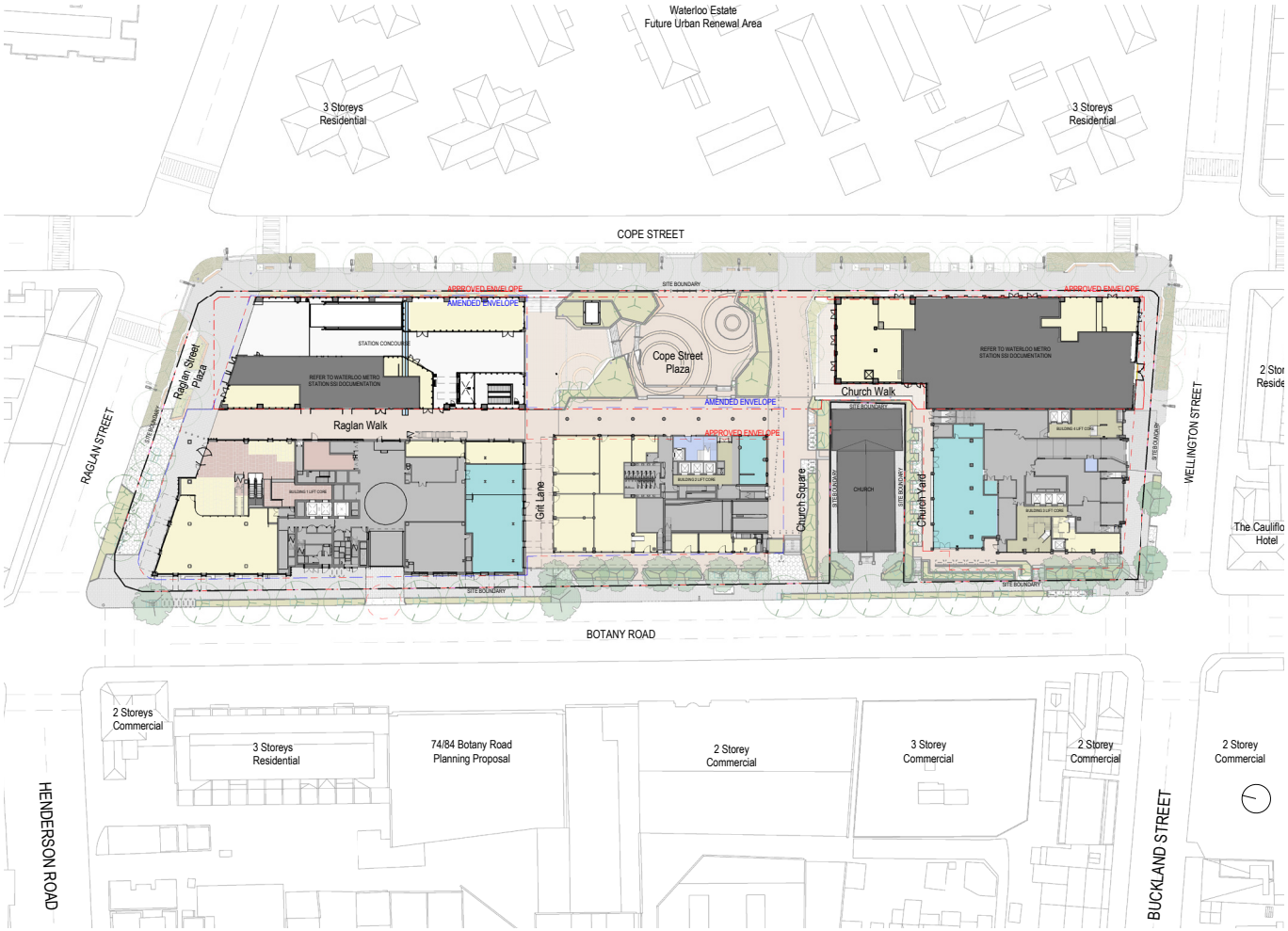


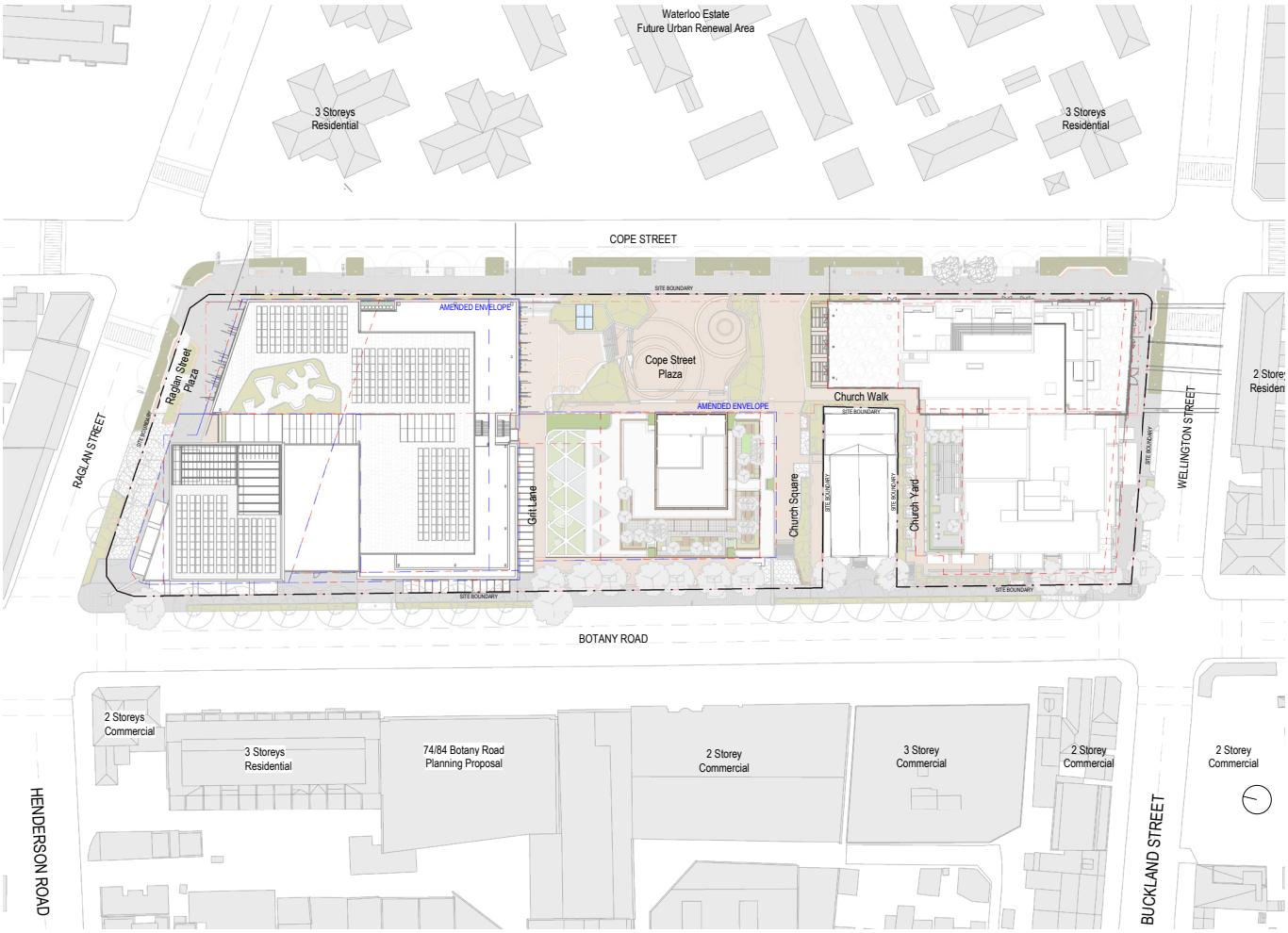
North-east facing aerial view, artist impression

8.1 Reference Design Overview & Illustrative Plan

Precinct wide Ground Floor Plan



Precinct wide Roof Plan



8.2 Public Domain

Public domain

Waterloo Metro Quarter will be a dynamic precinct within the broader surrounds of Waterloo comprised of public spaces including a neighbourhood square (Cope Street Plaza), laneways (Raglan Walk, Grit Lane and Church Lane), a courtyard (Church Yard) and surrounding streetscapes with generous footpaths and planting areas.

Raglan Street

→ Provision of generous circulation space around Metro and building entries. Creation of comfortable microclimate with shade trees and planting to cool street frontage. Permeable paving over deep soil. Predominantly native understorey planting provides opportunity for education through urban foraging.

Wellington Street

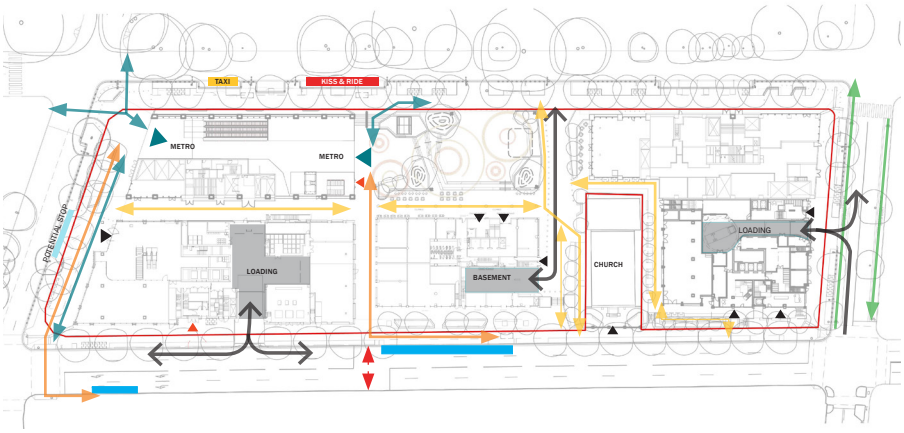
→ Extension of understorey planting in verge from western side of Botany Rd green connector to Alexandria Park. Weeping Lilly Pilly street trees, native understory planting and bike parking integrated near cycle path - separated bike path proposed on road.

Cope Street

→ Provision of generous circulation space around Metro and building entries. Incorporates parking/taxi/kiss 'n ride with widened verge. Creation of comfortable microclimate with shade trees and planting to cool street frontage. New street trees are Corymbia eximia (Yellow Bloodwood) with native understorey planting. Integration metro security elements and WSUD. Bike parking and benches located to provide amenity near Cope Street Plaza.

Botany Road

→ Provision of generous footpath widths along Botany Rd with new Lophostemon confertus street trees and native understorey planting that creates amenity and separation from the busy vehicular street. Double row of trees provided in areas with 10m setback.



Public Domain Access and Circulation

KEY

- Metro entry
- Bike entry
- Major entry / building lobbies
- Vehicular access
- Bike path
- Future pedestrian crossing
- 309 309+ Bus stop
- 355 355 Bus stop
- Access to and from Metro Station
- Access between bus stop and Metro Station
- Secondary pedestrian routes

Cope Street Plaza

→ Waterloo Place (will be named through a competition open to the community) will provide a meeting place/neighbourhood square/communal gathering area that showcases Aboriginal artworks and stories. Located at footpath level, the square is subtly separated from the surrounding circulation zones and outdoor dining areas, creating a protected place for community use. Active building uses are edges to the square, making this an attractive space to be during day and evening. A small pavilion could provide a permanent place for trade/busking/gathering linked to the original trade route walking trail now known as Botany Rd.

Raglan Walk

→ An important north south connecting laneway activated by adjacent building lobby, retail tenancies as well as Metro retail and bike storage.

Grit Lane

→ Will be a well used connector between the Metro southern entrance and Botany Rd bus stop. Activated by retail tenancies both sides.

Church Square

→ Provides both pedestrian access across the precinct and vehicular access to the basement. Allows church facade to be exposed and contribute to character of the place.

Church Yard

→ A protected courtyard framed by the Church and the facade of the student accommodation building. Allows activities to flow out from the Church and Maker Space.



View of Cope Street Plaza from Cope Street, artist's impression

8.2
Public Domain

Cope Street Plaza

Cope Street Plaza will provide a meeting place, a neighbourhood square, and a communal gathering area that showcases Aboriginal artworks and stories. Located at footpath level, the square is subtly separated from the surrounding circulation zones and outdoor dining areas, creating a protected place for community use.

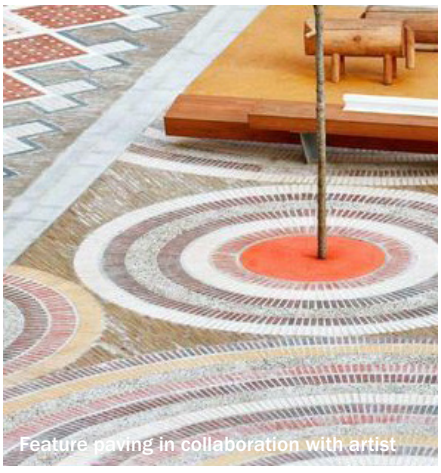
Distinctive planting will allow an understanding of the six indigenous seasons to be highlighted through the native planting selection.

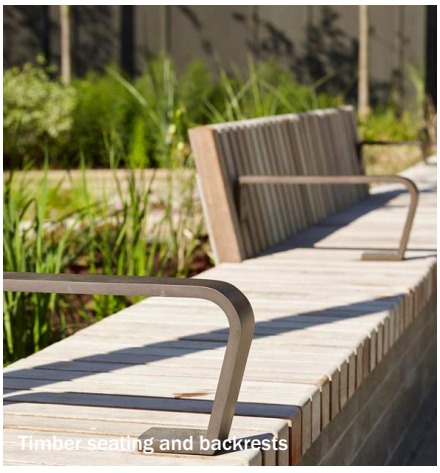
Active building uses are edges to the square, making this an attractive space to be during day and evening. A small pavilion will provide a permanent place for trade/busking/gathering linked to the original trade route walking trail now known as Botany Road. Circulation routes are clearly defined and slightly separate from places to dwell. The upper area of the plaza becomes a meeting place and opportunity to sit at the higher level adjacent the station separate from the main circulation routes.

The lower plaza is contained on three sides by seating terraces which create a sheltered place for sitting or enjoying small scaled events.


Amphitheatre style terraces


Feature tree in the heart of the plaza


Feature paving in collaboration with artist


Timber seating and backrests

KEY

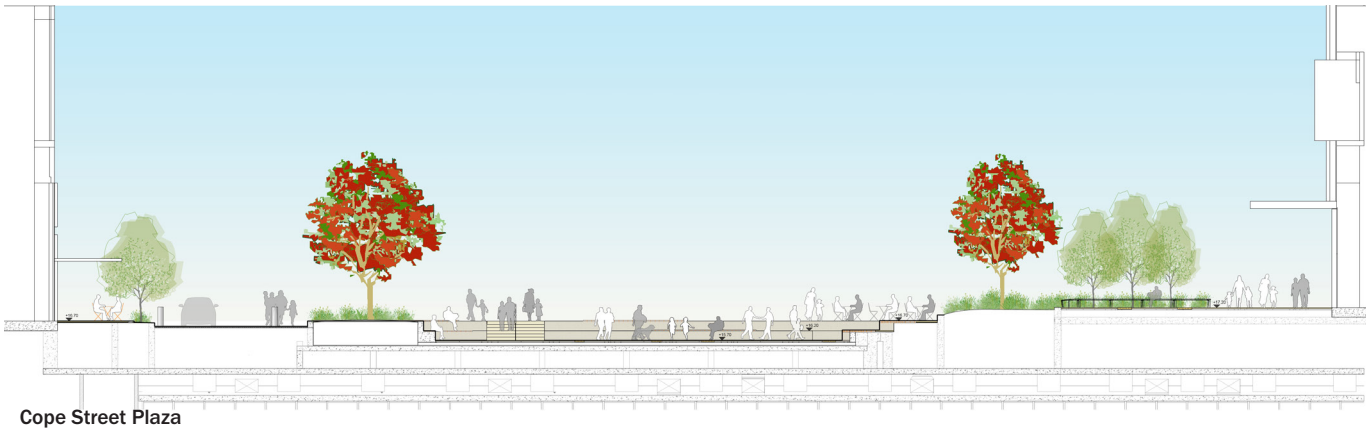
1. Southern Metro Station entrance/exit
2. Indigenous paving artwork
3. Integrated skylight
4. Potential licensed seating area
5. Terraced seating
6. Potential shade structure/canopy
7. Hostile vehicle protection bollards
8. Integrated timber seating with backrest
9. Power outlet
10. Potable water connection



Cope Street Plaza
Section A



Cope Street Plaza
Illustrative Plan



Cope Street Plaza
Section B

8.3 Northern Precinct - Building 1 Commercial SSD 10440

Building 1 overview

Situated on the northern edge of the proposed Waterloo Metro Quarter, at the corner between Botany Road and Raglan Street and interfacing the north entry of the Waterloo Metro Station, the Northern Precinct is a 17-storey tower generating approximately 30,000 sqm of commercial space (NLA), ground floor retail tenancies, community space and shared loading dock.

The Northern Precinct also includes a two level basement car park, new public open space such as Raglan Street Plaza, Raglan Walk and deep planted footpaths along Botany Road, contributing to a greater pedestrian experience. At street level the podium manifests an identifiable link to surrounding building typologies through the articulation of facade openings, shopfronts and the use of a rich textural materiality.

The tower above is broken down in four distinctive volumes (quadrants) descaling the archetype of the commercial towers to better integrate with the local context. Green roofs and planted recesses to the facade soften the edges of the building providing for greater general amenity within the precinct.



View of Northern Precinct from Botany Road, artist's impression



View toward Raglan Walk, artist's impression



View toward Grit Lane, artist's impression



View of Northern Precinct from Raglan Street, artist's impression

8.4
Central Precinct - Building 2 Residential SSD 10439

The juxtaposition of the podium and tower expression reflects the diversity of urban form throughout Waterloo.

Building 2 overview

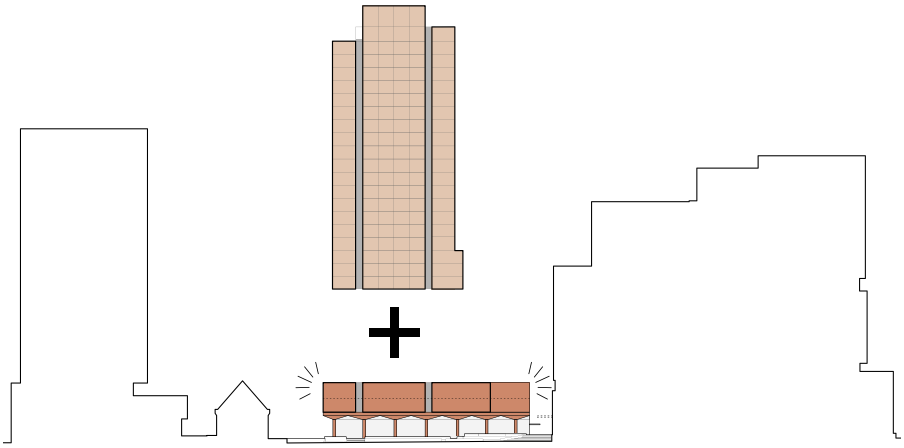
The central building is a vibrant, vertically connected neighbourhood with an active ground plane, community and childcare facility in the podium, affordable (key worker) housing and residential apartments within the tower, and a shared lounge and outdoor garden on the roof top.

Prominently located in the centre of the precinct, facing the new Cope Street Plaza to the east and the bus interchange to the west this building will play a significant role in how people engage and remember this place.

The podium and ground plane is generously setback to the south to create Church Square which will be integrated with the existing Congregational Church providing improved access and visual connection to the Church from the wider precinct.

The tower expresses a sense of individuality through a finer grain floor by floor and 'room by room' expression to reflect the idea of individual homes in the sky that draws inspiration from the uniqueness and personality of the Waterloo spirit.

Our vision is that this will be a safe, welcoming and engaging place that fuels social interaction between residents, workers and visitors. The build form and materiality will capture the rich and layered character of Waterloo - through the juxtaposition of two distinct identities that have been carefully woven together.













View from Cope St Plaza, artist impression



View from Botany Road, artist impression



View of the Central Building and Cope Street Plaza from Cope Street, artist impression

8.5 Southern Precinct - Building 3 and 4 Student Accommodation and Social Housing SSD 10437

Building 3 overview

Located on the southwestern corner of the precinct on the corner of Botany Road and Wellington Street, Building 3 is a 13,400sqm (GFA) building consisting of a student accommodation tower and a mixed use podium containing the student accommodation communal spaces, a 300sqm community space and a commercial gym.

The podium design aims to reflect the scale and character of the surrounding area, whilst the use of brick and metal echoes the materiality of the local built context. The community space creates an active frontage to Church Yard, an intimate public space situated between Building 3 and the Waterloo Church. Entries to the student accommodation, the gym and the social housing building activate the frontages to Botany Road and Wellington Street.

An 'L shaped' tower accommodates 474 students in a range of studio and twin studio units located over 20 floors. The tower is articulated into two distinct volumes with the facades on each elevation varying according to the specific environmental conditions. On each level a common room occupies the prime street corner location capturing views to the west and south.



View of Southern Precinct, Building 3, from the corner of Wellington Street and Botany Road, artist impression



View of Waterloo Congregational Chapel and Church Square and Yard, artist impression



View of Church Yard, artist impression

Building 4 overview

Situated above the southern metro box, on the corner of Wellington Street and Cope Street, Building 4 contains 70 residential apartments over 9 levels.

The building massing, articulation and facade expression responds to the built context, building orientation and environmental conditions such as solar shading, acoustics and privacy. The floor-plate design aims to provide a high level of amenity to both the apartments and the shared common spaces, whilst a communal rooftop terrace and community room provide residents with shared spaces for relaxation and socialising.

The facade design has been developed to create a building skin that offers a high degree of privacy, solidity and environmental performance. A simple palette of materials consisting of brick, concrete and metal has been chosen for their longevity, durability and their timeless quality.



View of Southern Precinct, Building 4, from the corner of Cope Street and Wellington Street, artist impression



View of typical studio apartment, artist impression



View of eastern elevation, artist impression

8.6 Wind mitigation and pedestrian environment

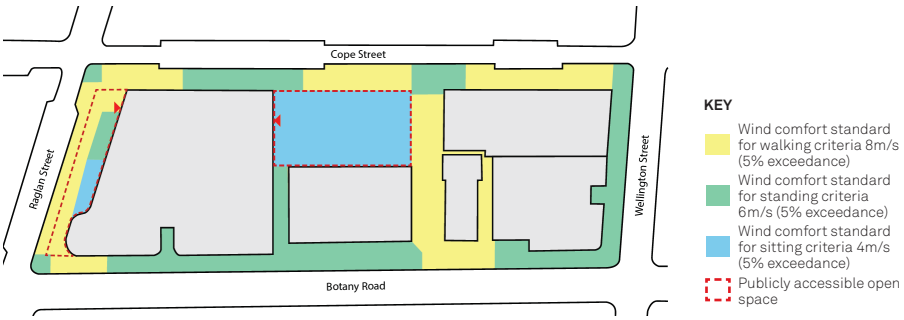
Design Requirements

3G, 1.

→ Mitigate potential wind impacts and ensure adequate levels of comfort are achieved in the public domain for intended activities.

3G, 2.

→ Ensure the wind environment created by the development does not result in uncomfortable or unsafe wind conditions on publicly accessible open space.



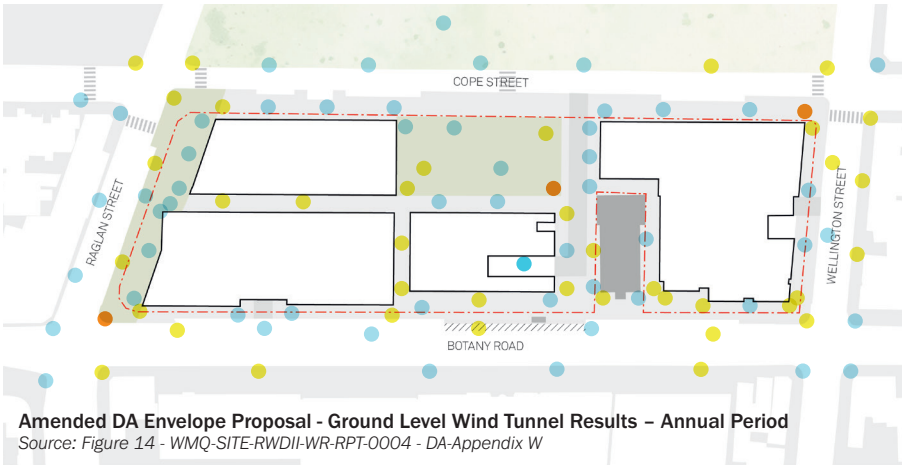
Based on the Development Consent approval for SSD8875, the wind conditions associated with the subject development are required to meet the comfort categories prescribed in the Lawson Criteria in the areas shown in above.
Source: Waterloo Metro Quarter Design and Amenity Guidelines FINAL (March 2020)

Design Criteria

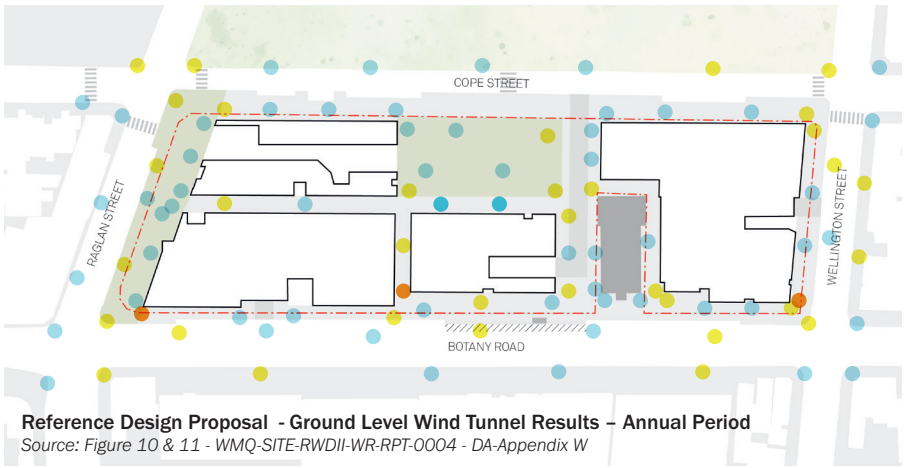
3.G,1.

Mitigate wind impacts on the public domain and achieve the following targets:

→ At least 50% of publicly accessible open space meets the wind comfort standards for sitting. Outdoor dining and casual seating areas should correspond to these areas;
→ Waiting areas at bus stops and pedestrian crossings to meet the wind comfort standard for standing;
→ Development must not exceed the wind safety standard of 24 m/s (gust - 0.1% exceedance).



Amended DA Envelope Proposal - Ground Level Wind Tunnel Results – Annual Period
Source: Figure 14 - WMQ-SITE-RWDII-WR-RPT-0004 - DA-Appendix W



Reference Design Proposal - Ground Level Wind Tunnel Results – Annual Period
Source: Figure 10 & 11 - WMQ-SITE-RWDII-WR-RPT-0004 - DA-Appendix W

Testing of Reference Design

To assess the wind environment around the proposed development, a 1:400 scale model of the project site and surroundings was used for two wind tunnel tests.

Amended Envelope
In accordance with the WMQ DAGs, wind tunnel testing was carried out for the built form, without the inclusion of landscaping or wind mitigation elements such as awnings.

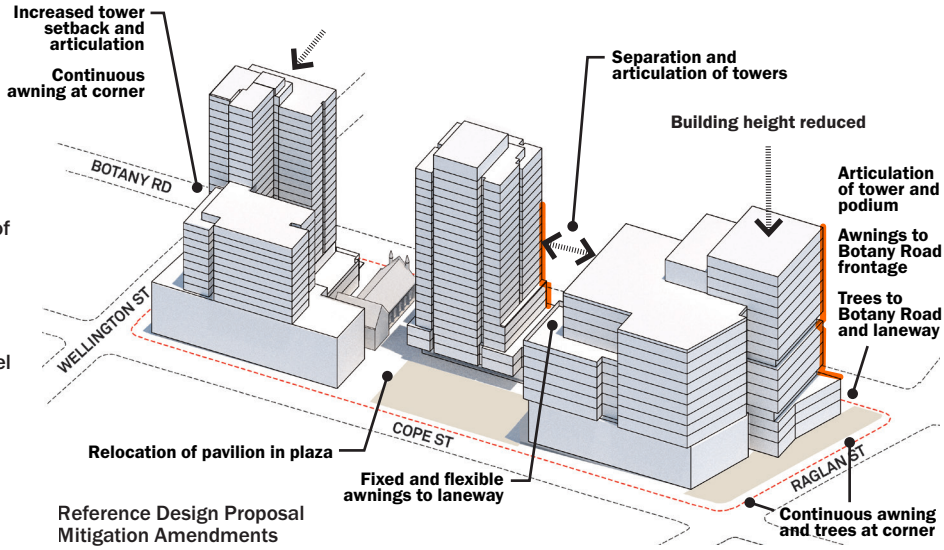
This testing demonstrated a significant improvement in wind conditions when compared to the original reference design. These improvements resulted from changes to the configuration of built form, such as building setbacks, separation and articulation, as well as the relocation of the plaza pavilion. Initial testing demonstrated areas of the site that required further mitigation of wind impact.

Detailed Design Scheme
The second wind tunnel test assessed a more detailed design scheme, with the addition of wind mitigation elements such as building awnings and tree planting (as outlined in public domain drawings). Trees were modelled to reflect their "young" state, so it can be assumed that their wind mitigation contribution will increase over time.

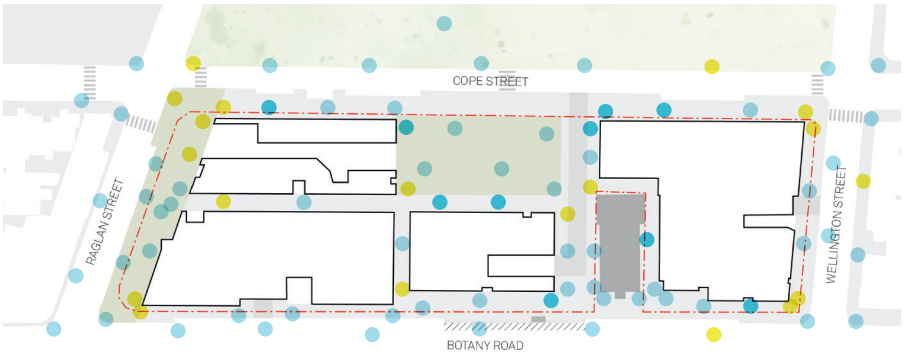
This second test demonstrated further improvement in wind conditions, satisfying the objectives of the Design and Amenity Guidelines. Minor non-compliances occur in locations where surrounding wind conditions cannot be entirely managed (for instance, street corners and within some areas of Cope Street Plaza) - however, these conditions will improve as trees along foorpaths and within the plaza mature. The maximum safety limit criteria of 24 m/s is achieved.

Source: WMQ-SITE-RWDII-WR-RPT-0004 -DA-Appendix W

KEY
- Sitting
- Standing
- Walking
- Uncomfortable



Reference Design Proposal
Mitigation Amendments



Reference Design Proposal including mitigation
Ground Level Wind Tunnel Results – Summer Period
Source: Figure 12 - WMQ-SITE-RWDII-WR-RPT-0004 - DA-Appendix W

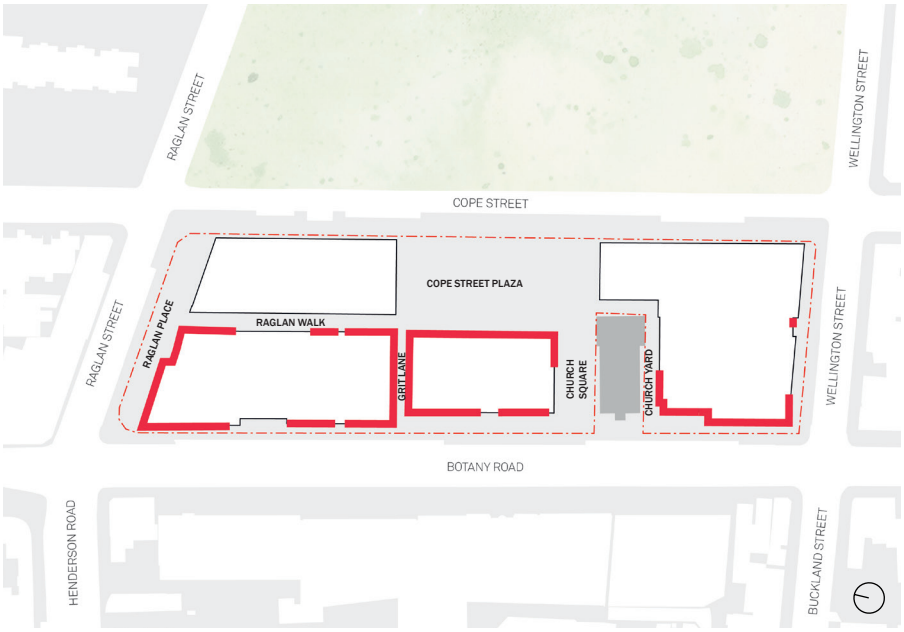


Reference Design Proposal including mitigation
Ground Level Wind Tunnel Results – Winter Period
Source: Figure 13 - WMQ-SITE-RWDII-WR-RPT-0004 - DA-Appendix W

8.7 Active frontages and pedestrian amenity

PDA C1 target

60% Active frontage

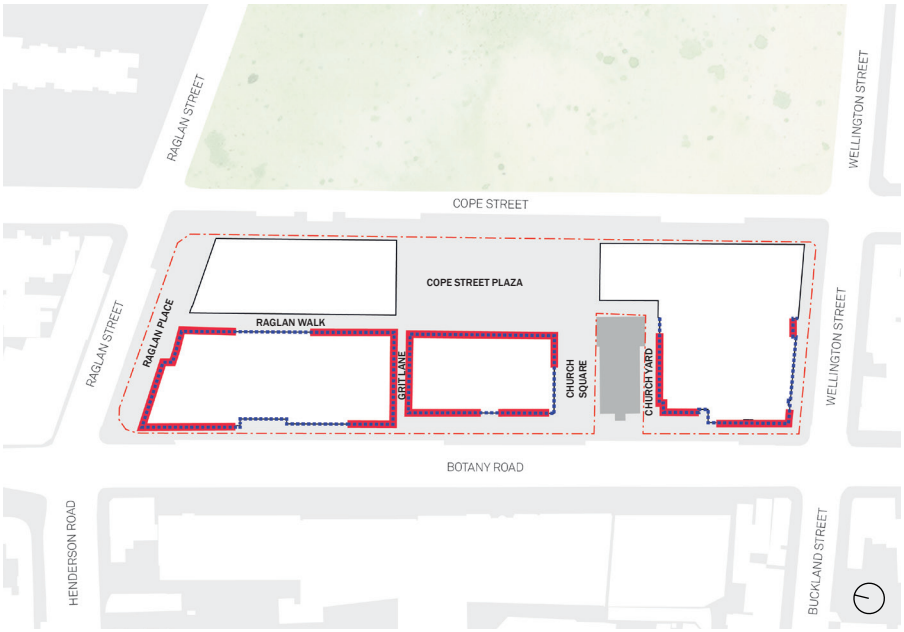


PDA C1 Active Frontage Requirements

Reference Design Proposal

73.9% Active frontage

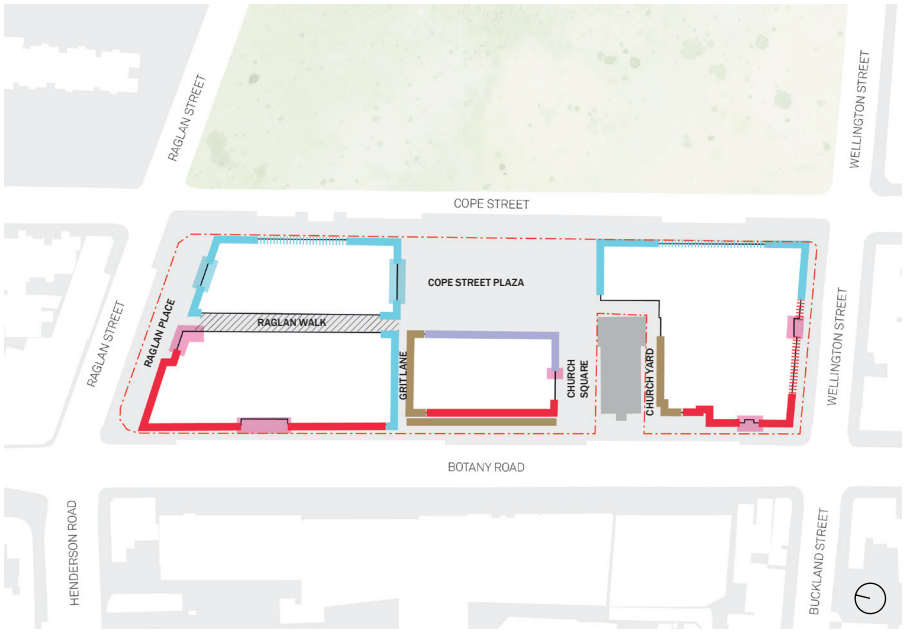
→ Total frontage: 461.0m
→ Active frontage: 340.6m



Reference Design Active Frontage Proposal



MQD Weather Protection Parameters



Reference Design Indicative Awning Proposal

8.8 Overshadowing

Overshadowing objectives and criteria

The *Waterloo Metro Quarter Design and Amenity Guidelines (March 2020)* provide guidance on the acceptable level of shadow impact by the development. The following Objectives and Criteria are stipulated.

Objectives

Section 3M Solar access and amenity objectives:

Objective 1

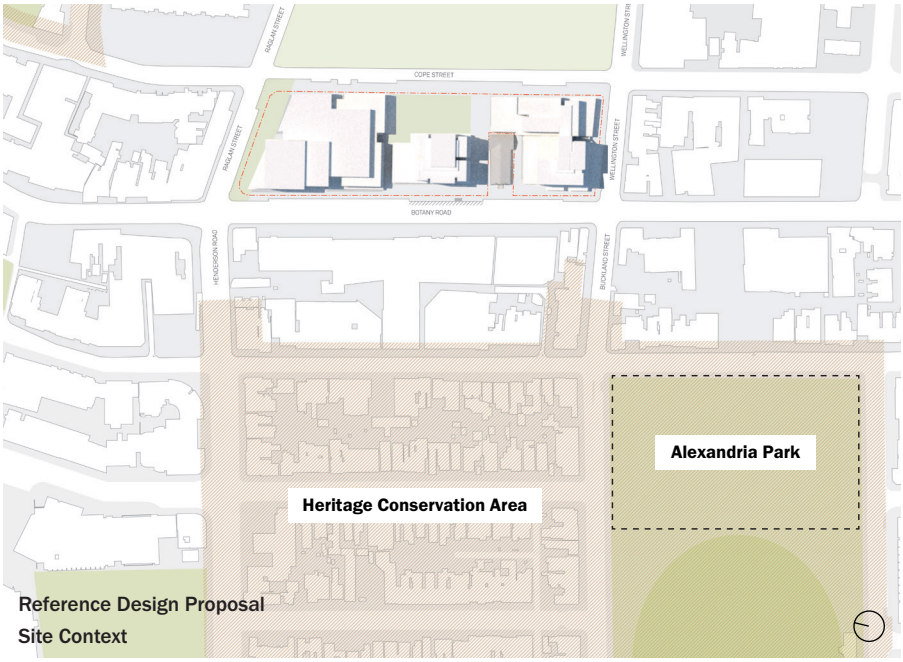
→ Ensure solar access to the public domain on the site including Cope Street Plaza and Raglan Street Plaza

Objective 2

→ Minimise overshadowing on Alexandria Park and the wider public domain Design Criteria

The results of the analysis regarding these requirements is presented for each space (Alexandria Park, Cope Street Plaza, Waterloo Heritage Precinct and other neighbouring buildings) in the following sections 8.8 Overshadowing and 8.9 Solar access to open space.

Source: WMQ-SITE-RWDII-WR-RPT-0005 -DA-Appendix U





KEY
- Site boundary
- Open space
- Heritage conservation zone

Solar access to Alexandria Park
Source: Figure 21, Turner Studio

Alexandria Park and the wider public domain

Objective 2 of Section 3M (Solar access and amenity) of the *Waterloo Metro Quarter Design and Amenity Guidelines (March 2020)* requires minimising the overshadowing on Alexandria Park and the wider public domain.

The detailed design of the development incorporates initiatives to minimise overshadowing on Alexandria Park and nearby developments including:

- → A reduction in the height of Building 2 as compared to the SSD 9393 Approved Envelope by approximately 6m on the east side and approximately 12m on the west and south; and,
- → A reduction in the height of Building 3 as compared to the SSD 9393 Approved Envelope by approximately 3.5 m on the east side and approximately 10 m on west and south.

These height reductions are inclusive of less floors than contemplated in the Concept Approval, and the greater allocation of floor space. Commercial use in the Northern Precinct allows for a more consolidated mass, achieving better efficiency and therefore reduced overall mass and overshadowing.

Design criteria

The criteria that needs to be met for Alexandria Park are:

Design Criteria 1

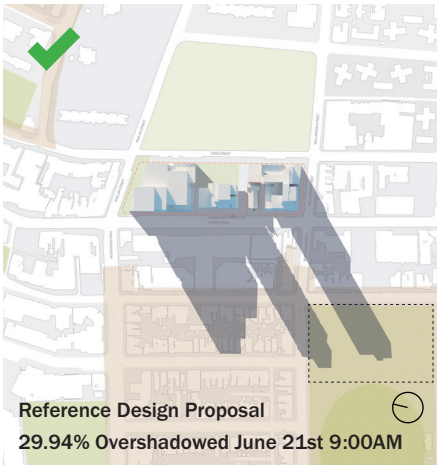
- → The development does not result in any additional overshadowing of Alexandria Park after 10am on 21 June

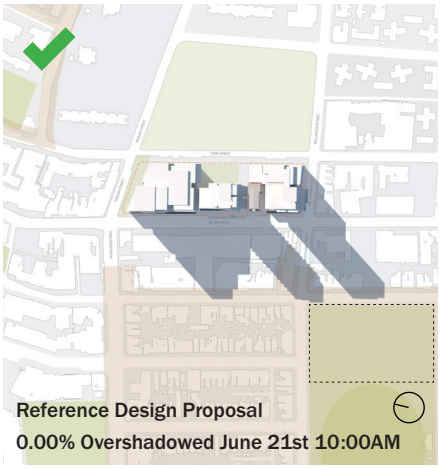
Design Criteria 2

- → No more than 30% of Alexandria Park excluding the oval is overshadowed by the development as measured at any time after 9am on 21 June

KEY

- Site boundary
- Open space
- Heritage conservation zone
- Overshadowing





Time (AEST)	Compliant Criteria 21 June	Approved SSD 9393 Envelope 21 June	Reference Design Proposal 21 June
9:00	30%	41.5%	29.94%
9:15	<30%	27.41%	18.39%
9:30	<30%	14.86%	7.67%
9:45	<30%	4.99%	0.62%
10:00 - 15:00	0%	0.00%	0.00%

Table: Shadowed Percentage of Alexandria Park (exclusive of oval)
Source: WMQ-SITE-RWDII-WR-RPT-0005 -DA-Appendix U

The Reference Design Proposal will not create new shadowing on Alexandria Park between 10:00 am and 3:00 pm on 21 June.

- → Very slight new shadowing is predicted on Alexandria Park before 10:00 am. This shadowing is expected to be at a maximum at 9:00 am, amounting to 29.94% of the Park area and reducing rapidly. This indicates that both criteria are met for the Proposed Development impact on Alexandria Park.
- → The reference design proposal results in less overshadowing of Alexandria Park compared to the Approved SSD 9393 Envelope.

The reference design proposal is predicted to be compliant with the criteria stipulated for Alexandria Park.

Source: WMQ-SITE-RWDII-WR-RPT-0005 -DA-Appendix U

8.9
Solar access to open space

Cope Street Plaza

Objective 1 of Section 3M (Solar access and amenity) of the *Waterloo Metro Quarter Design and Amenity Guidelines FINAL (March 2020)* seeks to ensure solar access to the public domain on the site including Cope Street Plaza and Raglan Street Plaza.

The detailed design of the development incorporates initiatives to achieve these objectives:

- → Cope Street Plaza sits on the eastern side of the site with the stepped form of the northern station box and Building 1 to the north and Building 2 to the west, as such is exposed primarily to morning sunlight.
- → Raglan Street Plaza sits along the north side of Building 1 and the northern station box, as such is minimally impacted by the proposed development in terms of solar access.

Results of the technical assessments to demonstrate the performance of the spaces with respect to the objectives and criteria are discussed in the following sections. Reference is made to the improvement in performance compared to the Approved DA Envelope Design Scheme as applicable.

Design Criteria

Section 3C Public Domain, design criteria for Cope Street Plaza states:

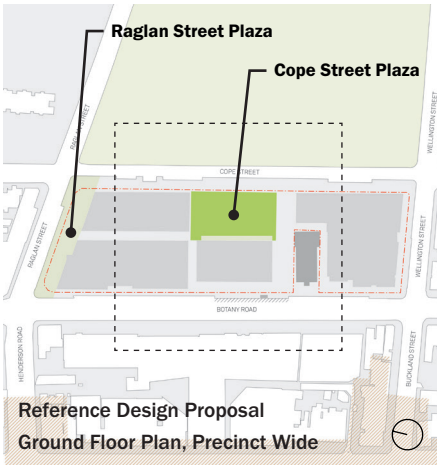
Design Criteria 4

- → At least 50 percent of the area of the Cope Street Plaza receives at least two hours sunlight between 9am and 3pm on 21 June.

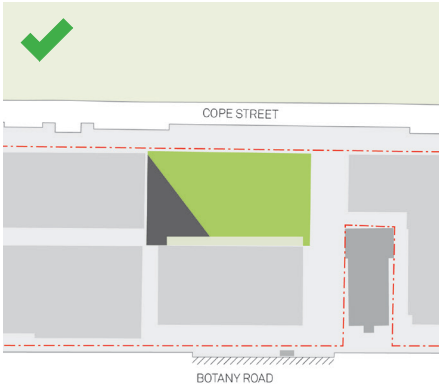
The simulations predict that 57.3% of Cope Street Plaza can receive at least 2 hours of direct sunlight between 9am and 3pm on June 21, thereby complying with the requirement in the Waterloo Metro Quarter Design and Amenity Guidelines.

Source: WMQ-SITE-RWDII-WR-RPT-0005 -DA-Appendix U

KEY
- Site boundary
- Cope Street Plaza
- Overshadowing
- Existing shadow



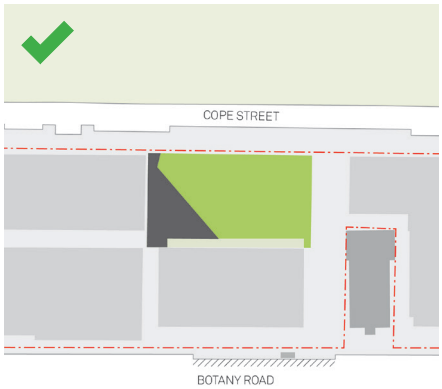
Reference Design Proposal
Ground Floor Plan, Precinct Wide



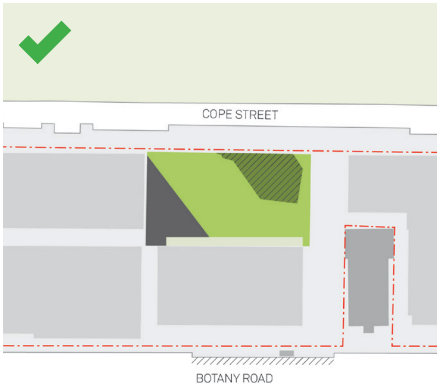
Reference Design Proposal
Area in sun: 80% June 21st 9:30AM



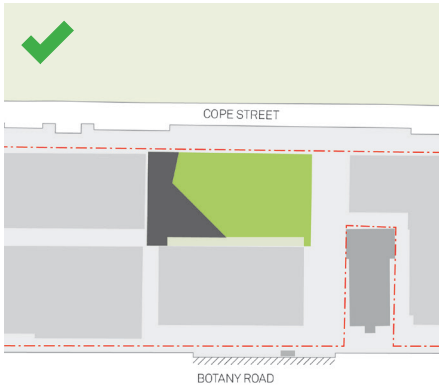
Reference Design Proposal
Area in sun: 30% June 21st 9:00AM



Reference Design Proposal
Area in sun: 77% June 21st 9:45AM

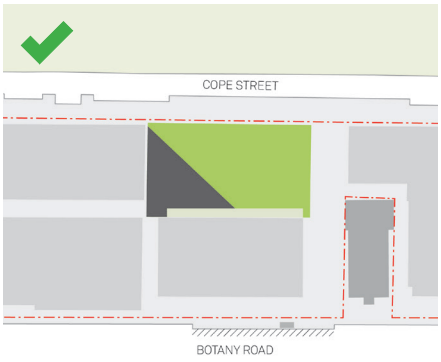


Reference Design Proposal
Area in sun: 63% June 21st 9:15AM

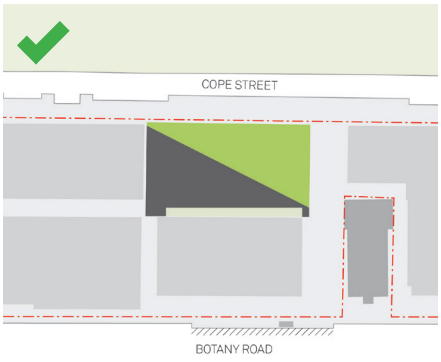


Reference Design Proposal
Area in sun: 71% June 21st 10:00AM

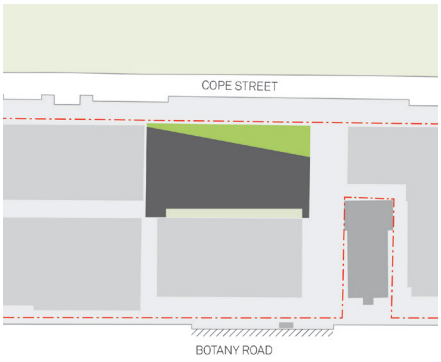
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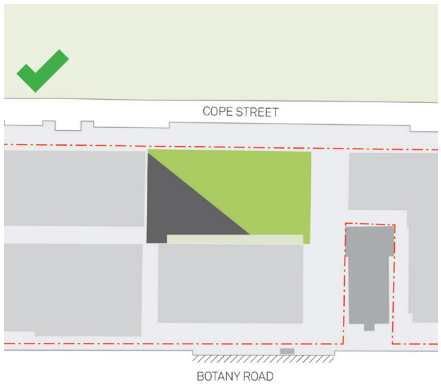
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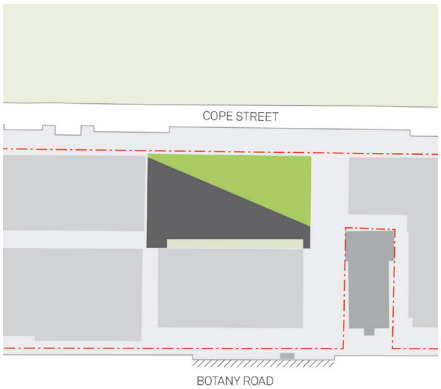
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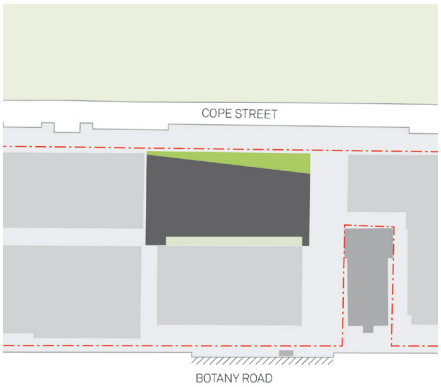
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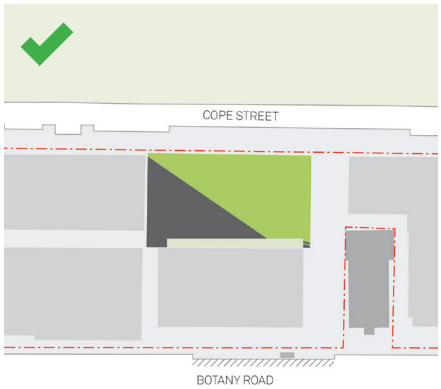
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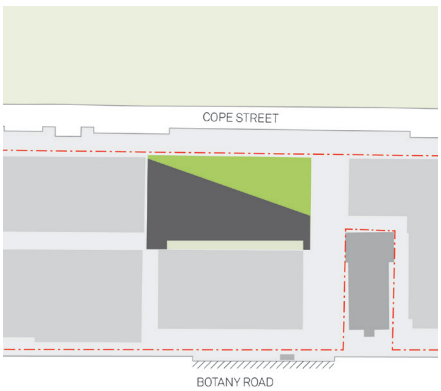
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Reference Design Proposal
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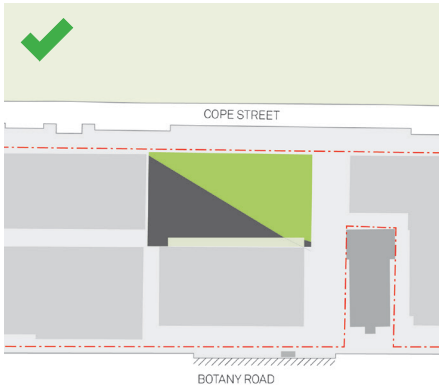
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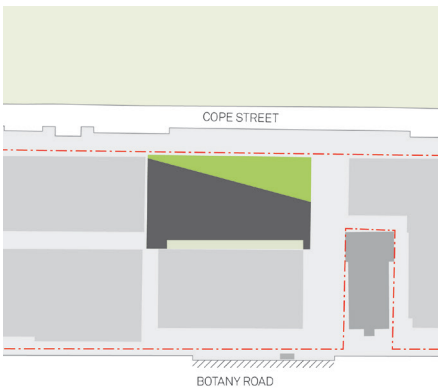
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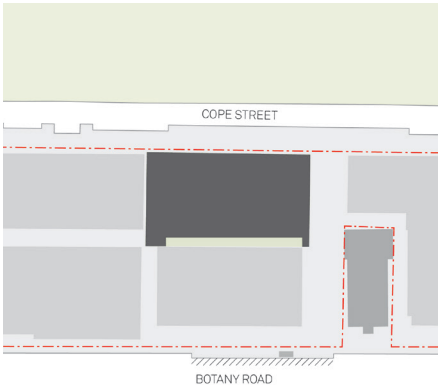
Reference Design Proposal
Area in sun: 8% June 21st 12:45PM



Reference Design Proposal
Area in sun: 59% June 21st 11:00AM



Reference Design Proposal
Area in sun: 28% June 21st 12:00PM



Reference Design Proposal
Area in sun: 0% June 21st 1:00PM - 3:00PM

8.10
Land Use and Building Area Summary

Land use and building area summary

A summary of the Reference Design Proposal Gross Floor Area is provided in this table of land use for each part of the Waterloo Metro Quarter.

Retail and community uses have been combined in the table with gym placed into a separate category.

Use	Basement	Northern	Central	Southern	Total
Residential (25%)			10,248.6 sqm - build to sell 1,780.8 sqm - affordable housing	5,437 sqm - social housing	**17,466.4 sqm**
Student accommodation (17.5%)				12,129 sqm	**12,129.0 sqm**
Commercial (office) (49.85%)	273.7 sqm	33,842.5 sqm			**34,116.2 sqm**
Community facilities (child care) (3.2%)			2,219.6 sqm		**2,219.6 sqm**
Retail facilities (future use to be community uses)		270 sqm	62 sqm	300 sqm	**632 sqm**
Retail (incl. retail for community uses) (2.85%)	32.7 sqm	568 sqm	612.7 sqm		**1,213.4 sqm**
Gym (1.4%)				973.0 sqm	**973.0 sqm**
				Total	**68,749.6 sqm**
				Site Area	12,871 sqm
				Proposed FSR	**5.34:1**



View of Church Yard, artist impression

8.11 Better Placed

Better Placed

Better Placed is a draft guideline by the Government Architect of NSW for a design-led planning strategy to create liveable, productive, sustainable and resilient communities.

The Metro Quarter is a catalyst for the positive evolution of the Waterloo Estate and surrounding areas. To achieve this successfully, a number of strategies have been developed based on the seven Better Placed objectives. These strategies will ensure the built environment will be healthy, responsive, integrated, equitable and resilient.

Better Fit

Contextual, local and of its place

Good design is place based and relevant to and resonant with local character, heritage and communal aspirations. It contributes to evolving and future character setting.

The Waterloo Metro Quarter response:

- → Positively responds to the existing character and built environment of the area as well as the potential future character of the Waterloo Estate.

Additional analysis of contextual typologies has informed the scale, configuration and expression of buildings.

Better Performance

Sustainable, adaptable and durable

Environmental sustainable and responsiveness is essential to achieve the highest performance standards and for functional, whole of life design.

The Waterloo Metro Quarter response:

- → The design of built form considers the environmental impact of the development onto the surrounding context and their inherent environmental amenities;
- → Detail design of the Metro Quarter and the choice of high quality and durable materials and finishes will tie into the existing character;
- → Innovative initiatives are integrated, e.g. WSUD.

An integrated sustainability strategy has been developed, from whole of site to individual buildings and spaces.

Better Look and Feel

Engaging, inviting and attractive

The built environment should be welcoming, aesthetically pleasing and promote positive engagement by encouraging community use and enjoyment.

The Waterloo Metro Quarter response:

- → Variety of land uses proposed to complement existing uses;
- → A range of public spaces and buildings;
- → Potential for the community to program the public space for events;
- → Social and affordable housing provided to support more choice and affordability for the community;
- → Delivery of public benefits upfront.

Better integration between public spaces and community uses is provided. A broader range of housing types are located on the site.

Better for People

Safe, comfortable and liveable

Design should focus on safety, comfort and the functionality of place to support good and functional places for people.

The Waterloo Metro Quarter response:

- → All inclusive access;
- → Convenient and easy navigation through the space;
- → Passive surveillance promoted through siting and location of uses;
- → Public spaces provided with good amenity and quality of finishes.

Permeability and sightlines across the site are improved. Greater commercial activity supports retail and services, and extends activation of the site.

Better Working

Functional, efficient and fit for purpose

Buildings and spaces that work well for their proposed use and have the ability to adapt to change will remain valuable and well-utilised.

The Waterloo Metro Quarter response:

- → Non residential uses provide services and facilities required for the future community;
- → Buildings and spaces are designed to accommodate future change and adapt by providing flexible floor plates and appropriate heights.

Greater diversity is provided with a range of housing types and greater commercial floorspace. The commercial building is configured for a range of tenants, flexibility and adaptation over time.

Better Value

Creating and Adding Value

Good design generates ongoing value for people and communities, minimises costs over time, raises standards and quality of life for users and provides return on investment for industry.

The Waterloo Metro Quarter response:

- → Use of high quality finishes that require less cost to maintain;
- → Buildings located to maximise amenity benefits for solar, wind and noise mitigation.

Solar access and wind mitigation strategies have improved amenity and comfort on the site and in the surrounding area.

Better Look and Feel

Engaging, inviting and attractive

The built environment should be welcoming, aesthetically pleasing and promote positive engagement by encouraging community use and enjoyment.

The Waterloo Metro Quarter response:

- → Design of safe and attractive public domain;
- → Spaces designed to encourage social interaction (both programmed and unprogrammed).

Public space area has increased, with greater resolution of movement paths, materiality, landscape and seating areas.

8.12
SEPP65 Design Quality Principles

Design Quality Principle 1

Context and neighbourhood character

Proposal:

The proposal is compatible with the existing and desired context and neighbourhood character of the precinct.

The proposal seeks to respond to and contribute to the context of Waterloo both in its present state as well as the desired future character.

Waterloo's urban fabric has been shaped by a history of growth and renewal, with the resulting diverse mix of housing typologies reflecting evolving models for living. This narrative is reflected in the environment and comprises of a diverse mix of built form, fine grain and use adapted over time to meet changing housing demands.

The Waterloo Metro Quarter straddles zones of differing density and height, with Alexandria Park and the Alexandria Heritage Conservation Area to the west and Waterloo Estate - future urban renewal - to the east. Future development along Botany Road provides a potential “transition zone” between Waterloo Estate to the east and the Alexandria Heritage Conservation Area to the west, beyond Wyndham Street.

The future vision for Waterloo anticipates an intensifcation of residential and commerical development around the future Waterloo Station.

The ground plane is designed to produce an attractive vibrant streetscape. The Waterloo Metro Quarter will become a dynamic space where commuters, residents and visitors will experience a social cohesion that engages with the existing local character whilst providing an environment that welcomes the community to Waterloo.

The materials and finishes for the development are of a high standard, and referential to the surrounding dwelling typologies, as well as it' historical an environmental context.

The Waterloo Metro Quarter has the opportunity to increase social sustainability and liveability by providing a more diverse mix that includes social, affordable and private dwellings. This will provide more equitable access to resources and better quality of life for all.

Design Quality Principle 2

Built form and scale

Proposal:

The proposal is layered composition of typologies reflecting the surrounding context.

Most critical are the interfaces to Waterloo Congregational Church and the Raglan Street junction where three heritage items on the opposing corners mark a key interface with the existing context.

The grain and character of the podium shall reflect the identity and diversity of the locality.

The mid-rise buildings reference the scale of the medium density typologies of the urban renewal that has occurred along Botany Road, providing a transition between the podium and tall building forms. These buildings serve to mediate the building scale toward Cope Street and the public plaza along Cope Street.

The tall buildings provide a destination marker for Waterloo Station, the new activity centre, and the threshold into the Waterloo Estate. The tower articulation reduces the floor plate size, in turn maximising outlook and daylight access within the buildings and between them to the public domain. The apartments will enjoy views in all directions, from Central Sydney to the eastern beaches and west to the mountains.

The proposed built form typologies responds to the layered and diverse mix of built form within the surrounding context, with a range of built form - low, mid and high rise - to respond to the complex nature of the site and create a new marker for Waterloo Station.

Design Quality Principle 3

Density

Proposal:

The proposal for the Waterloo Metro Quarter – a mixed-use development integrated with the new Waterloo Station, organised around a new public domain including a station entry plaza, community plaza and pedestrian and shared laneways has an overall GFA of 68,750 square metres, generating an FSR of 5.34:1.

The indicative GFA distribution is divided into 29,596.9 square metres of residential foor space and 39,153.1 sqm of office, retail, entertainment, community, recreational and local business and commercial uses. These uses are accommodated in a 3 storey podium and Community Hub building, and 16 storey commercial building.

Approximately 220 apartments are provided, 6.02% affordable, 70 social housing dwellings, the remainder to be private market housing, and an additional 474 student apartments which are not subject to SEPP65 or ADG requirments. The apartments are accommodated in a mixture of podium buildings and towers up to 9 and 23 storeys, above and next to the approved metro station.

Design Quality Principle 4

Sustainability

Proposal:

The proposed development will be designed to be highly sustainable and to contribute positively to the environmental, social and economic aspects of the area.

The ESD principles have been considered thoroughly throughout the planning process. Furthermore, the project team has sought to align the design response against the Green Star Communities National Framework and commits to delivering a 5 Star Green Star Design & As Built rating for the builidings within the development.

Incorporation of water sensitive urban design (WSUD) features within the Metro Quarter will contribute to a green and resilient urban environment.

Widened footpaths along Cope Street, provides the opportunity to utilse the former kerb alignment as the new invert level therefore directing runoff into the tree pits through kerb inlets along adjacent pathways and roadsides

The development will include rainwater collection for irrigation of the landscaping and vehicle wash down.

Energy efficient appliances and water efficient devices will be specified in line with BASIX Water 40+ requirements to minimise water consumption and resources.

The massing and orientation have been organised to maximise natural daylighting and solar access to the primary living spaces and external areas, while minimising wind and noise impacts.

The development achieves the deep soil and open space recommendations of the ADG and in doing so will provide a variety of open space and landscaped areas to enhance the overall amenity for the residents.

Design Quality Principle 5

Landscape

Proposal:

As a gateway to Waterloo and the surrounding neighbourhoods of Redfern, Alexandria and Eveleigh, the public domain will unite the metro station, retail and residential components whilst integrating the Metro Quarter into the existing urban fabric.

The public domain will establish a new public plaza, creating a place that is activated, vibrant, pedestrian and cycle focused.

Trees are the predominant elements that will define the public domain character and atmosphere. The tree palette for the Metro Quarter aims to augment local character and species diversity (both native and exotic), maintaining biodiversity and support local wildlife.

Selected species will support local native bee species and foraging wildlife whilst providing canopies that will create shade minimising urban heat island effect and cooling the public domain during summer months.

To appreciate Waterloo's existing vegetation, species such as Banksia integrifolia have been included to help strengthen the threatened plant community.

Low growing, flood tolerant understorey species have been selected to further define the public domain, provide habitat and assist with WSUD, avoiding obstruction of sight lines across the site and streets creating a safe and healthy environment.

Tree and understorey species are of Indigenous significance are selected and provide edible elements for cooking with flowers, fruits, roots and seeds all providing a source of food with the public domain.

Roof top terraces have been proposed to ensure outdoor spaces are both functional and visually interesting, including when viewed from above.

Furthermore tree planting assists in providing privacy to the amenity uses on ground. These areas receive good levels of solar access and a high level of amenity, enhancing the public domain along the street edges.

8.12
SEPP65 Design Quality Principles

Design Quality Principle 6

Amenity

Proposal:

The building envelopes have been designed to maximise views and access to daylight while minimising wind and noise impacts. Apartment amenity is consistent with the objectives of the Apartment Design Guide (ADG).

The west elevation of the building faces Botany Road which is a busy and noisy main transport corridor. In order to provide good apartment amenity, an alternative solution is proposed to meet the requirement of acoustic and natural ventilation by integrating acoustic plenum into the building facade to allow natural ventilation while reducing acoustic impact of the road.

The attenuator has an exterior metal louvre, internally lined with absorbent material with an operable damper, internal fly screen and Grill. The internal shape assists in reducing the acoustic transfer and helps induce air movement.

Acoustically absorbent soffit is proposed on the balconies facing west to reduce the impact of noise generated from Botany Road to minimise noise transfer to the apartment.

Demonstration of compliance is to be provided in individual development applications for each building.

Design Quality Principle 7

Safety

Proposal:

Throughout Waterloo Metro Quarter, buildings help define the public domain. Sightlines to and from the Cope Street metro entry, are strengthened through the triangulation of the plaza, and the location of the community building providing directional movement to the Waterloo Station from Cope Street and south Waterloo.

With increased setbacks along Raglan and a new Cope Street Plaza along Cope Street, active retail edges develop a vibrant day to night economy aligning with the Sydney Metro operating hours and encouraging pedestrian movement and use of the public domain.

Through-site links from Botany Road to Cope Street as well as within the Metro Station, enhance sight lines and porosity of the site, increasing visibility at ground level, whilst levels above maximise passive surveillance creating safe environment to live, work and play.

Passive surveillance of the buildings throughout day and night by providing safe access with clearly defined points of pedestrian entry to the buildings that are visible from the public domain.

- → The entry lobbies are to be fully glazed and well-lit to accentuate the street address and appropriate lighting will be provided to all exterior areas, both public and communal;
- → The building will utilise a security system at all entry points, and within the lifts. Three points of vehicular access will be secured by automatic panel lift doors.

Design Quality Principle 8

Housing diversity and social interaction

Proposal:

Approximately 220 apartments are provided, 6.02% affordable, 70 social housing dwellings, the remainder to be private market housing, and an additional 474 student apartments which are not subject to SEPP65 or ADG requirments.

The market housing contains a mix of studio, 1 bed, 2 bed and 3 bed apartments. Within this range there are multiple apartment types and sizes allowing a variety of options for different demographics and price points.

New social spaces such as the Raglan Street Plaza and the Cope Street Plaza will draw in users to and from Waterloo Station, providing a social and retail experience in a new urban setting whilst creating moments to meet, pause and engage.

The public domain will become the 'community door.' A place for the community, a home for residents, a workplace for workers, and a destination for visitors and commuters.

The external communal spaces will be designed to engender community spirit for residents within the development by offering north facing private and public open spaces including areas for groups to congregate and also for more private activities. All common areas are designed for equitable access.

Design Quality Principle 9

Aesthetics

Proposal:

The proposed building envelopes have been developed to accommodate future design opportunities for differing facade expression for each stage to achieve a high level of visual interest and aesthetics, in response to the existing and future local context.

The aesthetics of the proposal do not form part of a SSDA submission. These will be addressed as part of the future design excellence process and subsequent Stage 2 DA SSDA submission.

This submission, however, includes illustrative plans and photomontages to give an indication of the overall scale of the buildings relative to their context.

Furthermore the design, materials and colours shown are purely indicative at this stage.

8.13 Staging and Framework for Managing Environmental Impacts

An overview of the relevant SSD 9393 Report section is included below with a summary of proposed changes and resulting proposed amendment.

Sydney Metro proposes to procure the delivery of the Waterloo integrated station development in one single package, which would entail the following works:

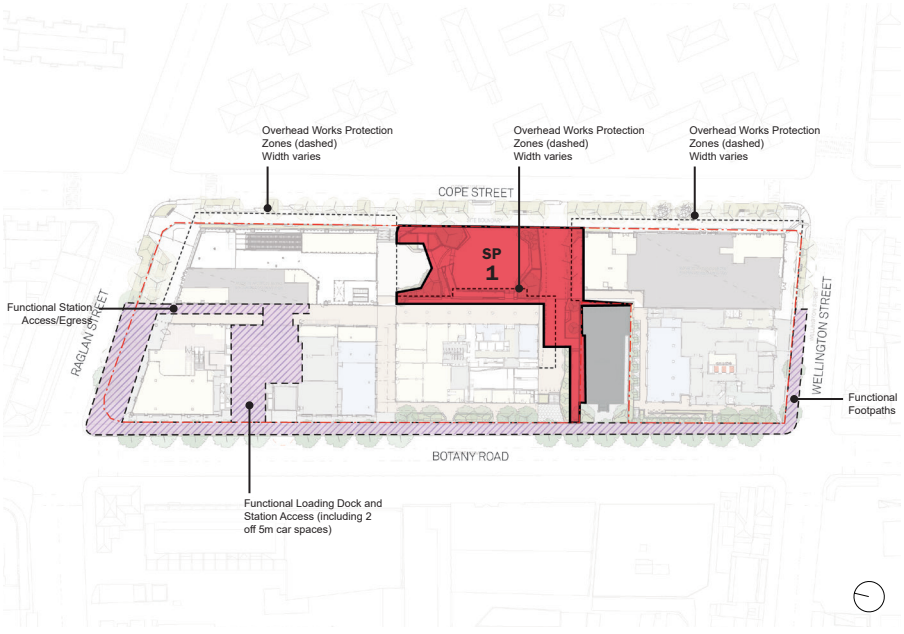
- → Station structure fit-out, including mechanical and electrical.
- → OSD structure fit-out, including mechanical and electrical.

Separate delivery packages are also proposed by Sydney Metro to deliver the excavation of the station boxes/shafts ahead of the integrated station development delivery package, and linewide systems (e.g. track, power, ventilation) and operational readiness works prior to the Sydney Metro City & Southwest metro system being able to operate.

Sydney Metro has entered into a development agreement with Waterloo Development Pty. Ltd. who have provided a staging and framework for construction and environmental management plan that reflects the four work areas being basement, Northern Precinct, Central Precinct, Southern Precinct, and address the requirements outlined within the development agreement for separable portions:

1. Station access works, and

2. Social housing.



Annexure 1 - Separable Portions
Ground Level at completion of SP1

KEY

- Site boundary
- SP1/SP2 Functional Only
- SP1 (Station Access Works)

8.14 Concept Approval and relationship between the Waterloo Station and OSD

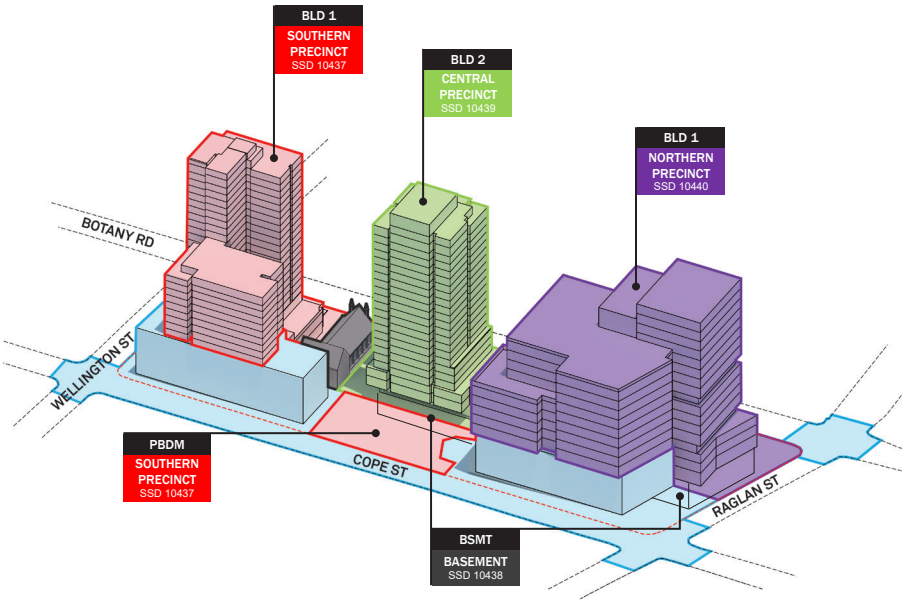
MQD DA Demarcation

The proposed amendment to the concept building envelope does not impact the relationship between the Waterloo metro station and the concept approval for the over station development. The proposed building envelopes remain adjacent to and above the Waterloo metro station box, approved under the CSSI application.

The over station development will be the subject of multiple detailed SSD development applications, submitted to the DPIE in accordance with the approved concept SSD development application, as proposed to be amended by this application. The future detailed SSD development applications will likely relate to four key components of the over station development, being the basement structure, building 1 within the northern precinct, building 2 in the central precinct, and buildings 3, 4, and the Cope Street plaza within the southern precinct.

While it is likely that the Waterloo metro station and the various over station building components will be constructed concurrently, the multiple detailed development applications allows for the staged construction of buildings where required and the completion of buildings most notably in the southern precinct, concurrently with the opening of the Waterloo metro station.

The majority of the public domain improvements to be delivered on and adjacent to the Waterloo Metro Quarter site will be delivered under the approved scope of the CSSI application, where this work is required to service the functionality of the metro station itself. The remaining public domain works will be delivered under the terms of the relevant detailed SSD development application for that precinct.



MQD Detailed SSDA Demarcation Axonometric, view from north-east
Ground level to 'Transfer Level'

MQD DA Demarcation Table

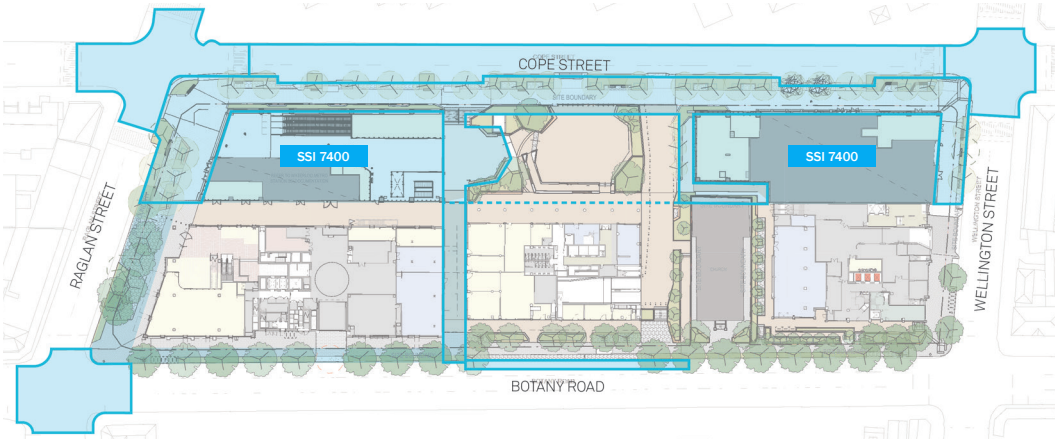
	WL Dev Ref.	MQD PDA Seprable Portion	
SSD 10441	Site	Not attributable	Overall Site (General)
SSD 10437	BLD3/4	SP2, SP3	Southern Precinct (Building 3 & 4)
SSD 10437	PBDM	SP1	Cope Street Plaza Public Domain
SSD 10438	BSMT	SP3	Shared Basement (Below Building 1 & 2)
SSD 10439	BLD2	P5*, SP8	Central Precinct (Building 2)
SSD 10440	BLD1	SP6, SP7, SP5*	Northern Precinct (Building 1)

*Parts of *Separable Portion 5 - Building 1 and Building 2 Podium Retail is contained CSA 1 and CSA 2.*

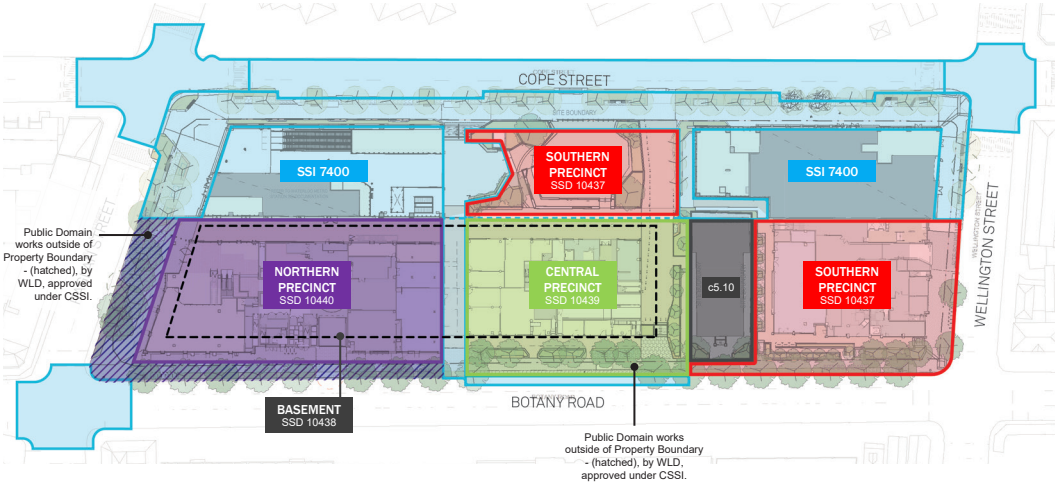
KEY

- Concept SSDA Amendment -10441
- Detailed SSDA 1 - Southern Precinct 10437
- Detailed SSDA 1 - Basement 10438
- Detailed SSDA 1 - Central Precinct 10439
- Detailed SSDA 1 - Northern Precinct 10440
- SSI Approval - 7400 (works by WLC)
  SSI Approval - 7400 (works by WLD hatched)
- Clause 5.10 Approval
  Waterloo Congregational Church

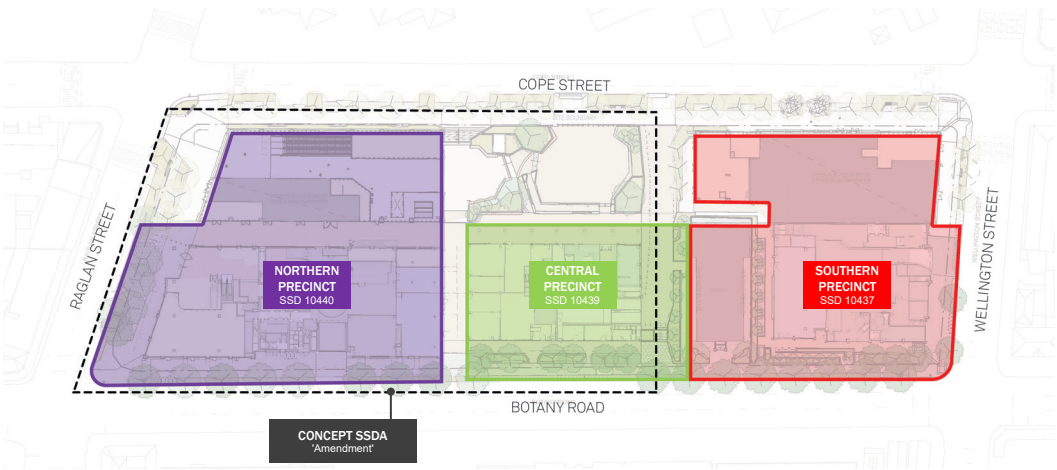
8.14
Concept Approval and relationship between the Waterloo Station and OSD



MQD Detailed SSDA Demarcation Plan
Ground level to 'Transfer Level'



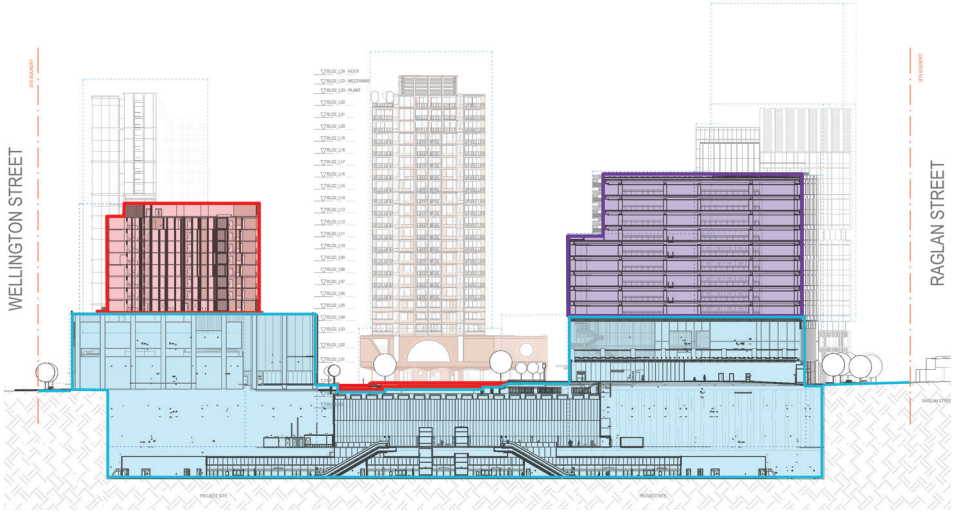
MQD Detailed SSDA Demarcation Plan
Ground level to 'Transfer Level'



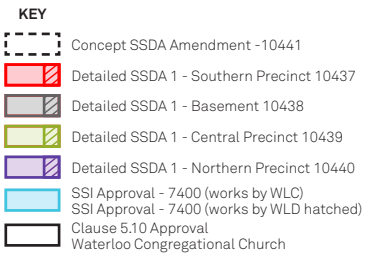
MQD Detailed SSDA Demarcation Plan
Above 'Transfer Level'

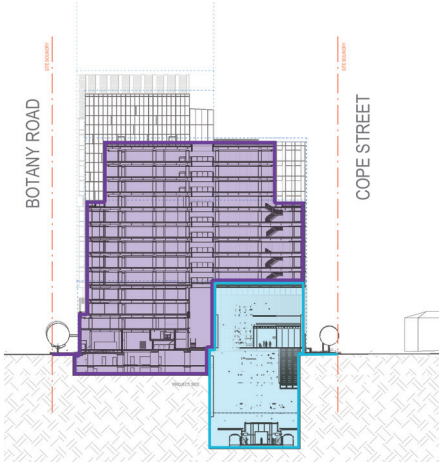


MQD Detailed SSDA Demarcation Section
Botany Road

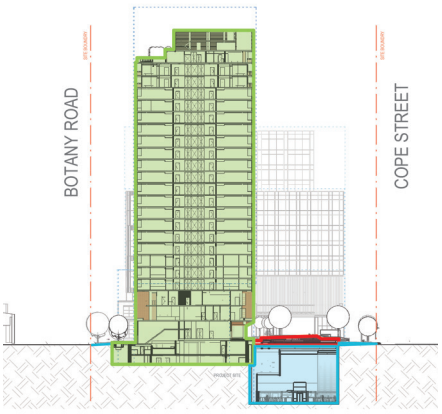


MQD Detailed SSDA Demarcation Section
Cope Street

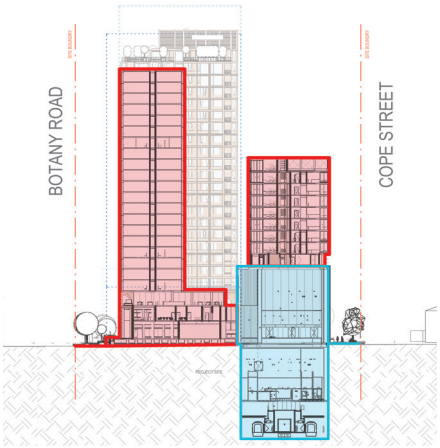




MQD Detailed SSDA Demarcation Section
Northern Precinct



MQD Detailed SSDA Demarcation Section
Central Precinct



MQD Detailed SSDA Demarcation Section
Southern Precinct



South-west facing aerial view artist impression