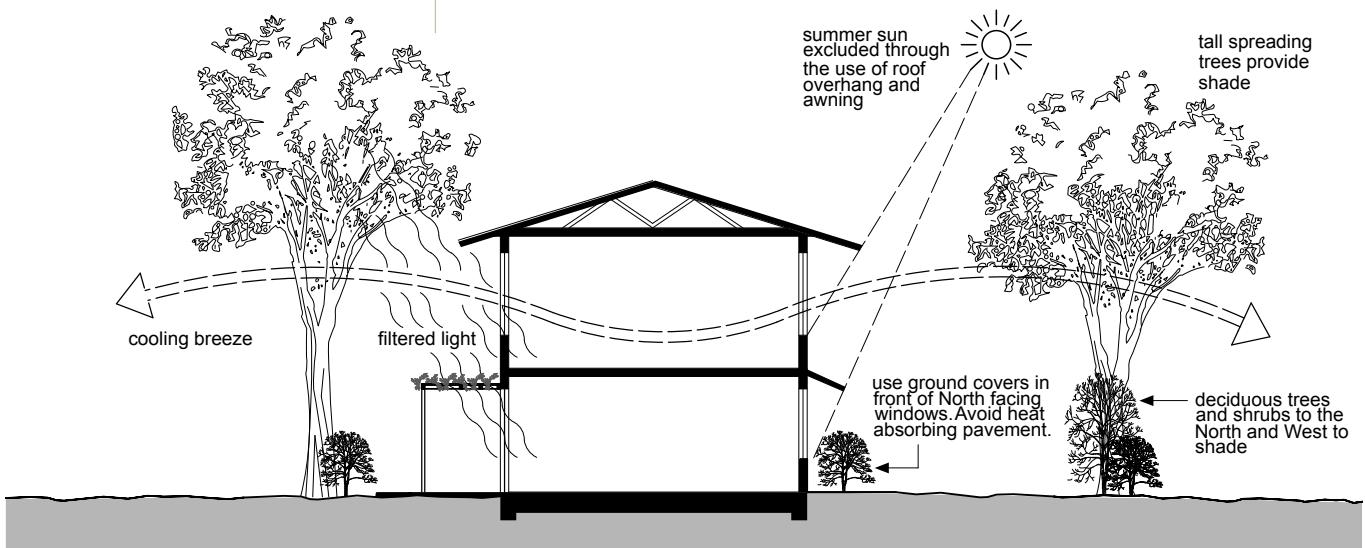


Figure 21.2-4:
Improved air quality through landscape design

GENERAL ACCESS AND PARKING

Introduction

- 22.1 Equitable Access
- 22.2 General Vehicle Access
- 22.3 Basement Car Parking
- 22.4 Visitor Parking
- 22.5 Parking for People with a Disability
- 22.6 Pedestrian Movement Within Car Parks
- 22.7 Bicycle Parking and Facilities
- 22.8 Surface Parking

22R References

- 22R.1 Car Parking Rates

INTRODUCTION

This part applies to all types of development, and provides a consistent area wide approach to access and parking issues that all developments **are to** address. This Part guides development consistent with the KLEP in meeting the aims and objectives within the LEP.

This Part provides guidance on how developments can be safely and conveniently accessed by all people, whether they are walking, riding, in a wheelchair or a vehicle, with an emphasis on the more sustainable methods of access.

22.1 EQUITABLE ACCESS

Objectives

- 1 *To encourage consideration of access issues at the start of the development design process.*
- 2 *To ensure convenient, safe and legible access for all people throughout the pedestrian network and public open space.*
- 3 *To ensure that buildings used by the public and high and medium density residential development have safe and convenient access for all people.*
- 4 *To ensure that substantial building refurbishment or intensified use of existing buildings provides upgraded levels of access and facilities for all people.*
- 5 *To ensure that people with a disability have equal access to work by providing access to facilities, services and opportunities that meets their specific needs.*
- 6 *To provide housing that allows people to stay in their home as their needs change due to aging or disability.*
- 7 *To ensure that use of the development is easy to understand, regardless of the user's experience, knowledge, language skills or current concentration level.*

Controls

- 1 For the purpose of this Part "access" is defined as:
 - i) an ability to travel from one point to another in a continuous and independent manner, following a reasonable route;
 - ii) an ability to communicate or obtain information or service from any person, display or facility which is intended to communicate or provide that information or service to any person.
- 2 Designing for access for all people is encouraged for all development types.
- 3 Where minor alterations or additions to an existing building are proposed, the alterations **is not to** reduce the accessibility of the building.
- 4 Applications for development, other than single dwellings, are to demonstrate how access to and within developments meets the requirements of the Disability Discrimination Act 1992 (DDA) and the Disability (Access to Premises – Buildings) Standards 2010.

Note: Section 23 of the Disability Discrimination Act 1992 (DDA) requires non-discriminatory access to premises which the public or a section of the public is entitled or allowed to use. It does not apply to single dwellings.

Some of the premises covered by Section 23 include:

- i) public footpaths, walkways, pedestrian malls and public transport facilities
- ii) educational institutions, child care centres, libraries and other information and advice centres
- iii) shops, department stores, travel agents, hairdressers, beauty salons, cafes, restaurants and pubs
- iv) banks and other financial institutions
- v) parks, public swimming pools, sporting venues, social clubs and public toilets
- vi) theatres and other places of entertainment
- vii) government service offices
- viii) hospitals and other medical facilities
- ix) doctors', lawyers, dentists and other professional offices
- x) other premises the public or a part of the public is entitled or allowed to enter or use.

Section 23 applies to existing places as well as places under construction. The Disability (Access to Premises – Buildings) Standards 2010 are one of three standards established under the DDA, and provides information for people responsible for the design, construction and management of buildings in relation to the level of access required, and how this may be achieved.

22.1 EQUITABLE ACCESS (continued)

Controls

To comply with the DDA and the Disability (Access to Premises – Buildings) Standards 2010 existing places may need to be modified to be accessible.

The DDA does not require the provision of access to be made if this will cause major difficulties or excessive costs to a person or organisation. This is called “unjustifiable hardship”.

But before deciding that providing access is unjustified, a person or organisation should:

- i) thoroughly consider how access might be provided
- ii) discuss this directly with the person involved, and
- iii) consult relevant sources of advice.

If alterations to premises to provide full and equitable access would involve the destruction or removal of significant heritage value, in some circumstances making these alterations MAY be found to involve unjustifiable hardship. If adjustments cause hardship it is up to the organisation to show that they are unjustified.

It remains the responsibility of the owner or occupier to comply with the requirements of the DDA and to investigate their own personal legal liabilities under the DDA. Council cannot certify compliance.

- 5 Entry access ramps for people with a disability **are to** be located within the site and **is not to** dominate the front façade.
- 6 The provision of access for all to and within heritage items is to:
 - i) have minimal impact on the significant fabric of the item;
 - ii) be, as far as possible, reversible.



Figure 22.1-1 International Symbols for Facilities

1. Universal Information Symbol
2. International Symbol of Accessibility
3. Symbol indicating Audio Description for Theatre & Live Performances
4. Audio Description for TV, Films & Video
5. Large Print / Accessible Print Symbol
6. Symbol indicating Access for Individuals Who Are Blind or Have Low Vision
7. Braille Symbol
8. Telephone Typewriter Symbol
9. Sign Language Interpretation Symbol
10. Assistive Listening Systems Symbol (Ear)
11. Assistive Listening System Symbol (Telephone)
12. Closed Captioning Symbol

22.1 EQUITABLE ACCESS (continued)

Controls

- 7 Where such access is likely to have a major adverse impact on significant fabric, alternative solutions should be considered. However every effort is to be made to provide equitable access through the main entrance to the building.
Note: Alternative solutions may include a temporary ramp, or access through a side entrance or the like.
- 8 Building entries are to be clearly visible from the street. Where site configuration is conducive to having a side entry, the path to the entry **is to** be obvious from the street.
- 9 Ensure pedestrian areas have clear sightlines, are appropriately lit and overlooked by buildings that provide street level activity.
- 10 Access ways for pedestrians and for vehicles are to be separated.
- 11 Ensure landmarks, including landmark buildings, are distinctive in form and reinforce the street pattern and topography to enable people to find their way.
- 12 Buildings are to be sited and designed to avoid obscuring landmark features and views which enable ease of orientation from the street and public open space areas.
- 13 Ensure all users of the site can find their way within the development. This can be achieved by:
 - i) Designing foyers and orienting reception and information desks so that arriving visitors can be seen;
 - ii) Locating reception and information desks near lifts to enable staff to assist visitors with directions;
 - iii) Dividing large-scale sites into distinctive smaller parts, or zones of functional use, while preserving a 'sense of place' and connectivity between spaces;
 - iv) Organising the smaller parts of the development under a simple organisational principle, such as 'use' through a zonation plan with a logical and rational structure;
 - v) Providing frequent directional cues throughout the space, particularly at decision points along routes in both directions;
 - vi) Displaying/using appropriate international symbols for facilities as illustrated in Figure 22.1-1.

Residential only

- 14 All Multi Dwelling Housing, Residential Flat Buildings and Shop Top Housing within Mixed Use developments are to provide access to, and between, dwellings and parking in accordance with the *Livable Housing Guidelines* as stipulated in Part 6 Multi Dwelling Housing, Part 7 Residential Flat Buildings and Part 8 Mixed Use Development.

22.2 GENERAL VEHICLE ACCESS

Objectives

- 1 To ensure pedestrian amenity and safety.
- 2 To minimise the size, quantity and visual intrusion of vehicle access points and driveways.
- 3 To provide well located and designed vehicle entrances that facilitate streetscape continuity and a high quality and amenity of the public domain.
- 4 To ensure continuous kerbside on-street parking.

Controls

- 1 Except as provided in *Part 14 of this DCP*, car park entry and egress, for developments other than low density residential, **are to** be provided from secondary streets or lanes where these are available.

Note: For service access and loading requirements see relevant development type in Section A.

- 2 The width and number of vehicle access points are to be limited to minimise potential pedestrian/vehicle conflicts. Wherever practicable, commercial and mixed use buildings are to share, amalgamate or provide a rear lane for vehicle access.
- 3 Vehicle access driveways **are to** be set back a minimum of 10m from street intersections or as specified in *Clause 3.2.3 of AS2890.1* (whichever is the greater). Refer to Figure 22.2-1.

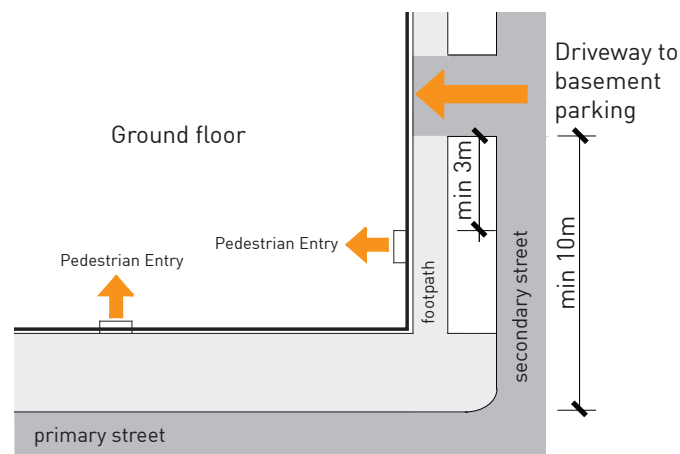


Figure 22.2-1:
Vehicle access controls.

- 4 Vehicle and pedestrian access to buildings **are to** be separated and clearly distinguished. Vehicle access **is to** be located a minimum of 3m from pedestrian entrances. Refer to Figure 22.2-1.
- 5 Provide clear sight lines at pedestrian and vehicle crossings.
- 6 The width of any driveway for a low density residential development, as measured at the front site boundary, **is not to** exceed 3.5m.
- 7 For all other development types, driveway width is to comply with the table below. Greater widths will only be considered where it is required by RMS or Australian Standards relating to off-street parking and pedestrian safety.

22.2 GENERAL VEHICLE ACCESS (continued)

Controls

Proposed Number of Car Parking Spaces in Development	Driveway Clear Width
Less than 25 spaces	6m max
25-100 spaces	6m max (on local roads) 6m min - 9m max (on main roads)*
100-300 spaces	6m min – 9m max (on local roads) 6m for entry, 4-6m for exit, 1.3m separation (on main roads)*

* Subject to TfNSW approval

- 8 Long driveways (greater than 30m) are to be avoided. Where they are unavoidable, driveways over 30m long are to be provided with a passing bay.
- 9 Service ducts, pipes and storage facilities located in proximity to vehicular access points are to be concealed and not be visible from the street.
- 10 External security doors may be provided to access points where necessary. Security doors are to be of high quality material and detail and are to blend into the building facade.
- 11 Vehicles are to be able to enter and leave the site in a forward direction.
- 12 Vehicle entries and service areas are to be set back or recessed from the main facade line and integrated into the overall facade design, so as not to dominate the building elevation.
- 13 Vehicle entries, walls and ceilings are to be finished with high quality materials, finishes and detailing, similar to the external facades of the building.
- 14 For driveways on sloping sites, where high retaining walls are required on both sides of the driveway, one wall is to be no higher than 1.2m. Where greater level change is required, the retaining wall should be stepped back and softened by landscaping. High solid walls should be relieved by
 - i) change in colour or finish;
 - ii) recessing; and/ or
 - iii) exposed brick or block work.
- 15 Any new development with 4 or more dwellings, or childcare development, which has its driveway on a road that carries over 2,000 vehicles per day is to make an application to the Ku-ring-gai Traffic committee to provide 'No Parking' restrictions for 6 metres on either side of the driveway. Costs of reporting, processing and installation are to be at the applicant's expense.



Figure 22.2-2:
Vehicle entries that are well integrated with overall facade design.

22.3 BASEMENT CAR PARKING

Further controls that may apply

SECTION C
PART 23.7 - Waste Management

Objectives

- 1 To ensure basement car parking design is of high efficiency and ecologically sustainable.
- 2 To provide safe and secure access for building users within the car park areas.
- 3 To minimise visitor parking on the street.



Figure 22.3-1:
Secure basement car parking.



Figure 22.3-2:
Ventilation grilles to basement car park are well integrated with overall facade design.

Controls

- 1 A logical and efficient structural grid **is to** be provided to the basement car park areas.
- 2 The minimum height between floor level and an overhead obstruction is to be 2.2m, except for the following:
 - i) 2.5m for parking area for people with a disability;
 - ii) 2.6m for residential waste collection and manoeuvring area; and
 - iii) 4.5m for commercial waste collection and manoeuvring area.
- 3 Where natural ventilation is not possible, a ventilation system for the basement car park is to be provided and designed in accordance with AS1668.2 *The use of ventilation and air conditioning in buildings - Ventilation design for indoor air contaminant control*. Monitoring of CO² and variable speed fans are to be provided with any basement car park mechanical ventilation systems.
- 4 Basements **are to** be fully tanked to prevent unnecessary subsurface or groundwater extraction.
- 5 Unimpeded access to visitor parking and waste and recycling rooms located within a secure basement parking **is to** be maintained.
- 6 Where ventilation grilles or screening devices are provided they are to be recessed and integrated into the overall facade and landscape design of the development.
- 7 Vehicle access ways to basement car parking **is not to** be located in direct proximity to doors or windows of habitable rooms.
- 8 Where visitor parking is not separated from residential parking by a barrier, a light colour palette is to be used for the interior of the car park and lines of sight are to be open and avoid concealment and entrapment areas.
- 9 All off-street parking provision **is to** comply with the design requirements of the current AS 2890 applying to off -street car parking.

22.4 VISITOR PARKING

Objectives

- 1 *To provide well designed car parking for all visitors.*
- 2 *To provide parking for visitors with a disability.*

Controls

This section applies where visitor parking is required by this DCP.

- 1 Where visitor parking is required by this DCP, the spaces are to be provided on site and clearly marked.
- 2 Visitor parking located behind a security grille require an intercom system to gain entry.
- 3 At least one visitor parking space it to be accessible, designed in accordance with AS2890.6.

Security grille

Visitor space



Figure 22.4-1:
Basement visitor parking provided in front of
security grille.

22.5 PARKING FOR PEOPLE WITH A DISABILITY

Objectives

- 1 To provide well designed, clearly identified and accessible car parking spaces for people with disabilities.

Controls

- 1 Accessible car parking spaces are to be level and have a continuous path of travel to the building's principal entrance or lift.
- 2 Accessible car parking spaces are to be identified by a sign incorporating the international symbol specified in AS1428 and be designed in accordance with the provisions of AS2890.6.
- 3 Appropriate international symbols for the disabled **are to** be displayed/used where appropriate to assist in direction to ramps, lifts etc.
- 4 Car parking spaces for residential development (excluding single dwellings) are to be designed in accordance with the requirements of the *Livable Housing Guidelines 2012* as stated within Part 6 Multi-Dwelling Housing, Part 7 Residential Flat Buildings and Part 8 Mixed Development.
- 5 Provision of accessible car parking for non-residential development is to comply with the following minimum rates, rounded up to the nearest whole number:

Type of Facility	Minimum Rate of Provision
Retail/commercial	1-2%
Civic/community centres	2-3%
Recreational facilities	2-3%
Educational establishment: schools	2-3%
Educational establishment: tertiary institutions	2%
Entertainment facilities	3-4%
Hospitals	3-4%
Medical centres	3%

Note: for parking with 50 or more spaces, the minimum provision is one space.

- 6 For other land uses/facilities, the minimum number of spaces should be at least 1%, unless supported by a merit assessment.

22.6 PEDESTRIAN MOVEMENT WITHIN CAR PARKS

Objectives

- 1 To ensure all car parks provide a safe pedestrian environment.

Controls

- 1 Marked pedestrian pathways, with clear sight lines and appropriate energy efficient lighting **are to** be provided in all car parks. See *Austroads Guide to Traffic Management Part 11 - Parking*.
- 2 Pedestrian pathways, entrances, stairway and lift areas **are to** be clearly visible, conveniently located, well lit and have minimal conflict with vehicular traffic.
- 3 All pathways and ramps within car parks **are to** conform to the minimum dimensional requirements set out in *AS1428.1*.
- 4 All pedestrian path surfaces within car parks are to be stable, even and constructed of slip resistant material.

22.7 BICYCLE PARKING AND FACILITIES

Objectives

- 1 *To provide well designed bicycle parking and facilities that are functional and secure.*



**Figure 22.7-1:
Bicycle Stands**

Controls

- 1 Bicycle parking and storage facilities are to be designed in accordance with AS2890.3 to ensure:
 - i) both wheels and frames can be locked to the device without damaging the bike;
 - ii) easy access from a bicycle lane or roadway with appropriate signage;
 - iii) access paths have a minimum width of 1.5m to accommodate a person pushing a bicycle, and adequate sight lines for safety.

22.8 SURFACE PARKING

Objectives

- 1 To locate and design car parking which is integrated into the design of the site and the building.
- 2 To limit surface car parking and ensure it is incorporated into the landscape design of the development site.
- 3 To ensure shading of outdoor car park areas through the use of landscaping.

Controls

- 1 Any surface car parking is to be located behind the building line and screened from view.
- 2 The landscape design of surface car parks is to provide for adequate watering.
- 3 Illuminated areas of surface car parks or driveways is to be screened to minimise light spillage and loss of amenity to adjacent residential areas.
- 4 Surface parking areas are to:
 - i) have a maximum of 5 parking bays with minimum 2m wide deep soil landscape islands between parking bays and around the perimeter of the area.
 - ii) have broad canopy plant species selected and located in these areas to provide screening and shade, without blocking signs or reducing driver visibility or creating entrapment areas. See Figure 22.8-1.

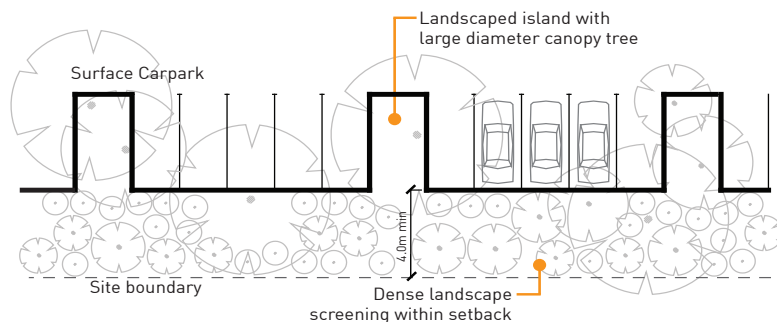


Figure 22.8-1:
The use of vegetation in a typical car park to provide screening and shade.

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22R	References
22R.1	Car Parking Rates

REFERENCES



22R.1 CAR PARKING RATES

On-site parking is to be provided at the minimum rates set out in the schedule below.

Where non-residential development is within 400m of a railway station and within a commercial centre, refer to specific parking requirements under building types in Section A of this DCP.

Reference should be made to the KLEP for land use definitions.

In the calculation of the parking spaces, overall requirement figures are to be rounded up to the nearest integer.

LAND USE	PARKING RATE	NOTE
Commercial		
Offices and Business Premises	1 space per 33m ² gross floor area (GFA) plus 1 space if resident manager or caretaker. Suggested split: 90%: employee parking 10% visitor parking	For development in excess of 200m ² gross floor area, 1 courier space to be provided in a convenient location. Servicing facilities to be provided to satisfy Council's requirements.
Retail		
Shops	1 space per 17m ² gross floor area. For minor additions to existing shops or conversion of existing shops, 1 space per 28m ² .	1 space per 17m ² may be considered for reduction to 1 space per 26m ² , and 1 space per 28m ² may be reduced to 1 space per 35m ² where development within 400m radius of a railway station ticket office as follows For developments over 10,000m ² gross floor area a lower parking rate might be considered. Servicing facilities to be provided to satisfy Council's requirements.
Service Stations	6 spaces per work bay plus 1 space per 20m ² gross floor area of convenience store. Additional parking to be provided if food and drink premises are added.	Recommended rates assume work bays and/or convenience store. For basic service stations without these facilities, 1 space per staff member to be provided. Total parking might be reduced where it can be demonstrated that the times of peak demand for the facilities do not coincide. Spaces beside petrol pumps are not to be included in calculating the parking requirement.
Motor Showrooms	1.5 spaces per 200m ² of site area plus 6 spaces per work bay.	Area required on-site for articulated car transporters to manoeuvre and unload.

22R.1 CAR PARKING RATES (continued)

Markets	2 spaces per stall.	Higher parking provision would be desirable, at 2.5 spaces per stall, but needs to be considered in the context of the frequency of use and parking available in the area.
Bulky Goods Retail Stores	1 space per 28m ² gross floor area.	Parking provision might be considered at a lower rate if supported by a traffic impact study.
Landscape and Garden Supplies	1 space per 200m ² site area, within a minimum of 15 spaces.	
Milk bars, takeaway food shops and the like Drive-in or take-away food outlets: a) 12 spaces per 100m ² gross floor area b) With no on-site seating or drive-through facilities c) With on-site seating but no drive-through facilities d) With on-site seating and drive-through facilities	The greater of: 1 space per 5 seats (internal + external) or 1 space per 2 seats (internal seating only). The greater of: 1 space per 2 seats (internal seating only) or 1 space per 3 seats (internal + external).	
Restaurants, cafes, coffee shops, new development a) General b) If gross floor area less than 100m ² c) If proposed to operate outside of retail business hours	1 space per 17m ² gross floor area. For minor additions to existing shops or conversion of existing premises to shops, 1 space per 28m ² . The parking provision in a) above is desirable but Council will consider a reduction if a parking study indicates that there is parking available in adjacent off-street or on-street parking areas at the time of trading of the proposed development. The parking provision in a) above is desirable but Council will consider a reduction if a parking study indicates that there is parking available in adjacent off-street or on-street parking areas at the time of trading of the proposed development. The minimum parking to be provided is 1 space per 17m ² (the shops rate). Shop rate applicable if onsite car parking can be provided.	For minor additions to existing restaurants etc or conversion of existing premises to restaurants etc, merit based assessment. Note: 1 space per 17m ² may be considered for reduction to 1 space per 26m ² , and 1 space per 28m ² may be reduced to 1 space per 35m ² where development within 400m radius of a railway station ticket office.

d) Coffee shops, cafes and restaurants as a change of use only of an existing building including extensions of the building	If no on site car parking available for existing building or limited on site car parking available Council will consider existing use rights provisions.	This category relates to changes of use or minor extensions of existing older buildings only.
e) Registered clubs	Because of the variation factors affecting club parking, each situation will be treated on its merits. A traffic assessment report is to be prepared to assess the parking requirements based on the facilities to be provided and the parking demands of similar developments.	

22R.1 CAR PARKING RATES (continued)

LAND USE	PARKING RATE	NOTE
Recreational and Tourist Facilities		
Squash and Tennis Courts	3 spaces per court plus 1 space per 2 staff.	Additional parking might be necessary if regular spectator attractions are to be promoted.
Bowling Alleys	3 spaces per alley plus 1 space per 2 staff.	Additional parking might be necessary if regular spectator attractions are to be promoted.
Gymnasiums	1 space per 17m ² gross floor area.	Additional parking might be necessary if regular spectator attractions are to be promoted.
Swimming Pools	Requirement will be assessed on merit.	Additional parking might be necessary if regular spectator attractions are to be promoted. Independent traffic report required.
Warehouses	Each application will be treated on its merits. A traffic assessment study should be submitted, also covering service vehicle requirements.	
Vehicle Repair Stations and Vehicle Body Repair Workshops	12 spaces plus 1 space per 70m ² site area.	
Health and Community Services		
Health consulting rooms	1 space per 40m ² gross floor area.	Parking spaces in excess of residential parking requirement are to be designated as visitor parking.
Medical Centres	1 space per 25m ² gross floor area.	Parking facilities for patients are to be suitably signposted and provided in a convenient location.
Hospitals	1 space per 3 beds plus 1 space per 2 day-shift staff or practitioners plus 1 ambulance space. 1 space per 1 full time night-shift employee.	Rates apply to either public or private hospitals. The day-shift staff are the total on-site at any one time, including overlaps between shifts if such overlaps occur. Where Medical Centres are attached to hospitals, additional parking would be required at the rate for Medical Centres.

22R.1 CAR PARKING RATES (continued)

Child Care Centres	<p>1 space per 2 staff.</p> <p>1 space per 6 children, of which at least one space is to be accessible for people with a disability.</p>	<p>Bulk of parking should be in a convenient location, allowing safe setdown / pick up and movement of children. Minimum 60% of parking spaces to be allocated to pick-up/ drop-off.</p> <p>If the number of children and/or staff were to increase after approval, additional car parking space will be required.</p> <p>Car parking spaces, circulation areas, roadways and ramps are to comply with AS2890.1</p>
Schools	<p>1 space per equivalent full-time employee plus 1 space per 8 Year 12 students. Where an auditorium or similar rooms are proposed, additional parking might be required. Provision for on site set down / pick up of students and a set down / pick up management plan is required.</p>	<p>The number of equivalent full time employees should be the maximum number at the school at any one time. A parking impact assessment should be undertaken to quantify the total parking required.</p> <p>Provision is to be made for bus services in all applications made by schools.</p>
Tertiary Institutions	<p>1 space per equivalent full time employee plus 1 space per 3 students.</p>	<p>The student parking might be reduced if a parking impact study can prove a lower rate. Provision is to be made for bus services.</p>

22R.1 CAR PARKING RATES (continued)

Places of Public Worship, Funeral Homes	<p>Each application will be treated on its merits, with a parking assessment report required. As a guide, the provision of 1 space per 6 seats is recommended.</p> <p>The need for additional parking for church halls should be assessed on merit. The parking study should take into account the supply of and demand for parking in the vicinity of the site at the time of the proposed use of the site.</p>	
Entertainment Facilities, Public Halls, Function Centres	Minimum parking provision to be 1 space per 10 seats, for day time parking. Recommended parking provision is 1 space per 6 seats, for Friday / Saturday evening.	The recommended level of parking might be reduced, at the discretion of Council, if it can be proven that there is adequate parking available in the vicinity of the site on Friday and Saturday evening.
LAND USE	PARKING RATE	NOTE
<i>Residential</i>		
Dwelling-houses	<p>2 spaces for single occupancy.</p> <p>Dual occupancy under 125m²: 1 space per dwelling.</p> <p>Dual occupancy over 125m²: 2 spaces per dwelling.</p>	
Multi-dwelling housing	<p>1 bedroom unit: 1 space.</p> <p>2 bedroom unit: minimum multiple of 1.25 spaces per unit.</p> <p>3 bedroom unit: minimum multiple 1.5 spaces per unit.</p> <p>Visitor parking: 1 space per 4 units.</p>	<p>Spaces are to include a minimum of 1 covered space per unit within the confines of the building for exclusive resident use.</p> <p>Visitor parking to be clearly signposted, convenient to entry, not obscured and not used by residents.</p> <p>Access requirements for furniture vans and trucks should be considered.</p>
Residential flat buildings, and residential component of mixed use development	<p>Resident parking:</p> <p>Studio unit: 0.5 spaces per unit</p> <p>1 bedroom unit: 1 space per unit</p> <p>2 bedroom unit: 1.25 space per unit</p> <p>3 bedroom unit: 2 spaces per unit</p> <p>Visitor parking: 1 space per 4 units</p> <p>The above are minimum requirements unless Council is satisfied on the merit basis there are particular circumstances that warrant reduction of the above rates. Note: Studies or the like will be considered as bedrooms for the purpose of this DCP.</p>	<p>Spaces are to include a minimum of 1 covered space per unit within the confines of the building for exclusive resident use.</p> <p>Visitor parking to be clearly signposted, convenient to entry, not obscured and not used by residents.</p> <p>Access requirements for furniture vans and trucks should be considered.</p>

Boarding Houses, Group Homes, Hostels	1 space per staff. Parking rate to be assessed on merit of application.	Assessment should take into account the nature of the dwelling and its proposed residents.
Seniors Housing	Provisions of Seniors Living Policy apply. The following parking provision is recommended: <u>Resident funded development</u> 2 spaces per 3 self contained units plus 1 visitor space for every 5 units. <u>Subsidised developments</u> 1 space per 10 self contained units plus 1 visitor space for every 10 units.	Disabled person parking to be provided as per Seniors Living Policy. For self contained units, additional visitor parking will not be required if at least half the spaces for residents are unassigned and accessible to visitors.
	Hostels, nursing and convalescent homes 1 space per 10 beds for visitors, plus 1.5 spaces per 2 employees, plus 1 space for ambulance	Hostels of more than 60 residents are to provide a mini-bus service.
Casual Accommodation		
Hotel Accommodation	1 space per unit or bedroom. Plus 1 space per full time staff plus 1 space if resident manager. Plus if public restaurant or function room included, 1 space per 3 seats.	Discounts on the parking for restaurants and function rooms might be considered if suitable proof is provided that the peak parking demand would not be fully additive.
Pubs	1 space per unit or bedroom. Plus 1.5 spaces per 2 full time staff plus 1 space if resident manager. Additional parking will be provided for bar, lounge, restaurant and other licensed areas.	A traffic assessment report is to be prepared that assesses the parking that will be required, with the assessment based on the facilities to be provided and the parking demands of similar developments.
Caravan Park	1 space per van site.	Plus adequate parking for visitors, boats and trailers.

Other Land Uses

The parking requirements of land uses not specified above are to be determined on merit, preferably with a traffic impact assessment submitted with the application.

GENERAL BUILDING DESIGN AND SUSTAINABILITY

Introduction

- 23.1 Social Impact
- 23.2 Green Buildings
- 23.3 Sustainability of Building Materials
- 23.4 Materials and Finishes
- 23.5 Roof Terraces and Podiums
- 23.6 Building Services
- 23.7 General Acoustic Privacy
- 23.8 General Visual Privacy
- 23.9 Construction, Demolition and Disposal

23R References

- 23R.1 Examples of ESD Measures

INTRODUCTION

This Part guides development in meeting the and objectives within KLEP. This Part applies to all development types whether or not it is individually specified in *Section A of this DCP*. It also supplements the objectives and controls for each development type in Section A and should be read with the section on Building Design and Sustainability for the relevant development type.

Each section within this Part applies to a range of development types, and some sections to all development. It provides a consistent area wide approach to issues that developments **are to** address. These issues include, but are not limited to, various aspects of sustainability, amenity and quality streets and public areas.

23.1 SOCIAL IMPACT

Objectives

- 1 To ensure that development minimises adverse social impacts.
- 2 To ensure that social considerations are an integral part of development proposals.

Controls

- 1 Proposals **are to** consider the impacts of the development on nearby residents and users of the site.

Where relevant, particular attention is to be paid to:

- Children;
- Young people;
- Women;
- Older people;
- People with a disability;
- People from culturally and linguistically diverse background;
- Aboriginal and Torres Strait Islander people.

- 2 A Social Impact Statement will be required in the case of proposals which are likely to have a significant social impact because they are likely:
 - i) To contribute to social inequity;
 - ii) To increase risk to public safety; or
 - iii) To threaten the existing sense of community identity or cohesiveness.

Note: Council may require a social impact statement (SIS) by an appropriately qualified and experienced social impact practitioner. Council will consider the scale of the development and the extent of potential adverse impact (geographically and over time) in determining the need for an SIS. Examples of developments that may require an SIS include major retail centre, major health or education institutions, sex services premises, pub, entertainment facility, late night trading venue, hazardous or offensive uses; strata subdivision of a low rental residential building (of 6 or more dwellings).

- 3 A Social Impact Statement **is to:**
 - i) Support socially responsible development and decision-making, contributing to the determination of best policy or development alternatives;
 - ii) Acknowledge the values of different sectors of society;
 - iii) Assess the distributional equity of impacts in regard to both intra-generational equity and inter-generational equity;
 - iv) Identify impacts that are directly related to the proposal (demonstrate the connection between the intervention and the likely impact);
 - v) Address how net social benefit can be enhanced through the proposal and how negative social outcomes can be ameliorated and managed through mitigating and monitoring measures; and
 - vi) Demonstrate rigour and a social science base in presenting evidence for the assessment and recommendations.

Note: See Council's Social Impact Assessment Policy for more detailed guidelines, available on Council's website (www.krg.gov.au).

23.2 GREEN BUILDINGS

Introduction

This section applies to the following new buildings and alterations/additions:

- offices under 1,000sqm;
- hotels, motels, serviced apartments with less than 100 rooms;
- all other non-residential development, including non-residential components of mixed-use buildings.

This section **does not apply** to development that is required to comply with:

- State Environmental Planning Policy (Sustainable Buildings) 2022

All non-residential development (listed above) must incorporate ecologically sustainable design measures, and achieve Green Star rated buildings to Green Building Council of Australia (GBCA) standards as required in 23.2 (3), (4), (5).

This will enable buildings to comply with the ongoing mandatory performance ratings required under the Building Energy Efficiency Disclosure Act 2010 (refer to the website for details: www.cbd.gov.au.)

The Green Building Council of Australia (GBCA) has developed the following rating tools:

- *Green Star Buildings*: for all building types;
- *Green Star Communities*: for projects at the neighbourhood, precinct or community scale;
- *Green Star Interiors*: for interior fit-outs in buildings including offices, hotels schools and shops;
- *Green Star Homes*: for assessing the health, resilience and energy efficiency of homes;
- *Green Star Performance*: for the operational efficiency of existing buildings.

Except for development mentioned in the State Environmental Planning Policy (Sustainable Buildings) 2022 (offices with more than 1,000sqm GFA, and hotels, motels, serviced apartments with more than 100 rooms), all non-residential buildings with a total GFA above 2,000sqm are required to obtain Certification under the GBCA *Green Star Buildings* rating tool. This is to ensure the design and construction of buildings deliver a sustainable structure, architecture and performance,

Where developments involve large master planned sites, use of the *Green Star - Communities* rating tool is encouraged. Where large interior refurbishments are being undertaken, the use of the *Green Star - Interiors* rating tool is encouraged.

The GBCA *Green Star Buildings* rating will entitle the developer, architect and team to publicise their building as Green Star rated early in the design development stage (via the 'Design' portion of the Certification) and for the life of the building (via the 'As Built' portion of the Certification). In addition, the building will receive publicity and marketing through the GBCA and Ku-ring-gai Council's media. Council and GBCA will also publicise developments that achieve ratings under the *Interiors*, *Communities* and *Performance* rating tools.

23.2 GREEN BUILDINGS (continued)

Objectives

- 1 To ensure that development minimises the use of non-renewable energy resources and water consumption.
- 2 To utilise an integrated sustainability assessment tool for gauging building sustainability.
- 3 To develop green buildings that incorporate innovative design, construction and operational practices that significantly reduce, or eliminate, the negative impact of development on the environment and building occupants.
- 4 To ensure commercial buildings deliver lower operating costs from reduced energy and alternative resource consumption, and so represent better life cycle value.
- 5 To ensure that all non-residential buildings consider and incorporate Ecologically Sustainable Design (ESD) systems and measures.

Controls

General

- 1 All new non residential developments are to include Ecologically Sustainable Design (ESD) measures in the following areas, and list them under these titles in the required ESD report and checklist:
 - i) Water Efficiency:
 - provide systems to minimise mains water usage.
 - ii) Energy Generation:
 - building design is to demonstrate a reduced reliance on mains power and provision of alternate energy sources.
 - iii) Heating and Cooling:
 - use of mechanical air conditioning and heating is to be minimised. Where it is unavoidable, the systems are to be of a high efficiency in technology choice to reduce peak energy demand.
 - iv) Lighting:
 - buildings are to be designed to reduce the need for artificial light use.

Note: Refer to 23R of this Part for examples of measures of the above.

Note: This control does not apply to non-residential development assessed under the State Environmental Planning Policy (Sustainable Buildings) 2022.

Green Star Rating

Required Ecologically Sustainable Measures

- 2 This control applies to:
 - all new non-residential buildings, including alternations/additions, less than 2,000sqm GFA;
 - all non-residential components of mixed-use buildings with less than 2,000sqm GFA;
 - offices, including new buildings alterations/additions with less than 1,000sqm GFA;
 - hotels, motels, serviced apartments with less than 100 rooms, where the GFA is less than 2,000sqm.

The above development types are to provide the following documentation at Development Application (DA stage)

- i) Ecologically Sustainable Design (ESD) Report:
 - prepared by a GBCA Accredited Professional, verifying that the elements/systems included in the development will, in the view of that professional, result in buildings with an ESD level equivalent to a 4, 5 or 6 Star Rating under the GBCA Green Star Buildings rating tool.

23.2 GREEN BUILDINGS (continued)

Controls

- ii) Annotated Development Application (DA) Drawings:
 - clearly indicating the elements/systems described in the ESD Report, including the requirements in 23.2(1) of this section.
- iii) A signed Statement of Commitment from the applicant to develop and implement the elements/systems described in the ESD Report into the Construction Certificate (CC) stage and **deliver elements/systems** in the final built form.

Note: Applicants are advised to consult with a GBCA Accredited Professional at the onset of the design process to ensure the building supports ESD principles at the outset.

Refer to www.gbca.org.au for a list of Green Star Accredited Professionals.

Note: Approved DAs will have a *Condition of Consent* requiring the applicant to include the following documentation as part of their CC submission:

- i. An updated ESD Report by the applicant's Green Star Accredited Professional describing elements/systems incorporated to maintain the ESD principles that were approved at DA.
- ii. A Checklist Table of each ESD system/element included in the ESD Report to clearly state systems incorporated (refer to 23R.3 of this Part for example of Checklist);
- iii. Annotated CC Drawings clearly indicating elements/systems described in the ESD Report.

Required Green Building Council of Australia (GBCA) Certification

3 This control applies to:

- all new non-residential buildings with a GFA between 2,000sqm and 5,000sqm;
- all non-residential components of mixed-use buildings with a GFA between 2,000sqm and 5,000sqm;
- hotels, motels, serviced apartments with less than 100 rooms, where the GFA is between 2,000sqm and 5,000sqm;
- all alterations/ additions to existing non-residential buildings and existing components of non-residential buildings, where the proposed development has a GFA between 2,000sqm and 5000sqm.

The above development types must achieve 4 Star Green Star ('Best Practice') Rating under the GBCA *Green Star Buildings* rating tool.

4 This control applies to:

- all new non-residential buildings with a GFA of 5,000sqm or greater;
- all non-residential components of mixed use buildings with GFA of 5,000sqm or greater;

23.2 GREEN BUILDINGS (continued)

Controls

- hotels, motels, serviced apartments with less than 100 rooms, where the GFA is 5,000sqm or greater;
- all alterations and additions to existing non-residential buildings and existing components of non-residential buildings where the proposed development has a GFA of 5,000sqm or greater.

The above development types must achieve a 5 Star Green Star ('Australian Excellence') rating under the GBCA Green Star **Buildings** rating tool.

Note: Refer to 23R.2 of this Part for the Green Star Information Sheet.

Note: Refer to www.gbca.org.au for the latest version of the GBCA's Green Star Rating Tools.

5 Where 23.2 (3) and (4) apply, the development application (DA) must include the following documentation:

- i) Proof of registration of the proposal with GBCA for a **Green Star Buildings** Certification; and GBCA Certification of the 'Design' component of the Development Application;
- ii) A signed Statement of Commitment from the applicant to implement and achieve Certification for both components of the **Green Star Buildings** rating tool.
- iii) Ecologically Sustainable Design (ESD) Report prepared by GBCA Accredited Professional, stating the Green Star point distribution for the proposal, and the strategy, methods and systems proposed to achieve the Green Star rating, including the requirements in 23.2(1) of this section;
- iv) Annotated Development Application Drawings clearly indicating the Green Star rating elements described in the ESD Report.
- v) A signed Statement of Commitment from the applicant to retain their GBCA Accredited Professional and complete the formal GBCA Certification process and achieve Certification for both Green Star **Designed and Green Star Certified under the Green Star Buildings** rating tool.

Note: Approved DAs will have a Condition of Consent requiring the applicant to include the following documentation as part of their Construction Certificate submission:

- i. The GBCA Certificate of achievement of the **Green Star Buildings: Design component** demonstrating the development application will achieve the full **Green Star Buildings** certification as per the conditioned ESD report.
- ii. An updated Credit Summary and ESD Report describing elements/ systems incorporated to achieve the nominated Green Star rating;

Controls

- iii. A Checklist Table of each ESD system/element (refer to 23R.3 of this Part for example of Checklist);
- iv. Annotated Construction Certificate Drawings clearly indicating elements/systems described in the DA approved ESD Report including the requirements of 23.2(1) in this section;
- v. A copy of the letter and invoices from the GBCA to the applicant, confirming the project is registered and will progress to **full certification under the Green Star Buildings** rating tool.

Note: Approved DAs will have a Condition of Consent requiring the applicant to submit the completed and final GBCA **Green Star Buildings** Certification to Council prior to the release of the Occupation Certificate.

23.3 SUSTAINABILITY OF BUILDING MATERIALS

Objectives

- 1 To provide good indoor air quality.
- 2 To limit pollution and protect public health and comfort.
- 3 To select materials and products which minimise environmental impact throughout a building's life cycle
- 4 To reduce the consumption of natural and non-renewable, resources.
- 5 To ensure material selection has been equally driven by environmental sustainability, safety, commercial competitiveness and quality.
- 6 To promote use of materials and finishes that contribute to the design of innovative buildings.
- 7 To reduce urban heat island effects.



Figure 23.3-1
Recycled timber wall as a feature in the entry lobby.

Controls

- 1 Development proposals **are to** consider the following in the selection of building materials:
 - i) **retain, re-use, recycle materials with:**
 - low embodied energy such as sandstone and timber; and
 - high embodied energy such as brick and concrete.
 - ii) materials that come from renewable sources;
 - iii) materials that generate a lower environmental cost over time;
 - iv) materials with a low life cycle cost and/or high durability;
 - v) production methods with a low environmental impact;
 - vi) **avoid large expanses of dark coloured materials that contribute to urban heat.**

Note: Generally, non-recycled metals contain the highest embodied energy, followed by plastics and other materials with a high chemical content. Natural construction materials such as timber, brick and render contain the least embodied energy. To reduce the embodied energy of a typical building structure, specify:

 - i. metal produced from post-consumer waste
 - ii. concrete blends that include a percentage of recycled content (for example, cement extender including fly ash or blast furnace slag)
 - iii. concrete that incorporates recycled aggregate wherever possible
 - iv. the sourcing of locally produced materials and products
- 2 Where the use of timber is proposed, only FSC, AFS or PEFC certified timbers may be specified for construction or finishing. Medium Density Fibreboard (MDF) and particleboard **is not to** be specified as a construction material for the development.
- 3 The use of alternatives to PVC piping is highly encouraged including Colorbond (above ground only), and HDPE where appropriate.
- 4 The use of construction materials and chemicals with toxic components **are to** be avoided, to facilitate recycling and reduce pollution.
- 5 Structures **are to** be designed with physical, rather than chemical, termite measures. This can be achieved by:
 - i) appropriate materials and construction design;
 - ii) physical barriers;
 - iii) suspended floor systems.
- 6 Low Volatile Organic Compounds (VOC) are to be used throughout the building interior (carpets, paints, adhesives, sealants and all other finishes), and low emission building materials are to be used across the site.

23.3 SUSTAINABILITY OF BUILDING MATERIALS (continued)

Controls

- 7 Avoid the use of ozone depleting products and materials, or products and materials manufactured using ozone depleting substances **must be avoided**.
- 8 Materials likely to contribute to poor internal air quality, such as those generating formaldehyde, or those that may create a breathing hazard in the event of fire, such as polyurethane, **must be avoided**.

23.4 MATERIALS, COLOURS AND FINISHES

Objectives

Non-residential Buildings

- 1 To promote the use of high quality materials, finishes and colours for building facade articulation design and visual interest.
- 2 To ensure the use of materials, finishes and colours creates well proportioned facades and minimises the visual bulk.
- 3 To encourage the use of a subdued palette of colours and limited range of hues for building consistency across the LGA.
- 4 To deliver buildings with high quality materials and finishes that are durable and able to retain their aesthetic value over time.
- 5 To complement streetscapes natural environment and the high quality urban character of Ku-ring-gai.



Figure 23.4-1:
Photovoltaic cells integrated into the awning design.

Controls

Non-residential Buildings

- 1 Non-residential development must:
 - i) use heavy weight building materials with high thermal mass on roofs and/or walls. Where lightweight materials are used, with high R-value insulation is to be used;
 - ii) integrate photovoltaic cells which can be mounted as panels, or used as an integrated building cladding or sun shading.
 - iii) use light coloured internal finishes to improve internal reflectivity and minimise lighting use.
- 2 External walls are to be constructed of high quality and durable materials and finishes.
Note: Material and finishes selection is to be made in accordance with objectives and controls as stated in 23.3 of this Part to ensure low environmental impact.
- 3 Reuse or recycling of existing local materials such as sandstone and brick is encouraged.
- 4 Building facades must avoid large, unbroken expanses of any single material and/or finish, in particular rendered and/or painted finishes.
Note: Well-detailed and modulated face brickwork may be acceptable.
- 5 New development is to avoid extensive use of highly reflective or gloss materials on the exterior of buildings.
- 6 For buildings of 3 storeys and above:
 - i) a large expanse of sandstone or face brick is not to be used on the upper levels of the buildings;
 - ii) lightweight materials and finishes (eg. timber and copper/steel) are encouraged for the upper levels of buildings;
 - iii) use of colours that minimise the bulk and scale of upper levels of buildings are encouraged to assist in minimising the bulk and scale of the building.
- 7 The exterior finish material (e.g. sandstone or brick) must be integral to the overall building façade design and must not appear to be cosmetic. Rendered and/or painted finishes are limited to accent elements only, and must not be the primary finish.
- 8 Highly contrasting coloured bricks are to be restricted to building elements such as sills, window heads, string courses and to assist in the division of the building into bays.
- 9 Where louvres are used, they are to be an integral element in the building façade design (e.g. west facing windows).
- 10 Material selection is to demonstrate dual purpose solutions. For example, photovoltaic panels integrated with wall cladding, and utilised as shading devices for ground level and rooftop communal spaces. See Figure 23.4-1.

23.4 MATERIALS, COLOURS AND FINISHES (continued)

Controls

- 11 Where additions and alterations are proposed, external materials and finishes **are to** complement the existing building.
- 12 The selection of a colour scheme for new development and in the restoration of existing facades **is to** comply with the following guidelines:
 - i) Base colours for major areas of building façade are to be light in tone (eg. earth tone) with minimal colour intensity (or hue) eg. off white or grey colours. Larger expanses of bold colour, black and white **are to** be avoided, as these detract from the prominence of other façade details. Contrasting tints, tones and shades are to be restricted to small areas. See *Figure 23.4-3*.
 - ii) Highlight colours to window and door mouldings, string courses, parapet details and the like, are to be in sufficient contrast to the base colour. Strong colours to large sections of the building **are to** be avoided. Details **are to** be finished in a matt to semi gloss range. See *Figure 23.4-3*.
 - iii) Trim colours for window frames and awning fascias are to be a darker contrast to base and highlight colours. Window frames **are to** be finished in either a semi gloss or full gloss.
- 13 Natural earth tones and **recessive colour tones** are to be used on building facades in close proximity to bushland.
- 14 The use of corporate colours to identify a business name is to be limited to signage, and **is not to** be used as the main building façade colour.
- 15 Where buildings colours are representational of a company or brand, the colour scheme will be accepted by Council provided the built form has been designed to address the site attributes and constraints and the surrounding urban fabric. Stock standard building forms (representational of a company) placed onto a site regardless of the context will not be accepted.



Figure 23.4-2:
**Accent colour on shading devices
to commercial building.**

23.4 MATERIALS, COLOURS AND FINISHES (continued)

Objectives

Multi-unit Dwellings, Residential Flat Buildings and Mixed-use Buildings

- 6 To ensure buildings are constructed using high quality materials and finishes that are durable and able to retain their aesthetic value over time.
- 7 To ensure built form is of high architectural standard and able to positively contribute to the streetscape.
- 8 To ensure the future character of dense built form continues to contribute to the Ku-ring-gai character.

Figure 23.4-3:
Building facade with bricks as the Primary Field facade with painted finishes creating a contrasting Secondary Field.

Controls

Multi-unit Dwellings, Residential Flat Buildings and Mixed-use Buildings

- 16 External building walls are to be constructed of high quality and durable materials and finishes with low reflectivity.
Note: Material and finish selection is to be in accordance with Part 23.3 to ensure low environmental impact.
Note: For controls relating to façade articulation refer to:
 - Part 6C.8 for Multi-dwelling Housing.
 - Part 7C.6 for Residential Flat Buildings.
 - Part 8C.9 for Mixed-use Buildings.
- 17 The material and colour palette for all building façades are to be composed of three fields:
 - i) Primary Field - the predominant façade material/colour that gives the building its primary character.
 - ii) Secondary Field - a supporting colour/material that provides diversity and façade articulation by highlighting the Primary Field.
 - iii) Accent Field – supplementary colours and materials that:
 - add emphasis to the façade; and
 - highlight facade elements; and
 - typically contrast in colour or material or texture with the Primary and Secondary fields.

See Figure 23.4-3, Figure 23.4-4, Figure 23.4-5, Figure 23.4-6, Figure 23.4-7, Figure 23.4-8 and Figure 23.4-9 for Indicative Primary, Secondary and Accent Field materials, colours and finishes.

Note:

- i) Considered and resolved composition of elevations and facades communicates a clear visual hierarchy of building elements and use of materials, textures and colours.
- ii) Well-composed facades with high quality edge detailing of a more limited materials palette achieve positive streetscape outcomes.
- iii) Arbitrary changes of materials and colours and/or featureless wall planes and edge detailing do not achieve Ku-ring-gai's streetscape character.



23.4 MATERIALS, COLOURS AND FINISHES (continued)

Controls



Figure 23.4-4:
Indicative Primary Field Colours.



Figure 23.4-5:
Indicative Secondary Field Colours.



Figure 23.4-6:
Indicative Secondary Field Materials.

- 18 The Primary Field and predominant façade material is to be face brick. Selected bricks are to be warm earthy colours and tones that complement the local setting or future character of areas in transition, and require minimal maintenance to retain their high quality finish.
- 19 The Secondary Field is to comprise materials and textures consistent with the indicative colour and material palette at Figure 24.4-4.
- 20 The Accent Field materials and colours are to be consistent with the indicative colour and material palette at Figure 24.4-3, Figure 24.4-4, and Figure 23.4-5. The Accent Field is to highlight building elements including, but not limited to, windows, railings, parapets, doors, balustrades. The material and colour selection is to complement the overall Primary and Secondary Field façade treatment.

Note: A sample board displaying and describing the selected Primary, Secondary and Accent Field materials and colour is to be specified and submitted with the application.

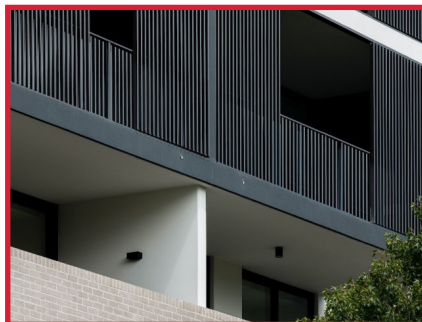


Figure 23.4-7:
Louvres, sliding panels and screens as integrated Secondary Field facade elements.



Figure 23.4-8:
Timber handrails provide Accent contrast to the Secondary concrete balustrades and columns and complement the Primary brick facades.

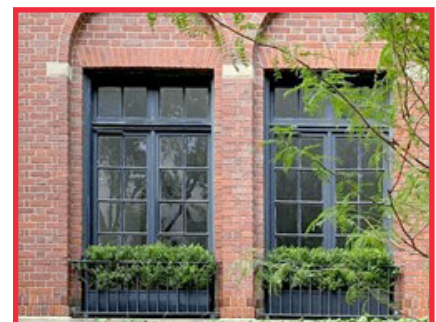


Figure 23.4-9:
Dark window and balcony rail Accent colour contrasting with the Primary brick facade.

23.5 ROOF TERRACES AND PODIUMS

This section does not apply to single dwellings

Objectives

- 1 To provide high quality of private and public common open space on roof terraces and podiums.
- 2 To design roof terraces so that they contribute to the streetscape.
- 3 To encourage use of low maintenance planting and low water use on roof terraces and podiums with appropriate support systems.

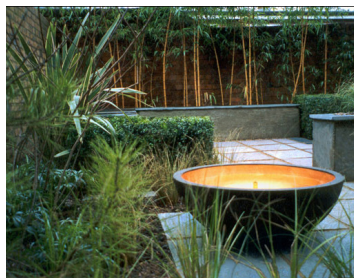


Figure 23.5-1:
Roof top recreation area.

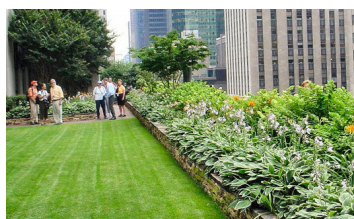


Figure 23.5-2:
Roof top public parkland.



Figure 23.5-3:
Roof top vegetable garden.

Controls

- 1 All roof terraces and podiums **are to** provide appropriate building systems to make them trafficable, and to support landscaping.
- 2 Roof and terrace common open areas are to incorporate sun shading devices, wind screens and facilities such as BBQ and kitchenette area with drinking water to encourage usage.
- 3 Where artificial lighting is required, energy efficient lights **are to** be used in conjunction with timers or daylight controls. All light spill is prohibited.
- 4 Roof terraces and podiums **are to** provide soft landscaping areas that complement the appearance of the building, soften the edges of the building, and reduce the scale of raised terraces and other built elements such as services.
- 5 Robust and drought tolerant plant material **are to** be used to minimise maintenance and ensure long term survival.
Note: Communal produce gardens are encouraged.
- 6 Roof terraces and podiums are to be designed for optimum conditions for plant growth by appropriate solar access, soil mix, and the provision of water connections and drainage.
- 7 Minimum soil provision for a range of plant sizes **are to** be in accordance with the following:
 - i) large trees (canopy diameter of up to 16m at maturity)
 - minimum soil volume 150m³
 - minimum soil depth 1.3m
 - minimum soil area 10m x 10m area or equivalent
 - ii) medium trees (8m canopy diameter at maturity)
 - minimum soil volume 36m³
 - minimum soil depth 1m
 - approximate soil area 6m x 6m or equivalent
 - iii) small trees (4m canopy diameter at maturity)
 - minimum soil volume 11m³
 - minimum soil depth 0.8m
 - approximate soil area 3.5m x 3.5m or equivalent
 - iv) shrubs
 - minimum soil depth 0.5-0.6m
 - v) ground cover
 - minimum soil depth 0.3-0.45m
 - vi) turf
 - minimum soil depth 0.1-0.3m

Note: Any subsurface drainage requirements are in addition to the minimum soil depths quoted above.

Note: Council will require a long term maintenance plan for both the greenery and the waterproofing.

23.5 ROOF TERRACES AND PODIUMS
(continued)

Controls

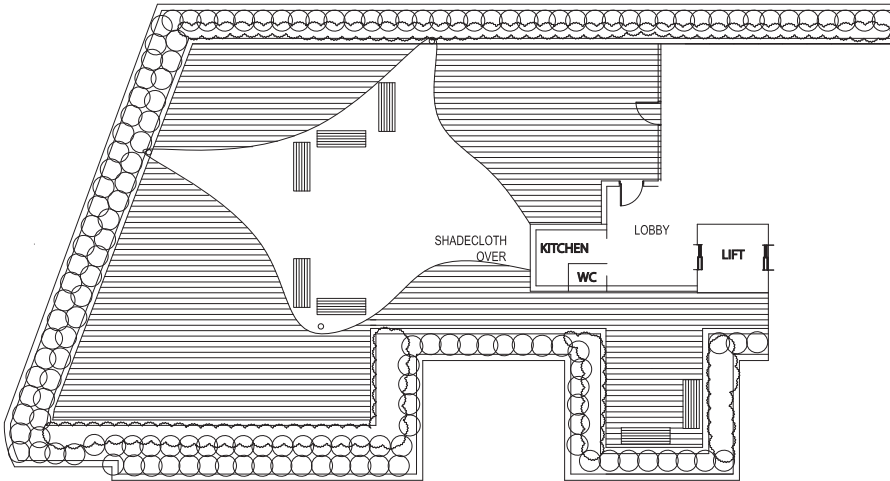


Figure 23.5-4: Roof terrace design

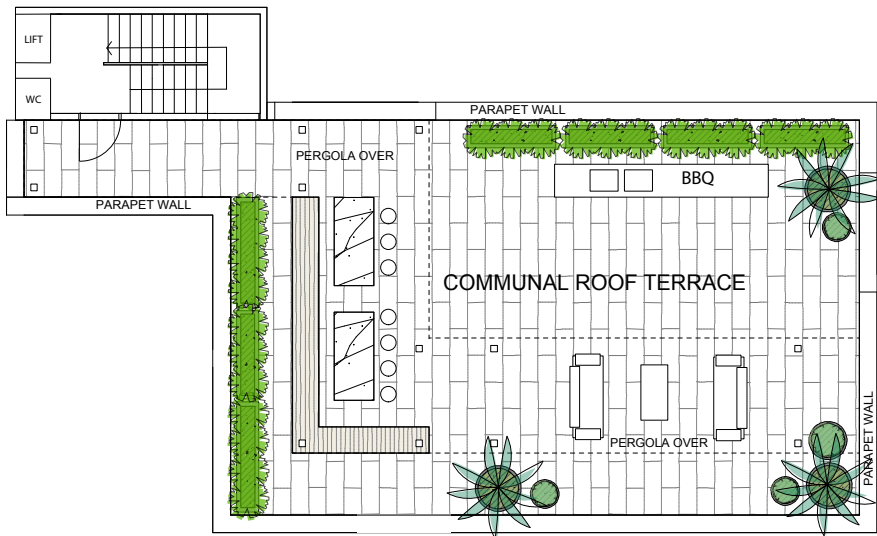


Figure 23.5-5: Roof terrace design

Objectives

- 1 To ensure visually intrusive service elements are located away from the streetscape.
- 2 To ensure that proposed or future service provision does not detract from the visual or general amenity of the building users.



Figure 23.6-1 Public art used to hide ventilation stacks

23.6 BUILDING SERVICES

Controls

- 1 All applicants **are to** consult with service providers such as energy, electricity, gas, water, telephone and fire.
- 2 **For high and medium density development, including Seniors Housing, Multi Dwelling Housing and Residential Flat Buildings, underground electricity services are to be provided from the proposed building on the site to the appropriate power pole(s) or other connection point.**
- 3 Services and structures required by the providers are to be located within basements, or concealed within the facade, with appropriate access. Where this is not possible, the proposal **is to** demonstrate an alternative method of minimising street impact, such as screening with landscape or built elements. Particular care should be taken in mixed use precincts to ensure substations and fire hydrants are not visible from the primary street and principal active street frontages.
- 4 Ventilation stacks are to be concealed within the building. Where they exhaust at street level (eg. from basements) they should be integrated within the design of the site. (See Figure 23.3-1)
- 5 All new developments designed to allow for commercial uses **are to** include an internal ventilation shaft to ensure future alterations do not place the shaft in an unsuitable location.
- 6 **With the exception of dwelling houses, all buildings are to accommodate proposed or future air conditioning units within the basement or on rooftops, with provision of associated vertical/horizontal stacks to all sections of the building.**
- 7 Air conditioning condensers are to be located within the basement or within the roof structure of the upper most roof. Air conditioning condensers are not to be located on:
 - i) the building façade;
 - ii) the top of a flat roof;
 - iii) terraces;
 - iv) private or communal open spaces; or
 - v) balconies.

Note: Where air conditioning condensers are to be located within the basement, certification from a mechanical engineer is to be provided confirming that the nominated area/plantroom will be large enough to accommodate the number of proposed condenser units. This certification **is to** also indicate the likely required supply/extraction air flow within the plant room to demonstrate that ventilation requirements have been sufficiently incorporated into the basement design. Additionally there **is to** be sufficient service ducting incorporated into the development so that the systems operate efficiently.
- 8 Air conditioning units located on the roof will only be permitted where they are well screened, integrated into the building form and do not result in adverse noise impacts on neighbouring occupants.

23.6 BUILDING SERVICES (continued)

Objectives

- 3 To minimise visual impacts of utility infrastructure, including kiosk substations and fire hydrant and booster assemblies, on streetscape character and amenity.
- 4 To manage the cumulative visual and amenity impacts of utility infrastructure, including kiosk substations and fire hydrant and booster assemblies, resulting from development.
- 5 To ensure early consultation with utility providers to enable joint consideration of visual impacts of new infrastructure.



Figure 23.6-2:
Visually obtrusive kiosk substation detracting from streetscape.



Figure 23.6-3:
Hydrant and Booster Assembly located perpendicular to the street to reduce visual impact

Controls

Electrical Kiosk Substations and Fire Hydrant Boosters

- 9 All utility infrastructure is to be located to have minimal physical and visual impact and obstruction to the streetscape, natural environment and to the development.
- 10 Kiosk substations and hydrant and booster assemblies are to be designed and located to:
 - i) not dominate the street frontage of the development; and
 - ii) be integrated within the overall development; and
 - iii) retain and protect existing trees.
- 11 Any proposed kiosk substation and hydrant and booster assembly that is part of a Residential Flat Building development or a Multi-dwelling Housing development is to be screened from the street using a fence/ gate system that is integrated into the architecture of the development and its fencing. The fence/gate is to provide a screen so that the kiosk substation and hydrant/booster assembly is not visible from the adjoining public street. Refer to Figure 23.6-5.

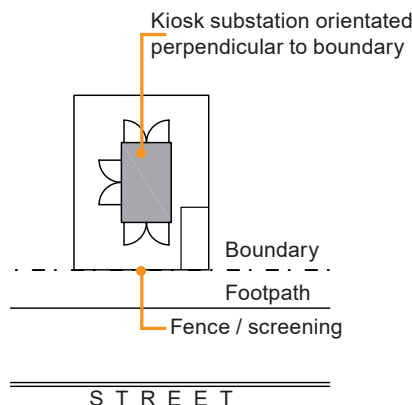
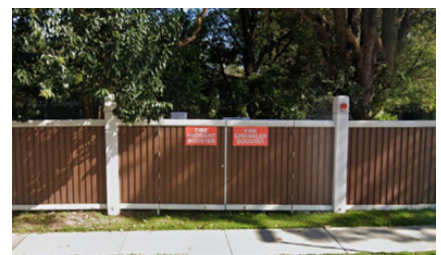


Figure 23.6-4:
Kiosk Substation orientated perpendicular to property boundary to minimise visual impact



Figure 23.6-5:
Screened Hydrant and Booster Assembly – within an enclosure or 1.2m high fence to minimise visual impact to streetscape.



23.6 BUILDING SERVICES (continued)

Controls

- 12 For Mixed-use Buildings, all kiosk substation and hydrant and booster assemblies are to be enclosed within the building facade with compliant access doors that are integrated into the design of the building architecture.

Note: To demonstrate due diligent consideration of the location of key utility infrastructure, development applications are to submit the following:

- i) A letter from Ausgrid to demonstrate consultation to agree:
 - a) The assessment undertaken to determine the type of kiosk substation required and its proposed location.
 - b) The incorporation of a fence/gate screen at the front of the kiosk as per Section 8 - *Ausgrid Network Standard NS141Site Selection and Preparation for Kiosk Substations 10/02/2023*.
 - c) The location and orientation of the kiosk substation perpendicular to the street frontage with reference to *Annexure A: Site Requirements for Off-Street sites - Ausgrid Network Standard NS141Site Selection and Preparation for Kiosk Substations 10/02/2023*.
- ii) A letter from Fire and Rescue NSW (FRNSW) to demonstrate consultation to agree:
 - a) An assessment has been undertaken by FRNSW to determine the performance requirements for a fire hydrant and booster assembly, specific to the proposed development.
 - b) An assessment has been undertaken by FRNSW of the performance solution proposed by the Proponent and submitted with the Development Application.
 - c) A request has been made to FRNSW to incorporate the Hydrant and Booster Assembly within an enclosure or to be screened.

23.7 GENERAL ACOUSTIC PRIVACY

Further controls that may apply:		
	SECTION B PART 20 - Development Near Road or Rail Noise	

Objectives

- 1 To ensure high standards of acoustic privacy for all occupants of the development.
- 2 To minimise the impact of the development on the acoustic privacy of neighbouring developments.
- 3 To ensure housing adjoining main roads is designed and constructed to minimise the impact of external noise and facilitate comfortable living conditions for residents.
- 4 To ensure measures to address acoustic privacy have regard to the existing or desired future character of the street.

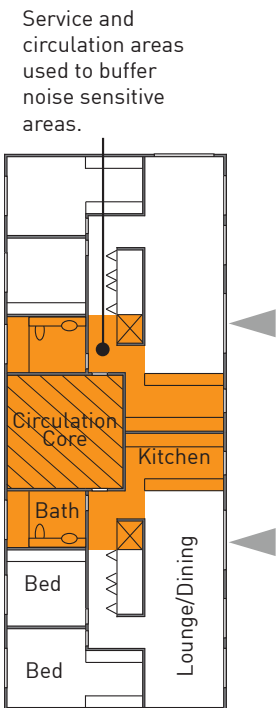


Figure 23.8-1:
Buffer zone to minimise noise pollution.

Controls

- 1 Development is to be designed to minimise the impact of external noise sources (eg busy roads, railways, swimming pools, heavy vehicle entries) on the internal and external spaces used by occupants.
- 2 Balconies and other external building elements are to be designed and located to minimise infiltration and reflection of noise onto the facade.
- 3 Buildings are to be designed to minimise noise transmission by, but not limited to:
 - i) careful siting and orientation of the building;
 - ii) locating bedrooms away from both internal and external noise generators of a development, eg by using storage or circulation areas as a buffer or grouping room uses according to the noise level generated.

Note: Internal noise generators include, but are not limited to - kitchens, laundries and living areas

External noise generators include, but are not limited to - traffic, railway line, vehicle entries and mechanical equipment; pool pumps, air conditioning units, garbage collection areas, tennis courts.

 - iii) fitting out building services with appropriate acoustic insulation;
 - iv) incorporating appropriate noise shielding or attenuation techniques into the design and construction of the development.
- 4 Measures such as mounding or high solid fencing will only be permitted where they are compatible with the streetscape.
- 5 When designing and siting active open space areas (eg BBQ areas, swimming pools, communal areas etc) regard is to be paid to potential noise impacts on adjacent rooms and buildings, such as bedrooms.
- 6 Noise levels associated with air conditioning, kitchen, bathroom, laundry ventilation, or other mechanical ventilation systems and plant either as an individual piece of equipment or in combination is not to be audible within any habitable room in any residential premises before 7am and after 10pm. Outside of these restricted hours noise levels associated with air conditioning, kitchen, bathroom, laundry ventilation, or other mechanical ventilation systems and plant either as an individual piece of equipment or in combination is not to emit a noise level greater than 5dB(A) above the background noise (LA90, 15 min) when measured at the boundary of the nearest potentially affected neighbouring properties. The background (LA90, 15 min) level is to be determined without the source noise present.

Note: Council requires an acoustic assessment be undertaken for multi-dwelling housing, residential flat buildings, mixed-use development, non-residential buildings, and child care centres. Council may require an acoustic assessment be undertaken for dwelling houses and secondary dwellings. Assessment is to be undertaken by a suitably qualified acoustic consultant to assess compliance with the above criteria. Recommended noise attenuation measures are to be included in this report where applicable.

23.8 GENERAL VISUAL PRIVACY

Objectives

- 1 *To ensure the impact of development on the visual privacy of neighbouring occupants is minimised.*
- 2 *To ensure that the level of visual privacy to principal living areas and private open spaces is appropriate to the development type.*
- 3 *To ensure high standards of visual privacy for all occupants within low density residential development.*
- 4 *To ensure visual privacy measures do not compromise outlook, ventilation and solar access or the functioning of internal and external spaces.*

Controls

- 1 Private open spaces and principal living spaces of the proposed dwelling/s and adjacent dwellings are to be protected from direct or unreasonable overlooking from all new residential and non-residential developments. Siting and design measures to achieve this include:
 - i) use of distance or slope;
 - ii) appropriate dwelling layout;
 - iii) off-setting windows in relation to adjacent windows;
 - iv) use of obscure glass or highlight windows;
 - v) screening devices such as fences, louvres, translucent screens, perforated panels, trellises and courtyard walls;
 - vi) using louvres/screen panels to windows and balconies (see Figure 23.9-1);
 - vii) using solid or semi-transparent balustrades or screens to balconies or terraces (see Figure 23.9-2);
 - viii) off setting balconies in relation to adjacent balconies;
 - ix) using recessed balconies and/or vertical fins between adjacent private balconies;
 - x) using deep sills with planter boxes or incorporating planter boxes into walls or balustrades (see Figure 23.9-3).
 - xi) providing vegetation as a screen between spaces;
 - xii) utilising pergolas or shading devices to limit overlooking of lower building levels or communal and private open space.



Figure 23.9-1:
Balconies with sliding panels to increase visual privacy.



Figure 23.9-2:
Use of a mix of solid and transparent balustrades on different levels to ensure visual privacy.

23.9 VISUAL PRIVACY(continued)

Controls

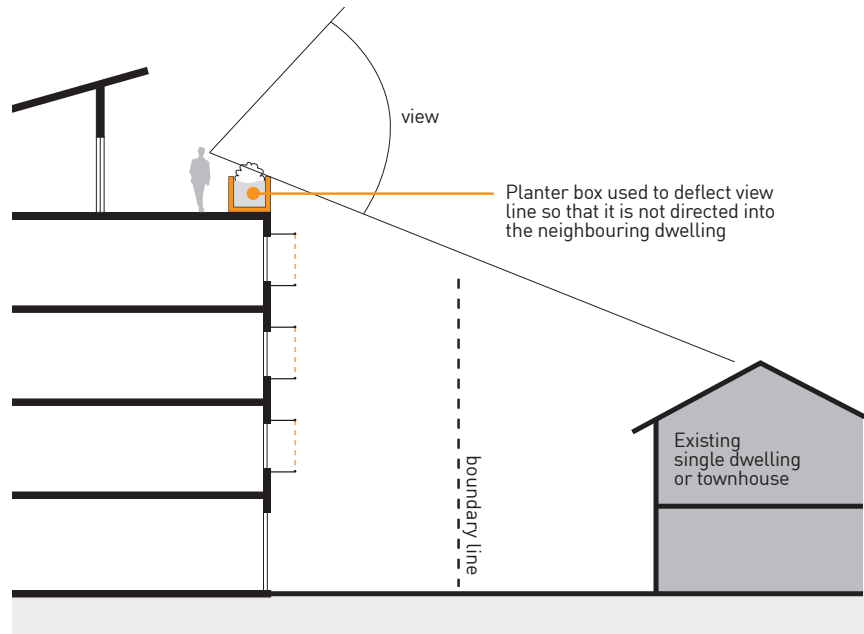


Figure 23.9-3: Incorporation of planter boxes into walls or balustrades for visual privacy.

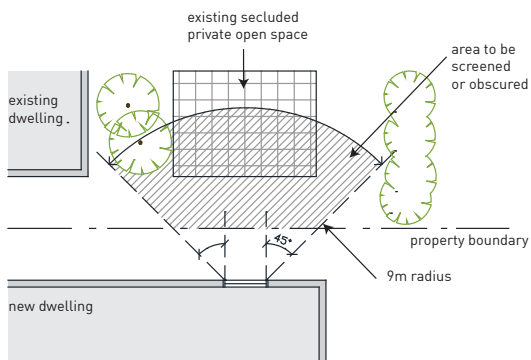


Figure 23.9.4: Designs incorporating screening to protect residents of the development.

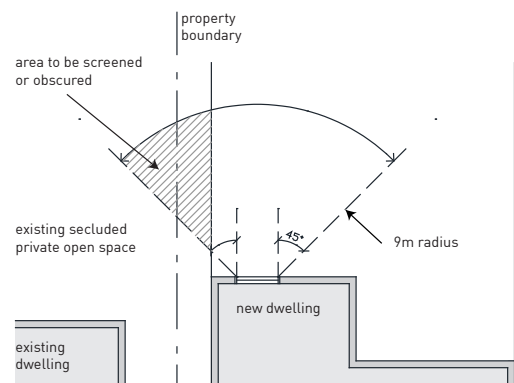


Figure 23.9.5: Area of neighbouring development to be protected from overlooking..

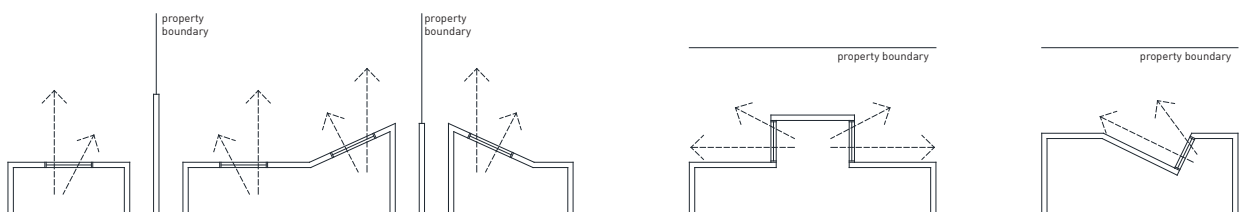


Figure 23.9.6: Arrangement of windows to avoid overlooking of adjacent open space or living areas

23.9 VISUAL PRIVACY(continued)

Controls

- 2 For low density residential development first floor decks, balconies and roof top terraces are not permitted where they unreasonably overlook or would directly overlook principal living spaces or private open space and the impact cannot be adequately mitigated.
- 3 Continuous transparent balustrades are not permitted to balconies or terraces for the lower 3 storeys.

23.9 CONSTRUCTION, DEMOLITION AND DISPOSAL

Objectives

- 1 *To preserve the various natural elements and habitats such as soil profile, vegetation, natural rock shelves and watercourses.*
- 2 *To protect existing trees and the natural elements of the site, including soil profile, vegetation, rock outcrops and water courses.*
- 3 *To reduce the volume and cost of construction and demolition waste material.*
- 4 *To protect neighbouring structures and minimise disturbance to neighbouring and downstream properties.*
- 5 *To ensure regular rainfall events do not adversely affect water quality.*
- 6 *To protect the sensitive Hawkesbury Sandstone communities in the LGA.*
- 7 *To prevent cumulative impacts from pollutants, (such as excess nutrients, sediment) on downstream ecosystems.*
- 8 *To maintain visual amenity of the locality and the natural environment.*

Controls

Environmental Site Management Plan

- 1 Site disturbance during construction or demolition **is to** be minimised by:
 - i) avoiding excavation beyond the building area;
 - ii) restricting machinery and vehicle movement to the building footprint and access corridor;
 - iii) locating service lines close to the building or within previously excavated areas where possible; and
 - iv) locating storage areas to areas outside the tree protection zones of trees to be retained.
- 2 An environmental site management plan showing tree protection areas, machinery usage zones, storage areas, site sheds and location of stormwater pollution barriers is to be submitted with the application as per Councils DA Guide.

Waste Management Control

- 3 A Waste Management Plan (WMP) **is to** be submitted with the application, in accordance with *23R.8 of this Part*. Evidence such as weighbridge dockets, copies of invoices or some other form of written evidence will be required to be submitted to Council on completion of the development to verify the quantities and destination of waste and recycling materials generated during works (either demolition and or construction).

Note: Plans and drawings of the proposed development that highlight the location of and space allocated to the waste management facilities and the nominated waste collection point **is to** be attached to the WMP. The path of access for both users and collection vehicles **are to** be highlighted.
- 4 Provide source separation facilities on building sites so that different waste streams may be easily separated during construction and demolition to encourage the reuse and recycling of materials.

Stormwater Quality Control During Construction

- 5 Manage soil, water and materials on construction sites to prevent erosion, sedimentation and pollution of waterbodies and the natural environment.
- 6 Manage the quality and quantity of post-construction stormwater runoff from the site to protect downstream ecological communities, to prevent altered nutrient regimes and to reduce litter entering the waterways.
- 7 Control erosion and sedimentation by:
 - i) minimising the extent of disturbance;
 - ii) rapidly stabilising the disturbed areas;
 - iii) diverting clean runoff around work areas; and
 - iv) trapping eroded sediment as close to the source as is practical.

23.10 CONSTRUCTION DEMOLITION AND DISPOSAL (continued)

Controls

- 8 Provide for appropriate management of wastes, chemicals and fuel through:
 - i) Appropriate storage and handling to prevent discharge of pollutants to waterways;
 - ii) On-site containment of waste water from construction activities;
 - iii) Appropriate storage and disposal of waste materials; and
 - iv) Appropriate management and disposal of waste water.

Note: Under the *POEO Act 1997*, owners and builders have a responsibility to notify Council or the Environment Protection Authority (NSW Office of Environment and Heritage) of any harmful pollution incident as soon as is practicable. Allowing pollutants (including sediment) to enter any waterway is an offence under the *Protection of the Environment Operations Act 1997*.

Failure to notify could result in a maximum fine of \$250,000 for corporations and \$120,000 for individuals.

Erosion and sediment control

- 9 All activities that have the potential to pollute **are to** comply with the requirements of the Protection of the Environment Operations Act
- 10 All development applications **are to** be accompanied by an 'Erosion and Sediment Control Plan' (ESCP) that describes the measures undertaken at development sites to minimise land disturbance and to control sediment pollution. The ESCP **is to** be prepared in accordance with "Managing Urban Stormwater, Soil and Construction, 2006 (Landcom)".
- 11 Disturbance to existing vegetation should be minimised when installing controls, especially along watercourses, on highly erosive lands and in high-conservation-value areas.
- 12 Where land disturbance activities occur in riparian zones (Category 1 and 2) or watercourses, a separate Vegetation Management Plan may be required. This plan is to cover all disturbed lands within the riparian zone. It should address revegetation, bush regeneration and weed control. It should ensure that previously stored topsoil is respread over disturbed lands and the litter layer is restored. Any imported topsoil **is to** be weed free.

Note: Under the *POEO Act 1997*, it is an offence to store hazardous and dangerous liquids (including oils, solvents, fuels, acids and paints) in such away as to allow any water pollution incident to occur. Also you need to be in accordance with the Ku-ring-gai Council DA guide.

23.10 CONSTRUCTION DEMOLITION AND DISPOSAL (continued)

Controls

- 13 All disturbed areas should be rehabilitated as soon as possible after excavation or completion of the construction period. This includes, but may not be limited to:
 - i) restoration of all surfaces to their original condition (or as specified);
 - ii) re-establishment of surface stability with suitable cover to achieve a permanent C-factor of less than 0.1 (equivalent to 60 per cent ground cover) within 20 working days from the start of works.
- 14 Disturbance to existing vegetation should be minimised when installing controls, especially along watercourses, on highly erosive lands and in biodiversity significant areas.

23R References

23R.1 Examples of ESD Measures

REFERENCES



23R.1 EXAMPLES OF ESD MEASURES

Water Efficiency

These measures ensure all non-residential buildings implement systems of water collection and recycling. Systems to minimise mains water usage may include:

- i) on-site rainwater collection and on-site waste water treatment to provide recycled water for use within the development;
- ii) provide low flush toilets and water efficient fixtures and fittings, including waterless urinals;
- iii) utilise water efficient landscape principles, such as the selection of low water usage species, including local species, and the use of tree foliage to create on ground shade and windbreaks.

Energy Generation

These measures encourage implementation of systems that provide alternative energy sources. Energy generation measures may include:

- i) solar louvres (powered by photovoltaic cells) that track the sun to supply building use;
- ii) solar hot water system;
- iii) solar energy collection technology such as solar heat pumps for hot water and photovoltaic cells;

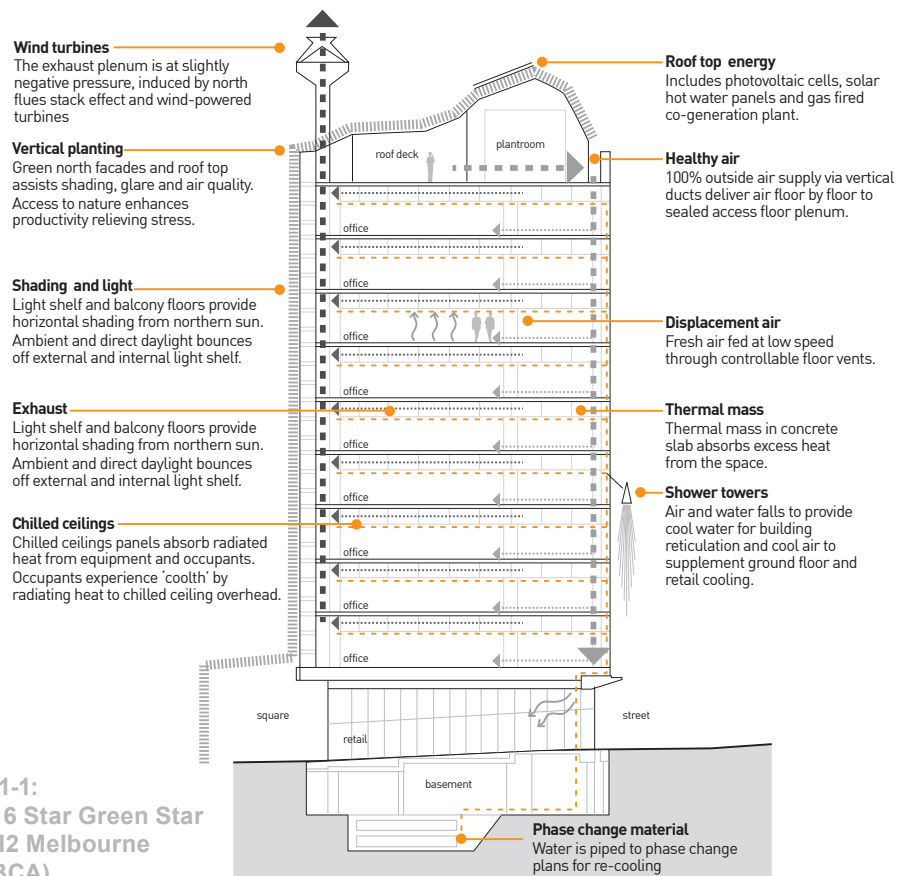


Figure 23R.1-1:
Example of 6 Star Green Star
Building CH2 Melbourne
(Source: GBCA)

23R.1 EXAMPLES OF ESD MEASURES (continued)

- i) use of photovoltaic cells which can be mounted as panels, or used as an integrated building cladding as shading device;
- ii) use of co-generation or tri-generation plants located within the basement to service the whole building; and
- iii) wind turbine technology.

Heating and Cooling

These measures reduce the heat and carbon output of non-residential buildings. Alternative heating and cooling measures may include (refer to *Figure 23R.1-2*):

- i) displacement ventilation with low level air delivery and high level air exhaust to create air change effectiveness;
- ii) thermal chimneys in atriums to draw warm air up and out of work areas;
- iii) new generation cooling systems such as chilled ceiling beams;
- iv) active mass cooling system utilising thermo-active slabs and concrete core conditioning;
- v) radiant slab heating to provide energy efficient thermal comfort;
- vi) night purge systems to cool and clear stale air within the building;
- vii) roof surfaces with a sheen finish that reduce heat gain in summer (only where they do not impact on the amenity of neighbour in terms of glare and reflectivity);
- viii) roof gardens and landscaped terraces which provide thermal insulation;

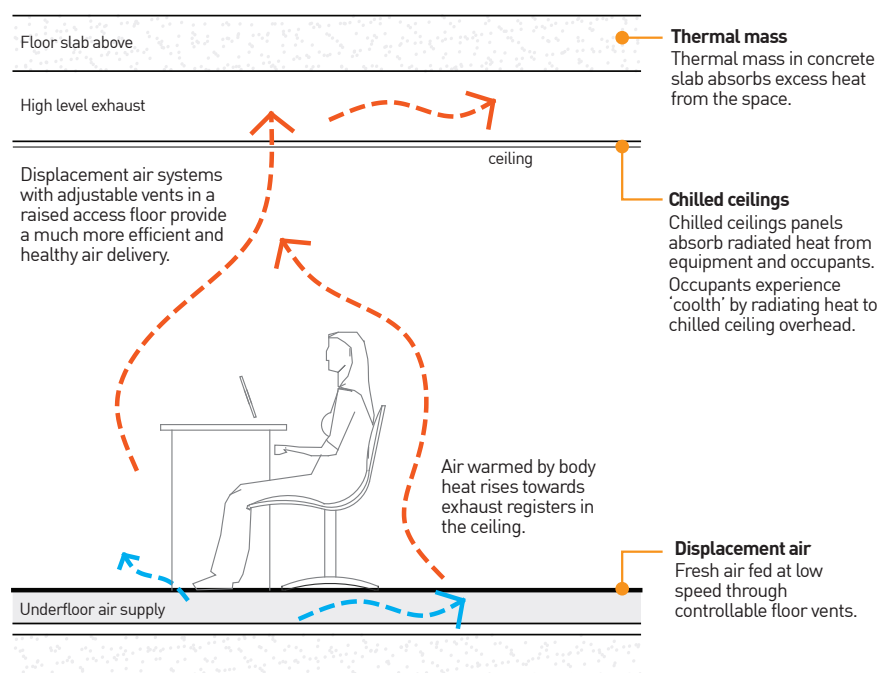


Figure 23R.1-2:
A displacement air system. Removing contaminants efficiently with 100% fresh air supply, resulting in a healthier work environment.

23R.1 EXAMPLES OF ESD MEASURES (continued)

- ix) use of tri-generation plants located within the building basement;
- x) use of vertical planting to shade building elevations;
- xi) insulation and ventilation of roof spaces; and
- xii) use of heavy weight building materials, such as concrete, for thermal mass on flat roofs and/or walls. Where lighter weight materials are used they are to be well insulated.

Lighting

These measures reduce the energy uptake for lighting systems within non-residential building sites. Measures to reduce artificial light use may include (refer to *Figure 23R.1-3*):

- i) considering internal building use relative to window location;
- ii) consider fenestration with high performance glazing with spectrally selective glass that allows views and a high degree of diffused natural light into the workspace without glare;
- iii) select and position light fittings to minimise energy consumption. For example create separate lighting zones for areas close to and further away from windows;
- iv) lighting used in common areas such as entries, corridors, car parks and communal open space areas **are to** utilise daylight sensor control, movement detectors, automated dimmers and timers. Lightspill **is to** be controlled;
- v) improve internal natural light reflection and minimise lighting use by using light coloured internal finishes;

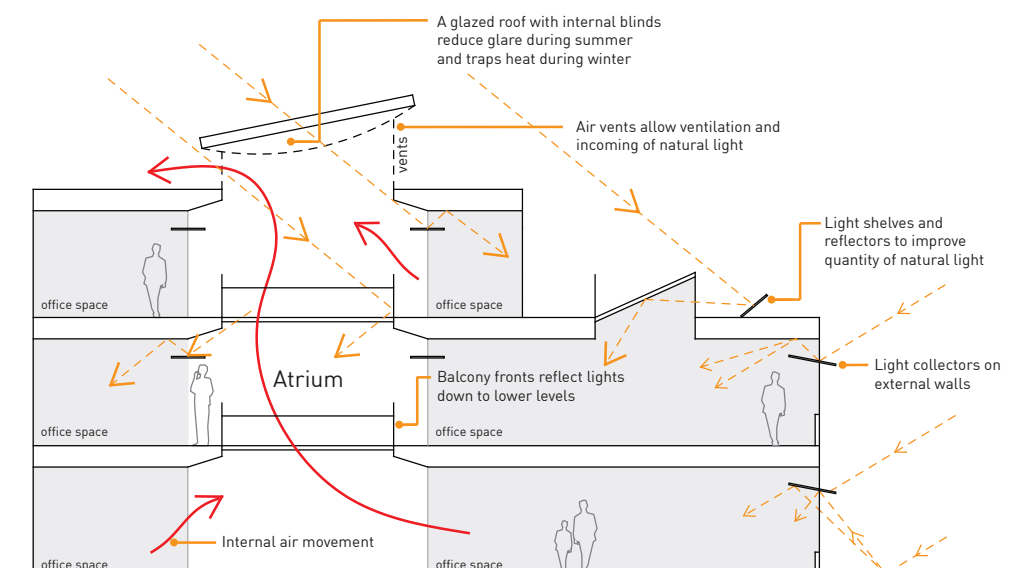


Figure 23R.1-3:
Lighting and ventilation.

WATER MANAGEMENT

Introduction

24A Site Design for Water Management

- 24.1 Development Type for Water Management
- 24.2 Location of Development for Water Management
- 24.3 Locating the Development on Site

24B Storm Water Discharge

- 24B.1 General
- 24B.2 Stormwater Disposal from Location A Properties
- 24B.3 Stormwater Disposal from Location B Properties
- 24B.4 Stormwater Disposal from Location C Properties
- 24B.5 Stormwater Disposal from Location D Properties
- 24B.6 Relocating Pipes and Modifying or Releasing Easements where Council is the Authority

24C On-site Stormwater Management

- 24C.1 General
- 24C.2 Effective Stormwater Management
- 25C.3 General Controls for On-Site Stormwater Management
- 24C.4 Mandatory Rainwater Tank Requirements
- 24C.5 Controls for On-site detention
- 24C.6 Stormwater Quality Control

24D Existing Drainage Systems

- 24D.1 General

- 24D.2 Flood Studies and the Design Flood Standard

- 24D.3 Development Over or Adjacent to a Natural Waterbody, Open Channel or Drainage Depression

- 24D.4 Development Over or Adjacent to an Underground Pipeline

- 24D.5 Tennis Courts and Other Sporting Surfaces

- 24D.6 Fences

- 24D.7 Swimming Pools and Spas

24E Road & Trunk Drainage Design

- 24E.1 Design procedures

24F On-site Wastewater management

- 24F.1 On-site wastewater management

24R References

- 24R.1 Design of On-site Detention Systems (OSD)
- 24R.2 Design of Property and Interallotment Drainage Systems
- 24R.3 Flood Study Requirements
- 24R.4 Terms of Positive Covenants and Restrictions on use
- 24R.5 OSD Exemption Map

INTRODUCTION

This Part facilitates development in achieving the requirements of KLEP
Clause 5.21 - Floodwater Planning.
Clause 6.5 - Stormwater and Water Sensitive Urban Design.

For some development types State Environmental Planning Policy
(Sustainable Buildings) 2022 will apply.

Part 24A categorises:

- i) development types, eg new dwellings or retail premises, and
- ii) site location by drainage patterns, eg draining towards the road, or draining towards bushland.

These matters guide the location of development, including water management measures, on the site.

Part 24B outlines how stormwater is ultimately to be discharged from the site.

Part 24C outlines methods of effective stormwater management on site, prior to disposal. This includes methods to improve both water quality and quantity of runoff from the site, to protect downstream neighbours and ecosystems.

There is considerable overlap in the objectives of modern techniques of stormwater management. For instance, water tanks not only store water for re-use as a water conservation technique, but with constant use, also have huge potential to reduce one of the biggest pressures on urban waterways, namely increased intensity and frequency of runoff. Likewise, a purpose designed green roof can both slow runoff from a site and improve water quality while providing aesthetic and insulation benefits to a building.

Therefore the guidance provided in each relevant section of *Part 24C* is specifically related to the objective of that section. There is significant opportunity with careful design to maximise the number of objectives being met, with the minimum number of techniques, or with a variety of techniques best suited to the site, or the desired appearance of the site.

Part 24D guides development in relation to existing drainage systems, such as easements, underground pipes, overland flow paths, and waterways and outlines the requirements of a flood study.

Part 24E guides work (other than minor maintenance) proposed to be undertaken within the road and trunk drainage system.

Part 24F guides proposals where water is intended to be conserved by treating and re-using wastewater (greywater) on the site.

24A Site Design for Water Management

- 24A.1 Development Type for Water Management
- 24A.2 Location of Development for Water Management
- 24A.3 Locating the Development on Site

24A.1 DEVELOPMENT TYPE FOR WATER MANAGEMENT

Objectives

- 1 *To plan water management techniques that are appropriate to the development and location.*
- 2 *To manage water to preserve, enhance and complement existing environmental, social and aesthetic conditions within and external to the site.*
- 3 *To design measures to support and enhance sustainable water management.*
- 4 *To ensure that development does not increase surface and subsurface runoff to downstream properties.*

Controls

Select the Type from those listed below (1-9) that best represents the development proposed. Note that Type 9 is for any other development type not listed in the previous eight categories. The majority of controls applicable to Type 9 development will be determined by Council on an individual basis in consultation with the developer.

- Type 1 Minor alterations and additions - any alteration or addition to a single detached dwelling or secondary dwelling where the increase in hard surface area is less than 100m².
- Type 2 Major alterations and additions - construction of a secondary dwelling or any alteration or addition to a single detached dwelling where the increase in hard surface area exceeds 100m².
- Type 3 New single dwellings including replacement single dwellings.
- Type 4 Dual Occupancies- two dwellings on one allotment (either attached or detached), where either one or both of the dwellings are new.
- Type 5 High and medium density development - any development involving three or more dwellings on one allotment, regardless of the size of the allotment and regardless of whether the dwellings are attached or detached. Includes seniors housing, multi-dwelling housing and residential flat buildings.
- Type 6 Business, Commercial or Retail Premises - any building to be used for business, commercial or retail purposes, and mixed use developments such as shop top housing.
- Type 7 Open Space - land used exclusively for recreational purposes, whether passive or active recreation, including any buildings erected on the land, where the land is primarily permeable and landscaped.
- Type 8 Subdivision other than strata subdivision.
- Type 9 Any other development.

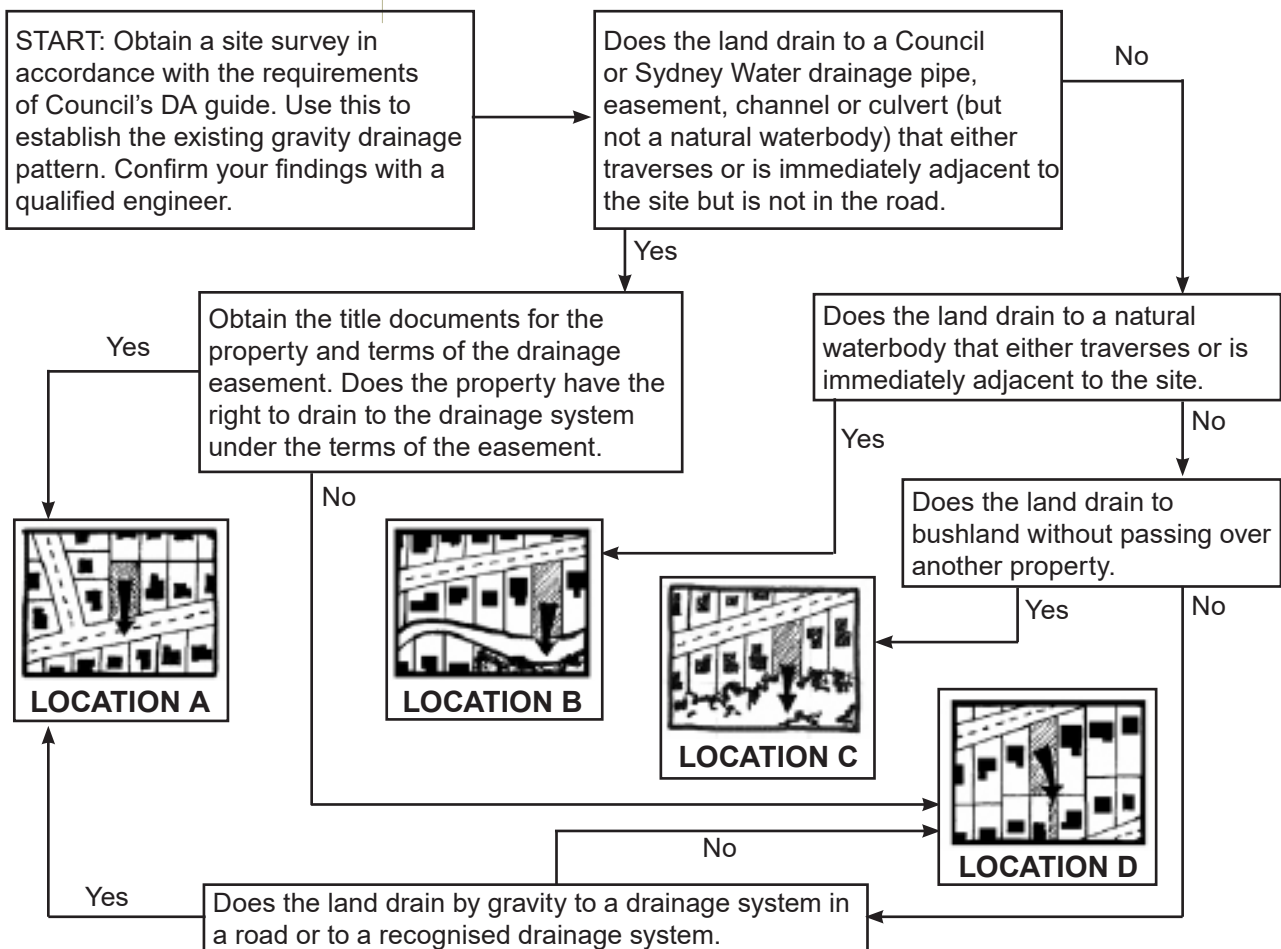
24A.2 LOCATION OF DEVELOPMENT FOR WATER MANAGEMENT

Further controls that may apply

SECTION B PART 17 - Riparian Lands

Controls

Determine which of the following situations (Locations A – D) described below most closely resembles the location of the development site with respect to the natural drainage direction of stormwater. You may determine this by working through the flow chart below and check against the example below and the full descriptions following.



24A.2

LOCATION OF DEVELOPMENT FOR WATER MANAGEMENT (continued)

Controls

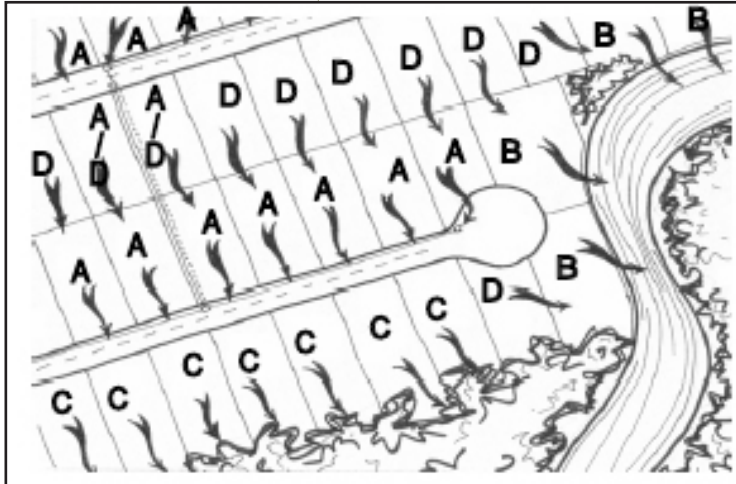
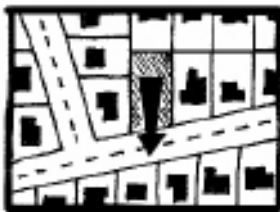


Figure 24A.2-1:
Examples of Location Types



Location A

Land that drains directly to a Council or Sydney Water drainage system in the road or drainage reserve (including a gutter, pipe or road) without the need for stormwater runoff to pass over another private property. This includes land traversed by or immediately adjoining a trunk drainage system where a legal right to connect already exists.



Location B

Land that drains directly to a natural waterbody (see LEP definitions) that traverses (crosses) or intersects the subject site. At least one bank of the waterbody **is to** be located within or immediately adjacent to the subject site.



Location C

Land that drains directly to bushland.



Location D

Any other land, being land that **is to** pass its stormwater over one or more intervening downstream private properties or public land to reach a recognised drainage system in a road reserve, drainage reserve or waterbody. This includes land where a private drainage easement is required (whether or not this has been obtained) and properties that are traversed by or immediately adjoining a trunk drainage system where there is no existing legal right to connect to the system.

24A.3 LOCATING THE DEVELOPMENT ON SITE

Further controls that may apply

SECTION B
PART 17 - Riparian Lands

Objectives

- 1 To plan and design buildings and structures that preserve, enhance and complement existing environmental, social and aesthetic conditions within and external to the site.
- 2 To design water management measures that are complementary to the proposed development.
- 3 To design water management measures that support and enhance sustainability and improve the natural environment.

Controls

Buildings **are to** be located on properties in accordance with the controls set out below.

- 1 The development **is not to** be located so as to impede, divert or increase the rate or concentration of stormwater flow across a boundary onto adjoining private property (eg. by placing a solid wall along a boundary).
- 2 Sufficient space **is to** be allowed on the property for the installation and operation of water management measures as required in this Part of the DCP.

Note: Development within 'waterfront land' may be Integrated Development. Integrated Development requires consent from at least one public body other than Council.

- 3 Above ground elements of the stormwater management system, such as tanks and pumps **are not to** be located in the front setback of a development.
- 4 **Above ground rainwater tanks are not to exceed** 10,000 litres in storage capacity **per tank**.
- 5 Stormwater management devices such as on site detention systems and large water tanks, should be located within the basement or beneath other impermeable areas. eg. - driveways.
- 6 Where there is more than one dwelling, stormwater management devices should be located in common areas.
- 7 The stormwater management system **is not to** result in changes to the existing ground levels within the dripline of trees to be retained.

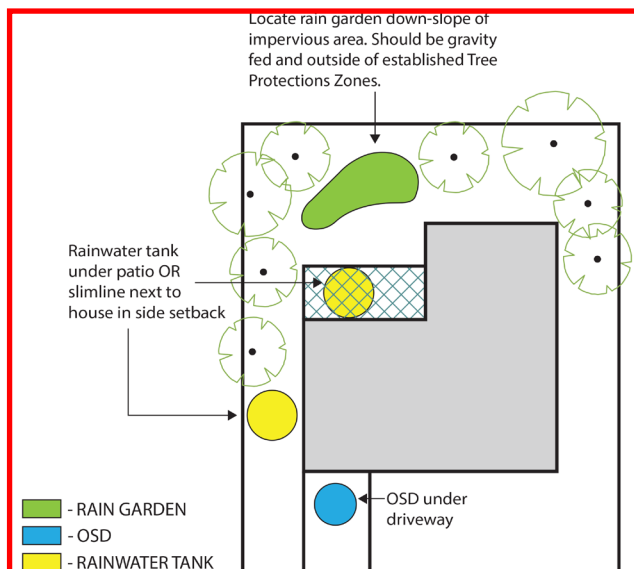


Figure 24A.3-1: Allow sufficient space for installation and operation of required water measures.

Note: Raingarden is to be integrated into the existing landscape setting and be gravity fed and outside established Tree Protection Zones.

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24B Stormwater Discharge

- 24B.1 General
- 24B.2 Stormwater Disposal from Location A Properties
- 24B.3 Stormwater Disposal from Location B Properties
- 24B.4 Stormwater Disposal from Location C Properties
- 24B.5 Stormwater Disposal from Location D Properties
- 24B.6 Relocating pipes and modifying or extinguishing easements where council is the authority

READ WITH
SECTION B PART 17 - Riparian Lands
SECTION C PART 24 - Water Management 24R.2: Design of Property and Interallotment Drainage systems



24B. 1 GENERAL

Objectives

- 1 To achieve a high level of residential safety and amenity.
- 2 To conserve the natural environment of Ku-ring-gai and adjoining areas.
- 3 To minimise the adverse impact of stormwater runoff on neighbouring properties.
- 4 To ensure adverse impacts are not increased beyond what was present prior to the development.
- 5 To minimise the adverse impact of stormwater runoff on the natural environment

Controls

Note: For all location types refer to - *Ku-ring-gai Council Technical Guideline for Water Management*.

Note: For the control of stormwater runoff and water quality measures refer to *Figure 6: Typical Stormwater Pit Details in the Ku-ring-gai Council Technical Guideline for Water Management*.

- 1 Stormwater **is to** be discharged from the site in accordance with the controls for the relevant location category, as identified in *Part 24A* of this DCP.
Note: Where Council drainage easement is designed to only convey "roadwater", the terms of the easement **is to** be legally updated to allow for the site drainage connection.
- 2 Stormwater that is not retained for a use or appropriately infiltrated on site **is to** generally be directed to a public drainage system comprising gutters, streets, pipes, box culverts and channels.
- 3 The scale of the development and the site conditions (including factors such as the lie and type of the land) will inform the selection of the most appropriate form of stormwater discharge.
- 4 In the selection of the means of stormwater disposal, particular regard **is to** be given to downstream impacts.

Carrying Out Drainage Works

- 5 Drainage systems for stormwater disposal **is to** comply with *AS3500.1:2021: Plumbing and Drainage Water Services* or any standard replacing that standard.

Note: See Council Website for the *Ku-ring-gai Council Easement Management Policy*.

24B. 2 STORMWATER DISPOSAL FROM LOCATION A PROPERTIES

Controls

Discharge to Kerb and Gutter/Table Drain

- 1 Piped drainage from the boundary line of the development to the street gutter or table drain **is to** have a minimum 1% longitudinal fall towards the street gutter.
- 2 The total discharge from any dwelling on a lot to the street gutter or table drain **is not to** exceed 25 litres per second for development Type 3 and above.
Note: Where this is not possible, stormwater **is to** be discharged to an enclosed system (pipe, box culvert, road pit). Alternatively, on-site detention may be required to lower the total discharge rate, or the site coverage contributing to the discharge, reduced.
- 3 For Development Types 1, 2 and 3 where piped drainage line crossings from the site boundary are to be employed:
 - i) the piped drainage line crossing **is to** extend no further than 20m from the development site across the frontage of a neighbouring property (see note) except where the location of trees prevent such piped crossings;
 - ii) the crossing line **is to** be at an angle not less than 45° from the line of the frontage of the neighbouring property;
 - iii) the crossing line **is to** run directly behind, and parallel to the street kerb as far as the discharge point. Any necessary drainage line crossing of driveways **are to** be constructed in a trafficable grade, directly behind the layback and parallel to it, subject to Council approval. (These requirements may be varied by Council where they are demonstrated to be impracticable and where a suitable alternative route is demonstrated); and
 - iv) the proposed piped crossing will not compromise existing or future vehicular access to the neighbouring property or to services, trees or similar.**Note:** Details of the proposed route are to be provided to Council in the form of scale plans with all these features shown.
- 4 For development types 4 – 9, piped drainage line crossings to the street drainage system **are to** take place directly outside the frontage of that development and **is not to** encroach across the frontage of any neighbouring property.
- 5 Connection to existing secondary footpath drainage systems, such as pipes beneath the concrete footpath, will not be permitted as they have limited capacity and block easily.
- 6 Connections to concrete kerb and gutter **is to** comply with *Figure 12: Connection of Drainage Line to Kerb in the Ku-ring-gai Council Technical Guideline for Water Management*.

24B.2 STORMWATER DISPOSAL FROM LOCATION A PROPERTIES (continued)

Controls

- 7 When discharge is proposed to an open table drain, the pipe outlet **is to** terminate flush with the property-side edge of the table drain and **is to** be fully encased in a minimum 100mm thick mass concrete for the final 300mm length of the pipe.

Note: Where the applicant cannot comply with any of the above requirements due to site constraints, an alternative method of connection may be proposed for consideration by Council.

Discharge to an Existing Council Pipe in the Road Reserve or a Drainage Reserve

- 8 Discharge to an existing piped (in-ground) drainage system in the road or a drainage reserve may be an option where:
- i) Such a system exists in reasonable proximity to the site and it is not possible to direct stormwater to a Council kerb and gutter or table drain; or
 - ii) The peak site discharge proposed exceeds 25 litres per second and it can be demonstrated that the hydraulic grade line of the inground drainage system (to which connection is proposed) is lower than the outlet of the property drainage system during the 5% AEP event.
- 9 Stormwater **is to be discharged to an existing Council pipe in the road reserve. Connection to the Council drainage pipe is to, at Council's discretion, be undertaken in conjunction with the establishment of a grated gully (access) pit to Council standards. Details of new pits will need to be submitted to Council. All details are to be submitted with an application for a Roads Act approval.**

Discharge to an Extension of the In-Ground Piped System in the Road Reserve

It may be possible to extend an existing downstream in-ground street drainage system on either the property side or the opposite side of the street. This is only allowed where no other connection is possible. In such cases, the following controls apply.

- 10 The in-ground drainage line **is to** be extended using a steel reinforced or fibre reinforced piped system to convey 5% AEP year trunk flows (minimum of 375mm diameter rubber ring jointed reinforced or fibre reinforced concrete pipe), generally at gutter lip alignment.
- 11 The extended drainage line **is to** connect to a new Council standard grated gully pit that **is to** be established outside the development site.
- 12 The feasibility of such a proposal **is to** be established by a suitably experienced and qualified civil engineer.

24B.2 STORMWATER DISPOSAL FROM LOCATION A PROPERTIES (continued)

Controls

- 13 A detailed design **is to** be prepared by a suitably experienced and qualified civil engineer based on design criteria obtained from the roads authority (Refer to 24E of this Part).

Note: The full cost of such works **is to** be borne by the developer.

Note: The design is subject to the approval of the roads authority (Council or TfNSW) under the Roads Act 1993 and no work may be undertaken until approved.

Note: The feasibility of such a proposal **is to** be demonstrated with any DA submission.

Connection to a Council or Sydney Water Formed Channel or Pipeline within or adjacent to the Subject Site

Note: A 'formed channel' generally means a concrete or stone-lined channel located in a position that may not necessarily coincide with any historical waterbody. For example, a formed channel may have been constructed to convey runoff from a road to a nearby natural watercourse. In the event that a legal right to connect exists, the following controls apply (where no legal right exists, the property is likely to be Location D rather than Location A):

- 14 The terms of any easement over the channel/pipe system to which connection is proposed **is to** legally permit the subject site to discharge its stormwater into it and be demonstrated to Council.

Note: Ascertaining this may require independent legal advice.

- 15 Where the formed channel/pipe system crosses intervening downstream properties before the next downstream area of road or drainage reserve, permission to convey the stormwater runoff from the development site by way of the formed channel/pipe **is to** be established under the terms of an easement on the title of each affected downstream property.

- 16 The formed channel/pipe **is to** have sufficient hydraulic capacity to accept the additional flow from the post developed site **of a 5% annual exceedance probability**. The hydraulic capacity **is to** be determined having regard to existing and cumulative future flow rates in that system.

- 17 The outlet **is to** be designed to minimise backwater influence from the receiving system.

- 18 **Connection is to be made to a surcharge pit prior to direct connection to a Council pipeline. Connection to a Council pipeline is to be made in accordance with Figure 11: Typical Junction Pit including Private Connections in the Ku-ring-gai Council's Technical Guidelines for Water Management. For all pipes a junction pit is to be constructed at the connection point.**

- 19 Where connection is to a Sydney Water stormwater pipe, the design tailwater for a sealed pipe drainage system connecting to such a channel **is to** be the top of the channel unless otherwise specified by Sydney Water.

24B.2 STORMWATER DISPOSAL FROM LOCATION A PROPERTIES (continued)

Controls

- 20 Any other site specific requirements of the Council or Sydney Water **is to** be satisfied.

Note: Council may require the establishment of an on-site detention system at the development site (regardless of whether this is required in accordance with *24C of this Part*).

24B. 3 STORMWATER DISPOSAL FROM LOCATION B PROPERTIES

Further controls that may apply

SECTION B PART 17 - Riparian Lands

Controls

- 1 Disposal of stormwater from Location B properties **is to** be undertaken in accordance with the NSW Department of Primary Industries 'Office of Water' document 'Guidelines for Outlet Structures on Waterfront Land, 2012'.

Note: This document is available at <https://water.dpie.nsw.gov.au/>
- 2 Where an existing connection is in poor condition, the stormwater outlet structure is to be upgraded in line with the *Guideline for Outlet Structures on Waterfront Land* and the *Ku-ring-gai Council Technical Guideline for Water Management*.
- 3 Where there is bushland between development and the waterbody, water quality treatment in accordance with Part 24C.6 of this Part prior to discharge to the watercourse.

Note: On some sites, discharge directly to the waterbody may not be appropriate. Advice and evidence from an appropriately qualified and experienced ecological expert may be required.

24B. 4 STORMWATER DISPOSAL FROM LOCATION C PROPERTIES

Controls

Urban stormwater flowing into bushland is the major factor that causes weeds to become established in natural areas. In order to minimise such impacts, the following controls apply to Location C properties.

- 1 The developer **is to** demonstrate to Council that all stormwater entering bushland will be dispersed sufficiently so as to not cause downstream erosion, scour or pollution. This may be achieved by using a raingarden, infiltration or dispersal trench system or slotted pipe to practical depth (where site conditions prevent a deeper trench structure) established at the highest practicable level within the site, parallel to the site contours. Any technique used is to be designed in accordance with Council's Technical *Guideline for Water Management*.

Note: In some circumstances this may require OSD as part of the stormwater management system.

- 2 For new single dwellings (Development Type 3), the maximum post developed built-upon area draining to the dispersal trench/level spreader system **is not to** exceed 35% of the total site area.
- 3 For alterations and additions (Development Types 1 & 2), the post-development **total site** area draining to dispersal trench/level spreader system **is not to** exceed the pre-developed built-upon area.

24B. 5 STORMWATER DISPOSAL FROM LOCATION D PROPERTIES

Further controls that may apply		
		SECTION C PART 24R.2 - Design of Property and Interallotment Drainage Systems

Controls

Council requires that stormwater is discharged from a site in a controlled manner under gravity to a recognised public drainage system. Accordingly, where this could be achieved but for the existence of another property downstream, Council will require that, where possible, an interallotment easement for drainage be utilised to legally provide a controlled gravity drainage solution as far as the nearest available recognised public drainage system.

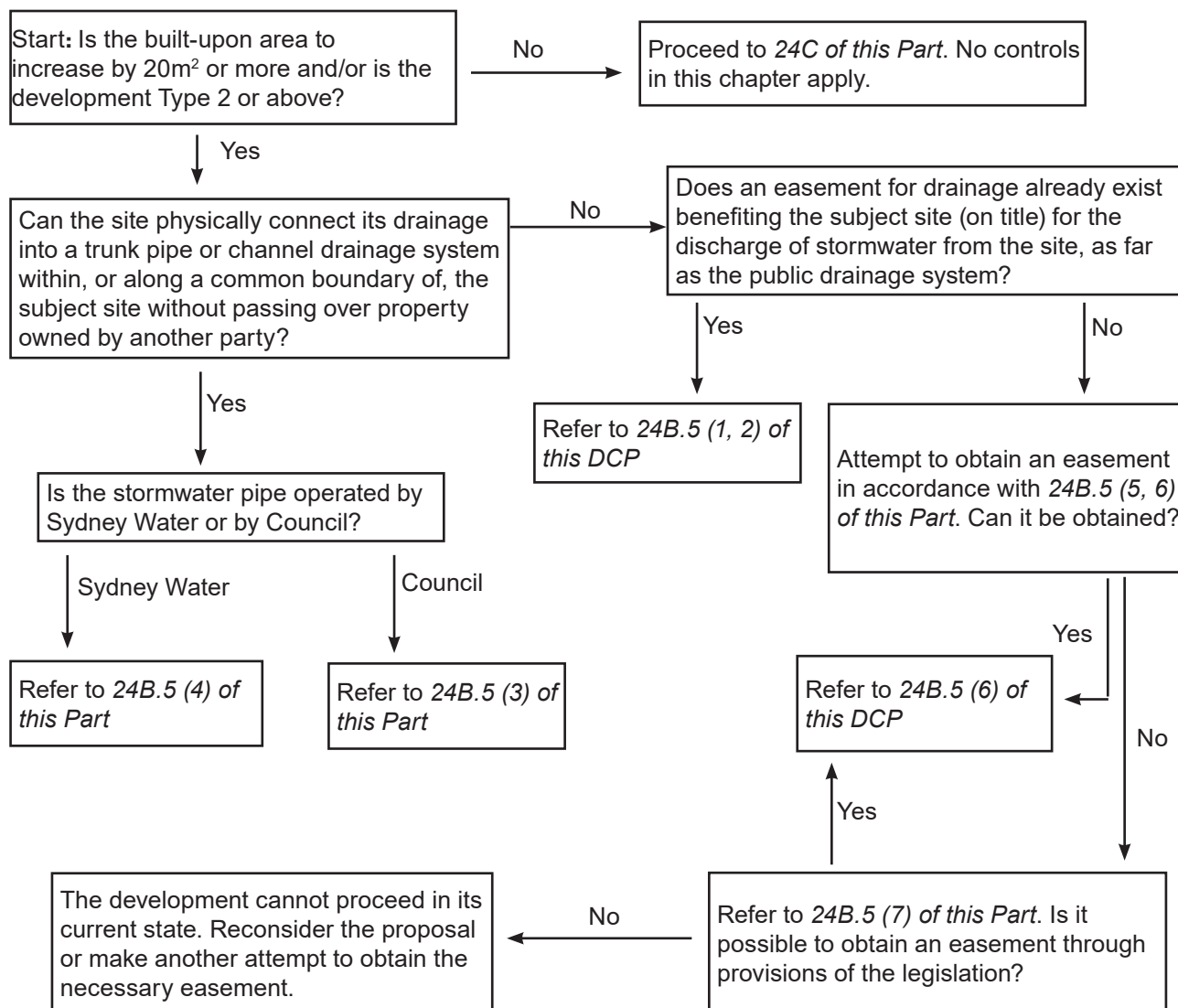
The necessary easement for interallotment drainage as far as the recognised public drainage system may already exist on the title of the subject site (generally described as being appurtenant to, or benefiting, the site). If not, it will be necessary for the owner of the subject site to obtain the necessary easement for drainage. Properties over which an easement may be created include private properties and public parks and reserves.

It may also be possible to connect into a trunk drainage system traversing or directly adjacent to a subject site. (Where the legal right to do so already exists, the property is a Location A property – Refer to 24A.2 of this Part). Where there is presently no legal right to connect to the trunk drainage system, Council may consider an application for a direct connection, as necessary, depending on the physical condition and capacity of the trunk system; the consent of the downstream owners; terms of the easement (where one exists); and the intent of the receiving trunk system.

24B.5 STORMWATER DISPOSAL FROM LOCATION D PROPERTIES (continued)

Controls

Where the use of, or creation of, an easement for drainage is not possible, it may be possible to utilise other methods of disposal depending on the scale and type of development. The following flow chart explains how to determine the manner in which to dispose of stormwater from a Location D property:



Note: Exposed aerial drainage other than downpipes will not be approved by Council.

Note: Council strongly encourages the developer to seek the services of a conveyancing solicitor or experienced legal professional in order to clarify the standing of a site with respect to use of drainage easements. Council does not have in-house experts in property conveyancing matters.

24B.5 STORMWATER DISPOSAL FROM LOCATION D PROPERTIES (continued)

Controls

Discharge to an existing interallotment drainage easement

The development application is to:

- 1 Demonstrate to Council the existence of the interallotment drainage easement that allows the site to drain by gravity as far as a recognised and appropriate public drainage system. This will require provision of the title documents for the affected properties and the subject property. Such title documents are available from the Land and Property Information NSW.
- 2 Include either:
 - i) documentation from a registered surveyor or qualified engineer demonstrating the existence of either suitable drainage infrastructure within the easement system to be utilised (capacity and condition); or
 - ii) a scale plan showing the proposed drainage infrastructure to be placed in the existing easement to drain the subject site.

Note: In the event that the existing easement or piped system is not satisfactory in terms of capacity or length, Council will require the system to be upgraded or extended (Refer to 24R.2 of this Part).

Connection to a formed channel or council pipeline within the subject site

- 3 Permission to connect to a formed channel or drainage pipe will be granted by Council and at the discretion of Council only where it can be demonstrated that:
 - i) the terms of any easement over the channel/pipe system, to which connection is proposed, legally permit the subject site to discharge its stormwater into it and this can be demonstrated to Council;
 - ii) the said channel/pipe is located within or directly adjacent to the development site;
 - iii) where the formed channel/pipe system crosses intervening downstream properties before the next downstream area of road or drainage reserve, permission to convey the stormwater runoff from the development site by way of the formed channel/pipe is established under the terms of an easement or easements on the title of all affected downstream properties;
 - iv) the pipe / formed channel has sufficient hydraulic capacity to accept the additional flow from the post developed site and the hydraulic capacity is determined having regard to existing and cumulative future flow rates in that system;
 - v) the outlet is designed to minimise backwater influence from the receiving system;

24B.5 STORMWATER DISPOSAL FROM LOCATION D PROPERTIES (continued)

Controls

- vi) where it is found that an existing Council owned channel/pipe is present on site that is not within an easement, a suitable easement will be created over the drain in favour of Council, at no cost to Council, or else the easement moved accordingly also at no cost to Council;
- vii) drainage systems for stormwater disposal complies with *AS3500.1:2021 – Plumbing and Drainage Water Services* or any subsequent standard replacing that standard;
- viii) connection to a formed stormwater channel/pipe is made in accordance *Figure 11: Typical Junction Pit Including Private Connections in the Ku-ring-gai Council Technical Guideline for Water Management*; and
- ix) any other site-specific requirements of the Council are satisfied.

Note: Please refer to Council's Easement Management Policy for information relating to the connection and alteration of easements.

Connection to a Sydney Water stormwater pipe in an easement

- 4 The following controls apply:
 - i) Written consent **is to** be obtained by the proponent from Sydney Water and submitted to Council;
 - ii) All necessary easements for drainage exist to benefit the subject site;
 - iii) All relevant requirements of Sydney Water **are to** be satisfied prior to development consent being granted by the Council; and
 - iv) The design tailwater for a sealed pipe drainage system connecting to such a channel **is to** be the top of the channel unless otherwise specified by Sydney Water.

Procedures for obtaining new private interallotment drainage easements

- 5 The first step: Approaching the downstream owners creation of a new interallotment drainage easement **is to** be attempted for all Location D properties where the built-upon area is to increase by 20m² or more (where built-upon area will increase by less than this area, please proceed to *Part 24C*). All attempts **are to** be in accordance with the steps set out below.
 - i) The developer **is to** establish the most appropriate route between the subject site and point of connection to the downstream public drainage system, together with any alternate routes. This may be in a road reserve, a drainage reserve, or a natural watercourse. The developer should contact an appropriate engineer to make the necessary investigations where such a location is not apparent. If trees are on or near the route, an arborist **is to** also be consulted.

24B.5 STORMWATER DISPOSAL FROM LOCATION D PROPERTIES (continued)

Controls

- ii) After establishing the route, the developer **is to** write to the owners of all the relevant downstream properties requesting an interallotment drainage easement as far as is necessary to connect into a recognised public drainage system. The letter may offer financial compensation and **is to** indicate that the burdened property owner would not be responsible for maintenance of the easement.

Note: Appropriate financial compensation may be determined by a registered Valuer but will be subject to negotiations between both parties.

Note: It is recommended that the services of a conveyancing solicitor be engaged in this process.

- iii) The developer **is to** obtain a written response from the landowners of the properties approached in control (ii) above. This will either consent to, or refuse, the creation of the necessary easement(s) for drainage. Where refusal occurs, refer to 24B.5 (7) of this Part.
- iv) Where consent is given, the developer **is to** provide a copy of the signed agreement(s) to Council with any development application lodged.

Note: Where a signed agreement is obtained and submitted as part of DA documentation, the consent authority will impose a condition of consent requiring the legal registration and demonstration of the necessary easement. Alternatively, depending on the circumstances, Council may require registration of the easement on title prior to any DA consent being given. All costs associated with the registration of the easement on title **is to** be borne by the applicant.

- 6 The second step: Prepare the design as per 24R.2 of this Part. If the development application is to be approved it will be on a deferred commencement basis with the registration of the interallotment drainage easement with Land and Property Information NSW (LPI) completed before the consent becomes operational..

Where the downstream landowners agree to the creation of an easement, the following steps **are to** be carried out.

- i) A survey plan, suitable for registration at LPI, **is to** be prepared by a registered surveyor on behalf of the proponent showing the location of the easement. The necessary terms of the drainage easement **is to** be prepared.

Note: The width of the easement to be created **is to** have regard to the required size of pipe that will be placed in the easement and sufficient excavation width in the event of maintenance. Refer to 24R.2 for the required widths and placement of easements.

- ii) The survey plan, owners' written approval, application form and fees **are to** be lodged by the developer at the LPI. The Council **is to** be nominated in the Section 88B Instrument as a party whose consent is required to release, vary or modify an easement.
- iii) Written advice to the effect that the easement has been registered **is to** be obtained by the developer from the LPI and

24B.5 STORMWATER DISPOSAL FROM LOCATION D PROPERTIES (continued)

Controls

supplied to the relevant landowners, the certifying authority as is necessary in the approval process and to Council for its records

Note: The services of independent professionals with relevant experience should be sought in this process. Council does not provide legal advice in this respect.

Using legislation to obtain a drainage easement

- 7 In the event that all reasonable attempts to obtain the consent of the relevant landowners for the creation of an interallotment drainage easement have failed, provisions of *Section 88K of the Conveyancing Act 1919* or *Section 40 of the Land and Environment Court Act 1979* may be utilised. Council does not encourage the use of these provisions and supports negotiation with adjoining property owners. However, Council does recognise that these provisions exist.

Note: Independent legal advice **is to** be sought if either of these options are to be pursued.

Providing evidence that a legal inter-allotment drainage easement cannot be obtained

- 8 In the event that an easement cannot be obtained from one or more downstream parties, the following documentary evidence **is to** be submitted to Council in support of any Development Application:
- i) A copy of all letters sent to landholders of neighbouring properties containing all feasible easement routes indicating an offer of appropriate financial compensation and explaining that the burdened property would not be responsible for maintenance of the easement; and
 - ii) A signed copy of the letters received from owners of the neighbouring properties through which an interallotment drainage easement was sought, stating that an easement will not be granted.

Note: In the event that it is not possible to obtain such a letter, a written account of any response obtained from the property owners may suffice. This evidence will be subject to independent verification by Council.

Note: Some development will not be approved by Council where an easement cannot be obtained.

Discharge of stormwater within the site

On-site discharge of concentrated stormwater flows by infiltration/ absorption into soils on the site is considered to be inadequate in most areas of Ku-ring-gai. This is because the majority of soils are clay-based and have a low to very low infiltration rate or shallow bedrock.

- 9 Discharge of stormwater within the site may involve:
- i) One or more dispersal trenches constructed at the point of disposal designed to disperse stormwater across a site in

24B.5 STORMWATER DISPOSAL FROM LOCATION D PROPERTIES (continued)

Controls

- a sheet flow to provide an opportunity for water take-up by vegetation downstream from the trench;
- ii) A series of infiltration trenches constructed on sandy soils where bedrock is not close to the surface, and;
 - iii) other methods designed to ensure the infiltration/absorption of water into the site such as rain gardens, soaks or swales.
- 10 Discharge of stormwater within the site will only be permitted where all of the following conditions are satisfied (applies to Development Type 1, 2 or 3 only).
- i) It is demonstrated that direct drainage by gravity to the street drainage system, a public drainage system or recognised natural watercourse within the property or to a drainage easement is not possible.
 - ii) It is demonstrated that no drainage easement either exists over adjoining properties or is readily available through negotiation.
 - iii) It is demonstrated that all other alternatives have been comprehensively examined and demonstrated to be inappropriate or ineffective.
 - iv) A rainwater reuse system is incorporated into the development with a least one connection to a toilet.
 - v) It is demonstrated that, for new single dwellings (Development Type 3), the maximum post developed built-upon area draining to the:
 - a) infiltration/absorption trench system will not exceed 30% of the total site area; or
 - b) dispersal/level spreader trench system will not exceed 30% of the total site area. A dispersal/level spreader is only acceptable where an infiltration/absorption trench system is not possible due to topography, geology or biodiversity restrictions.

Note: a geotechnical investigation report will be required to confirm soil depth and permeability rate.
 - vi) It is demonstrated that, for alterations and additions (Development Types 1 & 2), the post-development built-upon area draining to:
 - a) an infiltration/absorption trench system will not exceed the greater of
 - b) 30% of the total site area; or
 - c) a dispersal/level spreader trench system. A dispersal/level spreader is only acceptable where an infiltration/absorption trench system is not possible due to topography, geology or biodiversity restrictions. It cannot exceed the greater of
 - d) 30% of the total site area; or

Note: a geotechnical investigation report will be required to confirm soil depth and permeability rate

24B.5 STORMWATER DISPOSAL FROM LOCATION D PROPERTIES (continued)

Controls

- vii) The design and construction of the system are undertaken in accordance with *Figure 1: Typical Absorption Trench and Figure 4: Typical Level Spreader Dispersion System in the Ku-ring-gai Council Technical Guideline for Water Management.*

Charged drainage systems

A charged drainage system is a sealed drainage system containing permanent ponded water that is forced out under pressure by the height of water above the outlet / discharge point.

Council does not readily encourage the use of charged drainage systems. This is because of their susceptibility to blockage by leaf debris and sediment and the requirement for a high maintenance regime that may not be met by new or uninformed owners. The failure of such systems results in roof gutter overtopping and the increased potential for flooding/damp problems within or adjacent to premises.

However, in certain cases, where the layout of the site and proposed building design permits, a charged drainage system may be used to aid in controlling stormwater disposal from a site. This may be useful where an easement for drainage cannot be obtained and it is necessary to limit the degree of on-site stormwater disposal that is undertaken in accordance with the controls set out in 24B.5 - 'Discharge of Stormwater within the Site' of this Part.

Discharge of stormwater from the site by way of a charged drainage system will only be permitted where all of the following controls are satisfied (applies to Development Type 1, 2 or 3 only):

- 11 Not more than 120 square metres of roof area and four charged downpipes from any one building are required;
- 12 It is demonstrated that direct drainage by gravity to the street drainage system, a public drainage system or recognised natural watercourse within the property or to a drainage easement is not possible;
- 13 It is demonstrated that no drainage easement exists either over adjoining properties or are readily available through negotiation;
- 14 It is demonstrated that all other alternatives have been comprehensively examined and demonstrated to be inappropriate and ineffective;
- 15 The design for the system **is to** be prepared by a qualified civil or hydraulic engineer;
- 16 A stilling pit **is to** be provided at the property boundary from which the drainage line to the street gutter has positive fall by gravity to preclude the possibility of street water backflow;
- 17 A minimum of 1.5m head (height) **is to** be available from the roof gutter to the invert of the inlet in the stilling pit;
- 18 A minimum of 0.8m head (height) **is to** be available from the roof gutter to the top of the rainwater tank;

24B.5 STORMWATER DISPOSAL FROM LOCATION D PROPERTIES (continued)

Controls

- 19 Hydraulic grade line calculations **are to** be undertaken by a suitably qualified and experienced engineer that demonstrates that the proposed system will have sufficient operating head (A freeboard of at least 300mm is to be allowed between the roof gutter level and the hydraulic grade line at the top of the respective downpipe);
- 20 The drainage line from the stilling pit to the street system **is to** be in accordance with control in 24B.2 (1-7) of this Part;
- 21 The property drainage system **is to** be fully sealed from the level of the roof gutter to the stilling pit;
- 22 The charged system **is to** be a minimum uPVC sewer grade 100mm diameter;
- 23 Leaf guards **are to** be established on all proposed roof gutters to minimise debris entering the system. Providing leaf guards to existing gutters is strongly encouraged;
- 24 A grated cleanout pit **is to** be established adjacent to all system low-points in which is provided a screw-capped sealed extension of the respective main charged drainage line;
- 25 An appropriate flap valve **is to** be established over the inlet pipes to the stilling pit in order to minimise mosquito nuisance;
- 26 Drainage systems for stormwater disposal **is to** comply with AS3500 – *Plumbing and Drainage* and;
- 27 Exposed aerial drainage will not be approved by Council, except for guttering and vertical downpipes and diagonal lines where they are directly feeding a rainwater tank required under the controls in this DCP.
- 28 The design and construction of the system are undertaken in accordance with *Figure 3: Combined Charged Line/Absorption Trench in the Ku-ring-gai Council Technical Guideline for Water Management*.

Pump-out systems

- 29 Council will only give consent to pump-out systems for development Types 1, 2 and 3 in rare instances and subject strictly to the applicant fully demonstrating compliance with a number of design

24B.5 STORMWATER DISPOSAL FROM LOCATION D PROPERTIES (continued)

Controls

controls. This is because of:

- i) The susceptibility of pumps to failure during power outages which commonly occur during storms of higher rainfall;
 - ii) The potential impact of a failed pump-out drainage system on the downstream properties;
 - iii) The necessity for a high maintenance regime that may not be met by new or uninformed occupants; and
 - iv) Pumping water into an upstream or adjacent catchment can exacerbate existing flooding problems.
- 30 Stormwater disposal from a site by way of a pump-out system will only be permitted where it can be fully demonstrated that the owner or Council, in approving the pump-out system, could not reasonably be held liable for exacerbating or introducing a flooding problem in the immediate drainage system which is receiving the pumped runoff.
- 31 Pump-out systems **are to** comply with the controls set out below.
- i) The Development **is to** be type 1, 2 or 3 only.
 - ii) The applicant **is to** demonstrate in writing that no easement may be obtained for the discharge of stormwater from the site.
 - iii) The pump-out system **is not to** be the sole means of stormwater discharge from the site.
 - iv) The pump-out system **is to** be employed only as an additional means of stormwater discharge where an absorption trench is proposed to operate, where the impervious area to be drained exceeds 30% of total site area as defined in 24B.5 (10v) of this Part.
 - v) The total impervious area to be pumped **is not to** exceed 100m²
 - vi) The pump-out system **is to** be used in conjunction with an absorption trench system which drains a separate impervious area of 30% of the total site area as defined in 24B.5 (10v) of this Part.
 - vii) Runoff pumped to the street frontage **is not to** enter an existing drainage system where flooding affects private and/or public property including parks and reserves. In this respect, it **is to** be demonstrated by a suitably experienced and qualified civil engineer using suitable hydraulic analysis that:
 - there are no existing flooding issues causing damage or nuisance to property adjacent to or burdened by the drainage system which is receiving the pumped runoff; and
 - increasing the volume of runoff in the receiving system would not create a new, or exacerbate, an existing drainage issue in any downstream private property; and
 - the cumulative impact of pumping more than one property to the same receiving drainage system has been considered; and

24B.5 STORMWATER DISPOSAL FROM LOCATION D PROPERTIES (continued)

Controls

- the drainage system that would receive the additional pumped runoff is of sufficient width and capacity to handle additional runoff as determined in (ii); or
 - the drainage system immediately downstream at the nearest sag point receiving the pumped runoff drains directly to the bush via a formal drainage system without impacting upon private property.
- viii) The pump-out system **is to** have a visible ponding area available for temporary storage during pump failure with an absolute minimum capacity for the 1% AEP, 2 hour event falling on the corresponding impervious area draining via the pump system.
- ix) A duty and standby pump with alternating switches **is to** be provided within a sump in the ponding area, together with a fuel generator on site capable of operating the pump-out system when no power is available.
- x) A stilling pit **is to** be provided at the property boundary, with gravity drainage provided between the stilling pit and the discharge point in accordance with controls in 24B.2 (1-7) of this Part. A non-return or flap valve **is to** be placed at the point the rising main enters the stilling pit. If a stilling pit is impossible, some other form of cleanout/backflow prevention **is to** be provided.
- xi) Overflow from the ponding area of the pump-out system **is to** be formally drained to the site dispersal system.

Pump-out example:

A Location D site of 930 m² proposing a new dwelling (Type 3) with hard surface area generating runoff (including roof, driveway and all other areas generating runoff) of 390 m² (42% of the total site area) proposed with access to an easement refused by the relevant owners. Under the controls of 24B.5 (10v) of this Part, a maximum of 30% of the total site area, or 280m², could drain to an on-site dispersal trench system. However, provided that it may be demonstrated by a experienced and qualified civil/hydraulic engineer that the above pump-out controls are met in full, a pump out system could be considered to pump the additional 110m² (12% of site area) proposed above the 30% threshold permitted by 24B.5 (10v) of this Part. In this case, the applicant would need to provide a visible storage area of **5.6** m³ volume based on the 100 year 2 hour storm of **51.2mm/hr** falling on 110m². This would be in addition to any controls required under BASIX or this DCP.

24B. 6 RELOCATING PIPES AND MODIFYING OR RELEASING EASEMENTS WHERE COUNCIL IS THE AUTHORITY

Controls

- 1 The application **is to** demonstrate that the relocation of the pipeline and /or easement will not have any adverse impacts on the following:
 - i) the hydraulic efficiency of the re-routed system;
 - ii) the potential for blockages within the system;
 - iii) the management of overland flow;
 - iv) water quality and riparian health;
 - v) costs associated with ongoing maintenance of the stormwater asset.
- 2 A Council drainage easement is to be created over any new line of pipe and any redundant easements are to be extinguished.
- 3 The release or extinguishment of an easement will only be permitted where it can be demonstrated that it is redundant to existing or future stormwater management needs.
- 4 All associated design, documentation, relocation, valuation, stamp duty, compensation and legal costs are to be borne by the applicant.
- 5 The application and procedures **are to** be consistent with Council's Easement Management Policy.

24C On-site Stormwater Management

24C.1 General

24C.2 Effective Stormwater Management

24C.3 General Controls for On-Site Stormwater Management

24C.4 Mandatory Rainwater Tank Requirements

24C.5 Controls for On-site detention

24C.6 Stormwater Quality Control



24C.1 GENERAL

Objectives

- 1 *To ensure stormwater management is integrated with the overall site design and reflects the site analysis.*
- 2 *To ensure that development does not increase surface and subsurface runoff to neighbouring properties.*
- 3 *To consider the existing capacity of the public drainage system.*
- 4 *To minimise stormwater discharge and reduce runoff days to protect and improve stream health*
- 5 *To ensure that development does not adversely affect the integrity of natural waterways, subsurface water and ecosystems.*
- 6 *To ensure stormwater management measures are functional and effective for the duration of their existence.*
- 7 *To maximise rainwater re-use.*

Controls

- 1 Stormwater is to be managed efficiently on-site and runoff controlled to assist in the prevention of:
 - i) flooding of public and private properties;
 - ii) overland water flows;
 - iii) undesirable changes in flow regime to bushland;
 - iv) erosion of creek beds, embankments and bushland areas;
 - v) transportation of gross pollutants, nutrients and chemical pollutants;
 - vi) spread of weeds;
 - vii) undesirable impacts on the character of the street.
- 2 Stormwater is to be managed on-site to assist in the maintenance of:
 - i) stream flow;
 - ii) water quality in creeks, rivers, groundwater and harbours;
 - iii) waterway and riparian ecosystems;
 - iv) groundwater dependant ecosystems; and
 - v) the natural recharge of groundwater.

Note: Council encourages the design of innovative stormwater management systems. Such systems **are to** be informed by the soil type on the site. It should be recognized that soils in Ku-ring-gai are not generally appropriate for retention systems that involve infiltration.

Note: Where water sensitive urban design features do not preclude screen and canopy planting, they can be included in the calculations of deep soil landscaping.
- 3 Colours and materials of built elements of the stormwater management system that are visible to the public **is to** be sympathetically treated to minimise visibility.

24C.2 EFFECTIVE STORMWATER MANAGEMENT

Controls



Figure 24C.2-1
Informal raingarden



Figure 24C.2-2
Formal detention pond
amphitheatre in public space
(www.wsud.org)

An appropriate method or combination of methods **are to** be provided on the site to manage stormwater quality and flows. The system **is to** be designed to ensure the optimum outcome for both the catchment and the subject site. Available management techniques include rainwater tanks, detention basins and tanks, infiltration basins and trenches, passive irrigation tanks, raingardens (biofiltration gardens), green roofs, dense native vegetation buffer strips, vegetated swales, biofiltration swales, rainscaping and dispersal trenches.

Note: Some techniques, such as green roofs, are predominantly used for water quality treatment, microclimate regulation and aesthetics, rather than for retention or detention. However, consideration of retention or detention contribution will be made where such benefits can be demonstrated through modelling.

Note: Biofiltration systems can be used for stormwater quality and flow management. Refer to *Figure 7: Typical Biofiltration System* and *Figure 8: Biofiltration System Standard Details in the Ku-ring-gai Council Technical Guideline for Water Management*.

These systems can be designed to retain or detain stormwater:

- 1 On-site Retention (OSR) is a stormwater management system that keeps water on site for re-use in the hydrological cycle or as an alternative to mains water. OSR controls the volume of runoff during rainfall and storm events. Stormwater is not sent directly off the site, reducing runoff draining to pipelines, minimising flood events, conserving water and reducing the impact on the natural water cycle.
- 2 On-site Detention (OSD) works involve holding back stormwater temporarily within a site and then releasing it at a controlled rate. It controls the rate of runoff and reduces peak discharges during storm events; to minimise the load on pipelines and to minimise flood events. OSD does not alter the total volume of stormwater leaving the site and normally does not allow the stormwater to be used before it leaves the site.
- 3 In many situations a combination of OSD and OSR may be appropriate. In general, the factors that the designing engineer should take into account when determining the stormwater management techniques for a site are:
 - i) the timing of peak flows from the site relative to those from the upstream catchment which drain to the same point. This is influenced by the time of concentration and the proximity of the site to the catchment point. Generally, in upper parts of the catchment water needs to be detained, whereas in lower areas it may be preferable to allow most of the stormwater to leave the site immediately;
 - ii) the proximity of the subject property to environmentally sensitive areas such as bushland. Specifically, OSD can be problematic where a site drains to bushland as constant seepage causes weed growth;
 - iii) the impact of any proposed stormwater management method on the streetscape and neighbouring properties, particularly in terms of aesthetics.

24C.2 EFFECTIVE STORMWATER MANAGEMENT (CONTINUED)

Controls

- 4 Both OSR and OSD options are to be designed and constructed to meet water quality controls in accordance with 24C.6 of this Part. This can be achieved by incorporating litter screens, proprietary devices, biofiltration or infiltration within the design.

24C.3 GENERAL CONTROLS FOR ON-SITE STORMWATER MANAGEMENT

Controls

This section is based on the principles of effective stormwater management (Refer to 24C.2 of this Part) and contains the controls that will form the basis for assessing any stormwater management proposal.

- 1 The stormwater management system, as far as is practicable, **is to** be designed so as to improve water quality and assist in maintaining stream flow and the water regime.
- 2 The stormwater management system, as far as is practicable **is to** be designed to control discharge rates to prevent downstream flooding. On site detention will be required in most circumstances.
- 3 The design of the stormwater management system is to be based on:
 - i) for location A, B and D properties
 - the deep soil landscaping or built-upon area requirements in Section A of this DCP
 - ii) for location C properties:
 - the requirements of 24B.4 of this Part.

Note: Where the proposed built-upon area is less than the maximum permissible built-upon area, the design **is to** still be based upon the maximum permissible built-upon area.

Note: For larger sites where development is obviously precluded from certain areas, a merits based assessment may be considered by Council for the basis of area calculations.

Stream Flow Controls

- 4 In order to maintain and improve stream flow the number of runoff days from the site **is to** be reduced by 50% compared to the base case. This is to be achieved through the incorporation of both a rainwater tank and landscape measures, as outlined below.

Note: Base case for the purpose of 4) above refers to the number of runoff days that would result from the proposed development without stormwater management measures.

 - i) landscapes should be designed to ensure runoff from impervious areas of the site is directed to raingardens or other vegetated areas for infiltration (rainscaping) rather than being directly connected to the stormwater system. Permeable paving may also be used to reduce the frequency and intensity of runoff.

Note: This may not be possible on some sites due to the presence of large areas of exposed rock, existing drainage issues or ecological constraints. Where these circumstances apply, a Pre-DA meeting with Council is recommended.

Note: The impermeability factor for permeable (**porous**) paving is available in the *Technical Guideline for Water Management*.

- a) runoff is to be controlled to ensure it does not cause flooding to the dwelling or neighbouring properties.

Note: Typical details of the porous system is to be in accordance with *Figure 5: Typical Porous Paving Details in the Ku-ring-gai Council Technical Guideline for Water Management*.

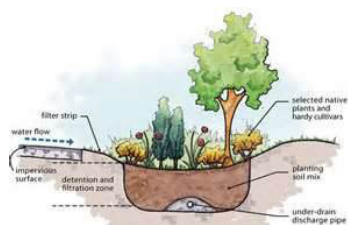


Figure 24C.3-1
Concept design of a
raingarden

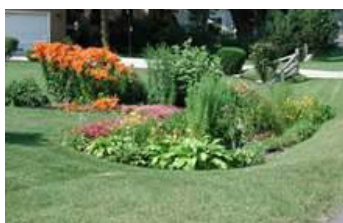


Figure 24C.3-2
Vegetated Infiltration basin



Figure 24C.3-3
Permeable paving used to
reduce runoff to bushland on
a Location C property.

24C.3 GENERAL CONTROLS FOR ON-SITE STORMWATER MANAGEMENT (continued)

Controls

- ii) for Development Types 5, 6, 8 and 9; and for proposed variations to iii) below:
 - a) Rainwater tanks **are to** be sized and installed in accordance with table 24C.4-1, and
 - b) A suitably qualified and experienced engineer **is to** certify that the proposed management measure(s) to be used at the site (whether proprietary or otherwise) will achieve the reduction in runoff days in 2) above;
- iii) for Development Types 3 and 4, and for Type 2 where the development includes alterations and additions to a bathroom or laundry. The following will be deemed to comply with the reduction in runoff days in 2) above:
 - a) Rainwater tanks sized and installed in accordance with table 24C.4-1 and either of the following:
 - b) For rainscaping, the size of the area receiving runoff is to be 30% of the contributing hardstand area for clay soils and 20% for other soils, or
 - c) An unlined raingarden with a filter surface area in accordance with 24C.6-2.
- 5 The selected stormwater techniques **is to** be designed and constructed in accordance with the specifications for the relevant technique. The specifications can be found on Council's website.

Subsurface Water Controls

- 6 Subsurface water management systems **are to** be designed to transfer subsurface water through, around or under the proposed development to maintain the natural subsurface water regime.

Where an impediment to the natural flowpaths is created as a result of the nature of the construction methods utilised or the bulk of the below-ground structure, artificial drains such as perimeter drains and through drainage may be utilised. These systems may only be utilised where it can be demonstrated that the natural flow regime is restored both up-gradient and down-gradient of the site, without any adverse effects on

- i) surrounding property;
- ii) infrastructure;
- iii) groundwater dependent ecosystems;
- iv) threatened species, populations, and ecological communities;
- v) **bushland**;
- vi) riparian lands; and
- vii) watercourses

Note: Ongoing dewatering of any development may need approval from NSW DPI Office of Water for an aquifer interference activity.

Note: Additional information relating to shallow subsurface soil water and vegetation impacts may be required.

24C.3 GENERAL CONTROLS FOR ON-SITE STORMWATER MANAGEMENT (continued)

Controls

- 7 Subsurface water management systems are to be designed to be easily maintained. Council may require a Positive Covenant (see 24R.4 of this Part) to ensure the continued functioning and maintenance of the approved subsurface water management system.
- 8 For development types 4 and above, basements are to be fully tanked, unless:
 - i) 3ML/year limit is met; and
 - ii) Hydrological assessment to demonstrate the receiving system can accept flows.

24C.4 MANDATORY RAINWATER TANK REQUIREMENTS

Controls

For all Locations (A-D), at least one rainwater tank **is to** be established to capture as much as possible roof water from the primary building(s) on the property. The controls are as set out in the table below:

Table 24C.4-1: Mandatory Rainwater Tank Requirement by Development Type

Type	Description		Minimum Tank Storage Volume	Minimum Use of Retained Water
Type 1 <20m ²	Alts & adds to a single detached dwelling or secondary dwelling. Increase in hard surface area.♦		A water tank is strongly recommended but not mandatory,	Where installed, are to be connected to garden. Connection to toilet and laundry hot water is also encouraged.
20-100m ²	Alts and Adds to single or secondary dwellings where the development is increase in hard surface area.♦	Where proposal does not involve a bathroom or laundry	The minimum tank storage volume is 2,000L, or, compliance with BASIX, whichever is the greater.	For garden irrigation only.
		Where proposal involves a bathroom or laundry.	The minimum tank storage volume is 2,000L, or in compliance with BASIX, whichever is the greater.	Is to be at least one connection to laundry or toilet.
Type 2	Alts and Adds or construction of secondary dwellings >100m ² increase in hard surface area.♦		The minimum tank storage volume is 5,000L, or in compliance with BASIX, whichever is the greater.	Connection for garden irrigation and for internal use.
Type 3	Single Dwellings in sites less than 1000m².		The minimum tank storage volume is 5,000L, or in compliance with BASIX, whichever is the greater.	Connection for garden irrigation and for internal use.
	Single Dwelling in sites greater than 1000m².		The minimum tank storage volume is 10,000L; or in compliance with BASIX, whichever is the greater.	Is to be at least one internal connection to laundry or toilet.
	Single Dwellings in locations B, C and D (where an inter-allotment drainage cannot be obtained or it is located within the OSD exemption map 24.R.9) is to provide rainwater storage in lieu of OSD.			

24C.4 MANDATORY RAINWATER TANK REQUIREMENTS (continued)

Controls

Table 24C.4-1: Mandatory Rainwater Tank Requirement by Development Type (continued)

Type	Description	Minimum Tank Storage Volume	Minimum Use of Retained Water
Type 4	Dual Occupancy	For any new dwelling: <ul style="list-style-type: none"> The minimum tank storage volume is 5,000L; or in compliance with BASIX, whichever is the greater; plus <ul style="list-style-type: none"> 2,000L for any existing dwelling to be retained 	Connection to garden, toilet and laundry and hot water is encouraged for the existing dwelling.
Type 5	High and medium density	The minimum tank storage volume is that required to meet the 50% reduction in runoff days specified in control 24B.3-4, or compliance with BASIX whichever is the greater.	Number of connections required to meet the specified target. Is to also be connected to garden, podium plantings, green roofs and walls.
Type 6	Business, Commercial, Retail	The minimum tank storage volume is that required to meet the 50% reduction in runoff days specified in control 24B.3-4, or compliance with BASIX or the Green Star Rating, whichever is the greater.	Number of connections required to meet the specified target. Is to be connected to garden, podium plantings, and any green roofs and walls.
Type 7	Open Space	2,000L for every five toilets or part thereof in any building erected.	Is to be connected to toilets. Where possible also for irrigation.
Type 8	Subdivision	2,000L for any dwelling to be retained on a newly created lot.	The minimum use of retained water will be garden irrigation. Connection to toilet and laundry and hot water is also encouraged.
Type 9	Any Other Development	As determined by Council, dependent on development type	

♦ Or where total site Built Upon Area is above 60%.

Note: The mandatory rainwater tank volume requirement may be met using one or more tanks, as appropriate to the site and the required use of stormwater.

Note: The installation of rainwater tanks are to be in accordance with *Figure 2: Typical Rainwater Reuse Tank and Use in the Ku-ring-gai Council Technical Guideline for Water Management*.



Figure 24C.4-1
Rainwater tank blends
with dwelling

24C.5 CONTROLS FOR ON-SITE DETENTION

Controls

Part 24C.5 applies to locations A, B and D (where connection to an easement is available), and in some circumstances to Location C properties **where bushland overland flow is directed to downslope properties.**

- 1 OSD Exemptions will only be considered for properties identified on the OSD Exemption Map in 24R.5.

Note: Exempting of OSD will be subject to Council approval.

Note: Developments on properties which benefit from an OSD exemption may be subject to additional rainwater reuse tanks requirements in accordance with part 24C.4.

- 2 The orifice plate **is to** be installed in any discharge control pit at the same time as the pit is connected to the outlet pipe. The on-site detention system is not to discharge uncontrolled runoff into the downstream drainage network.
- 3 To protect the streetscape character, above ground on-site detention systems in the front setback are to be avoided.

Development Type 1 and 2

- 4 OSD is not required for development Types 1 and 2 unless the development increases the BUA to over 60% of the site area, or it is required to control rates of runoff into existing stormwater systems.

Development Types 3, 4, 5 and 6

- 5 Any rainwater retention system **is to** be included as part of the stormwater management system and **is to** comply with the installation specifications available on Council's website.
- 6 In areas where it is desirable that peak outflows from the subject site do not coincide with the peak flow for the catchment as a whole, the permitted site discharge and storage volume **is to** be calculated in the following manner:
 - i) Determine in which OSD drainage catchment the site is located (**refer to the *Ku-ring-gai Council Technical Guideline for Water Management***);
 - ii) Use the information **and calculation sheet in the *Ku-ring-gai Council Technical Guideline for Water Management*** to determine the permitted site discharge and minimum OSD storage volume required for the development; and
 - iii) Deduct from the minimum storage volume (SSR1 or SSR2 from **the *Ku-ring-gai Council Technical Guideline for Water Management***) the minimum volume of the any rainwater tank required at 24B.4 of this Part up to an absolute maximum of 10% of SSR provided the tank, is at least, plumbed to toilet and garden irrigation.

Note: The permitted site discharge (PSD) **is to** remain as specified **in the *Ku-ring-gai Council Technical Guideline for Water Management***.

24C.5 CONTROLS FOR ON-SITE DETENTION (continued)

Controls

- iv) Areas, such as green roofs, permeable paving, and hard stand directed to raingardens or rainscaping, may be included in the impervious area bypassing the detention system in the On-site Detention system, calculation sheet (*in the Ku-ring-gai Council Technical Guideline for Water Management*).
- 7 Except where it is demonstrably not practicable, the stormwater management system **is to** incorporate at least two different devices or techniques so as to reduce the risk of total system failure, ie. rainwater tanks may NOT be the sole means employed for on-site stormwater management.
Note: Examples of means that may be acceptable to Council (depending on site circumstances) include:
 - i) a rainwater tank and OSD; or
 - ii) a rainwater tank, OSD and a raingarden.
- 8 The system **is to** be designed such that overflow from the retention system is captured by the OSD device(s) employed on the site and disposed of in accordance with Part 24B.

Development Types 7, 8, and 9

- 9 For development where construction of sealed driveways or roadways with an area greater than 200m² is proposed, an on-site detention system will be required to treat that area prior to discharge into the Council system. The SSR and PSD for this system **is to** be calculated using *the on-site detention calculation sheet in the Ku-ring-gai Council Technical Guideline for Water Management* and based upon the total impervious area to be constructed under the subdivision application.
Note: The creation of new lots will not be approved unless adequate provision for gravity drainage is demonstrated for each of the lots to be created. This will include demonstration of the necessary easements as required.
- 10 Tennis Courts **are to** be constructed as on-site detention systems unless otherwise approved.
Note: For other type 7, 8, and 9 developments it is recommended that Councils pre-DA service be used, prior to the lodgement of a DA.

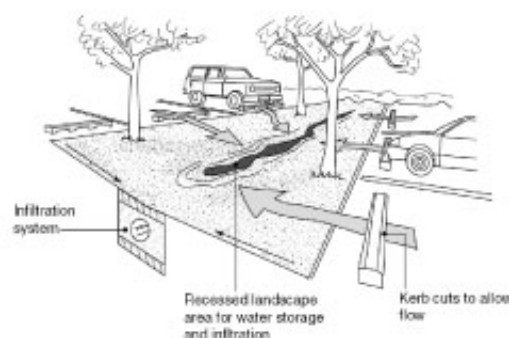


Figure 24C.5-1:
Biofiltration systems can be incorporated into vegetated areas within car parks reducing the on site detention requirements.

24C.6 STORMWATER QUALITY CONTROL

Controls

- 1 The captured stormwater **is to** be treated to the standards set out in the table 24C.6-1.

Table 24C.6-1: Captured Stormwater Treatment Standards

Pollutant	Baseline Annual Pollutant Load (kg/ha/yr)	Standard to be achieved (kg/ha/yr)
Gross Pollutants	500	30% (70% reduction) = 150
Total Suspended Solids	900	15% (85% reduction) = 135
Total Phosphorus	2	35% (65% reduction) = 0.7
Total Nitrogen	15	55% (45% reduction) = 8.25

- 2 For Development Types 3 and 4, and Type 2 where the development includes alterations and additions to a bathroom or laundry. The following will be deemed to comply with 1) above:
 - i) direction of roof area to a rainwater tank;
 - ii) green roof;
 - iii) permeable paving;
 - iv) direction of runoff from impermeable surfaces to rainscaping.

Note: See the Technical Guidelines for Water Management for green roof and permeable paving standard details.

- 3 For any remaining impermeable surface area, a raingarden or raingardens may be provided with a filter surface area of 2.5% of the remaining impermeable surface area. Design guidance can be found of Council's website: (krg.nsw.gov.au)

- 4 Raingardens, particularly those within the front setback, on a Heritage Item, or in a Heritage Conservation Area, are to give consideration to its appearance, including the planting.

- 5 For the purpose of 2) above, the area of impermeable surface used to calculate the required raingarden surface area can be reduced by the following:

- i) area of roof that is directed to a rainwater tank;
- ii) area of green roof;
- iii) area of permeable paving;
- iv) area of impermeable surfaces where runoff is directed to rainscaping.

Note: Gross pollutant load has been set higher than typical Australian values reflecting the significant weight of leaf litter generated within Ku-ring-gai.

Note: Within the Ku-ring-gai local government area the vegetation associated with soils derived from Hawkesbury sandstone are particularly intolerant to phosphorus. For this reason, water quality standards for phosphorus and gross pollutants leaving a site have been set at a high standard. It is important to note that the pollutant load standard to be achieved for phosphorus is based on technology currently available.

Note: Standards to be achieved are a percentage of the 'baseline annual pollutant load', which is defined as the expected post-development pollutant load that would be discharged from the site over the course of an average year if no stormwater reuse or treatment measures were applied. The load is determined based on average rainfall of 1200 mm per year from a 50% impervious catchment with concentrations derived from average values reported in Engineers Australia Australian Runoff Quality (as updated).

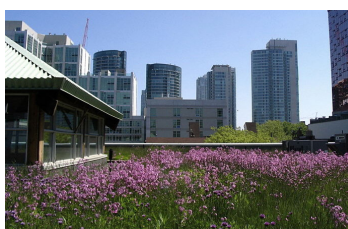


Figure 24C.6 -1

A green roof can reduce the required OSD, insulate the roof, encourage small wildlife, and provide enjoyment for local residents.

Source author: Sookie

24C.6 STORMWATER QUALITY CONTROL (continued)

Controls



Figure 24C.6 -2
A local raingarden connected to the overflow of a rainwater tank improves water quality and reduces runoff to the adjoining bushland.

- 6 For Development Types 5, 6, 8 and 9 (including car parks):
 - i) all stormwater flows from regular rainfall events (up to the 40% AEP storm) **are to** be captured for treatment prior to discharge to the stormwater drainage system.
 - ii) a suitably qualified and experienced engineer **is to** certify that the proposed management measure(s) to be used at the site (whether proprietary or otherwise) will achieve the standards for water quality required in this DCP;
 - iii) the design is to be based on MUSIC modelling prepared in accordance with Council's MUSIC Modelling Guidelines available on Council's website (www.krg.nsw.gov.au) and in the MUSIC-link function within MUSICv6 (or the latest version).
 - iv) the certification and modelling **is to** be submitted with the development application.
 - where MUSICv6 (or the latest version) is used a MUSIC-link validation report for Ku-ring-gai Council **is to** be submitted with the development application
 - where an older version of MUSIC is used the model files **are to** be submitted to Council to enable MUSIC-link validation to be undertaken.
 - any model using parameters not in line with Councils MUSIC modelling guidelines **are to** provide clear justification for any variation.

Note: modelling software other than MUSIC may be used, however all assumptions, inputs and parameters used **are to** match Councils MUSIC modelling guidelines and be clearly explained/demonstrated. Council may also require the model to be certified by a third party (at the proponents expense).
- 7 The treatment measure(s) **is to** include one or more of the following methods or other as appropriate:
 - i) Proprietary device/s including an independent certification that it is able to capture and treat or retain the pollutant load specified;
 - ii) Any appropriate method described on Council's website or other technique appropriate to the site including:
 - retention (ponds, wetlands);
 - retention and filtration (raingarden, sand filters, permeable paving);
 - re-use and re-charge (rainwater tanks and infiltration systems); or
 - filtering and conveyance (vegetated swales); and
 - Gross Pollutant Traps (GPTs).
- 8 Treatment **is to** occur as close as practicable to the source to maximise effectiveness.
- 9 Where it is proposed to treat stormwater using one or more proprietary devices, technical specifications from the manufacturer **are to** be provided with the development application as evidence of the performance capabilities of the device.
- 10 Council will require a Positive Covenant or restriction on use (see 24R.4 of this Part) for any approved proprietary device to ensure the continued functioning and maintenance of the device.

24D Existing Drainage Systems

- 24D.1 General
- 24D.2 Flood Studies and the Design Flood Standard
- 24D.3 Development Over or Adjacent to a Natural Waterbody, Open Channel or Drainage Depression
- 24D.4 Development Over or Adjacent to an Underground Pipeline
- 24D.5 Tennis Courts and Other Sporting Surfaces
- 24D.6 Fences
- 24D.7 Swimming Pools and Spas

READ WITH
SECTION B PART 17 - Riparian Lands

24D.1 GENERAL

Objectives

- 1 *To ensure existing stormwater flow paths and drainage systems are preserved during all rainfall events.*
- 2 *To ensure natural watercourses and floodplain processes are maintained.*
- 3 *To ensure flows maintain or mimic natural or pre-development conditions.*
- 4 *To enhance the environmental function of urban creeks and riparian lands.*
- 5 *To preserve the integrity of existing open waterbodies.*
- 6 *To minimise the detrimental effects on neighbouring properties.*
- 7 *To ensure accessibility to existing and future underground piped drainage systems is preserved for maintenance and construction purposes.*
- 8 *The impact of flood events is not increased.*
- 9 *To protect new development from inundation or flood damage.*

Controls

Controls 1 - 3 below are only relevant where it is proposed to undertake development adjacent to or over an existing drainage system (including a natural waterbody). In such situations the following controls apply:

- 1 Development **is to** be kept clear of floodways.
- 2 Development **is not to** impede overland flows.
- 3 Development in the vicinity of drainage systems **are not to** result in:
 - i) increased incidences of flooding;
 - ii) damage to property and belongings;
 - iii) risk to life;
 - iv) loss of environmental amenity and integrity; or
 - v) difficulty in maintaining or upgrading an associated drainage system.

Note: There may also be shallow overland flow paths and depressions that may not be formally identified in the flood planning area that are to be considered in design.

24D.2 FLOOD STUDIES AND THE DESIGN FLOOD STANDARD

Controls

A flood study is undertaken to identify the reach and depth of overland flows associated with drainage systems on or near a site and to assess the impact of development on such flows and vice versa. Drainage systems include underground pipes, natural watercourses, open channels and depressions.

Note: Council has completed flood studies for selected catchments. Refer to Flooding Ku-ring-gai (nsw.gov.au)

- 1 Where a Catchment Flood Study has been completed and the site is identified on the Flood Planning Area map any development proposal is to demonstrate:
 - i) Development is confined to a part of the site which is flood free; or
 - ii) All dwellings are set at or above the specified freeboard; and
 - iii) Development will not exacerbate flooding depth, extent or flow velocities on adjoining properties; and
 - iv) Any part of the dwelling house or any ancillary development that is erected at or below the flood planning level is to be constructed of flood compatible material, and able to withstand the forces exerted during a flood by water, debris and buoyancy up to the flood planning level.

Note: Absence of Flood Planning Area or Probable Maximum Flood mapping on a property does not mean the site is free from overland flows during major rainfall events – all development is to carefully consider potential flow paths and incorporate good drainage design to minimise potential impacts during major rainfall events.

2. Where a Catchment Flood Study has not been completed or Council considers that a development proposal, associated with a nearby drainage system, may:
 - i) be subject to inundation from overland flows causing damage to property or belongings; and/or
 - ii) be subject to structural damage from overland flows or debris associated with the overland flows; and/or
 - iii) impede the passage of stormwater associated with the design flood standard to cause a rise (afflux) in the flood level upstream greater than 50mm; and/or
 - iv) divert overland flows onto or into surrounding properties; and/or
 - v) increase the downstream velocities of flow for the design flood standard.

Council reserves the right to request that a flood study be undertaken and prepared in accordance with 24R.3 of this Part.

24D.2 FLOOD STUDIES AND THE DESIGN FLOOD STANDARD (continued)

- 3 The design flood standard is to be calculated based on either:
 - i) the overland flow associated with the 1% AEP storm event with any above-ground channels and underground pipes / culverts operating at a maximum of 50% capacity; or
 - ii) the overland flow associated with the 20% AEP storm event with any above-ground channel or underground pipes / culverts fully blocked;
 - iii) whichever is the greater.
- 4 For sensitive and hazardous development Council may require the adoption of events between the 1% AEP and Probable Maximum Flood (PMF) as the design flood event where it is considered that the proposed works pose a greater than usual risk to persons and/or property.
 - i) Sensitive and hazardous development includes:
 - a) Early education and care facilities.
 - b) Educational establishments.
 - c) Emergency services facilities.
 - d) Group homes.
 - e) Hospitals.
 - f) Respite day care centres.
 - g) Seniors housing.
 - h) Hazardous storage establishments.

24D.3 DEVELOPMENT OVER OR ADJACENT TO A NATURAL WATERBODY, OPEN CHANNEL OR DRAINAGE DEPRESSION

Further controls that may apply

SECTION B PART 17 - Riparian Lands

Controls

Note: Development within 40m of 'waterfront land' may be Integrated Development. Integrated Development requires consent from at least one public body other than Council.

The following controls apply to development over or adjacent to a natural waterbody, open channel or drainage depression.

- 1 Where works are proposed to be undertaken adjacent to the design flood standard conveyance zone associated with a watercourse, open channel or drainage depression, and Council considers it to be necessary, a flood study **is to** be prepared in accordance with 24R.3 of this Part to demonstrate that the development will not:
 - i) be subject to inundation from flows associated with the watercourse causing damage to property or belongings; and /or
 - ii) be subject to structural damage from flows associated with the watercourse or debris associated with the flows; and/or
 - iii) impede the passage of stormwater associated with the watercourse to cause a rise (afflux) in the flood level upstream greater than 50mm; and/or
 - iv) divert flows associated with the watercourse onto or into adjacent properties; and/or
 - v) increase the downstream velocities of flow for the design flood standard.
- 2 Bridges may be considered, where:
 - i) the underside of any bridge structure, including any attached utility services, is not less than 300mm above the level of the design flood standard;
 - ii) the existing velocity of water in the watercourse would not be affected;
 - iii) not more than one bridge is established per property; and
 - iv) the watercourse and banks beneath the bridge are stabilised by rock lining or equivalent to prevent erosion that would otherwise result from reduced plant growth due to restricted solar access.

Note: Lower level bridges may be considered subject to demonstration that they are structurally adequate, will not impact upon stormwater flows (including backwater affecting upstream property) and will enable dry access during storm events up to the 5% AEP.

24D.3 DEVELOPMENT OVER OR ADJACENT TO A NATURAL WATERBODY, OPEN CHANNEL OR DRAINAGE DEPRESSION (continued)

Controls

- 3 Where the design flood standard is less than $20\text{m}^3/\text{s}$, or identified as overland flow on the Flood Planning Area Map* the minimum floor level of all enclosed areas and structures, including all habitable floor areas, **is to** be either:
- i) 300mm above the design flood standard level; or
 - ii) 300mm above the highest existing ground level along the associated overland flow path; or
 - iii) whichever is the greater, except in the case of garages, where the minimum height **is to** be 150mm instead of 300mm, and in-ground swimming pools, which **is to** be designed in accordance with the provisions of 24D.7 (4) of this Part

*where a flood study has been completed.

- 4 Where the design flood standard exceeds $20\text{m}^3/\text{s}$, or as identified as mainstream flow on the Flood Planning Area Map* the minimum floor level for all enclosed areas, including all habitable floor areas, **are to** be 500mm above the design flood standard level, except in the case of garages, where the minimum height **is to** be 300mm, and in-ground swimming pools, which **is to** be designed in accordance with the provisions of 24D.7 (3,4,5) of this Part.

*where a flood study has been completed.

Note: Council may require, as a condition of consent, that the following burdens be placed on the title of the subject property over the following areas of the property:

- i) a restriction-on-use over the determined design flood standard conveyance zone for an overland flow path associated with a natural waterbody, open channel or drainage depression, the terms of which do not permit the placement of any structures within that zone which may impede the design flood standard; and/or
 - ii) a drainage easement to the benefit of Council and/or upstream properties as applicable.
- 5 Safety fencing that is required to reduce hazard to persons to acceptable limits may be installed in any areas that are subject to overland flow. Safety fencing **is to** be able to withstand a velocity x depth ratio of $0.4\text{m}^2/\text{s}$, not impede flows or debris, and meet the minimum requirements of AS1926.1-1993: Fencing for Swimming Pools or any standard that replaces it. If fencing is not feasible, other suitable measures may be provided to restrict access to areas which exceed this limit.
- 6 Parking areas **are not to** be established in areas where vehicles would become buoyant in an overland flow zone, and hence unstable. A maximum velocity x depth ratio of $0.6\text{m}^2/\text{s}$ to $0.7\text{m}^2/\text{s}$ applies in these instances in accordance with Australian Rainfall and Runoff.

Note: Australian Rainfall and Runoff is published by Engineers Australia www.eabooks.com.au. Information on updates to Australian Rainfall and Runoff can be found at www.arr.org.au

24D.4 DEVELOPMENT OVER OR ADJACENT TO AN UNDERGROUND PIPELINE

Further controls that may apply

SECTION B PART 17 - Riparian Lands

Controls

- 1 The exact location of any drainage line within (or out of) any drainage easement **is to** be established by a registered surveyor, including size, depth to obvert from ground levels and changes in direction, and shown on a scaled drawing.
- 2 Notwithstanding the controls contained in this section, development is not permitted over or adjacent to a drainage easement and/or pipe unless it also meets the requirements of 24D.3 (3,4) of this Part.
- 3 No structure will either encroach upon or be located within a drainage easement. Where no easement is present, no structure will encroach within a 1.5 metre wide zone either side of an underground drainage system, with the exception of carports and other open-faced structures, where:
 - i) existing overland flow paths are maintained, i.e there is no substantial alteration to existing ground levels;
 - ii) the pipe size does not exceed 525mm;
 - iii) all sides of the structure are open-faced to not less than 300mm above the top water level of any overland flow path;
 - iv) the structure has a minimum 2.5 m head clearance along the length of the easement or pipeline;
 - v) footings do not encroach into the easement and are not located where they would cause any structural loading on an underground pipe;
 - vi) velocity x depth profiles of associated overland flows do not exceed 0.4 m²/s; and
 - vii) the structure is readily removable and would not compromise future access to the in-ground drainage system for maintenance or upgrade.
- 4 Parking stands to be paved as set out below.
 - i) paving, where finished ground levels over the pipe or easement will not be substantially altered, where existing overland flow paths will be maintained and where a suitable full-depth expansion joint or equivalent measure is provided along the easement boundaries or 1.5 m from the centreline. Paving is to be readily removable for future maintenance or upgrade;
 - ii) eave overhangs where a minimum 2.5m head clearance to ground level is provided;

24D.4 DEVELOPMENT OVER OR ADJACENT TO AN UNDERGROUND PIPELINE (continued)

Controls

- iii) footings that extend to at least the depth of the invert of the associated pipe or that are placed on competent bedrock. *Refer to Figure 10: Typical Footing Adjacent to Drainage Easements/ Pipes in the Ku-ring-gai Council Technical Guideline for Water Management;*
- iv) tennis courts and other sporting surfaces in accordance with 24D.5 of this Part; and
- v) fences, where construction does not, either partly or fully, obstruct any existing overland flowpath and which comply with 24D.6 of this Part.

Note: The approval of such structures will be at the discretion of Council.

- 5 Where any structure is to be located within a drainage easement in accordance with the controls listed at clause 3 above, a written agreement to the activity **is to** be obtained from all beneficiaries of the easement.
- 6 Where works are required to Council's drainage systems or in easements on private land the natural form of the channel is be reinstated where feasible as identified on the 'Riparian Lands Map' in the KLEP. See Section 6.7 of the KLEP, and Part 17 of this DCP.
- 7 Where underground drainage lines exist within private property without the benefit of an easement, Council may require the creation of an appropriate easement at no cost to Council as a condition of approval for any Development Application for the subject land.

Note: In the event that works need to be carried out on Council drainage systems for private developments or in easements, the costs of removal and replacement of any structure permitted under this section will NOT be borne by Council.

24D.5 TENNIS COURTS AND OTHER SPORTING SURFACES

Controls

Tennis courts will not generally be permitted over drainage systems, however, in certain limited circumstances, Council may consider such a proposal acceptable. A tennis court in such a location **is to** comply with the controls set out below.

- 1 Tennis courts **are not to** be constructed within the riparian land associated with any watercourse (see 'Natural Resources - Riparian Lands Map' in the KLEP).

24D.6 FENCES

Further controls that may apply

SECTION B PART 17 - Riparian Lands

Controls

- 1 No fence of any construction type may be established within the cross-section of the main flow channel associated with watercourses.
- 2 No fence of solid construction may be established over a natural watercourse, open channel or drainage depression.
- 3 Fences, whether located at boundaries or within a property, **are to** not obstruct any overland flow path associated with a watercourse, open channel, easement or drainage depression.
- 4 Any fence located within an overland flow path as defined by the flood design standard **is to** be of open construction to at least 300mm above the flood design standard level.

24D.7 SWIMMING POOLS AND SPAS

Controls

- 1 Swimming pools, spas and associated equipment **are to** be located not less than 1.5m from any outer edge of an underground drainage system operated by Council, regardless of whether an easement has been created for the drainage system.

Note: This is to ensure that Council will be able to maintain the system without compromising the pool structure (eg. lifting plant).

- 2 Where it is proposed to establish a pool adjacent to the design flood standard conveyance zone associated with an overland flow path, watercourse, channel or drainage depression, a flood study **is to** be prepared in accordance with the provisions of 24D.2 of this Part and 24R.3 of this Part to ascertain the design flood standard and demonstrate that the pool structure will:
 - i) not impede the flow of stormwater associated with the design flood standard so as to cause a rise (afflux) in the flood level upstream greater than 50mm;
 - ii) not increase the downstream velocities of flow for the design flood standard; and
 - iii) not be subject to structural damage associated with the conveyance of the design flood standard (water) or the impact of debris transported by the flows.
- 3 Where the design flood standard flow is less than 20m³/s, the minimum finished level of the swimming pool or spa coping is to be not less than 150mm above the design flood standard level.
- 4 Where the design flood standard flow is greater than 20m³/s, the minimum finished level of the swimming pool or spa coping level is to be not less than 300mm above the design flood standard level.
- 5 No swimming pool or spa **is to** be established where it will be subject to inundation from the calculated design flood standard.

Note: The presence of silt, debris and other pollutants in overland flows can severely compromise the life of the pool, spa and associated equipment where they are inundated. In this respect, covenants or similar which place the onus for maintenance of the swimming pool or spa on the property owner where it is known that they will be inundated will not be considered by Council.

**24E Road and Trunk Drainage Design**

24E.1 Design procedures

24E.1 DESIGN PROCEDURES

Objectives

- 1 *To ensure proper management of stormwater capture and conveyance.*
- 2 *To achieve high standard of safety, health and amenity for persons, vehicles and property.*
- 3 *To manage and conserve the Ku-ring-gai environment.*
- 4 *To minimise risk to vehicles and property from the impacts of stormwater runoff.*
- 5 *To preserve existing stormwater flow paths and drainage systems during all rainfall events.*

Controls

As required under legislation (including the Roads Act 1993), a design plan **is to** be prepared and submitted to Council for approval when any work other than minor maintenance is to be undertaken within the road and trunk drainage system.

Note: Further detail may be found in other Council documents such as Council's Specification for Road and Drainage Works.

Note: Sufficient information **is to** be provided for Council to assess the proposed drainage design.

Note: The care, control and management of the road and trunk drainage system, including the network of pipes, overland flow paths and natural and constructed channels, is the responsibility of Council, so any work performed on it may only be carried out with Council's knowledge and approval.

General Controls

- 1 All designs **are to** be prepared by a qualified civil engineer.
- 2 All calculations and designs **are to** be in accordance with the procedures set out in *Australian Rainfall and Runoff*.
- 3 All submissions of calculations to Council **are to**, where appropriate, include:
 - i) a catchment plan showing each sub-catchment and overland flow path;
 - ii) engineering plans detailing the proposed construction; and
 - iii) calculations shown on the calculation sheet contained in *Australian Rainfall and Runoff*.
- 4 Where the calculations are to be performed by approved computer modelling, full details of the input and output files **are to** be provided in hard copy and in acceptable electronic form.

Note: *Australian Rainfall and Runoff* is published by Engineers Australia www.eabooks.com.au. The most recent version of *Australian Rainfall and Runoff* should be used unless otherwise specified by council. Information on updates to *Australian Rainfall and Runoff* can be found at www.arr.org.au/

Hydrological Calculations

- 5 All hydrological calculations submitted to Council for approval **is to** be carried out in accordance with the procedures set out in *Australian Rainfall and Runoff* and in accordance with recognised engineering practice.

Note: For drainage systems in all catchments, Council has 20% and 1% AEP flow information available. This can be obtained by completing a Technical Services search form (available from Customer Service) and payment of the relevant fee.

- 6 For catchments greater than 1.5 hectares and/or where there is more than one contributing catchment, peak flowrates **are to** be determined using a recognised runoff routing computer model such as DRAINS.

24E.1 DESIGN PROCEDURES (continued)

Controls

Note: In all other cases, use of the rational method for determining flowrates will be considered acceptable. In these instances, the calculation sheet shown in *Australian Rainfall and Runoff* **is to** be included together with a plan clearly showing the catchment areas and overland flowpaths.

Note: In some areas 1 dimensional modelling may not be considered sufficient and Council may require 2 dimensional modelling to be undertaken

- 7 Runoff coefficients and times of concentration **are to** give due consideration to likely future development within the catchment.

Recurrence Intervals

- 8 Drainage systems **are to** be designed to provide both minor and major flow conveyance systems as detailed in *Australian Rainfall and Runoff*
- 9 All enclosed stormwater drainage systems **are to** be designed to have minimum capacity to cater for a 5% AEP storm, unless otherwise approved by Council.
- 10 An overland flowpath **is to** be established to accommodate the surcharge from rainfall for a storm recurrence interval of either the 1% AEP with all pipelines 50% operational or the 20% AEP with all pipes blocked, whichever provides the greatest surcharge.
- 11 Constructed trunk stormwater drainage channels **are to** be designed to have sufficient capacity to convey the 5% AEP rainfall event with appropriate freeboard at the bankfull level together with provision to convey the 1% AEP event in overbank flow.

Note: Council may require the recurrence intervals specified herein to be increased having regard to the particular circumstances of each case or where danger to persons or risk of significant property damage warrants such an approach.

Note: Rainfall intensities for Ku-ring-gai as derived from Australian Rainfall and Runoff are included in Ku-ring-gai Rainfall Intensity Frequency Duration Data.

Note: Topographical maps may be purchased in whole or in part from Council.

Note: Council does not retain a complete record of the locations, sizes and levels of all components of its drainage system. Upon written application to Council, relevant information may be researched for the applicant, however, Council cannot guarantee that the correct information is held in its records.

Hydraulic Calculations and System Design

- 12 Pipeline design for road and trunk drainage **is to** be performed using the hydraulic gradeline method set out in *Australian Rainfall and Runoff*.
- 13 Minimum internal pipe diameter **is to** be 375mm.
- 14 Minimum pipe gradient **is to** be 1.0% to allow for cleaning and self-flushing.

24E.1 DESIGN PROCEDURES (continued)

Controls

- 15 Pipe velocity **is to** be between 0.5m/s and 7.0m/s and preferably between 1.0m/s and 5.0m/s during the design storm to ensure the flow is self-cleansing but not likely to cause scour.
- 16 Minimum pipe cover in areas not subject to vehicular loading **is to** be 300mm (measured from the crown of the pipe).
- 17 Minimum pipe cover in areas subject to vehicle loading **is to** be 450mm. Appropriate design of bedding and backfill is also required.
- 18 Pipe classes, backfill and bedding **is to** be determined using the AS3725 or any standard replacing that standard.

Note: Pipeload available from the Concrete Pipe Association Australia <http://www.cpa.org.au/> can be used for bedding design and determining pipe class to be used.

- 19 Except where approved by Council, pipes **are to** be rubber ring jointed reinforced concrete pipes to comply with the requirements of Australian Standard AS4058 or any standard replacing that standard.

Note: Council does not permit the use of pipes or traditional concrete lined channels or their equivalent to replace existing open watercourses. Where new drainage channels are proposed, they **are to** be designed and constructed in an environmentally sensitive manner that mimics the environmental benefit of a natural open watercourse. This would typically involve the use of large sandstone rocks that are tightly packed to form a stable channel and also to provide niches for habitat function, sediment collection and plant growth. The size of individual rocks will depend on the design velocity of flood flow along the channel. The channel design will require sensitive design by the engineer. *Refer to Figure 9: Typical Outlet Structures to Watercourse in the Ku-ring-gai Council Technical Guideline for Water Management.*

- 20 Constructed channels **is to** be designed to cater for a 50% blockage factor (ie, it **is to** be assumed that the channel is 50% blocked during the critical design storm). This applies to both the minor and major flow conveyance design.
- 21 Inlet pits **are to** be located and provided with kerb inlet of adequate size to relieve the flow in gutters, such that the depth does not exceed 100mm on the high side of residential roads and 75mm on the low side of residential roads and 75mm in commercial areas. Additional pits may be required in certain locations to prevent cross road flows. The location of the gully pits on curves, kerb returns and in line with normal pedestrian traffic flows is to be avoided.
- 22 The minimum pit size for any inlet, gully or junction pit on Council drainage systems is 900x900mm clear internal.
- 23 The inlet capacity of on-grade and sag inlet pits **are to** be determined using equations given in *Australian Rainfall and Runoff* or the charts provided in the Appendix of *Australian Rainfall and Runoff*. Allowances **are to** be made for blockage in accordance with the following table:

24E.1 DESIGN PROCEDURES (continued)

Controls

Inlet Type	Side Entry	Grated	Combination	Letterbox
% Capacity Blockage	10%	30%	100% side inlet capacity only	50%

Table 24E.1-1: Inlet capacity allowance requirements.

Note: Alternative capacity allowances may be considered if they are in line with Australian Rainfall and Runoff or related updates www.arr.org.au

Note: Some areas where there is a history of blocking, such as high leaf drop, high street litter load, Council may require check analysis with higher blocking factors as part of the design

- 25 All new pits are to be constructed using galvanised steel grates and sag pits are to have a minimum internal lintel width of 2.4m nominal opening.
- 26 Water depths and velocities in free surface flows **are to** be determined using Manning's Equation. Where uniform flow is occurring (ie. the channel cross-section, roughness and slope are constant over a reasonable distance), Manning's Equation may be applied to the cross-section without consideration of upstream or downstream influences.

Note: For most overland flow analysis, the assumption of uniform flow will not be appropriate and consideration **is to** be given to upstream and downstream controls, losses for afflux and other hydraulic losses.

Preparation of Stormwater Design Drawings for Trunk Systems

- 27 Stormwater design drawings submitted to Council for approval **are to** include a plan view of the proposed stormwater drainage layout and a drainage longitudinal section of each proposed pipeline. These **are to** be drawn at recognised scales and in accordance with Australian Standard AS1100, Part 401-1984 or any standard replacing that standard.
- 28 The plan view **is to** clearly show the location, dimensions and types of:
 - i) all existing drainage features including drainage pipelines, channels, structures, utility services and overland flow paths;
 - ii) all proposed drainage features including drainage pipelines, channels, structures and overland flowpaths; together with
 - iii) all necessary information to accurately set out the proposed works including the location, coordinates and levels of survey control marks and coordinates of each drainage node.
- 29 Drainage longitudinal sections **are to** be provided for all proposed stormwater drainage lines. They **are to** be drawn to Australian Height Datum (AHD) at the same horizontal scale as the plan view and with a vertical exaggeration of five, oriented with chainages running from left to right and **are to** include the following:

24E.1 DESIGN PROCEDURES (continued)

Controls

- i) existing and design surface profile;
- ii) existing and design surface levels;
- iii) existing drainage pipelines;
- iv) utility services;
- v) design pit and pipe profiles;
- vi) chainages along pipe centreline;
- vii) proposed pipe grade, size and class;
- viii) design flow and velocity;
- ix) drainage structure definition; and
- x) junction and node identification.

24F On-site Wastewater Management

24F.1 On-site wastewater management



ON-SITE WASTEWATER MANAGEMENT

24F.1 ON-SITE WASTEWATER MANAGEMENT

Objectives

- 1 *To ensure that land is suitable for on-site sewage management and that on-site sewage management systems are designed to operate sustainably, without resulting in environmental harm or risk to public health.*

Controls

On-site Single Domestic Sewer Management

This section contains the controls that form the basis for assessing on-site domestic sewer management systems carried out on a residential premises that does not include premises comprising of more than one dwelling. This does not apply to sewage of a commercial (non-domestic) nature or greywater re-use.

- 1 Approval is required under the *Local Government Act 1993* to install and operate an onsite domestic sewer management system. Sewer management systems manage wastewater that has been used in the home including from the toilet, urinal, bidet, kitchen, laundry, baths and showers.
- 2 Domestic sewer management facilities include septic tanks with absorption trench disposal or pump out service systems, collection wells, aerated wastewater treatment systems and composting toilets.
- 3 Applications must relate to residential premises that, only comprise of one dwelling, are normally occupied by less than 10 persons and generate an average flow of less than 2,000 litres of sewage a day.
- 4 Council can only approve the installation of sewer management systems on domestic premises if the sewer management facility has been accredited by the NSW Ministry of Health. Refer to the register of accredited sewage management facilities on the NSW Health website.
- 5 Application for installation of a sewer management system is to include:
 - i) Plan to scale, showing the location of;
 - the sewage management facility proposed to be installed or constructed on the premises, and any related effluent application areas, and
 - any buildings or facilities existing on, and any environmentally sensitive areas of, any land located within 100 metres of the sewage management facility or related effluent application areas, and
 - any related drainage lines or pipework.
 - ii) Specifications of the sewage management facility proposed and NSW Health accreditation documents.
 - iii) Site assessment including details of the climate, geology, hydrogeology, topography, soil composition and vegetation of effluent application areas.
 - iv) Statement including the number of persons residing on the premises and any other factors that are relevant to the capacity of the proposed sewage management facility.
 - v) Operation and maintenance details including maintenance and servicing arrangements and action to be taken in the event of a breakdown in operation.

24F.1 ON-SITE WASTEWATER MANAGEMENT (continued)

Controls

Domestic Greywater Diversion Systems

This section contains the controls relating to installation of a greywater diversion system on a residential premises. Domestic greywater is wastewater from washing machines, laundry tubs, showers, hand basins and baths but does not include wastewater from a kitchen, toilet, urinal or bidet.

- 6 Domestic greywater diversion requires approval under the *Local Government (General) Regulation 2021* except in the following circumstances:
- i) is carried out on a residential premises that does not include premises comprising of more than one dwelling, and;
 - ii) is carried out in accordance with the Plumbing Code of Australia, and
 - iii) a sewage management facility is not installed on the premises concerned, and
 - iv) the following performance standards are achieved;
 - the prevention of the spread of disease by micro-organisms;
 - the prevention of the spread of foul odours;
 - the prevention of contamination of water;
 - the prevention of degradation of soil and vegetation;
 - the discouragement of insects and vermin;
 - ensuring that persons do not come into contact with untreated greywater;
 - the minimisation of any adverse impacts on the amenity of the premises and surrounding lands.

24R References

- 24R.1 Design of On-site Detention Systems (OSD)
- 24R.2 Design of Property and Interallotment Drainage Systems
- 24R.3 Flood Study Requirements
- 24R.4 Terms of Positive Covenants and Restrictions on use
- 24R.5 OSD Exemption Map

READ WITH
SECTION C PART 24 - Water Management 24C.4: Mandatory Rainwater Tank Requirements



24R.1 DESIGN OF ON-SITE DETENTION SYSTEMS (OSD)

Controls

Depending on the site, stormwater may be detained above and/or below ground. Where it is above ground, it may be held in an open grassed or landscaped area or in a driveway designed for such a purpose. It is possible to use a combination of different locations. The following controls apply to on-site detention tanks:

General Controls for On-site Detention Systems (OSD)

- 1 On-site detention (OSD) **is not to** be established across allotment boundaries unless intended to be covered by reciprocal drainage easements.
- 2 The design of the facility is to be compatible with the proposed overall site layout and landscaping and **is not to** be unsightly.
- 3 On-site detention storages **are to** generally be located as close as possible to the lowest point of the site.
- 4 The site drainage system **is not to** surcharge before the on-site detention area is full to the design top-water level.
- 5 On-site detention storages **are not to** be located in drainage easements and/or overland flow paths that convey catchment flows through the site.
- 6 The on-site detention system is to drain freely to the public drainage system for storm events up to and including the 1% AEP.

If this is not possible, compensation is to be made by increasing the storage volume provided (calculations to be submitted for approval).

The rate of discharge from the OSD system is to be calculated based on the impervious area remaining after the deep soil area is deducted from the total site area.
- 7 Where the development is on land that is to be strata titled or community titled, OSD **is to** be located in common areas (and not in private courtyards).
- 8 Locations of on-site detention systems **are to** be included on any new final plans of subdivision.
- 9 Cut and/or fill within the canopy areas of any trees to be retained is not permitted.
- 10 The excavation influence line **is not to** affect footings of adjacent or neighbouring structures.
- 11 The location of the OSD **is not to** restrict pedestrian access between a public road and any site building and **is not to** cause hazard or inconvenience in any manner.
- 12 A spillway or overflow outlet is to be provided in all OSD systems as part of the operation of the system. The overflow **is to** be designed to cater for total system failure (blockage) in extreme storm events and designed to safely convey all overflows up to the 1% AEP

24R.1 DESIGN OF ON-SITE DETENTION SYSTEMS (OSD) (continued)

Controls

uncontrolled flow to an adequate downstream drainage system without adverse impact on neighbouring properties.

Note: Where large overflow structures are required, Council may determine that approval for the structure is required from the Dam Safety Committee.

- 13 The overflow from the system is to be collected within a suitably located and sized drainage pipeline with a design capacity equivalent to the 1% AEP storm runoff from the site.
- 14 Overflow **is not to** be directed to another private property unless along an overland flowpath along an easement.
- 15 The spillway is to be protected by the fixing of suitable armour over the overflow facility.
- 16 The overflow level **is not to** be less than:
 - i) 0.3m below the floor level of all habitable areas adjacent to the OSD and
 - ii) 0.15m below the floor level of all garage areas adjacent to the OSD.
- 17 The top level of kerbs and other retaining structures is to be a minimum of 50mm above the level of flow over the spillway.
- 18 The location of all on-site stormwater detention systems is to be marked on site by the fixing of a marker plate of minimum size of 0.15m x 0.1m to the grate of the discharge control pit or nearest concrete or permanent surface in a prominent position. The plate **is to** be of non-corrosive metal or 4mm thick laminated plastic and that contains the following wording:

This is an on-site stormwater detention system required by Ku-ring-gai Council. It is an offence to reduce the volume of the tank or basin or to interfere with the orifice plate that controls the outflow. The owner **is to** clean the base of the outlet control pit and the debris screen of debris and sediment on a regular basis. This plate **is not to** be removed.

- 19 A positive covenant and restriction on use is to be established for the detention system in accordance with 24R.4 of this Part.

Discharge control pits (dcp)

- 20 The discharge control pit is to have dimensions of 0.6m x 0.6m for pits up to 0.6m deep, and 0.9m x 0.6m for pits exceeding 0.6m depth.
- 21 To protect against blockage, all outflow controls are to be totally and solely enclosed by a rustproof debris screen or wire cage in accordance with the following:
 - i) the screen material is to be hot dipped galvanised mesh (Lysaght's maximesh 3030 or equivalent product);
 - ii) the minimum surface area of the debris screen **is to** be 50 times

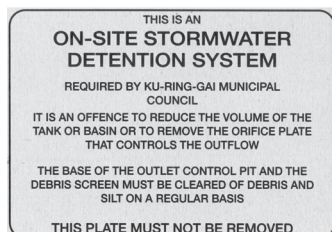


Figure 24R.1-1
Marker plate for on-site
detention system

24R.1 DESIGN OF ON-SITE DETENTION SYSTEMS (OSD) (continued)

Controls

- the area of the outlet pipe or orifice;
 - iii) the screen is to be a minimum of 0.1m from the face of the orifice and attached (generally on a sliding mechanism) to the wall;
 - iv) the screen **is to** be capable of removal by hand to permit cleaning and easy inspection of the outlet control; and
 - v) the inlet pipe to a DCP should direct inflows parallel to the screen. To assist in shedding debris, the screen should be positioned as close as possible to the vertical, but not less than 45 degrees to the horizontal.
- 22 A sediment collection sump **is to** be provided below the orifice outlet to the stormwater detention system that:
- i) has a minimum depth of 0.2m below the invert of the orifice;
 - ii) is connected to the outlet pipe by means of 3 x 40mm weepholes plugged with a geofabric filter cloth; and
 - iii) includes an additional filter medium between the weepholes and the connection to the outlet that consists of 15mm river gravel wrapped in geofabric over a minimum length of 0.6m, thence to subsoil drainage connected to the main outlet (where possible).
- 23 If site discharge is controlled through installation of a choke pipe, the adopted tailwater levels are to be as follows:
- i) for systems draining directly to the street drainage system –
 - for connections to the kerb, the top of the kerb level, or
 - for connections to street drainage pits, 0.15m below the underside of the grate, or
 - for connections to footway or easement pipes or pits, the surface level of the point of connection; or
 - ii) for systems draining directly to an open channel, the top of the channel.
 - iii) for systems draining directly to a watercourse, the top of the watercourse.
- 24 If site discharge is controlled by a sharp edged orifice, the following controls apply:
- i) orifice plates are to have minimum dimensions of 0.2 x 0.2m with a minimum orifice diameter of 30mm and **are to** be 3mm thick flat stainless steel.
 - ii) the orifice plate is to be tooled to the exact dimension as calculated and **is to** be securely fastened in a central position over the outlet pipe using four galvanised (4) dynabolts and epoxy cement.
 - iii) orifice plates are to be flush with the wall such that flow does not pass between the plate and the wall and is to be located so that the centreline of the orifice is in line with the base of the on-site detention tank.

24R.1 DESIGN OF ON-SITE DETENTION SYSTEMS (OSD) (continued)

Controls

- iv) the following formula is to be used to calculate the required diameter of the sharp edged orifice:

$$D = 21.8 * (PSD / h^{0.5})^{0.5} \text{ where}$$

D = orifice diameter (mm) PSD = flowrate (L/s)

h = pressure head at the middle of the orifice when the system is at its maximum storage capacity (m)

Note: The formula assumes that the water level immediately downstream of the orifice is not above its obvert.

- v) where the calculated orifice diameter is less than 30mm, the detention system **is to** be redesigned to either reduce water depths in the storage facility or to increase the catchment draining to the basin.
- vi) the outlet pipe to which the orifice discharge is connected is to have a capacity at least 1.5 times the permissible site discharge for at least the first 2m downstream from the orifice.

Above ground on-site detention systems

- 25 The facility **is to** be located where the least possible adjustment to existing ground levels would be required to achieve storage of the necessary volume.
- 26 The calculated storage volume is to be increased by 20% to allow for the growth of the vegetation and for minor variations to the ground level occasioned by the maintenance regime.
- 27 Ponding depth **is not to** exceed 1.2m at any point and **is not to** exceed 0.3m over a minimum width of 1m at the perimeter.
- 28 A childproof fence **is to** be established around the OSD area where ponding depth exceeds 0.3m and where any side of the OSD basin exceeds 15% gradient.
- 29 The proposed structure **is to** be certified by the designing engineer as impermeable and structurally adequate to retain the design volume of water.
- 30 Council will not approve post and sleeper walls and/or earth mounding as a retaining structure for on-site detention storages unless of double wall construction with at least 0.5m width of soil between.
- 31 A minimum of 0.15m freeboard to the top of the basin perimeter is to be provided above the level of the overflow spillway invert.
- 32 Where ponding on driveways/parking areas is considered the maximum ponding depth is to be 0.15m in parking areas and 0.2m in all other trafficked areas; and
- 33 Where ponding on driveways/parking areas is considered, all driveway gradients and gradient transitions **are to** meet the standards of *Australian Standard 2890.1 – 2004 “Off-street car parking”*.

24R.1 DESIGN OF ON-SITE DETENTION SYSTEMS (OSD) (continued)

Controls

Below ground OSD structures

- 34 A minimum of 0.3m soil cover is to be provided where the tank is located under landscaped areas.
- 35 The tank **is to** be structurally designed to withstand all service loads (normal earth, surcharge, traffic and hydrostatic) and to provide a service life of fifty (50) years.
- 36 Internal supporting walls **are to** be minimised to ease maintenance. Typically internal supports should only be considered for spans greater than 3m.
- 37 Excavation for the tank **is to** be checked for impact on the zone of influence on adjacent footings and structures.
- 38 An inspection / access grate measuring 0.6m x 0.9m is to be installed directly over the overflow outlet and **is to** be readily accessible from a point external to the site building(s).
- 39 Where the internal depth of the tank is less than 0.6m, surface grates are to be provided in each corner of the on-site detention tank and all inlet pipes **are to** be connected directly under the grate access to the control outlet of the on-site detention tank. This is to minimise any need to enter the tank for maintenance reasons and to allow for ventilation and remote flushing of the tank floor.
- 40 The base of the tank is to have a minimum 1% grade towards the discharge control pit to ensure proper drainage.
- 41 Fixed step irons **are to** be fitted into the tank where the internal tank depth exceeds 1.2m.
- 42 A child-proof locking system **is to** be employed for surface grates and lids.
- 43 In high water table areas, the tank **is to** be designed to avoid flotation.
- 44 All inlet pipes are to discharge at the tank floor level in order to minimise noise disturbance;
- 45 Rainwater tanks designed for aboveground use **are not to** be utilised for underground OSD purposes; and
- 46 A Ku-ring-gai Council marker plate is to be affixed to the detention tank/basin at the discharge control pit.
- 47 On-site detention tanks are to be constructed of concrete insitu, pre-cast or modular or other approved materials in accordance with AS/NZS 3500.3 **and should consider landscape outcomes and planning controls**. VERSITANK, AUSDRAIN, ATLANTIS modules or equivalent will not be permitted.

24R.2 DESIGN OF PROPERTY AND INTERALLOTMENT DRAINAGE SYSTEMS

Controls

Design of Property Drainage Systems

The property drainage system is the system of underground pipes, inlet and junction pits, roof gutters, downpipes, swales and associated plumbing within a property that captures and conveys stormwater to on-site management systems (ie, OSD, OSR and/or water quality treatment devices) and to the public drainage system outside the site. The following controls apply to these drainage systems:

- 1 Consideration **is to** be given to the management of all stormwater runoff from:
 - i) roofs, paved areas, driveways, swimming pool surrounds and other impervious areas,
 - ii) areas subject to changes to natural ground level and including excavated or filled areas,
 - iii) areas where the natural or pre-development overland flow regime is disrupted to the potential detriment of an adjoining property,
 - iv) areas where long term ponding of water may occur, and
 - v) areas where existing runoff from up-slope properties is likely to create nuisance to the proposed development.
- 2 The piped property drainage is to capture and convey the 2% AEP storm runoff to the stormwater management/disposal system.

Note: At Council's discretion, higher standards may be adopted if the proposed development is sensitive to damage by stormwater or blockage of the drainage system.
- 3 All stormwater entering the site, including that which exceeds the capacity of the piped drainage system, is to be captured and conveyed overland within the development site, in a controlled manner not exceeding recognised hazard criteria, to the approved stormwater disposal system.

Note: Any proposed concentrated flow onto adjoining properties is only permissible where an easement has been obtained in accordance with the requirements of this DCP (Refer to 24B of this Part).
- 4 No part of the property drainage system is to consist of aerial drainage systems other than vertical downpipes and guttering.
- 5 Underground pipes/plumbing **are to:**
 - i) have a minimum internal diameter of 0.1m,
 - ii) not be located beneath buildings except where:
 - there is no practicable alternative and pipes cannot be routed around the building,
 - the number of pipes underneath the building is minimised,
 - piping underneath buildings is straight and has no junctions,
 - inspection openings are provided at all points of entry and exit under the building, and

24R.2 DESIGN OF PROPERTY AND INTERALLOTMENT DRAINAGE SYSTEMS (continued)

Controls

- the design engineer certifies that the system is in accordance with *AS3500.3 – Plumbing and Drainage and the National Construction Code*,
- be subject to a hydraulic grade line analysis by a consulting engineer for any development site exceeding 5,000m² in area,
- be sewer class piping or better,
- be designed so that no surcharge occurs onto other properties or pipe flows exceed 100l/s,
- have a minimum longitudinal grade of 1% where pipe diameters are up to and including 0.15m or, where larger, a minimum longitudinal grade of 0.5%,
- be compatible with proposed and possible future development in all respects, and
- have the minimum depth of cover from finished ground level to top of pipe as required in accordance with Table 7.1 from *AS3500.3 - Plumbing and Drainage Part 3.2: Stormwater drainage - Acceptable solutions*.

Note: Higher standards should be adopted if the proposed development is sensitive to damage by stormwater or blockage of the drainage system.

- 6 Discharge from subsoil drainage systems **are to** be to a pit located within the property and not directly to the street gutter. The discharge is to be disposed of in a manner that does not affect adjacent properties nor cause erosion or scour of downstream drainage systems.
- 7 In residential developments that consist of more than one (1) dwelling, the private courtyard of each dwelling **is to** contain at least one grated inlet pit.
- 8 Surface inlet pits **are to**:
 - i) be located to catch overland flows experienced during failure of the site drainage system,
 - ii) be provided at all pipe junctions, changes in pipe direction exceeding 45 degrees and at the road boundary (within the property) prior to connection to the public drainage system,
 - iii) be of sufficient size to accept the predicted flow and have dimensions in accordance with the table below:

Depth (mm)	Dimension (mm ²)
< 600	450 x 450
600 – 900	600 x 600
900 – 1200	600 x 900
>1200	900 x 900

24R.2 DESIGN OF PROPERTY AND INTERALLOTMENT DRAINAGE SYSTEMS (continued)

Controls

- iv) have step irons inside, where pits are deeper than 1.2m,
 - v) **is not to** be of plastic unless not larger than 0.45 x 0.45m with, not deeper than 0.45m and of heavy duty plastic to manufacturer's specifications, and
 - vi) have grated pit covers that are removable, designed to appropriate loadings (such as traffic) and constructed of galvanised steel or cast iron.
- 9 Heavy duty, grated drains of minimum width 0.2m and minimum depth 0.2m **are to** be provided across driveways at the following locations:
 - i) outside the entrance to a garage where the driveway falls towards the garage, or
 - ii) at the front (street) boundary of the property, fully within the property, where the driveway falls towards the street.
 - 10 The minimum diameter outlet pipe from any grated surface inlet pit or grated drain provided to capture surface runoff **is to** be 150mm in order to reduce the occurrence of outlet blockage.
 - 11 All inlet and outlet pipes from a pit are to be finished flush with the internal wall of the pit. The outlet pipe **is to** be at the same level as the base of the pit to ensure there is no permanent ponding of water in the pit.
 - 12 Any existing drainage system on a development site to be utilised **is to** be suitably modified in order to offset any adverse impacts that a proposed development may have on the efficiency of that system.
 - 13 Stormwater pipes are to be located outside the drip-line or not less than six (6) metres from the trunk (whichever is greater) of any tree to be retained unless the method of pipe installation is certified by a qualified arborist as not affecting the longevity of the tree to be retained.

Note: For small diameter pipes with minimum cover, careful hand excavation of the installation trench with retention across the trench of all roots greater than 25mm diameter, may be an acceptable method.

Note: For larger diameter pipes, or for small pipes at excessive depth, installation of pipes by remote thrust boring technique may be an acceptable method. In this case a pipe cover of at least one (1) metre should be provided.
 - 14 Drainage works, materials and specifications are to be designed and constructed in accordance with:
 - i) Institution of Engineers Australia *Australian Rainfall and Runoff*
 - ii) Australian Standard AS 3500.3 *Plumbing and Drainage*; and
 - iii) relevant occupational health and safety requirements.

24R.2 DESIGN OF PROPERTY AND INTERALLOTMENT DRAINAGE SYSTEMS (continued)

Controls

Mechanical pump-out systems for basement carpark

Mechanical pump-out drainage is only permissible where gravity drainage cannot be achieved from basement carpark area to the on-site stormwater management system. The following controls apply to mechanical pump-out systems:

- 15 The developer is to demonstrate that gravity drainage from the basement carpark is not possible.
Note: Where gravity drainage is possible from some parts of a basement carpark, only those sections where gravity drainage is not possible are to be drained using a mechanical pump-out system.
- 16 The catchment area being pumped out **is to** consist of not more than the basement carpark itself and the driveway ramp to the basement carpark.
- 17 The catchment area being drained is to be 100m² or less.
- 18 The system **is to** be designed by a competent qualified civil engineer.
- 19 The system **is to** be dual alternating with level switches and activation of dual operation at top water level.
- 20 Each pump **is to** cater to a minimum of 110% of the design flow.
- 21 A description of the pump(s) is to provide listing the manufacturer, model number and published duty curves.
- 22 An automatic alarm **is to** be installed so that it sounds during pump failure.
- 23 The water pumped from the basement carpark **is to** be directed to the OSD system designed in accordance with the requirements of 24B of this Part.
- 24 The pump wet well is to have a storage capacity of at least the two hour 1% AEP storm runoff and **is to** be checked for adequacy up to the 1% AEP event by a time-area computer model or the mass-curve technique in *Australian Rainfall and Runoff*.
- 25 The noise level from the pump **is not to**, at any time, exceed the ambient sound pressure levels by 5dB(A) at the boundary of the site and **is not to** be audible within any habitable room of an adjoining premises.
- 26 Proposed maintenance is to be described in the submission to Council.

Note: Council may impose a requirement to create a Positive Covenant on the title of the property requiring regular maintenance and reporting to Council of the pump-out system by a plumber or engineer.

24R.2 DESIGN OF PROPERTY AND INTERALLOTMENT DRAINAGE SYSTEMS (continued)

Controls

Design Controls for Interallotment Drainage Easements

This section describes the requirements for the design and construction of interallotment drainage systems. In the majority of cases, the developer will be required to construct a pipe in the easement once it is created. In limited circumstances, Council may agree that such a pipe is not necessary – it is important to consult with Council on this matter prior to submission of the development application. Agreement of the owner of the downstream property in this respect will also be required. The following controls apply for the design and location of all easements:

- 27 The easement is to be designed with sufficient regard to:
 - i) proposed pipe diameter within the easement and contributing catchments;
 - ii) significant trees that may be impacted upon by the placement of drainage lines;
 - iii) the structural requirements of pipes and their laying/upkeep;
 - iv) any adjoining structures; and
 - v) the stormwater overland flowpath capacity requirements.
- 28 All overflow from rainfall events on a site **is to** be directed to the interallotment drainage line with the necessary inlet pits and cut-offs
- 29 The interallotment easement **is to** be designed in accordance with the following table unless otherwise approved by Council:

Nominal Pipe Diameter	Minimum Easement Width
150mm	1.0 metres
225mm	1.2 metres
300mm	1.3 metres
375mm	1.4 metres
450mm	1.5 metres
525mm	1.6 metres
600mm	1.6 metres
750mm	1.8 metres
>750mm	metre + nominal pipe diameter

Note: The presence of an on-site stormwater retention, detention or extended detention system at the development site will not be accepted as a justification for reducing the design flowrate through a downstream interallotment drainage system. The capacity of the system within the easement **is to** be sufficient in the event of a blockage failure or overflow of the detention system.

24R.2 DESIGN OF PROPERTY AND INTERALLOTMENT DRAINAGE SYSTEMS (continued)

Controls

- 30 The in-ground interallotment drainage system (pipe) **is to** be sufficient to carry:
- i) the **5% annual exceedance probability** uncontrolled stormwater runoff from existing and future hard surfaces on the site, and the additional future design inflows, as determined by the requirements of this section, from all other properties that may benefit from a connection to the system, that adjoin and are uphill from the same associated drainage easement and/or have the benefit of the same associated drainage easement.
- Note:** Upon application, Council may waive this requirement for Development Types 1-3.
- Note:** In rare circumstances, **an overland flow path may be required to convey the 1% annual exceedance probability** event.
- 31 The constructed interallotment drainage system (pipe or channel) is to be wholly contained within the drainage easement created on the title(s) of the affected property or properties.
- 32 Where the drainage line in the private interallotment drainage easements is to be piped, the minimum pipe diameter **is not to** be less than 0.15m and the minimum depth of cover from finished ground level to the top of the pipe is to be in accordance with Table 7.1 of *Australian Standard AS 3500.3.2*.
- 33 If constructed channels are proposed for interallotment drainage systems, then:
- i) the channel **is to** be concrete, stone-pitch or brick lined to form a permanent profile, and
 - ii) a 50% channel blockage factor is to be adopted in the design.
- 34 Stormwater pipes **are to** be located outside the Tree Protection Zone of any tree to be retained unless the method of pipe installation is certified by a qualified arborist as not affecting the longevity of the tree to be retained.
- Note:** For small diameter pipes with minimum cover, careful hand excavation of the installation trench with retention across the trench of all roots greater than 25mm diameter, may be an acceptable method.
- Note:** For larger diameter pipes, or for small pipes at excessive depth, installation of pipes by remote thrust boring technique may be an acceptable method. In this case a pipe cover of at least one (1) metre should be provided.
- 35 An overland flowpath that directs water along the easement **is to** be established to cater for blockage of the in ground interallotment system as far as the discharge point.
- 36 Surface inlet pits **are to**:

24R.2 DESIGN OF PROPERTY AND INTERALLOTMENT DRAINAGE SYSTEMS (continued)

Controls

- i) be located to catch overland flows experienced during failure of the site drainage system, into the interallotment drainage line,
- ii) be provided at all pipe junctions, changes in pipe direction exceeding 45 degrees and at the road boundary (within the property) prior to connection to the public drainage system,
- iii) be of sufficient size to accept the predicted flow and have minimum dimensions in accordance with the table below:

Depth (mm)	Dimension (mm ²)
< 600	450 x 450
600 – 900	600 x 600
900 – 1200	600 x 900
>1200	900 x 900

- iv) have step irons inside, where pits are deeper than 1.2m,
 - v) have pit covers that are removable, designed to appropriate loadings and constructed of galvanised steel or cast iron.
- 37 Drainage works, materials and specifications **are to** be designed and constructed in accordance with:
- i) Institution of Engineers Australia *Australian Rainfall and Runoff*,
 - ii) Australian Standard AS 3500 3.2 – Plumbing and Drainage, Part 3 Stormwater Drainage,
 - iii) the relevant occupational health and safety requirements, and
 - iv) any other relevant controls in this DCP.
- 38 Where it is found that an existing Council owned channel/pipe is present on site that is not within an easement, a suitable easement is to be created over the drain in favour of Council, at no cost to the Council, or else the easement moved accordingly at no cost to Council.
- 39 Where an easement benefits one or more private properties, that easement **is not to** also be created to the benefit of Council.

24R.3 FLOOD STUDY REQUIREMENTS

Controls

A flood study is undertaken to identify the reach and depth of overland flows associated with drainage systems on or near a site and to assess the impact of development on such flows and vice versa. Drainage systems include underground pipes, natural watercourses, open channels and depressions and seepage.

The flood study **is to** be undertaken by a suitably qualified and experienced stormwater or hydraulic engineer. It **is to** conform to the principles set out in *Australian Rainfall and Runoff* and the *NSW Floodplain Management Manual* and **is to** include the following information:

Calculations and supporting information

- 1 A plan of the contributing catchment area and rationale for area determination **is to** be submitted.
- 2 Rationale for time of concentration calculations **are to** be discussed.
- 3 A hydrologic model is required to assess the flow discharge arriving at the site in the 1% AEP event, based on the following:
 - i) for catchment areas less than 1 Ha, a rational method assessment is allowed.
 - ii) for catchment areas greater than 1 Ha, an appropriate runoff routing computer model is to be used (e.g DRAINS, ILSAX etc).
- 4 Sufficient survey is to be obtained to accurately define the flow limits and profiles, which may extend onto adjoining properties.
- 5 A hydraulic model is required to assess the impact of the flow discharges through the pre-developed and post-developed site.
 - i) for flow rates of 2m³/s with no backwater effects, the Mannings Equation may be used.
 - ii) for flow rates greater than 2m³/s and/or with backwater effects, HEC-RAS or another suitable model is to be used.
- 6 Where an enclosed drainage system exists in the catchment studied (and is to be included in the analysis), the overland flow rate is to be determined as occurring during the greater of:
 - i) the 1:100 year event with the enclosed system operating at a maximum of 50% capacity (due to inlet controlled systems and blockage factors), or
 - ii) the 1:5 year event with the enclosed system fully blocked.

24R.3 FLOOD STUDY REQUIREMENTS (continued)

Controls

Information to be included in submission

- 7 All hydrological and hydraulic calculations undertaken to quantify the design flood standard and derive the flood levels together with the catchment map and any other data used in the calculations, as required above.
- 8 A scale plan view of the determined flood zone **is to** be provided at the same scale as the site survey for:
 - i) The pre-developed site. This may be overlaid on the existing site survey plan and the centreline of the watercourse or drainage depression together with all existing structures and impediments to flow **are to** be shown on this detail, and
 - ii) The post-developed site. This is to be overlaid on a plan, at the same scale as the submitted architectural plans, showing the footprint of all proposed structures in relation to the determined flood zone. The centreline chainages of the watercourse or drainage depression, together with all proposed structures and impediments to flow, **are to** be shown on this detail.
- 9 A minimum of three 1:50 scale cross-sections taken at right angles to the drainage system, showing both the pre-developed and post-developed flow sections with all levels to AHD, drawn at the following chainages:
 - i) at the upstream property boundary;
 - ii) where the existing and proposed development is closest to the drainage line;
 - iii) at the downstream extent of the development work; and
 - iv) other cross-sections as needed if other parts of the system affect the site.

Note: Cross-sections **are to** show existing and proposed levels, top water levels, hydraulic data, flood extents and critical proposed development levels such as floor levels.

- 10 A longitudinal section (at vertical scale 1:50, horizontal scale to that of plan view) of the drainage system through the property showing existing and proposed levels, flood levels, hydraulic data and all changes in grade.
- 11 The conclusion of the report is to have a signed declaration by the engineer stating:

“I have examined the site, existing improvements and proposed development. In accordance with accepted engineering practice, I have undertaken a flood study of the adjacent drainage system and can confirm the accuracy of my calculated results. I declare that the proposed development will be safeguarded from flooding and flood damage associated with the design flood standard as defined in Part 24 of the *Ku-ring-gai DCP* and will not adversely affect any other structures or properties.

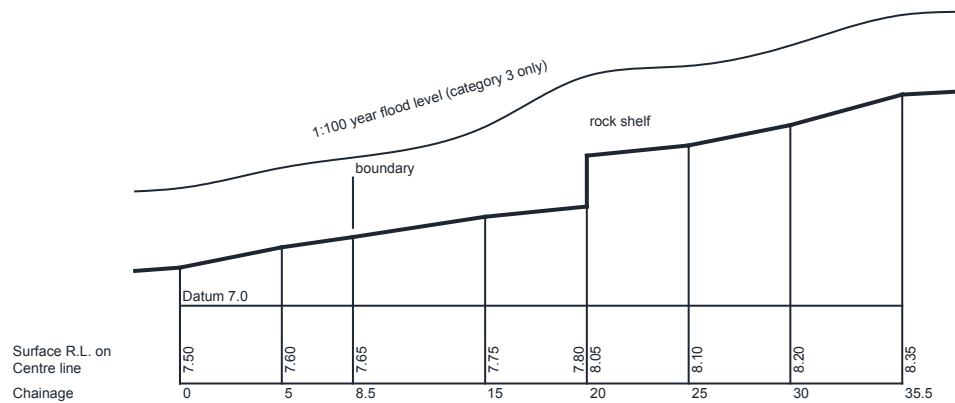
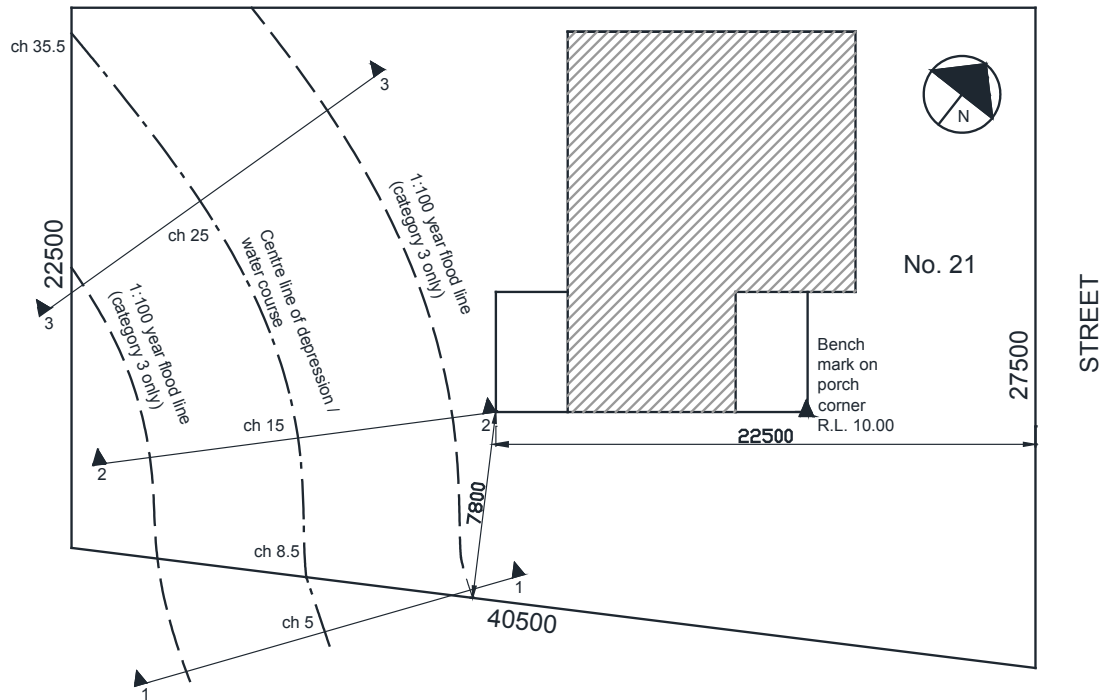
24R.3 FLOOD STUDY REQUIREMENTS (continued)

Controls

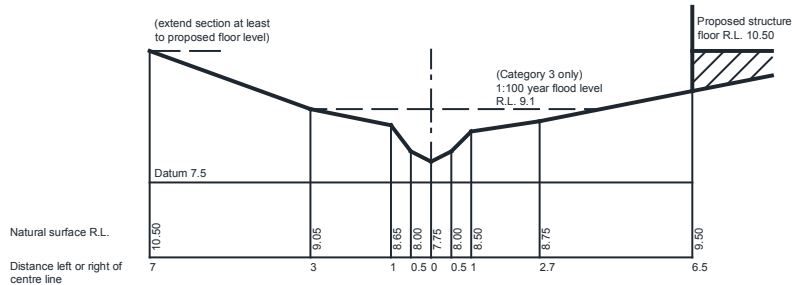
- 12 The study **is to** be submitted in a flood report form which includes an introduction and reference to the plans for the proposed development, methodology adopted and a written explanation/ conclusion for findings of the study, together with all supporting information. The study **is to** nominate floor levels for the proposed development, with regard to Council freeboard requirements.

Note : Please consult Council's website for flood studies which have been completed

24R.3 FLOOD STUDY REQUIREMENTS (continued)



LONGITUDINAL SECTION
H 1:250, V 1:50



SECTION 2-2 (LOOKING UPSTREAM)
1:100 Natural

Figure 24R.3-1:
Typical Survey Information

24R.4 TERMS OF POSITIVE COVENANTS AND RESTRICTIONS ON USE

Controls

24R.4.1 Terms for On-site Detention

Terms of positive covenant referred to in the plan

1. The proprietor of the burdened lot covenants with the Council in respect of any System (as later defined) constructed on the burdened lot to:
 - a) permit stormwater to be temporarily detained by the System;
 - b) regularly keep the System clean and free from grass clippings, silt, rubbish, debris and the like;
 - c) maintain the System to ensure a maximum outflow from the System and a minimum pondage in accordance with plans duly approved by Council and any other principal certifying authority;
 - d) ensure that the System at all times includes an overflow to direct any excess flow to the downstream drainage System;
 - e) maintain, repair and replace the System or any part of it due to deterioration or damage without delay so that it functions in a safe and efficient manner;
 - f) comply with the terms of any written notice issued by the Council in respect of the requirements of this Positive Covenant within the time stated in the notice;
 - g) permit the Council to enter upon the burdened lot or any part of it with all necessary materials and equipment at all reasonable times and on reasonable notice (but at any time and without notice in the case of an emergency);
 - to view the state of repair of the System;
 - to ascertain whether or not there has been any breach of the terms of this Positive Covenant;
 - to execute works on the burdened lot for compliance with the requirements of this Positive Covenant;
 - h) indemnify and keep indemnified the Council from and against all claims, demands, actions, suits, causes of action, sums of money, compensation, damages, costs and expenses which the Council or any other person may suffer as a result of any malfunction or non-operation of the System or any failure of the proprietor to comply with the terms of this Positive Covenant.
2. The Council **is to** have the following additional powers:
 - a) in the event that the proprietor fails to comply with the terms of any written notice issued by the Council as set out above or in the event of an emergency, the Council or its authorised agent may enter the burdened lot with all necessary materials and equipment at all reasonable times and on reasonable notice (but at any time and without notice in the case of an emergency) and carry out any work which the Council in its discretion considers

24R.4 TERMS OF POSITIVE COVENANTS AND RESTRICTIONS ON USE (continued)

Controls

reasonable to comply with the said notice referred to in Part 1(f) above or to alleviate the emergency.

- b) The Council may recover from the proprietor as a liquidated debt in a court of competent jurisdiction;
- any expense reasonably incurred by it in exercising its powers under sub-paragraph (a) hereof,
 - legal costs on an indemnity basis for issue of the said notices and recovery of the said costs and expenses together with the costs and expenses of registration of a covenant charge pursuant to Section 88F(4) of the Conveyancing Act, 1919 or providing any certificate required pursuant to Section 88G of the Act or obtaining any injunction pursuant to Section 88H of the Act.

In this Positive Covenant unless inconsistent with the context,

“System” means in relation the burdened lot the stormwater drainage detention basin or tank constructed or to be constructed on the burdened lot in accordance with the requirements of the Council (as shown on the plan) including all ancillary, gutters, downpipes, pipes, drains, orifice plates, trench barriers, walls, earth banks, kerbs, pits, grates, tanks, basins and other surfaces designed to temporarily detain and control stormwater located on any part of the burdened lot.

“Proprietor” includes the registered proprietor of the burdened lot from time to time and all of its heirs, executors, assigns and successors in title to the burdened lot and where there are two or more registered proprietors of the burdened lot the terms of this Positive Covenant **are to** bind all those registered proprietors jointly and severally.

“Council” means the Ku-ring-gai Council, its successor, its employees, officers, authorised agents and contractors.

“Burdened lot” means folio identifier [lot/deposited plan].

Name of Authority empowered to release, vary or modify this Positive Covenant:

Ku-ring-gai Council or such other successive Council that may be established

Manager – Development Assessment

Ku-ring-gai Council

24R.4 TERMS OF POSITIVE COVENANTS AND RESTRICTIONS ON USE (continued)

Controls

24R.4.2 Terms for On-site Retention

Terms of positive covenant referred to in the plan

1. The proprietor of the burdened lot covenants with the Council in respect of any System (as later defined) constructed on the burdened lot to:
 - a) permit stormwater to be retained and re-used by the System;
 - b) regularly keep the System clean and free from grass clippings, silt, rubbish, debris and the like;
 - c) maintain the System to ensure a maximum outflow from the System and a minimum pondage in accordance with plans duly approved by the Council and any other principal certifying authority;
 - d) ensure that the System at all times includes an overflow to direct any excess flow to the downstream drainage System;
 - e) maintain, repair and replace the System or any part of it due to deterioration or damage without delay so that it functions in a safe and efficient manner;
 - f) comply with the terms of any written notice issued by the Council in respect of the requirements of this Positive Covenant within the time stated in the notice;
 - g) permit the Council to enter upon the burdened lot or any part of it with all necessary materials and equipment at all reasonable times and on reasonable notice (but at any time and without notice in the case of an emergency);
 - to view the state of repair of the System;
 - to ascertain whether or not there has been any breach of the terms of this Positive Covenant;
 - to execute works on the burdened lot for compliance with the requirements of this Positive Covenant;
 - h) indemnify and keep indemnified the Council from and against all claims, demands, actions, suits, causes of action, sums of money, compensation, damages, costs and expenses which the Council or any other person may suffer as a result of any malfunction or non-operation of the System or any failure of the proprietor to comply with the terms of this Positive Covenant.
2. The Council **is to** have the following additional powers:
 - a) In the event that the proprietor fails to comply with the terms of any written notice issued by the Council as set out above or in the event of an emergency, the Council or its authorised agent may enter the burdened lot with all necessary materials and equipment at all reasonable times and on reasonable notice (but at any time and without notice in the case of an emergency) and

24R.4 TERMS OF POSITIVE COVENANTS AND RESTRICTIONS ON USE (continued)

Controls

carry out any work which the Council in its discretion considers reasonable to comply with the said notice referred to in Part 1(f) above or to alleviate the emergency.

- b) The Council may recover from the proprietor as a liquidated debt in a court of competent jurisdiction;
- any expense reasonably incurred by it in exercising its powers under sub-paragraph (a) hereof,
 - legal costs on an indemnity basis for issue of the said notices and recovery of the said costs and expenses together with the costs and expenses of registration of a covenant charge pursuant to Section 88F(4) of the Conveyancing Act, 1919 or providing any certificate required pursuant to Section 88G of the Act or obtaining any injunction pursuant to Section 88H of the Act.

In this Positive Covenant unless inconsistent with the context,

“System” means in relation the burdened lot the stormwater drainage detention basin or tank constructed or to be constructed on the burdened lot in accordance with the requirements of the Council (as shown on the plan) including all ancillary, gutters, downpipes, pipes, drains, orifice plates, trench barriers, walls, earth banks, kerbs, pits, grates, tanks, basins and other surfaces designed to temporarily detain and control stormwater located on any part of the burdened lot.

“Proprietor” includes the registered proprietor of the burdened lot from time to time and all of its heirs, executors, assigns and successors in title to the burdened lot and where there are two or more registered proprietors of the burdened lot the terms of this Positive Covenant **are to** bind all those registered proprietors jointly and severally.

“Council” means the Ku-ring-gai Council, its successor, its employees, officers, authorised agents and contractors.

“Burdened lot” means folio identifier [lot/deposited plan].

Name of Authority empowered to release, vary or modify this Positive Covenant:

Ku-ring-gai Council or such other successive Council that may be established

Manager – Development Assessment

Ku-ring-gai Council

24R.4 TERMS OF POSITIVE COVENANTS AND RESTRICTIONS ON USE (continued)

Controls

24R.4.3 Terms for Waste Collection

Terms of positive covenant referred to in the plan

1. Full and free right for Council its servants, agents, contractors and all persons authorised by Council to go, pass and repass over the Easement Site situated on the servient tenement at all times with or without vehicles for the purpose of collecting and removing garbage and refuse from the servient tenement and for purposes incidental thereto. Nothing herein contained **is to** entitle any person exercising the aforesaid rights to enter any building, private open space or courtyard except to the extent necessary to gain access to garbage receptacles located therein in positions approved by Council or to drive any motor vehicle onto any part of the Easement Site which has not apparently been constructed or provided for the purpose of a carriageway or parking area for vehicles.
2. The rights hereby granted may be exercised by Council, its servants, agents, contractors and all persons authorised by Council to enter the Easement Site without being liable for damage which may be occasioned to the servient tenement or any improvements thereon including any paving, driveways, footpaths, lawns, gardens, fences, walls, buildings or to the property of any person therein or thereon otherwise than by reason of the negligence of Council.
3. Without limiting the generality of, and notwithstanding anything hereinbefore contained, if any carriageway or parking area and/or the adjacent land supporting the same is damaged by reason of the movement thereon of any vehicle being used in connection with the collection of garbage from the servient tenement, neither Council its servants, agents, contractors nor any person authorised by Council **is to** be liable in respect thereof.

Council, its servants, agents, contractors and all persons authorised by it to exercise the rights hereby granted **is to** be indemnified and be kept indemnified by the registered proprietor of the servient tenement, its successors and assigns against all actions, suits, causes of action or suits, claims, demands, proceedings, costs, charges, damages or expenses whatsoever which may be brought or made, instituted or claimed against and from them or any of them by the registered proprietor or any occupier of the servient tenement or any part thereof or by any other person in respect of any loss or injury sustained or threatened or damages suffered or feared by any such person whether in property or person as a consequence of any act or thing done or omitted by any person whilst upon the Easement Site for the purpose of collecting garbage from the servient tenement or for a purpose incidental thereto except where such loss, injury or damages result from the negligence of Council, its servants, agents, contractors or of any person authorised by Council as aforesaid.

24R.4 TERMS OF POSITIVE COVENANTS AND RESTRICTIONS ON USE (continued)

Controls

4. Nothing herein contained **is to** oblige Council to have garbage collected from points within the Easement Site or **is to** prevent Council from discontinuing collection of garbage from within the servient tenement PROVIDED ALWAYS that if Council discontinues collection of garbage from within the servient tenement Council and the registered proprietor for the time being of the servient tenement **is to** respectively have the same rights and obligations with regard to the removal of garbage from the servient tenement as they would have had if this instrument had not been executed.

“Council” means the Ku-ring-gai Council or its successor

“Easement Site” means the location and boundaries of the easement as shown in the plan.

“Servient tenement” means lot TBC in deposited plan TBC.

Name of Person or Authority empowered to release, vary or modify this easement

Ku-ring-gai Council

Manager, Development Assessment Services

Ku-ring-gai Council

24R.4 TERMS OF POSITIVE COVENANTS AND RESTRICTIONS ON USE (continued)

Controls

24R.4.4 Terms for Water Quality Measures

Terms of positive covenant referred to in the plan for maintenance of water quality measures

1. The Registered Proprietor will at the Register Proprietor's own expense sufficiently maintain and keep in good and substantial repair and working order the water quality measures (stormwater cartridges) on the burdened lot in accordance with the system approved by Council (herein after called "the system") which exists from time to time on the burdened lot and further shown on the plan.
2. The maintenance **is to** include the checking of the condition of the system and the stormwater cartridges every 6 months and maintaining a logbook of these periodic checks and of any maintenance performed.
3. The Registered Proprietor **is to** permit officers of Council, having given two days' notice, to enter the burdened lot and to view the logbook and the condition of the system and the stormwater cartridges on two occasions per year.
4. Where the Registered Proprietor of the burdened lot fails to maintain the system in accordance with the above and fails to comply with any written request of Council within such reasonable time as nominated in said respect, the Registered Proprietor **is to** permit Council by its servants or agents to carry out any works it reasonably considers necessary to reinstate satisfactory performance of the system and the stormwater cartridges, and the Registered Proprietor **is to** pay on demand to Council any reasonable costs incurred by Council in undertaking such works.

The term "**Registered Proprietor**" **is to** include the Registered Proprietor of the burdened lot from time to time, and all the Registered Proprietor's heirs, executors, assigns and successors in title to the burdened lot and where there are two or more registered proprietors of the burdened lot the terms of this covenant **is to** bind all those registered proprietors jointly and severally.

"Council" means the Ku-ring-gai Council or its successor.

"Burdened lot" means folio identifier [lot/deposited plan].

Name of the body empowered to release, vary or modify these terms of this Positive Covenant

Ku-ring-gai Council

Manager – Development Assessment Services

Ku-ring-gai Council

24R.4 TERMS OF POSITIVE COVENANTS AND RESTRICTIONS ON USE (continued)

Controls

24R.4.5 Terms for Restriction on Use of Land referred to in the Plan

Unless inconsistent with the context words used herein have the same meaning as those ascribed to them in the Positive Covenant referred to in the Plan.

1. The proprietor of the burdened lot covenants with the Council not to:
 - a) allow any obstruction or interference of any kind to be erected, placed, created or performed so as to inhibit the pumping of water in and out of the System;
 - b) except in accordance with the written approval of the Council allow any building, erection or structure to be constructed or allowed to remain constructed or placed on the System;
 - c) carry out or allow to be carried out any change of land profile or earthworks on the System;
 - d) carry out or allow to be carried out any alterations to the System including surface levels, controlled outflows, grates, pipes, filter, pump, delivery plumbing or any other materials or elements thereof outside those normally required for the formation, maintenance and proper function of the System

In this Restriction on Use of Land unless inconsistent with the context,

“System” means the pump out drainage system (which expression is to include all ancillary gutters, pipes, drains, walls, kerbs, pits, grates, fittings, tanks, chambers and pumps designed to control water) (herein after called “the system”) shown on the plan which exists from time to time on the burdened lot.

“Proprietor” includes the registered proprietor of the burdened lot from time to time and all of its heirs, executors, assigns and successors in title to the burdened lot and where there are two or more registered proprietors of the burdened lot the terms of this Restriction on Use of Land is to bind all those registered proprietors jointly and severally.

“Council” means the Ku-ring-gai Council, its successors, its employees, officers, authorised agents and contractors.

“Burdened lot” means folio identifier [lot/deposited plan].

Name of Authority empowered to release, vary or modify this Restriction on the Use of Land:

Ku-ring-gai Council

Manager – Development Assessment Services

Ku-ring-gai Council

24R.4 TERMS OF POSITIVE COVENANTS AND RESTRICTIONS ON USE (continued)

Controls

24R.4.6 Positive Covenants to be Applied Under Section 88E of the Conveyancing Act 1919

Positive Covenant for construction over Council's easement referred to in the Plan

1. The Registered Proprietor will at its own expense remove the [structure as shown on Site Plan which is annexed hereto and marked with the letter "A"] ("the structure") at their own expense if requested by Council for the purpose of accessing the easement by notice in writing given to the Registered Proprietor by Council.
2. The Registered Proprietor **is to** maintain the structure at its own expense and perform any works in relation to the structure that are reasonable required by Council.
3. In the event that the Registered Proprietor of the burdened lot fails to remove or maintain the structure in accordance with the above and fails to comply with any written request of the Council within such reasonable time as nominated in said request, then Council **is to** be entitled to enter the burdened lot and perform such removal or maintenance of the structure and the Registered Proprietor **is to** meet any reasonable costs incurred by Council in carrying out works necessary to reinstate satisfactory performance of the easement, remove the structure or maintain the structure, such costs to be recoverable as a liquidated debt.
4. The term "Registered Proprietor" **is to** include the Registered Proprietor of the land from time to time, and all the Registered Proprietor's heirs, executors, assigns and successors in title to the burdened lot and where there are two or more registered proprietors of the burdened lot the terms of this covenant **is to** bind all those registered proprietors jointly and severally.

"Council" means the Ku-ring-gai Council or its successor.

"Burdened lot" means folio identifier [lot/deposited plan].

Name of authority empowered to release, vary or modify this positive covenant

Ku-ring-gai Council

Manager, Development Assessment Services

Ku-ring-gai Council

24R.4 TERMS OF POSITIVE COVENANTS AND RESTRICTIONS ON USE (continued)

Controls

24R.4.7 Terms of restriction on use of land for burdened lot affected by overland flow referred to in the Plan

1. The Proprietor of the burdened lot covenants with the Council not to:
 - a) allow the placement of any structures, walls, fences, fill or other items which may impede the 1% AEP flood on the Restriction Site,
 - b) except in accordance with the written approval of the Council, allow any structures, walls, fences, fill or other items to be constructed or allowed to remain constructed or placed in a position on the Restriction Site that may impede the 1% AEP flood;

“**Council**” means the Ku-ring-gai Council or its successor.

“**Burdened lot**” means folio identifier [lot/deposited plan].

“**Restriction Site**” means the area show on the plan.

**Name of authority empowered to release, vary or modify this
restriction on the use of land**

Ku-ring-gai Council

Manager – Development Assessment Services
Ku-ring-gai Council

24R.4 TERMS OF POSITIVE COVENANTS AND RESTRICTIONS ON USE (continued)

Controls

24R.4.8 Positive Covenant for Turntable referred to in the Plan

1. The registered proprietor for the time being of the property agrees, in the event of a mechanical breakdown malfunctioning or failure ("failure") of the mechanical turntable to be erected on the burdened lot (shown on the plan) pursuant to Development Consent granted by Council on vehicle turntable ("the device"), to take all such action as is necessary to ensure that the failure is corrected and remedied within seven (7) days of the first occurrence of the failure.
2. The registered proprietor for the time being of the property agrees to indemnify and keep indemnified Council its members, officers and employees (collectively "Council") from and against:
 - a) all and any claims, demands, liabilities, losses, damages, costs, expenses, actions and proceedings whatsoever and howsoever arising made by either the registered proprietor or any third person in connection with or arising out of the construction use, maintenance, non-maintenance repair or non-repair of the device; and
 - b) all and any losses, damages, costs and expenses (including, without limitation, reasonable lawyers' fees) whatsoever and howsoever incurred by Council in connection with or arising out of the construction, use, maintenance, non-maintenance repair or non-repair of the device.

"Council" means the Ku-ring-gai Council or its successor.

The term "**registered proprietor**" is to include the registered proprietor of the burdened lot from time to time, and all its heirs, executors, assigns and successors in title to the burdened lot and where there are two or more registered proprietors of the burdened lot the terms of this covenant is to bind all those registered proprietors jointly and severally.

"**Burdened lot**" means folio identifier [lot/deposited plan].

Name of authority empowered to release, vary or modify this Positive Covenant

Ku-ring-gai Council

Manager, Development Assessment Services

Ku-ring-gai Council

24R.4 TERMS OF POSITIVE COVENANTS AND RESTRICTIONS ON USE (continued)

Controls

24R.4.9 Positive Covenant for Permeable Pavers referred to in the plan

1. The Registered Proprietor agrees to maintain, repair and replace the Permeable Pavers situated on the Paver Site on the Burdened Lot as required at its own cost and comply with any reasonable request made by Council in respect of the Permeable Pavers.
2. In the event that the Registered Proprietor fails to maintain, repair or replace the Permeable Pavers or otherwise fail to comply with a reasonable request from Council, then Council may enter the Burdened Lot and perform such maintenance, repair or replacement of the Permeable Pavers or carry out other works necessary to ensure that water runoff in the area is not negatively impacted and recover from the Registered Proprietor the cost of such works as a liquidated debt.

“Council” means the Ku-ring-gai Council or its successor.

The term **“Registered Proprietor”** is to include the registered proprietor of the Burdened Lot from time to time, and all its heirs, executors, assigns and successors in title to the Burdened Lot and where there are two or more registered proprietors of the Burdened Lot the terms of this covenant is to bind all those registered proprietors jointly and severally.

“Burdened Lot” means folio identifier [lot/deposited plan].

“Paver Site” means that area where Permeable Pavers have been placed on the Burdened Lot shown on the plan.

“Permeable Pavers” means the permeable pavers required pursuant to Development Consent DA [TBC]

Name of authority empowered to release, vary or modify this Positive Covenant

Ku-ring-gai Council

Manager, Development Assessment Services

Ku-ring-gai Council

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24R.5 References

24R.5 OSD Exemption Map

WASTE MANAGEMENT

Introduction

25A General Waste and Recycling

25B **Bulky Goods Waste**

25R References

INTRODUCTION

This Part guides development in meeting the aims and objectives within the KLEP. This Part applies to all development types, unless stated otherwise.

This Part seeks to outline how developments are to manage waste in Ku-ring-gai. This includes, but is not limited to;

- waste storage;
- waste collection;
- layout of waste and recycling rooms;
- waste management for particular developments; and
- management of bulky goods waste.

25A General Waste and Recycling

- 25A.1 General Requirements
- 25A.2 Waste Storage Rooms
- 25A.3 Access to Collection Point
- 25A.4 Construction of Waste and Recycling Rooms
- 25A.5 Residential Buildings



25A.1 GENERAL REQUIREMENTS

Objectives

- 1 *To enable efficient, effective and sustainable waste management practices.*
- 2 *To ensure waste collection and storage within the site that does not affect the amenity of residents with regard to odour, visual appearance or noise disturbance.*
- 3 *To ensure waste and recycling storage areas are designed and constructed to meet the requirements of the building's use and its occupants.*
- 4 *To ensure design and management of waste and recycling facilities protect public health.*

Controls

- 1 All waste and recycling facilities are to comply with the NCC and all relevant Australian Standards.
- 2 During the design of the development, construction waste **is to** be minimised by:
 - i) using recycled materials, selecting materials that reduce waste or do not require disposal, or can be reused or recycled in the future; and
 - ii) designing with minimal site disturbance by avoiding unnecessary excavation or fill.
- 3 All waste and recycling storage containers **are to** be stored within the boundary of the subject site.
- 4 All putrescible and non-putrescible waste materials stored in any waste and recycling room or at centralised collection points **are to** be contained in approved rigid containers supplied by the Council.
- 5 No compaction equipment is to be used for any sized bin.

25A.2 WASTE STORAGE ROOMS

Objectives

- 1 *To ensure waste generated from the building is fully accommodated onsite.*

Controls

- 1 Sufficient space is to be provided within the premises for the storage and manoeuvring of the number of bins required to store the volume of waste and recycling materials.
- 2 Sufficient space is to be provided to adequately house any additional equipment to handle or manage the waste generated from the development.
- 3 For buildings exceeding four (4) storeys which contain a residential component, where a chute system is proposed, a fully enclosed waste and recycling materials compartment is to be provided within each storey of the building. The facility is to be designed to contain the waste chute hopper and the number of recycling storage bins equivalent to 2 x 240 litre bins for every 4 units per storey.

25A.3 ACCESS TO COLLECTION POINT

Objectives

- 1 To ensure access to waste storage rooms for both building uses and for collection service operators.*

Controls

This section does not apply to residential developments of 2 dwellings or less, which do not have an internal collection point.

- 1 The location of the waste and recycling room is to be conveniently accessible and have unimpeded access for both occupants and collection service operators. In the event that the proposed development is protected by a security system and/or locked gates, the waste and recycling room/s are to have unimpeded access for the collection service providers. Where security gates are provided to the development, gates are to be accessible by Council's master key.
- 2 The waste and recycling collection point is to be located on a level surface away from gradients and vehicle ramps, with the path of travel being free from any floor obstructions, such as steps, to allow for the transfer of wheelie bins to and from the storage room to the collection vehicle.
- 3 The vehicle access road leading to and from the collection point in a waste and recycling room is to have a minimum finished floor to ceiling height of 2.6m for residential waste rooms and 4.5m for commercial waste rooms for the entire length of travel within the building. This clearance is to be kept free of any overhead conduits, ducting, services or other obstructions.
- 4 The Waste Management Plan (WMP) **are to** describe how the waste management system is to be managed and who is responsible for each stage of the process. (Refer to Waste Management Plan, *25R.5 of this Part*).

25A.4 CONSTRUCTION OF WASTE AND RECYCLING ROOMS

Objectives

- 1 *To ensure waste and recycling rooms are designed to prevent health and safety hazards.*
- 2 *To ensure provision of facility to aid cleaning of waste areas.*

Controls

- 1 The floor of any waste and recycling room is to be:
 - i) constructed of either concrete which is at least 75mm thick; or other equivalent material; and
 - ii) graded and drained to a floor waste which is connected to the sewer.
- 2 The walls of any waste room, recycling room and waste service compartment are to be constructed of solid impervious material and cement rendered internally to a smooth even surface coved at all intersections.
- 3 All waste and recycling rooms are to be provided with an adequate supply of hot and cold water mixed through a centralised mixing valve with hose cock. This does not include waste and recycling service compartments located on residential floors of multi-occupancy dwellings.
- 4 A close-fitting and self-closing door that can be opened from within the room is to be fitted to all waste and recycling rooms.
- 5 In the event that Council permits the installation of a roller shutter door (under special circumstance only), a sign is to be erected in a conspicuous position drawing attention to the fact the door **is to** be kept closed at all times when not in use.
- 6 All waste and recycling rooms are to be constructed to prevent the entry of vermin (eg. no gaps under access doors etc).
- 7 All waste and recycling rooms are to be ventilated by either:
 - i) mechanical ventilation system exhausting at a rate of 5L/s per m² of floor area, with a minimum rate of 100L/s; or
 - ii) permanent, unobstructed natural ventilation openings direct to the building exterior, not less than one-twentieth (1/20th) of the floor area.
- 8 Meters and piping are not to be located in the waste and recycling room.
- 9 All waste and recycling rooms are to be provided with artificial light controlled by switches located both outside and inside the rooms.
- 10 Clearly printed "NO STANDING" signs are to be affixed to the external face of each waste and recycling room.
- 11 Clearly printed signage is to be affixed in all communal waste collection and storage areas, specifying which materials are acceptable in the recycling system and identifying the location of waste and recycling storage areas, as well as waste and recycling service compartments.
- 12 *Waste management systems are not to be visible from outside the building.*

25A.5 RESIDENTIAL BUILDINGS

Objectives

- 1 *To ensure storage and collection of waste can be carried out in a safe and orderly manner.*
- 2 *To ensure adequate provision of waste facilities for all residential dwellings.*
- 3 *To prevent unauthorised dumping of waste on the street and associated visual clutter and hazard.*

Controls

- 1 Centralised waste collection points are required in the following circumstances:
 - i) Attached dwellings where the number exceeds two dwellings in total; and
 - ii) Where site characteristics (eg. steep sites, narrow street frontage) make access to the street difficult for individual unit holders and where placement of bins on the street frontage is assessed as dangerous for either the public or service personnel, or would have a detrimental effect on the street amenity.

Residential Dwellings - 2 or less per site

2. For all single dwellings, including both the principal and secondary dwellings and dual occupancy development whether attached or detached, Council's standard waste and recycling service is:

Waste Type	Bin Type
Waste (garbage)	1 x 120L
Co-mingled recycling	1 x 240L
Recycling of paper and cardboard	1 x 240L
Green waste (communal except for single dwellings) (subject to Owners Corporation Agreement on a fee for service basis)	1 x 360L

- 3 Developments are to allocate, within each property boundary, an area for storing Council specified waste and recycling bins, preferably located at the rear of the premises to minimise visual clutter. Steep sites will be considered on a merit basis. The storage area is to be a minimum of 3m from openable windows and integrated with the landscaping. Refer to *25R.1 of this Part* for bin characteristics.
- 4 An area is to be nominated for on-site composting.

Multi-Unit Dwellings - No Basement

5. Where basement car parking is not provided and dwellings are separately accessed via a private access road, or where centralised arrangements are not required under *23.4 (25) of this Part*, space is to be provided for:

Waste Type	Bin Type
Waste (garbage)	1 x 120L
Co-mingled recycling	1 x 240L
Recycling of paper and cardboard	1 x 240L
Green waste (communal) (subject to Owners Corporation Agreement on a fee for service basis)	1 x 360L

25A.5 RESIDENTIAL BUILDINGS (CONTINUED)

Controls

Note: To check the service level for the relevant collection zone contact Council's Customer Service Section. Waste is collected weekly while all other waste types are collected on a fortnightly basis.

- 6 All new dwellings are to be designed to allow the internal accommodation of one receptacle to collect waste and two receptacles to collect recycling materials, each with the capacity to store one day's worth of material.
- 7 All such developments are to allocate, within each property boundary, an area for storing Council specified waste and recycling bins, preferably located at the rear of the buildings to minimise visual clutter. The storage area is to be a minimum of 3m from openable windows and integrated with the landscaping. Refer to **25R.2** of this Part for bin characteristics.
- 8 Centralised collection points are to be provided, directly accessible from the street/rear lane and/or the internal road. Collection points are to be located a minimum of 12m from any openable window. One collection point is to serve a maximum of 6 units.
- 9 Where on site collection points are provided, the full path of travel to and from the collection points is to be designed to allow a 6m rigid vehicle, weighing GVM 7 tonnes, to enter and exit the development in a forward direction.
- 10 The maximum grade of any access road leading to a waste and recycling room is not to be more than 1:5 (20%). The turning area at the base of any ramp is to be sufficient to allow for the manoeuvre of a 6.0m rigid vehicle to exit the building in a forward direction.
- 11 A level path is to be established for wheeling bins to the collection point, free of steps or kerbs.
- 12 An area is to be nominated for on-site communal composting.

Multi-Unit Dwellings and Residential Flat Buildings - With Basement

- 13 If there are **four** or more dwellings and basement parking is provided, Council's standard waste and recycling service is as follows:

Waste Type	Number of Units	Number of Bin/s
Waste (garbage)	N/A	1 x 120L MGB per unit dwelling or 1 x 240L MB per 2 units
Co-mingled recycling of glass, steel and aluminium cans and plastic etc	For every 4 units or part thereof.	1 x 240L MGB (communal)

25A.5 RESIDENTIAL BUILDINGS (CONTINUED)

Controls

Recycling of paper and cardboard	For every 4 units or part thereof.	1 x 240L MGB (communal)
Green waste	Optional	Please contact Council's Waste Service Team to discuss options. Green waste bins will be subject to Owners Corporation Agreement on a fee for service basis. Green waste bins will be serviced from the street frontage due to the small number of bins involved.

Note: To check the service level for the relevant collection zone contact Council's Customer Service Section. All bins are collected weekly except green waste bins. Please contact Council's Waste Service Team to discuss options.

- 14 All new dwellings are to be designed to allow the internal accommodation of one receptacle to collect waste and another to collect recycling, each with the capacity to store one day's worth of materials.
- 15 Centralised waste and recycling rooms are to be provided in the basement that has sufficient capacity to store all waste and recycling likely to be generated in the entire building in a week.
- 16 The full path of travel to and from the waste and recycling room is to be designed to allow a 6.0m rigid vehicle, weighing GVM 7 tonnes, to enter and exit the development in a forward direction.
- 17 The maximum grade of any access road leading to a waste and recycling room is not be more than 1:5 (20%). The turning area at the base of any ramp is to be sufficient to allow for the manoeuvre of a 6.0m rigid vehicle to exit the building in a forward direction.
- 18 The minimum floor to ceiling height within the vehicle accessway leading to and from the waste and recycling room(s) is to be 2.6m for the entire length of travel required within the development.
Note: Prior to pouring of the ground floor slab, the applicant will be required to obtain confirmation from Council engineers that 2.6m headroom has been provided.
- 19 Noise attenuation measures are required to ensure that the use of, and collection from, the waste and recycling room do not give rise to "offensive noise" as defined under the *Protection of the Environment Operations Act 1997*.
- 20 An area is to be nominated for on-site communal composting.

25A.5 RESIDENTIAL BUILDINGS (CONTINUED)

Controls

Mixed-Use Buidling/Dwelling

Refer to Part 25A.5 for non-residential component of mixed-use buildings.

- 21 In a mixed use development, the waste handling, storage and collection system from residential waste and commercial waste is to be completely separate and self-contained.
- 22 There are to be at least two separate centralised waste and recycling storage areas, one for residential waste and one for commercial. The Waste Management Plan is to identify the collection points and management systems for both residential and commercial waste streams.
- 23 An area is to be nominated on relevant plans for on-site composting and/or worm farm for the residential component of the mixed-use building.
- 24 Where there is a residential component, any new dwellings are to be designed to allow the internal accommodation of one receptacle to collect waste and another to collect recyclable materials, each with the capacity to store one day's worth of materials.

This section applies to other development types not covered by controls 25 to 48 above. It applies to any development that incorporates a commercial, business or light industrial use (eg. retail premises, offices, hospitals, restaurants and food retailers, light industries, residential care facilities and the like).

- 1 Buildings **are to** have a dedicated and enclosed waste and recycling room(s) which has adequate storage area to meet the generation rates (refer to **25R.6 of this Part**).
- 2 Centralised collection points are to be provided, directly accessible from the street/rear lane and/or the internal road. Collection points **are to** be located a minimum of 12m from any openable window. One collection point is to serve a maximum of 6 units.
- 3 Where on site collection points are provided, the full path of travel to and from the collection points is to be designed to allow an appropriately sized rigid vehicle to enter and exit the development in a forward position. The design and location of the waste and recycling room **are to** allow for adequate access for the relevant vehicle size, including manoeuvring and loading.

Note: Standard sizes include a 6m rigid vehicle, weighing GVM 7 tonnes and an 11m rigid vehicle, weighing GVM of 22 tonnes. The size will be dependent on the the intended usage and quantity of waste generated by the development type. Consultation with Council's waste section early in the design phase to ascertain the relevant vehicle size is strongly recommended.

- 4 A path **is to** be established for wheeling bins to the collection point; it **is to** be level and free of steps or kerbs.
- 5 The size and design of the waste and recycling rooms **is to** be based on the following criteria:
 - i) the proposed and potential land use of the building;
 - ii) the floor area of the building;
 - iii) the number of separate occupancies contained within the development;
 - iv) waste and recycling generation rates associated with the land use;
 - v) type and amount of waste/recycling to be produced;
 - vi) the number and sizes of bins required to contain waste/recycling materials likely to be generated during the period between collections; and
 - vii) the size and design of the waste/recycling storage is to allow for future changes of use.
- 6 If Council is to collect commercial waste from the premises, the minimum floor to ceiling height within the vehicle accessway leading to and from the waste and recycling room(s) **is to** be 4.6m for the entire length of travel required within the development. Otherwise, any development application is to be accompanied by documentary

If Council is to collect commercial waste from the premises, the minimum floor to ceiling height within the vehicle accessway leading to and from the waste and recycling room(s) **is to** be 4.6m for the entire length of travel required within the development. Otherwise, any development application is to be accompanied by documentary evidence from at least three contractors giving the dimensions of their vehicles and confirming that they are willing to collect waste from the building after construction.

- 7 For recycling materials, clinical, medical or liquid waste, the design **is to** reflect the separate storage, operation and management of these waste materials within the development.
- 8 In the event of the generation of:
 - i) more than 1.5m³ per day of food waste, other than unprocessed or uncooked fruit and vegetables; or
 - ii) organic veterinary or medical waste;
 stored waste **is to** be refrigerated unless collected daily.
- 9 Where refrigeration is required:
 - i) the temperature **is to** be maintained at or below 5°C;
 - ii) all refrigeration equipment **is to** be installed with sufficient space for cleaning both the equipment and the storage area;
 - iii) the floors walls and ceiling of the refrigerated waste room **is to** be constructed of a smooth impervious material and coved at all intersections;
 - iv) the floor of the refrigerated waste room **are to** be graded to the doorway and a floor waste, designed in accordance with Sydney Water guidelines, **is to** be located outside the room as close as practicable to the doorway; and
 - v) noise attenuation measures **are to** be put in place to ensure that the noise generated by the refrigeration equipment associated with the waste and recycling room **is to** not give rise to "offensive noise" as defined under the *Protection of the Environment Operations Act 1997*.
- 10 In circumstances involving the use of baling equipment for paper and cardboard, sufficient area **are to** be provided for the storage of a minimum of four (4) bales without impacting on the access and service conditions for collection materials for each day.
- 11 Where liquid wastes such as oils are generated by the business, a separate bunded storage area for these wastes **is to** be provided with drainage directed to a grease trap. The bunded area is to be weather protected and have a capacity not less than 20% of the storage contents to contain any spill.

Note: Liquid waste from grease traps **is to** only be removed by licensed waste contractors approved by Sydney Water Corporation and the NSW Environment Protection Authority.

- 12 Any construction for food premises **is to** be in accordance with the 'National Code for the Construction and Fit-out of Food Premises'
- Note:** Contact Council for a copy of this Code and advice on the construction of food premises.
- 13 For retail premises, light industry, hospitals, residential care facilities, a waste service compartment **is to**:
- i) be provided on each storey of the building;
 - ii) have the capacity to store at least one day's volume of waste and recycling likely to be generated on that floor; and
 - iii) provide for the separation of paper and cardboard for recycling on each storey.
- 14 If more than 10m³ of waste and recycling is likely to be generated per day, then the central waste and recycling room **is to** be separate from the goods receipt dock.
- 15 Separate space and collection arrangements **are to** be made for clinical/hazardous waste.
- 16 For offices, provision **are to** be made on each floor and in the central waste and recycling storage area, for the separation and storage of all recyclable materials such as cardboard, paper and paper products likely to arise on the premises.
- 17 Easement waste collection **is to** be in accordance with terms in **25R.5** of this DCP.

25B Bulky Goods Waste

25B.1 On-site Bulky Goods Storage Area

25B.2 On-Site Temporary Bulky Goods Collection Point

BULKY GOODS WASTE



Objectives

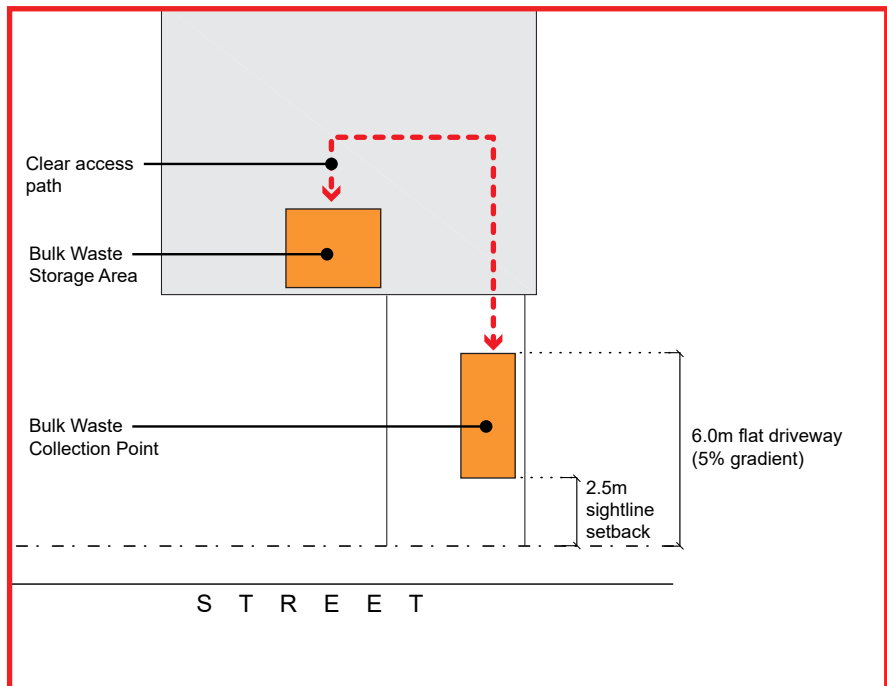
- 1 To provide temporary onsite, secure bulky goods storage for items awaiting disposal through Council's clean-up collection service,
- 2 To minimise adverse social and environmental impacts associated with bulky goods waste management.
- 3 To enable the movement of bulky goods items from the basement storage area to the on-site collection point.

25B.1 ON-SITE BULKY GOODS STORAGE AREAS

Controls

- 1 All Residential Flat Buildings, Multi Dwelling Housing and Mixed-use developments are to provide an on-site Bulky Goods Storage Area that is.
 - i) located within the basement of the building; and
 - ii) located directly adjacent to the basement vehicular entry; and
 - iii) be separate from the general Waste Storage Area; and
 - iv) be screened and not be visible from the street or any public area outside the basement; and
 - v) not be accessible to the general public.

Refer to Figure 25B.1-1.



**Figure 25B.1-1:
Bulk Waste Storage Area and Collection Point**

- 2 The following minimum on-site Bulky Goods Storage Area is to be provided within the basement:

	Number of Dwellings	Minimum Storage Area
i.	Up to 50	6 sqm
ii.	50-100	12 sqm
iii.	100-110	15 sqm
iv.	Above 110	15 sqm + 1 sqm per 10 additional dwellings above 10

25B.1 ON-SITE BULKY GOODS STORAGE AREAS (CONTINUED)

Controls

- 3 The Bulky Goods Storage area is to be:
 - i) a room or a caged area; and
 - ii) have a minimum doorway width of 2 metres; and
 - iii) have instructive signage regarding storage and collection of bulky items.
- 4 The instructive signage displayed at the Bulky Goods Storage area is to:
 - i) provide contact details for the Building Manager; and
 - ii) clearly label the room as 'Bulky Goods Storage'; and
 - iii) provide instruction on the storage of bulky goods; and
 - iv) indicate the route to the 'Bulky Goods Collection Point'; and
 - v) provide instruction on the timing and responsibility of movement of bulky goods from the Bulky Goods Storage area to the on-site Bulky Goods Collection Point.

Objectives

- 1 *To ensure efficient collection of bulky goods from the on-site collection points by Council collection contractors.*
- 2 *To ensure the storage and collection of bulky goods does not impact on the landscape setting and deep soil provisions of the residential development;*
- 3 *To maintain a high quality streetscape that reflects the Ku-ring-gai character of buildings in a landscape setting including canopy trees.*

25B.2 ON-SITE TEMPORARY BULKY GOODS COLLECTION POINT

Controls

- 1 All Multi-Unit and Residential Flat Building developments are to provide an on-site Bulky Goods Collection Point as part of the entry access driveway, a separate hardstand area is not permitted.
- 2 The Bulky Goods Collection Point:
 - i) is to be located on the exit of the driveway within the front setback, close to the street boundary; and
 - ii) is to be setback 2.5m from the street boundary to maintain sitelines; and
 - iii) is to have a maximum 5% gradient in any direction; and
 - iv) is to measure a minimum 2.0m wide x 3.5m long; and
 - v) is to be line marked as a designated Bulky Goods Collection Point; and
 - vi) is not to prevent access to and from the basement car park, and maintain at least one travel lane at all times while temporary storage of bulky goods takes place on the driveway.

Refer to Figure 25B.1-1.

Note: Conditions of consent will require that all bulky goods waste material is placed on the on-site Bulky Goods Collection Point ready for collection. Materials placed on the footpath will not be collected and will incur a penalty fine.

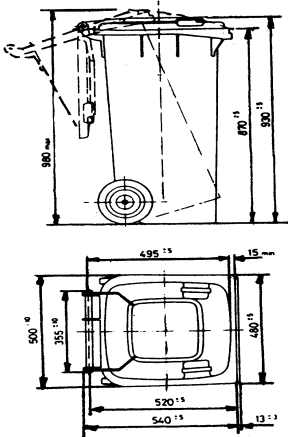
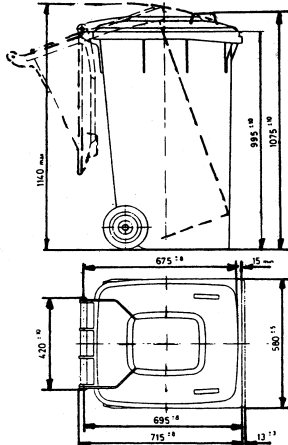
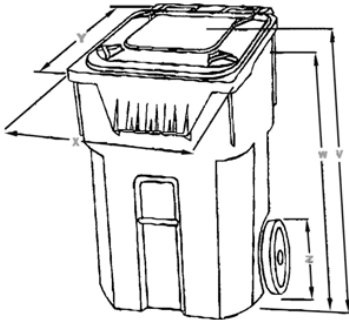
Note: Bulky Goods Waste will only be collected from the on-site Collection Point. Any waste outside the development boundary will not be collected.

25R References

- 25R.1 Council's Standard Bin Characteristics
- 25R.2 Council's Collection vehicle characteristics
- 25R.3 Vehicle Access/Turning Circles
- 25R.4 What is a Waste Management Plan?
- 25R.5 Waste Management Plan
- 25R.6 Waste Guidelines



25R.1 COUNCIL’S STANDARD BIN CHARACTERISTICS

Bin Type	Characteristics	Uses																					
120 Litre MGB		Landfill Collection Used for domestic waste that cannot be recycled. Contents to be taken to landfill.																					
240 Litre MGB		Co-mingled/Paper Recycling Used for the storage of material that can be recycled. Two bins are supplied, one for paper and cardboard while the other is for co-mingled material such as plastics, metal and aluminum cans.																					
360 Litre MGB	 <table><tr><th colspan="3">Dimensions</th></tr><tr><td>Overall Height</td><td>V</td><td>1171mm</td></tr><tr><td>Cart Body Height</td><td>W</td><td>1088mm</td></tr><tr><td>Overall Width</td><td>X</td><td>704mm</td></tr><tr><td>Overall Depth</td><td>Y</td><td>803mm</td></tr><tr><td>Wheel Diameter</td><td>Z</td><td>305mm</td></tr><tr><td>Load Rating</td><td></td><td>154Kg</td></tr></table>	Dimensions			Overall Height	V	1171mm	Cart Body Height	W	1088mm	Overall Width	X	704mm	Overall Depth	Y	803mm	Wheel Diameter	Z	305mm	Load Rating		154Kg	Vegetation Recycling Used for the storage of vegetation material for recycling as garden mulch or similar.
Dimensions																							
Overall Height	V	1171mm																					
Cart Body Height	W	1088mm																					
Overall Width	X	704mm																					
Overall Depth	Y	803mm																					
Wheel Diameter	Z	305mm																					
Load Rating		154Kg																					

25R.2 COUNCIL'S COLLECTION VEHICLE CHARACTERISTICS

Waste collection vehicles may be side loading, rear end loading or top loading. The size of the vehicle varies according to the collection service. Thus it is impossible to specify what constitutes the definitive garbage truck. Developers **are to** consult with Council regarding the type of vehicle to be used for the development if the development is to be serviced by Council collection vehicles.

The following characteristics represent the typical collection vehicle used by Council; however these are for guidance only.

Any turning circle considerations **are to** also include allowances for driver steering error and overhangs. The steering error allowances **is to** be at least 0.6 metres (absolute minimum) on both sides of the theoretical wheel path, and 1m as a desirable minimum.

1 Collection from Enclosures

Collection vehicles may enter building basements for the collection of waste and/or recyclables provided the following requirements are met:

- i) the gradient of the ramp access to basement should not exceed 1:5;
- ii) the height to the structural members and upper floor ceiling should allow for a typical collection vehicle travel height / operational height consistent with type of vehicle employed;
- iii) the provision of space clear of structural members or vehicle parking spaces is adequate to allow the typical three-point turn of collection vehicles; and
- iv) the basement floor should be of industrial-type strength pavement and designed for a maximum wheel loading of 7 tonnes per axle in order to accommodate waste and recycling collection trucks.

25R.3 VEHICLE ACCESS/TURNING CIRCLES

Best design practice for access and egress from a development calls for a separate entrance and exit to allow the collection vehicle to travel in a forward direction at all times. Where there is a requirement for collection vehicles to turn at a cul-de-sac head within a development, the design should incorporate a bowl, 'T', or 'Y' shaped arrangement.

- 1 The design aspects that **is to** be taken into account include the following:
 - i) placement of waste and recycling bins outside each home, or in a common collection area;
 - ii) the presence of parked cars on access roads;
 - iii) trucks should only be expected to make a three-point turn to complete a U-turn; and
 - iv) allow for collection vehicle overhang and possible interference with bins and road furniture.

2 Internal Road Geometry

The design parameters covered in *AS2890.2 Off Street Parking – Part 2 Commercial Vehicle Facility* **is to** be complied with.

25R.4 WHAT IS A WASTE MANAGEMENT PLAN?

- 1 A waste management plan (WMP) is a checklist that provides Council with details of the following:
 - i) the volume and type of waste to be generated;
 - ii) how the waste is to be stored and treated on site;
 - iii) how and where the non-reusable, or recyclable residual, is to be disposed of; and
 - iv) how ongoing waste management for the site will operate.

Completion of the WMP will help to determine what materials are on the site and how and where they will be stored, re-used/recycled and eventually disposed of. A list of local outlets and other waste disposal facilities can be obtained from Council's *'Register of Waster Receiving Facilities for Waste Planning'* and from the Waste Service NSW recycling directory.

A copy of the proforma WMP follows. Further copies can be obtained from Council's Customer Service counter or from Council's website (www.krg.gov.au).

25R.5 WASTE MANAGEMENT PLAN

To be completed for all Developer Applications:

To facilitate sustainable waste management and waste reduction, Council requires on-site sorting and storage of waste products pending re-use or collection. Completing this proforma will assist you in identifying the type of waste that will be generated and in advising Council how you intend to reuse, recycle or dispose of your waste.

The information provided on the proforma (and on your accompanied plans) will be assessed against the design objectives of the DCP (e.g. to maximise reuse and minimise disposal where possible) and the relevant controls for your particular use.

If space is insufficient in the table please provide attachments.

Outline of Proposal

Applicant's Name & Address: _____

Phone: _____ Fax: _____

Site Address: _____

Buildings & other structures currently on the site: _____

Builders Name & Address: _____

Brief Description of Proposal: _____

The details provided on this form are your intentions for managing waste relating to this project.

Signature of Applicant: _____ Date: _____

25R.5 WASTE MANAGEMENT PLAN (continued)

Section One: To be completed for all Development Applications involving demolition (including major renovations and excavation), single-dwellings, dual occupancy and non-habitable building or structure.

	Weight/ Volume	Reuse/Recycling On site	Off site/Recycling Specify name & address of contractor/recycling outlet	Disposal Specify name & address of contractor/recycling outlet
Timber		<input type="checkbox"/> Chip for landscaping on site <input type="checkbox"/> Reuse <input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Deliver to second hand building yard _____ <input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Landfill _____ _____ <input type="checkbox"/> Other _____ _____
Plasterboard		<input type="checkbox"/> Mulch on site <input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Return good quality remnants to _____ <input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Landfill _____ _____ <input type="checkbox"/> Other _____ _____
Bricks/Tiles/ Concrete		<input type="checkbox"/> Crush and use in landscaping <input type="checkbox"/> Use for fill behind retaining walls <input type="checkbox"/> Store on site for future use <input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Deliver to second hand building centre _____ <input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Landfill _____ _____ <input type="checkbox"/> Other _____ _____
Organics (green waste, vegetation etc.)		<input type="checkbox"/> Mulch on site for landscaping <input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Deliver to recycling centre or mulch company _____ <input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Landfill _____ _____ <input type="checkbox"/> Other _____ _____
Fill		<input type="checkbox"/> Used in landscaping <input type="checkbox"/> Other: _____ _____	<input type="checkbox"/> Other _____ _____ _____	<input type="checkbox"/> Landfill _____ _____ <input type="checkbox"/> Other _____ _____

	Weight/ Volume	Reuse/Recycling On site	Off site/Recycling Specify name & address of contractor/recycling outlet	Disposal Specify name & address of contractor/recycling outlet
Metal (e.g. steel, aluminum etc)			<input type="checkbox"/> Deliver to second hand building centre _____ <input type="checkbox"/> Metal Recycler _____ _____ <input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Landfill _____ _____ <input type="checkbox"/> Other _____ _____
Plastics – recyclable			<input type="checkbox"/> Deliver to recycling company _____ _____ <input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Landfill _____ _____ <input type="checkbox"/> Other _____ _____
Plastics – non- recyclable			<input type="checkbox"/> Return to manufacturer _____ _____ <input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Landfill _____ _____ <input type="checkbox"/> Other _____ _____
Contaminated material (e.g. asbestos)			<input type="checkbox"/> Approved recycling Company _____ _____ <input type="checkbox"/> Other _____ _____	<input type="checkbox"/> Approved Landfill _____ _____ <input type="checkbox"/> Other _____ _____

25R.5 WASTE MANAGEMENT PLAN (continued)

Section Two: Construction Stage (To be completed and submitted with all Development Applications for all other developments not included in Section One).

Materials on-site		Destination		
Expected Waste Materials	Est. Volume (m ³)	Reuse and Recycling		Disposal
		ON-SITE <ul style="list-style-type: none"> Specify proposed reuse or on-site recycling methods See <i>Waste Guidelines</i> for suggestions 	OFF-SITE <ul style="list-style-type: none"> Specify contractor and recycling outlet See <i>Waste Guidelines</i> for suggestions Refer to <i>Register of Waste Receiving Facilities for Waste Planning</i> for outlets. 	LANDFILL <ul style="list-style-type: none"> Specify contractor and landfill site Refer to <i>Register of Waste Receiving Facilities for Waste Planning</i> for outlets.
Excavation Material				
Green Waste				
Bricks				

Concrete				
Timber – please specify				
Plasterboard				
Metals – please specify				
Other – please specify				

Note: Details of site area to be used for on-site separation, treatment and storage (including weather protection) must be provided on the plan drawings accompanying your application.

25R.5 WASTE MANAGEMENT PLAN (continued)

Section Three: Use of Premises (Occupation Stage) (To be completed and submitted with all development Applications with Section Two).

Type of waste material to be Generated	Proposed on-site storage & Treatment facilities	Destination
Please specify. For example – glass, paper, food waste, off cuts etc.	For example – <ul style="list-style-type: none"> • Waste storage and recycling area • On-site composting • Compaction equipment 	Specify contractor name & address <ul style="list-style-type: none"> • Recycling • Disposal

Note: Details of on-site waste management facilities must be provided on the plan drawings accompanying your application.

Section Four: On Going Management (To be completed and submitted with Sections Two and Three).

Space

Number of Units (if applicable): _____

Estimated garbage generation (see *Waste Guidelines* at A.26): _____

Estimated recycling generation (see *Waste Guidelines* at A.26): _____

Describe the equipment & system to be used for managing:

Garbage _____

Recyclables _____

Garden Organics (if applicable) _____

Access

Describe arrangements for access by system users to waste facilities (highlight on plan drawings): _____

Describe arrangements for access by collection contractors to waste facilities (highlight on plan drawings): _____

Amenity

Describe how noise associated with residents using bins, collection contractors emptying the bins has been minimised: _____

Describe the ventilation of waste storage areas (highlight on plan drawings): _____

Describe facilities for washing bins and waste storage areas (highlight on plan drawings): _____

25R.6 WASTE GUIDELINES

Type of Premises	Garbage Generation	Recycling Generation
Food premises		
Butcher	80L/100m ² floor area/day	Information not available
Delicatessen	80L/100m ² floor area/day	Information not available
Fish shop	80L/100m ² floor area/day	Information not available
Greengrocer	240 L/100m ² floor area/day	120L/100m ² floor area/day
Restaurants	660L/100m ² floor area/day	130L/100m ² floor area/day
Supermarkets	660L/100m ² floor area/day	240L/100m ² floor area/day
Takeaway	80L/100m ² floor area/day	Information not available
Retail (non-food sales)		
Shops with less than 100m ² floor area	50L/100m ² floor area/day	25L/100m ² floor area/day
Shops with over 100m ² floor area	50L/100m ² floor area/day	50L/100m ² floor area/day
Showrooms	40L/100m ² floor area/day	10L/100m ² floor area/day
Hairdresser	60L/100m ² floor area/day	Information not available
Other		
Backpacker accommodation	40L/occupant/week	20L/occupant/week
Boarding house/guesthouse	60L/occupant/week	20L/occupant/week
Offices	10L/100m ² /day	10L/100m ² /day
Hotel	5L/bed/day 50L/100m ² floor area/day 660L/100m ² dining area/day	50L/100m ² of bar and dining areas/day
Licensed club	50L/100m ² floor area/day	50L/100m ² of bar and dining areas/day
Motel (without public restaurant)	5L/bed/day 660L/100m ² dining area/day	1L/bed/day

Better Practice Guide for Waste Management in Multi-Unit Dwellings.

The current standard NSW commercial waste generation rates are those established by the Combined Sydney Region of Councils. For further information on commercial waste generation rates as they become available, please refer to www.environment.nsw.gov.au