

ORDINARY COUNCIL MEETING

ATTACHMENTS BOOKLET - Item 9.2 (pages 584-990)

Under Separate Cover

Tuesday, 17 June 2025

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

B.14 Public domain interface

Active street frontage

Active street frontages support a lively, interesting and safer public domain. Busy pedestrian areas and nonresidential uses such as shops, studios, offices, cafes, recreational and civic uses promote the most active frontages. Active frontages at ground level should be established along major pedestrian routes. Refer to Photo K17-20 and Photo K17-21.

In residential areas the interaction between the public and private domain can be strengthened by maximising the number of entrances and locating more public functions on the street side of the building. In mixed use areas, ground level retail and commercial frontage provides the benefit of public safety, commercial activity and street life. Active frontages should extend above street level with uses which provide transparency and visual contact with the street.

Due to the temperate climate, favourable orientation, and views to Olympic Park and Homebush Bay from the public domain, Rhodes West is a desirable location for outdoor dining. Outdoor dining has the potential to contribute to the liveliness of the streets and public open spaces.

Controls

C1.	<p>An active frontage is defined as one, or a combination of the following:</p> <ul style="list-style-type: none"> • Shopfronts, if predominantly glazed and accompanied by an entry • Community use if accompanied by an entry • Commercial lobby if accompanied by an entry • Entrance to residential/ commercial use • Café or restaurant if accompanied by an entry and/ or outdoor seating • Any other use that in the opinion of the consent authority is consistent with the strategy
C2.	<p>Minimise the number and width of vehicle footpath and cyclepath crossings, to optimise pedestrian and cyclist safety.</p>



Photo K17-20 Built form that frames public open space with pedestrian link to surrounding street



Photo K17-21 Active street with restaurants and cafés with outdoor dining

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

B4 - Mixed use zone

Controls	
C3.	To create a lively centre, active frontages must be established along the activity strip identified in Figure K17-9 Rhodes West Setbacks Plan, with ground level retail and commercial uses, and entrances to residential or commercial development above. Active ground floor frontage should also be maximised to all other streets, laneways and plazas in the mixed use zone, especially at street corners. Refer to Photo K17-23 and Photo K17-24.
C4.	To create an interesting pedestrian environment, predominantly clear glazing should be provided to the street frontage of retail and commercial windows at ground floor level.
C5.	To create a friendly pedestrian environment, roller shutters to ground floor retail street frontages are prohibited.
C6.	To create a lively centre, street level retail frontage for individual tenancies is limited to 20m, except on street corners where 30m frontages are permitted, and along Rider Boulevard and Oulton Avenue where bulky retailing may be accommodated.
C7.	To create a safe and lively retail complex, active frontages must be provided to the pedestrian spine of the retail centre. Ground level shops with frontage to both a public street and a pedestrian spine, should have public entrances on both frontages.
C8.	To enliven the street, laneways and plazas, outdoor eating areas should be located at ground floor and first floor level along street frontages and adjacent to parks, with minimal disturbance to pedestrian circulation and residential amenity.

C9.	To enliven the street, provide surveillance, accommodate home occupation, and facilitate potential future adaptation for mixed or commercial use, design every ground floor apartment fronting a primary street in the mixed use zone to incorporate a direct street entrance.
C10.	Complete existing connections and establish new pedestrian connections through the block, to create a fine-grained network of interconnected laneways and open spaces.

R4 - Residential zone

C11.	To achieve street surveillance, maximise the number of pedestrian entrances to residential buildings. Refer to building articulation and address controls.
C12.	To achieve amenity in local neighbourhoods, permissible non-residential uses such as publicly accessible facilities, local shops and cafes are preferred where they will be most accessible and visible, such as at street level, in the following locations: <ul style="list-style-type: none"> • Along Walker Street; • At the Gauthorpe Street extension in the Foreshore Park; and • Fronting parks at locations identified in Figure K17-9 Rhodes West Setbacks Plan.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

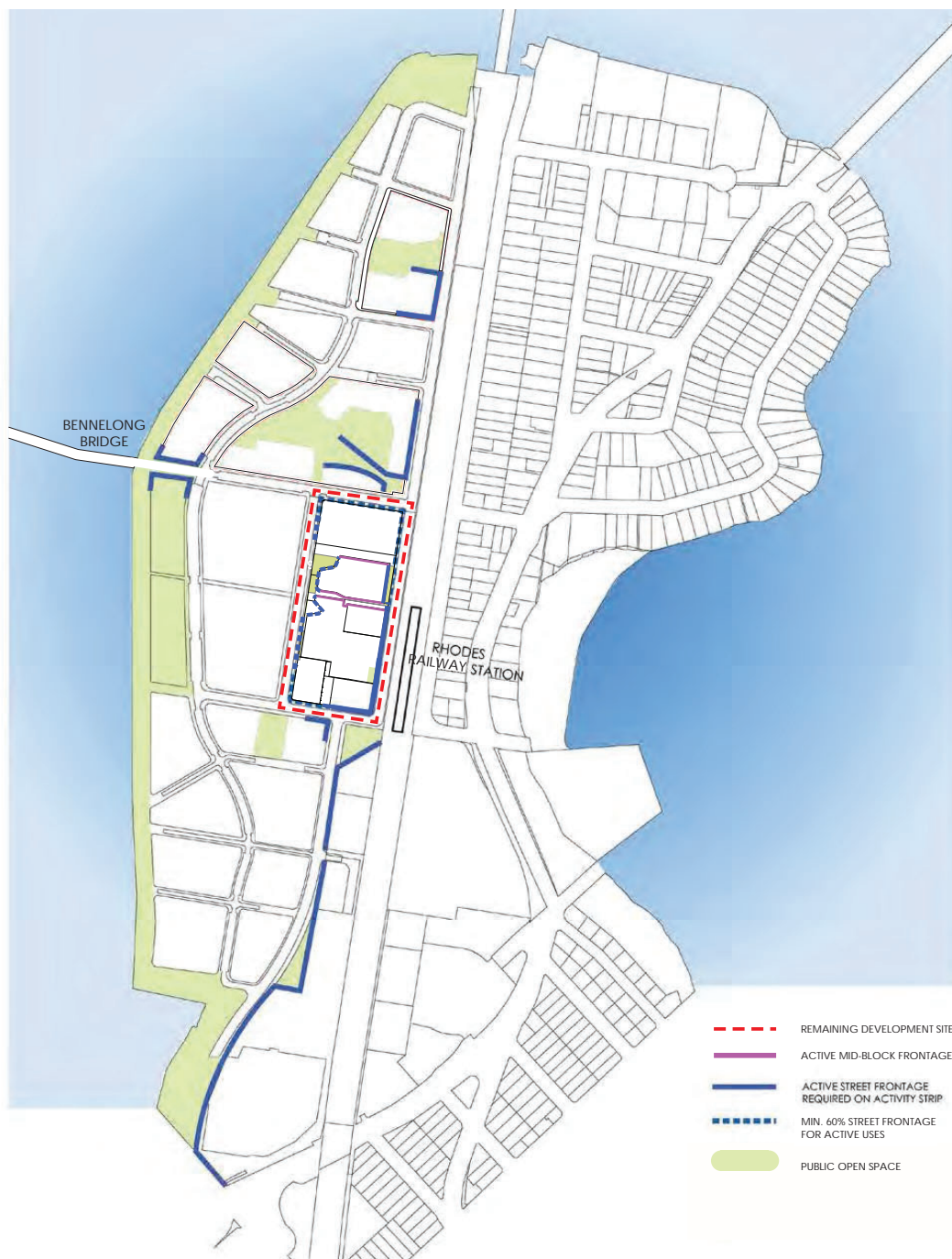


Figure K17-10 Rhodes West Active Street Frontages

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

B.15 Awnings and entrance canopies

In retail and mixed use streets awnings increase pedestrian amenity by providing wet weather protection and shade. Refer to Photo K17-22. For public and commercial buildings in residential streets discontinuous awnings and entrance canopies create a protected transition area between internal and external spaces at building entrances. Refer to Photo K17-25 and Figure K17-10 Rhodes West Active Street Frontages.

Awnings

Controls

C1.	To achieve weather protection in the major pedestrian areas, continuous awnings must be provided to the activity strip and discontinuous awnings in transition areas opposite and adjoining the activity strip.
C2.	To provide adequate weather protection awning height is to be minimum 3.2m and maximum 4.5m and integrate with adjoining properties. The awning face should be horizontal. Steps for design articulation or to accommodate sloping streets are to be maximum of 0.75m. Awning width is to be a minimum 2m, setback 0.8m from the face of the kerb and to suit adjoining awnings. 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 out segments are not acceptable. Awnings wider than 3.66m require approval from the Director General of Local Government.
C3.	To achieve protection from the sun, awnings should have no more than 50% of their area transparent.
C4.	To create a safe pedestrian environment at night and avoid visual clutter, under awning lighting should be provided and recessed into the soffit of the awning or wall mounted on the building.
C5.	To promote a safe and weather protected pedestrian connection, a continuous awning from Rhodes Station to the bus interchange should be provided.

C6.	To accommodate a design for any awning or overbridges on ground level and facing the roadway with an underpass of 4.3 meter clearance.
-----	--

Canvas awnings

C7.	To assist sun shading generally, retractable or fixed canvas awnings or shade cloths are permitted.
C8.	To provide sun shading to east and west facades, vertical canvas blinds may be used along the outer edge of awnings. These blinds should not carry advertising or signage.

Entrance canopies

C9.	To provide weather protection canopies are required at the pedestrian entries of all buildings. Entrance canopies are permitted within building setbacks. Where there is no building setback, entrance canopies can extend 2m beyond the property line over the footpath or further to align with the width of any adjoining discontinuous awning.
-----	--



Photo K17-22 Awning to active street frontage

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

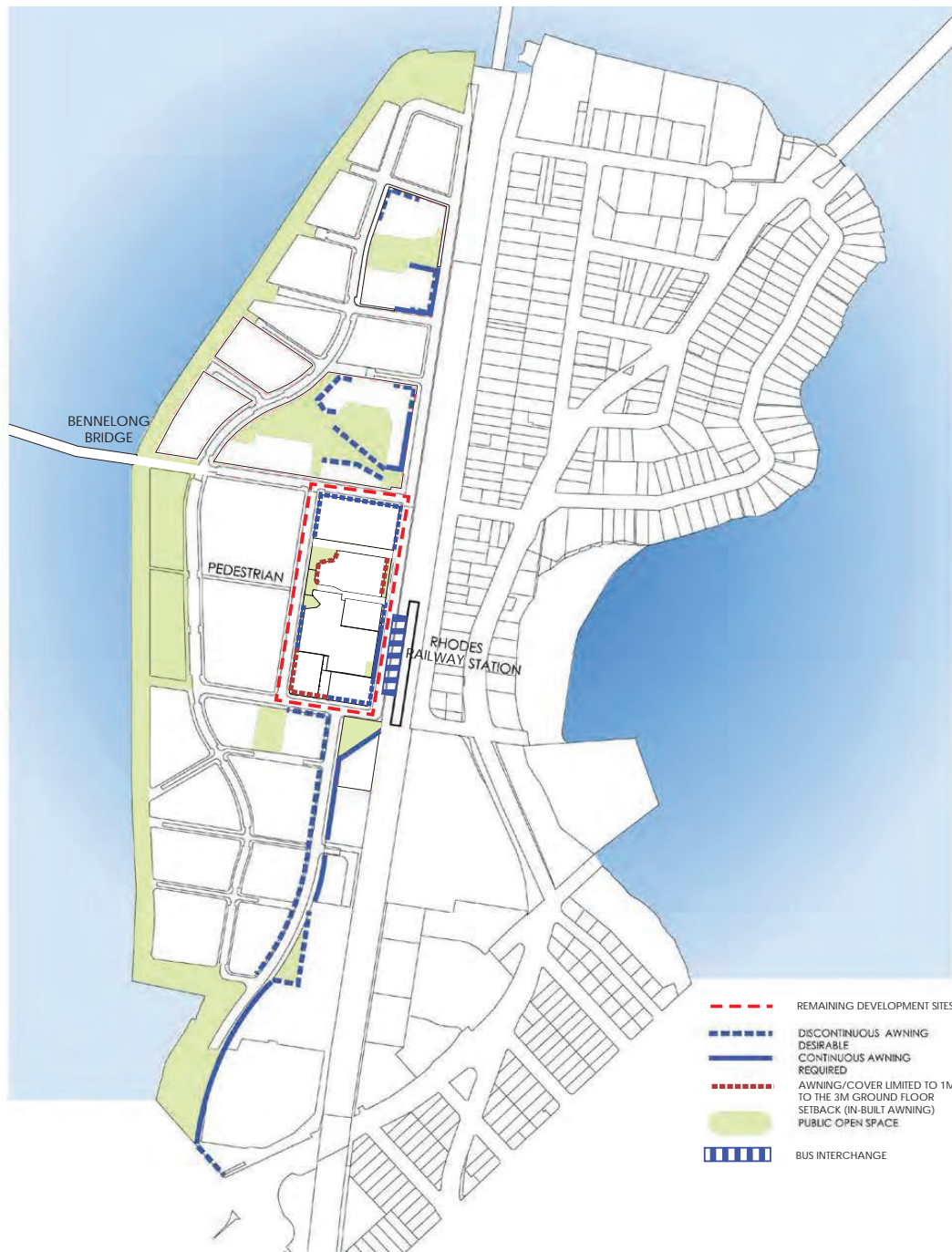


Figure K17-11 Rhodes West Location of Awnings

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



Photo K17-23 An example of a mid-block activated open space that is lively and attractive and that can accommodate different activities



Photo K17-25 Awning to residential entry



Photo K17-24 Laneways can accommodate seating, planting and other street furniture to enhance amenity



Photo K17-26 Side gardens achieve privacy with landscaping

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

B.16 Signage and advertising

Signage and advertising should communicate effectively and contribute in a positive way to the public domain. Signage and advertising structures should be unobtrusive, informative and compatible with an attractive shopping environment. Important factors to be considered are:

- Avoiding physical and visual clutter of the public domain;
- Avoiding conflict between advertising signs and nearby safety; public directions or traffic signs; and
- Protecting residential amenity

Controls	
C1.	Signage must be designed to avoid confusion with directional and traffic signs.
C2.	Signage should be designed to add character to the street and complement the architecture.
C3.	To minimise visual clutter, signage should be integrated with awnings. Suspended signage should be a minimum of 2.7m clear above finished footpath level.
C4.	Building identification is the only signage permitted above first floor level.
C5.	A single retail centre and major tenant pylon is permitted along Homebush Bay Drive.
C6.	To achieve durability, signage and advertising should be constructed of non-combustible materials and be resistant to vandalism.
C7.	To protect residential amenity, advertising signage is not permitted facing private residential streets, or on side walls abutting residential properties.
C8.	To minimise visual clutter, the source of light to illuminated signage should be concealed or integral with the sign. Electrical conduits to illuminated signs including neon signs should be concealed. The ability to adjust the light intensity is required. A curfew on illumination may be imposed to protect the residential amenity of nearby residential development.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

B.17 Private and communal open space

Garden spaces

Dwellings should have access to private or communal garden spaces that are useable and comfortable. Internal landscape spaces should contribute to the character and environmental quality of the landscape of the peninsula. These spaces should have a balance of podium, or terrace space, and deep soil, planted garden spaces. Design of podium landscapes should create optimum conditions for establishment and long term viability of planted gardens. Refer to Photo K17-27.

Controls

C1.	The area of communal open space required should be at least 25% of the site. Developments must achieve at least 50% direct sunlight to the principal useable part of the open space for a minimum of 2 hours between 9am to 3pm on 21 June (mid-winter).
C2.	Where communal open space cannot be totally provided at ground level, it should be provided on a podium or roof, communal roof or private open space. Where developments are unable to achieve the recommended communal open space, such as those in dense urban areas, they must demonstrate that residential amenity is provided in the form of increased private open space and/ or in a contribution to public open space.
C3.	To optimise natural infiltration and encourage substantial planting, deep soil landscape space should be provided wherever possible, and maximised.
C4.	Development sites in the residential zone are to contain landscaped areas in the form of private, common and public open space. Refer to <i>Section K17.4 Site-specific controls</i> .
C5.	To achieve a garden quality, half the area of communal open space should be unpaved and provide soft landscaping.

C6.	To achieve a leafy residential quality, a minimum of one large tree, with a spreading canopy, and mature height of 12m minimum, should be planted in soft landscaping zones for every 100m ² of landscape space. Locally native species are preferred.
C7.	Each apartment at ground level or on podiums or car parks, must have minimum private courtyard open space of 15m ² , with minimum depth for planting of 3m.
C8.	To assist stormwater management, landscape areas should provide some capacity for storage and infiltration of stormwater falling within the total landscape space.
C9.	To create optimum conditions for the establishment and long term viability of planted areas. Plantings are to achieve the following guidelines in deep soil zones: <ul style="list-style-type: none"> • Large trees (13-18m high with 16m diameter canopy at maturity) with: <ul style="list-style-type: none"> » Minimum soil volume: 80m³ » Minimum soil depth: 1.3m » Minimum soil area: 8m x 8m or equivalent • Medium trees (9-12m high with 8m diameter canopy at maturity) with: <ul style="list-style-type: none"> » Minimum soil volume: 35m³ » Minimum soil depth: 1m » Minimum soil area: 6m x 6m or equivalent • Small trees (6-8m high with 4m diameter canopy at maturity) with: <ul style="list-style-type: none"> » Minimum soil volume: 15m³ » Minimum soil depth: 800mm » Minimum soil area: 4.5m x 4.5m or equivalent

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Controls

C10.	<p>Deep soil zone are to be at least 7% of the site area and to meet the following minimum requirements: (ADG – Part 3E: Deep soil zones)</p> <ul style="list-style-type: none"> Site area: <ul style="list-style-type: none"> » 650-1,500m²: 3m » Greater than 1,500m²: 6m » Greater than 1,500m² with significant tree cover: 6m
C11.	<p>For planting on top of built structures such as basement car parks, podiums or roofs, ensure that the minimum soil standards for the following plant types and sizes are complied with:</p> <ul style="list-style-type: none"> Large trees (12-18m high with up to 16m diameter canopy at maturity): <ul style="list-style-type: none"> » Minimum soil volume: 150m³ » Minimum soil depth: 1,200mm » Minimum soil area: 10m x 10m or equivalent Medium trees (8-12m high with up to 8m diameter canopy at maturity): <ul style="list-style-type: none"> » Minimum soil volume: 35m³ » Minimum soil depth: 1,000mm » Minimum soil area: 6m x 6m or equivalent Small trees (6-8m high with up to 4m diameter canopy at maturity): <ul style="list-style-type: none"> » Minimum soil volume: 9m³ » Minimum soil depth: 800mm » Minimum soil area: 3.5m x 3.5m or equivalent Shrubs: <ul style="list-style-type: none"> » Minimum soil depth: 500-600mm Ground cover: <ul style="list-style-type: none"> » Minimum soil depth: 300-450mm Turf: <ul style="list-style-type: none"> » Minimum soil depth: 200mm

C12.	Variations may be considered to the above guidelines supported by advice from a qualified arborist.
C13.	Drainage and irrigation must be provided to all planters over structure.
C14.	All planters on podium levels must be accessible for maintenance.



Photo K17-27 Pedestrian connections between buildings to internal common open space

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

B.18 Front gardens

Well designed front gardens can retain existing landscape elements and supplement the stock of vegetation, particularly trees, in the public domain. Front gardens contribute to street character and amenity, enhance definition of the public and private domains, and can provide a positive setting for the building.

Front gardens

Controls	
C1.	Garden structures such as gazebos, play equipment, swimming pools and spa baths are not permitted in front gardens.
C2.	To minimise the visibility of car parking, garages and parking structures are not permitted forward of the building alignment to public streets;
C3.	To minimise the impact of driveways in front gardens, appropriate design, materials selection and screen planting is encouraged.
C4.	To minimise impact on the root zone of street trees, driveways, kerb crossings, parking, paved areas and external structures should be located appropriately.
C5.	Front gardens should generally be wide enough to be useable, and should have adequate continuous access to allow maintenance.
C6.	To achieve safety, lighting at both pedestrian and vehicular street entry points should be provided to each residential building.
C7.	To provide a pleasant streetscape and privacy of ground level private gardens a minimum of 1 small tree in front gardens of ground floor dwellings is required.

Front fences

C8.	The maximum height of front fences is 1.2m from the finished footpath level of the adjoining street. Front fences may be sloping or stepped along sloping streets.
C9.	Fences should be integrated with the building and landscape design through the use of common materials and detailing and be part of a suite of fences in the street. Refer Photo K17-28.
C10.	Fences should highlight building entrances, to allow for outlook and street surveillance
C11.	Fences must be partially transparent. Solid fencing or fencing with frosted or obscure glazing is not permitted



Photo K17-28 Front fences have some transparent quality to allow for surveillance of the adjoining public domain, we well as privacy for occupants

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

B.19 Above ground open space

Every dwelling should have access to private open space to extend the liveable area and take advantage of the temperate climate.

Private open space should be designed to allow privacy, security and solar access. Where private gardens are not possible, well designed balconies and terraces have the potential to improve amenity and lifestyle of apartment residents. Some useable communal open space at ground level should also be provided where there is no access to private gardens.

Controls

C1.	To achieve residential amenity, at least one balcony, terrace, verandah, loggia, or deck must be provided to each dwelling where direct access to ground level private open space is not available. Refer Photo K17-29.
C2.	<p>All apartments are required to have primary balconies as follows:</p> <ul style="list-style-type: none"> • Studio apartments: <ul style="list-style-type: none"> » Minimum area: 4m² » Minimum depth of balcony: no requirement • 1 bedroom apartments: <ul style="list-style-type: none"> » Minimum area: 8m² » Minimum depth of balcony: 2m • 2 bedroom apartments: <ul style="list-style-type: none"> » Minimum area: 10m² » Minimum depth of balcony: 2m • 3+ bedroom apartments: <ul style="list-style-type: none"> » Minimum area: 12m² » Minimum depth of balcony: 2.4m • For apartment balconies with the following circumstances: <ul style="list-style-type: none"> » At 10 storeys or above, subject to consistently high wind speeds; » In close proximity to road, rail or other noise sources; and

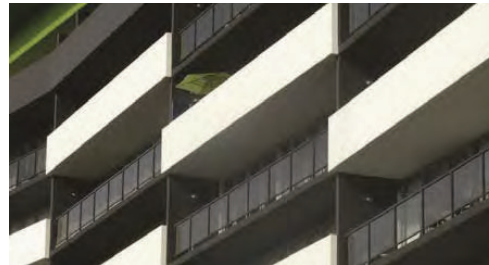


Photo K17-29 Building articulation in balustrade design

	» Exposure to significant levels of aircraft noise. In these situations, the use of other forms of balconies (e.g. wintergardens, bay windows or juliet balconies) are appropriate, with natural ventilation demonstrated.
C3.	To achieve high quality living environments, smaller secondary above ground open space elements are also encouraged, such as balconies adjacent bedrooms, screened external clothes drying balconies adjacent laundries and bathrooms. Such spaces may have screens to a height of 1.4m. The preferred depth of secondary open space is 1.2m and the minimum permissible depth is 0.9m.
C4.	Above ground open space must be designed to provide security and protect the privacy of neighbours.
C5.	Lightweight pergolas, sunscreens, privacy screens and planters are permitted on roof terraces, provided they do not increase the bulk of the building. These elements should not significantly affect the views available from adjoining properties, the immediate vicinity or from the nearby ridges.
C6.	To optimise useability, the primary above ground space element should include a potable water tap and barbeque gas outlet where possible.

Refer additionally to Chapter 4 of the Housing SEPP, titled 'Design of residential apartment development' and the Apartment Design Guide, NSW Department of Planning and Environment, July 2015 SEPP 65, Apartment Design Guide Part 4E Private open space and balconies.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

B.20 Services

Low energy services

The consumption of electricity generated by the burning of fossil fuels contributes to CO2 production, the 'greenhouse effect' and global warming. The construction and use of buildings, accounts for a high proportion of overall energy consumption and consequently presents opportunities for energy savings and reductions in CO2 emissions. Applicants are required to satisfy the requirements of SEPP (Sustainable Buildings) 2021.

Controls

C1.	Install energy efficient building services, including but not limited to, low energy heating and cooling systems and timer switches. The use of green power and solar cells is encouraged.
C2.	Passive solar design principles should be provided in building design to avoid the need for additional heating and cooling.
C3.	Building designs should be energy efficient by isolating and selecting spaces to be heated or provide individual room controls if using a centralised system; select low energy lighting such as compact fluorescent light fittings, and low energy appliances (minimum 3-star rating).
C4.	To minimise energy consumption incorporate clothes lines that are screened from public view, in preference to dryers. Locate clothes lines for sun and breeze wherever possible.
C5.	To maximise safety and minimise visual clutter all new services should be located underground. Building services such as drainage and sewerage pipe work should not be exposed.

C6.	Appliances with a low energy rating are to be used when provided as part of a development.
C7.	<p>Minimum energy requirements, include:</p> <ul style="list-style-type: none"> • Building Management Tools like motion sensors, time based controllers, irrigation control systems and air quality control systems for carparks to minimise water and energy use • An average thermal comfort star rating of 5 or better (BERSPro, AccuRate or FirstRate5) • Double Glazed, low-e glass to all apartment windows achieving summer/ winter (glass only) U-values of 1.7 or less • R2.5 insulation to all non-glazed external walls • R3.0 plus foil insulation to the underside of all roofs and roof terraces over apartments • Energy efficient variable speed fans for mechanical exhaust system • Energy efficient light fittings • Energy efficient VVVF lifts

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

B.21 Water conservation

Water conservation is an important element of an integrated ESD strategy. Measures can be implemented to match water quality with its intended use, to reduce water demand and use water more efficiently.

Applicants are required to satisfy the requirements of SEPP (Sustainable Buildings) 2021 and Water Sensitive Urban Design Strategies.

Controls

C1.	Water saving devices such as dual flush toilets, tap aerators, low water use dishwashers and washing machines must be provided to all new developments.
C2.	Spring return taps must be used for all public amenities.
C3.	Appliances and plumbing hardware should have a "AAA" Australian Standards Conservation Rating.
C4.	Implement fit for purpose substitution by matching water quality with its intended use. Roofwater should be retained on site for use externally, such as garden watering, cleaning and irrigation. The collection and storage of rainwater for toilet flushing should be considered. The recycling of grey water for toilet flushing or external use should also be considered.
C5.	The installation of insinkers is not permitted.
C6.	Water conserving landscape practices, such as use of mulch, irrigation zoning, limited turf areas and flow regulators on hoses should be incorporated into design and management arrangements.
C7.	Minimum water requirements, include: <ul style="list-style-type: none"> • Drip irrigation to all planters/ on slab landscaping, except turf areas • Water efficient taps • Non-potable (recycle) water reticulation to all apartment WC's and laundries (washing machine supply), the irrigation of gardens and the supply of carwash bays • Recycling of water from the fire pump testing system

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

B.24 Site facilities

Site facilities include loading areas, waste areas, mail boxes, external stores, end of cycle trip facilities laundries and clothes drying areas. Development should provide appropriate site facilities for retail, commercial and residential uses, and locate and design them to minimise their impact on the streetscape.

Controls

C1.	Loading facilities must be provided via a rear lane or side street where such access is available.
C2.	Adequate waste and recycling areas must be provided to all developments. These areas are to be visually integrated to minimise their visibility from the street. Such facilities must be located away from openable windows to habitable rooms to avoid amenity problems associated with smell and noise.
C3.	To achieve amenity, provide either communal or individual laundry facilities to every dwelling, and at least one external clothes drying area. The public visibility of this area should be minimised. Clothes drying is only permitted on balconies that are permanently screened from public view.
C4.	To avoid visual clutter, all apartments are to have a balcony that has portion of the balustrade which has a minimum height of 1.4 metres and minimum width of 1.5 metres wide to screen drying clothes.
C5.	To optimise convenience, lockable mail boxes should be provided close to the street, integrated with front fences or building entries.
C6.	To minimise the negative impact of smells on occupants on upper levels ducted vents must be provided to commercial kitchens.

C7.	To facilitate the maintenance of communal open space, garden maintenance storage including connections to water and drainage should be provided.
C8.	In addition to storage in kitchens, bathrooms and bedrooms, provide the following storage to each apartment: <ul style="list-style-type: none"> • Studio: 4m³ • 1 bedroom: 6m³ • 2 bedroom: 8m³ • 3 + bedrooms: 10m³ With: <ul style="list-style-type: none"> • At least 50% of the required storage to be located within the apartment; and • Storage is to be accessible from circulation spaces, living areas or laundry.
C9.	To encourage sustainable transport options provide change rooms, showers and lockers for people walking, running or cycling to work on all employment generating development. Locate these facilities close to secure bicycle parking.
C10.	To provide a safe public environment CCTV surveillance is to be provided in liaison with NSW Police.

Refer additionally to SEPP 65, Apartment Design Guide Part 4G Storage

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

B.25 Pedestrian access, parking and servicing

Pedestrian access and mobility

Most people experience some form of mobility impairment at some stage during their lives which may be caused by a variety of factors including ageing as well as injury and disease. It is important that access to the facilities of the Rhodes Peninsula is made easy for a wide variety of people.

The creation of a barrier free environment in all public spaces, premises and associated spaces will ensure that all people who live, work, or visit Rhodes Peninsula are able to access and use all spaces, services and facilities, and participate in community life at Rhodes.

Controls

C1.	To cater for mobility impairment, provide at least one main entry with convenient, barrier-free access in all buildings. Access should be direct and without unnecessary barriers. Obstructions which cause difficulties should be avoided. These include: <ul style="list-style-type: none"> • Uneven and slippery surfaces • Steep stairs and ramps • Narrow doorways, paths and corridors • Devices such as door handles which require two hands to operate, or revolving doors
C2.	To cater for mobility impairment, appropriately designed and convenient seating and ablutions should be provided.
C3.	To cater for drivers with mobility impairment, adequate parking should be provided for people with mobility disabilities, and safe, easy and convenient access to the building.
C4.	To cater for visitors with mobility impairment, the proportion of visitable dwellings should be maximised.
C5.	An assessment of the accessibility of developments is to accompany all development applications for new buildings and substantial alterations to existing buildings involving changes to pedestrian access.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

B.26 Vehicular access

Vehicle access to developments should minimise conflicts between pedestrians and vehicles, visual intrusion, and disruption of streetscape continuity. The location and design of vehicle entrances needs to be carefully considered to avoid disrupting pedestrian and cycle movement and promote pedestrian and cycle safety. Minimising the size and quantity of vehicle crossings will retain streetscape continuity and reinforce a high quality public domain.

Controls

C1.	Provide access to parking from rear or side lanes or secondary streets wherever possible. Where practical, buildings are to share vehicle access points, and internal on-site signal equipment is to be used if necessary. Vehicular access is to be avoided in locations identified in Figure K17-11 Rhodes West Location of Awnings.
C2.	To optimise pedestrian safety, pedestrian and vehicle access should be clearly differentiated.
C3.	Provide a minimum 6m distance between a vehicle and pedestrian entries to avoid conflicts and maintain safety.
C4.	To optimise pedestrian amenity, driveways should be consolidated within blocks, particularly those in single body corporate ownership.
C5.	Vehicle access and pathway layouts should be designed to satisfy Australian Standards.
C6.	To optimise pedestrian access and safety, vehicular access ramps parallel to the street frontage are not permitted.
C7.	Where a port cochere is proposed, it is to be located so as not to interrupted pedestrian access to a building or along a street frontage. Pedestrian access is to be maintained along street footpaths.

C8.	The maximum permitted width of driveway crossings to detached, row and pair housing is 2.5m. The maximum permitted width of driveway crossings to all other lots is 6m generally, and 12m for the entrance to the retail centre near Homebush Bay. Dependent on the number of vehicles, 3m is the preferred width of driveway crossings, and car park and service entries.
C9.	In commercial, retail and light industrial developments, minimise the width of driveway crossings by consolidating car access, docks and servicing, and waste disposal. Avoid conflicts with pedestrian access and the impact of any such access on residential amenity.
C10.	Visual intrusion of vehicle access points must be minimised in accordance with NSW Police regulations set-out in CPTED 'Safer by Design' principles.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



Figure K17-12 Rhodes West Vehicle Access Restrictions

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

B.27 On-site parking

The higher residential density and mixed use envisaged for the Rhodes Peninsula will enhance public transport use and viability, and reduce travel demand. This DCP promotes public transport use by minimising car parking requirements whilst providing for on-site service vehicle parking. Underground and semi-underground parking minimises the visual impact of car parks and is an efficient use of the site creating an opportunity for increased private, common and private open space.

Provision

Controls

C1.	Parking provision shall be in accordance with Table K17-1 Private vehicle parking rates.
-----	--

General

C2.	Stack parking is not permitted for residential development except where two spaces are provided for one apartment.
C3.	Car share, electric vehicle charging station and motorcycle parking rates are to be as per Table K17-3
C4.	One accessible parking space is to be provided for each adaptable unit.
C5.	Parking and service areas are to satisfy AS2890.1 and AS2890.2.

Basement and semi-basement car parking

C6.	To maximise the area for soft landscaping consolidated parking areas should be concentrated under building footprints wherever possible.
-----	--

At grade car parking

C7.	To achieve a high quality public domain, at grade car parking is only permitted to the rear of shops, restaurants and the like, and to detached, pair and row housing. It must be located behind the building line and screened from the public domain unless accessed via a lane or private street.
-----	--

Above ground car parking

C8.	To achieve a high quality public domain, internal car parking which protrudes more than 1.2m above ground level of the adjacent public domain must be located behind the building alignment and be screened from the public domain in a manner that is an integral part of the external design of the building.
C9.	Parking structures should be designed to minimise reliance on artificial ventilation of car exhaust.

Bicycle parking

C10.	To encourage cycling provide the following bicycle parking in accordance with Table K17-2 Bicycle parking rates.
C11.	To encourage cycling, ensure resident and employee bicycle parking is secure.
C12.	To encourage cycling, provide end of cycle trip facilities in retail/ commercial developments.
C13.	Secure bike parking facilities are to be provided in accordance with the following: <ul style="list-style-type: none"> a) Class 1 bike lockers for occupants of residential buildings; b) Class 2 bike facilities for staff/employees of any land use; and c) Class 3 bike rails for visitors of any land use
C14.	Where bike parking for residents is provided in a basement, it is to be located: <ul style="list-style-type: none"> a) on the uppermost level of the basement; b) close to entry/exit points; and c) subject to security camera surveillance where such security systems exist.
C15.	A safe path of travel from bike parking areas to entry/exit points is to be marked.
C16.	Bike parking for visitors is to be provided in an accessible on-grade location near a major public entrance to the development and is to be signposted.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Table K17-1 Private vehicle parking rates

Residential	Refer to Part B.	
	Service vehicles	max 1 space per 50 apartments for first 200 apartments plus 1
Commercial	Commercial offices	max 1 space per 40m ² Gross Floor Area
	Service vehicles	1 space per 4,000m ² GFA for first 20,000m ² GFA and a space per 8,000m ² GFA thereafter
	Retail	1 space per 40m ² Gross Floor Area
	Service vehicles	1 space per 500m ² for first 2,000m ² and 1 space per 1,000m ² thereafter (50% of spaces for trucks)

Table K17-2 Bicycle parking rates

Residential	Refer to Part B	
Commercial	Employees	<ul style="list-style-type: none"> • 2 per 150m² GFA (employee) • 2 per 400m² GFA (visitor)
	Visitor	min 1 space per 750m ² GFA
	Retail complex/ shops	<ul style="list-style-type: none"> • 2per 250m² GFA (resident) • 4+2 per 100m² GFA (visitor)
	Cafes	min 1 space per 25m ² public area for employees min 2 spaces for clientele

Table K17-3 Car share rates, electric vehicle charging stations and motorcycle rates

Land Use	Rates
Residential, Commercial, Retail	<ul style="list-style-type: none"> • Refer to Canada Bay DCP General Controls

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K17.4 Site-specific controls

Introduction

Design controls and objectives have been prepared for each development site to ensure that the urban design and built form objectives and principals of the Canada Bay Local Environment Plan 2013 (as amended) and this Development Control Plan are achieved.

Considerable input from Council's Urban Design Consultant has guided the preferred framework for each site with urban design and place making principles. This input has guided the delivery of high quality living and working environments that are well designed and set a high standard for Rhodes as a recognisable Specialised Centre in Sydney.

These controls provide certainty to the community, Council and landowners as to the general position of the buildings on each site having regard to street setbacks, maximum building depths, building separation distances, and building heights in metres and maximum relative levels (RLs), as well as the size and general configuration of public open spaces. The building envelope controls also nominate the preferred location for non-residential uses to activate the public domain.

The design controls have been prepared on a precinct by precinct basis, however, do not undertake a detailed design of individual buildings. This flexibility in the development control allows the potential for a creative Architectural approach within set parameters, and is subject to refinement as detailed design proceeds. The building envelopes are not intended to prescribe the exact location of buildings footprints or the final location for vehicle and pedestrian access points.

Car parking is generally provided below the buildings and in certain locations extends beyond the building envelope under roads and public open spaces. These arrangements will be subject to detailed discussions at the DA stage for the various buildings and open spaces.

Building envelopes

Under the Canada Bay Local Environment Plan 2013 (as amended) Height of Building and Floor Space Ratio development standards have been established for all remaining development lots at Rhodes West.

The building envelopes described in this section allow some flexibility on the design of buildings, however the envelopes have been carefully developed in consultation with Council's Urban Design Consultant to maximise public benefit.

The envelopes have been tailored to each site, taking into consideration its particular characteristics and place making potential. These characteristics are described for each of the remaining sites in each precinct in terms of the following:

- The relationship of the building to the public domain, including street and public open space frontages;
- The desired character of parks and streets;
- The optimum development potential; and
- The environmental impact.

Building envelopes describe the building setbacks and separation distances, maximum building depths, minimum dimensions of public spaces around buildings and maximum building height.

The Urban Design Framework defines the physical outcome for the remaining development sites, whilst encouraging architectural innovation within the building envelopes indicated. The site-specific building envelope controls should be read in conjunction with the general controls for the private and public domain in Section K17.3 of this DCP.

The building envelope controls illustrated in this section allow some latitude for the detailed architectural design of buildings. This development control is intended to promote highly articulated buildings with generous balconies, recesses and steps in facades to ameliorate a sense of excessive bulk.

Figure K17-32 Indicative Development Concept of this DCP shows the indicative development concept for all development sites combined, based on developments which comply with the development standards of the Canada Bay Local Environment Plan 2013 (as amended) and this DCP.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

The Precincts

The Precincts, as defined in the Canada Bay Local Environment Plan 2013 (as amended) and the remaining development sites have been adopted from the previous planning framework (SREP 29: Rhodes Peninsula) and are as follows:

- Precinct A – Site A
- Precinct B – Site 2A, 3A, 3B, 3C and 3D
- Precinct C – Site A
- Precinct D – Station Gateway West

Figure K17-13 Rhodes West Precincts, Sites and Lots identifies the precincts, sites and lots, the subject to the site-specific design provisions of this DCP.

For each of the sites, an urban design framework is provided to illustrate the following controls:

- Building Envelope Plan and Sections
- Minimum building setbacks
- Maximum building depth
- Maximum building height
- Building articulation zone
- Location of public and private open space
- Preferred location for vehicle and pedestrian access

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



Figure K17-13 Rhodes West Precincts, Sites and Lots

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Precinct A (Site A)

Located at the southern end of Rhodes, Precinct A has a mix of retail, commercial and residential uses. Retail uses are contained in the Rhodes Shopping Centre and at the ground floor level of some of the commercial and residential buildings fronting Rider Boulevard.

The key development controls illustrated in Figure K17-14 Precinct A Building Envelope Plan, Figure K17-15 Precinct A Building Envelope Section A-A and Figure K17-16 Precinct A Building Envelope Section B-B are as follows:

Controls	
C1.	Maximum building height ranging up to 25 storeys including a 4 storey podium.
C2.	Maximum FSR of 2.4:1 (Refer to Canada Bay Local Environment Plan 2013 (as amended)).
C3.	An area of 1,375m ² of public open space as a town square located at the northern side of the site.
C4.	Vehicle access located off laneway between commercial building to the south and proposed building on Site A.
C5.	Preferred location for non-residential uses at ground floor to activate Rider Boulevard and new public open space.
C6.	Preferred separate entries for residential and nonresidential uses.
C7.	The edge building is to be designed to address the Town Square. The façade of the edge building must be a minimum of three storeys in height and not exceed 4 storeys before setbacks.
C8.	A minimum building setback for the tower building of 5m to Rider Boulevard and 5m from the podium alignment to the Rhodes Town Square.

C9.	The edge building should incorporate a continuous colonnade along its length and along the Rider Boulevard frontage to accommodate the significant diagonal pedestrian flows traversing the site generated by Rhodes Station.
C10.	Consideration should also be given to incorporating an arcade linking the Town Square to the footpath cycleway.
C11.	The ground floor of the edge building fronting the Town Square must have active uses such as retail, cafes and taverns.
C12.	The tower building form and design is to reinforce and not detract from the civic quality of the Town Square. Generally, this is to be achieved by observing a 5m minimum setback above the 3-4 storey street wall.
C13.	Vistas into the site from Walker Street and Servier Avenue must be acknowledged in the overall design of the project and given architectural recognition in the composition of the building façade. The vista from Mary Street, Walker Street and Rider Boulevard into the Town Square also require consideration.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

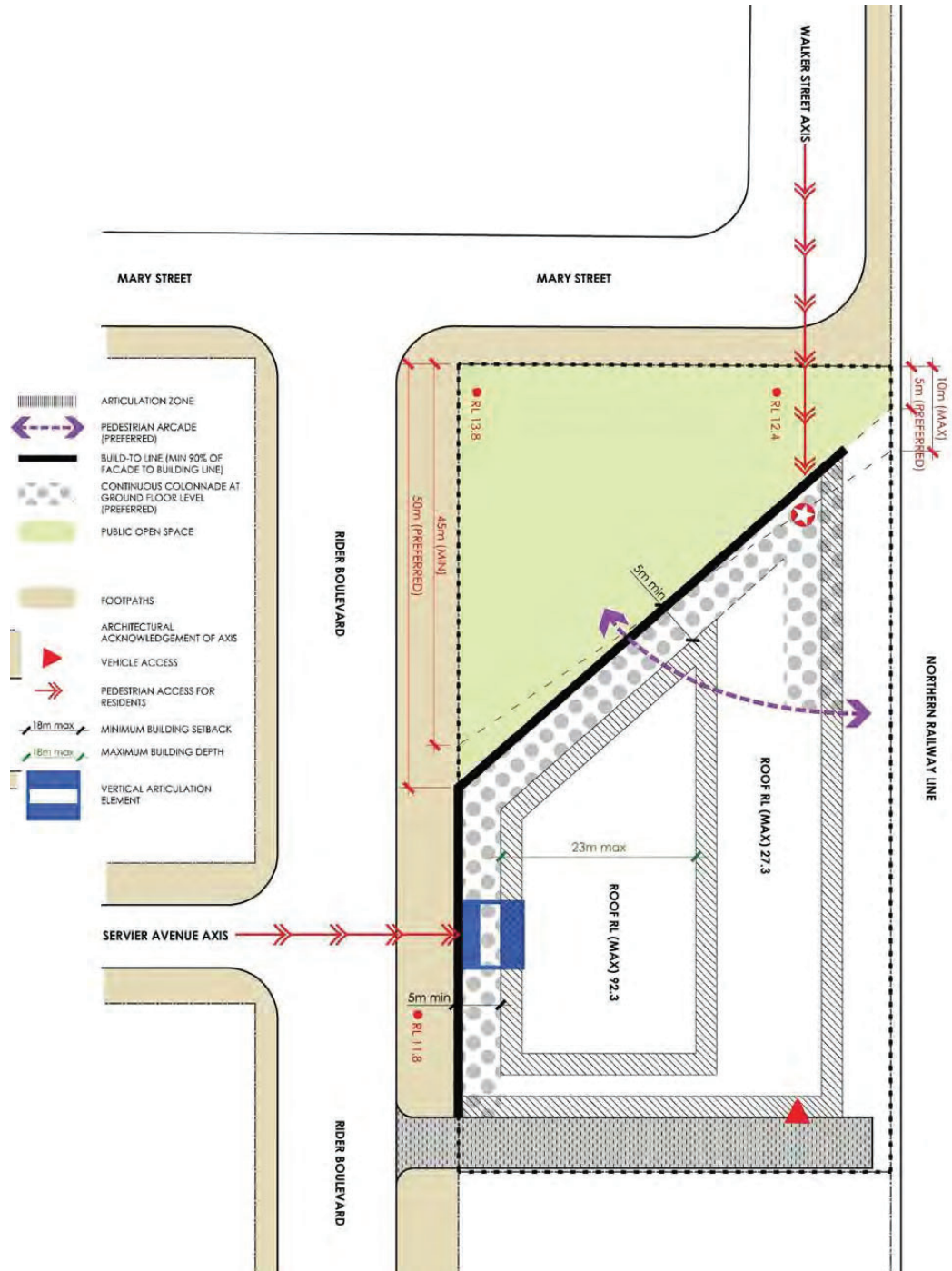


Figure K17-14 Precinct A Building Envelope Plan

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

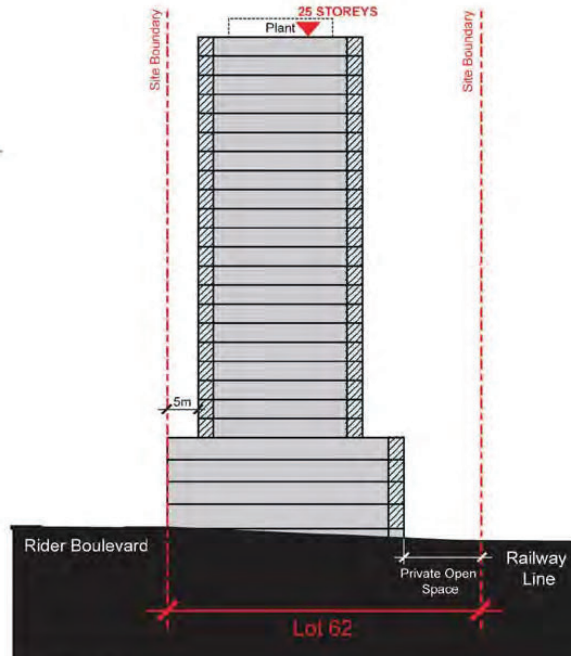
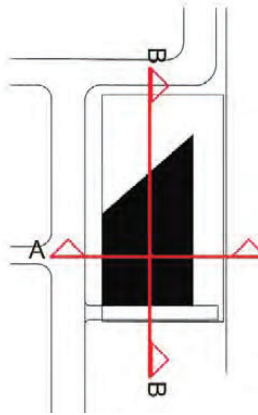


Figure K17-15 Precinct A Building Envelope Section A-A

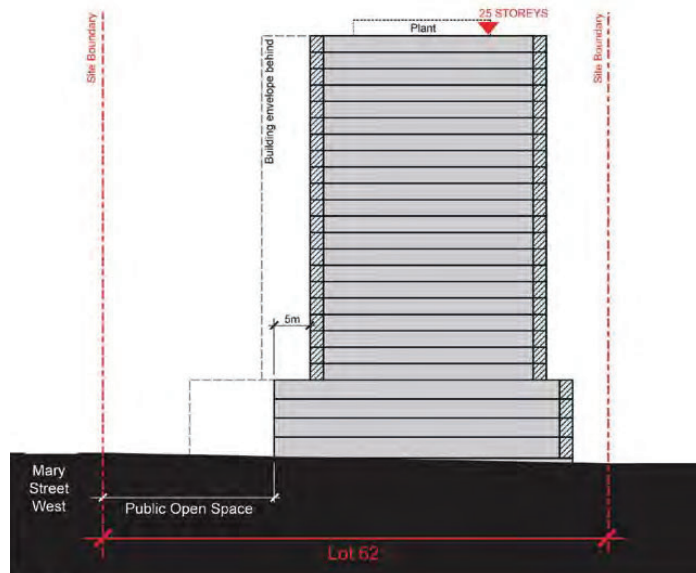


Figure K17-16 Precinct A Building Envelope Section B-B

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Precinct B

Precinct B is centrally located within Rhodes West. The Precinct is 10.16 hectares in area and is planned as predominantly residential with local non-residential uses such as neighbourhood shops and cafes.

There are five remaining development sites and surrounding public domain to be developed following site remediation processes. The remaining development parcels are known as Sites 2A, 3A, 3B, 3C and 3D.

Precinct B comprises a large new local park which straddles these two land ownerships. As such the overall precinct has been considered as one Precinct Plan as illustrated in Figure K17-17 to Figure K17-20. For the purpose of describing the development controls, the separate landownership have been used.

Sites 2A + 3A

Sites 2A and 3A have a frontage to Walker Street of approximately 140m. The sites are located between Timbrol Avenue, a no-through road for vehicles and Gauthorpe Street, which provide public access from Walker Street directly to the foreshore and the planned community facilities. With the consolidation of these lots with the secondary road known as Peake Street, the provision of publicly accessible open space between tower and podium buildings is achieved.

Controls

C1.	Building heights ranging from low-rise buildings of 4-5 storeys which frame the public open space to tower buildings in the north east corner (25 storeys), south east corner (25 storeys) and north west corner (20 storeys).
C2.	The maximum Floor Space Ratio is 2.8:1.
C3.	Car park entry is from Timbrol Avenue.
C4.	Combined with Site 3B a minimum of 16,000m ² of public open space is required.
C5.	One level of basement car parking and one level of partially above ground car parking.

C6.	Above ground parking screened behind the street front building line to all streets and open spaces.
C7.	Preferred location for non-residential uses fronting Walker Street and the through site link open space.
C8.	Minimum building setbacks as illustrated in Figure K17-17 Precinct B Building Envelope Plan.
C9.	Separate pedestrian entries and lobbies for residential and non-residential uses.
C10.	The preferred location for non-residential uses including retail and commercial uses is along the Walker Street frontage and fronting onto the diagonal pedestrian plaza from the south east corner of the site.
C11.	The indicative alignment of non-residential frontages on the northern and southern sides of the pedestrian plaza are indicated on the building envelope plan. To avoid a 'gun-barrel' effect it is recommended that the alignment is to be staggered with stepping and recesses to provide pedestrian interest.
C12.	To maintain a view corridor along the diagonal alignment of Marquet Street by providing an undercroft space with a minimum height of 15m beneath the tower building in the south west corner of the site. Exposed columns are to have a high architectural design quality with a slender form and quality materials and integrated into the overall architectural design of the building.
C13.	To enhance the forecourt space at the Timbrol Avenue / Walker Street provide an undercroft space over two levels of the tower building.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Sites 3B, 3C and 3D

Sites 3B is located on the eastern side of Shoreline Drive and forms part of the new Central Park in Precinct B. This site has long frontages to both Shoreline Drive to the west and Gauthorpe Street to the south.

The new park front is to the north of Site 3B. Built form is to be located in the southern part of the site with the contribution to the new park forming the northern part of the site. Sites 3C and 3D are located on the western side of Shoreline Drive and also have a frontage to the Foreshore Reserve. These sites are divided by Peake Street, a secondary street, which provides vehicle access to basement parking on both sites. The key development controls for each of the three remaining development parcels are summarised below:

Site 3B

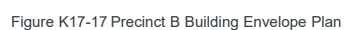
Controls	
C14.	A maximum height of 18 storeys above a single level podium stepping down to 15 storeys above a two level podium fronting Shoreline Drive is required.
C15.	Break up the bulk and length of the building; provide a recess in the façade of a minimum 4m in depth and length, in the location where the step in height occurs, as illustrated in the building envelope plan. Design the building as two linked buildings.
C16.	The car park entry is to be from Gauthorpe Street.
C17.	Combined with Sites 2A + 3A provide a minimum of 16,000m ² of public open space.
C18.	One level of basement car parking and one level of above ground car parking.
C19.	Above ground parking screened behind the street front building line to all streets and open spaces.
C20.	The preferred location for the primary pedestrian entry is from Gauthorpe Street.

Site 3C

C21.	Building height ranging from 4 storeys fronting the Foreshore Reserve up to 9 storeys fronting Shoreline Drive.
C22.	Maximum floor space ratio of 2.2:1.
C23.	Car park entry from Peake Street.
C24.	Two levels of basement car parking.
C25.	All buildings with an address to a street frontage.
C26.	The design of the building fronting Shoreline Drive is to accentuate the curvilinear alignment of the street through building setbacks, façade articulation, and balcony and balustrade forms.

Site 3D

C27.	Building height ranging from 3 storeys fronting the Foreshore Reserve up to 9 storeys fronting Shoreline Drive.
C28.	A maximum floor space ratio of 2.3:1.
C29.	Car park entry from Peake Street.
C30.	Two levels of basement car parking.
C31.	Preferred location for non-residential uses fronting the community facility lot to the south.
C32.	The building on the southern boundary is to align with the Gauthorpe Street view corridor.
C33.	The building on the northern boundary is to align with the Peake Street view corridor.
C34.	Separate pedestrian entries and lobbies for residential and non-residential uses are required.
C35.	The design of the building fronting Shoreline Drive is to accentuate the curvilinear alignment of Shoreline Drive through building setbacks, façade articulation, and balcony and balustrade forms.
C36.	The central private courtyard is to provide the main pedestrian access to the parallel building fronting the Foreshore Reserve.



CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

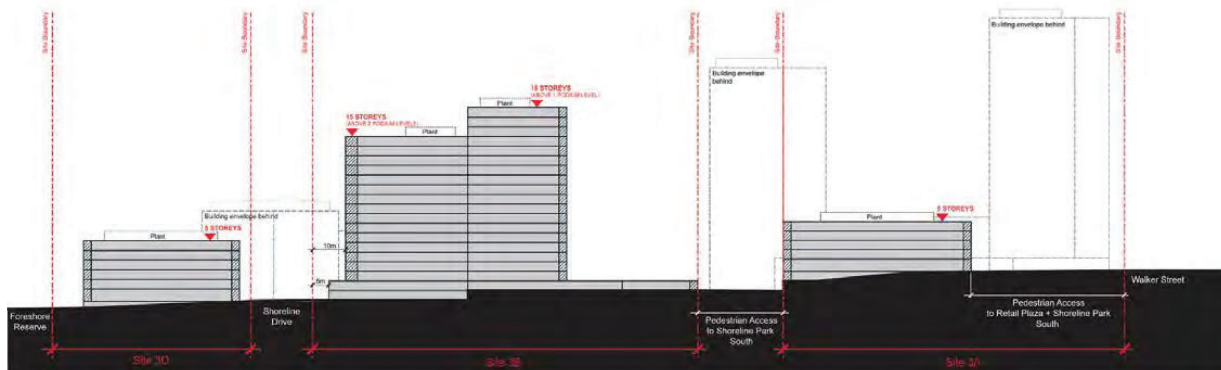


Figure K17-18 Precinct B Building Envelope Section A-A

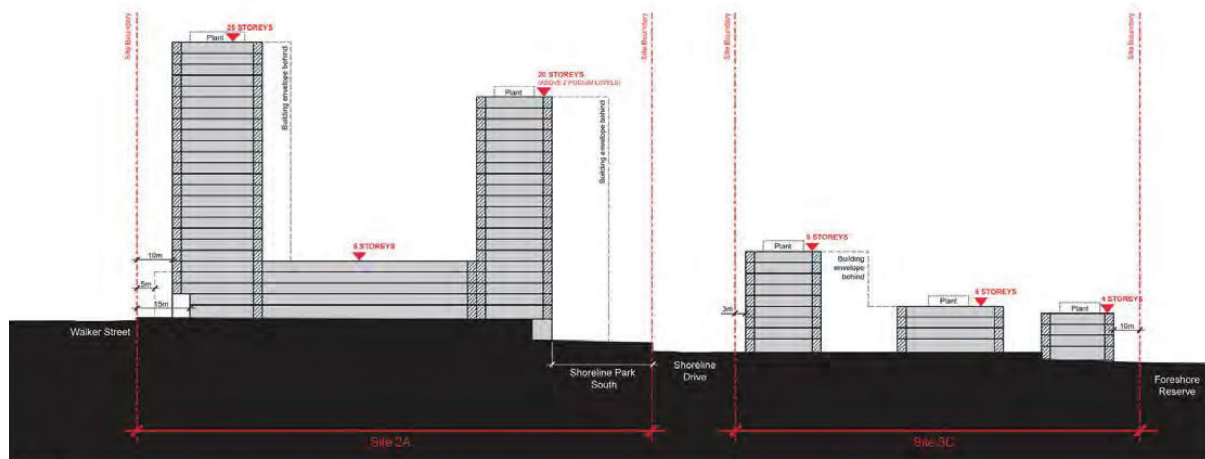


Figure K17-19 Precinct B Building Envelope Section B-B

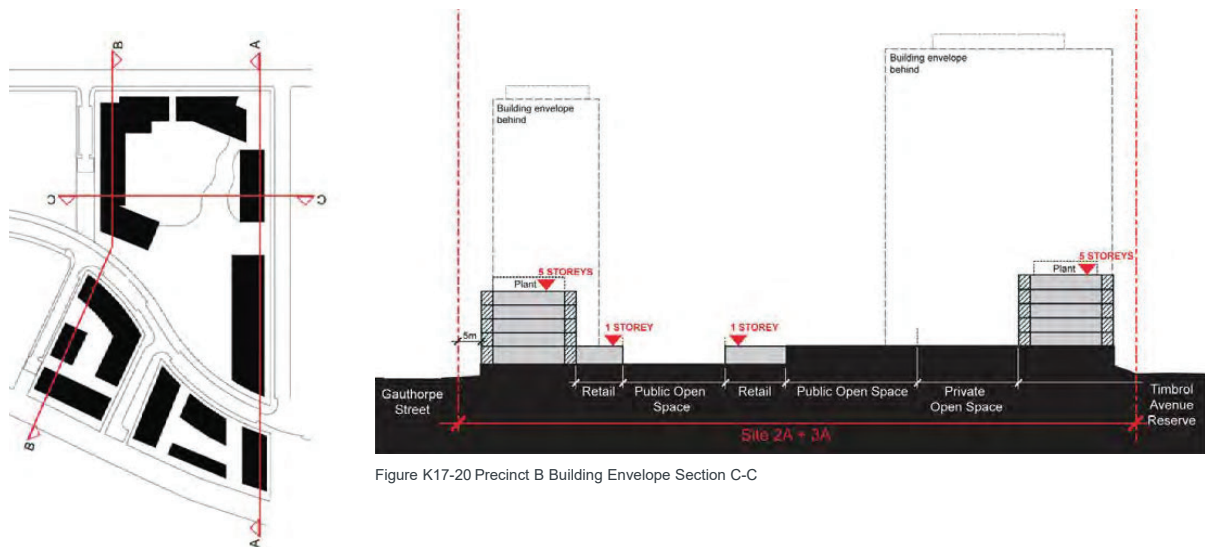


Figure K17-20 Precinct B Building Envelope Section C-C

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Precinct C (Site A)

Precinct C is located at the northern end of Rhodes West. The area is predominantly a residential precinct. Two development parcels remain which are known as Site A.

The development provides an opportunity to create additional publicly accessible open space by amalgamating the lots. The open space is to be centrally located with a wide pedestrian accessible link between Walker Street and Shoreline Drive.

The development controls for the parcels are summarised below:

Controls	
C1.	Tower building in the south west corner of Site A of 25 storeys.
C2.	Tower building in the north western corner of Site A of 25 storeys.
C3.	Lower-rise buildings of 6 and 7 storeys fronting Shoreline Drive and Walker Street.
C4.	Single storey building on the corner of Walker Street and Nina Grey Avenue as a podium to the tower building above.
C5.	Building setback controls as illustrated in Figure K17-21 Precinct C Building Envelope Plan, Figure K17-22 Precinct C Building Envelope Section A-A and Figure K17-23 Precinct C Building Envelope Section B-B including: <ul style="list-style-type: none"> • Tower buildings are setback 10m from Walker Street and Shoreline Drive street frontages • Lower rise buildings are to align with the street frontages with a minimum of 5m setback to provide adequate space for ground level garden courtyards fronting the street
C6.	Vehicle access is to be provided from Nina Grey Avenue.
C7.	A minimum of 4,600m ² of public open space to be provided in a linear alignment between Walker Street and Shoreline Drive.
C8.	The preferred location for non-residential uses including local shops to be provided fronting onto the public open space with a northern aspect with good sunlight access, close to Walker Street.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

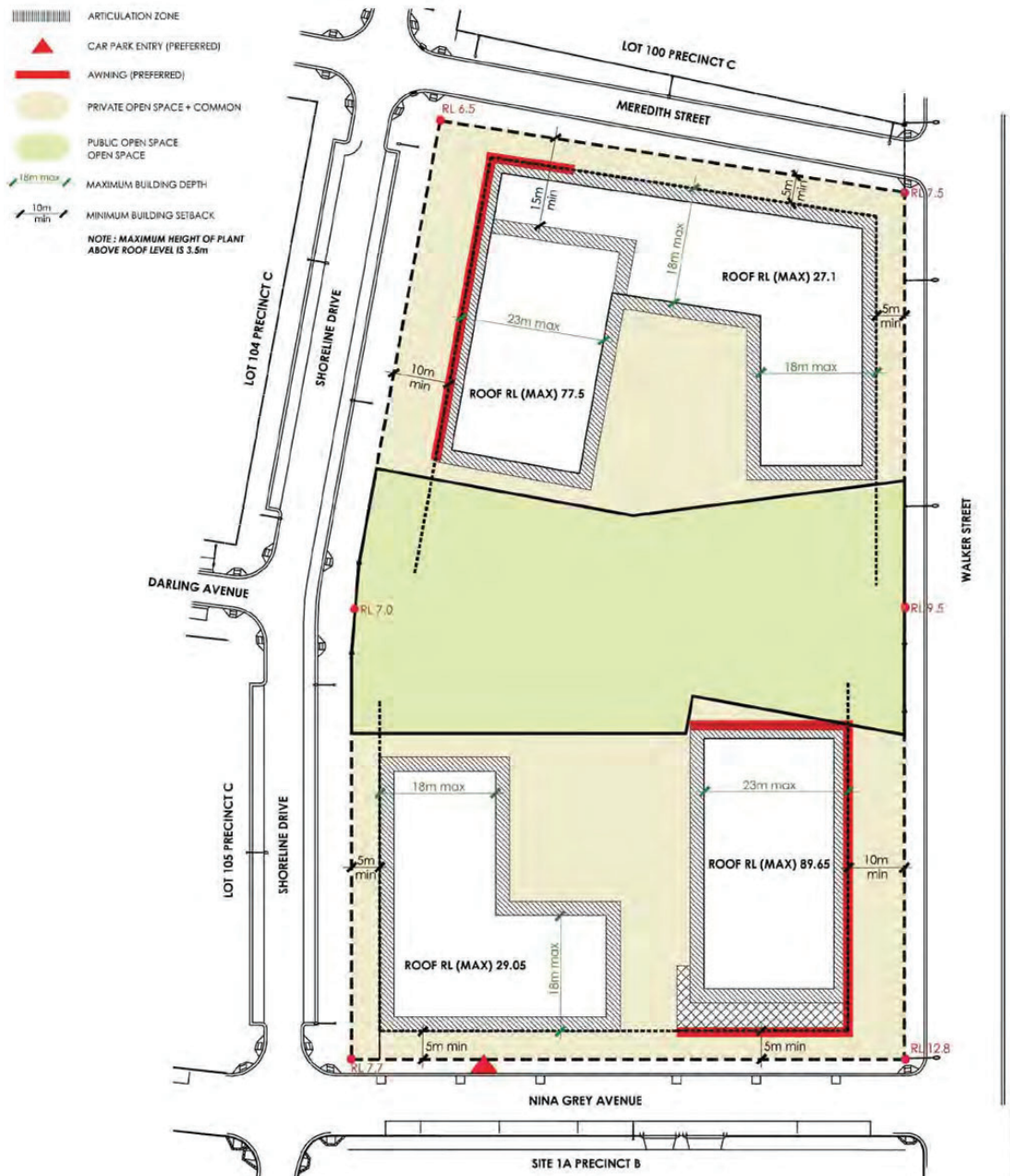


Figure K17-21 Precinct C Building Envelope Plan

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



Figure K17-22 Precinct C Building Envelope Section A-A

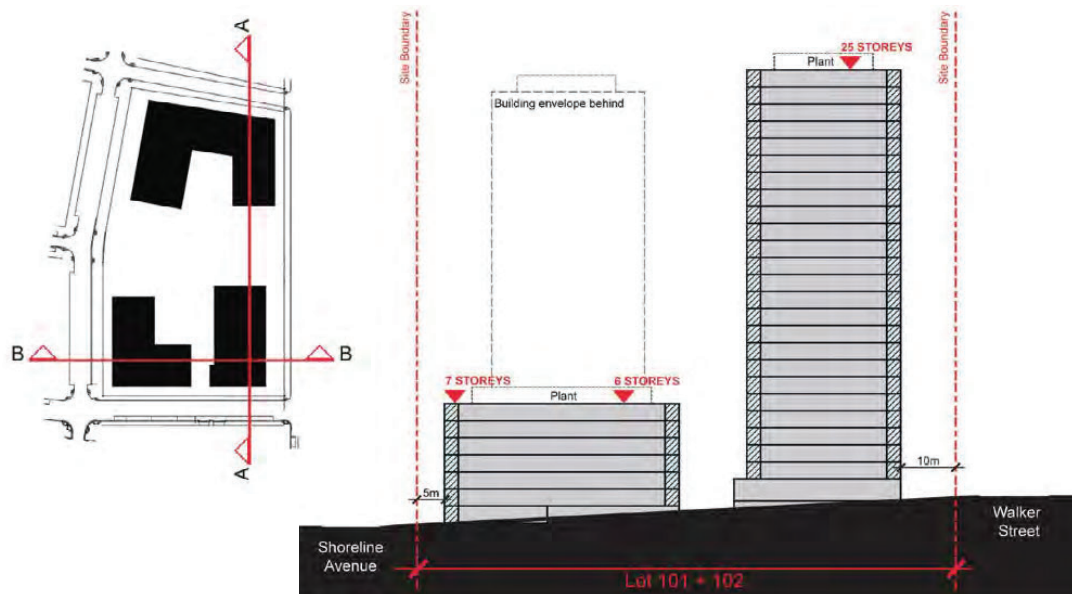


Figure K17-23 Precinct C Building Envelope Section B-B

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Precinct D (Station Gateway West)

The Station Gateway West Masterplan (CM+, November 2014) was prepared to inform the planning framework for the Station Precinct and is supported, and superseded in some cases, by the Station Gateway West Master Plan (Hatch Roberts Day, August 2021). Precinct D, known as Station Gateway West, is located next to Rhodes Station, and is bounded by Walker Street, Marquet Street, Mary Street West and Gauthorpe Street. Refer "Figure K17-25-28".

Rhodes West has the potential to grow as a true Transit Oriented Development, adjacent to the waterfront, connected to surrounding communities and metropolitan Sydney. A mixed use precinct that includes residential, commercial and social places.

Station Gateway West will be completed as a place-led urban destination, reflective of and, building upon the original Master Plan intent. The delivery of additional public benefit and amenity to support the urban context and transit importance of the Precinct has driven the design process. The development capacity, height and form of development at Station Gateway West respects the ground plane amenity and demonstrates realisation of the best practice criteria.

Fine grain podium and tower building typologies will activate a connected public space network of forecourts, transit plazas and pedestrian laneways. The podiums will contribute to pedestrian comfort, provide greening opportunities and define a legible ground plane guiding residents and visitors to and from key destinations.

The shape, variety and siting of buildings will contribute to the gateway character of Station Gateway West whilst providing a visually interesting skyline with visible sky from important vistas across the Peninsula.

Critically, the Station Gateway West Master Plan future-proofs:

- the site itself for optimum connectivity, urban open space and residential amenity, and
- the surrounding area, with a particular focus on not compromising existing public spaces and facilitating embellishment and improvement of the public realm and infrastructure.

The architectural expression, is envisaged to be contemporary, exhibiting a sophistication, lightness and

transparency in detailing. The public domain paving, lighting, furniture, signage, materials and finishes, and landscaping will be a seamless continuation of the public domain of the surrounding streets and squares. A highlight of the public domain will be the incorporation of engaging, relevant and place specific public artwork and installations, drawing themes from the history of the place, and from cultural cues, as well as looking to the future.

Controls

C1.	The maximum permissible building height on the subject sites are defined in the Canada Bay Local Environment Plan. Building height reaches 159 metres (equivalent to 45 storeys) adjacent to Rhodes Station and steps down to the west and south. Refer to Figure K17-25 Precinct D (Station Gateway West) Master Plan and the building envelope sections in Figures Figure K17-26 to Figure K17-31.
C2.	The maximum Floor Space Ratio (FSR) is defined in the Canada Bay Local Environment Plan 2013.
C3.	The mid-block is to provide a fine grained network of plaza's and laneways, creating a permeable city block.
C4.	Pedestrian connections, through a series of new urban places and plazas between Rhodes Station, to Marquet Street, Mary Street and Annie Leggett Promenade to the waterfront are required. Additional north-south retail laneway connections between Town Square and the new Recreation Centre are also required. Refer to Figure K17-25 Precinct D (Station Gateway West) Master Plan.

CITY OF CANADA BAY

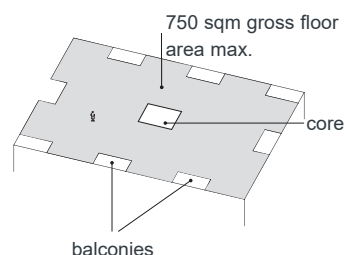
Development Control Plan

Part K

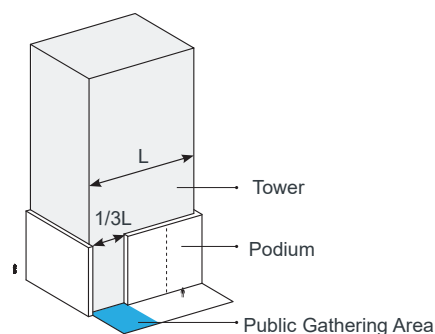
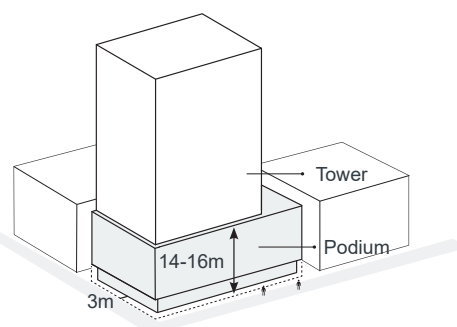
Special Precincts

Controls

C5.	Consistent with the Objectives and supplementing SEPP 65, building-to building setbacks within the Precinct are to achieve the following separation controls: 15 - 20 storeys - 24m Above 20 storeys - 40m
C6.	Towers above 20 storeys are to provide a 4 storey differential in building height.
C7.	Residential towers above podium level shall have a maximum gross floor area of 750 square metres as per diagram opposite. The two towers at 34 Walker Street can be developed following the existing/approved floor plate, subject to demonstration design quality in accordance with the requirements of the Apartment Design Guide and this DCP.
C8.	A minimum podium height of approximately 14-16m building height is required.
C9.	A tower and podium building typology is required, subject to the following outcomes: a) A ground floor setback of 3m is to be provided. b) A Podium to Tower setback of 4m is to be provided. c) Maximum 1/3 of a tower frontage along a street or public space can be extended down to the ground. Public gathering areas must be associated with the 2/3 of the façade that is grounded by a podium.



(Above) Maximum gross floor area of 750 square metres



CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Controls	
C10.	The street wall has a maximum continuous frontage of 45m. Facades longer than 45m are to have a recess of a minimum of 3 x 3 meter and provide other means in the visual composition to break up overly bulky buildings. The composition and detailing of a facade is important to the appearance of the building and influences its perceived scale. Well designed facades reflect the use, internal layout and structure of an apartment building.
C11.	A minimum of 60% street frontage is dedicated to active retail uses. All building fronting a street will have 15-20 doorways per 100m of a façade.
C12.	A tower Setback Line applies to all new property frontages and is a minimum of 4m.
C13.	A Build-to-line with a zero setback is required for the mid-block laneways and plaza. Laneway width is 8-12m and minimum plaza width is 20m. Laneway width is subject to performance requirements to accommodate: <ul style="list-style-type: none"> • Sufficient space to accommodate sufficient clear width, swept path and height for emergency vehicle access as required by the NSW Fire Brigade and NSW Ambulances and other day-to-day service vehicles required to maintain the central oval plaza and laneway public domain and as necessary to service businesses • Planting of mature trees in the laneways and central oval plaza as illustrated in the Public Domain Concept Plan (Context Landscape Design 2014) • Provision of outdoor dining zones associated with cafe, bar and restaurant tenancies • Projecting shop or other signage
C14.	Through site links and laneways are to have clear line-of-sight from Precinct D to Annie Leggett Promenade, with buildings setback to the same distance as buildings fronting Annie Leggett Promenade.
C15.	Union Square must not receive any additional overshadowing from new development between 9.00am and 2.00pm on the Winter Solstice. Peg Patterson Park must not receive any additional overshadowing from new development between 12.00pm and 2.00pm on the Winter Solstice. McIlwaine Park must not receive any additional overshadowing from new development between 8.30pm and 12.30pm on the Winter Solstice. Turfed area within McIlwaine Park must not receive any additional overshadowing from new development between 8.00am - 2.00pm on the Winter Solstice.
C16.	Provide a taxi rank, kiss-and-ride drop-off and pickup bay and disabled parking spaces in proximity of the Rhodes Station on Walker Street.
C17.	Bus bays relocated and expanded along eastern and western edges of Walker Street to accommodate the projected increase in patronage.
C18.	Maximise pedestrian amenity by providing bus shelters and building awnings for weather protection from Rhodes Station to the bus interchange.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Controls			
C19.	<p>Buildings are designed to minimise wind impacts to new areas of open space without the need for roofs or canopy structures.</p> <p>Any proposed development must demonstrate that a sufficient level of 'Wind Comfort Standard for Sitting in Parks' (in accordance with Lawson Wind Comfort Criteria) is achievable without the need for any open space cover or mitigation measures other than the design of the building itself.</p> <p>Maximum awnings coverage consistent with the Station Gateway West Master Plan (Hatch Roberts Day, August 2021) and Figure K17-11.</p>	C21.	Proponents are to address the provision of cycle routes, crossings and parking facilities in relation to Station Gateway West, including at Rhodes Station and at key precinct destinations. Refer to section A.2 Cycle Strategy and to Figure K17-6 Rhodes West Cycle Strategy.
C20.	<p>A single overhead connection from the development to the Station Concourse with a pedestrian bridge over Walker Street is permitted subject to a high level of urban design and architectural quality being achieved. A pedestrian bridge should appear light and slender in design and maximise Walker Street openness and vistas. The proposed pedestrian bridge over Walker Street is to meet the following requirements:</p> <ul style="list-style-type: none"> • TfNSW and Sydney Trains specifications for access to a station (including design for growth and 24/7 access for the public) • Disability Standards for Accessible Public Transport 2002 • Vertical transport and commuter access to buses on both sides of the roads and station • In accordance to safety regulations set by NSW Police and their CPTED 'Safer by Design' principles 	C22.	Restrict vehicular and servicing access to the midblock to ensure for a safe, pedestrian prioritised network of mid-block laneways and plazas to thrive.
		C23.	Major truck and service vehicle access to Station Gateway West basements is preferably from Walker Street and Marquet Street at the preferred locations identified in Figure K17-12.
		C24.	Consolidate wherever possible, vehicular entry points to Station Gateway West development and ensure good sight lines at pedestrian cross-overs.
		C25.	Maintain fire and emergency vehicle access via one or more laneways, as required by emergency service authorities.
		C26.	<p>A minimum of 4,000 sqm of publicly accessible open space to be provided within the Precinct.</p> <p>The open space allocation shall be distributed as per Figure K17-4.</p> <p>New publicly accessible open spaces on Marquet St and Walker St must achieve 2h of solar access on 50% of its area between 9.00am and 3.00pm on the Winter Solstice.</p>
		C27.	Public plazas are required to be open to the sky and unobstructed, except for certain permitted obstructions such as planting, seating, and other plaza amenities.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Controls	
C28.	<p>The street interface of a public plaza is required to have a minimum 50% of its area free of obstructions.</p> <p>Plazas that front on a street intersection are required to maintain a clear area within 5m of the intersection. The remaining 50% of the sidewalk frontage may contain obstructions such as fixed and movable seating, plantings and trees, light poles, public space signage, litter bins or other design elements that are permitted within public plazas.</p>
C29.	<p>Marquet Street Forecourt must be designed to have:</p> <ul style="list-style-type: none"> • A minimum width of 10m for the entire street frontage, • An average length of 20m, • A minimum clear usable space of 20 x 20m (the major portion) • 2hrs of sun over 50% of the space (9am-3pm) • Awning/ cover limited to 1m in addition to the 3m ground floor setback (establishing an in-built awning) on new building podiums. • The main portion of the space is termed the "major portion" of the public space and must account for at least 75% of the public area. The smaller areas are then considered to be "minor portions" and are limited to no more than 25% of the public area. <p>Refer to Figure K17-25 for spatial explanation.</p>
C30.	<p>Walker Street Transit Plaza must be designed to have:</p> <ul style="list-style-type: none"> • A minimum width of 6.5m for the entire street frontage, • Clear and direct link to the Gateway West Pedestrian Laneways • 2hrs of sun over 50% of the space (9am-3pm) • No additional awning/ cover to that of the 3m ground floor setback (establishing an in-built awning) on new building podiums <p>Refer to Figure K17-25 for spatial explanation.</p>
C31.	<p>On site landscape replacement must be provided as the equivalent or more of the total site area. Landscape replacement can be provided through the following:</p> <ul style="list-style-type: none"> - Vertical and facade greening. - Rooftop greening and greening of communal podium spaces. - Public open space, through site links within the site boundary.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Controls

C32.	<p>All development must contribute to and demonstrate a 25% Green View Index using the methodology outlined in Figure K17-24 and described below.</p> <p>The Green View Index (GVI) is a numerical value given to the amount of green canopy and landscape perceived by an individual at street level. Tree canopies, understorey vegetation, and facade greening are the three primary contributors to the GVI.</p> <p>The GVI target for Station Gateway West (Precinct D) is 25%. To achieve this, the design of streets and new developments must include an objective assessment of the GVI value achieved, using the following method:</p> <ul style="list-style-type: none"> Where tree canopies and understorey vegetation do not achieve the GVI target, facade greening is required to the extent necessary to achieve the minimum requirement.
C33.	<ul style="list-style-type: none"> NOTE: for the purposes for the purposes of calculation GVI at street level, a standard height of 14m above ground level has been set, consistent with the podium height. A mix of small (<7m canopy), medium (7-15m canopy), and large (15m + canopy) trees is required, appropriate to the scale of spaces and building interfaces.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



- Small full canopy trees, spaced at 5m centres
- Understorey planting at base of tree (understorey planting at 0.6m high)
- Extensive facade greening



- Medium trees spaced at 8m centres
- Understorey planting at base of tree (understorey planting at 0.6m high)
- Medium facade greening



- Large Tree spaced at 10m centres
- Understorey planting at base of tree (understorey planting at 0.6m high)



- Medium foreground trees spaced at 8m centres.
- Understorey planting at base of tree (understorey planting at 0.6m high)
- Possible where there is widened verge or open space to the streetscape



- Medium foreground trees spaced at 3-5 m centres for plazas and parks.

Figure K17-24 Tree Canopy Strategy

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Public domain

The urban and landscape design of Station Gateway West is guided by the following Public Domain Principles:

Principles:

Controls

C34.	<p>Provide a raised threshold pedestrian crossing to Rhodes Station, across Walker Street, that:</p> <ul style="list-style-type: none"> • Encompasses and connects the future bus interchanges on either side of Walker Street, • Has the same materiality and treatment as the future Walker Street Transit Plaza and is flush (no kerbs), • Integrates a cycleway along the eastern side of Walker Street connecting north and to the Station. <p>Provide a raised threshold pedestrian mid-point, across Marquet Street, to Annie Leggett Promenade.</p>
C35.	<p>Provide generous through-site pedestrian links (as shown in Figure K17-25 Precinct D (Station Gateway West) Master Plan) with tree planting arranged to maximise views into the mid-block, and taking into account of access and safety considerations.</p>
C36.	<p>Wherever possible provide active edges along all pedestrian passageways and around the proposed plaza.</p>
C37.	<p>Central Oval Plaza – this is an opportunity for a flexible, simple and uncluttered space, with minimal and carefully chosen landscape, furniture, lighting and artwork. The plaza and laneways are a focus for cafes, small daytime events, community activities and temporary markets.</p>
C38.	<p>There is an opportunity to integrate a water feature within the Station Gateway West plaza.</p>

C39.	<p>Provide new street trees in surrounding streets – Gauthorpe, Marquet, Mary and Walker Streets.</p>
C40.	<p>Celebrate the Walker Street and Marquet Street entry plazas to the precinct with groves of distinctive palm trees.</p>
C41.	<p>Integrate Walker Street public domain generally in accordance with Council's Public Domain Concept Plan.</p>
C42.	<p>Integrate public art and feature lighting into the public domain – opportunities include embedded artwork in the paving or sculptural installations, as a focus in the entry plazas, and in the central oval plaza – to entice pedestrians to the 'heart' of the precinct.</p>
C43.	<p>Integrate sustainability and WSUD initiatives in the designated public domain.</p>
C44.	<p>Integrate the Station Gateway West paving, furniture, lighting and materials and finishes, seamlessly with the adjoining Rhodes Peninsula public domain.</p>
C45.	<p>Through-site links are crucial to creating a continuous pedestrian and green network within Gateway Rhodes West. The proposed through-site links must:</p> <ul style="list-style-type: none"> • Provide uninterrupted views through the links between Marquet and Walker Street. • Allow for continuous 3m wide (minimum) pedestrian through zone within the minimum laneway width established within the Master Plan and this DCP. • Outside of the 3m pedestrian zone, provide trees along the length of link, spaced to achieve a continuous canopy of shade when mature. • Provide public furniture integrated into the space, co-located with building entries and key nodes where appropriate.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Controls	
C46.	<p>Assure CPTED principles are implemented to ensure reduced opportunities for crime.</p> <p>Public spaces:</p> <ul style="list-style-type: none"> • should be designed to support natural surveillance <p>Through-site links:</p> <ul style="list-style-type: none"> • Must have uninterrupted views between Marquet St and Walker Street • Must provide direct visual connection to Annie Leggett Promenade • Must be provided as part of the public domain • Must provide visible, unobstructed and easily distinguished entries to buildings
C47.	<p>All public space design must adhere to the Australian Standard Design for Access and Mobility (AS1428).</p> <ul style="list-style-type: none"> • Public plazas should generally be located at the same level of adjoining public domain. Minor changes in elevation, not to exceed 0.6m above the level of the adjacent area, are permitted • Plazas should generally not be sunken below street level • Step risers must be no less than 100mm, and no greater than 150mm (exception can be made for vanishing steps) • Seating steps shall be in the range of 150mm-500mm
C48.	<p>Circulation paths must be designed to ensure ease of access to and within public space. For optimal outcomes:</p> <ul style="list-style-type: none"> • Circulation paths must be a minimum of 2.4m in width and extend to a minimum of 80% of the depth of the space • Trees planted flush-to-grade, light poles, public space signage, and litter bins are permitted within circulation paths, However, 1.8m of continuous path must remain clear of fixed furniture elements at all times • Circulation paths must have a cross-fall no greater than 2.5%
	<ul style="list-style-type: none"> • Garage entrances, driveways, parking spaces, loading berths, exhaust vents, mechanical equipment, and building bin storage facilities are prohibited within all public plazas • Any such elements located adjacent to a public plaza are required to be screened or concealed from view. Vents and mechanical equipment are prohibited on any adjacent building walls within 5m of the level of the public plaza. Air intake vents and intake shafts, are permitted within public plazas if they are incorporated into plaza design features and do not impair visibility within the plaza
C49.	<p>Union Square must not receive any additional overshadowing from new development between 9.00am and 2.00pm on the Winter Solstice.</p> <p>Peg Patterson Park must not receive any additional overshadowing from new development between 12.00pm and 2.00pm on the Winter Solstice.</p>

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Controls

C50.	<p>The configuration, location and diversity of seating available should be considered to ensure social interactions can be undertaken in a safe and comfortable manner.</p> <p>Seating requirements:</p> <ul style="list-style-type: none"> At least 1 linear metre of seating must be provided for every 30m² of plaza space. Movable seating for cafes may constitute up to 50% of the seating requirement, and may be stored outside of trading hours Up to 50% of seating may be informal (e.g. low walls/bleacher steps). <p>To create an active street edge a portion of the required seating must be provided within 5m of the street boundary. A minimum 1 lineal meter of seating for every 2 lineal meters of street frontage is required. To ensure that this seating is comfortable and engages the public by being oriented toward the street, 50% of such seating is required to have backs, and 50% of the seats with backs are required to face the street.</p> <p>To provide variety, the public plazas are required to provide at least 3 different seating types, with moveable seating one of the three required seating types.</p> <p>A substantial proportion of seats in a plaza should have backs to facilitate comfort and usability by people of all ages and abilities. To ensure sufficient variety in seating types in the public plaza, seating steps and walls are limited to no more than 15% of the total required seating in the public plaza.</p> <p>Seating must be minimum 450mm depth, and in the height range of 400mm to 500mm. To allow for generous plantings, seating provided on planter ledges are required to be at least 550mm deep.</p>
------	--

C51.	<p>Spikes, rails, or deliberately uncomfortable materials or shapes, placed on any surfaces that would otherwise be suitable for seating are prohibited within public plazas.</p> <p>Devices incorporated into seating that are intended to prevent damage caused by skateboards are generally permitted. Such deterrents are required to be spaced at least 1.5m apart from one another, be constructed of high-quality materials that are integrated with the seating design, and should not inhibit seating.</p>
C52.	<p>Bollards should only be included where it is necessary to discourage vehicle movement. They must not be perceived as a pedestrian barrier. They should only be used as an element of access control. Bollards are recommended where trafficable areas adjoin flush with public spaces (e.g. plazas).</p> <p>In alignment with best practice, a variety of bollards can be used. This includes bollards that contain planting, removable bollards, fixed bollards and bollards as seating elements.</p>
C53.	<p>Requirements for general waste and recycling bins are to be as directed by Council.</p> <p>All waste facilities are to be located within 15m of seating and gathering spaces. Visual appearance and impacts of smell should be carefully considered when locating waste facilities.</p>
C54.	<p>All signage in public space must be visible and legible. Signage design (i.e. font, colour and shape) should be aligned with the greater public domain elements palette.</p> <p>Where required by Council, wayfinding and signage are to integrate digital technologies.</p>

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Controls

C55.	<p>Public art can serve an important role turning spaces into places, giving people reason to stop and engage with the public domain. It can also celebrate cultural and environmental diversity and instill a sense of belonging.</p> <p>A site specific Public Arts Plan is to be prepared by an arts and cultural planner and will be required to address the following:</p> <ul style="list-style-type: none"> • Identify opportunities for the integration of public art in the proposed development • Identify themes for public art • Durability, robustness and longevity of the public art • Demonstrate how public art is incorporated in the site and built form design • Demonstrating that the scale of the public art is appropriate and proportionate to the development and thoughtfully sited & integrated with the building to create a point of interest and define the location of area • The proposal should also provide a program for installation and integration with the construction program for the development <p>Public art must be delivered in accordance with City of Canada Bay's Public Art Plan.</p>
------	--

C56.	<p>To ensure a vibrant and visually appealing public space consideration must be given to the treatment of adjoining walls and facades.</p> <ul style="list-style-type: none"> • Any building entry must be clear and legible. The entries must be unobstructed within 5m of entry • Walls required for planters or to mitigate changes in grade must not be visually or spatially intrusive on the space, and must be designed to a comfortable seating height wherever possible • Blank building walls or facades facing onto public space must be treated with public art or screened with vertical planting to a minimum height of 5m above the ground
C57.	<p>Large plazas can are to accommodate a more varied palette of design features. Potential additional amenities include water features, such as fountains or reflecting pools; children's play areas; game tables; and food service, such as open air cafés, kiosks, or food service in adjacent retail spaces.</p> <p>The design must consider incorporating at least 2 of these elements at a scale and location appropriate to each plaza space. Any proposals must take into consideration existing amenities in the surrounding area.</p>
C58.	<p>To encourage greater landscaping variety and to prevent plazas from being excessively hard-surfaced, public plazas are required to be comprised of at least 20% planted areas, in the form of planting beds, ground cover or accessible lawns.</p> <p>To ensure visibility throughout the space, bounding walls for planters or planting beds cannot exceed 450mm in height.</p>

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Controls

C59.	<p>At least 50% of required trees should be planted either flush-to-grade or within at-grade planting beds.</p> <p>When planted flush-to-grade, the trees must be surrounded by a porous surface at least 1.5m in width that allows water to penetrate to the tree roots while at the same time accommodating pedestrian circulation. Trees provided in planting beds are required to have a minimum of 1.5m square of porous area, such as mulch or planted area to allow for water penetration.</p> <p>Trees must be located in deep soil areas wherever possible. If on structure, trees must be provided soil depth and volumes in accordance with the NSW Department of Planning Apartment Design Guide.</p> <p>Designs should consider the use of deciduous trees where appropriate for solar access in the cooler months.</p>
C60.	<p>All public open spaces should seek to integrate Water Sensitive Urban Design (WSUD) and other sustainability initiatives.</p>

Additional Referral Requirement

Controls

C61.	<p>Requirement for a Development Approval is subject to a Sydney Airport 'Operate Equipment' Approval. Information required by Sydney Airport prior to any approval is to include:</p> <ul style="list-style-type: none"> • The location of any temporary structure or equipment, i.e. construction cranes, planned to be used during construction relative to Mapping Grid of Australia 1994 (MGA94); • The swing circle of any temporary structure/ equipment used during construction; • The maximum height, relative to Australian Height Datum (AHD), of any temporary structure or equipment i.e. construction cranes, intended to be used in the erection of the proposed structure/ activity; and • The period of the proposed operation (i.e. construction cranes) and desired operating hours for any temporary structures.
------	---

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

This page was intentionally left blank

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

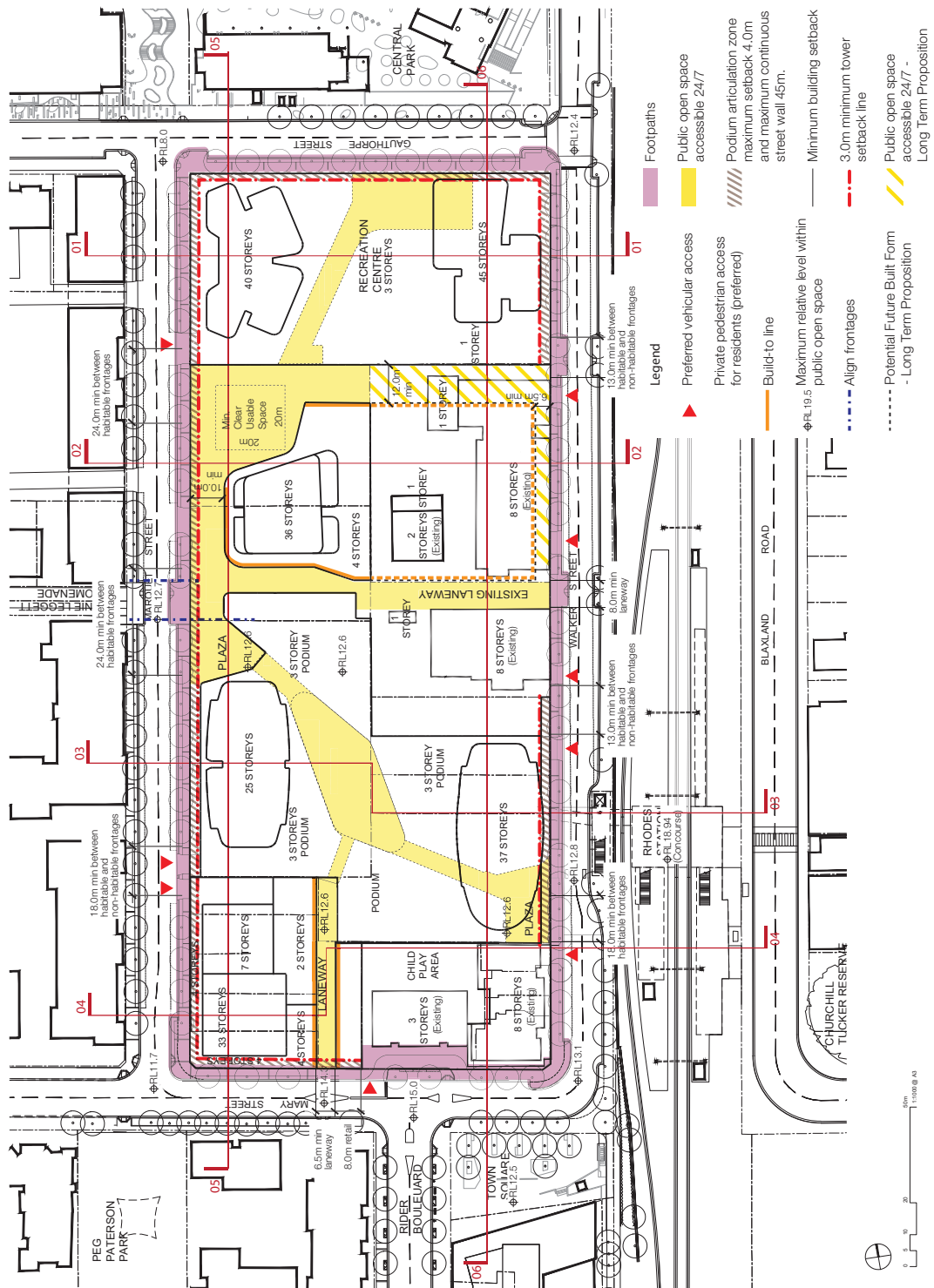


Figure K17-25 Precinct D (Station Gateway West) Master Plan

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

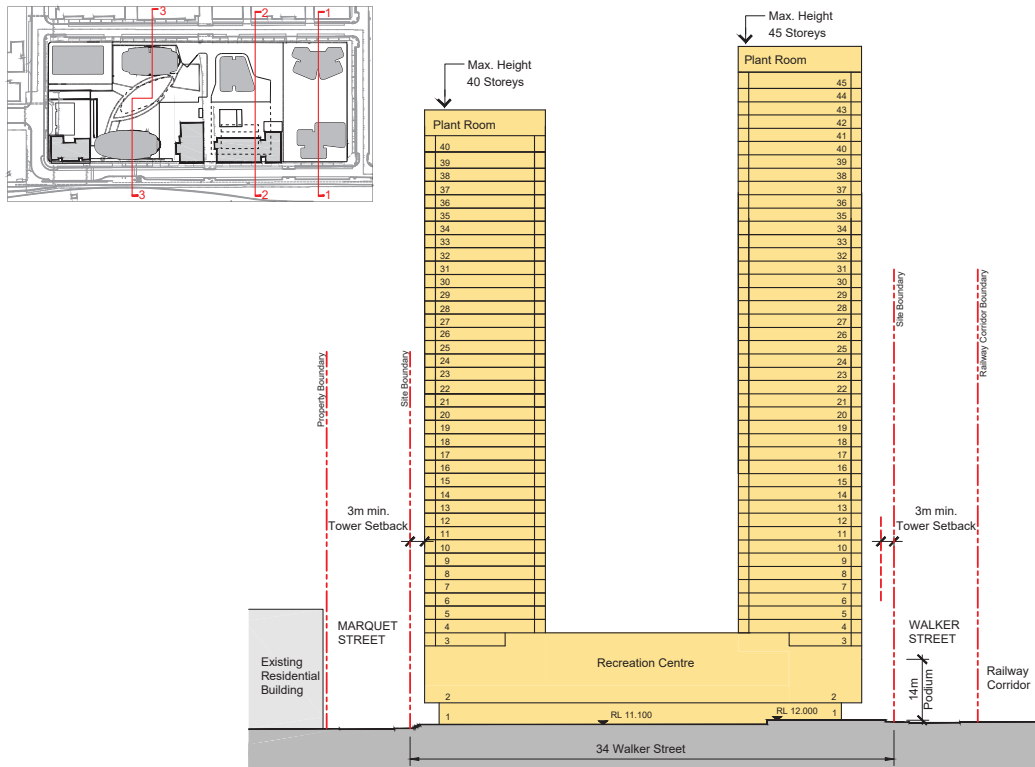


Figure K17-26 Precinct D - Section 1-1

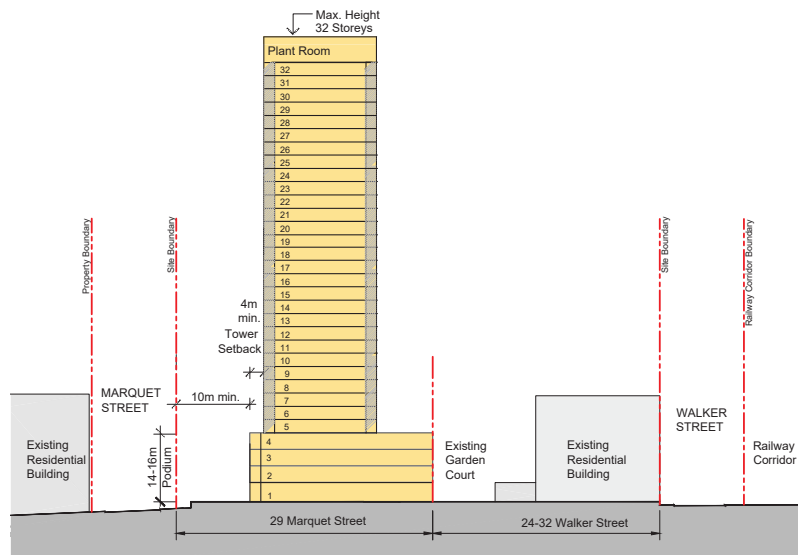


Figure K17-27 Precinct D - Section 2-2

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

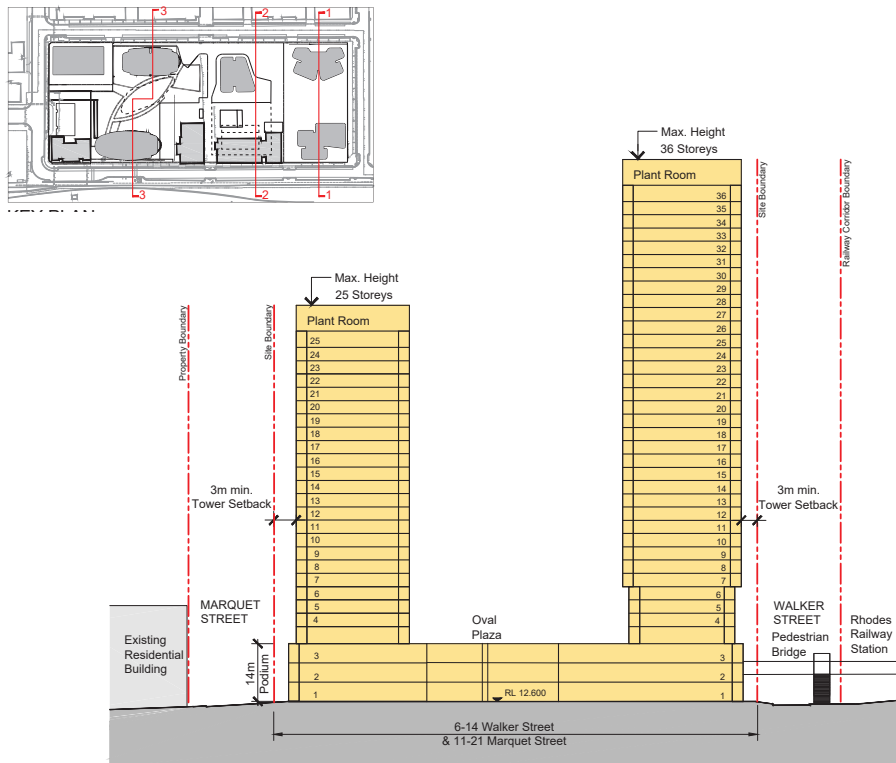


Figure K17-28 Precinct D - Section 3-3

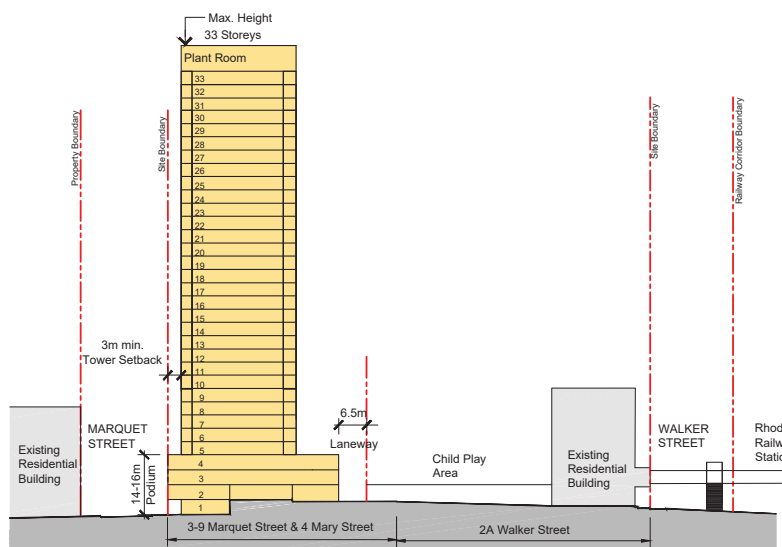


Figure K17-29 Precinct D - Section 4-4

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

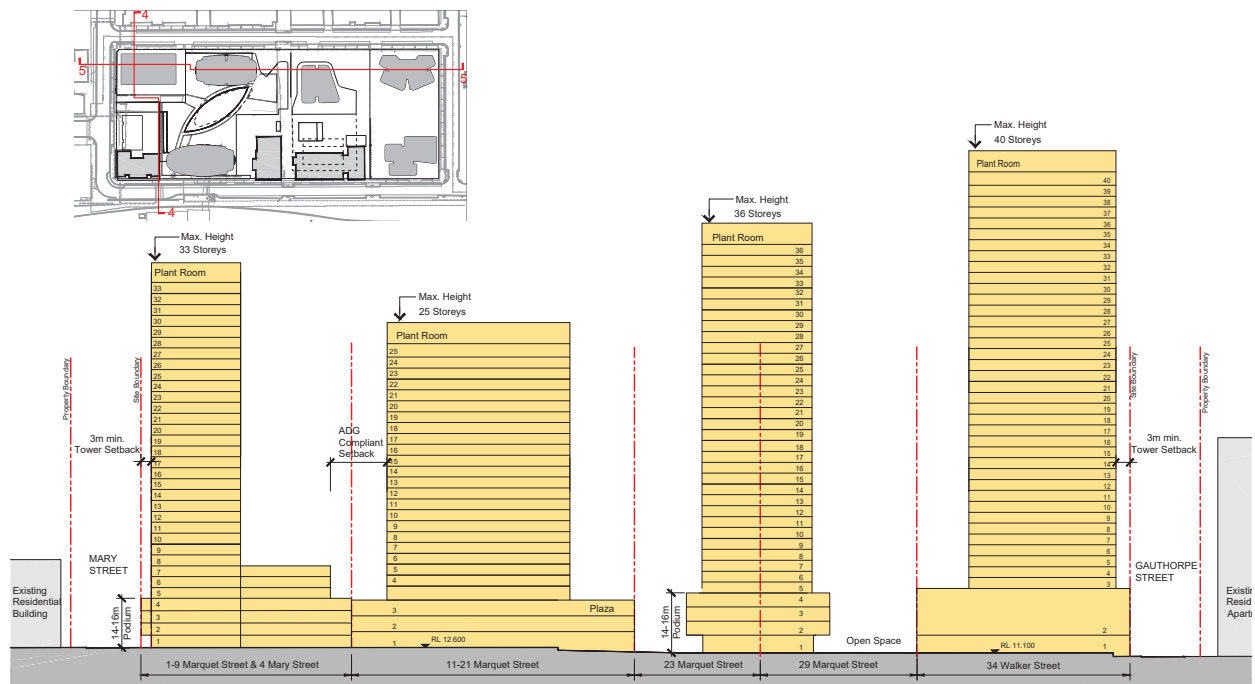


Figure K17-30 Precinct D - Section 5-5

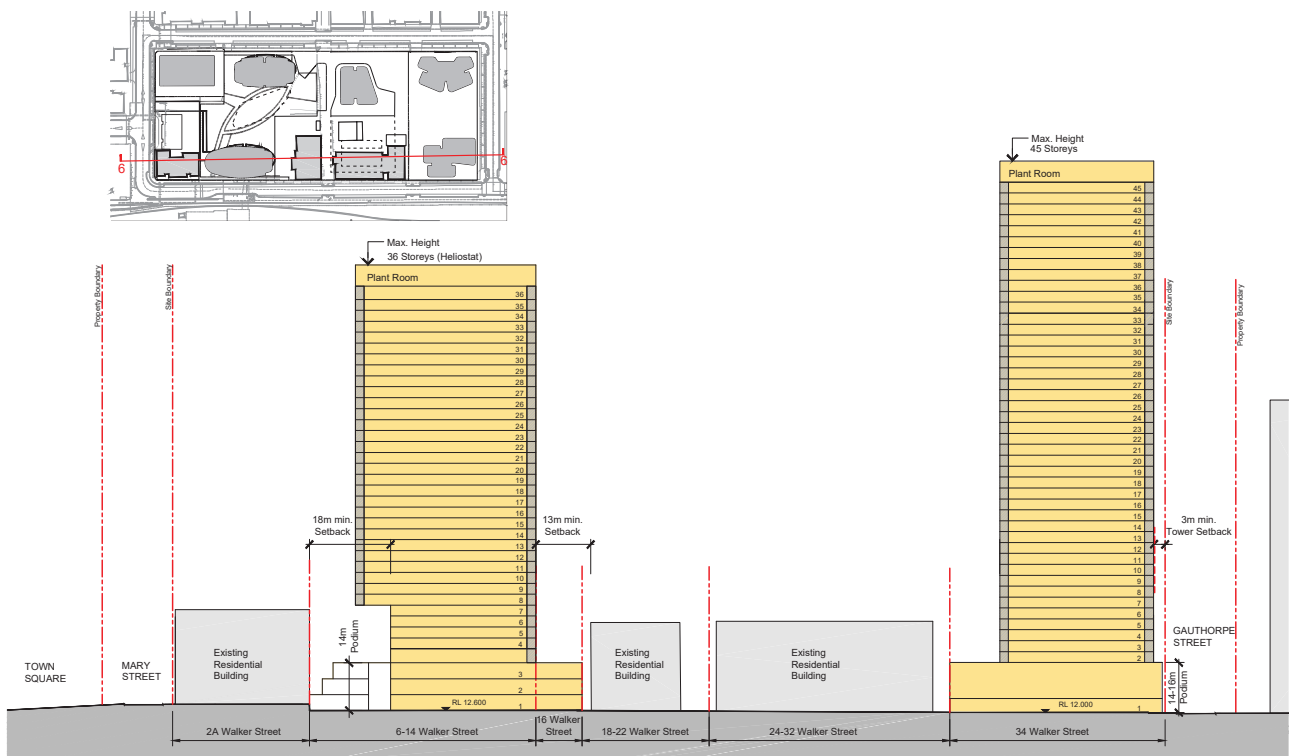


Figure K17-31 Precinct D - Section 6-6

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Indicative development concept

This Indicative Development Concept reflects the principles embodied in this DCP and illustrates building footprints that can be achieved by developments that comply with the Station Gateway West Masterplan and the development controls of this DCP. Illustrated is the desired future character of development which complies with this DCP.

It is not the intention of the Indicative Development Concept plan to identify the exact form and design of future development proposals, however, it does illustrate the desired character of the built form and public open spaces. Developments must generally comply with the building envelope controls provided earlier in this section of the DCP.



Figure K17-32 Indicative Development Concept
Not to scale. The diagram illustrates the indicative concepts for built form and public domain

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K18 Sydney Wire Mill site, Chiswick



Figure K18-1 Aerial photo (source: nearmap.com)



Figure K18-2 Council area map



Figure K18-3 Sydney Wire Mill, Chiswick - Location Plan



CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K18.1 General objectives

- O1. To encourage and facilitate development on the site which, in terms of scale, bulk, form and character, reflects the physical context of the site, is sympathetic to surrounding development, particularly residential development, and does not dominate the landscape;
- O2. To retain and incorporate, where possible, significant buildings, trees, natural and man made landforms and any other site features identified as having heritage values, to create a sense of place which respects and enhances those values;
- O3. To minimise the impact of development in terms of overlooking, loss of view and loss of sunlight on adjoining and neighbouring properties;
- O4. To provide unrestricted public access to the foreshore of Abbotsford Bay, linked to adjoining foreshore access systems and to existing parks;
- O5. To provide for the active and passive recreational needs of the residents of the development; and
- O6. To provide a publicly accessible street and pedestrian network as an extension of the existing street network.

K18.2 Specific provisions

Design Scale and Bulk

Objectives

- O7. To ensure the scale and bulk of proposed buildings responds in a sympathetic and harmonious manner to the site and its context, including the waterway and the surrounding residential neighbourhood; and
- O8. To provide a high standard of amenity and environmental quality for future residents.

Controls

C1.	A four storey maximum height limit applies to most of the site with a two storey height limit on land located opposite existing residential development. The height of buildings, including any car parking levels, must not exceed the height limits specified for the precincts illustrated in Figure K18-5 Maximum Heights and Setbacks.
C2.	Buildings shall not occupy more than 30% of the total site area.
C3.	A 4.5m building line applies to that part of the site fronting Blackwall Point Road which faces existing residential development (see Figure K18-5 Maximum Heights and Setbacks).
C4.	Buildings adjacent to the central spine of public open space and Melrose Crescent shall be set back from this public open space or road reserve boundary as shown on the building envelope control included as Figure K18-4 Indicative 45° Building Envelope Control based on 2.7m wall height.
C5.	Buildings adjacent to the public foreshore open space boundary shall be setback from this public open space as shown on the building envelope control included as Figure K18-5 Maximum Heights and Setbacks.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Controls	
C6.	Buildings elsewhere on the site should be setback progressively as wall heights increase to reduce bulk and overshadowing.
C7.	Visually the impact of the development of the site should make a positive contribution to 'the landscape and special scenic qualities of the Parramatta River'.
C8.	A gradation of building heights is desirable (see Figure K18-4 Indicative 45° Building Envelope Control based on 2.7m wall height).
C9.	Buildings are to be articulated and are not to present long unrelieved structures that dominate the landscape;
C10.	Buildings shall not be located so as to directly abut any public open space and must be setback as shown on Figure K18-4 Indicative 45° Building Envelope Control based on 2.7m wall height and Figure K18-5 Maximum Heights and Setbacks.
C11.	Buildings shall have a formal presentation to their street frontages, and where appropriate, to Abbotsford Bay and the waterway generally.
C12.	Development shall recognise the contours and natural and man-made landforms of the site and compliment surrounding areas.
C13.	Architectural elements, materials and colour schemes should blend with existing landscape forms and colours.
C14.	The preferable roof form for the bulk of development on the site should be pitched, providing the opportunity for innovative uses of roof spaces.

Open Space

Objectives

- O9. To provide public and private open space that meets the needs of residents and the local community having regard for existing land forms, including historic modifications, and visual and functional links with adjoining open space.
- O10. To produce a low maintenance landscaped outcome and a management plan for its future maintenance requirements.

Controls	
C15.	In addition to areas zoned RE1 Public Recreation, smaller, more intimate public, community and private landscaped open spaces shall be provided throughout the site, linked by and forming part of the pedestrian and cycle movement system.
C16.	Landscaped areas should generally be designed in plan to be dominated by vegetation rather than by masonry elements. Hard paved areas should be kept to a minimum, consistent with meeting standards for parking, disabled access and site drainage.
C17.	Private open space for each dwelling at ground level must have: a minimum dimension of 3m; direct access from a living area; a maximum gradient of 1 in 10; and screening where necessary to ensure privacy.
C18.	Private open space for each dwelling above ground in the form of a balcony or roof terrace should have: convenient access from the main living area; a minimum area of 10m²; and a minimum dimension of 2m.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Impacts on adjoining and nearby residential properties

Objective

O11. To provide safe, attractive streetscapes which link with and enhance the amenity of neighbouring development.

Controls

C19.	The street reserves together with the buildings and landscaping defining them should be designed to create an attractive streetscape and establish a clear identity or 'sense of place' to the street, place or precinct.
C20.	Setbacks of buildings from their street frontage should be appropriate to the desired streetscape character and respond to features of the site in terms of views, vistas and existing natural features, including vegetation.

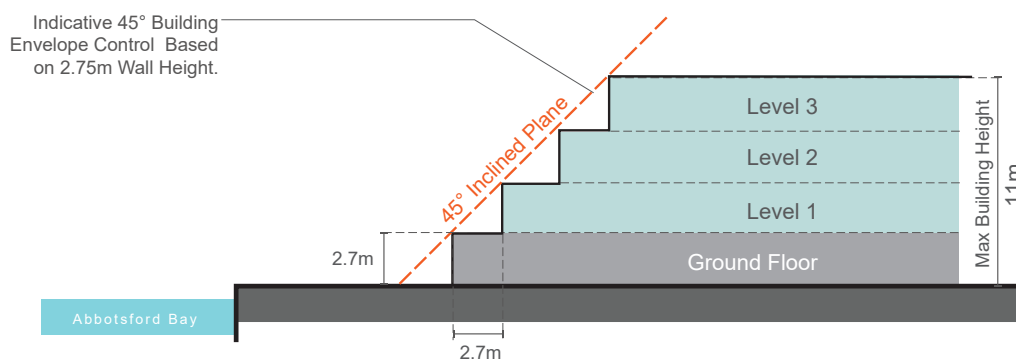


Figure K18-4 Indicative 45° Building Envelope Control based on 2.7m wall height

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



Figure K18-5 Maximum Heights and Setbacks

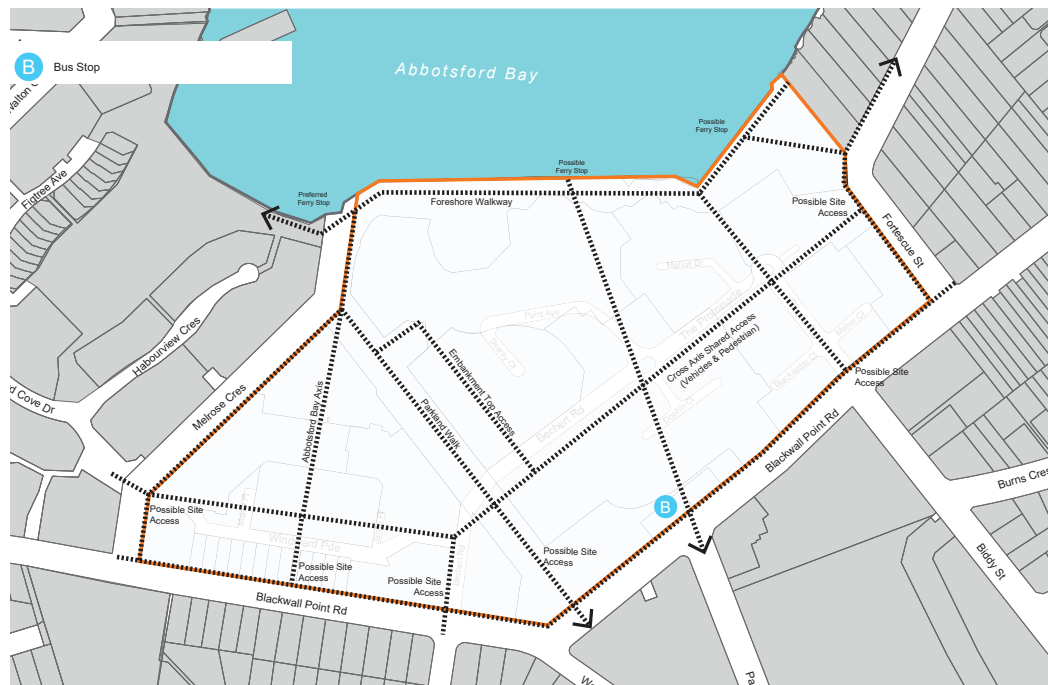


Figure K18-6 Indicative Access Plan



CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K19 Tuscany Court

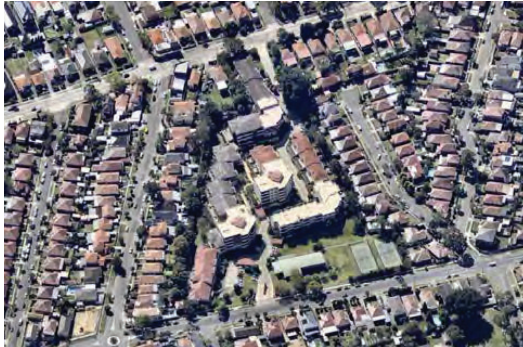


Figure K19-1 Aerial photo (source: nearmap.com)

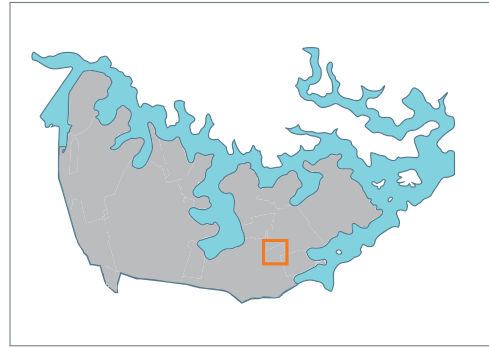


Figure K19-2 Council area map



Figure K19-3 Tuscany Court - Location Plan



CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K19.1 General objectives

- O1 To encourage and facilitate development on the site which, in terms of scale, bulk, form and character reflects the physical context of the site and is sympathetic to surrounding residential development;
- O2 To minimise the impact of the development in terms of overlooking and loss of sunlight from adjoining and neighbouring properties;
- O3 To provide for the active and passive recreation needs of residents of the development and incorporate recreation facilities such as a swimming pool and tennis courts;
- O4 To identify and retain any significant trees on the site; and
- O5 To provide for safe access to and from the site.

K19.2 Specific provisions

Density, Design, Scale and Bulk

Objective

- O6 To achieve a development outcome which, in terms of its density, design, scale and bulk, responds in a sympathetic and harmonious manner to the site and surrounding residential development.

Height

Controls

- | | |
|-----|--|
| C1. | The height of buildings, including any car parking, should comply with the height limits for the three precincts specified in Figure K19-4 Maximum Height. |
| C2. | Buildings should be sited within the building envelope from the eastern and western boundaries of the site as illustrated in Figure K19-6 Indicative 45° Building Envelope Control. This includes a minimum setback of 10m from the eastern and western boundaries with the upper two levels to be setback within a 45° plane to minimise overshadowing and overlooking of adjoining properties. |

Setbacks

Controls

- | | |
|-----|--|
| C3. | Buildings located on the eastern and western boundaries of the site and the northern boundary adjoining 355 Lyons Road are to be located no closer than 10 metres at any point, from these boundaries (see Figure K19-4 Maximum Height and Figure K19-6 Indicative 45° Building Envelope Control). |
| C4. | The location of any building near a tree nominated in Figure K19-5 Significant Trees must take account of the drip lines and root systems of the tree. |

Design and Form

Controls

- | | |
|-----|--|
| C5. | Buildings are to be articulated and are not to present long, unrelieved structures that dominate the landscape. |
| C6. | A diversity of accommodation is to be provided, including townhouses and small, medium and large units. |
| C7. | A pitched roof form is preferable for all development on the site as it provides the opportunity for innovative use of roof space. |

Site coverage

Controls

- | | |
|-----|---|
| C8. | Buildings, excluding any community facilities should occupy less than 40% of the site area. |
|-----|---|

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Landscaped and Open Space

Objective

- O7 To provide for private open space that meets resident requirements for recreational and social activities and for landscaping;
- O8 To ensure all significant trees are retained or relocated on the site; and
- O9 To assist on-site drainage by the provision of at ground landscaped open space.

Controls

C9.	To ensure adequate provision of open space the maximum permissible site coverage is 40%.
C10.	Landscaped open spaces should be provided to accommodate a range of communal and individual needs. There should be a primary open space area containing a recreation facility such as a pool/spa or similar, and this facility is to be easily accessible to all residents on site. Smaller, more intimate landscaped areas should be provided throughout the site and be accessible via a pathway system.
C11.	Landscaping on the eastern and western boundaries is to ensure the privacy of adjoining residential development.
C12.	In accordance with Figure K19-5 Significant Trees trees identified as "must be retained" should be retained on the site. Other trees nominated should be retained or relocated on-site where practicable. Buildings in the vicinity of these nominated trees must be setback from the drip line and root systems of these trees.
C13.	Landscaped areas should generally be dominated by vegetation and not masonry elements. Hard paved areas should, where possible, be kept to a minimum in order to reduce stormwater runoff, although wheelchair access and remediation requirements must be considered.

Access

Objective

- O10 Adequate provisions should be made for access to and from the site.

Vehicular Access

Controls

C14.	Access to the site is not to be provided by a 'gatehouse' security system which limits public access to the site.
C15.	Vehicular access is to be maintained to 347 Lyons Road.
C16.	The primary two-way access is to be from Barnstaple Road.
C17.	A secondary access is to be provided from Lyons Road with an island on Lyons Road installed to prohibit entry to the site from the west and exit from the site to the east.

Pedestrian Access

Controls

C18.	Pedestrian access is to be maintained from Lyons Rd to Dalmeny Ave.
------	---

Streetscape

Objective

- O11 To provide attractive streetscapes which enhance the amenity of neighbouring development.

Controls

C19.	The street reserve together with the dwelling fronts and gardens are to create an attractive streetscape and establish a clear character and identity for the street or precinct.
C20.	The setback of buildings from the street frontages to be appropriate to the streetscape character.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

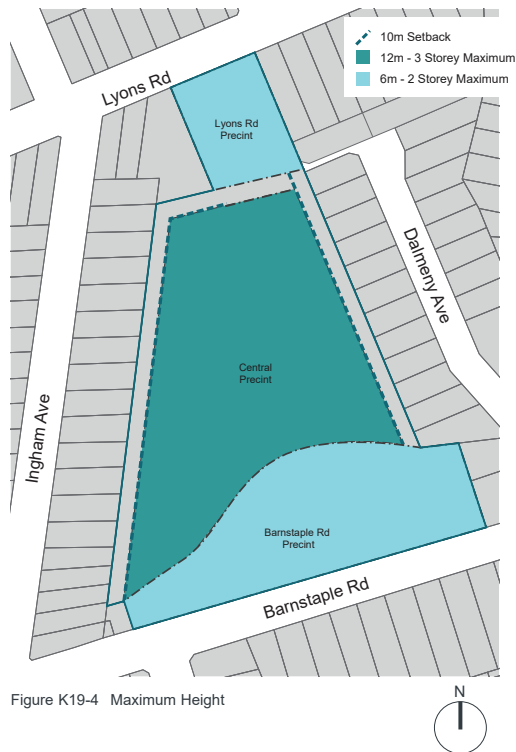


Figure K19-4 Maximum Height



Figure K19-5 Significant Trees

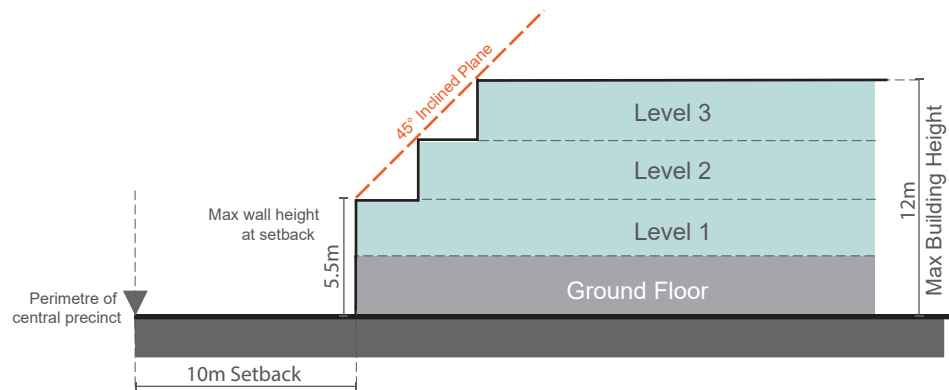


Figure K19-6 Indicative 45° Building Envelope Control

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

This page was intentionally left blank

K20 Kings Bay (PRCUTS)

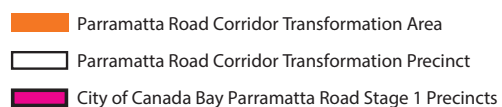


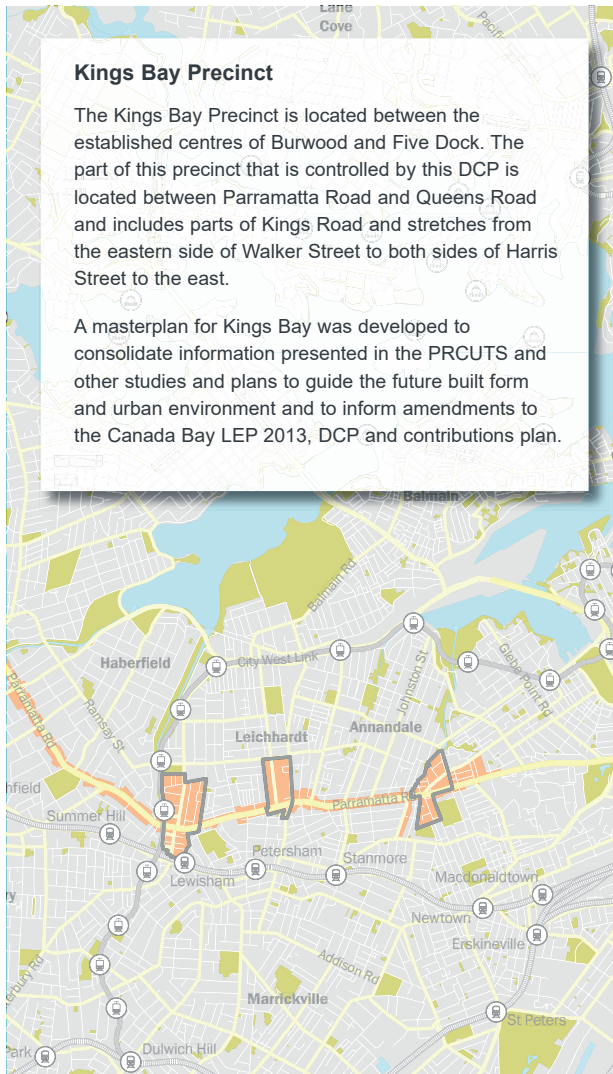
Figure K20-1 PRCUTS Parramatta Road Corridor (Source: PRCUTS, 2016)

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



K20.1 Parramatta Road Corridor Urban Transformation Strategy (PRCUTS)

This DCP has been prepared to support the implementation of the NSW Government Parramatta Road Corridor Urban Transformation Strategy (PRCUTS) published in November 2016.

The DCP has been prepared to deliver the desired future character envisaged in PRCUTS, with refinements to achieve better urban design and community outcomes.

Two development pathways are available:

- 1) Land is developed to the standards identified on the Floor Space Ratio and Height of Building maps.
- 2) Where development achieves the minimum lot size and/or identified community infrastructure is delivered, the land may be developed to the standards identified on the Community Infrastructure Floor Space Ratio and Height of Building Maps.

The provisions in this DCP describe the planning controls permitted under Option 2.

PRCUTS aims to renew Parramatta Road and adjacent communities through investments in homes, jobs, transport, open spaces and public amenity. It presents significant urban renewal opportunities for land within defined development precincts.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)



Figure K20-4 Aerial photo (source: nearmap.com)

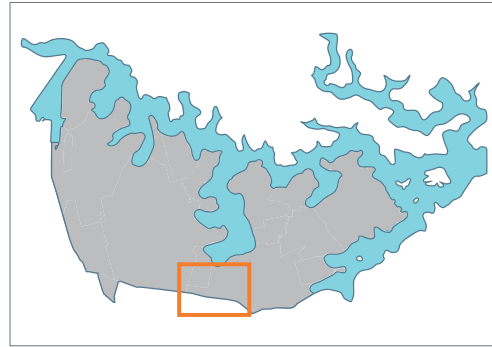


Figure K20-2 Location within LGA



Figure K20-3 Land to which this DCP applies

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20.2 Existing Character

The Kings Bay Precinct currently consists of a mix of smaller fine grain lots and larger landholdings occupied by light industrial service industries such as small manufacturers, car sales and servicing centres, panel beaters, upholsterers, and other urban support services. Wholesalers occupy large format, low density warehouse spaces.

Key community infrastructures include Rosebank College, Lucas Gardens School, Five Dock Leisure Centre and a childcare centre. Medium density residential development is located on Kings Road. Public open space is limited and the street network is characterised by small front setbacks, narrow or no footpaths and few street trees.

Strengths and opportunities

- large land holdings, generally unfragmented land and limited strata titled properties;
- a grid-like pattern of streets;
- potential reduction in traffic volumes with the opening of WestConnex;
- proximity to high amenity open space, recreation facilities and the Parramatta River foreshore;
- potential to enhance existing recreational opportunities and linkages for active transport and extend the existing green corridor from Hen and Chicken Bay to Parramatta Road;
- potential to facilitate the relocation of the Concord Community Centre and/or Concord Library, if the circumstances are appropriate; and
- access to future metro West rail stations and Burwood North (Concord) and Five Dock.

Challenges and constraints

- existing high traffic volumes on surrounding streets;
- limited north-south connections across Parramatta Road, particularly for pedestrians and cyclists;
- a current lack of reliable public transport;
- heritage items and sensitive uses which require appropriate setbacks and transitions; and
- limited, poor quality public domain.

K20.3 Desired Future Character

"Kings Bay will be a new residential and mixed use urban village on Parramatta Road, with an active main street and strong links to the open space network along Sydney Harbour."

As industry moves west, the precinct's traditional industrial area is changing and transforming into more light industrial and urban support services that can capitalise on the rapid transit connections to Sydney CBD, Burwood Town Centre and many large areas of open space.

Spencer Street will form the main street of local shops and services. A new fine grain will be introduced along Spencer Street to reinforce the local nature of the centre, and provide a pedestrian focus with high amenity and low traffic. A new north-south park and pedestrian link will connect Spencer Street to Queens Road and the recreational facilities and foreshore just north of the precinct.

Kings Bay offers the opportunity to be a new address for medium and high density residential development. Taller residential buildings will mark the centre of the precinct at the corner of Parramatta Road, William Street and Spencer Street. Buildings will transition in height and density towards adjacent residential areas, Rosebank College and Lucas Garden School.

A new green link along William Street will connect to open space and the foreshore. The new regional cycleway will link Concord Road, Gipps Street, Patterson Street and Queens Road and will connect to the M4 Motorway in the west and Iron Cove and the Bay Run in the east. Parramatta Road will have significant tree planting and wider public domain to improve the amenity and environment.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)



Figure K20-5 Artist impression of indicative future character along Spencer Street, Kings Bay

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



Page K-292

CITY OF CANADA BAY

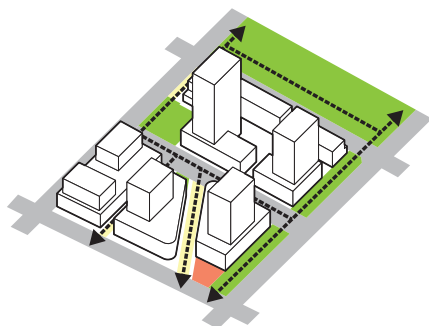
Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)

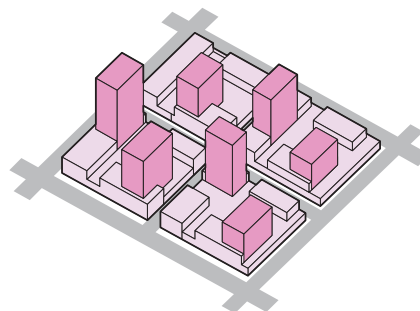
K20.4 Urban Design Principles



Create an active and permeable public realm

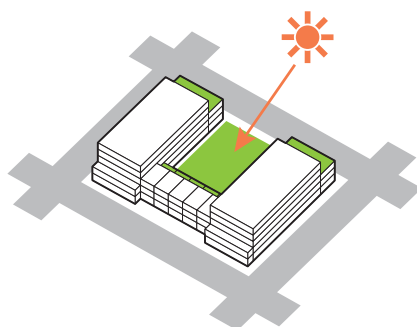
Expand open space network and provide easy access and connection throughout the public realm.

Promote active transport such as walking and cycling.



Define a building height strategy

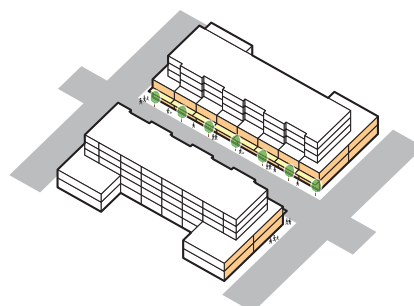
Create a dynamic skyline by spreading higher built form.



Maximise solar access and amenity

Ensure all public open spaces have adequate solar access.

Putting heights towards the southern boundaries to ensure solar access penetrates the site and minimise overshadowing.



Promote fine grain and active frontages

Reinvent Spencer Street and its eastern extension as a Place for People that responds to the vision set out in PRCUTS;

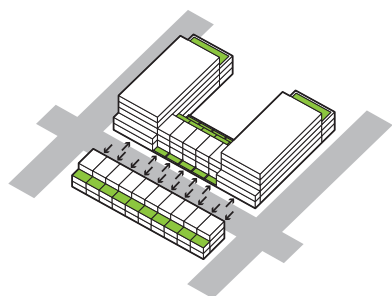
'streets with high demand for activities and lower levels of vehicle movement. They create places people enjoy, attract visitors, and are places communities value'.

CITY OF CANADA BAY

Development Control Plan

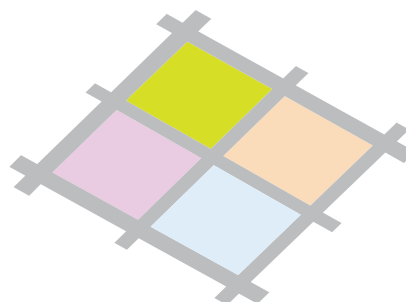
Part K

Special Precincts



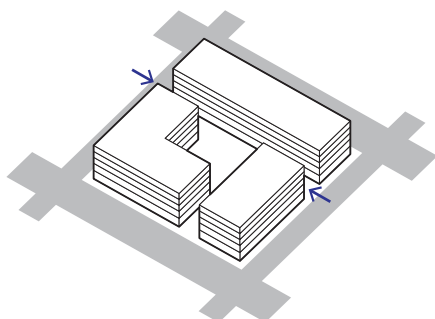
Interactive frontages

Promote direct ground floor access from the street in residential areas to enhance passive surveillance.



Create character precincts celebrate the industrial character of Kings Bay

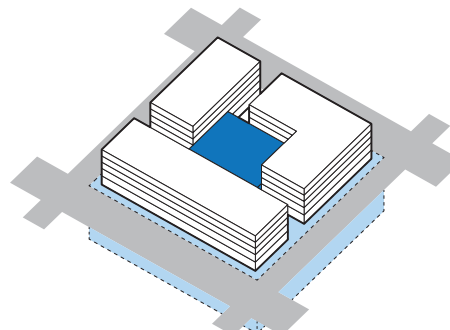
Utilise the current industrial context and history of each block as a driver for place making, facade expression and block character.



Integrated servicing and access

Avoid putting service access on traffic-heavy and pedestrian-oriented streets.

Minimise the impact on public domain by integrating services within the building.



Minimise the impacts of parking

Parking should be put underground as a priority. Where an underground option is not possible, parking should be sleeved with active uses or considerable facade treatment to avoid exposing the structure directly to the street.

CITY OF CANADA BAY

Development Control Plan

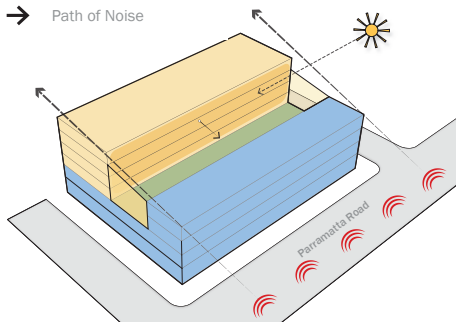
Part K

Special Precincts

K20 Kings Bay (PRCUTS)

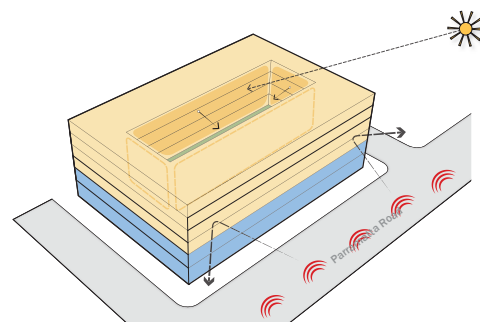
K20.5 Design Approach

- Residential
- Primary Orientation
- Non residential
- Communal open Space
- Source of Noise
- Path of Noise



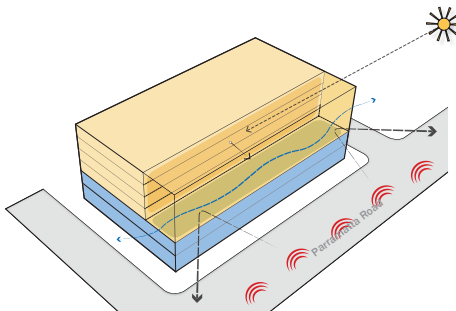
Design Approach 1: Shield

Conventional residential building to the rear of the site away from noise; non-residential building to road edge at a height to create acoustic shadow for residential; fixed solid glazed element encloses courtyard.



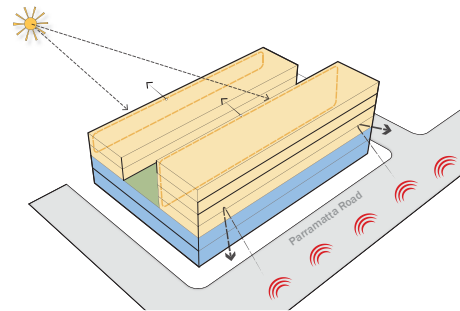
Design Approach 2: Barrier (Courtyard)

All openings required for ventilation open from a protected courtyard; courtyard dimension defined by separation requirements as outlined in the Apartment Design Guide.



Design Approach 3: Barrier (Screen)

A fixed solid glazed edge to provide a protected courtyard space for ventilation; the glazed courtyard is open to the sky to allow for natural ventilation.



Design Approach 4: Facing away

Habitable rooms to be orientated away from the source of noise; locate secondary uses such as cores and walkways facing the source of noise.

Figure K20-6 Design approaches to minimise noise and air quality impacts (Source: PRCUTS Guidelines 2016)

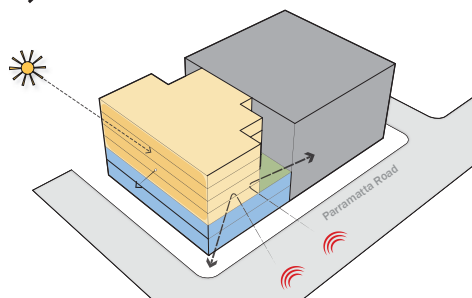
CITY OF CANADA BAY

Development Control Plan

Part K

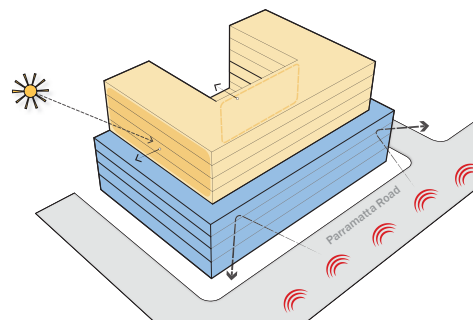
Special Precincts

- Residential
- Primary Orientation
- Non residential
- Communal open Space
- Source of Noise
- Path of Noise



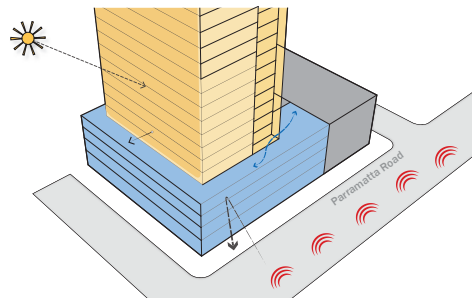
Design Approach 5: Corner

Turning away primary orientation of living space from noise source; articulate facade to create an acoustic shadow away from the source of the noise, orientate openings within the acoustic shadow.



Design Approach 6: Upper Level Setbacks

All openings required for ventilation open from a protected courtyard; turning away from noise source.



Design Approach 7: Above Podium Towers

Turning away habitable spaces from the noise source; utilised fixed solid glazed edge to provide an enclosed space for ventilation.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)

K20.6 Block Configuration

The scale, height, arrangement and orientation of new built form defines the proportion and level of enclosure of streets and public spaces. Good site planning and block configuration maximises the level of sun access and visual and acoustic privacy for all, including neighbouring properties.

Together with primary and upper level setbacks (see *Section K20.10 Street Wall Heights and Setbacks*), the following controls set the basic building footprints and envelopes for new development in the Kings Bay Precinct.

Objectives

- O1 To arrange building forms including heights and massing that reinforce the future desired character of the area and protect valued character attributes.
- O2 To facilitate daylight access and ventilation to streets, public places and neighbouring properties.
- O3 To maximise visual and acoustic privacy.
- O4 To consider future development opportunities on adjoining sites and avoid isolated sites.
- O5 To maximise permeable ground surfaces to allow rainwater to penetrate the soil.

Controls

- C1. New development is to consider future development on adjoining sites by providing sufficient separation and setbacks, and avoid creating isolated sites.

New development is to follow the desired Site Amalgamation Plan (see **Figure K20-7**).
- C2. The delivery of identified amalgamation and community infrastructure is a prerequisite for the heights and densities identified in the LEP. If this is achieved new development is to conform to the maximum number of storeys as shown in **Figure K20-12** and **Figure K20-13**. Further controls regarding the permissible building envelope are contained in *Section K20.10 Street Wall Heights and Setbacks* and *Section K20.13 Massing and Articulation*.

- C3. The maximum length of any building above 5 storeys is 60m.
- C4. Residential towers above podium level shall have a maximum enclosed area of 750sqm (including circulation and excluding balconies) and a maximum total floor area of 875sqm (including and assuming 15% for balconies).
- C5. For commercial uses on all floors above the ground level, any wall with windows must be set back from the side and rear boundary by 3m. Any wall without windows is not required to be setback.
- C6. Built form is to be positioned for optimal access to daylight and direct sunlight for internal and external spaces, and for adjoining public and private land.
- C7. Buildings are adaptable to a variety of uses over time. The following minimum floor to floor heights apply:

Use	Minimum height
Retail	4.4m
Commercial	3.7m
Adaptable	3.7m
Residential	3.1m
- C8. The ground floor of all lots fronting Parramatta Road is to be a minimum of 4.4m in height to facilitate a wide variety of uses.

Development on the ground floor fronting Parramatta Road is to prioritise urban services and light industrial uses, consistent with Active Frontages.

The second floor of development fronting Parramatta Road in the B4 Mixed Use zone is also to have retail and/or commercial uses.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



- Amalgamation boundary
- A1 Lot identification number
- Proposed public domain/ road corridor
- Proposed future open space
- Existing open space
- Required through-site link
- Desired through-site link
- Cadastre
- Precinct boundary

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)

K20.7 Access Network

A permeable urban structure is key to successful places. The provision of new links and open spaces is encouraged to build upon the existing access network and support the uptake of active and public transport and linking key destinations within and beyond the precinct.

Objectives

- O1 To provide a finer grain access network to more effectively link the precinct to Parramatta Road, open spaces and public transport stops.
- O2 To encourage travel behaviour change by discouraging car usage and supporting sustainable travel choices such as public and active transport.
- O3 To improve network permeability, in particular for pedestrians, by breaking up long blocks with new streets and quality pedestrian prioritised links.
- O4 To meet access requirements for future development and enable increased density in selected locations.



A more permeable urban structure and a focus on a high quality pedestrian environment will support walking and cycling.



Slow speed, shared spaces provide links that encourage pedestrian access across the precinct.

Controls	
C1.	The existing access network is retained and new streets, through-site links and cycle routes are provided as identified in Figure K20-8 and Figure K20-9 .
C2.	New public open spaces are located as identified in Figure K20-8 and Figure K20-9 . See <i>Section K20.8 Public Domain Experience</i> for more detail.
C3.	Wherever possible, long blocks are broken up with new high quality pedestrian prioritised links, particularly where new connections would facilitate access to public transport, open spaces and community facilities.
C4.	Size and location of footpaths, laneways, cycleways, planting and parks are to be provided according to Council's PRCUTS Public Domain Plan and PRCUTS Masterplan.
C5.	New roads, public domain widenings, parks and cycleways are required to be in public ownership where identified in the LEP. New roads and parks that are identified in the LEP to be publicly accessible but not in public ownership, may be delivered as a public access easement over private land. Future pedestrian links may be delivered as a public access easement over private land. Provision is to be in accordance with the LEP, PRCUTS Infrastructure Strategy and Council's specifications.
C6.	Future pedestrian/ cycle links are to be naturally lit and ventilated, appropriately lit after hours, publicly accessible 24/7, and have clear sightlines from end to end.
C7.	All new pedestrian/ cycle links are to be defined by built form and quality edge treatments such as low semi-transparent fences and landscaping.
C8.	Bicycle facilities, such as parking, secure storage and end-of-trip facilities are to be easily accessible from the public domain and conveniently located near entrances and/or lifts of new development.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20.8 Public Domain Experience

Private development has a large influence on the local character and the support of the existing or future functioning of the public realm, for example by clearly addressing a new pedestrian link and providing good levels of surveillance. The scale of built form, its appearance and the design of private-public interfaces has a significant impact on how people experience a streetscape and the safety of the neighbourhood.

Key elements apart from the built form that need to be considered include front setbacks, boundary treatments, vegetation and landscape design, vehicular access, visible activity at street level, and surveillance provided by doors, windows and balconies.

Objectives

- O1 To protect and improve the quality, accessibility and safety of the public domain across the precinct.
- O2 To support walking and cycling to key destinations such as the Five Dock Leisure Centre and local schools.
- O3 To improve the interface to Parramatta Road and support increased activity levels, safety and comfort.
- O4 To increase tree canopy cover and provide for more greenery associated with the public domain.

Controls

- | | |
|-----|---|
| C1. | <p>New development that fronts onto streets identified as active frontages, including vibrant, friendly and mixed facades (see Figure K20-10) must:</p> <ul style="list-style-type: none"> a) minimise the number and width of vehicular driveways across the footpath; b) ensure building entries are clearly visible and pedestrian access to entries and lobbies is direct; c) pay particular attention to the 'human-scale' of lower levels and display a high degree of detailed design and articulation; d) maximise the number of doors and windows on upper levels overlooking the street; and e) provide vehicular access off a rear laneway; driveways off Parramatta Road are strictly prohibited. |
|-----|---|

- | | |
|-----|--|
| C2. | <p>New development that fronts onto Parramatta Road is to:</p> <ul style="list-style-type: none"> a) set back as per Figure K20-8 and Figure K20-9. b) apply coordinated urban and landscape design features that unify the linear green edge; and c) prioritise urban services uses. |
| C3. | <p>Development is to support the experience and safety of future public open spaces as identified in Figure K20-8 and Figure K20-9. Development that faces open space must:</p> <ul style="list-style-type: none"> a) maximise the number of doors and windows overlooking the open space; b) pay particular attention to quality architectural detail at the lower levels; c) ensure that at least 50% of each open space receives a minimum of 3h direct solar access in mid-winter (21 June) between 9am and 3pm; and d) where an active frontage is required by the LEP, encourage active uses on the ground floor with a preference for community facilities and cafes/ restaurants with outdoor seating. The minimum floor to floor height of the first two levels is to be as per the 'Adaptable' category in <i>Section K20.6 Block Configuration</i>. |
| C4. | <p>Development fronting Queens Road is to maximise entry doors and windows overlooking the street, minimise vehicular entry points and pay particular attention to quality landscape and architectural detail along lower levels. For more controls see <i>Section K20.11 Transitions and Interfaces</i>.</p> |
| C5. | <p>Any development on a corner site including corners of the new open spaces must pay particular attention to overall design quality due to the location's high visibility and impact on the local character, i.e. well proportioned facades and quality material, finishes and plant species selection.</p> |

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)



Figure K20-8 Public Domain Plan - western part

- | | |
|---------------------------------|--|
| Active frontage (various) | Required through-site links |
| 3m landscaped setback | Desired through-site links |
| 4.5m landscaped setback | Proposed future open space |
| Deep soil zone (various widths) | Proposed future open space (privately owned publicly accessible) |
| 1 storey street wall | Potential open space (other) |
| 2 storey street wall | Existing open space |
| 3 storey street wall | Proposed future public domain |
| 4 storey street wall | Variable TfNSW road widening |
| 5 storey street wall | Proposed future road corridor |
| | Cadastre |
| | Precinct boundary |

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



Figure K20-9 Public Domain Plan - eastern part

0 25m 50m 100m



- | | |
|---------------------------------|--|
| Active frontage (various) | Required through-site links |
| 3m landscaped setback | Desired through-site links |
| 4.5m landscaped setback | Proposed future open space |
| Deep soil zone (various widths) | Proposed future open space (privately owned publicly accessible) |
| 1 storey street wall | Potential open space (other) |
| 2 storey street wall | Existing open space |
| 3 storey street wall | Proposed future public domain |
| 4 storey street wall | Variable TfNSW road widening |
| 5 storey street wall | Proposed future road corridor |
| | Cadastre |
| | Precinct boundary |

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)

K20.9 Active Frontages

The quality and attractiveness of buildings at the streetscape level plays an important role in the attractiveness and vibrancy of the street. Active streetscapes have frequent doors, many windows with transparent glass and narrow frontages providing a vertical rhythm along the street with few blank walls.

Successful buildings make a positive contribution to the streets and public spaces around them. They visually activate the street and encourage people to use the street.

It is important to focus on active frontages in commercial and mixed use zones as these are areas where activity and vibrancy is critical to the success of the centre. Ensuring streets and open spaces are overlooked can increase the sense of safety, especially at night.

Objectives

- O1 To create lively and attractive streetscapes that are safe and attractive.
- O2 To support walking in the precinct along streets and within public open spaces.
- O3 To provide attractive streets and public spaces that encourage activity and provide opportunities for passive surveillance.
- O4 To ensure that the ground level of buildings in mixed use areas are well designed and able to attract a variety of uses that will activate the streetscapes.

Controls

- | | |
|-----|---|
| C1. | Active frontages are to be provided as identified in Figure K20-10 . For more controls see <i>Section K20.15 Safety and Accessibility</i> .

Three different types of active frontage have been identified. The type of active frontage desired is dependent on the location and the intended character of the street. |
| C2. | A maximum of 70% of the ground floor facade is to be glazing and balanced with solid vertical elements creating a rhythm along the street. |

C3.

Vibrant Facades

- a) Maximise the number of units along the street. Provide small (narrow) units with a minimum of 15 front doors per 100m of facade length.
- b) Cater for a wide variety of uses such as shops, cafes, restaurants, bars, fruit/ vegetable markets, community uses and live-work units.
- c) Provide a high degree of visual richness in facade details and architectural expression with a focus on vertical facade articulation. Provide 'ins and outs' (recesses and projections) to create shadows and interest.
- d) Vehicle access and servicing zones are not permitted along a Vibrant Façade.
- e) Blank facades are not permissible. Passive facades are strongly discouraged and are only permissible where alternatives are not available.
- f) Tenancies are to be a minimum of 10m deep.

C4.

Friendly Facades

- a) Maximise the number of units along the street. Provide relatively small (narrow) units with a minimum of 10 front doors per 100m facade length
- b) Cater for some variety of uses such as shops and live-work units including residential lobbies.
- c) Blank facades and passive facades are strongly discouraged
- d) Provide a degree of visual richness in facade details and architectural expression.
- e) Minimise the number and width of vehicular driveways across the footpath with limited vehicle access and servicing permitted. Openings, when permitted are to be narrow and recessed.
- f) Tenancies are to be a minimum of 10m deep.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



Controls

C5.

Mixed Facades

- Maximise the number of units along the street. Where possible provide small (narrow) units with a minimum of 6 front doors per 100m facade length
- Blank facades and passive facades are discouraged. Any blank façade that is more than 10% of the façade or more than 10sqm (at street level) is to have visual interest i.e. architectural treatment, detailing, art or greenery/ green walls
- Provide a degree of visual richness in facade details and architectural expression.
- Minimise the number and width of vehicular driveways across the footpath.
- Buildings fronting Parramatta Road are to have vehicle access and servicing via shared underground areas accessed from side streets where possible.
- Tenancies are to be a minimum of 10m deep.



Breaking the facade into smaller elements at the street level helps create variation and interest

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)

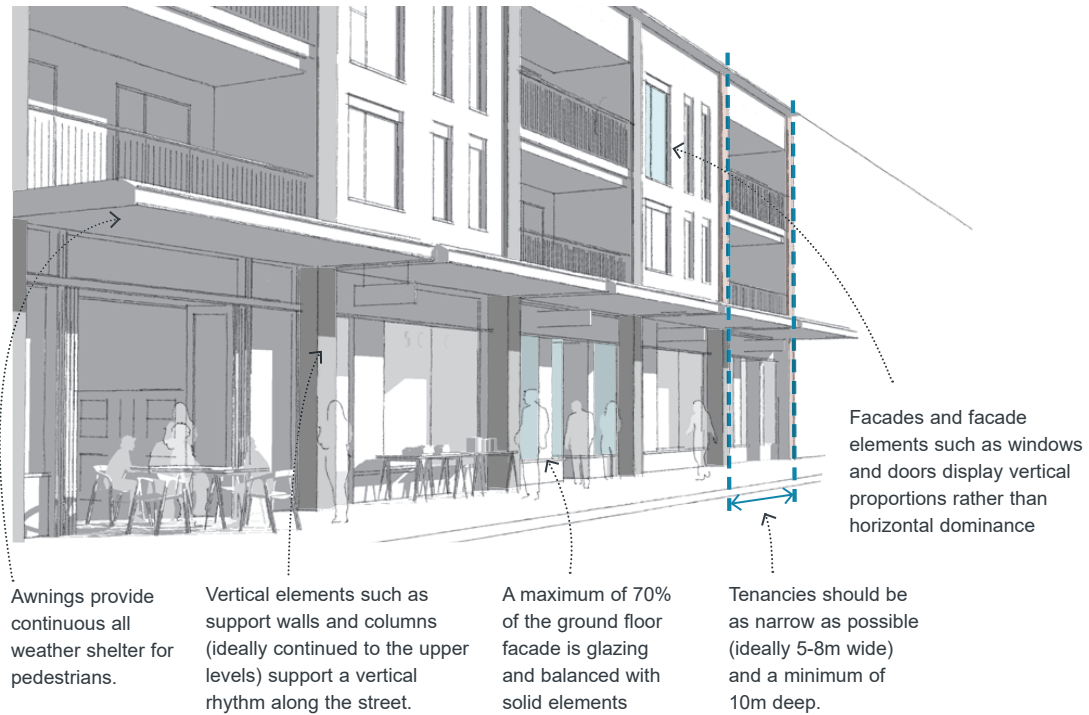


Figure K20-11 Active Frontage Design Guidance



Stall risers, richness of material choices and operable glazing contribute to high quality street interfaces

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20.10 Street Wall Heights and Setbacks

Street setback areas are an integral part of the streetscape and their treatment is fundamental to the amenity and character of a place. Combined with building height and road reserve width, they define the proportion, scale and visual enclosure of the street. Street setbacks not only establish the alignment of buildings along the street, they also provide for landscaping and deep soil areas, building entries and a transition between public and private space.

Street wall heights and upper level setbacks further define the proportion, scale and visual enclosure of the public domain and provide a level of consistency across the precinct. Upper level setbacks lessen the visual impact of taller development and help create a more unified, human-scale streetscape environment.

Objectives

- O1 To ensure setbacks contribute positively to the pedestrian environment at street level.
- O2 To provide a sense of enclosure to the street and contribute to a consistent built form scale across the precinct over time.
- O3 To enhance development and its relationship with adjoining sites and the public domain, particularly in regard to access to sunlight, outlook, view sharing, ventilation and privacy.



A lower street wall height helps to integrate taller development with lower residential scales

Controls

C1.	All development is to comply with the setbacks shown on Figure K20-8 and Figure K20-9 .										
C2.	Where applicable, a portion of the setback area is to provide deep soil zones and tree planting. Refer to <i>Section K20.18 Landscape Design</i> for more detailed controls.										
C3.	<p>'Undesirable' elements such as vents, electrical substations, or plant and equipment spaces are not permissible within the setback area and should be accommodated within the building.</p> <p>Service cabinets are to be co-located internally, accessible from loading, waste or parking areas where possible to avoid impact on the public realm.</p>										
C4.	Upper level setbacks are required towards all public domain interfaces and have been identified on Figure K20-12 and Figure K20-13 .										
C5.	<p>The following street wall heights apply:</p> <table border="1"> <thead> <tr> <th>Location</th><th>Maximum street wall height</th></tr> </thead> <tbody> <tr> <td>Parramatta Road</td><td>2, 4 & 5 storeys</td></tr> <tr> <td>Queens Road</td><td>1 & 2 storeys</td></tr> <tr> <td>Kings Road</td><td>2 & 3 storeys</td></tr> <tr> <td>Laneways and through-site links</td><td>nil</td></tr> </tbody> </table> <p>Refer Figure K20-8 and Figure K20-9.</p>	Location	Maximum street wall height	Parramatta Road	2, 4 & 5 storeys	Queens Road	1 & 2 storeys	Kings Road	2 & 3 storeys	Laneways and through-site links	nil
Location	Maximum street wall height										
Parramatta Road	2, 4 & 5 storeys										
Queens Road	1 & 2 storeys										
Kings Road	2 & 3 storeys										
Laneways and through-site links	nil										

CITY OF CANADA BAY

Development Control Plan

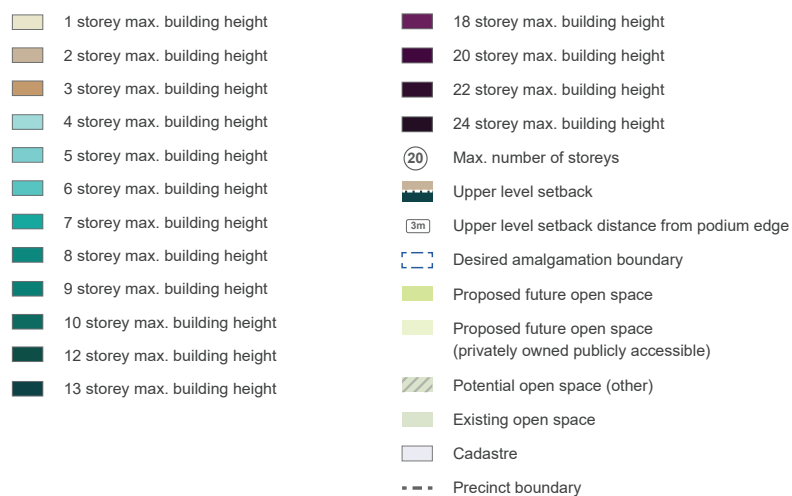
Part K

Special Precincts

K20 Kings Bay (PRCUTS)



Figure K20-12 Building Envelopes Plan - western part



CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



Figure K20-13 Building Envelopes Plan - eastern part

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)

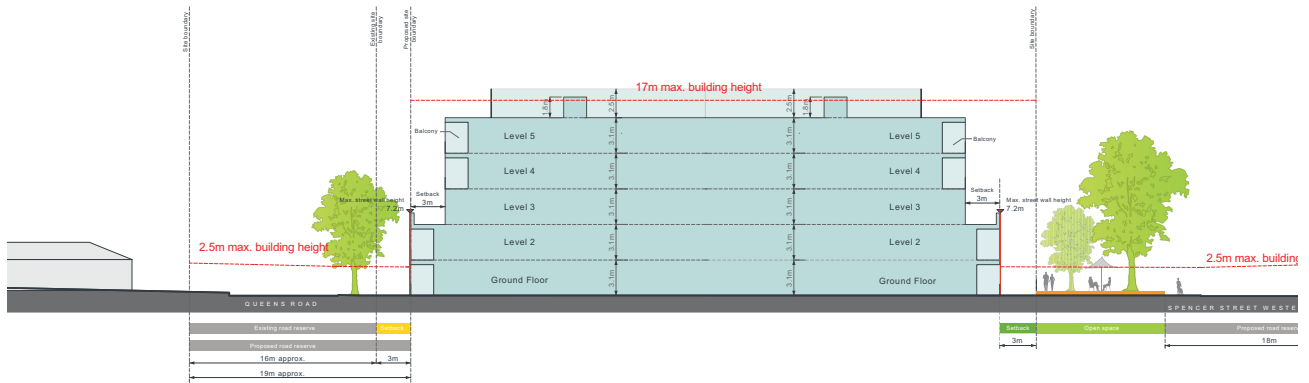
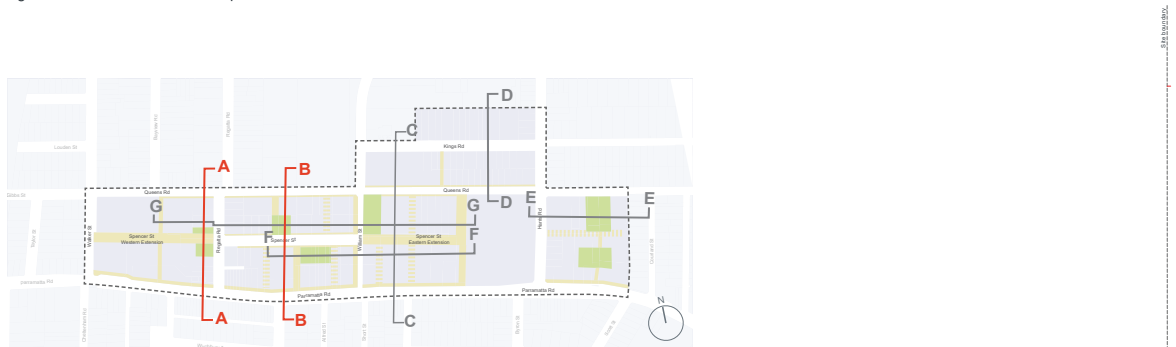


Figure K20-14 Built Form Envelope - Section A



Section Key Plan

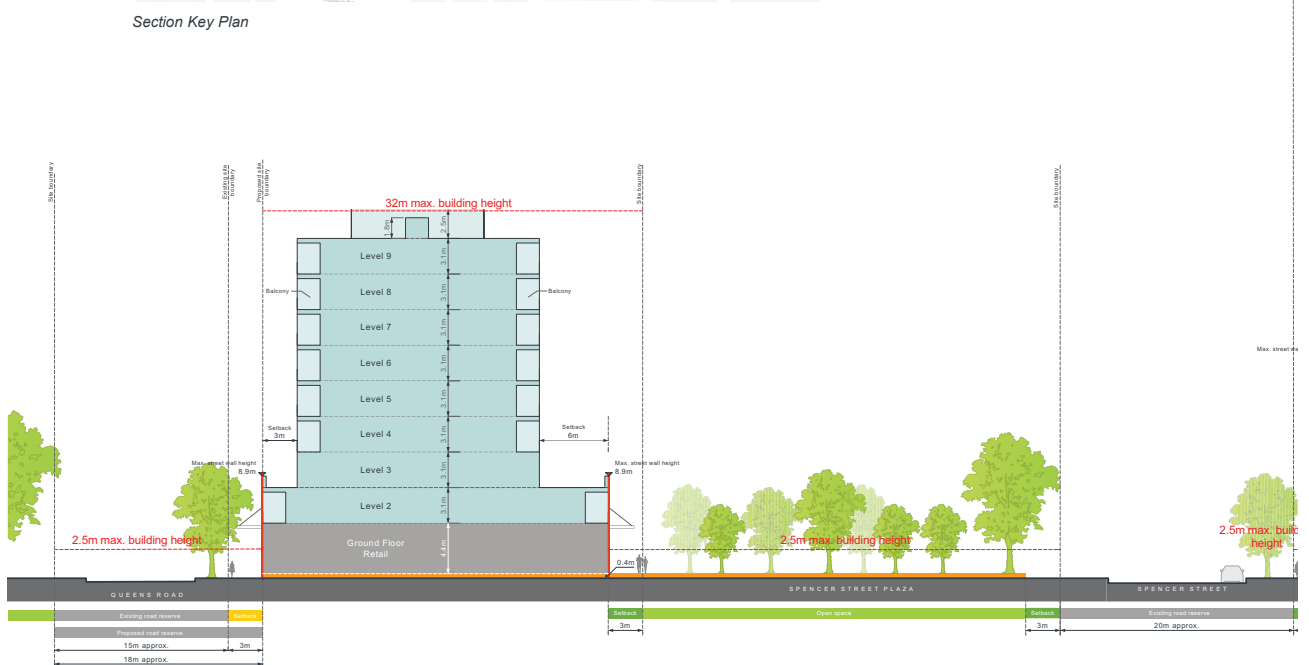


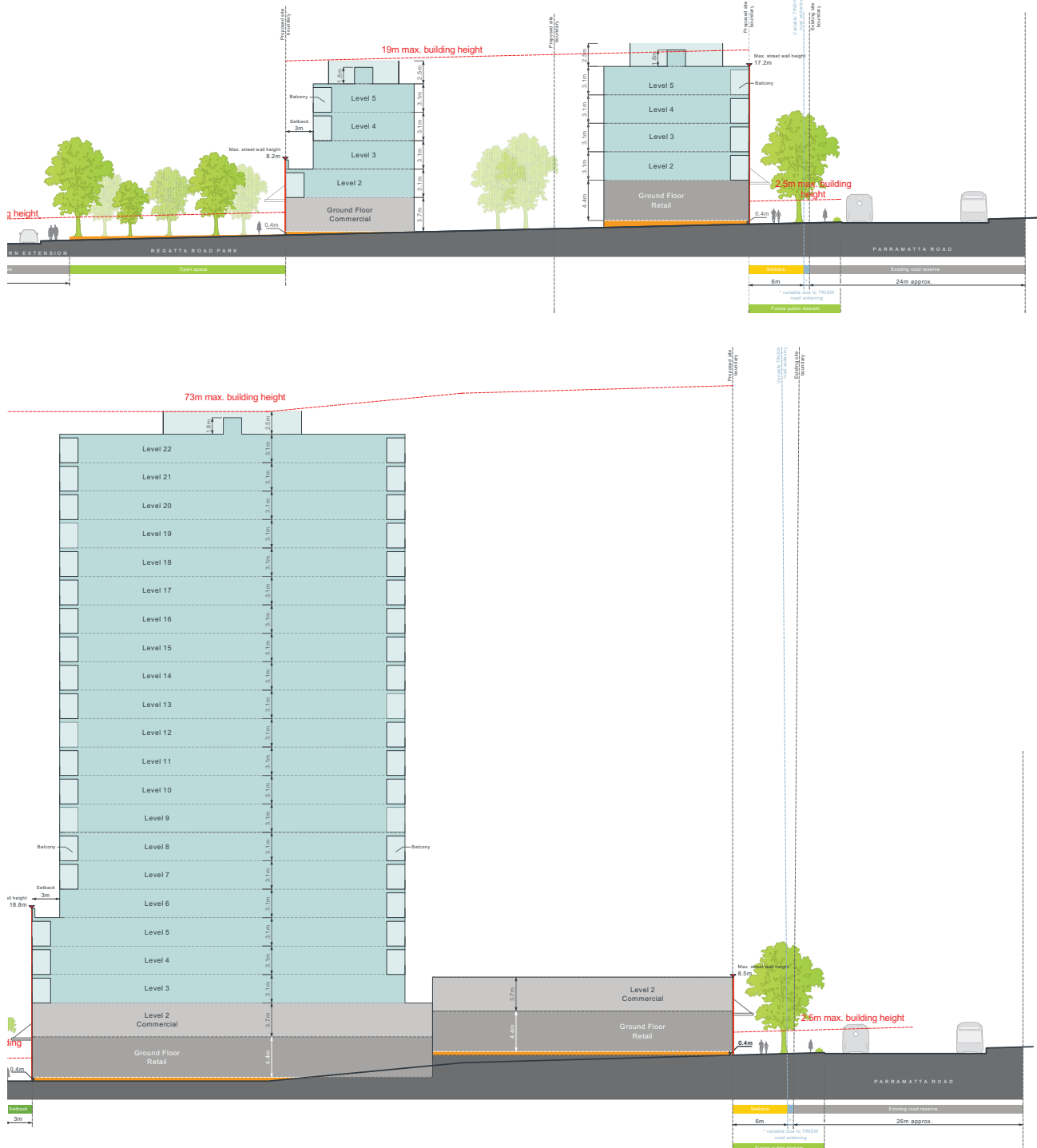
Figure K20-15 Built Form Envelope - Section B

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)

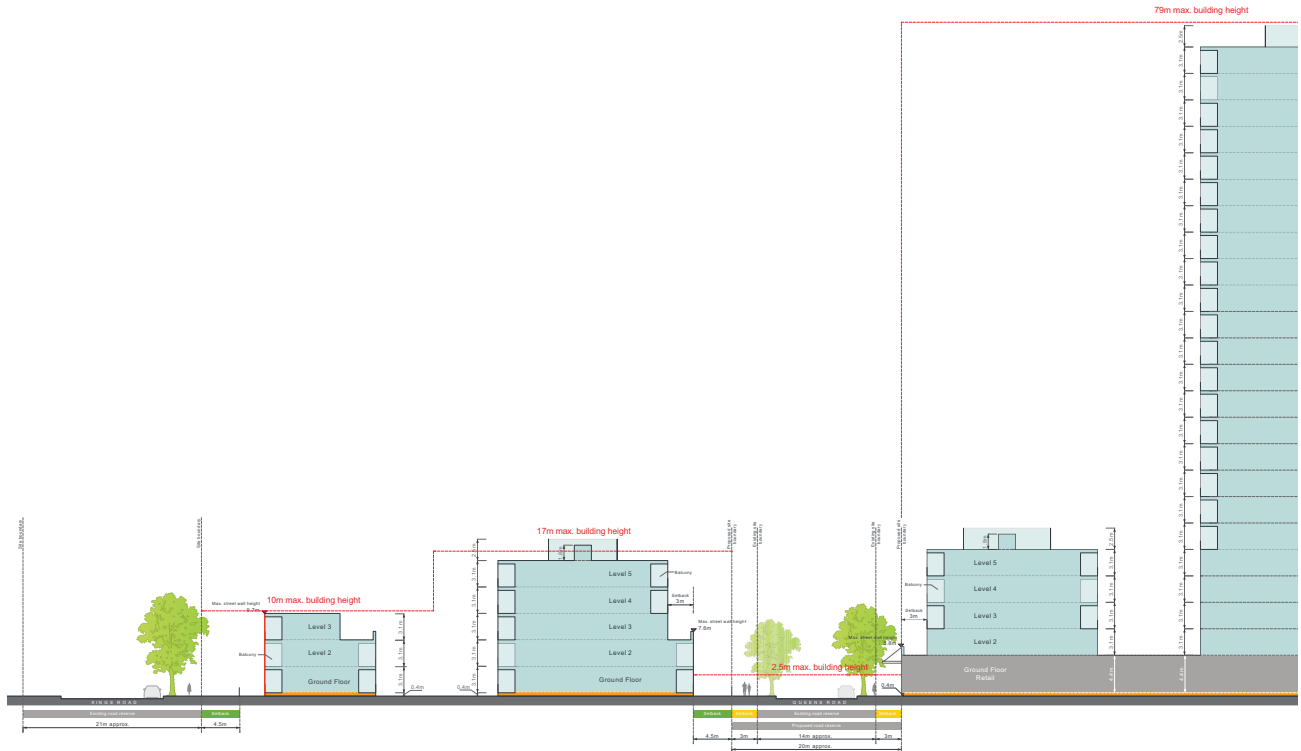


Figure K20-16 Built Form Envelope - Section C

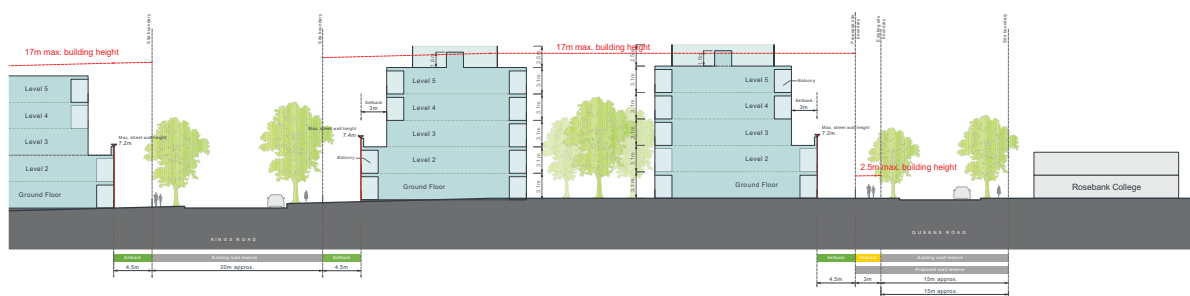


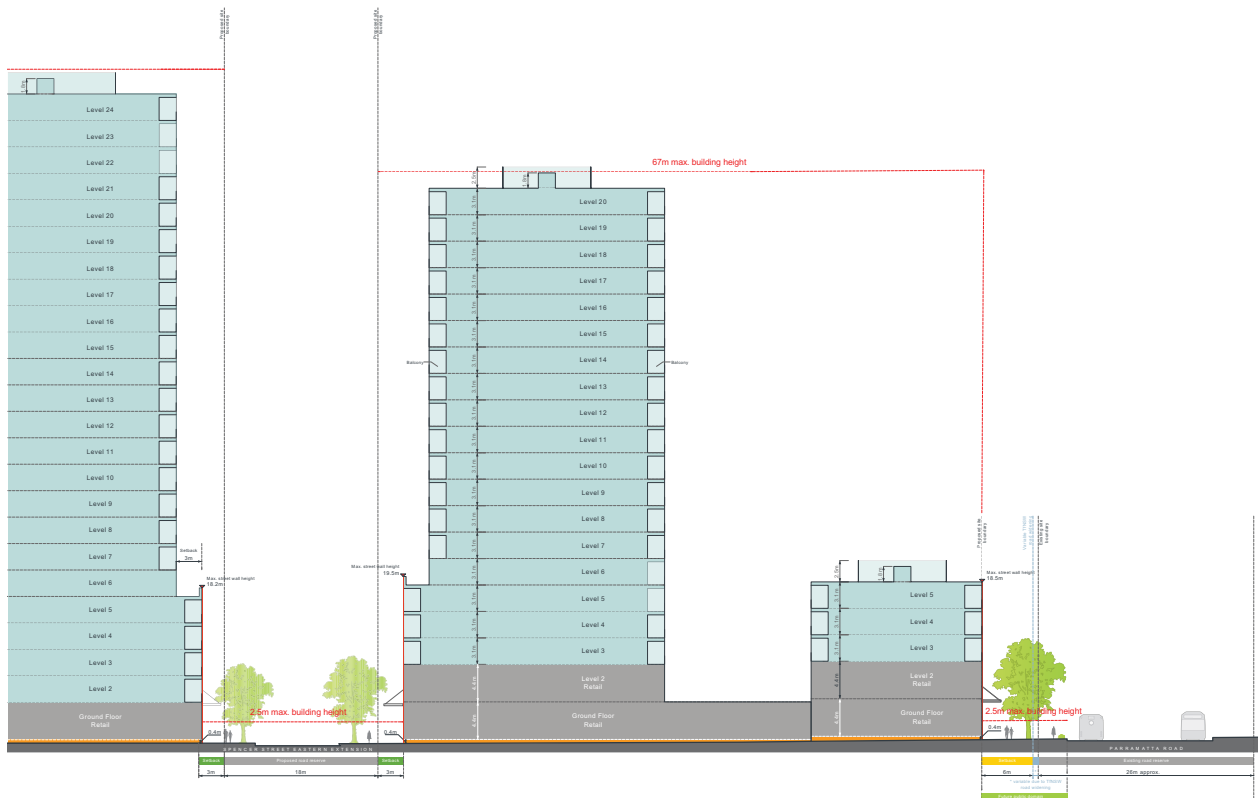
Figure K20-17 Built Form Envelope - Section D

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



Section Key Plan

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)

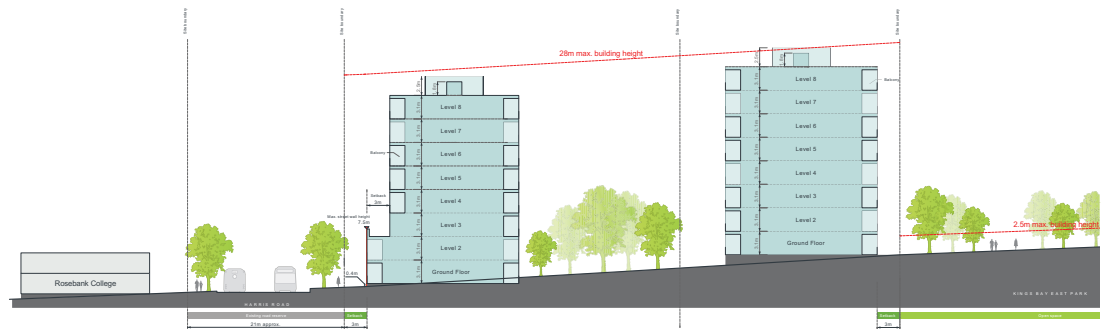


Figure K20-18 Built Form Envelope - Section E

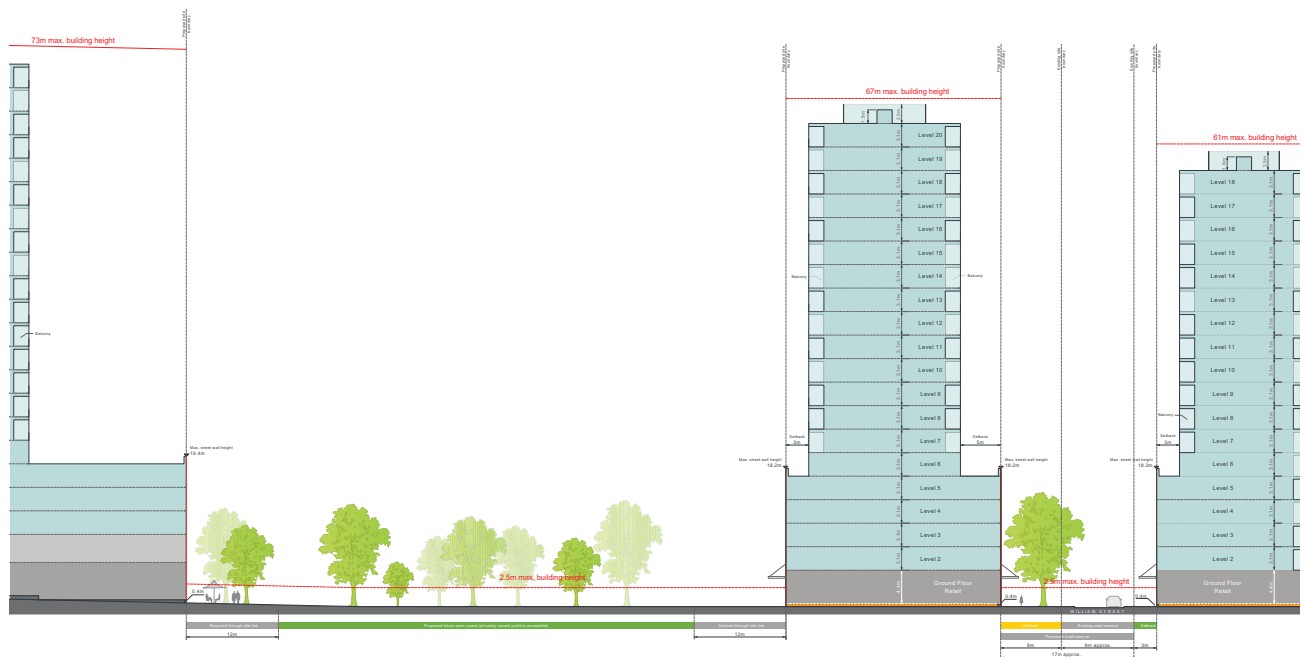


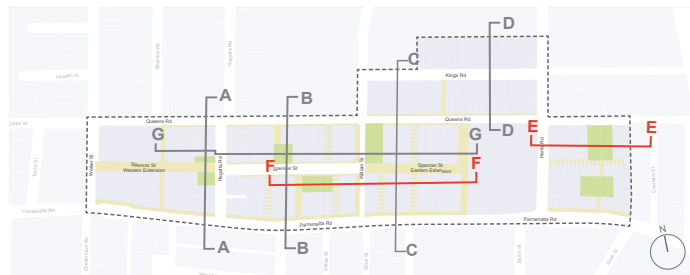
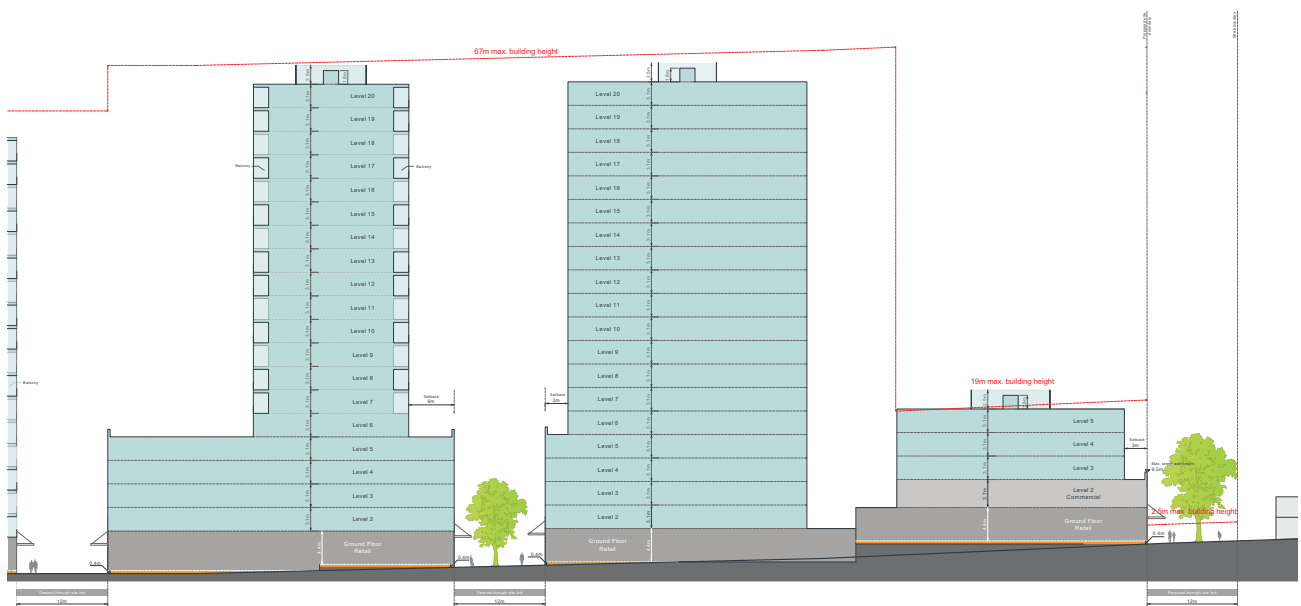
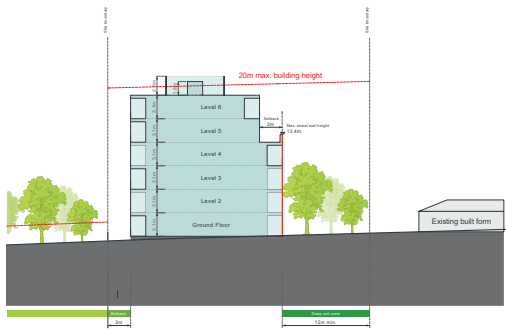
Figure K20-19 Built Form Envelope - Section F

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)

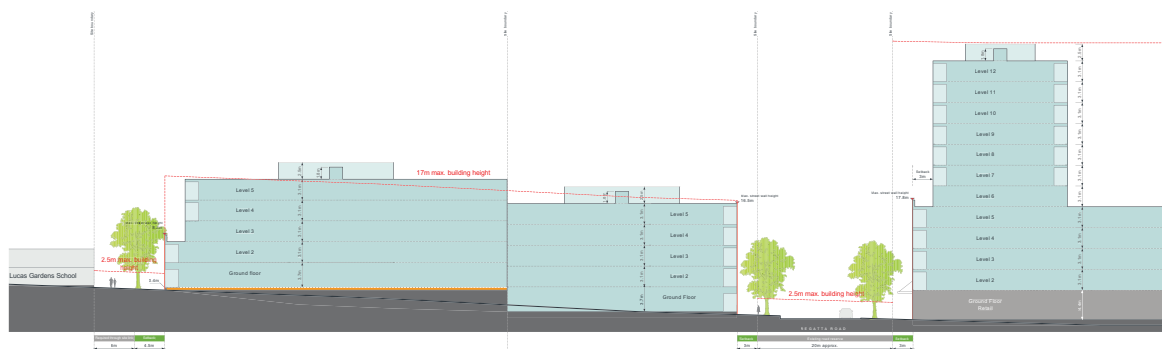


Figure K20-20 Built Form Envelope - Section G (west)

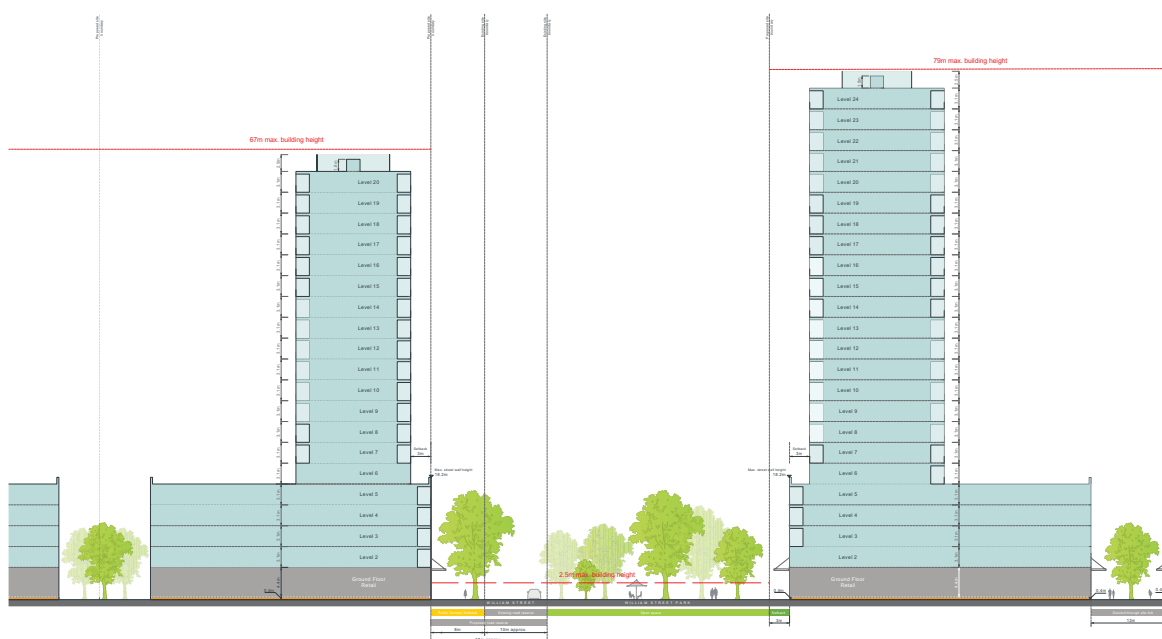


Figure K20-21 Built Form Envelope - Section G (east)

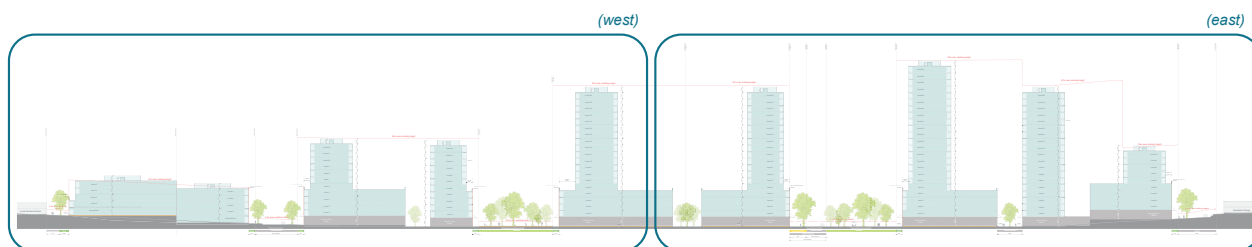


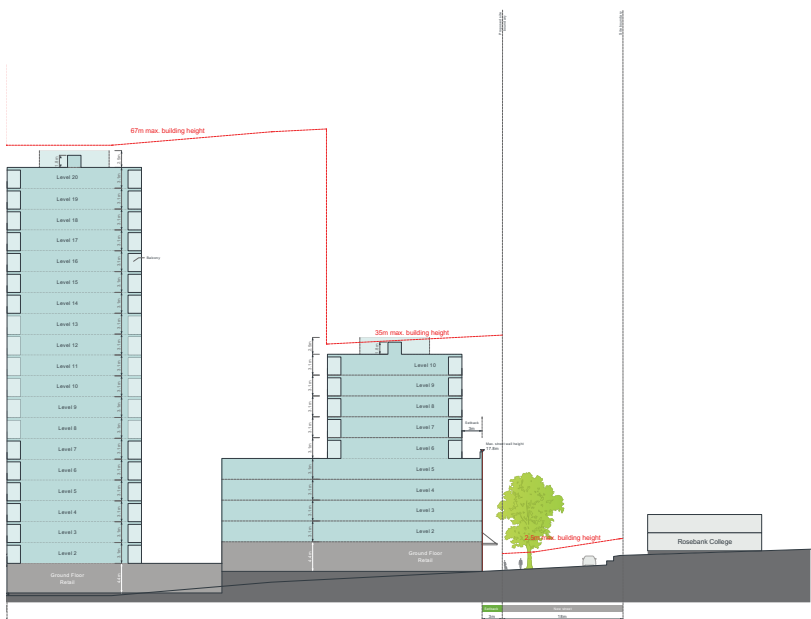
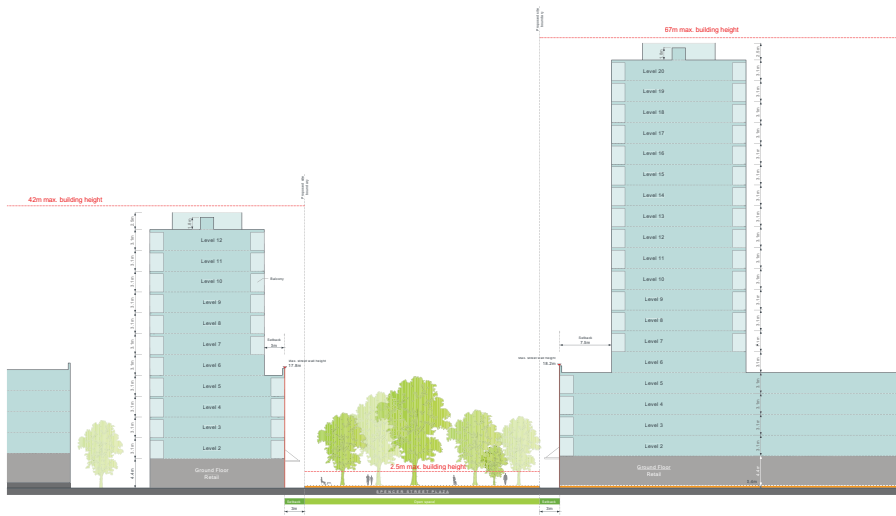
Figure K20-22 Built Form Envelope - Section G Key Section

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



Section Key Plan

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)

K20.11 Transitions and Interfaces

Changes in height and scale will require transitions to sensitive interfaces such as existing low scale residential areas, heritage items and open spaces. New development will be required to respond to the overall scale and form of existing elements to preserve visual scale and to minimise loss of outlook, and privacy and maximise sun access of adjoining properties.

Objectives

- O1 To encourage new development that is sensitive and complementary in scale and site location to surrounding properties.
- O2 To minimise the impact on the visual curtilage and setting of existing heritage items.
- O3 To protect residential amenity at the interface to existing low rise development.
- O4 To ensure streets and open spaces receive adequate sunlight and ventilation.

Controls

- | | |
|-----|--|
| C1. | Where adjacent to low density residential interfaces and heritage items, new development should gradually step away in height and provide appropriate setbacks as identified in Figure K20-23 and Figure K20-24 . |
| C2. | Development along 'sensitive interfaces' (opposite lower residential uses and/or heritage) pays particular attention to quality landscape and architectural detail along lower levels, and complies with the maximum building envelope identified in Figure K20-12 , Figure K20-13 , Figure K20-23 and Figure K20-24 . |
| C3. | Along all streets where future public domain is required to be delivered (such as the 'linear green edge' interface to Parramatta Road), development must comply with the primary and upper level setbacks shown in Figure K20-8 , Figure K20-9 , Figure K20-12 , Figure K20-13 and Figure K20-25 . The following applies: <ul style="list-style-type: none"> a) treatment of the setback area is designed to be an extension of the public footpath area, is publicly accessible 24/7 and focuses on pedestrian amenity; and b) the setback area maximises deep soil to allow for mature vegetation with trees provided as outlined in Section K20.18 <i>Landscape Design</i>. |

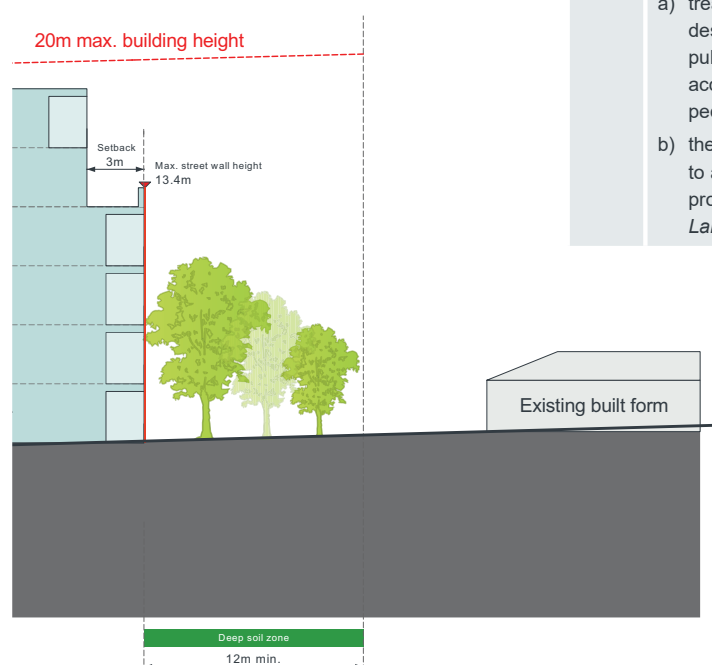


Figure K20-23 Interface to adjacent heritage and/or low rise residential

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

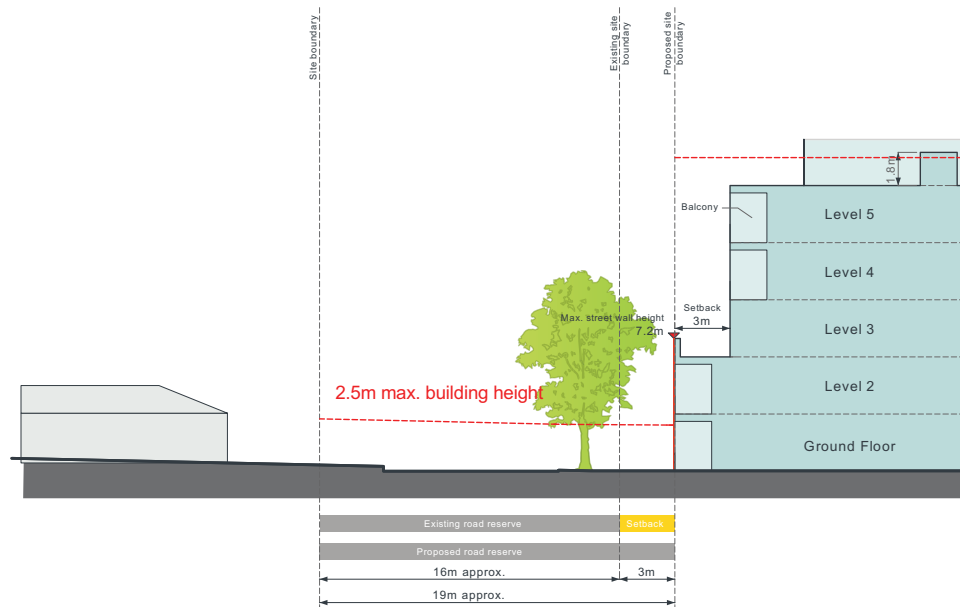


Figure K20-24 Interface to heritage and/or low rise residential across local street

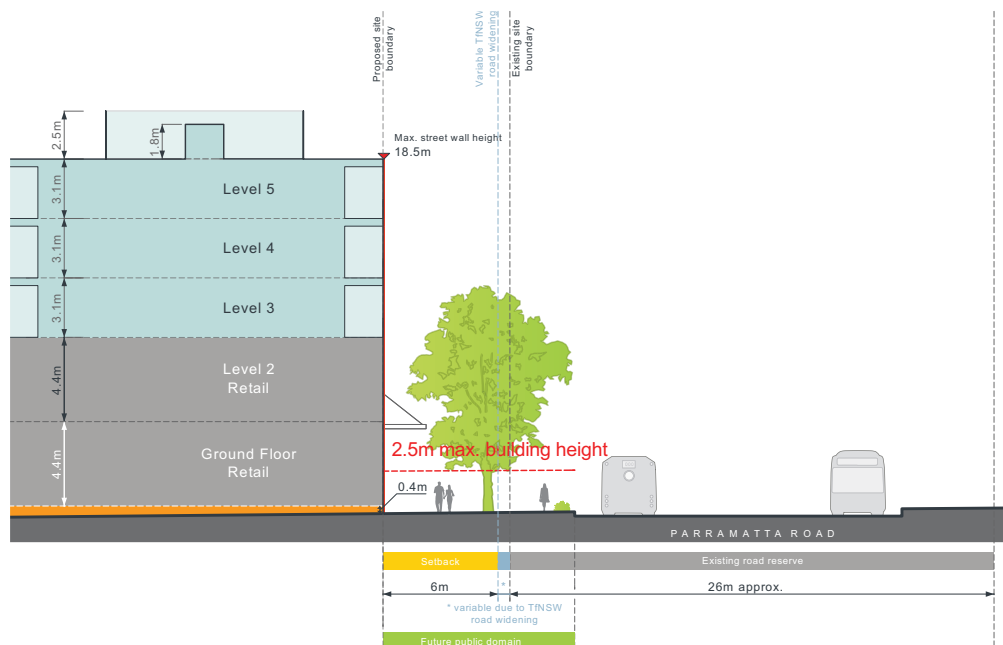


Figure K20-25 'Green edge' interface to Parramatta Road

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)

K20.12 Interactive Frontages

Within residential zones the design of the development plays an important role in encouraging pedestrian activity and enhancing public safety and security. Developments which allow passive surveillance, where people within buildings are able to overlook the street and where passersby are aware of 'signs of life', promote streetscape activity and local interactions. Multiple entries to residential dwellings which allow residents to physically access homes directly off the street also provide visual interest and encourage streetscape activity.

Objectives

- O1 To encourage new development that promotes activity on the street and enhances public safety and security.
- O2 To encourage new development that provides a high level of passive surveillance.
- O3 To ensure development provides a high quality visual experience and creates interest when experienced from a walking pace.
- O4 To ensure private spaces and entries facing the street are safe, attractive and comfortable to use.



Front semi-transparent fences and landscaped setbacks with tree planting contribute to the amenity of the streetscape and support a positive pedestrian experience.

Controls

C1.	Developments are to maximise the number of front doors and private spaces which are visible from the street. At a minimum there is to be a pedestrian entries and/or primary private open space overlooking the street every 15m.
C2.	Developments are to provide openable windows and balconies at upper levels that encourage views of the street.
C3.	Entries and private open spaces are encouraged within the 3m or 4.5m landscaped setbacks including a 1.5m wide strip of landscaping (see Figure K20-26 and Figure K20-27) and other controls including those identified in <i>Section K20.18 Landscape Design</i> are also to be met.
C4.	Deeper front setbacks (greater than 5m) are discouraged and landscaping and fences or structures higher than 0.9m within the front setback are not permitted.
C5.	All landscaping within the front setback is to maintain clear views from the footpath to the development.
C6.	Front fences are to be a maximum of 1.2m high and at least 50% is to be at least 50% transparent and enable a high level of passive surveillance.
C7.	Front terraces and entry areas are to be elevated by between 0.6m and 1.0m above the level of the street to improve privacy and increase opportunities for passive surveillance.
C8.	Development is to minimise services (i.e. substations, fire services and water services) located within the front setback, along the site frontage or on building facades.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

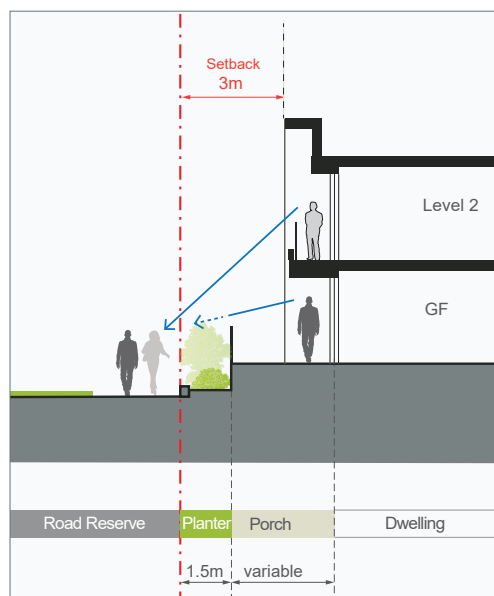


Figure K20-26 Indicative 3m front setback for residential ground floors



Landscaped setbacks with integrated entries and tree planting contribute to the residential streetscape.

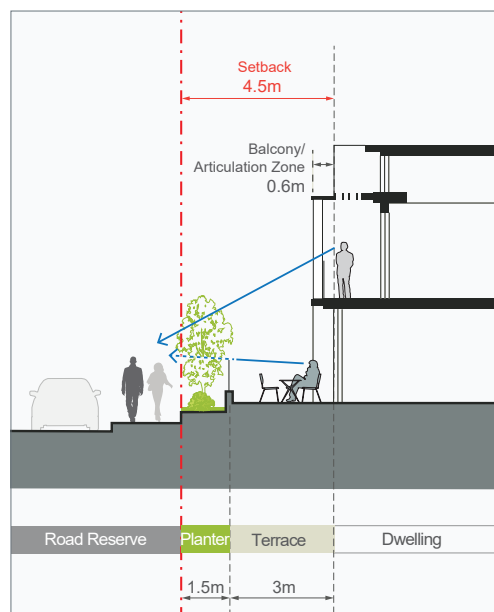


Figure K20-27 Indicative 4.5m front setback for residential ground floors



A low stone wall and visually permeable fencing provides privacy for ground floor units and passive surveillance of the street.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)

K20.13 Massing and Articulation

Detailed articulation and appropriate scale of built form defines and reinforces the identity and desired character of a place. The following architectural treatments are encouraged to create variety and interest in the streetscape while contributing to a sense of continuity and overall visual quality.

Objectives

- O1 To ensure buildings and their individual elements are appropriately scaled to define and respond to the surrounding character.
- O2 To add visual quality and interest to new buildings with a focus on breaking up massing of higher density forms when viewed from public places and neighbouring properties.

Controls

C1.	Buildings that are 3 storeys or more are to be designed so that they clearly articulate a base, middle and top.
C2.	Facades are articulated using techniques such as projections, recesses, eave overhangs and deep window reveals. Where development is set back at least 3m from the site boundary, elements can protrude up to 0.3m into the front setback (articulation zone).
C3.	The maximum length of straight wall on any storey above ground floor level, without articulation such as a balcony or return, is 15m.
C4.	New development is to place particular focus on creating a 'human scale' at the lower levels through the use of detailed design, insets and projections that create interest and, where relevant, the appearance of finer grain buildings.
C5.	Where frontages are more than 20m wide, building massing is also to be vertically articulated.
C6.	Vertical elements such as support walls and columns at the street level are ideally to be continued to the upper levels to support a vertical rhythm along the street.

C7.	For built form that is 3 storeys or more, the upper-most level is set back and visually unobtrusive. Ways to achieve this include the use of lightweight construction techniques, darker colours, solid balustrades and roof overhangs that create deep shadows.
C8.	Adjoining buildings are considered in terms of setbacks, awnings, parapets, cornice lines and facade proportions.
C9.	Roof plant, lift overruns, vents, carpark entries and other service related elements are integrated into the built form and complement the architecture of the building.
C10.	Buildings on corners address both streets and architectural elements are composed so that they 'turn the corner'.



Example of an building that is vertically articulated into two components and differentiates between base, middle and top

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20.14 Heritage and Fine Grain

A 'fine grain' of narrow lots provides a significant contribution to the character of the precinct and often includes traditional shop fronts, roofs with parapets, corner buildings and upper level verandahs. This historic pattern of elements creates a streetscape of character and, together with listed heritage items, should be retained and protected wherever possible.

Objectives

- O1 To ensure that development in the vicinity of heritage items is designed and sited to protect its heritage significance.
- O2 To avoid new development physically dominating and overwhelming heritage items.
- O3 To enable the consolidation of small individual lots into larger lots whilst ensuring the original subdivision pattern is represented.

Controls

- | | |
|-----|---|
| C1. | Development in the vicinity of a heritage item is to minimise the impact on the setting of the item by: <ul style="list-style-type: none"> a) providing an adequate area around the building to allow interpretation of the heritage item; b) retaining original or significant landscaping (including plantings with direct links or association with the heritage item); c) protecting, where possible and allowing the interpretation of archaeological features; and d) retaining and respecting significant views to and from the heritage item. |
| C2. | All development of and in the vicinity of a heritage item is to address the requirements of <i>Part C Heritage of the City of Canada Bay DCP</i> . |

- | | |
|-----|--|
| C3. | Alterations and additions to buildings and structures and new development of sites in the vicinity of a heritage item are to be designed to respect and complement the heritage item in terms of the building envelope, proportions, materials, colours and finishes, and building and street alignment. |
| C4. | Where additional storeys are proposed above a heritage building, the new front wall should be set back from the existing front building line by a minimum of 8m. |
| C5. | Where a finer grain existing subdivision is present and lot consolidation is proposed, the subdivision pattern and fine grain is to be interpreted in the architectural treatment of the facades, e.g. through building layout, composition, modulation and vertical articulation. |
| C6. | All development of, or in the vicinity of, heritage items must submit a heritage impact assessment as part of the DA. It should be noted that the assessment may lead to setbacks, building heights and built form modulation that may differ (are less than) the minimum provisions outlined in this DCP. |

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)

K20.15 Safety and Accessibility

The way in which buildings address streets, links and open space creates an important transition between public and private land. The careful design of this interface zone contributes to the liveliness, interest, comfort and safety of the public domain. Good accessibility to and from new development increases activity levels further and contributes to the visible activity in a neighbourhood.

Objectives

- O1 To ensure new development supports the wider neighbourhood and community safety and maximises opportunities for passive surveillance.
- O2 To encourage ground floor activities to spill out into the public domain and create a vibrant streetscape (active frontages).
- O3 To incorporate a high degree of accessibility into the design of new buildings and the public domain that considers the various mobility levels of future users, i.e. disabled and elderly.
- O4 To achieve good design and equitable access in flood planning areas.
- O5 To minimise hazards and property damage from flooding.
- O6 To create activated frontages on sites that also need to consider flooding impacts.

Controls

C1.	New development addresses and defines the public domain through entrances, lobbies, windows and balconies that overlook public spaces, maximising opportunities for passive surveillance.
C2.	The location and width of vehicle entries is to minimise impacts on the pedestrian network.
C3.	<p>All building entries are clearly visible from the public domain.</p> <p>Access is to be provided according to:</p> <ul style="list-style-type: none"> a) Active Frontages: at ground level unless it can be clearly demonstrated that it is unreasonable to meet this requirement and a suitable urban design outcome can be achieved which would be applicable in this specific instance only. b) Interactive frontages for residential development in the R3 Medium Density zone: at ground level and set in a landscaped front setback that is to be raised above natural ground level to between 0.6m and 1.0m.
C4.	To avoid blank walls and create visual interest, the maximum length of any wall at the ground floor level, without articulation such as a door or window is 5m.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Controls	
C5.	Residential uses on the ground floor can be raised to a maximum of 1.0m above the footpath level to improve internal privacy. Direct access from the footpath to individual dwellings is required wherever possible.
C6.	Front setback treatments incorporate safety considerations such as lighting after hours.
C7.	Front fencing for residential uses on the ground floor are to display an appropriate balance of visibility and outlook, informal surveillance of the street and privacy for residents and building users. Fences are to be a maximum height of 1.2m and at least 25% transparent. Solid walls are only acceptable to a maximum height of 0.6m.
C8.	Common areas for building users/ residents are encouraged within the front setback with seating facilities located close to the public footpath to encourage surveillance of the street, visible activity and social interaction.

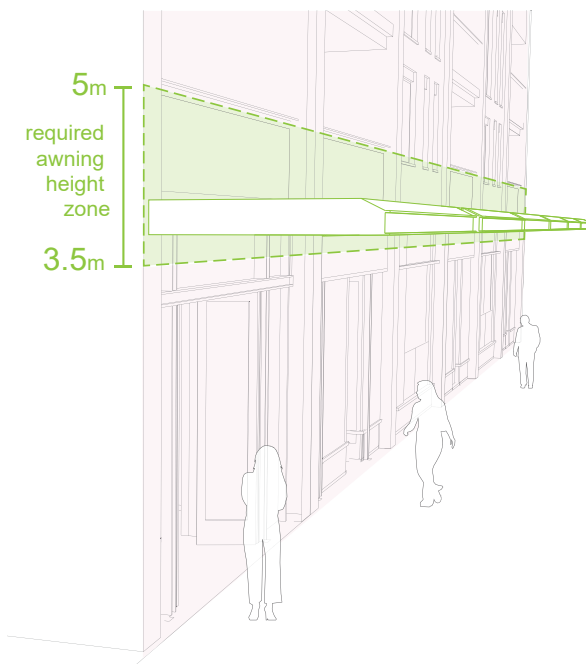


Figure K20-28 Awnings are to be between 3.5m and 5m above ground level along active frontages

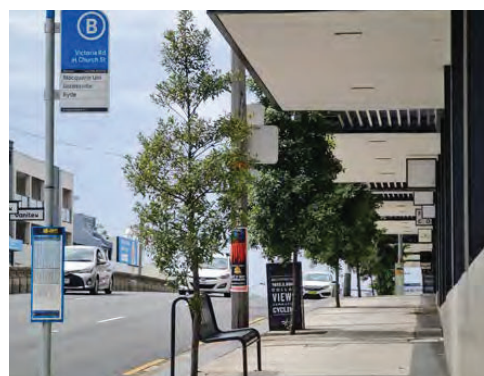


Figure K20-29 Awnings should be designed to allow for street tree planting

CITY OF CANADA BAY

Development Control Plan

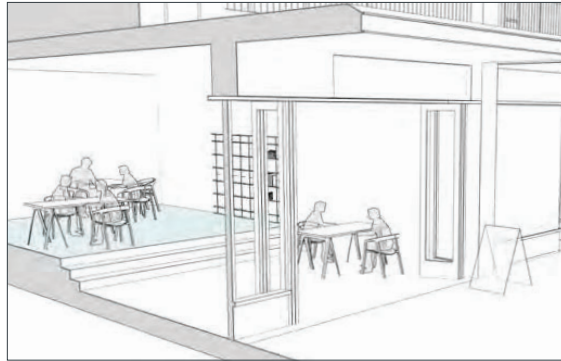
Part K

Special Precincts

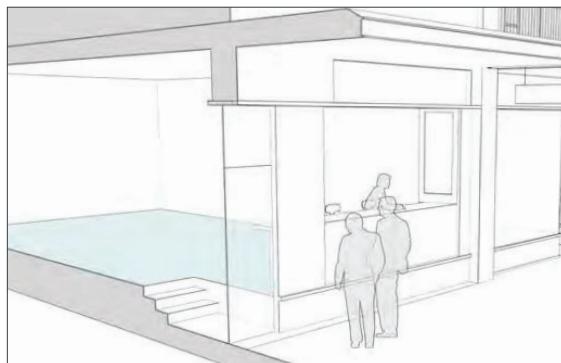
K20 Kings Bay (PRCUTS)

Controls

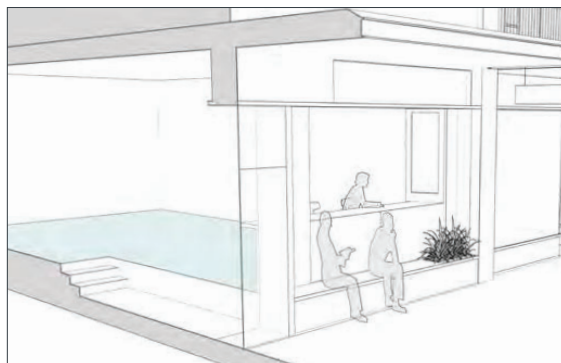
- | | |
|------|---|
| C9. | Active frontages are provided as identified in Figure K20-10 . |
| C10. | <p>Along active frontages:</p> <ul style="list-style-type: none"> a) the finished ground floor level is to match the footpath level; where this is not possible due to topography, the ground floor level is to be a maximum of 0.4m above the footpath, unless the building is located within an area vulnerable to flooding; b) in flood prone areas where the ground floor is elevated above the footpath or adjoining public open space, street activation is to be created by locating entries at footpath level, and with internal steps. Any elevated areas outside are to form an activated continuation of the interior and are not to create a visual barrier to the interior (see Figure K20-30). c) continuous awnings must be provided to shelter pedestrians from weather conditions; d) awnings should be designed to allow for street tree planting; e) awnings are to be between 3.5m and 5m above ground level (see Figure K20-28); f) consistent paving, street furniture, signage, planting and lighting is desirable; and g) design guidance in Figure K20-11 is applied where possible with long expanses of floor to ceiling glass prohibited. |



Building entry at street with internal steps/ ramp/ retractable stair/ lift system to elevated floor above flood level



Elevated active areas against the street boundary



Elevated active areas against the street boundary with integrated seating

Figure K20-30 Strategies to achieve street level activation in flood prone areas

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

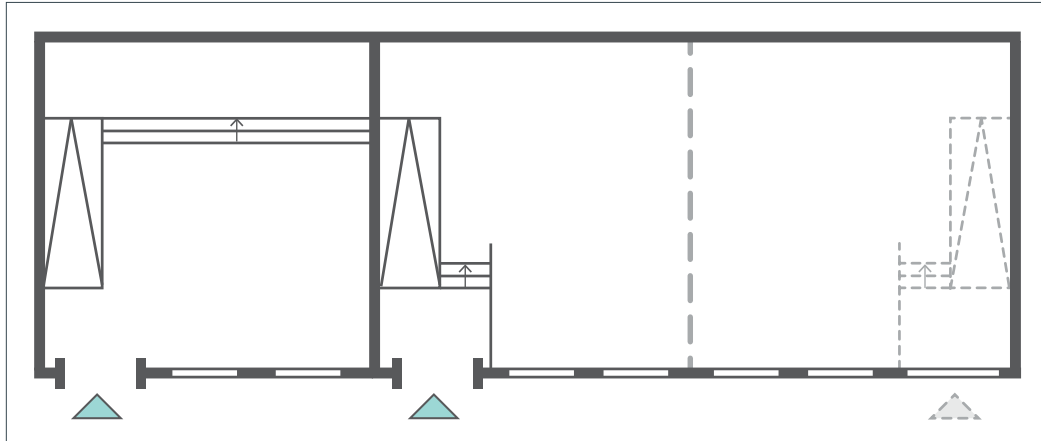


Figure K20-31 Example of design options that provide street activation and flexibility for future changes in a flood zone.
The right-hand tenancy has been designed to allow future subdivision, including a new doorway and internal transition area.

CITY OF CANADA BAY

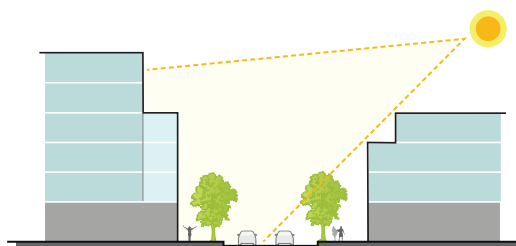
Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)

K20.16 Amenity



New housing and employment uses need to provide a high level of amenity for future residents and building users. At the same time, development is required to protect and where possible enhance the quality of the public domain and adjoining private properties. The following controls seek to help maximise privacy, solar access and outlook for all. This section also identifies design treatments to mitigate air quality and noise impacts for development along Parramatta Road.

Objectives

- C1. To minimise the impact of new development on the outlook, privacy and sun access of adjoining properties.
- C2. To minimise overshadowing of streets, links and public open spaces.
- C3. To protect building users from negative impacts (noise, air quality, vibration) from Parramatta Road.

Controls

C1.	Siting and built form configuration optimises solar access within the development and minimises overshadowing of adjoining properties.
C2.	Taller elements of built form are oriented north-south where possible. The height and modulation of east-west buildings allows solar access to courtyard spaces (where courtyards are appropriate).
C3.	Louvres, shading devices and windows are able to be operated by buildings users where possible, to allow building occupants to regulate climatic conditions rather than rely solely on mechanical systems.
C4.	Development along Parramatta Road is to consider the provisions of the <i>State Environmental Planning Policy (Infrastructure) 2007</i> and <i>Development Near Rail Corridors and Busy Roads Interim Guidelines</i> and the design approaches illustrated in Figure K20-32 .
C5.	For residential components of new development, noise sensitive areas (living rooms, bedrooms) are located away from Parramatta Road where possible.
C6.	Windows located towards Parramatta Road are double-glazed (or use laminated glazing) and have acoustic seals.
C7.	Habitable rooms (excluding balconies) are to be designed to achieve internal noise levels of no greater than 50dBA.

CITY OF CANADA BAY

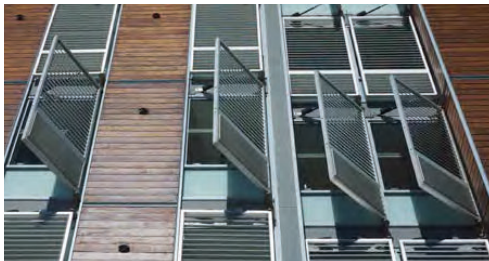
Development Control Plan

Part K

Special Precincts



Example of a public square with good solar access, seating facilities and active frontages.



All building users should have the opportunity to open windows and operate privacy screens and sun shading devices.

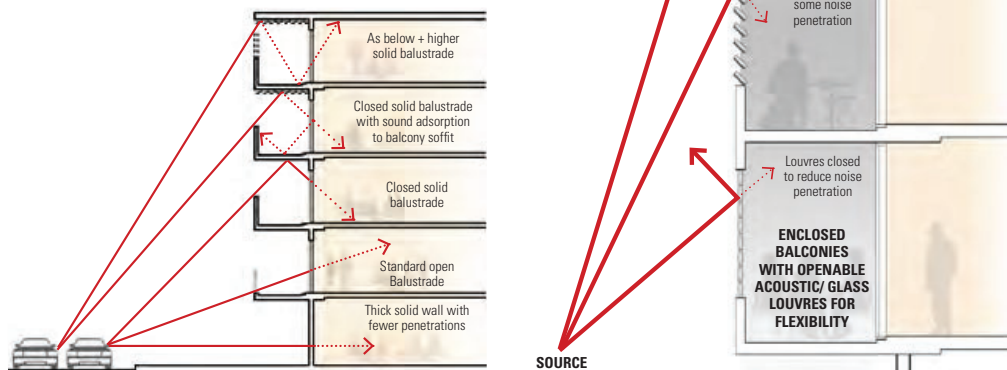


Figure K20-32 Noise mitigating facade treatments

(Source: Development Near Rail Corridors And Busy Roads Interim Guideline, NSW)

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)

K20.17 Appearance

The design of buildings contributes to the streetscape character and adds visual richness, complexity and interest. In addition, the selection of signage, materials, finishes and colours should have regard to compatibility to the surrounds and consider robustness, durability and ease of maintenance.

Objectives

- O1 To ensure building exteriors positively contribute to the desired future character of the area and streetscape.
- O2 To respect and reflect the area's history as an industrial precinct with building finishes, fixtures and detailing that are compatible with Kings Bay's industrial character.
- O3 To ensure that signage is integrated and not detrimental to the local character by limiting its cumulative impact with other signage.



Example of balconies with a balance of solid and void in the facade composition and treatment.

Facade design

Controls

- | | |
|-----|---|
| C1. | The composition of facades balances solid and void elements and does not display large areas of a single material, including reflective glass. |
| C2. | External walls are constructed of high quality and durable materials and finishes with low maintenance attributes ('self-cleaning') such as face brickwork, rendered brickwork, stone, concrete and glass. |
| C3. | Any blank sidewalls (including temporary walls that may be covered in the future) that are visible from the public domain are designed as an architecturally finished surface that complements the main facade. |
| C4. | Visually prominent elements such as balconies, overhangs, awnings, and roof tops are to be of high design quality. |
| C5. | Roof plant, lift overruns, utilities, vents and other service related elements are to be integrated into the built form design and complementary to the architecture of the building. |
| C6. | Materials and finishes are to be consistent with late 19th century and early 20th century industrial and warehouse buildings, which typically included: <ul style="list-style-type: none"> • Internal walls of exposed face brickwork, rendered or painted brickwork, or sandstone. • Floors typically of timber or concrete. • Windows were either timber or steel-framed. • Street frontages and window surrounds were typically of exposed face brickwork, rendered or painted brickwork, or sandstone. • High ceilings, with exposed structural elements and utilities (pipes, ducts and vents), that reflect the original functions that required clearance or storage space. |

CITY OF CANADA BAY

Development Control Plan

Part K

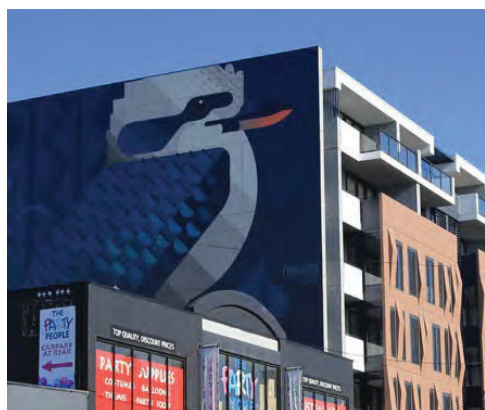
Special Precincts

Signage and advertising

Controls	
C7.	Signage is to comply with the requirements of State Environmental Planning Policy No 64-Advertising and Signage. Also refer to requirements in the <i>City of Canada Bay DCP Part I Signage and Advertising</i> .
C8.	Signage is to be integrated into the overall architectural design. Advertising signs should complement the design of buildings and the overall character of the precinct. Signage must relate to an approved use on the site.
C9.	The main facades of buildings from the first floor to the rooftop or parapet are to be uncluttered and generally free of signage.
C10.	Freestanding signs are not to be located on the top of buildings and should not impact on the skyline when viewed from the street. Signs painted on or applied to the roof of a building are not permitted.



Contemporary use of face brickwork



Blank sidewalk temporarily covered with public art

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)

K20.18 Landscape Design

Landscape design plays an important role in the successful integration of new development into the surrounding streetscape and context. It enhances the appearance and amenity of the area, provides for recreation, preserves biodiversity and improves micro-climatic conditions.

Landscape and built form need to be designed together and landscaped areas should not be generated by 'left-over spaces' resulting from building siting. A portion of the landscaped area is required to be deep soil suitable for the growth of mature trees and vegetation.

Objectives

- O1 To promote high quality landscape design as an integral component of the overall design of new development, softening the appearance of buildings.
- O2 To improve the local micro-climate, native fauna and flora habitats and control climatic impacts on buildings and outdoor spaces.
- O3 To allow adequate provision on site for infiltration of stormwater, deep soil tree planting, landscaping and areas of communal outdoor recreation.

Precinct Wide

Controls

C1.	Existing street trees and landscape features are to be retained wherever possible. All 'significant trees' that are identified as either High Significance or Medium Significance in the PRCUTS Public Domain Plan are to be retained and assessed by a suitably qualified Arborist. Refer also to CCB DCP Part B General Controls, <i>B6.10 Urban Tree Canopy</i> and <i>Australian Standards - AS 4970-2009 Protection of Trees on Development Sites</i> .
C2.	The layout and key design features of all parks and plazas are to be as per the PRCUTS Public Domain Plan
C3.	Landscape design complements the proposed built form and minimises the impacts of scale, mass and bulk of the development in its context.

C4.	Landscape design highlights architectural features, defines entry points, indicates direction, and frames and filters views from and into the site.
C5.	For development along Parramatta Road, a minimum of 1 canopy tree per 10m of length of frontage is to be planted in the 'green edge' setback area, capable of reaching a mature height of at least 10m.
C6.	For development along all other streets (excluding active frontages) a minimum of 1 canopy tree per 12m of frontage is to be planted. New trees are to be capable of a mature height of at least 6m.
C7.	Where surfaces on rooftops or podiums are used for community open space, the development must demonstrate at least 50% of the accessible roof area is shaded by a shade-structure or covered with vegetation, including tree canopy.
C8.	Where surfaces on rooftops or podiums of Residential flat buildings, Shop top housing or Commercial premises are not used for community open space, for example solar PV or heat rejection, the development must demonstrate at least 75% of the remaining roof area or podium is covered in vegetation, including tree canopy.
C9.	A minimum of 40% projected tree canopy coverage on publicly accessible streets and laneways, unless it can be clearly demonstrated that it is unreasonable to meet this requirement and a suitable urban design outcome can be achieved which would be applicable in this specific instance only.
C10.	A minimum of 75% projected tree canopy coverage shall be achieved for all parks.
C11.	Adequate soil volume is to be provided for the tree species. In areas where deep soil is restricted, opportunities for structural soil or under paving vault systems should be included to meet these requirements. Where the building setback is 1.5m or less, additional uncompacted soil volumes are to be provided under pavements to provide the soil volumes suitable for the tree species.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Controls

C12.	Tree planting is to be prioritised in the planning and design of all public domain areas and, where possible, utilities to be bundled, undergrounded and located away from tree planting areas.
C13.	Tree species are to be selected for their respective micro-climatic suitability and need to provide a high level of urban amenity, noting that the duration and density of overshadowing from buildings will impact the growth and species suitability.
C14.	<p>A landscape architect to be engaged to ensure that:</p> <ul style="list-style-type: none"> the architectural planning, building footprint and basement engineering result in adequate deep soil zones and podium planter boxes. the deep soil zones are located in areas where canopy and landscape outcomes will best serve the future users and general architectural amenity. species selection considers site suitability, shade requirements of any communal open space and solar access into internal building spaces.

Mixed Use Zone

Controls

C15.	A minimum of 15% projected tree canopy coverage shall be achieved for all private land (i.e. non-public) developments. This shall be measured as the projected square metre canopy of the trees using reasonable estimates of the mature size of the chosen trees.
C16.	Trees are to be planted in sufficient deep soil to support them to maturity (refer to PRCUTS Public Domain Plan for soil volumes). A tree shall be as defined by this DCP.
C17.	Tree coverage may include trees planted at ground level as well as any trees planted in upper levels of buildings, such as podiums and roofs. It may also include any canopy overhanging from an adjoining public domain area.

Residential Zones

Controls

C18.	Development consent must not be granted unless the development achieves at least 25% canopy cover across the site, identified on the landscape plan and measured by the extent of canopy at maturity.
C19.	Native species must comprise at least 75% of the plant schedule, incorporating a mix of locally native trees, shrubs and groundcovers appropriate to the character of the area (see CCB DCP Appendix 3 for further details).
C20.	<p>A minimum of 30% of the total site area is to be provided as landscaped area.</p> <p><i>Refer to Landscaped Area definition in this DCP.</i></p>
C21.	50% of the required landscaped area is to be deep soil with deep soil planting (trees and shrubs) and a preference for native species.
C22.	Calculation of landscaped and deep soil areas is not to include any land that has a length or a width of less than 1.5m.
C23.	<p>Trees and vegetation provide a high degree of amenity and environmental benefit. Their selection and location should:</p> <ol style="list-style-type: none"> Provide shade in summer and sun access in winter to building facades and public and private open spaces; Reduce glare from hard surfaces; Channel air currents into built form; and Provide windbreaks, screen noise and enhance visual privacy where desirable.
C24.	For residential development in the R3 Medium Density zone, at least 50% of the front setback area is required to be deep soil.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)

K20.19 Sustainability and Resilience

To create sustainable, resilient and affordable communities along the Corridor, the PRCUTS identifies that the following three key areas of intervention should be pursued:

- 1) High performance buildings;
- 2) Reduced and decoupled strategic parking; and
- 3) Urban resilience and infrastructure delivery.

Further details are provided in the Parramatta Road Corridor Sustainability Implementation Plan and should be considered when assessing proposals.

Objectives

- O1 To deliver world leading urban transformation of the precinct by exceeding current sustainability requirements.
- O2 To mitigate the impacts of climate change on key infrastructure and assets.

Controls

- | | |
|-----|---|
| C1. | A residential flat building or a mixed use development (that contains dwellings) which complies with Table K20-1 is eligible for an amount of additional residential floor space (above that already permitted elsewhere under this Plan) equivalent to that which exceeds the floor space ratio as shown on the Floor Space Ratio Map or Incentive Floor Ratio Map (as applicable to that development) by up to 5%, subject to the consent authority being satisfied that this additional residential floor space does not adversely impact on neighbouring and adjoining land in terms of visual bulk and overshadowing. |
| C2. | Future development should demonstrate consistency with the smart parking strategies and design principles outlined in <i>Section K20.20 Access and Parking</i> . |

- | | |
|-----|--|
| C3. | Public domain and buildings shall be designed to reduce localised heat created by the urban heat island affect by: <ol style="list-style-type: none"> a) maximising canopy cover along all streets, particularly along Parramatta Road, Queens Road, Spencer Street and Spencer Street extension; b) developments within the R3 zone are to provide at least 25% canopy cover across the site, identified on the landscape plan and measured by the extent of canopy at maturity; c) maximising the use of vegetation on buildings, including above ground parking facilities; d) encouraging vegetation, green roofs, green walls and materials with a high solar reflectance index on at least 50% of the surfaces of all buildings with western and northern building facades; and e) complying with landscape DCP guidelines within <i>Section K20.18 Landscape Design</i>. |
| C4. | Flow rates from the site should not be more than pre-development site discharge. |
| C5. | Stormwater run-off quality should seek to reduce annual loads of: <ol style="list-style-type: none"> a) total Nitrogen by 45%; b) total Phosphorus by 65%; and c) total suspended solids by 85%. |
| C6. | All new streets should implement water sensitive urban design treatments at the point source across all catchment areas. |
| C7. | Development consent must not be granted unless the building, or part of a building, contains both potable water pipes and recycled water pipes for the purposes of all available internal and external water uses. |

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Table K20-1 Energy and Water Targets by Use

Use	Energy Target	Water Target
Residential		
<14 storeys	BASIX Energy 50	BASIX Water 50
15 - 29 storeys	BASIX Energy 40	
30 - 39 storeys	BASIX Energy 35	
40+ storeys	BASIX Energy 30	
Commercial and Retail Development < 10,000m² GFA*		
Smaller scale non-residential development is governed by the National Construction Code, and should demonstrate consistency with relevant requirements of the Code.		
Commercial Development ≥ 10,000m² GFA*		
Base building and/or individual tenancies	NABERS 5-star	NABERS Water 4-star NABERS Water 5-star should be pursued where recycled water is available
Shopping Centre Development*		
Base building only	NABERS 5-star	NABERS Water 4-star NABERS Water 5-star should be pursued where recycled water is available

*Source: PRCUTS Planning and Design Guidelines, Urban Growth, Nov 2016



Maximising canopy cover significantly improves the micro-climate and supports active transport choices.



All new streets and pedestrian/ cycle links should implement water sensitive urban design treatments (WSUD).

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)

K20.20 Access and Parking

The location of car parking has a significant impact on pedestrian safety and the quality of the public domain. Vehicle access points need to be integrated carefully to avoid potential conflicts with pedestrian movement and the desired streetscape character.

Objectives

- O1 To transition to lower car ownership and support the uptake of walking, cycling and public transport use.
- O2 To minimise the visual impact of car parking areas and vehicle access points.
- O3 To minimise conflicts between pedestrians and vehicles on footpaths, particularly along pedestrian desire lines such as Spencer Street.

Parking and access design

Controls	
C1.	Vehicular access points minimise visual intrusion and disruption of the streetscape, emphasise the pedestrian experience and maximise pedestrian safety.
C2.	The width and height of vehicular entries is kept to a minimum. Roller doors or gates should be integrated with the architectural design of the development. Vehicular entry/exit points are to be recessed by at least 0.5m behind the building line.
C3.	The public footpath treatment is to be continued across driveways to create a threshold, signal pedestrian priority and slow vehicle speeds.
C4.	Vehicle access points are not permitted along active street frontages that are identified as Vibrant and are to be minimized on Friendly and Mixed Facades. Where rear or side access is not possible, development without parking will be considered.

C5.	At grade parking is not permissible within any of the setback zones and, only if unavoidable due to proximity to the Metro tunnel, is to be sleeved with active uses to shield the car parking from the street.
C6.	Parking is to be designed to be 'adaptable' and able to be converted to other uses in the future. Underground car parking and basement spaces are to have a minimum floor to floor height of 3.7m to be able to be converted to commercial uses. At ground level parking areas are to have a minimum floor to floor height of 4.4m to be able to be converted to retail uses. Above ground parking areas are to have a minimum floor to floor height of 3.7m (second floor level) to be able to be converted to commercial uses, or 3.1m-3.7m (above second floor level) to be able to be converted to commercial or residential uses.
C7.	Where unavoidable due to topography, basement parking can only protrude above natural ground level by a maximum of 0.4m in R4 zone and 1.0m in R3 zone. Car parking cannot protrude into the front setback area within an R3 zone.
C8.	Parking is not permitted to be visible from streets and open spaces. Access to parking via a driveway, lane or basement carpark entry is permitted if one access point services a minimum of 5 dwellings. Front garages, carports and individual driveways are not permitted.
C9.	Development sites are encouraged to provide below-ground car parking that is interconnected to and shared with, or is able to be interconnected in the future to, the below-ground car parking on adjoining sites and developments In order to facilitate rationalisation of vehicle entry points and to increase future planning flexibility.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Car parking

Controls	
C10.	Off street parking is to be provided in accordance with the maximum rates identified in (residential uses) and (non-residential uses).
C11.	On-street parking to be integrated to the streetscape and parallel to the kerb.
C12.	Parking is to be listed on a separate title (unbundled) from the development.

Shared parking

Controls	
C13.	Shared parking rates should be provided in accordance with the occupancy rates provided in Table K20-2 . Shared parking is parking shared by more than one user, which allows parking facilities to be used more efficiently.
C14.	Parking requirements for non-residential uses may be shared and potentially reduced where it can be determined that the peak parking requirements occur at different times (either daily or seasonally). Parking rates for shared parking shall be calculated by applying the occupancy rates in Table K20-2 to the maximum parking requirements for a proposed use.

Table K20-2 Shared Car Parking Rates

Building Use	Mon - Fri 8am - 5pm	Mon - Fri 6pm - 12am	Mon - Fri 12am - 6am	Weekend 8am - 5pm	Weekend 6pm - 12am	Weekend 12am - 6am
Industrial	100%	20%	5%	5%	5%	5%
Commercial	90%	80%	5%	100%	70%	5%
Hotel	70%	100%	100%	70%	100%	100%
Restaurant	70%	100%	10%	70%	100%	20%
Theatre	40%	80%	10%	80%	100%	10%
Entertainment	40%	100%	10%	80%	100%	50%
Conference	100%	100%	5%	100%	100%	5%
Institutional	100%	20%	5%	10%	10%	5%
Church	10%	5%	5%	100%	50%	5%

Source: PRCUTS Planning and Design Guidelines p45, Urban Growth, Nov 2016

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)

Car share and ride share

Controls	
C15.	On-site parking can be reduced at a rate of 5 parking spaces per 1 car share space where an active car-sharing program is made available to residents and/ or employees and where ride share or other organised car pooling initiatives are available on site.
C16.	Additional car share should be provided at a rate of 1 space per 20 dwellings without parking and 1 space per 100 dwellings with parking.
C17.	Car share will be located in publicly accessible sites, either on-street, in public parking stations or, if provided within a building it should be accessible to all car share members.
C18.	The following car share targets have been established for the precinct: <ul style="list-style-type: none"> • 10% - 15% of residents by 2031 • 15% of residents by 2050.

Parking rates

Controls	
C19.	For parking rates, refer to clause 8.11 of the Canada Bay LEP 2013 and Part B of this DCP.

Bicycle parking

Controls	
C20.	For bicycle parking controls, Refer to <i>DCP Part B - General Controls, B3.6 Bicycle parking and storage facilities</i> ; and <i>B3.7 End of trip facilities</i> .

Electric vehicles

Controls	
C21.	Refer to <i>DCP Part B - General Controls, B3.8 Electric Vehicles</i>

Common loading docks and service vehicle parking

Controls	
C22.	Refer to <i>DCP Part B - General Controls, B3.9 Common loading docks and service vehicle parking</i> .

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Freight and service access

Controls	
C23.	Freight and service vehicle rates should be provided in accordance with Table K20-3 .
C24.	Vehicle access including for freight and service vehicles is not permissible off Parramatta Road

C25.	Commercial and medium/ high density residential developments are to have common loading docks and facilities for freight and service vehicles, including trades, home deliveries etc.
C26.	Loading docks for freight and service vehicles are to be located off-street and underground.
C27.	Loading docks and facilities are to be located and designed to minimise the impact of freight and service vehicle movements on the area.

Table K20-3 Freight and service vehicle rates

Land Use	Space required
Residential development	1 space per 50 apartments for first 200 apartments plus 1 space per 100 apartments thereafter
Commercial offices	1 space per 4,000m ² GFA for first 20,000m ² GFA and a space per 8,000m ² GFA thereafter
Retail	1 space per 500m ² for first 2,000m ² and 1 space per 1,000m ² thereafter (50% of spaces for trucks

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K20 Kings Bay (PRCUTS)

K20.21 Housing Diversity

A mix of dwelling types in the precinct will provide greater housing choice and support equitable housing access by offering a diversity of dwelling types, amount of floor space, number of bedrooms and level of accessibility and affordability.

Objectives

- O1 To provide a diverse range of dwelling types and sizes to cater for the needs of the existing and future residents over time, and encourage social diversity.
- O2 To ensure that low to moderate income households can afford to live in the precinct by increasing the stock of appropriate affordable housing.

Controls

C1.	For mix of residential flat buildings and residential components of mixed use developments, refer to LEP clause - 6.11 <i>Mix of dwelling sizes in residential flat buildings and mixed use development</i>
C2.	Regarding the amount of adaptable (accessible) housing to be provided refer to requirements in <i>City of Canada Bay DCP Part B1.1 Adaptable Housing</i> .
C3.	Contributions towards Affordable Housing is to be provided according to Council's Affordable Housing Contributions Scheme.
C4.	Affordable housing is to be consistent with the requirements of the <i>City of Canada Bay Affordable Housing Program and Policy</i> .

K20.22 Residential Uses not covered by the Apartment Design Guide

The NSW Apartment Design Guide (ADG) applies to buildings that are three or more storeys high and that comprise at least four dwellings. For other residential development types, such as 2-3 storey terraces, low rise up-over or walk-up apartments, multiplexes, urban courtyard houses and the like, the following controls apply.

Objective

- O1 To ensure design quality, performance of and amenity created by new residential development is of a high standard and consistent across the precinct.

Controls

C1.	The maximum building depth is 18m unless it can be demonstrated that all habitable rooms receive adequate ventilation and solar access, e.g. through the use of a courtyard design.
C2.	The minimum private open space of a ground floor dwelling is calculated by the number of bedrooms x 4m ² .
C3.	Single aspect dwellings, if unavoidable, are only permitted if they have a northerly or easterly aspect.
C4.	Living rooms and private open spaces of at least 70% of apartments receive a minimum of 2 hours direct sunlight between 9 am and 3 pm in mid winter (21 June).
C5.	Master bedrooms have a minimum area of 10m ² and other bedrooms 9m ² .
C6.	Building separation is as per the <i>Apartment Design Guide, Section 3F Visual Privacy</i> .

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Controls

C7.

Private open space (POS) is designed to maximise useability, privacy, outlook and solar access.

For dwellings on the ground floor including townhouses and terraces, the minimum private open space is as follows:

Dwelling type	Min. POS
Studio/ 1 bedroom	20m ²
2 bedroom	28m ²
3+ bedroom	35m ²

The minimum dimension is 4.0m x 4.0m.

For dwellings on upper levels, the minimum private open space (such as decks and balconies) is as follows:

Dwelling type	Min. POS
Studio/ 1 bedroom	10m ²
2 bedroom	14m ²
3+ bedroom	18m ²

The minimum dimension is 2.0m x 3.0m.

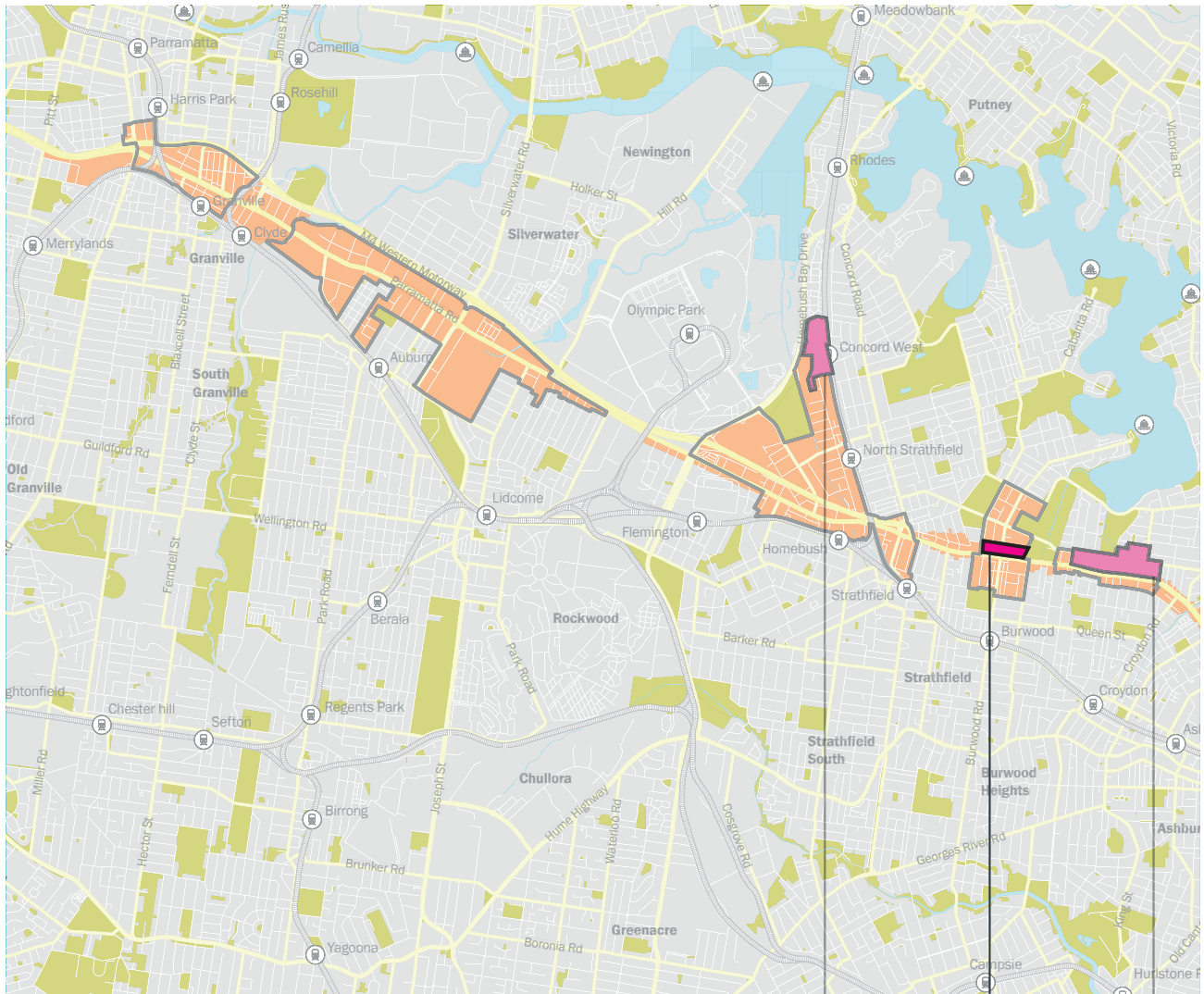
CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)



- Parramatta Road Corridor Transformation Area
- Parramatta Road Corridor Transformation Precinct
- City of Canada Bay Parramatta Road Stage 1 Precincts

HOMEBUSH
NORTH

BURWOOD

KINGS
BAY

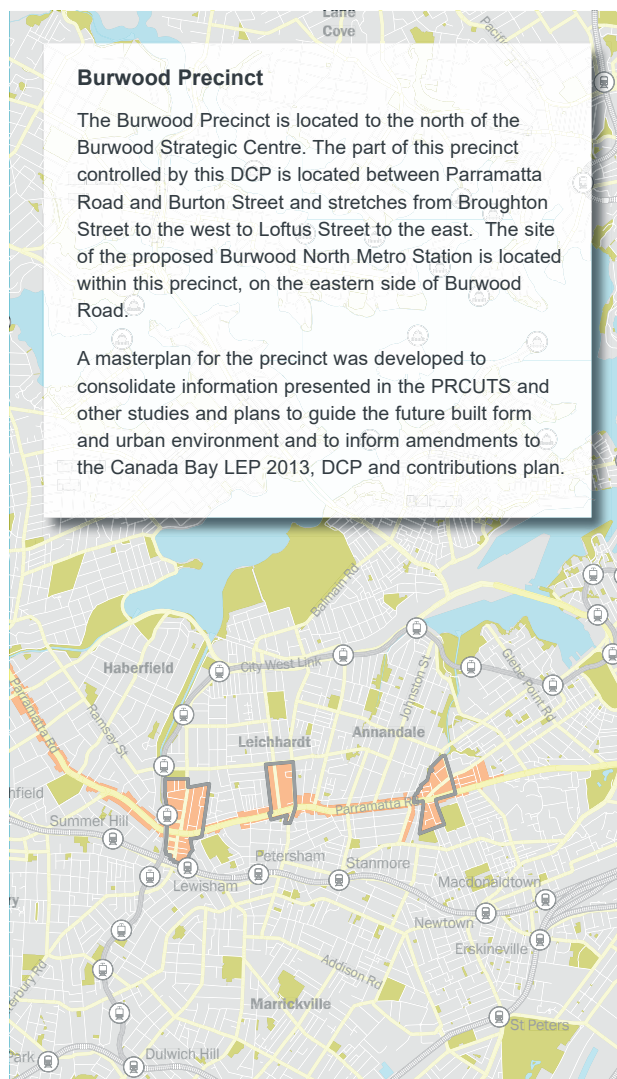
Figure K21-1 PRCUTS Parramatta Road Corridor (Source: PRCUTS, 2016)

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



K21.1 Parramatta Road Corridor Urban Transformation Strategy (PRCUTS)

This DCP has been prepared to support the implementation of the NSW Government Parramatta Road Corridor Urban Transformation Strategy (PRCUTS) published in November 2016.

PRCUTS aims to renew Parramatta Road and adjacent communities through investments in homes, jobs, transport, open spaces and public amenity. It presents significant urban renewal opportunities for land within defined development precincts.

The DCP has been prepared to deliver the desired future character envisaged in PRCUTS, with refinements to achieve better urban design and community outcomes.

Two development pathways are available:

- 1) Land is developed to the standards identified on the Floor Space Ratio and Height of Building maps.
- 2) Where development achieves the minimum lot size and/or identified community infrastructure is delivered, the land may be developed to the standards identified on the Community Infrastructure Floor Space Ratio and Height of Building Maps.

The provisions in this DCP describe the planning controls permitted under Option 2.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)

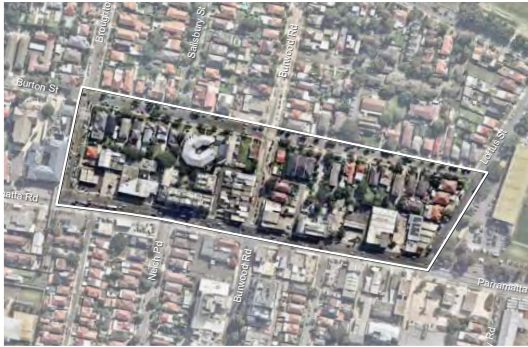


Figure K21-4 Aerial photo (source: nearmap.com)

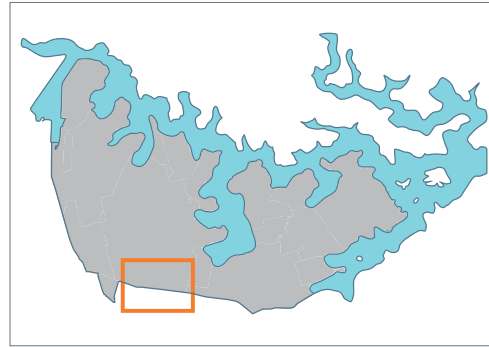


Figure K21-2 Location within LGA



Figure K21-3 Land to which this DCP applies



CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21.2 Existing Character

The Burwood Precinct has distinct character zones located around the central spine of Burwood Road. Along Burwood Road, a mix of lot sizes, building styles and heights accommodate a range of residential and commercial uses. New developments along Burwood Road north currently have a poor interface with the public domain. Parramatta Road is dominated by large floor-plate buildings with generous setbacks that accommodate car sales and service centres with a few taller apartment buildings. Around the precinct residential development is either low density detached houses or low rise apartments. There is little to transition between the two, creating a strong dichotomy.

A number of existing heritage items can be found around the precinct although only one (a dwelling) is located within the precinct. There are a few schools and large open green spaces in close proximity to the precinct. There is little diversity in the public domain, which is dominated by footpaths of varying quality and widths. There are few places to linger. Burton Street is wide with small street trees. Parramatta Road, Burwood Road and Broughton Street generally lack street trees. A series of laneways within the precinct are underutilised, but provide a framework for increased connectivity.

Strengths and opportunities

- large blocks in a grid like street pattern which are generally unfragmented and limited strata titled properties along Parramatta Road;
- excellent access to the proposed Metro station on Burwood Road near Parramatta Road
- leveraging off potential traffic calming along Parramatta Road following the completion of WestConnex;
- close proximity to high amenity open space and recreation facilities and opportunity to create smaller local squares and open spaces;
- potential to improve linkages for active transport;
- creating a series of new laneways and mid block links within the existing road network to increase permeability and accessibility of sites in long blocks;
- improving active transport connections to regional recreation and open space facilities; and
- reducing car dependency by lowering parking rates.

Challenges and constraints

- limited north-south connections across Parramatta Road, particularly for pedestrians and cyclists;
- adjoining low density neighbourhoods, heritage items and sensitive uses which require appropriate setbacks and transitions;
- limited community facilities;
- reliance on a small number of key roads to accommodate interchange and all modes of transport; and
- regional open space that is difficult to access.

K21.3 Desired Future Character

"Burwood Precinct will be a commercial gateway to Burwood Town Centre based around the enlivened spine of Burwood Road building upon existing amenity for new residents."

A focus lies on an improved Burwood Road as an important north-south spine connecting to Burwood Town Centre to the south of the precinct. Both Burwood and Parramatta Roads will be marked by taller residential and mixed use buildings and active frontages with shops and commercial uses. Public transport options along Parramatta Road will improve connections for people working and living to the north of the precinct.

Beyond these roads residential development will be sensitive to existing heritage, lower-scaled housing, existing and new open space areas and schools such as St. Marys to the west of the precinct. Trees will be planted along the 'green edge' interface of Parramatta Road. An improved network of footpaths, cycle routes and through-site links will make it easier to reach destinations by active transport. New public open spaces along Burton Street support the successful transformation of the precinct.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)



Figure K21-5 Artist impression of indicative future character along Burton Street, Burwood

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



CITY OF CANADA BAY

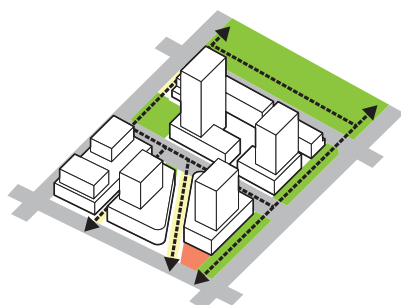
Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)

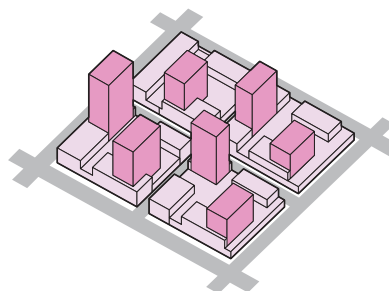
K21.4 Urban Design Principles



Create an active and permeable public realm

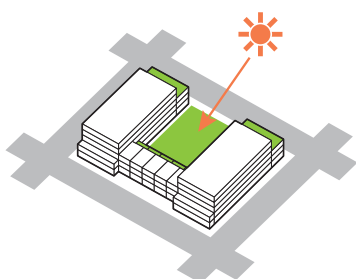
Expand open space network and provide easy access and connection throughout the public realm.

Promote active transport such as walking and cycling.



Define a building height strategy

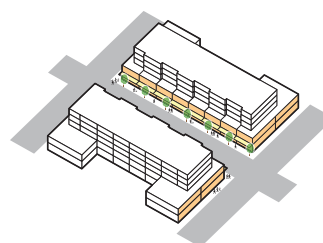
Create a dynamic skyline by spreading higher built form.



Maximise solar access and amenity

Ensure all public open spaces have adequate solar access.

Putting height towards the southern boundaries to ensure solar access penetrates the site and minimises overshadowing.



Promote fine grain and active frontages

Reinforce Burwood Road as a Place for People by appropriate frontage treatment, including fine grain facade and activation.

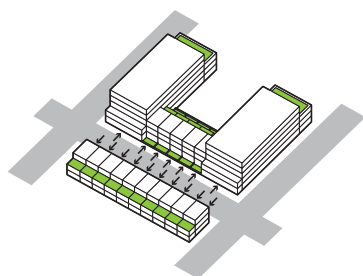
PRCUTS definition: Places for People are "streets with high demand for activities and lower levels of vehicle movement. They create places people enjoy, attract visitors, and are places communities value".

CITY OF CANADA BAY

Development Control Plan

Part K

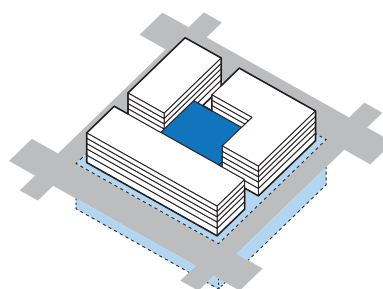
Special Precincts



Promote passive surveillance through ground floor modulation

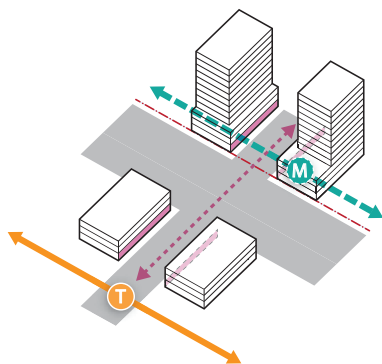
Enhance passive surveillance along residential streets by providing:

- entrances to ground floor units that are accessible from the street
- planted landscape buffers & low-height fencing that are designed to maximise visual connectivity to living areas.



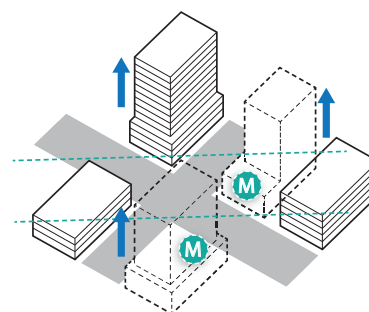
Minimise the impacts of parking

Parking should be put underground as a priority. Where underground option is not possible, due to proximity to the Metro West rail tunnel and limitations on excavation, parking will not be required. If parking is required to be provided above ground, parking should be sleeved with active uses or considerable facade treatment to avoid exposing the structure directly to the street.



Enhance retail connection to the train station on Burwood Road

Enhance the north-south retail link on Burwood Road and form the Northern gateway to Burwood Town Centre.



Integrate future Metro station

Metro West is a catalyst for renewal. Development is likely to occur around and above the new stations, including new commercial development along Parramatta Road and residential towers to the north and throughout the precinct.

New development will take into consideration the metro tunnel going underground and potential entry plaza that will be provided within the precinct.

CITY OF CANADA BAY

Development Control Plan

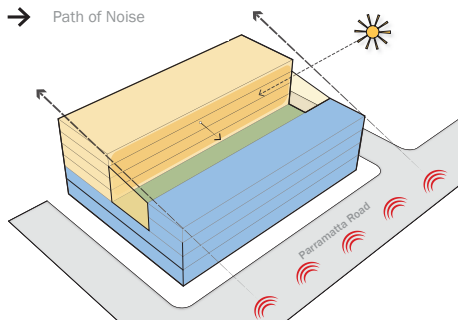
Part K

Special Precincts

K21 Burwood Concord (PRCUTS)

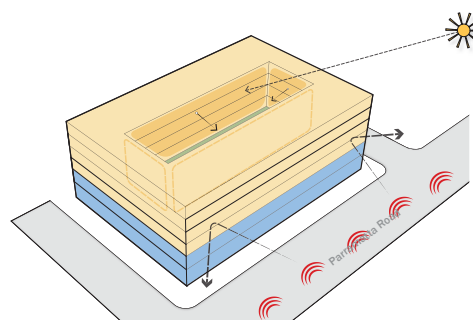
K21.5 Design Approach

- Residential
- Primary Orientation
- Non residential
- Communal open Space
- Source of Noise
- Path of Noise



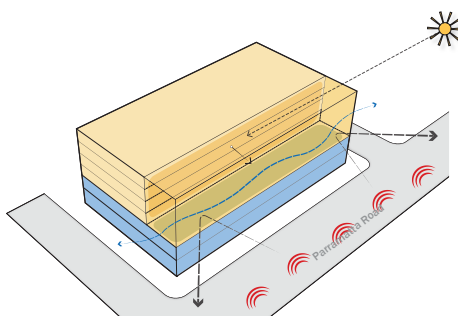
Design Approach 1: Shield

Conventional residential building to the rear of the site away from noise; non-residential building to road edge at a height to create acoustic shadow for residential; fixed solid glazed element encloses courtyard.



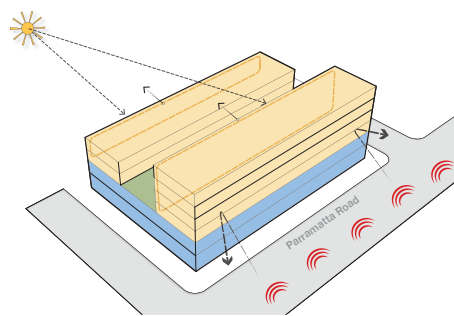
Design Approach 2: Barrier (Courtyard)

All openings required for ventilation open from a protected courtyard; courtyard dimension defined by separation requirements as outlined in the Apartment Design Guide.



Design Approach 3: Barrier (Screen)

A fixed solid glazed edge to provide a protected courtyard space for ventilation; the glazed courtyard is open to the sky to allow for natural ventilation.



Design Approach 4: Facing away

Habitable rooms to be orientated away from the source of noise; locate secondary uses such as cores and walkways facing the source of noise.

Figure K21-6 Design approaches to minimise noise and air quality impacts (Source: PRCUTS Guidelines 2016)

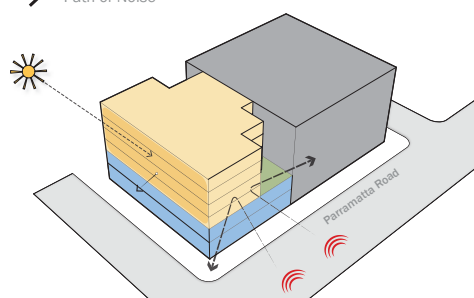
CITY OF CANADA BAY

Development Control Plan

Part K

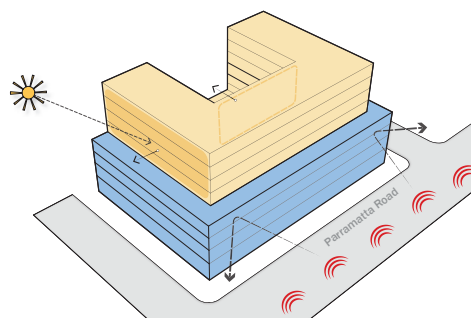
Special Precincts

- Residential
- Primary Orientation
- Non residential
- Communal open Space
- Source of Noise
- Path of Noise



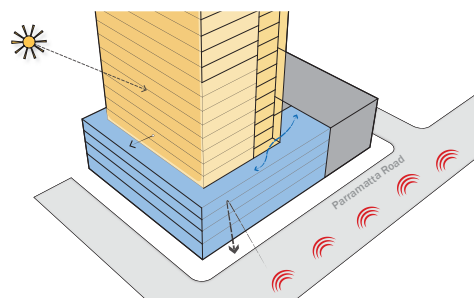
Design Approach 5: Corner

Turning away primary orientation of living space from noise source; articulate facade to create an acoustic shadow away from the source of the noise, orientate openings within the acoustic shadow.



Design Approach 6: Upper Level Setbacks

All openings required for ventilation open from a protected courtyard; turning away from noise source.



Design Approach 7: Above Podium Towers

Turning away habitable spaces from the noise source; utilised fixed solid glazed edge to provide an enclosed space for ventilation.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)

K21.6 Block Configuration

The scale, height, arrangement and orientation of new built form defines the proportion and level of enclosure of streets and public spaces. Good site planning and block configuration maximises the level of sun access and visual and acoustic privacy for all, including neighbouring properties.

Together with primary and upper level setbacks (see Section *K21.9 Street Wall Heights and Setbacks*), the following controls set the basic building footprints and envelopes for new development in the Burwood Parramatta Road Precinct.

Objectives

- O1 To arrange building forms including heights and massing that reinforce the future desired character of the area and protect valued character attributes.
- O2 To facilitate daylight access and ventilation to streets, public places and neighbouring properties, including properties on the south side of Parramatta Road.
- O3 To maximise visual and acoustic privacy.
- O4 To consider future development opportunities on adjoining sites and avoid isolated sites.
- O5 To maximise permeable ground surfaces to allow rainwater to penetrate the soil.

Controls

- C1. New development is to consider future development on adjoining sites by providing sufficient separation and setbacks, and avoid creating isolated sites.

New development is to follow the desired Site Amalgamation Plan (**Figure K21-7**).
- C2. The delivery of identified amalgamation and community infrastructure is a prerequisite for the heights and densities identified in the LEP. If this is achieved new development is to conform to the maximum number of storeys as shown in **Figure K21-11**. Further controls regarding the permissible building envelope are contained in Section *K21.9 Street Wall Heights and Setbacks* and Section *K21.13 Massing and Articulation*.

- C3. The maximum length of any building above 5 storeys is 60m.
- C4. Residential towers above podium level shall have a maximum enclosed area of 750sqm (including circulation and excluding balconies) and a maximum total floor area of 875sqm (including and assuming 15% for balconies).
- C5. For commercial uses on all floors above the ground level, any wall with windows must be set back from the side and rear boundary by 3m. Any wall without windows is not required to be setback.
- C6. Built form is to be positioned for optimal access to daylight and direct sunlight for internal and external spaces, and for adjoining public and private land.
- C7. Buildings are adaptable to a variety of uses over time. The following minimum floor to floor heights apply:

Use	Minimum height
Retail	4.4m
Commercial	3.7m
Adaptable	3.7m
Residential	3.1m
- C8. The ground floor of all lots fronting Parramatta Road is to be a minimum of 4.4m in height to facilitate a wide variety of uses.

Development on the ground floor fronting Parramatta Road is to prioritise urban services and light industrial uses, consistent with Active Frontages.

The second floor of development fronting Parramatta Road in the B4 Mixed Use zone is also to have retail and/or commercial uses.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

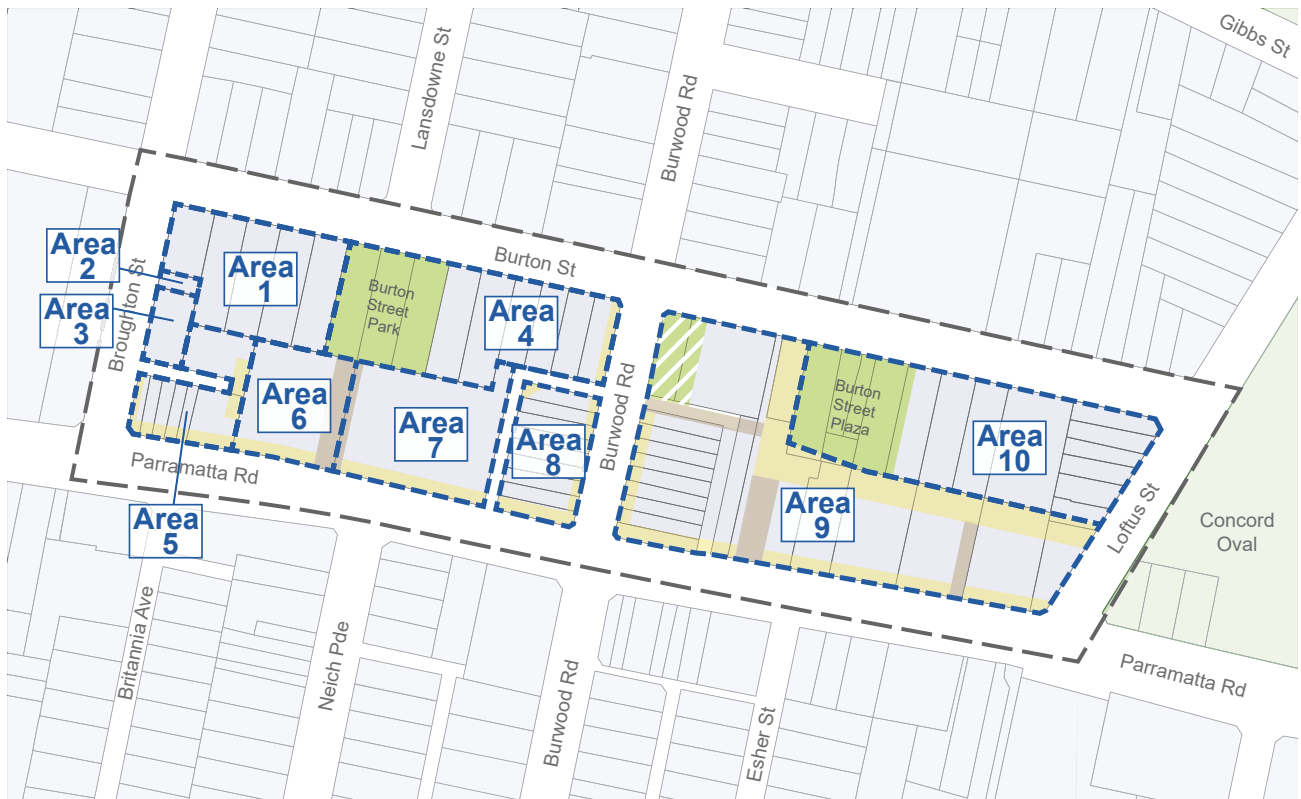


Figure K21-7 Amalgamation Plan

- Amalgamation boundary
- A1 Lot identification number
- Proposed public domain/ road corridor
- Proposed future open space
- Publicly accessible open space
- Existing open space
- Required through-site link
- Cadastre
- Precinct boundary

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)

K21.7 Access Network

A permeable urban structure is key to successful places. The provision of new links and open spaces is encouraged to build upon the existing access network and support the uptake of active and public transport and linking key destinations within and beyond the precinct.

Objectives

- O1 To build upon and further improve the fine grain access network to more effectively link to open spaces, public transport stops and Burwood Town Centre to the south.
- O2 To encourage travel behaviour change by discouraging car usage and supporting sustainable travel choices such as public and active transport.
- O3 To improve network permeability, in particular for pedestrians, by breaking up long blocks with new streets and quality pedestrian prioritised links.
- O4 To meet access requirements for future development and enable increased density in selected locations.



A more permeable urban structure and a focus on a high quality pedestrian environment will support walking and cycling.



Slow speed, shared spaces provide links that encourage pedestrian access across the precinct.

Controls

C1.	The existing movement network is retained and new public open spaces and new north-south and east-west pedestrian links are provided as a minimum as identified in Figure K21-8 . See <i>Section K21.8 Public Domain Experience</i> for more detail.
C2.	New public open spaces are located as identified in Figure K21-8 . See <i>Section K21.8 Public Domain Experience</i> for more detail.
C3.	Wherever possible, long blocks are broken up with new high quality pedestrian prioritised links, particularly where new connections would facilitate access to public transport, open spaces and community facilities.
C4.	Size and location of footpaths, laneways, cycleways, planting and parks are to be provided according to Council's PRCUTS Public Domain Plan and PRCUTS Masterplan.
C5.	New roads, public domain widenings, parks and cycleways are required to be in public ownership where identified in the LEP. New roads and parks that are identified in the LEP to be publicly accessible but not in public ownership, may be delivered as a public access easement over private land. Future pedestrian links may be delivered as a public access easement over private land. Provision is to be in accordance with the LEP, PRCUTS Infrastructure Strategy and Council's specifications.
C6.	Pedestrian/ cycle links are to be naturally lit and ventilated, appropriately lit after hours, publicly accessible 24/7, and have clear sightlines from end to end.
C7.	All new pedestrian/ cycle links are to be defined by built form and quality edge treatments such as low semi-transparent fences and landscaping.
C8.	Bicycle facilities, such as parking, secure storage and end-of-trip facilities are to be easily accessible from the public domain and conveniently located near entrances and/or lifts of new development.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21.8 Public Domain Experience

Private development has a large influence on the local character and the support of the existing or future functioning of the public realm, for example by clearly addressing popular walking routes and providing good levels of surveillance. The scale of built form, its appearance and the design of private-public interfaces has a significant impact on how people experience a streetscape and the safety of a place.

Key elements apart from the built form that need to be considered include front setbacks, boundary treatments, vegetation and landscape design, vehicular access, visible activity at street level, and surveillance provided by doors, windows and balconies.

Objectives

- O1 To protect and improve the quality, accessibility and safety of the public domain across the precinct.
- O2 To support walking and cycling to key destinations and local schools.
- O3 To improve the interface to Parramatta Road and support increased activity levels, safety and comfort.
- O4 To increase tree canopy cover and provide for more greenery associated with the public domain.

Controls

C1.	<p>New development that fronts onto streets identified as active frontages, including vibrant, friendly and mixed facades (see Figure K21-9) must:</p> <ul style="list-style-type: none"> a) minimise the number and width of vehicular driveways across the footpath; b) ensure building entries are clearly visible and pedestrian access to entries and lobbies is direct; c) pay particular attention to the 'human-scale' of lower levels and display a high degree of detailed design and articulation d) maximise the number of doors and windows on upper levels overlooking the street; and e) provide vehicular access off a rear laneway; driveways off Burwood Road and Parramatta Road are strictly prohibited.
C2.	<p>New development that fronts onto Parramatta Road supports the upgraded strategic walking link ('green edge') along Parramatta Road between Broughton and Loftus Streets. Development is to:</p>

- a) set back as per **Figure K21-8**;
- b) apply coordinated urban and landscape design features that unify the linear green edge along Parramatta Road; and.
- c) prioritise urban services uses.

C3. Development fronting Burton Street is to maximise entry doors and windows overlooking the street, minimise vehicular entry points and pay particular attention to quality landscape and architectural detail along lower levels. For more controls see *Section K21.11 Transitions and Interfaces*.

C4. Development on a corner site including corners of the two new open spaces along Burton Street must pay particular attention to overall design quality due to the location's high visibility and impact on the local character, i.e. well proportioned facades and quality material, finishes and plant species selection.

C5. Development is to support the experience and safety of the two new public open spaces along Burton Street as identified in **Figure K21-8** by giving consideration to CPTED principles. Development that faces the open space must:

- a) maximise the number of doors and windows overlooking the open space to maximise surveillance and activation of the open space;
- b) pay particular attention to quality architectural detail at the lower levels; and
- c) ensure that at least 50% of each open space receives a minimum of 3h direct solar access in mid-winter (21 June) between 9am and 3pm.

C6. The maximum number of storeys may be exceeded where additional building height is permissible under the LEP, the minimum floor to floor heights can be achieved, and where it is demonstrated that the solar access requirements of the Apartment Design Guide will be satisfied for buildings on the southern side of Parramatta Road.

C7. Any built structures within the area identified as 'Publicly accessible open space' at the corner of Burwood Road and Burton Street are to be a maximum of two storeys and should maintain sight-lines to the station entry.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)



Figure K21-8 Public Domain Plan

- | | |
|--|--------------------------------|
| Active frontage (various) | Required through site link |
| 1m landscaped setback | Proposed future open space |
| 3m landscaped setback | Publicly accessible open space |
| 4.5m landscaped setback | Desired future open space |
| 6m landscaped setback | Existing open space |
| 6m landscaped setback to heritage item | Proposed future public domain |
| 1 storey street wall | Variable TfNSW road widening |
| 2 storey street wall | Proposed future road corridor |
| 3 storey street wall | Heritage item |
| 6 storey street wall * | Cadastre |
| | Precinct boundary |

* a six storey street wall height is required even if additional building height, permissible under the LEP, can be achieved. Additional storeys must be setback a minimum of 3m from the street wall/ podium.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21.9 Street Wall Heights and Setbacks

Street setback areas are an integral part of the streetscape and their treatment is fundamental to the amenity and character of a place. Combined with building height and road reserve width, they define the proportion, scale and visual enclosure of the street. Street setbacks not only establish the alignment of buildings along the street, they also provide for landscaping and deep soil areas, building entries and a transition between public and private space.

Street wall heights and upper level setbacks further define the proportion, scale and visual enclosure of the public domain and provide a level of consistency across the precinct. Upper level setbacks lessen the visual impact of taller development and help create a more unified, human-scale streetscape environment.

Objectives

- O1 To ensure setbacks contribute positively to the pedestrian environment at street level.
- O2 To provide a sense of enclosure to the street and contribute to a consistent built form scale across the precinct over time.
- O3 To enhance development and its relationship with adjoining sites and the public domain, particularly in regard to access to sunlight, outlook, view sharing, ventilation and privacy.



A lower street wall height helps to integrate taller development with lower residential scales

Controls

- C1. All development is to comply with the setbacks shown on **Figure K21-8**.
- C2. Where applicable, a portion of the setback area is to provide deep soil zones and tree planting. Refer to *Section K21.18 Landscape Design* for more detailed controls.
- C3. 'Undesirable' elements such as vents, electrical substations, or plant and equipment spaces are not permissible within the setback area and should be accommodated within the building.

Service cabinets are to be co-located internally, accessible from loading, waste or parking areas where possible to avoid impact on the public realm.
- C4. Upper level setbacks are required towards all public domain interfaces as identified in **Figure K21-11**.
- C5. The following street wall heights apply:

Location	Maximum street wall height
Parramatta Road	1, 3 & 6 storeys
Burwood Road	1, 2 & 6 storeys
Burton Street	2 storeys
Loftus Street	2 & 6 storeys
Broughton Street	2 & 3 storeys
Laneways	nil

See **Figure K21-8**.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)

K21.10 Active Frontages

The quality and attractiveness of buildings at the streetscape level plays an important role in the attractiveness and vibrancy of the street. Active streetscapes have frequent doors, many windows with transparent glass and narrow frontages providing a vertical rhythm along the street with few blank walls.

Successful buildings make a positive contribution to the streets and public spaces around them. They visually activate the street and encourage people to use the street.

It is important to focus on active frontages in commercial and mixed use zones as these are areas where activity and vibrancy is critical to the success of the centre. Ensuring streets and open spaces are overlooked can increase the sense of safety, especially at night.

Objectives

- O1 To create lively and attractive streetscapes that are safe and attractive.
- O2 To support walking in the precinct along streets and within public open spaces.
- O3 To provide attractive streets and public spaces that encourage activity and provide opportunities for passive surveillance.
- O4 To ensure that the ground level of buildings in mixed use areas are well designed and able to attract a variety of uses that will activate the streetscapes.

Controls

- | | |
|-----|--|
| C1. | Active frontages are to be provided as identified in Figure K21-9 . For more controls see <i>Section K21.15 Safety and Accessibility</i> .

Three different types of active frontage have been identified. The type of active frontage desired is dependent on the location and the intended character of the street. |
| C2. | A maximum of 70% of the ground floor facade is to be glazing and balanced with solid vertical elements creating a rhythm along the street. |

C3.

Vibrant Facades

- a) Maximise the number of units along the street. Provide small (narrow) units with a minimum of 15 front doors per 100m of facade length.
- b) Cater for a wide variety of uses such as shops, cafes, restaurants, bars, fruit/ vegetable markets, community uses and live-work units.
- c) Provide a high degree of visual richness in facade details and architectural expression with a focus on vertical facade articulation. Provide 'ins and outs' (recesses and projections) to create shadows and interest.
- d) Vehicle access and servicing zones are not permitted along a Vibrant Façade.
- e) Blank facades are not permissible. Passive facades are strongly discouraged and are only permissible where alternatives are not available.
- f) Tenancies are to be a minimum of 10m deep.

C4.

Friendly Facades

- a) Maximise the number of units along the street. Provide relatively small (narrow) units with a minimum of 10 front doors per 100m facade length
- b) Cater for some variety of uses such as shops and live-work units including residential lobbies.
- c) Blank facades and passive facades are strongly discouraged
- d) Provide a degree of visual richness in facade details and architectural expression.
- e) Minimise the number and width of vehicular driveways across the footpath with limited vehicle access and servicing permitted. Openings, when permitted are to be narrow and recessed.
- f) Tenancies are to be a minimum of 10m deep.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



Controls

C5.

Mixed Facades

- Maximise the number of units along the street. Where possible provide small (narrow) units with a minimum of 6 front doors per 100m facade length
- Blank facades and passive facades are discouraged. Any blank façade that is more than 10% of the façade or more than 10sqm (at street level) is to have visual interest i.e. architectural treatment, detailing, art or greenery/ green walls
- Provide a degree of visual richness in facade details and architectural expression.
- Minimise the number and width of vehicular driveways across the footpath.
- Buildings fronting Parramatta Road are to have vehicle access and servicing via shared underground areas accessed from side streets where possible.
- Tenancies are to be a minimum of 10m deep.



Breaking the facade into smaller elements helps create variation and interest

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)

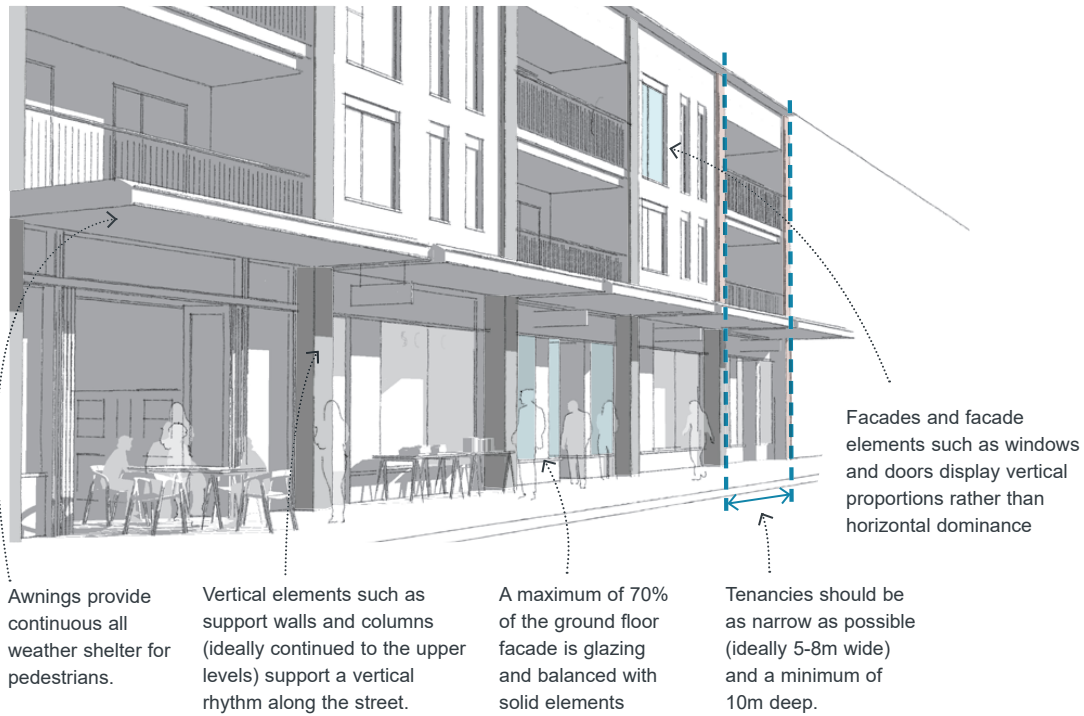


Figure K21-10 Active Frontage Design Guidance



Stall risers, richness of material choices and operable glazing contribute to high quality street interfaces

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

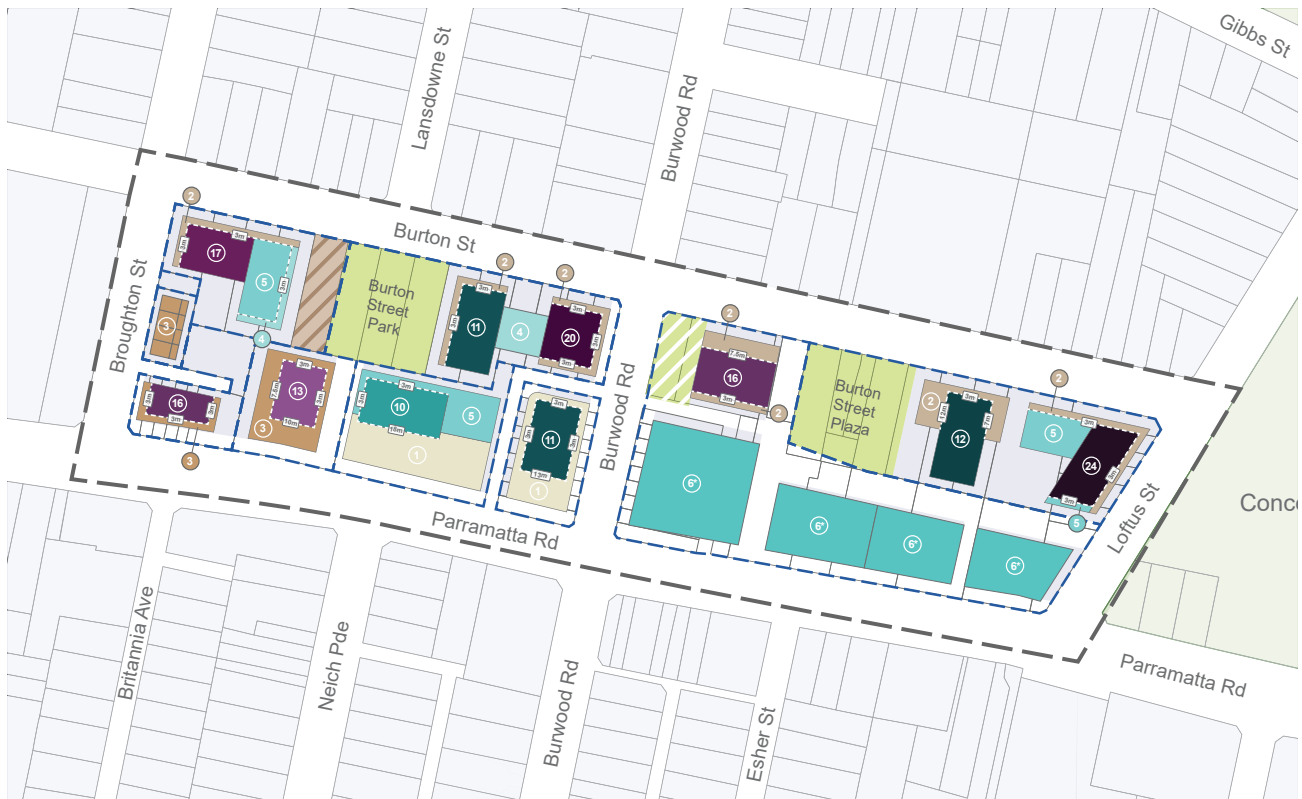


Figure K21-11 Building Envelopes Plan



- 1 storey max. building height
- 2 storey max. building height
- 3 storey max. building height
- 4 storey max. building height
- 5 storey max. building height
- 6 storey max. building height *
- 10 storey max. building height
- 11 storey max. building height
- 12 storey max. building height
- 13 storey max. building height
- 16 storeys max. building height
- 17 storey max. building height
- 20 storey max. building height
- 24 storey max. building height

- 24 Max. number of storeys
- Upper level setback
- 3m Upper level setback distance from podium edge
- Desired amalgamation boundary
- Proposed future open space
- Publicly accessible open space
- Existing open space
- Heritage item
- Cadastre
- Precinct boundary

* the maximum number of storeys may be exceeded where additional building height is permissible under the LEP, the minimum floor to floor heights can be achieved, and where it is demonstrated that the solar access requirements of the Apartment Design Guide will be achieved.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)

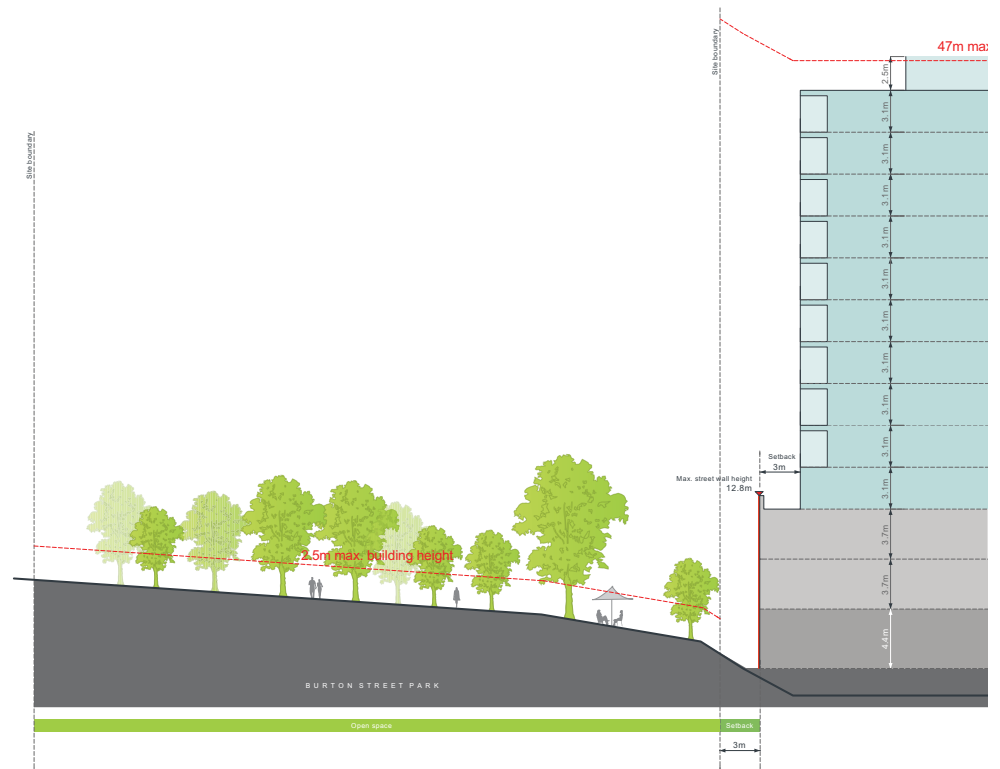


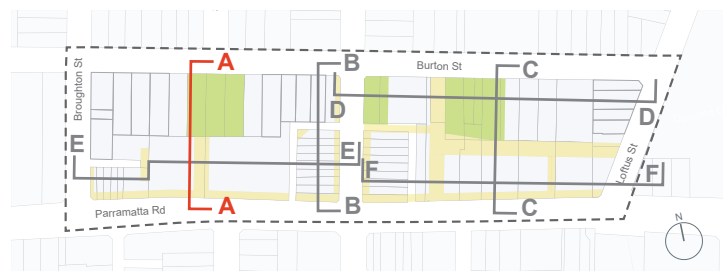
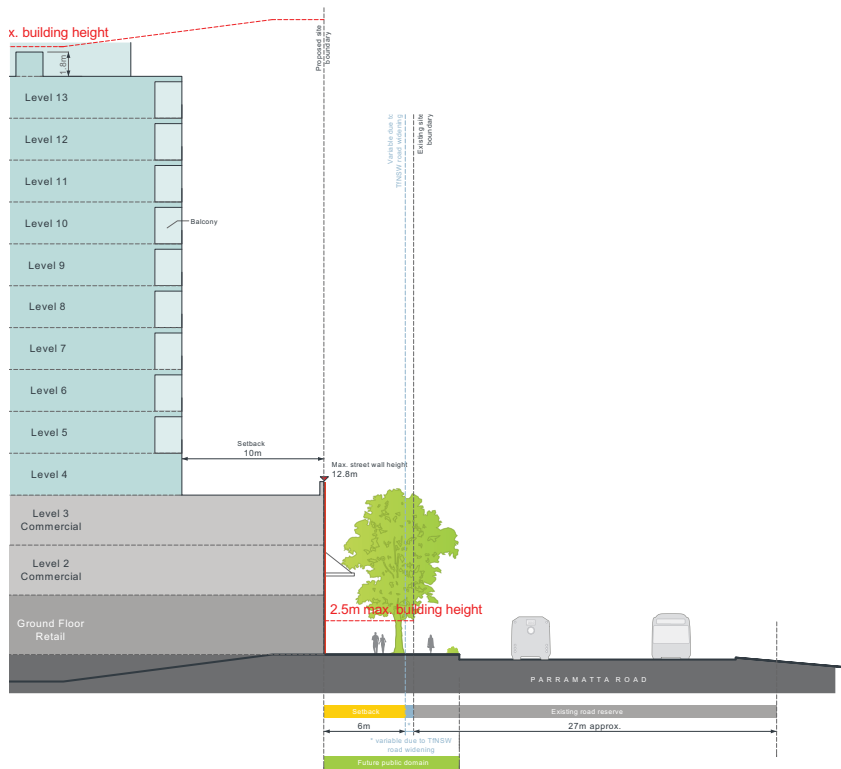
Figure K21-12 Built Form Envelope - Section A

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



Section Key Plan

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)



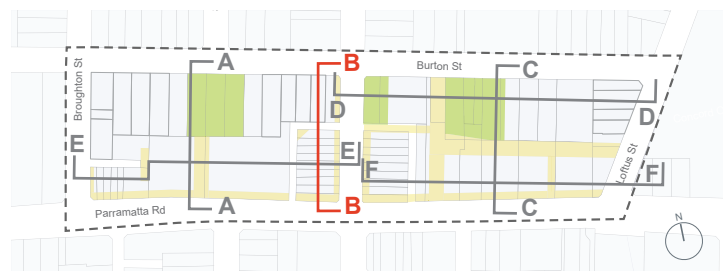
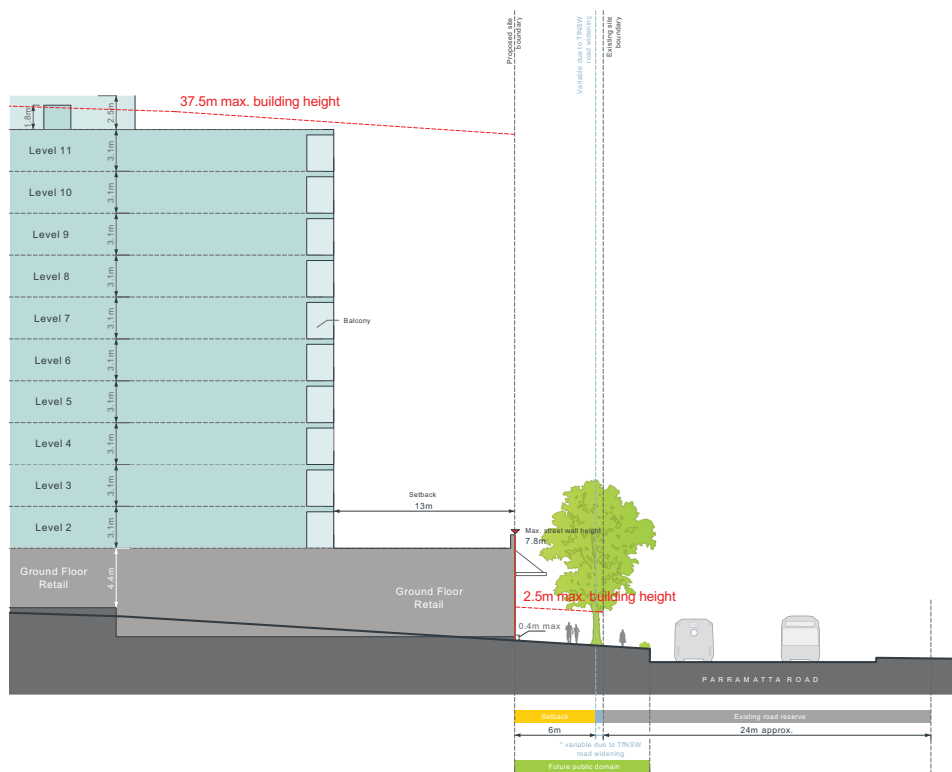
Figure K21-13 Built Form Envelope - Section B

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



Section Key Plan

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)

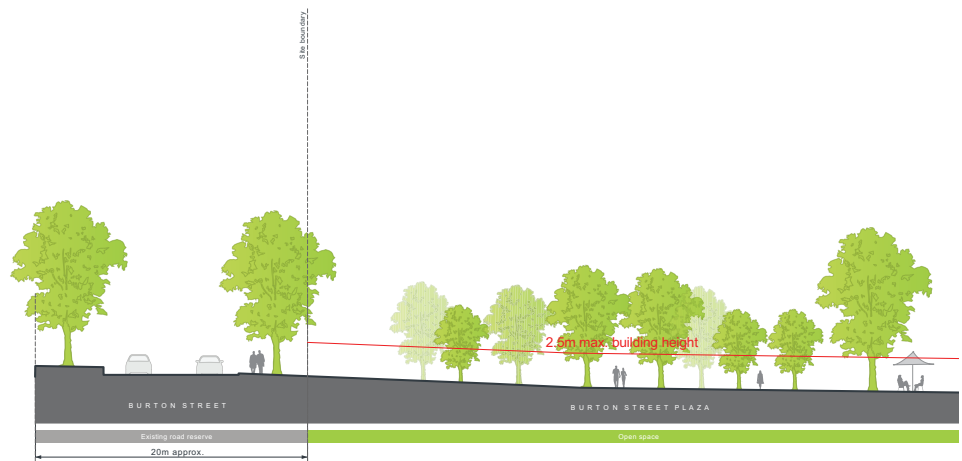


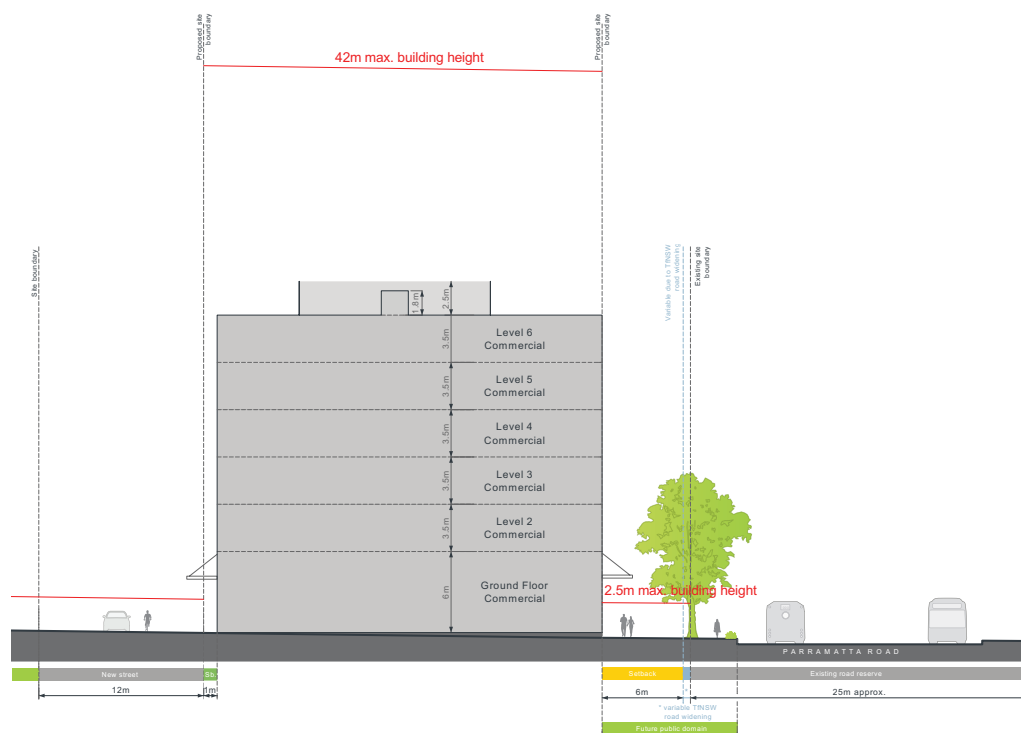
Figure K21-14 Built Form Envelope - Section C

CITY OF CANADA BAY

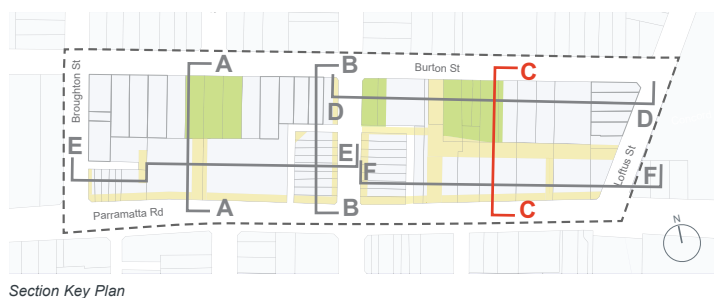
Development Control Plan

Part K

Special Precincts



*Note: the maximum number of storeys may be exceeded where additional building height is permissible under the LEP, the minimum floor to floor heights can be achieved, and where it is demonstrated that the solar access requirements of the Apartment Design Guide will be satisfied for buildings on the southern side of Parramatta Road.
Refer to Clause K21.8 C6*



Section Key Plan

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)

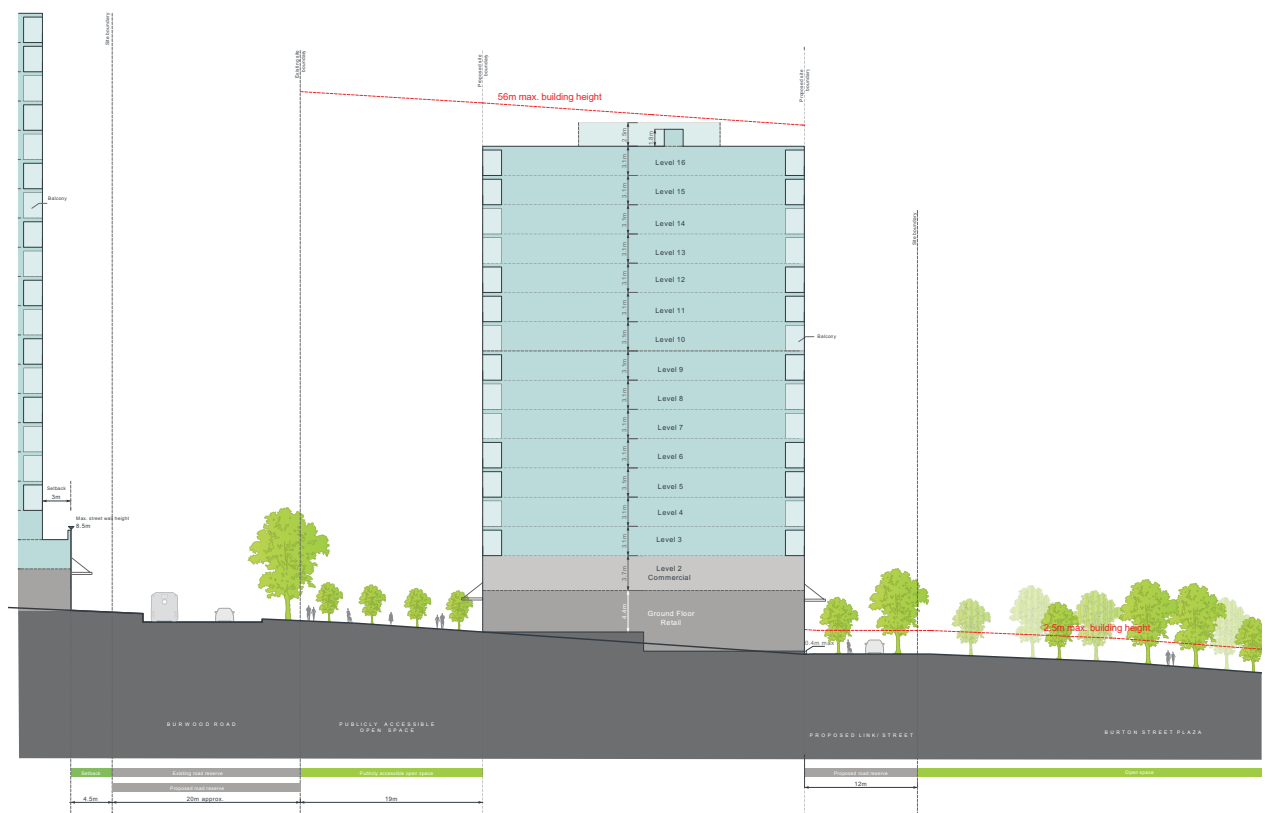


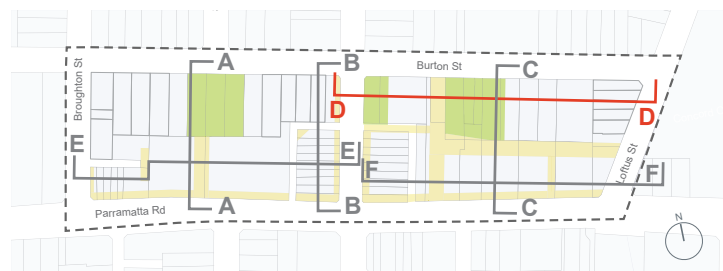
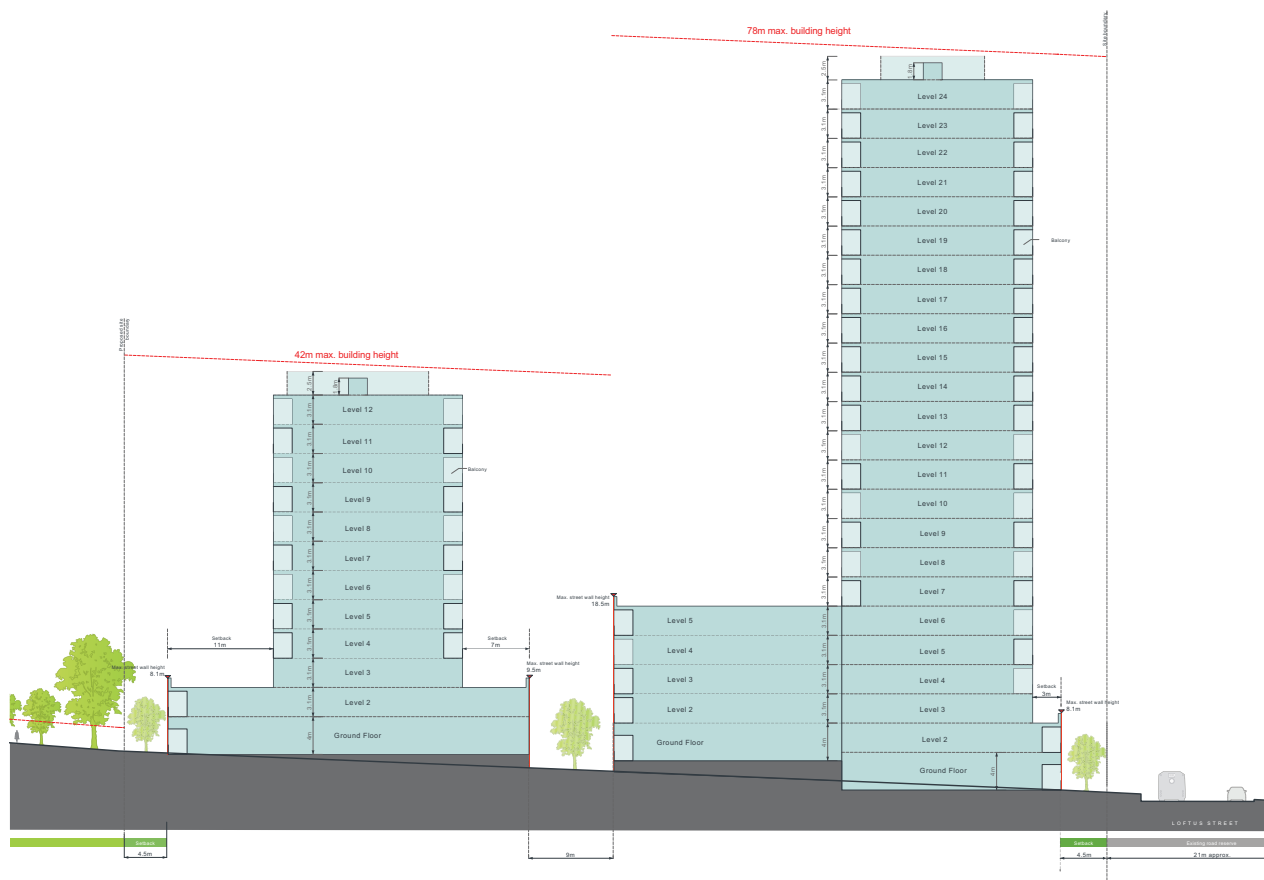
Figure K21-15 Built Form Envelope - Section D

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



Section Key Plan

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)

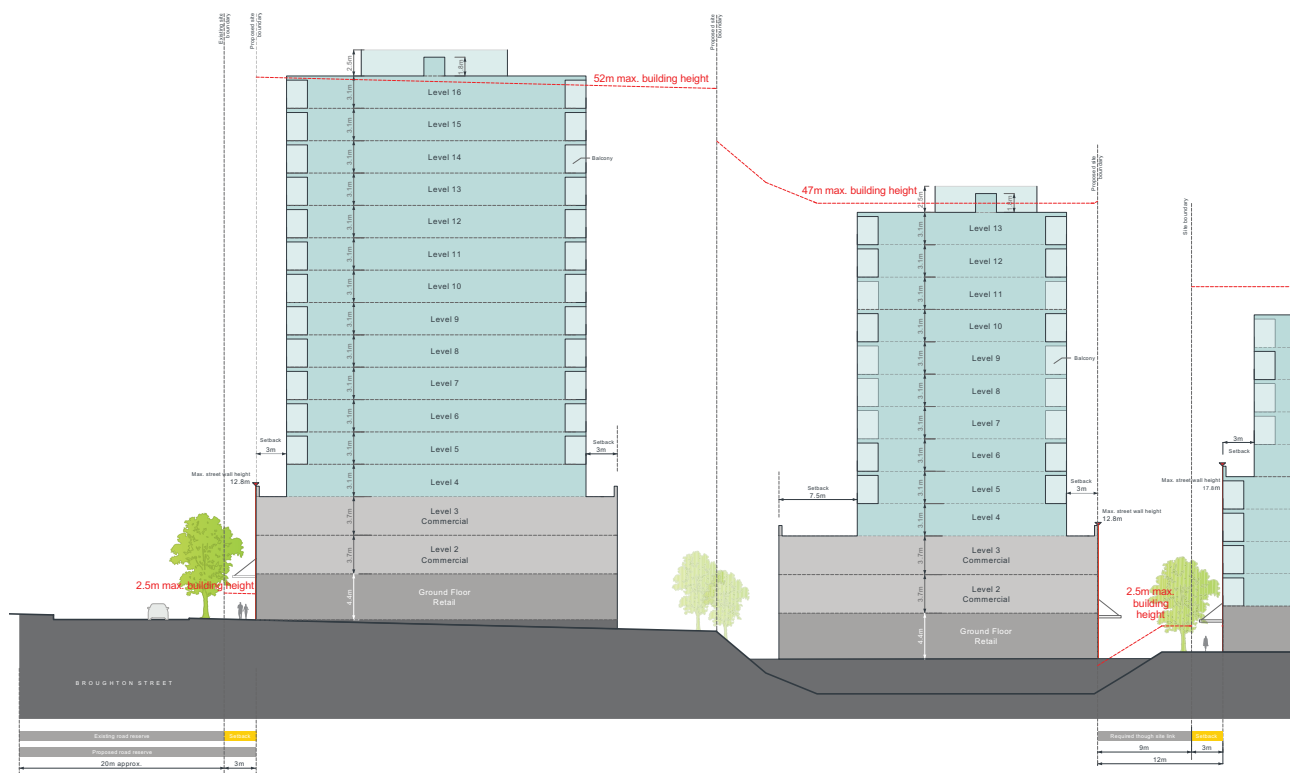


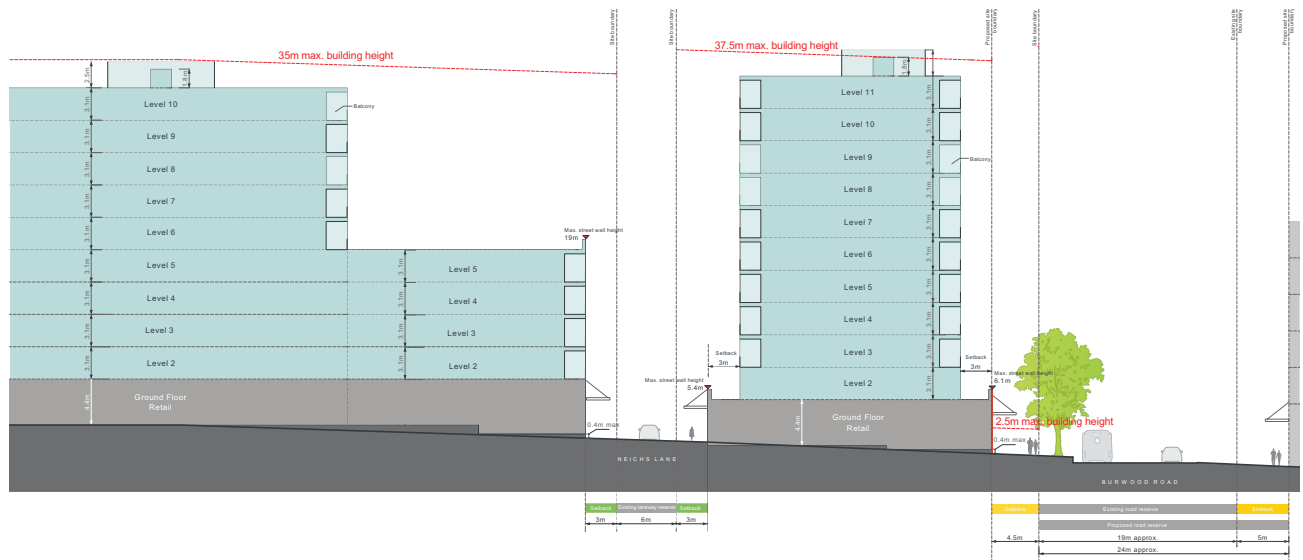
Figure K21-16 Built Form Envelope - Section E

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



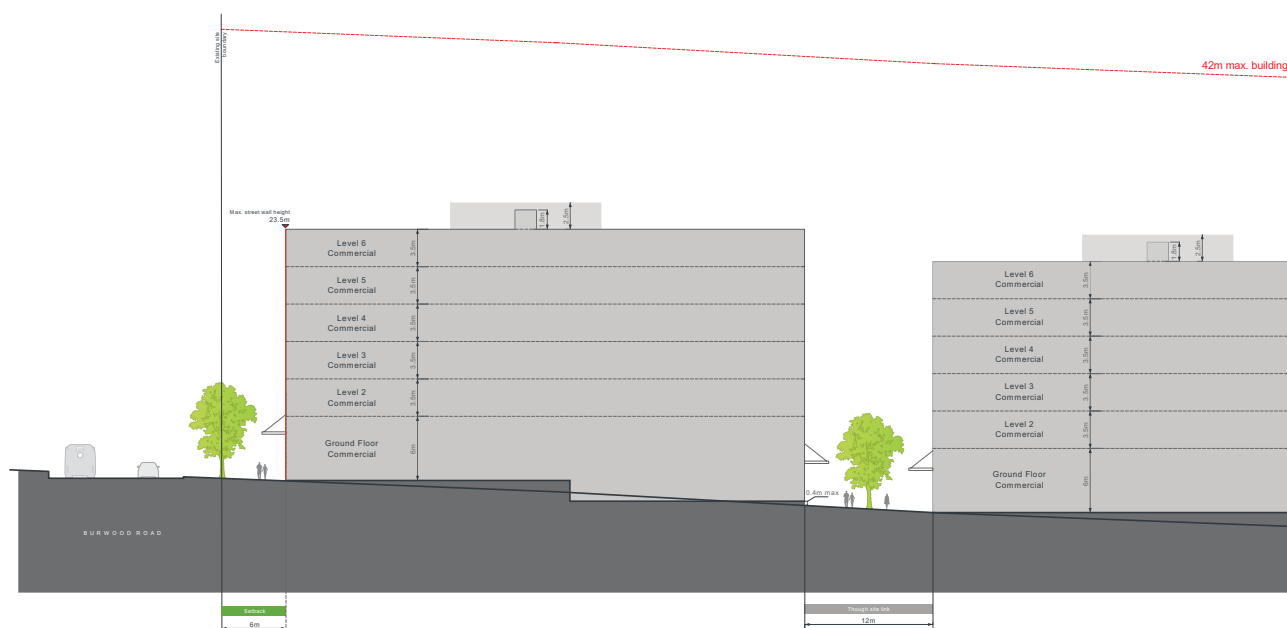
Section Key Plan

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



Note: the maximum number of storeys may be exceeded where additional building height is permissible under the LEP, the minimum floor to floor heights can be achieved, and where it is demonstrated that the solar access requirements of the Apartment Design Guide will be achieved.

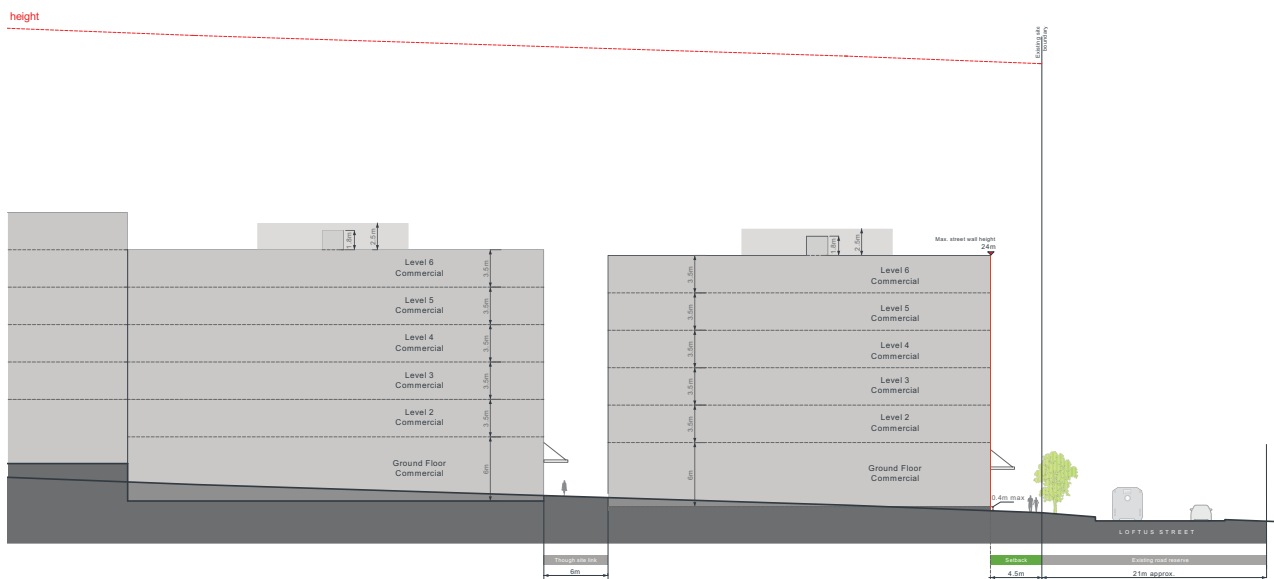
Figure K21-17 Built Form Envelope - Section F

CITY OF CANADA BAY

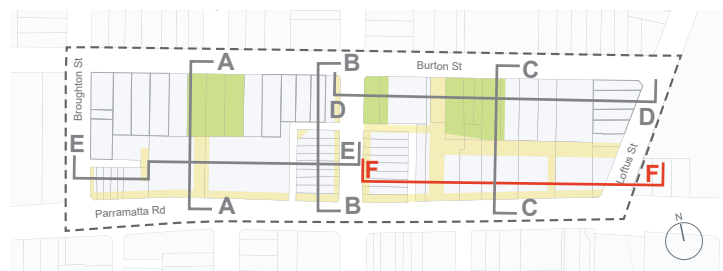
Development Control Plan

Part K

Special Precincts



Note: the maximum number of storeys may be exceeded where additional building height is permissible under the LEP, the minimum floor to floor heights can be achieved, and where it is demonstrated that the solar access requirements of the Apartment Design Guide will be achieved.



Section Key Plan

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)

K21.11 Transitions and Interfaces

Changes in height and scale will require transitions to sensitive interfaces such as existing low scale residential areas, heritage items and open spaces. New development will be required to respond to the overall scale and form of existing elements to preserve visual scale and to minimise loss of outlook, and privacy and maximise sun access of adjoining properties.

Objectives

- O1 To encourage new development that is sensitive and complementary in scale and site location to surrounding properties.
- O2 To minimise the impact on the visual curtilage and setting of existing heritage items.
- O3 To protect residential amenity at the interface to existing low rise development.
- O4 To ensure streets and open spaces receive adequate sunlight and ventilation.

Controls

C1.	Where adjacent to low density residential interfaces and heritage items, new development should gradually step away in height and provide appropriate setbacks as identified in Figure K21-18 .
C2.	Development along Burton, Loftus and Broughton Streets: <ul style="list-style-type: none"> a) sets back as identified in Figure K21-8 and Figure K21-11 with the setback area to be landscaped and at least 50% deep soil; and b) maximises windows and balconies of the upper levels that provide effective passive surveillance of the streetscape.
C3.	Along all streets where future public domain is required to be delivered (such as the 'linear green edge' interface to Parramatta Road), development must comply with the primary and upper level setbacks shown in Figure K21-8 , Figure K21-11 and Figure K21-19 . The following applies: <ul style="list-style-type: none"> a) treatment of the setback area is designed to be an extension of the public footpath area, is publicly accessible 24/7 and focuses on pedestrian amenity; and b) 50% of the setback is deep soil to allow for mature vegetation in order to create a linear park with trees provided as outlined in <i>Section K21.18 Landscape Design</i>.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

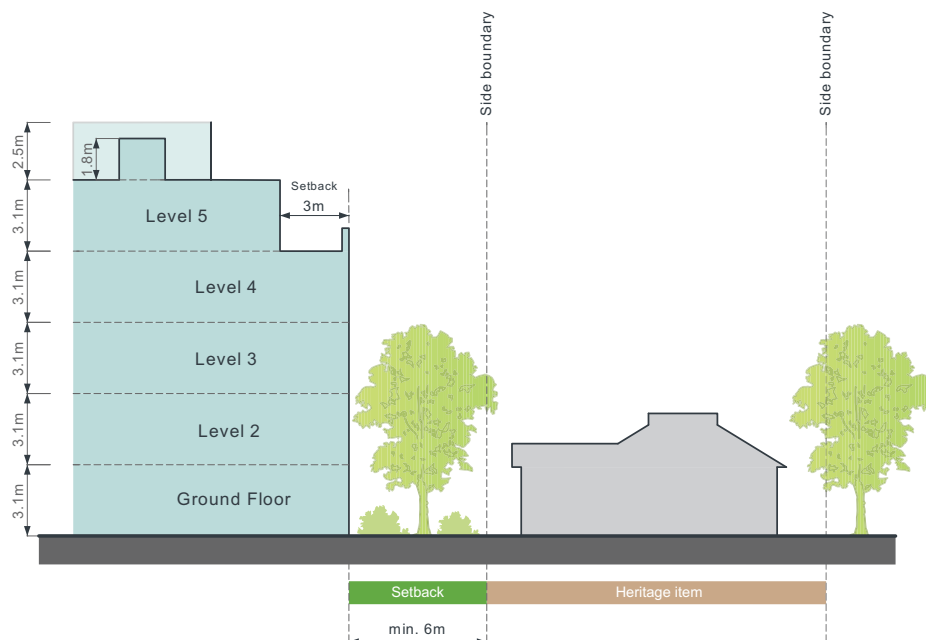


Figure K21-18 Interface to adjacent heritage and/or low rise residential

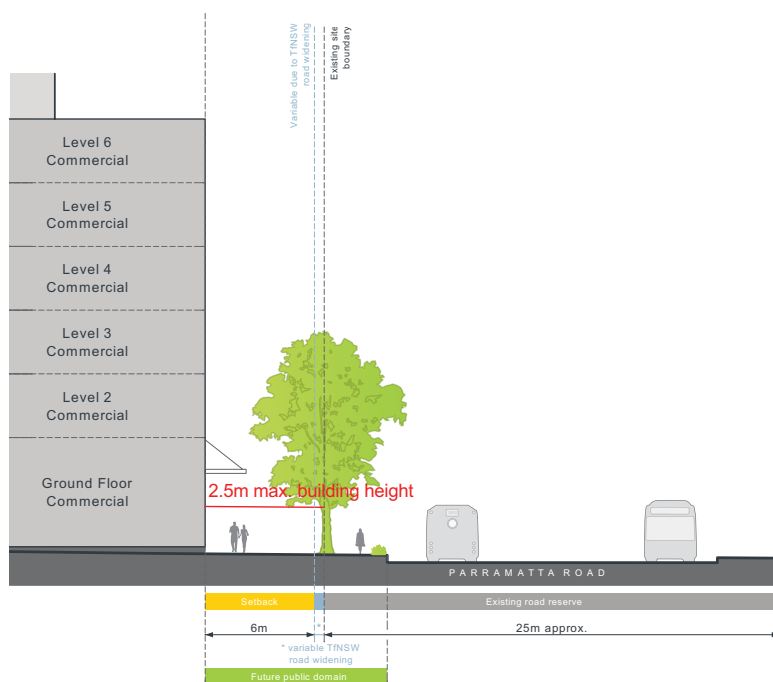


Figure K21-19 'Green edge' interface to Parramatta Road

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)

K21.12 Interactive Frontages

Within residential zones the design of the development plays an important role in encouraging pedestrian activity and enhancing public safety and security. Developments which allow passive surveillance, where people within buildings are able to overlook the street and where passersby are aware of 'signs of life', promote streetscape activity and local interactions. Multiple entries to residential dwellings which allow residents to physically access homes directly off the street also provide visual interest and encourage streetscape activity.

Objectives

- O1 To encourage new development that promotes activity on the street and enhances public safety and security.
- O2 To encourage new development that provides a high level of passive surveillance.
- O3 To ensure development provides a high quality visual experience and creates interest when experienced from a walking pace.
- O4 To ensure private spaces and entries facing the street are safe, attractive and comfortable to use.



Front semi-transparent fences and landscaped setbacks with tree planting contribute to the amenity of the streetscape and support a positive pedestrian experience.

Controls

C1.	Developments are to maximise the number of front doors and private spaces which are visible from the street. At a minimum there is to be a pedestrian entries and/or primary private open space overlooking the street every 15m.
C2.	Developments are to provide openable windows and balconies at upper levels that encourage views of the street.
C3.	Entries and private open spaces are encouraged within the 3m or 4.5m landscaped setbacks including a 1.5m wide strip of landscaping (see Figure K21-20 and Figure K21-21) and other controls including those identified in <i>Section K21.18 Landscape Design</i> are also to be met.
C4.	Deeper front setbacks (greater than 5m) are discouraged and landscaping and fences or structures higher than 0.9m within the front setback are not permitted.
C5.	All landscaping within the front setback is to maintain clear views from the footpath to the development.
C6.	Front fences are to be a maximum of 1.2m high and at least 50% is to be at least 50% transparent and enable a high level of passive surveillance.
C7.	Front terraces and entry areas are to be elevated by between 0.6m and 1.0m above the level of the street to improve privacy and increase opportunities for passive surveillance.
C8.	Development is to minimise services (i.e. substations, fire services and water services) located within the front setback, along the site frontage or on building facades.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

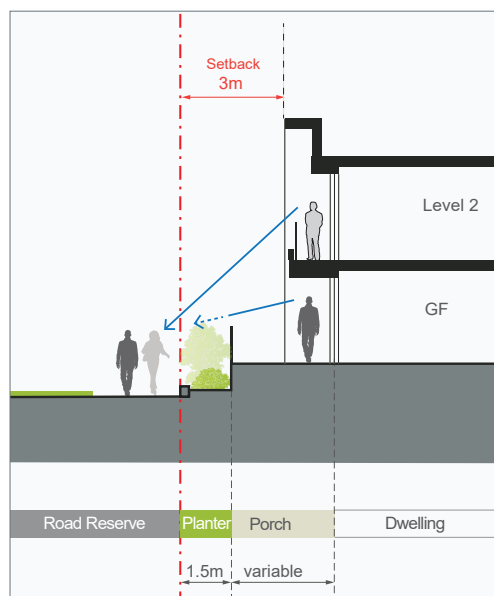


Figure K21-20 Indicative 3m front setback for residential ground floors



Landscaped setbacks with integrated entries and tree planting contribute to the residential streetscape.

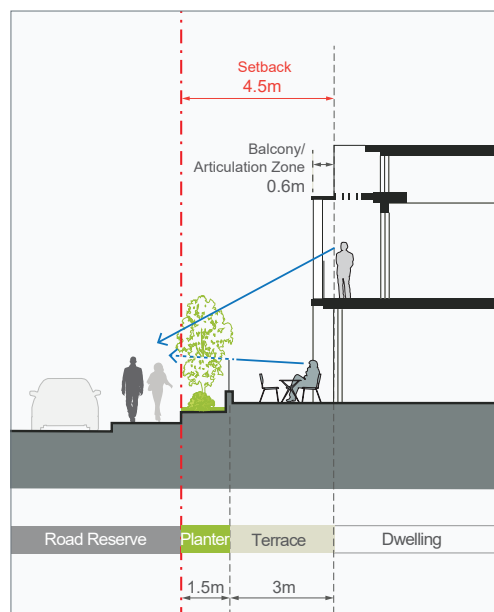


Figure K21-21 Indicative 4.5m front setback for residential ground floors



A low stone wall and visually permeable fencing provides privacy for ground floor units and passive surveillance of the street.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)

K21.13 Massing and Articulation

Detailed articulation and appropriate scale of built form defines and reinforces the identity and desired character of a place. The following architectural treatments are encouraged to create variety and interest in the streetscape while contributing to a sense of continuity and overall visual quality.

Objectives

- O1 To ensure buildings and their individual elements are appropriately scaled to define and respond to the surrounding character.
- O2 To add visual quality and interest to new buildings with a focus on breaking up massing of higher density forms when viewed from public places and neighbouring properties.

Controls

C1.	Buildings that are 3 storeys or more are to be designed so that they clearly articulate a base, middle and top.
C2.	Facades are articulated using techniques such as projections, recesses, eave overhangs and deep window reveals. Where development is set back at least 3m from the site boundary, elements can protrude up to 0.3m into the front setback (articulation zone).
C3.	The maximum length of straight wall on any storey above ground floor level, without articulation such as a balcony or return, is 15m.
C4.	New development is to place particular focus on creating a 'human scale' at the lower levels through the use of detailed design, insets and projections that create interest and, where relevant, the appearance of finer grain buildings.
C5.	Where frontages are more than 20m wide, building massing is also to be vertically articulated.

C6.	For built form that is 3 storeys or more, the upper-most level is set back and visually unobtrusive. Ways to achieve this include the use of lightweight construction techniques, darker colours, solid balustrades and roof overhangs that create deep shadows.
C7.	Adjoining buildings are considered in terms of setbacks, awnings, parapets, cornice lines and facade proportions.
C8.	Roof plant, lift overruns, vents, carpark entries and other service related elements are integrated into the built form and complement the architecture of the building.
C9.	Buildings on corners address both streets and architectural elements are composed so that they 'turn the corner'.



Example of an building that is vertically articulated into two components and differentiates between base, middle and top

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21.14 Heritage and Fine Grain

A 'fine grain' of narrow lots provides a significant contribution to the character of the precinct and often includes traditional shop fronts, roofs with parapets, corner buildings and upper level verandahs. This historic pattern of elements creates a streetscape of character and, together with listed heritage items, should be retained and protected wherever possible.

Objectives

- O1 To ensure that development in the vicinity of heritage items is designed and sited to protect its heritage significance.
- O2 To avoid new development physically dominating and overwhelming heritage items.
- O3 To enable the consolidation of small individual lots into larger lots whilst ensuring the original subdivision pattern is represented.

Controls

- | | |
|-----|---|
| C1. | Development in the vicinity of a heritage item is to minimise the impact on the setting of the item by: <ul style="list-style-type: none"> a) providing an adequate area around the building to allow interpretation of the heritage item; b) retaining original or significant landscaping (including plantings with direct links or association with the heritage item); c) protecting, where possible and allowing the interpretation of archaeological features; and d) retaining and respecting significant views to and from the heritage item. |
| C2. | All development of and in the vicinity of a heritage item is to address the requirements of <i>Part C Heritage of the City of Canada Bay DCP</i> . |

- | | |
|-----|---|
| C3. | Alterations and additions to buildings and structures and new development of sites in the vicinity of a heritage item are to be designed to respect and complement the heritage item in terms of the building envelope, proportions, materials, colours and finishes, and building and street alignment. |
| C4. | Where additional storeys are proposed above a heritage building, the new front wall should be set back from the existing front building line by a minimum of 8m. |
| C5. | Where the finer grain existing pattern is present and lot consolidation is proposed, the subdivision pattern and fine grain is to be interpreted in the architectural treatment of the facades, e.g. through building layout, composition, modulation and vertical articulation. |
| C6. | All development of, or in the vicinity of, heritage items must submit a heritage impact assessment as part of the DA. It should be noted that the assessment may lead to setbacks, building heights, and built form modulation that may differ (are less than) the minimum provisions outlined in this DCP. |

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)

K21.15 Safety and Accessibility

The way in which buildings address streets, links and open space creates an important transition between public and private land. The careful design of this interface zone contributes to the liveliness, interest, comfort and safety of the public domain. Good accessibility to and from new development increases activity levels further and contributes to the visible activity in a neighbourhood.

Objectives

- O1 To ensure new development supports the wider neighbourhood and community safety and maximises opportunities for passive surveillance.
- O2 To encourage ground floor activities to spill out into the public domain and create a vibrant streetscape (active frontages).
- O3 To incorporate a high degree of accessibility into the design of new buildings and the public domain that considers the various mobility levels of future users, i.e. disabled and elderly.

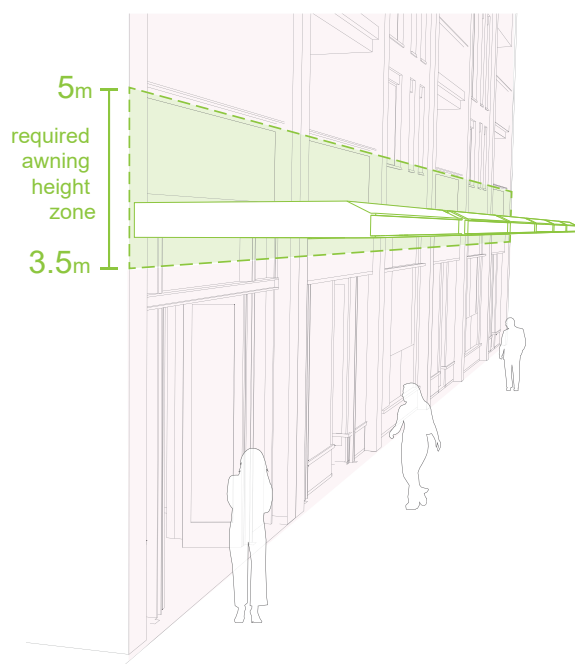


Figure K21-22 Awnings are to be between 3.5m and 5m above ground level along active frontages

Controls	
C1.	New development addresses and defines the public domain through entrances, lobbies, windows and balconies that overlook public spaces, maximising opportunities for passive surveillance.
C2.	The location and width of vehicle entries is to minimise impacts on the pedestrian network.
C3.	All building entries are clearly visible from the public domain. Access is to be provided according to: a) Active Frontages: at ground level unless it can be clearly demonstrated that it is unreasonable to meet this requirement and a suitable urban design outcome can be achieved which would be applicable in this specific instance only. b) Interactive frontages for residential development in the R3 Medium Density zone: at ground level and set in a landscaped front setback that is to be raised above natural ground level to between 0.6m and 1.0m.
C4.	To avoid blank walls and create visual interest, the maximum length of any wall at the ground floor level, without articulation such as a door or window is 5m.

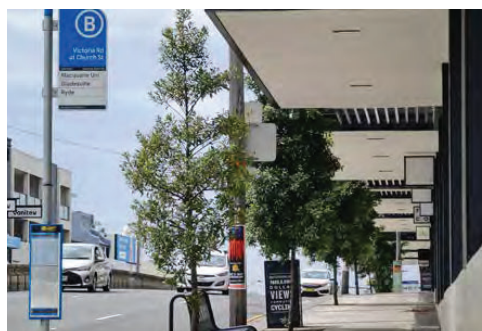


Figure K21-23 Awnings should be designed to allow for street tree planting

CITY OF CANADA BAY

Development Control Plan

Part K

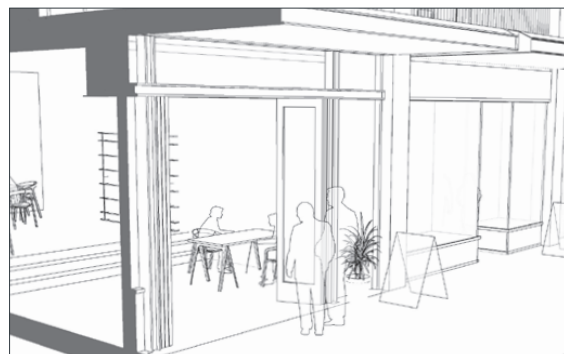
Special Precincts

Controls

C5.	Active frontages are provided as identified in Figure K21-9 .
C6.	<p>Along active frontages:</p> <ul style="list-style-type: none"> a) the finished ground floor level is to match the footpath level; where this is not possible due to topography, the ground floor level is to be a maximum of 0.4m above the footpath. Where ground floor level is elevated above the footpath, the elevated area is to form an activated continuation of the interior, and not to create a visual barrier to the interior; b) continuous awnings must be provided to shelter pedestrians from weather conditions; c) awnings should be designed to allow for street tree planting; d) awnings are to be between 3.5m and 5m above ground level (see Figure K21-22); e) consistent paving, street furniture, signage, planting and lighting is desirable; and f) design guidance in Figure K21-10 is applied where possible with long expanses of floor to ceiling glass prohibited.
C7.	Residential uses on the ground floor can be raised to a maximum of 1.0m above the footpath level to improve internal privacy. Direct access from the footpath to individual dwellings is required wherever possible.

C8. Front fencing for residential uses on the ground floor are to display an appropriate balance of visibility and outlook, informal surveillance of the street and privacy for residents and building users. Fences are to be a maximum height of 1.2m and at least 25% transparent. Solid walls are only acceptable to a maximum height of 0.6m.

C9. Common areas for building users/ residents are encouraged within the front setback with seating facilities located close to the public footpath to encourage surveillance of the street, visible activity and social interaction.



Operable glazing with street level activation and dining



Elevated seating area integrated with street frontage and operable glazing

Figure K21-24 Strategies to achieve street level activation

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)

K21.16 Amenity

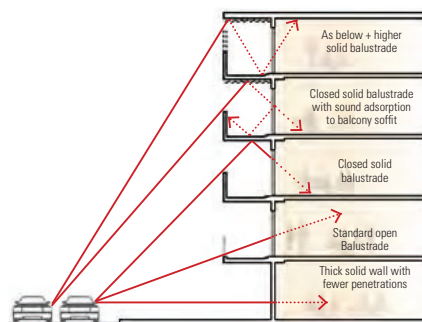
New housing and employment uses need to provide a high level of amenity for future residents and building users. At the same time, development is required to protect and where possible enhance the quality of the public domain and adjoining private properties. The following controls seek to help maximise privacy, solar access and outlook for all. This section also identifies design treatments to mitigate air quality and noise impacts for development along Parramatta Road.

Objectives

- O1 To minimise the impact of new development on the outlook, privacy and sun access of adjoining properties.
- O2 To minimise overshadowing of streets, links and public open spaces.
- O3 To protect building users from negative impacts (noise, air quality, vibration) from Parramatta Road.

Controls

C1.	Siting and built form configuration optimises solar access within the development and minimises overshadowing of adjoining properties.
C2.	Taller elements of built form are oriented north-south where possible. The height and modulation of east-west buildings allows solar access to courtyard spaces (where courtyards are appropriate).



C3.	Louvres, shading devices and windows are able to be operated by buildings users where possible, to allow building occupants to regulate climatic conditions rather than rely solely on mechanical systems.
C4.	Development along Parramatta Road is to consider the provisions of the <i>State Environmental Planning Policy (Infrastructure) 2007</i> and <i>Development Near Rail Corridors and Busy Roads Interim Guidelines</i> and the design approaches illustrated in Figure K21-25 .
C5.	For residential components of new development, noise sensitive areas (living rooms, bedrooms) are located away from Parramatta Road where possible.
C6.	Windows located towards Parramatta Road are double-glazed (or use laminated glazing) and have acoustic seals.
C7.	Habitable rooms (excluding balconies) are to be designed to achieve internal noise levels of no greater than 50dBA.

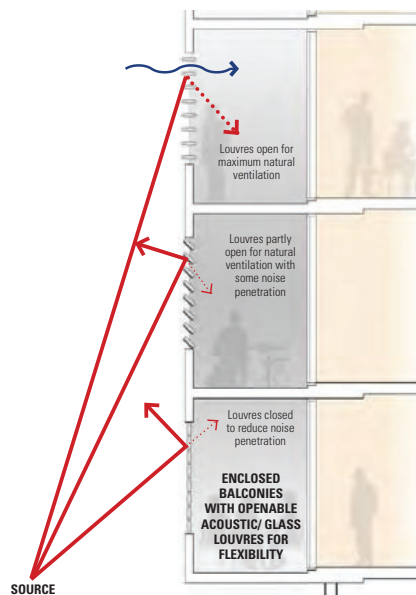


Figure K21-25 Noise mitigating facade treatments

(Source: *Development Near Rail Corridors And Busy Roads Interim Guideline, NSW*)

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21.17 Appearance

The design of buildings contributes to the streetscape character and adds visual richness, complexity and interest. In addition, the selection of signage, materials, finishes and colours should have regard to compatibility to the surrounds and consider robustness, durability and ease of maintenance.

Objectives

- O1 To ensure building exteriors positively contribute to the desired future character of the area and streetscape.
- O2 To ensure that signage is integrated and not detrimental to the local character by limiting its cumulative impact with other signage.

Facade design

Controls	
C1.	The composition of facades balances solid and void elements and does not display large areas of a single material, including reflective glass.
C2.	External walls are constructed of high quality and durable materials and finishes with low maintenance attributes ('self-cleaning') such as face brickwork, rendered brickwork, stone, concrete and glass.
C3.	Any blank sidewalls (including temporary walls that may be covered in the future) that are visible from the public domain are designed as an architecturally finished surface that complements the main facade.
C4.	Visually prominent elements such as balconies, overhangs, awnings, and roof tops are to be of high design quality.
C5.	Roof plant, lift overruns, utilities, vents and other service related elements are to be integrated into the built form design and complementary to the architecture of the building.



Example of balconies with a balance of solid and void in the facade composition and treatment.

Signage and advertising

Controls	
C6.	Signage is to comply with the requirements of State Environmental Planning Policy No 64-Advertising and Signage. Also refer to requirements in the <i>City of Canada Bay DCP Part I Signage and Advertising</i> .
C7.	Signage is to be integrated into the overall architectural design. Advertising signs should complement the design of buildings and the overall character of the precinct. Signage must relate to an approved use on the site.
C8.	The main facades of buildings from the first floor to the rooftop or parapet are to be uncluttered and generally free of signage.
C9.	Freestanding signs are not to be located on the top of buildings and should not impact on the skyline when viewed from the street. Signs painted on or applied to the roof of a building are not permitted.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)

K21.18 Landscape Design

Landscape design plays an important role in the successful integration of new development into the surrounding streetscape and context. It enhances the appearance and amenity of the area, provides for recreation, preserves biodiversity and improves micro-climatic conditions.

Landscape and built form need to be designed together and landscaped areas should not be generated by 'left-over spaces' resulting from building siting. A portion of the landscaped area is required to be deep soil suitable for the growth of mature trees and vegetation.

Objectives

- O1 To promote high quality landscape design as an integral component of the overall design of new development, softening the appearance of buildings.
- O2 To improve the local micro-climate, native fauna and flora habitats and control climatic impacts on buildings and outdoor spaces.
- O3 To allow adequate provision on site for infiltration of stormwater, deep soil tree planting, landscaping and areas of communal outdoor recreation.

Precinct Wide

Controls

C1.	Existing street trees and landscape features are to be retained wherever possible. All 'significant trees' that are identified as either High Significance or Medium Significance in the PRCUTS Public Domain Plan are to be retained and assessed by a suitably qualified Arborist. Refer also to CCB DCP Part B General Controls, <i>B6.10 Urban Tree Canopy</i> and <i>Australian Standards - AS 4970-2009 Protection of Trees on Development Sites</i> .
C2.	The layout and key design features of all parks and plazas are to be as per the PRCUTS Public Domain Plan.
C3.	Landscape design complements the proposed built form and minimises the impacts of scale, mass and bulk of the development in its context.

C4.	Landscape design highlights architectural features, defines entry points, indicates direction, and frames and filters views from and into the site.
C5.	For development along Parramatta Road, a minimum of 1 canopy tree per 10m of length of frontage is to be planted in the 'green edge' setback area, capable of reaching a mature height of at least 10m.
C6.	For development along all other streets (excluding active frontages) a minimum of 1 canopy tree per 12m of frontage is to be planted. New trees are to be capable of a mature height of at least 6m.
C7.	Where surfaces on rooftops or podiums are used for community open space, the development must demonstrate at least 50% of the accessible roof area is shaded by a shade-structure or covered with vegetation, including tree canopy.
C8.	Where surfaces on rooftops or podiums of Residential flat buildings, Shop top housing or Commercial premises are not used for community open space, for example solar PV or heat rejection, the development must demonstrate at least 75% of the remaining roof area or podium is covered in vegetation, including tree canopy.
C9.	A minimum of 40% projected tree canopy coverage on publicly accessible streets and laneways, unless it can be clearly demonstrated that it is unreasonable to meet this requirement and a suitable urban design outcome can be achieved which would be applicable in this specific instance only.
C10.	A minimum of 75% projected tree canopy coverage shall be achieved for all parks.
C11.	Adequate soil volume is to be provided for the tree species. In areas where deep soil is restricted, opportunities for structural soil or under paving vault systems should be included to meet these requirements. Where the building setback is 1.5m or less, additional uncompacted soil volumes are to be provided under pavements to provide the soil volumes suitable for the tree species.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Controls	
C12.	Tree planting is to be prioritised in the planning and design of all public domain areas and, where possible, utilities to be bundled, undergrounded and located away from tree planting areas.
C13.	Tree species are to be selected for their respective micro-climatic suitability and need to provide a high level of urban amenity, noting that the duration and density of overshadowing from buildings will impact the growth and species suitability.
C14.	<p>A landscape architect to be engaged to ensure that:</p> <ul style="list-style-type: none"> the architectural planning, building footprint and basement engineering result in adequate deep soil zones and podium planter boxes. the deep soil zones are located in areas where canopy and landscape outcomes will best serve the future users and general architectural amenity. species selection considers site suitability, shade requirements of any communal open space and solar access into internal building spaces.

Mixed Use Zone

Controls	
C15.	A minimum of 15% projected tree canopy coverage shall be achieved for all private land (i.e. non-public) developments. This shall be measured as the projected square metre canopy of the trees using reasonable estimates of the mature size of the chosen trees.
C16.	Trees are to be planted in sufficient deep soil to support them to maturity (refer to PRCUTS Public Domain Plan for soil volumes). A tree shall be as defined by this DCP.
C17.	Tree coverage may include trees planted at ground level as well as any trees planted in upper levels of buildings, such as podiums and roofs. It may also include any canopy overhanging from an adjoining public domain area.

Residential Zones

Controls	
C18.	Development consent must not be granted unless the development achieves at least 25% canopy cover across the site, identified on the landscape plan and measured by the extent of canopy at maturity.
C19.	Native species must comprise at least 75% of the plant schedule, incorporating a mix of locally native trees, shrubs and groundcovers appropriate to the character of the area (see CCB DCP Appendix 3 for further details).
C20.	<p>A minimum of 30% of the total site area is to be provided as landscaped area.</p> <p><i>Refer to Landscaped Area definition in this DCP.</i></p>
C21.	50% of the required landscaped area is to be deep soil with deep soil planting (trees and shrubs) and a preference for native species.
C22.	Calculation of landscaped and deep soil areas is not to include any land that has a length or a width of less than 1.5m.
C23.	<p>Trees and vegetation provide a high degree of amenity and environmental benefit. Their selection and location should:</p> <ol style="list-style-type: none"> Provide shade in summer and sun access in winter to building facades and public and private open spaces; Reduce glare from hard surfaces; Channel air currents into built form; and Provide windbreaks, screen noise and enhance visual privacy where desirable.
C24.	For residential development in the R3 Medium Density zone, at least 50% of the front setback area is required to be deep soil.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)

K21.19 Sustainability and Resilience

To create sustainable, resilient and affordable communities along the Corridor, the PRCUTS identifies that the following three key areas of intervention should be pursued:

- 1) High performance buildings;
- 2) Reduced and decoupled strategic parking; and
- 3) Urban resilience and infrastructure delivery.

Further details are provided in the Parramatta Road Corridor Sustainability Implementation Plan and should be considered when assessing proposals.

Objectives

- O1 To deliver world leading urban transformation of the precinct by exceeding current sustainability requirements.
- O2 To mitigate the impacts of climate change on key infrastructure and assets.

Controls

- | | |
|-----|---|
| C1. | A residential flat building or a mixed use development (that contains dwellings) which complies with Table K21-1 is eligible for an amount of additional residential floor space (above that already permitted elsewhere under this Plan) equivalent to that which exceeds the floor space ratio as shown on the Floor Space Ratio Map or Incentive Floor Ratio Map (as applicable to that development) by up to 5%, subject to the consent authority being satisfied that this additional residential floor space does not adversely impact on neighbouring and adjoining land in terms of visual bulk and overshadowing. |
| C2. | Future development should demonstrate consistency with the smart parking strategies and design principles outlined in <i>Section K21.20 Access and Parking</i> . |

- | | |
|-----|---|
| C3. | Public domain and buildings shall be designed to reduce localised heat created by the urban heat island affect by: <ol style="list-style-type: none"> a) maximising canopy cover along all streets, particularly along Parramatta Road and Burwood Street; b) developments within the R3 zone are to provide at least 25% canopy cover across the site, identified on the landscape plan and measured by the extent of canopy at maturity; c) maximising the use of vegetation on buildings, including above ground parking facilities; d) encouraging vegetation, green roofs, green walls and materials with a high solar reflectance index on at least 50% of the surfaces of all buildings with western and northern building facades; and e) complying with landscape DCP guidelines within <i>Section K21.18 Landscape Design</i>. |
| C4. | Flow rates from the site should not be more than pre-development site discharge. |
| C5. | All new streets should implement water sensitive urban design treatments at the point source across all catchment areas. |
| C6. | Stormwater run-off quality should seek to reduce annual loads of: <ol style="list-style-type: none"> a) total Nitrogen by 45%; b) total Phosphorus by 65%; and c) total suspended solids by 85%. |
| C7. | Development consent must not be granted unless the building, or part of a building, contains both potable water pipes and recycled water pipes for the purposes of all available internal and external water uses. |

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Table K21-1 Energy and Water Targets by Use

Use	Energy Target	Water Target
Residential		
<14 storeys	BASIX Energy 50	BASIX Water 50
15 - 29 storeys	BASIX Energy 40	
30 - 39 storeys	BASIX Energy 35	
40+ storeys	BASIX Energy 30	
Commercial and Retail Development < 10,000m² GFA*		
Smaller scale non-residential development is governed by the National Construction Code, and should demonstrate consistency with relevant requirements of the Code.		
Commercial Development ≥ 10,000m² GFA*		
Base building and/or individual tenancies	NABERS 5-star	NABERS Water 4-star NABERS Water 5-star should be pursued where recycled water is available
Shopping Centre Development*		
Base building only	NABERS 5-star	NABERS Water 4-star NABERS Water 5-star should be pursued where recycled water is available

*Source: PRCUTS Planning and Design Guidelines, Urban Growth, Nov 2016



Maximising canopy cover significantly improves the micro-climate and supports active transport choices.



All new streets and pedestrian/ cycle links should implement water sensitive urban design treatments (WSUD).

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)

K21.20 Access and Parking

The location of car parking has a significant impact on pedestrian safety and the quality of the public domain. Vehicle access points need to be integrated carefully to avoid potential conflicts with pedestrian movement and the desired streetscape character.

Objectives

- O1 To transition to lower car ownership and support the uptake of walking, cycling and public transport use.
- O2 To minimise the visual impact of car parking areas and vehicle access points.
- O3 To minimise conflicts between pedestrians and vehicles on footpaths, particularly along pedestrian desire lines such as Burton Street.

Parking and access design

Controls

C1.	Vehicular access points minimise visual intrusion and disruption of the streetscape, emphasise the pedestrian experience and maximise pedestrian safety.
C2.	The width and height of vehicular entries is kept to a minimum. Roller doors or gates should be integrated with the architectural design of the development. Vehicular entry/exit points are to be recessed by at least 0.5m behind the building line.
C3.	The public footpath treatment is to be continued across driveways to create a threshold, signal pedestrian priority and slow vehicle speeds.
C4.	Vehicle access points are not permitted along active street frontages that are identified as Vibrant and are to be minimized on Friendly and Mixed Facades. Where rear or side access is not possible, development without parking will be considered.

C5.	Vehicular access points off Burton Street are only permitted if a development has no other street or laneway frontage.
C6.	At grade parking is not permissible within any of the setback zones and, only if unavoidable due to proximity to the Metro tunnel, is to be sleeved with active uses to shield the car parking from the street.
C7.	Parking is to be designed to be 'adaptable' and able to be converted to other uses in the future. Underground car parking and basement spaces are to have a minimum floor to floor height of 3.7m to be able to be converted to commercial uses. At ground level parking areas are to have a minimum floor to floor height of 4.4m to be able to be converted to retail uses. Above ground parking areas are to have a minimum floor to floor height of 3.7m (second floor level) to be able to be converted to commercial uses, or 3.1m-3.7m (above second floor level) to be able to be converted to commercial or residential uses.
C8.	Where unavoidable due to topography, basement parking can only protrude above natural ground level by a maximum of 0.4m in R4 zone and 1.0m in R3 zone. Car parking cannot protrude into the front setback area within an R3 zone.
C9.	Parking is not permitted to be visible from streets and open spaces. Access to parking via a driveway, lane or basement carpark entry is permitted if one access point services a minimum of 5 dwellings. Front garages, carports and individual driveways are not permitted.
C10.	Development sites are encouraged to provide below-ground car parking that is interconnected to and shared with, or is able to be interconnected in the future to, the below-ground car parking on adjoining sites and developments In order to facilitate rationalisation of vehicle entry points and to increase future planning flexibility.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Car parking

Controls	
C11.	On-street parking to be integrated to the streetscape and parallel to the kerb.
C12.	Parking is to be listed on a separate title (unbundled) from the development.

Shared parking

Controls	
C13.	Shared parking rates should be provided in accordance with the occupancy rates provided in Table K21-2 . Shared parking is parking shared by more than one user, which allows parking facilities to be used more efficiently.
C14.	Parking requirements for non-residential uses may be shared and potentially reduced where it can be determined that the peak parking requirements occur at different times (either daily or seasonally). Parking rates for shared parking shall be calculated by applying the occupancy rates in Table K21-2 to the maximum parking requirements for a proposed use.

Table K21-2 Shared Car Parking Rates

Building Use	Mon - Fri 8am - 5pm	Mon - Fri 6pm - 12am	Mon - Fri 12am - 6am	Weekend 8am - 5pm	Weekend 6pm - 12am	Weekend 12am - 6am
Industrial	100%	20%	5%	5%	5%	5%
Commercial	90%	80%	5%	100%	70%	5%
Hotel	70%	100%	100%	70%	100%	100%
Restaurant	70%	100%	10%	70%	100%	20%
Theatre	40%	80%	10%	80%	100%	10%
Entertainment	40%	100%	10%	80%	100%	50%
Conference	100%	100%	5%	100%	100%	5%
Institutional	100%	20%	5%	10%	10%	5%
Church	10%	5%	5%	100%	50%	5%

Source: PRCUTS Planning and Design Guidelines p45, Urban Growth, Nov 2016

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)

Car share and ride share

Controls	
C15.	On-site parking can be reduced at a rate of 5 parking spaces per 1 car share space where an active car-sharing program is made available to residents and/ or employees and where ride share or other organised car pooling initiatives are available on site.
C16.	Additional car share should be provided at a rate of 1 space per 20 dwellings without parking and 1 space per 100 dwellings with parking.
C17.	Car share will be located in publicly accessible sites, either on-street, in public parking stations or, if provided within a building it should be accessible to all car share members.
C18.	The following car share targets have been established for the precinct: <ul style="list-style-type: none"> • 10% - 15% of residents by 2031 • 15% of residents by 2050.

Parking rates

Controls	
C19.	For parking rates, refer to clause 8.11 of the Canada Bay LEP 2013 and Part B of this DCP

Bicycle parking

Controls	
C20.	For bicycle parking controls, Refer to <i>DCP Part B - General Controls, B3.6 Bicycle parking and storage facilities</i> ; and <i>B3.7 End of trip facilities</i> .

Electric vehicles

Controls	
C21.	Refer to <i>DCP Part B - General Controls, B3.8 Electric Vehicles</i>

Common loading docks and service vehicle parking

Controls	
C22.	Refer to <i>DCP Part B - General Controls, B3.9 Common loading docks and service vehicle parking</i> .

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Freight and service access

Controls	
C23.	Freight and service vehicle rates should be provided in accordance with Table K21-3 .
C24.	Vehicle access including for freight and service vehicles is not permissible off Parramatta Road.
C25.	Commercial and medium/ high density residential developments are to have common loading docks and facilities for freight and service vehicles, including trades, home deliveries etc.

C26.	Loading docks for freight and service vehicles are to be located off-street and underground.
C27.	Loading docks and facilities are to be located and designed to minimise the impact of freight and service vehicle movements on the area.

Table K21-3 Freight and service vehicle rates

Land Use	Space required
Residential development	1 space per 50 apartments for first 200 apartments plus 1 space per 100 apartments thereafter
Commercial offices	1 space per 4,000m ² GFA for first 20,000m ² GFA and a space per 8,000m ² GFA thereafter
Retail	1 space per 500m ² for first 2,000m ² and 1 space per 1,000m ² thereafter (50% of spaces for trucks)

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K21 Burwood Concord (PRCUTS)

K21.21 Housing Diversity

A mix of dwelling types in the precinct will provide greater housing choice and support equitable housing access by offering a diversity of dwelling types, amount of floor space, number of bedrooms and level of accessibility and affordability.

Objectives

- O1 To provide a diverse range of dwelling types and sizes to cater for the needs of the existing and future residents over time, and encourage social diversity.
- O2 To ensure that low to moderate income households can afford to live in the precinct by increasing the stock of appropriate affordable housing.

Controls

C1.	For mix of residential flat buildings and residential components of mixed use developments, refer to LEP clause - 6.11 <i>Mix of dwelling sizes in residential flat buildings and mixed use development</i>
C2.	Regarding the amount of adaptable (accessible) housing to be provided refer to requirements in <i>City of Canada Bay DCP Part B1.1 Adaptable Housing</i> .
C3.	Contributions towards Affordable Housing is to be provided according to Council's Affordable Housing Contributions Scheme.
C4.	Affordable housing is to be consistent with the requirements of the <i>City of Canada Bay Affordable Housing Program and Policy</i> .

K21.22 Residential Uses not covered by the Apartment Design Guide

The NSW Apartment Design Guide (ADG) applies to buildings that are three or more storeys high and that comprise at least four dwellings. For other residential development types, such as 2-3 storey terraces, low rise up-over or walk-up apartments, multiplexes, urban courtyard houses and the like, the following controls apply.

Objective

- O1 To ensure design quality, performance of and amenity created by new residential development is of a high standard and consistent across the precinct.

Controls

C1.	The maximum building depth is 18m unless it can be demonstrated that all habitable rooms receive adequate ventilation and solar access, e.g. through the use of a courtyard design.
C2.	The minimum private open space of a ground floor dwelling is calculated by the number of bedrooms x 4m ² .
C3.	Single aspect dwellings, if unavoidable, are only permitted if they have a northerly or easterly aspect.
C4.	Living rooms and private open spaces of at least 70% of apartments receive a minimum of 2 hours direct sunlight between 9 am and 3 pm in mid winter (21 June).
C5.	Master bedrooms have a minimum area of 10m ² and other bedrooms 9m ² .
C6.	Building separation is as per the <i>Apartment Design Guide, Section 3F Visual Privacy</i> .

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Controls

C7.

Private open space (POS) is designed to maximise useability, privacy, outlook and solar access.

For dwellings on the ground floor including townhouses and terraces, the minimum private open space is as follows:

Dwelling type	Min. POS
Studio/ 1 bedroom	20m ²
2 bedroom	28m ²
3+ bedroom	35m ²

The minimum dimension is 4.0m x 4.0m.

For dwellings on upper levels, the minimum private open space (such as decks and balconies) is as follows:

Dwelling type	Min. POS
Studio/ 1 bedroom	10m ²
2 bedroom	14m ²
3+ bedroom	18m ²

The minimum dimension is 2.0m x 3.0m.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K22 Homebush North (PRCUTS)

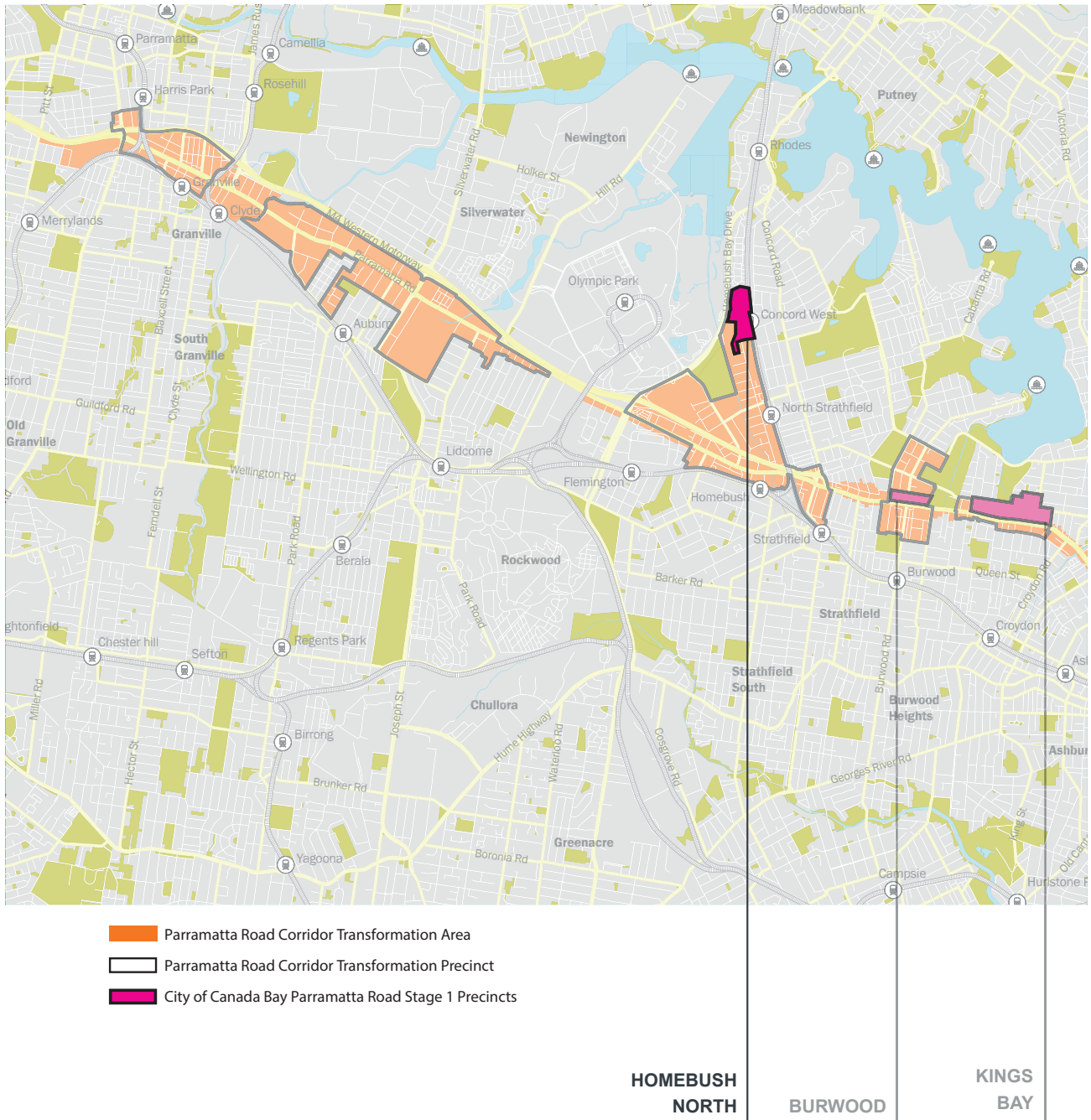


Figure K22-1 PRCUTS Parramatta Road Corridor (Source: PRCUTS, 2016)

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Homebush North Precinct

The Homebush North Precinct is located between Homebush Bay Drive and the Northern Railway Line (T9). The precinct is located to the east of the Powells Creek Reserve and is adjacent to the Concord West Train Station. The part of this precinct controlled by this DCP includes the Victoria Avenue Public School and properties to the north of Conway Street.

A masterplan for the precinct was developed to consolidate information presented in the PRCUTS and other studies and plans to guide the future built form and urban environment and to inform amendments to the Canada Bay LEP 2013, DCP and contributions plan.

K22.1 Parramatta Road Corridor Urban Transformation Strategy (PRCUTS)

This DCP has been prepared to support the implementation of the NSW Government Parramatta Road Corridor Urban Transformation Strategy (PRCUTS) published in November 2016.

Previous studies have identified a number of industrial sites within the precinct that are currently underutilised and are suitable for residential purposes, featuring good access to public transport and local amenities. PRCUTS aims to renew Parramatta Road and adjacent communities through investments in homes, jobs, transport, open spaces and public amenity. It presents significant urban renewal opportunities for land within defined development precincts.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K22 Homebush North (PRCUTS)



Figure K22-3 Aerial photo (source: nearmap.com)

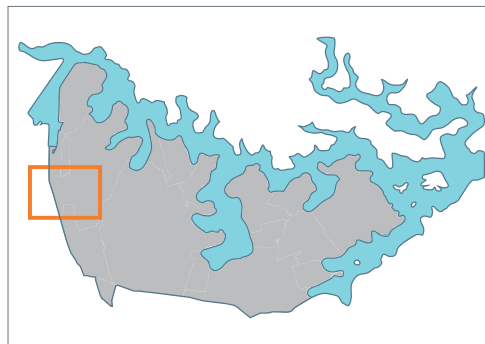


Figure K22-2 Location within LGA



Figure K22-4 Artist impression of indicative future character within Homebush North Precinct (Source: PRCUTS, Urban Growth, Nov 2016)

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



Figure K22-5 Land to which this DCP applies

K22 Homebush North (PRCUTS)

K22.2 Existing Character

Homebush North Precinct is characterised by a variety of built form and uses, including a mix of dwelling houses, town houses, apartment buildings, education and industrial uses. In terms of vehicle movement, the precinct is effectively self-contained, with George Street forming the only vehicular access point to the surrounding road network at the southern end of the precinct.

Strengths and opportunities

- proximity to high amenity open space, recreation facilities and Sydney Olympic Park;
- enhanced connections to rail transport, including future Metro stations, to increase accessibility to employment, recreation and cultural opportunities;
- some large, unfragmented land holdings and limited number of strata titled properties;
- potential to enhance existing recreational opportunities and linkages for active transport such as better pedestrian connectivity and safety across the railway line and Homebush Bay Drive;
- improved active transport access to regional recreation and open space facilities with a focus on connecting to the existing recreational routes around Olympic Park; and
- reduced car dependency by lowering parking rates in areas with good access to public transport.

Challenges and constraints

- Existing high traffic volumes on Homebush Bay Drive;
- Barriers to access for all modes of transport, created by major roads and rail lines;
- Low pedestrian connectivity and permeability; and
- High parking demand and levels of on-street parking.

K22.3 Desired Future Character

"Homebush Precinct will become a new, mixed use precinct housing a new community of residents attracted to the area for its high amenity and access to employment at Parramatta CBD and Sydney Olympic Park. The precinct will provide a long term supply of housing stock to meet increasing demand as Sydney Olympic Park grows into a new city."

Sitting between Sydney's two main CBDs, the wider area of Homebush will be transformed into an active and varied hub, blending higher density housing and a mix of different uses, supported by a network of green links and open spaces with walking access to Concord West train station. Future development will support the delivery of high quality open space and improvements to the area around the station.

The desired future character of the precinct is a transit oriented community which features higher densities that maximise site renewal opportunities. Development proposals in the precinct are to achieve the following desired future characteristics:

- **Well Integrated Built Form:** Development will provide a built form that steps down in height toward adjoining lower-rise residential areas. The siting, bulk and scale of development will ensure there are no significant adverse impacts to sunlight access and privacy within the precinct.
- **Mixed Use:** Development adjoining the station square will provide a focal point for the neighbourhood by providing active uses such as shops, cafes and restaurants.
- **Accessibility:** Development will better connect the precinct as a whole by creating a street network with emphasis on active transport. Connections will strengthen existing or promote new routes to the station and open space.

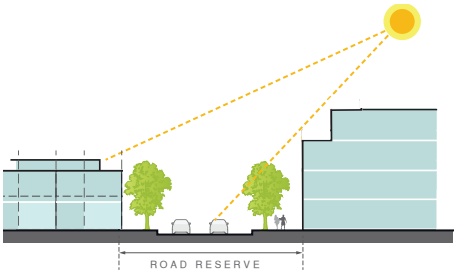
CITY OF CANADA BAY

Development Control Plan

Part K


Special Precincts

K22.4 Built Form Principles




Solar access

Taller development is located, designed and modulated in height so that impacts such as overshadowing on neighbouring properties and public spaces is minimised.



Sensitive interfaces

Development that is of a larger scale than that of the surrounding area is required to set back and step down, in particular along sensitive interfaces to heritage items and adjoining low rise residential uses.



Street character

Consistent proportions and a human scale along streetscapes are established through front setbacks, landscape treatments, street wall heights and building articulation.



Bulk and scale

Larger development is integrated into the context through vertical articulation that breaks the facade into smaller elements, changes in material and colour, and a recessed roof form.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K22 Homebush North (PRCUTS)

K22.5 Block Configuration

The scale, height, arrangement and orientation of new built form defines the proportion and level of enclosure of streets and public spaces. Good site planning and block configuration maximises the level of sun access and visual and acoustic privacy for all, including neighbouring properties.

Together with building setbacks (see *Section K22.8 Street Setbacks*), the following controls set the basic building footprints and envelopes for new development in the Homebush North Precinct.

Objectives

- O1 To arrange building forms including heights and massing that reinforce the future desired character of the area and protect valued character attributes.
- O2 To facilitate daylight access and ventilation to streets, public places and neighbouring properties.
- O3 To maximise visual and acoustic privacy.
- O4 To consider future development opportunities on adjoining sites and avoid isolated sites.
- O5 To maximise permeable ground surfaces to allow rainwater to penetrate the soil.

Controls

C1.	New development is to consider future development on adjoining sites by providing sufficient separation and setbacks, and avoid creating isolated sites. New development is to follow the desired Site Amalgamation Plan (Figure K22-6).
C2.	New development is to conform to the maximum number of storeys as shown in Figure K22-8 . Further controls regarding the permissible building envelope are contained in <i>Section K22.8 Street Setbacks</i> and <i>Section K22.10 Massing and Articulation</i> . If a multi dwelling (terrace) development is proposed the maximum height for that development will be 8.5m.

However, if the development complies with the following requirements then it may have a maximum height of 9.0m if:

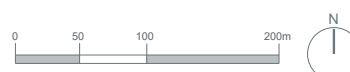
- a) The development follows a 45 degree height plane, measured at the front and rear building line, springing from 7m above the natural ground level, and
- b) Only bedrooms and non-habitable spaces are located in the third storey.

C3.	The maximum length of any building more than three storeys high is 60m.										
C4.	Where a one to three storey building is greater than 60 metres in length, the facade is articulated through the use of: <ul style="list-style-type: none"> significant recesses or projections. deep balconies. elements of a finer scale than the main structural framing including the eaves and overhangs. vertical elements such as blade walls or fins. 										
C5.	For commercial uses on all floors above the ground level, any wall with windows must be set back from the side and rear boundary by 3m. Any wall without windows is not required to be setback.										
C6.	Built form is to be positioned for optimal access to daylight and direct sunlight for internal and external spaces, and for adjoining public and private land.										
C7.	Buildings are adaptable to a variety of uses over time. The following minimum floor to floor heights apply: <table border="1"> <thead> <tr> <th>Use</th><th>Minimum height</th></tr> </thead> <tbody> <tr> <td>Retail</td><td>4.4m</td></tr> <tr> <td>Commercial</td><td>3.7m</td></tr> <tr> <td>Adaptable</td><td>3.7m</td></tr> <tr> <td>Residential</td><td>3.1m</td></tr> </tbody> </table>	Use	Minimum height	Retail	4.4m	Commercial	3.7m	Adaptable	3.7m	Residential	3.1m
Use	Minimum height										
Retail	4.4m										
Commercial	3.7m										
Adaptable	3.7m										
Residential	3.1m										

Development Control Plan

Part K

Special Precincts



CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K22 Homebush North (PRCUTS)

K22.6 Access Network

A permeable urban structure is key to successful places. The provision of new links and open spaces is encouraged to improve the area's currently disconnected street network, with a particular focus on supporting the uptake of active and public transport and linking key destinations within and beyond the precinct.

Objectives

- O1 To provide a better and more robust access network that links residential, local schools, employment and retail uses to Concord West Station and open spaces such as the playing fields, Powell's Creek Reserve and Sydney Olympic Park.
- O2 To encourage travel behaviour change by discouraging car usage and supporting sustainable travel choices such as public and active transport.
- O3 To improve network permeability, in particular for pedestrians, by breaking up long blocks with new streets and quality pedestrian prioritised links.
- O4 To meet access requirements for future development and enable increased density in selected locations.

Controls

C1.	The existing movement network is retained and new streets, shareways and links are provided as identified in Figure K22-7 .
C2.	Wherever possible, long blocks are broken up with new high quality pedestrian prioritised links, particularly where new connections would facilitate access to public transport, open spaces and community facilities.
C3.	Potential rear lanes have been identified in Figure K22-7 to mitigate the impact of vehicular access and loss of car parking along Victoria Avenue, George Street and King Street. Provision of these lanes would require negotiations between landowners and/or amalgamated sites.
C4.	Shared Zones have been shown on Figure K22-7 . The intended shared use of the road will be indicated by pedestrianised laneway treatments including flush kerbs, landscaping and a paved road surface.

C5.	Size and location of footpaths, laneways, cycleways, planting and parks are to be provided according to Council's PRCUTS Public Domain Plan and PRCUTS Masterplan.
C6.	All future vehicular links including shareways are required to be in public ownership. It is desirable that all future pedestrian/ cycle links also become public land, however, as an alternative an access easement over private land may be able to be negotiated with Council.
C7.	Future pedestrian/ cycle links should have a minimum width of 10m and are to be naturally lit and ventilated, appropriately lit after hours, publicly accessible 24/7, and have clear sightlines from end to end.
C8.	Bicycle facilities, such as parking, secure storage and end-of-trip facilities are easily accessible from the public domain and conveniently located near entrances and/or lifts of new development.
C9.	A new 'Station Square' is located at the eastern end of Victoria Avenue as identified in Figure K22-7 . The public square is to: <ul style="list-style-type: none"> • have a minimum area of 400m². • have minimum dimensions of 17m x 18m; and • feature characteristics for passive recreation such as hardstand paving, tree planting to provide shade, lighting and seating.
C10.	Encourage kerb build outs with rain gardens or low level landscaping at intersections and other key pedestrian crossings to narrow the width of the street.
C11.	The entry and exit of existing underpasses to the east of Station Avenue underneath the rail line and to the west of Victoria Avenue underneath Homebush Bay Drive are addressed and overlooked by private development where possible.
C12.	For more controls see <i>Section K22.17 Access and Parking</i> .

Page K-401

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K22.7 Public Domain Experience

Private development has a large influence on the local character and the support of the existing or future functioning of the public realm, for example by clearly addressing a new pedestrian link and providing good levels of surveillance. The scale of built form, its appearance and the design of private-public interfaces has a significant impact on how people experience a streetscape and the safety of the neighbourhood.

Key elements apart from the built form that need to be considered include front setbacks, boundary treatments, vegetation and landscape design, vehicular access, visible activity at street level, and surveillance provided by doors, windows and balconies.

Objectives

- O1 To protect and improve the quality, accessibility and safety of the public domain across the precinct.
- O2 To support walking and cycling along new and upgraded walking routes to key destinations such as Concord West Station and Sydney Olympic Park.
- O3 To improve the immediate surrounds of Concord West Station including the new Station Square and support increased activity levels, safety and comfort.
- O4 To increase tree canopy cover and provide for more greenery associated with the public domain.

Controls

C1.	Active frontages and Interactive frontages are to be provided as identified in Figure K22-8 .
C2.	<p>Development is to support the experience and safety of the new Station Square adjacent to Concord West Station as identified in Figure K22-7. Development directly to the north of the square must:</p> <ul style="list-style-type: none"> a) maximise the number of openable doors and windows at ground level facing the square; b) ensure that at least 50% of the square receives a minimum of 3h direct solar access in mid-winter (21 June) between 9am and 3pm, unless it can be clearly demonstrated that it is unreasonable to meet this requirement due to urban design considerations and only in specific circumstances where the development complies with all other relevant development standards and development controls; c) locate active uses on the ground floor with a preference for convenience retail and cafes/ restaurants with outdoor chairs and tables; and d) provide continuous awnings or colonnades to the square and wrapping around the corner along King Street which encourages the public to spend time during all weather types.
C3.	All new pedestrian/ cycle links are to be defined by built form and quality edge treatments such as semi-transparent fences or low walls with landscaping. See Section <i>K22.12 Safety and Accessibility</i> for more detail.
C4.	Any development on a corner site and at the end of terminating views must pay particular attention to overall design quality due to the location's high visibility and impact on the local character, i.e. well proportioned facades and quality material, finishes and plant species selection. Driveways or vehicle entry/ exit points at the end of terminating views are prohibited.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K22 Homebush North (PRCUTS)

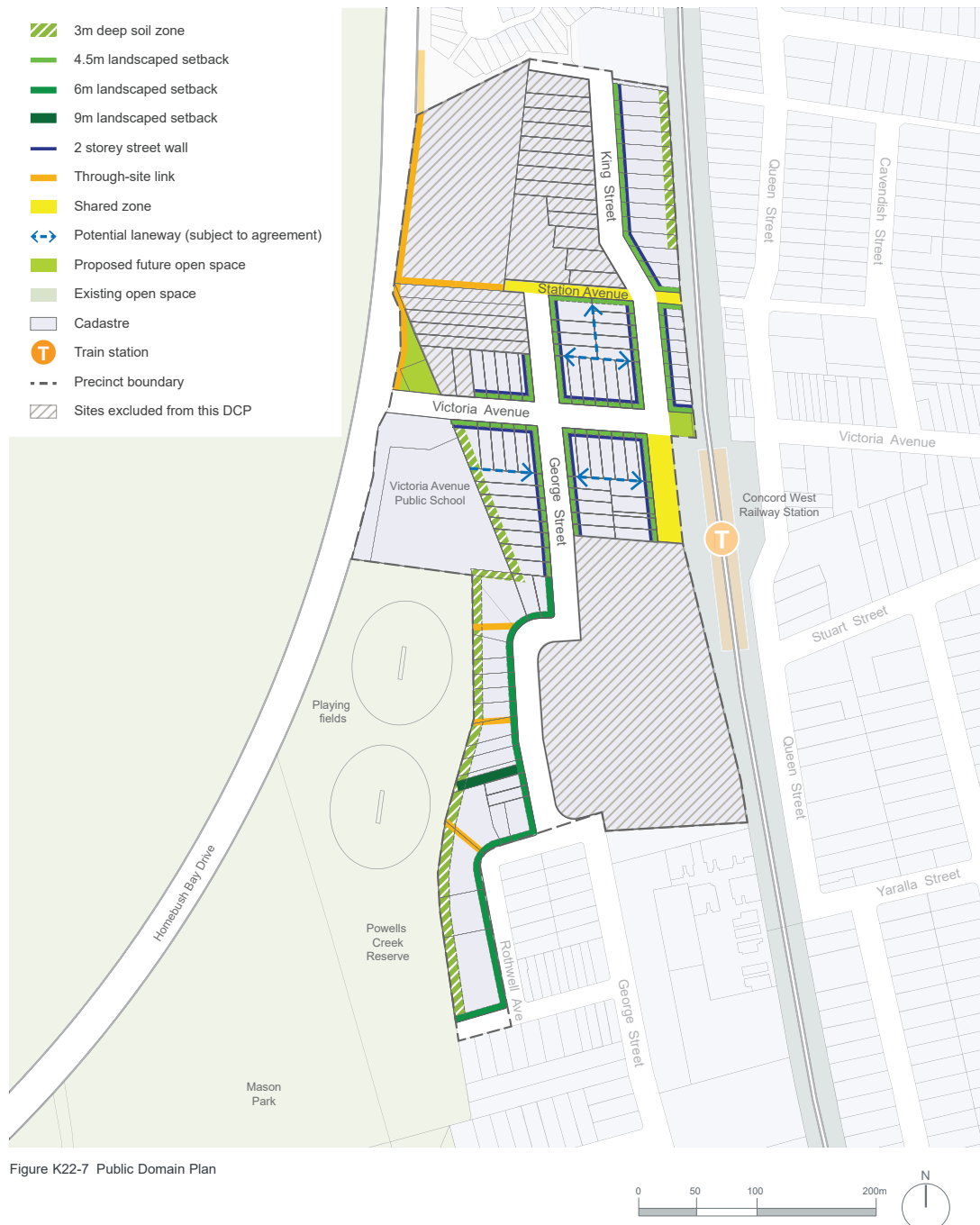


Figure K22-7 Public Domain Plan

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

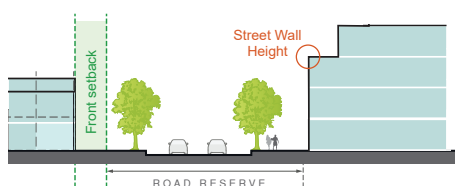
K22.8 Street Setbacks

Street setback areas are an integral part of the streetscape and their treatment is fundamental to the amenity and character of a neighbourhood. Combined with building height and road reserve width, they define the proportion, scale and visual enclosure of the street. Street setbacks not only establish the alignment of buildings along the street, they also provide for landscaping and deep soil areas, building entries and a transition between public and private space.

Street wall heights and upper level setbacks (where relevant) further define the proportion, scale and visual enclosure of the public domain and provide a level of consistency across the precinct. Upper level setbacks lessen the visual impact of taller development and help create a more unified, human-scale streetscape environment.

Objectives

- O1 To ensure new development reinforces the desired streetscape character and where appropriate retains the character of established residential areas.
- O2 To ensure setbacks contribute positively to the pedestrian environment at street level.
- O3 To provide a sense of enclosure to the street and contribute to a consistent built form scale across the precinct over time.
- O4 To enhance development and its relationship with adjoining sites and the public domain, particularly in regard to access to sunlight, outlook, view sharing, ventilation and privacy.



Together with overall building height limits, street setbacks and wall heights define the spatial proportion and visual enclosure of the public domain.

Controls

C1.	All development is to comply with the setbacks shown on Figure K22-7 .
C2.	Where applicable, a portion of the setback area is to provide deep soil zones and tree planting. Refer to Section <i>K22.15 Landscape Design</i> for more detailed controls.
C3.	<p>'Undesirable' elements such as vents, electrical substations, or plant and equipment spaces are not permissible within the setback area and should be accommodated within the building.</p> <p>Service cabinets are to be co-located internally, accessible from loading, waste or parking areas where possible to avoid impact on the public realm.</p>

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K22 Homebush North (PRCUTS)

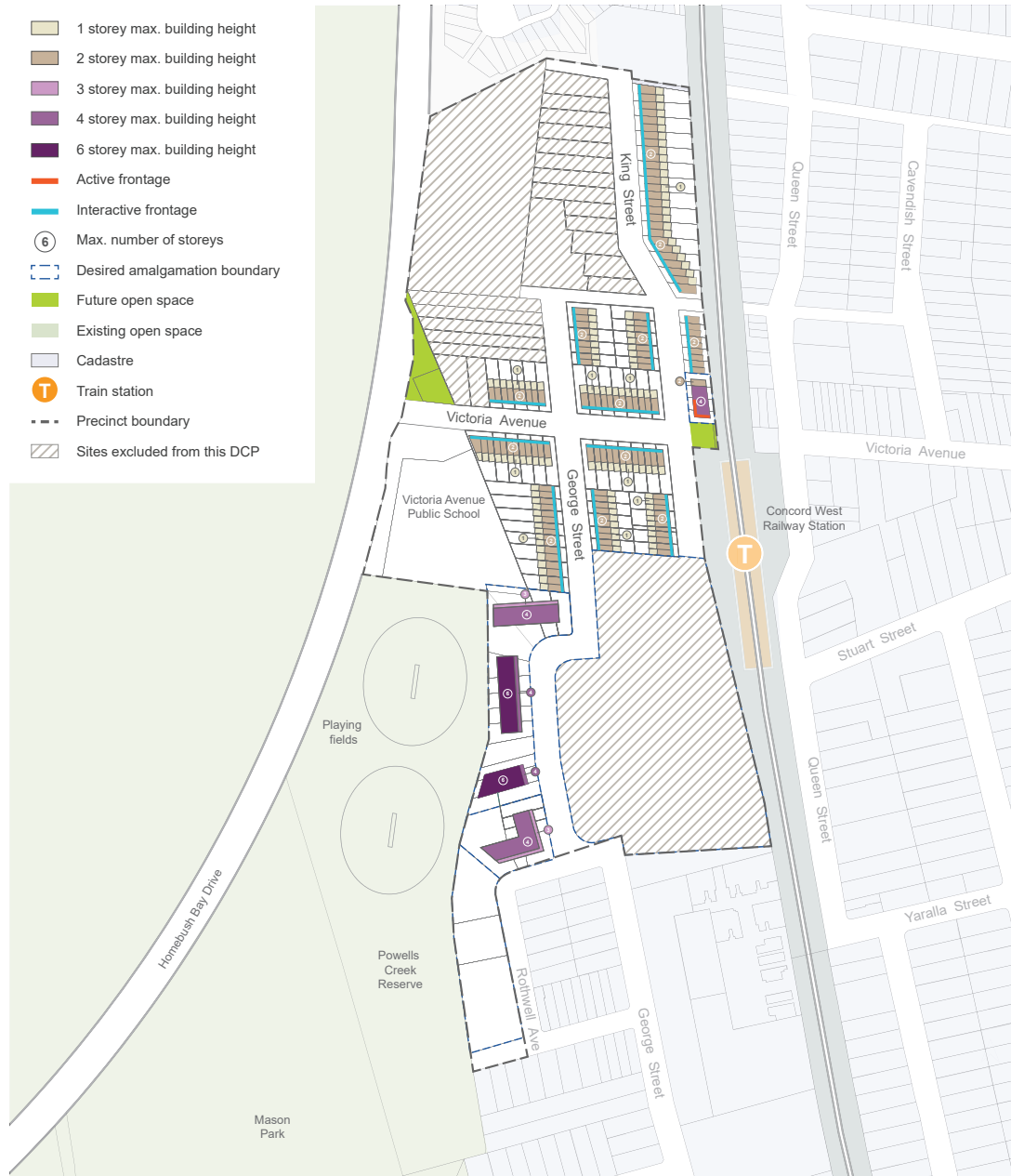
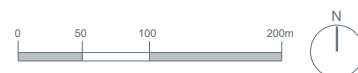


Figure K22-8 Building Envelopes Plan



CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

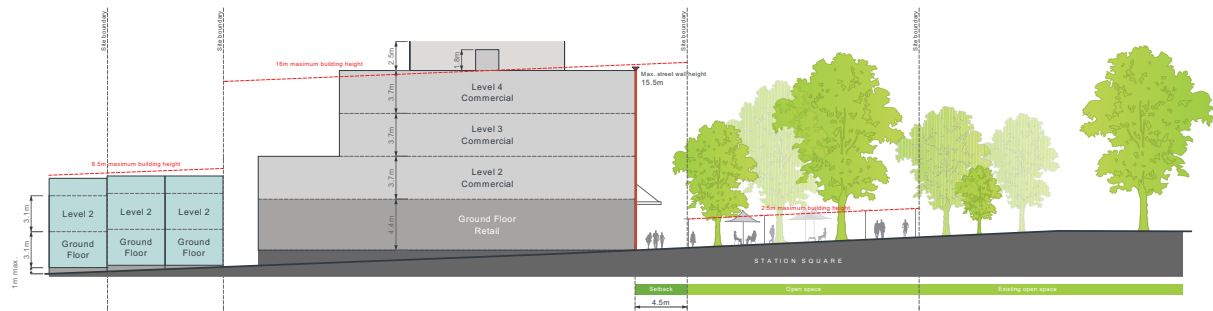


Figure K22-9 Built Form Envelope - Section A

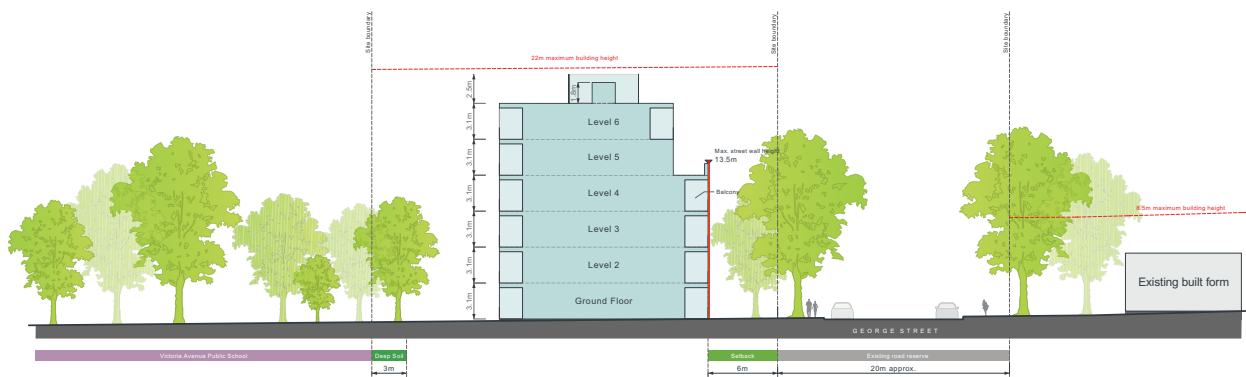


Figure K22-10 Built Form Envelope - Section B



Section Key Plan

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K22 Homebush North (PRCUTS)

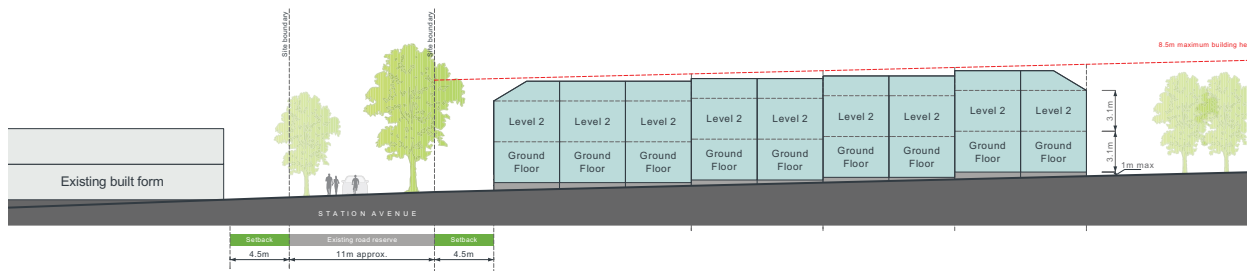


Figure K22-11 Built Form Envelope - Section C

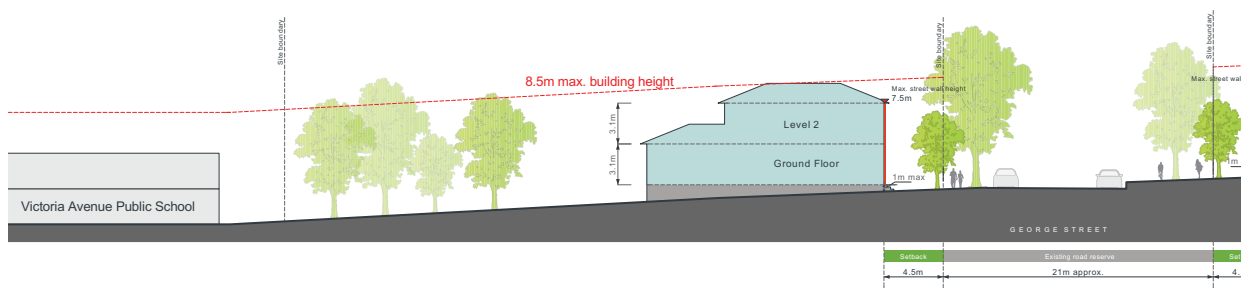


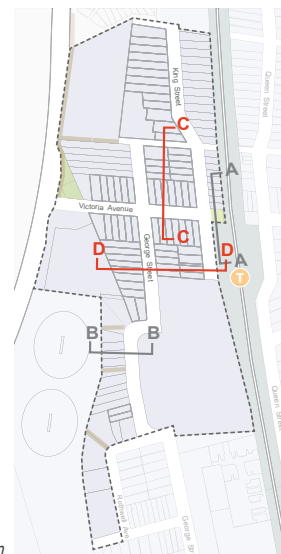
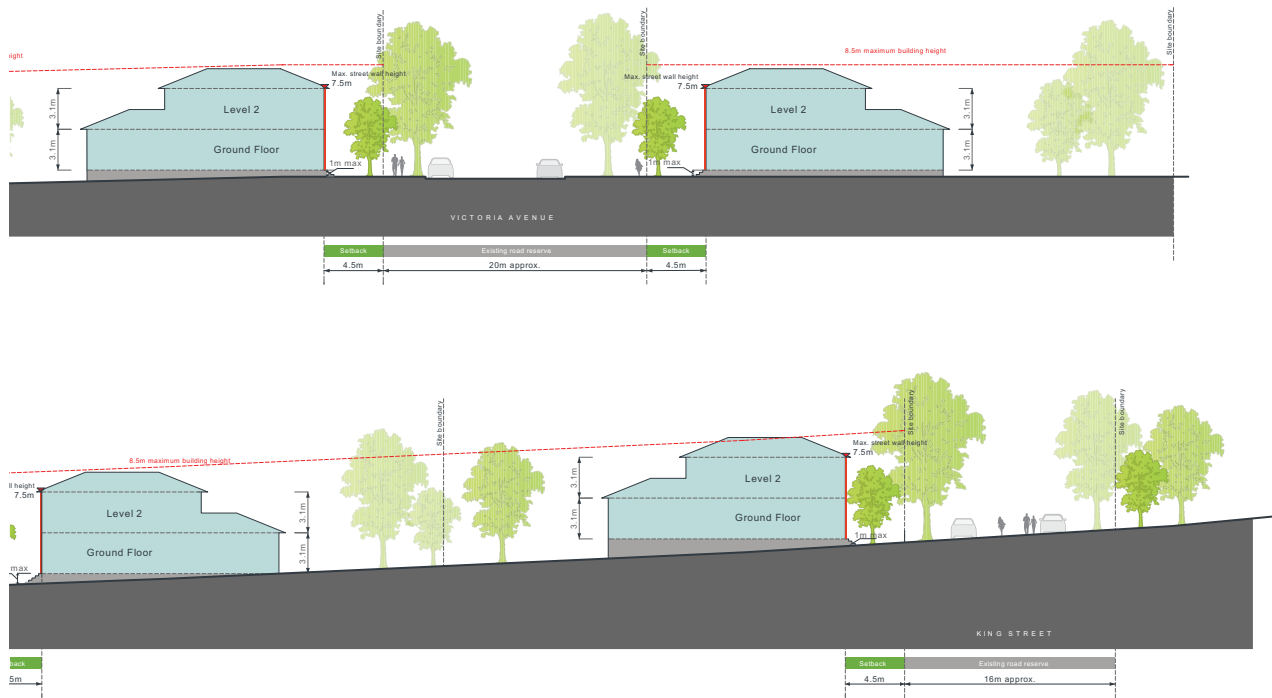
Figure K22-12 Built Form Envelope - Section D

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



Section Key Plan

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K22 Homebush North (PRCUTS)

K22.9 Transitions and Interfaces

Changes in height and scale will require transitions to sensitive interfaces such as existing low scale residential areas and open spaces. New development will be required to respond to the overall scale and form of existing elements to preserve visual scale and to minimise loss of outlook and privacy and maximise sun access of adjoining properties.

Interface treatments for development adjacent to the rail line and/or Homebush Bay Drive need to support the protection of future residents and building users from negative impacts such as noise, vibration and air pollution.

Objectives

- O1 To encourage new development that is sensitive and complementary in scale and site location to surrounding properties.
- O2 To protect residential amenity at the interface to existing low rise development.
- O3 To ensure streets and open spaces receive adequate sunlight and ventilation.
- O4 To protect future residents and building users from negative impacts generated by the rail line and Homebush Bay Drive.

Controls

C1.	Where adjacent to low density residential interfaces, new development should gradually step away in height and provide appropriate setbacks.
C2.	<p>Development to the east of the playing fields along the open space interface:</p> <ul style="list-style-type: none"> a) sets back as identified in Figure K22-7 with the setback area to be landscaped and deep soil; and b) addresses the open space and maximises windows and balconies of the upper levels that maximise passive surveillance.
C3.	<p>Development along the interface to the rail line, the Victoria Avenue Public School and/or Homebush Bay Drive complies with the setbacks shown in Figure K22-7. The following applies:</p> <ul style="list-style-type: none"> a) The setback is to be deep soil to allow for mature vegetation in order to create a buffer; and b) Fences and walls can be as high as 2.0m and should be constructed to effectively shield noise.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K22.10 Massing and Articulation

Detailed articulation and appropriate scale of built form defines and reinforces the identity and desired character of a place. The following architectural treatments are encouraged to create variety and interest in the streetscape while contributing to a sense of continuity and overall visual quality.

Objectives

- O1 To ensure buildings and their individual elements are appropriately scaled to define and respond to the surrounding character.
- O2 To add visual quality and interest to new buildings with a focus on breaking up massing of higher density forms when viewed from public places and neighbouring properties.

Controls

C1.	Buildings that are 3 storeys or more are to be designed so that they clearly articulate a base, middle and top.
C2.	Facades are articulated using techniques such as projections, recesses, eave overhangs and deep window reveals. Where development is set back at least 3m from the site boundary, elements can protrude up to 0.3m into the front setback (articulation zone). Where development is set back at least 4.5m from the site boundary, elements can protrude up to 0.6m into the front setback (articulation zone).
C3.	The maximum length of straight wall on any storey above ground floor level, without articulation such as a balcony or return, is 15m.
C4.	New development is to place particular focus on creating a 'human scale' at the lower levels through the use of detailed design, insets and projections that create interest and, where relevant, the appearance of finer grain buildings.
C5.	Building massing is also to be vertically articulated.

C6.	New development in established residential areas within the 8.5m height limit zone display roof forms that integrate with neighbouring sites. Pitched roofs are preferable over flat roof forms.
C7.	For built form that is 3 storeys or more, the upper-most level is set back and visually unobtrusive. Ways to achieve this include the use of lightweight construction techniques, darker colours, solid balustrades and roof overhangs that create deep shadows.
C8.	Adjoining buildings are considered in terms of setbacks, awnings, parapets, cornice lines and facade proportions.
C9.	Roof plant, lift overruns, vents, carpark entries and other service related elements are integrated into the built form and complement the architecture of the building.
C10.	Buildings on corners address both streets and architectural elements are composed so that they 'turn the corner'.



Example of an building that is vertically articulated and differentiates between base, middle and top

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

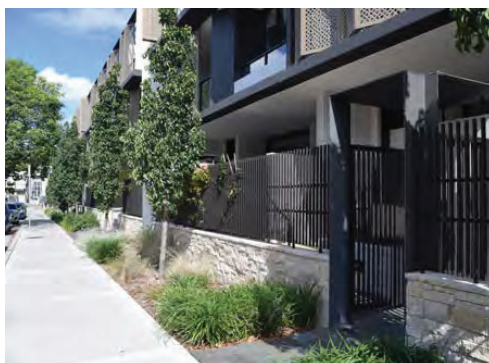
K22 Homebush North (PRCUTS)

K22.11 Interactive Frontages

Within residential zones the design of the development plays an important role in encouraging pedestrian activity and enhancing public safety and security. Developments which allow passive surveillance, where people within buildings are able to overlook the street and where passersby are aware of 'signs of life', promote streetscape activity and local interactions. Multiple entries to residential dwellings which allow residents to physically access homes directly off the street also provide visual interest and encourage streetscape activity.

Objectives

- O1 To encourage new development that promotes activity on the street and enhances public safety and security.
- O2 To encourage new development that provides a high level of passive surveillance.
- O3 To ensure development provides a high quality visual experience and creates interest when experienced from a walking pace.
- O4 To ensure private spaces and entries facing the street are safe, attractive and comfortable to use.



Front semi-transparent fences and landscaped setbacks with tree planting contribute to the amenity of the streetscape and support a positive pedestrian experience.

Controls	
C1.	Development that fronts onto streets identified as 'interactive frontage' (see Figure K22-8) must comply with following controls:
C2.	Developments are to maximise the number of front doors and private spaces which are visible from the street. At a minimum there is to be a pedestrian entries and/or primary private open space overlooking the street every 15m.
C3.	Developments are to provide openable windows and balconies at upper levels that encourage views of the street.
C4.	Entries and private open spaces are encouraged within the 3m or 4.5m landscaped setbacks including a 1.5m wide strip of landscaping (see Figure K22-13 and Figure K22-14) and other controls including those identified in Section K22.15 <i>Landscape Design</i> are also to be met.
C5.	Deeper front setbacks (greater than 5m) are discouraged and landscaping and fences or structures higher than 0.9m within the front setback are not permitted.
C6.	All landscaping within the front setback is to maintain clear views from the footpath to the development.
C7.	Front fences are to be a maximum of 1.2m high and at least 50% is to be at least 50% transparent and enable a high level of passive surveillance.
C8.	Front terraces and entry areas are to be elevated by between 0.6m and 1.0m above the level of the street to improve privacy and increase opportunities for passive surveillance.
C9.	Development is to minimise services (i.e. substations, fire services and water services) located within the front setback, along the site frontage or on building facades.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

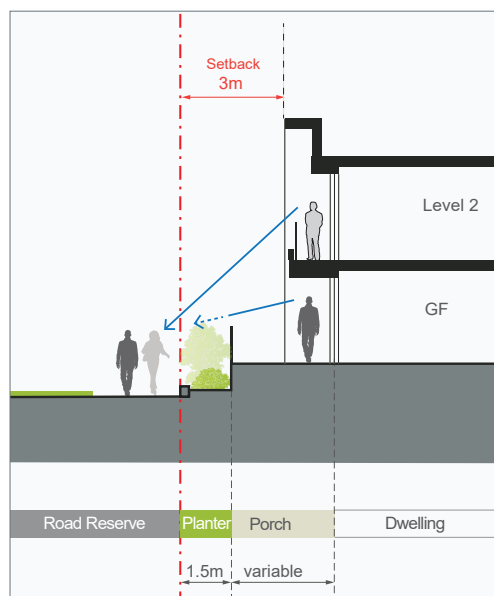


Figure K22-13 Indicative 3m front setback for residential ground floors



Landscaped setbacks with integrated entries and tree planting contribute to the residential streetscape.

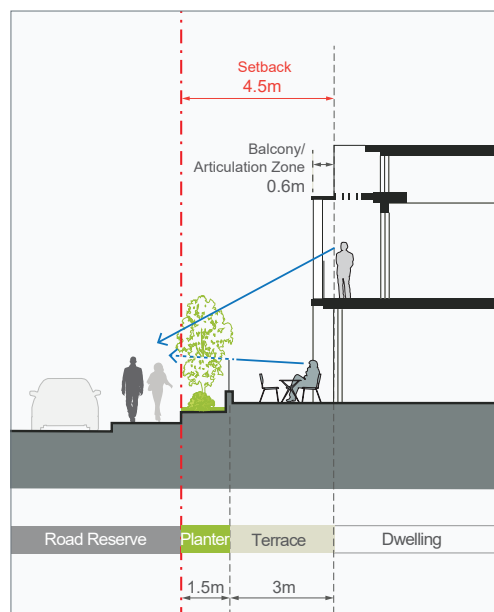


Figure K22-14 Indicative 4.5m front setback for residential ground floors



A low stone wall and visually permeable fencing provides privacy for ground floor units and passive surveillance of the street.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K22 Homebush North (PRCUTS)

K22.12 Safety and Accessibility

The way in which buildings address streets, links and open space creates an important transition between public and private land. The careful design of this interface zone contributes to the liveliness, interest, comfort and safety of the public domain. Good accessibility to and from new development increases activity levels further and contributes to the visible activity in a neighbourhood.

Objectives

- O1 To ensure new development supports the wider neighbourhood and community safety and maximises opportunities for passive surveillance.
- O2 To incorporate a high degree of accessibility into the design of new buildings and the public domain that considers the various mobility levels of future users, i.e. disabled and elderly.
- O3 To encourage ground floor activities to spill out into the public domain and create a vibrant streetscape in parts of the precinct that should be a focus for local retail (active frontages).

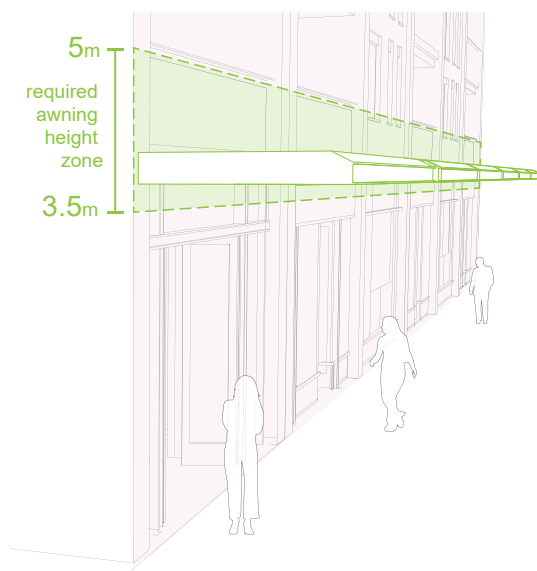


Figure K22-15 Awnings are to be between 3.5m and 5m above ground level along active frontages

Controls

- | | |
|-----|--|
| C1. | New development addresses and defines the public domain through entrances, lobbies, windows and balconies that overlook public spaces, maximising opportunities for passive surveillance. |
| C2. | All building entries are clearly visible from the public domain.

Access is to be provided according to:

a) Active Frontages: at ground level unless it can be clearly demonstrated that it is unreasonable to meet this requirement and a suitable urban design outcome can be achieved which would be applicable in this specific instance only.

b) Interactive frontages for residential development in the R3 Medium Density zone: at ground level and set in a landscaped front setback that is to be raised above natural ground level to between 0.6m and 1.0m. |
| C3. | The location and width of vehicle entries is to minimise impacts on the pedestrian network. |
| C4. | To avoid blank walls and create visual interest, the maximum length of any wall at the ground floor level, without articulation such as a door or window is 5m. |

CITY OF CANADA BAY

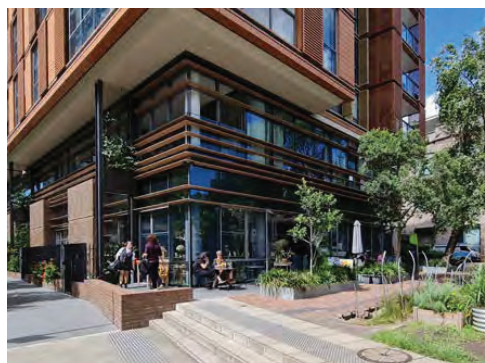
Development Control Plan

Part K

Special Precincts

Controls

C5.	<p>Along active frontages (see Figure K22-8):</p> <ol style="list-style-type: none"> the finished ground floor level is to match the footpath level; where this is not possible due to topography, the ground floor level is a maximum of 0.4m above the footpath. Where ground floor level is elevated above the footpath, the elevated area is to form an activated continuation of the interior, and not to create a visual barrier to the interior; continuous awnings must be provided to shelter pedestrians from weather conditions; awnings should be designed to allow for street tree planting; awnings are to be between 3.5m and 5m in height above ground level (see Figure K22-15); and consistent paving, street furniture, signage, planting and lighting is desirable.
C6.	<p>Residential uses on the ground floor can be raised to a maximum of 1.0m above the footpath level to improve internal privacy. Direct access from the footpath to individual dwellings is encouraged.</p>
C7.	<p>Front fencing for residential uses on the ground floor are to display an appropriate balance of visibility and outlook, informal surveillance of the street and privacy for residents and building users. Fences are to be a maximum height of 1.2m and at least 25% transparent. Solid walls are only acceptable to a maximum height of 0.6m.</p>
C8.	<p>Common areas for building users/ residents are encouraged within the front setback with seating facilities located close to the public footpath to encourage surveillance of the street, visible activity and social interaction.</p>



Public domain activated by ground level retail and dining that enhances passive surveillance.



Figure K22-16 Awnings should be designed to allow for street tree planting

CITY OF CANADA BAY

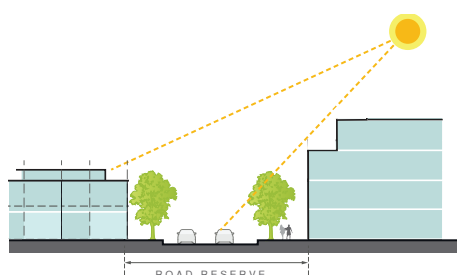
Development Control Plan

Part K

Special Precincts

K22 Homebush North (PRCUTS)

K22.13 Amenity



New housing and employment uses need to provide a high level of amenity for future residents and building users. At the same time, development is required to protect and where possible enhance the quality of the public domain and adjoining private properties. The following controls seek to help maximise privacy, solar access and outlook for all. This section also identifies design treatments to mitigate air quality and noise impacts for development along the rail line and Homebush Bay Drive.

Objectives

- O1 To minimise the impact of new development on the outlook, privacy and sun access of adjoining properties.
- O2 To minimise overshadowing of streets, links and public open spaces.
- O3 To protect building users from negative impacts (noise, air quality, vibration) from the rail line and Homebush Bay Drive.

Controls

C1.	Siting and built form configuration optimises solar access within the development and minimises overshadowing of adjoining properties.
C2.	New development adjacent to existing residential uses complies with the following: <ul style="list-style-type: none"> a) at least 50% of the private open space of adjoining residential properties receives sunlight for a minimum of 2 hours between 9am and 3pm in mid-winter; or b) where the adjoining private open space does not currently receive 2 hours of sunlight, the development does not reduce sunlight by more than 30%.
C3.	Taller elements of built form are oriented north-south where possible. The height and modulation of east-west buildings allows solar access to courtyard spaces (where courtyards are appropriate).
C4.	Louvres, shading devices and windows are able to be operated by buildings users to allow building occupants to regulate climatic conditions rather than rely solely on mechanical systems.
C5.	Development near the rail line and Homebush Bay Drive is to consider the provisions of the <i>State Environmental Planning Policy (Infrastructure) 2007</i> and <i>Development Near Rail Corridors and Busy Roads Interim Guidelines</i> and the design approaches illustrated in Figure K22-17 .
C6.	For residential components of new development, noise sensitive areas (living rooms, bedrooms) are located away from the rail line and Homebush Bay Drive.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Controls

C7.	Windows located along the rail line and/ or Homebush Bay Drive are double-glazed (or use laminated glazing) and have acoustic seals.
C8.	Habitable rooms of dwellings (excluding balconies) are to be designed to achieve internal noise levels of no greater than 50dBA.
C9.	Windows, balconies, terraces and porches should be included on street elevations to increase opportunities for passive surveillance.
C10.	Front doors should be located where they are visible from the street.

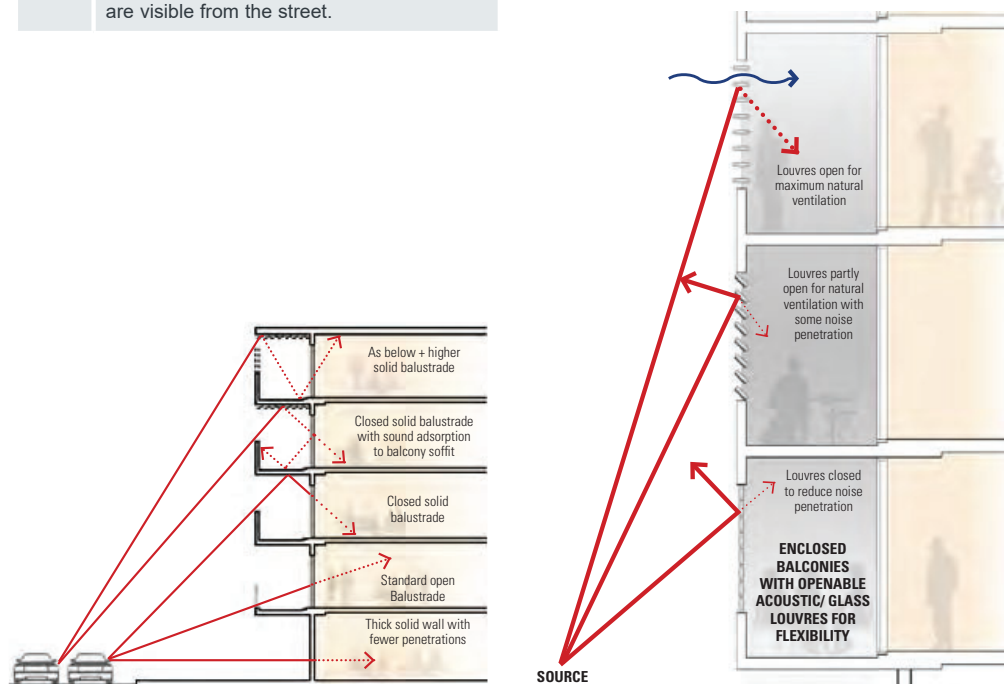


Figure K22-17 Noise mitigating facade treatments

(Source: Development Near Rail Corridors And Busy Roads Interim Guideline, NSW)

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K22 Homebush North (PRCUTS)

K22.14 Appearance

The design of buildings contributes to the streetscape character and adds visual richness, complexity and interest. In addition, the selection of signage, materials, finishes and colours should have regard to compatibility to the surrounds and consider robustness, durability and ease of maintenance.

Objectives

- O1 To ensure building exteriors positively contribute to the desired future character of the area and streetscape.
- O2 To ensure that signage is integrated and not detrimental to the local character by limiting its cumulative impact with other signage.

Facade design

Controls	
C1.	The composition of facades balances solid and void elements and does not display large areas of a single material, including reflective glass.
C2.	External walls are constructed of high quality and durable materials and finishes with low maintenance attributes ('self-cleaning') such as face brickwork, rendered brickwork, stone, concrete and glass.
C3.	Any blank sidewalls (including temporary walls that may be covered in the future) that are visible from the public domain are designed as an architecturally finished surface that complements the main facade.
C4.	Visually prominent elements such as balconies, overhangs, awnings, and roof tops are to be of high design quality.
C5.	Roof plant, lift overruns, utilities, vents and other service related elements are to be integrated into the built form design and complementary to the architecture of the building.

Signage and advertising

Controls	
C6.	Signage is to comply with the requirements of State Environmental Planning Policy No 64-Advertising and Signage. Also refer to requirements in the <i>City of Canada Bay DCP Part I Signage and Advertising</i> .
C7.	Signage is to be integrated into the overall architectural design. Advertising signs should complement the design of buildings and the overall character of the precinct. Signage must relate to an approved use on the site.
C8.	The main facades of buildings from the first floor to the rooftop or parapet are to be uncluttered and generally free of signage.
C9.	Freestanding signs are not to be located on the top of buildings and should not impact on the skyline when viewed from the street. Signs painted on or applied to the roof of a building are not permitted.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



Example of terrace houses with a variety of solid and void in the facade composition and treatment

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K22 Homebush North (PRCUTS)

K22.15 Landscape Design

Landscape design plays an important role in the successful integration of new development into the surrounding streetscape and context. It enhances the appearance and amenity of the area, provides for recreation, preserves biodiversity and improves micro-climatic conditions.

Landscape and built form need to be designed together and landscaped areas should not be generated by 'left-over spaces' resulting from building siting. A portion of the landscaped area is required to be deep soil suitable for the growth of mature trees and vegetation.

Objectives

- O1 To promote high quality landscape design as an integral component of the overall design of new development, softening the appearance of buildings.
- O2 To improve the local micro-climate, native fauna and flora habitats and control climatic impacts on buildings and outdoor spaces.
- O3 To allow adequate provision on site for infiltration of stormwater, deep soil tree planting, landscaping and areas of communal outdoor recreation.

Precinct Wide

Controls

C1.	Existing street trees and landscape features are to be retained wherever possible. All 'significant trees' that are identified as either High Significance or Medium Significance in the PRCUTS Public Domain Plan are to be retained and assessed by a suitably qualified Arborist. Refer also to CCB DCP Part B General Controls, <i>B6.10 Urban Tree Canopy</i> and <i>Australian Standards - AS 4970-2009 Protection of Trees on Development Sites</i> .
C2.	The layout and key design features of all parks and plazas are to be as per the PRCUTS Public Domain Plan.
C3.	Landscape design complements the proposed built form and minimises the impacts of scale, mass and bulk of the development in its context.

C4.	Landscape design highlights architectural features, defines entry points, indicates direction, and frames and filters views from and into the site.
C5.	For development along Parramatta Road, a minimum of 1 canopy tree per 10m of length of frontage is to be planted in the 'green edge' setback area, capable of reaching a mature height of at least 10m.
C6.	For development along all other streets (excluding active frontages) a minimum of 1 canopy tree per 12m of frontage is to be planted. New trees are to be capable of a mature height of at least 6m.
C7.	Where surfaces on rooftops or podiums are used for community open space, the development must demonstrate at least 50% of the accessible roof area is shaded by a shade-structure or covered with vegetation, including tree canopy.
C8.	Where surfaces on rooftops or podiums of Residential flat buildings, Shop top housing or Commercial premises are not used for community open space, for example solar PV or heat rejection, the development must demonstrate at least 75% of the remaining roof area or podium is covered in vegetation, including tree canopy.
C9.	A minimum of 40% projected tree canopy coverage on publicly accessible streets and laneways, unless it can be clearly demonstrated that it is unreasonable to meet this requirement and a suitable urban design outcome can be achieved which would be applicable in this specific instance only.
C10.	A minimum of 75% projected tree canopy coverage shall be achieved for all parks.
C11.	Adequate soil volume is to be provided for the tree species. In areas where deep soil is restricted, opportunities for structural soil or under paving vault systems should be included to meet these requirements. Where the building setback is 1.5m or less, additional uncompacted soil volumes are to be provided under pavements to provide the soil volumes suitable for the tree species.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Controls

C12.	Tree planting is to be prioritised in the planning and design of all public domain areas and, where possible, utilities to be bundled, undergrounded and located away from tree planting areas.
C13.	Tree species are to be selected for their respective micro-climatic suitability and need to provide a high level of urban amenity, noting that the duration and density of overshadowing from buildings will impact the growth and species suitability.
C14.	<p>A landscape architect to be engaged to ensure that:</p> <ul style="list-style-type: none"> the architectural planning, building footprint and basement engineering result in adequate deep soil zones and podium planter boxes. the deep soil zones are located in areas where canopy and landscape outcomes will best serve the future users and general architectural amenity. species selection considers site suitability, shade requirements of any communal open space and solar access into internal building spaces.

Mixed Use Zone

Controls

C15.	A minimum of 15% projected tree canopy coverage shall be achieved for all private land (i.e. non-public) developments. This shall be measured as the projected square metre canopy of the trees using reasonable estimates of the mature size of the chosen trees.
C16.	Trees are to be planted in sufficient deep soil to support them to maturity (refer to PRCUTS Public Domain Plan for soil volumes). A tree shall be as defined by this DCP.
C17.	Tree coverage may include trees planted at ground level as well as any trees planted in upper levels of buildings, such as podiums and roofs. It may also include any canopy overhanging from an adjoining public domain area.

Residential Zones

Controls

C18.	Development consent must not be granted unless the development achieves at least 25% canopy cover across the site, identified on the landscape plan and measured by the extent of canopy at maturity.
C19.	Native species must comprise at least 75% of the plant schedule, incorporating a mix of locally native trees, shrubs and groundcovers appropriate to the character of the area (see CCB DCP Appendix 3 for further details).
C20.	<p>A minimum of 30% of the total site area is to be provided as landscaped area.</p> <p><i>Refer to Landscaped Area definition in this DCP.</i></p>
C21.	50% of the required landscaped area is to be deep soil with deep soil planting (trees and shrubs) and a preference for native species.
C22.	Calculation of landscaped and deep soil areas is not to include any land that has a length or a width of less than 1.5m.
C23.	<p>Trees and vegetation provide a high degree of amenity and environmental benefit. Their selection and location should:</p> <ol style="list-style-type: none"> Provide shade in summer and sun access in winter to building facades and public and private open spaces; Reduce glare from hard surfaces; Channel air currents into built form; and Provide windbreaks, screen noise and enhance visual privacy where desirable.
C24.	For residential development in the R3 Medium Density zone, at least 50% of the front setback area is required to be deep soil.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K22 Homebush North (PRCUTS)

K22.16 Sustainability and Resilience

To create sustainable, resilient and affordable communities along the Corridor, the PRCUTS identifies that the following three key areas of intervention should be pursued:

- 1) High performance buildings;
- 2) Reduced and decoupled strategic parking; and
- 3) Urban resilience and infrastructure delivery.

Further details are provided in the Parramatta Road Corridor Sustainability Implementation Plan and should be considered when assessing proposals.

Objectives

- O1 To deliver world leading urban transformation of the precinct by exceeding current sustainability requirements.
- O2 To mitigate the impacts of climate change on key infrastructure and assets.

Controls

C1.	A residential flat building or a mixed use development (that contains dwellings) which complies with Table K22-1 is eligible for an amount of additional residential floor space (above that already permitted) by up to 5%, subject to the consent authority being satisfied that this additional residential floor space does not adversely impact on neighbouring and adjoining land in terms of visual bulk and overshadowing.
C2.	Future development should demonstrate consistency with the smart parking strategies and design principles outlined in <i>Section K22.17 Access and Parking</i> .
C3.	All new streets should implement water sensitive urban design treatments at the point source across all catchment areas.

C4.	Public domain and buildings shall be designed to reduce localised heat created by the urban heat island affect by: <ol style="list-style-type: none"> a) maximising canopy cover on streets designated as streets with 'interactive frontage' as identified in Figure K22-8; b) retaining existing street trees, especially those identified as High Significance or Medium Significance in the PRCUTS Public Domain Plan, by minimising driveway crossovers and locating driveways between existing trees; c) targeting canopy cover of at least 60% over all pedestrian spaces such as footpaths, pedestrian links and the new Station Square; and d) maximising the use of vegetation on buildings, including above ground parking facilities vegetation, green roofs, green walls and materials with a high solar reflectance index are encouraged on at least 50% of the surfaces of all buildings with western and northern building facades a particular areas of focus; and e) complying with landscape DCP guidelines within <i>Section K22.15 Landscape Design</i>.
C5.	Flow rates from the site should not be more than pre-development site discharge.
C6.	Stormwater run-off quality should seek to reduce annual loads of: <ol style="list-style-type: none"> a) total Nitrogen by 45%; b) total Phosphorus by 65%; and c) total suspended solids by 85%.
C7.	New development is to contain both potable water pipes and recycled water pipes for the purposes of all available internal and external water uses.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Table K22-1 Energy and Water Targets by Use

Use	Energy Target	Water Target
Residential		
<14 storeys	BASIX Energy 50	BASIX Water 50
15 - 29 storeys	BASIX Energy 40	
30 - 39 storeys	BASIX Energy 35	
40+ storeys	BASIX Energy 30	
Commercial and Retail Development < 10,000m² GFA		
Smaller scale non-residential development is governed by the National Construction Code, and should demonstrate consistency with relevant requirements of the Code.		
Commercial Development ≥ 10,000m² GFA		
Base building and/or individual tenancies	NABERS 5-star	NABERS Water 4-star NABERS Water 5-star should be pursued where recycled water is available
Shopping Centre Development		
Base building only	NABERS 5-star	NABERS Water 4-star NABERS Water 5-star should be pursued where recycled water is available

Source: PRCUTS Planning and Design Guidelines, Urban Growth, Nov 2016



Maximising canopy cover significantly improves the micro-climate and supports active transport choices.



All new streets and pedestrian/ cycle links should implement water sensitive urban design treatments (WSUD).

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K22 Homebush North (PRCUTS)

K22.17 Access and Parking

The location of car parking has a significant impact on pedestrian safety and the quality of the public domain. Vehicle access points need to be integrated carefully to avoid potential conflicts with pedestrian movement and the desired streetscape character.

Objectives

- O1 To transition to lower car ownership and support the uptake of walking, cycling and public transport use.
- O2 To minimise the visual impact of car parking areas and vehicle access points.
- O3 To minimise conflicts between pedestrians and vehicles on footpaths, particularly along pedestrian desire lines such as George Street.

Parking and access design

Controls

C1.	Vehicular access points minimise visual intrusion and disruption of the streetscape, emphasise the pedestrian experience and maximise pedestrian safety.
C2.	The width and height of vehicular entries is kept to a minimum. Roller doors or gates should be integrated with the architectural design of the development. Vehicular entry/exit points are to be recessed at least 0.5m behind the building line.
C3.	The public footpath treatment is to be continued across driveways to create a threshold, signal pedestrian priority and slow vehicle speeds.

C4.	Vehicle access points are not permitted along active street frontages. Where rear or side access is not possible, development without parking will be considered.
C5.	Vehicular access points off George Street are only permitted if a development has no other street frontage.
C6.	At grade parking, if unavoidable, is screened from public view by active uses and not permissible within any of the setback zones.
C7.	Parking is to be designed to be 'adaptable' and able to be converted to other uses in the future. Underground car parking and basement spaces are to have a minimum floor to floor height of 3.7m to be able to be converted to commercial uses. At ground level parking areas are to have a minimum floor to floor height of 4.4m to be able to be converted to retail uses. Above ground parking areas are to have a minimum floor to floor height of 3.7m (second floor level) to be able to be converted to commercial uses, or 3.1m-3.7m (above second floor level) to be able to be converted to commercial or residential uses.
C8.	Where unavoidable due to topography, basement parking can only protrude above natural ground level by a maximum of 1.0m in R3 zones and cannot protrude into the front setback area within an R3 zone.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Car parking

Controls	
C9.	On-street parking to be integrated to the streetscape and parallel to the kerb.
C10.	Parking is to be listed on a separate title (unbundled) from the development.

Car share and ride share

Controls	
C11.	On-site parking can be reduced at a rate of 5 parking spaces per 1 car share space where an active car-sharing program is made available to residents and/ or employees and where ride share or other organised car pooling initiatives are available on site.
C12.	Additional car share should be provided at a rate of 1 space per 20 dwellings without parking and 1 space per 100 dwellings with parking.
C13.	Car share will be located in publicly accessible sites, either on-street, in public parking stations or, if provided within a building it should be accessible to all car share members.
C14.	The following car share targets have been established for the precinct: <ul style="list-style-type: none"> • 10% - 15% of residents by 2031 • 15% of residents by 2050

Parking rates

Controls	
C15.	For parking rates, refer to clause 8.11 of the Canada Bay LEP 2013 and Part B of this DCP.

Bicycle parking

Controls	
C16.	For bicycle parking controls, Refer to <i>DCP Part B - General Controls, B3.6 Bicycle parking and storage facilities; and B3.7 End of trip facilities.</i>

Electric vehicles

Controls	
C17.	<i>Refer to DCP Part B - General Controls, B3.8 Electric Vehicles</i>

Common loading docks and service vehicle parking

Controls	
C18.	<i>Refer to DCP Part B - General Controls, B3.9 Common loading docks and service vehicle parking.</i>

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K22 Homebush North (PRCUTS)

K22.18 Housing Diversity

A mix of dwelling types in the precinct will provide greater housing choice and support equitable housing access by offering a diversity of dwelling types, amount of floor space, number of bedrooms and level of accessibility and affordability.

Objectives

- O1 To provide a diverse range of dwelling types and sizes to cater for the needs of the existing and future residents over time, and encourage social diversity.
- O2 To ensure that low to moderate income households can afford to live in the precinct by increasing the stock of appropriate affordable housing.

K22.19 SEPP 65 and the Apartment Design Guide

SEPP 65 and the NSW Apartment Design Guide (ADG) applies to all apartment buildings that are three or more storeys high and that comprise at least four dwellings.

Controls

C1.	For mix of residential flat buildings and residential components of mixed use developments, refer to LEP clause - 6.11 <i>Mix of dwelling sizes in residential flat buildings and mixed use development</i>
C2.	Regarding the amount of adaptable (accessible) housing to be provided refer to requirements in <i>City of Canada Bay DCP Part B1.1 Adaptable Housing</i> .
C3.	Dwellings dedicated to Affordable Housing are to be of equivalent design quality, diversity and mix as all other dwellings.
C4.	Contributions towards Affordable Housing are to be provided according to Council's <i>Affordable Housing Contributions Scheme</i> .

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K22.20 Residential Uses not covered by SEPP 65 and the Apartment Design Guide

The NSW Apartment Design Guide (ADG) applies to buildings that are three or more storeys high and that comprise at least four dwellings. For other residential development developments not covered by these codes such as 2-3 storey terraces, low rise up-over or walk-up apartments, multiplexes, urban courtyard houses and the like, the following controls apply.

Objective

- O1 To ensure design quality, performance of and amenity created by new residential development is of a high standard and consistent across the precinct.

Controls

C1.	The maximum building depth is 18m unless it can be demonstrated that all habitable rooms receive adequate ventilation and solar access, e.g. through the use of a courtyard design.
C2.	The minimum private open space of a ground floor dwelling is calculated by the number of bedrooms x 4m ² .
C3.	Single aspect dwellings, if unavoidable, are only permitted if they have a northerly or easterly aspect.
C4.	Except for development in the 8.5m height limit zone, parking is not permitted to be visible from streets and open spaces. Access to parking via a driveway, lane or basement carpark entry is permitted if one access point services a minimum of 5 dwellings. Front garages, carports and individual driveways are not permitted.
C5.	Living rooms and private open spaces of at least 70% of apartments receive a minimum of 2 hours direct sunlight between 9 am and 3 pm in mid winter (21 June).
C6.	Master bedrooms have a minimum area of 10m ² and other bedrooms 9m ² .
C7.	Building separation is as per the <i>Apartment Design Guide, Section 3F Visual Privacy</i> .

- C8. Private open space (POS) is designed to maximise useability, privacy, outlook and solar access.

For dwellings on the ground floor including terraces, the minimum private open space is as follows:

Dwelling type	Min. POS
Studio/ 1 bedroom	20m ²
2 bedroom	28m ²
3+ bedroom	35m ²

The minimum dimension is 4.0m x 4.0m.

For dwellings on upper levels such as decks and balconies, the minimum private open space is as follows:

Dwelling type	Min. POS
Studio/ 1 bedroom	10m ²
2 bedroom	14m ²
3+ bedroom	18m ²

The minimum dimension is 2.0m x 3.0m.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K23 160 Burwood Rd, Concord (former Bushells Factory)



Figure K23-1 Aerial photo (source: nearmap.com)



Figure K23-2 Council area map



CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

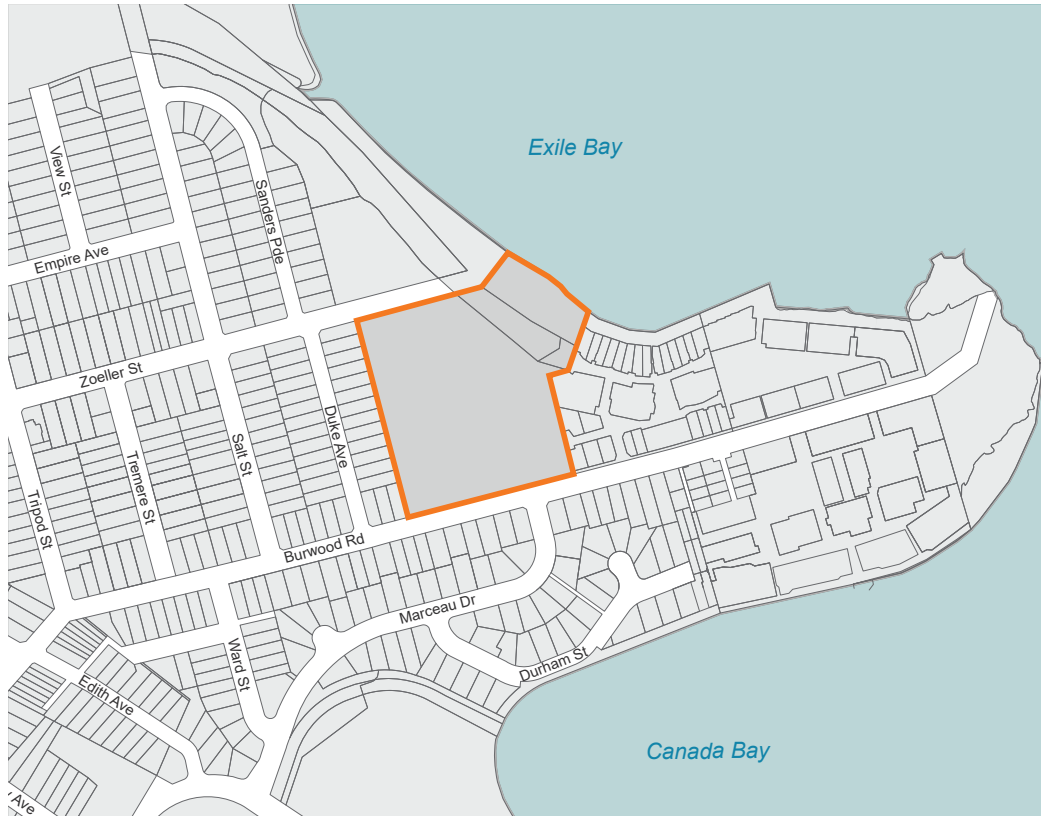


Figure K23-3 160 Burwood Road, Concord - Location Plan



CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K23 160 Burwood Rd, Concord (former Bushells Factory)



K23.1 Introduction

Location

The site is located at 160 Burwood Road, Concord, approximately 15km to the west of the Sydney CBD, 2.6km from Burwood District Centre and Burwood Train Station, 3km from Strathfield Train Station and 5.5km from Rhodes Strategic Centre. The nearest local commercial/ retail centre is located at Majors Bay Road, approximately 1.5kms from the precinct.

The precinct comprises approximately 3.9Ha of land and is bounded by Massey Park Golf Course to the north, Exile Bay foreshore area to the north east, medium density residential developments to the east, and low density residential developments to the west and south. Bayview Park is located further to the east along the foreshore line of Exile Bay and the Parramatta River.

Context

The precinct is surrounded by low to medium density residential development. To the east lies a medium density housing development known as 'Pelican Quays/ 'Pelican Point' which was built in the last 10-20 years. Another medium density development known as 'Phillips Landing' is located to the south of the precinct.

The Massey Park Golf Course is located along the northern boundary of the site and is publicly owned. The surrounding streets comprise tree lined avenues with on street parking reinforcing a residential streetscape character.

Current use, built form and character

The precinct is located on a small peninsula of land between Exile Bay and Canada Bay. The shape of the peninsula, combined with the generally flat topography of the surrounding area and 2 to 3 storey buildings along the foreshore, creates a landscape that has a strong horizontal dominance, formed by the water, the land and the tree line.

The site currently operates as a coffee manufacturing facility. The main industrial building is a multi-storey brick and concrete structure that is orientated north-south and is sited in the western part of the site and contains an industrial building, known as the 'Robert Timms Factory' or 'Bushell's Factory' featuring a prominent 78m high chimney stack. A two storey administration building is located to the eastern side of the factory and a covered walkway joins the two structures. A security booth/ gatehouse and boom gates are located at the Burwood Road frontage.

Vehicular access to the precinct is provided off Burwood Road, which extends along the centre of the peninsula to Bayview Park. A small section of the north west corner of the precinct connects to Zoeller Street.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K23.2 Desired Future Character

Vision statement

"The precinct will be a fine-grain, river-orientated village bringing broad public benefit to locals including new parklands, community uses, daily needs retail and diversity of housing choice. The retention of the existing Roasting Hall as a heritage item incorporating a combination of selected light industrial and commercial functions, as well as new economy and creative uses, will contribute to precinct activation and diversity and create a unique sense of place and enhance local identity."

General objectives

- O1 To create a river-orientated 'urban village' providing jobs and diversity of housing.
- O2 To celebrate the natural landscape assets and the precinct's history through view corridors, unique public spaces and physical connections.
- O3 To reconnect the precinct to the water by providing a new public foreshore and publicly accessible plaza for the benefit of the wider community and ensuring the access to the site is inviting to the public.
- O4 To maintain the precinct's connection to the past by protecting and adaptively reusing the former 'Bushell's Factory' Central Roasting Hall for urban services and retail/commercial uses with residential above.
- O5 To sensitively transition to the surrounding residential built form and support the existing neighbourhood & landscaped character.
- O6 To focus on people and improve the overall 'quality of life' by fostering social connectedness, connecting people to place and strengthening the sense of community.
- O7 To support the health and wellbeing of Country by valuing, respecting, and being guided by Aboriginal people from the Wangal clan and informed by the Connecting with Country framework.
- O8 To achieve a high quality urban development that exhibits design excellence and reflects the desired future character of the area.



CITY OF CANADA BAY

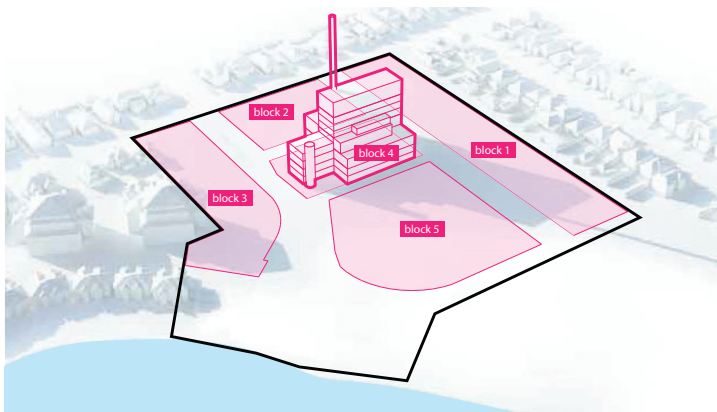
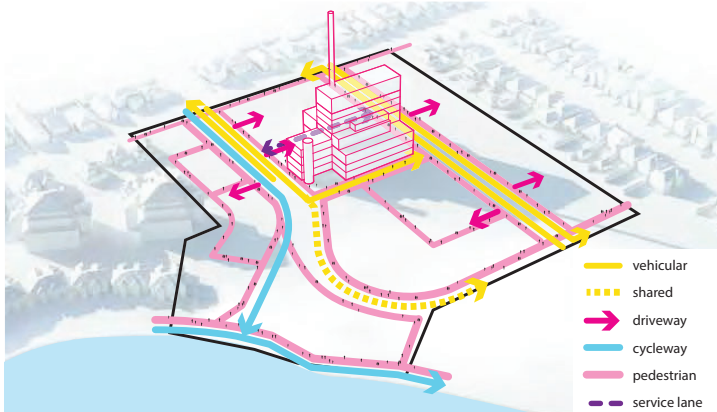
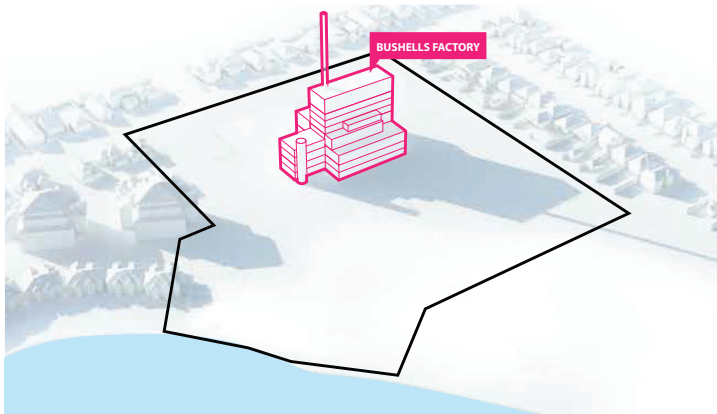
Development Control Plan

Part K

Special Precincts

K23 160 Burwood Rd, Concord (former Bushells Factory)

K23.3 Urban Design Principles



Character Retention

The existing former 'Bushell's Factory' Central Roasting Hall and associated chimney stack will remain the dominant built form features on the site, ensuring the value of the factory as a recognisable landmark.

Movement & Access

An internal hierarchy of movement networks increases the overall permeability & accessibility within the site and to other local networks. Free flowing public movement along the foreshore (east west) and along north south streets helps create a movement network that prioritises pedestrians.

Block Structure

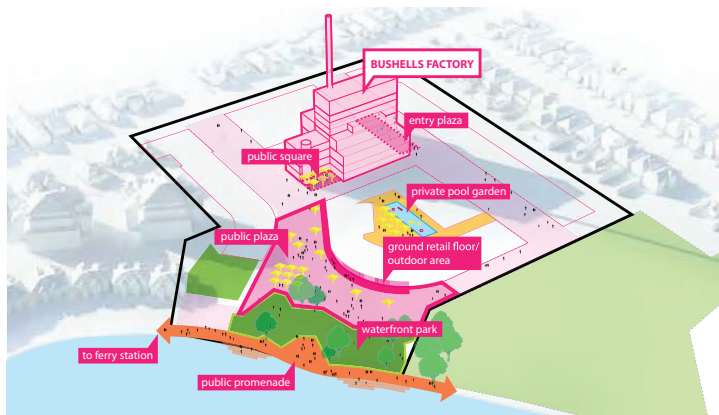
The block structure and internal movement network orientates towards key landmarks and public places allowing for enhanced permeability and uninterrupted view corridors to key landmarks and spaces.

CITY OF CANADA BAY

Development Control Plan

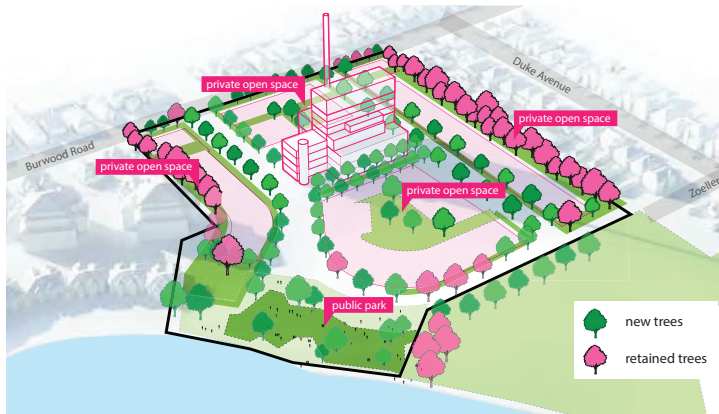
Part K

Special Precincts



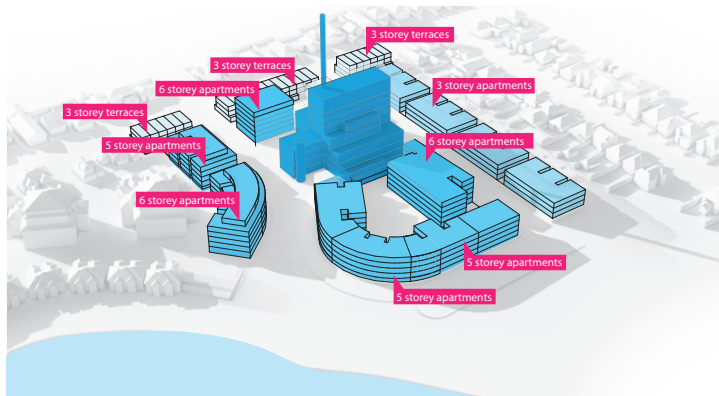
Public Domain

An abundance of flexible public space is a key public benefit, aiming to create a series of destinations, complementing the existing natural and urban context. Highly activated spaces create various stages for social and cultural connectedness, wellbeing and community relationships. Across the site, the public domain will be a combination of areas dedicated to Council and spaces that are privately owned but publicly accessible.



Greenery & Tree Retention

The adjacent diagram illustrates the concept of greening the precinct through public parks, planting new trees along pedestrian networks, as well as retaining significant mature trees which contribute to the overall amenity, local character and identity of the area.



Scale & Height Transition

Built form is appropriately scaled based on function, orientation and views to amenity and public spaces. Heights sensitively transition to the surrounds, maintaining privacy and amenity for neighbours with lower building heights to the precinct's periphery.

Note: The graphics used to explain the "Urban Design Principles" are illustrative only. Please refer to specific DCP controls for required outcomes.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K23 160 Burwood Rd, Concord (former Bushells Factory)

K23.4 Movement and Access Network

Objectives

- O9 To provide a new, fine grain and publicly accessible access network that effectively connects the Precinct to its surrounds.
- O10 To provide a hierarchy of new local streets consistent with their function.
- O11 To maximise permeability and public access through the Precinct and to be visually and physically integrated into the surrounding street network.
- O12 To strongly promote active transport (walking and cycling) and the use of public transport.
- O13 To encourage activity in public (and publicly accessible) open spaces, with a particular focus on the Exile Bay foreshore.
- O14 To ensure the safety of pedestrians, cyclists and users of the foreshore walk and open space.
- O15 To enable access and a safe environment for all including children, disabled people and the elderly.
- O16 To enable innovative and effective access and loading solutions for the functioning of the urban services uses.

Access Network

Controls

C1.	New streets, through-site links, and cycle and pedestrian routes are to be constructed to the satisfaction of Council in accordance with Figure K23-5 Public Domain Framework Plan and Figure K23-8 to Figure K23-14 Building Envelope Controls Sections.
C2.	Any vehicle, pedestrian or cycle network that varies from that shown in Figure K23-5 Public Domain Framework Plan, and Street Sections is to demonstrate an improved public benefit and design excellence having regard to: <ul style="list-style-type: none"> • The objectives, character statement and principles of this DCP; • The degree to which any alterations may enhance or detract from public enjoyment of the public benefits associated with the development.
C3.	The access point located on Burwood Road opposite Marceau Drive is to be the main vehicular access to and from the Precinct and provide access to retail, commercial and urban services, and the new public open space. The road network shall focus site traffic to that intersection.
C4.	An additional vehicular access point is to provide access between Burwood Road and Zoeller Street along a new north-south street. Vehicle access should in the first instance be provided from Burwood Road. Vehicle access from Zoeller Street should not encroach into any part of the existing adjoining golf course (see Figure K23-5). <p>This access should only be provided as an alternative or secondary access to the main access off Burwood Road and should not service any Heavy Rigid Vehicles (HRV) required for retail, commercial or urban service uses.</p>

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Pedestrians and Cyclists

Controls	
C5.	Ensure permanent public access through the site and linkage to the new public open space, along publicly accessible private roads, is provided through an easement or similar.
C6.	<p>A Traffic Operations Plan is to be submitted with the development application and implemented prior to issue of the occupation certificate. The plan is to include measures to:</p> <ul style="list-style-type: none"> • calm traffic and implement a maximum speed of no more than 40km per hour for all streets and lanes; • 10km per hour maximum speed limit for service lanes; • prioritise pedestrian and cycle access across the site with kerb extensions, continuous raised footpath thresholds, tight corner radii and street trees; • discourage inappropriate through traffic; • manage potential vehicle and pedestrian conflict at the interface of open spaces and streets; and • manage access to commercial, retail and urban services including access by heavy vehicles for the servicing of permissible uses.
C7.	<p>Where roads or lanes are closed to vehicular access, connections to public open space or between public roads are to provide:</p> <ul style="list-style-type: none"> • public access whether or not the land is public; and • are to be designed so that the access is clearly public and encourages pedestrian and cycle traffic to and from the open space and the adjoining public roads.

Controls	
C8.	Pedestrian and bicycle access is to be provided as shown in the K23.3 Movement & Access Design Principle and to the satisfaction of Council.
C9.	Ensure the continuation of the foreshore walk through the public open space provides a wide, direct, accessible and legible route between Bayview Park and the Massey Park Golf Club.
C10.	<p>Pedestrian and bicycle access throughout the Precinct, including connections from roads to the public open space, is to be designed to:</p> <ul style="list-style-type: none"> • be direct and accessible to all; • be easily identified by users and have a public character; • include signage advising of the publicly-accessible status of the link and the places to which it connects; • be clearly distinguished from vehicle access unless it is a purpose built shareway; • allow visibility along the length of the link to the public domain at each end; • include materials and finishes (paving materials, tree planting, furniture etc.) integrated with adjoining streets and public spaces and be graffiti and vandalism resistant; • include landscaping to assist in guiding people along the link while enabling long sightlines; • be well lit to safety standards (AS1158 pedestrian lighting) with use of metal halide (white) lighting, giving regard to highlighting any unique architectural or public art features; and • be open to the sky along the entire length and accessible 24 hours a day.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K23 160 Burwood Rd, Concord (former Bushells Factory)

K23.5 Public Spaces & Public Access

Objectives

- O17 To provide high quality public space and a network of publicly accessible spaces and connections.
- O18 To capitalise on the precinct's unique setting and location by creating strong visual and physical connections to heritage items and the water.
- O19 To reconnect the precinct to Exile Bay and provide a highly accessible public park on the foreshore for the benefit of local residents.
- O20 To cater for a range of passive recreational activities within the public spaces.
- O21 To create memorable places with high quality public domain design that the wider community uses and enjoys.

Public Domain Network

Controls	
C11.	A highly permeable and high quality public domain network including various open spaces, foreshore plaza, and new internal streets and pedestrian links, is delivered as per Figure K23-5.
C12.	A minimum of 9,700m ² of publicly accessible, privately owned public domain is to be provided within the Precinct and is to be generally consistent with that shown in Figure K23-4. This includes any potential service lane.
C13.	<p>The layout of public open space and publicly accessible, privately owned public domain is to be generally consistent with that shown in Figure K23-5. Alterations to that layout will be considered where they demonstrate an improved public benefit and design excellence having regard to:</p> <ul style="list-style-type: none"> • The objectives, character statement and principles of this DCP; • The degree to which any alterations may enhance or detract from public enjoyment of the public benefits associated with the development.
C14.	Maximise direct sunlight to streets with active frontages between 9am and 3pm on 21 June.

C15.	50% of public and publicly accessible open space is to receive at least four hours direct sunlight between 9am and 3pm on 21 June.
------	--

Foreshore Area

Controls	
C16.	The foreshore public open space is to be designed to provide for a range of passive activities.
C17.	<p>A minimum of 5,900m² of public open space as shown in Figure K23-4 is to be dedicated to Council and is to:</p> <ul style="list-style-type: none"> • create a new and vital public space on the waterfront that may include i.e. seating and furniture, opportunity for markets and events, provision of public BBQ's & shelter, a community garden, heritage interpretation and public art; • be located and designed so that it is clearly identifiable as public space and encourages public use; • reflect and respond to the heritage landscape character; • have clearly defined pedestrian entrances and paths, appropriate seating, and zones for activities that are clearly defined and encourage use; • maximise access for people with mobility difficulties, through design and location of paths and entrances; • the public open space is to primarily feature soft landscaping except for civic spaces, pathways, and small areas ancillary to active frontages; • minimise area required for stormwater and overland flow paths; and • provide legible pedestrian and cycle connections along the foreshore and connecting to Burwood Road and Zoeller Street.
C18.	The concrete sea wall along the boundary of the site to Exile Bay is to be replaced with terraced steps or alternatively repaired to a standard acceptable to Council.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts



Publicly Owned Open Space
Privately Owned & Publicly Accessible Land

Figure K23-4 Public Spaces diagram

K23.6 Landscape Design

Objectives

- O22 To control climatic impacts on buildings and outdoor spaces, maximise provision of shade and reduce urban heat island effect.
- O23 To improve the local micro-climate, increase native fauna and flora habitats and promote biodiversity.
- O24 To promote high quality landscape design as an integral component of the overall design of new development, softening the appearance of buildings.
- O25 To allow adequate provision on site for infiltration of stormwater.
- O26 To strengthen locally native vegetation and enhance Connecting with Country landscape values on Wangal land.
- O27 To encourage passive green roofs that increase building performance, air quality, biodiversity and contribute to urban greening.

Deep Soil

Controls	
C19.	Deep soil zones are to be provided as identified in Figure K23-5 Public Domain Framework Plan. Additional opportunities for deep soil zones beyond the areas identified should also be considered.
C20.	Buildings and structures including basements are not to encroach into identified deep soil zones.
C21.	Non-permeable hard surfaces (i.e. concrete slabs) are not permitted in identified deep soil zones.

Landscape Screening

Controls	
C22.	Development is to provide sufficient setbacks with deep soil zones along the boundaries (for more detail see Section K23.9 Built Form Envelopes) in order to create adequate landscape screening to the surrounding residential areas.
C23.	Existing trees and vegetation along the western and eastern boundaries of the site are to be retained in a healthy condition to provide screening for adjoining residential areas. If any trees are lost, they are to be replaced with well established trees of similar mature height.
C24.	Vegetation in the landscaped setback to Burwood Road is to be provided to soften the appearance of new built form.

Native Species Selection

Controls	
C25.	Native species must comprise at least 75% of the plant schedule, incorporating a mix of locally native trees, shrubs and groundcover appropriate to local climatic conditions.
C26.	Where exotic species are proposed to provide a change of form, texture and seasonal colour, these must be consistent with the character outlined in section K23.3 Urban Design Principles.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K23 160 Burwood Rd, Concord (former Bushells Factory)

Tree Canopy Cover

Controls	
C27.	A minimum of 25% of the precinct area is to be covered by tree canopy.
C28.	Generous landscape opportunities exist to achieve the above control including the foreshore park, plaza, street verges, communal open space of apartments, and retention of most existing trees along the western boundary.
C29.	<p>To demonstrate compliance with the above control, a landscape plan is to be submitted as part of any future development application (DA), prepared by a suitably qualified landscape architect and supported by an arborist statement/ report that includes the following:</p> <ul style="list-style-type: none"> • A site plan showing the entire precinct and identifying the percentage of canopy of all retained trees, and the percentage of canopy achieved by proposed new tree planting (calculated for all tree species at 'established age' of no more than 20 years); and • A detailed plan showing the subject site of the DA including: <ul style="list-style-type: none"> – all retained trees and their percentage of canopy; – all new trees and their percentage of canopy at 'established age'; and – detail in regard to landscaped setbacks and screening, deep soil zones, protection measures for retained trees, and type of tree species to be planted including information on mature canopy size and height.

Retention of Trees

Controls	
C30.	All trees and vegetation identified in Figure K23-5 Public Domain Framework Plan are to be retained, protected and maintained.
C31.	Of particular importance are the mature groves of trees along the eastern and western boundary, which are to be retained and protected, to maintain the existing developed landscape and privacy for the neighbours.
C32.	Retention and ongoing protection of the large Hill's Weeping Fig (Tree 184) and its TPZ (tree protection zone) near the north eastern boundary of the site is a key requirement. This particular tree has been identified as "the best tree on the site" and is considered a significant item that contributes to the landscape of the precinct and the 'Factory in a Garden' setting.

Green Roofs

Controls	
C33.	Passive green roofs should be located on serviceable and visible parts of the roof, such as the roof of lower parts of a development with varying heights.
C34.	Green roofs must demonstrate adequate drainage, wind impact and waterproofing is provided for the species and volumes of plants and soil.

Other/ Miscellaneous

Controls	
C35.	Landscape design highlights architectural features, defines entry points, indicates direction, and frames and filters views from and into the site.
C36.	Consultation is to occur with the Massey Golf Course to determine if golf safety fences/ netting will be required to be constructed to protect people, vehicles and structures from potential stray golf balls. All fences would need to be of high design quality and visually unobtrusive.

Page K-437

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Public Domain / Ground Floor Uses



Figure K23-5 Public Domain Framework Plan

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K23 160 Burwood Rd, Concord (former Bushells Factory)

K23.7 Diversity of Uses

Objectives

- O28 To increase jobs and skills (employment generation) on site through the provision of adaptable retail uses and maker spaces.
- O29 To include industries that serve the population related needs of the Canada Bay community (urban support services).
- O30 To provide for a diverse mixture of housing types with a scale of built form that responds to existing neighbouring properties.
- O31 To ensure an adequate supply of low cost housing in the private market and facilitate the development of affordable housing by social and not-for-profit providers.
- O32 To minimise land use conflict and any potential impacts on the operational viability of employment/ light industrial uses.
- O33 To ensure new light industrial development, or other development for employment uses, is designed and built to mitigate any potential impacts they may have on existing and planned sensitive uses.
- O34 To ensure sensitive uses, particularly residential uses, are designed and built to mitigate against the potential impacts that light industrial uses, or other employment uses, may have on them.
- O35 To ensure appropriate noise attenuation measures are incorporated into building design and site layout.
- O36 To provide efficient vehicle access, circulation and loading docks that also ensures the safety and security of all users.

Housing Mix & Affordable Housing

Controls

C37.	Dwelling mix is to be provided in accordance with the Canada Bay Local Environmental Plan 2013.
C38.	Dwellings dedicated to Affordable Housing are to be of equivalent design quality, diversity and mix as all other dwellings.
C39.	Affordable housing is to be provided in accordance with the <i>Canada Bay Local Environmental Plan 2013</i> and the requirements of the <i>Canada Bay Affordable Housing Contribution Scheme</i> .

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Urban Services, Commercial and Retail Uses

Controls	
C40.	The minimum provision of non-residential uses in the Precinct is 7,500m ² GFA.
C41.	Within the total 7,500m ² GFA, a minimum of 3,000m ² GFA is to be provided for 'urban services' (i.e light industrial uses).
C42.	A staged masterplan must be submitted to Council to demonstrate how non-residential GFA is to be distributed across the site. This must be provided with the first development application and updated for subsequent applications.
C43.	The maximum size of any supermarket in the Precinct is 1,000m ² GFA.
C44.	Non-residential uses should be predominantly located within the area zoned B1 Neighbourhood Centre.
C45.	Social and community uses, such as a childcare centre or community meeting space and/or gyms are encouraged within the commercial spaces.
C46.	Outdoor dining areas should be provided that overlook the foreshore plaza and public promenade.
C47.	Urban services including mixed light industry, new economy, operational making areas and creative uses are encouraged and should be located within the lower and upper ground floor levels of the Central Roasting Hall and the ground floor of adjoining buildings.
C48.	Any light industrial uses not located on the ground floor, must ensure suitable construction to accommodate floor loading, access and the suitability of space for industrial uses.
C49.	Buildings that are primarily for an industrial purpose are to have a minimum floor to ceiling height of 5m. This ceiling height may need to be adjusted slightly to accommodate the existing structure of the heritage Central Roasting Hall.
C50.	The design of large clear spans is desirable for light industrial floor spaces to achieve maximum flexibility.

C51.	Driveways which provide access to the development for car parking, deliveries for loading and unloading and waste collection, shall be provided from loading access locations identified on Figure K23-5 Public Domain Framework Plan.
C52.	New development should demonstrate that the design of driveways and loading docks is appropriate for the vehicular servicing requirements of the proposed use. Loading facilities should be provided in accordance with the current RMS 'Guide to Traffic Generating Developments 2002' and AS 2890.2.
C53.	Development must incorporate areas that accommodate bins for garbage collection and recycling of waste for industrial and other employment areas. These areas are not to be visible from the street or public open spaces.
C54.	The service access and loading dock(s) for industrial uses must: <ul style="list-style-type: none"> • allow easy access for the size, type and frequency of the service vehicles anticipated (ie Small Rigid Vehicles (SRV), Medium Rigid Vehicles (MRV) and/or Heavy Rigid Vehicles (HRV)); • incorporate sufficient space for service vehicles to turn within the site and minimise the need for trucks to reverse or manoeuvre on existing roads; • be separate from pedestrian routes and thoroughfares (unless the functionality of the service lane and safety of the pedestrians can be guaranteed); • demonstrate strong functionality and connectivity with any proposed freight lift; • accommodate the circulation of large items between the freight lift and industrial floor spaces, and; • be covered at least 1.2m beyond the edge of the loading dock to protect users and goods. Enclosed loading bays are encouraged.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K23 160 Burwood Rd, Concord (former Bushells Factory)

Controls

C55.	<p>In granting development consent for non-residential development on sites with proximity to residential uses, the consent authority will have regard to the potential impacts on the amenity of existing and future residential uses. The following matters must be considered and addressed:</p> <ul style="list-style-type: none"> a) noise impacts; b) operating hours; c) privacy; d) vehicular and pedestrian traffic; e) vibration; f) reflectivity; g) overlooking; and h) overshadowing.
C56.	<p>All applications for noise generating uses adjacent to or located in a building containing a residential use must be accompanied by a Noise Impact Assessment from a qualified acoustic engineer, certifying that the acoustic standard can be met.</p> <p>The Noise Impact Assessment should include mitigation strategies, such as utilising landscape buffers, screened and acoustically sealed balconies, mechanical ventilation, triple glazing, green walls, and the use of other specific building materials or sound walls that manage noise.</p>

K23.8 Maximum Density (FSR)

Objectives

- O37 To ensure the height and density of future development is compatible with the surrounding context.
- O38 To ensure each stage of the development contributes appropriately to the overall density of the Precinct.
- O39 To concentrate development at the centre of the site and away from the sensitive interfaces with surrounding area.

Controls

C57.	The maximum overall density of the Precinct is not to exceed the maximum FSR shown in the LEP.
C58.	Development of each part of the site is not to exceed the maximum floor space ratio shown in Figure K23-6.
C59.	Each stage of the development is to provide a table showing both the FSR of the parcel and the overall FSR (to date). The maximum FSR of both the parcel and the Precinct is not to be exceeded. If early stages maximise FSR, later stages may be required to have a lower FSR than shown on Figure K23-6 to ensure the maximum overall FSR is not exceeded.

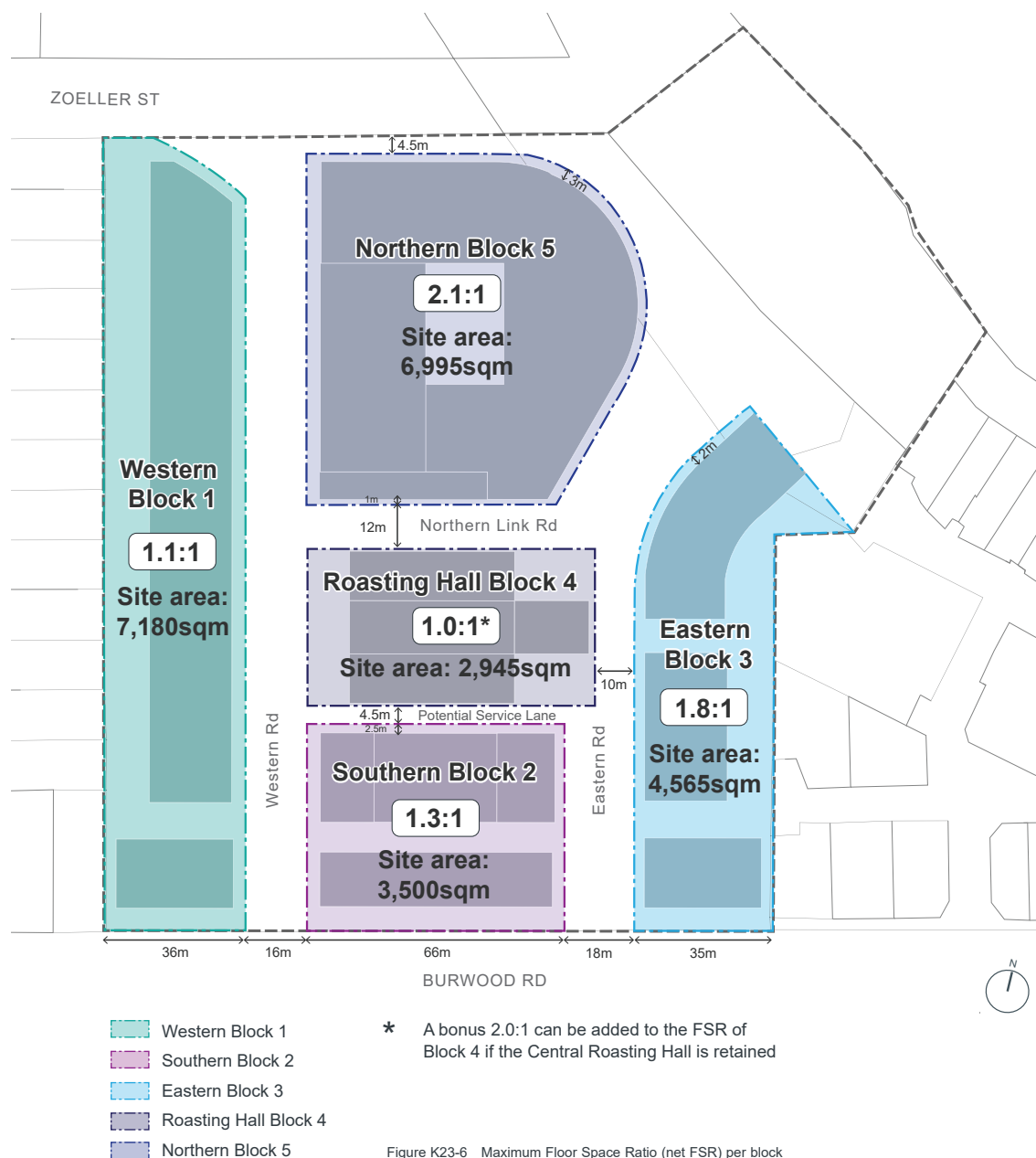
CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Maximum FSR Block Plan



CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K23 160 Burwood Rd, Concord (former Bushells Factory)

K23.9 Built Form Envelopes

Objectives

- O40 To create building forms that reinforce the future desired character of the area and protect valued character attributes such as views to the foreshore and the Central Roasting Hall.
- O41 To facilitate daylight access and ventilation to streets, public places and neighbouring properties.
- O42 To define the proportion, scale and visual enclosure of the public domain and provide a level of consistency across the Precinct.
- O43 To ensure rooftop spaces do not create unreasonable amenity impacts such as overlooking, loss of privacy or unacceptable noise.

Building Heights

Controls

C60.	New development is to conform with the maximum heights (in metres) as shown in Figure K23-7 Building Envelope Controls Plan and Figure K23-8 to Figure K23-14 Building Envelope Controls Sections.
C61.	New development is to conform with the maximum number of storeys as shown in Figure K23-7 Building Envelope Controls Plan and Figure K23-8 to Figure K23-14 Building Envelope Controls Sections.
C62.	New development in the Southern Block should not exceed the existing Roasting Hall parapet height of RL26.8.
C63.	Minimum floor to floor heights for new development are as follows:

Use	Minimum floor to floor height	Minimum floor to ceiling height
Retail	4.4m	4m
Commercial	3.7m	3.3m
Adaptable	3.7m	3.3m
Residential	3.1m	2.7m
Community	3.7m	3.3m
Urban Services	5.4m	5m

Note: Exceptions for floor to floor heights within the existing Roasting Hall structure may be acceptable.

Height Transition to Adjoining Land

Controls

C64.	Building heights are to transition (be lower) towards the Precinct's boundaries and adjoining residential uses as identified in Figure K23-7 Building Envelope Controls Plan and Figure K23-8 to Figure K23-14 Building Envelope Controls Sections.
------	---

Heritage Integration

Controls

C65.	New development is to minimise the impact on the visual curtilage and setting of the Central Roasting Hall.
C66.	New development near the Roasting Hall is to provide visual separation to preserve the iconic nature of the structure.

Solar Access/ Overshadowing

Controls

C67.	Overshadowing of neighbouring buildings is minimised while direct sunlight to the public domain and publicly accessible spaces is maximised.
C68.	Direct solar access (sunshine) to windows of principal living areas and to the principal area of open space of existing dwellings, particularly along the eastern and western boundary, should not be reduced to less than 3 hours between 9.00am and 3.00pm on 21 June (mid winter).
C69.	50% of publicly accessible open space is to receive at least four hours direct sunlight between 9am and 3pm on 21 June.
C70.	Shade from strong sun is available between September and March, for at least 20% of the area used for passive recreation, and protection from strong winds is provided to any space that is open to winds from the south.

[illegible]

Figure K23-7 Building Envelope Controls Plan

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K23 160 Burwood Rd, Concord (former Bushells Factory)

Building Footprints/ Envelopes

Controls	
C71.	<p>The maximum building/ floor plate depth of all residential apartment development is 18m. Deeper building/ floor plate depths may be considered where it can be demonstrated that apartments are able to satisfy ADG principles and all habitable rooms receive adequate ventilation and solar access.</p> <p>The maximum depth of medium density typologies (terraces) is 14m unless varied in accordance with K23.14 Medium Density Housing (Terraces) Control C125.</p>
C72.	<p>Along the western boundary of the site the maximum length of any building is 36m and buildings are to be broken into a minimum of five buildings with a building 'break' that is a minimum of 6m wide.</p>
C73.	<p>The maximum length of any building over 4 storeys high is 50m with a minimum building 'break' of 9.0m wide between buildings. This control does not apply to the 5 storey curved building within the Northern Block 5.</p>

Building Façades, Entrances and Articulation

Controls	
C74.	<p>Building façades are to be articulated into smaller elements at a scale or grain that reflects:</p> <ul style="list-style-type: none"> • different uses and/or components of the building; • the location of the building relative to pedestrian or public spaces; • building entries; and • the ground floor, lower floors, top floor and roof.
C75.	<p>Underground parking areas are to protrude no more than 1m above the level of the footpath or adjacent public domain and are to:</p> <ul style="list-style-type: none"> • be integrated into the landscape and building design; • not have car ventilation grills on the street frontage unless screened by landscaping in a garden bed with a minimum plan depth of 1m; and • have any ground floor car parking areas sleeved with uses fronting the street.
C76.	<p>Ground floor dwelling units facing the street and public domain are to have individual entries from the street.</p>
C77.	<p>Entrances to dwellings and or associated transitional spaces are to be designed to encourage personalisation of the space.</p>
C78.	<p>Individual dwelling layouts are to be planned and located to provide passive surveillance of the street and public open space.</p>

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Setbacks

Controls	
C79.	New development must set back as identified in Figure K23-7 Building Envelope Controls Plan and Figure K23-8 to Figure K23-14 Building Envelope Controls Sections.
C80.	Setback areas are to be deep soil where identified in Figure K23-5 Public Domain Framework Plan. Basements are not permitted to encroach into deep soil zones.
C81.	'Undesirable' elements such as vents, electric substations, or plant and equipment spaces are not permissible within the setback area. Where unavoidable they must be screened from view by quality landscape.

Building Diversity and Architectural Character

Controls	
C82.	<p>To achieve diversity and interest in the architectural character of the Precinct:</p> <ul style="list-style-type: none"> architectural expression of a development block should be varied and present as a group of buildings rather than one building designed by a single designer or company; at least two architectural firms should be used within each block*; and buildings designed by the same architectural company should not be adjacent or opposite to each other. <p>*Note: A single team may be permitted to design the urban service uses within the Central Roasting Hall and Southern Block 2 to solve the complexities of loading and servicing these uses.</p>

Rooftop Spaces

Controls	
C83.	<p>Private and communal open spaces may be provided on a podium or roof-top terrace if the following is shown to be addressed:</p> <ul style="list-style-type: none"> a) visual and acoustic privacy, b) safety and security, c) roof maintenance and servicing; and d) wind effects
C84.	Above ground open spaces must not directly overlook rooms and private landscaped areas of neighboring properties unless overlooking can be mitigated by increased setbacks, screening or other means.
C85.	The design of any rooftop spaces and associated rooftop lift overruns or structures must be integrated into the main building envelope and not increase the overall bulk and scale of the development.
C86.	The location and design of green roofs and rooftop spaces should not detract from the heritage significance of the Central Roasting Hall.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K23 160 Burwood Rd, Concord (former Bushells Factory)

Building Envelope Controls Sections

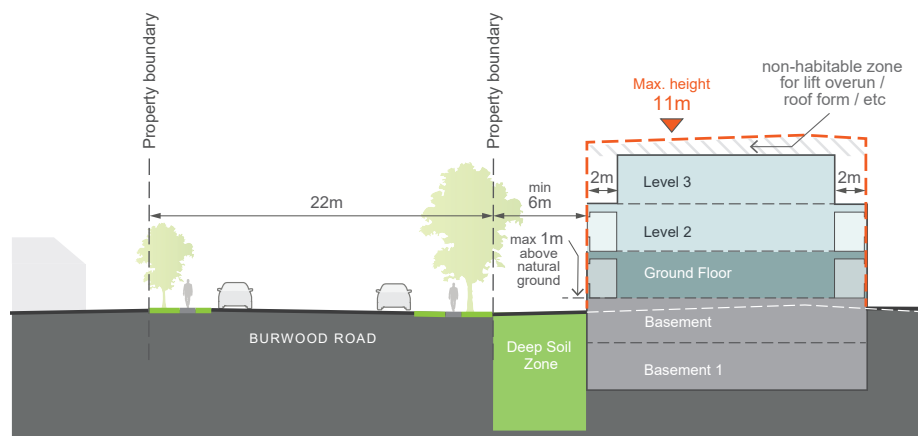


Figure K23-8 Section 1: Burwood Road and 3 storey terrace interface

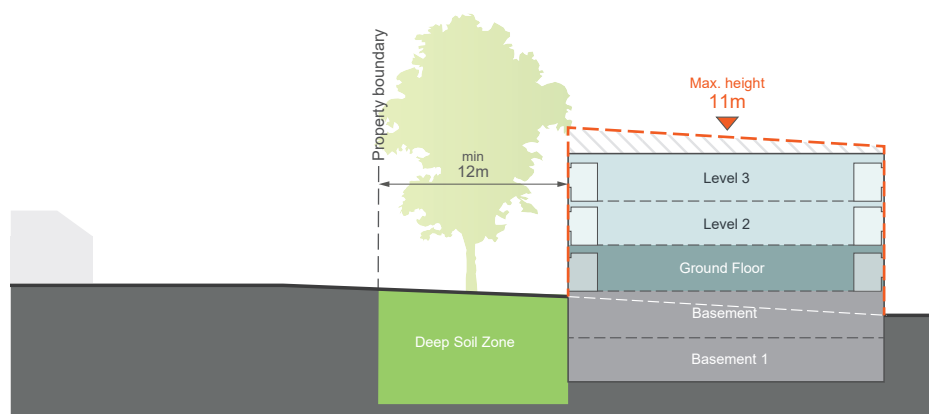


Figure K23-9 Section 2: Western boundary and 3 storey development interface

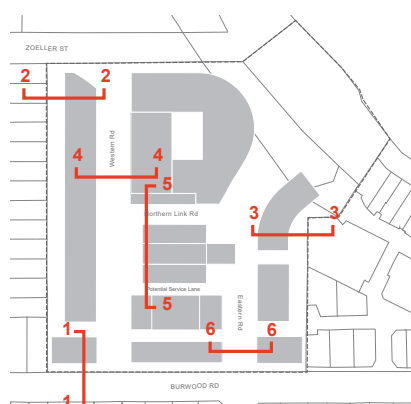


Figure K23-10 Section key

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

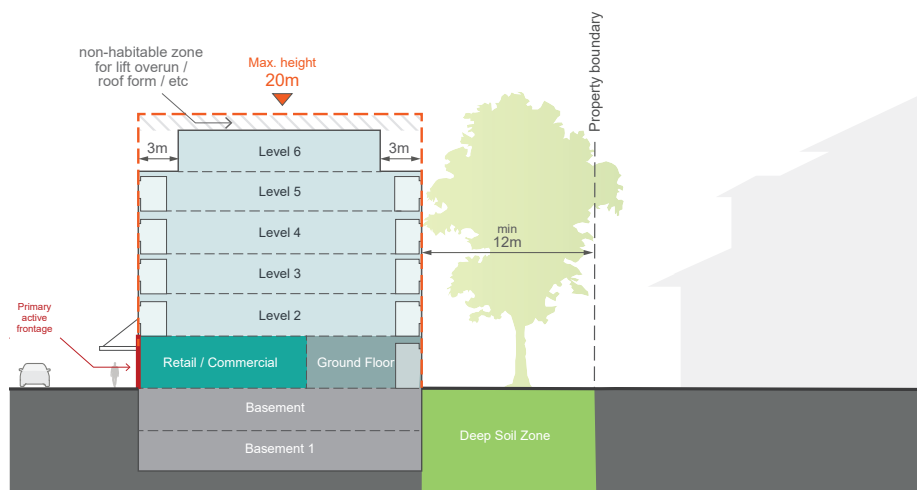


Figure K23-11 Section 3: Eastern boundary and 6 storey development interface

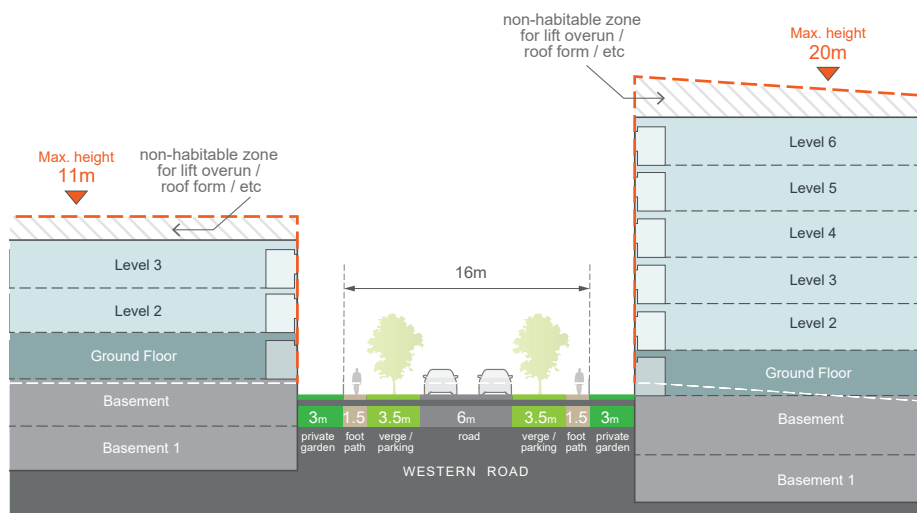


Figure K23-12 Section 4: Local street section

- Basement
- Retail / Commercial
- Residential Ground Floor
- Non-habitable Zone
- Residential

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K23 160 Burwood Rd, Concord (former Bushells Factory)

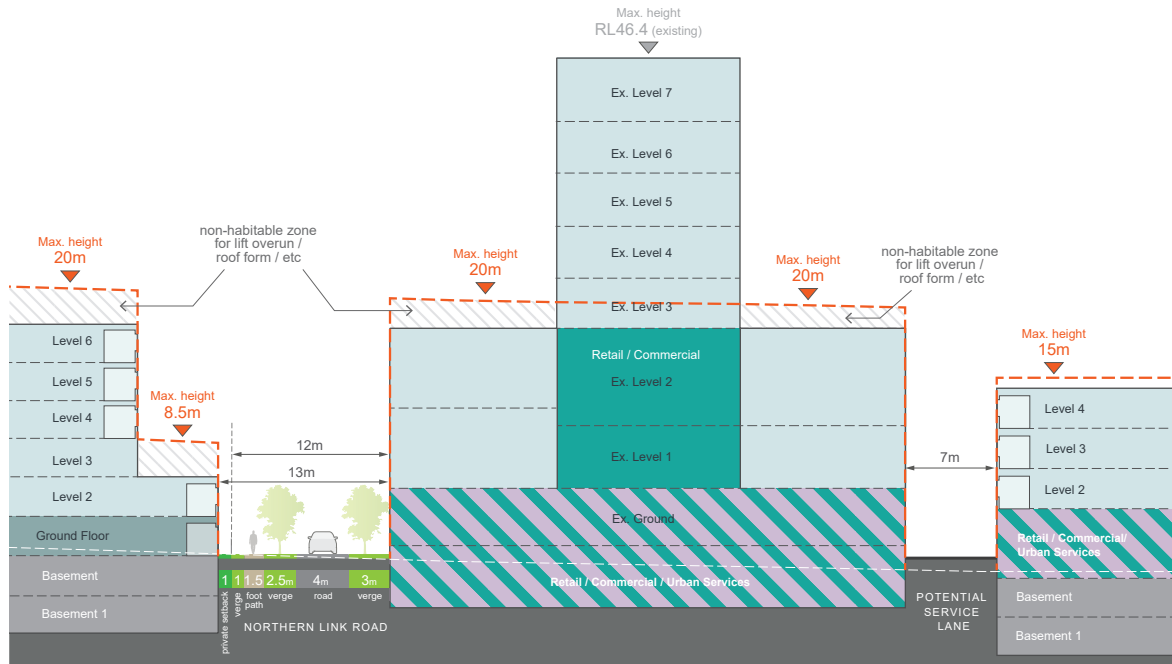


Figure K23-13 Section 5: Looking east towards 6 storey development, existing Central Roasting Hall and 4 storey development with indicative potential locations of urban service uses

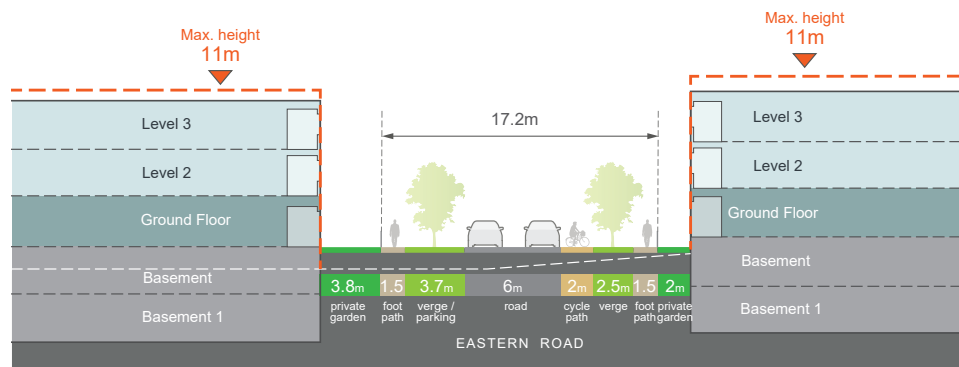


Figure K23-14 Section 6: Local street section

Basement	Retail / Commercial
Residential Ground Floor	Non-habitable Zone
Residential	Urban Services

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K23.10 Public-Private Interfaces

Objectives

- O44 To provide a safe, interesting and vibrant environment that encourages pedestrian activity and supports the economic success of the Precinct.
- O45 To maximise opportunities for passive surveillance of the public domain.
- O46 To enhance the commercial viability of the area and complement existing retail, commercial, entertainment and community uses.

Active Frontages on the Ground Floor

Controls

C87.	Ground level active uses must be provided along 'Active frontages' as identified in Figure K23-15.
C88.	Vehicle access points are generally not permitted along active frontages. Where no alternative access point can be provided, their width must be kept to a minimum.

C89.	Along active frontages: <ul style="list-style-type: none"> the finished ground floor level is to match the footpath level; where this is not possible, the ground floor level is to be a maximum of 0.35m above or below the footpath; active uses/ tenancies must be a minimum of 10m deep; continuous awnings must be provided to shelter pedestrians from weather conditions; and the design guidance shown in Figure K23-15 must be applied.
C90.	Residential entries and foyers are permitted along active frontages, however, they are not to compromise the commercial/ retail activity along the street, by keeping their frontage width to a minimum. The maximum width for residential entries/ foyers is 6m. Awnings should be provided at residential entries and foyers.

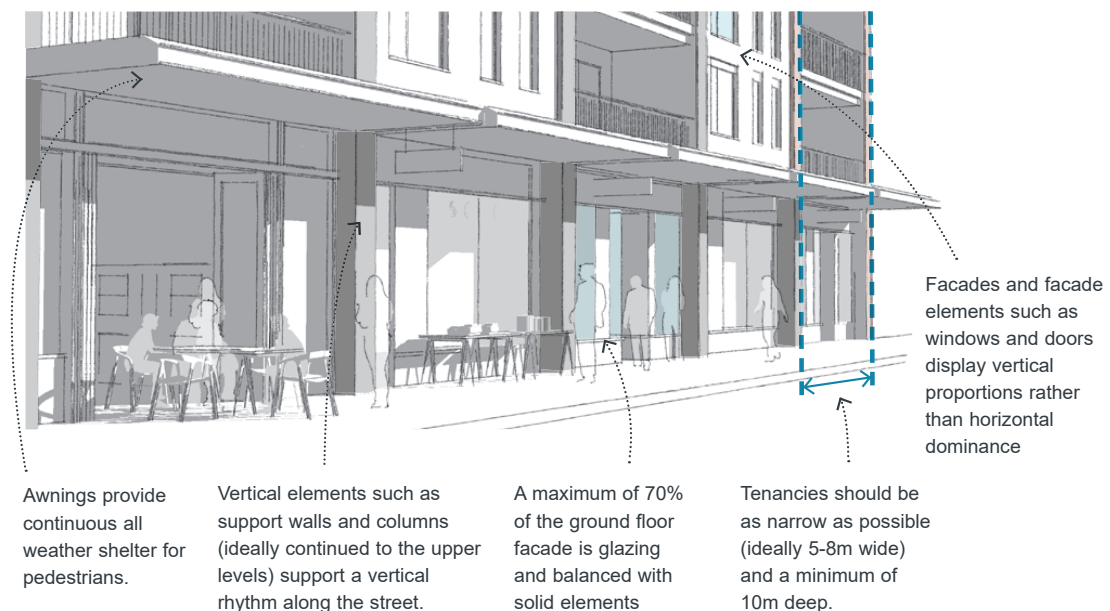


Figure K23-15 Design guidance for active frontages

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K23 160 Burwood Rd, Concord (former Bushells Factory)

Activated Urban Services Frontage

Controls	
C91.	Consideration should be given to the nature of 'Activated urban services frontage' as identified in Figure K23-5.
C92.	Activated urban services frontage should be high quality with careful industrial detailing and integrated wayfinding. For reference, see the Caxton Works light industrial frontage in London.



Figure K23-16 Detailed, activated urban services frontage, Caxton Works, London (source: Google Streetview)

'Interactive' Frontages on the Ground Floor

Controls	
C93.	'Interactive' frontages comprise all ground floor frontages that address the public domain or publicly accessible spaces and are not designated as 'active frontages' in Figure K23-5.
C94.	Interactive frontages must: <ul style="list-style-type: none"> display a high level of architectural quality and detail; minimise vehicular access points; have a high level of visual permeability; minimise blank facades; avoid visually dominant building services where possible. Co locate service cabinets with loading, waste or parking areas where possible to avoid impact on the public realm; maximise the number of doors and windows and have no more than 5m along the ground floor facade that is without a door or window; and place a particular focus on 'human scale' and pedestrian views i.e. through the use of detailed design, insets and projections that create interest and diversity.

Residential Uses on the Ground Floor

Controls	
C95.	All ground floor residential units must have individual access directly off a street or laneway to improve activity levels and surveillance.
C96.	Where possible, ground floor residential units are to be elevated by up to 1m, with the exception of accessible units where level access off the street/ laneway/ footpath is preferred.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Safety & Surveillance

Controls	
C97.	New development is to address and define the public domain and publicly accessible spaces through entrances, lobbies, windows and balconies that overlook public spaces, maximising opportunities for passive surveillance.
C98.	The building design is to maximise opportunities for casual surveillance of the public domain and any semi-public or common open space, particularly adjacent to public open space.
C99.	Ground floor dwellings adjacent to public open space are to have an "address" or "front door" that is visible and directly accessible from the pedestrian paths within the public open space.
C100.	Balconies should be designed to balance visual privacy for the resident and opportunities to overlook the public domain. Design treatment may include a combination of solid and transparent balustrade materials.
C101.	A high level of surveillance is required from upper levels of buildings adjacent to public open space.
C102.	The detailed design of the external areas of the ground floor is to minimise blind-corners, recesses and other areas which have the potential for concealment.

K23.11 Massing and Articulation

Objectives

- O47 To ensure buildings and their individual elements are appropriately scaled to define the built form and respond to the surrounding character.

Controls	
C103.	The built form layout is to be generally consistent with that shown in Figure K23-7 Building Envelope Controls Plan and Figure K23-8 to Figure K23-14 Building Envelope Controls Sections. Alterations to the layout will be considered where they demonstrate an improved public benefit and design excellence having regard to: <ul style="list-style-type: none"> the objectives, character statement and principles of this DCP; the degree to which any alterations may enhance or detract from public enjoyment of the public benefits associated with the development; and the impact on neighbouring properties.
C104.	All buildings that are over 4 storeys, are to be clearly articulated i.e. base, middle and top.
C105.	The maximum length of straight wall without articulation, such as a balcony, recess, projection or return, is 15m.
C106.	Roof plant, lift overruns, vents, carpark entries and other service related elements are to be located within the maximum building height, visually unobtrusive, integrated into the built form and complement the architecture of the building.
C107.	Ensure buildings exhibit high design quality, and minimise overshadowing of neighbouring buildings and public and private open spaces.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K23 160 Burwood Rd, Concord (former Bushells Factory)

K23.12 Appearance

Objectives

- O48 To add visual quality and interest to new buildings, with a focus on breaking up massing of higher density forms when viewed from the public domain, publicly accessible places and neighbouring properties.

Controls

C108.	All development along Burwood Road, Zoeller Street and the new public open space are to be of the highest architectural quality and reflect the prominence of the streets and spaces that they face.
C109.	The composition of facades balances solid and void elements and does not display large areas of a single material, including glass.
C110.	Visually prominent elements such as balconies, overhangs, awnings, and roof tops are to be of high design quality.
C111.	Facades are articulated using techniques such as projections, recesses, eave overhangs and deep window reveals. Elements are not to protrude into the front setback area. In general, vertical articulation should be more 'pronounced' than horizontal articulation.
C112.	Buildings on corners address both streets and architectural elements are composed so that they 'turn the corner'.

K23.13 Heritage

Objectives

- O49 To retain and integrate remnants of the precinct's history and structures of heritage value and connection to the past.
- O50 To acknowledge and celebrate the site's industrial history and the Central Roasting Hall's quality as a 'factory in a garden' setting.
- O51 To retain the 'Bushells Factory' Central Roasting Hall, being one of the few remaining industrial structures on the Sydney waterfront.
- O52 To protect the Central Roasting Hall's prominence as an iconic visual landmark (including 'B' sign and chimney) that can be seen from the water and surrounding suburbs.
- O53 To ensure future development is guided by a clear understanding of the heritage values of the place.

New Development

Controls

C113.	Development must comply with requirements in the City of Canada Bay DCP Part C2 'Development of heritage items'.
C114.	Any future development is to embrace the existing industrial character of the Precinct. Particular consideration should be given to the following: <ul style="list-style-type: none"> • built form shape and scale; • roof form; • architectural detail (e.g. window design inspired by the prominent translucent wall of the Central Roasting Hall); and • appropriate colours and materials such as natural red/ brown brick.
C115.	Surrounding new development is of appropriate scale and provides adequate separation of the historic structure(s). The minimum setbacks are identified in Figure K23-7 Building Envelope Controls Plan.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

Controls	
C116.	New development should support the heritage value of the Central Roasting Hall as a 'Factory in a Garden' setting, including the retention and ongoing protection of the large Hill's Weeping Fig (Tree 184) and other mature trees along the eastern and western site boundaries.
C117.	An archival record, in accordance with Heritage NSW guidelines, should be lodged with any application for demolition. The recording should include measured drawings.
C118.	A Schedule of Conservation Works, including drawings, must be prepared by a suitably qualified and experienced heritage consultant and submitted with any application for development.
C119.	A heritage Conservation Management and a heritage Interpretation Plan must be submitted with any application for development.

Adaptive Reuse of the Roasting Hall

Controls	
C120.	The arrangement of new built form, open space and roads is to enable the Central Roasting Hall to retain its landmark quality and 'factory in the garden' setting.
C121.	The Central Roasting Hall is to be protected and listed as an item of environmental heritage in the Canada Bay Local Environmental Plan 2013, including the Central Roasting Hall, chimney stack, 'B' sign and other characteristics such as the landscaped setting.

C122.	A Detailed Fabric Analysis of the Central Roasting Hall, undertaken by a suitably qualified heritage consultant, is required with any development application so as to help ensure no significant fabric of potential heritage value will be lost. The fabric analysis must include a grading of significance of building fabric and spaces.
C123.	All elements of the Central Roasting Hall with identified heritage value must be retained and restored including: <ul style="list-style-type: none"> • the chimney stack; • the 'B' sign; and • original structural elements and the translucent facade of the Roasting Hall.
C124.	The Central Roasting Hall is to be adaptively reused in accordance with Part 'C2.14 Adaptive reuse' of the City of Canada Bay DCP. Appropriate uses include the following: <ul style="list-style-type: none"> • community facilities and multipurpose cultural spaces; • spaces for temporary activation such as markets, events and concerts; • retail/ commercial and urban services uses; • food & drink premises, e.g. gourmet providores stores, wine/ tapas bars, market style food outlets; • short term accommodation; and • apartments.

CITY OF CANADA BAY

Development Control Plan

Part K

Special Precincts

K23 160 Burwood Rd, Concord (former Bushells Factory)

K23.14 Medium Density Housing (Terraces)

Objectives

- O54 To ensure high quality design of medium density residential typologies with a particular focus on their contribution to the local character.
- O55 To transition to lower density residential areas, in particular along the Burwood Road interface.

Controls

C125.	The maximum building depth is 14m unless it can be demonstrated that all habitable rooms receive adequate ventilation and solar access, e.g. through the use of a courtyard design.
C126.	The minimum overall landscaped area for terraces is 35% of the lot area. The minimum dimension of landscaped area is 1.5m. A minimum of 50% of the overall landscaped area is to be deep soil.
C127.	A minimum of 35% of the front setback is to be landscaped area. A minimum of 50% of the landscaped area in the front setback is to be deep soil.
C128.	The minimum area of private open space (POS) is linked to the number of bedrooms as follows: <ul style="list-style-type: none"> • 15m² for 1 bedroom dwellings • 25m² for 2 bedroom dwellings • 30m² for 3+ bedroom dwellings
C129.	Master bedrooms have a minimum area of 10m ² and other bedrooms 9m ² .
C130.	Driveways of front-loaded terraces are a maximum width of 3.5m.
C131.	Where basement parking is provided, the following applies: <ul style="list-style-type: none"> • basement car parking is not to protrude more than 1m above finished ground level except at the carpark entry; • carpark entries are to be set back behind the building line; • the first 4.5 metres of the carpark entry/ driveway measured from the street boundary is to be at grade; and • carpark entries are a maximum 2.7m high and 3.5m wide.

K23.15 Sustainability & Performance

Objectives

- O56 To celebrate the ecological values of the site and improve the ecology of the waterfront.
- O57 To reduce the embodied energy in new development through the retention and adaptive reuse of existing structures.
- O58 To achieve Australian leading practice in design, construction and operation to deliver on sustainability outcomes, targeting a net positive ecological impact.

Controls

C132.	The development is to achieve beyond the baseline compliance requirements set by BASIX through the following key interventions: <ul style="list-style-type: none"> • efficient appliances and improved thermal design; • avoid natural gas in all residential development and provide appliances that can be powered by renewable energy sources such as; <ul style="list-style-type: none"> – electric heat pumps for hot water, – induction cooktops, – electric heating and cooling e.g. efficient air-conditioners with low GWP (Global Warming Potential); • solar photovoltaic and battery ready facilities; • recycled water infrastructure; • green facade treatment for cooler dwellings; and • access to car share facilities best practice parking measures including provision of EV charging and smart metering systems for all parking spaces.
C133.	All new buildings are to implement the technology (or similar) of the 'Modelled Scenario' identified in Figure K23-17 and achieve the impact performance identified in Figure K23-18.

CITY OF CANADA BAY

Development Control Plan

Part K

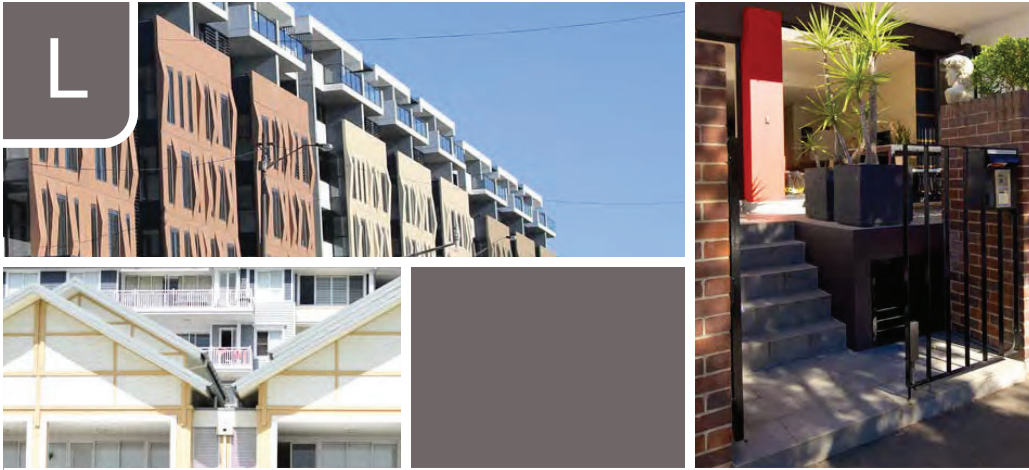
Special Precincts

Technology	Benchmark	Modelled scenario
Hot water system	Centralised gas	Centralised gas
Thermal Design (NatHERS)	5-star average	8-star average (delivered through design & green façade)
Space heating and cooling	2-Star A/C	5-Star A/C
Lighting	Halogen, T8 & CFL	Efficient (LED)
Appliances	Dishwasher 2.5-star Energy, 2.5-star Water	Dishwasher 4-star Energy, 5-star Water
	Dryer 1.5-star Energy	Dryer Heat Pump Clothes Dryer
	Clothes washer (not installed)	Clothes washer 4.5-star Energy, 5-star Water
	Fridge (not installed)	Fridge 5-star Energy
Solar PV	None	300 kW* (0.5 kW per multi unit dwelling 2 kW per townhouse)
Water Fixtures & fittings	Toilet – 4-star	Toilet – 4-star
	Showerhead – 3+ Star	Showerhead – 3+ Star
	Kitchen Taps – 5-star	Kitchen Taps – 5-star
	Other Taps – 5-star	Other Taps – 5-star
Water reuse	None	Recycled water for irrigation, toilet and laundry
Car parking rates	Affordable – 1 space	Affordable – 0 space
	1 bed – 1 space	1 bed – 0 space
	2 bed – 1.5 space	2 bed – 1 space
	3 bed – 2 space	3 bed – 1.5 space
	1 visitor per 3 apartments	1 visitor per 5 apartments
		Unbundled parking Provision of car share spaces

Figure K23-17 Technological assumptions for scenarios (Kinesis, Feb 2019)

	Impact of interventions
Greenhouse gas emissions	▼ 34%
Water consumption	▼ 38%
Peak electricity	▼ 50%
Solar PV contribution	20%
Recycled/rain water contribution	30%
BASIX Energy score (estimated)	53
BASIX Water score (estimated)	66
Annual household cost savings	\$7,200

Figure K23-18 Impact of interventions table (Kinesis, Feb 2019)



PART L - DEFINITIONS

CITY OF CANADA BAY

Development Control Plan

Part L

Definitions

Definitions

Note: For additional definitions please refer to the Canada Bay Local Environmental Plan.

Acid sulfate soils

Note: Refer to the Canada Bay Local Environmental Plan for definition.

Advanced tree

An advanced tree is one with a root ball of 90 litres (or larger), which is at least 2 metres in height and 2 years of age. Trees with a 25 litre root ball will be accepted in lieu of trees with a root ball of 90 litres, when local native trees are selected.

Ancillary development/structures

Ancillary development or ancillary structures are group terms used to encapsulate a variety of minor subordinate development such as:

- a) access ramp,
- b) awning, blind or canopy,
- c) balcony, deck, patio, pergola, terrace or verandah that is attached to a dwelling house,
- d) basement,
- e) carport that is attached to a dwelling house,
- f) detached studio,
- g) driveway, hard stand space, pathway or paving,
- h) fence or screen,
- i) garage that is attached to a dwelling house,
- j) outbuilding,
- k) rainwater tank that is attached to a dwelling house,
- l) retaining wall,
- m) swimming pool or spa pool and child-resistant barrier.

Annual exceedance probability (AEP)

The chance of a flood of a given or larger size occurring in any one year, usually expressed as a percentage.

Arborist report

A report (including photographic evidence) prepared by a suitably qualified arborist to ascertain the Safe Useful Life Expectancy (SULE) of the tree and/or whether the tree presents an unacceptable level of risk that pruning will not resolve.

Articulation zone

Articulation zone means an area of a lot forward of the building line within which building elements are permitted to be located, being an area measured from:

- a) one side boundary of the lot to the opposite side boundary of the lot, or
- b) if the lot is a corner lot—the secondary road boundary of the lot to the boundary opposite the secondary road boundary.

Attic

Note: Refer to the Canada Bay Local Environmental Plan for definition.

Basement

Note: Refer to the Canada Bay Local Environmental Plan for definition.

Bicycle Parking Facility

Bicycle parking facility - is an area reserved or designed for short term parking of one or more bicycles. It includes a device to which the bicycle frame and wheels can be locked. It is mostly used by visitors to the development at which it is provided.

Bicycle Storage Facility

Bicycle storage facility - is an area reserved or designed for long term parking of one or more bicycles. It is usually enclosed to provide security. It is mostly used by employees or residents of the development at which it is provided.

Biodiversity corridor

Defined in Figure B6.8 to Figure B6.14, encompassing all land contained within the green markings in the figures.

CITY OF CANADA BAY

Development Control Plan

Part L

Definitions

Building Envelope

Building envelope - means the three-dimensional space within which a building is to be confined.

Building Footprint

Building footprint - means the area of land measured at finished ground level which is enclosed by the external walls of a building

Building Height (or height of building)

Note: Refer to the Canada Bay Local Environmental Plan for definition.

Building height plane

Building height plane - means a plane projected at an angle of 45° over the actual land to be built upon from a vertical distance of 5.0 metres above ground level at the side boundaries of the site.

Building identification signs

Note: Refer to the Canada Bay Local Environmental Plan for definition.

Building line or setback

Note: Refer to the Canada Bay Local Environmental Plan for definition.

Business identification sign

Note: Refer to the Canada Bay Local Environmental Plan for definition.

Canopy

The uppermost branches of a tree, forming a more or less continuous layer of foliage.

Canopy cover

The proportion of land area occupied by the tree's canopy when visualised from directly above.

Canopy Spread

The diameter of a tree's canopy.

Canopy tree

A tree that is capable of forming a canopy that contributes to the urban forest and total canopy cover of an area. A canopy tree is categorised as possessing the following characteristics at maturity:

- Small: Minimum 6-8 metres height and minimum canopy diameter of 2 metres
- Medium: Minimum 8-12 metres height and minimum canopy diameter of 4 metres
- Large: Minimum 12+ metres height and minimum canopy diameter of 6 metres

Ceiling Height

Ceiling height - in relation to buildings means the greatest distance measured vertically from the ceiling of the upper most habitable room, or in the case of raked or cathedral ceilings a line projected from associated ceilings, to the existing ground level, or the lowest habitable floor immediately below that point, whether or not at natural ground level, excluding chimneys, attic rooms, and non-habitable rooms which are entirely below natural ground level and have no visible external elevation whatsoever.

Child Care Centre

Note: Refer to the Canada Bay Local Environmental Plan for definition.

Co-located facilities

Co-located facilities – means one or more facilities on or within an original facility or a public utility structure.

Co-Siting

Co-siting – means the siting of a number of telecommunication facilities, often owned by different carriers, in one location.

Collection Area

Collection area - is the location where garbage or recyclable material is transferred from a building's storage containers to a collection vehicle for removal from the site.

CITY OF CANADA BAY

Development Control Plan

Part L

Definitions

Communal Open Space

Communal open space - means useable shared open space for the recreation and relaxation of residents of a housing development and which is under the control of a body corporate or equivalent.

Conservation Plan

Conservation plan - means a document establishing the significance of a heritage item and recommending an appropriate policy to enable that significance to be retained.

Cumulative impact

Cumulative impact – in relation to Telecommunications and Radiocommunications infrastructure - means the impact of radiation from various sources or over time.

Council

Council - means the City of Canada Bay Council or any officer or delegated authority authorised to act on behalf of Council.

Crown modification

Crown modification pruning refers to changing the form and habit of trees. It may include pruning in the form of reduction, lifting, pollarding and remedial (restorative) pruning i.e.: damaged, declining or diseased limbs or reducing limbs from touching a roof of a house.

Deep soil zones

Deep soil zones are areas of soil that are unencumbered by buildings or structures such as basement car parks, services, swimming pools, tennis courts, rainwater tanks, on site detention tanks, and impervious surfaces including car parks, driveways and roof areas.

Note: Deep soil zones only apply where specified in Part G and K of this DCP.

Development Control Plan (DCP)

A plan made to provide more detailed provisions than those included in a local environmental plan.

Domestic driveway

A vehicular path within a property comprising three or less domestic units where a single or shared driveway is provided.

Dormer Window

Dormer window - means a construction containing a vertical window framed into and projecting through a steeply sloping roof. It can be a window or a group of windows forming a bay or recess in a room projecting outward from the general line of the wall.

Dual Occupancy

Note: Refer to the Canada Bay Local Environmental Plan for definition.

Dwelling House

Note: Refer to the Canada Bay Local Environmental Plan for definition.

Ecologically sustainable development

Note: Refer to the Canada Bay Local Environmental Plan for definition.

Electromagnetic radiation (EMR)

Electromagnetic radiation (EMR) – means the radiation in the microwave and radiofrequency band of the electromagnetic spectrum.

EV-Capable

Circuitry is installed (including a dedicated branch circuit and continuous raceway from the panel to the future EV parking bay) in preparation for a powerpoint/charging point/station to be added in future.

EV-Installed

Charging station is connected to pre-installed circuitry to enable immediate Level 2 or 3 charging. This is the next step (upgrade) from EV-Ready.

EV-Ready

Standard powerpoint is connected to pre-installed circuitry to enable immediate Level 1 charging. This is the next step from EV-Capable.

CITY OF CANADA BAY

Development Control Plan

Part L

Definitions

Flood planning area (FPA)

The area of land below the flood planning level (FPL) and thus subject to flood related development controls.

(Source: Department of Infrastructure, Planning and Natural Resources (2005) Floodplain Development Manual: the management of flood liable land).

Flood planning levels (FPL)

The combinations of flood levels (derived from significant historical flood events or floods of specific annual exceedance probability (AEP) and freeboards selected for floodplain risk management purposes, as determined in management studies and incorporated in management plans

(Source: Department of Infrastructure, Planning and Natural Resources (2005) Floodplain Development Manual: the management of flood liable land).

Flood prone land

Land susceptible to flooding by the PMF event.

Floor Space Ratio

Note: Refer to the Canada Bay Local Environmental Plan for definition.

Food Organics (FO)

Food waste including fruit and vegetable scraps, processed food and leftovers from meals such as meat, fish, chicken, bread, egg, egg shells, dairy products, coffee grounds and tea bags.

Food Organics Garden Organics (FOGO)

Food Organics and Garden Organics (FOGO) is a collection service that allows food waste or Food Organics (FO) to be added with Garden Organics (GO) waste so it can be recycled into top quality compost.

Foreshore area

Note: Refer to the Canada Bay Local Environmental Plan (Clause 6.4) for definition.

Freeboard

Freeboard represents a nominated additional height above a flood level to provide a safety factor against inundation. It is used to set minimum floor levels.

Frontage

Frontage - means the alignment at the public road reserve at the front of a lot and in the case of a lot that abuts two or more streets, the boundary of which, when chosen, would enable the lot to comply with the DCP provisions.

Garage

A structure that is, or is capable of being fully enclosed, that is constructed above or below ground level and for which the primary purpose is for the parking of vehicles.

Garbage and Recycling Room

Garbage and Recycling Room - means a room where garbage and recycling receptacles are stored, awaiting reuse or removal from the premises.

General crown maintenance

General crown maintenance refers to pruning according to the growth habit of the tree. It does not involve reducing the volume of the crown and retains the structure and size of the tree i.e.: removal of deadwood material.

Green roof

Green roof is a roof surface, flat or pitched, that has a growing medium over a waterproof membrane planted partially or completely with vegetation. Vegetation for green roofs in Canada Bay is to include species suitable for the temperate climate.

Green wall

Green wall is an external vertical building element that supports a cover of vegetation, rooted either in stacked pots or growing mats.

Gross Floor Area

Note: Refer to the Canada Bay Local Environmental Plan for definition.

CITY OF CANADA BAY

Development Control Plan

Part L

Definitions

Gross Leaseable Floor Area

Gross Leaseable Floor Area – the sum of the areas of each floor of a building that is taken to be the area within the internal faces of the walls, excluding stairs, amenities, lifts, corridors and other public areas but including stock storage area.

Ground Level (existing)

Note: Refer to the Canada Bay Local Environmental Plan for definition.

Habitable Room

Habitable room means a room used for normal domestic activities, and—

- includes a bedroom, living room, lounge room, music room, television room, kitchen, dining room, sewing room, study, playroom, family room, home theatre and sunroom; but
- excludes a bathroom, laundry, water closet, pantry, walk-in wardrobe, corridor, hallway, lobby, photographic darkroom, clothes-drying room, and other spaces of a specialised nature occupied neither frequently nor for extended periods.

(Source: National Construction Code 2019 A1)

Habitat feature

Defined as features forming part of the site comprising habitat for locally native fauna, including but not limited to; trees, shrubs, sedges, groundcovers, rockeries, insect hotels, natural and artificial waterbodies, raingardens, green roofs and green walls.

High Flood Risk Precinct

An area of land that under 1%AEP conditions is either subject to a high hydraulic hazard or presents significant evacuation difficulties.

Injuring

Injuring - includes the administration to any part of a tree of any chemical or compound or substance which has the potential to harm the tree, irrespective of whether it actually harms the tree; "injuring" also includes altering the ground level in the near vicinity of the tree; "injuring" also includes changing the level of the water table so as to adversely affect the tree.

Internal lot

Note: Refer to the Canada Bay Local Environmental Plan for definition.

Landscaped Area

Note 1: Refer to the Canada Bay Local Environmental Plan for definition.

Note 2: A landscaped area is an area of soil that does not contain buildings or structures (anything constructed) above or below ground, and which has sufficient dimensions to allow for the growth of canopy trees. Landscaped areas must not contain or sit above; basements, services, swimming pools, tennis courts, rainwater tanks, on site detention tanks, synthetic turf, permeable paving, gravel, impervious surfaces such as car parks, driveways and roof areas, and any area which is not readily available to grow plants into deep soil.

Note 3: Landscaping on structures such as green roofs, walls and balcony gardens is encouraged but is not included in landscaped area calculations.

Lane

A public road, with a width greater than 3m but less than 7m, that is used primarily for access to the rear of premises, and includes a nightsoil lane.

Level 1 (Electric Vehicle Charging Facility)

- Standard powerpoint
- 2.5–7kW (10-15A, single phase)
- 10-20km of range per hour
- 8-12 hours full charge

Level 2 (Electric Vehicle Charging Facility)

- Dedicated EV charger
- 7–25kW (32A, single or three phase)
- Up to 40km of range per hour
- 1.5-5 hours full charge

Level 3 (Electric Vehicle Charging Facility)

- Dedicated EV charger
- 25-350kW (40-500A, three phase)
- Up to 150km of range per hour
- 10-45 minutes full charge

CITY OF CANADA BAY

Development Control Plan

Part L

Definitions

Local Environmental Plan (LEP)

An LEP is a legal document and generally provides the land use zones, Council Objectives and development standards for different types of development.

Low Flood Risk Precinct

An area above the 1% AEP flood and includes all area up to and including the 'Probable Maximum Flood (PMF)'.

Low Impact Facility (LIF)

Low impact facility (LIF) - a facility that is exempted from state and council local planning under the Telecommunications (Low-impact Facilities) Determination 1997.

Manor House

Note: Refer to SEPP (Exempt and Complying Development Codes) 2008 for definition.

Medium Flood Risk Precinct

An area of land that under 1%AEP conditions is not subject to a high hydraulic hazard and presents less than significant evacuation difficulties.

Multi Dwelling Housing

Note: Refer to the Canada Bay Local Environmental Plan for definition.

Multi Dwelling Housing (Terraces)

Note: Refer to SEPP (Exempt and Complying Development Codes) 2008 for definition.

NatHERS or equivalent

NatHERS or equivalent - NatHERS (Nationwide House Energy Rating System) is a computer simulation tool developed by the CSIRO for rating the thermal performance of houses across Australia. The Energy Management Task Force is responsible for delivering a NatHERS compliance protocol. Any software or paper checklist which passes under this protocol is deemed "NatHERS or equivalent" (SEDA 1997).

North Facing

North facing - means the orientation within 20 degrees east and 30 degrees west of true north.

Outbuilding

Outbuilding - means a detached building or structure used for purposes ancillary to the main dwelling on an allotment and includes cabanas, gazebos, garden sheds, greenhouses, garages, carports and the like.

Parent lot

In relation to subdivision, means the lot that is being subdivided.

Private Open Space

Note: Refer to the Canada Bay Local Environmental Plan for definition.

Protected tree

A protected tree is any tree (living or dead) that:

- has a height equal to or greater than 5 metres above ground level (existing); or
- is under 5 metres in height that has a trunk diameter of more than 300mm at ground level (existing); or
- has a canopy spread of over 4m; or
- is a native palm, cycad or mangrove, irrespective of its dimensions; or
- is identified individually or contained within a property identified in the Canada Bay Local Environmental Plan in Schedule 5 or shown on a Heritage Map.

Pruning/Prune

Pruning is a type of tree works and is referred to as General Crown Maintenance or Crown Modification as prescribed in the Australian Standard 'Pruning of Amenity Trees' (AS 4373-2007).

Radiocommunications facility

Radiocommunications facility – means a base station or radio communications link, satellite-based facility or radio communications transmitter.

CITY OF CANADA BAY

Development Control Plan

Part L

Definitions

Recyclable

Recyclable - means capable of being reprocessed into useable material or re-used.

Removal and Cutting down

Removal and cutting down - means the cutting down of a tree so that the tree, including its branches, foliage, trunk, stump and root system will not regrow. This includes the poisoning of the stump and/or roots and/or removal or grinding out of its remains to prevent regrowth. "Transplanting" is "Removal" when a tree is relocated from one property to another.

Residential Flat Building

Note: Refer to the Canada Bay Local Environmental Plan for definition.

Semi-Detached Dwelling

Note: Refer to the Canada Bay Local Environmental Plan for definition.

Significant tree

A tree within a defined precinct which has been assessed by an arboriculturist as being of significance. This listing must be included within a Significant Tree Assessment, Urban Canopy Assessment or similar report relating to the precinct.

Note: This definition only applies to Part K – Special Precincts.

Site Coverage

Note: Refer to the Canada Bay Local Environmental Plan for definition.

Solar Access

Solar access - means the amount of direct access to sunlight enjoyed by a building, room or open space.

Statement of Heritage Impact (SOHI)

Statement of Heritage Impact (SOHI) - means a statement prepared in accordance with the requirements of the Heritage Manual that addresses the significance of the place or item; adequately describes the existing features of the item or place; describes the proposed works and its contribution to the significance of the item; and justifies any proposed works.

Streetscape

Refers to the view from the public domain, including but not limited to a street, road, laneway, public reserve, or the like.

Structural engineers report (tree removal)

A report (including photographic evidence) prepared by a suitably qualified structural engineer that demonstrates that the subject tree is causing damage to buildings, structures or underground services.

Studio apartment

A dwelling/apartment consisting of one habitable room that combines kitchen, living and sleeping space.

Studio (outbuilding)

An outbuilding used for purposes ancillary to the dwelling that is not capable of being used as a separate dwelling.

Special Waste

Special waste - means a waste that posed or is likely to pose an immediate or long-term risk to human health or the environment. This includes hazardous waste, clinical waste and contaminated waste. Special arrangements need to be made for the management of these wastes.

CITY OF CANADA BAY

Development Control Plan

Part L

Definitions

Storey

Note: Refer to the Canada Bay Local Environmental Plan for definition.

Telecommunications facility

Note: Refer to the Canada Bay Local Environmental Plan for definition.

Telecommunications Network

Note: Refer to the Canada Bay Local Environmental Plan for definition.

Tree

A perennial plant with at least one self-supporting woody or fibrous stem.

Urban forest

All trees and vegetation growing within urban areas on public and privately owned lands and includes the organisms for which they provide habitat.

Visual catchment

A visual catchment is the area within which a project can be seen at eye level above ground. Its extent will usually be defined by a combination of landform, vegetation and built elements.

Wall Height

Wall height - means the greatest distance measured vertically from the topmost point on an external wall of a building, other than a gable wall or the wall of a dormer window, to existing ground level immediately below that point.

Waste

Waste – means any substance that is no longer able to be used for the purpose for which it was originally intended, and defined under the Waste Minimisation and Management Act, 1995, as:

- a) Any substance (whether solid, liquid or gaseous) that is discharged, emitted or deposited in the environment in such volume or manner as to cause an alteration in the environment; or
- b) any discarded, rejected, unwanted, surplus or abandoned substance; or
- c) any otherwise discarded, rejected, unwanted, surplus or abandoned substance intended for sale or recycling, reprocessing, recovery or purification by a separate operation from that which produced the substance; or
- d) any substance prescribed by the regulation to be waste under the Waste Minimisation and Management Regulation.

For the purpose of the DCP, a substance is not precluded from being waste merely because it can be re-processed, re-used or recycled.

Waste Management Plan

Waste Management Plan – means a checklist showing the volume and type of waste to be generated, stored and treated on site, and how the residual is to be disposed, re-processed, re-used or recycled.

Waste Storage and Recycling Area

Waste storage and recycling area – means a designated area or a combination of designated areas on the site of a building for the housing of approved containers to store all waste material (including recyclable material) likely to be generated by the occupants of the building.

CITY OF CANADA BAY

Development Control Plan

Part L

Definitions

This page was intentionally left blank

A1



APPENDIX 1 - CONSERVATION AREAS

Statements of significance	A1-2
CA.1 Birkenhead and Dawson Estates Conservation Area	A1-2
CA.2 Bourketown Conservation Area	A1-5
CA.3 Creewood Street Conservation Area	A1-9
CA.4 Drummoyne Avenue East Conservation Area	A1-11
CA.5 Drummoyne Avenue West Conservation Area	A1-14
CA.6 Drummoyne Park Conservation Area	A1-16
CA.7 Gale Street Inter-War Californian Bungalow Group	A1-19
CA.8 Gale Street Victorian Housing Group	A1-21
CA.9 Gears Avenue Conservation Area	A1-23
CA.10 Gipps Street Conservation Area	A1-25
CA.11 Hampden Road Conservation Area	A1-27
CA.12 Lindfield Avenue Conservation Area	A1-30
CA.13 Majors Bay Road Conservation Area	A1-32
CA.14 Marlborough and Tavistock Streets Conservation Area	A1-34
CA.15 Mons Street and Boronia Avenue Conservation Area	A1-38
CA.16 Moore Street Conservation Area	A1-40
CA.17 Mortlake Workers' Housing Group	A1-42
CA.18 Park Avenue Conservation Area	A1-44
CA.19 Parklands Estate Conservation Area	A1-46
CA.20 Powell's Estate Conservation Area	A1-48
CA.21 Salsbury Street Housing Group	A1-50
CA.22 Thompson Street Conservation Area	A1-52
CA.23 Victoria Road Retail Conservation Area	A1-54
CA.24 Yaralla Estate Conservation Area	A1-56

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

Statements of significance

CA.1 Birkenhead and Dawson Estates Conservation Area

History

This conservation area includes the subdivisions of two major estates. The first was the 1882 Birkenhead Estate subdivision that included the land bounded by Lyons Road, Victoria Road, Ferry Lane, Ferry Road, and Iron Cove Bay. That was followed in 1901 by two subdivisions of the Dawson Estate that included most of the land to the east of Ferry Lane. A third subdivision of the Dawson Estate in 1908 included the land between Albert Street, Alexander Street and Queen Victoria Road.

Development in this Conservation Area followed the subdivisions and houses from the Victorian period survive in Renwick Street and on Park Avenue, Thornley Street and Day Street. Most of the remaining development is from the Federation period, reflecting the continued development of the Birkenhead Estate and the rapid development of the Dawson Estate subdivisions.

Description

This area contains some of the earliest surviving buildings in Drummoyne with an interesting collection of buildings from the late Victorian period including a number of stone houses in Renwick Street. The area is also of historical interest with the very high retention rate of items of heritage significance in Renwick Street due to its long term road widening affectation which effectively prevented any development for over 20 years. This has resulted in this group of properties surviving as the most intact early and modest housing streetscape in the Municipality.

The styles of housing in the Conservation Area reflects the various subdivisions. Renwick Street was developed early in the development of Drummoyne, along with other streets close to Victoria Road. In contrast the adjoining streets released for development at a later period are more typical of the strong Federation character of Drummoyne.

The scale of building is modest with a large number of simple timber cottages, stone cottages and generally unpretentious buildings. This is particularly seen in Alexandra Street and Day Street.

The area falls into three distinct characters:

- Renwick Street with its late Victorian through to inter-war housing
- Alexandra, Albert and Day Streets which have a predominantly Federation character and
- Thornley Street and Park Avenue which have a mix of Edwardian, Federation and several late Victorian buildings.

The generally narrow allotments (15-16m frontages) has resulted in tightly packed development. Access to the rear of allotments on Alexandra Street and Renwick Street has allowed garages and carports to be built away from the main streetscape.

Statement of Significance

The Birkenhead and Dawson Estates Conservation Area is of high heritage significance for the very intact and complete streetscapes reflecting the intense development of Drummoyne in the late nineteenth and early twentieth century. The styles of housing clearly reflect the pattern of subdivision of the area.

This Conservation Area includes extensive groups of Federation and Edwardian housing interspersed with Victorian cottages and some larger two storey homes. The narrow allotments and generally consistent scale of development create a cohesive and interesting streetscape.

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

Analysis - Setting

This conservation area has narrow allotments. Setbacks are generally smaller closer to Victoria Road. Street trees are important in contributing to the character of much of this area. The angled junction of Ferry Lane and Thornley Streets gives additional interest to the streetscape in that part of the Conservation Area.

Scale

Most of the housing has single storey frontages to the street, consistent with the narrow allotments. Two storey housing is scattered through the area. Some semi-detached housing utilising double allotments is included in the area and gives the impression of larger scaled housing.

Form

Some of the earlier development has simple rectangular massing with simple hipped roofs and verandahs running across the full width of the houses. The dominant Federation period housing breaks up the overall massing with projecting wings and more complex roof forms. Gables are used either as decorative features or as the main roof form. The two storey housing on the smaller allotments generally has quite simple massing with the main bulk of the building set behind a verandah to help reduce the overall bulk in the streetscape.

Facades usually include verandahs and elements that step forward of the main part of the building. This often adds interest to the roof form as well as the street front of the house. Simple verandahs across the street facades help to soften the impact of the higher two storey facades on the streetscape.

Materials and Colours

Face brickwork is the most common original material. Sandstone and render is found on the earlier Victorian housing. Roofs of the Federation and Edwardian housing are usually terracotta or slate shingled. Some cottages have galvanised corrugated steel roofs.

Doors and Windows

Doors and windows are usually vertically proportioned. Larger openings, when they occur, are divided vertically.

Carparking

Parking is generally at the rear of the property, in some cases taking advantage of rear street access. On steeply sloping sites, some garages have been built into the retaining walls on the street front.

Fencing

A mixture of fencing is used and depends to some extent on the nature of the site and the character of the house.

Masonry retaining walls of face brick or stone are used on sloping sites. Low masonry fences of either face brick or stone are common on the early twentieth century development. On some late Federation and Inter-War housing, the brick piers are linked by a pipe rail. Timber picket fences are usually modern reproductions and are not original to the streetscape.

Garden Elements including Paving and Driveways

Hedges are often used where increased privacy is desired. Driveways are often a pair of concrete strips parallel to the side boundary of the house. Terraces provide a setting on steeply sloping sites where houses are located on the high point to maximise views.

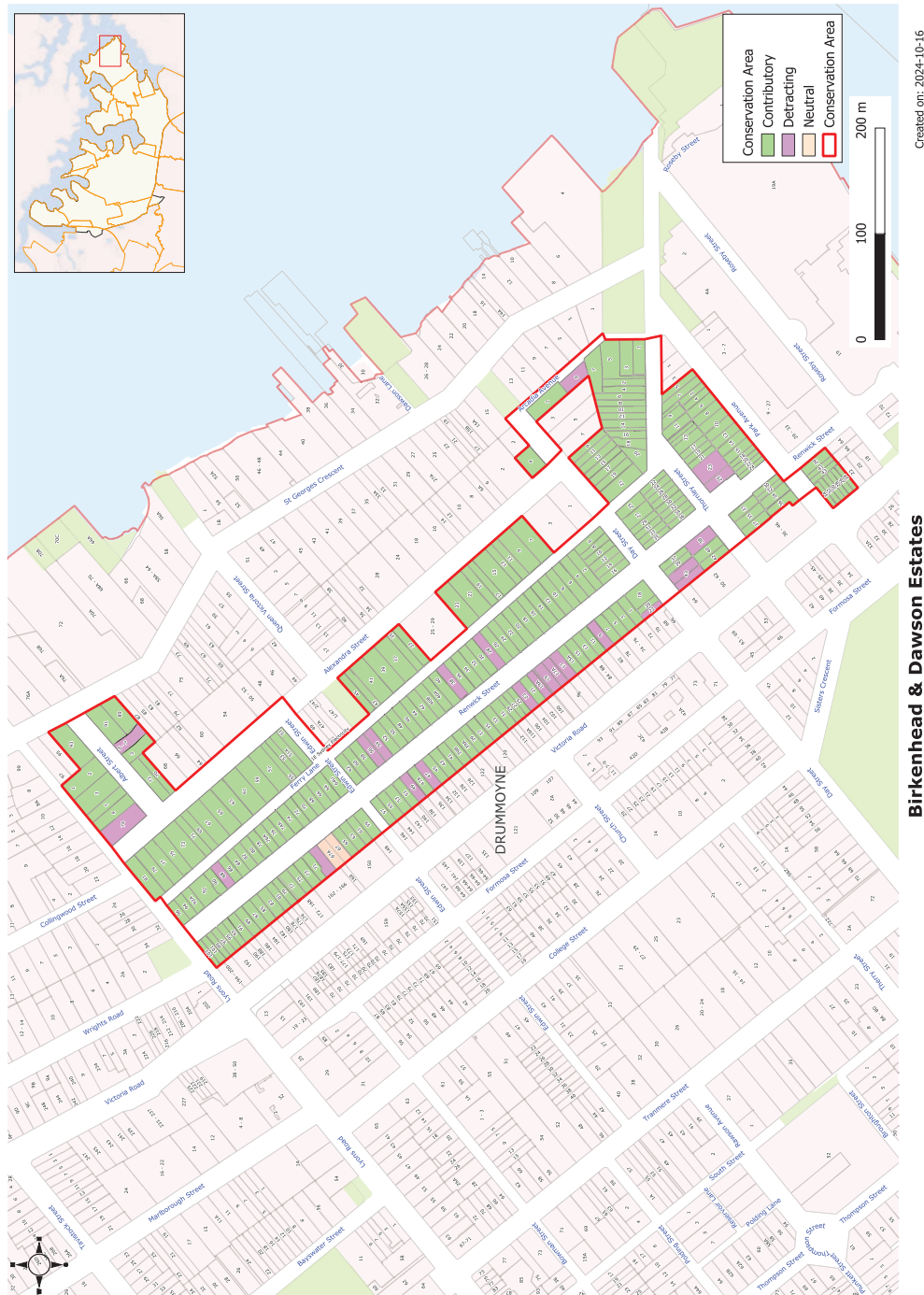
Refer to Figure App1.1

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas



Created on: 2024-10-16

Birkenhead & Dawson Estates

Figure App1.1 Birkenhead and Dawson Estates Conservation Area

Figure App1.1

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

CA.2 Bourketown Conservation Area

History

Bourketown was initially established in the 1840 period making it one of the first planned developments in the area along with Gipps Town at Five Dock. The subdivision had Bourke Square at its centre and was first offered for sale in 1841.

Although some land was taken up little development took place until the area was linked by the Iron Cove Bridge to the city in 1882. The new bridge resulted in further sales and was the start of the development that currently typifies the area. There appear to be no structures remaining from the pre-1880 period of development.

The area between Formosa Street and South Street was re-subdivided in 1883 as the Tranmere Estate. Further re-subdivision of larger blocks continued into the Inter-War period and is reflected in the housing styles.

The most intensive phase of development in the Bourketown area was the Federation period. Speculative developments of semi-detached houses are concentrated closer to Victoria Road and free-standing Federation period houses dominate other parts of the conservation area. A small number of late Victorian houses survive, primarily in the area closer to Bourketown Square. The dominant Federation phase of development is reinforced with a good range of Inter-War housing.

Statement of Significance

The Bourketown Conservation Area is of high value in reflecting the principal late Victorian and Federation period of development of the Drummoyne Area. The street layout survives from the original Bourketown subdivision, one of the earliest subdivisions of the area. The focal point of Bourketown is Bourke Square and it is in this vicinity that some of the finest individual buildings and groups of buildings are located, along with a small group of commercial buildings and the Drummoyne Public School.

Bourketown is important for its remaining Victorian housing, particularly in the vicinity of Bourke Square, which includes substantial houses on generous allotments as well as a scattering of worker's homes. This development is surrounded by the Federation housing that dominates the streetscapes and, importantly, includes a range of housing from semi-detached speculative development closer to Victoria Road, through to smaller freestanding houses, to large houses of high individual value. These are representative of most styles of residential development from the Federation period and include housing for a variety of social classes.

The conservation area includes a number of important urban buildings including four churches, a public school, commercial buildings and a major water reservoir all relating to the early twentieth century development of the precinct and all of high value both individually and for understanding the development of the area.

Future Character

The future character for this large and mixed area is principally to retain the strong overall heritage urban character of the streets with their mix of one and two storey houses on lots of mixed size.

Existing building stock is predominantly Victorian and Edwardian with some Inter-war pockets of housing and these characters should be retained. Buildings built prior to the Second World War should not be demolished and new buildings should retain the scale and overall character of the immediate area as it relates to bulk, form and use of materials. Given the large lot sizes for much of the area, additions and new buildings can be in a range of forms including good contemporary design with the emphasis on 'fit' into the setting. Garages and carports should not be added in front of the building line.

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

Analysis - Setting

The area falls into a number of separate zones or precincts that are related to groups of streets.

Firstly the major north-south streets linking to Lyons Road: Gipps; Thompson; Tranmere and College Streets. These streets are wide, have long vistas, established street plantings and strong heritage value. They have a strong suburban character with a sense of spaciousness that relates to the scale of houses. The central street, Thompson Street, contains Bourketown Square which is a major public space of high heritage value that represents the first development of the Drummoyne area and forms a focal point in the area. The location of important civic buildings of high heritage value, such as churches and public utilities on these streets adds to their importance in the townscape.

The secondary north-south streets are narrower and have a smaller scale of housing development, greater use of semi-detached forms and a tighter urban fabric. These streets are: Ullathorne, Henley, and Formosa Streets and South Street (for its northern section). Formosa Street in particular is noted for its fine streetscape of semi-detached Federation housing.

The east-west streets have a completely different character. They are narrow (except for Day Street and sections of Plunket and Broughton Streets which are of varying widths) and contain a much tighter sub-division pattern with generally small blocks and far less pretentious houses. This is particularly seen in Bowman and Polding Streets. The western blocks of Polding and Bowman Streets and Plunkett Street contain the largest scattering of Victorian cottages and houses outside Thompson Street.

The major houses are not confined to one location within Bourketown, but the major groupings are in Thompson Street, the south end of Tranmere and South Streets and Lyons Road. The precinct in Thompson Street from Broughton Street to Bowman Street contains the most substantial and significant group of buildings, but this does not devalue the smaller scale buildings around it.

Another distinctive area of the Bourketown Conservation Area is the Lyons Road frontage from Formosa Street to Thompson Street. This frontage, which effectively forms part of the main road frontage rather than the residential character of the rest of the precinct, contains:

- commercial buildings at both the Drummoyne shopping centre, Tranmere Street and Thompson Street corners, several of which are individually important and intact examples of Inter-war retail buildings
- Drummoyne Fire Station
- Drummoyne Presbyterian Church at a key visual location
- blocks of Inter-war apartments of very fine proportion and detailing set amongst a series of substantial Federation and later homes which indicate the predominant early character of this road frontage.

Scale

The buildings fall into a range of groups. The predominant form for Thompson Street, South Street and Tranmere Street is single residences of significant scale. Most of Formosa Street and its side streets have single storey semi-detached housing built as speculative development. Other streets have small single fronted cottages or large groups of semi-detached dwellings generally speculatively built as seen for much of the length of Formosa and Edwin Streets and part of Day Street and Bowman Street.

Single storey housing is dominant with two storeys housing usually only confined to freestanding homes on larger allotments or for buildings originally incorporating shops.

Form

The dominant Federation period housing in the Bourketown Conservation Area is noted for the use of interesting roof forms with decorative gables providing interest and rhythm to the streetscape.

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

Siting

The siting of buildings in Bourketown is related to the scale of the building and the size of the site. The closely spaced semi-detached groups have small setbacks. Setbacks generally increase on larger allotments.

Materials and colours

Red face brickwork is the dominant material in the Bourketown Conservation Area. A few surviving Victorian buildings are rendered but this is the exception and these contrast to the general streetscape. The red tones continue in the terracotta roof tiles used either as a main roof material or as a highlight to the grey slate roofs.

Timber is generally used for verandah framing and joinery elements.

Colours were selected from a limited palette and complement the natural tones and textures of the materials.

Doors and Windows

Windows on contributory buildings are almost exclusively timber framed. The dominant Federation period housing has either casement or double hung windows. Larger openings are created by grouping two or three sashes together or by using French doors.

Fencing

The small number of Victorian houses in the area had transparent fencing of either iron pickets between masonry posts or timber pickets. The iron picket fencing could be up to 1.8m high on larger blocks, but clear documentation of physical evidence of this would be needed before reproduction of fencing of that height was approved. Most picket fencing would be a maximum of 1.2m high.

The dominant Federation period housing usually had low masonry fencing with panels of timber pickets or wrought steel up to a maximum of 900mm high.

Inter-war period housing in the Bourketown Conservation area usually had face brick fencing with brick piers separated by low brick panels with horizontal steel pipe rails.

Subdivision

The late nineteenth and early twentieth century subdivision patterns are typically small allotments. Larger allotments are generally only found with surviving free standing houses or are the sites of churches, schools and other public buildings. The subdivision patterns in the Bourketown Conservation Area are closely related to the rhythm of the streetscape.

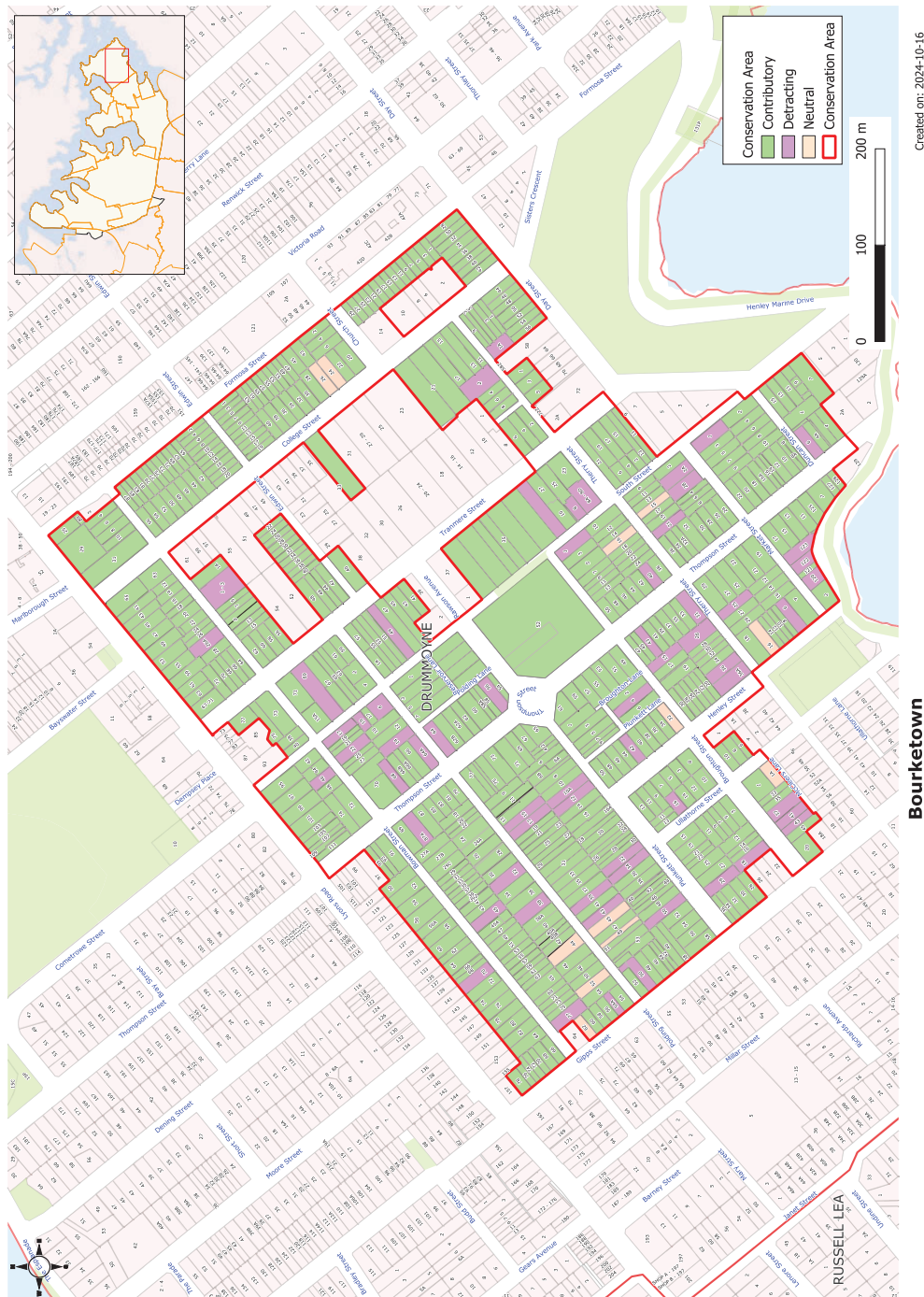
Refer to Figure App1.2

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas



Created on: 2024-10-16

Bourketown

Bourketown Conservation Area

Figure App 1.2

Page A1-8

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

CA.3 Creewood Street Conservation Area

History

Creewood was a prominent house facing Concord Road. The land to the east of the house was developed in two subdivisions creating Creewood Street. The southern and eastern sections were subdivided in 1926 with the northern part of the street subdivided in 1927. Development of Inter-War housing appears to have rapidly followed the subdivision.

Description

The development in this short street is characterised by intact Inter-War California bungalows. The houses feature multiple gables facing the street, verandahs across part of the front elevation, dark face brick walling and tiled roofs. The houses retain their landscaped setting with low brick fences with metal railing complementing the low horizontal lines of the housing. The turn in the street adds to the visual amenity of Creewood Street.

Statement of Significance

Developed in a short period from 1926, Creewood Street is one of the areas finest streetscapes of Inter-War bungalows. The streetscape is remarkable for the integrity of the landscaping and street fencing.

Analysis - Setting

Developed as a cul-de-sac, Creewood Street is a contained streetscape. The bend in the street contributes to the visual quality of the street. Intact fencing, contemporary with the houses is important to the setting of the houses.

Scale

Apart from infill development, the housing in Creewood Avenue is all single storey.

Form

The houses in Creewood Street are exemplars of Inter-War bungalows, incorporating strong horizontal lines created by the low-medium pitched gables, deep verandahs with simple brick balustrades and heavy verandah piers. Verandahs are always incorporated into the front elevation of the houses, giving depth to the façade.

Siting

Setbacks from the front boundary are consistent. Side setbacks include a generous setback on one side to allow driveway access.

Doors and Windows

Window openings are usually divided into sets of casement sashes, sometimes with a flat awning and a decorative brick sill. Doors may be multi-paned glazed leafs, sometimes with pairs of doors opening to the verandah.

Materials and Colours

Face brick walls of liver or redbrick with commons to side and rear walls. Roofs are usually of terracotta roof tile. The gables are often trimmed with shingles or weatherboards. Verandahs are trimmed with bands of cement render and stub columns.

Carparking

Garages and carports are set well behind the building line.

Fencing

Fencing has brick piers between panels of brickwork matching the houses. Pipe rails or wrought metal panels join the piers.

Refer to Figure App1.3

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas



Figure App1.3 Creewood Street Conservation Area

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

CA.4 Drummoyne Avenue East Conservation Area

History

The subdivision of Drummoyne House in 1894 created suburban allotments at Wrights Point. The proximity to Parramatta River attracted purchasers who could afford to build fine homes, most of which were oriented to the water. This Conservation Area includes some of the finest waterfront houses to survive in Drummoyne. It also includes the house on the southwest corner of Wrights Road and Drummoyne Avenue that, due to its corner location and elevated position, provides a visual link to this group and to the Drummoyne Avenue West Conservation Area.

5 Drummoyne Avenue is the earliest house of the group, probably built soon after the subdivision in 1894. Other houses, with the exception of 8A Drummoyne Avenue, followed in the next 10-15 years.

Description

This Conservation Area includes some of the more significant waterfront houses to survive in the Drummoyne Area. They retain their setting with their major orientation to the water. Most of the group are large and notable examples of the Federation Queen Anne style.

Many of the houses retain important elements of their original gardens. Boatsheds and sea walls also contribute to the setting of the houses.

Statement of Significance

Drummoyne Avenue East Conservation Area forms one of the last intact groups of waterfront residences on the Parramatta River and has high regional as well as local value. They are indicative of the major development form along the eastern Drummoyne waterfront which has been almost completely obliterated by State Government Planning policies since the 1970's period. This is the last major waterfront group in the Canada Bay Council area and a key group of buildings at the entrance to Parramatta River.

Analysis - Setting

The houses in Drummoyne Avenue East Conservation Area respond to their proximity to the water with frontages to Parramatta River as well as to Drummoyne Avenue. Gardens are important to the setting of the houses. Large setbacks from Drummoyne Avenue are used to take advantage of water frontages.

Scale

These are generally large houses of one to two storeys located on large allotments that allowed appropriate setbacks from side boundaries.

Form

Generally interesting roof forms incorporating hipped and gabled forms. The larger houses also include tower and turret elements

These houses use elements such as bay windows, projecting gabled fronts and verandahs to break down the overall mass of the building.

Siting

The houses in this group are sited well back from the street frontage taking advantage of the site depth and river frontage.

Materials and Colours

Roofs are either slate or terracotta tiles or a combination of the two. Walls are generally face brickwork, originally unpainted.

Doors and Windows

A variety of window forms are often used in any one of the Federation houses in this group. Groups of casement windows, usually with toplights, are dominant and might be contrasted with bullseye or keyhole windows. French doors are also used to provide access to balconies.

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

Carparking

Garages for houses with river frontages have generally been located on the street to minimise impact on the garden setting. For other sites, garages are set back as far as possible from the street boundary.

Garages and carports may be allowed in front of the building line subject to the merit of the design. However they should be located where they will have minimal impact on original or early garden layouts and should avoid blocking important views of the houses from the street.

Garages should not be allowed where they occupy more than 40% of the street boundary.

Fencing

Fencing on the street boundary should generally be not more than 900mm high. Where higher fencing is used, it should be of a transparent design such as simple iron or timber pickets between brick piers.

Landscape Elements Including Paving and Driveways

The gardens are important to the setting of the house and incorporate curved paths, mature trees and areas of lawn. The paths often incorporate a focal element such as a fountain or urn.

Pools are generally located between the houses and the river.

Outbuildings

Outbuildings should be carefully located to avoid impacting on important views of houses from the street or the water. Where outbuildings are visible in important views, they should be designed to relate to the original house.

Small boatsheds are acceptable subject to design merit and approval of the relevant authority (N.S.W. Roads & Maritime Services).

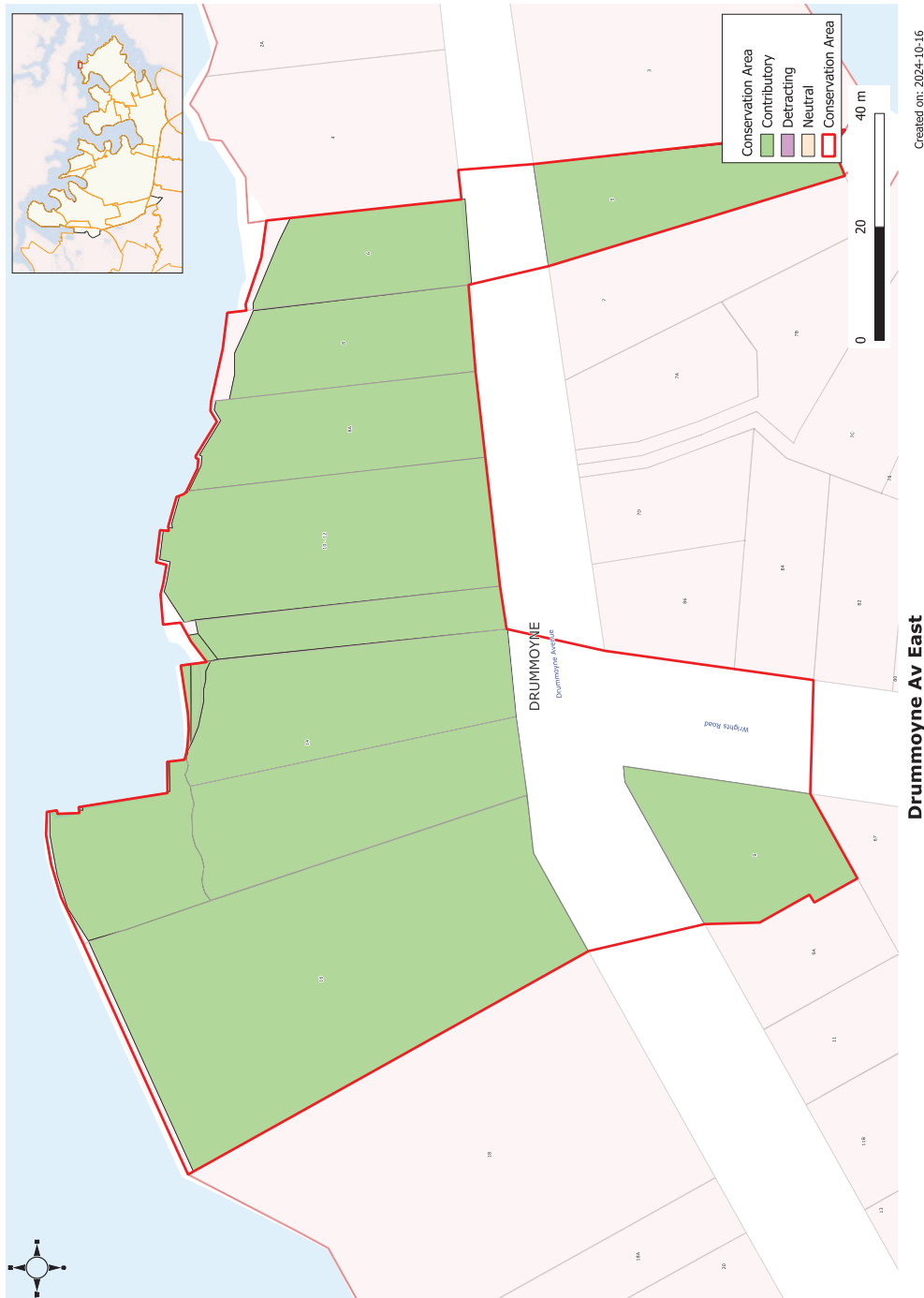
Refer to Figure App1.4

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas



Created on: 2024-10-16

Figure App1.4 Drummoine Avenue East Conservation Area

CA.5 Drummoyne Avenue West Conservation Area

History

The subdivision of Drummoyne House in 1894 created suburban allotments at Wrights Point. The land around and including Drummoyne House was re-subdivided in 1907 and housing was built facing the water and with its back to Drummoyne House. The present housing at 15-27 Drummoyne Avenue is an intact part of that prestigious sub-division. It is an important element in the streetscape and the continuous character of Drummoyne Avenue.

Description

This group of housing is from the Federation and Inter-War periods. The group has single storey fronts with high sub-floor spaces taking advantage of the slope of the sites. The four properties at the west end of this group date from the 1907 subdivision. The next house is Post World War II and the last two houses are very fine Inter-war houses with high quality detailing.

Statement of Significance

This group demonstrates the sub-division of one of the major Drummoyne estates and is representative of the prevalent form of housing built in east Drummoyne reflecting the importance of the area. This is a remnant of the once contiguous Federation character of the area.

Objectives

Retain the Federation and Inter-War character of this group and their garden settings.

Additions should be controlled to conserve the streetscape contribution of the group.

Analysis - Setting

The setting of these houses is elevated from Drummoyne Avenue. Low masonry retaining walls on the street boundary provide grassed terraces between the street and the house.

Scale

These houses are single storey with high sub-floor areas facing the street. First floor additions are possible subject to merit. These should generally incorporate the existing roof form facing the street.

Form

Overall bulk is generally broken up with projecting wings either under a gabled or hipped roof. Roofs of houses in this conservation area have medium pitches. Hipped and gabled forms are used on the earlier houses with more simple hipped forms on later houses.

Siting

Houses are set back from Drummoyne Avenue to take advantage of the elevated part of the site.

Materials and Colours

Roofs are either terracotta or glazed roof tiles or slate. Walls are generally face brickwork in red or dark colours. The sub-floor is usually of sandstone or brick.

Doors and Windows

Generally timber framed with pairs or groups of casement and double hung sashes.

Carparking

Garages in this conservation area were originally located to the rear of the site and this pattern continues for the majority of sites in this conservation area.

Fencing

Low masonry retaining walls on the street boundary

Garden Elements including Paving and Driveways

Grassed terraces between the street boundary and the house with low shrubs. Mature trees are placed to minimise interference with the views. Driveways are usually single width running past the house.

Refer to Figure App1.5

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

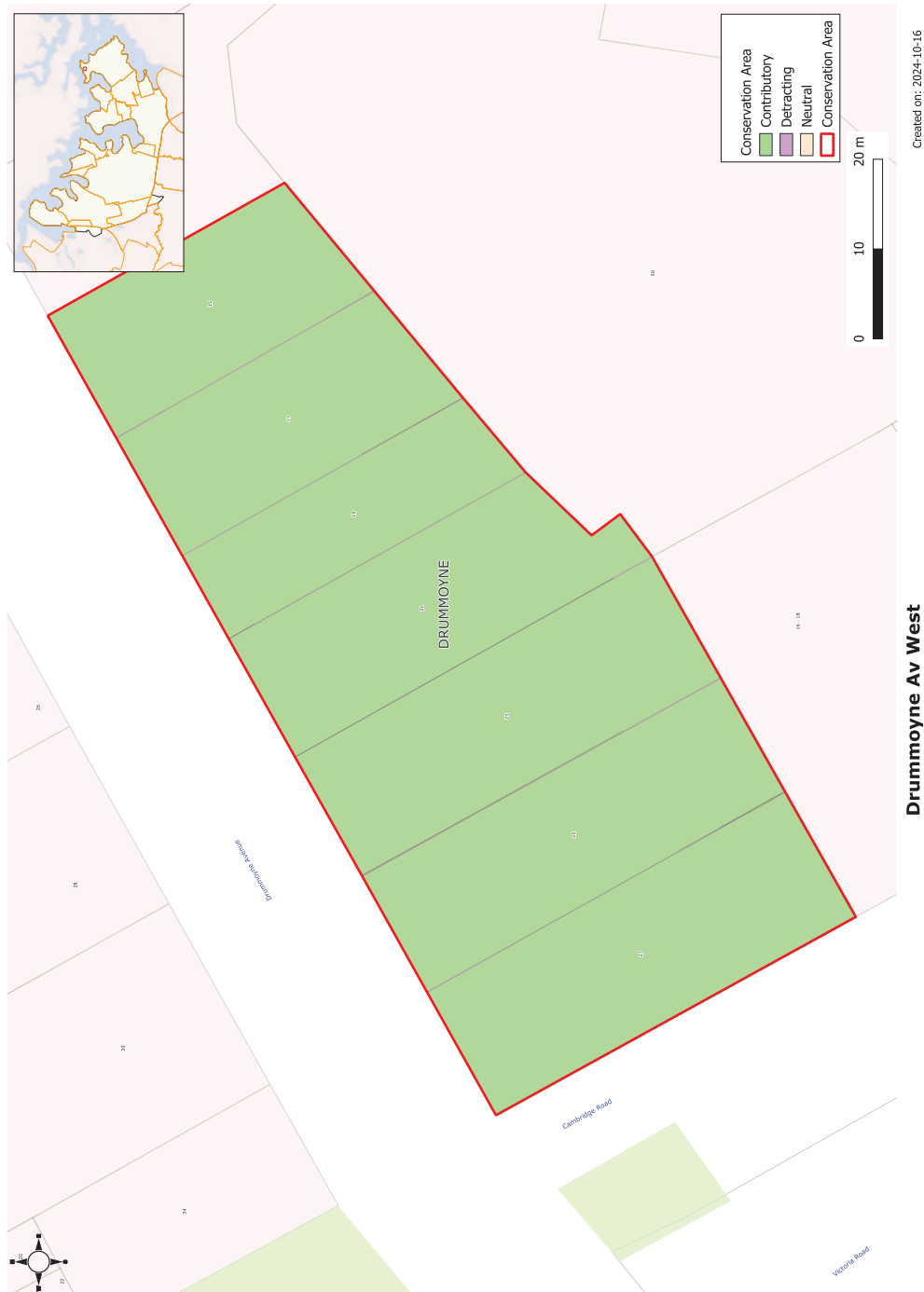


Figure App1.5 Drummoine Avenue West Conservation Area

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

CA.6 Drummoyne Park Conservation Area

History

The land on the eastern side of the present Victoria Road, north of Lyons Road, was subdivided in 1881-2 as Drummoyne Park Estate. Subsequent development included a number of substantial and well detailed Victorian Italianate houses followed by large Federation Arts and Crafts and Federation Queen Anne style housing. Much of the earlier housing was located on sites where elevated land provided good views of the harbour. This late nineteenth century development was reinforced by smaller Federation and Inter-War housing both on the original allotments of the Drummoyne Park Estate and on the subsequent subdivisions of the larger landholdings in the area.

Statement of Significance

The Drummoyne Park Estate Conservation Area, developed from 1881, includes substantial late nineteenth century homes in prestigious locations, such as nos. 2, 8 and 45 Wrights Road and 5-11 and 23 Collingwood Street, interspersed among smaller early twentieth century housing. The smaller scale of the early twentieth century housing gives the Conservation Area an underlying consistency of scale, materials and form that highlights the larger houses of the late nineteenth century in the streetscape. Apart from the heritage items within the area most of the buildings and features within this precinct are of high local heritage value and a combination of representative and rare examples of their period and style in the Drummoyne context.

Analysis - Setting

Larger late nineteenth century houses have prominence in the streetscape. The surrounding streetscape is dominated by smaller scaled Federation period housing.

Scale

Two to three storey houses occupy larger sites and usually have a garden setting. On smaller sites, single storey houses dominate. Some semi-detached housing utilising double allotments is included in the area and gives the impression of larger scaled housing.

Form

Most of the housing that contributes to the heritage character of this Conservation Areas has prominent roof forms with terracotta being the dominant material followed by slate shingles. Facades usually include verandahs and elements that step forward of the main part of the building. This often adds interest to the roof form as well as the street front of the house. Many of the late Victorian houses incorporate bay windows.

Siting

Most groups of houses in this conservation area have regular setbacks from the front and side boundaries. Deeper setbacks on one side of many allotments has allowed for side driveways and provides space between houses. The earlier houses in the Drummoyne Park Estate sometimes have deeper setbacks relating to the larger scale of the buildings and the larger sites.

Materials and Colours

The majority of housing in the Conservation Area has face brick walling with render or cement sheeting used as a contrast. Rendered walls are restricted to the large Victorian homes in this Conservation Area.

Doors and Windows

Doors and windows are usually vertically proportioned. Wider openings, when they occur, are divided vertically.

Carparking

Parking is generally at the rear of the property, in some cases taking advantage of rear street access. On steeply sloping sites some garages have been built into the retaining walls on the street front.

Fencing

A mixture of fencing is used and depends to some extent on the nature of the site and the character of the house. Masonry retaining walls of face brick or stone are used on sloping sites. Low masonry fences of either face brick or stone are common on the early twentieth century development. On larger houses this might support a higher wrought steel fence. On many late Federation and Inter-War houses, the brick piers are linked by a pipe rail.

Landscape Elements including Paving and Driveways

Terraced gardens provide a setting on steeply sloping sites where houses are located on the high point to maximise views. Hedges are often used where increased privacy is desired. Driveways are often a pair of concrete strips parallel to the side boundary of the house.

Refer to Figure App1.6 and Figure App1.7

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

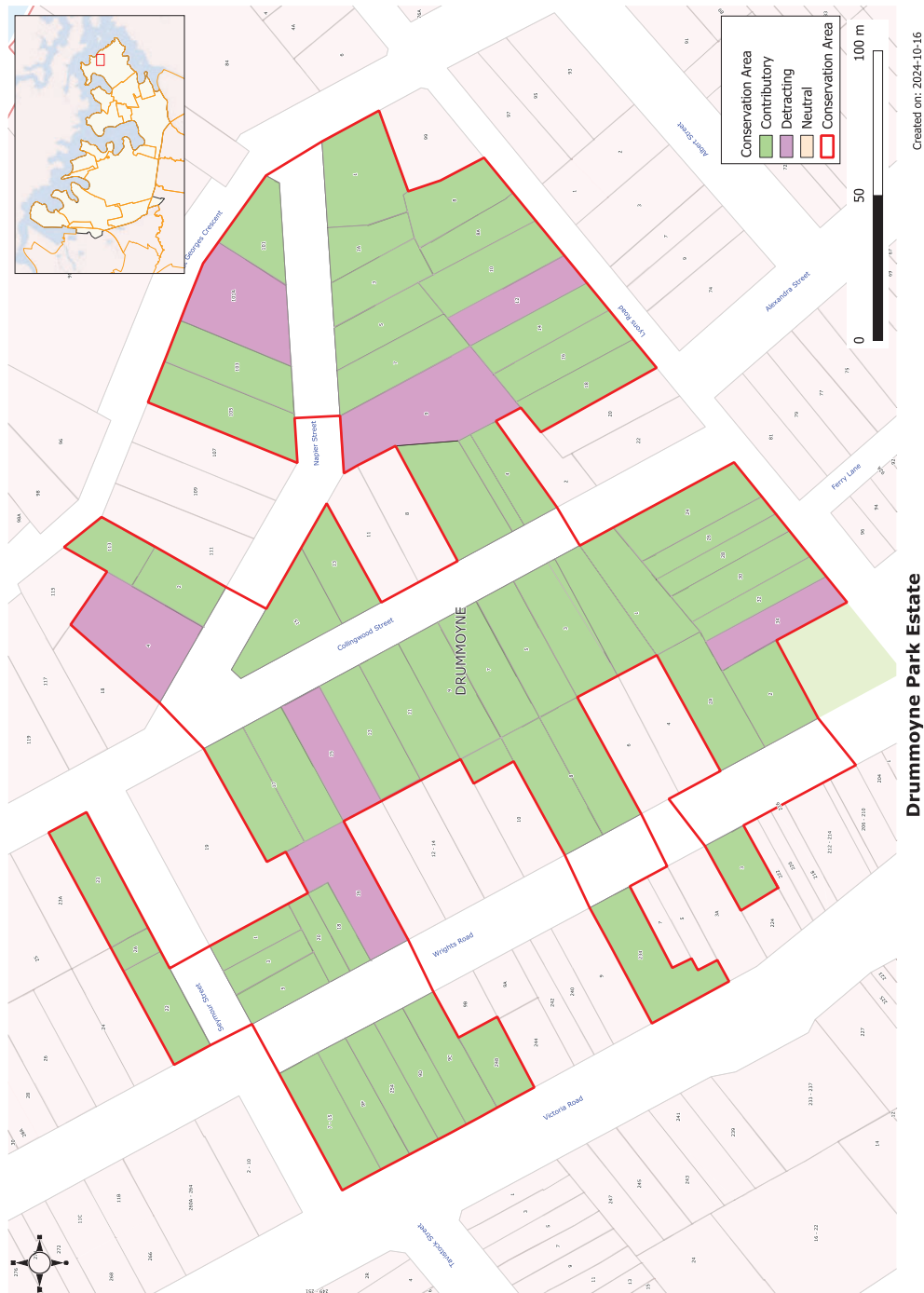


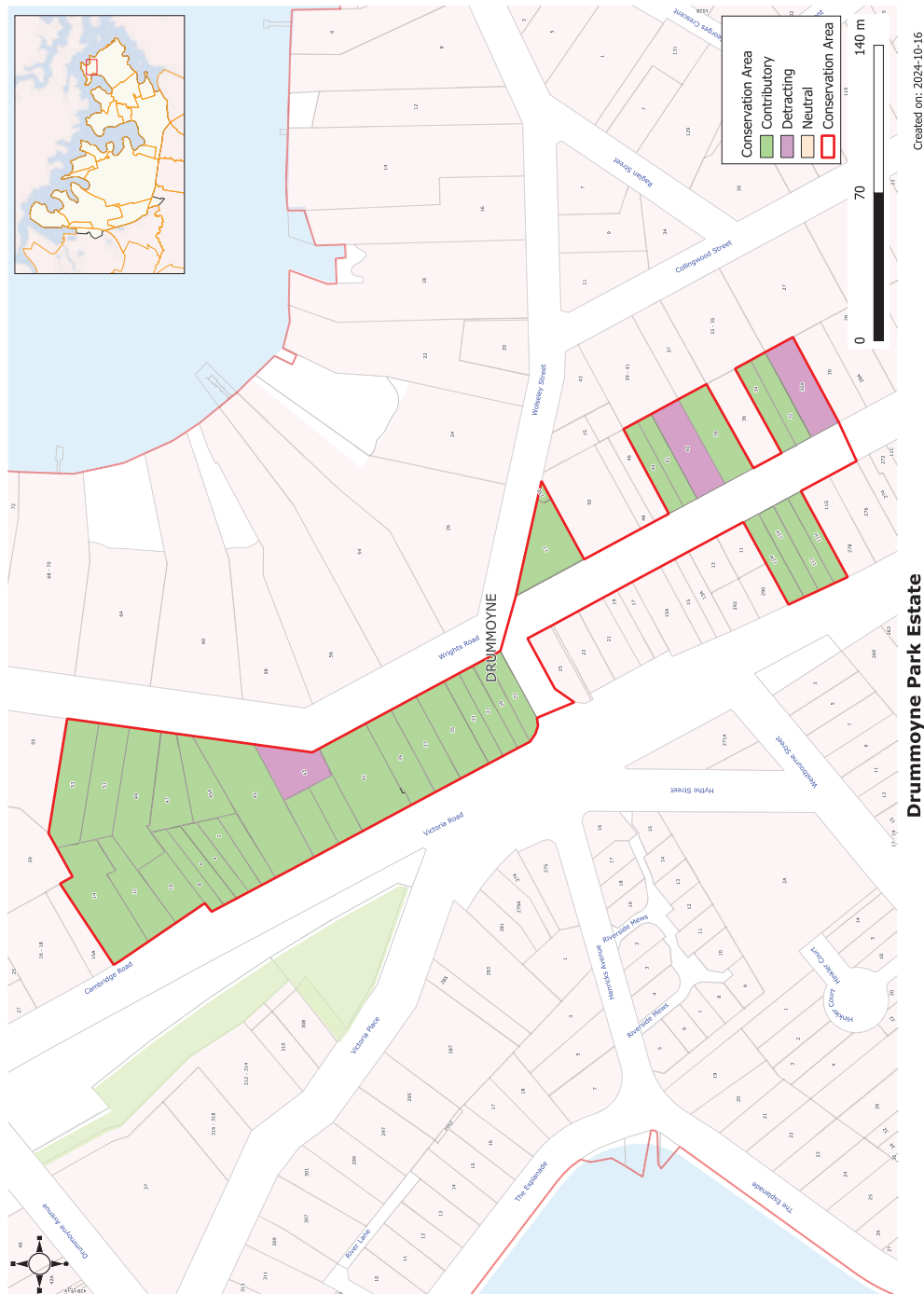
Figure App1.6 Drummyne Park Conservation Area

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas



Created on: 2024-10-16

Figure App1.7 Drummyne Park Conservation Area - Sheet 1

Figure App1.7

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

CA.7 Gale Street Inter-War Californian Bungalow Group

History

Mortlake township began with the establishment of the Australian Gas Light Company's works at Mortlake in 1886. Subdivision of the township took place in the following two years. The group of houses at 36-44 Gale Street were built in the 1920's and appear to have been a speculative development.

Description

The Gale Street Conservation area is a group of five Inter War Californian bungalows all designed to the same pattern with double gable to the front and an inset verandah. The houses have gardens to the front with low brick walls to the street. Most have been altered to some extent.

Statement of Significance

The Gale Street Conservation area is a good example row of five Inter-War Californian style bungalows that form an important group in the streetscape and that have historical associations with the AGL gasworks and the development of the Mortlake Township.

Analysis - Setting

The group is set on identical blocks along a tree lined street with rear lane access to garages and carports. The adjoining scale is predominantly single storey with a mix of Victorian and Federation cottages with some later infill development.

Scale

All the houses in the group are single storey with no second floor additions. There is some later two storey development close by.

Form

The group is in the classic Californian bungalow style in dark face brick with double gables, low pitched roofs and low, brick verandahs to the front.

Siting

The front setbacks are the same with a small garden to the front. The setback of adjoining houses varies.

Materials and Colours

The houses are predominantly in red face brick with terracotta tile roofs and painted timber casement windows. Some of the verandahs have been infilled and external walls rendered.

Car Parking

The rear lanes provide car access to garages and carports.

Fencing

The front fencing is not consistent, with a mix of low masonry walls, timber pickets of various styles and metal palisade fencing.

Landscape Elements including Paving and Driveways

Front gardens are dominated by lawns with perimeter shrub planting with some hedging. There are some street trees with Paperbarks predominant.

Refer to Figure App1.8

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas



Figure App1.8 Gale Street Inter-War Californian Bungalow Group

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

CA.8 Gale Street Victorian Housing Group

History

Mortlake township began with the establishment of the Australian Gas Light Company's works at Mortlake in 1886. Subdivision of the township took place in the following 2 years. The houses at 37-39 Gale Street were built soon after the subdivision of the township.

Description

The Gale Street Conservation area is a group of two, single storey, Victorian cottages with symmetrical front verandahs.

Statement of Significance

The Gale Street Conservation area is a good example of two Victorian cottages that form an important group in the streetscape that have historical associations with the AGL gasworks and the subdivision of the Mortlake Township.

Analysis - Setting

The group is set on similar blocks along a tree lined street with rear lane access to garages and carports. The adjoining scale is predominantly single storey with a mix of Victorian and Federation cottages with some later infill development.

Scale

The houses are single storey with no second floor additions. There is some later two storey development close by.

Form

The group is in the Victorian cottage form style with double fronted elevations and front verandahs

Siting

The front setbacks are the same with a small garden to the front. The setback of adjoining houses varies.

Materials and Colours

The houses are in different materials. 37 Gale Street is in painted brick with high gables to the side and has a bullnosed verandah with a corrugated metal roof. 39 Gale Street is in weatherboard with a concrete tile roof.

Car Parking

The rear lane provides car access to rear garages and carports.

Fencing

The front fencing varies with a metal tube and wire fence to 39 Gale Street and no fence to 37 Gale Street.

Landscape Elements including Paving and Driveways

The small front gardens are laid to lawn with some shrub planting.

Refer to Figure App1.9

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

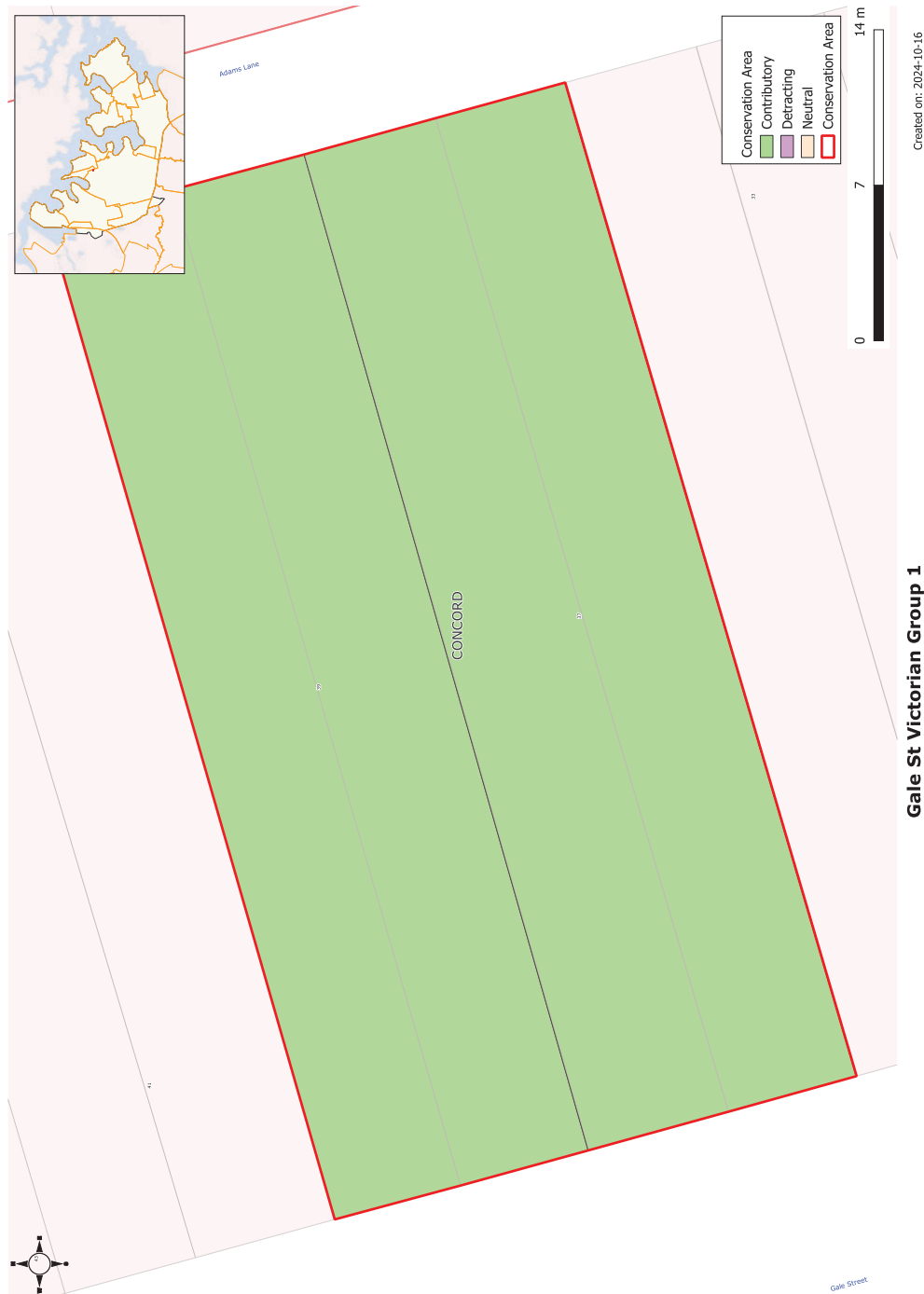


Figure App1.9 Gale Street Victorian Housing Group

Page A1-22

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

CA.9 Gears Avenue Conservation Area

History

Gears Garden Estate was subdivided in 1924 creating lots generally with 50 foot frontages to Gears Avenue. The present 17-35 Gears Avenue were re-subdivided in 1926 to create allotments with 40 foot frontages. The housing in the Gears Avenue Conservation Area all appear to have been built in a short period following the subdivisions.

Description

This group of Inter-war houses is an intact group of predominantly bungalow influenced houses with one very good example of the Californian Bungalow style set high up on the rise and well above the street.

Statement of Significance

The Gears Avenue, Drummoyne Conservation Area is a very good example of housing from the Inter-War period and has survived intact with setting, fences and detailing. The vista down the hill towards the water typifies the development of Drummoyne with Lyons Road on the ridge and streets falling towards the water. The regular division of the allotments, consistency of materials and scale of the housing combines with the slope of the land to create an attractive streetscape.

Objectives

Original details of houses should be retained with fencing and garden settings to enhance the character of the street. Additions should reflect the character of the existing buildings in order to retain the streetscape and heritage value of the streetscape. Garages and carports should not be added in front of the building line.

Analysis - Setting

Housing has a consistent setback behind low street fencing and gardens. One side of each allotment has a greater setback to allow a driveway to go to the rear yard.

Scale

The housing in Gears Avenue is mainly single storey facing the street.

Form

The front of the houses are generally broken down with a verandah section and a projecting room with a gabled or hipped roof. The repetition of gables and hipped forms is an important part of the streetscape. The verandahs have low horizontal proportions with heavy masonry piers.

Siting

The houses in this group have regular setbacks from the street boundary. A deeper setback on one side boundary of most houses provides space between houses and vehicular access to the rear of the site.

Materials and Colours

Walls are generally of face brickwork with use of battened fibro on gables as a contrasting element. The roofs are typically glazed tiles.

Doors and Windows

Timber casements in pairs or groups of three or double hung windows in pairs.

Carparking

Single driveways with garages or carports located well behind the building line.

Fencing

Many original fences have survived in this conservation area. They are typically low street fences with brick piers and panels sometimes using pipe rails between piers.

Landscape Elements including Paving and Driveways

Single driveways with concrete driving strips typically run along the side boundary past the house. Gardens to these houses often include a curved path to the front door and hedge type plants behind the front fence.

Subdivision

This conservation area has a regular subdivision pattern of 40 and 50 feet frontages (12.192m and 15.25m).

Refer to Figure App1.10

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas



Created on: 2024-10-16

Figure App1.10 Gears Avenue Conservation Area

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

CA.10 Gipps Street Conservation Area

History

Of this small group of buildings, Euroka, at 9 Gipps Street, Drummoyne is the earliest, existing, with its tennis court, on the site in 1912 when the block bounded by Gipps, Therry, Miller and Market Streets was subdivided. The remaining houses in the group appear to have been built soon after the subdivision.

Description

This is a small group of very fine timber and brick dwellings that formed part of the major subdivision around Bourketown but which are now separated from the main conservation area by altered and unsympathetic development.

Statement of Significance

This group forms a fine group stepping down the slope towards the water, each sited with good views towards the city and set up from the road to maximise their setting. They form a complete block which adds to their integrity. They demonstrate the dominant form of the architectural style of Drummoyne and make a very fine contribution to the streetscape and the important views down Gipps Street to the water.

Objectives

All of the buildings in this small group should be retained in their predominant early twentieth century form. Additions should respect the character of the buildings and first floor additions should be controlled to retain the heritage value of the buildings. Garages and carports should not be constructed in front of the building line.

Analysis - Setting

The slope of Gipps Street towards Iron Cove Bay contributes to the setting of these houses. Euroka at 9 Gipps Street, as the house that preceded the subdivision, was the dominant building in the group until 2005.

Scale

The houses in this conservation area include one and two storey houses with the height relative to the size of the allotment.

Form

These are free standing houses with hipped roofs over the main rectangular block of the house. The hipped roofs are relieved in most of the houses by a projecting gabled wing facing the street. For all but one of the houses the roof forms incorporate hipped and gabled forms. Slate with terracotta tile trim is the dominant original roof material, although this has been replaced on some roofs. Glazed tiling to the roofs is not original and could in due course be replaced with more appropriate roofing materials. Verandahs are incorporated into the front elevation, usually offset by a gabled wing.

Materials and Colours

Face brickwork walls dominate, trimmed with battened fibro to the gables. Original roofs surviving in the group are slate with terracotta trim. Verandahs are framed with timber incorporating decorative fretwork and balanced by decorative timberwork to the gables.

Doors and Windows

Various forms of windows and doors are used but are not all combined in a single dwelling. The proportion of wall space to fenestrations is important, as is the vertical proportions of most of the openings.

Carparking

Carparking is set well behind the front building alignment. Driveways utilise side streets where possible, otherwise are restricted to single width.

Fencing

Original fencing is reasonably low and usually incorporates a masonry base of either face brick or sandstone. Transparent panels of either metal or timber pickets are used between piers.

Subdivision

Apart from Euroka at 9 Gipps Street that preceded the subdivision, the allotments of this Conservation Area were of regular size with 40-44 foot frontages.

Landscape Elements including Paving and Driveways

Front gardens are dominated by lawn with plantings of low shrubs.

Refer to Figure App1.11

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

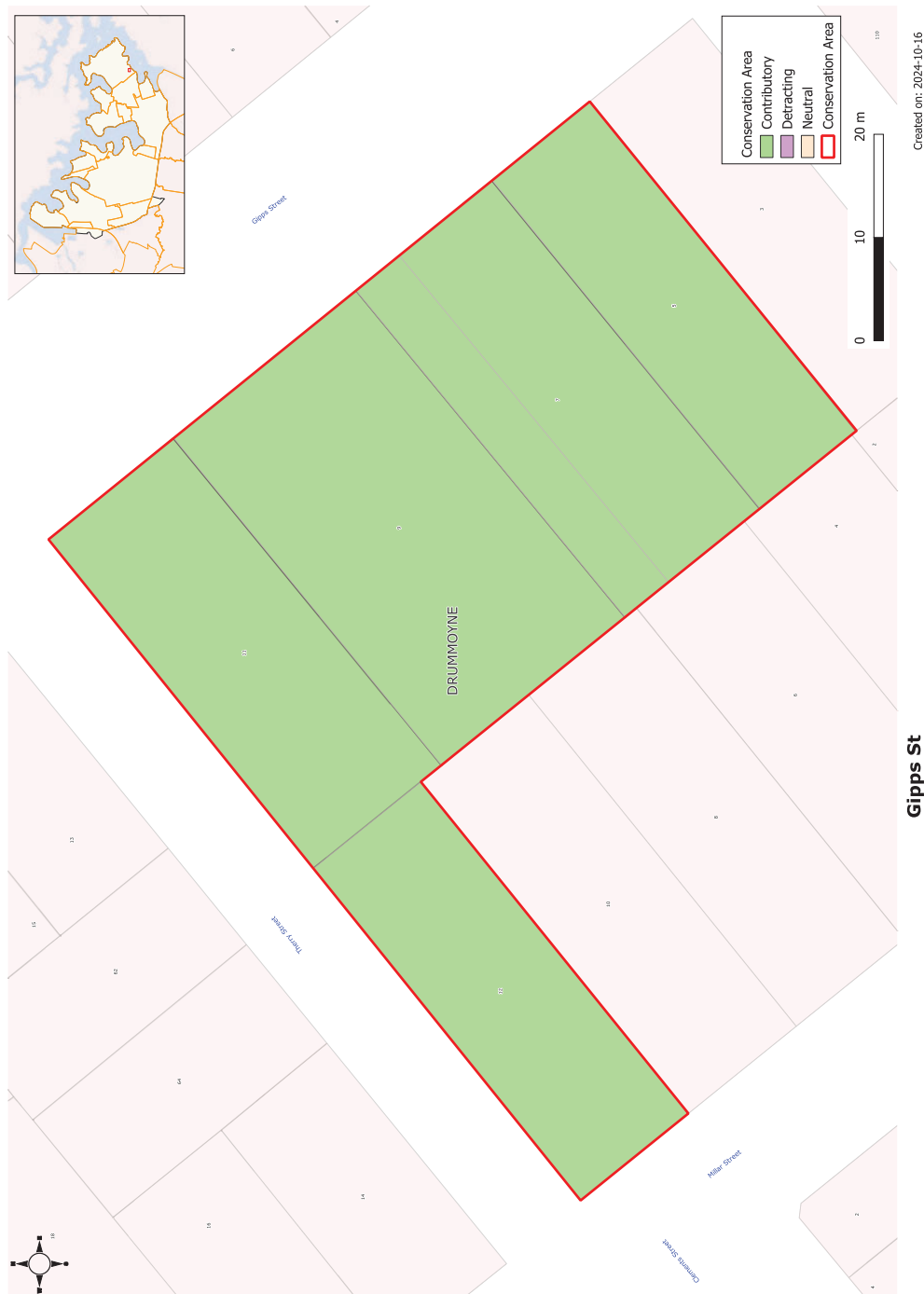


Figure App1.11 Gipps Street Conservation Area

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

CA.11 Hampden Road Conservation Area

History

The north and south sides of Hampden Road were subdivided in two separate subdivisions in 1915. The north side of the road was part of the Five Dock Estate subdivision and the south side was part of the Lirylea subdivision. Apart from the Victorian house Faleofa, facing Lyons Road, that preceded the 1915 subdivisions, most of the development of this conservation area followed soon after the subdivisions. Faleofa was further subdivided in 1928 prior to the construction of shops on the corner of Lyons and Hampden Roads.

Description

This is a predominantly residential group with largely intact houses from the late Federation and Inter-War periods as well as the Victorian house Faleofa and some Inter-War shops on the corner of Lyons Road.

The houses include a very fine group of c1915 houses of matching style with terracotta shingle roofs, well set back from the road in garden settings. The group represents the mix of development that took place in the Edwardian period with houses ranging from modest but well detailed semi-detached residences to more impressive two storey houses through to idiosyncratic arts and crafts cottages. The shops on Lyons Road are typical of the Inter-War period. As a substantial Victorian house, Faleofa provides a contrast to the group.

Statement of Significance

The Hampden Road, Drummoyne Conservation area is one of the rare surviving streetscapes on a main road in the municipality. Located on the main road through Drummoyne and Five Dock this group is of high visual value. The group also includes a substantial and attractive Victorian residence, Faleofa, illustrating the earlier development of the area. The commercial building on the corner of Lyons Road and Hampden Road demonstrates the importance of these roads in the local transport network.

Future Character

The Federation to Inter-war housing should be retained without demolition and in its historic form to the street with retention of facade materials and details. Additions should reflect the character of the existing buildings to retain the streetscape and the heritage value. Garages and carports should not be added in front of the building line.

Analysis - Setting

The houses in this group have reasonably deep setbacks from the street. Street trees and the slope of Hampden Road contribute to the setting of this group.

Scale

This conservation area has a consistent single storey scale to Hampden Road with the larger two storey residence Faleofa on a larger site fronting Lyons Road.

Form

The front of the houses are generally broken down with a verandah section and a projecting room with a gabled or hipped roof. Roofs include low to medium pitched hipped and gabled forms, most clad with terracotta tiles or slate. The commercial building contrasts with a solid parapeted form.

The facades typically incorporate verandahs with heavy masonry piers. Awnings are also used to provide interest in the street facades.

Siting

Houses fronting Hampden Road have regular front and side setbacks. The commercial building at the corner of Lyons Road contrasts with these and with Faleofa by having no street setback.

Materials and Colours

Dark face brickwork is almost exclusively used in this conservation area. This blends well with the terracotta and slate roofs.

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

Doors and Windows

Windows are usually timber casements in pairs or groups of three or double hung windows in groups.

Carparking

Single driveways with garages or carports located well behind the building line.

Fencing

Surviving original fencing is generally low brick or sandstone fencing.

Landscape Elements including Paving and Driveways

Most houses in the group have established gardens with trees and shrubs in the front garden.

Subdivision

The houses in this group fronting Hampden Road have a reasonably regular allotment size.

Refer to Figure App1.12

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas



Figure App1.12 Hampden Road Conservation Area

CA.12 Lindfield Avenue Conservation Area

History

Lindfield Avenue was created by a 1928 subdivision and was originally called Ardath Avenue. The Inter-War California Bungalows that line this street were built soon after.

Description

Lindfield Avenue is a short cul-de-sac featuring facing rows of consistent Inter-War California Bungalows, set in period gardens. The buildings display a high degree of integrity, with one notable exception. The street facades of the buildings are remarkably intact, as are fences and period garden features.

Statement of Significance

The Lindfield Avenue Conservation Area is an excellent local example of an Inter-War subdivision, in an area noted for its 1920s and 1930s streetscapes. It is also considered one of the best examples in the Sydney region of a streetscape of Inter-War California Bungalows. The high consistency of design suggests development within a very short time span. The street facades of the buildings are remarkably intact, as are fences and period garden features. The subdivision consists of a street and is unusual locally for its cul-de-sac design.

Analysis - Setting

Designed as a cul-de-sac, Lindfield Avenue is an enclosed streetscape. Street plantings are mixed with some clipped hedges and more recent plantings of native plants.

Scale

Apart from one rear addition, this is a street of single storey houses.

Form

The Inter-War California Bungalow form is exclusively used in this area. It features low to medium pitched gables facing the street with a front verandah an important part of the main elevation of the house.

Siting

The houses have regular setbacks from the street. A deeper setback from one side allows vehicular access to the rear of the allotments.

Materials and Colours

Houses that have not been altered have face brick trimmed with render to lintels and battened fibro to the gables complemented by terracotta tiled roofs.

Doors and Windows

Windows are usually timber casements sashes in groups of two or three, often with horizontal sun hoods. Later houses have groups of double hung windows, sometimes in a chamfered bay. Doors are often glazed and sometimes are paired.

Carparking

Garages and carports are usually set well back from the front building alignment.

Fencing

Original fencing is usually low brick panels between brick piers. Metal rails or wrought metal panels are sometimes used between piers.

Landscape Elements including Paving and Driveways

Street trees are important in this conservation area. Front gardens are usually dominated by lawn with low plantings of shrubs to provide interest.

Refer to Figure App1.13

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

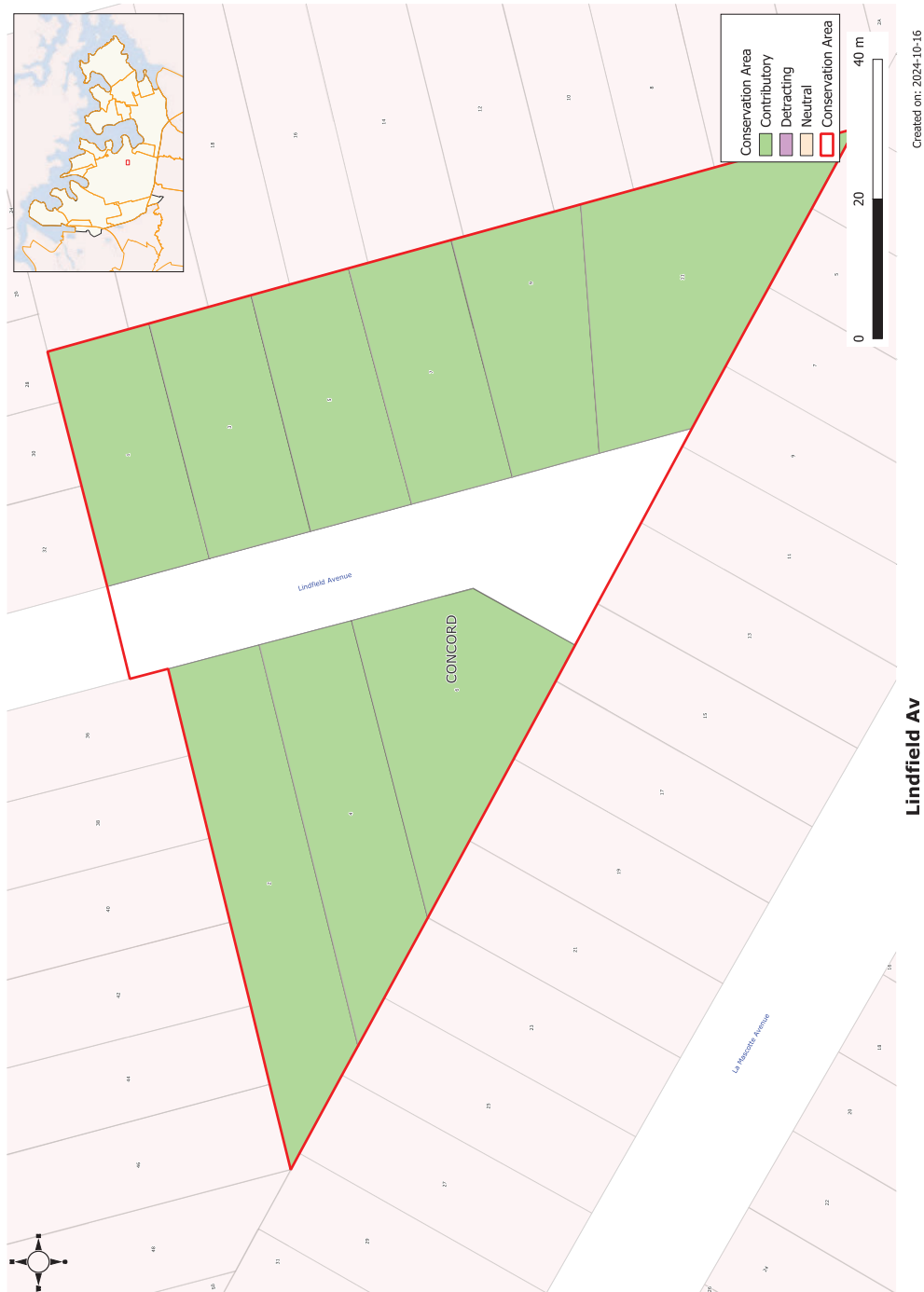


Figure App1.13 Lindfield Avenue Conservation Area

CA.13 Majors Bay Road Conservation Area

History

Commercial development in the early twentieth century tended to be in ribbons lining major transport routes. The development along Majors Bay Road followed this pattern, taking advantage of the importance of the road in connecting Queens Road to the industrial areas at Mortlake. It also relied on the importance of Wellbank Street to provide a direct link to North Strathfield Railway Station.

On the east side of Majors Bay Road between Wellbank Street and Jones Street the Terrabona Estate subdivision of 1915 appears to have provided the impetus for commercial development along Majors Bay Road. The precinct was planned as a commercial boulevard to complement the Inter-War housing boom in Concord.

Description

The commercial precinct of Majors Bay Road between 48-114 Majors Bay Road on the west side and 23-95 Majors Bay Road on the east side is dominated by Inter-War commercial development. The buildings are generally two storey with retail premises on the ground floor and offices or flats on the upper floor. Parapet walls front the street on most buildings and the floors are divided on the facades by cantilevered awnings. Some residential buildings survive on the west side of Majors Bay Road.

Statement of Significance

This commercial precinct reflects the importance of Majors Bay Road and Wellbank Street in providing connections from the main transport links of Queens Road to the south and Strathfield North Railway station to the west with the industrial area of Mortlake and with the growing residential development of Cabarita from the Inter-War period to the late twentieth century.

The Majors Bay Road commercial precinct is a good quality streetscape dominated by Inter-War commercial buildings. The consistent scale and rhythm of facades, and use of materials contributes to an attractive streetscape.

The Majors Bay Road commercial precinct provides a focal point for the local community and continues to function as a popular meeting place.

Analysis - Setting

This conservation area derives its importance from its location at the junction of two important local roads.

Scale

Two storey development is dominant with ground floor used for retailing and the upper floor for office or residential use. A few single storey shops and houses are scattered through the group.

Form

These are two storey buildings usually with no setback from the street or side boundaries creating a continuous wall to the street. The buildings are usually parapeted. Roofs are usually tiled. The buildings have engaged piers at regular intervals reflecting traditional structural spans.

Recessed verandahs were incorporated into the upper floor of many of the commercial buildings, some of these have been filled in. The lower floors of the earlier buildings in the group generally have commercial shopfronts.

The freestanding buildings in the conservation area are more residential in form with hipped and gabled roofs and usually with front verandahs.

Siting

Most buildings in this group have no setbacks from the front and side boundaries.

Materials and Colours

Masonry is used for most buildings. Face brickwork trimmed with rendered or decorative details was the most common wall treatment. Rendered panels in the parapet provide space for signs. Other buildings have rendered facades with decorative rendered details.

Doors and Windows

Windows to the upper floors are often in square or arched openings, infilling the original open verandahs. Some buildings retain the French doors opening to the upper verandahs.

Refer to Figure App1.14

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas



Figure App1.14 Majors Bay Road Conservation Area

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

CA.14 Marlborough and Tavistock Streets Conservation Area

History

The South Hythe subdivision of the 1870s included all the land west of Lyons Road, between the present Victoria Road and Bayswater Road. It included Tavistock, Marlborough and Westbourne Streets, establishing the general street layout that survives to the present day. Many of the initial purchases were for a number of allotments. Speculative development and subsequent subdivision in the Federation and Inter-War periods created rows of housing of similar scale, form and materials.

The housing on the southeast side of Tavistock Street and from 21 to 39 Westbourne Street appear to have been groups of speculative development built in the Federation period. Groups of semi-detached houses have since been subdivided to allow individual ownership. 43 Marlborough Street also dates from this period.

The houses at 4-8 Tavistock Street were probably built soon after a re-subdivision of land fronting the present Victoria Road in 1915. Those at 10-12 Tavistock Street along with 26-28 Marlborough Street are also part of one development comprising detached and semi-detached houses.

Description

The character of the Marlborough and Tavistock Streets Conservation Area is defined by:

- a consistent row of speculative semi-detached Federation houses in Westbourne Street,
- consistent Federation housing, both semi-detached and free standing, on the southeastern side of Tavistock Street including a very good group of speculative semi-detached Edwardian houses towards Victoria Road.
- a group of Inter-War bungalows on the northwest side of Tavistock Street between Victoria Road and Marlborough Street, extending along Marlborough Street.
- consistent Federation housing on the northeast side of Marlborough Street.

The housing in the Conservation Area is predominantly of c.1910 to 1930 construction. It has a consistent character dominated by single storey housing of dark face brick, terracotta and slate roofing, hipped and gabled roof forms and front verandahs.

Statement of Significance

The Marlborough and Tavistock Streets, Drummoyne Conservation Area is of significance for its largely intact early twentieth century residential development. The group has an overall homogeneity due to consistent use of materials, scale, setbacks and forms. Groups of speculative development also contribute to the regular rhythms in the streetscape.

Objectives

To retain the high level of integrity and homogenous character of the group.

To ensure new development does not detract from established rhythms in the streetscape created by the group.

Analysis - Setting

Groups of houses within each block have regular setbacks. The setbacks of the groups of semi-detached houses are usually less than for the free standing houses.

Plantings of street trees as well as trees in front gardens adds to the amenity of this conservation area.

Scale

This conservation area has a dominant single storey scale facing the street.

Form

The groups of houses within this conservation area have regular form and massing. Front verandahs are an important element of the front of the houses. Gabled elements are used in most of the roofs as either a complement to the main hipped roof or as the main roof form facing the street.

Materials and Colours

Terracotta and/or slate are the dominant materials for roofs and are complemented by face brick walls with some rendered and/or battened fibro sheet for contrast. Verandahs have face brick piers and balustrades with timber posts. Driveways are formed with concrete strips.

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

Doors and Windows

Casement windows are common with some use of double hung sashes. French doors are also used to provide access to verandahs. Front doors usually have toplights and, where space permits, might have sidelights.

Carparking

Some freestanding houses have space for parking at the rear of the allotment. Many of the semi-detached houses have no space for on-site parking that does not intrude on the front garden.

Fencing

Original fencing is usually low allowing good views from the footpath to the houses. Fencing often incorporates masonry elements including sandstone and low face brick walls, often with pipe rails. More recent fencing has a variety of picket fencing.

Landscape Elements including Paving and Driveways

Street trees are important to the character of this area and are reinforced with mature trees in front gardens. Front gardens should incorporate low shrubs and lawn areas.

Refer to Figure App1.15 and Figure App1.16

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

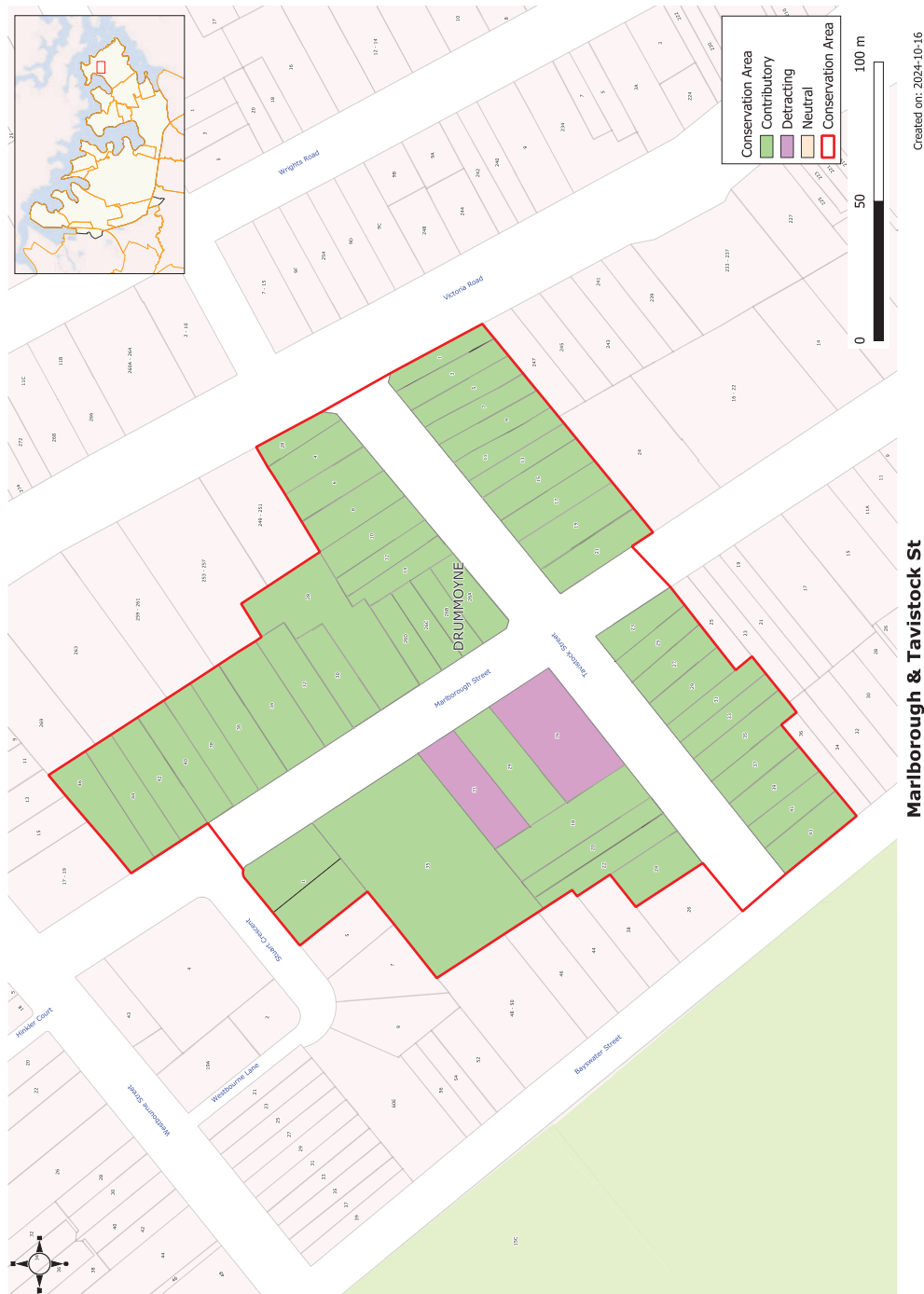


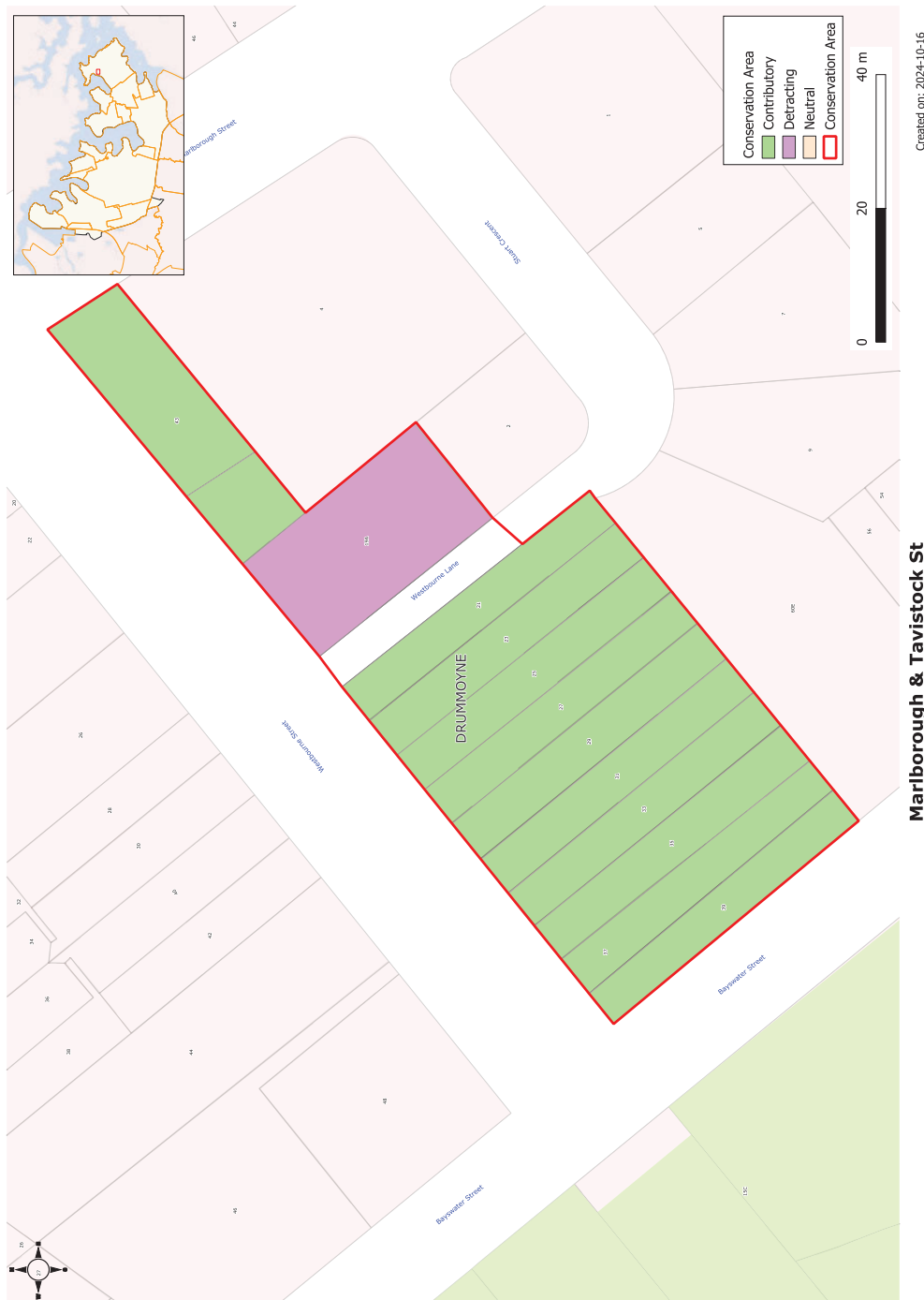
Figure App1.15 Marlborough and Tavistock Streets Conservation Area

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas



Created on: 2024-10-16

Figure App1.16 Marlborough and Tavistock Streets Conservation Area - Sheet 2

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

CA.15 Mons Street and Boronia Avenue Conservation Area

History

This conservation area comprised two subdivisions; the Sunlight Estate subdivision of 1926 creating Mons Road and the Boronia Avenue subdivision of 1927.

Description

The Mons Street and Boronia Avenue Conservation Area is dominated by Inter-War California Bungalow style housing creating a regular rhythm of gables in the streetscape. Street plantings of box hedge in Mons Street have been pruned ensuring the houses have a close relationship to the street.

Statement of Significance

The Mons St and Boronia Avenue Conservation Area contains a very intact group of Inter-war houses representing the major sub-division of the Municipality that took place during this period. The group is one of a small number of excellent groups in the Five Dock/ Russell Lea area that demonstrate the pattern of sub-division of the Municipality and which contain a very fine representative group of houses from one period, mostly with intact settings and detailing. Most houses in the area have not been substantially altered.

Objectives

The high level of integrity of this group is a key feature, which should be retained. With only one or two significant alterations to significant properties there should be no demolition of existing early housing, controls on first floor additions to retain the character of housing and retention of façade details such as windows and wall treatments. Garages and carports should not be added in front of the building line.

Analysis - Setting

The houses in this conservation area have regular setbacks from front boundaries. Side setbacks are wider on one side to allow vehicular access.

Street trees are restricted to clipped box hedges.

Scale

The housing in this conservation area was originally single storey development, consistent with the low horizontal character of the Inter-War California Bungalow style.

Form

The Inter-War California Bungalow style that dominates this Conservation Area has strong low-medium pitched gabled roof forms facing the street. Verandahs are incorporated into the front elevations and emphasise the low horizontal lines of the houses.

Materials and Colours

Face brick walls trimmed with rendered lintels and battened fibro gables. Original roofs are of terracotta tiles.

Doors and Windows

Windows facing the street are grouped sets of casement sashes, often with horizontal sunhoods. Front doors are simple glazed doors, sometimes in pairs.

Carparking

Carparking is provided well behind the building line of most houses.

Fencing

Original surviving fencing is low face brick fencing of piers and panels. The low brick panels usually had a metal pipe or panel above.

Landscape Elements including Paving and Driveways

Single driveways to the side of the house. Front gardens are dominated by lawns with low shrubs providing interest. Street plantings are restricted to clipped hedges.

Refer to Figure App1.17

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas



CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

CA.16 Moore Street Conservation Area

History

The Lyonsville subdivision of the 1880s created Moore Street and Short Street. Development of small cottages followed through to the Inter-War period.

Description

The Moore Street Conservation area encompasses a range of building styles and periods of construction, typifying the pattern of development of the central areas of Drummoyne. The earlier development relates to waterfront activity and extends from late nineteenth century through to the Inter-War period with several fine bungalow influenced cottages and semi-detached buildings. The street also contains a very good range of timber buildings from the first decade of the twentieth century or possibly earlier. On the corner of Short Street is a two storey store and commercial building that provides a focal point in the streetscape.

Statement of Significance

The Moore Street Conservation Area includes a variety of houses that, while modest, display fine detailing and varied forms that are not generally seen in Drummoyne. Buildings of particular interest in this conservation area are the large timber house at no 40, the two storey corner store and residence, one of three very good examples in the municipality, the fine timber houses, and several very modest timber and fibro cottages. Together, these buildings represent the early development of the street and its lower status than the south side of Lyons Rd.

Analysis - Setting

Moore Street has a gradual slope down from Lyons Road. Groups of cottages have fairly regular setbacks from the street. The two storey shop at the corner of Short Street provides contrast with no setback from the street frontages. Street trees also contribute to the amenity of the street.

Scale

Single storey scale is dominant in this conservation area.

Form

Most houses have simple rectangular forms with hipped roof forms relieved by gabled elements. Verandahs provide depth to the front elevations of the houses.

Materials and Colours

Weatherboard and face brick are the common wall materials in this group. Roofs were originally either corrugated steel or terracotta tiles.

Doors and Windows

Windows are usually in vertically proportioned openings. Double hung windows are most common with sets of casement windows used in some later houses. Front doorcases usually incorporate toplights and, on larger houses, sidelights.

Carparking

Where space allows, car parking has been set behind the building line. Few carports and garages have been located in front of the main building line in this conservation area.

Fencing

Original surviving fencing includes low masonry fencing of either sandstone or face brick. Some reproduction picket fencing has been introduced.

Landscaping Elements including Paving and Driveways

Front gardens are usually dominated by lawn with low plantings of shrubs to provide interest.

Refer to Figure App1.18

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

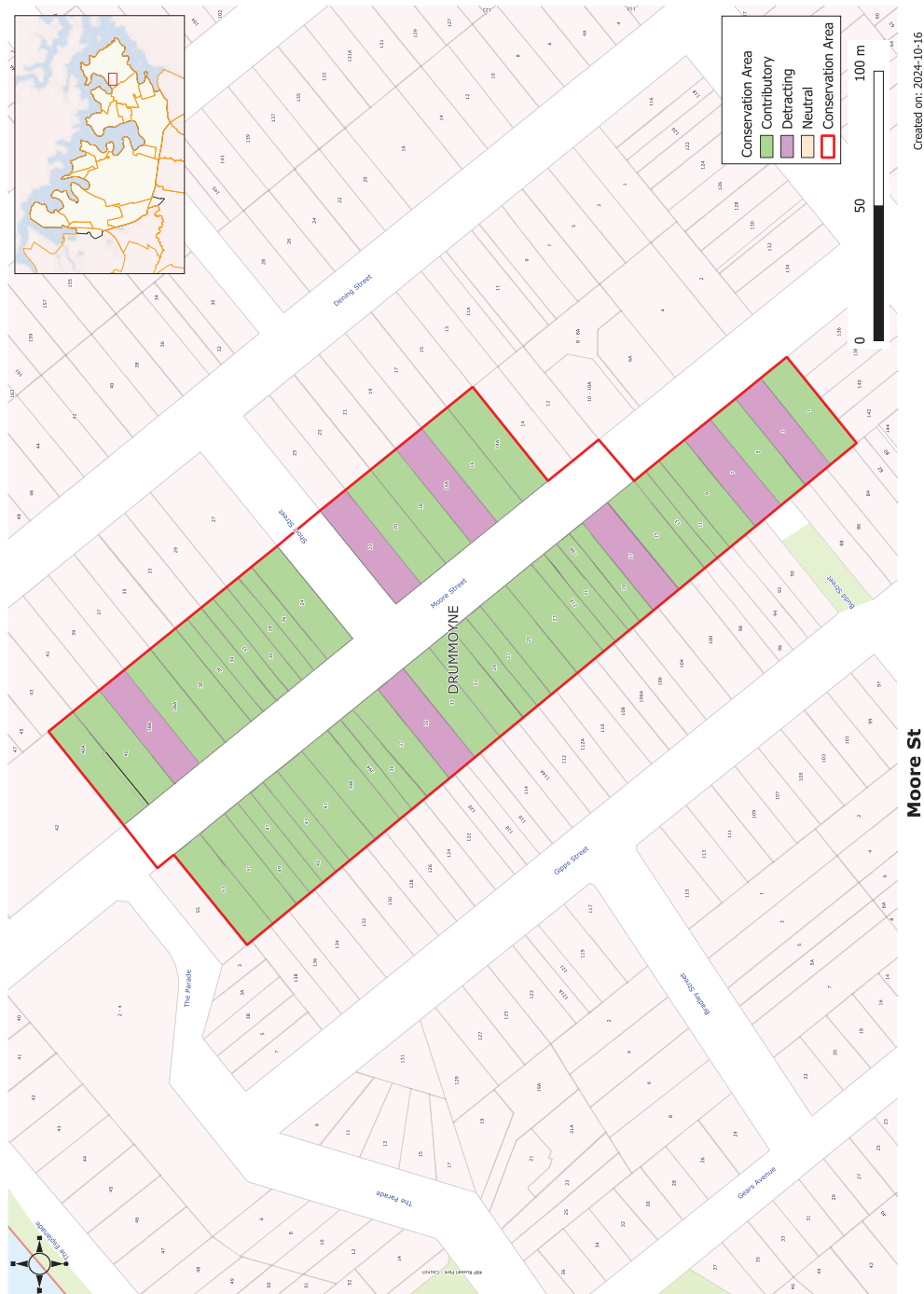


Figure App1.18 Moore Street Conservation Area

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

CA.17 Mortlake Workers' Housing Group

History

Mortlake township began with the establishment of the Australian Gas Light Company's works at Mortlake in 1886. Subdivision of the township took place in the following 2 years. The houses at 46-50 Gale Street were built soon after the subdivision of the township closely followed by the houses at 4-8 Tennyson Road.

Description

A group of single storey houses from the late Victorian and Federation periods.

Statement of Significance

The Tennyson Road conservation area is an interesting group of workers' housing from the late Victorian and Federation period directly relating to the development of the AGL gasworks and the establishment of the Mortlake township. The group makes an important contribution to the streetscape and forms a precinct of great charm and character.

Analysis - Setting

The group is set on various size blocks at the corner of the two streets with rear lane access to garages and carports. The adjoining scale is predominantly single storey with a mix of Victorian and Federation cottages with some later infill development.

Scale

The houses are single storey with no second floor additions. There is some later, two storey development close by.

Form

The group is in the Victorian and Federation cottage form style with double fronted elevations and front verandahs or gables.

Siting

The front setbacks vary due to the angled nature of the lots with small gardens to the front.

Materials and Colours

The houses are in a variety of materials with timber weatherboards, rendered masonry and stone. Roofs are in tile and corrugated metal. 8 Tennyson Street is unusual in being in timber with the boards cut to appear as stone. 48 Gale Street is in sandstone with an Italianate style verandah with decorative lacework.

Car parking

The rear lanes provide car access to rear garages and carports.

Fencing

The front fencing varies with masonry walls, picket and timber fences or with the garden open to the footpath.

Landscape Elements including Paving and Driveways

Small front gardens generally laid to lawn with some shrub planting

Refer to Figure App1.19

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas



Figure App1.19 Mortlake Workers' Housing Group

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

CA.18 Park Avenue Conservation Area

History

Longbottom Stockade was established in the eighteenth century as an overnight detention centre for convicts on their journey between Sydney and Parramatta. From 1840 to 1842 it was used to house 58 French speaking Canadian rebels. A ramshackle settlement gradually grew around the stockade that was gradually falling into disrepair. In 1843 the Village of Longbottom was laid out to formalise the settlement and included the south side of the present Park Avenue. The large allotments from this settlement generally survive on the south side of Park Avenue, although the west end was re-subdivided in 1927.

Description

A grouping of early homes on large allotments, generally well set back from the street. The group includes a number of Victorian villas, all enjoying an outlook over the park opposite.

Statement of Significance

Park Avenue, Concord is a notable group of heritage homes on large allotments, enjoying an outlook over public parkland. It includes a number of outstanding Victorian villas with large front gardens, rare for Concord. The large lots and deep setbacks are unique in the Council area. The group has considerable aesthetic and historical significance.

Analysis - Setting

Goddard Park on the north side of Park Avenue provides a setting for this conservation area. Street plantings and large front gardens reinforce the amenity provided by the park.

Scale

Park Avenue includes larger one and two storey houses, usually on large allotments.

Form

The houses in this conservation area have a variety of forms. Most of the original houses in the group were built with generous verandahs on the front of the house taking advantage of the northerly aspect and view of Goddard Park.

Siting

Most of the contributory houses in this group have generous setbacks from the front boundaries.

Materials and Colours

Masonry is the dominant wall material with render used on some of the earlier homes. Roofs are either slate or tiled.

Doors and Windows

Vertically proportioned double hung windows are most common in this conservation area. Front doorcases incorporate toplights and sidelights. French doors are also used with verandahs.

Carparking

Garages and carports have usually been set behind the front building line of contributory houses.

Fencing

Only one original fence survives in this group, an iron palisade fence with sandstone gateposts at 2 Park Avenue.

Landscape Elements including Paving and Driveways

Street trees add to the amenity of the area. Gardens are usually generous and incorporate lawns with mature trees and shrubs.

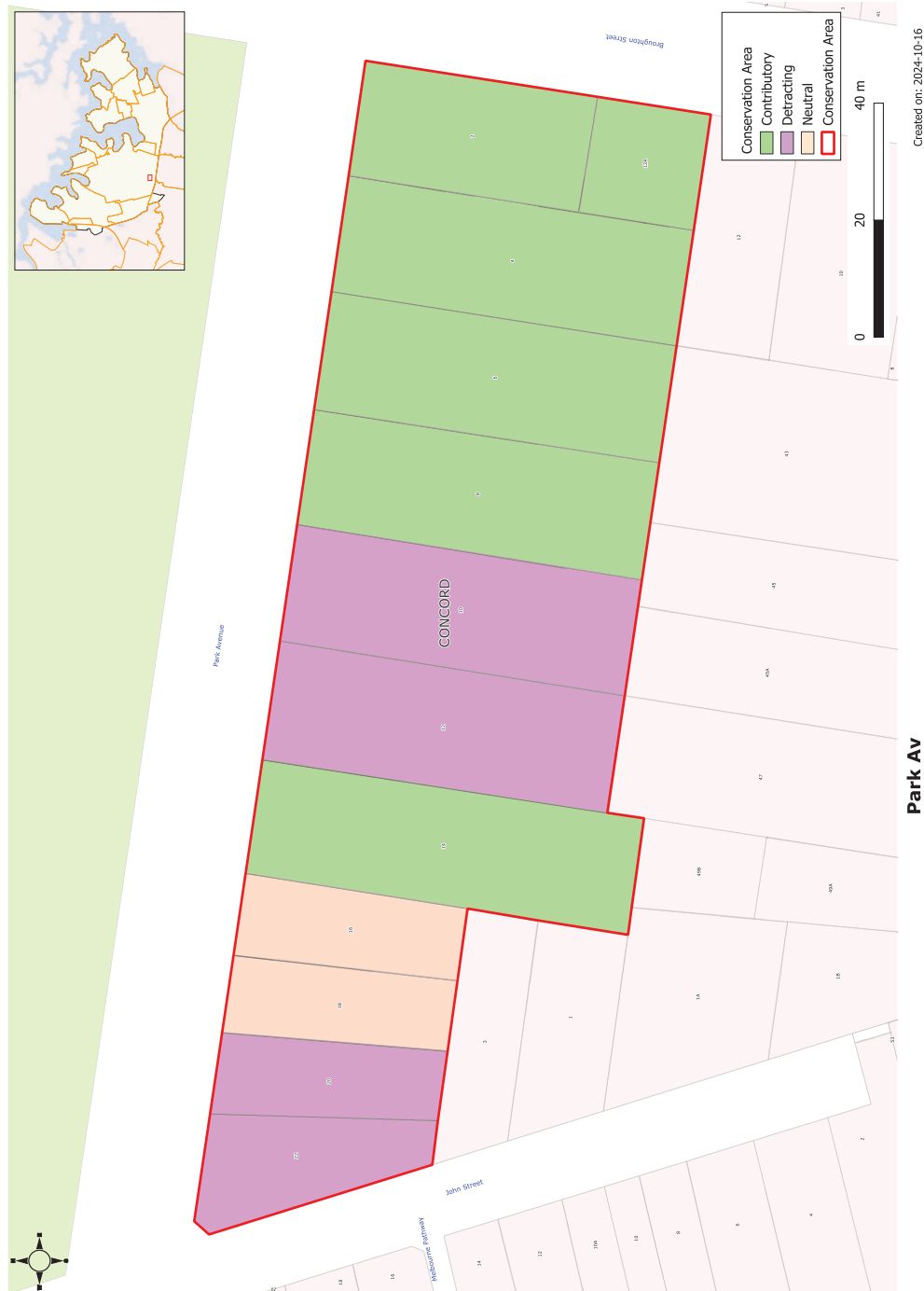
Refer to Figure App1.20

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas



Created on: 2024-10-16

Figure App1.20 Park Avenue Conservation Area

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

CA.19 Parklands Estate Conservation Area

History

Parklands Estate, between Lyons Road and Barnstaple Road, was subdivided in 1927 creating Bennett Avenue and a cul-de-sac, Mitchell Street. This small group of houses were developed between 1927 and the late 1930s.

Description

The buildings stylistically are predominantly derivatives of Californian Bungalows with several later houses from the immediate post World War Two period at the end of the cul-de-sac which add to the group. All are fine if modest examples of the style and reflect the pattern of further sub-division that took place as larger estates were gradually broken up.

Statement of Significance

Developed in a short period from 1927, Parklands Estate has high heritage value locally as an intact group within an intact streetscape setting reflecting an excellent range of Inter-war housing types. The group is complemented by street planting, fencing and gardens.

Future Character

The high level of integrity of this group is a key feature which should be retained. With only one or two significant alterations to significant properties there should be no demolition of existing Inter-war housing, controls on first floor additions to retain the character of housing and retention of facade details such as windows and wall treatments. The important street planting should be retained. Garages and carports should not be added in front of the building line.

Analysis - Setting

The Parklands Estate has a relatively enclosed streetscape dominated by mature street trees.

Scale

Single storey scale is dominant, consistent with the low horizontal emphasis of the Inter-war housing styles in this estate.

Form

The houses in the Parklands Estate usually have multiple gables and include a deep verandah to offset a projecting room on one side of the street front.

Low-medium pitched roofs of terracotta tiles with multiple gables provide rhythm to the streetscape. Houses in the group from the later part of the Inter-war period have simple hipped roofs with glazed tiles.

Siting

Development in the Parklands Estate has a regular street setback. Side setbacks include a wider setback on one side to allow for vehicular access.

Doors and Windows

Windows are usually arranged in groups with bungalows having sets of casement windows. Later houses in the Parklands Estate have grouped double hung sash windows.

Materials and Colours

Terracotta roof tiles and dark face brick walls with light coloured rendered trim are typical of this streetscape. Windows are generally timber framed.

Carparking

Garages are usually located well behind the building line so that they are not visible in the streetscape.

Fencing

Many houses have reproduction picket fencing which, while not authentic to the Inter-war character of the houses, provides cohesion to the streetscape.

Landscape Elements including Paving and Driveways

Front gardens incorporate large areas of lawn with some planting of shrubs. Driveways are single width usually located to the side of the allotments.

Subdivision

The regularity of the original subdivision is important in establishing the rhythm of the streetscape.

Refer to Figure App1.21

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas



Created on: 2024-10-16

Figure App1.21 Parklands Estate Conservation Area

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

CA.20 Powell's Estate Conservation Area

History

Powell's Estate was subdivided in 1886 and included housing allotments with regular frontages. The allotments were wider further away from Parramatta Road. Rear lanes were incorporated into the subdivision, originally providing access for night soil collection. Due to the narrow allotment width (20 feet), many houses were built on double allotments. The main period of development of the estate continued through the late Victorian and Federation period. Much of this housing has survived through to the twenty-first century, except where removed to make way for the development of the M4.

Description

Powell's Estate is an area of late Victorian housing interspersed with Federation and Inter-War period housing on small allotments. The development includes a mixture of large individual homes and semi-detached housing. Street plantings add to the amenity of the area.

Statement of Significance

The Powell's Estate Conservation Area is a rare local example of Victorian period development. A number of the original Victorian homes survive, including some fine villas. The area retains considerable historical significance.

Analysis - Setting

The Powell's Estate has regular sized allotments on a rectilinear street layout. Street trees provide amenity to the area. Lanes now allow vehicular access to the rear of the allotments.

Scale

Single storey housing is dominant. A few one and a half and two storey houses are located on double allotments. A notable one and a half storey group faces Concord Road.

Form

The houses in this conservation area include free standing and semi-detached forms. Most have a simple rectilinear footprint to the main front wing and incorporate a verandah in the street elevation. Roofs are usually hipped, sometimes incorporating a gable as a feature.

Siting

Front setbacks are reasonably uniform along each street. Some larger houses have greater setbacks. Side setbacks are small, possibly as a result of the small allotments.

Materials and Colours

Rendered masonry is used for most of the Victorian houses and is complemented by slate roofs (where the original roofing survives). Later houses are face brick with tiled roofs. There are a small number of weatherboard houses with corrugated steel roofs.

Doors and Windows

Windows are vertically proportioned usually with timber double hung sashes. Some of the Victorian houses incorporate bay window elements. A few later homes have sets of timber casement sashes. Front doors usually incorporate a toplight and, in larger homes, sidelights.

Carparking

The rear lanes provide access for parking at the rear of the properties.

Fencing

Few original fences survive. Iron palisades might be expected for some of the larger Victorian houses. Smaller cottages could be expected to have timber picket fences. Later houses appear to have used brick fencing with low brick panels between brick piers.

Landscape Elements including Paving and Driveways

Front gardens are dominated by lawns with plantings of low shrubs.

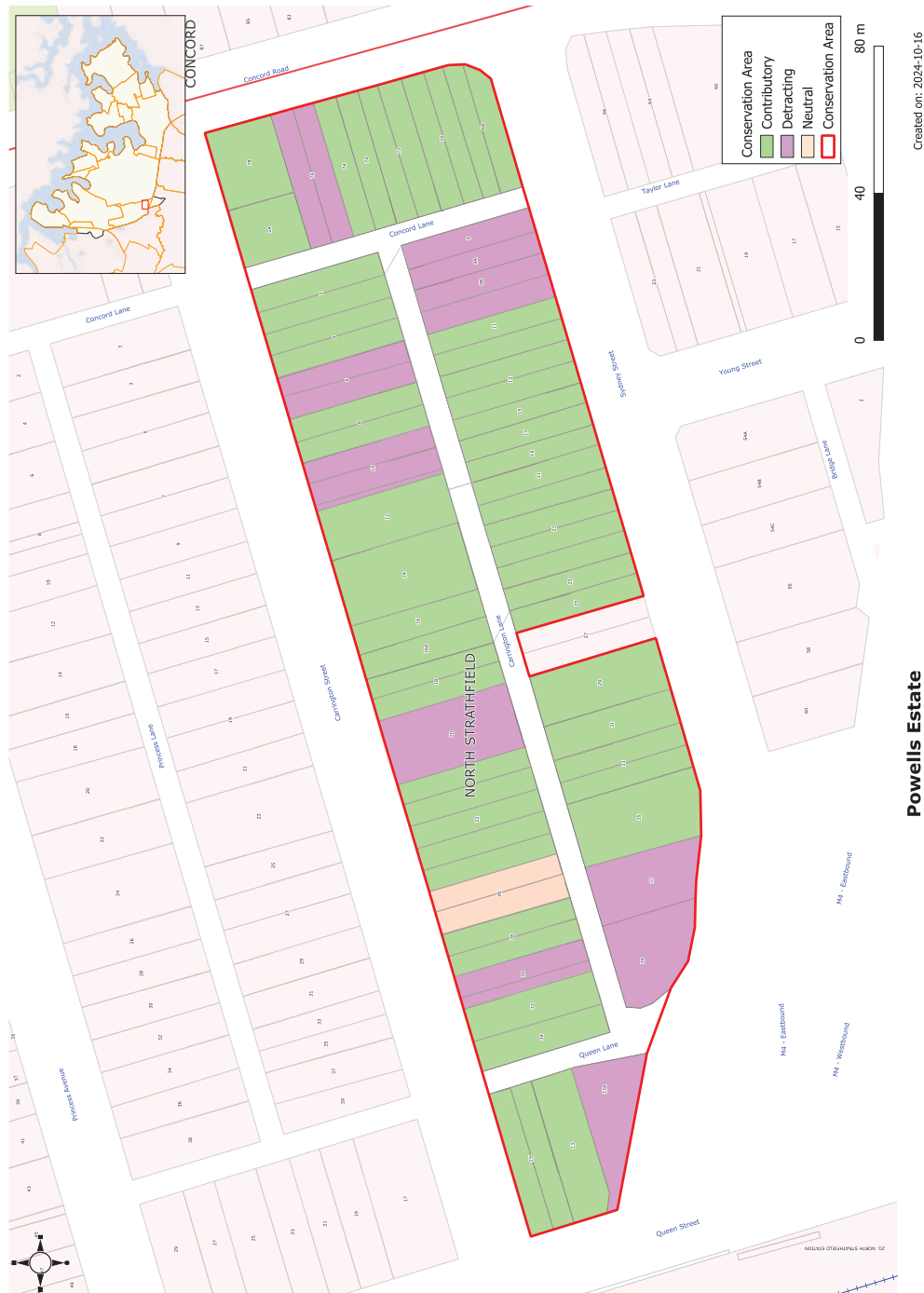
Refer to Figure App1.22

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas



Created on: 2024-10-16

Powell's Estate

Powell's Estate Conservation Area

Figure App1.22

Page A1-49

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

CA.21 Salsbury Street Housing Group

History

This group of houses is located on the 1886 Beaconsfield Square subdivision. They include cottages built soon after the subdivision through to the Inter-War period.

Description

This is a group of single storey verandahed cottages from the 1880s to the Inter-War period. The narrow setback from the street and the consistent scale and simple forms of these houses creates a cohesive streetscape.

Statement of Significance

This is a cohesive streetscape of cottages built soon after the 1886 Beaconsfield Square subdivision. They include cottages built soon after the subdivision through to the Inter-War period.

Analysis - Setting

The group is set on similar blocks with narrow setbacks from the street. The group contrasts with the open space and larger scale building of the public school on the opposite side of the street.

Scale

The houses are originally single storey, with one now having a first floor addition. This is consistent with the narrow width of the street

Form

The group have a range of cottage forms. All are based on simple rectangular cottages with hipped roofs and a front verandah. The later examples have a gabled element on the front elevation to provide interest.

Siting

The front setbacks are quite narrow. Some have a wider setback on one side to allow vehicular access.

Materials and Colours

The houses are in different materials. Traditional materials of weatherboard or face brick is used for walls and, originally, corrugated steel or terracotta tiles for the roof.

Car parking

Some of the cottages have sufficient side setbacks to provide access for rear garages. The narrow street setbacks limit parking in front of the houses.

Fencing

No original fencing survives. Fencing is low to medium height.

Landscape Elements including Paving and Driveways

The small front gardens are laid to lawn with some shrub planting.

Refer to Figure App1.23

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas



Figure App1.23 Salisbury Street Housing Group

Page A1-51

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

CA.22 Thompson Street Conservation Area

History

This terrace of seven houses was built on the 1904 subdivision of the Cometrowe Estate. The terrace remained under one title until 1958 when it was subdivided into individual allotments for each house.

Description

This small group comprises a row of single level terrace style housing with narrow frontages and matching facades. They have a strong Federation Queen Anne character.

Statement of Significance

The terrace of seven houses in Thompson Street is a very rare building form in Drummoyne. This is the only significant terrace in the Canada Bay Council area and is a strong form in the Thompson Street streetscape and illustrates one of the major stages of Drummoyne's development.

Objectives

The integrity of this row is to be retained without any alterations to the street elevations. No further painting of face brick walls should take place and timber joinery details should be retained.

Analysis - Setting

This terrace has a narrow setback from the street. The slope of Thompson Street away from Lyons Road adds interest to the group.

Scale

This is a single storey group.

Form

The houses have a repetitive pattern of verandahs and gabled fronts in front of a main roof slope.

The terracotta tiled roof is a regular gabled form parallel to the street with individual houses separated by parapet walls. Transverse gables are used on the projecting bays.

Siting

This terrace has a small setback from Thompson Street.

Materials and Colours

The face brick walls of this group have been painted. The roof is of terracotta tiles with crenellated ridging and rams horn finials.

Windows

Double hung windows are used in the projecting gabled fronts.

Carparking

No off-street car parking is provided with these houses.

Fencing

The street boundaries are marked by consistent low reproduction picket fencing.

Landscape Elements including Paving and Driveways

The houses have small front gardens sometimes incorporating shrubs and hedges. Paving is restricted to pedestrian paths.

Subdivision

The subdivision pattern of this group related directly to the individual houses.

Refer to Figure App1.24

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

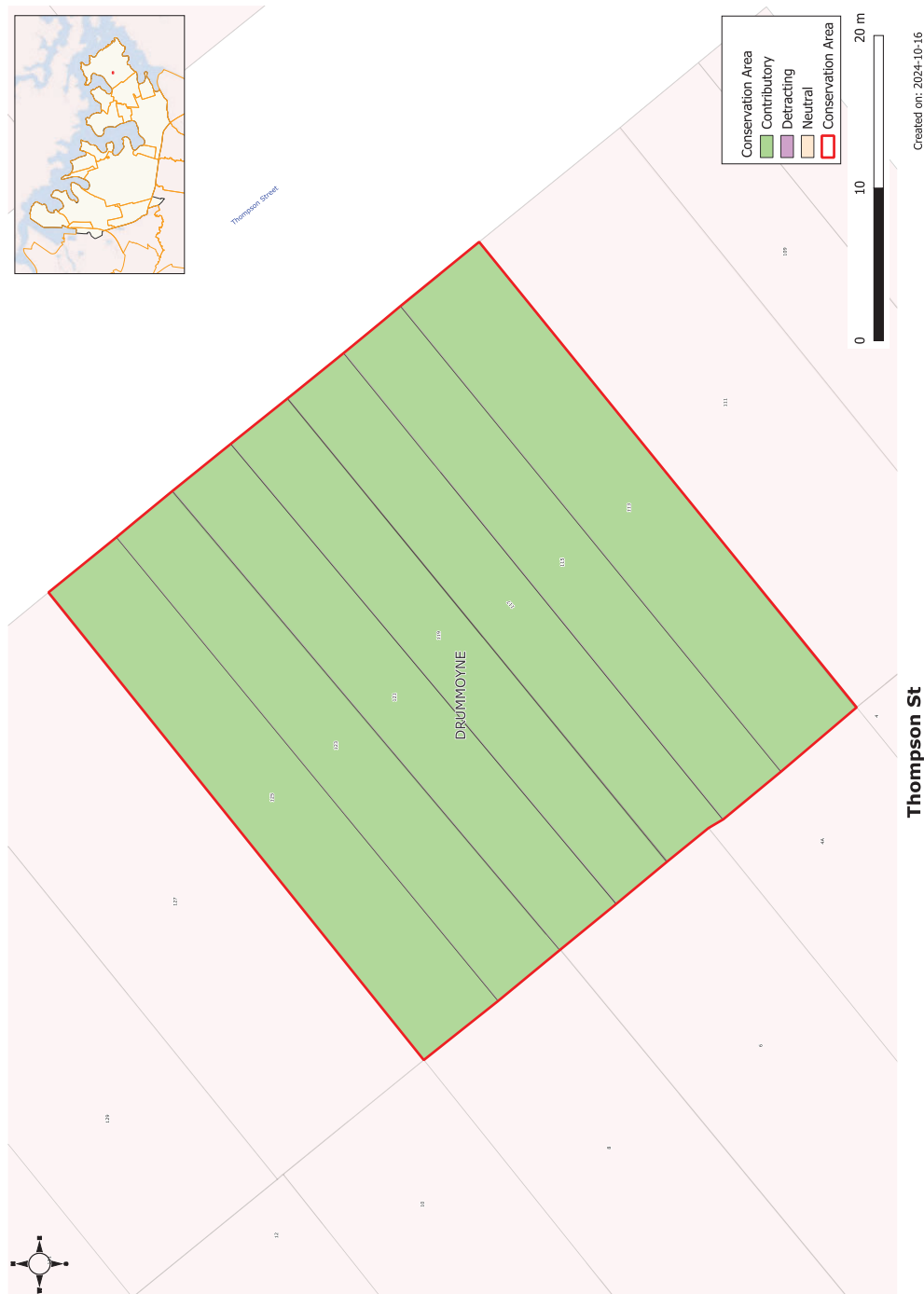


Figure App1.24 Thompson Street Conservation Area

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

CA.23 Victoria Road Retail Conservation Area

History

Victoria Road can be clearly seen with its two phases of development; the earlier eastern side from the early years of the twentieth century and the western side which is predominantly post World War II development except where buildings were set well back from the street alignment. The eastern side of Victoria Road is of particular interest as it has survived the numerous road widenings that have removed much of the building stock on the opposite side of the road.

Description

This small group of retail buildings are a very fine example of Edwardian shopping centre development and form an almost intact streetscape across the crown of the hill. The buildings vary in style but the predominant form is the two storey building with shopfront below and residence over. A number of these have cantilevered balconies to the street of design interest and rarity. The other buildings are the post office, several well detailed buildings originally used for banks and the Inter-War commercial building on the northwestern corner of Lyons Road.

Statement of Significance

This Victoria Road, Drummoyne Retail Conservation area is a very good example of early twentieth century retail development, incorporating Edwardian, Classical Revival and Art Deco designs. With the Sutton Place shopping centre and the hotel on the opposite corner, these buildings create a significant townscape at this very busy and prominent corner. All of these buildings form a gateway to Drummoyne and establish a strong and key character. The survival of cantilevered verandahs on a number of the buildings adds particular interest to the group.

Objectives

The strong Federation to Inter-war character of these retail buildings should be retained with their masonry facades, often intact shopfronts, upper floor verandahs, parapet forms and overall consistent and intact streetscape setting. Original shopfronts should be retained. Infill buildings should respect the overall scale of the street development.

Analysis - Setting

This is an urban group with buildings abutting or separated by narrow walkways. They have visual prominence due to the location at the crest of a hill and the absence of a setback from the street alignment.

Scale

Generally two storey buildings, usually divided horizontally by an awning.

Form

Continuous street facades are modulated by cantilevered and recessed verandahs, regularly spaced shopfronts, fenestration patterns, use of piers to divide first floor façade and articulation of the parapet walls. Cantilevered balcony roofs are generally corrugated steel and use a skillion form. The main roofs are generally concealed behind parapet walls. This group is distinctive for the incorporation of cantilevered balconies to a number of the buildings. The first floor façade is generally articulated with engaged piers and a shaped parapet.

Siting

These commercial buildings usually have no setback from the street boundary and little or no setback from the side boundaries, forming a continuous wall to Victoria Road.

Materials and Colours

Walls of masonry contrasting with render. Some Inter-War buildings are finished with render incorporating decorative details. Face brick is important to the character of the Edwardian buildings.

Doors and Windows

A range of window openings are used, generally with a vertical emphasis. Larger window openings are avoided ensuring a regular proportion of wall and windows in the facades. Ground floor shopfronts are generally modern, although a few buildings in the conservation area are notable for being designed as a cohesive façade over both floors, undivided by an awning or balcony.

Carparking

Where available, car parking is at the rear of the site.

Refer to Figure App1.25

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas



Figure App1.25 Victoria Road Retail Conservation Area

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

CA.24 Yaralla Estate Conservation Area

History

The Yaralla Estate conservation Area comprises a major part of the 1920 release of the Yaralla Park Estate. This was the largest single release of land for urban subdivision in the former Concord Municipality's history. It included the main entrance driveway to the old Walker Estate, retained on its original alignment as The Drive. The rapid development of the subdivision, closely associated with the Main Northern Railway, produced highly consistent Inter-War streetscapes.

The 1920 subdivision extended from Colane Street to the northern side of Wilga Street. The southern side of Wilga Street was developed shortly afterwards.

Description

This is an area of regular subdivision and generally uniform Inter-War housing. The repetition of the gabled roof forms of Inter-War bungalows create a strong rhythm in the streetscape and is reinforced by consistent use of dark brick and tiled roofs. Landra Street at the north of the Conservation Area and Wilga Street at the south of the Conservation Area include groups of Inter-War cottages.

It includes significant street planting, most notably along The Drive. The area's original 1920s townscape character survives essentially unaltered. Subtle bends in the parallel street system add visual interest. The area includes a small neighbourhood shopping centre on Concord Road.

Statement of Significance

This 1920s precinct is representative of Concord's major developmental period. It is one of the best preserved examples of Inter-War streetscapes in the Council area and includes some of the Sydney region's best examples and some outstanding rows of typical 1920s bungalows, for which Concord is noted. The Drive has special significance as the alignment of the original entry to the Walker family's Yaralla estate.

The inclusion of subtle bends in the streetscape and of street planting adds to the distinctive qualities of this Conservation Area.

Analysis - Setting

The Yaralla Estate Conservation Area has long streetscapes of wide streets with subtle bends. Street plantings add to the amenity of the residential streets.

Scale

Single storey housing dominates the residential development in this conservation area. Two storey commercial development and flats facing Concord Road reflect the importance of that road as a main traffic route.

Form

The Inter-War California Bungalow style with its strong gabled form dominates this conservation area. Verandahs on the front of the house provide depth to the street facades. Later housing has a similar scale with verandahs incorporated below hipped roof forms.

Siting

Housing in the Yaralla Conservation Area has regular front setbacks from the streets. Most houses include a wide setback to one side to allow for vehicular access. This provides space between houses and helps reinforce the rhythm in the streetscape.

CITY OF CANADA BAY

Development Control Plan

Appendix 1

Conservation Areas

Materials and Colours

Face brickwork trimmed with render below terracotta or slate roofs is almost uniform in the Yaralla Conservation Area.

Doors and Windows

Windows are usually timber casement sashes in groups of two or three, often with horizontal sun hoods. Later houses have groups of double hung windows, sometimes in a chamfered bay. Doors are often glazed and sometimes are paired.

Carparking

Garages and carports are usually set well back from the front building alignment.

Fencing

Original fencing is usually low brick panels between brick piers. Metal rails or wrought metal panels are sometimes used between piers.

Landscape Elements including Paving and Driveways

Street trees are important in this conservation area. Front gardens are usually dominated by lawn with low plantings of shrubs to provide interest.

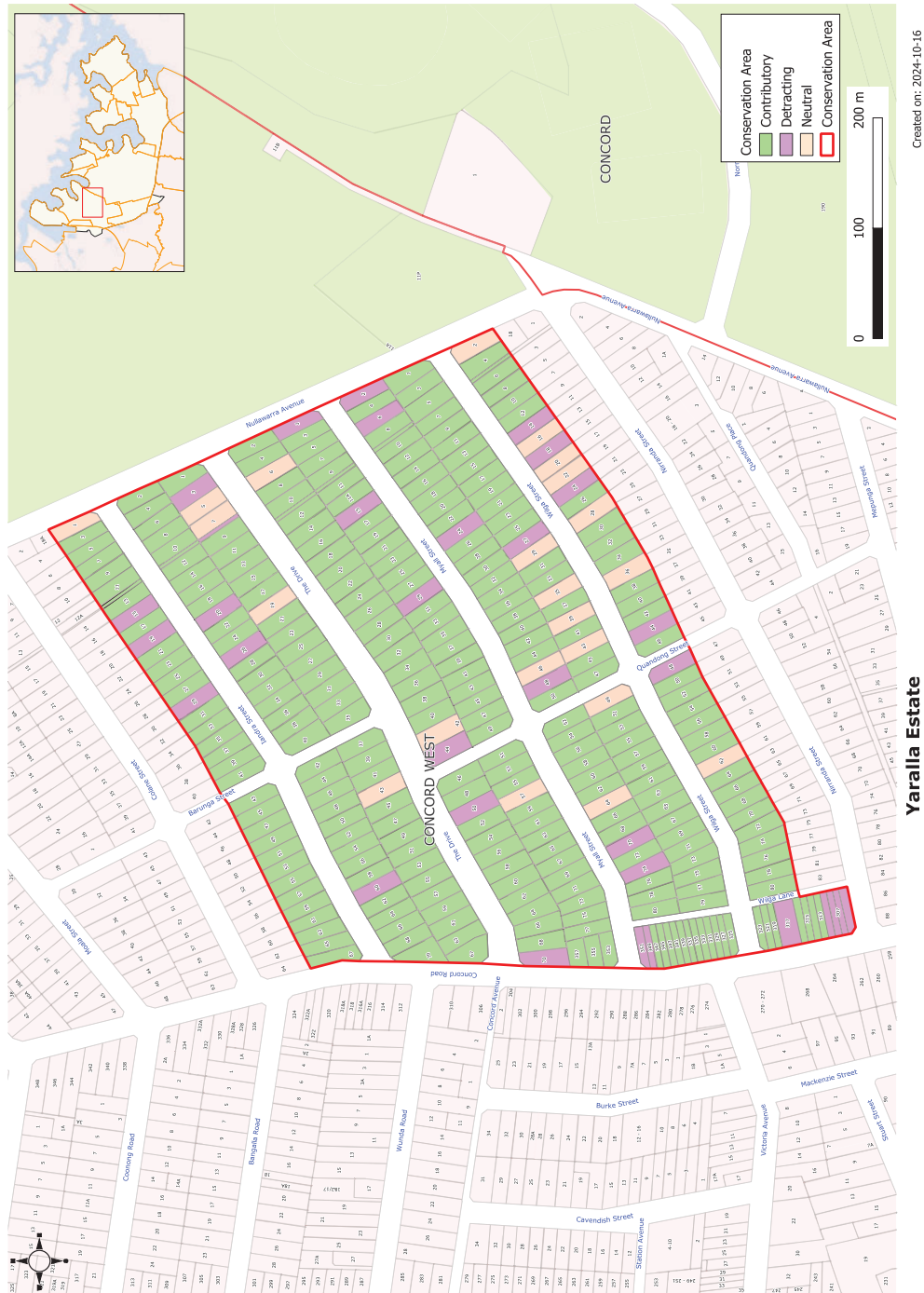
Refer to Figure App1.26

CITY OF CANADA BAY

Development Control Plan

Appendix 1

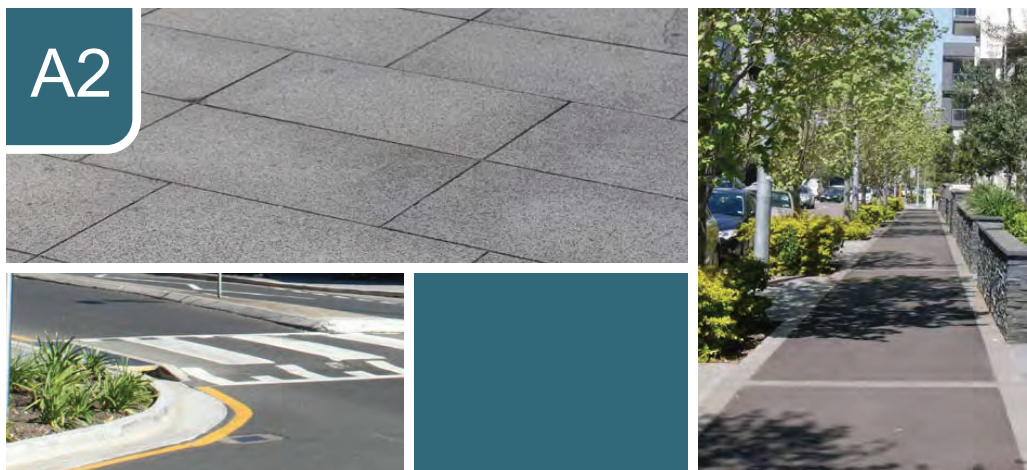
Conservation Areas



Created on: 2024-10-16

Figure App1.26 Yaralla Estate Conservation Area

A2



APPENDIX 2 - ENGINEERING SPECIFICATIONS

ES1 Road and Footpath Works	A2-2
Footway	A2-3
Footpath	A2-5
Kerb and Gutter	A2-7
Road Carriageway	A2-8
Ancillaries	A2-9
ES2 Vehicular Access	A2-12
Statutory and Design Requirements	A2-12
ES3 Stormwater Management	A2-21
On-site Stormwater Detention Systems	A2-24
On-site Stormwater Absorption Systems	A2-33
Charged Systems	A2-34
Mechanical Pump-out Systems	A2-36
Scouring, Erosion and Water Quality Control	A2-38
Rainwater Re-use	A2-40
Stormwater Drainage Design	A2-41
Stormwater Pollution and Erosion Control	A2-54
Water Sensitive Urban Design	A2-55
Document Submission	A2-57
ES4 Appendices	A2-62
Terms of Positive Covenant	A2-62
Restriction on the Use of Land	A2-65
Rhodes Peninsula Site Specific Requirements	A2-67
Strathfield Triangle Site Specific Requirements	A2-70
Flow Charts Rainwater Reuse	A2-71
Stormwater Management Type 2 Developments	A2-72
Stormwater Management Type 3 to 9 Developments	A2-73
Driveway and Ancillary Works	A2-74
Standard Engineering Drawings	A2-75

CITY OF CANADA BAY

Development Control Plan Appendix 2 Engineering Specifications

ES1 Road and Footpath Works

Objectives

- O1 Engineering Standards - To provide adequate engineering standards for public domain areas, public road reserves and private access roads.
- O2 Uniformity - To ensure that there is a benefit to the public resulting from developments and the result is that the public is catered for by uniform infrastructure. Such infrastructure includes the road carriageway, footway, footpath, pavement, kerb and gutter, street trees, utility services, ancillaries and the like.

Definitions

- D1 Components - The road reserve is defined by the following components:
 - Footway - the section of land between the kerb face and the property boundary
 - Footpath - the section of pavement within the footway dedicated for pedestrian and/or bicycle access
 - Kerb and gutter - the separation or interface between the footway and vehicular (road) carriageway
 - Road carriageway - the section of land dedicated for vehicular traffic
 - Ancillary items - any stormwater drainage asset, road/street furniture, edging, lighting, poles, services, signage etc., that forms part of the road reserve
- D2 Significant Developments - Major commercial and industrial developments, developments which occupy more than three sites across a street frontage, three or more allotment sub-divisions would be considered as "significant developments".

Controls

- C1 Requirements - All development involving demolition and/or construction will be required to satisfy the requirements of this Engineering Specification.
- C2 Footway Area Minimum Standards - The footway area shall be reconstructed to satisfy the following minimum standards.

Development	Requirement
1. Demolition only	Repair/ reinstate damaged areas not reported in the Damage Report Form or Dilapidation Report
2. Alterations and additions	Repair/ reinstate damaged areas not reported in the Damage Report Form or Dilapidation Report
3. New dwelling with existing footpath along frontage	Repair/ reinstate damaged areas not reported in the Damage Report Form or Dilapidation Report
4. New dwelling with no existing footpath	Repair/reinstate damaged areas not reported in the Damage Report Form or Dilapidation Report. Construct new footpath
4a. Dual Occupancy (duplexes, town homes, etc.) with no existing footpath	Repair/ reinstate damaged areas not reported in the Damage Report Form or Dilapidation Report. Construct new footpath
5. Residential Flat Building, commercial and mixed developments	Repair/ reinstate damaged areas not reported in the Damage Report Form or Dilapidation Report. Construct new footpath
6. Development under SEPP (Housing) 2021	Repair/reinstate damaged areas not reported in the Damage Report Form or Dilapidation Report. Construct new or reconstruct existing footpath from site to nearest transport facility to AS1428.1 compliance
7. Significant Development other than those listed herewith	Construct new footway, footpath, road carriageway and ancillaries
8. Subdivision of one into two allotments	Repair/ reinstate damaged areas not reported in the Damage Report Form or Dilapidation Report. Construct new footpath, ancillaries and access road/s
9. 'Greenfields' site, subdivision of more than two allotments	Construct new footway, footpath, road carriageway and ancillaries. Construct access road/s. For Rhodes Peninsular Developments refer to Appendix 5F for additional requirements

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

Footway

Re-grading the grassed verge within Footway

- FW1 Footway Re-grading** - The grassed verge within the footway is to be re-graded across the entire property frontage, for development types 7, 8, and 9, and in the following circumstances regardless of the development type:
- Grassed verge has cross-fall of more than 5% (1 vertical: 20 horizontal).
 - Matching in with constructed and existing driveway/s.
 - Existing grassed verge is difficult (undulating) for pedestrians to negotiate.
 - The construction of a vehicular crossing into the site results in unreasonable undulations in the footway or steep level changes.
 - The construction of a footpath pavement and/or re-alignment of the road carriageway require the footway to be raised or lowered to match.
 - Access difficulties for both pedestrian and vehicular traffic would occur without adjustment of the verge.
 - Walls and fences within the property boundary must match in with the new levels.

Minimum Footway Design Requirements

- FW2 Constraints** - When adjusting footway levels, factors such as the levels of adjoining properties, the degree of pedestrian usage, existing trees, rock outcrops and other physical features and the alignment of existing road, must be taken into consideration.

- FW3 Minimum Design Criteria** - The minimum design criteria are set out as follows:

- The longitudinal gradient of new footways shall not exceed 10%.
- The longitudinal change in gradient along footways shall not be greater than 1 in 10 with a minimum ease of 4.0 metres.
- A concrete footpath shall be constructed along the entire section of new footways.
- Where it is necessary to raise or lower the section of footway at the front of properties, the adjoining sections shall be re-graded to provide a smooth transition to the new levels.
- The construction of steps is generally not permitted unless the footway transition will extend more than 5.0 metres beyond the property frontage along the footway in order to achieve smooth transition.
- Where a footpath is to be installed and its longitudinal gradient exceeds 10%, over a distance of not less than 5.0 metres, steps may be installed subject to Council's approval.
- Grassed footway cross-fall shall be graded at 10% adjacent to the property boundary, where there is no formal or concrete footpath. The grassed verge near the kerb side shall not have a cross fall exceeding 5%. The absolute minimum footway cross-fall shall be at 1.0% (for grassed surfaces only). A footpath shall be constructed at all times. The footway shall be graded such that there will be no localised depressions which may cause water to pond or to allow the concentration of stormwater or directing stormwater into private property/s or creates a step or height difference which makes it difficult for the 85th percentile vehicle (B85) to open its doors on the verge side.
- Where access to properties is affected by re-grading of the footway, all work necessary must be done to ensure that satisfactory pedestrian and vehicular access is provided. This may necessitate transitions within the development. Where works are required on adjoining property/s, such as driveway adjustments, written consent from the property owner/s must be obtained.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

Footway Material

- FW4 Material - Material to be used for filling of the footway shall be a minimum 75mm thick DGB20 or clean fill consisting of granular material free of vegetation, stumps, roots, rubbish, construction waste and other deleterious material.
- FW5 Rock Excavation - Where excavation is in rock, the rock shall be removed to a depth of 300mm below the finished surface level and replaced with clean fill.
- FW6 Topsoil - Minimum 100mm thick layer of topsoil shall be placed over the footway. Topsoil shall not contain more than 40% clay content. Clods in the topsoil shall not be greater than 50mm in diameter.
- FW7 Ground Cover - The footway shall be protected with couch, kikuyu or buffalo or other types of ground cover to match the existing surface type which provides good protection from surface erosion.
- FW8 Ground Cover Maintenance - The ground cover shall be maintained by the Developer for a minimum two (2) months after placement or laying.
- FW9 Developer Responsibilities - The Developer shall be responsible, at his expense, for the replacement of dead ground cover during the first two (2) month period after placement.
- FW10 Footway Acceptability - The footway will not be considered satisfactory if:
- The finished level of the footway adjacent to the kerb is below the top of the kerb or edging.
 - There is a step-down or uneven transition from any foot paving or driveway crossing to the finished level of the footway.
 - There are localised depressions in the footway which would cause the ponding of water or the concentration of stormwater runoff.
 - There are areas of eroded or dead ground cover.

Footway within Private Property

- FW11 Requirements of Footways - Generally footways for private access roads are not required unless access into the property/s, for example, as part of land subdivision including community title subdivision, requires the construction of an access road where its length exceeds 30 metres and no other safe access is made available for pedestrian thoroughfare.
- FW12 Width of Footways - Where a footway is required, the width of the footway shall not be less than 1.2 metres with service corridor/s located within the footway area in accordance with the Streets Opening Co-ordination Council Guidelines.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

Footpath

Where Footpaths Required

- FP1 New Concrete Footpath - Full concrete footpath construction is required across the entire property frontage for development types 4, 4a, 5, 6, 7, 8, and 9 and beyond the development frontage for development type 6.
- FP2 Footpath Reconstruction - Full sections of footpath are to be reconstructed for development Type 3 to Type 9. Types 1 and 2, replacing broken pavements to ensure safety for pedestrian thoroughfare.

Footpath Minimum Widths

- FP3 Minimum Widths - Minimum footpath pavement widths are given in the following table.

Development type	Minimum Width (metres)
1, 2	Width to match existing but not less than 1.2m unless constrained by site conditions such as footway width being less than 1.2m
3, 4, 4a	1.2
5, 6, 7, 8 and 9	2.0
Regardless of above development type, the footpath is a shared route	Width as per Aust Roads Guidelines

Footpath Design Requirements

- FP4 Construction Material - All footpath pavements are to be constructed in plain full concrete. Pavers, bitumen, patterned concrete, coloured concrete, any other form of cosmetic treatment of concrete pavement or a combination of pavement types is not acceptable unless it has been approved as part of the streetscape planning of the area or the pavement is a replacement of an existing slab of similar material, pattern or colour.
- FP5 Footpath Cross fall - Footpath pavement cross-fall shall be a minimum of 1.0% and a maximum of 2.5% (1 in 40 for disabled access) or absolute maximum 5.0% (where disabled access is not required).

- FP6 Grading of Footpaths - Footpath cross-falls shall be graded away from the property boundary, towards the kerb and gutter or to an approved drainage system. Cross-fall must not be graded into private property/s.
- FP7 Concrete Minimum Strength - The minimum concrete strength shall be 25 MPa at 28 days and 80mm slump in accordance with **AS3600 – 1994, Concrete Structures Code**.
- FP8 Concrete Thicknesses - Concrete shall be installed at the minimum uniform thicknesses as given in the table below (except where footpath is across driveways, in which case, it shall be the same thickness as the driveway slab). Concrete footpath shall be laid on a minimum 100mm thick road base (compacted to minimum 98% maximum dry density) or 50mm thick and well compacted sand (compacted to a density index of not less than 65%).

Footpath Width (metres)	Slab Thickness (mm)
1.2 to 1.5	100
1.5 to 2.5	130
> 2.5	150

- FP9 Sub-Grade - The sub-grade shall be compacted and checked for uniformity and all irregularities made good prior to the pouring of concrete.
- FP10 Finish - The concrete shall be coving trowel finished only. All edges shall be rounded with a 75mm edging tool, with a 5mm radius.
- FP11 Joint Material - Contraction/expansion or construction joints shall be formed from 10mm thick compressible bituminous cork filler board (mastic jointing material).

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

FP12 Joint Installation - Contraction/expansion joints shall be installed at the full depth of the slab at each side of vehicular crossing slabs, against concrete structures and at intervals given in table below.

Width of Slab (metres)	Distance C/E Joints (metres)
1.5	4.5
2.0	6.0
3.0	9.0
3.5	10.5

FP13 Weakened Plane Joints - Weakened plane joints shall be 3mm wide and formed at intervals as given in the table below except for integral kerbs where they are to match joint locations in the slab.

Width of Slab (metres)	Distance WP Joints (metres)
1.5	1.5
2.0	2.0
3.0	3.0
3.5	3.5

FP14 Concrete Curing - Concrete shall be subjected to a curing process for a minimum of seven (7) days. In the event of any damage or an unsatisfactory finish of the slab, replacement shall be carried out at the expense of the Developer at no cost to Council.

The footpath slab must have a minimum thickness of 100mm. For footpaths with a width greater than or equal to 1.5 metres but less than or equal to 2.5 metres, the minimum slab thickness is 130mm, and SL72 reinforcement is required. Footpath with a width greater than 2.5 metres will require a slab thickness of 150mm and SL82 reinforcement. Reinforcement is to be centrally placed within the slab.

Location of Footpaths within the Footway

- FP15 Footpath Location - New footpaths shall be abutted against the property boundary or in the same alignment or continuation of the existing footpath or as deemed appropriate by Council's Asset Engineer, where no existing footpath is present. For reconstruction of existing footpaths, the same location as the adjoining footpath.
- FP16 Extension of Footpath - If the installation of a footpath results in the grassed verge to be less than 600mm in width, then the footpath shall be extended for the full width of the footway, that is, the concrete footpath shall be constructed from the edge of the property boundary to the back of kerb.

Signage

- FP17 Signage - Where footpath is to be used for both pedestrians and cyclists, adequate signage shall be installed at the commencement of the footpath indicating that the footpath is for shared pedestrian and bicycle usage.
- FP18 Signage Location - Signage shall be provided both on stems and painted onto the pavement at the appropriate locations, in accordance with the Aust Roads Bicycle Design Guidelines.
- FP19 Signage Clearance - Signage stems shall have at least 600mm clearance from the face of kerb.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

Kerb and Gutter

Where Kerb and Gutter is Required

- KG1 Kerb and Gutter Requirement - Regardless of the development type, kerb and gutter shall be constructed in the following circumstances:
- The proposed works includes the reconstruction or construction of an existing road or new road for access.
 - Kerb and gutter along an existing paved carriageway servicing the development is in an unsatisfactory condition or at unacceptable or non-standard level. For example, kerb height is more than 150mm or less than 150mm.
 - Kerb and gutter along an existing paved carriageway servicing the development does not exist.
 - Kerb and gutter along the property frontage is in an unsatisfactory condition or at unacceptable or non-standard levels.
 - Kerb and gutter along the property frontage does not exist.
 - The construction of kerb and gutter provides protection to the property/s from the inflow of stormwater off a public road or reserve.
 - The construction of kerb and gutter would prevent the likely erosion of the road shoulder as a result of vehicular and/or pedestrian traffic outside the proposed development.
 - Kerb and gutter is to be reconstructed as part of the footway and/or carriageway reconstruction.

Minimum Design Standards

- KG2 Minimum Design Criteria - Kerb and gutter shall be constructed to the following criteria:
- The minimum longitudinal gradient along the gutter shall be at 1%, where practical.
 - Cross fall from the centreline of the road to the invert of the gutter shall be at 3%.
 - The road maximum cross fall from the centre line of the road to the shoulder shall not exceed 5%.
 - The proposed kerb and gutter shall match in with existing kerb and gutter.
 - A section of not less than 1.0 metre of the existing kerb and gutter need to be reconstructed to ensure that there is a smooth transition between new and old works.
 - Existing crossovers and drainage outlets affected by the proposed works shall be replaced and extended to the new kerb face.
 - Kerb and gutter refer to standard 150mm high concrete kerb with integral gutter.
 - Other types of edge treatment such as rolled kerb and gutter, mountable kerb and gutter, dish crossing, sandstone blocks or brick kerbs may be used if it has been approved as part of the streetscape planning of the area or the edging type is a replacement of an existing material, pattern or colour.
 - Kerb only is not to be used where the cross fall of the road diverts stormwater to the kerb.
 - Kerb and gutter shall have tool joint at 3.0m intervals and mastic joints at 12.0m intervals.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

Road Carriageway

General

- R1 Reference - The road carriageway refers to the section of the road reserve dedicated for vehicular traffic flow. This includes any private access roads (e.g. rights-of-way).

When road carriageway is to be reconstructed

- R2 Carriageway Construction - The road carriageway is to be reconstructed in the following situations:
- Half road reconstruction for development type 7 and full road construction for development types 8 and 9.
 - Regardless of the development type, a Damage or Dilapidation Report confirms that the road has been significantly damaged as part of the development or is in very poor condition or failure at the time of construction/development, half road reconstruction will be required.
 - Regardless of the development type, the existing road carriageway outside the property frontage is at a cross fall which results in the scraping of vehicles when a vehicular crossing has been installed for the property.
- Full road slab construction will be required for local road concrete pavements to Council's standard concrete road pavement specification.

Road carriageway construction

- R3 Cross-fall - Construction of the road carriageway is to have the following cross-falls:
- Cross-fall to be graded from the centre or crown of the carriageway to the gutter.
 - One-way cross-falls may only be permitted for narrow roads and one-way trafficked carriageways of less than 5.0 metres in width.
 - Offset crowns are not acceptable.
 - Super-elevation is not normally provided but shall be a maximum of 6% at bends.
 - The minimum cross-fall for asphaltic concrete carriageway pavement shall be 2.5% to 3% (with absolute maximum of 5%).
- R4 Longitudinal Gradient - Longitudinal gradient of the road carriageway shall be as follows:
- For bitumen pavements, the minimum longitudinal gradient of the road carriageway shall be 1%.
 - For concrete pavements, an absolute minimum fall of 0.5% is allowed, construction accuracy permitting.
 - For all pavement types, the general maximum longitudinal gradient shall be 12.5% for residential (local) roads. For other road classification, in accordance with the Aust Roads Pavement Design Manual.
 - For all pavement types, the general maximum longitudinal gradient shall be 8.5% for local distributor roads.
 - An absolute maximum longitudinal gradient of 16% may be permitted depending on adequate sight distance of vertical curves.
- R5 Matching in with Existing - The proposed road pavement shall match in with the existing pavement with regard to adequate vertical eases and horizontal transitions. This may require the reconstruction of a portion of the existing road pavement to match in smoothly with the new works.
- Where reconstruction of existing road way is proposed, a pavement design shall be undertaken to Council's satisfaction based on geotechnical investigation.
 - For all road rectification works, treatment types shall be submitted to Council for approval prior to implementation.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

- R6 Where reconstruction of existing road way is proposed, a pavement design shall be undertaken to Council's satisfaction based on geotechnical investigation.
- R7 For all road rectification works, treatment types shall be submitted to Council for approval prior to implementation.
- R8 Pavement Design Standard – All Road Pavements shall be constructed as a rigid road pavement comprising:
- Road pavement constructed in concrete shall be minimum 50MPa compressive strength at 250mm uniform thickness with two layers of reinforcement fabric (SL82) top and bottom 50mm cover over a 150mm lean mix concrete of 5MPa compressive strength.
 - Verification of sub-grade suitability shall require submission of a geotechnical report with relevant core sampling tested and reported.

Ancillaries

Pedestrian Crossing Ramps

- A1 Location - Pedestrian crossing ramps shall be constructed at each kerb return opposite the extension of the main footpath and in the kerb opposite the extension of a public pathway.
- A2 Design and Installation - Pedestrian crossing ramps shall be designed and installed as per AS1428.2.
- A3 Raised Tactile Pavers - Raised tactile pavers shall be installed on pedestrian ramps located in high pedestrian environments such as town centres and positioned as per AS1428.2.
- A4 Tactile Paver Material and Colour - Raised tactile pavers shall be of grey coloured concrete or black coloured polyurethane type material or as specified as part of the streetscape planning for the area or the tactile paver is a replacement of an existing paving of similar material, pattern or colour.

Vehicle Crossings and Laybacks

- A5 Minimum Standards - The minimum standards for the construction of driveways and laybacks across the footway are provided in Section ES2 Vehicular Access.

Stormwater drainage

- A6 Installation of Piped Drainage - For development types 7, 8, and 9, piped stormwater drainage must be installed to cater for at least the minor system flows as described in Section ES3 Stormwater Management.
- A7 Minimum Standard - The minimum standards for stormwater drainage system design are given in Section ES3 Stormwater Management.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

Traffic Calming Devices

- A8 Minimum Standards - Traffic calming devices such as thresholds, slow points, speed humps, chicanes, and the like are to be designed in accordance with ***Aust Roads Guide to Traffic Engineering Practice, Part 10, Local Area Traffic Management.***

Steps

- A9 When Steps Required - Steps should be avoided whenever possible. However where necessary, they shall be installed along all pedestrian-only footpaths where the longitudinal gradient of the pathway is sufficiently steep to warrant its installation or that the installation of a transition ramp cannot be extended adequately to achieve a smooth transition due to site constraints. "Steepness" is measured in accordance with the Building Code of Australia requirements or as determined by Council's Asset Engineer, where BCA requirements cannot be met.
- Steps are also to be installed where the longitudinal gradient of the footpath exceeds 1 in 4, over a distance of not less than 5.0 metres.
- A10 Material - Steps shall be constructed in reinforced concrete, pre-cast units or prefabricated metal and supported on-ground and are to be painted in highly visible paint to delineate change in height. Suspended types are not preferred.
- A11 Preference of Ramps over Steps - Ramps are favoured over steps whenever possible. To permit access for disabled persons, steps are considered as a last resort and only when ramps cannot be installed to comply with the disabled access code due to physical constraints.
- A12 Handrails - Where the level change between the steps and/or footpath and the adjoining surface level, at a distance of 1.5 metres or less, exceeds 500mm, handrails are to be installed. Handrails are to be designed in accordance with **AS1428.2.**

Utility services

- A13 Satisfactory Provision of Services - Satisfactory arrangements for sewer, water, gas, electricity and telecommunication services must be provided for all developments including "greenfield" sites and land subdivisions.
- A14 Approval - Approval will not be granted unless satisfactory service provisions can be provided.
- A Section 73 Certificate under the Sydney Water Act 1994 must be obtained for "greenfield" sites and new land subdivisions. This Certificate must be provided prior to the release of the Subdivision or Occupation Certificate.
- A15 Provision of Electricity Services - Direct access to electricity supply must be provided for all "greenfield" sites and new land subdivisions. New electrical sub-stations, generators, kiosks, and turrets servicing the development must be located wholly within the property boundary. New electrical sub-stations, generators, kiosks and turrets must not be located on public land.
- A16 Undergrounding of Electrical Services - Development types 7, 8 and 9 including "greenfield" sites and new land subdivisions must have electricity supply provided underground. Including public domain areas, existing overhead power lines are to be re-installed as underground cables.
- A17 Light pole and Power pole and vehicular crossing - A minimum of 300mm clearance between the face of the pole to the edge of vehicular crossing and the face of the kerb, unless specified otherwise by Council.
- A18 Gas Services - Reticulated gas supply, where available and allowable, shall be provided for all "greenfield" sites and new land subdivisions.
- A19 Certification - A Compliance Certificate from each utility service authority must be provided certifying that its requirements for the satisfactory provision of the service have been met before release of Subdivision or Occupation Certificate.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

- A20 Dedicated Service Corridor - For "greenfield" sites and new land subdivisions, a dedicated service corridor, conduit and easement shall be provided to service each allotment created.
- A21 Relocation of Services - If, as part of the proposed development, mains, services and poles need to be relocated, it shall be carried out at the Applicant's expense to the satisfaction of Council and the relevant utility authority, as required.
- A22 Developers' Responsibility - It is the responsibility of the Developer to ensure that all care has been exercised to prevent damage to any public utility, e.g. gas, water, sewerage, electricity and telecommunication. The Applicant will be responsible for any damage caused by him or his agents, either directly or indirectly.
- A23 House Service Alterations - Alterations to house services shall be carried out only by qualified tradesperson.
- A24 Location of Utility Services -The locations and depths of utility services under a road reserve shall be installed in accordance with the latest revision of Guide to Codes and Practices for Streets Opening prepared by New South Wales Streets Opening Coordination Council resolution.
- A25 Liaising with Relevant Utility Service Authorities - In particular relation to "greenfield" sites, new land subdivisions, and where a new or existing public road is to be reconstructed or constructed, the Developer must liaise with the relevant authority, arrange and pay all costs and fees associated with providing street lighting, underground electrical power, telecommunication services, and adjustment of surface fittings, pits, etc. affected by the propose works.
- A26 Engineering Plans - All underground services and services in general must be detailed on engineering plans, submitted and approved by Council prior to development approval.
- A27 Public domain lighting – All public light shall be designed and constructed to the requirements and specification of the City of Canada Bay Council.

Street Trees and Landscaping

- A28 Installation of Street Trees - Street trees are to be installed across the entire property frontage, for development types 7, 8, and 9 and where the footway and road is to be reconstructed regardless of the development type.
- A29 Suitable Species - Council's Landscape Architect is to be consulted in regards to suitable plant species.
- A30 Location - Street trees are to be planted at an offset distance of not less than 600mm from the face of kerb to the centre of the tree. Trees are to be planted at the distances tabulated below.

Location	Distance (metres)
From any road intersection (tangent point/kerb return)	10
Between tree centres	6
From the top of driveway wings	2
From signs, posts	1
Street Lighting Poles	10

- A31 Edging - For concrete pavements, no timber edging is required around the landscape islands. For surface types other than concrete pavements (e.g. turf or bitumen), the perimeter edging around the landscape island, shall be timber 30mm wide by 100mm deep. Landscape islands shall be square in shape, 1200mm wide by 1200mm long.
- A32 Bedding Material - For concrete pavements, bedding material shall be "arboresin" or equivalent. For bitumen pavements or grassed areas, bedding material shall be mulch. Colour shall be as specified by Council's Landscape Architect at the lodgement of the Development Application (DA).
- A33 Submission of Detailed Landscape Plans - Detailed landscape plans are to be submitted and approved by Council prior to development consent.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

ES2 Vehicular Access

Objectives

- V1 Uniformity - To ensure uniformity in the design and construction of vehicular crossings in the City of Canada Bay Local Government Area.
- V2 Safe and Convenient Access - To ensure that safe and convenient vehicular access can be provided to and from parking spaces for all properties.

Definitions

- V3 General - Vehicular access or driveway crossing refers to the formal access for vehicles (85th percentile vehicle in accordance with AS/ **NZS2890.1:2004 Off Street Car Parking Code**).
- V4 Formal Access - Driveway refers to the formal platform between the kerb line and the property boundary by which vehicular access is provided.
- V5 Exclusions - In this Section, vehicular access does not include internal access roads, (both vehicular and pedestrian access) within the property boundary, suspended structures and the like, which would be assessed separately on its merits and will require separate Development Application (DA) approval.
- V6 Ancillary Works (Minor) - Ancillary works (Minor) refers to any works other than vehicular crossings and laybacks, such as footpath, kerb, ramp construction or reconstruction, stormwater drainage connection (Road Opening Permit for stormwater connection is required), and the like within the road reserve. These works could be undertaken in conjunction with or separately from vehicular crossing and footpath construction.
- V7 Ancillary Works (Major) – Ancillary works (Major) refers to any works other than Ancillary Works (Minor), such as stormwater connection to the street underground drainage system, construction and reconstruction of pipes, pits and kerb lintels, as well as pavement within the road reserve. These works necessitate a separate application and consent under Civil Works in the Public Domain Application.

Application

- V8 Applications to Council for the location and construction of a vehicular crossing or ancillary works must be submitted.
No construction work will be permitted until formal written consent is obtained from Council following the submission of the Application. An application for Vehicular Crossing Construction and Ancillary Works must be submitted and consented to by Council for all proposed construction and reconstruction of vehicular access, and this applies to:
 - All Developments Applications involving residential, commercial, and industrial development,
 - All Complying Development Certificate application, and
 - Where a stand alone formal crossing(s) or cross-over (layback) is proposed.
- V9 Consultation - Prior to the lodgement of a Vehicular Crossing Application, please ensure that:
 - The Applicant has consulted with Council's Planning Section, in regard to heritage, trees, LEP and DCP matters and has been given advice that a driveway/vehicular crossing at the specified location is permissible; and that
 - The Applicant has read this Specification and is fully aware of any limitations and/or constraints, which may preclude the approval of a driveway.

Statutory and Design Requirements

Persons who can undertake Construction

- V10 Approved Persons - Vehicle crossings can be constructed by either Council's Construction Team or a Private Contractor, to ensure that works are built to a reasonable standard and uniformity.

Property owners may appoint their own Private Contractor to construct the driveway. However, to ensure that the quality of the work is maintained and public safety is not compromised, the nominated Contractor must have extensive experience in concrete works especially in the construction of vehicle crossings with current public liability insurance cover and must be approved by Council.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

A Private Contractor, nominated by the Property Owner, may be approved by Council to carry out the works following submission of the following:

- A copy of the current public liability insurance is provided to Council. The insurance cover shall be for a sum not less than \$A20,000,000 for a period of six (6) months, and nominating on the policy the City of Canada Bay Council as indemnifying them against public risk claims, arising during the construction of the crossing or as a result of the construction of the crossing;
- A copy of the Contractor's current concrete license and record of previous work are provided to Council; and
- A Security Deposit is paid to Council by the Contractor, as set down in Council's Fees and Charges lodged prior to any works commencing. This Deposit is refundable upon satisfactory completion of the works, at the discretion of Council.
- An additional non-refundable administration fee, as set down in Council's Fees and Charges shall also be paid. This fee covers the processing of the driveway application and three (3) site inspections. Note this fee applies to each driveway applied for per property. If more than one driveway is to be constructed, the same fee must be paid for any additional driveway to be processed.

If all of the above requirements are not satisfied, the application may be rejected and a further fee (10% of the Security Deposit) will be required before reconsideration.

For ancillary works such as the construction of a concrete footpath, an administration fee is payable. A refundable deposit is also required.

Issuing Driveway Levels

- V11 Written Permission - No work shall commence without written permission from Council.

The Contractor is to submit a driveway design appropriate for the site, complying with AS/NZS2890.1:2004. This design must be approved by Council in writing before any construction can be carried out.

In exceptional circumstances, e.g. due to omission of information on the part of the applicant and notwithstanding the above advice,

Council may consider that the construction of a driveway at the proposed location or site is inappropriate or impractical. The Applicant will then be advised accordingly and all but \$A50 will be refunded.

Supervision and Inspections

- V12 Supervision - Works are to be carried out in accordance with this document, relevant Council Specifications and Australian standards.

No work is to be carried out except under the supervision and approval of Council or its nominated representative.

Council shall meet with the nominated Contractor and/or Owner to carry out mandatory inspections for the purpose of:

- Formwork inspection - at least forty-eight (48) hours notice must be given for checking timbering for alignment, reinforcement placement, level and stability and sub-grade preparation.
- Final inspection - the Owner or Contractor shall notify Council for a Final inspection once the concrete has been poured and finished, formwork removed and area restored. At least twenty-four (24) hours notice must be given.

To arrange for appropriate inspection times, bookings shall be made through Council's Customer Service Section.

If more inspections are required above the mandatory inspections due to any omission or unsatisfactory work, including the storage of materials, insufficient barricading and site safety, on the part of the owner or contractor, or remedial actions that Council deems necessary to achieve compliance, an additional fee shall be charged, as defined in Council's Fees and Charges Schedule.

Final Approval

- V13 Notification in Writing - Council will notify the owner in writing of the Final Approval of the work. Any defects found during the Final Inspection must be remedied. This is the responsibility of the owner and therefore it is advised that final payment not be made to the Contractor until such approval has been received.

Once the driveway is completed and Council is satisfied with the works, a refund of the crossing bond can be arranged. The Applicant shall apply in writing to Council.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

Adjustments to Utility Services

- V14 Service Alterations - Any alteration, which may be necessary, for the construction of the vehicle crossing, to any water, sewer, gas, electricity, telecommunication, stormwater system, and other utility services is to be arranged by the contractor with the relevant utility authority.
- V15 Protective Box Adjustments - The protective boxes over any hydrant, gas cocks, stop valves, sewer lines, and the like shall be adjusted by the contractor, in consultation with the relevant utility authority, so that they are flush with the finished surface.
- V16 Physical Location - The contractor is responsible for the physical location of all utility services likely to affect the proposed works. The contractor is liable for any damage to service utilities. The contractor is required to contact "Dial before you dig" (ph 1100) before any work commencing.
- V17 Associated Costs - Any cost incurred as part of the adjustment will be borne by the owner.
- V18 Conflicts with Stormwater Conduits - Where an existing or proposed house stormwater pipe traverses the proposed driveway crossing, and there is insufficient cover over the pipe, the section of pipe shall be converted to a galvanised steel 125 x 75 x 5 or 200 x 100 x 6 rectangular hollow section (RHS) across the footpath, to achieve adequate cover. Alternatively, relocate the pipe, where possible, away from the driveway and in the direction which allows adequate drainage

Road Design Affecting Driveway Levels

- V19 Proposed Design - Where a proposed design has been prepared by Council to alter the carriageway and/or footpath fronting the property concerned, the driveway works shall be carried out in conformity with the proposed design. Information for this purpose shall be supplied by Council or its representative.
- V20 Proposal to Modify Street Levels - Where Council has a proposal to modify the area at the front of the property but a proposed design has not yet been prepared, the work shall be set out in accordance with the best available information and in accordance with this Document and any other relevant standards, on the understanding

that if Council should carry out future construction works to a proposed design, which may involve the alteration to part or whole of any of the constructed work, then a contribution may be payable had no work been carried out, will be levied and must be paid by the property owner, in accordance with the Roads Act, at the time when the Council proposed works are to be carried out.

Public Safety and Provision for Traffic

- V21 Pedestrian and Vehicle Safety - The contractor is responsible for the safe passage of pedestrian and vehicular traffic. During the progress of the works, all necessary warning notices, barricades and lights must be installed, in accordance with **AS1742.3-2009, Traffic control devices for works on roads**.

Where the works require traffic control, the contractor will be responsible for appropriate traffic control devices being put in place, including necessary lamp signage, maintenance and the like in accordance with **AS1742.3 - 2019**.

Where works are to be carried out on roads of a "Collector Road" status or higher, and obstruction to traffic is unavoidable, a Traffic Management Plan must be submitted with the application to Council, endorsed by the Police and relevant authorities e.g. Transport for NSW, for approval. This plan is to be prepared in compliance with **AS1742.3 - 2019**. A minimum notification period not less than ten (10) working days shall be provided prior to the commencement of works.

These ancillaries should be included in the total cost towards the works.

- V22 Liability - The contractor shall be liable for any accident, damage or injury to persons or property resulting from the work. In this regard, the Contractor must have appropriate and current public liability insurance to this effect.

Compliance with Other Regulations

- V23 Compliance - Works shall be carried out in compliance with The Clean Waters Act, The Roads Act, The Motor Traffic Act and the Occupational Health and Safety Act, and any other Acts as deemed relevant.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

Hours of Construction/ Demolition

- V24 Hours of Construction/Demolition - The hours of construction/demolition shall be restricted to 7:00am to 5:00pm, Mondays to Fridays and 8:00am to 1:00pm Saturdays, with a total exclusion of work on Sundays and Public Holidays.
- V25 Non-offensive Works - Non-offensive works, where power operated plant is not used such as setting out, surveying, plumbing, electrical installation, or site cleaning by hand shovel and site landscaping, is permitted between the hours of 1:00pm to 4:00pm Saturdays, at Council's approval.

Important Note: The Protection of the Environment Operations Act 1997 may preclude the operation of some equipment on site during these permitted working hours.

Preparation and Excavation

- V26 Minimum Excavation - The Contractor shall excavate to the full depth required for the specified thickness of the proposed crossing slab.
- In rock, clay or unstable foundation material, additional excavation shall be carried out and a sub-base of sand, or other approved material, to a minimum depth of 75mm consolidated thickness, shall be provided.
- V27 Compaction - The sub-grade or sub-base shall be adequately compacted to the required minimum depth of 150mm to the following requirements:
- Sands - density index of 70% in accordance with AS 1289.E3.1 where the compaction test is in accordance with AS 1289.E5.1.
 - Material other than sand - dry density rates in accordance with AS 1289.E4.1 of more than 95% where the compaction test is in accordance with AS 1289.E1.1 (standard).
- V28 Adjacent Surface - The surface adjacent to the proposed driveway shall be trimmed to conform generally to the levels and cross-fall similar to the adjoining area, free of trip hazard, unless otherwise instructed by Council's Engineer. This shall include lifting and resetting footpath lawns where necessary.

Driveway Dimensions and Alignment

- V29 Maximum Driveway Slab Widths - The width of any crossing to a property must be kept to a minimum. Excessively wide vehicle crossings will not be approved because it:
- compromises pedestrian safety by encouraging vehicles to cross the footway at greater speeds,
 - minimises the area for pedestrian refuge,
 - encourages illegal parking on the footway,
 - detracts from passive streetscape by increasing the amount of visible hard paving, and
 - reduces on-street parking spaces.

Refer to Part B3 of DCP for crossing and driveway widths.

- V30 Driveway Slabs for Commercial Premises - Commercial premises, properties requiring two-level entries, or where traffic is heavy (for example, the property frontage to a main road with heavy vehicular traffic movement); the above widths may be increased at Council's discretion. For example, service stations may be granted wider driveway widths based on swept vehicle paths and submission of a Traffic Report.
- V31 Wheel Strips - Wheel strips **are not acceptable** because they do not provide sufficient protection to the public footway. Constant wearing by vehicular traffic may cause rutting in the grass verge which compromises the safety of pedestrians using the footway.
- V32 Vehicle Crossings to be Perpendicular to Kerb Line - Vehicle crossings are to be constructed perpendicular to the kerb line. In special circumstances, to reduce disturbance to traffic flow along a major road, an angled driveway may be permitted subject to the approval of Council's Traffic Engineer.

CITY OF CANADA BAY

Development Control Plan | Appendix 2 | Engineering Specifications

Driveways off Narrow Roads

V33 Splays and Widened Driveways - Splays are not to be used. The maximum crossing slab width shall be 3.0 metres. Council does not encourage the construction of wide crossovers where it is unnecessary as it increases the risk to pedestrians and diminishes the opportunity for on-street parking.

Vehicle crossings are generally required to be constructed perpendicular to the kerb line. This encourages vehicles to slow down whilst entering properties.

In special circumstances, the driveway may be widened to prevent vehicles from driving onto the nature- strip or where safer access and egress can be provided.

Where the width of the road carriageway is less than 5.5 metres, the driveway may be permitted to be widened, subject to a check using a standard swept turning path of the 85th Percentile vehicle (B85).

Permitted Number of Driveways per Property

V34 A maximum of one (1) vehicle crossing for vehicle access is permitted per site. See Part B of DCP for further information.

Driveway Locations

V35 Prohibition - Access shall be located so that sight distances are not affected by existing structures such as street trees, earth mounds, bus shelters, and other physical features. Council may not approve the location of such an access if the location will adversely affect sight lines or detracts from the streetscape of the area.

Vehicle access will not be permitted at the following locations and circumstances:

- At Council's discretion
- Where the proposed vehicle access is likely to diminish on-street parking
- To a major road if reasonable access can be gained from another public road of lower classification
- Opposite or within 6.0 metres of a median opening in a major road

- Within 25.0 metres of a signalised intersection*
- Within 9.0 metres at non-signalised intersections*
- At localised depressions** ("sag" points)
- At the entrance into a basement or sub-floor level regardless of whether it is in a localised depression or not***

The above distances are measured perpendicular from the face of the kerb of the intersecting street (or prolongation of the kerb line or tangent point if curved).

***Important Note 1:** Access may be permitted provided that it can be demonstrated, to Council's satisfaction, that it is safe to do so and that extenuating circumstances exist, for example, where this is the only location where vehicular access can be gained.

****Important Note 2:** At sag locations in the road, if the proposed driveway could result in the driveway becoming a spillway for stormwater entry or stormwater ponding here, unless an appropriate hydraulic model (using either Manning's Equation or HEC-RAS, whichever being appropriate and based on the 1%AEP design storm) is used to determine the water surface profile to demonstrate that the driveway profile has a design crest which prevents stormwater from entering into the premises and/or that the stormwater runoff can be safely conveyed along a suitably designed overland flow path, then the driveway will not be approved.

*****Important Note 3:** All driveways to basement or sub-floor areas, whether it be located in a sag or not, will not be approved unless a catchment analysis for the 1%AEP design storm is undertaken to determine the stormwater runoff and then an appropriate hydraulic model (using either Manning's Equation or HEC-RAS, whichever being appropriate) is used to determine the water surface profile, to demonstrate that the proposed driveway will offer adequate protection from stormwater entering into the premises. Refer Section Overland Flow and Flood Studies for further details.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

V36 Minimum Length of Parking Bay - A driveway will not be permitted if the proposed parking space within the property between the boundary and building line is less than 5.5m in length, causing a parked vehicle to encroach onto the footway reserve.

V37 Sight Lines - Vehicle crossings shall be located so that minimum sight distances to traffic and pedestrians can be provided. Sight distance to pedestrians shall be met by providing clear sight lines in accordance with AS/NZS 2890.1 - **2004, Parking Facilities, Part 1: Off-street car parking.**

Vehicle crossings should also not be located where existing trees or power poles may obstruct sight lines or where it is too close to the root zone of trees. Similarly, the driveways shall not be located too close to power poles where undermining may occur.

V38 Removal of Obstructions - In certain situations, Council may grant approval for the removal or relocation of these structures, where there is no alternative location.

In this circumstance, approval must be sought from Council's relevant officers who may include Asset Engineer, Traffic Engineer, Tree Preservation Officer and Planners. All costs associated with such work shall be borne by the Owner.

V39 Stormwater Pits - All driveways must be clear of existing stormwater inlet pits. The removal or reduction in the length of the pit lintel or grating is not acceptable, as this would reduce the rate of stormwater collection. However, excluding existing pits located in a depression (sag), if the hydraulic characteristics of the drainage system are not made less efficient, the relocation of the pit may be permitted. In this circumstance Council will undertake the works of pit relocation or nominate an approved Contractor. All costs associated with the relocation of the pit shall be borne by the Owner.

V40 Street Trees - Driveways must not be located over or near trees to be retained. The minimum clearance to trees will depend on factors such as the proximity to the trees root zone and sight lines.

Existing Crossings

V41 Retention of Existing Crossings - Existing crossing slabs and laybacks may be re-utilised if:

- They are in the correct location, set at the correct levels and in reasonable condition, **and**
- its retention is NOT contrary to this Document.

V42 Removal of Existing Crossings - Existing crossings and layback must be removed, where the crossing slab and layback is made redundant. It shall be completely removed and the footway area and kerb/gutter restored to Council's satisfaction.

V43 Owner's Cost for Removal of Redundant Crossings - Any existing un-used crossing(s) and/or layback(s) must be removed and the kerb/gutter and footpath reinstated/restored at the owners expense to Council's satisfaction.

Driveway Levels and Gradients

V44 Design – The Applicant shall submit a detailed longitudinal driveway profile starting from the centerline of the roadway or the crown of the road including 2m from the lip of the gutter to the road pavement, which will show dimensions, levels and gradients, transition and headroom clearances for Council consent.

Note: Existing roadway levels (e.g., centreline or 2m from the lip line) shall not be assumed and shall be reflected on the survey plan prepared by a registered surveyor.

V45 Absolute Maximum Longitudinal Gradient - The absolute maximum longitudinal gradient of driveways shall not exceed 25% within the property and 10% in the footway (unless justification can be provided to vary these grades). Where the gradient exceeds 18%, a check is required using standard vehicle template (B85) to ensure that it does not scrape.

If a pedestrian footpath exists or is required, the gradient across the footway must not exceed 2.5% (1 in 40) where the footpath meets the driveway.

The location of the footpath is to match existing or 450mm offset from the property boundary or as directed by Council's Asset/Traffic Engineer if no footpath currently exists. It may be necessary to transition existing footpaths both sides of the driveway to align with the new driveway such that cross fall across the footpath is maintained at not more than 2.5% (3% absolute maximum). Driveways are to be graded to fall towards the kerb wherever possible.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

- V46 Changes in Gradients - Changes in gradients shall not exceed 12.5% algebraically (1 in 8) in a crest and 15% (1 in 6.7) in a depression (sag) to prevent vehicles scraping or bottoming.

Changes in grades in excess of 12.5% (crest) and 15% (sag) will require the introduction of transitions. A minimum transition of 2.0 metres in length will be required (a 1.5 metres transition may be permitted if a template is overlaid onto the driveway profile which demonstrates that it will not scrape).

- V47 Compliance – Driveways shall be designed to match in with the topography of the site, and shall comply with **AS/NZS 2890.1 - 2004, Parking Facilities, Part 1: Off-street car parking**.

Council, at its discretion, may not approve a Driveway Application on the basis that the information provided to Council, at the time of approval, was in error or there are deficiencies in the information provided for Council to make an informed determination at the time of the assessment.

Driveway Material

- V48 Concrete - All vehicle crossing slabs and laybacks are to be constructed in plain concrete with a minimum compressive strength of 32MPa at 28 days.
Ready mixed concrete conforming to **AS1379-1973** shall be used. The Contractor is to arrange for certificates by the manufacturer to be given for all concrete delivered and shall be able to produce these to Council's Representative upon request.
- V49 Cosmetic Pavement - Construction of driveways, within the road reserve, using brick pavers, coloured, stained, stamped or patterned concrete, pebblecrete, or any other cosmetic material other than plain concrete **will not be approved**. Only standard plain concrete finishes to vehicle crossings will be permitted.

- V50 Base - Clean sand shall be used, free of any deleterious material, compacted and screeded to a smooth finish. Bedding thickness is to be a minimum of 50mm uniform thickness.

Compact sand bedding to a minimum density index of 70 as per **AS1289 5.6.1**.

For road base (DGB20), the standard shall be **AS1289.5.2.1**.

- V51 Filling Material - Where filling under the proposed concrete is necessary, such filling shall consist of granular material of maximum size of 40mm and shall be spread in layers of a maximum thickness of 150mm and consolidated to provide a 95% compaction when tested under the modified proctor method.

Expansion and Construction Joints

- V52 Expansion and Construction Joints - Shall be provided to the full depth of the slab, at each side of the slab and where required or as directed by Council.

The joint shall be filled with a 12mm thick bitumen impregnated material such as a compressible mastic board. Other types of jointing material can only be used with the approval of Council.

Expansion joints shall separate the concrete apron from the driveway area that it adjoins, in line with the leading edge of paths.

- V53 Concrete Footpaths - Concrete footpaths shall have expansion and tooled (dummy) joints installed at the widths as indicated below:

Slab Width (metres)	Tooled Joint (metres)	Expansion Joint (metres)
1.2	1.2	3.6
2.0	2.0	6.0
3.0	3.0	9.0
3.5	3.5	10.5

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

Finish

- V54 Concrete Finish - The concrete surface shall be finished true and even, free from air and stone pockets, depressions and projections. The concrete shall be tamped and screeded to the correct surface levels and shall be given an even non-skid finish.

The crossings are to be cove finished in the direction of the kerb and gutter unless it has a gradient steeper than 1 (vertical) to 5 (horizontal), where it shall be finished with a wooden float and then grooved (ensure grooves do not create tripping hazard to pedestrians). The path section behind the apron shall be coving trowel finished across the path. All edges of the slab shall be rounded with a 50mm edging tool.

- V55 Slip Resistance - In general, driveways should have a slip resistance appropriate for the pavement slope in accordance with AS3600.

Minimum Driveway Slab Thickness

- V56 Council Standards - All work is to be carried out in accordance with Council's standard details, Construction Specification for Concrete and Restoration Works, where applicable.
- V57 Minimum Thickness of Gutter Crossings - Gutters and gutter crossings (laybacks) shall have a minimum uniform thickness of 200mm or 220mm for commercial and industrial sites.

- V58 Minimum Thickness of Driveway Slabs - The minimum crossing slab thickness shall be in accordance with the following table:

Development Type	Minimum Slab Thickness (millimetres), Reinforcement
Residential	125, SL72
Commercial	200, SL72
Industrial	200, SL72
Residential Flat Buildings	150, SL72

- V59 Minimum Thickness of Footpaths - Footpaths shall be a minimum of 100mm in thickness with reinforcement to match existing pathways unless under driveway in which the thickness shall be the same as for the driveway or as directed otherwise by Council

Non-Compliance

- V60 Non-compliance - Failure to comply with the conditions of this Document will result in the approval to carry out construction of the crossing being revoked. If works are constructed in non-conformity, Council will issue an order to have the area restored or remedied.
- V61 Recovery of Costs - The cost for reinstatement of non-complying works shall be recoverable by Council, for example, deducted from the Security Deposit held by Council.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

This page was intentionally left blank

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

ES3 Stormwater Management

Objectives

- SWM1** Uniform Guidelines - To provide uniform guidelines and applying control systems to achieve consistency, in the assessment and conditioning of Development Applications, in relation to stormwater runoff from all development types.
- SWM2** Minimise Adverse Impact to Properties - To minimise any adverse impact on properties caused by stormwater runoff from all developments types.
- SWM3** Minimise Impact on Water Quality - To ensure that the water quality of receiving waterways is not adversely affected by the discharge of pollutants such as nutrients and pathogens, from stormwater runoff as a result of development.
- SWM4** Uniform Controls - To ensure that uniform stormwater controls are applied throughout the whole of the City of Canada Bay Council Local Government Area.
- SWM5** To incorporate effective measures to improve the water quantity and quality of stormwater leaving the sites, where likely, potentially negative impacts have been identified.
- SWM6** To prevent adverse effects on the flood peak at any point upstream or downstream of development.
- SWM7** To emulate the runoff characteristics back to under the "State of Nature" condition.
- SWM8** To ensure that adequate stormwater management system to be provided within the development site.
- SWM9** Minimise alteration of flow regimes and velocities to avoid adverse impacts on the proposed development or other properties.

Controls

- SWM10** Controls - To achieve the above objectives, the following controls are applied:
- For controls where the site is within a Flood Planning Area, refer to the Flood Planning Section of Council's Development Control Plan.
 - The provision of safe overland flowpaths within developments and on public land.
 - The definition of floodways for major storms within developments and on public land.
 - The provision of controls such as on-site stormwater detention, community basins and the like and on-site retention systems to reduce and control stormwater runoff.
 - The application of alternative methods of merit based stormwater control and conveyance devices.
 - The removal of flood effected development from known floodways and the prohibition of future developments in such floodways.
 - The provision of minimum free-boards for assigning floor levels to reduce the risk of flood damage to property/s.
 - The installation of pipe/channel systems to minimise hazard to pedestrian and vehicular traffic caused by uncontrolled surface stormwater runoff.
 - The installation of water quality control devices such as trash screens, gross pollutant traps, water quality ponds and the like and encouraging the use of water sensitive urban design to protect the quality of receiving waters.
 - Depending on the development type and general site fall, the following stormwater control types would be applicable.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

Development Type	Site slope/ Site drains to	Control Type
1	Front boundary	E, G
	Rear boundary	B, C, D, E, G
2	Front boundary	A*, F**
	Rear boundary	A+, B***, C, D, F**
3, 4, 4a, 4b	Front boundary	A, D++, F
	Rear boundary	A+, B***, C, D++, F
5, 6, 7, 8, 9	Front boundary	A, D++, F, H
	Rear boundary	A+, B***, C, D++, F, H
2, 3, 4, 4a, 4b, 5, 6, 7, 8, 9	Waterfront property	E, F, H

Key:

Development Type

- 1 - Demolition Only
- 2 - Alterations and additions
- 3 - New dwelling with existing footpath along frontage
- 4 - New dwelling with no existing footpath
- 4a - Dual occupancy
- 4b - Townhouses, villas etc.
- 5 - Residential Flat Building (RFB), commercial and mixed developments
- 6 - Development under SEPP (Housing) 2021
- 7 - Substantial Development, Major alterations and additions
- 8 - Subdivision of one into two allotments
- 9 - "Greenfields" site, subdivision of more than two allotments

Stormwater Control System

- A - On-site Stormwater Detention System (OSD)
- B - On-site Retention System or absorption system (OSA)
- C - "Charged" system
- D - Mechanical Pump-out System
- E - Scour and erosion control system/devices
- F - Rainwater Re-use System
- G - Sediment Pond
- H - Water Sensitive Urban Design (WSUD)

* One-off minor development, where additional impervious area increase of building or structure is 50sqm or more.

** One-off minor development, where additional impervious area increase of building or structure is 40sqm or more

*** Geotechnical Investigation is required to support OSA design if more than 50sqm is to drain into the OSA

+ OSD is not required if all stormwater collected from impervious areas can be disposed by OSA

++ To drain basement or sub-floor areas only

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

Nuisance Overland Flooding to Low-Lying Habitable Floors and Basement Areas

SWM11 Gutter Capacity - Where the proposed development will result in the exposure of low-lying habitable floors or basements including sub-floor areas, garages and low level car parking areas to potential ingress of surface runoff, the determination of the street gutter capacity based on the peak runoff for the 1% Annual Exceedance Probability (AEP) storm event will be required. This is to ensure that the likelihood of surface runoff from the street entering the proposed low-lying areas does not occur.

SWM12 Flood Protection – For all low lying habitable floors or basements including sub-floor areas, garages and low level car parking areas, following determination of the 1%AEP design storm and gutter capacity, if it is found that there is potential for surface stormwater to enter into the property or minimum free boards cannot be achieved, it will be necessary to introduce a crest in the driveway ramp, or relocate the basement entry to a location where it is not vulnerable to water ingress, or raise floor levels to provide adequate free board protection.

SWM13 Flood gate or barrier may be considered for the additions and alterations to existing properties, or a single dwelling house development if it is reasonably necessary and it can be demonstrated that the crest and driveway ramp gradient has met the maximum gradient requirement, as outlined in the relevant Australian Standard. For any other new development, (e.g. commercial or residential containing more than one dwelling etc.), the crest requirement (1% AEP + 0.5m freeboard) shall be addressed, and flood gate or barrier shall be used to meet the probable maximum flood (PMF) requirement.

Overland Flow and Flood Studies

SWM14 Hydrological and Hydraulic studies - Where the proposal has the potential to obstruct natural flow paths, encroach over or adjacent to a public drainage infrastructure or a stormwater drainage easement, a driveway proposed into a basement, or sub-floor area, or the area proposed for development is potentially flood affected, an overland stormwater flow assessment or a flood study will be required when lodging a development application.

SWM15 Design Storm - The design storm to be used to determine the flowrate for the overland flow assessment or a flood study shall be the peak 1%AEP storm event. A PMF storm event flowrate may also be required for flood risk management study. Design guidelines are referred to Section Stormwater Drainage Design.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

On-site Stormwater Detention Systems

General

- OSD1 Runoff Control - On-site Stormwater Detention (OSD) system is to be implemented to control the rate of runoff from development sites and subdivisions to limit and reduce the rate of runoff to the existing state of nature condition or better.
- OSD2 Alternative Methods – Combination of OSD with other runoff control can be considered depending on the type of development, site condition and the location of stormwater disposal.
- OSD3 Maintenance Schedule – where a development site requires to provide a OSD storage facility. A maintenance schedule shall be prepared by a suitably qualified engineer demonstrating a simple set out maintenance actions and the frequency of such actions including a sketch plan to ensure the constructed devices can be maintained by the future property owners and occupiers.

Exemptions

- OSD4 Exemptions - OSD will be applied to the developments types as listed in the table under the Section **Controls**. Exemption from OSD would only apply in the following situations:
- The proposal is a residential development consisting of only alterations and additions to an existing dwelling where the additional increase in impervious area is first on-off minor development and does not exceed 50sqm outside the footprint of the existing building and the land naturally falls towards the property street frontage with direct access to a formed public road/street.
 - The development consists of improvements only to the existing building such as a second floor extension or internal refurbishments, which are wholly confined within the footprint of the existing building. However, if the runoff from the gutter and proposed/existing downpipes are to be redirected to different sub-catchment area. OSD system requirement is still applied.
 - Site area is located within a 1%AEP flood affected area with the depth of flood water

greater than 150mm or subject to tidal influence. This does not include areas where it is affected by nuisance flooding caused by inadequate capacity of the drainage system or localised overland flow. The runoff from the development is directly discharged into one of the bays or waterways and does not pass through any public drainage system. Council should be consulted on this matter for further clarification.

- The runoff from the development is directly discharged into one of the bays or waterways and does not pass through any public drainage system (e.g. piped conduit, dish drain, open channels, kerb and gutter, public reserve, public roadway etc.) or that downstream properties could be adversely affected by the discharge from the development site.
- An alternative method of stormwater disposal is applied such as an on-site absorption system, which fully caters for the site's runoff.
- Council should be consulted on this matter for OSD exemptions for further clarification.

Site Storage Requirement and Permissible Site Discharge

- OSD5 Catchment Based Method - The Catchment Based Method for determining the Site Storage Requirement (SSR) and Permissible Site Discharge (PSD) is to be used to size OSD systems for all development types except demolition works. The hydrological Site Based Method (ILSAX or DRAINS) is only to be used if more than 30% of the site cannot be routed through the OSD system.
- OSD6 Design Parameters - OSD design parameters are as follows:
- Site Storage Requirement (SSR) is 200cum per hectare.
 - Permissible Site Discharge (PSD) is 180L/s per hectare.
- OSD7 Area for Calculating Volume and Discharge – For the Catchment Based Method, the area to be used in calculating the OSD volume (SSR) and discharge (PSD) shall be based on the total site area.
- For the hydrological Site Based Method, the PSD shall be calculated on a 0%

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

pre-development site impervious area during the peak flow of overall critical storm for the 20%AEP storm event and the volume shall be sized on the basis of reducing the fully developed (i.e., controlled + uncontrolled area) site discharge for the peak flow of overall critical storm for the 1%AEP storm event back to the PSD.

OSD8 Alterations and Additions - In the case of development type 2, where the proposed alterations and additions are to be completely separated from the existing building/s and represent less than 10% of the total site area, then the SSR and PSD can be determined from the proposed footprint of the additions only. In the case if the existing dwelling is to be retained and adding a secondary dwelling with subdivision (e.g., Torren or Strata title) to become Dual Occupancy type (i.e., Type 4a) OSD requirement shall apply to the whole Lot. Including existing and propose development.

OSD9 Maximum Site Discharge - The maximum discharge from the site must not be greater than the calculated PSD. This would include both piped and uncontrolled flows. That is, the total outflow from the site must not exceed the PSD.

OSD10 Stormwater Discharge – Each development site shall generally have one (1) stormwater discharge connection point to the kerb. The maximum discharge to the kerb at any single point shall be limited to 25L/s per 15 lineal metre of frontage, for all storm events. Pressure stormwater drainage system directly to street kerb is prohibited.

Orifice controls

OSD11 Orifice Types - Orifice is to be a circular shaped hole drilled in a flat plate made from a stainless steel plate of 3mm thick or 5mm when the orifice diameter exceeds 150mm and 200mm x 200mm minimum dimension. The orifice shall be formed to a circular square edged cut (circular hole is to be pre-drilled into the plate to 0.5mm accuracy) and the plate permanently fixed to an oversized conduit or pipe stub if the hole is greater than 100mm.

OSD12 Permanent Fixture of Orifice - Dyna bolts or equivalent are to be used to permanently fix orifice plates. For orifice stubs/pipes, the fixture is to be such that tampering and removal is minimised.

OSD13 Minimum Orifice Diameter - For orifice plates, the size of the orifice shall not be less than 50mm in diameter to avoid blockages.

OSD14 Orifice equation - The orifice equation to be used is:
 $Q = C.A.\sqrt{2.g.h}$
 Where
 D = diameter of orifice = $\sqrt{(4.A/\pi)}$ in metres
 A = area of orifice hole in square metres
 $\pi = \text{pi} = 3.1416$ (dimensionless)
 g = acceleration due to gravity = 9.81 m/s²
 C = orifice coefficient (dimensionless). Ref table
 h = depth of water to centre of orifice in metres

OSD15 Orifice Coefficient - Orifice coefficients are given in table below.

Orifice Type	Discharge Coefficient
Stainless steel flat plate with circular hole	0.6
Pipe stub 100mm long	0.8

High Early Discharge (HED) Control

OSD16 HED Control Pit Type - The control pit in the OSD system must be a "High Early Discharge" (HED) arrangement for the Catchment Based Method. The following requirement shall be met:

- The discharge to the storage shall commence at a minimum of 75% of the PSD as calculated for the various storm frequencies.
- The overflow structure from the discharge control pit to the storage (weir, pipe, grate) shall convey the maximum 1%AEP flow to the discharge control pit less the initial HED through the orifice.
- A minimum of 85% of the area drainage into the OSD system shall be drained directly to the HED control pit or chamber.
- The volume of the discharge control pit shall be small in comparison to the volume of the storage.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

OSD17 Non HED Control Pit Type - If a HED control configuration is not used, then an additional 20% volume must be added to the final or adjusted site storage require (SSR) volume for the Catchment Based Method.

Tail-water influence

OSD18 Orifice Control - The centre-line of the orifice must be higher than the water level at the point of connection into the existing receiving drainage system otherwise a "drowned orifice" or downstream control occurs.

OSD19 Drowned Orifice - Where a "drowned orifice" occurs, supporting hydraulic calculations will need to be submitted to ensure that there is no loss in storage volume as a result.

OSD20 Control Types - Adopted 1%AEP tailwater control levels at the point of connection are given in table below.

Discharge point	Water level to be adopted
Kerb and Gutter	At the top of kerb
Pipe outlet or culvert	Top of conduit if super-critical flow or "free outlet"
	Depth as calculated if sub-critical flow
Pit	150mm above top of pit
Open channel	Depth as calculated
Waterway or Bay	Depth at High Tide

Site area to be routed through OSD

OSD21 Area to be routed through OSD System - The majority of the site runoff must be routed through the OSD facility.

A maximum of 30% of the site is permitted to bypass the OSD system if the Catchment Based Method is to be used. The 30% bypass must not be made up of more than 50% of the site's impervious areas.

For the Site Based Method, a maximum of 50% of the site is permitted to bypass the OSD system subject to the overall permissible site discharge achieving Clause OSD7 requirement.

OSD22 Adjustment of Volume and PSD due to Bypass for the Catchment Based Method.

For a bypass of 30% of total site area, an additional 20% increase in the calculated SSR volume shall be applied and the PSD shall be reduced by 20%. Proportional increase of the basic volume and reduction of the PSD shall apply between 0% and 30% bypass.

Trash screens

OSD23 Purpose - A rustproof screen or cage is to be used to protect the outlet from potential blockages.

OSD24 Removable - The screen or cage must be removable for ease of maintenance and inspections.

OSD25 Material - The screen or cage is to be made from Lysaght's maxi-mesh RH3030 or similar material.

OSD26 Minimum Surface Area - The minimum surface area of the screen is to be 50 times the area of the orifice outlet.

OSD27 Location - The screen or cage shall completely protect the outlet. It is to be located at a distance 1.5 times the orifice diameter or 200mm away, whichever is the greater.

OSD28 Orientation - Where possible, the main incoming line is to flow across the face of the mesh.

OSD29 Lifting Handle - The screen or cage shall include a lifting handle for ease of removal for inspection and maintenance.

Minimum requirements for underground OSD systems

OSD30 Purpose - Underground OSD systems shall be designed and located to attenuate and safely control stormwater runoff from the site to the public road gutter or receiving drainage system.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

- OSD31 Overland Flow path - Where likely overflow from the OSD facilities pass through private property and a controlled and safe overland flow path cannot be provided, the overflow is to be fully contained within an underground piped drainage system with a design capacity equivalent to the peak 100-year ARI storm event.
- OSD32 Location - Underground OSD systems must be located external to all building footprints. This includes basements, ground floor parking areas, garages, or patios unless all access points and emergency overflow provisions are external to the structure. Underground OSD systems must be located outside the root zones of trees that are to be retained. Underground OSD systems must be located in areas which will not impede existing overland flow paths, or cause concentration or diversion of stormwater into public or private property/s resulting in the undermining of existing structures or services or jeopardising public safety or cause public nuisance. Underground OSD systems must not be located within any deep soil areas or within the front building setback. OSD systems must not restrict the provision of required deep soil or landscape areas as prescribed in accordance with this DCP. Where underground OSD systems are located under landscaped areas, a minimum topsoil cover of not less than 800mm over the tank should be provided. Underground OSD systems are to be located where they can be easily accessible for inspections and routine cleaning. In this regard, for development types 4a, 5, 6 and 7, the following requirements must be met:
- The underground OSD facility must be located in common areas and not in private courtyards
 - The location of the underground OSD system is such as to ensure that the facility is located where easy unimpeded access is possible for routine inspections and maintenance requirements. It needs to be accessible for third party inspectors including Council
- OSD33 Provision of Formal Surcharge Path - A formal surcharge path must be provided even when the 1%AEP flows can be fully catered for by the system, to account for pipe blockages and higher intensity storms.
- OSD34 Easements - Easements must be created over private property/s for pipe systems and surcharge paths through adjoining property/s.
- OSD35 Structural Adequacy - Underground OSD systems are to be designed to be structurally sound and able to adequately withstand all service loads.
- OSD36 Adequate Soundproofing - Underground OSD systems must be adequately soundproofed to minimise noise when stormwater is collected or discharged.
- OSD37 Drainage of Base - The base of the OSD system must be graded to drain completely. Permanent water ponding in the tank encourages insect infestation and will not be acceptable. The base of the structure is to have a minimum longitudinal gradient of 0.7% to the outlet.
- OSD38 Material - Underground OSD systems must be constructed from reinforced concrete, pre-fabricated material or proprietary system/s approved by Council. Atlantis units or similar type systems are not to be used for detention storage due to reduced storage and difficulties with maintenance and inspections.
- OSD39 Inspection Access - Underground OSD systems must have at least one (1) inspection access opening over the storage outlet and/or discharge control outlet. This inspection point must be a minimum 600mm x 600mm in dimension subject to the internal depth of the pit referring to the latest AS3500.3.
- For ease of maintenance at least one (1) additional access at the extreme corner of the tank must be provided.
- Additional access or flushing points shall be provided for irregular shaped structures to allow for easier access for routine cleaning and maintenance.
- Underground OSD systems must have additional access points at distances of not less than 5000mm.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

OSD40 Confined Spaces - Underground OSD systems must comply with **AS2865 Safe Working in a Confined Space** and be appropriately designed to eliminate gas build-up.

OSD41 Steps - Underground OSD systems must have step irons when the depth exceeds 1200mm.

Minimum requirements for above-ground OSD systems in landscaped areas

OSD42 General - Above-ground OSD systems include areas where detention storage is provided in soft and hard landscaped area and above ground storage structures such as rainwater tanks.

OSD43 Purpose - As with Underground OSD systems, above-ground OSD systems are to be designed to collect, attenuate and safely control all stormwater runoff from the site to the public road gutter or drainage system.

OSD44 Overland Flow path - Where likely overflow from these OSD facilities is across private property and a suitable overflow path cannot be provided then the overflow shall be contained within an underground piped drainage system with a design capacity equivalent to the peak 1%AEP storm event. This underground system (both pits and pipes) shall be designed to receive and fully contain controlled flows and overflows from the OSD facility.

OSD45 Location - Above-ground OSD systems must be located external to all building footprints, basements, ground floor parking areas, garages, or patios unless access points and emergency overflow provisions are either provided externally or are easy to get to for the purpose of inspections and maintenance to the system.
Above-ground OSD systems must not be located across the boundary/s of allotment/s.
Above-ground OSD systems must not be located forward of the front building line.
Above-ground OSD systems must not be located such as to restrict pedestrian access from the public road to the building.
Where above-ground structures such as rainwater tanks are to be used, they must be located in an area least visually obtrusive and in compliance with Councils other related planning requirements.

Above-ground OSD systems must be located where they can be easily accessible for inspections and routine cleaning. In this regard, for development types 4a, 5, 6 and 7, the following requirements must be met:

- The OSD facility must be located in common areas and not in private courtyards
- The location of the OSD system must ensure that the facility is located where easy unimpeded access is possible for routine inspections and maintenance requirements.

OSD46 Provision of Formal Surcharge Path - A formal surcharge path must be provided even when the 1%AEP design flow is fully accommodated within the piped system to account for greater storm intensities and blockages.

OSD47 Easements - Formal easements must be created on private property for pipe systems and surcharge paths.

OSD48 Adequate Soundproofing - Above-ground OSD systems must be adequately soundproofed to minimise noise when stormwater is collected or discharged.

OSD49 Adequate Waterproofing - The barrier/ retaining wall around the perimeter of the OSD storage area must be constructed of watertight concrete/masonry/brick type material or a fully waterproof (prefabricated) material or equivalent. Timber construction is not permitted.

OSD50 Accessibility of Control Structures - Control structures must be located where they can be easily accessible for routine inspections and cleaning.

OSD51 Drainage of OSD Base - The base of above-ground OSD systems must be graded to drain completely. In soft landscaped areas, the gradient of the base must not be less than 1.0%.

OSD52 Subsoil Drainages - To avoid ground saturation in soft landscaped areas, subsoil drains shall be installed where gradients are less than 1.0%.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

OSD53 Good Design - Above-ground OSD systems must be designed in a manner which minimises inconvenience, unsightliness and hazard and is compatible with the proposed development in terms of functionality and purpose.

OSD54 No floatable material such as woodchip, leaf mulch, pine bark will be permitted for planting within OSD basin and any inundation area that causing debris and stormwater pollution. Grass surface or stone gravels (e.g., 30mm or greater rock mulch) will be permitted.

OSD55 Maximum Ponding Depths - Above-ground OSD systems must not allow water to pond more than 200mm in tennis court areas and other hard paved surface areas.

Above-ground OSD systems in landscape area shall be limited to pond no more than 300mm. Ponding greater than 300mm may be considerable if the following parameters are satisfied:

- Restricted access is enforced but possible to walk out from the ponding area.
- Embankment batter slopes are greater than 1 in 4.
- OSD basin is fully fenced off with approved pool fencing with child safety lock by the principal certifier, self-closing gates with batter slopes into the basin, around its perimeter, not to exceed 1 in 6.
- The maximum depth of ponding in landscaped areas must not exceed 1200mm, regardless of other restrictive measures implemented.
- For location where the vertical drop is greater than 900mm and where the rock batters are steeper than 1H:1V, a safety fence must be installed to prevent falls.

Minimum requirements for above-ground OSD systems in driveways and car parking areas

OSD56 Purpose - These OSD systems must be designed and located to collect, attenuate and safely control stormwater runoff from the site to the public road gutter or drainage system.

OSD57 Overland Flow path - Where likely overflow from these OSD facilities is across private property and a suitable overflow path cannot be provided, the overflow shall be contained within an underground piped drainage system with a design capacity equivalent to the peak 1%AEP storm event. This underground system (both pits and pipes) shall be designed to receive and fully contain controlled flows and overflows from the OSD facility.

OSD58 Location - These above-ground OSD systems must be located external to all building footprints. This includes basements, ground floor parking areas, garages, or patios unless all access points and emergency overflow provisions are external to the structure.

These above-ground OSD systems must not be located such as to restrict pedestrian access from the public road to the building.

Control structures must be located where they can be easily accessible for routine inspections and cleaning.

OSD59 Provision of Formal Surcharge Path - A formal surcharge path must be provided even where the 1%AEP design flow is fully accommodated within the piped system to cater for greater storm intensities and blockages.

OSD60 Drainage of Base - To avoid localised ponding within the detention area, the base of the OSD system must be graded to drain completely, with gradients not less than 0.5% in concrete paved areas or similar and 0.7% in bitumen surfaced areas.

OSD61 Good Design - These above-ground OSD systems must be designed in a manner which minimises inconvenience, unsightliness and hazard and is compatible with the proposed development in terms of functionality and purpose.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

OSD62 Adequate Waterproofing - These above-ground OSD systems must be totally impermeable unless permeable pavement has been designed as a function provided any water penetration will not affect adjoining buildings, structures and the like.

OSD63 Maximum Ponding Depths - Water is not permitted to pond more than 200mm in depth for all storm intensities, in these above-ground OSD systems.

Overland Flows and Flow Paths

OSD64 Existing and Natural Overland Flow paths- Existing and natural overland flow paths for surface stormwater are to be maintained whenever possible.

Overland flows or surface runoff collected from the site or passing through the site from upstream property/s is not permitted to be concentrated and channelled onto adjoining property/s.

OSD65 Concentration of Overland Flow paths - Where surface runoff or overland flows become concentrated, they will need to be safely re-directed to the street or to the site's OSD facility.

OSD66 Diversion of Surface Runoff or Overland Flows to OSD System - Where concentrated surface runoff or overland flows are to be controlled through the OSD facility, the OSD system must be designed to cater for any additional inflow.

OSD67 Emergency Overland Flow path - To cater for unexpected blockages in the OSD system or additional runoff in excess of the design storm, provision must be made for an emergency flow path from the OSD system to the street such as installing overflow weirs or spillways. The width of overflow weirs shall not exceed more than 2000mm across any property frontage.

OSD68 Designated Flow paths - Any likely overflow from these facilities must be fully contained within designated flow paths and must be conveyed safely to the nearest public road reserve or waterway.

Designated flow paths shall be designed for the peak 1%AEP storm event. Open channels, kerbs, pits and pipes may be used to contain runoff within the flow path.

Freeboard

OSD69 Definition - Freeboard refers to the clearance distance between the maximum water level and the surface level of habitable floors and garage floors.

OSD70 Adequate Freeboard - Adequate freeboard or clearance distance between the maximum depth of ponding in the detention system and the finished floor level of all habitable areas, garages, storage facilities, etc., are to be provided so that damage to goods and materials, nuisance flooding, or hazard is avoided.

OSD71 Minimum Freeboard - The minimum freeboard requirements for OSD pondage are tabled below.

Maximum water level in (A)	Finished floor level (B)	Minimum Freeboard between (A) and (B)
Detention facility	Warehouse	150mm
Detention facility	Factory	150mm
Detention facility	Garage	150mm
Detention facility	Carport	150mm
Detention facility	Office space	300mm
Detention facility	Habitable rooms	300mm
Detention facility	Living rooms	300mm
Detention facility	Retail space	300mm
Detention facility	Store rooms	300mm
Detention facility	Show rooms	300mm

***Important Note:** Refer to Clause **SW23** and the Flooding Control Section of Council's **Development Control Plan** for freeboard requirements in flood prone land.

All proposed developments are generally prohibited in known flood areas, flood ways and flood zones unless it can be demonstrated that a fail safe emergency evacuation route can be provided for occupants and that the proposed development will not cause an increase of the flood waters both upstream and downstream of the proposed development.

Council's Stormwater Policy is for the removal of such flood affected developments from known flood ways and the prohibition of future developments in such floodways, wherever possible, to protect life and amenity.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

Discharge Points

OSD72 Maximum Concentrated Stormwater Runoff
- The maximum allowable discharge of concentrated stormwater runoff to the kerb and gutter at any single point is 25L/s. This limit applies even if the permissible site discharge exceeds this rate.

If the discharge needs to exceed 25L/s, the following alternatives may be considered:

- Alternative 1 - Discharge made directly to the nearest Council piped drainage system, or to an approved piped drainage system or lay a new pipe and pit system to connect into the existing drainage infrastructure. This new line must be designed and installed to Council and the relevant road authority standards and become a public system. Note: Consent under Section 138 of the Roads Act 1993 will be required prior to commencement of roadwork.
- Alternative 2 - Increase the size of the detention system (if on-site stormwater detention is required) to limit the outflow to the street kerb to 25 L/s. This alternative is not permitted in specific zoning areas (MU1, SP4, R1, R4, E4),
- Alternative 3 - If there is enough property frontage width, allow split flows to the kerb at a minimum distance of 15 metres apart between kerb outlets. This alternative is not permitted in specific zoning areas (MU1, SP4, R1, R4, E4),
- Alternative 4 - Discharge directly into a watercourse or channel or to a stormwater channel or to the Bay, subject to joint approval from Council and other relevant governing authority. Adequate protection against scour and erosion at the point of discharge must be provided

OSD73 Maximum Discharge Velocity - The maximum discharge velocity into an unlined, that is, other than concrete channel shall be in accordance with the Department of Sustainable Natural Resources document Managing Urban Stormwater, Soils and Construction, table 5.1 maximum discharge flow velocities in waterways.

OSD74 Approval for Connection into Existing Council Piped Drainage System - Connection into an existing Council piped drainage system may be permitted subject to Council approval.

OSD75 Construction of New Piped System - If direct connection outside of the property frontage cannot be obtained, this will require the construction of new inlet pits and the laying of a new pipeline, to Council standards, to connect into the existing line. Minimum Council design standards are given in Section under Stormwater Drainage Systems.

OSD76 Minimum Drainage Infrastructure - Council encourages minimising the number of pits, junctions and pipe lengths in the road reserve. However, pits are preferable over bend joins to eliminate blind junctions such that ease of maintenance can be achieved.

OSD77 Private Stormwater Drainage System - Any private stormwater pipe leaving the site, must be laid and connect to the discharge point within the subject site frontage.
An angle of not less than 45 degrees to the front boundary line is recommended. If the pipe needs to be laid at a more acute angle or must run parallel with the kerb line in order to achieve gravity discharge to the kerb or connection into an under-ground system, then it must be taken to the kerb at 45 degrees and then a minimum 375-dia RCP is to be laid parallel to the kerb line connecting into the nearest downstream underground public drainage system. Standard gully inlet pits with minimum 1.2 metre clear opening long kerb lintels (subject to required inlet capacities) will need to be constructed in front of the subject site frontage and at all bends, junctions and minimum distances between pits as described in Australian Standard AS3500.3 and **Australian Rainfall and Runoff**.

OSD78 Equivalent Conduit Sizes - Conduits laid to the kerb face must be sized to cope with the design flow and with at least 50mm cover. Where cover is inadequate, the following pipe equivalencies shall be used:

- 100mm-dia equivalent to one (1) 125mm x 75mm x 5mm thick RHS
- 150mm-dia equivalent to one (1) 200mm x 100mm x 6mm thick RHS

OSD79 Outlets through Sandstone Kerbing - Outlets laid through existing sandstone kerbing will require drilling through sandstone kerb subject to Council approval.

OSD80 Pipe Class - The pipe class must be adequate to withstand proposed traffic loads, street tree loading and prevent ingress of street tree roots.

OSD81 Rectangular Hollow Sections - All Rectangular Hollow Sections (RHS) are to be hot-dipped galvanised or stainless steel material.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

Discharge to Different Catchment

OSD82 Gravity Drainage - Stormwater is to be drained in the same direction as the natural fall of the land by gravity means.

OSD83 Diversion of Stormwater to Different Catchment - Diverting stormwater runoff from one catchment (or sub-catchment) to another catchment (or sub-catchment) is generally prohibited.

OSD84 Consent for Stormwater Drainage to Different Catchment will only be considered by Council, provided that all conditions listed below are achieved to Council's requirements:

- Adjacent downstream property owner/s have indicated that they are not prepared to grant easement/s to permit the drainage of the low lying property to follow the natural fall of the land. Proof of genuine attempt at easement acquisition in the form of correspondence will be required.
- A detailed hydrological and hydraulic analysis and calculation in terms of receiving drain capacity analysis and clearly demonstrating that the redirection flow will not cause any adverse third part impact along the diverted route outside the street network. Also, it can be demonstrated that there are no existing drainage problems downstream in the catchment where the runoff is to be directed.
- Discharge made directly to the nearest consented piped drainage system from the road authority within the subject site frontage or lay a new pipe and pit system to connect into the existing drainage infrastructure downstream. The new line must be designed and installed to Council's standards or the relevant road authority standard and will become a public system. The capacity of the receiving underground stormwater drainage system must be demonstrated by calculation and comprehensive analysis and be able to determinate that the system is sufficient to accommodate the additional flow or redirect flow from the development. The calculation and analysis shall be prepared and certified by a suitably qualified engineer with a National Engineering Register (NER) Accreditation.

Note: Consent under Section 68 (Part B) of the Local Government Act 1993 from Council and Section 138 of the Roads Act 1993 from the road authority must be obtained prior to obtaining consent for the development and activity.

OSD85 Drainage "Against Fall of Land" - Where drainage "against the fall of the land" is permitted, On-site stormwater Detention will be required, regardless of the development type. The volume and discharge is to be calculated on the areas (proposed/existing) being directed to the outlet.

OSD86 Low-Lying Property Drainage - For low lying properties, on-site stormwater absorption (OSA) may be used for the disposal of runoff from on-ground paved or roof areas that are unable to be collected and taken to the street frontage.

Legal Obligations

OSD87 Positive Covenant and Restriction on the Use of Land – All types of development which requires an on-site stormwater quantity and/or quality management system (on-site stormwater detention, on-site stormwater absorption, stormwater quality improvement device and/or mechanical pump-out system) will require a Positive Covenant and Restriction on the use of land, in favour of the City of Canada Bay Council on the Title.

OSD88 Purpose of Positive Covenant - The purpose of the Covenant is to ensure that the registered proprietor of the land is made aware and takes responsibility for the control, care and maintenance of the constructed on-site stormwater management system.

OSD89 The Purpose of Restriction on the Use of Land - The purpose of the Restriction ensures that the system cannot be altered in any manner, shape or form.

OSD90 Newly Created Allotments - For newly created parcels of land, these terms shall be created under Section 88B of the Conveyancing Act 1919.

OSD91 Existing Land - For existing titles, the terms of Positive Covenant and Restriction on the use of land shall be created by an application to the Land Titles Office using Forms 13PC and 13RPA.

OSD92 Standard Wording - Standard wording for Positive Covenant and Restriction on the use of land are given in the Appendix.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

On-site Stormwater Absorption Systems

General

OSA1 Application - On-site stormwater absorption (OSA) systems may be used for disposal of the site's stormwater runoff. Refer to the Section under Controls for when it can be applied.

OSA systems can be used to dispose of stormwater on the site subject to the suitability of soil conditions and site constraints. Typical OSA systems include rubble drains, rubble trenches, and on-ground infiltration systems.

OSA can be used as an alternative method of stormwater disposal for 'low lying' properties where an easement through adjoining downstream properties cannot be obtained.

Design Principles

OSA2 Standard Design Methodology - The OSA system shall be appropriately sized, based on the area to be captured, using the methodology as given in the following table:

Total Impervious Area to be captured (sqm)	OSA Design Methodology*
≤ 50	Standard trench detail - 'Jumbo 410' type or equivalent material (refer to Appendix). The trench length is to be 4 metres for every 25sqm of catchment (hard stand, roof) area draining to it.
>50	Geotechnical Report to be prepared by a Geotechnical Engineer. Trench area and volume calculated from soil infiltration rate and Report recommendations. Mass Curve Method can be used.

***Important Note:** Design Constraints apply

OSA3 Location - OSA systems are to be located in 'soft' landscape areas, such as in the garden and vegetated on-ground areas. In 'hard' landscape areas, the use of porous pavement (pervious paving) is preferred.

Absorption systems shall not be located under or over any sewer service without Sydney Water approval.

Absorption systems are not to be located in rock (most non-sedimentary rocks and some sedimentary rocks such as shale) which has zero or near-zero permeability. Where rock is encountered, the base of any proposed gravel filled trench shall be set at least 500mm above the rock.

OSA systems are not permitted in shallow soil over bedrock.

Absorption trenches must follow the line of contours.

OSA4 Access - For routine inspections and maintenance, an access chamber is to be provided at either end of the OSA system.

OSA5 Water Sensitive Urban Design (WSUD) - OSA systems may be used in combination with WSUD systems and integrated as part of its performance principals.

OSA6 Design Storm Event - Runoff generated from the development must be fully catered for by the absorption system, for all storm events up to and including the 1%AEP storm event for all duration from 6 minutes to 72 hours inclusive.

OSA7 Soil Type - Soils to be used for OSA systems **must not** be predominantly loose aeolian sands or clay soils.

Suitable soils must have a uniform thickness of at least 3.0 metres.

A soil assessment and permeability test is required from a qualified Geotechnical Engineer where runoff is collected from an area greater than 50sqm.

Suitable soils must have hydraulic conductivity values greater than 1×10^{-6} m/s and the minimum absorption rate to be adopted shall be limited to 1.0 L/sqm per second irrespective of the absorption rate achieved by any geotechnical testing.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

OSA8 Minimum Clearance from Structures and Buildings - Clearance distance between all buildings, footings, structures and downstream boundaries are to be at least 3.0 metres from the proposed OSA system.

Minimum clearances are not to be reduced without a supporting Geotechnical Report.

The minimum clearance distance between sewer mains and the proposed absorption system is to be at least 1.0 metre unless approved by Sydney Water. Where clearance between buildings or structures to the OSA system cannot be provided, the structure is to be supported on a pier and beam system to a minimum 300mm below the base of the OSA system, which must be certified by a Structural Engineer.

OSA9 Steep Sites - Absorption systems will not be permitted on 'steep' sites with slopes greater than 5%, unless there is a supporting Geotechnical Report.

OSA10 High Water Table - Absorption systems will not be permitted where there is the presence of a high water table or the location of the OSA system would likely cause the water table to rise.

Where a high water table is encountered, the base of any proposed gravel filled trench shall be set at least 500mm above the water table.

OSA11 Sediment Traps and Trash Screens - Runoff directed into the OSA system must pass through an approved silt trap and filter system to remove all debris, silts, sands, etc. prior to absorption.

OSA12 Dispersion System - To ensure any overflows from the OSA system are not concentrated onto adjoining downstream properties, a dispersion system shall be provided at the overflow outlet.

OSA13 Maintenance Schedule – where the OSA is permitted in the development site. A maintenance schedule shall be prepared by the qualified suitable engineer demonstrating a simple set out maintenance actions and the frequency of such actions including a sketch plan to ensure the constructed devices can be maintained by the future property owners and occupiers.

Charged Systems

General

CH1 Application - 'Charged Systems' refers to a network of sealed or watertight stormwater drainage pipes which convey stormwater under constant pressure, requiring sufficient hydraulic head to move water.

Where a site naturally falls to the rear and the property is not benefited by any stormwater drainage easement and following unsuccessful attempts at obtaining a drainage easement and other drainage disposal methods such as OSA, have been found to be inappropriate for the site, then charged systems may be considered, to convey stormwater to the street frontage. Refer to Section **Controls**, for when it can be applied.

Charged systems are generally not to be used if a gravity feed system is available to dispose of stormwater off the site to the nearest downstream Council drainage system.

Important Note: Charged systems are only permitted when used in combination with rainwater re-use facilities.

CH2 Permissibility - Charged systems may only be used if address the requirements listed in Clause OSD84 under On-Site Stormwater Detention Systems.

- Genuine attempt at easement acquisition has been undertaken and the downstream property owner/s have indicated that they are not prepared to grant easement/s to permit the drainage of the property to follow the natural fall of the land - written evidence is to be submitted as proof
- The soil absorption characteristics and other physical constraints indicate that an OSA system is not feasible to cater for the development. A Geotechnical Report, indicating that the soil has very poor absorption rate, may be submitted as proof
- A detailed hydrological and hydraulic analysis and calculation in terms of receiving drain capacity analysis and clearly demonstrating that the redirection flow will not cause any adverse third part impact along the diverted route outside the street network. Also, it can

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

be demonstrated that there are no existing drainage problems downstream in the catchment where the runoff is to be directed.

- Discharge made directly to the nearest consented piped drainage system from the road authority within the subject site frontage or lay a new pipe and pit system to connect into the existing drainage infrastructure downstream. The new line must be designed and installed to Council's standards or the relevant road authority standard and will become a public system.

Note: Consent under Section 68 (Part B) of the Local Government Act 1993 from Council and Section 138 of the Roads Act 1993 from the road authority must be obtained.

Design Principles

- CH3 Permissible Site Discharge - The rate of runoff discharged to the street must not exceed the overall Permissible Site Discharge (PSD) calculated from Section On-site Stormwater Detention Systems.
- CH4 Combination of OSD, OSA and Charged Systems - The design of a charged system may be used in combination with an OSD and/or OSA system to minimise the runoff to the street.
- CH5 Watertight System - Charged lines may be taken directly from the roof gutter to the street and must be fully watertight.
- CH6 Rainwater Re-use Overflows - Overflows from the rainwater re-use system are to be drained to the external on-site stormwater drainage system, OSD or OSA system if these have been designed to accommodate the runoff.
- CH7 Outflows from OSD systems under pressure - Outflows from OSD systems are generally to be by gravity feed ('free outlet' control). However, 'drowned outlets' may be permitted if supporting calculations can be provided showing that sufficient pressure head can be generated to direct flows to the street via a charged system and that the permissible discharge for the site can be maintained. A suitable hydrological program such as DRAINS can be used to model such situations.

- CH8 Design Storm Event - The charged drainage system including roof gutters pipes and pits is to be designed for the 5 minutes duration in 1%AEP storm event.
- CH9 Minimum Height of Pressure Head - The minimum height difference between the roof gutter level and the discharge pit must be at least 2.0 metres unless supporting calculations showing a hydraulic grade line for the 1%AEP storm event indicates that the system can drain to the street with a 300mm free board to the gutter line.
- CH10 Gravity Feed to Street - The charged line must discharge to a sump pit within the property boundary and then gravity fed to the street underground drainage system.
- CH11 Location of Surcharge Pits - Surcharge pits are to be located such that any likely overflow is safely directed to the street or away from structures and buildings.
- CH12 Minimum Pipe Sizes for Pressure Application - Pipes must be minimum 150mm-dia in size for pressure applications and solvent welded unless hydraulic calculations support that a smaller pipe can be used. Pipes less than 80mm-dia will not be acceptable.
- CH13 Cleaning Eyes - Cleaning eyes within a sump must be installed at the lowest point in the system.
- CH14 Gutter Guards - Gutter guards are to be installed to minimise debris entering the charged system.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

Mechanical Pump-out Systems

General

MP1 Application - Mechanical pumps are to be used generally to convey sub-surface, or seepage water in a basement (sub-floor) area or to drain minor surface runoff collected from weather exposed areas (e.g. vehicular ramp) of less than 50m² or 100m² for development Types 5, 6 and 7.

MP2 Pumping of Stormwater - The pumping out of stormwater runoff is only permitted if it addresses the requirements listed in Clause OSD84 under On-Site Stormwater Detention Systems, and:

- If consent is achieved in accordance with both the Roads Act 1993 and the Local Government Act 1993.
- Gravity drainage cannot be achieved.
- Genuine attempt at easement acquisition has been undertaken and the downstream property owner/s have indicated that they are not prepared to grant easement/s to permit the drainage of the property to follow the natural fall of the land - written evidence is to be submitted as proof.
- An OSA system cannot be installed because it does not satisfy OSA Design Principles.
- There is no possibility of nuisance or flooding or damage to adjoining buildings and structures in the event of pump failure. The pump-out system shall be located at least 3 metres away from the downstream boundaries.
- A detailed hydrological and hydraulic analysis and calculation in terms of receiving drain capacity analysis and clearly demonstrating that the redirection flow will not cause any adverse third part impact along the diverted route outside the street network. Also, it can be demonstrated that there are no existing drainage problems downstream in the catchment where the runoff is to be directed.

- Discharge made directly to the nearest consented piped drainage system from the road authority within the subject site frontage or lay a new pipe and pit system to connect into the existing drainage infrastructure downstream. The new line must be designed and installed to Council's standards or the relevant road authority standard and will become a public system. The capacity of the receiving underground stormwater drainage system must be demonstrated by calculation and comprehensive analysis and be able to determinate that the system is sufficient to accommodate the additional flow or redirect flow from the development. The calculation and analysis shall be prepared and certified by a suitably qualified engineer with a National Engineering Register (NER) Accreditation.

Note: Consent under Section 68 (Part B) of the Local Government Act 1993 from Council and Section 138 of the Roads Act 1993 from the road authority must be obtained prior to obtaining consent for the development and activity.

MP3 Disposal of Sub-surface Water – Because it is a relatively constant source that promotes algal growth and constant wetness, draining of sub-surface water, whether by pumping or by gravity; either directly or indirectly, to the kerb is not permitted except by way of a controlled release specifically and separately approved under Section 138.1(d) of the Roads Act 1993. Generally, it is preferable to connect such sources to the nearest public underground drainage system. If that is not feasible and a thorough investigation has exhausted all acceptable alternatives then Council will consider an application for controlled release to the kerb.

Alternative methods of seepage water disposal and controlled release parameters are given in Section Subsurface Water.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

Design Principles

MP4 Minimum requirements for Mechanical Pump-out Systems - The minimum requirements for mechanical pump-out systems for stormwater apply as follows:

- The pump-out system shall consist of two (2) mechanical pumps, connected in parallel, with each pump being capable of emptying the holding tank at a rate equal to the peak 1%AEP, 5 minute duration storm event. Any subsurface inflow rate during wet weather determined by an approved test procedure or estimated value is to be included.
- The mechanical pump must be capable of draining the surface runoff collected from weather exposed areas of not less than 50m² or 100m² for Types 5, 6 and 7.
- The capacity of the holding tank shall be calculated as above the level at which all pumps are automatically brought into operation.
- The minimum capacity (volume) of the holding tank well shall be adequately sized in accordance with **AS/NZS3500.3.2 - 1998, National Plumbing and Drainage, Part 3.2: Stormwater drainage - acceptable solutions**, but based on the 1%AEP, 5 hours design storm.
- A silt trap shall be provided on the inlet side of the holding tank.
- The rising main from the pump system shall be designed and installed in accordance with the pump manufacturer's specification.
- The rising main from the pump system shall discharge to a stilling sump within the property boundary and then gravity fed to the underground receiving drainage system or to an OSD system if the OSD system is piped to an underground receiving drainage system.
- A one-way valve is to be installed on the rising main outlet. The stilling sump is to be located such that any likely overflow is safely directed to the street and away from adjoining buildings and structures.

- The switching of the pumps shall be arranged so that they operate alternately.
- The pumps shall be provided with automatic level switches so that they operate simultaneously should the capacity of the tank be exceeded.
- An automatic alarm system shall be provided to warn of failure of any part of the pump system.
- The alarm shall have visual indicators and an audible alarm siren.
- A rechargeable battery back-up system for the alarm is to be provided in the event of power failure.
- Maintenance Schedule – where the pump-out system is permitted in the development site. A maintenance schedule shall be prepared by the qualified suitable engineer demonstrating a simple set out maintenance actions and the frequency of such actions including a sketch plan to ensure the constructed devices can be maintained by the future property owners and occupiers.

Legal Obligations

MP5 Positive Covenant and Restriction on the Use of Land - Mechanical pump-out systems regardless of whether or not used as OSD systems or subsurface water shall require the creation of a Positive Covenant and Restriction on the Use of Land affixed to the title requiring the owner of the property to maintain the system, not tamper with the system and indemnifying Council against liability in respect of any damage sustained as a result of the failure of the pump system and damage to neighbouring property or any other cause not in Council's control, and providing for regular inspection by the proprietor. Refer to Section On-site Stormwater Detention Systems, Section under **Legal Obligations**.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

Scouring, Erosion and Water Quality Control

General

- SC1 Application - Where discharge of stormwater is to a natural watercourse, into bushland/ reserve, property or water way, adequate controls are required to protect these adjoining properties, bushland, roadways and receiving waters from erosion and degradation due to pollution, silt laden stormwater runoff and/or high concentration of runoff.
- SC2 Scour and Erosion Control Devices - Notwithstanding other stormwater controls that may be required such as OSD (flow attenuating devices) or OSA, appropriate scour and erosion control devices are to be installed at the outflow to the system.

Minimum Requirements

- SC3 Application - The installation of scour and erosion control devices and other stormwater management measures are required as follows:
- Appropriate scour protection devices installed at all outlets to stormwater conduits
 - Additional installation of pollution control devices at the source, on-line*, off-line or at the end of the line to control sediment laden overland stormwater flows
 - Stormwater management measures shall not be located on-line in water courses or within riparian zones or areas of remnant native vegetation
 - Where the volume of runoff is considered high, it may be appropriate to include an OSD (for sites larger than 1200 sqm) and/or OSA system/s to reduce runoff into the receiving waterway
 - The type of available control or treatment required for each development type that drains directly into a natural watercourse, bushland/ reserve, or water way are tabled below:

Development Type	Control Type
1	E*
2, 3, 4, 4a, 6, 8	A, B, E*, F, H
5, 7	A, B, E*, F, G*, H

Key:

Development Type

- 1 - Demolition only
- 2 - Alterations and additions
- 3 - New dwelling with existing footpath along frontage
- 4 - New dwelling with no existing footpath
- 4a - Dual occupancy, town homes etc.
- 5 - Residential Flat Building (RFB), commercial and mixed developments
- 6 - Development under SEPP (Housing) 2021
- 7 - Substantial development
- 8 - Subdivision of one into two allotments

Water Quality Treatment System

- A - On-site Stormwater Detention System (OSD)
 - B - On-site Retention System or Absorption System (OSA)
 - C - "Charged" System
 - D - Mechanical Pump-out System
 - E - Scour and Erosion Control System/Devices
 - F - Rainwater Re-use System
 - G - Sediment Pond/Water Quality Device
 - H - Water Sensitive Urban Design (WSUD)
- * denotes mandatory requirement

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

- SC4 Pollutant Load to be Retained - Water quality treatment systems or pollution control devices such as sediment ponds where required to be installed are to ensure the following pollutant loads are retained on the site:

Pollutant Type	Percentage Retention of Post-development Loads
Total suspended solids (TSS)	80%
Total phosphorus (TP)	45%
Total Nitrogen (TN)	45%
Gross Litter	All Litter - 70% Material (>50mm) - 70%

- SC5 Monitoring Water Quality - Water quality treatment systems or pollution control devices are to be installed and monitored regularly to ensure that they achieve their treatment objectives and that their performance meets the above criteria. If they fail to meet these targets, or if so required by the Appropriate Regulatory Authority (ARA), it shall be modified to achieve them and the system upgraded.
- SC6 Ease of Maintenance - Water quality treatment systems or pollution control devices are to be designed to ensure ease of maintenance.
- SC7 Scour Protection - Scour protection devices shall include embankment stabilisation e.g. rock walls, concrete aprons, gabions, turfing, jute mesh, energy dissipating units, or other more appropriate erosion control devices approved by Council. Preference is for 'soft engineering' solutions.
- SC8 Control Devices near Creeks - Stormwater pollution control devices may not be appropriate within or adjacent to creek locations. In this regard, The Department of Planning and NSW Fisheries shall be contacted for advice about suitable erosion control measures here.
- SC9 First Flush - Stormwater pollution control devices to remove pollutants during the 'first flush', shall be installed within the site. These include proprietary items such as gross pollutant trap, hydrodynamic separation, filters, basket or silt and grease arrestors. Installation of these devices shall be in accordance with the manufacturer's specification.

- SC10 Large Scale Control Devices - Other sediment control devices such as stilling basins and constructed wetlands shall be required for large-scale or substantial developments. These include land and community title subdivisions. Design of these devices shall be in accordance with the **Managing Urban Stormwater, Soils and Construction Manual** issued by Landcom and the NSW Department of Environment and Climate Change, March 2004 and June 2008.

- SC11 Silt Traps - Silt traps are to be installed in all stormwater pits to contain silt and debris. Silt traps shall be installed at the bottom of pits at a depth of 200mm to capture silts and fines. Weep holes shall be drilled into the base of the pit to ensure that it does not permanently hold water and create a breeding ground for insects. Where the pit is located over impervious material, a 100mm layer of gravel bedding with subsoil drains will also need to be laid.

Soil and Water Management

- SC12 Soil and Water Management Plan - A soil and water management plan is required for all development types, except for minor developments, for example extension to an existing dwelling of less than 50sqm.
- Minimum guidelines shall be in accordance with the **Managing Urban Stormwater, Soils and Construction Manual** by Landcom and the NSW Department of Environment and Climate Change, March 2004 and June 2008.
- SC13 Installation and Maintenance - All sediment control devices are to be installed prior to any commencement of clearing and earthworks on the site. Ongoing maintenance of these devices during construction will be required.
- SC14 Maintenance Schedule - For large scale developments, residential flat buildings and mixed used developments, a maintenance schedule is to be kept on site to ensure that the devices are cleaned on a regular basis.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

Rainwater Re-use

General

- RR1 Application - Notwithstanding BASIX water conservation targets, the collection of rainwater for non-potable use is encouraged. Non-potable water usage shall include watering of the garden, irrigation, washing machine and toilet flushing.

Minimum Requirements

- RR2 BASIX Certificate Requirements - Rainwater re-use shall be provided in accordance with BASIX Certificate requirements.
- BASIX is a web-based planning tool designed and developed by Department of Planning in association with other government agencies and utilities to assess the water and energy efficiency of new residential developments.
- The NSW Government introduced BASIX into the development approval system on 1 July 2004.
- RR3 Rainwater Re-use - Part of BASIX requires the installation of rainwater re-use facilities. The volume of storage required depends on the size of the dwelling, the number of amenities and other site factors. Further details can be obtained at www.basix.nsw.gov.au.
- RR4 Submission of a Development Application - Where it is proposed to install a rainwater tank only, a Development Application (DA) would need to be lodged if the volume of the proposed rainwater tank exceeds 10,000 L. No DA would be required if the proposed rainwater re-use volume is less than 10,000 L or if the rainwater harvesting proposal forms part of a DA for Development Types 2, 3, 4, 4a, 4b, 5, 6 and 7.
- RR5 Dual Usage - Dual usage for both OSD and re-use in the same tank is permitted. However it must be noted that stormwater collected for re-use must not include runoff collected from on-ground areas, balconies and sub-floor areas (sub-surface water). Only stormwater collected from roof areas can be stored for re-use.

- RR6 Permitted Use - Rainwater collected for re-use is classified as non-potable and is only permitted for use in the flushing of toilets, laundry clothes washing, irrigation systems including watering the garden and must not be used for human consumption in accordance with Sydney Water guidelines.
- RR7 When designing dual-purpose tanks, it is essential to consider the collection of rainwater from the site. It is important to note that OSD control typically applied to the entire site area. However, for the re-use component, stormwater can only be collected from the roofs of dwelling/s. A dual-purpose OSD/Rainwater reuse system that solely collects rainwater from the roof may lead to a situation where a significant portion of the surface stormwater runoff from the site bypasses the OSD system. In this regard, the design must carefully account for the majority of the site's runoff, combined stormwater management system is recommended, particularly from roofed and surface areas. This consideration ensures that the runoff can be effectively controlled through the OSD system to meet the overall permissible site discharge requirements.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

Stormwater Drainage Design

General

SW1 Application - This Section provides the minimum design guidelines for both private and public stormwater drainage systems.

Stormwater drainage systems referred to herewith are the systems which are designed to convey stormwater runoff. This includes property drainage, street drainage (both piped and surface flow paths), and trunk drainage (larger conduits, open channels) and receiving waters (rivers, creeks, groundwater storage, sea and ocean).

SW2 Purpose - Stormwater drainage systems are to be designed to collect and convey stormwater runoff from a site to a receiving waterway with minimal nuisance, danger to life or damage to properties.

Minimum Requirements

SW3 Australian Rainfall and Runoff Handbook - Stormwater drainage systems shall be designed in accordance with the Australian Rainfall and Runoff Handbook utilising the "major" and "minor" system design criteria.

SW4 Gravity Drainage - Stormwater runoff shall be conveyed to follow the natural fall of the land, by gravity means, wherever possible. The design of "Charged Systems" is not covered in this Section. Charged systems are not acceptable for public drainage systems.

SW5 Re-directing Stormwater - Re-directing stormwater runoff from one catchment (or sub-catchment) to another catchment (or sub-catchment) is generally prohibited.

SW6 Public Drainage systems - Public stormwater drainage systems must be designed as gravity systems. For private stormwater drainage systems, an alternative to gravity drainage will only be considered where easement acquisition is unsuccessful and on-site disposal such as OSA is not possible.

SW7 Minimising the Quantity and Improving the Quality of Stormwater Runoff - Stormwater quantity and quality (pollutants) shall be minimised by designing the system with the following criteria:

- Have adequate sub-surface drainage to provide protection to structures, and prevent long term water ponding
- Have adequate inlets to collect and convey surface stormwater runoff to prevent water from entering buildings or damage structures, minimise nuisance and danger to persons and vehicular traffic, prevent long term surface water ponding, prevent erosion, and protect adjoining and downstream properties from any adverse impacts as a result of stormwater runoff from proposed developments
- Include a system of overland flowpaths, where possible, to provide fail-safe protection to buildings, structures, adjoining and downstream properties in the event of pipe blockage or storm events that generate greater runoff than the capacity of the piped drainage system
- Include sediment and silt traps and trash screens strategically located in catch drains and inlet pits to capture pollutants
- This can be achieved by:
 - The construction of surface flow routes to convey floodwaters away from private and public properties and, in flood prone land, the velocity and depth of flows are controlled to an acceptable level.
 - The provision of surface flow routes and piped drainage systems to direct/control frequent runoff, so that convenience and safety for pedestrians and vehicle traffic can be provided.
 - The provision of both piped drainage and surface flowpaths for new developments, re-developments and new subdivisions.
 - The installation of water quality control devices such as gross pollutant traps, stilling basins, baskets and the like to collect pollutants present in the stormwater runoff.

CITY OF CANADA BAY

Development Control Plan | Appendix 2 | Engineering Specifications

Minor and Major System Design

SW8 "Dual Drainage" System - The method of stormwater drainage design used to size pipe networks and trunk drainage systems to convey stormwater runoff to the receiving water is known as the "dual drainage" system approach or minor/ major design concept, as described in the Australia Rainfall and Runoff Handbook. This method has been adopted by Council and a summary of the design criteria are set out below.

Minor System Design

SW9 Definition - The gutter and pipe network capable of conveying stormwater runoff during minor storm events is known as the "minor system".

SW10 Widths of Flows - When designing the minor system, adequate inlet pits are to be installed such that the maximum gutter flow widths shall not exceed the lesser of 2.5 metres or one-quarter of the road carriageway width.

Wider flow widths may be accepted on roads whose cross-sectional gradients are less than 1.0%. This is subject to Council approval.

For private stormwater drainage systems, the minor system must be capable of capturing or containing the runoff produced from the average rainfall recurrence interval as stipulated in SW21 Average Recurrence Interval for Public Drainage Systems.

SW11 Minimum Conduit Size - The minimum conduit sizes for the minor system design shall be as follows:

- Public system - pipes, 375mm-dia
- Public system - box culverts, 600mm wide x 450mm high
- Private system - pipes, 90mm-dia for roof runoff only
- Private system - pipes, 100mm-dia for surface runoff within the property only
- Roads - pipes, 375mm-dia
- Roads - conduits, equivalency to 375mm-dia

SW12 Minimum Pipe Gradient - The minimum pipe gradient for all types of pipe material shall be 1%.

SW13 Anchor Blocks - Pipes which are to be laid at a slope greater than 20% will require anchor blocks at the top and bottom of the section and at intervals of not more than 3.0 metres in between. Bulkheads shall be provided on steep gradients where soil instability is likely. To retain backfill material, bulkheads shall be installed at intervals of not more than 5.0 metres.

SW14 Pipe Material and Jointing Type - Type of pipe material and jointing to be used for the minor system design shall be as follows:

- Public system - steel reinforced concrete with rubber ring jointed. (Approval required for other material, subject to Council's discretion)
- Private system - up to 300mm-dia uPVC, solvent welded joints; 300mm-dia and larger reinforced or fibre reinforced concrete*, rubber ring jointed

SW15 Depth of Cover - Depth of cover to the conduit obvert shall be as follows:

- Public system not subject to vehicle loads - 450mm
- Public system subject to vehicle loads - 600mm
- Private system not subject to vehicle loads - 300mm
- Private system subject to vehicle loads - 600mm

SW16 Pipe Class - The appropriate class of pipe to be used shall depend on the minimum cover provided and the loading onto the pipe in accordance with AS3725 - 2007, loads on buried concrete pipes. The minimum pipe class for Council's public system is Class 4.

SW17 Design Velocity of Flows - Design velocity of flows shall be as follows:

- Conduits - 0.6 m/s minimum, 6.0m/s maximum
- Surface flow - 2.0m/s maximum

Where these values are exceeded, appropriate erosion control and scour protection measures are to be provided at the outlet.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

SW18 Maximum Depth of Flows - Maximum permitted depth of surface flow shall be:

- Road carriageway, driveways, footpaths and carparks - 150mm
- Landscaped areas - 300mm

SW19 Annual Exceedance Probability (AEP) for Public Systems - The annual exceedance probability to be adopted for the design of the public drainage system is tabulated below:

Location	AEP (%)
Local Roads	10
Collector roads	10
Sub-arterial roads	10
Arterial roads	5
State roads	2
Access to emergency facilities	1
At a depression (low point) in road	1
Public system passing through private property	1

SW20 Annual Exceedance Probability (AEP) for Private Systems - The annual exceedance probability to be adopted for private drainage systems (minor system design) is tabulated below:

Location	AEP (%)
Residential - low density	10
Residential - medium to high density	5
Commercial	2
Industrial	2
Hospitals and Emergency Facilities	1

*** Important Note:** The underground drainage system (includes pipes, conduits and pits) is to be designed for the 1%AEP storm where major system flows (e.g. along a drainage easement) are likely to surcharge across private property or cause localised flooding. A surcharge path must also be provided to safely convey surface stormwater across private property within easements. The minimum design AEP for surcharge paths shall be the 1%AEP storm event.

Major System Design

SW21 Definition - The "major system" comprises the drainage route, which conveys the runoff for the major storm events. This may be a series of trunk drainage systems and overland surface routes including open channels, creeks, and river systems.

SW22 Provision of Overland Flow Routes - Overland flow routes are to be provided at the following locations:

- Within the road carriageway excluding footpaths and the footway reserve. Flows across footpaths will only be permitted where this will not cause flooding to property or create danger to pedestrians and is subject to Council approval.
- Within drainage easements. Where it is not practical to provide an overland flow route over the easement, the piped drainage system shall be sized to accept the runoff for the major storm event i.e. the 1%AEP.
- Within a known and designated floodway
- Within creeks and river systems.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

SW23 Minimum Freeboard Requirement for Flood Prone Land - Freeboard can vary according to parameters such as the size of the upstream catchment, the local terrain, the difference between the 1% AEP (Annual Exceedance Probability) level and the PMF (Probable Maximum Flood) level and the proposed use.

In some cases, the determination of an appropriate freeboard will be best done on the merits of the individual case through the Development Application process. However, the minimum freeboard requirement unless overridden by a Flood Study, Draft Flood Study, Floodplain Risk Management Study, Floodplain Risk Management Plan or the DCP (Development Control Plan) shall be as follows:

Freeboard requirements above 1% AEP water surface level				
Finished Floor Level (B)	Adopted Flood planning area	Overland flow path identified by Council as "Minor"	Overland flow paths other than ones identified by Council as "Minor"	Mainstream flooding
Residential – Habitable rooms	As per the adopted Plan	300mm	500mm	500mm
Residential – Non-habitable rooms	As per the adopted Plan	300mm	300mm	500mm
Commercial or Industrial – All internal areas	As per the adopted Plan	300mm	500mm	500mm
Carport open on 3 or 4 sides (At Ground Level)	As per the adopted Plan	150mm*	150mm	300mm
Entrance to Basement	As per the adopted Plan	150mm to 300mm*	500mm and/or the PMF Level, whichever is greater	500mm and/or the PMF Level, whichever is greater
Critical Infrastructure	As per the adopted Plan	300mm	500mm and/or the PMF Level, whichever is greater	500mm and/or the PMF Level, whichever is greater

NOTE

* At Council's discretion, may be reduced

** Average depth of flow path affecting the subject property is less than 100mm

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

SW24 Design Velocities and Depths of Flow - Design velocities and depths of surface flows shall be in accordance with Figures 1 and 2 of the New South Wales **Flood Risk Management Manual FB03 – Flood Hazard**, with hazard category classed as "H1".

SW25 Annual Exceedance Probability (AEP) - The AEP to be adopted for the major system design is tabulated below:

Location	AEP (%)
Private	1
Public	1

Catchment Area

SW26 Definition - The catchment area is defined by the limits from where surface runoff will make its way, either by man-made or natural paths, to the point of exit.

Catchment Runoff

SW27 Catchment Runoff - Catchment runoff shall be determined using a suitable hydrological method depending on the level of accuracy required and the extent and shape of the catchment. Limitations of each method are given in the Australian Rainfall & Runoff Handbook.

SW28 Determination of Catchment Runoff - Catchment runoff is to be calculated using the following methods:

Method	Application
Rational Method	For catchments areas < 1200 sqm
Hydrological Method	For catchment areas > 1200 sqm

SW29 Rational Method Approach - The Rational Method for the estimation of peak flows will be acceptable for small catchments. This method is best suited to catchments with uniform slope and roughness characteristics and where the level of accuracy is not critical. This would include site discharge calculations and roof runoff.

SW30 Hydrological Computer Model Approach - The use of hydrological computer models is most suitable for medium to large catchments and where a reasonable level of accuracy is required.

Acceptable computer models include ILSAX, DRAINS. Any electronic models utilised in the report and plans for the development application or seeking approval for the activity (S68 – Local Government Act 1993) must be submitted to Council.

SW31 Impervious Areas - The impervious area percentages to be adopted for determining runoff are tabulated as follows:

Public System (trunk drainage)	
Residential Areas	80
Commercial	100
Road Reserves	80

Private System (inter-allotment drainage)	
Road Reserves	80
Residential Single	80
Residential Medium Density	90
Residential High Density	100
Industrial	100
Commercial	100

SW32 Roughness coefficients - Roughness Coefficients are to be used to calculate free surface flow.

For the purpose of determining stormwater runoff into open channels and free surface hydraulics, Manning's roughness coefficients shall be used. Typical values are given in appendix and the Australian Rainfall and Runoff Handbook.

For sections with composite roughness values, Horton's Equation may be used to convert to an equivalent roughness value for simplicity in calculations.

Horton's Equation is given as:

$$n = \{ \sum (P_i \cdot n_i^{3/2}) / \sum P_i \}^{2/3}$$

Where n_i is the Manning's Roughness Coefficient for section i and

P_i = is the wetted perimeter or length of the section with a roughness value n_i

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

Hydraulic Grade Line

- SW33 Analysis - Hydraulic grade line calculations are to be performed in accordance with the ***Australian Rainfall and Runoff***, and shall be undertaken by a qualified person with experience in hydrology and hydraulic design.
- SW34 Full Hydraulic Calculations - Full hydraulic calculations must be submitted for all public and major piped systems (375mm-dia and larger), drainage lines through easements and flood assessment to ascertain flood levels or where Council deems it necessary to determine the feasibility of the proposal.
- SW35 Reduction of Losses - Drainage lines shall be designed with minimal bends to avoid bend losses. Where this is unavoidable, junction pits shall be provided at the location of bends or changes in direction.
- SW36 Avoidance of Chokes - Pipes will not be permitted to be laid such that a larger pipe joins into a smaller pipe downstream, to avoid potential chokes in the system. However, this may be unavoidable when the new line is connected into an existing system. In this circumstance, the starting hydraulic control shall be adopted at the ground level at the point of connection.
- SW37 Water Surface Profiles – For determination of flood profiles and surface drainage systems (e.g. channels, open drains and the like), hydraulic calculations are to include determination of water surface profiles and backwater effect using suitable computer models such as DRAINS, HEC-RAS and TULFLOW. Any electronic models utilised in the report and plans for the development application must be submitted to Council.
- SW38 Frictional Losses - Frictional losses in closed conduits of circular shaped cross-section (e.g. pipes), shall be determined using the Darcy-Weisbach Formula. This Formula may be applied to rectangular sections (e.g. box culverts), by converting the product of the area and hydraulic radius to the power of two-thirds ($A.R^{2/3}$) to an equivalent circular section.

- SW39 Colebrook-White Roughness Values - Colebrook-White roughness parameters used for pipes are as tabulated:

Conduit Material	K value (mm)
uPVC pipe	0.03
Reinforced concrete pipe	0.06
Fibre reinforced concrete pipe	0.06

- SW40 Pit Energy Losses - Pit energy losses and pressure changes at junctions, bends, transition structures, slope junctions, inlet pits, junction pits, drops and outlets must be considered in the hydraulic assessment.
- Pressure head coefficients for determining these "head losses" are to be obtained from the following sources:
- Missouri Charts
 - Hare Equations
 - U S Corp of Engineers mitre bend charts
 - AR&R 2019 Handbook or later editions
- SW41 Downstream Hydraulic Controls - The following downstream water surface level or controls are to be adopted:
- Where the hydraulic grade line level downstream of the proposed works, including the upstream pit losses at the starting pit is known (corresponding to the design storm recurrence interval as adopted), this level is to be used
 - Where the downstream starting point is at a pit and its hydraulic grade line is unknown, a level of 150mm below the surface level of this pit is to be adopted
 - Where the outlet is to an open channel, the water surface level is to be determined using Manning's Equation or an appropriate hydraulic model. The water level shall be adopted as the normal depth calculated using an appropriate method, or the top of the outlet pipe, whichever is the greater
 - Where the outlet is to an open channel, and downstream flood levels are known, the water surface level to be adopted shall be the 1% AEP flood level

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

- Where the outlet is affected by tidal or wave action, the resulting tide water level shall be adopted
- Where the outlet is to an existing pipe or conduit, the hydraulic grade line of the conduit shall be determined downstream to a pit where its water level is known (e.g. at a grate in the gutter where the maximum free surface ponding is at the top of kerb)
- Where the outlet is at the invert of the kerb, the water surface level shall be adopted at the top of the kerb

Stormwater Drainage Pits

SW42 Pit Types - Standard Council kerb inlet pits with kerb lintel openings, junction pits and letter box type pits are to be installed for all public drainage systems. Pits for private drainage systems are to be inlet and junction pit types with grates or solid covers.

SW43 Material - Public drainage pits are to be precast concrete, fibre reinforced concrete or insitu poured concrete.

Private drainage pits may be constructed from pre-fabricated high density poly-plastic of appropriate load class as specified by the Manufacturer.

The bases of pits shall be concrete benched to minimise hydraulic losses.

Pits constructed of brick or blockwork will not be acceptable unless they are designed and constructed to withstand structural loading and fully waterproofed to prevent leakage.

SW44 Minimum Dimensions - Minimum internal dimensions of pits are tabulated below:

Pit Type	Dimension (mm)
Kerb Inlet with Lintel and Grate	900 x 900
Inlet Pits in Landscaped Areas	600 x 600
Junction Pits	600 x 600
Private Stormwater and Inlet Pit < 0.60m deep	450 x 450
Private Stormwater and Inlet Pit $\leq 0.60\text{m} \leq 0.90\text{m}$ deep	600 x 600
Private Stormwater and Inlet Pit $\leq 0.90\text{m} \leq 1.20\text{m}$ deep	600 x 900
Private Stormwater and Inlet Pit > 1.20m deep	900 x 900

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

SW45 Private Stormwater Drainage Pit Location - Private pits are to be located wholly within property boundaries.

SW46 Grates - Grates over public pits are to be galvanised and hinged to frame. Private pits may have grates made from pre-fabricated high density poly-plastic of appropriate load class as specified by Manufacturer.

SW47 Load Class of Grates and Covers - Stormwater drainage pit grates and covers shall be provided to support the required load classification at the following locations:

Location	Load Class Required*
Driveways including access handles	Heavy Duty
Car parks	Heavy Duty
Road Carriageways	Heavy Duty
Footways	Heavy Duty
Reserve, landscaped areas with pedestrian traffic only	Medium Duty
Reserve, landscaped areas with no traffic	Light Duty

*** Important Note:** Light duty is equivalent to 1 tonne wheel load, medium duty is equivalent to 3.5 tonne wheel load and heavy duty is equivalent to 9 tonne wheel load.

All public grates shall be hinged to frame and lockable.

Private grates are to be hinged to frame and lockable where it is designed to surcharge or where upwelling is likely.

SW48 Lifiable Lids - All lids over pits must be liftable for routine inspections and maintenance.

SW49 Junction Pits - Junction pits are not to be designed as pressurised systems.

SW50 Step Irons - Where pits are 1.2 metres or greater in depth, step irons in accordance with AS1657 are to be provided to one side of the pit wall to allow access for inspections and cleaning.

SW51 Letterbox Type Pits - Letterbox type pits may be used for collection of surface water. However, they are not permitted at or near kerb locations where there is likely pedestrian and/or vehicular traffic. In these locations, pits with butterfly type grates flush with the surrounding ground level are preferred.

SW52 Lintels - Lintels over kerb openings shall be provided at the kerb side with the opening length dependent on its design capture rate, but not less than 1.2 metres and not greater than 4.0 metres.

SW53 Pit Locations - Stormwater drainage inlet pits shall be positioned at the following locations:

- Spaced such that the gutter flow width is limited to 2.5 metres maximum width for the minor system design.
- Located at the upstream side of allotments to minimise runoff flowing across the road.
- Located at sag points and at road depressions.
- Located where access for inspections and maintenance is readily available.
- Provided at changes in direction, grade, conduit level, size, or class of conduit.
- Provided at junctions.
- Spaced at a distance of no greater than 75 metres apart.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

SW54 Inlet Capacities – The inlet capacity of pits shall be determined in accordance with the Australian Rainfall and Runoff Handbook.

Inlet capacities are to be restricted with the following blockage factors:

Location	Inlet Type	Capacity Allowed (%)
sag	side entry only	80
sag	grate only	80
sag	combination	100 side 0 grate
sag	letterbox	50
on-grade	side entry only	80
on-grade	grate only	50
on-grade	combination	80

Open Channels

SW55 Preferences – Piped drainage systems are preferred over open channel systems.

Open channels will only be permitted if they form part of the major drainage system and where permitted, shall be designed to have smooth transitions, with adequate access provisions available for inspections, general maintenance and adequate safety measures installed to protect persons and vehicles.

These include perimeter fences, bollards, and grills over outlet pipes. Step irons shall be installed and flow velocities and depths are to be reduced at nominated access points.

SW56 Design – Open channels shall be designed in accordance with the Australian Rainfall and Runoff Handbook and the NSW Government Floodplain Management Manual and must be able to contain the major system runoff. Open channels shall be designed to avoid hydraulic jumps or generate supercritical flow conditions. Side slopes must not exceed 1 in 3, unless fully fenced off.

Wherever possible, low flows shall be contained within a piped system or contained within a concrete lined channel at the invert of the channel.

SW57 Manning's Roughness Coefficient – Manning's roughness coefficients for open channel sections applicable to specific channel types can be obtained from the Australian Rainfall and Runoff Handbook.

Typical values are given below:

Surface Finish	n value
Concrete pipes or box sections	0.012
Concrete trowel finish	0.015
Concrete formed without finishing	0.016
Sprayed concrete, granite	0.018
Bitumen, smooth finish	0.016
Bricks or pavers	0.016
Pitchers or dressed stone in mortar	0.016
Rubble masonry or random stone in mortar	0.028
Rock lining or rip-rap	0.028
Earth, clean	0.027
Corrugated metal	0.027
Earth, weed and gravel	0.022
Rock cut	0.028
Short grass	0.033
Long grass	0.035
Medium to dense brush	0.150

Building Adjacent to Stormwater Drainage Systems

SW58 Location of Structural Supports - Where structural supports such as foundations, piers, and footings are to be located adjacent to the drainage system, they are to be located outside of the drainage easement and must not load bear onto the underlying drainage structure. In general, where a drainage structure is parallel or adjacent to foundations, piers or footings, the base of the footing shall be located outside the influence zone created by an angle of 45 degrees to the horizontal extended from the invert of the drainage structure.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

SW59 Where a public infrastructure drainage line or a drainage easement is identified within a development site, the location of the public line and/or drainage easement must be accurately located on the development application and construction certificate drawings.

Stormwater Connections

SW60 Stormwater connections from private land – any proposed or existing stormwater connection from private land to the Council's drainage system is a private stormwater connection. It is the responsibility and liability of the private landowners to maintain the private pipeline that crosses the footpath area in good condition at no cost to Council.

SW61 Under Buildings - shall be carried out in accordance with the latest AS/NZS3500.3.

SW62 Above ground pipe work - Shall be carried out in accordance with the latest AS/NZS3500.3 and this Document. The stormwater discharge point's location must be confirmed by Council.

Non-return valves are not permitted to be installed in Council maintained (public) systems.

SW63 Connection Detail - If the ratio of the private pipe size to the Council (public) pipe size is more than one third, a standard stormwater gully pit at the connection point, will be required.

Avoid Conflict with Utility Services

SW64 General - Care shall be taken to ensure that the proposed stormwater drainage system will not conflict with utility services. In this regard, all utility services shall be located prior to final drainage system design. Stormwater drainage conduits crossing over or under sewer lines must be laid in accordance with Sydney Water requirements. This may require support trenching and concrete encasement of sections that traverse the utility.

SW65 Location of Drainage Lines in Road Reserve - Public drainage lines laid in the road reserve, shall be located under the kerb line or within the road carriageway, to avoid conflict with the utility services in the footway.

For private drainage lines which must cross the footway reserve, they shall be laid across the footway perpendicular to or at a maximum angle of 45 degrees to the kerb face to minimise conflict with services. The stormwater connection point must be wholly within the subject site frontage.

Easements

SW66 Requirement - Where the site grades to the rear, the creation of formal drainage easements will be necessary. Evidence in the form of a Legal Agreement between affected parties or copies of titles showing the creation or intention to create easements must be provided to Council in support of the Development Application. This is essential for DA approval. Where easements cannot be negotiated, signed documents by all affected parties or acceptable documentation provided as evidence shall be submitted to support the case for alternative solutions.

Easements shall be required over constructed public drainage systems within private properties, to **ensure** that Council has full rights of access to such drainage systems for the purpose of inspection, maintenance or upgrade.

Stormwater drainage easements shall be required over all private inter-allotment drainage lines.

Stormwater drainage easements will not be required within or over natural drainage systems such as creeks and watercourses.

Council does not favour or encourage the piping, construction within or over, or interference with natural drainage systems. Any proposal to carry out such works will be subject to an assessment pursuant to other relevant Council policies and joint approval from other relevant authorities.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

SW67 Easement Acquisition - Council will take the opportunity to acquire drainage easements over existing constructed public drainage systems within private property whenever a development occurs by Condition of Consent.

When a developer, property owner or Council proposes to relocate or reconstruct a public drainage system within the site, a drainage easement in Council's favour must be created to suit the relocated or reconstructed drainage system at the cost to the developer.

A subdivision **will not** be approved where a formal drainage easement cannot be provided to drain a newly created allotment in the same direction as the natural fall of the land.

SW68 Prohibition of Building over Easements - Any construction of buildings or other permanent structures over a public drainage easement is not permitted.

Easements allow Council reasonable access for the purpose of construction, maintenance and upgrade of the stormwater drainage system.

Encroachments impede or re-direct overland flows away from the easement and may load bear onto the underlying drainage structure.

Council may require the relocation of an existing pipe to avoid encroachment.

Where encroachment is necessary to achieve reasonable development, then the conduit and easement may be relocated subject to Council approval.

SW69 Load bearing Structures adjacent to Drainage Easements - Any structural support such as footings and piers will only be permitted to be located adjacent to an easement if they do not load bear onto the underlying drainage structure, and that the built structure will not be undermined by any future maintenance work necessary within the easement.

SW70 Planting of Significant Trees - The planting of trees or large shrubs, particularly those with extensive root systems will not be permitted in or within proximity of drainage easements.

SW71 Construction over Public Drainage Easements - Construction over a public drainage easement is generally prohibited. Public drainage easements must be free of all encroachments with a minimum vertical clearance from the surface/ground level over the drainage structure to a height of 6.0 metres above.

Paved surfaces over the public drainage easement are permitted provided that construction joints along each longitudinal edge of the easement are installed to facilitate access to the drainage structure.

SW72 Public Easement Widths - Public easement width shall be a minimum width equal to the external width of the conduit plus 1.0 metres on each side, rounded up to the nearest 0.1 metres.

In all cases, authority to modify or extinguish the easement shall be vested in the City of Canada Bay Council.

Inter-allotment Drainage

SW73 Application - Inter-allotment drainage shall be provided for property/s that does not drain directly to its street frontage by gravity means, or directly by gravity means to an existing stormwater drainage system (public or legally private) or by gravity means to a natural watercourse.

Easements shall be created over all inter-allotment drainage systems on private property/s in favour of all upstream properties to be benefited by it.

SW74 Inter-allotment Easement Widths - Inter-allotment easement widths (private) shall be a minimum width of 0.9m. However these widths may be varied where there are site constraints.

SW75 Sizing of Inter-allotment Drainage Systems - Inter-allotment conduits shall be sized on the total site area of the benefitted allotments with a minimum impervious area as given in Section Impervious Areas.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

SW76 Material - Inter-allotment drainage pits and pipes shall be of reinforced concrete, fibre reinforced concrete or uPVC material. All pipes/ conduits are to be rubber ring jointed or solvent welded as specified by the manufacturer and in accordance with **AS4058**, **AS4139** and **AS1254** respectively.

Subsurface Water

SW77 Definition - Subsurface or groundwater is water held in the soil or in pores and crevices in rock and is generally present behind basement walls or subfloor areas which are below the natural ground level.

SW78 Minimum Information to be Provided – Where a proposal is for the installation of a basement or below ground area or the development will require cutting into the existing ground level, a Geotechnical Report must be submitted to Council for assessment. This Report shall detail an investigation of subsurface conditions including groundwater levels, the likelihood or indication of a high water table or seepage water, the soil type encountered and the soil infiltration rate.

SW79 Disposal – Generally subsurface water is collected by sub-soil drainage pipes and collected in a holding tank which is either pumped or gravity fed into an approved disposal point. Subsurface water is not permitted to be discharged to the kerb either directly or indirectly except in a controlled manner specifically approved by Council under **S138.1(d) of the Roads Act 1993** (refer **SW80** below). It must be drained directly into an underground public drainage system or other disposal point approved by Council.

SW80 Direct Connection into an Underground Public Drainage System – This is the preferred method of subsurface water disposal. The subsurface water is conveyed across the public footway by gravity means and drained into the nearest public underground piped drainage system.

A junction pit is to be installed within the property boundary with a non-return valve on the upstream pipe to prevent water back flowing into the site.

If there is no existing underground drainage system in the vicinity of the source, a new underground (piped) drainage system shall be installed and connected into the nearest downstream underground drainage system. The new drainage system other than the line that crosses the footway shall be designed to a public drainage system standard and shall become part of the public drainage system.

SW81 Waterproofing Subfloor Areas – Basement walls and subfloor areas may be waterproofed to minimise the collection of seepage water, in particular where Type 2 acid sulphate soils or high water tables are encountered.

Water proofing has its limitations and subsoil water ingress may still exist as there would be high pore pressures exerted on the walls and floors of the “tanked” structure. Pore pressures and floatation forces mean these types of structures require specialized design and certification by a Qualified Structural Engineer.

SW82 High Water Table – In the case of a high water table, the draw down effect of the water table when subsurface water is collected and disposed would necessitate a statement from a Geotechnical Engineer that nearby structures will not be affected by the development. It may be necessary to obtain licence for the drawing down of groundwater from the Department of Primary Industries.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

SW83 Controlled Disposal – If all alternative acceptable solutions have been exhausted, Council will consider separate specific approval of controlled release to the kerb under **Section 138.1(d) of the Roads Act**. In this circumstance subsurface water may be disposed to the kerb and gutter in a controlled rate, period and duration. This will necessitate the following:

- Provision of a sump or holding tank which can store collected seepage water for a minimum duration of 24 hours.
- The soil infiltration rate shall be determined by geotechnical investigation but shall not be less than 0.001 L/s per m².
- The holding tank shall be sized for the collected seepage water based on the area of exposed wall to the soil. For example, for typical double garage and an infiltration rate of 0.001 L/s per sqm and a wall height of 2.4m with subsoil drainage install around its perimeter say 25m long, the volume of the holding tank required will be $2.4 \times 25 \times (0.001/1000) \times 24 \times 60 \times 60 = 5.2$ cum or 5200 L required. Note this is in addition to the volume required for collected stormwater from weather exposed areas.
- Dual pumps to be installed and shall be designed to operate to discharge a maximum of 5L/s and restricted to pumping between 11pm and 3am only.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

Stormwater Pollution and Erosion Control

Soil and Water Management

- SPE1** Soil and Water Management Plan - A soil and water management plan shall be submitted and must be approved by Council prior to the commencement of any construction or demolition activity.
- SPE2** Guidelines - Guidelines shall be in accordance with the Managing Urban Stormwater, Soils and Construction Manual issued by Landcom and the NSW Department of Environment and Climate Change, March 2004 and June 2008.
- SPE3** Sediment Control Devices - All sediment control devices are to be installed prior to any commencement of clearing and earthworks on the site. Ongoing maintenance of these devices during construction will be required.
- A maintenance schedule is to be provided with the Soil and Water Management Plan for large scale developments and works within public land.
- SPE4** Soil Erosion Control - Soil erosion control is required to protect adjoining properties, bushland, roadways and receiving waters from degradation due to silt laden stormwater runoff as a result of development and/or concentration of runoff. Soil erosion control shall be provided as follows:
- Appropriate scour protection installed at the outlet to stormwater conduits, and
 - Installation of pollution control devices at the source, on-line, off-line or at the end of the line to control sediment laden overland stormwater flows.
- SPE5** Scour Protection Devices - Scour protection devices shall include embankment stabilisation e.g. rock walls, concrete aprons, gabions, turf, jute mesh, energy dissipating units, or other more appropriate erosion control devices approved by Council.
- Please note that some types of scour protection devices may be inappropriate along certain creek locations.

- SPE6** Silt and Sediment Control - Silt and Sediment Control devices are required as part of a development to remove pollutants during the "first flush".

These units shall be installed on line or within the site and may include proprietary items such as gross pollutant trap, hydrodynamic separation, filters, basket or silt and grease arrestors approved by Council. Installation of these devices shall be in accordance with the manufacturer's specification.

Other sediment control devices such as stilling basins and constructed wetlands shall be required for large-scale developments and include land and community title subdivisions.

Design of these devices shall be in accordance with the Managing Urban Stormwater, Soils and Construction Manual issued by Landcom and the NSW Department of Environment and Climate Change, March 2004 and June 2008.

Integrated Developments

- SPE7** Part 3A Permit for Development near Water Bodies - Any development within 40m of a water body such as a stream, creek, lagoon, or river may require a Part 3a Permit under the Department of Lands Guidelines and The Rivers and Foreshores Improvement Act 1948.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

Water Sensitive Urban Design

Objectives

WSUD1 Principles of Water Sensitive Urban Design
- All developments are encouraged to implement the principles of Water Sensitive Urban Design (WSUD) in order to minimise the impact of the development on the water cycle and achieve more sustainable forms of urban development.

WSUD2 Aim of WSUD - The aim of WSUD is to integrate stormwater management systems into the landscape component of the site in a manner that provides benefits that incorporate stormwater detention, retention, re-use and water efficiency whilst addressing issues such as nuisance flooding, protection from pollution of the receiving waterways and groundwater and improving visual amenity.

Design Principles

WSUD3 How Design Principles are achieved - In addition to those control systems already identified in Stormwater Management such as On-site Stormwater Detention, infiltration or absorption systems and rainwater harvesting, the aim of WSUD is to combine these options together with the proposed landscaping to achieve integration in accordance with **Clause SC4 (Pollutant Load to be Retained)** rather than relying on 'end of pipe' devices prior to discharge. These are achieved by:

- Operating practices and technologies which would prevent contamination of stormwater.
- Locate the development such as to minimise disturbance of the natural drainage system.
- Minimise impervious surfaces and encouraging soft landscaping to promote infiltration and reduce stormwater runoff.
- WSUD elements are to be located and configured such that impervious areas to be treated can be maximised.

WSUD4 Water Sensitive Urban Design Measures - Where WSUD principles are to be applied, the following table lists measures, which can be used to achieve water quality and water quantity targets. Note their uses may be complementary to other 'hard' engineering solutions.

WSUD Measure	Comments
Constructed Wetlands	To be considered for medium to large scale subdivisions
Sedimentation Basins	To be considered for medium to large scale subdivisions
Vegetated Filter Strips	Can be incorporated into new developments
Sand Filters	Used in combination with absorption system design
Bio-retention Systems	Used in combination with absorption system design or for water quality improvement targets in lieu of straight discharge into the waterways. Alternative Gross Pollutant Traps may be considered (mechanical system) for screening silts, sands and debris, may be considered
Permeable Pavers	As a complementary system to absorption trench to minimise on-ground impervious areas
Infiltration Trenches	Absorption trench design as described above
Rainwater Harvesting	Re-use is encouraged.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

WSUD5 Water Sensitive Urban Design Modelling – Modelling of WSUD using a suitable program such as MUSIC (Model for Urban Stormwater Improvement Conceptualisation) will be acceptable to Council.

WSUD6 Monitoring Water Quality - Water quality treatment systems or pollution control devices are to be installed and monitored regularly to ensure that they achieve their treatment objectives and that their performance meets the above criteria. If they fail to meet these targets, or if so required by the Appropriate Regulatory Authority (ARA), it shall be modified to achieve them and the system upgraded.

WSUD7 Ease of Maintenance - Water quality treatment systems or pollution control devices are to be designed to ensure ease of maintenance. The location of the WSUD measure shall locate where easy unimpeded access is possible for routine inspections and maintenance requirements.

WSUD8 Maintenance Schedule – where the development site requires to provide WSUD strategy and measures as per WSUD4 and/ or 'hard' engineering solutions such as gross pollutant treatment devices, filter units etc. A maintenance schedule shall be prepared by the qualified suitable engineer demonstrating a simple set out maintenance actions and the frequency of such actions including a sketch plan to ensure the constructed devices can be maintained by the future property owners and occupiers.

WSUD9 Positive Covenant and Restriction on the Use of Land – The constructed stormwater quality improvement device (SQID) shall require the creation of a Positive Covenant and Restriction on the Use of Land affixed to the title requiring the owner of the property to maintain the SQID system including inspect, removal of the pollutant, maintain and replace the treatment devices in order to maintain the reduction target in accordance with the approved documents. Restriction on the Use of land to ensure the treatment devices will operate/ perform as per approved documents and no alter or addition of the treatment devices without written consent from authority.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

Document Submission

General

- DS1 Minimum Requirements - At the lodgement of a Development Application, minimum submission of documentation is required to support the proposed development. Usually conceptual plans would suffice unless the proposed development would impact on public land or Council considers that there may be site constraints which may result in non-compliance to standards.
- DS2 Stormwater Drainage Conceptual Plan - a stormwater drainage concept plan (SDCP) must be submitted with the Development Application.
- DS3 Detailed Design Drawings - Detailed design drawings and supporting calculations are generally required at Construction Certificate submission and not required at DA stage except in the following circumstances:
- The proposed works include activities on Council property. A separate approval under Section 138 of the Roads Act may be necessary. It is important the Applicant contact Council in this case to ensure that approval can be granted.
- Important Note:** Works in the road reserve can only be approved under Section 138 of the Roads Act. Approval under Part 4 of the Environmental Planning and Assessment Act does not grant automatic approval for works on public land.
- The proposed development is a new dwelling, residential flat building, mixed development, commercial or industrial development and the land falls to the rear and does not benefit from a formal drainage easement.
 - A Stormwater Assessment Report is required due to likely flood affectation to ascertain design floor levels or if there is a proposed subfloor level which may be likely to be affected by stormwater inundation or disposal of seepage water is difficult.
- Where detailed design drawings are required, they must be submitted and approved by Council prior to the issue of the Construction Certificate.

Development Application

- DS4 Submission of Conceptual Drawings - Engineering conceptual drawings shall be submitted at the lodgement of the Development Application containing the following information:
- A3 or A1 size drawing sheets at an appropriate scale of 1:100, 1:200 or 1:500.
 - Showing the layout of the proposed drainage system and structures including the location of all downpipes, kerbs, channels, open drains, pits, pipes, retaining walls etc.
 - Showing the nominal size of all stormwater conduits, grades, and pit dimensions.
 - Showing conduit gradients.
 - Showing the finished surface levels of any open channels, drains, or swales.
 - Showing the location of all buildings, driveways, retaining walls, and other impervious and pervious surfaces.
 - Showing the finished surface levels of paved areas, unpaved areas, building floors and garages.
 - Showing typical cross sectional details of any open channels, drains, or swales.
 - Where drainage easements are required, the location of the proposed easement for stormwater drainage and legal agreements attached.
 - Showing details of the proposed On-site Stormwater Detention (OSD) or On-site Stormwater Absorption (OSA) System, Stormwater Quality improvement Device (SQID) or Mechanical Pump-out, if required.
 - Include basic supporting computation or information, including any electronic hydrological and/or hydraulic modelling utilised in the submitted engineering report or plans.
 - Showing the location of any utility services, structures, trees, etc., which might affect the proposed development.
- Important Note:** It is the responsibility of the applicant to submit sufficient details of all relevant services, which may conflict with the proposed design. The exact locations of any crossings or connections are to be shown.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

Construction Certificate

DS5 Submission of Construction Certificate

Drawings - Detailed construction drawings are to be submitted as required, either to Council or to a nominated Principal Certifier (PC) and must include the following information:

- Drawings to be issued on standard A3 or A1 size drawing sheets at an appropriate scale of 1:100, 1:200 or 1:500.
- Drawings must clearly show the layout of the proposed engineering works, including the location of all retaining walls, downpipes, pits and pipes and labelled with their pipe sizes, gradients, existing and finished surface and invert levels, dimensions of all OSD, OSA, and pump-out systems, including the proposed storage volumes, surcharge/overflow paths, permissible site discharge, and other relevant information sufficient for construction.
- All supporting calculations are to be supplied on computer disc (where applicable) with relevant hydrologic and hydraulic information.

DS6 Minimum Information - the minimum information to be provided on the drawings are as follows:

- Total site area in m².
- Total impervious area (roof and paved) in m².
- Area draining into the proposed stormwater (OSD or OSA) facility.
- Dimensions (mm), volume (cum), and discharge rate from the OSD or OSA system.
- Maximum water depth (mm) from centreline of outlet to top water level.
- Maximum depth of ponding for above ground OSD systems.
- Type and size of orifice (mm-dia), outlet pipe (mm-dia) and PSD (L/s).
- Details of the OSD control device(s) used including size and shape, outlet pipe diameter and invert level.
- For underground systems, at least one (1) detailed section through the OSD or OSA facility sufficient for construction.
- For above ground systems, at least two (2) detailed sections through the OSD facility, which shall include the maximum water level,

gradients, and overflow weir, sufficient for construction.

- Existing and proposed levels and details of adjoining structures and buildings shall be shown on the sections through the OSD or OSA facility.
- Overland flow path and PSD from the site.
- Plan showing the location of OSA or OSD facilities including dimensions, pervious (landscape) and paved (existing and proposed roof and paved) areas, and all existing and proposed surface levels.
- For pump-out systems, the pump type and rate, and holding tank volume.
- Location of any utility services, structures, trees, etc., which may affect the proposed drainage system.
- Full details of all relevant services, which may conflict with the proposed design, including invert levels and size of the service are to be shown.
- Structural details of retaining walls including sub-soil drainage, reinforcement details, dimensions, and concrete strength.
- Where an inter-allotment drainage line is to be laid, a longitudinal section of the proposed pipe from the point of connection to the discharge point is to be provided. This must include pipe sizes, gradients, flowrates, and a hydraulic grade line.

DS7 Design Certification - The construction drawing for all types of development must be designed and certified by a suitably qualified practising Engineer, with membership with the Institution of Engineers, Australia, practising in the relevant competency category (civil, geotechnical, structural) and on the National Engineering Register (NER).

DS8 Drainage Easements - Where drainage easements are required, evidence in the form of a legal agreement between the affected parties or copies of titles showing the created easements shall be submitted with the drawings.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

Prior to Occupation (Final) Certificate or Completion of Works

DS9 Minimum Information – Following construction and prior to the occupation of the development, the following document in accordance with the requirement prepared by a suitably qualified person shall be submitted to Council:

- **Works-As-Executed (WAE) drawings:** an engineering survey of the as built works prepared on the certified (or approved) plan issued by the principal certifier or the relevant authority. A copy shall be submitted to Council. This plan is to include constructed levels, dimensions, and volume of the built OSA, OSD facility, the location of all drainage pipes, sizes and levels, etc., and signed by a Registered Surveyor.

Note: WAE plan must be final version. Draft revision or watermark is not accepted.

- **Copies of titles** showing the creation of Positive Covenants and Restriction on the use of land. Standard wording of positive covenants and restriction on the use of land can be found in Section ES4 Appendices.
- **Final compliance certification** of the constructed drainage system by a suitably qualified engineer for all types of development. The certification must certify that the works have been installed in accordance with the relevant Australian standards (e.g., AS3500) and Council's relevant specifications and DCP.
- **Identification Plate:** an identification plate of not less than 110mm wide x 80mm high, is to be fixed near or onto the control structure of the OSD system, this is to advise the registered proprietor of their responsibility to maintain the OSD facility and not to tamper with it in any manner without written consent. This plaque shall read 'This is an On-site Stormwater Detention System. It is an offence to reduce the volume of the system (tank or basin) or to remove the orifice that controls the outflow. The base of the outlet control pit and the debris screen must be cleared of debris and silt on a regular basis. This plate must not be removed.'

Identification plates can be purchased from Council's Customer Services Centre

DS10 Where on-site stormwater detention system, on-site stormwater absorption system, stormwater quality improvement devices or a mechanical pump out system is proposed on site, the following documents must be submitted to Council or Principal Certifier prior to occupation:

- a) A certificate of compliance from a suitably qualified engineer with Institution of Engineers, Australia Corporate Membership and registered on the National Engineering Register (NER) under the appropriate professional Category certifying the intended function of constructed stormwater drainage system including Onsite Stormwater Detention (OSD) system, Onsite Stormwater absorption system, Stormwater Quality Improvement devices, Mechanical Pump out system etc, and
 - b) "Work - As - Executed" drawings of constructed stormwater drainage system prepared by a Registered Surveyor or equivalent.
- Where Council is not the Principal Certifying Authority, two (2) copies of the above documents are to be provided to Council prior to the issue of any Occupation Certificate. These documents are to be retained on Council's Construction Certificate files.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

DS11 Works-As-Executed Documentation for the constructed public infrastructure:

Prior to handing over of land or assets to Council, the developer is to provide Works-As-Executed documentation.

The documentation to be provided is to be in the form of:

- a) A certificate of compliance issued by a suitably qualified engineer with National Engineering Register (NER) accreditation for the constructed public infrastructure shall be submitted to Council;
- b) Work-As-Executed (WAE) drawing prepared by and certified by a registered surveyor. The WAE drawing is to be prepared on the certified (or approved) plan issued by the principal certifier or the relevant authority;
- c) A1 size pdf drawings suitable for archiving (vector based, not raster); and
- d) A vector format files suitable for importing into Council's Land Information Systems (Esri Geodatabase or MapInfo) or CAD systems (AutoCAD).
- e) A CCTV (closed circuit television) report and footage verification of the newly constructed public stormwater drainage lines and demonstrating no signs of crack post installation.

Note: The CCTV footage shall include but not limited to the size of pipe, location from point to point (e.g., A to B), material of pipe, date of the works, length of the pipe and pipe gradient. This is to be accompanied with a map or plan of the stormwater drainage pipeline surveyed.

DS12 Detailed Asset Data - Prior to handing over land or assets to Council, the developer is to provide detailed asset data at a component level for importation into Council's Asset Management System.

Information required will depend on the components and the developer should submit a component list to Council for further advice.

The following list is representative of what would be required:

- A vector representation of the component and its location on MGA2020 coordinates linked to:
 - Description.
 - Material details.
 - Design life.
 - Installation date.
 - Acquisition date.
 - Dimensional and quantity information where it is not defined by the graphic object (e.g. The length of a pipe can be represented by the length of a line object on the plan. A data value representing the diameter needs to be attached to that line object. The area of a segment of road can be defined by a polygon. A data value representing the pavement depth needs to be attached to the polygon.)
 - Valuation at installation date.

It is recommended that these requirements be considered at the design documentation stage.

For more complex and proprietary items, for example pumps or lighting systems, the developer shall provide to Council's satisfaction details of Brand, Model, Supplier, Warranty, Installation Guide, User Guide, Safety Instructions, Servicing Record, Maintenance Manual, Keys etc as appropriate.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

Section 138 Consent under the Roads Act

DS13 General - Development Approval does not give automatic approval for external works to the site, that is, in public domain areas.

Important Note - Private Certifiers cannot issue Consent under the Roads Act. The Road Authority which can issue Consent under the Roads Act will generally be either Council or the Transport for NSW (TfNSW). In some cases where Council or TfNSW is the Road Authority, the consent of both Council and the TfNSW will be required due to traffic or maintenance impacts.

Council is the Consent Authority for all works within the footway area, regardless of TfNSW approval for road pavement works or activities. This may be in the form of a **Road Opening Permit** (for minor works such as the laying of a private stormwater pipe across the footpath), **Vehicular Crossing Application** (for driveway and footpath construction) or a **Section 138 Application for Major Works** (such as laying a stormwater drainage line under the kerb or road pavement construction). All these activities require a separate consent from Council under Section 138 of the Roads Act 1993.

DS14 External works - Pursuant to Section 138 of the Roads Act 1993, written consent from the Appropriate Road Authority (Council or TfNSW), must be sought for proposed works external to the site. External works include the following:

- Closure of a carriageway on a State Road
- Closure of a carriageway on a Regional Road
- Works which may impact the traffic flow on a State Road or Regional Road
- Works within 100m of a Traffic Facility (e.g. Signalized Traffic Lights)
- Closure of a lane for the purpose of standing a crane, concrete pump or waste bin

DS15 Types of External Works cover by a Section 138 Approval - The types of works requiring Section 138 approval include but not limited to:

- Road works in general
- Stormwater drainage works
- Traffic devices or local area traffic management (LATM) schemes
- Footpath construction
- Water quality control devices on public land
- Driveway construction
- Any related works within an adjacent road reserve (path, verge or carriageway)

DS16 Road Occupancy License - Any works within the road reserve, for a State or Regional classified road, will require a Road Occupancy License to be obtained from the Planned Incidents Unit of the Traffic Management Centre of the TfNSW.

The Application must include details of a Traffic Management Plan.

DS17 Other Consents under Section 138 of the Roads Act - **An Application for Vehicular Crossing Construction and Ancillary Works, Road Opening Permit** or a **Consent Letter** from Council is required for all other types of works within the road reserve.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

ES4 Appendices

Terms of Positive Covenant

Existing Allotments

- A1 The Terms of Positive Covenant - Where there is no land subdivision (no Section 88B instrument required) then the following standard wording for the "The Terms of Positive Covenant" is to be used and attached with the standard NSW Department of Lands form 13RPA.

Terms of Positive Covenant

(Show full details of Positive Covenant)

The registered proprietors covenant with the City of Canada Bay Council (Council) that they will maintain and repair the structure and works on the land in accordance with the following terms and conditions:

I. The registered proprietor will:

- i. keep the structure and works clean and free from silt, rubbish and debris
- ii. maintain and repair at the sole expense of the registered proprietors the whole of the structure and works so that it functions in a safe and efficient manner.

II. For the purpose of ensuring observance of the covenant the Council may by its servants or agents at any reasonable time of the day and upon giving to the person against whom the covenant is enforceable not less than two days notice (but at any time without notice in the case of an emergency) enter the land and view the condition of the land and the state of construction maintenance or repair of the structure and works on the land.

III. The registered proprietors shall indemnify the Council and any adjoining land owners against any claims for damages arising from the failure of any component of the on-site stormwater detention (OSD), on-site stormwater retention/absorption (OSA), stormwater quality improvement device (SQID) and/or mechanical pump-out system, or failure to clean, maintain and repair the stormwater management system.

IV. By written notice the Council may require the registered proprietors to attend to any matter and to carry out such work within such time as the Council may require to ensure the proper and efficient performance of the structure and works and to that extent Section 88F(2) (a) of the Act is hereby agreed to be amended accordingly.

V. Pursuant to Section 88F(3) of the Act the authority shall have the following additional powers pursuant to this covenant:

i. In the event that the registered proprietor fails to comply with the terms of any written notice issued by the Council as set out above the Council or its authorised agents may enter the land with all necessary equipment and carry out any work which the Council in its discretion considers reasonable to comply with the said notice referred to in I hereof.

ii. The Council may recover from the registered proprietor in a Court of competent jurisdiction:

(a) Any expense reasonably incurred by it in exercising its powers under sub-paragraph i hereof. Such expense shall include reasonable wages for the Council's own employees engaged in effecting the said work, supervising the said work and administering the said work together with costs, reasonably estimated by the Council, for the use of machinery, tools and equipment in conjunction with the said work.

(b) 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 of the Act or providing any certificate required pursuant to Section 88G of the Act or obtaining any injunction pursuant to Section 88H of the Act.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

VI. This covenant shall bind all persons who claim under the registered proprietors as stipulated in Section 88E(5) of the Act.

For the purposes of this covenant:

Structure and Works shall mean the on-site stormwater detention (OSD), on-site stormwater retention/absorption (OSA), stormwater quality improvement device (SQID) and/or mechanical pump-out system constructed on the land as set out in the plan annexed hereto and marked with the letter "A" or alternatively as detailed on the plans approved by the Principal Certifying Authority (INSERT ORGANISATION/ COMPANY NAME): {INSERT CONSTRUCTION CERTIFICATE NUMBER AND DATE ISSUE BY PRINCIPAL CERTIFYING AUTHORITY, DRAWING NUMBER, DATE, REVISION NUMBER AND DESIGNER DETAILS} including all gutters, pipes, drains, walls, kerbs, pits, grates, tanks, chambers, basins and surfaces designed to temporarily detain stormwater on the land.

The Act means the Conveyancing Act 1919.

A copy of the construction certificate or complying development certificate is held on Council file "DA number" or "CDC number".

Name of authority having the power to release, vary or modify the 'Positive Covenant' is City of Canada Bay Council.

Land Subdivision

A2 The Terms of Positive Covenant - Where a subdivision has been lodged and a Section 88B instrument created, then the following standard wording for the "The Terms of Positive Covenant" shall be used.

Terms of Positive Covenant referred to in the above-mentioned Plan

The registered proprietors covenant with the City of Canada Bay Council (Council) that they will maintain and repair the structure and works on the land in accordance with the following terms and conditions:

I. The registered proprietor will:

- i. keep the structure and works clean and free from silt, rubbish and debris
- ii. maintain and repair at the sole expense of the registered proprietors the whole of the structure and works so that it functions in a safe and efficient manner.

II. For the purpose of ensuring observance of the covenant the Council may by its servants or agents at any reasonable time of the day and upon giving to the person against whom the covenant is enforceable not less than two days notice (but at any time without notice in the case of an emergency) enter the land and view the condition of the land and the state of construction maintenance or repair of the structure and works on the land.

III. The registered proprietors shall indemnify the Council and any adjoining land owners against any claims for damages arising from the failure of any component of the on-site stormwater detention (OSD), on-site stormwater retention/absorption (OSA), stormwater quality improvement device (SQID) and/or mechanical pump-out system, or failure to clean, maintain and repair the stormwater management system.

IV. By written notice the Council may require the registered proprietors to attend to any matter and to carry out such work within such time as the Council may require to ensure the proper and efficient performance of the structure and works and to that extent Section 88F(2) (a) of the Act is hereby agreed to be amended accordingly.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

V. Pursuant to section 88F(3) of the Act the authority shall have the following additional powers pursuant to this covenant:

- i. In the event that the registered proprietor fails to comply with the terms of any written notice issued by the Council as set out above the Council or its authorised agents may enter the land with all necessary equipment and carry out any work which the Council in its discretion considers reasonable to comply with the said notice referred to in I hereof.
- ii. The Council may recover from the registered proprietor in a Court of competent jurisdiction:
 - (a) Any expense reasonably incurred by it in exercising its powers under sub-paragraph i hereof. Such expense shall include reasonable wages for the Council's own employees engaged in effecting the said work, supervising the said work and administering the said work together with costs, reasonably estimated by the Council, for the use of machinery, tools and equipment in conjunction with the said work.
 - (b) 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 of the Act or providing any certificate required pursuant to Section 88G of the Act or obtaining any injunction pursuant to Section 88H of the Act.

VI. This covenant shall bind all persons who claim under the registered proprietors as stipulated in Section 88E(5) of the Act.

For the purposes of this covenant:

Structure and Works shall mean the on-site stormwater detention (OSD), on-site stormwater retention/absorption (OSA), stormwater quality improvement device (SQID) and/or mechanical pump-out system constructed on the land as set out in the plan annexed hereto and marked with the letter "A" or alternatively as detailed on the plans approved by the Principal Certifying Authority (INSERT ORGANISATION/COMPANY NAME): {INSERT CONSTRUCTION CERTIFICATE NUMBER AND DATE ISSUE BY PRINCIPAL CERTIFYING AUTHORITY, DRAWING NUMBER, DATE, REVISION NUMBER AND DESIGNER DETAILS} including all gutters, pipes, drains, walls, kerbs, pits, grates, tanks, chambers, basins and surfaces designed to temporarily detain stormwater on the land.

The Act means the Conveyancing Act 1919.

A copy of the construction certificate or complying development certificate is held on Council file "DA number" or "CDC number".

Name of authority having the power to release, vary or modify the 'Positive Covenant' is City of Canada Bay Council.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

Restriction on the Use of Land

Existing Allotments

- A3 The Terms of Restriction on the Use of Land - Where there is no land subdivision (no Section 88B instrument required) then the following standard wording is to be used for the "The Terms of Restriction on the Use of Land" and attached with the standard NSW Department of Lands form 13RPA.

Terms of Restriction on the Use of Land

(Show full details of the Restriction)

The registered proprietors covenant with the City of Canada Bay Council (Council) that they will not:

- I. Do any act, matter or thing which would prevent the structure and works from operating in an efficient manner.
- II. Make any alterations or additions to the structure and works or allow any development within the meaning of the Environmental Planning and Assessment Act 1979 to encroach upon the structure and works without the express written consent of the authority.
- III. This covenant shall bind all persons who claim under the registered proprietors as stipulated in Section 88E(5) of the Act.

For the purposes of this covenant:

Structure and Works shall mean the on-site stormwater detention (OSD), on-site stormwater retention/absorption (OSA), stormwater quality improvement device (SQID) and/or mechanical pump-out system constructed on the land as set out in the plan annexed hereto and marked with the letter "A" or alternatively as detailed on the plans approved by the Principal Certifying Authority (INSERT ORGANISATION/COMPANY NAME): {INSERT CONSTRUCTION CERTIFICATE NUMBER AND DATE ISSUE BY PRINCIPAL CERTIFYING AUTHORITY: {INSERT DA NUMBER, DRAWING NUMBER, DATE, REVISION NUMBER AND DESIGNER DETAILS} including all gutters, pipes, drains, walls, kerbs, pits, grates, tanks, chambers, basins and surfaces designed to temporarily detain stormwater on the land.

The Act means the Conveyancing Act 1919.

Name of Authority having the power to release, vary or modify the 'Restriction' is City of Canada Bay Council.

Land Subdivision

- A4 The Terms of Restriction on the Use of Land - Where a subdivision has been lodged and a Section 88B instrument created, then the following standard wording for the "The Terms of Restriction on the Use of Land" shall be used.

Terms of Restriction on the Use of Land referred to in the above-mentioned Plan

The registered proprietor covenant with the City of Canada Bay Council (Council) in respect to the structure erected on the land described as "on-site stormwater detention system" (which expression includes all ancillary gutters, pipes, drains, walls, kerbs, pits, grates, tanks, chambers, basins and surfaces designed to temporarily detain stormwater) shown on plans approved by the Principal Certifying Authority: {INSERT DA NUMBER, DRAWING NUMBER, DATE, REVISION NUMBER AND DESIGNER DETAILS} (hereinafter called "the system").

The registered proprietors covenant with the City of Canada Bay Council (Council) that they will not:

- I. Do any act, matter or thing which would prevent the structure and works from operating in an efficient manner.
- II. Make any alterations or additions to the structure and works or allow any development within the meaning of the Environmental Planning and Assessment Act 1979 to encroach upon the structure and works without the express written consent of the authority.
- III. This covenant shall bind all persons who claim under the registered proprietors as stipulated in Section 88E(5) of the Act.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

For the purposes of this covenant:

Structure and Works shall mean the on-site stormwater detention (OSD), on-site stormwater retention/absorption (OSA), stormwater quality improvement device (SQID) and/or mechanical pump-out system constructed on the land as set out in the plan annexed hereto and marked with the letter "A" or alternatively as detailed on the plans approved by the Principal Certifying Authority (INSERT ORGANISATION/COMPANY NAME): {INSERT CONSTRUCTION CERTIFICATE NUMBER AND DATE ISSUE BY PRINCIPAL CERTIFYING AUTHORITY}, including all gutters, pipes, drains, walls, kerbs, pits, grates, tanks, chambers, basins and surfaces designed to temporarily detain stormwater on the land.

The Act shall mean the Conveyancing Act 1919.

Name of Authority having the power to release, vary or modify the 'Restriction' is City of Canada Bay Council.

CITY OF CANADA BAY

Development Control Plan

Appendix 2 Engineering Specifications

Rhodes Peninsula Site Specific Requirements

Minimum Standards

MS1 General - The minimum engineering standards given in this Appendix applies to all proposed developments in the Rhodes Peninsular area.

The general standards given in the main body of this Engineering Development Control Plan will still apply where no reference or detail is given in this Appendix.

Shared Paths

SP1 Shared cycle ways and footpaths - shared cycle ways and footpaths shall be provided in all public domain areas. They shall be constructed to the following standards:

- Wearing surface material shall be of concrete 100mm thick, 32MPa compressive strength and reinforced with F72 mesh placed centrally.
- Concrete pavement shall be of uniform colour to match existing area. Coloured black oxide may be used.
- Concrete pavement to have keyed or dowelled joints at 12 metre centres. Control joints shall be saw cut at 3 metre intervals as soon as the concrete has set sufficiently as to not pull stones when cutting.
- Concrete pavement shall be laid on a 20mm sand blinding layer on a compacted sub-grade in accordance with the AUSPEC specification.
- Concrete pavement shall be finished with a coving trowel.

Seawalls

SE1 Serviceability Level - Seawalls shall be constructed to a serviceable level in accordance with the Australian Standards for Marine Structures.

SE2 Sea Level Rise - Seawalls shall be designed and constructed to withstand a 1%AEP storm event with no overtopping inclusive of additional height of 900mm minimum to account for sea level rise due to climate change.

Jetty

JE1 Prohibited - Jetties or similar structures are prohibited.

Council is unable to maintain and renew jetties due to financial constraints.

Public Domain Lighting

ST1 Design Requirements – All public domain lighting shall be designed and constructed to the requirements and specification of the City of Canada Bay Council.

Tree Planting

TP1 General - Refers to tree planting in road carriageways and footways in general.

TP2 Street Trees - Street trees generally shall be planted within a square reinforced concrete cut-off wall as a structural root barrier. Approved synthetic root barrier systems or equivalent may be used in footway areas (pedestrian access areas only).

Where street trees are to be planted in road carriageways (pavement area subject to vehicular loads), it shall be planted within a square reinforced concrete cut-off wall only.

The root barriers shall be extended 300mm below the road pavement. The purpose of the root barriers is to protect the road pavement from moisture and root ingress.

Design Life of all Structures

DL1 General - All public infrastructure shall be designed and selected to provide the least lifecycle costs with respect to maintenance and renewal of the infrastructure throughout its entire serviceable life.

DL2 Seawalls - Seawalls shall be designed and constructed for a minimum design life of 100 years in accordance with the Australian Standards for Marine Structures.

Civic Signage

SG1 General - All signage shall be designed and installed in accordance with Canada Bay Council's Signage Manual.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

Garbage Bins

- GR1 General - All garbage bins shall be minimum 240 Litres wheelie bin type and housed in stainless steel and timber surround (model no. EM235 Bennelong Bin Enclosures by Emerdyn Pty Ltd).

Stormwater Drainage

- SD1 General - Stormwater drainage systems shall be designed generally in accordance with Section **ES3 Stormwater Management**.
- SD2 On-site Stormwater Detention - On-site stormwater detention (OSD) shall be required for all proposed development allotments unless drainage from the developed site is discharged directly into the Bay, or that the street trunk drainage system has been designed to cater for the 1% AEP storm event.
- Where OSD is required, the permissible site discharge shall be based on a "greenfields" site during 20% AEP with an impervious area of 0%.
- SD3 Sub-surface Water - Sub-surface water collected from basements and all lowered floor areas shall not be discharged directly to the kerb. Refer to Section **ES3 Stormwater Management, Sub-surface Water** for further guidelines.
- SD4 Scour and Erosion Control - Refer to Section **ES3 Stormwater Management** for further guidelines.

Works as Executed Drawings and Asset Data

- WAE1 Works-As-Executed Drawings - Prior to handing over land or assets to Council, the developer is to provide Works-As-Executed drawings prepared and certified by a registered surveyor.
- The plans are to be provided in the form of:
- A1 size pdf drawings suitable for archiving (vector based, not raster) and
 - A vector format suitable for importing into Council's Land Information Systems (MapInfo) or Cad systems (AutoCAD).

- WAE2 Detailed Asset Data - Prior to handing over land or assets to Council, the developer is to provide detailed asset data at a component level for importation into Council's Asset Management System.

Information required will depend on the components and the developer should submit a component list to Council for further advice.

The following list is representative of what would be required:

- A vector representation of the component and its location on MGA94 coordinates linked to:
 - Description.
 - Material details.
 - Design life.
 - Installation date.
 - Acquisition date.
 - Dimensional and quantity information where it is not defined by the graphic object (e.g. The length of a pipe can be represented by the length of a line object on the plan. A data value representing the diameter needs to be attached to that line object. The area of a segment of road can be defined by a polygon. A data value representing the pavement depth needs to be attached to the polygon.)
 - Valuation at installation date.

It is recommended that these requirements be considered at the design documentation stage.

For more complex and proprietary items, for example pumps or lighting systems, the developer shall provide to Council's satisfaction details of Brand, Model, Supplier, Warranty, Installation Guide, User Guide, Safety Instructions, Servicing Record, Maintenance Manual, Keys etc as appropriate.

CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

Community Land

- | | | | |
|-----|--|-----|---|
| CL1 | Plan of Management - This Section provides a guideline for the preparation of a Plan of Management for open space land which will be transferred to Council as community land. | CL5 | Strategic Document - The plan would be a strategic document with prioritised actions which give Council flexibility to develop strategies consistent with the objectives identified in its Management Plan. |
| CL2 | The Local Government Act - The Local Government Act 1993 emphasises that Plans of Management should be prepared for all community land for which Council will be responsible to ensure land it owns or controls is actively and effectively managed. | CL6 | Development of Opportunities - The plan should also enable Council to take advantage of any opportunities that arise during the life of the plan that enable implementation of the strategies in ways that may be more cost-effective, more time efficient, or in some other way provide benefits that were unavailable or not recognised during preparation of the plan. |
| CL3 | Description of Use - The Plan of Management should describe how public land will be managed, maintained and utilised, who is responsible for its management, its facilities and the uses and activities that occur there. | | |
| CL4 | Status - The plan should show the status of each park or reserve and the planning of each, meet the other requirements of the Act pertaining to community land management, have informed the community based on a consultative process and establish a framework for meeting community needs regarding open space. | | |

Strathfield Triangle Site Specific Requirements

Minimum Standards

MS1 General - The minimum engineering standards given in this Appendix applies to all proposed developments in the North Strathfield area otherwise known as the Strathfield Triangle.

The general standards given in the main body of this Engineering Specification will still apply where no reference or detail is given in this Appendix.

[illegible]

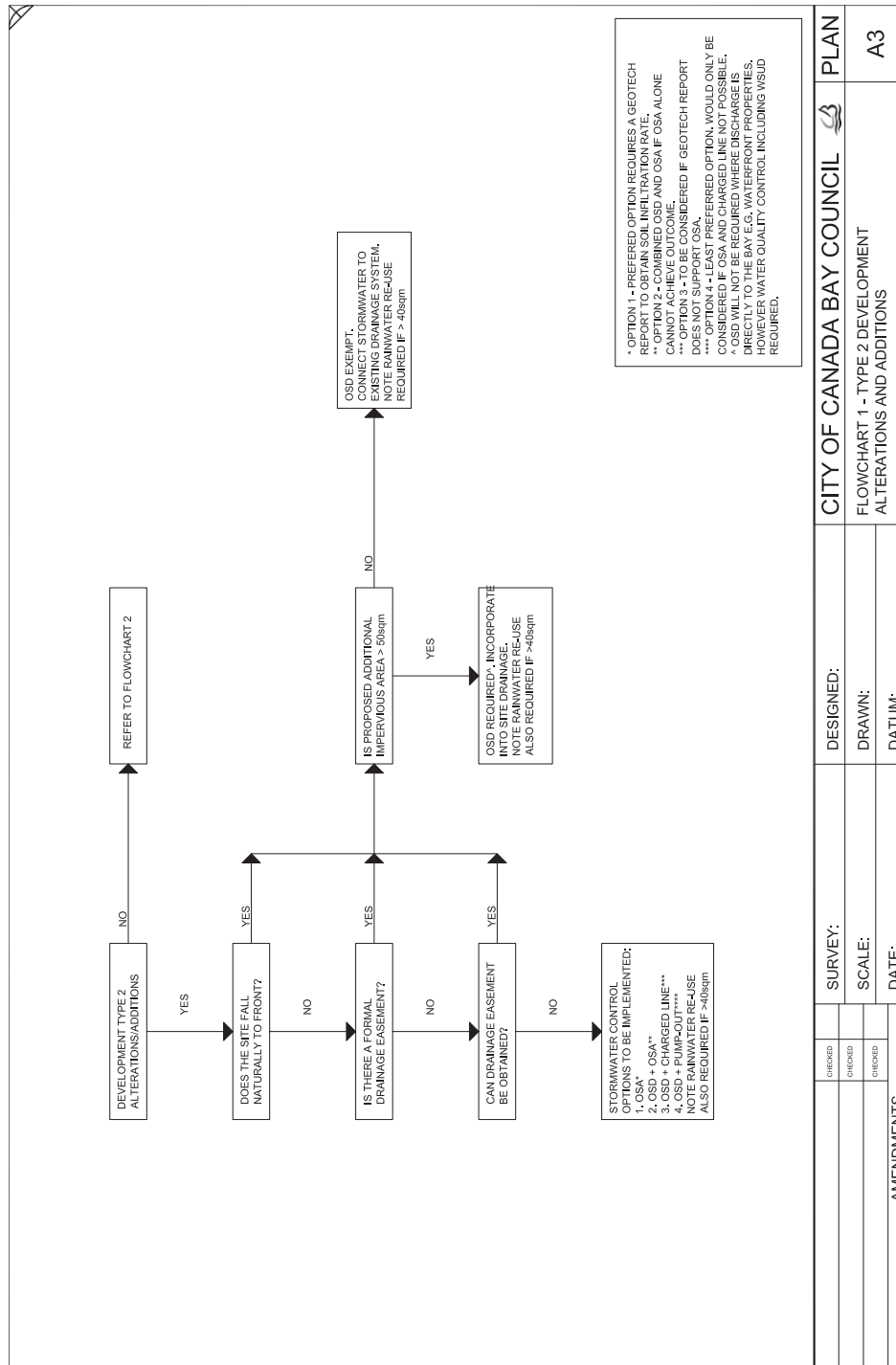
CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

Stormwater Management Type 2 Developments



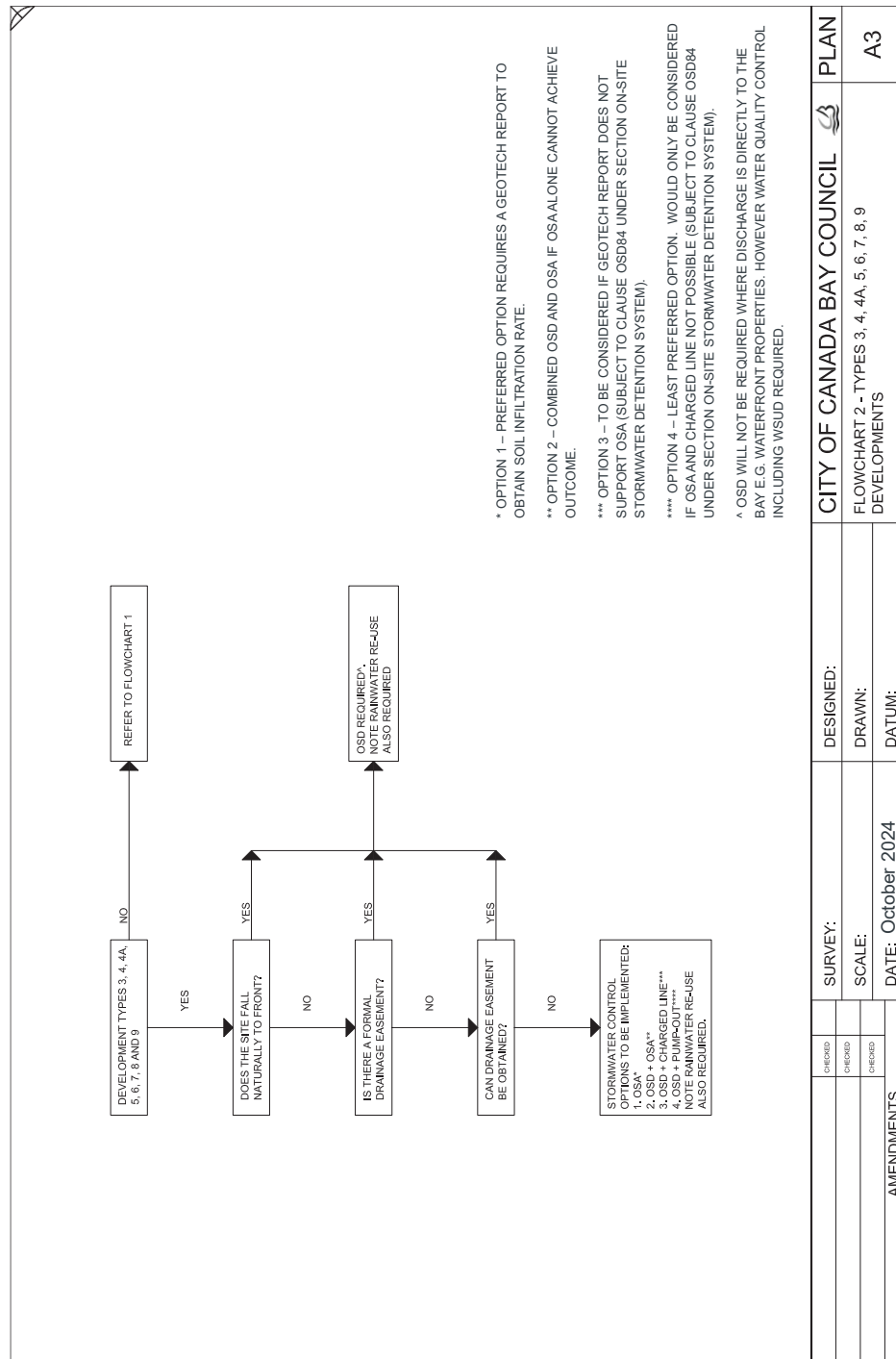
CITY OF CANADA BAY

Development Control Plan

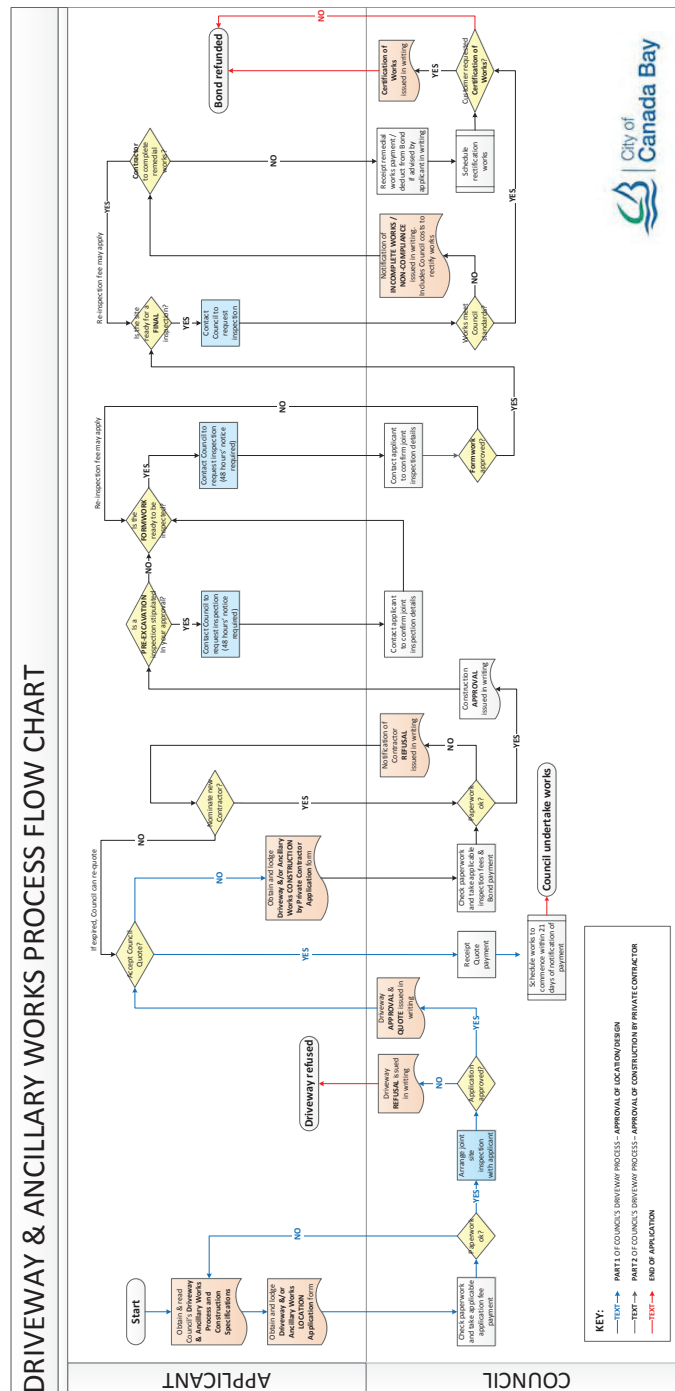
Appendix 2

Engineering Specifications

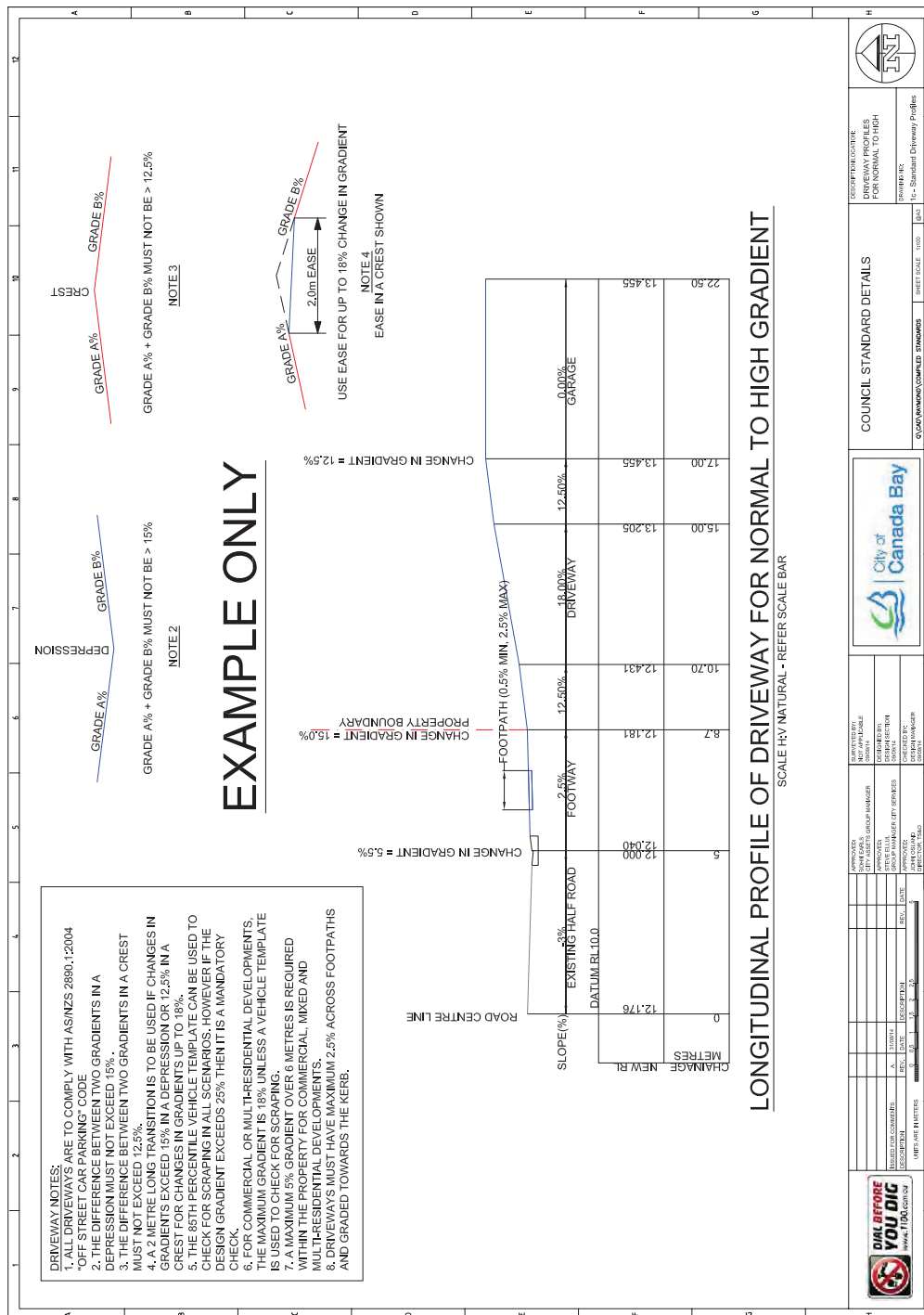
Stormwater Management Type 3 to 9 Developments

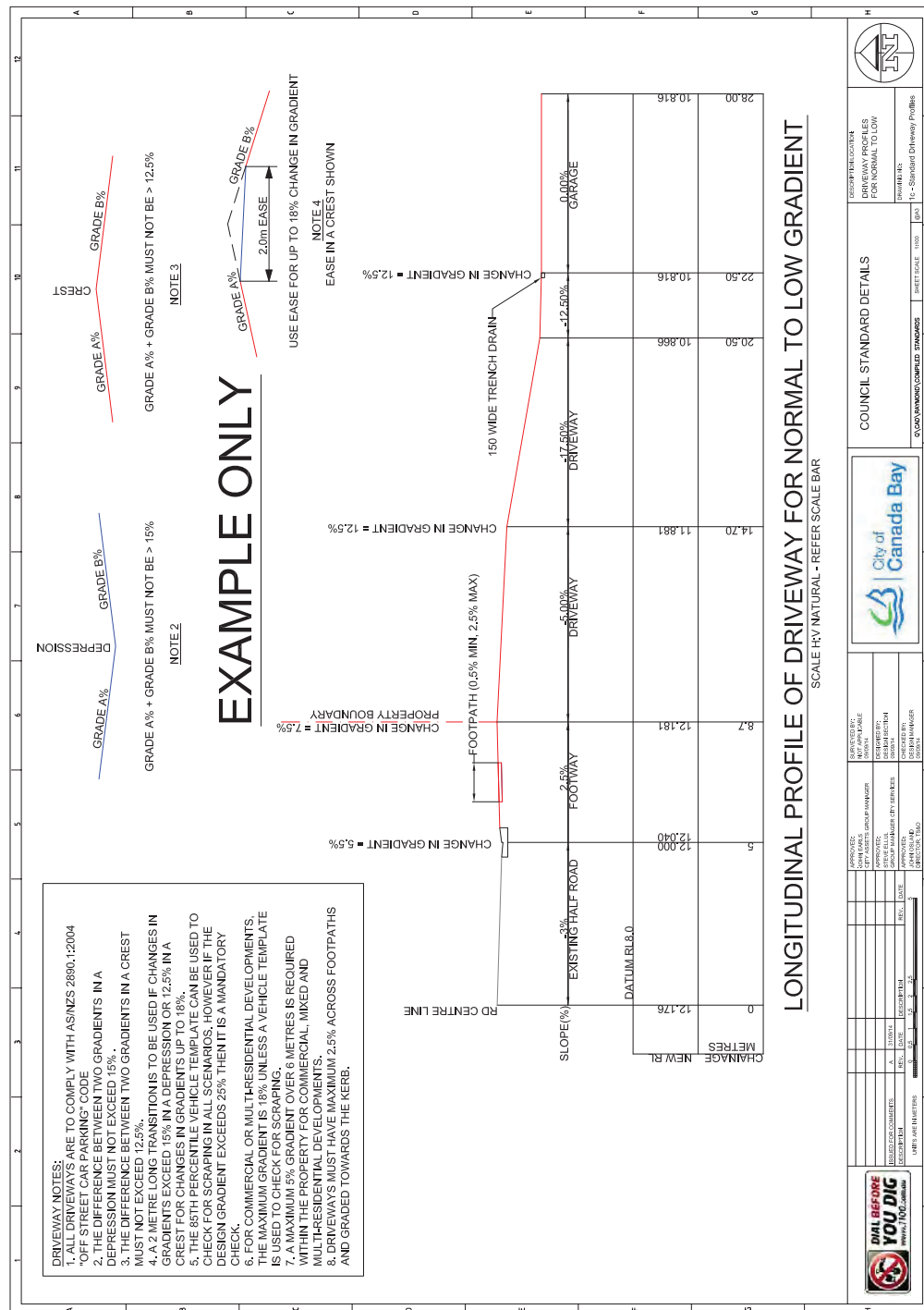


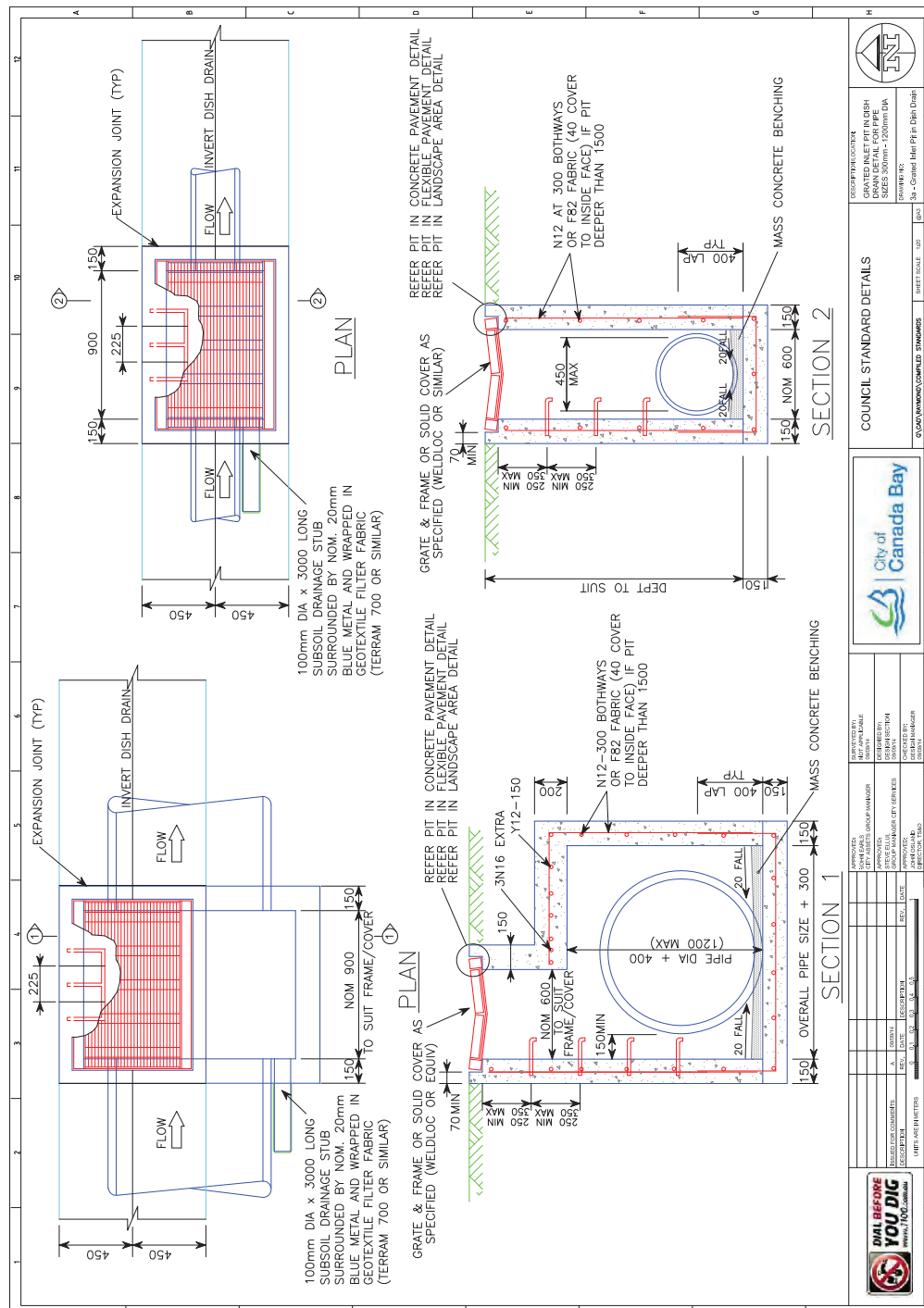
Driveway and Ancillary Works



Standard Engineering Drawings





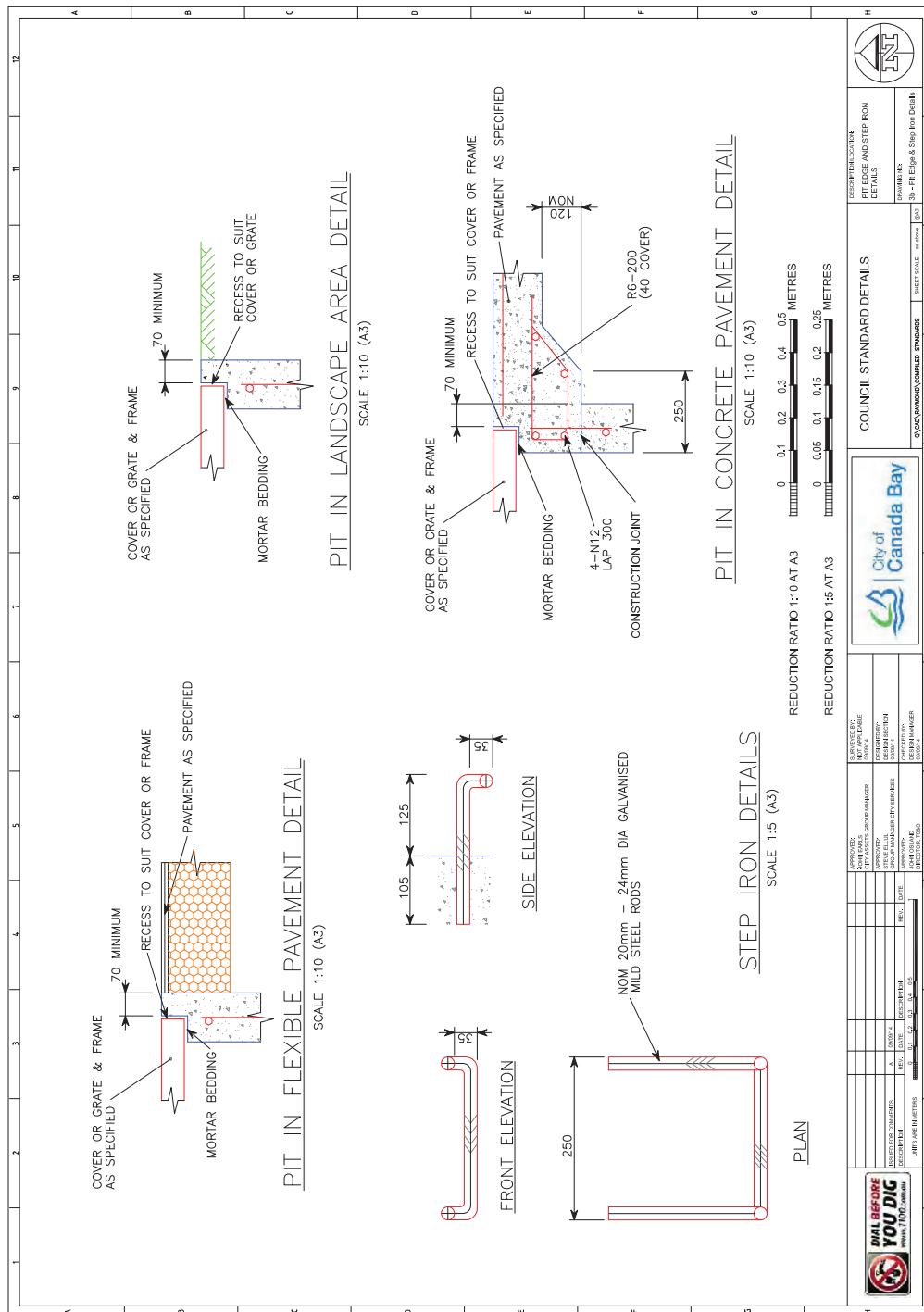


CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications



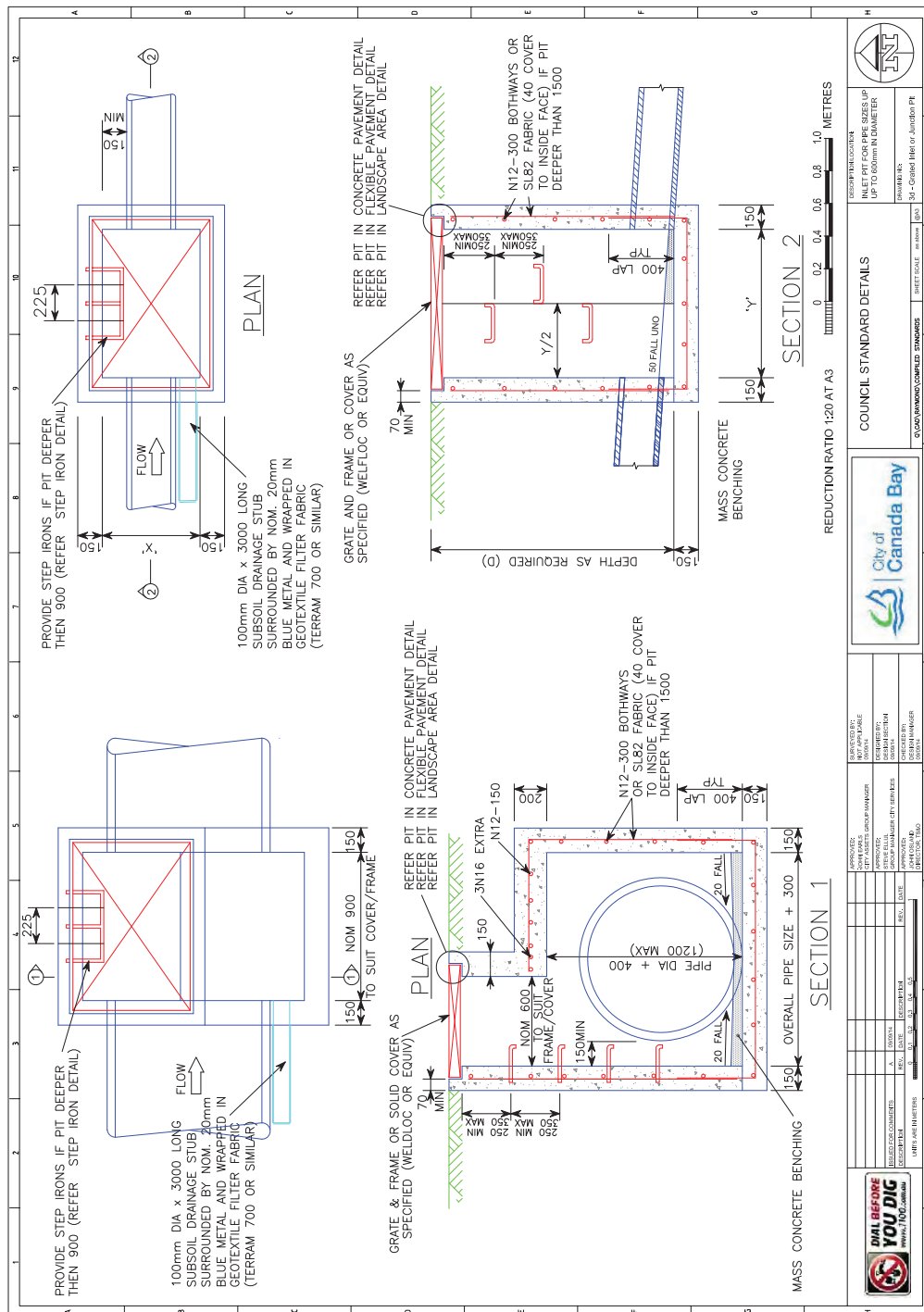


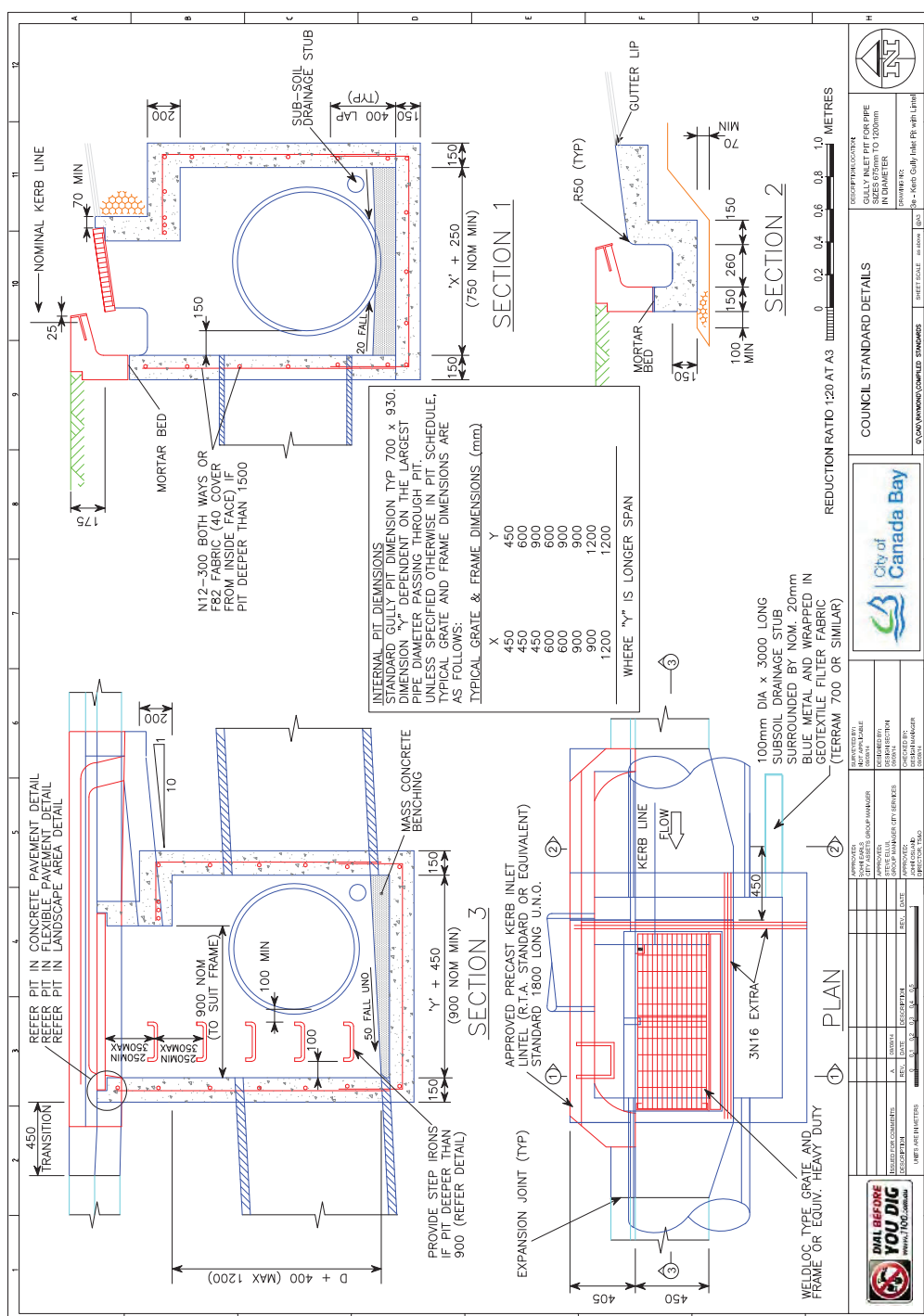
CITY OF CANADA BAY

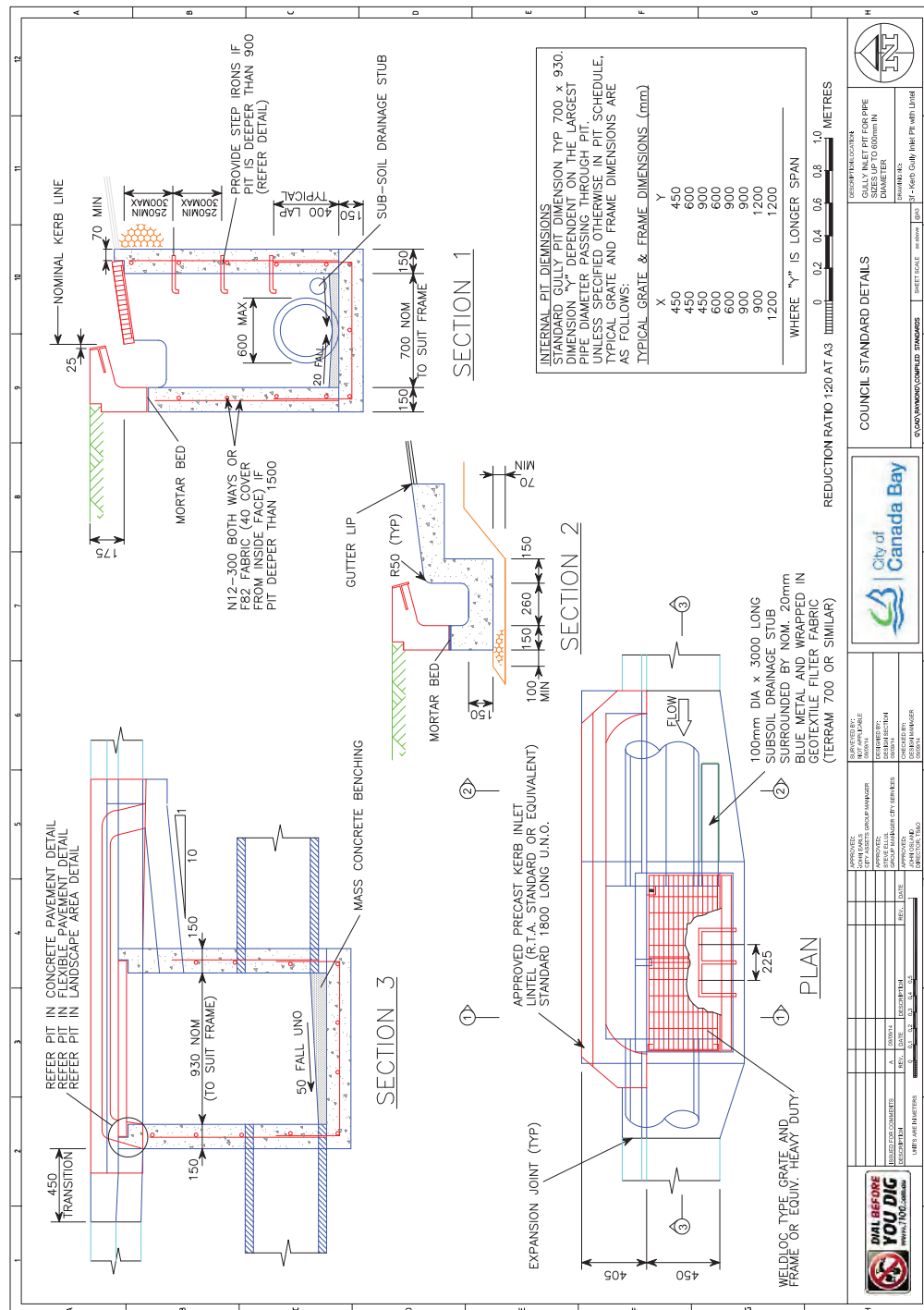
Development Control Plan

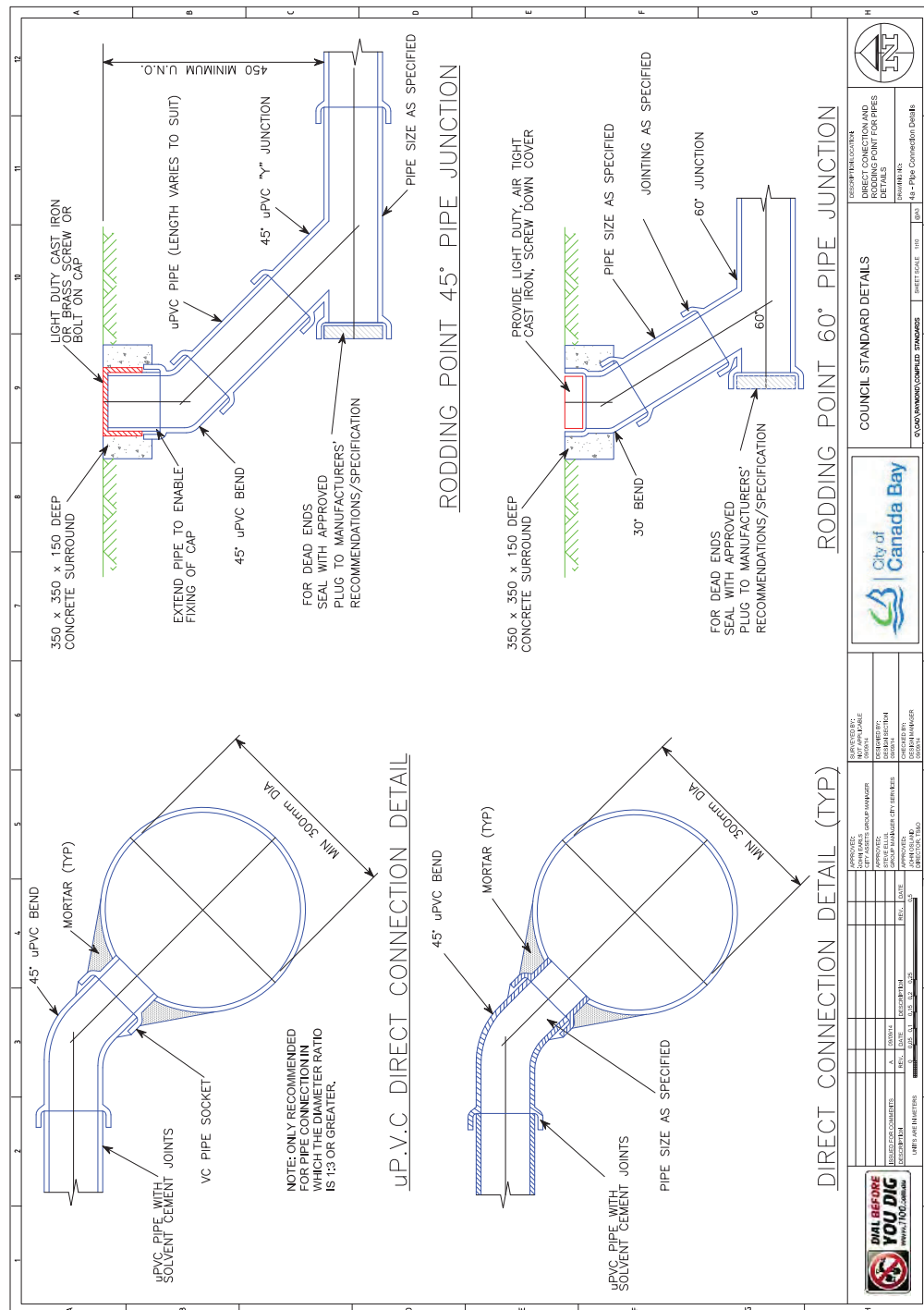
Appendix 2

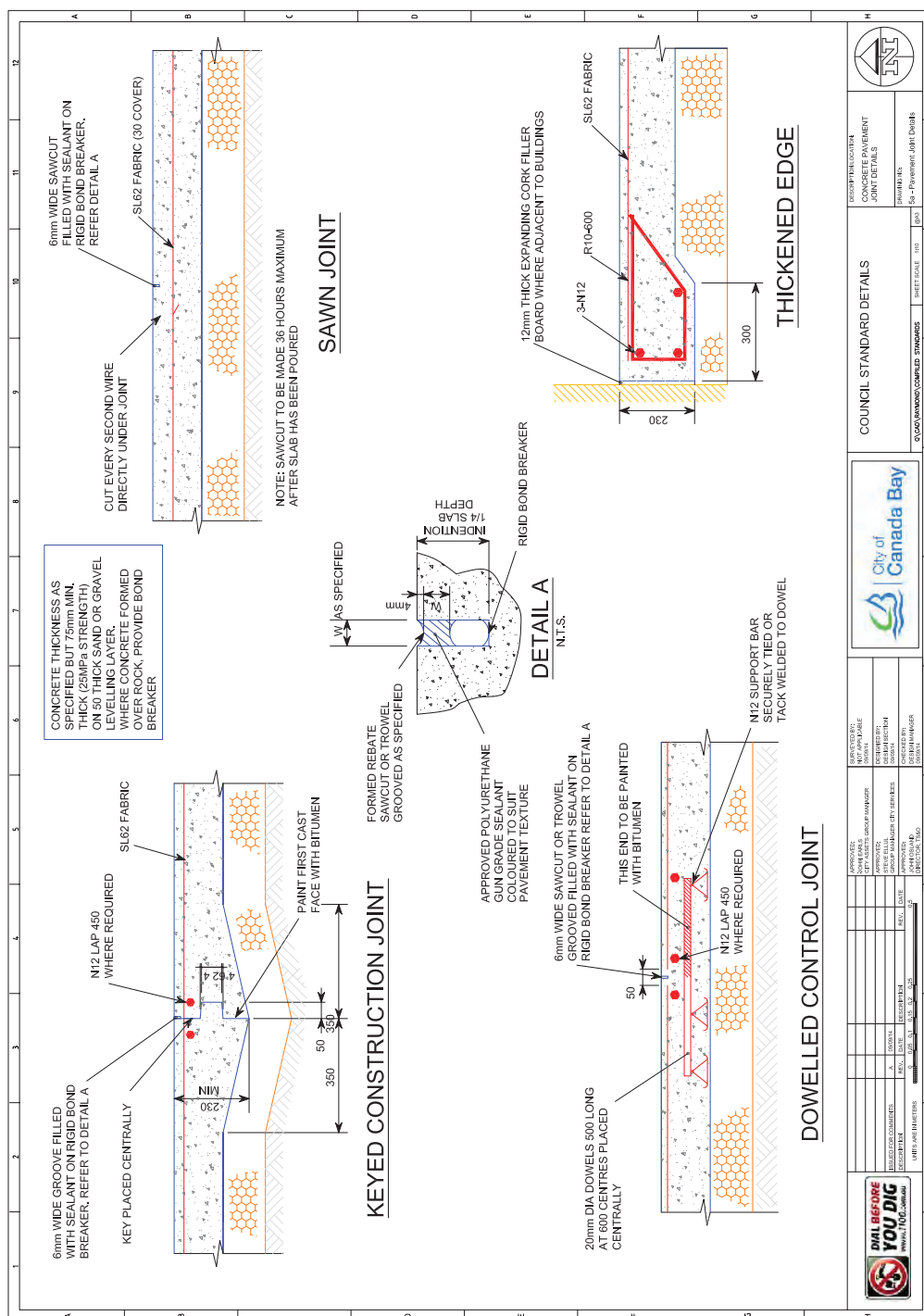
Engineering Specifications









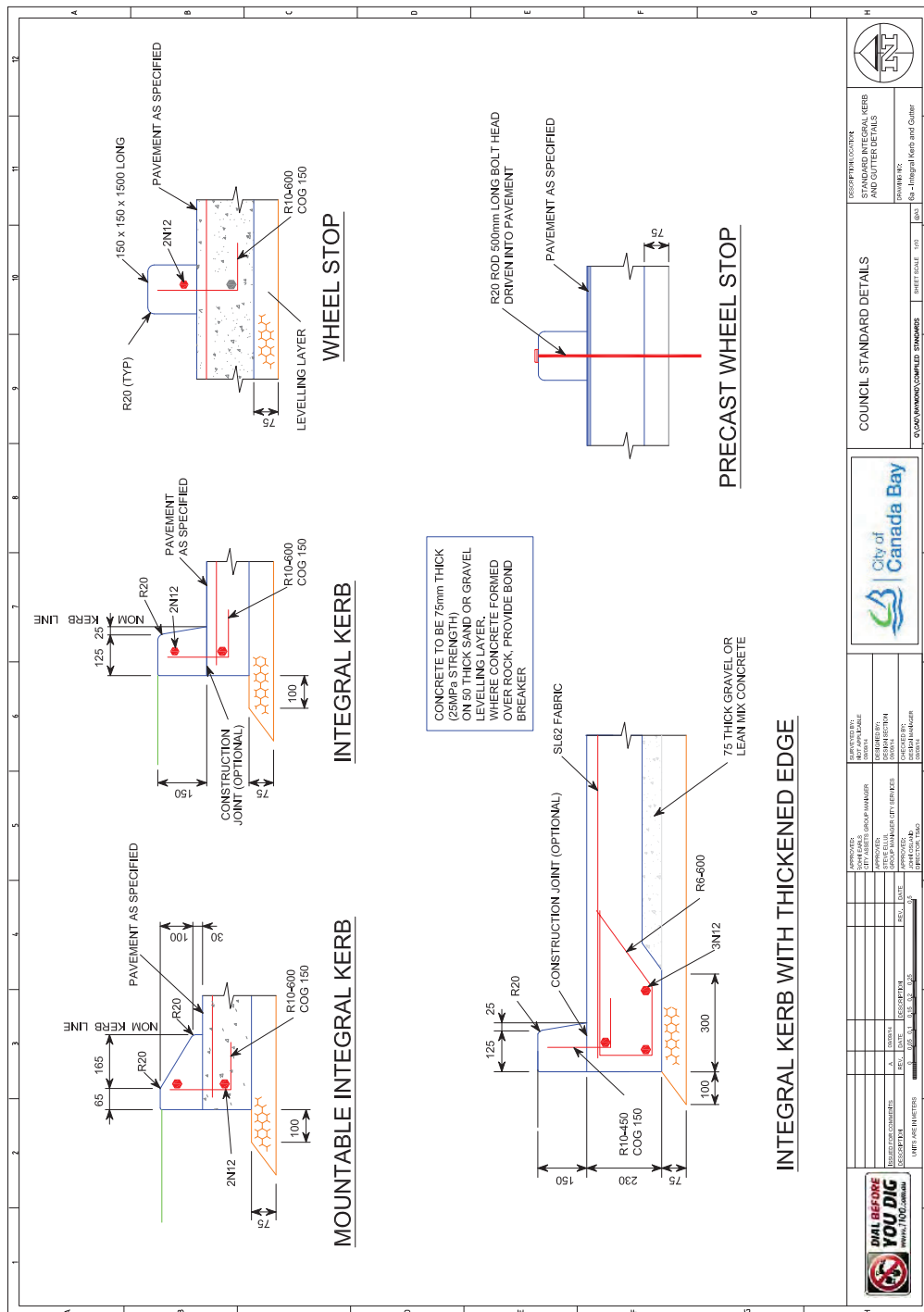


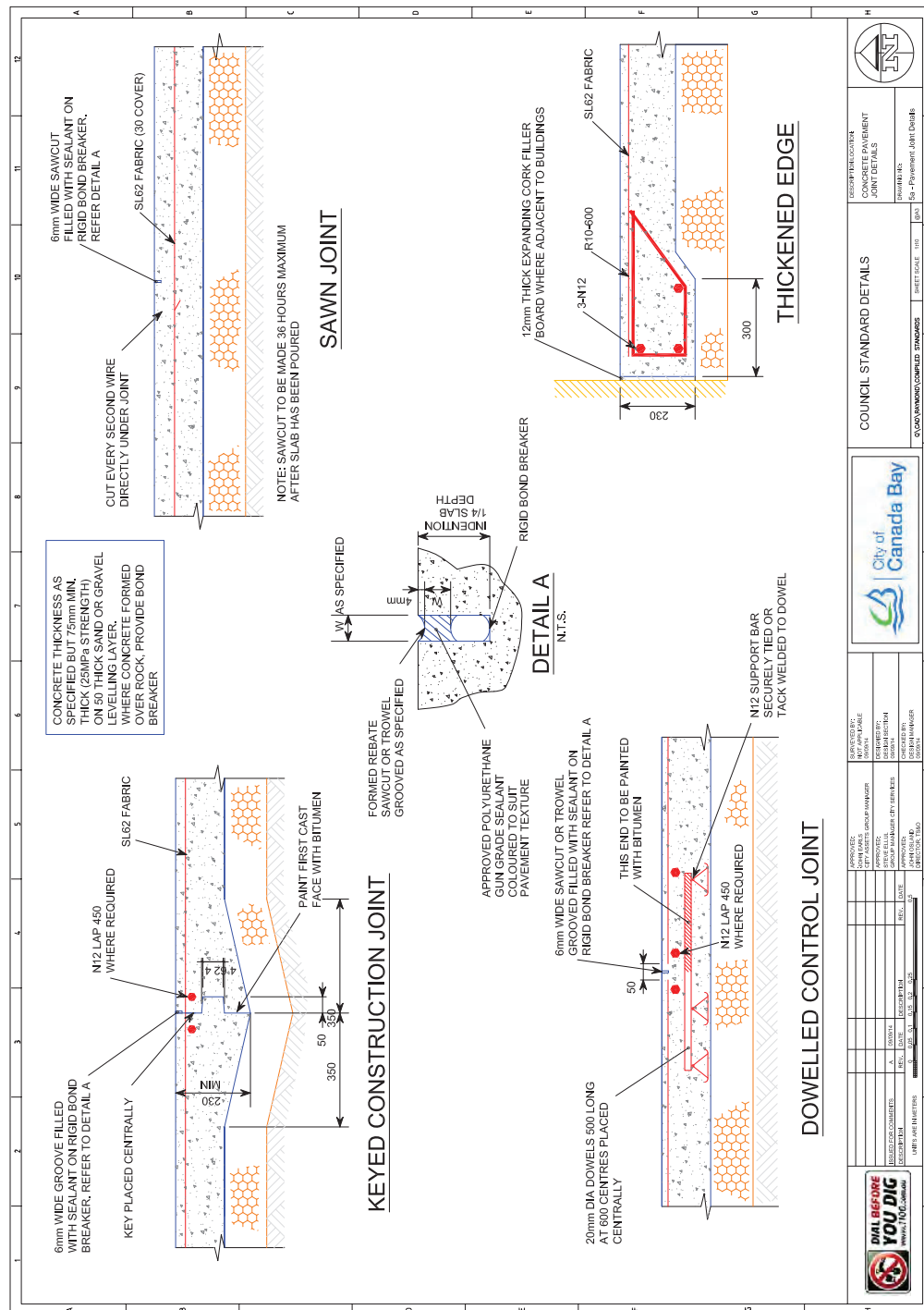
CITY OF CANADA BAY

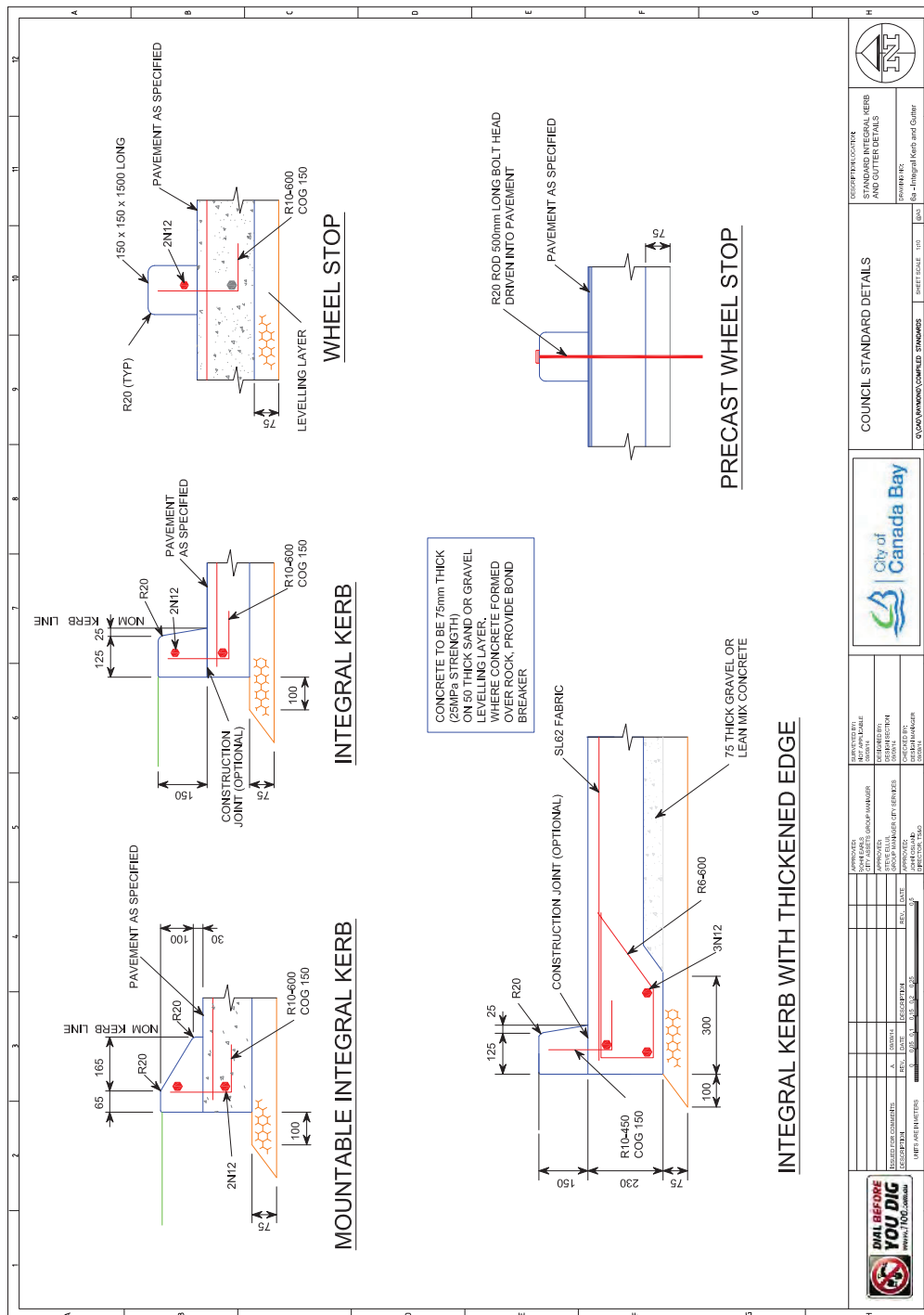
Development Control Plan

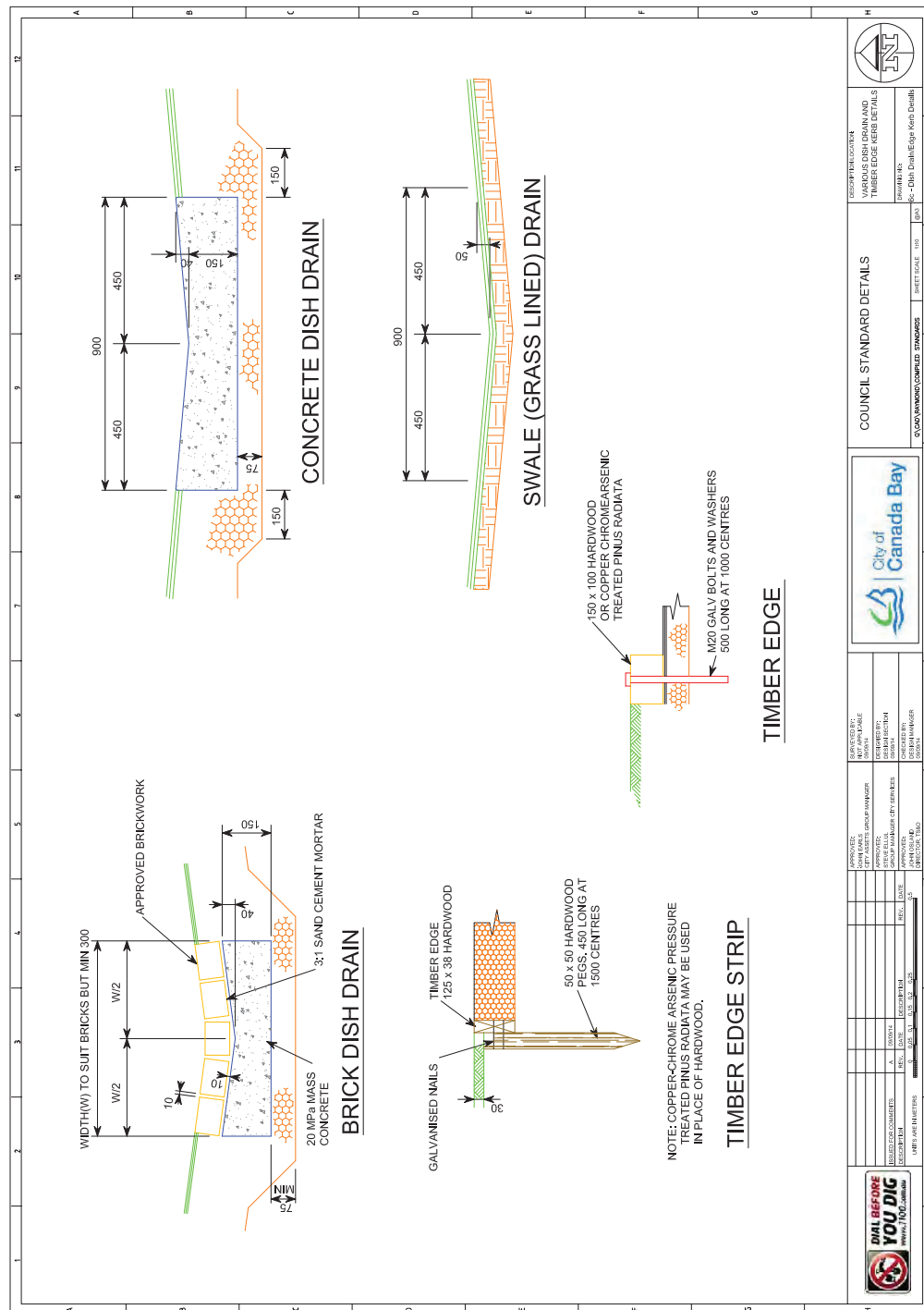
Appendix 2

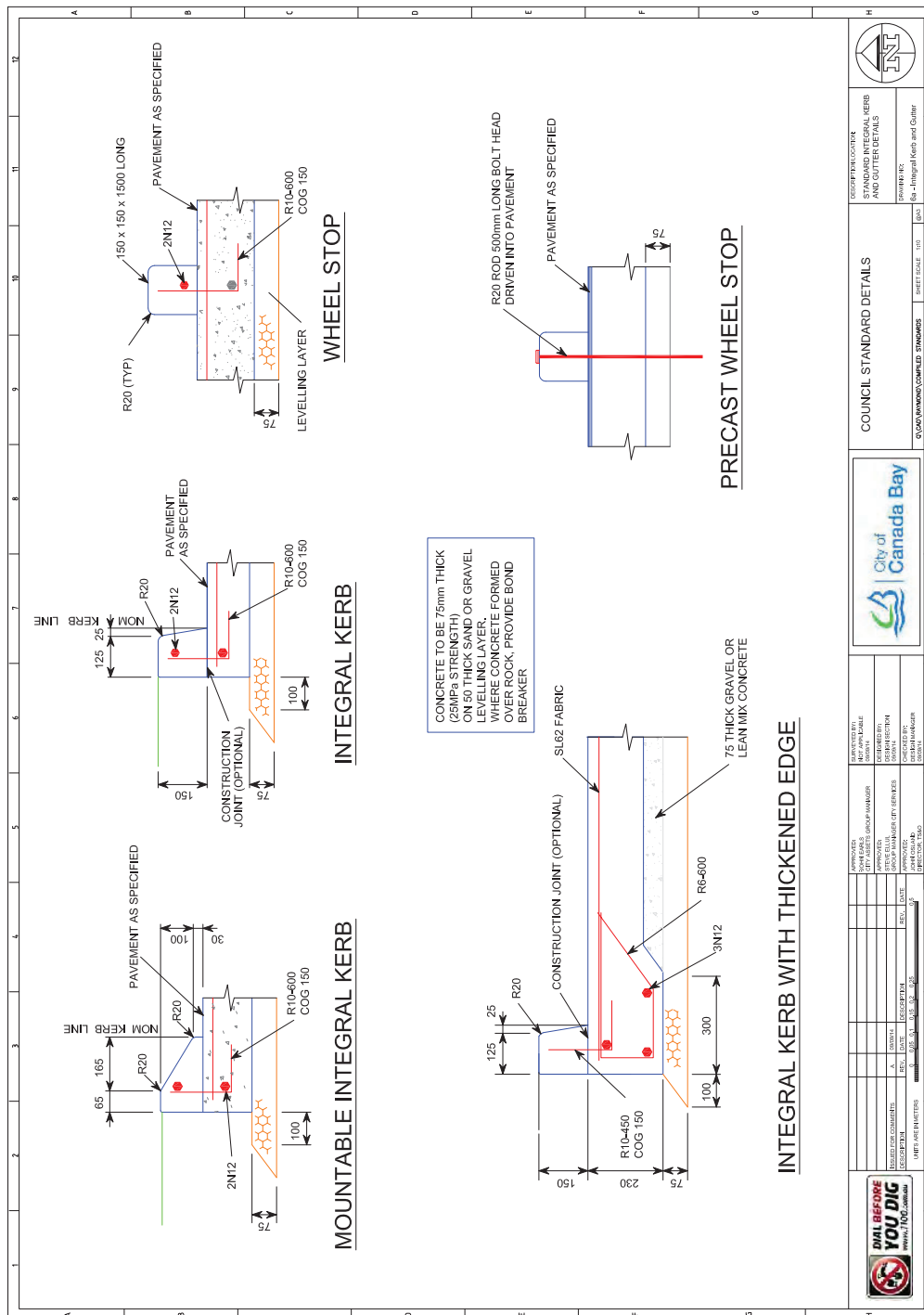
Engineering Specifications











CITY OF CANADA BAY

Development Control Plan

Appendix 2

Engineering Specifications

This page was intentionally left blank

A3



APPENDIX 3 - TREE SPECIES

TS.1 Locally native flora for landscaped areas	A3-2
TS.2 Locally native trees for replacement planting	A3-5
TS.3 Native and exotic trees for replacement planting	A3-7

CITY OF CANADA BAY

Development Control Plan

Appendix 3 Tree Species

TS.1 Locally native flora for landscaped areas

Plant Type	Botanical Name	Common Name	Mature height (trees, shrubs) or spread (groundcovers, grasses, sedges) in urban conditions	Features	Soil Suitability	
					Clay - Loam	Sandy - Well-drained
Trees	<i>Acacia parramattensis</i>	Parramatta Green Wattle	2-15m depending on conditions, can be maintained as a shrub	Grows in forest on shale derived soils (clay) but occasionally on sandstone. Attracts a wide variety of fauna.	✓	✓
	<i>Allocasuarina torulosa</i>	Forest Oak	5-20m depending on conditions, smaller in less fertile soils	As understorey in open forest to tall open forest. Usually on higher-nutrient soils and in moister situations than <i>A. littoralis</i> . Very long-lived.	✓	Possible
	<i>Allocasuarina littoralis</i>	Black She-Oak	5-12m depending on conditions, smaller in less fertile soils	In woodland or occasionally tall heath, on sandy or otherwise poor soils. Rarely on clay soils in forest.	x	✓
	<i>Angophora costata</i>	Sydney Red Gum	10-25m depending on conditions, smaller in less fertile soils	Attractive large tree with abundant white floral display	✓	✓
	<i>Angophora floribunda</i>	Rough Barked Apple	15-30m	Medium tree with deep shade and abundant white floral display in summer.	✓	✓
	<i>Elaeocarpus reticulatus</i>	Blueberry Ash	3-10m depending on conditions, can be maintained as an erect shrub	Attractive small, narrow tree with blue berries	✓	✓
	<i>Eucalyptus globoidea</i>	White Stringybark	10-30m	Medium sized eucalypt with stringy bark. Bird attracting	✓	Possible
	<i>Eucalyptus paniculata</i>	Grey Ironbark	25-40m	Tall, deep shaded tree with dark furrowed bark. Bird attracting.	✓	x
	<i>Eucalyptus punctata</i>	Grey Gum	10-25m	Medium to tall gum tree with bright orange and pink hues revealed in patches when outer bark is shed. Attracts birds and is a favoured food of koalas	✓	x
	<i>Eucalyptus resinifera</i>	Red Mahogany	25-45m	Medium to large eucalypt with reddish brown bark	✓	Possible
	<i>Syncarpia glomulifera</i>	Turpentine	20-50m, varies on conditions, slow-growing	Widespread medium to large long-lived tree in forests on heavier fertile soils. Provides deep shade and nectar-producing flowers in November.	✓	x
	<i>Banksia serrata</i>	Old Man Banksia	2-15m, varies on conditions, smaller in less fertile soils	Common Banksia with large leaves, flowers and cones. Flowers abundantly each summer.	x	✓
	<i>Banksia integrifolia</i>	Coastal Banksia	4-15m, varies with conditions, many nursery species are smaller	Common medium banksia which grows well in coastal areas and attracts nectar-feeding birds	x	✓
	<i>Ceratopetalum gummiiferum</i>	NSW Christmas Bush	<1-6m, varies with conditions, is larger in sheltered positions with fertile soil	Tall shrub or small tree which grows in moist sheltered positions in deeper sandy soils. Very long lived. Abundant red flowers and fruit in summer	✓	✓

CITY OF CANADA BAY

Development Control Plan

Appendix 3

Tree Species

	<i>Eucalyptus pilularis</i>	Blackbutt	20-30m	Large Eucalypt common on fertile moist sandy soils and clay soils. Suits deeper gullies.	✓	✓
	<i>Eucalyptus piperita</i>	Sydney Peppermint	10-20m	Medium tree in forest along sandstone water courses and drier woodland hillsides on sandstone derived soils.	x	✓
Shrubs	<i>Acacia implexa</i>	Hickory Wattle	<1-3m	Very common tall wattle on clay soils. Forms small suckering stands if disturbed.	✓	x
	<i>Acacia floribunda</i>	Gossamer Wattle	4-6m	Fast growing evergreen shrub with abundant pale cream flowers	✓	✓
	<i>Acacia longifolia</i>	Sydney Golden Wattle	<1-3m, spreading shrub	Short lived fast growing large wattle. Common in either sandy or clay soils post fire.	x	✓
	<i>Acacia myrtifolia</i>	Myrtle Wattle	1-3m	A medium red stemmed shrub with clusters of cream flowers	✓	✓
	<i>Kunzea ambigua</i>	Tick Bush (No affiliation with ticks)	1-3.5m	Spreading shrub with honey-scented white flowers and soft foliage. Great for attracting native birds and butterflies	✓	✓
	<i>Breynia oblongifolia</i>	Coffee Bush	0.5-3m	Small shrub with dense green oval leaves and red berries when ripe	✓	x
	<i>Goodenia ovata</i>	Hop Goodenia	Scrambler	Fast-growing sprawling shrub with yellow flowers	✓	✓
	<i>Grevillea linearifolia</i>	White Spider Flower	<0.5-3m	Spreading shrub with white flowers and soft foliage. Suitable for landscaped garden beds	x	✓
	<i>Pittosporum revolutum</i>	Wild Yellow Jasmine	0.5-2m	Attractive small shrub with soft, hairy foliage and yellow berries	✓	✓
	<i>Indigofera australis</i>	Australian Indigo	<0.5-2m	Sprays of blue-green foliage, purple stems and displays of pink, indigo and purple flowers	✓	✓
	<i>Zieria smithii</i>	Zieria	<0.5-2m	Dense foliage and floral display, grows well when contrasted with other plants in a shaded position	✓	✓
Locally native ground-covers, grasses and sedges	<i>Microlaena stipoides</i>	Weeping Grass	Low-growing grass	Soft, fast-spreading grass common in native grass meadows	✓	✓
	<i>Poa affinis</i>	Poa	Tussock grass	Tufted perennial grass, good for landscaping and edging	✓	✓
	<i>Themeda australis</i>	Kangaroo Grass	Tussock/Low-growing grass	Tufted perennial grass with prominent brown seed-heads, good for landscaping and edging	✓	✓
	<i>Kennedia prostrata</i>	Running Postman	Groundcover/ Scrambler	Attractive running scrambler with soft foliage and bright red flowers	✓	✓
	<i>Cymbopogon refractus</i>	Barb-wire grass	Tussock grass	Tufted perennial grass with prominent brown seed-heads, good for landscaping and edging	✓	✓
	<i>Lobelia purpureascens</i>	Purplish Pratia	Scrambler	Popular scrambler with purple-green foliage	✓	x
	<i>Oplismenus aemulus</i>	Creeping Shade Grass	Low-growing grass		✓	✓

CITY OF CANADA BAY

Development Control Plan

Appendix 3

Tree Species

	<i>Dianella caerulea</i>	Blue Flax Lily	Sedge	Popular sedge with deep green foliage, blue flowers and purple berries	✓	✓
	<i>Dianella revoluta</i>	Blueberry Lily	Sedge	Small sedge with purple berries and blue flowers	✓	✓
	<i>Dichondra repens</i>	Native Kidney Weed	Groundcover	Covers bare, shaded areas effectively, can be stepped on, controls soil erosion	✓	x
	<i>Lomandra longifolia</i>	Long-leafed Mat Rush	Sedge	Popular wiry sedge used for edging garden beds	✓	✓
	<i>Entolasia stricta</i>	Right-angle grass	Scrambler	Straggling and shrubby grass, grows well amongst shrubs in landscaped areas	✓	x
	<i>Entolasia marginata</i>	Right-angle grass	Low-growing grass	Smaller version of right-angle grass more commonly used as a lawn grass	✓	x
	<i>Goodenia hederacea</i>	Forest Goodenia	Scrambler	Attractive, hardy, yellow-flowering scrambler	✓	✓
	<i>Scaevola albida</i>	Mauve Carpet	Groundcover	Popular fast-growing groundcovers with mauve or white flowers	✓	✓
Vines	<i>Billardiera scandens</i>	Apple Berry	Vine	Small, attractive vine with berries in Spring	✓	✓
	<i>Hardenbergia violacea</i>	Native Sarsparilla	Vine	Popular native vine with purple flowers	✓	✓
	<i>Kennedia rubicunda</i>	Dusky Coral Pea	Vine	Scrambling fast growing vine. Works best in a contained garden bed.	✓	✓
	<i>Pandorea pandorana</i>	Wonga Wonga Vine	Vine	Popular native vine, good replacement for the exotic Jasmine vine	✓	✓

CITY OF CANADA BAY

Development Control Plan

Appendix 3

Tree Species

TS.2 Locally native trees for replacement planting

					Suitability				Diversity	
Botanical Name	Common Name	Evergreen (E) Deciduous (D)	Mature height in urban tree conditions	Features	Street Plaza	Powerlines	Open space/Parkland	Private Domain	Family	Climate Resilient
Large locally native trees - average above 10m										
Angophora costata	KAJIMBOURRA(D) Sydney Red Gum	E	8-20m	Open canopy, broad form, colourful bark, flowers on outer canopy, bird attracting	✓	x	✓	✓	Myrtaceae	✓
Angophora floribunda	BURRAM -BURRANG(D) or Rough Bark Apple	E	10-20m	Graceful upright form, medium canopy, showy flowers, bird and pollinator attracting	✓	x	✓	✓	Myrtaceae	✓
Eucalyptus botryoides	BANGALAY (D)	E	12-20m	Medium to open canopy, bird attracting	✓	x	✓	✓	Myrtaceae	✓
Eucalyptus globoidea	DTHAN DTHAANG(D) or White Stringybark	E	10-15m	Deep green foliage, bird attracting	✓	x	✓	✓	Myrtaceae	na
Eucalyptus paniculata	PARRAGILGA (G) or Grey Ironbark	E	18-25m	Feature tree, bird attracting	✓	x	✓	✓	Myrtaceae	na
Eucalyptus punctata	MAANDOWIE (D) or Grey Gum	E	18-25m	Textured and smooth salmon bark, bird attracting	✓	x	✓	✓	Myrtaceae	na
Eucalyptus resinifera	Red Mahogany	E	18-25m	Feature tree, bird attracting	✓	x	✓	✓	Myrtaceae	na
Eucalyptus robusta	CURRAMURRA (D) or Swamp Mahogany	E	10-15m	Interesting fruit, showy flowers, deep textured red and brown bark, wet areas, bird attracting	✓	x	✓	✓	Myrtaceae	✓
Ficus rubiginosa	BAIRA OR DTHAAMAN or Port Jackson Fig	E	8m x 12m	Interesting spreading buttress root system, long lived wide shade tree ideal for parks and open spaces	x	x	✓	x	Moraceae	✓
Syncarpia glomulifera	BOOREEAH or Turpentine	E	12-20m	Feature tree - predominately upright form, interesting leaves and fruit, bird attracting	✓	x	✓	✓	Myrtaceae	na
Medium locally native trees - average 5m to 10m										
Acacia parramattensis	Sydney Green Wattle	E	6m	Long lived wattle, interesting seed pod, abundant flowers, bird and pollinator attracting	✓	ap*	✓	✓	Fabaceae	✓
Acmena smithii	Midjuburi (Cadigal) or Lilly Pilly	E	6-10m	Dense green canopy with vibrant red fruit, bush tucker	✓	ap*	✓	✓	Myrtaceae	na
Angophora bakeri	Narrow-leafed apple	E	6-10m	Graceful upright form, medium canopy, showy flowers, bird and pollinator attracting	✓	ap*	✓	✓	Myrtaceae	✓

CITY OF CANADA BAY

Development Control Plan

Appendix 3

Tree Species

<i>Banksia integrifolia</i>	COURRIDJAH(D) or Coast Banksia	E	5-10m	Tall open canopy tree with silver leaves, showy flowers and interesting fruit, bird attracting, bush tucker	✓	ap*	✓	✓	Proteaceae	✓
<i>Corymbia gummifera</i>	MANNEN(D) or Red Bloodwood	E	8-10m	Small Eucalypt in urban situations, decorative bark and fruit, creamy white flowers on outer canopy, bird attracting	✓	ap*	✓	✓	Myrtaceae	na
<i>Elaeocarpus reticulatus</i>	Blueberry Ash	E	8m	Upright tree with dense green foliage, white pink flowers and blue drupes, shade tolerant, bird attracting	✓	ap*	✓	✓	Elaeocarpaceae	✓
<i>Glochidion ferdinandi</i>	Cheese Tree	E	6m	Feature tree, interesting fruit, shade tolerant, wet areas	✓	ap*	✓	✓	Phyllanthaceae	✓
<i>Melaleuca styphelioides</i>	NAAMBARR(D) or Prickly Paperbark	E	8-10m	Decorative bark, showy flowers, wet areas, bush tucker	✓	ap*	✓	✓	Myrtaceae	✓
<i>Melaleuca linariifolia</i>	Snow in Summer	E	6m	Feature plant, showy flowers, bush tucker, wet areas	✓	ap*	✓	✓	Myrtaceae	✓
<i>Syzygium paniculatum</i>	Magenta Lilli Pilly	E	5-10m	Showy flowers and fruit, bird attracting, shade tolerant, bush tucker	✓	ap*	✓	✓	Myrtaceae	✓
Small locally native trees - up to 5m										
<i>Acacia binervia</i>	MYIMBARR(D) or Coastal Wattle	E	5m	Long lived wattle, small tree, beautiful silvery grey green foliage, fluffy spikes of golden flowers, fragrant wood	✓	✓	✓	✓	Fabaceae	na
<i>Angophora hispida</i>	BANDA (C) or Dwarf Apple	E	4m	Interesting rusty foliage and fruit, bird attracting	✓	✓	✓	✓	Myrtaceae	✓
<i>Homalanthus populifolius</i>	Bleeding Heart	E	4 -5m	Attractive foliage (suitable for parks-plant with other clumps)	✓	✓	✓	✓	Euphorbiaceae	na
<i>Leptospermum polygalifolium</i>	YellowTea Tree	E	3-4m	Long lived white flowers, bird and pollinator attracting	✓	✓	✓	✓	Myrtaceae	✓
<i>Melaleuca nodosa</i>	Ball Honeymyrtle	E	3m	Small paperbark tree, abundant flowers, bird and pollinator attracting	✓	✓	✓	✓	Myrtaceae	na

Aboriginal language/ area

(D) = Dharawal (Sydney south of Botany Bay, Sydney West)

(C) = Dharag language of the Cadigal Clan (Sydney)

(G) = Gumbaynggir (Mid -North NSW)

ap* =

amendable

to pruning

na = no data

CITY OF CANADA BAY

Development Control Plan

Appendix 3

Tree Species

TS.3 Native and exotic trees for replacement planting

						Suitability				Diversity	
Botanical Name	Common Name	Evergreen (E) Deciduous (D)	Native (n) Exotic (ex)	Mature height in urban tree conditions	Features	Street Plaza	Powerlines	Open space/Parkland	Private Domain	Family	Climate Resilient
Large native or exotic trees - average above 10m											
Agathis robusta	Queensland Kauri	E	n	25m	Feature tree	✓	x	✓	✓	Araucariaceae	✓
Brachychiton acer- folius	Flame tree	D	n	10-15m	Attractive rainforest tree produces spectacular bright red flowers in spring / summer	✓	x	✓	✓	Malvaceae	✓
Corymbia maculata	YARRUN (D) or Spotted Gum	E	n	20-30m	Smooth long trunk with a high leafy crown	✓	x	✓	✓	Myrtaceae	✓
Corymbia exima	Yellow Bloodwood	E	n	10-12m	Interesting scaly yellow, brown bark. Large creamy flowers bird and pollinator attracting	✓	x	✓	✓	Myrtaceae	✓
Elaeocarpus eu- mundi	Eumundi Quondong	E	n	10-15m	Tall narrow canopy, luscious green with rich red new growth	✓	ap*	✓	✓	Elaeocarpaceae	na
Flindersia australis	Australian Teak	E	n	15-25m	Hardy large street or feature tree with round dense canopy, interesting fruit	✓	x	✓	✓	Rutaceae	✓
Fraxinus oxycarpa 'Raywood'	Claret Ash	D	e	10-15m	Deep red leaf colour, drought tolerant	✓	x	✓	✓	Oleaceae	✓
Fraxinus pennsl- vanica 'Urbanite'	Red Ash	D	e	12- 18m	Large spreading tree, drought tolerant	✓	x	✓	✓	Oleaceae	✓
Harpullia pendula	Tulipwood	E	n	10-15m	Dense dark green foliage, colourful orange capsules, tropical native that is drought tolerant	✓	x	✓	✓	Sapindaceae	✓
Ginkgo biloba	Maidenhair Tree	D	e	10-20m	One of the oldest living tree species, feature tree, very hardy once established	✓	x	✓	✓	Ginkgoaceae	s
Liriodendron tulip- ifera	Tulip Tree	D	e	10-15m	Beautiful feature tree with smooth textured leaves and tulip like flowers.	✓	x	✓	✓	Magnoliaceae	s
Lophostemon confertus	Brush Box	E	n	10-15m	Highly valued, reliable, fast growing, very hardy rainforest tree ideal for street and park plantings	✓	ap*	✓	✓	Myrtaceae	✓
Quercus palustris	Pin Oak	D	e	10-15m	Drought tolerant, fast growing deciduous tree with colour in Autumn- Ideal park Tree	✓	x	✓	✓	Fagaceae	✓
Podocarpus elatus	DAALGAAL or Plum Pine	E	n	8-15m	Broad dense foliage, bush tucker, very hardy, edible fruit	✓	ap*	✓	✓	Podocarpaceae	✓

Aboriginal language/ area

(D) = Dharawal (Sydney south of Botany Bay, Sydney West)

(C) = Dharag language of the Cadigal Clan (Sydney)

(G) = Gumbaynggir (Mid -North NSW)

ap* =
amendable
to pruning

na = no data
s = sensitive

CITY OF CANADA BAY

Development Control Plan

Appendix 3

Tree Species

Small to medium native or exotic trees - average up to 10m											
<i>Acer buergerianum</i>	Trident Maple	D	e	6m	Attractive small hardy tree with good autumn colour, drought tolerant	✓	✓	✓	✓	Sapindaceae	✓
<i>Acmena smithii</i> - varieties	Lilly Pilly - various	E	n	3-8m	Dense green canopy with vibrant red fruit, bush tucker (varieties grow to different heights)	✓	ap*	✓	✓	Myrtaceae	na
<i>Buckinghamia celsissima</i>	Ivory Curl Tree	E	n	6-10m	Spectacular flowering tree, slow growing, hardy, bird and pollinator attracting	✓	ap*	✓	✓	Proteaceae	s
<i>Callistemon salignus</i>	Willow bottlebrush	E	n	6-10m	Drought and flood tolerant, yellow flowers, attractive colours in new foliage	✓	ap*	✓	✓	Myrtaceae	✓
<i>Callistemon viminalis</i>	Weeping bottlebrush	E	n	6-8m	Vibrant red flowers, bird and pollinator attracting	✓	ap*	✓	✓	Myrtaceae	✓
<i>Caesalpinia ferrea</i>	Leopard Tree	E	e	6-8m	Hardy medium tree from Brazil. Drought tolerant. Distinctive smooth creamy mottled bark	✓	ap*	✓	✓	Fabaceae	s
<i>Cercis siliquastrum</i>	Judas Tree	D	e	6m	Attractive deciduous tree, prolific display of pink flowers in spring	✓	✓	✓	✓	Fabaceae	✓
<i>Corymbia ficifolia</i>	Red flowering gum	E	n	5-8m	Great small tree for back yards, bird and pollinator attracting	✓	ap*	✓	✓	Myrtaceae	✓
<i>Geijera parviflora</i>	WILGA or Australian Willow	E	n	5-10m	Slow growing, very hardy, attractive drooping scented foliage, drought tolerant	✓	ap*	✓	✓	Rutaceae	✓
<i>Guioa semiglaucula</i>	Wild Quince	E	n	6m	Small tree -shrub like	✓	✓	✓	✓	Sapindaceae	na
<i>Hibiscus tiliaceus</i> var <i>rubra</i>	Purple Leaf Hibiscus	E	n	5-8m	Hardy tropical tree with large maroon heart shaped leaves and sunny yellow flowers	✓	ap*	✓	✓	Malvaceae	na
<i>Hymenosporum flavum</i>	Native Frangipani	E	n	5-10m	Rainforest species with showy fragrant flowers, shade tolerant	✓	ap*	✓	✓	Pittosporaceae	✓
<i>Lagerstroemia indica</i>	Crepe Myrtle	D	e	4-8m	Colorful flowers, drought tolerant	✓	✓	✓	✓	Lythraceae	✓
<i>Leptospermum petersonnii</i>	Lemon Scented Tea Tree	E	n	4-6m	Very hardy, fast growing, adaptable, attractive shrub like tree with aromatic foliage	✓	✓	✓	✓	Myrtaceae	✓
<i>Melaleuca bracteata</i>	Black Tea Tree	E	n	5-10m	Spikes of scented white flowers in summer. Suitable medium tree for narrow streets and footpaths	✓	ap*	✓	✓	Myrtaceae	✓
<i>Pistacia chinensis</i>	Pistachio	D	e	6-8m	Very hardy, attractive, small deciduous tree with great autumn colour	✓	ap*	✓	✓	Anacardiaceae	✓
<i>Tristaniaopsis laurina</i>	OORAMMILLY(D) or Water Gum	E	n	5-8m	Drought tolerant small green tree with yellow flowers, 'Lucscious' variety needs more water	✓	ap*	✓	✓	Myrtaceae	✓
<i>Waterhousia floribunda</i>	Weeping Lilly Pilly	E	n	6-10m	Deep green dense weeping glossy foliage, good shade tree	✓	ap*	✓	✓	Myrtaceae	na
<i>Zelkova serrata</i> 'Green Vase'	Japanese Zelkova	D	e	6-12m	Vase shaped, autumn colour, hardy, drought tolerant	✓	ap*	✓	✓	Ulmaceae	s



CCB DCP Proposed Amendments

Draft DCP amendment comments from: External submissions				
Page	Part	Existing text/control etc	Proposed text/control etc	Council Officer Comment
A-2	A1.6	6. Encourage ecologically sustainable development and reduce the impacts of development on the environment.	Increase incorporation of Biodiversity Sensitive Urban Design within DCP objectives and controls.	General requests to revise and improve the biodiversity elements of the draft DCP will be considered as part of the preparation of the review of the Biodiversity Strategy.
B-73	B6.2	Biodiversity corridors provide linkages through urban areas to connect significant plant and animal communities remaining as endangered ecological communities, endangered populations, threatened or migratory species and their habitats.	Amend wording to: “..... threatened ecological communities, threatened populations”.	Amendment accepted and draft DCP updated.
B-73	B6.2	N/A	Add an objective: “Retain existing native vegetation”.	Amendment accepted and draft DCP updated.
B-73	B6.2	O2. Encourage plantings which increase habitat connectivity and tree canopy.	Amend O2 to: “Encourage plantings which increase habitat connectivity and tree canopy, shrubs and understorey.”	Amendment accepted and draft DCP updated.
B-73	B6.2	N/A	Add controls that establish buffers between development and biodiversity corridors.	General requests to revise and improve the biodiversity elements of the draft DCP will be considered as part of the preparation of the review of the Biodiversity Strategy.
B-81	B6.3	Urban trees play a critical role in creating healthy cities; they improve air quality, absorb carbon and rainfall, cool local environments, and support wildlife. Trees create attractive urban places, providing seasonal variation and creating memorable landmarks.	Update the introduction so that it is consistent with the definition of urban forest as defined in the DCP.	Amendment accepted and draft DCP updated.
B-81	B6.3	O1. To protect the urban forest by increasing the retention of existing trees on public and private land.	Amend wording to: “To protect the urban forest by retaining existing trees and vegetation on public and private land”	Amendment accepted and draft DCP updated.

CCB DCP Proposed Amendments

Draft DCP amendment comments from: External submissions				
Page	Part	Existing text/control etc	Proposed text/control etc	Council Officer Comment
B-81	B6.3	O2. To increase total canopy cover within the LGA and achieve canopy targets outlined in this section.	Incorporate structural diversity within objectives, controls, and targets.	General requests to revise and improve the biodiversity elements of the draft DCP will be considered as part of the preparation of the review of the Biodiversity Strategy.
B-81	B6.3	O4. Minimise conflicts between people, infrastructure and trees.	Amend O4 to: "Minimise conflicts between people, infrastructure and the urban forest."	Amendment accepted and draft DCP updated.
B-81	B6.3	N/A	Add an objective: "Maximise opportunities for positive interactions between people, infrastructure and the urban forest".	Amendment accepted and draft DCP updated.
B-81	B6.3	O6. To conserve and enhance the tree canopy and greenscape and to enhance visual amenity in the public domain.	Include a definition of greenscape.	General requests to revise and improve the biodiversity elements of the draft DCP will be considered as part of the preparation of the review of the Biodiversity Strategy.
B-91	B6.8	O1. To consider the impact of development on threatened species and ecological communities	Amend O1 to: "Avoid impact of development on threatened species and ecological communities"	Amendment accepted and draft DCP updated.
B-121	B13.8	Indoor air quality	Nine submissions supported the introduction of indoor air requirements and move toward all electric homes and commercial buildings. The submissions provided justification for the amendment based on: 1. The proposal is legally robust and based on sound legal analysis 2. The proposal will make City of Canada Bay a leader in NSW on electrification	No amendment required.

Page 2

CCB DCP Proposed Amendments

Draft DCP amendment comments from: External submissions				
Page	Part	Existing text/control etc	Proposed text/control etc	Council Officer Comment
			3. We strongly congratulate council for this proposal and hope that it is supported unanimously by councillors.	
G-11	G2.6	N/A	Incorporate principles of Biodiversity Sensitive Urban Design into objectives and controls.	General requests to revise and improve the biodiversity elements of the draft DCP will be considered as part of the preparation of the review of the Biodiversity Strategy.
H-5	H5	N/A	Incorporate light pollution guidelines for wildlife within objectives and controls.	General requests to revise and improve the biodiversity elements of the draft DCP will be considered as part of the preparation of the review of the Biodiversity Strategy.

CCB DCP Proposed Amendments

Draft DCP amendment comments from: Internal submissions				
Page	Part	Existing text/control etc	Proposed text/control etc	Council Officer Comment
N/A	N/A	Formatting.	Categorizing the DCP by building type or providing a summary of relevant sections by building type.	General requests to revise and improve the formatting of the draft DCP will be considered as part of a future DCP amendment.
N/A	N/A	Formatting.	Relocate whole page / multi page maps and tables within the body of the text to the end of each section or to an appendix.	General requests to revise and improve the formatting of the draft DCP will be considered as part of a future DCP amendment.
N/A	B6	Formatting.	Change formatting including DCP Part order, order of objectives and controls, clarify requirements of some controls, add references to SEPP (Biodiversity and Conservation) 2021.	Amendment accepted and draft DCP updated.
N/A	N/A	References to 'native' fauna.	Change 'indigenous' to 'locally native'.	Amendment accepted and draft DCP updated.
N/A	N/A	References to 'public' land.	Amend relevant objectives and controls to reinforce that they also apply to public land.	Amendment accepted and draft DCP updated.
B-65	B6	B6 Urban Ecology	Include the words 'forest' or 'trees' in the title.	Amended to: Trees and Urban Ecology.
B-65	B6.1	N/A	Add objective: Prioritise the planting, retention, and restoration of locally native vegetation in our urban and river foreshore environment.	Amendment accepted and draft DCP updated.
B-81	B6.3	O7. To protect all protected trees.	Replace with: To safeguard longevity and optimal health for all protected trees'	Amendment accepted and draft DCP updated.
B-82	B6.3	C7. Canopy trees are to be planted in deep soil along the site's fence, forming a contiguous canopy cover between properties.	Remove.	Amendment accepted and draft DCP updated.
B-83	B6.3	C8. Where it is not possible to comply with landscaped area and canopy tree controls, or	Replace with:	Amendment accepted and draft DCP updated.

Page 4

CCB DCP Proposed Amendments

Draft DCP amendment comments from: Internal submissions				
Page	Part	Existing text/control etc	Proposed text/control etc	Council Officer Comment
		where exceedance of those controls is desired, there may be an opportunity for planting on a structure. In such circumstances the minimum soil depths specified in Table B-T shall be applied.	Planting on a structure is encouraged in addition to provision of the minimum Landscaped area (DCP Part E4.6). It does not substitute or replace provision of minimum Landscape area. Where there is an opportunity for planting on a structure, the minimum soil depths specified in Table B-T shall be applied.	
B-83	B6.3	Note 1: Trees are to be cared for by the land owner until established to a size consistent with the definition of a Protected tree	<p>Replace with:</p> <p>For trees planted on private property, it is the responsibility of the land owner to ensure that trees reach the mature dimensions (at maturity) as specified by Council in relevant approvals or conditions of consent. Trees which fail to survive, or that fail to reach specified mature dimensions must be replaced by the land owner.</p> <p>For trees planted on public owned or managed land, as a condition of development, care must be provided by the proponent for a period of 12 months in accordance with Council's Planting and Maintenance specification which will be provided as part of relevant approvals or conditions of consent. Trees which fail to survive must be replaced by the proponent.</p>	Amendment accepted and draft DCP updated.
B-84	B6.3	C18. Trees are to be planted a minimum of 5 metres distance from any other tree or shrub, or if closer than 5 metres should not be grown as or form part of a hedge.	Delete. 5m is very prescriptive and would not complement reasonable compliant development. It is likely to result in fewer healthy trees, as they can co-establish at shorter distances.	Amended to: Trees are to be planted a minimum of 2 metres distance from any other tree or shrub and trees should not be grown as or form part of a hedge.
B-84	B6.3	C19. All development proposals must be designed to maintain or improve the urban forest values of the site by minimising the impact on tree/s and planting replacement tree/s for tree/s that are proposed for removal. This requirement applies	<p>Replace with:</p> <p>C19. All development proposals must be designed to maintain or improve the urban forest, amenity and biodiversity values of the site by minimising the impact on trees. Proposals must include replacement planting</p>	C19 deleted and proposed text relocated under B6.5 heading.

Page 5

CCB DCP Proposed Amendments

Draft DCP amendment comments from: Internal submissions				
Page	Part	Existing text/control etc	Proposed text/control etc	Council Officer Comment
		to Council owned trees and trees on private or other property and adjoining land. All such development must comply with the provisions of AS4970 Protection of Trees on Development Sites.	if trees are proposed for removal. Replacements trees are to attain a similar mature size and habit of those proposed for removal. This requirement applies to trees on public and private land (within the property of proposed development, including Council owned and managed trees, trees on adjacent property and trees on adjoining land). All such development must comply with the provisions of AS4970 Protection of Trees on Development Sites.	
B-84	B6.4	C1. A person must not ringbark, cut down, top, lop, prune, remove, injure or wilfully destroy any protected tree, or other vegetation to which this development control plan applies without an approval granted by the Council.	Replace with: C1. A person must not ringbark, cut down, top, lop, prune, remove, injure or wilfully destroy any protected tree, or other vegetation to which this development control plan applies without an approval granted by the Council, unless considered exempt work as defined in B6.3.C3. of this DCP.	B6.4 has been amended and reformatted to simplify and improve legibility. New exemption for 10% pruning at all times for works that would otherwise need a permit.
B-86	B6.4	Table B-V Exempt Species	Amendments to plant names and addition of new species.	Amendment accepted and draft DCP updated.
B-87	B6.5	C1	Updates to provide additional information including AQF levels, and where to access relevant forms and fact sheets.	Amendment accepted and draft DCP updated.
B-87	B6.5	C1	New control: h) When it is suspected that trees are causing damage to structures or infrastructure, or that it is believed that trees must be removed to repair damage to structures or infrastructure, it must be demonstrated that no course of action that will allow the tree to be retained is viable. The burden of proof is on the applicant.	Amendment accepted and draft DCP updated.
B-89	B6.6	N/A	New control: Replacement plantings for trees removed on private property are to be planted on the property, unless	Amendment accepted and draft DCP updated.

Page 6

CCB DCP Proposed Amendments

Draft DCP amendment comments from: Internal submissions				
Page	Part	Existing text/control etc	Proposed text/control etc	Council Officer Comment
			otherwise specified in a permit or development consent issued by Council. Replacement plantings from trees removed from public property are to be planted in a public or private location as specified in a permit or development consent issued by Council.	
B-89	B6.6	N/A	New control: Replacement trees are to be of a similar size and habit to those removed, unless otherwise specified in a permit or development consent issued by Council	Amendment accepted and draft DCP updated.
B-89	B6.6	C4. Trees are to be planted a minimum of 5 metres distance from any other tree or shrub, or if closer than 5 metres should not be grown as or form part of a hedge. C5. Photographic evidence of replacement	Replace with: Trees are to be planted a minimum of 2 metres distance from any other tree or shrub, or trees should not be grown as or form part of a hedge.	Amendment accepted and draft DCP updated.
B-89	B6.6	N/A	New control: A permit or development consent issued by Council may specify planting locations.	Amendment accepted and draft DCP updated.
C-15	C2.15	N/A	New control: Where new structural elements are required in relation to a building (such as in the case of basement excavations or additional storeys) these elements must be shown on the architectural drawings submitted with the development application.	Amendment accepted and draft DCP updated.
E-25	E4.5	C1. Excessive void areas contribute to overall bulk and scale of a building and more likely to result in negative impacts on the amenity and character of surrounding development and the public domain.	Delete: Any void areas proposed must be limited in size to a maximum of 12m2, not including any area required for stair structure.	Amendment accepted and draft DCP updated.

CCB DCP Proposed Amendments

Draft DCP amendment comments from: Internal submissions				
Page	Part	Existing text/control etc	Proposed text/control etc	Council Officer Comment
		<p>Any void areas proposed must be limited in size to a maximum of 12m², not including any area required for stair structure.</p> <p>Void areas shall be justified by demonstrating necessity for specific functional outcomes of a building.</p> <p>Voids will not be supported when a building has an impact on the streetscape, departs from the building envelope or setback controls or has an impact on the amenity of neighbours.</p>		
E-25	E4.6	O7. To provide sufficient deep soil landscaped area to ensure urban greening and maintain and enhance tree canopy cover.	Delete 'deep soil' as a qualifier. Landscaped area is deep soil by definition.	Amendment accepted and draft DCP updated.
E-25	E4.6	C1. Landscape areas need to be consistent with the definition in this DCP.	Delete.	Amendment accepted and draft DCP updated.

CCB DCP Proposed Amendments

Draft DCP amendment comments from: Additional post-exhibition housekeeping amendments				
Page	Part	Existing text/control etc	Proposed text/control etc	Council Officer Comment
A-3	A1.7	SEPPs.	Additional text to clarify that the DCP includes controls that provide guidance on developments to which SEPPs are applicable. Additional text to clarify the relationship with other policies including the Apartment Design Guide, Rhodes Place Strategy, Homebush TOD Precinct Design Guide and Public Domain Plans/Street Design Guides.	Amendment accepted and draft DCP updated.
N/A	B3.5, B3.6, B3.8, B3.9	Residential Parking Category B. Parking maps. Non-residential and commercial parking rates Industrial parking rates	Homebush TOD Precinct added.	Amendment accepted and draft DCP updated.
F-3	F2.1	References to SEPP 65	Replace with: (Housing) 2021 (the Housing SEPP).	Amendment accepted and draft DCP updated.
K-99	K16	Various	A number of controls and figures have been removed from Part K16 Rhodes East to accommodate the adoption of the Rhodes East Public Domain Plan and Street Design Guide. Some new and amended controls have also been proposed to reference the Plan and Guide.	Amendment accepted and draft DCP updated.