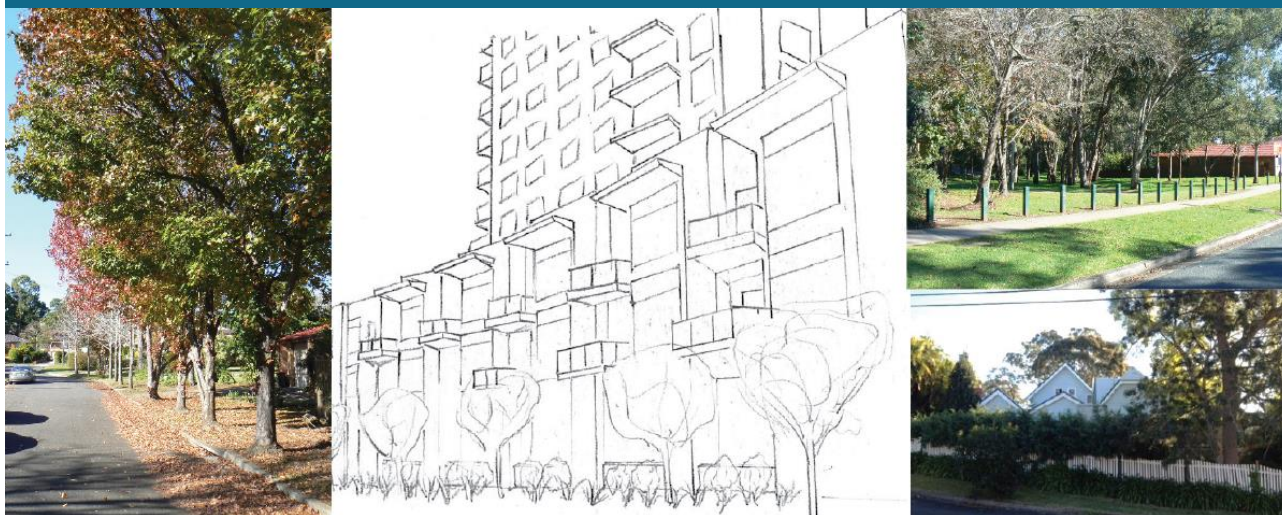


The Hills Development Control Plan (DCP) 2012

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ATTACHMENT 1

THE
HILLS
Sydney's Garden Shire



Part D Section 18

Castle Hill North Precinct

POST EXHIBITION DRAFT – NOVEMBER 2018

In Force XXXXXXXX

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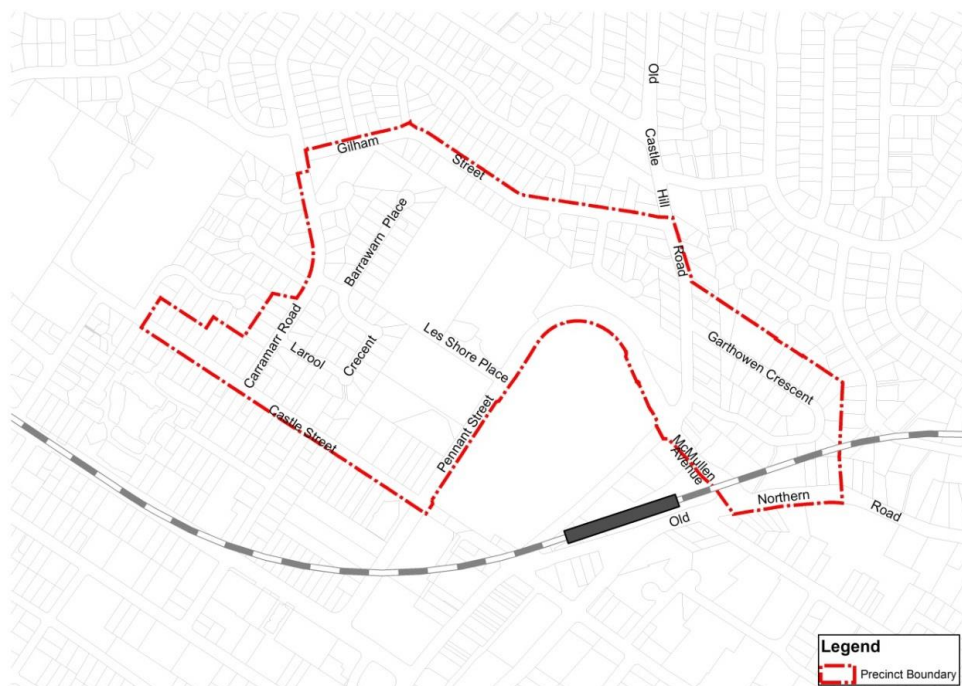
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1 Introduction

This Section establishes a framework and controls to guide development in the Castle Hill North Precinct (the Precinct).

1.1 Land to which this Section applies

This section applies to the land within the Castle Hill North Precinct (refer to Figure 1).



1 Land to which this Section Applies

Figure

1.2 Purpose of this Section

The purpose of this section of the DCP is to guide future development of the Castle Hill North Precinct by identifying the vision, development principles, key elements and indicative structure for the future development of the precinct. It seeks to ensure the orderly, efficient and environmentally sensitive development of the precinct to achieve high quality urban design outcomes.

This DCP was developed with consideration to the Apartment Design Guide, which sets minimum requirements for compliance. This DCP builds on these same principles to facilitate the delivery of a distinct local character that aligns with Council's vision for the Precinct.

1.3 Relationship to other Sections of the DCP

This section forms part of The Hills Development Control Plan 2012 (DCP 2012). Development within the Castle Hill North Precinct will need to have regard to this section of the DCP as well as other relevant controls in DCP 2012. In the event of any inconsistency between this section and other sections of DCP 2012, this section will prevail to the extent of the inconsistency.

2 Vision and Principles

2.1 Vision

The Castle Hill North Precinct is proposed to become an attractive and well connected neighbourhood that achieves housing targets, creates vibrant, safe and desirable places, reinforces the garden Shire character and lifestyle and is supported by necessary infrastructure. It is anticipated that the precinct will provide up to 3,283 additional dwellings by 2036. In order to meet this vision, future development within the Precinct must achieve the following key principles and strategic priorities.

2.2 Development principles

To achieve the vision, future development within the Precinct must address the following key principles and strategic priorities of Council:

Housing Diversity

As the population grows there will be greater reliance on higher density development to accommodate future housing demand. The expected characteristics of the Hills Shire population will continue to include a variety of household types including singles, couples and a high proportion of households with children. It will be critical that future high density development provides 'dwelling diversity' to ensure the market caters for the different living needs, expectations and household budgets within the community. This will require the provision of an appropriate mix of one, two and three bedroom apartments which are varied in size.

Apartment buildings are long term building stock so it is very important that if they are to be built, they are resilient over the long term. Unlike detached housing where landowners can choose the style and size of their home, a homeowner wanting an apartment can only choose from what is being provided. Whilst smaller apartments should be provided to meet the needs of a certain demographic within the market, moderate and larger apartments should also be provided to meet the latent demand for this housing option. This will then reduce pressure on smaller, more affordable housing options.

In order to achieve appropriate housing diversity within the Corridor, a floor space incentive provision has been included within The Hills Local Environmental Plan 2012 which permits additional floor space for developments that provide the required mix of apartment types and sizes (refer to figure 2).

Castle Hill North Precinct Development Control Plan

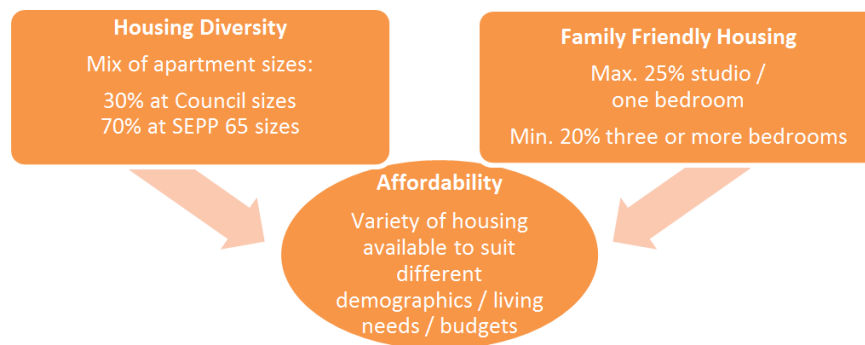


Figure 2 Approach to Housing Diversity

Transit oriented development

Transit oriented development (TOD) involves the creation of compact, walkable, mixed-use communities around public transport nodes. A key goal of TODs is to increase the number of people who walk, cycle or use public transport as their main form of transport. TODs have densities that result in increased patronage of public transport and provide more opportunities for people to live near the station and reduce their reliance on vehicles.

The need to locate high density housing in centres with good access to services, community facilities and transport is well recognised and will support the on-going operation of the Sydney Metro Northwest. Density at the core allows for a scale and character suitable for pedestrian connectivity. Centres should provide a mixture of residential, retail and commercial activities that are centred around transport and create an environment where services, recreation, entertainment, jobs and housing provide a lifestyle alternative to the traditional suburban context, consistent with the principles of TODs.

This DCP Section supports the provision of TODs by helping to deliver the highest densities in key strategic locations close to centres and existing and proposed transport infrastructure. This will ensure a sensible balance can be achieved between delivering on housing targets whilst ensuring an appropriate transition in residential densities and maintaining residential character.

Infrastructure and open space

Public open spaces play an important role in urban areas including provision of recreation, environmental conservation, connecting people with nature and improving social and mental health.

The expected additional population within the Castle Hill North Precinct will increase demand for various public facilities and services (such as roads, community facilities, open space and the like). The future population should be provided with access to open space, recreation and community facilities in line with the lifestyle enjoyed by existing residents.

There is a need to improve open space networks to meet the demands generated by incoming population and ensure appropriate recreational opportunities are provided for the future population. A number of local parks will be embellished to improve their capacity. Development

Castle Hill North Precinct Development Control Plan

within the Precinct will also be levied for the provision of new playing fields and pedestrian facilities which will be delivered to improve the quality of life of future residents.

Place Making

Place making will be a key focus in order to provide neighbourhoods that are sustainable, accessible, safe, attractive and well serviced with a unique character and sense of place. The development controls will provide the guidelines to make neighbourhoods liveable including vibrant activity centres, permeable and safe movement networks, generous public spaces, high quality built form and ecologically sustainable development. The provision and embellishment of quality spaces including streets, parks, buildings, and other public spaces will enable greater interaction between people and foster healthier, more social and economically viable communities.

Public areas such as informal gathering areas within centres will include high quality and durable elements such as seating, shading and lighting to enhance the amenity of these areas. Streets will be enlarged where possible incorporating new public domain treatments including new paving, new street furniture and lighting, improved pedestrian access and dedicated street tree planting.

Quality built form plays a vital role in achieving liveable, productive and resilient environments and creating great places that people want to live, work, visit and invest. Development which achieves the key principles and meets with the development controls in this DCP will ensure an exemplary standard of design that provides a positive contribution to the public realm. A design excellence clause has been included within The Hills Local Environmental Plan 2012 to require certain buildings and or development sites to be assessed by a design excellence panel to achieve quality built form outcomes for the precincts.

3 Desired Future Character and Structure Plan

3.1 Desired Future Streetscape Character

The Castle Hill North Precinct will be a pedestrian friendly centre which will provide an attractive alternative to the traditional suburban context. It will focus on an appropriate scale and amenity for pedestrians which will be achieved by providing buildings at a human scale and an improved public domain that make travel by foot a desirable option. Developments will have reasonable setbacks and landscaping reflective of their intended character.

Development is to be consistent with the 'Desired Character' for the precinct as well as the 'Structure Plan', streetscape area controls, key precinct elements, general controls and development type controls. LEP 2012 utilises floor space ratios as the primary development standard for the Castle Hill North Precinct. This provides the flexibility to articulate and guide the desired built form outcomes on each individual development site. In order to provide a guide of the likely built form outcome, the structure plan identifies the intended land uses, indicative building height ranges and key links.

Objectives

- a. To ensure the delivery of an appropriate mix of uses.
- b. To ensure that the proposed land uses and the built form of future development contributes to the intended character for each streetscape.
- c. To ensure that future development provides an appropriate address to sensitive interfaces and transitions to the surrounding residential context.
- d. To provide for a high density residential development with a high quality public domain, high canopy trees and activated streets.
- e. To ensure that each streetscape is distinct yet contributes to the overall vision for the Castle Hill North Precinct, which is for a vibrant, connected and walkable centre that is an attractive place to live, work and visit.

Controls

1. Development is to be consistent with key streetscape elements as outlined below.

There are four key streetscape areas within the precinct as identified in Streetscape Area Map below.

Castle Hill North Precinct Development Control Plan

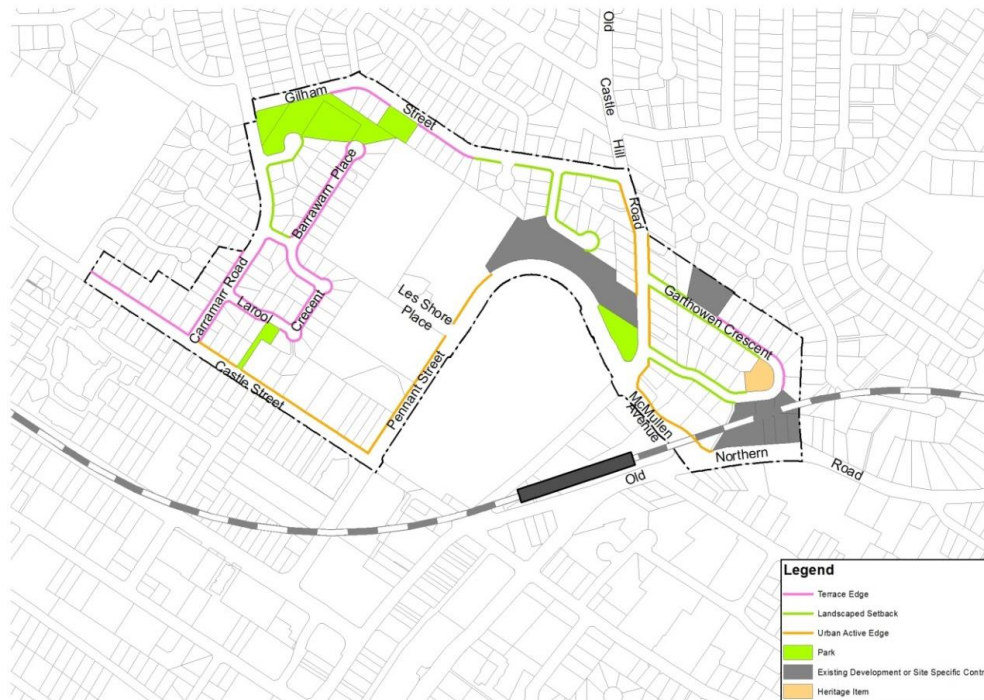


Figure 3 Streetscape Area Map

Urban Active Edge Streetscape

The 'Urban Active Edge Streetscape' applies to streets within close proximity to the railway station and Castle Hill Centre. These streets will generally comprise high density residential and mixed use buildings with a compact urban feel and lively and vibrant streetscape achieved through a mix of uses and street level activation. Public domain treatments along these frontages will include high quality paving, street furniture and street trees to contribute to the consistency of the streetscape.

Buildings in this area shall provide a hard line edge, at the setback line to provide continuity and create a seamless and identifiable area of public and private space. Retail and commercial uses are encouraged on the ground and first floors with fine grain articulation. Awnings shall be provided on buildings with active street frontages to enhance pedestrian amenity. Front setback areas are to integrate with the public domain.

Figure 4 Activated Street frontage, Sydney
Source: THSCFigure 5 Activated street frontage with residential above
Source: Google Streetview



Figure 6 Residential Development with fine grain residential street interface, Harold Park
Source: THSC



Figure 7 Cross-section of Urban Active Edge Streetscape

Landscape Setback Streetscape

The 'Landscape Setback Streetscape' applies to streets the further from the station and Castle Hill Centre that will generally comprise medium to low-rise apartment development. These areas will provide a transition of character from the urban streetscapes immediately surrounding the centre to lower density development towards the edges of the precinct. Developments will provide generous setbacks reflective of a landscaped garden character. Lower scale development with high quality landscape treatments shall be provided along interfaces with sensitive uses. Wide footpaths and tree lined verges will create a pleasant environment to encourage pedestrian movements.

Setback areas for high density development are to be intensively landscaped and shall include ground cover (grass), shrubs and trees of varying heights so as to facilitate the retention of 'The Garden', feel. A minimum of two high canopy trees per 30 m of street frontage where the street setback is greater than 3m is to be provided within the front setback. Deciduous trees are encouraged within the front setback areas to facilitate sunlight access in winter. Buildings on sites

which adjoin public open spaces shall have an outlook to the adjoining open space area, so as to increase passive surveillance of these spaces. Where terraces are proposed along these streets these will have smaller setbacks and shall address the 'Terrace Edge Streetscape' street frontage elements.



Figure 8 Landscaped setback, Rhodes
Source: THSC



Figure 9 Landscaped setback, Lindfield
Source: Google Streetview



Figure 10 Cross section of a Landscape Setback Streetscape

Terrace Edge Streetscape

The 'Terrace Edge Streetscape' applies to land that will accommodate terrace style housing. This area will be characterised by tree lined streets with soft landscape treatments within the front setback areas of terraces. Fine grain terrace style appearance will break up the massing and scale of the built form and present a compact medium density dwelling type which transitions sensitively to the surrounding neighbourhood.

Terraces will be a maximum of three storeys in height. Landscaped open space areas in the form of courtyards and small gardens will be provided in the front setback areas. Moderate and low level landscaping shall be provided within open space courtyards to soften the interface of the built form with the public realm.

Castle Hill North Precinct Development Control Plan

Note: Residential flat buildings with a 'terrace edge' are to address this section in terms of streetscape appearance. All units within the development are also to address the development controls for high density development within Section 5.



Figure 11 Terrace Development
Source: THSC



Figure 12 Terrace Development
Source: Domain



Figure 13 Cross section of Cross section of Terrace Feel Streetscape

3.2 Castle Hill North Precinct Structure Plan and Key Elements

Objectives

- To ensure that development occurs in a coordinated manner consistent with the Precinct vision and the development principles of housing diversity, transit oriented development, quality infrastructure and open space and place making.
- To provide a diversity of residential development within the precinct.
- To locate higher scale residential development close to station to optimise access to public transport.

Castle Hill North Precinct Development Control Plan

Controls

1. Development is to comply with the desired character in Section 3.1 of this DCP, key elements in Table 1 and the Castle Hill North Precinct Structure Plan in Figure 14.
2. Where variations are proposed, development is to demonstrate how the vision, development principles, key elements for the Precinct and relevant specific objectives are to be achieved.

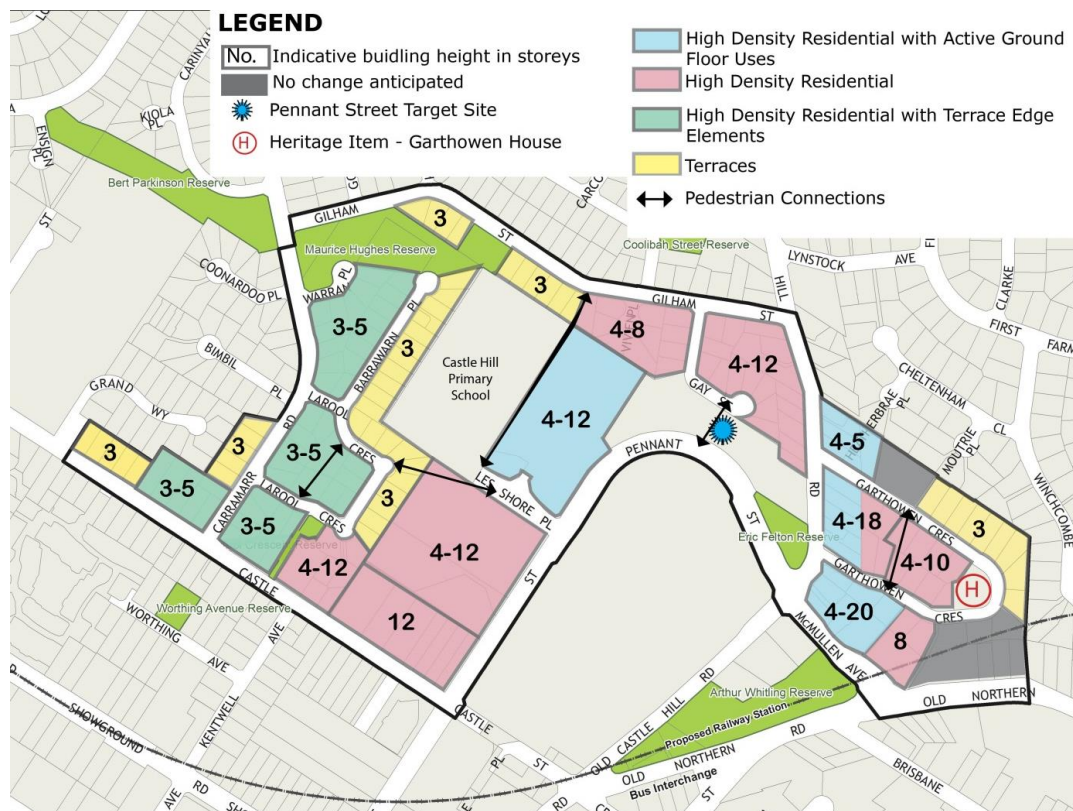


Figure 14 Castle Hill North Structure Plan

Table 1 Key Elements of the Precinct

Element	Description
Land Use	<ul style="list-style-type: none"> Higher density residential and mixed use buildings in areas closest to the station. Medium to low-rise buildings and terraces towards the edges of the precinct. Retail and commercial uses on ground and first floors where appropriate to enliven streets and provide supporting employment, shops and services.
Open Space & Public Domain	<ul style="list-style-type: none"> Enhancement of existing local parks including Maurice Hughes Reserve, Larool Crescent Reserve and Eric Felton Reserve to improve useability. Provision of approximately two additional playing fields on nearby land to cater for active recreation. Public domain works along streets including quality paving and shared paths, street trees, bins and seating.
Movement Network	<ul style="list-style-type: none"> Existing roads to be retained and in some locations upgraded to enhance access and permeability including:

Castle Hill North Precinct Development Control Plan

Element	Description
	<ul style="list-style-type: none">- Road widening at Castle Street, Old Castle Hill Road and Garthowen Crescent.- Intersection treatments including roundabouts at Carramarr Road/ Castle Street, Gilham Street/ Carramarr Road, Gilham Street/ Old Castle Hill Road and Garthowen Crescent/ Old Castle Hill Road.- Intersection realignment at Old Northern Road/McMullen Avenue.• Provision of through site pedestrian links in certain locations to enhance connectivity and walkability.• Provision of two pedestrian bridges across Pennant Street to improve connectivity and safety.
Built Form	<ul style="list-style-type: none">• Excellent architectural and urban design.• Tallest buildings in close proximity to the train station and centre.• Medium to low-rise buildings transitioning towards the edges of the precinct.• Sensitive interfaces with Garthowen House (heritage item).• Upper levels of high rise buildings setback to provide human scale and solar access.• Parks and other key public domain areas protected from overshadowing.

4 General Controls

4.1 Movement Network and Design

Objectives

- a. To encourage residents to walk or cycle to shops, railway station, recreation areas, community and other facilities by providing for safe and direct pedestrian and cycle connections between key locations.
- b. A functional and attractive new street network is provided that facilitates access, safety and convenience for all street and road users and minimises the negative impact of traffic.
- c. Carriageways and verge widths are consistent with the identified street hierarchy and profiles to allow streets to perform their designated functions within the street network, enhance functionality and amenity for users and accommodate public utilities and drainage systems.
- d. Improve the capacity and function of the road network to support higher density development.

Controls

1. The street network is to be consistent with the 'Indicative Street Network and Hierarchy' within Figure 15.
2. Streets profiles are to be consistent with the street profiles in Figures 17-21.
3. The design and construction of road infrastructure shall comply with Council's Design Guidelines Subdivisions/Developments.
4. Infrastructure not funded through a Contributions Plan is to be constructed to Council's specifications and dedicated to Council at no cost.
5. Public domain including footpaths and street trees on all streets (excluding Castle Street and Old Castle Hill Road) are to be provided by developers in accordance with the Castle Hill North Public Domain Plan, and dedicated to Council at no cost.
6. The cycleway network is to be generally consistent with the 'Existing and Proposed Cycleway Network' map in Figure 16.
7. Pedestrian links shall be provided, by way of legal public access, in accordance with the 'Indicative Street Network and Hierarchy' in Figure 15 and shall have regard to the guidelines contained under section '4.2 Public Domain' of this section of the DCP.
8. As high density development occurs along Garthowen Crescent, road upgrades in accordance with the street section (Figure 21) and dedication plan (Figure 22) shall be undertaken by developers and dedicated to Council at no cost.
9. Land along the northern side of Castle Street and along both the eastern and western sides of Old Castle Hill Road, as identified in the Castle Street and Old Castle Hill Road - Road Widening Plans (Figures 23-25) shall be acquired by Council for road widening.



Castle Hill North Precinct Development Control Plan

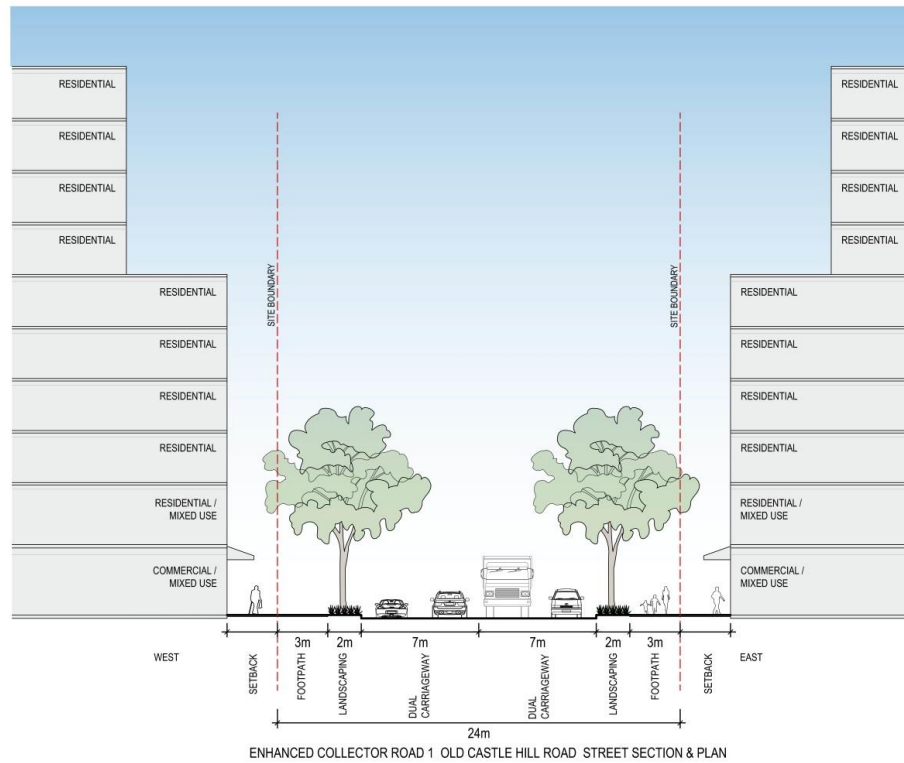


Figure 17 Enhanced Collector Road 1 (Old Castle Hill Road)

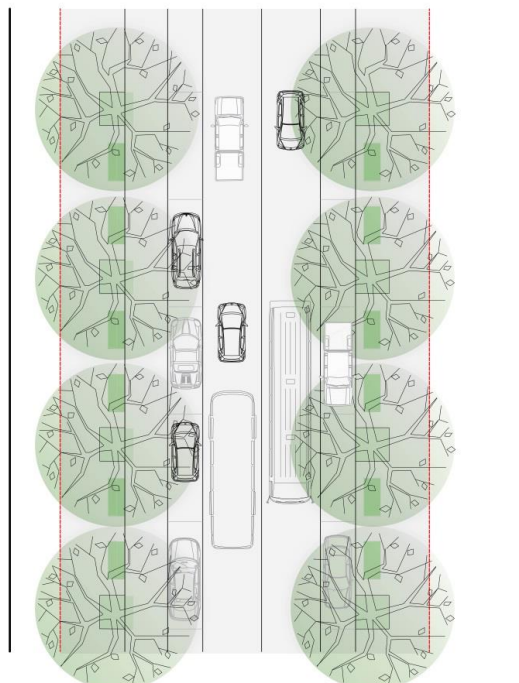
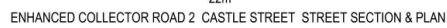
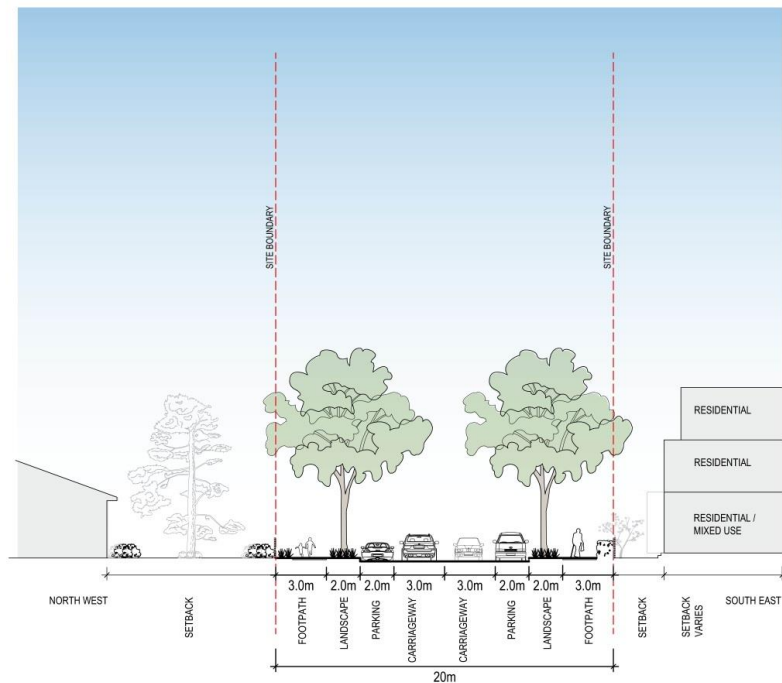


Figure 18 Enhanced Collector Road 2 (Castle Street)

Castle Hill North Precinct Development Control Plan



COLLECTOR ROAD GILHAM ST. AND CARRAMARR ROAD STREET SECTION & PLAN

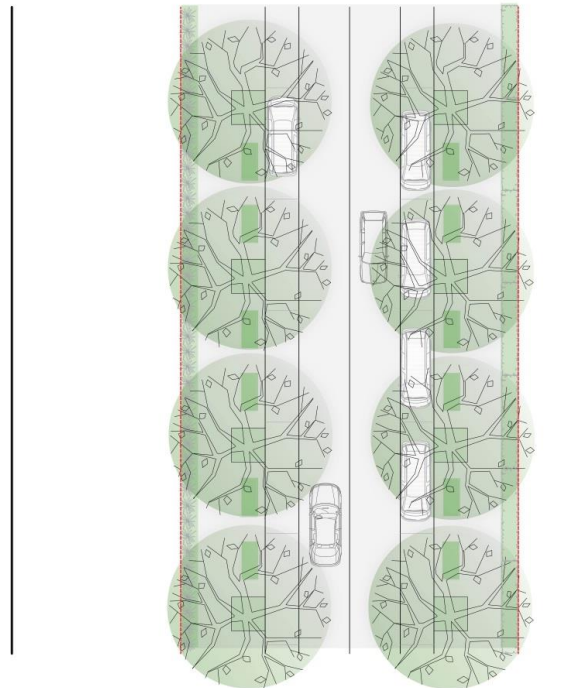
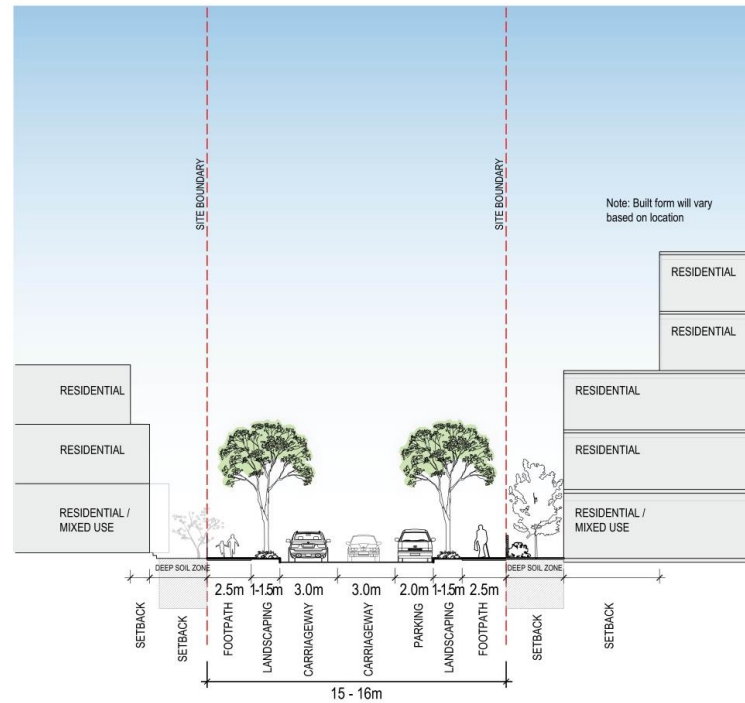


Figure 19 Collector Road (Gilham Street and Carramarr Road)

Castle Hill North Precinct Development Control Plan



LOCAL ROAD 1 (LAROL CRESCENT, BARRAWARN PLACE AND GAY STREET) STREET SECTION & PLAN

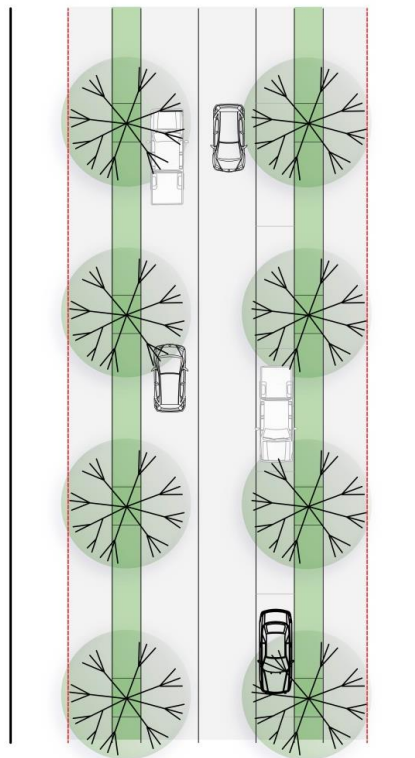


Figure 20 Local Road 1 (Larool Crescent, Barrawarn Place and Gay Street)

Castle Hill North Precinct Development Control Plan

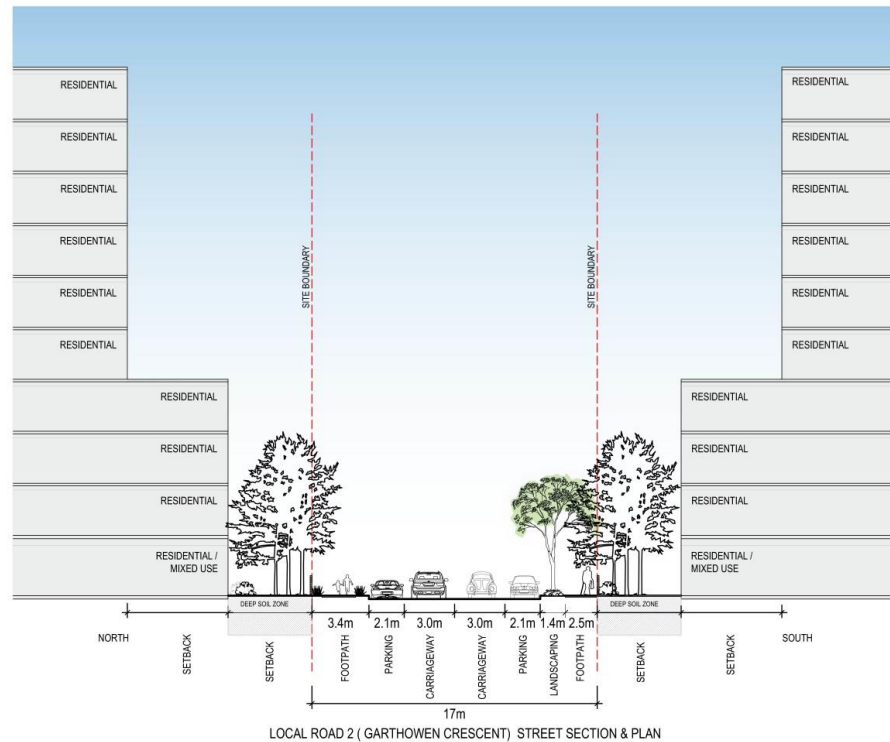


Figure 21 Local Road 2 (Garthowen Crescent)

Castle Hill North Precinct Development Control Plan

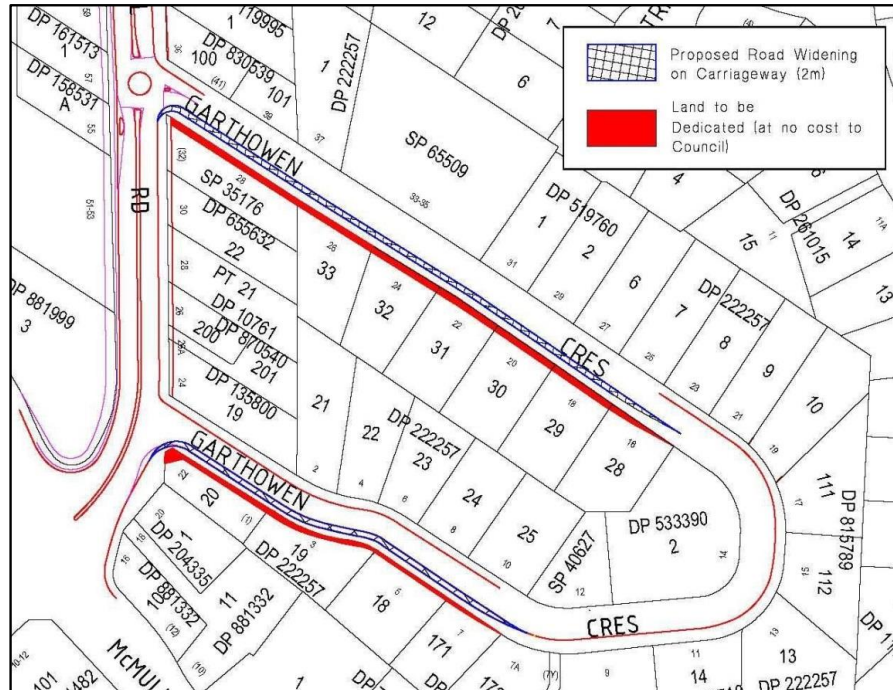


Figure 22 Garthowen Crescent Land Dedication Plan

Castle Hill North Precinct Development Control Plan

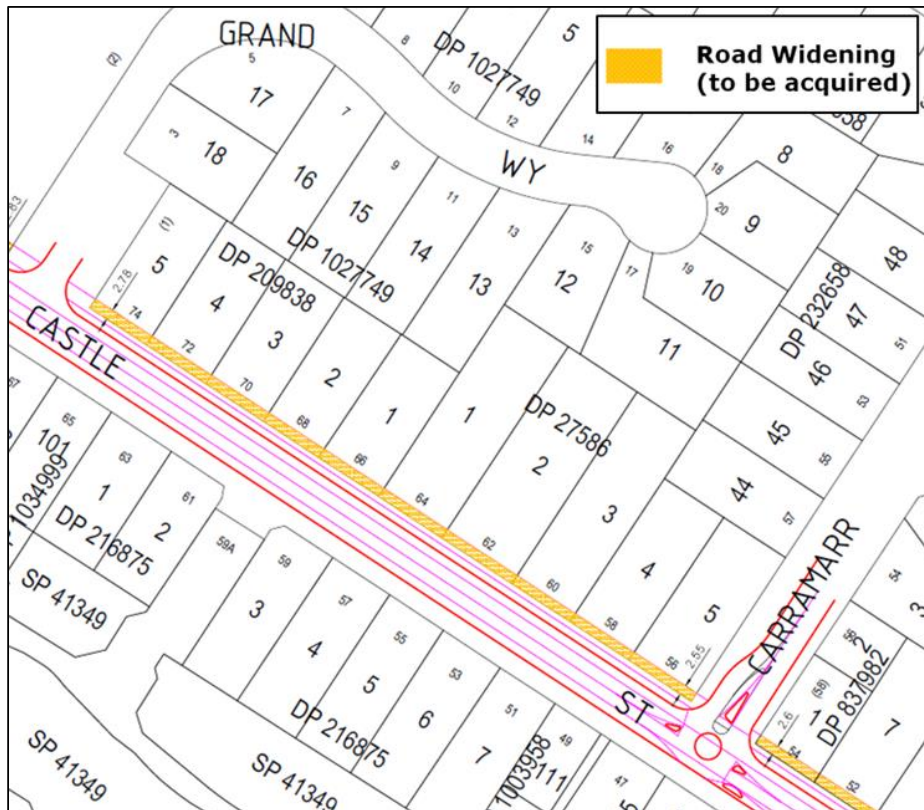


Figure 23 Castle Street - Road Widening Plan (West)

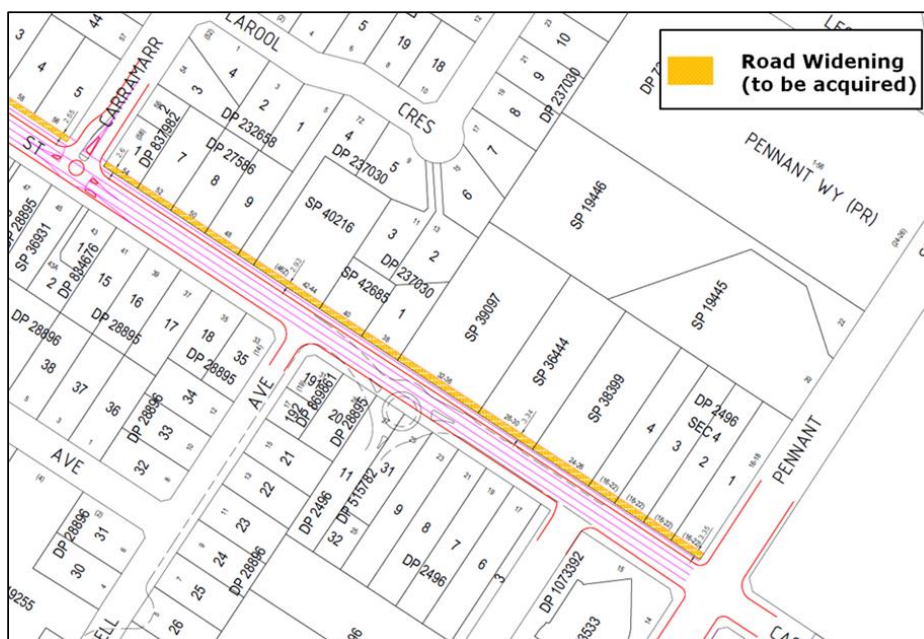


Figure 24 Castle Street - Road Widening Plan (East)

Castle Hill North Precinct Development Control Plan

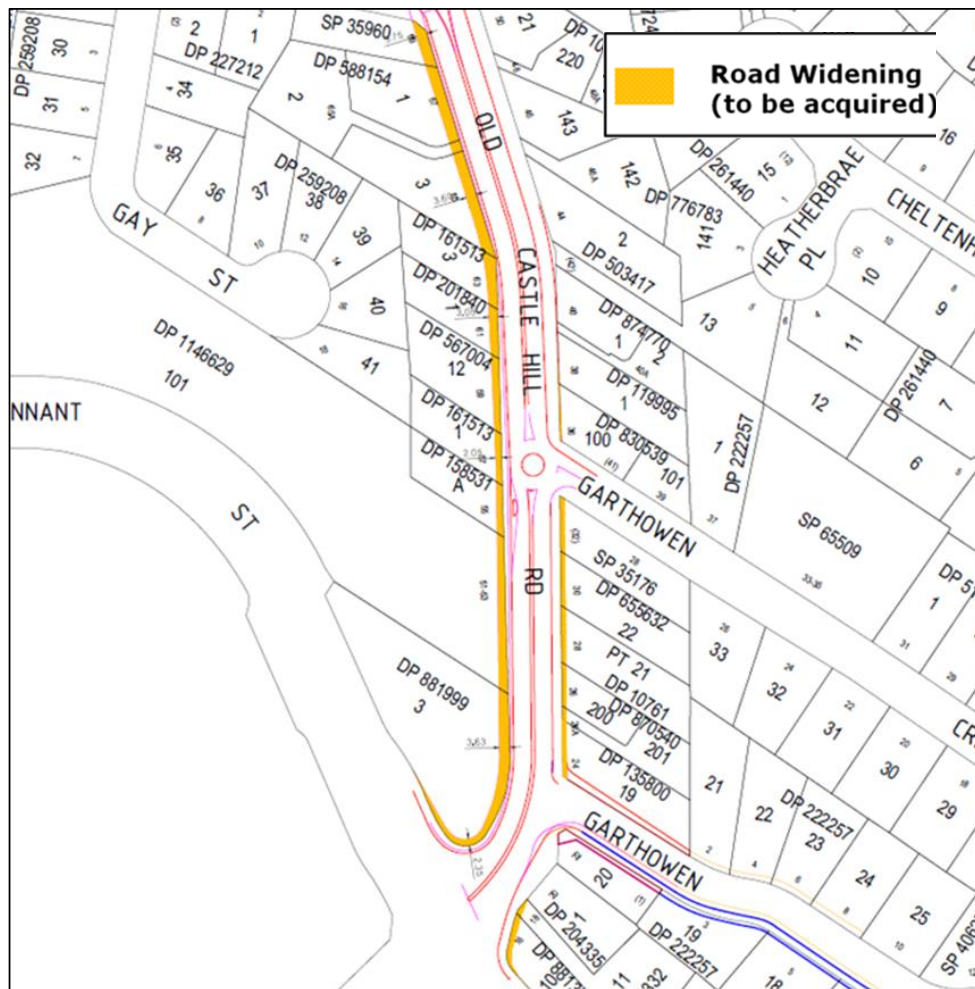


Figure 25 Old Castle Hill Road – Road Widening Plan

4.2 Public Domain

Objectives

- To provide a range of quality public spaces to support new residential and employment uses.
- To improve the quality and aesthetic of the public domain to reflect the transitioning of Castle Hill North into a Transit Centre.
- To provide an improved pedestrian experience.
- Undergrounding of power lines to improve the appearance and liveability of the Precinct and to facilitate increased space within road reserves to install public domain improvements.

Controls

- Development applications shall comply with the Castle Hill North Public Domain Plan and demonstrate how high quality elements (driveways, footpaths, street trees, street furniture etc.) will be incorporated into future development.

Castle Hill North Precinct Development Control Plan

2. Attractive, high quality outdoor spaces for children to play shall be integrated into the public domain within centres where appropriate. Such spaces should allow for interactive play and include seating and shading.
3. Council requires underground electricity reticulation and telecommunications for all urban development. Council will require as a condition of any development consent that any existing aboveground electricity reticulation service be relocated underground with the exception of main transmission lines. The undergrounding of the power lines shall be at no cost to Council.
4. Pedestrian and through-site links shall have regard to the following:
 - a. be publicly accessible;
 - b. have a width of 4-5 metres;
 - c. a minimum of 500mm of landscaping (maximum height of 800mm) along each side of the pedestrian link is desirable;
 - d. be clearly identifiable as a publicly accessible pedestrian link;
 - e. encourage pedestrians to move along the link and not linger;
 - f. maintain the privacy of ground floor apartments which adjoin the link;
 - g. ensure adequate passive surveillance is provided;
 - h. have adequate lighting to improve safety; and
 - i. building setbacks to the pedestrian links are to be assessed on their merits.

4.3 Integrated Water Management

Objectives

- a. To adopt best practice techniques for stormwater quality management.
- b. To minimise flooding and reduce the effects of stormwater pollution on waterways.
- c. To ensure that land is appropriate to managing and minimise risks from flooding.
- d. To ensure an integrated approach to water management through the use of water sensitive urban design (WSUD) principles.

Controls

1. A Stormwater Management Plan is to be prepared for each development application to include consideration of various sustainable practices including stormwater harvesting and re-use and water conservation.
2. All Stormwater drainage designs are to comply with the most up to date revision of Council's Design Guidelines Subdivision/Developments (September 2011) and Contributions Plan No.17 – Castle Hill North Precinct, or an appropriate alternative approved by Council.

Flood Management

3. Any site that is identified as a Flood Control Lot is to comply with Part C Section 6 – Flood Controlled Land, of this DCP.
4. Flood planning levels for new development shall comply with the requirements of Part C Section 6 of this DCP.
5. Development is to comply with the flood risk management provisions of Part C Section 6 of this DCP.
6. All landscaping is to be compatible with flood risk and not impede overland stormwater flows.
7. All vegetation species and structures, including paths, walls and fences, are to be able to withstand temporary flood inundation in any areas designated as detention basins.

Castle Hill North Precinct Development Control Plan

8. During the construction phase of development, the relevant Stormwater Management Objectives for New Development as set out in the most up to date revision of "Managing Urban Stormwater: Soils and Construction" (NSW Department of Housing) must be complied with in full.
9. Erosion and sediment control measures are to be implemented and regularly maintained on site, while sediment trapping measures are to be located at all points where stormwater runoff can enter inlets to stormwater systems, or where runoff may leave the construction site.

Water Sensitive Urban Design (WSUD)

10. WSUD is to be adopted throughout all development, incorporating water quality management and attenuation of runoff to acceptable levels following development.
11. The following stormwater management objectives are to be achieved for all development within the Precinct:
 - 90% reduction in the post-development average annual gross pollutant load;
 - 85% reduction in the post-development average annual total suspended solids (TSS) load;
 - 65% reduction in the post-development average annual total phosphorus (TP) load; and
 - 45% reduction in the post-development average annual total nitrogen (TN) load.
12. For developments generating oils and grease, the additional objective of no visible oils for flows up to 50% of the one-year ARI peak flow shall be achieved.
13. WSUD infrastructure elements are to be designed and constructed in accordance following publications:
 - Australian Runoff Quality (Engineers Australia 2005); and
 - Water Sensitive Urban Design Technical Guidelines for Western Sydney (NSW Government Stormwater Trust and UPRCT, May 2004).
14. The WSUD strategy prepared for all development is to take into account water quality and stream erosivity objectives, together with attenuating flow rates and runoff volumes to acceptable levels following urban development.
15. Water quality modelling to support development proposals within the Precincts shall utilise MUSIC Version 5 or later and adopt modelling parameters in line with the most up to date version of the NSW Music Modelling Guidelines (CMA).
16. Stormwater runoff must be treated before being discharged into riparian zones or watercourses.
17. To minimise the impact of stormwater on the health and amenity of upper Cattai Creek Catchment, stormwater is to be retained on development sites by:
 - collecting and storing water from roofs and hard surfaces;
 - maximising porous surfaces and deep soil zones; and
 - draining paved surfaces to adjacent vegetation.
18. All buildings must install rainwater tanks to meet a portion of supply such as outdoor use and toilets. All residential dwellings are required to provide a (minimum) 3,000 litre (3 KL) rainwater tank, and such tank is to be connected for use in toilet flushing and external uses. Larger tanks than the requirement are permitted.
19. Each rainwater tank is to be provided with potable water trickle top-up with a back flow prevention device, complying with Sydney Water requirements.
20. On-site detention is to be provided in accordance with Section 4.22 of Council's Design Guidelines Subdivision / Developments.

4.4 Cut and Fill

Objectives

- a. Developments minimise the impact of earthworks on the stormwater regime, salinity and groundwater.
- b. The extent of cut and fill required for large scale development does not detract from the appearance and design.
- c. Development visually integrates with the surrounding environment.
- d. Fill material imported to a site is to be clean and comply with the contamination and salinity provisions of this section.
- e. Land is appropriately stabilised and retained.
- f. Cut and fill does not encroach within, or adversely affect the efficiency, integrity and stability of any open space area.

Controls

1. In the areas of fill relevant provisions of Council's Flood Controlled Land DCP are to be applied, with reference to the Integrated Water Management Section of this DCP.
2. A Fill Plan must be prepared.
3. All cut and fill works shall be in accordance with Council's Design Guidelines Subdivisions/ Developments and Works Specification Subdivisions/ Developments.
4. All landfilled areas must comprise clean material free from contamination. Imported material shall be certified "Virgin Excavated Natural Material (VENM)".
5. Landfilled areas must be suitably compacted and stabilised with density tests to verify that compaction was achieved in accordance with Council requirements.

4.5 Ecologically Sustainable Development

Objectives

- a. To ensure building design is innovative and sustainable to reduce the reliance on, and consumption of, fossil fuels and potable water supplies.
- b. Development adapts to climate change.
- c. Development contributes to improved quality of life, health and well-being of the community.
- d. The design, construction and operation of development minimises adverse impacts on the natural environment.
- e. Use landscape treatments to improve amenity for people using open space.

Controls

1. Residential flat buildings, townhouses and terraces built as a development lot should achieve a minimum 5 star NatHERS energy rating for each dwelling unit.
2. Development other than residential should achieve a minimum 5 star Green Star Design and as Built rating, respectively.
3. Building operation should achieve a minimum 4.5 star base building and tenancy NABERS Energy rating, where applicable.

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4. The incorporation of green walls and roofs into the design of commercial and residential buildings is encouraged. Where suitable, building facades should incorporate vertical landscaping features to soften the visual bulk of buildings and to improve streetscape appeal.
5. Canopy trees are to be planted within street verges and medians to provide shade and reduce pavement surface temperatures. Understorey planting and permeable surfaces should also be provided where possible to reduce the extent of paved areas and to enhance the amenity of the streetscape environment.
6. Buildings are encouraged to incorporate a tri-generation facility that provides energy-efficient power, heating and air conditioning for use on site.
7. Building designs are to:
 - Maximise the use of natural light and cross ventilation;
 - Reduce the reliance on mechanical heating and cooling through the use of eaves, awnings, good insulation and landscaping;
 - Include energy efficient light fittings and water fittings; and
 - Allow for separate metering of water and energy usage for commercial and multi-unit tenancies.



Figure 26 Green Wall at 1 Bligh Street, Sydney
Source: City of Sydney

Green roofs can help to decrease heat absorption, reduce the ambient temperatures of buildings, and improve air quality and building efficiency. They can also provide a habitat for urban ecology and have amenity and recreational benefits for a building's occupants.

Green walls are plant systems that are grown on the vertical façade of a building and are often a striking and attractive design feature. Benefits include reducing the radiation of absorbed heat from buildings, they provide insulation from noise and heat, and make public spaces more appealing for the community to use and enjoy.



Figure 27 Greened Balconies to residential apartments

Source: Stefano Boeri Architects



Figure 28 Greenroof in cityscape

Source: Susanne Jespersen

4.6 Ecology

Objectives

- To protect and enhance areas of significant native vegetation.
- To protect and enhance wildlife habitat.
- To protect and enhance the integrity and environmental functionality of riparian corridors.

Controls

- Wherever practical, development within the Precinct should be sited to minimise impacts on the existing vegetation and avoid removal of significant trees.
- Provide green roofs and walls wherever practical to mitigate the loss of green canopy and vegetation as a result of development.

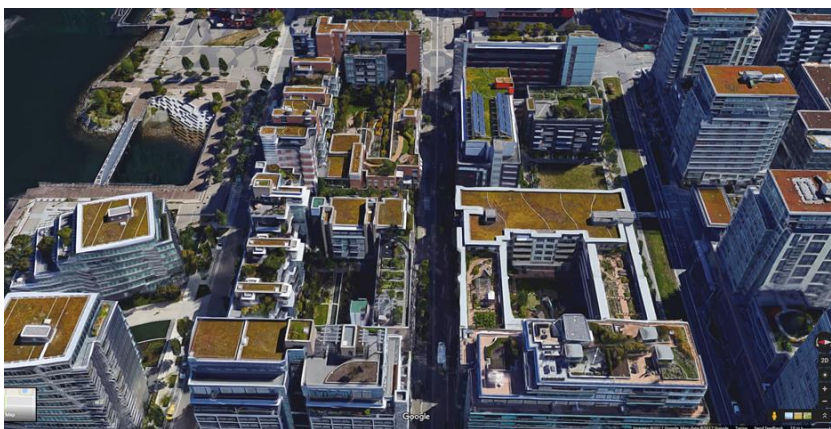


Figure 29 Green roofs on higher density development

Source: Google Maps

4.7 Safety & Security

Objectives

- a. To provide high levels of property safety as well as personal comfort and safety.
- b. To minimise opportunities for criminal and anti-social behaviour through urban design.

Controls

1. Development is to address the principles of Crime Prevention Through Environmental Design.

Note: Consideration shall also be given to The Hills Shire Council's Policy Designing Safer Communities, Safer by Design Guidelines (June 2002).

4.8 Heritage (Garthowen House)

Objectives

- a. To ensure that development within the vicinity of Garthowen House does not impact on the heritage significance of the heritage item.

Controls

1. Development in the vicinity of Garthowen House shall have regard to Part C Section 4 – Heritage of this DCP.
2. The curtilage of the heritage item, being the existing allotment boundary of 14 Garthowen Crescent (Lot 2 DP 533390), shall be maintained and protected.
3. Development on sites within the vicinity of Garthowen House shall be designed to ensure that building elements, which interface the western boundary of the heritage site, have a maximum height of (4) four storeys or no more than 13.5m in height whichever is the lessor (exclusive of building services).
4. Development on sites adjoining the heritage item should consider locating landscaped areas and common open space areas between future building elements and the heritage site to assist in providing greater separation between the heritage cottage and future development.
5. Development to the west of the heritage item shall incorporate a transition of height and density, with the lower scale elements located closest to the heritage site.
6. Development within the vicinity of the heritage site shall ensure that significant view lines to and from the heritage item are appropriately maintained.

5 Residential Flat Buildings and Shop Top Housing

Siting the Development

5.1 Site Requirements

The Hills LEP 2012 Clause 9.1 (Minimum lot sizes residential flat buildings and shop top housing) specifies the minimum lot size for residential flat buildings in the R4 High Density Residential zone and R1 General Residential zone.

Objectives

- a. To encourage the amalgamation of sites and discourage the creation of isolated development sites.
- b. To provide sufficient space for landscaping that will complement the building form and enhance the landscape character of the street.
- c. Development sites have sufficient area to provide adequate access, parking, landscaping and building separation.

Controls

1. Development sites shall have a minimum road frontage of 30m.
2. Development sites shall have a minimum site depth of 40m.
3. Residential flat buildings and shop top housing are to have a frontage (address) to the street and are not to be located on battle-axe allotments or rely on right of access arrangements for access to a public road.
4. The site coverage of future development shall not exceed 50% of the site area (excluding land to be dedicated or acquired for a public purpose).

Note: Determination of site cover includes driveways, footpaths and other impervious surfaces.

Note: Isolation of Lots and Orderly Development

The creation of isolated sites is not desirable and should be avoided where possible. Where a property is likely to be isolated by a development and it cannot be demonstrated that the site can be developed to its full potential, applicants should provide documentary evidence that a genuine and reasonable attempt has been made to purchase the isolated site based on a fair market value. Where a development may result in the creation of an isolated lot/s, the applicant should demonstrate that:

- Negotiations for amalgamation of sites commenced early, prior to the lodgement of a development application;
- If negotiations are not successful, details of the negotiations should be provided with the development application submission, including at least one recent independent valuation (which considers the property as being part of a complying amalgamated site) and include other reasonable expenses likely to be incurred by the owner of the isolated property in the sale of the property; and

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- The orderly development of the isolated site can be achieved that is consistent with the provisions of The Hills LEP and DCP. This should include the applicant providing an envelope for that site, indicating height, building form, setbacks and separations (building and basement) sufficient to understand the relationship between the proposed development and the isolated site and the streetscape implications.

The development of an isolated site should not detract from the character of the streetscape and is to achieve a satisfactory level of amenity, including solar access, visual and acoustic privacy.

5.2 Setbacks (Building and Upper Level)

Objectives

- a. To provide strong definition to the public domain and create a consistent streetscape.
- b. To set taller building elements back from the street to reduce building scale and bulk and enable adequate sunlight access to the public domain.
- c. To provide articulation zones to complement building mass and emphasise key design elements such as entrance points and respond to environmental conditions including solar access, noise, privacy and views.
- d. To ensure adequate separation between buildings on different sites to alleviate amenity impacts, including privacy, daylight access, acoustic control and natural ventilation.
- e. To facilitate a landscaped streetscape that can accommodate larger trees.

Controls

1. Buildings are to comply with Figure 30 Street Setbacks map and Table 2 Building Setbacks.
2. Where land is dedicated to Council for road widening at no costs, the setback shall be measured from the existing property boundary.
3. Buildings on street corners are to address both street frontages, with corners emphasised by appropriate architectural treatment.

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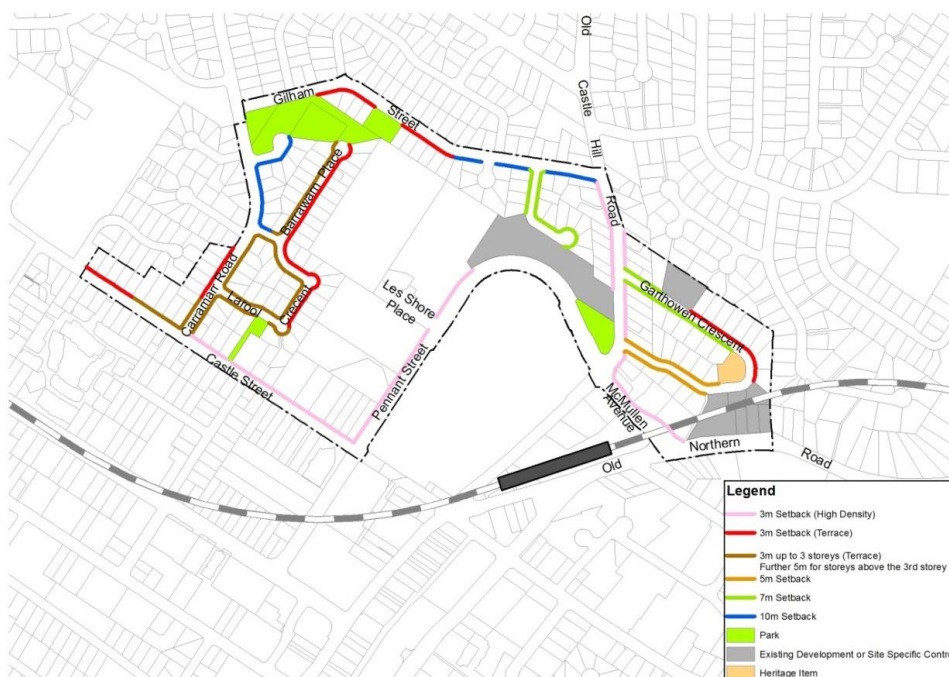


Figure 30 Street Setbacks

Table 2 Building Setbacks

Setbacks	
Front Setbacks (street level)	<ul style="list-style-type: none"> See Figure 30 Street Setbacks. Underground car parking shall not intrude into the primary setback.
Front Setbacks (upper level)	<ul style="list-style-type: none"> Where upper level setbacks are not specified on Figure 30 the following upper level setbacks shall be applied: <ul style="list-style-type: none"> For all buildings, on a street reservation equal to or greater than 20m in width (Old Castle Hill Road and Castle Street), all storeys above the 6th storey shall be setback 6m behind the front building line. For all buildings on a street reservation less than 20m in width, all storeys above the 4th storey shall be setback 6m behind the front building line.
Rear Setback	<ul style="list-style-type: none"> 8m or to comply with SEPP 65 whichever is the greater.
Side Setback	<ul style="list-style-type: none"> 6m or to comply with SEPP 65 whichever is the greater.
Balconies	<ul style="list-style-type: none"> Balconies shall not protrude into the setback areas.

5.3 Open Space and Landscaping

Objectives

- a. To maximise opportunities for landscaping, including the retention and/or planting of trees within deep soil areas to ensure a high level of amenity.
- b. To assist with the management of water quality.
- c. To provide communal open space for the enjoyment of residents.
- d. Communal open spaces:
 - Are accessible, usable and safe;
 - Enhance the attractiveness of the development;
 - Provide opportunities for social interaction; and
 - Create pleasantly shaded outdoor areas.
- e. To ensure development sites have sufficient space for landscaping that will complement the building form and enhance the landscape character of the street.

Controls

Landscaping

1. A minimum of 50% of the site area (excluding building footprint, roads, access driveways and parking) shall be landscaped. Terraces and patios within 1m of natural ground level shall be included in the calculation of landscaped open space.
2. Landscaped areas are to have a minimum width of 2m. Areas less than 2m in width will be excluded from the calculation of landscaped area.
3. Native ground covers and grasses are to be used in garden beds and path surrounds (turf is to be confined to useable outdoor areas).

Roof Gardens and Planting on Structures

4. Green walls are encouraged on podium walls along active frontages to soften the interface between future development and the public realm.
5. Rooftop gardens must be adequately enclosed and accessible to occupants of the development.
6. The design of exterior private open spaces such as roof top gardens is to address visual and acoustic privacy, safety, security, and wind effects.
7. Where roof gardens and green walls are provided, consideration should be given to the Urban Green Cover in NSW – Technical Guidelines, published by the Office of Environment and Heritage.

Communal Open Space

8. A minimum of 10m² per dwelling shall be provided as communal open space.
9. A minimum of 25% of the required communal open space must be located at ground level in a singular large parcel.
10. External (outside) common open space areas are to be capable of accommodating substantial vegetation and are to be designed to incorporate active and passive recreation facilities (such as seating, shade structures, BBQs, children's play equipment and swimming pools).
11. External (outside) common open space areas are to be located and designed to:

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- Be seen from the street between buildings;
 - Provide for active and passive recreation needs of all residents;
 - Provide landscaping;
 - Present as a private area for use by residents only;
 - Include passive surveillance from adjacent internal living areas and/or pathways;
 - Have a northerly aspect where possible; and
 - Be in addition to any public thoroughfares.
12. Internal open space areas are to provide opportunities for larger communal gathering and/or active recreation (i.e. kitchen facilities, tables and chairs, small-scale gymnasium, health studio or swimming pools).
13. Plant species appropriate to the context and the specific microclimate within the development are to be selected to maximise use of endemic and native species and opportunities for urban biodiversity.
14. Drought tolerant plant species, and species that enhance habitat and ecology, are to be prioritised.
15. Landscape design is to be integrated with water and stormwater management.

Designing the Building

5.4 Built Form Design

Objectives

- a. To ensure development creates a positive streetscape and achieves a high quality architectural design that promotes commercial, retail and business activity.
- b. To establish streets with a high quality pedestrian friendly retail strip.
- c. To encourage podiums that reinforce the intended neighbourhood character and enhance the pedestrian experience.
- d. To ensure that towers:
 - Include slender design so as to not overwhelming in bulk and scale;
 - Allow for solar access to units within the development and on adjoining sites;
 - Create an open, attractive and distinct skyline;
 - Create small, fast moving shadows;
 - Allow for view corridors between nearby towers.
- e. Roof design and roof features are provided which integrate telecommunications, service structures, lift motor rooms and mechanical plants, contributing to an attractive and interesting skyline of the precinct.
- f. To ensure buildings are designed to maximise the privacy of adjoining properties.

Controls

General

1. The façade design of a development is to utilise large expressed elements to relate to passing motorists and articulate the key components of the building such as entries, showrooms and the like. Finer detail to identify individual tenancies and different building levels are to be used to add richness to the architectural design.
2. The design and layout of any building adjoining landscaped spaces or pathways shall ensure there is natural surveillance of the pathway to protect the security and amenity of users. Solid fences will not be permitted along the boundary of a pathway as they will restrict passive surveillance over the pathway.
3. Sun shading is to be provided appropriate to orientation for glazed portions of facades.
4. Development shall be designed to incorporate clearly defined ground floor street zone, podium and upper level elements. The podium element of any development is to be articulated as shown in Figure 31.



Figure 31 Street façade articulation

Source: THSC

5. On streets with a road reserve of less than 20m the width, the length of the façade shall not exceed 40m. On streets with a road reservation of 20m or greater in width the street frontage shall not exceed 65m.
6. Buildings are to have a maximum length of 65m. Where a building has a length greater than 30m it is to be separated into at least two parts by a significant recess or projection.
7. Where a building has a length greater than 40m it shall have the appearance of two distinct building elements with individual architectural expression and features.
8. The entry to the development is to be visually identifiable from the street frontage with clear sight lines. Separate entrances are required for commercial / retail and residential uses.
9. Street corners must be addressed by giving visual prominence to parts of the building façade, such as a change in building articulation, material or colour, roof expression or height. Buildings on street corners are to address both street frontages.
10. Services such as for fire protection, water and power distribution are not to intrude upon the pedestrian right of way, visually detract from the appearance of the development, and are to be screened from the street frontage with materials which are integrated with architectural expression of the development.
11. The design of buildings, in particular upper level balconies, shall be designed to maximise the privacy of surrounding properties, particularly sensitive interfaces such as Castle Hill Public School.

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Figure 32 Artist's Impression of Quality Building Design
(Source: www.collinsandturner.com/architecture/barangaroo-r7)

Apartment Mix

1. No more than 25% of the total number of dwellings (to the nearest whole number of dwellings) contained in the development are to be studio or 1 bedroom dwellings, or both, and
2. At least 20% of the total number of dwellings (to the nearest whole number of dwellings) contained in the development are to be 3 or more bedroom dwellings.

Podium Design

12. Podium heights shall frame adjacent park land and on-site open space.
13. Podium facades shall avoid blank, featureless walls by patterning high quality architectural elements such as window bays, canopies and fenestration.



Figure 33 Podium Addresses Public Open Space
(Source: THSC)



Figure 34 Podium Interfaces with Street, Rhodes
(Source: THSC)

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Tower Form and Design

14. The tower floor plate (floors above the 8th storey) is limited to 750m² gross floor area per storey.
15. Tower forms are to provide a unique profile when compared to nearby existing and proposed towers of similar height.
16. Tower form is to be coordinated to offset with adjacent towers to ensure:
 - Prominent tower views to natural features are not obstructed; and
 - Views of the sky and access to sunlight from the public realm and private open space areas are maximised.
17. Tower form is to be orientated to:
 - Reduce the perceived mass of the building; and
 - Provide privacy for both communal and private open space areas.
18. Tower facades are to be:
 - Articulated to manage passive solar gain in summer;
 - Well-glazed with functional windows where possible to reduce reliance on artificial cooling;
 - Designed with high-quality sustainable materials and finishes that promote building longevity; and
 - Varied in design and articulation to promote visual interest.

Roof Design and Features

19. Where building height creates an identifiable protrusion in the skyline the following are provided:
 - A signature cap strengthening the building's identity as a landmark; and
 - Decorative lighting that highlights key architectural features.
20. Roof features shall be designed to generate an interesting skyline and enhance views from adjoining developments and surrounding areas.

5.5 Active Street Frontages

These controls apply where active frontages are provided

Objectives

- a. To encourage active street frontages in suitable locations.
- b. Active street frontages cater to a diverse range of activities.
- c. Active street frontages provide energetic, safe and vibrant pedestrian environments.
- d. The public domain encourages activity outside of commercial business hours.

Controls

1. Active frontages are required for ground floor non-residential uses.
2. Active frontages may include one or a combination of the following:
 - Shop front;
 - Café or restaurant if accompanied by an entry from the street;
 - Community and civic uses with a street entrance; and
 - Recreation facilities with a street entrance.

3. An active street frontage is not required for any part of a building that is used for any of the following:
 - Entrances and lobbies (including as part of mixed use development);
 - Access for fire services; and
 - Vehicular access.
4. Retail and commercial uses at ground level are to be designed so that the ground floor for at least part of the premises is at the same level as the finished footpath level of the adjacent street and/or open space.
5. Awnings are to be provided over commercial and residential entries. Continuous awnings are to be provided above retail uses and the full length of active frontages.
6. Development is to provide awnings which are a minimum width of 1.5m over the pedestrian access/footpath.
7. Footpath awnings shall be designed to complement and integrate with the façade and the streetscape.
8. Where an active frontage is required, a minimum of 80% of the building frontage is to be transparent (i.e. windows and glazed doors). Clear glazing is to be provided to windows and doors.
9. For larger developments, building entrances should be provided on each street frontage.
10. Loading docks are not permitted on active frontages.
11. Security grilles may only be fitted internally behind the shopfront. They are to be transparent and fully retractable.



Figure 35 Active Street Frontage, Cafe
(Source: THSC)

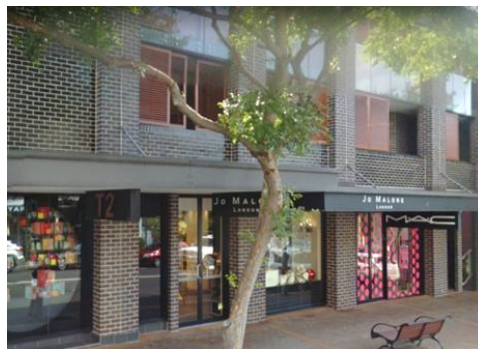


Figure 36 Active Street Frontage, Retail Uses
(Source: THSC)

5.6 Streetscape and the Public Domain Interface

Objectives

- a. Development contributes to the activity, safety, amenity and quality of streets and the public domain.
- b. Development addresses the street and creates a human scale for pedestrians.
- c. Development frames and addresses public spaces with appropriately scaled built form achieving excellence in architectural, landscape and urban design.

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Controls

1. Buildings shall address any shared open space and adjacent public areas to increase the natural surveillance of these areas and contribute to their safety and security.
2. Residential developments are to address the primary street frontage. Where a development comprises a number of buildings with a variety of orientations, a major part of the overall development is to face the street.
3. Building design shall avoid creating opportunities for personal concealment.
4. The siting and design of dwellings should take advantage of any views to open space, public reserves and bushland to promote natural surveillance and to enhance the visual amenity of residents.
5. Blank courtyard walls along boundaries shared with open space or reserves should be avoided and opportunities to create and orient dwellings to permit direct views from living areas into the open space/reserve should be pursued in design. Any blank wall or portion of blank wall is to be treated with an anti-graffiti paint application and / or vegetation treatment.
6. Building entries should be readily apparent from the street and clearly visible from inside the dwelling to improve casual surveillance.
7. Lighting is to be provided for safety at night for all public and semi-public entry ways.
8. The design and layout of any building adjoining landscaped spaces or pathways shall ensure there is natural surveillance of the pathway to protect the security and amenity of users. Solid fences will not be permitted along the boundary of a pathway as they will restrict passive surveillance over the pathway.



Figure 37: Active Street Frontage with landscaped edge (Source: THSC)



Figure 38: Landscaped setback to development (Source: THSC)



Figure 39: High quality address to public open space corridor (Source: THSC)



Figure 40: High quality address to public open space corridor (Source: THSC)

5.7 Residential Uses on Ground and First Floors

Objectives

- a. To provide residential activation to streets.
- b. To provide for residential identity and legibility.
- c. Encourage the provision of housing for a diversity of dwelling types and users.
- d. To introduce a fine grain built form and architectural diversity within a street block and/or building development.
- e. To provide for future flexibility in use.

Controls

1. Higher density development with residential ground and lower floor uses is to adopt a two storey terrace house appearance to present a fine grain articulation to the street frontage.
2. Residential ground floor units are to have individual gates and entrances accessed directly from the street.
3. Ground floor residential apartments are to be elevated from the street level by a minimum of 300mm and a maximum of 600mm.
4. Ground floor residential fences are to be no more than 1.2m in height with a minimum 50% transparency. Contemporary palisade fence designs in a dark recessive colour are encouraged.
5. Soft landscaping to the front of the terrace is to be a minimum of 40% of the setback area, contiguous, and a minimum of 2m in any direction.
6. Small trees suitable for the landscaped area provided are encouraged.
7. Underground car parking is not to intrude into the primary setback by more than 500mm.

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Figure 41: Terrace style housing with access to street
(Source: THSC)



Figure 42: Entry detail (Source: THSC)

5.8 Solar Access and Overshadowing

Objectives

- To provide adequate solar access to common open spaces and the open space of adjoining properties, and to ensure that a high level of amenity is achieved for both future and adjoining residents.
- To ensure that overshadowing from new development does not result in significant loss of sunlight and diminish the enjoyment of public and private open spaces.
- To protect, and where possible, increase the level of sunlight to public and private open spaces during the times of the year when outdoor spaces are most commonly used.
- To facilitate the equitable sharing of future impacts of new development on the public domain.

Controls

- Development is to ensure that at least 50% of the landscaped open space of adjoining properties receives a minimum of 4 hours of sunlight between the hours of 9am and 3pm on 21 June.
Note: Where these areas already receive less than the minimum 4 hours, the proposed development shall not further reduce the level of solar access.
- Development shall achieve direct sunlight to the principal usable part of the communal open space within the development site for a minimum of 2 hours between 9am and 3pm on 21 June.
- The development shall not create additional overshadowing of land identified for public open space between the hours of 11am-2pm on 21 June. This includes public open spaces outside and adjacent to the precinct.
- Solar access to future dwellings within the development shall comply with, and where possible exceed, the minimum solar access requirements within the Apartment Design Guide.

5.9 Adaptable housing

Objectives

- To ensure a sufficient proportion of dwellings include accessible layouts and features to accommodate changing requirements of residents.
- To encourage flexibility in design to allow people to adapt their home as their needs change due

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to age or disability.

Controls

1. Residential flat buildings are to meet the requirements for adaptable housing within Part B Section 5 Residential Flat Buildings of The Hills DCP 2012.
2. All types of residential accommodation are to consider flexibility in the design to allow adaption to meet the changing needs of residents due to ageing or disability.

5.10 Noise

Objectives

- a. To ensure the amenity of future residents and workers by appropriately responding to noise impacts.

Controls

1. Site planning, building orientation and interior layout is to lessen noise intrusion as far as possible.
2. Attenuation of noise at the source is preferred. Applicants are to indicate measures undertaken to mitigate the impact of noise upon adjacent residents and/or workers.
3. It is preferable that noise attenuation measures will last for a minimum of 10 years or the life of the development proposal, before being upgraded to meet current standards as required.
4. A Noise Impact Assessment prepared by a suitably qualified consultant may be required when submitting a development application for a new development or the renovation of an existing development.
5. The provisions of State Environmental Planning Policy (Infrastructure) 2007 and *Development near Rail Corridors and Busy Roads Interim Guideline* must be taken into consideration to minimise impacts of busy roads and railway corridors on residential and other sensitive development.
6. Development applications are to demonstrate how buildings comply with the noise criteria specified in Table 3.

Table 3 Noise Criteria

Internal Space	Recommended Noise Criteria	Maximum Noise Criteria
Living areas	40 dBA	45 dBA
Working areas		
Sleeping areas	35 dBA	40 dBA

7. The provisions of State Environmental Planning Policy (Infrastructure) 2007 and *Development near Rail Corridors and Busy Roads Interim Guideline* must be taken into consideration to minimise impacts of busy roads and railway corridors on residential and other sensitive development.

5.11 Wind

Objectives

- a. To allow for cooling summer breezes to move through the Precinct.
- b. To ensure the built form does not provide adverse wind conditions which will impact upon the amenity of pedestrian comfort in streets and public and private open spaces.

Controls

1. Built form is to demonstrate that the passage of cooling summer breezes will not be impacted.
2. Buildings 8 or more storeys in height (or over 25 metres) require wind tunnel testing, irrespective of whether they are built to the street frontage or not, which demonstrates the following:
 - a. In open areas to which people have access, the annual maximum gust speed should not exceed 23 metres per second;
 - b. In walkways, pedestrian transit areas, streets where pedestrians do not general stop, sit, stand, window shop and the like, annual maximum gust speed should not exceed 16 metres per second;
 - c. In areas where pedestrians are involved in stationary short-exposure activities such as window shopping, standing or sitting (including areas such as bus stops, public open space and private open space), the annual maximum gust speed should not exceed 13 metres per second;
 - d. In areas for stationary long-exposure activity, such as outdoor dining, the annual maximum gust speed should not exceed 10 metres per second; and
 - e. The report is to be prepared by a suitably qualified engineer.

5.12 Parking Rates and Access

Objectives

- a. To provide sufficient parking spaces for development while encouraging public transport use.
- b. To ensure that car parking is appropriately located and visual impacts of access and parking facilities on the public realm are minimised.
- c. To ensure vehicles enter and exit developments in a safe and efficient manner.
- d. Pedestrian and cycle access to, from and through development is simple, safe and direct.
- e. To ensure that bicycle parking is considered and provided appropriately in all development.
- f. To ensure that end of trip facilities such as change rooms, showers and secure areas for bicycle parking are provided in new buildings featuring employment uses.
- g. To encourage provision of commercial uses to activate streets and provide for local employment.

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*Controls*Car Parking

1. Car parking spaces are to be provided at the rates specified in the parking rates table below. For any use not specified, the car parking rates in The Hills Development Control Plan 2012 (Part C Section 1 – Parking) shall apply.

Table 4 Car Parking Rates

Land Use	Rate
Residential flat buildings and dwellings in shop top housing	1 resident space per unit. 1 visitor space per 5 units.
Commercial premises as part of a mixed use development	Max 1 space per 200m ² GFA.
All other uses	To comply with the rates in The Hills DCP 2012 Part C Section 1 – Parking.

2. Car parking shall not be located on the roof of buildings.

Vehicular Access

3. The location and means of access to customer car parking within a building is to be clearly visible.
4. Adequate vehicular entry and exit and circulation areas are to be provided. The design must:
 - Provide safe environment for both pedestrians and vehicles using the site and surrounding road networks;
 - Ensure vehicular ingress and egress to the site is in a forward direction at all times;
 - Provide for service vehicles where possible; and
 - Be designed to minimise the visual impact of hard paved areas.
 - Parking shall be provided underground or at the rear of buildings.
5. Loading areas and vehicular access points for development are to be screened from public roads and public access points.

Residential Flat Buildings and Shop Top Housing

6. Parking is to be underground and within the footprint of the building above.
7. Basement parking is not to be provided forward of the building line.
8. Where above ground parking cannot be avoided due to site conditions, it must be well integrated into the overall façade design and create a good relationship to the public domain.
9. Garages and parking structures are not to project forward of the building line and are to be screened from the public domain by active uses.
10. Any parking located within the front setback area must be suitably landscaped and contribute positively to the streetscape.
11. Car share spaces are encouraged within residential flat buildings and shop top housing developments. Car share spaces are to be for the exclusive use of car share scheme vehicles,

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and included in the number of car parking spaces permitted on a site. The car share parking spaces are to be:

- Exclusive of visitor car parking;
 - Retained as common property by the Owners Corporation of the site, and not sold or leased to an individual owner/occupier at any time;
 - Made available for use by operators of car share schemes without a fee or charge;
 - Grouped together in the most convenient locations relative to car parking entrances and pedestrian lifts or access points;
 - Located in well-lit places that allow for casual surveillance;
 - Signposted for use only by car share vehicles; and
 - Made known to building occupants and car share members through appropriate signage which indicates the availability of the scheme and promotes its use as an alternative mode of transport.
12. Development applications are to demonstrate how the car share parking space(s) is to be accessed, including where access is through a security gate. A covenant is to be registered with the strata plan advising of any car share parking space. The covenant is to include provisions that the car share parking space(s) cannot be revoked or modified without prior approval of Council.

Bicycle Parking

13. Secure, conveniently located bike parking facilities are to be provided at the rates specified in Table 5 below.

Table 5 Bicycle Parking Rates

Land Use	Rate (minimum)
Residential flat buildings	1 resident space per 3 apartments.
	1 visitor space per 12 apartments.
Commercial use	1 space per 600m ² GFA for staff.
Retail use	1 space per 450m ² for staff.

6 Terrace Housing

This section of the DCP applies to land within the Precinct zoned R3 Medium Density Residential.

Development specified in this section of the DCP that is Torrens Title subdivision will need to meet the requirements of Clause 4.1B Exceptions to minimum lot sizes for certain development under The Hills Local Environmental Plan 2012.

Siting the Development

6.1 Site Requirements

Objectives

- a. Development sites have sufficient area to provide adequate access, parking and landscaping.
- b. To minimise impact on the amenity of neighbouring sites.
- c. To allow a range of allotment types to suit most household types and allow for diversity.
- d. To provide a distinct urban character which is sympathetic to existing and future development.

Controls

1. Terrace lots shall have minimum site depth of 30m (exclusive of land required for rear laneway access).
2. Terrace housing (as single lot or as a townhouse type development) shall be provided within the periphery of the Precinct on land zoned R3 Medium Density Residential.
3. Subject to council discretion all terraces are to be rear loading.
4. All dwellings with a frontage to the street (including a secondary street) must address the street.

6.2 Building Setbacks

Objectives

- a. Developments contribute to an attractive and diverse neighbourhood that is characterised by tree-lined streets, high quality landscaping and innovative building design.
- b. To provide strong definition to the public domain and create a consistent streetscape.
- c. To alleviate impacts on amenity including privacy, solar access, acoustic control and natural ventilation within the development and adjoining neighbours.

Controls

1. Buildings are to comply with Figure 30 Street Setbacks Map and Table 6 Setbacks – Terrace Housing.

Table 6 Setbacks – Terrace Housing

Terrace Housing	
Front setbacks	<ul style="list-style-type: none"> • Shall Comply with Figure 30. • 3m to front building line for the first and second storey • 4m to front building line for the third storey
Front articulation zone	<ul style="list-style-type: none"> • Minor façade elements such as balconies, porches or verandahs may be 1m forward of front building line. On corner blocks the articulation zone may be extended along the secondary frontage for a max of 3m or 25% of façade length with a min. of 1m setback from boundary.
Side setbacks	<ul style="list-style-type: none"> • 0m between terraces. • 3m from the side property boundary (end terrace) that adjoins a neighbouring property. • 3m from the side property boundary (end terrace) that adjoins a public street. • 1m from the side property boundary (end terrace) that adjoins a laneway.
Rear Setbacks <ul style="list-style-type: none"> • 1-2 storey element • 3 storey element • Garages of rear lanes 	<ul style="list-style-type: none"> • 7m • 9m • 0.5m
Multi Dwelling Housing (Other than Terrace Housing)	Shall comply with the setback requirements contained within The Hills DCP 2012 (Part B Section 4 – Multi Dwelling Housing)

6.3 Open Space and Landscaping

Objectives

- To cater for the recreational needs of building occupants.
- To improve amenity and soften the impact of buildings through the provision of landscaping, including the retention and/or planting of trees within deep soil zones.
- A high level of amenity for residents is achieved through the provision of sufficient solar access, natural ventilation, privacy and open space.

Controls

- Minimum 16m² private open space (POS) for each dwelling with a minimum dimension of 3m. Must be located at ground level at the rear of the dwelling directly accessible from the main living area.
- 60% of the private open space area shall comprise deep soil planting and be located such that a canopy tree can be planted.
- 30% of front setback area shall comprise soft landscaping.
- Landscaped areas are to have a minimum width of 2m.
- Roof terraces and roof gardens are encouraged where the privacy of adjoining properties can be maintained.



Figure 43 Terrace with Green roof

(Source: Bere Architects)

6. At least 50% of the required private open space for each dwelling and adjacent dwellings is to receive direct sunlight for a minimum of 3 hours between 9am and 3pm on 21 June.
7. Collapsible or permanent clothes drying device is to be provided within private open space areas and located to maximise the amount of direct sunlight received.

6.4 Rear Laneways

Objectives

- a. To facilitate orderly development within the R3 Medium Density zone through the provision of rear laneways.
- b. To provide vehicular access to the rear or side of lots to reduce garage dominance in residential streets.
- c. To reduce vehicular conflict through reduced driveway cross overs and focusing of traffic to known points.
- d. To enable garbage collection along street frontages.
- e. To facilitate the use of attached and narrow lot housing to achieve an attractive streetscape.

Controls

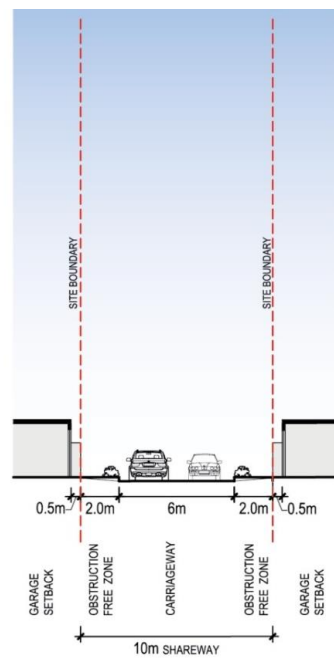
1. Rear laneways are the preferred access and parking arrangement for terrace housing.
2. Where rear laneways are not achievable (for single row terraces only), and underground parking is an option, the entry is to not adversely impact upon the streetscape or pedestrian right of way. Driveway entries from the street frontage are not desirable and are subject to council discretion.
3. The design and construction of laneways is to be consistent with Figure 44.

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4. The laneway is a public “shareway” as the paved surface is for cyclists, pedestrians and cars etc, with a 10 km speed limit and driveway-style crossovers to the street rather than a road junction.
5. On-street car parking within the rear laneway carriageway shall not be permitted.
6. The minimum garage doorway widths for manoeuvrability in this laneway section are 2.4m (single) and 4.8m (double).
7. Rear laneway design shall have regard to the following lot layouts (refer Figure 45). Entry way sightlines are to end with a landscaped treatment or the continuation of the laneway.
8. Laneways that create a ‘fronts to backs’ layout (front addressed principal dwellings on one side and rear accessed garages on the other side) are to be avoided.
9. All lots adjoining a laneway should utilise the laneway for vehicular/garage access (refer Figure 45).
10. Terraces shall be designed so as to facilitate passive surveillance along the rear laneway through the positioning of windows and balconies facing the laneway.
11. Waste collection is to be undertaken from the rear laneway.
12. A concrete bin pad 1.7m wide and 0.8m deep shall be provided behind the kerb and adjacent to the driveways for bin presentation.
13. A swept path analysis for the standard 12.5m long HRV (AS2890.2-2002) shall be submitted demonstrating all bends of laneways are suitable for the turning of garbage vehicles. This includes ingress and egress points to intersecting roads or laneways. All manoeuvring must be contained within trafficable carriageways.
14. No building element (such as eaves, balconies, gutters and the like) shall encroach into the rear laneway reservation area (carriageway plus verge).

Note: Waste collection vehicles will collect rubbish bins from the laneway verge. Accordingly, any building elements that overhangs the rear laneway reservation area will impact on operation of side mounted waste collection vehicles.

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PROFILE 10 TYPICAL LANEWAY SECTION & PLAN

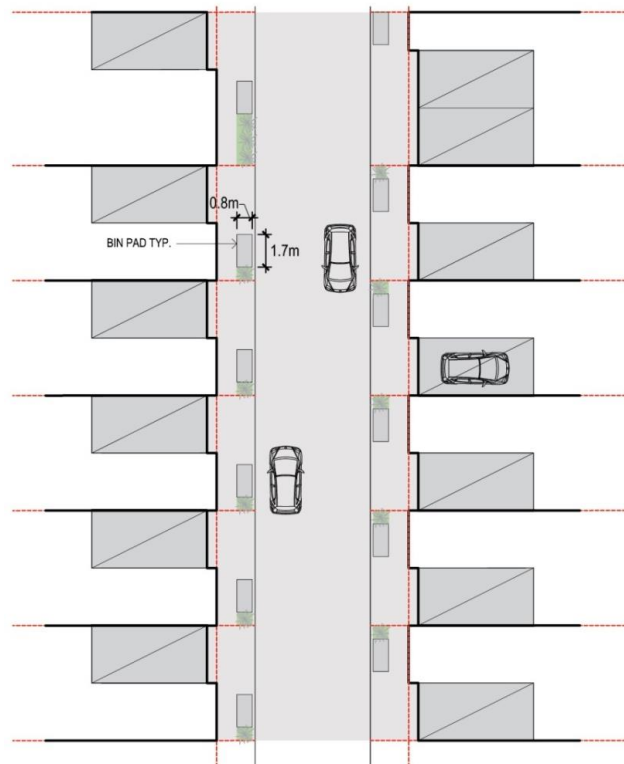
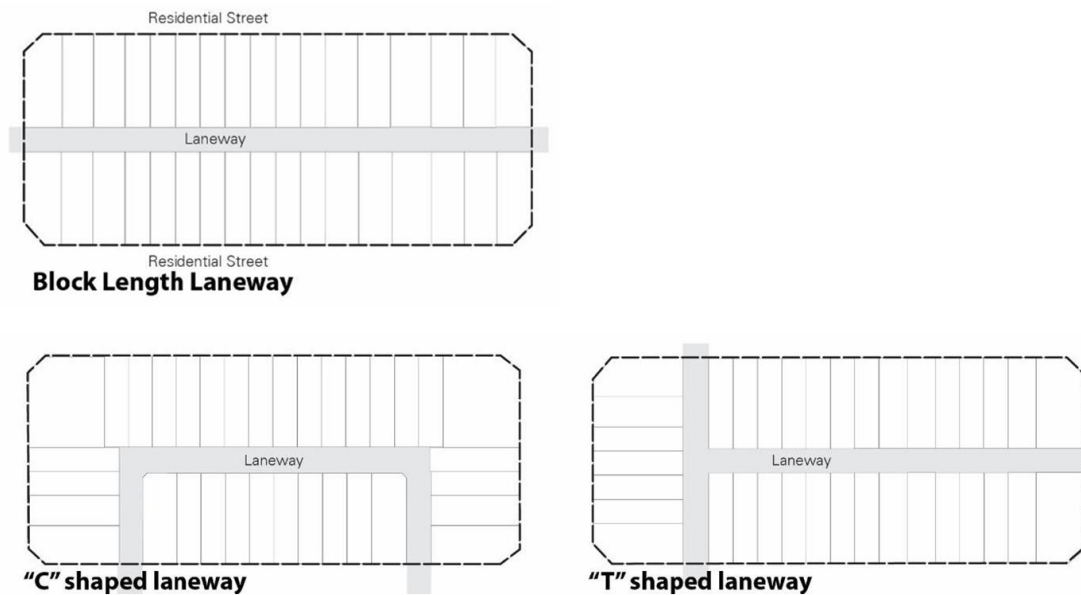


Figure 44 Rear Laneway Principles

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**Figure 45 Sample Lane Sections**

Source: North Kellyville DCP

Note: Rear laneway location and layout is subject to swept path analysis.

Designing the Building

6.5 Building Height

Objectives

- Terraces integrate with the character of surrounding development and are of a high architectural quality.
- Designs reduce the visual bulk of buildings from the street.
- The scale of terrace development reinforces the desired future neighbourhood character.

Controls

- Terrace houses are to be a minimum of 2 storeys and a maximum of 3 storeys inclusive of attic rooms.

6.6 Building Design and Streetscape

Objectives

- To incorporate high quality façade design and finishes.
- Designs reduce the visual bulk of buildings from the street to reinforce the desired future neighbourhood character.
- Developments provide an appropriate level of amenity for residents within and adjoining the development.

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Controls

1. Each dwelling is to include individual access from the main street frontage.
2. Building entry must be integrated with building façade design. At street level, entry is to be articulated with awnings, porticos, recesses or projecting bays for clear identification. The entry path to the building is to be accessible and visible from the street.
3. The minimum internal floor area for each dwelling, excluding common passageways, car parking spaces and balconies shall be as follows:

Table 7 Minimum Floor Area – Terrace Housing

Dwelling Type	Minimum Floor Area
1 bedroom dwelling	75m ²
2 bedroom dwelling	110m ²
3 bedroom dwelling	135m ²

4. For strata developments, a minimum of 10m³ storage space is to be provided for each dwelling in either a lockable garage or a basement. Storage areas shall have a minimum base of 5m² and minimum width of 2m.
5. The minimum width of each dwelling is 6m.
6. The maximum building length is 50m (block of attached terraces).
7. Where a building frontage is greater than 32m, a 4m gap shall be provided to break up the frontages.

**Figure 46 Vegetated rear lane**

Source: THSC

**Figure 47 Pedestrian walkthroughs between terraced groups, Kingston**

Source: THSC

8. Bin storage areas must be located so that bins can be easily wheeled to the rear laneways for collection.
9. Hedge and shrub planting or open style fencing shall be provided along the street frontage. Where proposed, the height of front fences should not exceed:
 - 0.9m for solid masonry fences; and
 - 1.2m for open or transparent style fences with 50% min. permeability / and or hedges.

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10. Chain link, sheet metal or timber paling fencing is not permitted to front or secondary frontages.
11. Side and rear fences shall be a maximum of 1.8m in height.
12. Front fencing and courtyard walls are permitted on the boundary line. Courtyard walls are only permitted on secondary frontage to corner lots.
13. Minimise direct overlooking of main internal living areas and private open space of dwellings both within and adjoining the development through building design, window locations and sizes, landscaping and other screening devices.
14. Rear laneways to provide for low maintenance soft landscaping treatments to reduce impact of hardscaped surfaces and wall treatments.



Figure 48 Terrace style housing, Kingston
Source : THSC



Figure 49 Terrace Style Townhouse
Source: Google Streetview



Figure 50 Modern Terrace Design
Source: www.realestate.com



Figure 51 Terraces, Pyrmont
Source: THSC

6.7 Car Parking

Objectives

- a. To provide sufficient parking spaces for development while encouraging public transport use.
- b. To ensure that car parking is appropriately located.

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Controls

1. Car parking spaces are to be provided at the rates specified in parking rates table below. For any use not specified, the car parking rates in The Hills Development Control Plan 2012 (Part C Section 1 - Parking) shall apply.

Table 8 Parking Rates

Land Use	Rate
Dwellings – detached, attached and semi-detached	To comply with the rates in Part C Section 1 – Parking.

2. The preferred access for terrace housing is via a rear laneway.
3. Garages are to face the rear lane.
4. Where basement car parking is provided, the parking area is to be accessed by a single front driveway. The car park entry is to be integrated with the building design.
5. Basement car parking is to be consolidated under building footprints to maximise opportunities for deep-soil planting on the site.
6. Basement car parking must not protrude more than 0.5m above the natural ground level.
7. Where basement car parking is provided, waste collection shall occur within the basement car park.