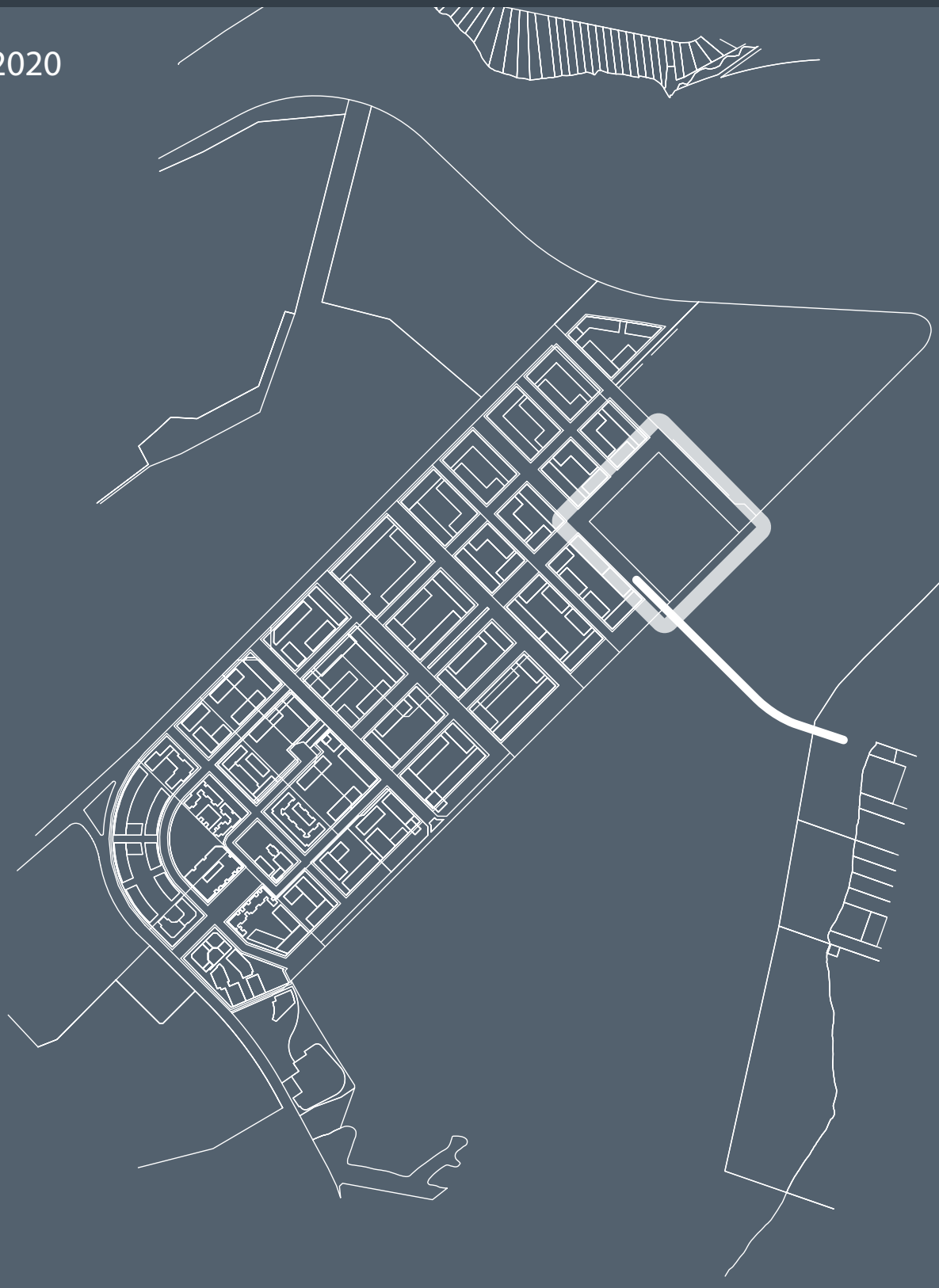
CITY OF PARRAMATTA

Draft Amendment No. 2

2020



Homebush Bay West DEVELOPMENT CONTROL PLAN

Draft Homebush Bay West Development Control Plan 2004 Amendment No. 2

Section 1 - Introduction

1.1 Name of this Development Control Plan

This Plan is known as Homebush Bay West Development Control Plan 2004 Amendment No 2 The Plan was adopted by the City of Parramatta Council on [insert date] and came into effect on [insert date].

1.2 Where this Development Control Plan Applies

This plan applies to the site known as "Block H" and adjoining foreshore, as shown on the diagram provided at clause 5.4.1

1.3 Relationship to Other Plans and Policies

This Plan is to be read in conjunction with Sydney Regional Environmental Plan No 24 - Homebush Bay Area (REP). If there is any inconsistency between this Plan and the REP, the REP will prevail.

This Plan amends the Homebush Bay West Development Control Plan as adopted by the Director General on 3 September 2004 and the Homebush Bay West Development Control Plan 2004 Amendment No. 1 as adopted by the Director General on 9 July 2013.

This Plan fulfills the requirements of Clause 16 of the Sydney Regional Environmental Plan No 24—Homebush Bay Area, being a development control plan adopted under Section 3.44 of the Environmental Planning and Assessment Act 1979, and replaces No.1 Burroway Road Development Control Plan 2006 as it applies to the subject land.

1.4 Purpose of this Development Control Plan

The purpose of this DCP is to identify the land to which this DCP applies as an Opportunity Site so to allow for additional development, subject to the achievement of design excellence through a competitive design process, making significant improvements to the size and quality of the public domain, and the provision of additional community infrastructure.

1.5 Amendment to Homebush Bay Development Control Plan 2004

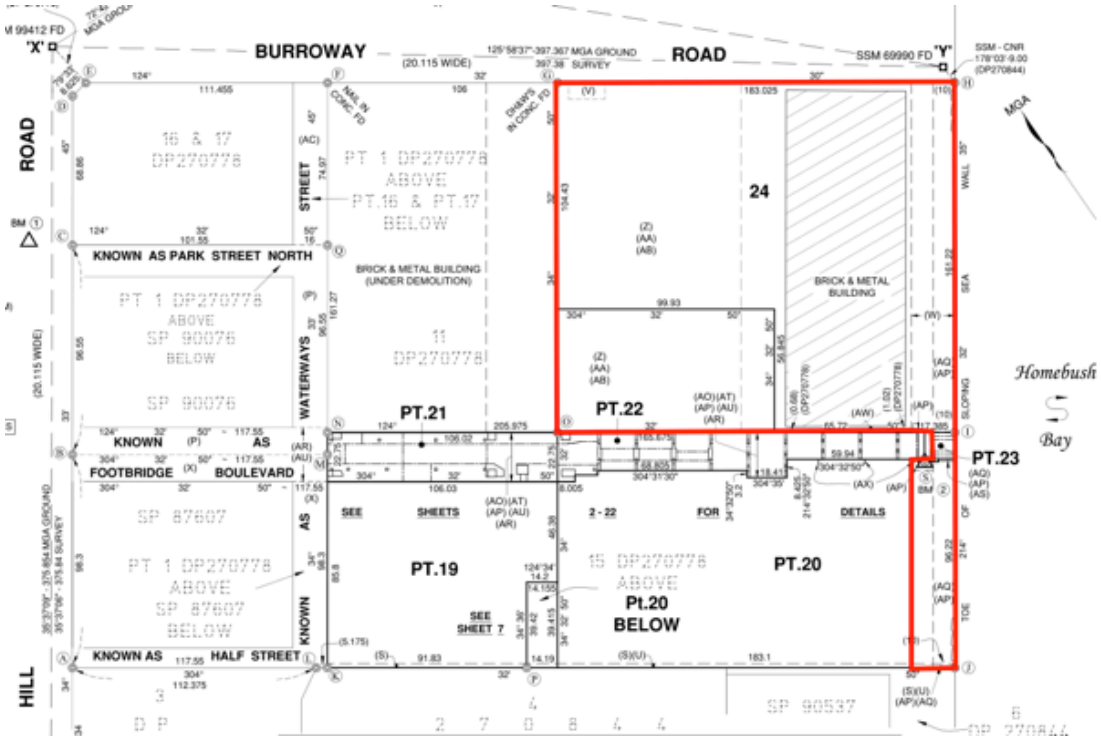
Homebush Bay Development Control Plan 2004 and Homebush Bay West Development Control Plan 2004 Amendment No. 1 are amended by the inclusion of a new section “Section 5.4 Lot H Wentworth Point" as set out in Section 2.

Section 2 – Amendment

5.4 Block H Wentworth Point

5.4.1 SUBJECT LAND

This section applies to the site known as "Block H" and adjoining foreshore, as shown on the diagram below.



5.4.2 OPPORTUNITY SITE

1) The objectives of this clause are:
   - to provide for design excellence and improved urban design outcomes;
   - to encourage opportunities to improve the size and quality of the public domain; and
   - to facilitate opportunities to deliver additional community infrastructure.

2) The subject land is identified as an Opportunity Site for the purposes of this Section.

3) Notwithstanding the other provisions of this DCP, the consent authority may grant consent to additional development on the subject land to that permitted under 5.3.1, as an Opportunity Site, under clause 5.4.5, but only where
   a) The development has been subject to a competitive design process and exhibits design excellence as set out in clause 5.4.11; and
   b) The development includes, or contributes to, community infrastructure to the satisfaction of the City of Parramatta Council, whether or not provided on the development site or not, but does not include infrastructure that would normally be required as a direct result of development.

5.4.3 **PRELIMINARIES**

The Design Framework Principles, General Controls or Detailed Design Guidelines as set out in Parts 2, 3, 4 and 5 of this DCP may no longer be wholly appropriate or desirable in implementing the objectives, development controls and performance criteria within this section.

Accordingly, in preparing and assessing development applications, consideration needs to be given to the suitability and extent of these provisions especially when they inadvertently give rise to diminished planning or design outcomes, or tend to undermine the ability to satisfy the design excellence outcomes and other provisions within this Section.

Specific exceptions, definitions and inclusions are provided in this Section for this purpose.

Objectives

- To ensure that general principles, controls and guidelines within Parts 2, 3, 4 and 5 can be adapted sufficiently to realise development permitted under Section 5.4 and achieve design excellence.
- To require that precedence is provided to the provisions of Section 5.4 over the general provisions and definitions within the DCP and to allow their adaptation to remain appropriate given the effect of the change in built form and floor area being permitted.

Development Controls

In the case of an inconsistency with a provision within Section 5.4 and the DCP, Section 5.4 will prevail. In particular:

i. Section 5.2.2 Precinct Structure in supplementing the key structuring elements in Section 2.4.5 is amended by adding:

    - Building height and orientation north of the Homebush Bay Bridge alignment transforms from the urban structure in providing higher tower forms nearer the foreshore with varied orientation to optimise the extent and solar access of a major park.

ii. Section 5.3.1 Land Use and Density still applies to the site but may be amended by the application of section 5.4.5.

iii. Sections 5.3.2 to 5.3.5 inclusive do not apply to the site.

iv. The parking rates set out in section 5.4.8 are to be applied in lieu of 4.3.2 (vii) to (xiv).

Exempt and Complying Development

v. For the purposes of clause 1.18 State Environmental Planning Policy (Exempt and Complying Development Code) 2008 in relation to the permissibility of development under clause 11(1) of Sydney Regional Environmental Plan No.24 – Homebush Bay Area, a development may be considered permissible if it is for the purpose of commercial premises or any other land use which has been granted development consent under this Plan.

Multi-Purpose Court

vi. Nothing in this plan inhibits the accommodation of a potential community multi-purpose court on the subject land, including any consequential departure from a development control, subject to the provisions of 5.4.13 Design Excellence.

Performance Alternatives

vii. The consent authority may consider alternatives to a prescriptive development control if it can be demonstrated that the intended environmental performance of that control can be otherwise achieved, but excludes a built form control under 5.4.5, 5.4.6 and 5.4.8.

Glossary

For the purposes of Section 5.4, the following expressions have the stated meaning in addition or in lieu of to the terms within the glossary:

Community infrastructure	a building, place or service owned or controlled by a public authority or non-profit organisation, including, but not limited to, community facilities, cycleways, centre-based child care facility, environmental facilities, footways, information and education facilities, public administration buildings, public roads, public squares, recreation areas and recreation facilities.
Competitive Design Process	an architectural design competition carried out in accordance with procedures approved by the Secretary of the Department of Planning and Environment.
Exhibits Design Excellence	where the design of the building is the winner of a competitive design process and the consent authority is satisfied that the building exhibits design excellence.
Floor Space	the sum of the areas of each floor of a building, measured from the inside face of external enclosing walls and 1400mm above each floor level. It includes: - habitable space below ground (auditoria, cinemas, supermarkets) - retail space (cafés) associated with main entrance and/or lobby. It excludes: - community infrastructure including a Council owned child care centre - main building entrances and associated foyers and lobbies, and all common horizontal corridors - common vertical circulation (stairs and lifts) - non-habitable areas of the building which do not protrude more than 1.2 metres above ground level that are used for the purposes of: – space for loading and unloading of goods – waste management and storage areas - car, coach and bicycle parking required under the DCP (additional car parking beyond those requirement to be included in the calculation of floor space) - plant rooms and vertical mechanical services and ducting - communal recreational areas in residential buildings up to 5% of the total floor area of the building - balconies, including wintergardens enclosed by at least 50% openable screening devices and are no greater than 30% above ADG minimum size standards. - the void space above double height spaces.
Opportunity Site	a site where additional development is possible (in accordance with the yields provided in clause 5.4.5), subject to the achievement of design excellence through a competitive design process, making significant

	improvements to the size and quality of the public domain, and the provision of additional community infrastructure.
Public open space	space which is accessible to the public and useable at all times, day or night.
Waterfront entertainment	commercial and publically accessible facilities to activate the Homebush Bay waterfront which may include a registered club; function, entertainment and/or recreation centres; restaurants and cafes and the like.

5.4.4 URBAN DESIGN PRINCIPLES

The following urban design principles are to be incorporated into the design.

i. New Urban Park – with an address to Burroway Road, Wentworth Place and Footbridge Boulevard.

ii. Development Zone – located adjacent to Waterside Promenade to minimise overshadowing and optimise view sharing with existing development.

iii. Tallest Development – located in the eastern portion of the site to maximise solar access of main park and marking the arrival to Wentworth Point via Bennelong Bridge.

iv. New Pedestrian and Cycle Connections – Fully accessible (including lift access) from Bennelong Bridge to Foreshore Promenade.

v. Street Address – New pedestrian and vehicular links to ensure an appropriate street address to all residential development.

vi. Foreshore Promenade – Ensure the delivery of a high quality, active and unique waterside public space at Wentworth Point while maximising commercial and community uses along the Foreshore Promenade.

vii. Waterside Activation –-Explore additional options for animating and activating the waterfront (e.g. public pool, jetties, etc.)

viii. Reinforce Pedestrian Desire Lines – Allow for direct pedestrian movement through the site identified from an analysis of potential prevalent desire lines which may include Bennelong Bridge (south-east) to Ferry Wharf (north-west).

5.4.5 LAND USE AND DENSITY

Objectives

Development of the site will comprise high quality residential apartment buildings with street orientated retail, commercial, community and live/work activities.

Development Controls

Despite section 5.3.1:

i. The maximum residential floor space permitted on the subject land is 85,000m2 subject to subclause (ii).

ii. Notwithstanding (i), the maximum residential floor space permitted on the subject land is 54,356m2 until a funding commitment to Parramatta Light Rail (Stage 2) and Metro West is confirmed in writing by a NSW State Minister or agency, or other transport improvements considered by Council to justify the maximum residential floor space permitted.

iii. The minimum floor space for non-residential uses required is 2,900 m2 to be provided on the subject land but which,

- excludes floor space for a “waterfront entertainment” facility to a maximum of 4,000m2 floor space, and
- may not be any greater than that which is required to activate the ground floor of buildings and suitable basement areas.

iv. The minimum public open space required is 16,800 m2 which is to include a main park of 10,500 m2.

v. The provision of covenanted space for community uses is permitted in addition to residential and non-residential floor space allowances. This does not include areas to be used for residential communal open spaces.

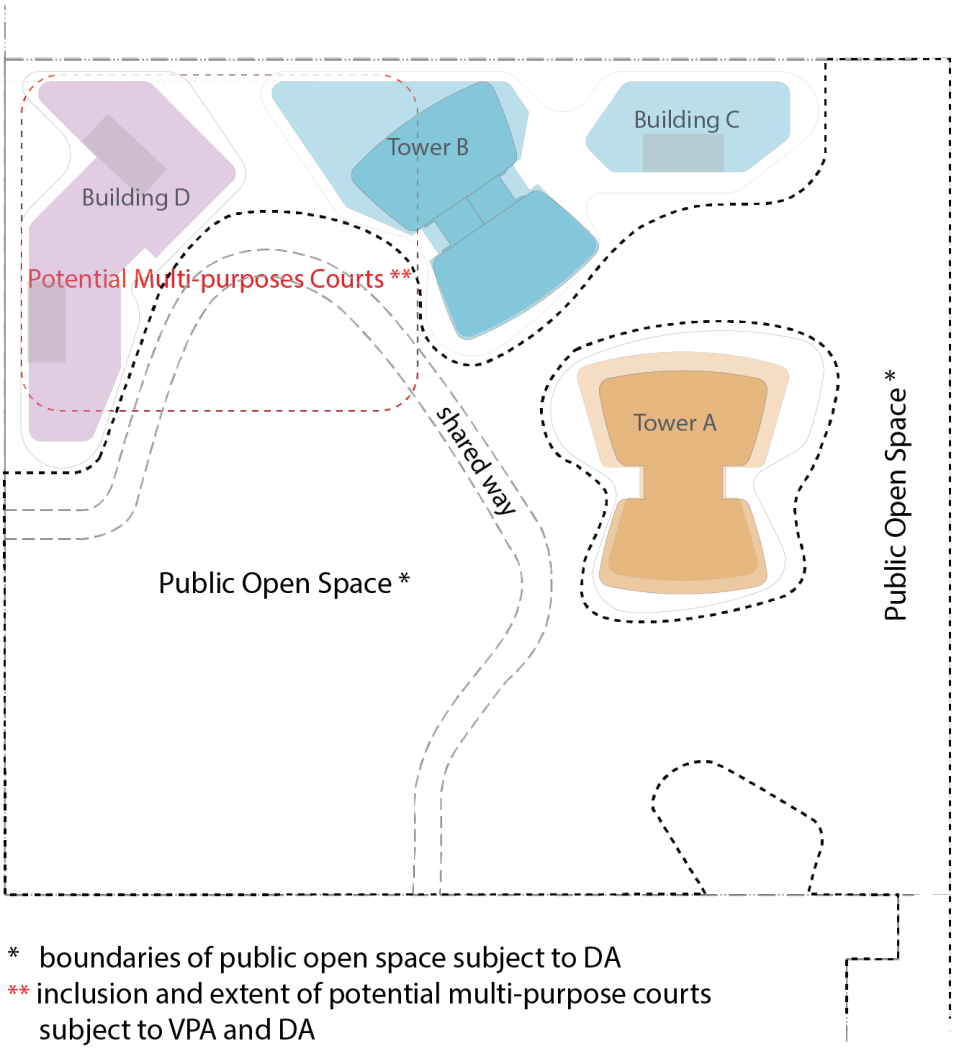


Diagram of general extent of public open space to be confirmed at DA

5.4.6 **BUILDING HEIGHTS**

Objectives

- To ensure future development is compatible with the character of streets and the precinct as a whole
- To protect the amenity of the foreshore promenade and public open space
- To provide for the built form outcomes dependent on permitted floor space provisions.
- To allow for a suitable tower height composition

Development Controls

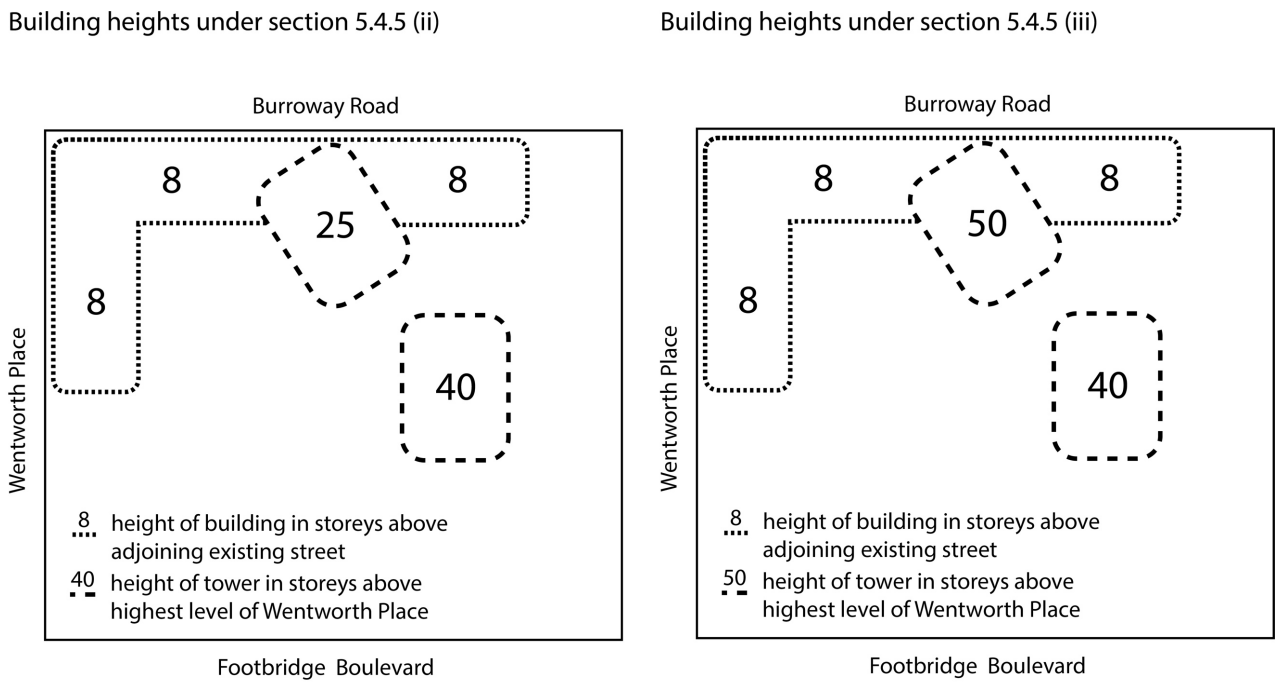
The maximum height of buildings and towers permitted is provided in the diagram below and described in the following controls

i) The maximum height of buildings providing a street wall to Burroway Road and Wentworth Place is limited to 8 storeys as measured from the adjacent street.

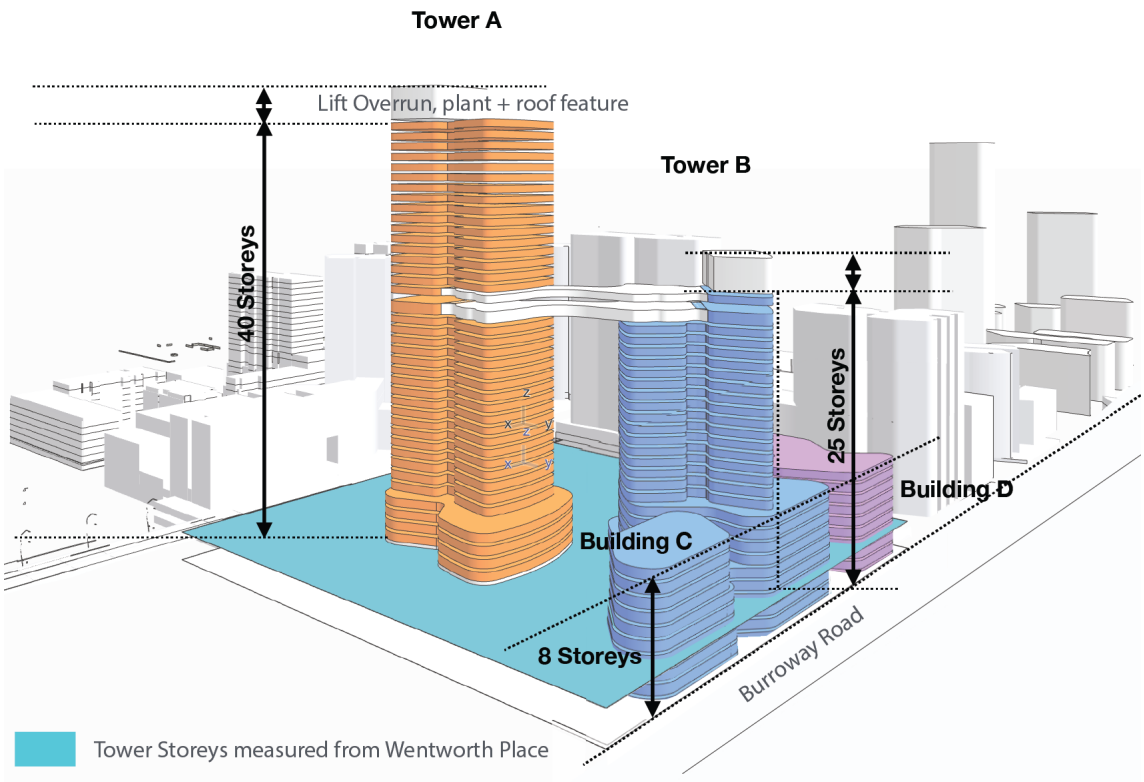
ii) In the case of development undertaken with floor space in accordance with 5.4.5 (ii) being 54,356m2 maximum residential floor space, the maximum height of a tower is 40 storeys above the main park as measured from the highest level of Wentworth Place.

iii) In the case of development undertaken with floor space in accordance with 5.4.5 (i) being 85,000m2 maximum residential floor space, the maximum height of a tower is 50 storeys above the main park as measured from the highest level of Wentworth Place.

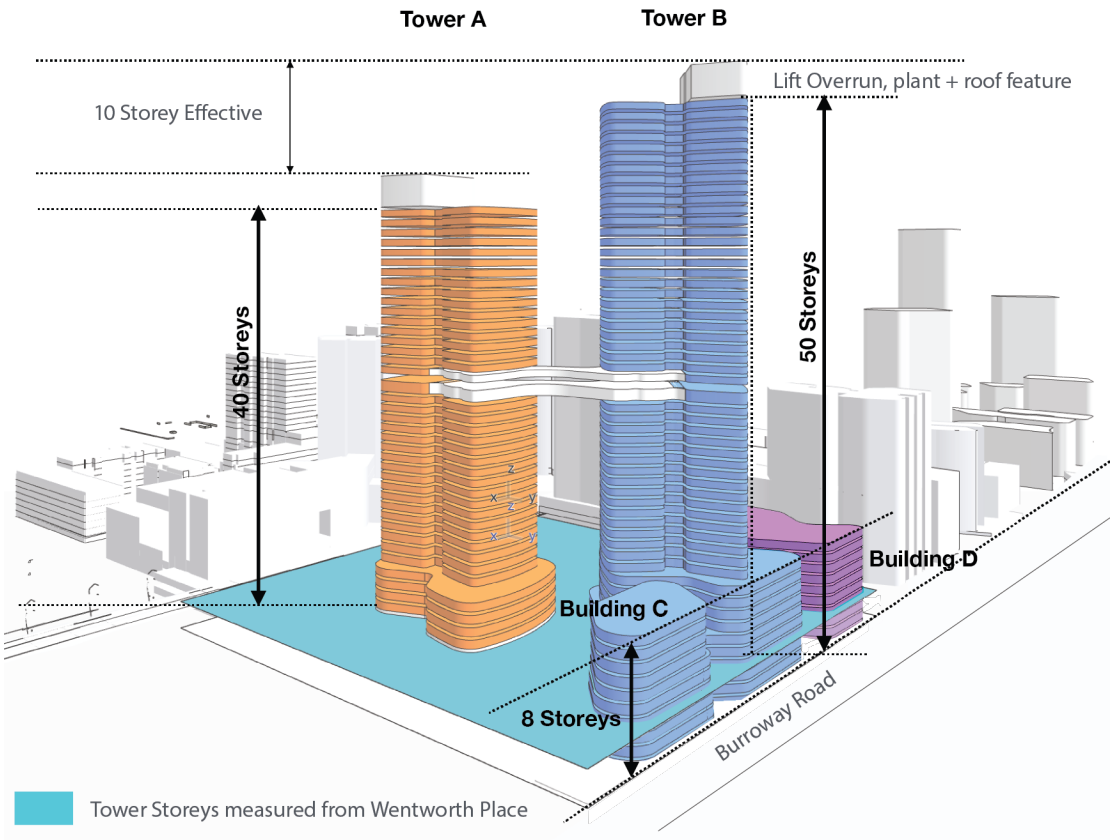
iv) Any volume above the storey height limit in section 5.4.5 (ii) and section 5.4.5(iii) may not be used for residential purposes.



Building height control diagram



Envelope illustration of building heights under section 5.4.5 (ii)



Envelope illustration of building heights under section 5.4.5(iii).

5.4.7 **BUILT FORM**

Objectives

The built form is to:

- Maintain the grid pattern east of Hill Road.
- Be organised to:
  - Reinforce the street pattern.
  - Assist in providing continuity of the built form on the east side of the peninsula and Hill Road.
  - Minimise· perceived density from the public domain.
  - Minimise impacts of density on the adjacent development.
  - Maximise the views to the water from the public domain.
  - Relate to the levels in the site as formed.
  - Respond in contemporary architecture to climate and sustainability issues.
- Minimise barriers from the transition of levels from the peak of the synthetic terrain at Wentworth Place to the finished seawall levels at the waterfront within the site and to the waterfront.
- Address impact of views on existing towers as a result of increased development.
- Provide clear sight lines within and through the site, and accommodate accessibility needs especially through the main park. Allow easy and generous pedestrian priority movement across vehicular access crossings along the site's perimeter.
- Clearly distinguish between public and private domains particularly for the main park and waterfront, while allowing for active edges to the foreshore linear park and elsewhere as appropriate.
- Define the main park without excessive indentation or complexity, edges to streets and the waterfront should be activated, and be sufficiently robust to accommodate a range of uses.
- Provide seamless, continuous and animated interfaces to the respective public domains
- Use robust resilient materials that complement the neighbourhood and reflect the location.
- Modulate and articulate buildings to provide depth in the external walls, interest at street level and highlighted entrances.

Development Controls

i. The building footprint measured to the outermost face of building is to be set back 30m from the property boundary of which 20m is the foreshore promenade and a further 10m of circulation / spillover dining / activation along the buildings water frontage.

ii. The maximum footprint of any tower is 1,150m2, which comprises all areas to the external face of a building including external walls, internal voids and balconies.

iii. Buildings must align with the orthogonal street grid or as permitted in achieving design excellence as determined by the competitive design process.

iv. Buildings must have a street address.

v. The placement and height of towers must consider alignment, suitable separation, effect on the skyline from viewing points from inside and outside the site, the impact of shadowing of public places and parks, wind turbulence and the like.

vi. To provide modelled building facades appropriately scaled for the building use and

desired street character, building setbacks are to be provided as follows.

- minimum 2.5 metre setback from streets including Burroway Road and Wentworth Place and 4 metres for tower forms.
- zero setback in all cases on ground floor and up to 4 storeys in association with retail, commercial or community uses below.
- balconies and ground floor terraces may extend forward of the street setback line by a maximum of 600mm across a maximum 50% of the building frontage and otherwise, the setback line may be averaged where justified.

vii. Building setbacks must accommodate additional width in footpaths for higher volume pedestrian activity and to compensate for road Infrastructure where necessary.

viii. Ground floor uses must respond to the planned and developed characteristics of the respective streets, as follows:

- Wentworth Place: retail and cafe frontages in development opposite and a potential park edge;
- Burroway Road: commercial and flexible live/work typologies with potential maritime uses in proposed development opposite and a potential park edge; and
- Footbridge Boulevard potential park edge.

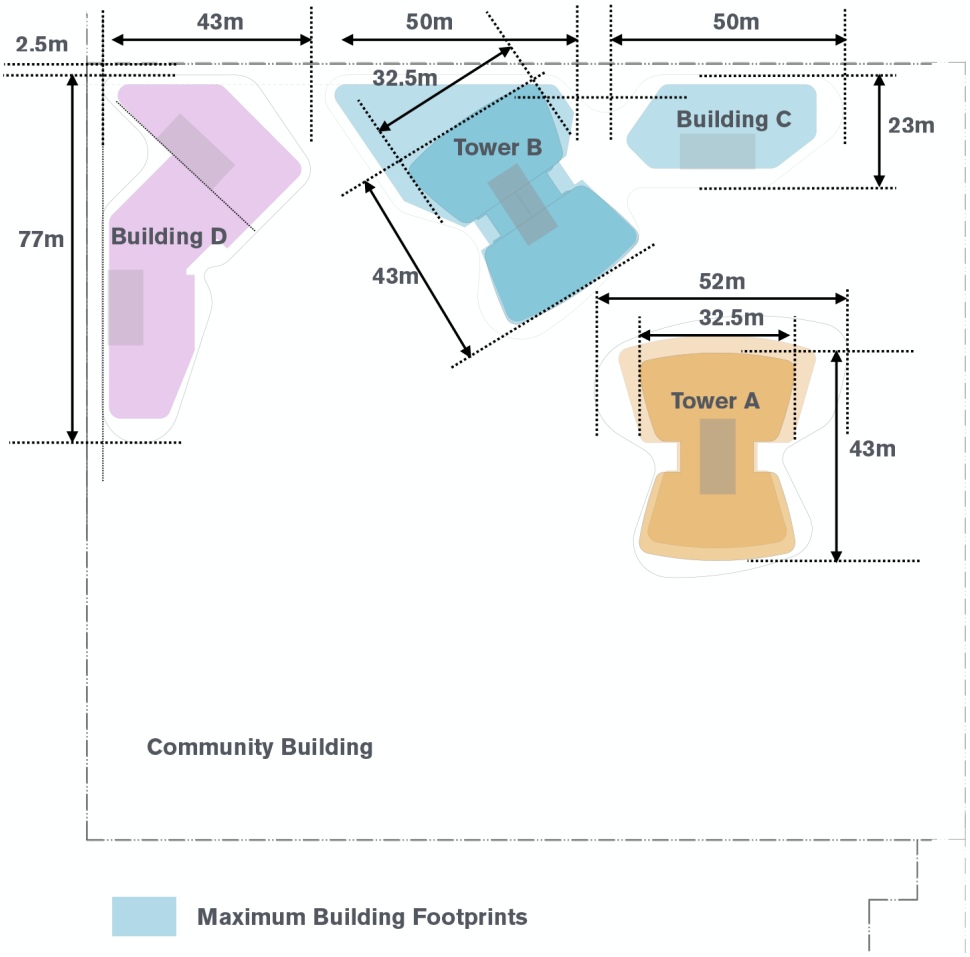


Diagram indicating compliant building floor plates

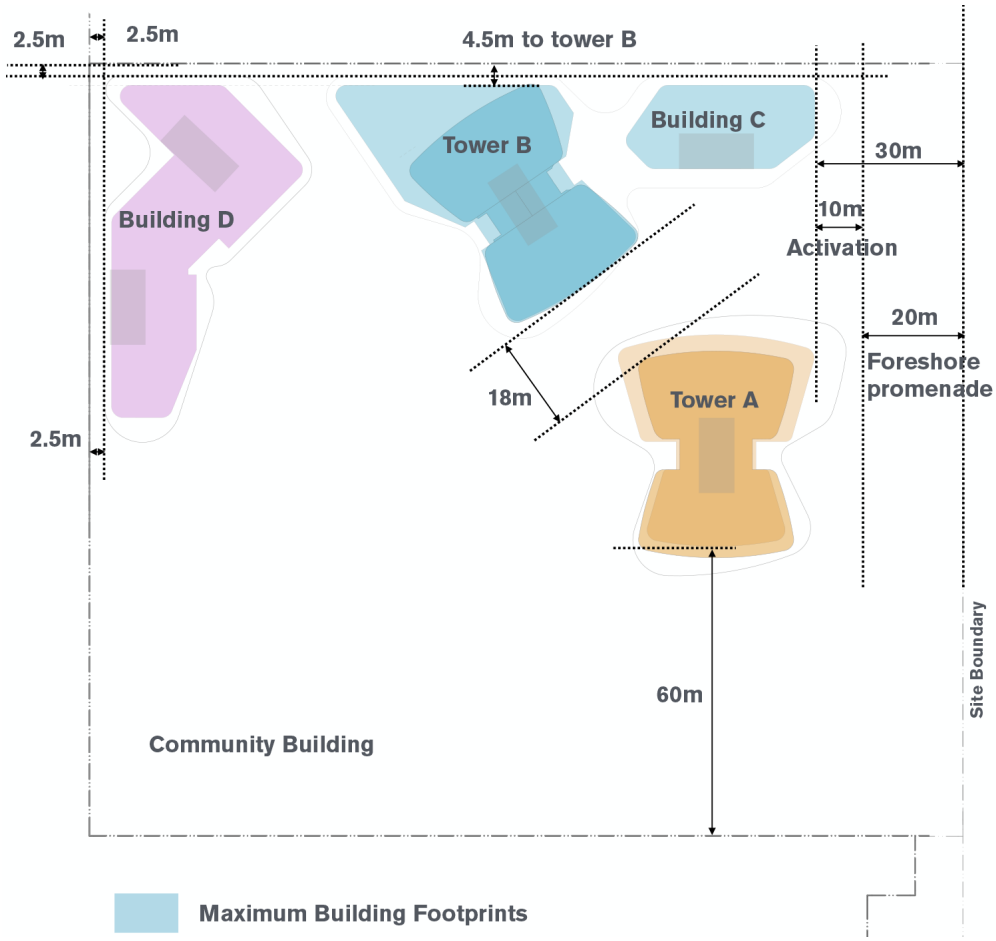


Diagram indicating building setbacks

ix. Car Parking must be located in basements while above ground car parking must not be higher than the level of the main park and be sleeved by apartments, other uses, the false terrain or other suitable means.

5.4.8 PARKING AND TRAVEL DEMAND MANAGEMENT

Objectives

- To minimise car dependency for commuting and recreational transport use and to promote alternative means of transport-public transport, bicycling, and walking.
- To provide adequate car parking for the building's users and visitors, depending on building type and proximity to public transport.

Development Controls

The following car parking rates are to be applied in lieu of 4.3.2 (vii) to (xiv).

i. Provide residential car parking in accordance with the following requirements:

- Generally provide a minimum of 1 space per dwelling.
-

Dwelling type	Maximum car spaces per dwelling
studio	none
1 bedroom	1.0
2 bedroom	1.2
3 bedroom	1.5
Visitors	1 per 12 dwellings
car share	1 per 200 dwellings

- No more than 50% of adaptable housing required to be provided under 4.4.5 (vi) are also required to have a disabled car space.
- Visitor parking requirements must be satisfied within basements.

ii. Provide car parking for convenience retail as follows:
- employees: 2 spaces per tenancy
- patrons: gross floor area under 100m2, managed on-street parking; gross floor area over 100m2, 1 space per 40m2.

iii. Provide car parking for cafes and restaurants as follows:
- employees: 2 spaces per tenancy
- patrons: 15 spaces per 100m2
- this may be a combination of on-street and on-site parking if appropriate management arrangements are agreed with the consent authority

iv. Provide 1 car parking space per 60 sq.m gross leasable floor area of commercial office development

v. Bicycle parking is to be provided at the rate of
1 resident space per dwelling and 1 visitor space for every ten units,
1 employee space per 150m2 of commercial floor space
1 visitor space per 400m2 of commercial floor space

vi. Provide motorbike parking at the rate of 1 space per 25 car parking spaces.

vii. Bicycle storage facilities are to be designed in accordance with Part 3 of AS2890.3 and are to include 10A power point outlets to serve 10% of spaces with no space being more than 20m away from a charging outlet. (Chargers excluded.)

viii. The consent authority may permit variations to the above maximum rates on the basis of transport and traffic management proposals which meet their approval

ix. Provide for a travel behaviour change program for each development after the opening of the Homebush Bay Bridge including:
- Transport Access Guides (TAGs) or similar;
- Community marketing and awareness campaigns for new residents;
- Provision for a car sharing scheme able to be operated by, or on behalf of, the respective strata body corporate.

5.4.9 **WIND**

Objectives

- Ensure suitable wind environments for pedestrians and residents.

Development Controls

i. To ensure public safety and comfort, the following maximum wind criteria are to be met by new buildings:
- 10 metres/second in retail streets
- 13 metres/second along major pedestrian streets, parks and public places
- 16 metres/second in all other streets and places.

ii. Development applications are to be accompanied by scaled model wind tunnel testing study to assess the pedestrian wind environment of the public domain and public open space network having regard to the Lawson distress criteria as well as within private and communal balconies and open spaces .

iii. Design buildings and public and private open spaces having regard to wind testing to minimise wind generation and effects through building form, articulation, screening, galleries, tree planting, vegetation and the like.

iv. The wind study shall be performed by a professional wind engineer with experience in wind issues in the built environment. It is recommended that the applicant or the wind engineer consults the City of Parramatta planning department to agree on the type and approach of the pedestrian level wind study required for the proposed development.

v. Historical data of wind speed and direction collected over a minimum of 10 years shall be used as the basis of a pedestrian level wind study. Data from the Bankstown Airport Bureau of Meteorology anemometer starting earliest in 1993 shall be used and adequately corrected for the effects of differences in roughness of the surrounding natural and built environment. The use of wind data for daytime hours between 6am and 9pm is generally recommended and may be specifically requested by the City of Parramatta, however, wind data for all hours may be used as well, where appropriate. Climate data are to be presented in the wind study report.

vi. The criteria for pedestrian level wind comfort and safety are based on published research, particularly on the criteria developed by Lawson (1990). Pedestrian safety and comfort are affected by both the mean and the gust wind speed. As such, the criteria defined above are to be applied to both the mean wind speed and the Gust Equivalent Mean (GEM), i.e. the 3 s gust wind speed in an hour divided by 1.85.

5.4.10 PUBLIC DOMAIN AND OPEN SPACE NETWORK

The public domain will comprise publicly accessible streets, lanes, pathways, plazas as well as a main park and waterfront linear park containing a promenade.

Objectives

The objectives for Block H public domain and open space network are to provide::

- A clear legible public domain.
- Clear legible communal and private open spaces.
- Places for people to gather formally and informally.
- A main community park for a wide range of uses and users.
- A foreshore promenade with canopy tree planting.
- Reflection of the history of the site.

Development Controls

Development of the public domain and open space network is to include:

i. Soil volumes and depths for planting on structures in accordance with the Apartment Design Guide -, arranged in large contiguous planter areas (as opposed to numerous separate planters). The majority of planters should not be raised.

ii. A 24/7 lift connection between the foreshore and Footbridge Boulevard. Additional 24/7 public connection between the park and the foreshore at ground level is required.

iii. Public and street frontages along all park edges in accordance with DCP Vol. 2 Public Domain 3.5 Parks (3)

iv. Active edges along the river foreshore.

v. Public amenities both at the foreshore and the main park.

vi. Mid-site access for physical and visual permeability and reflect both movement towards

the waterfront as well as north-south connections. It should be in the form of streets, lanes and/or public paths as well as view corridors

vii. A hierarchy of spaces, designed as a suite which enable a range of uses over a long time frame.

viii. Be guided by DCP Volume 2 Homebush Bay West December 2005 Public Domain Manual design principles.

ix. Be consistent with the Homebush Bay West DCP controls in relation to overshadowing, basement car parking and deep soil requirements.

x. Achieve Best Practice:

- Flooding and rainwater management outcomes, including diversion or all storm water from the Bay and collection for reuse and/or groundwater recharge; and
- Ecologically Sustainable Development outcomes in accordance with 5.4.12 to 14.

xi. Incorporate desire lines in the public domain design and through site links.

xii. Maintain positive spatial relationships between buildings, streets, open spaces and neighbouring buildings.

xiii. Provide on-street car parking on adjoining and internal streets as appropriate.

5.4.11 NEW URBAN PARK

Objectives

The Main Park is to:

- Reflect the relevant commentary within the Local Open Space Review prepared by Leisure Planners (December 2016).
- Be guided by DCP Volume 2 Homebush Bay West December 2005 Public Domain Manual design principles (except with respect to the specific location of the main park).
- Provide:
  - Flexible area for civic activities and community gathering spaces
  - Active areas such as a children's playground / all age play spaces / multi-use court / fitness equipment and bike hub.
  - Passive recreation areas for contemplation, relaxation, outlook and views.
  - Community gardens and community activity rooms.
  - Cafe/restaurant associated with the park - maximum size of 100m2
  - Connections through the park and linked to the street network.
- Incorporate the timber portals of the existing warehouse into the park design.

Development Controls

The New Urban Park must:

i. Be located level with adjacent streets Wentworth Place and Footbridge Boulevard.

ii. Provide:

- Public and street frontages along all park edges in accordance with DCP Vol. 2 Public Domain 3.5 Parks (3)
- A contiguous main park area of regular shape and minimum dimension of 70m.
- A minimum area of 10,500 m2.
- A large grassed open space area: kick about and informal play space fringed by large shade trees, outlook & views

- Sub-surface drainage and automatic irrigation.
- Pedestrian paths that connect to the street network.
- Amenities with toilets and baby change.
- Seating, bins, perimeter fencing, lighting, fitness equipment and/or community gardens and a paved plaza area that addresses the main public street..
- Equitable access to the park from the north and foreshore as well as directly adjoining streets.
- Café/s - 1 storey, maximum total area of 100 m2 including uncovered outdoor seating area.
- Children's playground, minimum size of 500 m2

iii. Solar access to the main park:

- 30% solar access to the main park between 9am-3pm at any time of the year, as well as 40% solar access to the main park between 11am-2pm during midwinter
- Solar access to be assessed with cumulative overshadowing of adjacent developments and DCP building envelopes of those yet to be approved.
- Solar access on main park to be contiguous as far as practical.
- Solar access to the foreshore and new street is not be included in calculating solar access on public main park.

iv. Reuse the portals that were part of the original building in the park design.

v. Incorporate/modify approved basement car parking within the park to accommodate deep soil requirements.

5.4.12 FORESHORE PROMENADE

Objectives

To provide:

- A continuous foreshore promenade activated at key locations.
- A Well-lit accessible area under the bridge in accordance with CPTED principles.
- Large canopy tree planting.

Development Controls

The foreshore promenade must:

i. Be guided by DCP Volume 2 Homebush Bay West December 2005 Public Domain Manual.

ii. Be 20m wide against from the property boundary and the sea wall must not be altered in alignment.

iii. Have tree planting in the 20m foreshore setback

iv. Be activated at key locations such as building interfaces and the bridge landing.

v. Use materials and finishes that blend with existing and proposed material adjoining the site.

vi. Provide 24/7 direct lift and stair access from the foreshore to Footbridge Boulevard at the south east corner.

5.4.13 DESIGN EXCELLENCE

In considering whether development exhibits design excellence, the consent authority must have regard to the following:

i. the evaluations and recommendations of a Jury formed by the City of Parramatta Council for the competitive design process to determine the exhibition of design excellence.

ii. whether a high standard of architectural design, materials and detailing appropriate to the building type and location will be achieved,

iii. whether the form and external appearance of the proposed development will improve the quality and amenity of the public domain,

iv. whether suitable soil depths, volumes and contiguous planting areas to support a thriving landscape are satisfactorily achieved for all landscape areas on structures.

v. whether the proposed development detrimentally impacts on view corridors,

vi. how the proposed development addresses the following matters:

- the suitability of the land for development,
- the existing and proposed uses and use mix,
- any heritage and archaeological issues and streetscape constraints or opportunities,
- the location of any tower proposed, having regard to the need to achieve an acceptable relationship with other towers (existing or proposed) on the same site or on neighbouring sites in terms of separation, setbacks, amenity and urban form,
- the bulk, massing and modulation of buildings,
- alignment of buildings with the streets to reinforce the block and street pattern,
- street frontage heights,
- environmental impacts, such as sustainable design, overshadowing and solar access, visual and acoustic privacy, noise, wind and reflectivity,
- excellence of the principles of ecologically sustainable development including improvement on the minimum applicable energy and water target of BASIX,
- pedestrian, cycle, vehicular and service access and circulation requirements , including the permeability of any pedestrian network,
- the impact on, and any proposed improvements to, the public domain,
- the impact on any special character area,
- achieving appropriate interfaces at ground level between the building and the public domain, and
- excellence and integration of landscape design.

5.4.14 ECOLOGICALLY SUSTAINABLE DEVELOPMENT

Objectives

The development is to:

- Seek to deliver improvements above minimum NSW legislated minimum in energy and water efficiency and resident amenity.
- Provide resilience to future changes in climate.

Development Controls

The development should:

i. Seek to achieve a BASIX Energy score of
    a. BASIX 50 for buildings with 3-4 storeys
    b. BASIX 50 (+25) for buildings with 5-15 storeys
    c. BASIX 45 (+20) for buildings with 16-30 storeys
    d. BASIX 35 (+10) for buildings with 31+ storeys
ii. Seek to achieve a BASIX Water score of at least 55.
iii. Provide photovoltaics to each of the buildings if sufficient roof space is available.
iv. Seek to implement decarbonisation initiatives where appropriate including requiring the embedded network operator to supply carbon neutral electricity.
v. Provide dual reticulation (dual pipe) systems to all buildings, with the dual reticulation system being of sufficient size to supply all non-potable water uses of the building and suitable for future connection to a recycled water main.
vi. Provide an integrated water management system for the site that includes the capture and use of stormwater.
vii. Provide efficient centralized heat rejection for each building source on the upper most roof.
viii. Maximise natural ventilation of carparking.
ix. Wintergardens must:
    a. Be well designed and contribute to the high quality of the building façade.
    b. Be designed and constructed as a private external balcony with drainage and finishes acceptable to an outdoor space and must not be treated as a conditioned space.
    c. Have effective natural ventilation provided by;
        i. Not less than 80% of the external wintergarden perimeter being fully operable glass louvres, or;
        ii. If fixed glazing is provided, permanent openings are provided of an area not less than 15% of the greater of enclosed wintergarden floor area or external wintergarden facade area. 30-50% of the fixed opening are to be provided in a zone within 500mm of the floor with the remainder being proving within 500mm of the soffit;
        iii. An alternative arrangement that achieves the same performance.
    d. A generous opening must be provided between the wintergarden and any adjacent living area to allow seamless connection of the spaces where ambient conditions are suitable.
    e. Acoustic control for living areas and bedrooms must be provided on the internal façade line between the wintergarden and the living area or bedroom.
    f. Glazing in the external façade of a wintergarden must have a solar absorption of less than 20%.
    g. The flooring of the wintergarden must provide exposed thermal mass.
x. Electric vehicle (EV) charging infrastructure
    a. All multi-unit residential car parking must:
        - Provide an EV Ready Connection to each and every space allocated to residents and visitors.
        - Provide EV Distribution Board(s) of sufficient size to allow connection of all EV Ready Connections and Shared EV connections.

- Locate EV Distribution board(s) located so that no future EV Ready Connection will require a cable of more than 50m from the parking bay to connect.

b. All car share spaces and spaces allocated to visitors must have a Shared EV connection.

c. All commercial building car parking must provide 1 Shared EV connection for every 10 commercial car spaces.

EV technical terms have the following meanings:

EV Ready Connection is the provision of a cable tray and a dedicated spare 32A circuit provided in an EV Distribution Board to enable easy future installation of cabling from an EV charger to the EV Distribution Board and a circuit breaker to feed the circuit.

Shared EV Connection is the provision of a Level 2 charger and Power Supply to a car parking space connected to an EV Distribution Board.

EV Distribution Board is a distribution board dedicated to EV charging that is capable of supplying not less that 50% of EV connections at full power at any one time. The distribution board will be complete with an EV Load Management System and an active suitably sized connection to the main switchboard.

EV Load Management System is to be capable of:

- reading real time current and energy from the elective vehicle chargers under management
- determining, based on known installation parameters and real time data, the appropriate behaviour of each EV charger to minimise building peak power demand whilst ensuring electric vehicles connected are fully recharged.
- scale to include additional chargers as they are added to the site over time.

5.4.15 URBAN HEAT

Objectives

The development is to:

- To reduce the contribution of development to urban heat.
- To maximise user comfort in the local urban environment (private open space and the public domain).
- To minimise the reflection of solar heat downward from the building façade into private open space or the public domain.

Controls

The development must:

i. Where surfaces on roof tops or podiums are used for communal open space or other active purposes, the development must demonstrate at least 50% of the accessible roof area complies with one or a combination of the following:

- Be shaded by a shade structure;
- Be covered by vegetation consistent with the controls on Green Roofs or Walls in Section 4.3.3.6.3 Landscaping in the Parramatta DCP.

ii. Where surfaces on roof tops or podiums are not used for the purposes of private or public open space, for solar panels or for heat rejection plant, the development must demonstrate the following:

- Materials used have a minimum solar reflectivity index (SRI) of 82 if a horizontal surface or a minimum SRI of 39 for sloped surface greater than 15 degrees; or
- 75% of the total roof or podium surface be covered by vegetation; or

- A combination of (a) and (b) for the total roof surface.

iii. The extent of the vertical façades that comprise Reflective Surfaces must achieve solar shading consistent with the design excellence scheme and be submitted with the development application.

The extent of solar shading is to be demonstrated through shadow diagrams. **ssss**at 10am, 11.30am, 1pm, 2.30pm and 4pm on 21 December for each relevant façade. Shadows from existing buildings, structures and vegetation are not considered in the calculations. Refer to Table 1 for sun angles corresponding to shading reference times.

Table 1

Shading sun angles

Façade Orientation	**Sun Angles**
East ± 22.5°	Reference Time: 10am AEDT (UTC/GMT+11) Sun Elevation: 51° Sun Azimuth: 86°
Northeast/Southeast ± 22.5°	Reference Time: 11.30am AEDT (UTC/GMT+11) Sun Elevation: 69° Sun Azimuth: 66°
North ± 22.5°	Reference Time: 1pm AEDT (UTC/GMT+11) Sun Elevation: 80° Sun Azimuth: 352°
Northwest/Southwest ± 22.5°	Reference Time: 2.30pm AEDT (UTC/GMT+11) Sun Elevation: 67° Sun Azimuth: 290°
West ± 22.5°	Reference Time: 4pm AEDT (UTC/GMT+11) Sun Elevation: 48° Sun Azimuth: 272°

iv. Shading may be provided by:
- External feature shading
- Intrinsic features of the building form such as reveals and returns
- Shading from vegetation such as green walls

v. Non-reflective surfaces such as concrete or brickwork, do not require shading and these areas can be excluded from the calculations.

vi. Transparent awnings are not encouraged on buildings. If transparent awnings are used, the awning must have a maximum solar transmittance of 20.

Urban Heat technical terms have the following meanings:

Solar heat reflectance is the measure of a material's ability to reflect solar radiation. A 0% solar heat reflectance means no solar heat radiation is reflected and 100% solar heat reflectance means that all of the incident solar heat radiation is reflected. In general, lighter coloured surfaces and reflective surfaces such as metals will have typically higher solar heat reflectance, with dark coloured surfaces or dull surfaces will typically have lower solar heat reflectance. External solar heat reflectance measured at the surface normal (90 degrees) is used in these controls.

Solar transmittance is the percentage of solar radiation which is able to pass through a material. Opaque surfaces such as concrete will have 0% solar transmittance, dark or reflective glass may have less than 10%, whilst transparent surfaces such as clear glass may allow 80 to 90% solar transmittance.

Solar Reflectance Index (SRI) is a composite measure of a materials ability to reflect solar radiation (solar reflectance) and emit heat which has been absorbed by the material. For example, standard black paint has a SRI value of 5 and a standard white paint has a SRI value of 100.

Reflective surfaces are those surfaces that directly reflect light and heat and for the purposes of this DCP are defined as those surfaces that have specular normal reflection of greater than 5% and includes glazing, glass faced spandrel panel, some metal finishes and high gloss finishes.

Non-reflective surfaces are those surfaces that diffusely reflect light and heat and for the purposes of this DCP are defined as those surfaces that have specular normal reflection of less than 5%.

Maximum External Solar Reflectance is the maximum allowable percentage of solar reflectance for the external face of a Reflective Surface. The percentage of solar reflectance is to be measure at

5.4.16 WATER SENSITIVE URBAN DESIGN

The development is to:

- To manage the quantity of stormwater run-off.
- To protect and enhance existing natural or constructed drainage networks including channel bed and banks by controlling the magnitude and duration of erosive flows.
- To ensure that downstream flora and fauna are protected from stormwater impacts during and post construction.
- To minimise surcharge from the existing drainage systems.
- To ensure that on-site stormwater management measures are operated and maintained in accordance with design specifications.

The development must:

i. Integrate WSUD principles into the development through the design and use of ‘green’ stormwater systems, biological water retention and treatment and integration of water management into the landscaperather than relying on ‘end of pipe’ proprietary treatment devices prior to discharge.

ii. Employ operating practices that prevent contamination of stormwater.

iii. Maximise pervious surfaces and use soft landscaping and deep soil to promote infiltration and reduce stormwater run-off.

iv. WSUD elements should be located and configured to maximise the impervious area that is treated through them.

v. Make adequate provision for the control and disposal of stormwater run-off from the site to ensure that stormwater has no adverse impact on Council’s stormwater drainage systems, natural watercourses, the development itself, or adjoining properties.

vi. Stormwater drainage design criteria are to be in accordance with Council’s Stormwater Disposal Policy and current Development Engineering Design Guidelines.

vii. Stormwater, including overland flows entering and discharging from the site, must be managed. The site drainage network must provide the capacity to safely convey stormwater run-off resulting from design storm events listed in Council’s Development Engineering and Guidelines.

viii. Council will generally not permit the construction of stormwater drainage lines through public reserves.

ix. The design and location of stormwater drainage structures, such as detention and rainwater tanks, is to be in accordance with Council's Stormwater Disposal Policy and current Development Engineering and Design Guidelines

x. Run-off entering directly to waterways or bushland is to be treated to reduce erosion and sedimentation, nutrient and seed dispersal.

xi. The discharge of polluted waters from the site is not permitted. Discharges from premises of any matter, whether solid, liquid or gaseous is required to conform to the Protection of the Environment Operations Act and its Regulations, or a pollution control approval issued by the NSW Office of Environment and Heritage for Scheduled Premises.

xii. Prepare and implement a Site Stormwater Management Plan (SSMP) incorporating water sensitive urban design measures is required. The SSMP must:

- identify the potential impacts associated with stormwater run-off for a proposed development and provide a range of appropriate measures for water quantity, water quality and water efficiency and re-use; and
- be developed in accordance with Council's Stormwater Disposal Policy and current Development Engineering and Design Guidelines; and
- to the maximum extent practical, achieve pollution reduction targets identified in Table 2 and consider measures including vegetated swales; vegetated filter strips; sand filters; bioretention systems; permeable pavements; infiltration trenches; infiltration basins; landscape developments; Gross Pollutant Traps and filters; and
- utilise the MUSIC modelling tool (or equivalent) to determine pollution load reduction as defined in Table 2; and
- be prepared by a suitably qualified professional.

Table 2

Stormwater Treatment Targets for Development

Pollutant	**Performance Target reduction loads**
Gross Pollutants	95% reduction in the post development mean annual load of (greater than 5mm)
Total Suspended Solids	90% reduction in the post development mean annual load of Total Suspended Solids (TSS)
Total Phosphorus	85% reduction in the post development mean annual load of Total Phosphorus (TP)
Total Nitrogen	65% reduction in the post development mean annual load of Total Nitrogen (TN)
Hydrocarbons, motor oils, oil and grease	No visible oils for flows up to 90% of the one-year ARI peak flow specific for service stations, depots, vehicle body repair workshops, vehicle repair stations, vehicle sales or hire premises, car parks associated with retail premises, places of public worship, tourist and visitor accommodation, registered clubs and pubs

NOTE: Reductions in loads are relative to the pollution generation from the same development without treatment