

BUILT FORM AND URBAN DESIGN REPORT

APPENDIX G



VICTORIA CROSS

**VICTORIA CROSS STATION
OVER STATION DEVELOPMENT
NORTH SYDNEY**

**BUILT FORM AND URBAN DESIGN REPORT
REVISION 5**

MAY 2018

CLIENT

Transport for New South Wales



CONSULTANTS

Consultant Team

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S12041

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1.0 INTRODUCTION

DEVELOPMENT SUMMARY

This design report has been prepared by Bates Smart for Victoria Cross Over Station Development (OSD), North Sydney. It has been prepared on behalf of Transport for NSW for the site bounded by Miller, Berry and Denison Streets in North Sydney. The report describes the design strategy, concept State Significant Development Application (SSDA) envelope and indicative design for a high-rise commercial building over the Victoria Cross Station. The design consists of approximately 60,000 sqm of commercial Gross Floor Area (GFA).

The design for Victoria Cross Station was conceptually approved as part of the CSSI Approval (SSI 15_7400) issued by the Minister for Planning on the 9th of January 2017. Since then, the design of the station has evolved in accordance with the terms of the approval to include a new through site link between Miller Street and Denison Street, with opportunities for active food and beverage retailing. Denison Street is to be enhanced with a landscaped pedestrianised link and a lower station entry creating direct pedestrian flow from Mount Street to the new station. This new at-grade connection is also activated with retail on route to the station entry.

The concept OSD design seeks to achieve clear urban design principles, such as bulk and scale; access, legibility, identity; safety and security through appropriate built form responses that adhere to North Sydney Council's strategic vision for the North Sydney Centre.

OSD Summary - Concept SSD Application

Site Area	4,815 sqm
Commercial GFA	60,000 sqm
FSR	12.46 : 1
Storeys	42 (incl. plant, excl. basement)
Car parking	150 car spaces



1.1

DESIGN OBJECTIVES - FOR AN INTEGRATED STATION DEVELOPMENT

This section in this report describes the design objectives for the 'Integrated Station Development,' which is the Victoria Cross Station and Over Station Development combined.

STATION

Improving the customer experience through:

- /clear and legible movement in the desired direction of travel.
- /providing ease of way-finding through visual clarity to circulation routes
- /using the site levels to create an upper and lower station entry.
- /accommodating the predominant pedestrian movement to Denison Street without unnecessary change of levels.
- /connect the station circulation with the urban through-site links.

RETAIL

- /creating a visually clear retail connection from the Station to Denison Street.
- /provisioning for potential future connections south to MLC and across Miller Street.
- /providing an active covered retail through-site link at Miller Street level.
- /providing retail activation along Miller Street.
- /ensuring retail enhances the customer experience and does not impinge on circulation.
- /providing appropriate retail shop heights.

PUBLIC DOMAIN

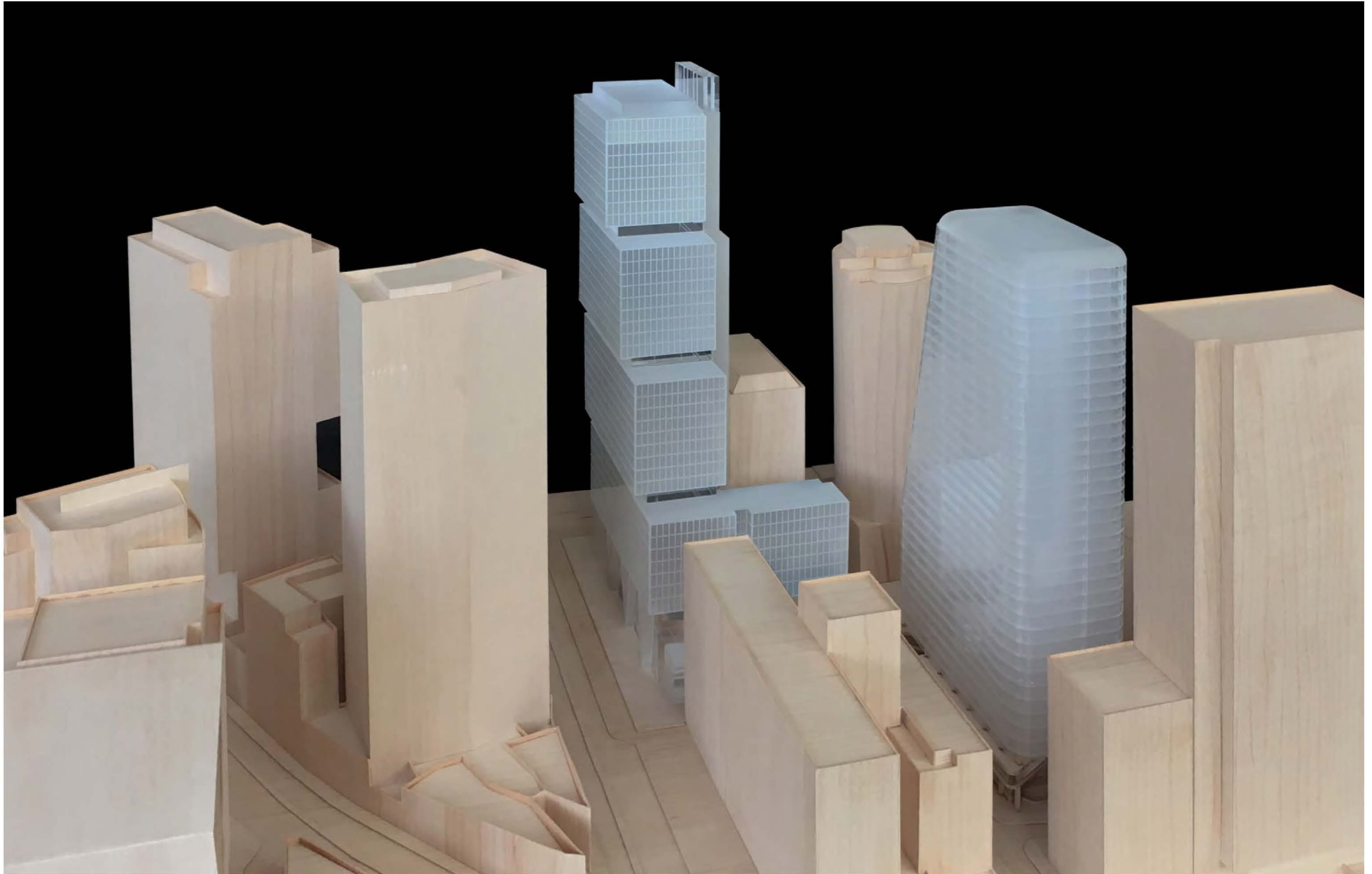
Improving the city's public space through:

- /providing a covered active pedestrian link between Miller and Denison Streets.
- /creating a linear sun-filled urban space along Miller Street, contributing to a main civic spine for North Sydney.
- /maximising transparency through the Station entry and OSD lobby from the public domain.
- /providing weather protection along the Miller Street frontage of the Station and OSD lobby.

BUILT FORM AND URBAN DESIGN

Delivering a high quality built form that exhibits design excellence through:

- /no net increase in overshadowing from 12-2pm to the Special Areas along Miller Street, Greenwood Plaza, and to the public recreation zone (RE1) forming Brett Whiteley Plaza.
- /minimising overshadowing to surrounding residential areas.
- /completing the vision of the Miller Street Special Area with a linear urban space.
- /creating an appropriate civic scale to the Station and OSD entries in relation to the adjoining Rag & Famish Hotel.
- /minimising the impact of structural columns on transparency and circulation by grouping the structure at ground level.
- /respecting the height of adjoining MLC Building and providing an appropriate (18m) separation to maintain views to the heritage facade.
- /enabling the connection of a public cross-city block link from Miller to Walker Streets.
- /creating a new landmark building on the skyline that is architecturally integrated with the overall Metro station design.
- /articulate the tower envelope to maximise solar access and sky-plane to surrounding public spaces eg Denison Street and the through site link.
- /articulate the tower to minimize view impacts for residents in Beau Monde (77 Berry Street).
- /differentiate the lower scale built forms with materials and colour that enhance the experience of the public domain.
- /respond to the pedestrianisation of Denison Street through activation and pedestrian scale built forms.



2.0 VISION - FOR AN INTEGRATED STATION DEVELOPMENT

Our vision is to transform North Sydney's CBD through the creation of a new landmark development, centred around the Victoria Cross Station.

We are interested in the potential of the podium to contribute to the public life of North Sydney. Our podium is truly a connective space between the public realm and the private realm of the workplace.

We have created a space where people will be comfortable to meet, work and socialise – an active through-site link that is an extension of the work environment. This highly open & permeable space is literally an expression of the modern workplace as work becomes less private and more integrated into the city, responding to the casual nature of today's tech savvy generation.

These new, centrally located and well connected commercial and retail opportunities will transform the city's north into a thriving and vibrant future heart of the city.

The Victoria Cross Station Development will be designed in collaboration with the Victoria Cross Station to achieve an Integrated Station Development.



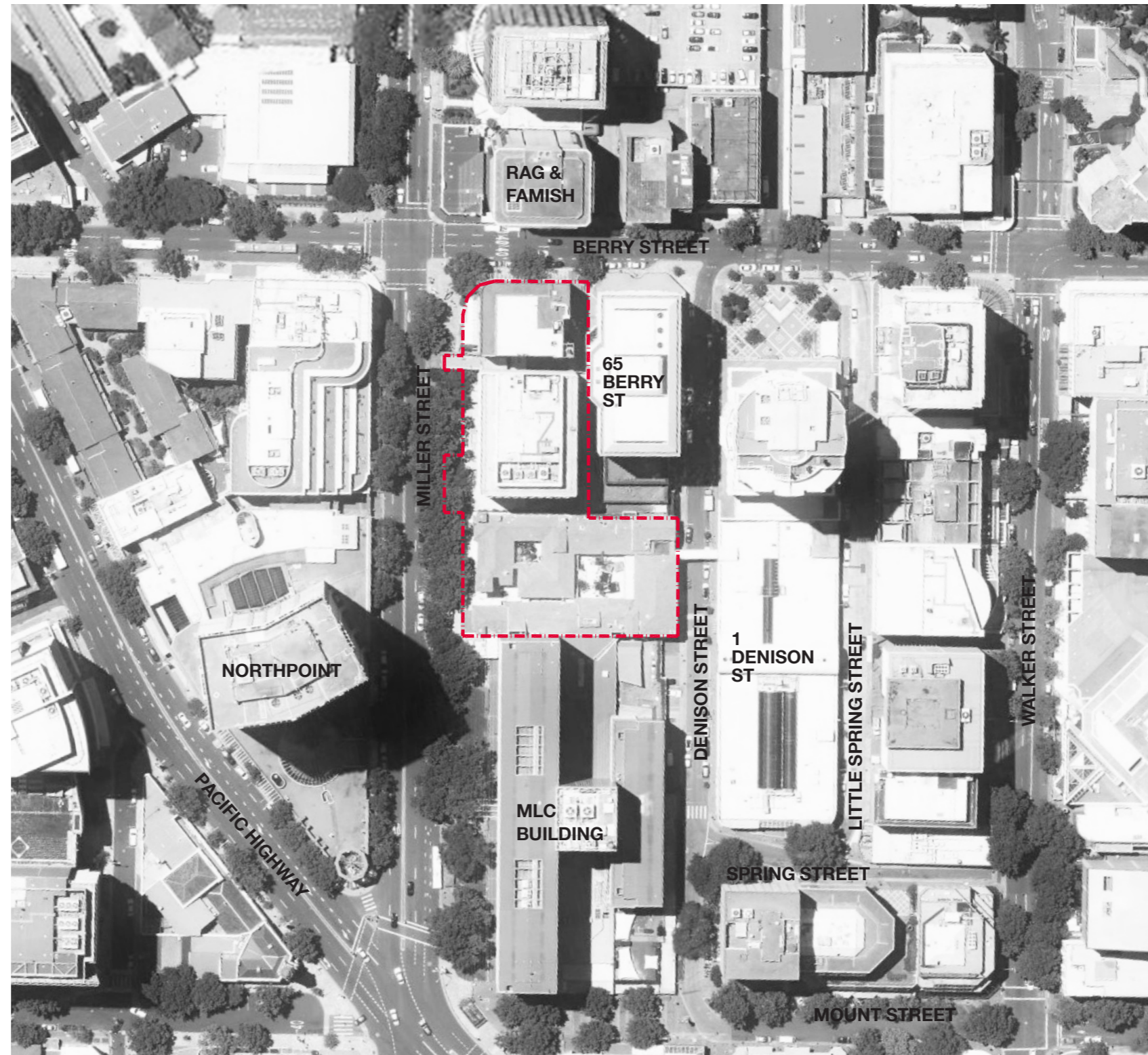
3.0 SITE LOCATION

The site occupies a strategic position in North Sydney at a key northern gateway to the CBD. The site offers a unique opportunity to create a building of significant scale and identity that reinforces the north-south pattern of development in the city and clearly identifies as an important urban marker for the new station within the wider city context.



SITE LOCATION

The site is located on the corner of Miller and Berry Streets in North Sydney. Configured in an 'L' shape which wraps around 65 Berry Street, the site also has an east boundary on Denison Street.



SITE AERIAL PHOTOGRAPH





4.0 SITE ANALYSIS

4.1 SITE ANALYSIS EXISTING CONDITIONS

EXISTING SITE CONDITIONS

The previous site conditions displayed a pattern of development with very little consistency in scale, form or alignment. The previous mid-rise commercial buildings (now demolished under the terms of the CSSI Approval) were set against the low-rise buildings of Tower Square (now demolished). Tower Square was an outdoor eating destination with smaller restaurant and cafe offerings.

The existing Miller Street Special Area consists of a series of planter boxes, stairs, trees, and other physical impediments that limit the movement of people through the space to the footpath. The heritage listed jewellery shop (now demolished) existed within this setback zone and created a visual barrier between the MLC building and the Rag & Famish Hotel.

Denison Street, whilst narrower in its dimension, is well used by pedestrians at peak times and is predicted to significantly increase the pedestrian traffic as a result of the proposed Victoria Cross Station. The current footpath conditions are narrow and illegible while a series of loading dock entries, vehicle cross-overs or blank walls create untidy, inactive and unsafe interfaces between pedestrians and vehicles.

The previous buildings on the site were as follows:

- / 189 Miller Street
- / 187 Miller Street
- / 181 Miller Street
- / 155-167 Miller Street (Tower Square)

These buildings have now been demolished under the CSSI Approval for Victoria Cross Station.



TOWER SQUARE (NOW DEMOLISHED)



RAG & FAMISH HOTEL



HERITAGE JEWELLERY SHOP (NOW DEMOLISHED)



DENISON STREET



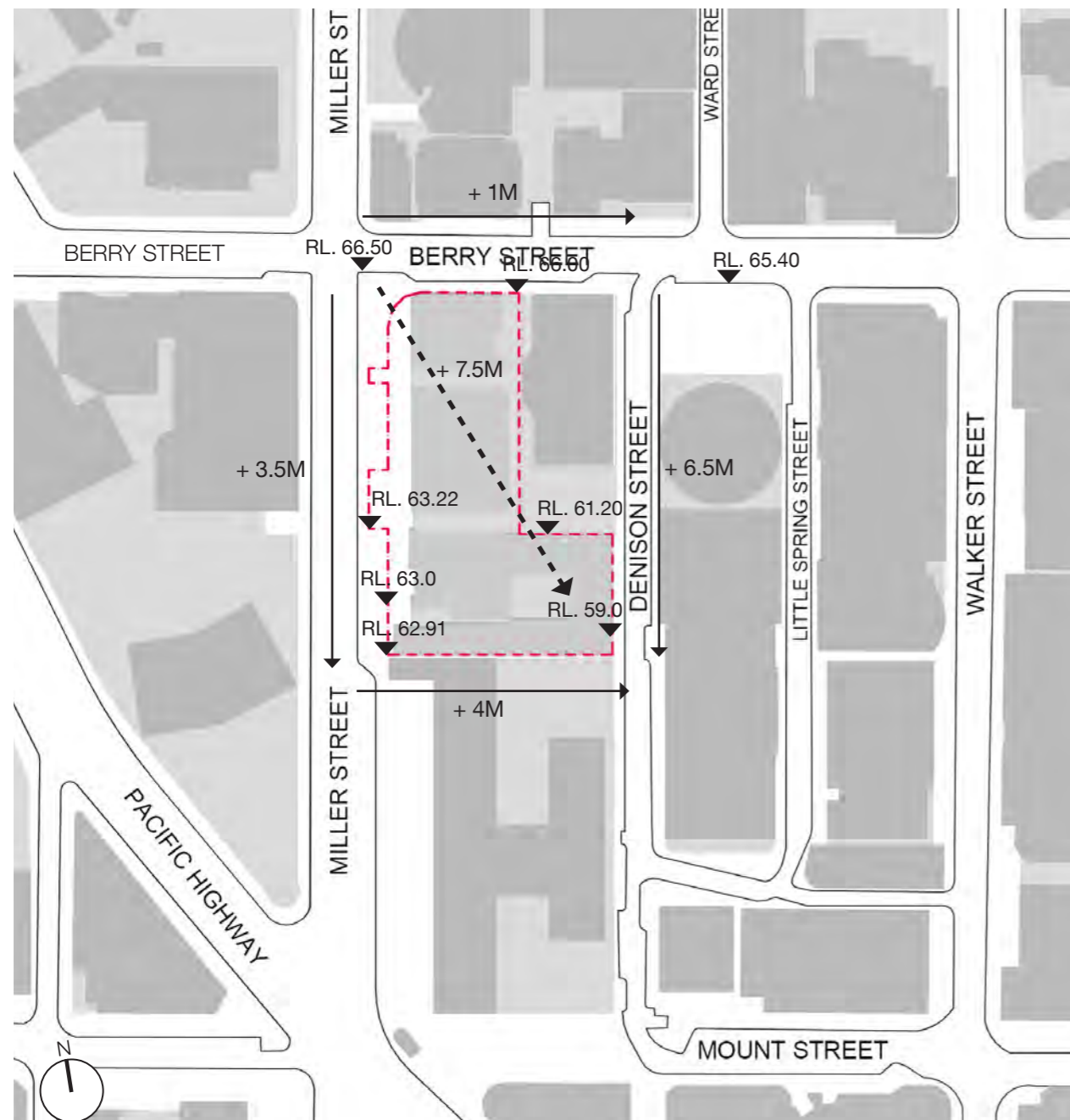
BRETT WHITELEY PLAZA



MLC FORECOURT

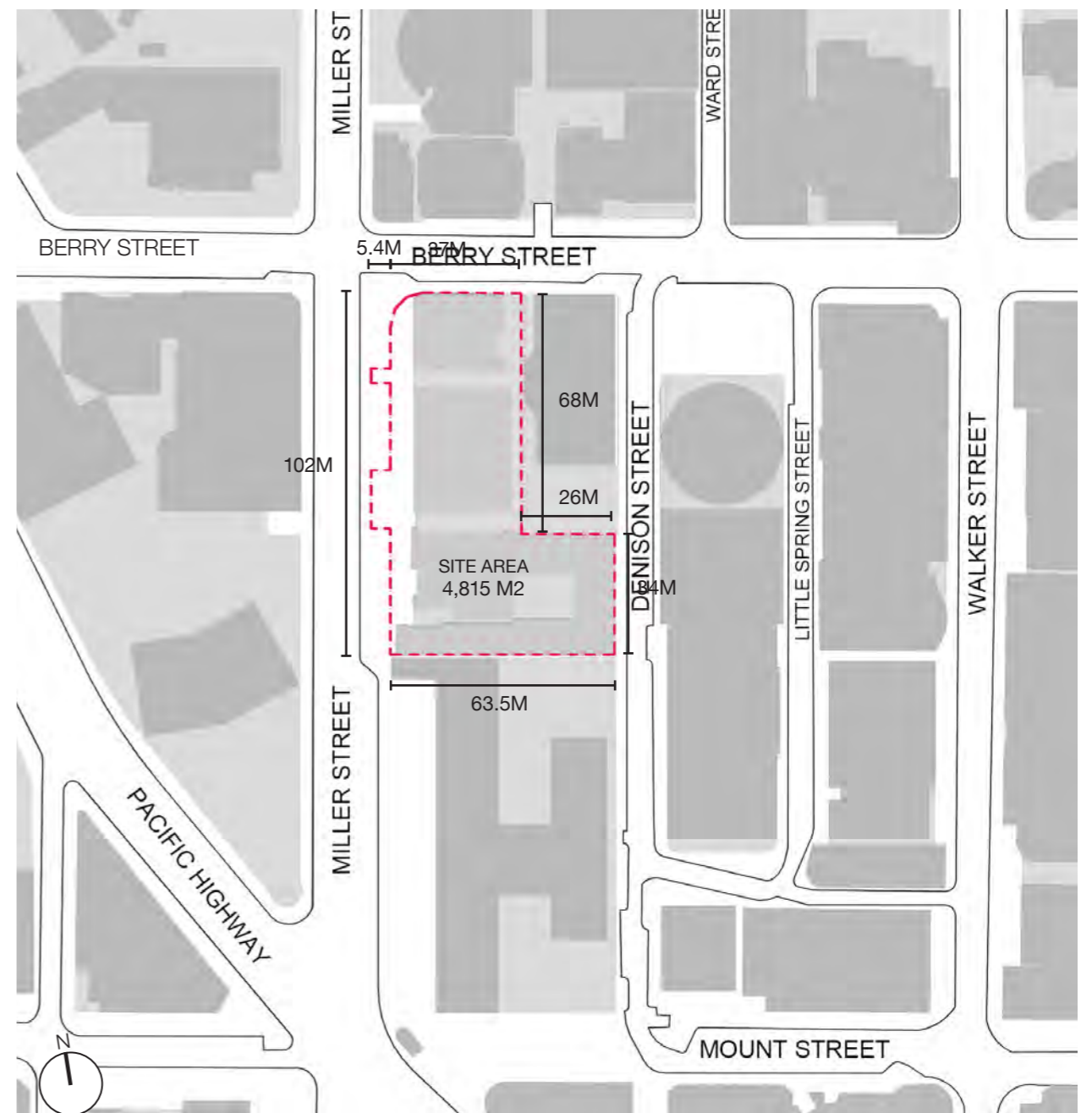
TOPOGRAPHY

The site has a 7.5m fall towards the south-east, from a high point on the corner of Miller Street and Berry Street of RL66.5, to a low point on the Denison Street frontage of RL59. The southern end of the Miller Street frontage is a mid point of the fall at RL63.



SITE PARAMETERS

The site is 4,815sqm in area. The site boundary is 102m along Miller Street, 37m at Berry Street and 34m at Denison Street.



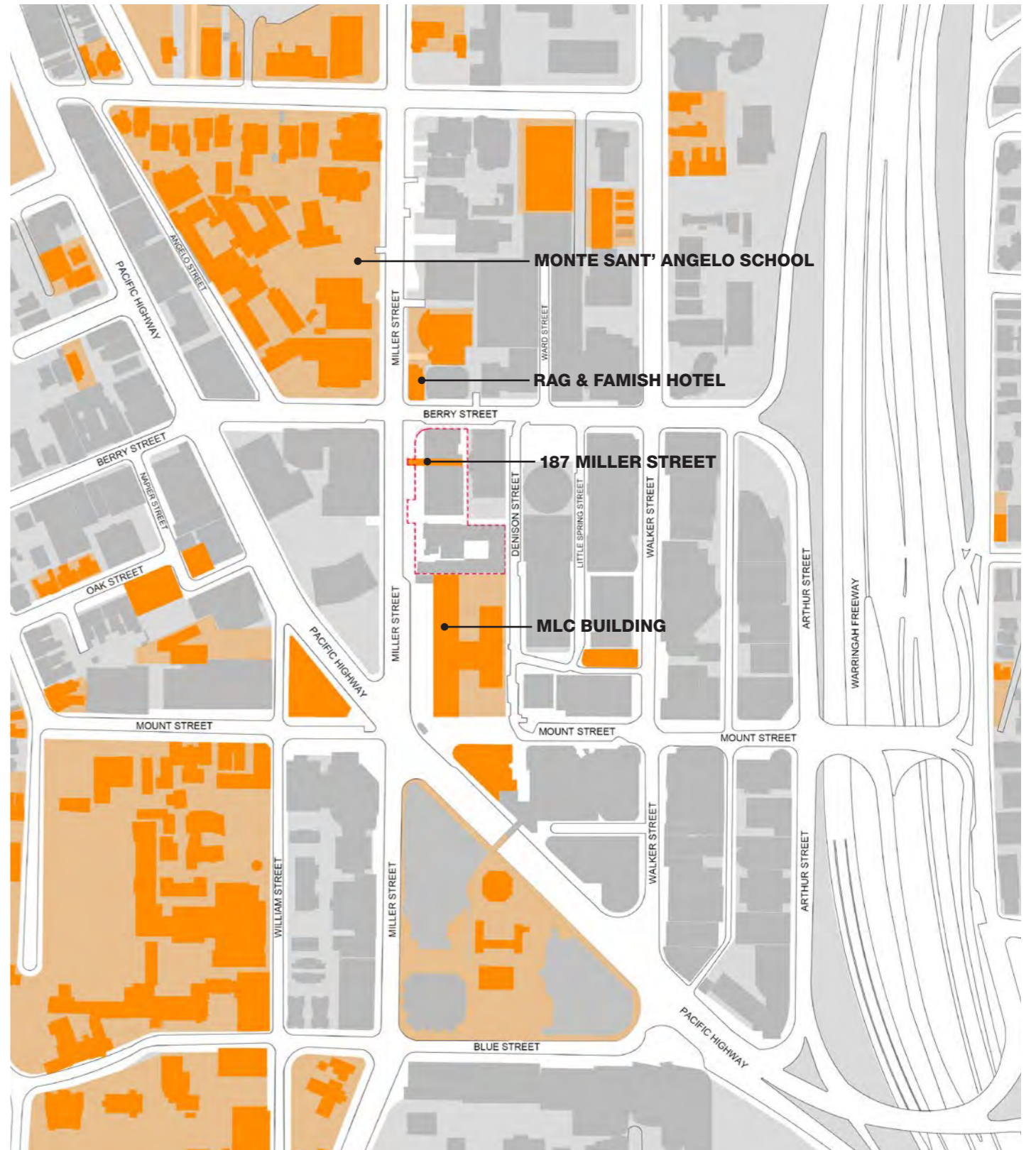
4.2 SITE ANALYSIS HERITAGE CONTEXT

HERITAGE CONTEXT

The MLC Building from 1958, the first commercial office building in North Sydney, adjoins the site to the south. To the north on the corner of Miller and Berry Streets is the Rag & Famish Hotel; while to the north-west is the Monte Sant' Angelo School and grounds. As mentioned in the previous section, the heritage jewellery shop at 187 Miller Street has now been demolished under the CSSI Approval for Victoria Cross Station.



RAG & FAMISH HOTEL

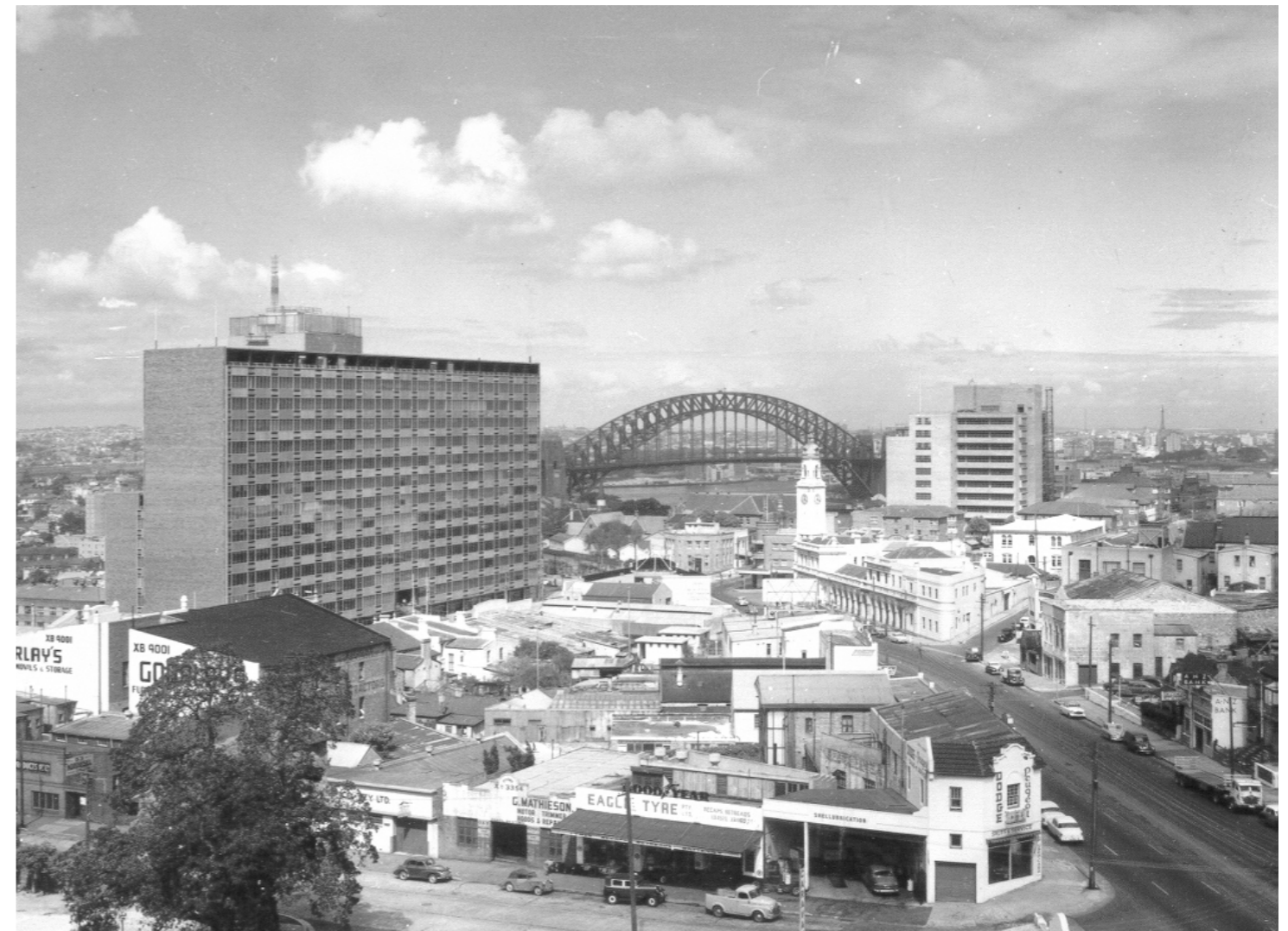


NORTH SYDNEY LEP HERITAGE BUILDINGS AND ZONES

A number of heritage items lie within close proximity to the proposed Victoria Cross Station and OSD development site. Each of these items has been considered during the design of the proposal to ensure sensitive built form relationships are established in terms of the envelope form and composition.



MLC BUILDING / BATES SMART (1957/1958)



MLC BUILDING / BATES SMART (1957/1958)

4.3 SITE ANALYSIS HIGH-RISE CONTEXT

The site is located within North Sydney Centre and contains predominantly high-rise and medium rise commercial office buildings, intermingled with public buildings, educational establishments, pubs, restaurants and shops.

HIGH-RISE CONTEXT

North Sydney has a context of commercial buildings of varied architectural form and scale. In the commercial core, there is a predominance of mid-rise buildings up to Relative Level (RL) 160; with a few high-rise towers up to RL200. Future high-rise towers are under construction at 100 Mount Street and at 1 Denison Street and will be a positive addition to the high-rise context.

This collection of buildings creates a series of tall buildings that define the North Sydney skyline. The proposed OSD is envisioned to be located centrally within this group of buildings and will create opportunities to identify the station and OSD site as the geographical centre when viewed from the wider Sydney Metropolitan region.

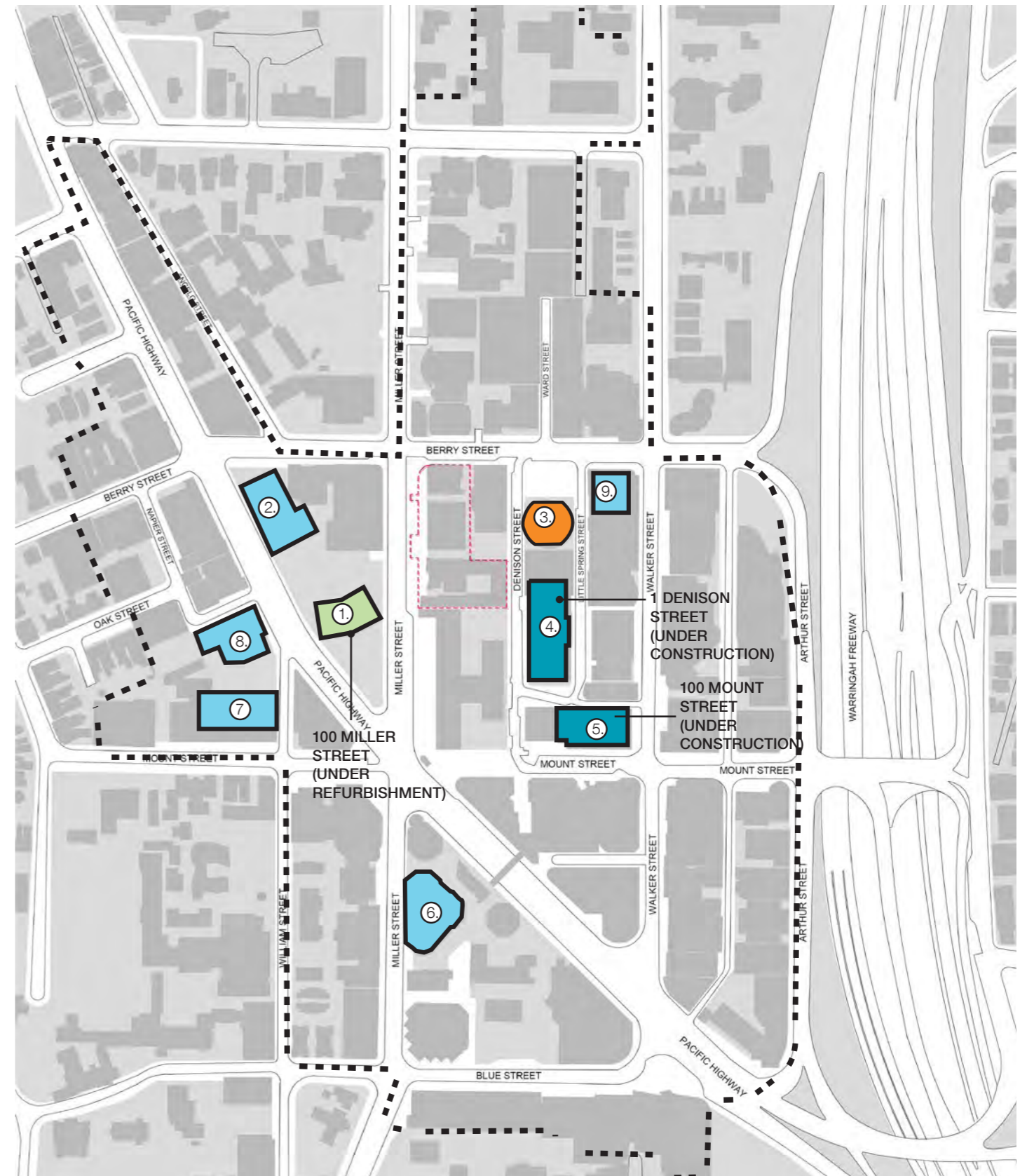


NORTH SYDNEY SKYLINE



KEY:

- Mixed Use
- Commercial
- Under Construction
- Under Refurbishment
- North Sydney Centre Boundary



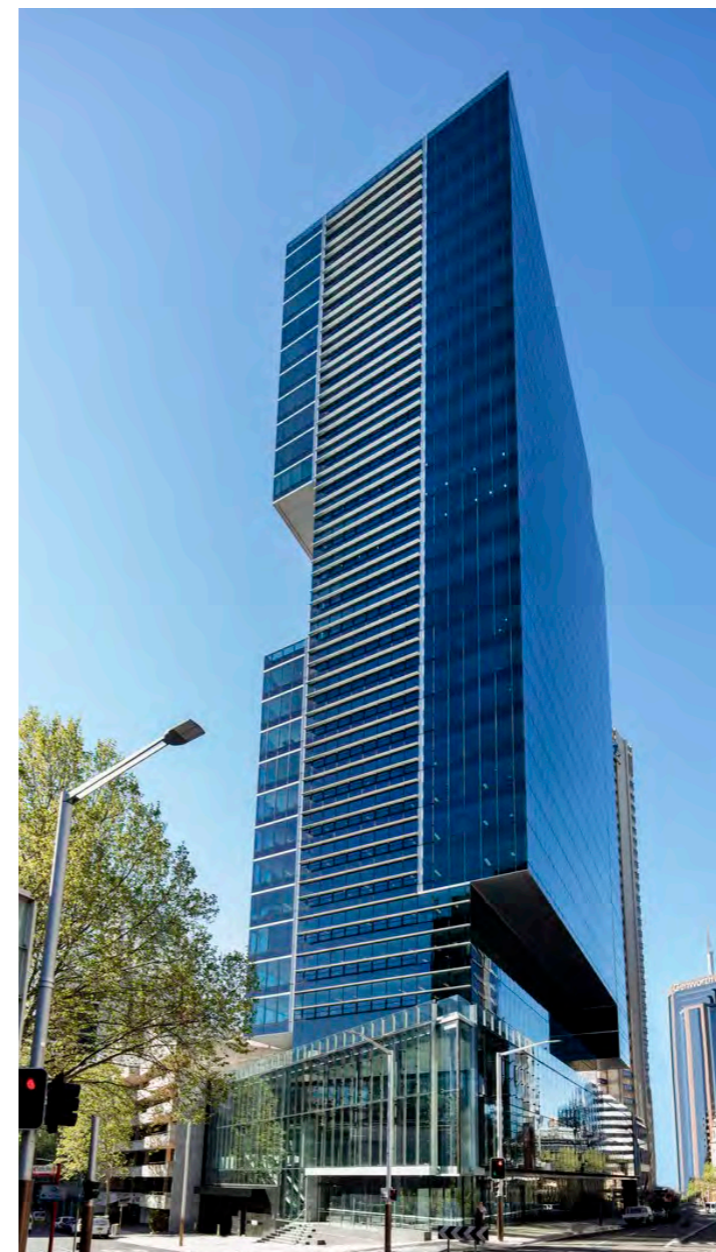
HIGH-RISE CONTEXT

*The Proposal will sit in the context of a number of large scale commercial buildings in the North Sydney CBD, including the following buildings recently completed and under construction:
1 Denison Street, 100 Mount Street and 177 Pacific Highway.*

1. Northpoint 100 Miller Street (RL. 195)
(DA approved & Under Refurbishment)
2. 177 Pacific Highway (RL. 195)
(Completed 2016)
3. 77 Berry Street (RL. 180)
4. 1 Denison Street (RL. 213)
(DA approved & Under Construction)
5. 100 Mount Street (RL. 200)
(DA approved & Under Construction)
6. 101 Miller Street (RL. 184.5)
7. 40 Mount Street (RL. 151)
8. 100 Pacific Highway (RL. 149)
9. 124 Walker Street (RL. 137)



1 DENISON STREET / BATES SMART/ UNDER CONSTRUCTION



177 PACIFIC HIGHWAY / BATES SMART / COMPLETED 2016



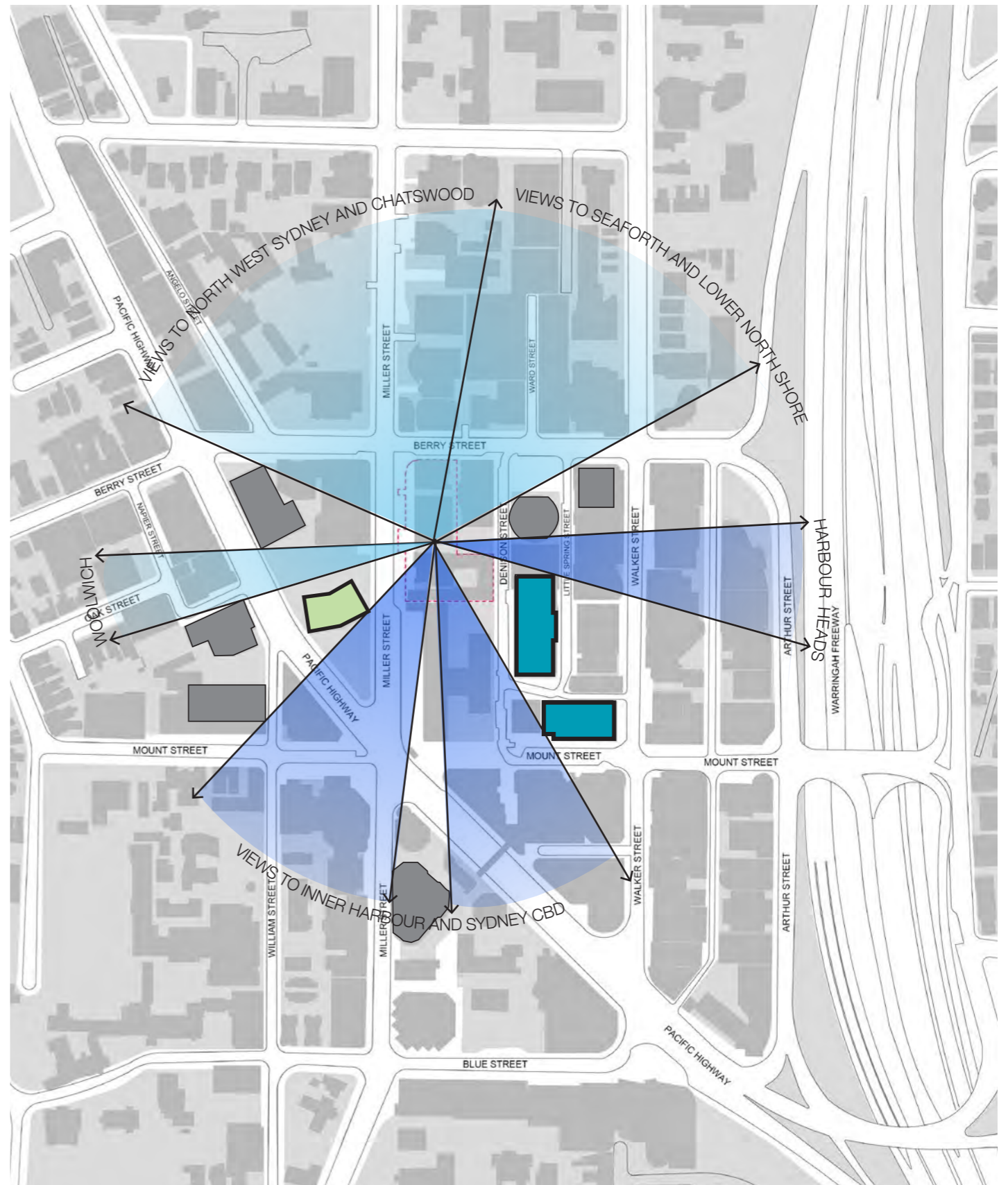
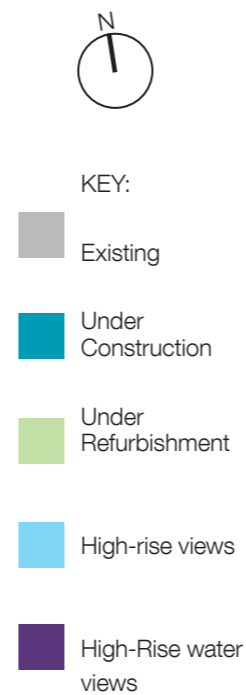
100 MOUNT STREET / SOM AND ARCHITECTUS/ UNDER CONSTRUCTION

4.4 SITE ANALYSIS VIEWS

The proposed OSD tower will have spectacular views from the high-rise and upper mid-rise levels to the north-east towards the lower North Shore and Sydney Harbour. To the north-west, the views extend to western Sydney and Chatswood, while the high-rise levels have views towards Sydney CBD and the inner harbour.

VIEWS

The diagram opposite demonstrates the views from the upper mid-rise and high-rise office levels above RL 160m. Although some views from the upper mid-rise levels are interrupted by existing and future high rise buildings above RL 160m, most of the high-rise levels have uninterrupted views over the high rise context. Views to the water are indicated in purple.



VIEW CONES BETWEEN HIGH RISE TOWERS ABOVE RL 160M



NORTH-EASTERN TO SOUTH-EASTERN VIEW



SOUTH-EASTERN TO SOUTH-WESTERN VIEW



SOUTHERN VIEW

4.5 SITE ANALYSIS VEHICULAR MOVEMENT

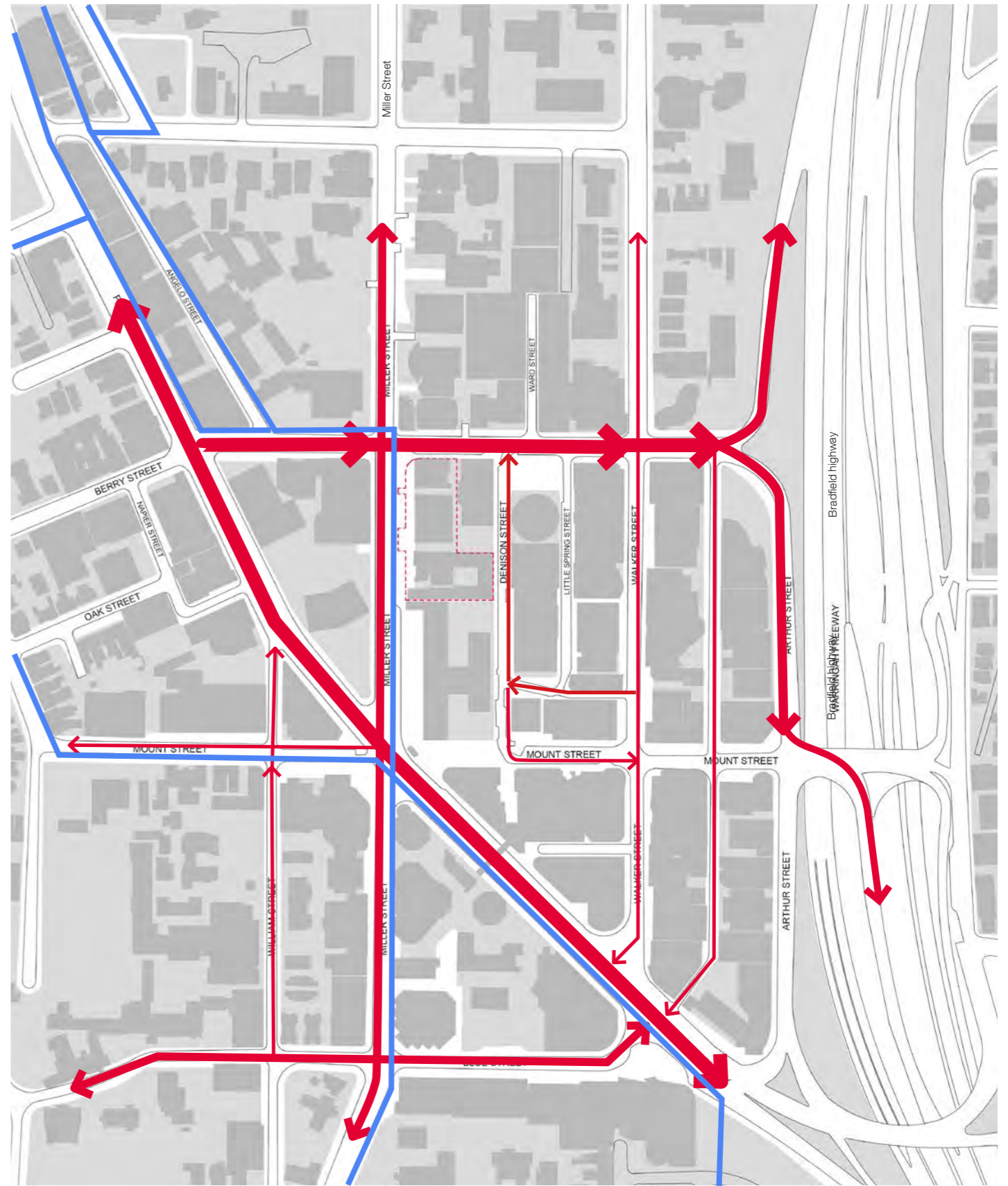
VEHICULAR MOVEMENT

The site has busy traffic routes along the northern boundary (Berry Street) and along the west boundary (Miller Street). Miller Street is the primary north-south vehicular street through North Sydney, connecting Blues Point Road in the south and Crows Nest in the north. Berry Street, a one-way street allows for connection to the Bradfield Highway in both north and south directions. Denison Street, a one-way vehicular street allows carpark entry into 65 Berry Street, MLC Building and also provides access to the former Tower Square.

North Sydney Council is working on an upgrade to the existing cycle network to connect the existing cycleways over the Sydney Harbour Bridge to the Sydney City Centre. When complete, this link will provide a continuous connection from North Sydney that caters for a range of trips from short rides to local shops and cafes, through to regional cycle commuting.

KEY:

- █ Major Transport Route
- █ Main Road
- █ Secondary Road
- █ Existing Bike Route



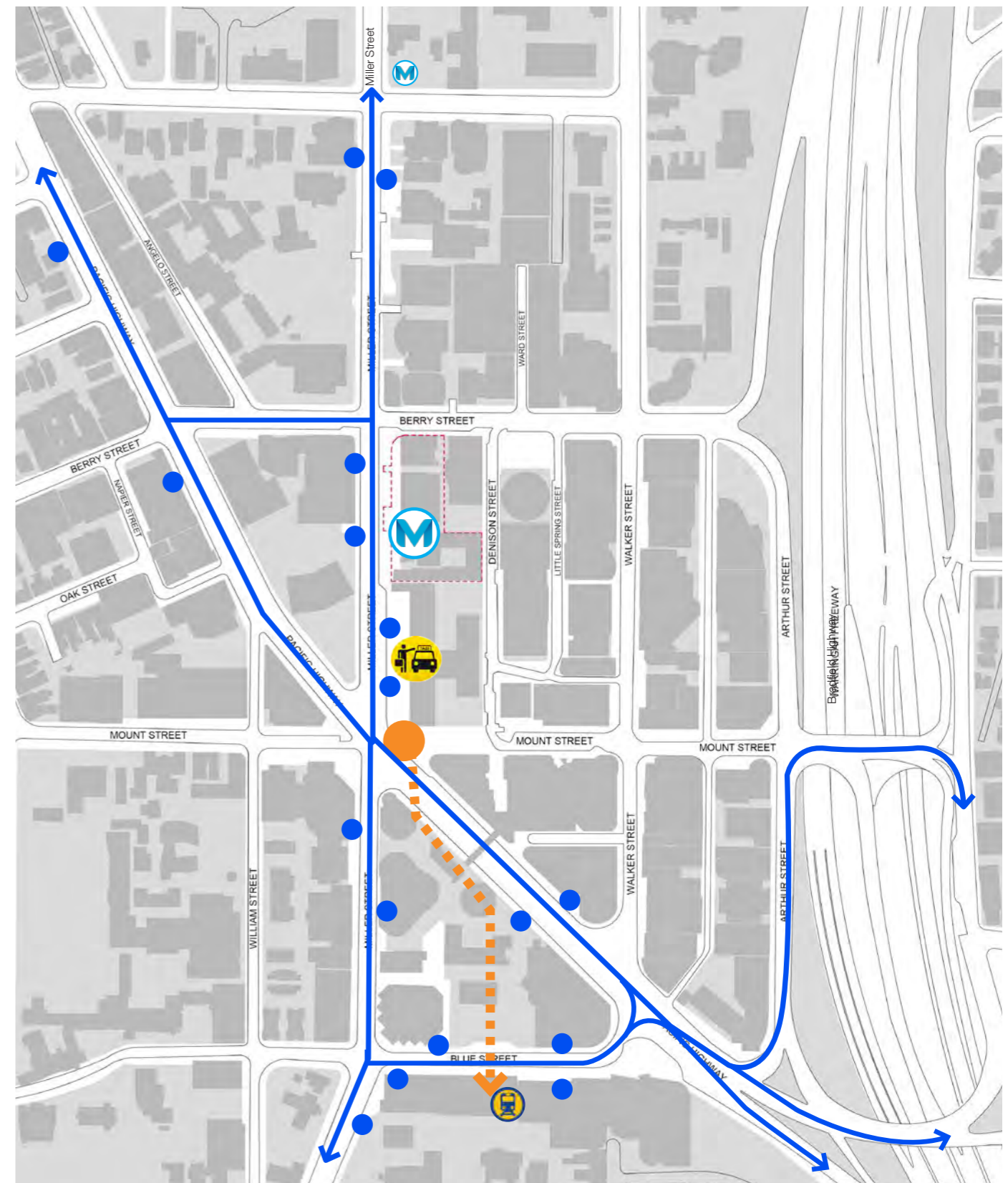
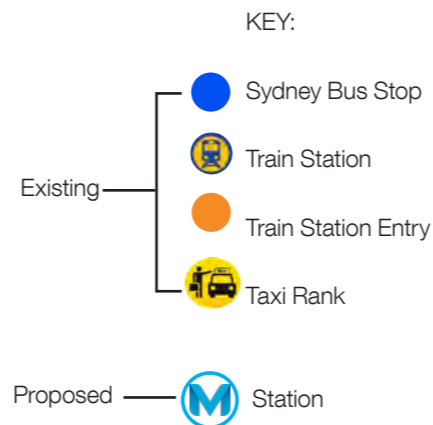
VEHICULAR MOVEMENT

The site is well serviced by public transport, being located directly above Victoria Cross Station. In addition, alternative public transport services including major bus routes exist adjacent to the site. It is also accessible to the North Sydney Train Station to the south via either a pedestrian bridge or pedestrian tunnel under the Pacific Highway to Greenwood Plaza.

NORTH SYDNEY PUBLIC TRANSPORT

The two forms of public transport that exist in North Sydney are the North Sydney Train Station to the south of the site and the Sydney Bus Services. The North Sydney Train Station lies on the Northshore Line linking Hornsby to the city centre. An existing tunnel entry on the corner of Mount and Miller Streets allows for access to the train station through Greenwood Plaza.

Miller Street is currently a major bus stop for suburban bus routes that generally connect outer lying suburban regions of the Northshore, Northern Beaches and Northwestern suburbs.



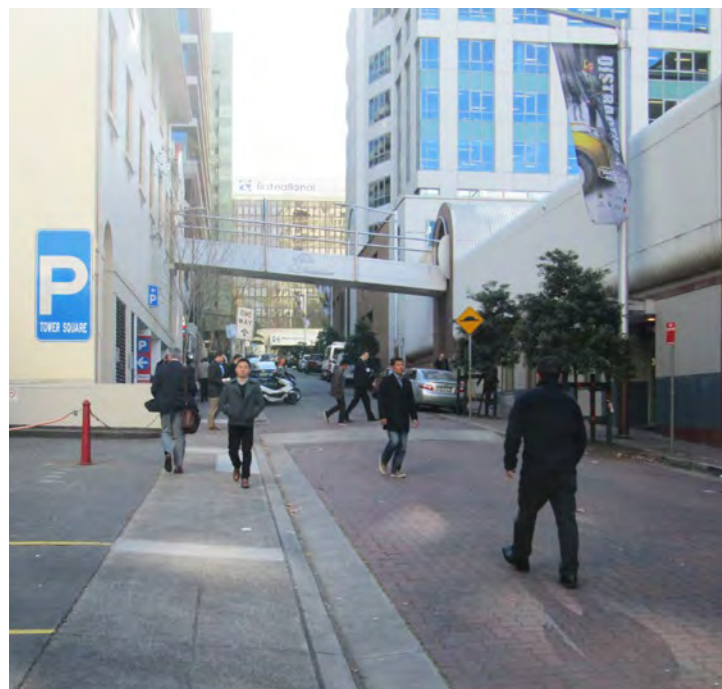
PUBLIC TRANSPORT EXISTING AND PROPOSED METRO STATION ENTRIES

4.6 SITE ANALYSIS PEDESTRIAN MOVEMENT

The predominant pedestrian movement is north-south along Miller Street frontage, representing movements to and from the North Sydney Train Station and to and from bus stops. There is also a strong north-south movement along Denison Street, which is proposed to be pedestrianised between Mount Street and the lower station entry.

EXISTING PEDESTRIAN MOVEMENT.

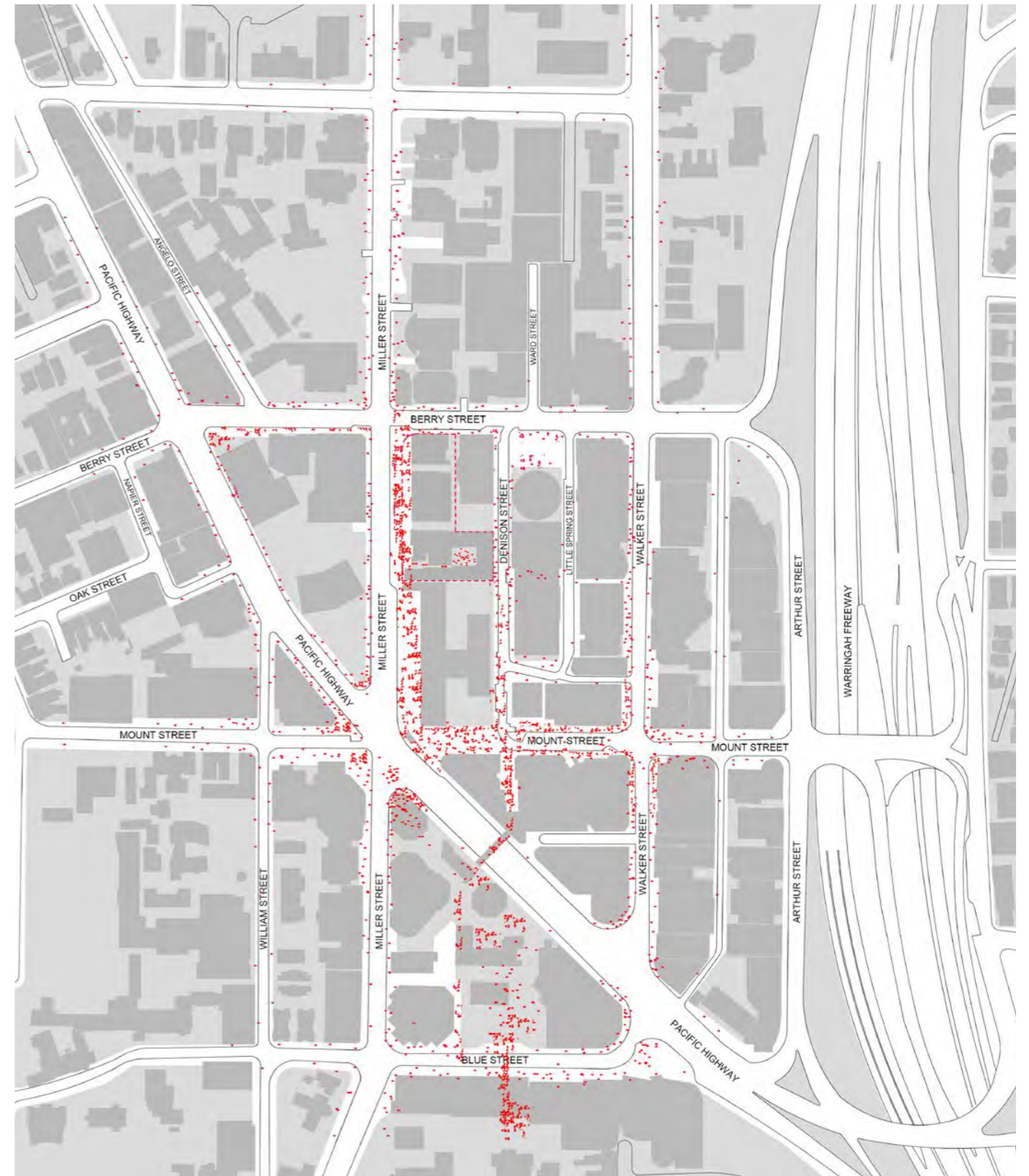
The diagram on the right shows the existing concentration of pedestrian movement (based on observation) within the North Sydney Centre and demonstrates the movement of people along Miller Street and between Berry and Mount Street via Denison Street, Little Spring Street and Walker Street. The concentration of people moving along Denison Street demonstrates the importance of the Denison Street pedestrianisation and the through-site link between Denison Street and Miller Street.



DENISON STREET



MILLER STREET SPECIAL AREA



OBSERVED PEDESTRIAN ACTIVITY AT 9AM MID WEEK

4.7 SITE ANALYSIS TOPOGRAPHY

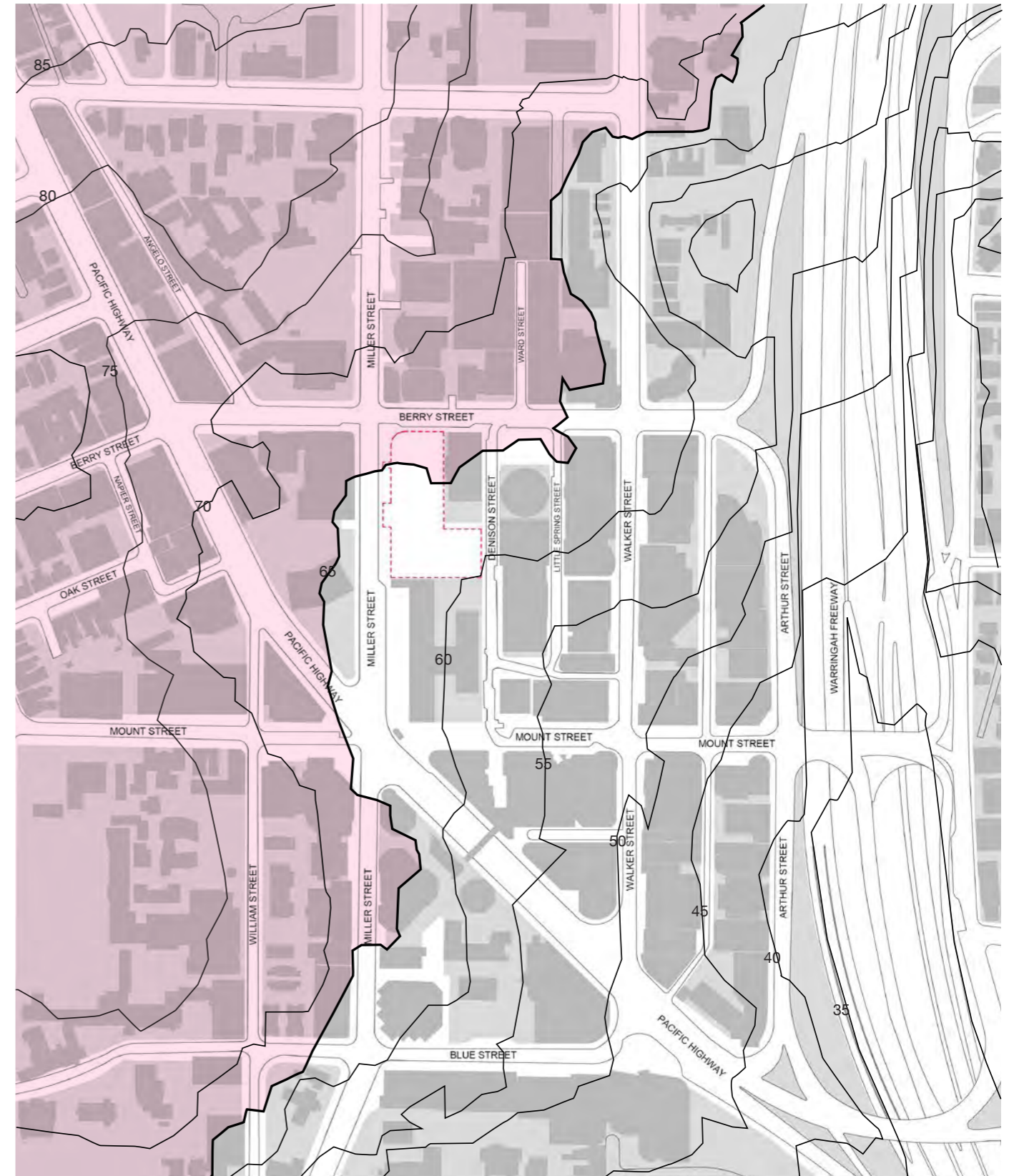
CONTOURS

The site can be considered to be centred on two topographical catchments, above and below RL 65m, the upper topographical catchment north of Berry Street and Pacific Highway with the lower topographical catchment south of Walker and Mount Streets.

This topographical analysis was key in the design of the OSD and station entry levels. The main entry from Miller Street at the upper level providing access to pedestrians arriving from the north west and the entry from Denison Street on the lower level providing access to pedestrians arriving from the south east.

KEY:

- ABOVE RL 65
- BELOW RL 65



CONTOUR MAP

4.8 SITE ANALYSIS SITE CONSTRAINTS

The site is within the North Sydney Centre, which is the commercial core of North Sydney.

A key objective of the controls in North Sydney LEP 2013 is to prevent a net increase in overshadowing to Special Areas and Public Recreation Zones (RE1) between 12-2pm.

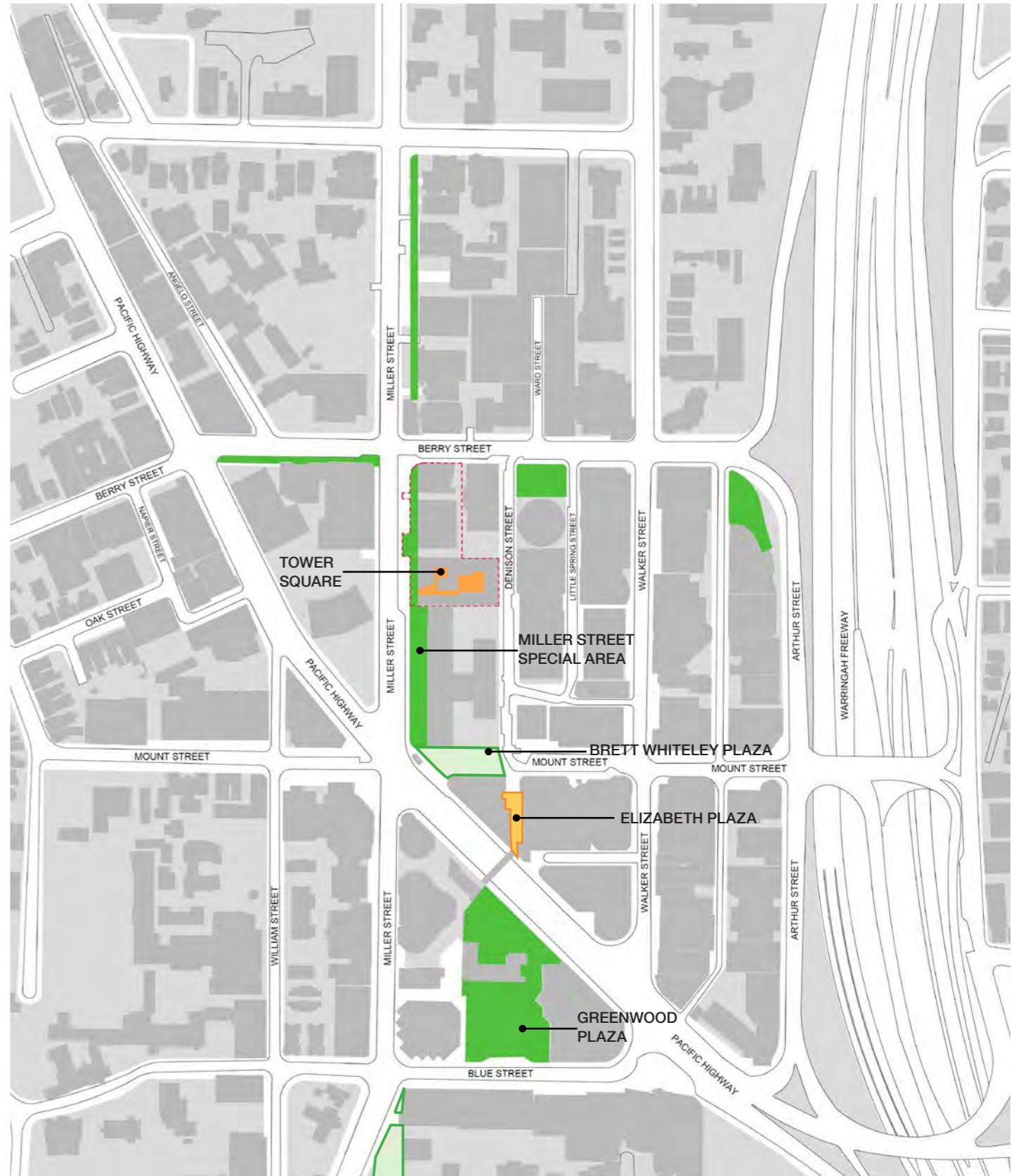
LEP SPECIAL AREAS

Clause 6.3(2)(a) of the North Sydney Local Environment Plan 2013 states that:

“Development consent must not be granted for the erection of a building on land to which the Division applies if: The development would result in a net increase in overshadowing between 12 pm and 2 pm on land to which this Division applies that is within Zone RE1 Public Recreation or that is identified as ‘Special Area’ on the North Sydney Centre map.”

The diagram to the right illustrates the areas defined in the LEP as special areas and public recreation zones (RE1).

- KEY:
- Special Area
 - Public Recreation Zones (RE1)
 - Special Area Removed under North Sydney Centre Planning Proposal
 - RE1 Public Recreation Zone Removed under North Sydney Centre Planning Proposal



GREENWOOD PLAZA SPECIAL AREA



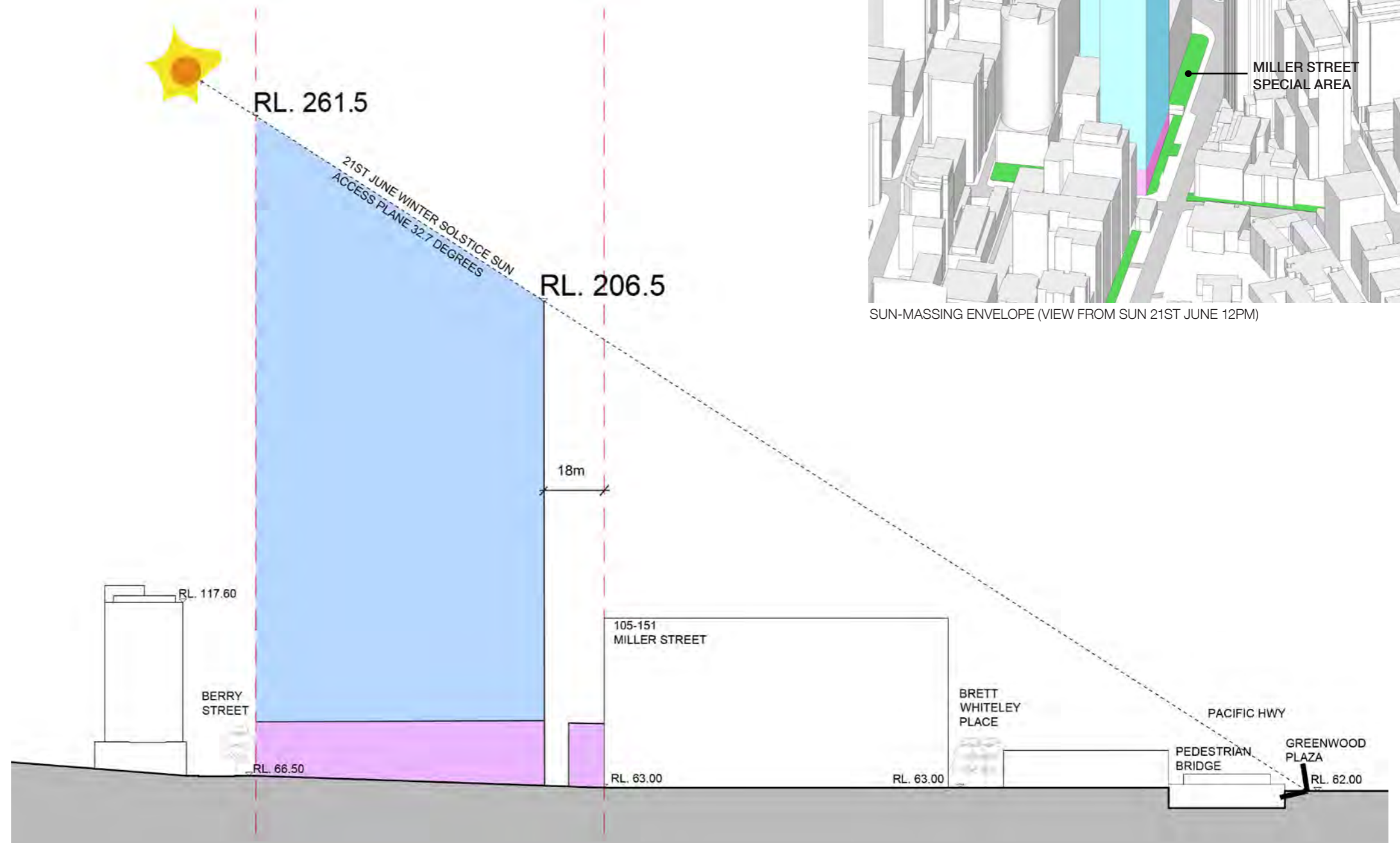
MILLER STREET SPECIAL AREA IN FRONT OF MLC BUILDING

NORTH SYDNEY LEP SPECIAL AREAS

SUN-MASSING ENVELOPE

The diagrams below and adjacent define the height at which a built form would cause no additional overshadowing to Greenwood Plaza, denoted as a “special area” in the North Sydney LEP 2013. The diagrams show the angle of the sun at the mid-winter solstice, the lowest sun angle (32.7 degrees).

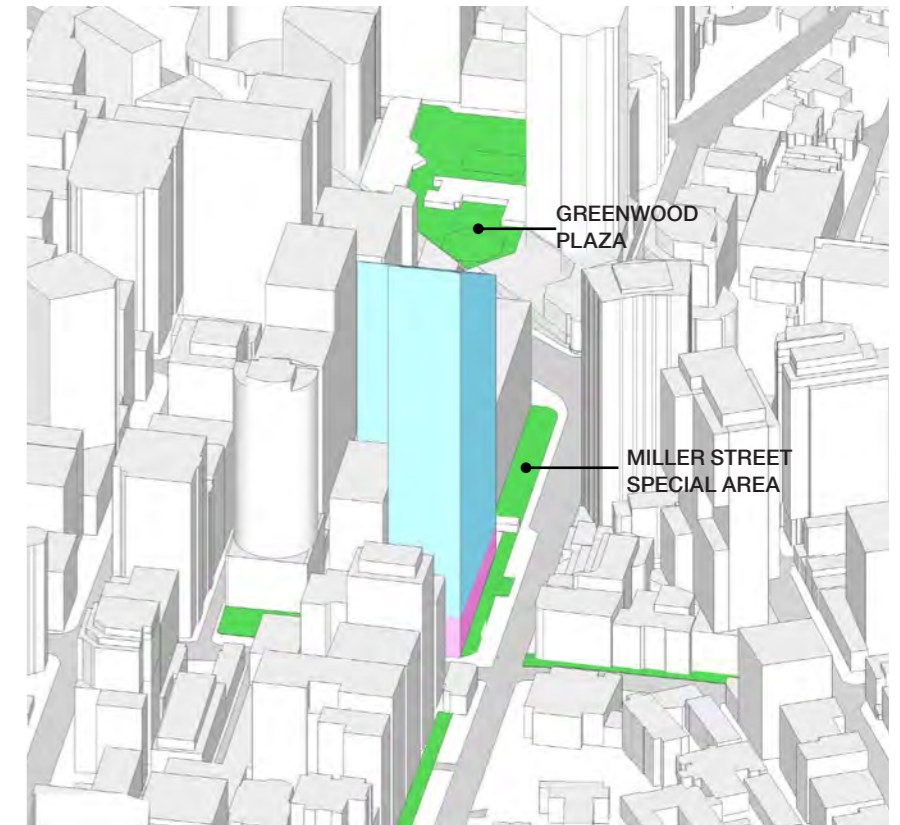
The resultant heights of the sun-massing section are RL 261.5 on the northern boundary and RL 206.5 to the southern extent of the sun-massing envelope. This assumes an 18m setback from the MLC Building on the south which will be described further in the Design Strategy (section 6.0).



KEY:

- Sun massing-envelope
- Victoria Cross Station CSSI Approval
- Special Area

SUN-MASSING ENVELOPE



SUN-MASSING ENVELOPE (VIEW FROM SUN 21ST JUNE 12PM)

4.8 SITE ANALYSIS SITE CONSTRAINTS

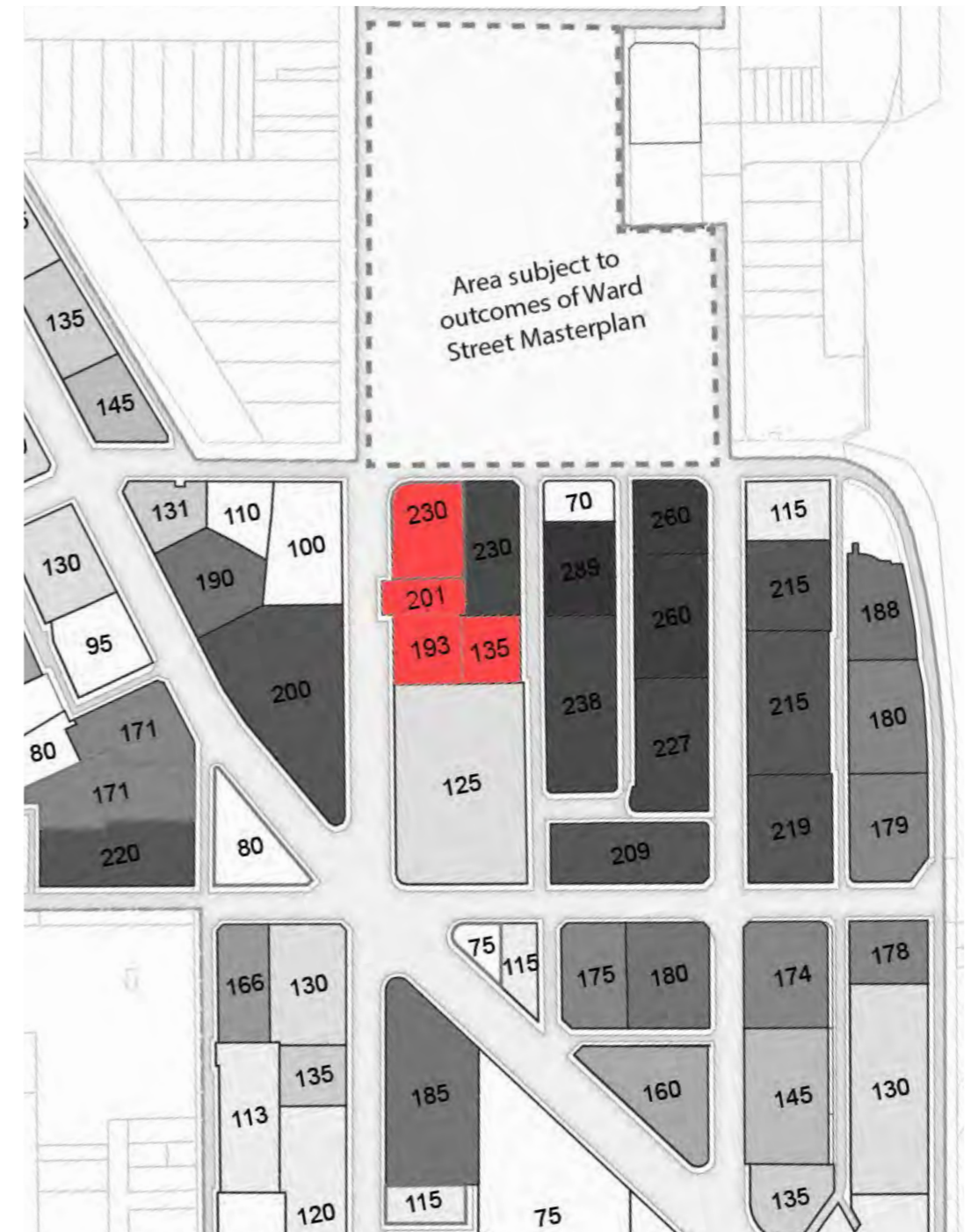
The North Sydney Centre Planning Proposal (supported by the North Sydney Centre Capacity and Land Use Study) proposes a review of the LEP Height of Buildings Map. It aims to develop a strategy for future growth in the North Sydney Centre. The strategy aims to balance the requirement for additional floor space and employment capacity within North Sydney Centre, with the need to protect and maintain a reasonable level of amenity to surrounding areas.

NORTH SYDNEY CENTRE CAPACITY AND LAND USE STUDY

The diagram on the near right shows the current North Sydney LEP 2013 Height of Buildings Map. The diagram on the far right indicates the North Sydney Centre Planning Proposal (as amended by Council resolution 19th February 2018) Height of Buildings Map, showing significant increase in building heights.



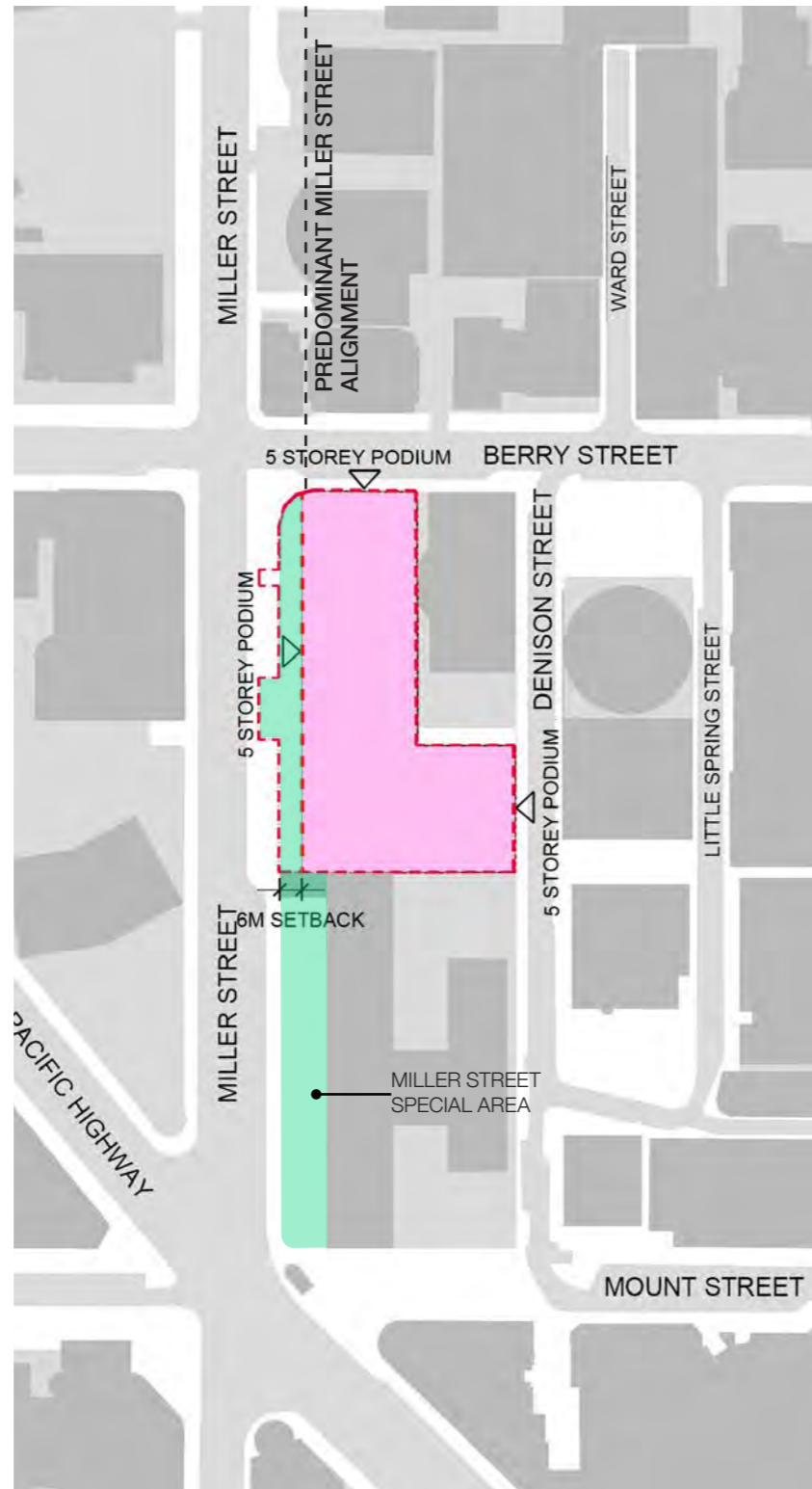
NORTH SYDNEY LEP 2013 HEIGHT OF BUILDINGS MAP



HEIGHT CONTROLS MAP FROM THE NORTH SYDNEY CENTRE PLANNING PROPOSAL (AS AMENDED BY COUNCIL RESOLUTION 19TH FEBRUARY 2018)

PLANNING CONTROLS: PODIUM

The podium is required to set back 6m defined by the Miller Street Special Area in the North Sydney LEP 2013. This also aligns with the predominant Miller Street street wall. A maximum podium height of 5 storeys (20m) is required by the North Sydney DCP 2013 along Miller Street, Berry Street and Denison Street.

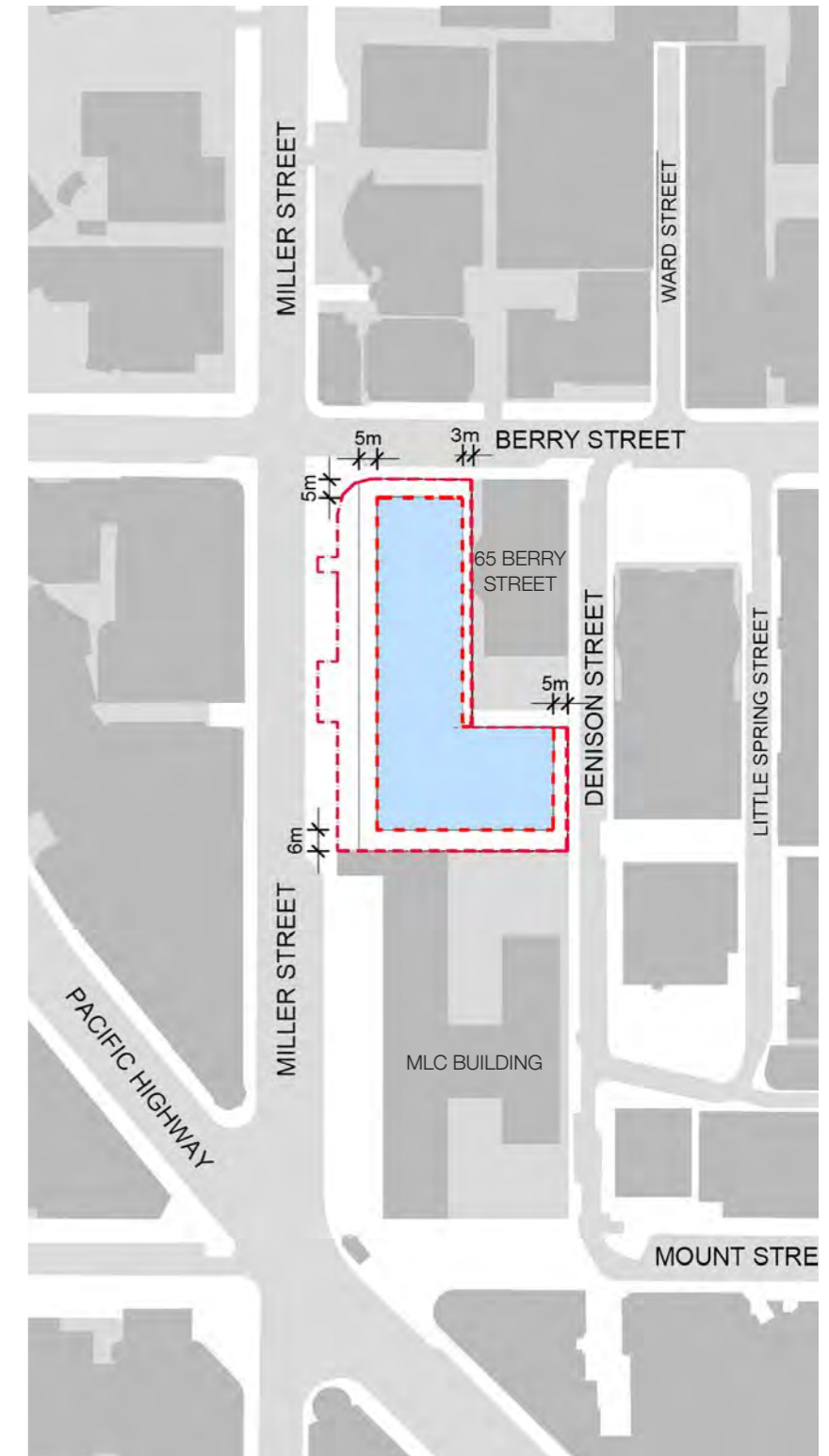


KEY:

- Tower Level Setbacks Envelope
- Podium Level Setbacks Envelope
- Miller Street Special Area

PLANNING CONTROLS: TOWER

Above the podium, a 5m setback is required along Berry Street and Miller Street and Denison Street as defined in the North Sydney DCP 2013. A minimum setback of 6m has been assumed between the tower envelope and the neighbouring 65 Berry Street Building to the east and the MLC Building to the south. This creates a narrow L-shaped building footprint that would present challenges to achieve a commercially viable footprint to meet current office building tenant needs.







5.0 PLANNING ANALYSIS

5.1 PLANNING ANALYSIS FLOORPLATE OPTIONS

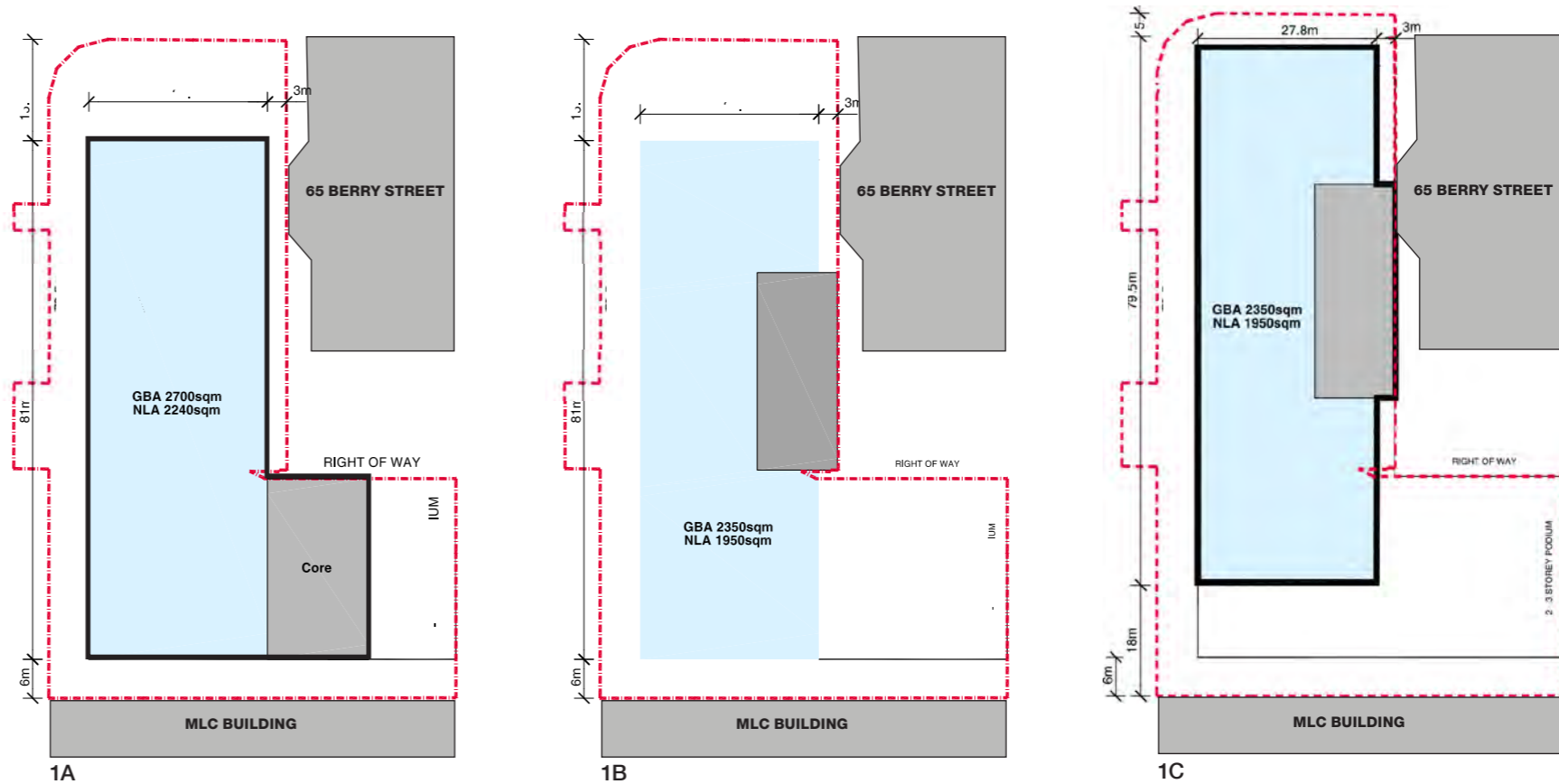
FLOORPLATE OPTIONS

The following diagrams illustrate a number of different commercial floorplate configurations which were explored during the initial stages of the design. These floorplate options were then analysed against a set of criteria including a range of commercial objectives, urban design and heritage considerations as well as public domain benefits and compliance with the North Sydney DCP 2013.

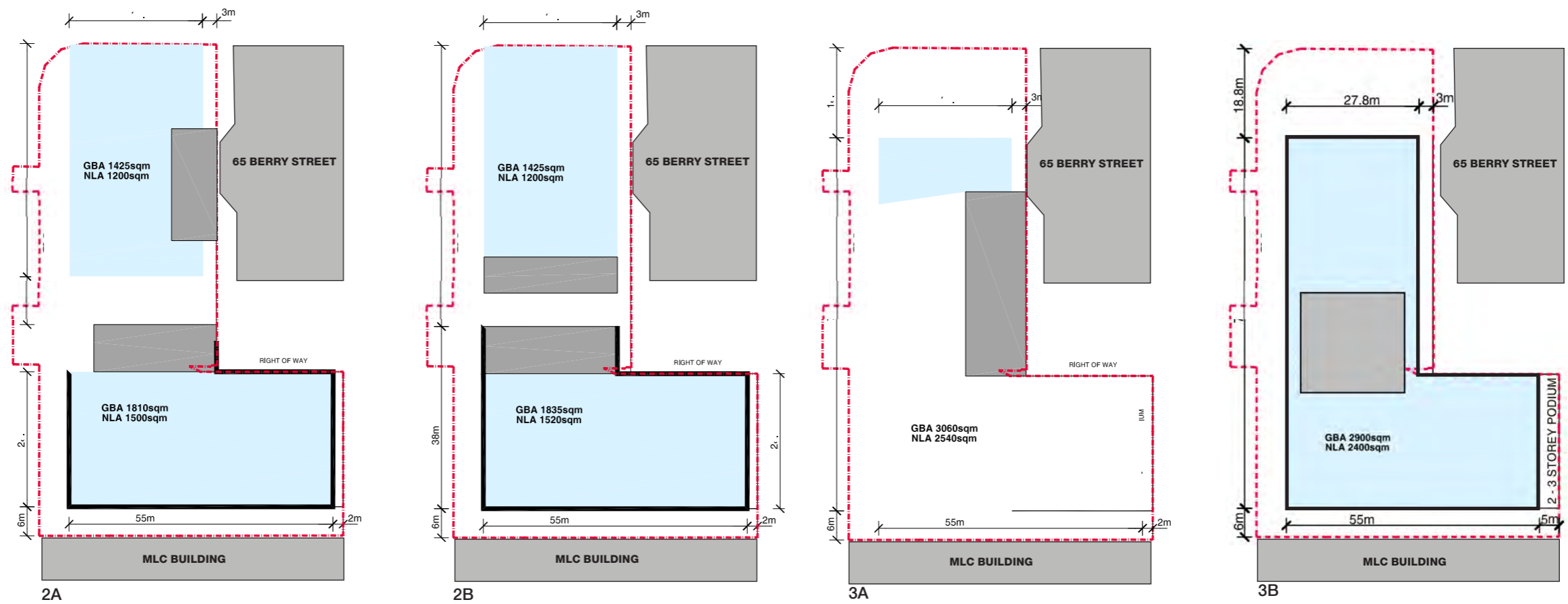
Each of the options assume a zero setback to Miller Street above the podium which is set back 6m to align with the Miller Street Special Area.

Options 1A, 1B and 1C demonstrate different possibilities for a rectilinear floorplate with a single core. Options 2A and 2B demonstrate different configurations for two buildings on the site with individual cores. Option 3A and 3B demonstrate different options for an L-shaped building with a single core.

The Option selected for the concept SSDA envelope most resembles Option 1C as the main high-rise component is concentrated on the northern portion of the site. This allows for maximum separation between the OSD tower and the MLC Building and reinforces the through-site link including improving access to natural light.



Core Arrangement (Allow for commercial subdivisibility)	X	✓	✓
Office Space > 1500sqm NLA	✓	✓	✓
Maximises View and Minimises overlooking	X	X	✓
Core does not Impact on Station Entry / Concourse	✓	✓	✓
Adequate separation from the heritage MLC Building	X	X	✓
Allows for a through-site link that is open to sky	X	X	✓
Complies with DCP setback controls with the exception of the 5m setback above the podium on Miller Street as mentioned above.	✓	✓	✓
TOTAL	-1	1	7 (Preferred)



✓	✓	✗	✓
✗	✗	✓	✓
✗	✗	✗	✗
✗	✗	✓	✗
✗	✗	✗	✗
✗	✗	✗	✗
✗	✗	✓	✓
-5	-5	-1	-1

5.2 PLANNING ANALYSIS BUILDING ENVELOPE OPTIONS

BUILDING ENVELOPE OPTIONS

The following diagrams illustrate a number of different building envelope options that were explored during the initial stages of the design.

The options are based on floorplate Option 1C from the previous section (5.1) with an 18m setback from the southern boundary, a 6m set back to Miller Street and a 5m set back from Berry Street to the north.

Options 1A, 1B and 1C demonstrate different possibilities for a vertically expressed envelope. Options 2A, 2B and 2C demonstrate different configurations for a horizontally expressed envelope.

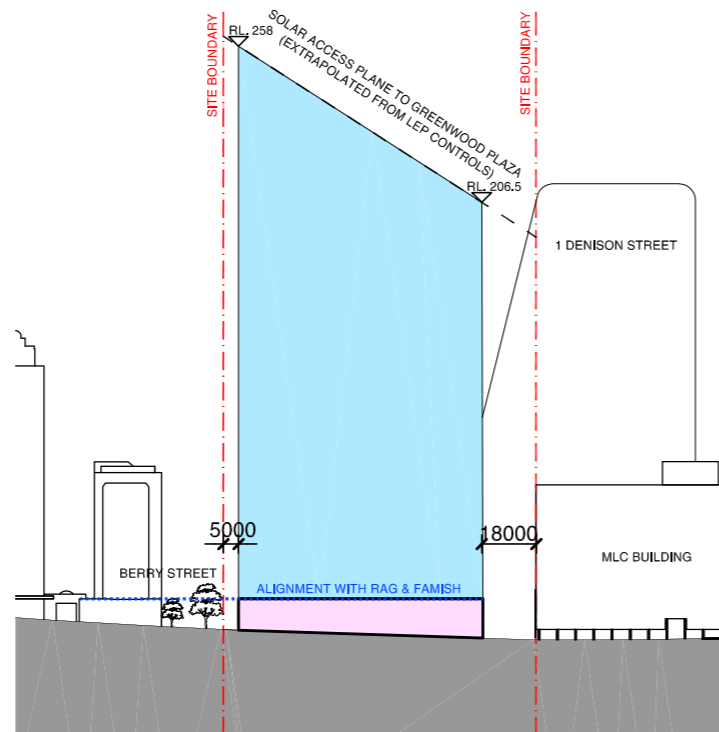
In each case the podium references the alignment of the heritage listed Rag & Famish Hotel to the north of Berry Street.

The preferred option for the concept SSDA envelope reflects Option 2B as the low rise stack references the alignment of the heritage MLC and the horizontal stacks break down the scale of the tower referencing the varied scales of the North Sydney Centre.

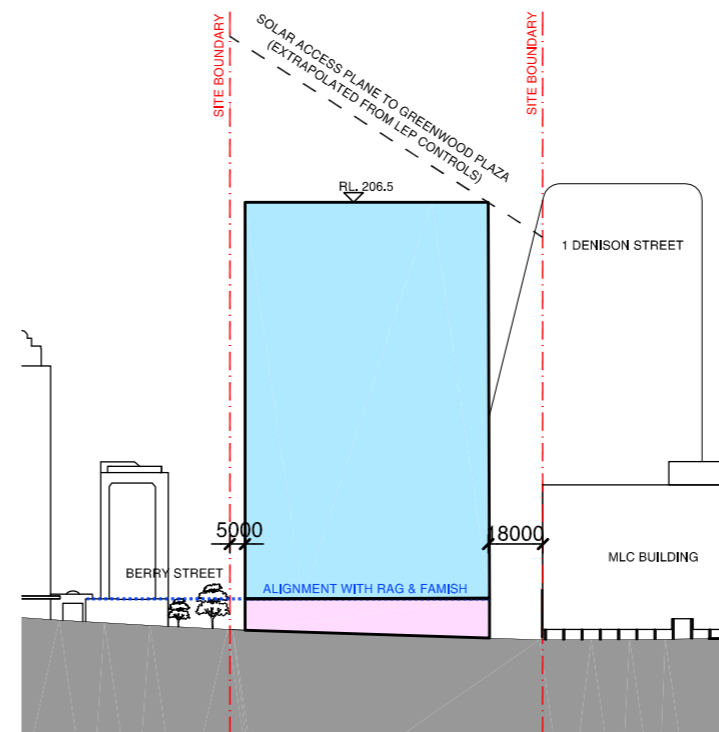
KEY:

OSD envelope

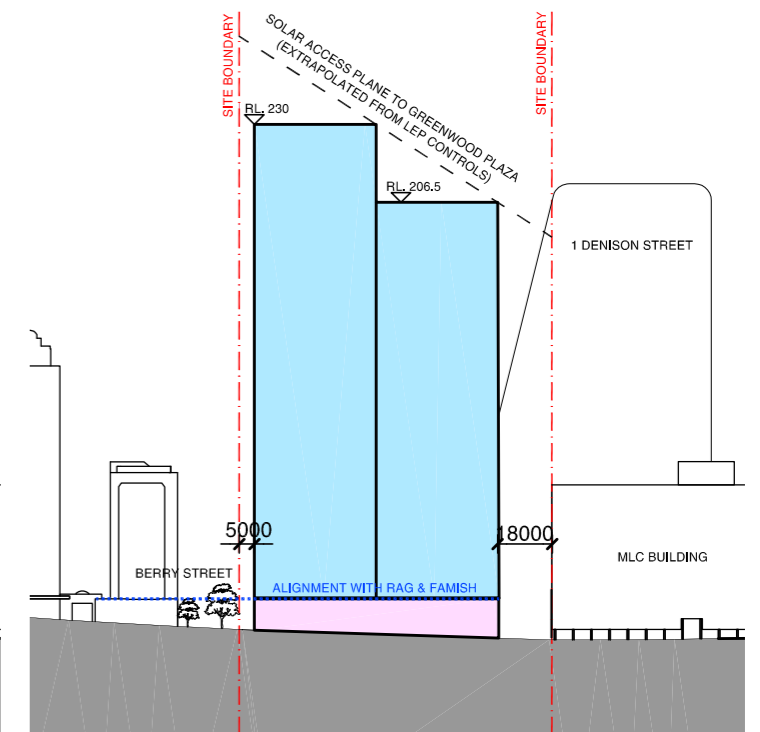
Victoria Cross Station CSSI



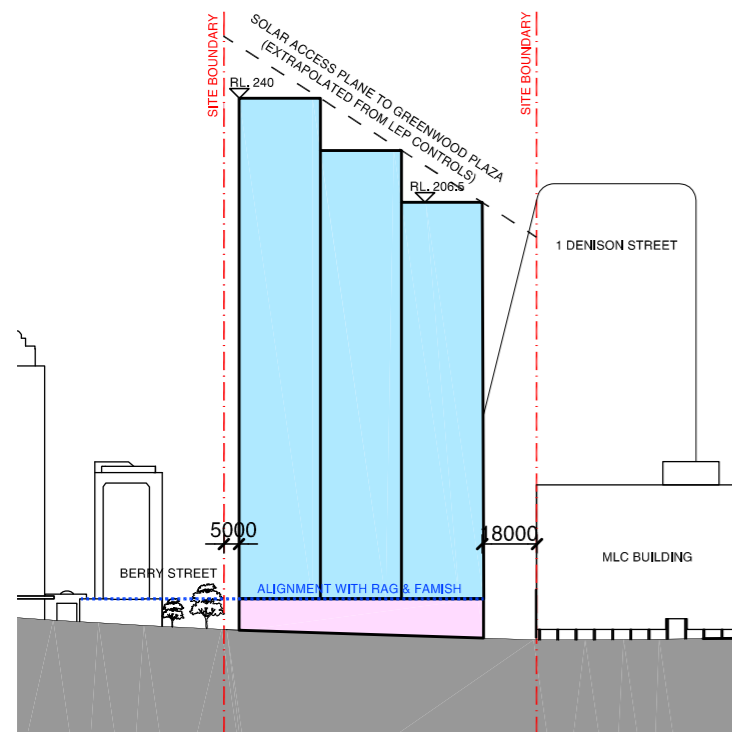
1 SUN PLANE MASSING ENVELOPE



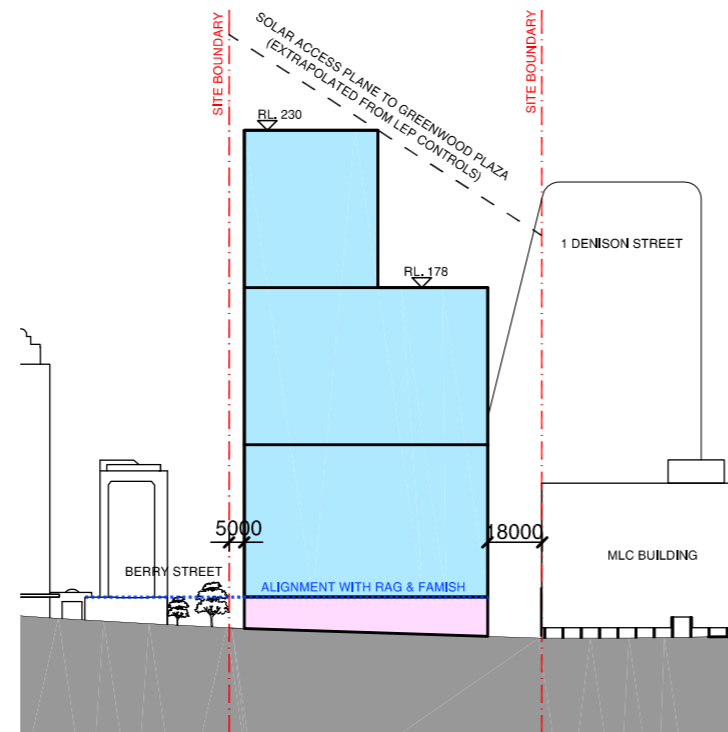
1A SINGULAR FORM



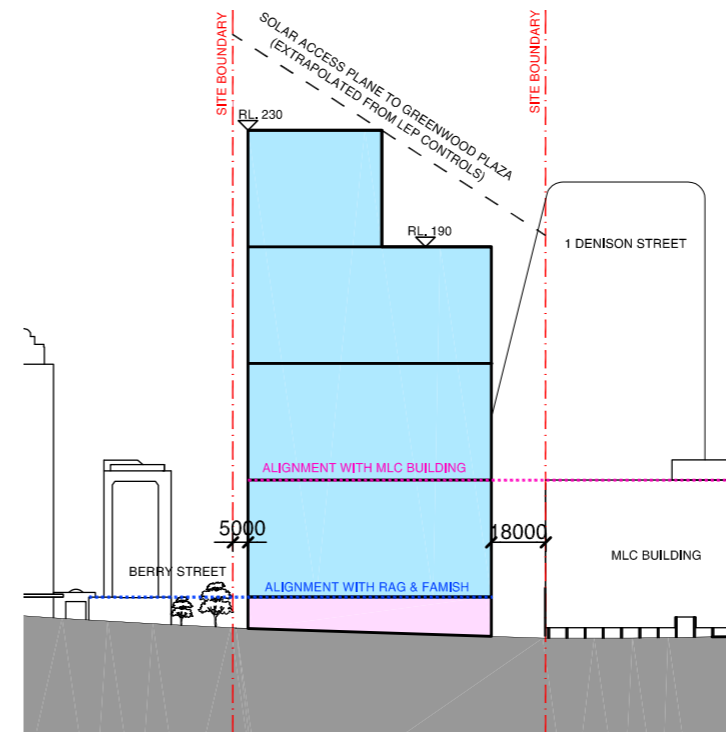
1B TWO VERTICAL TOWERS



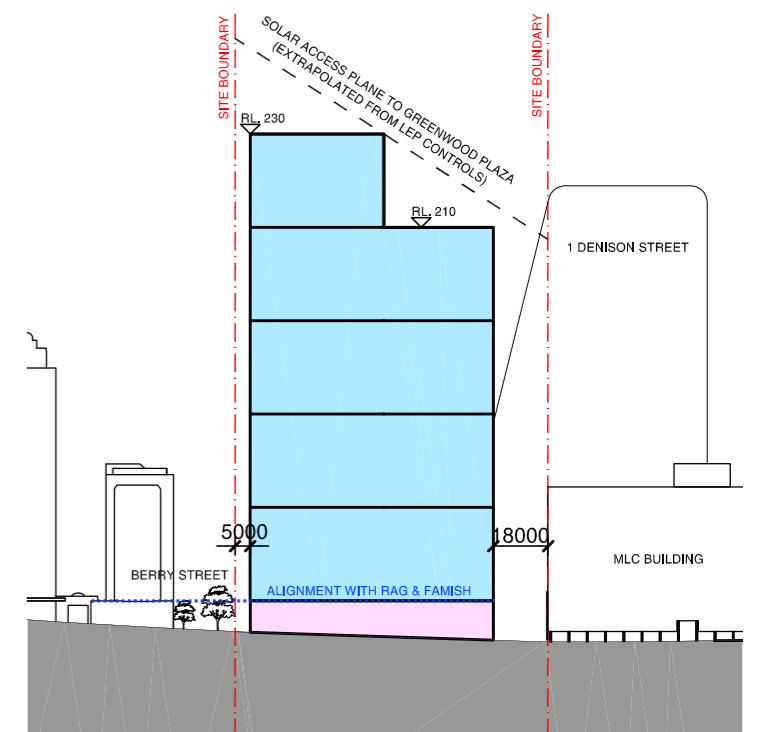
1C THREE VERTICAL TOWERS



2A THREE HORIZONTAL STACKS



2B FOUR HORIZONTAL STACKS



2C FIVE HORIZONTAL STACKS



Victor



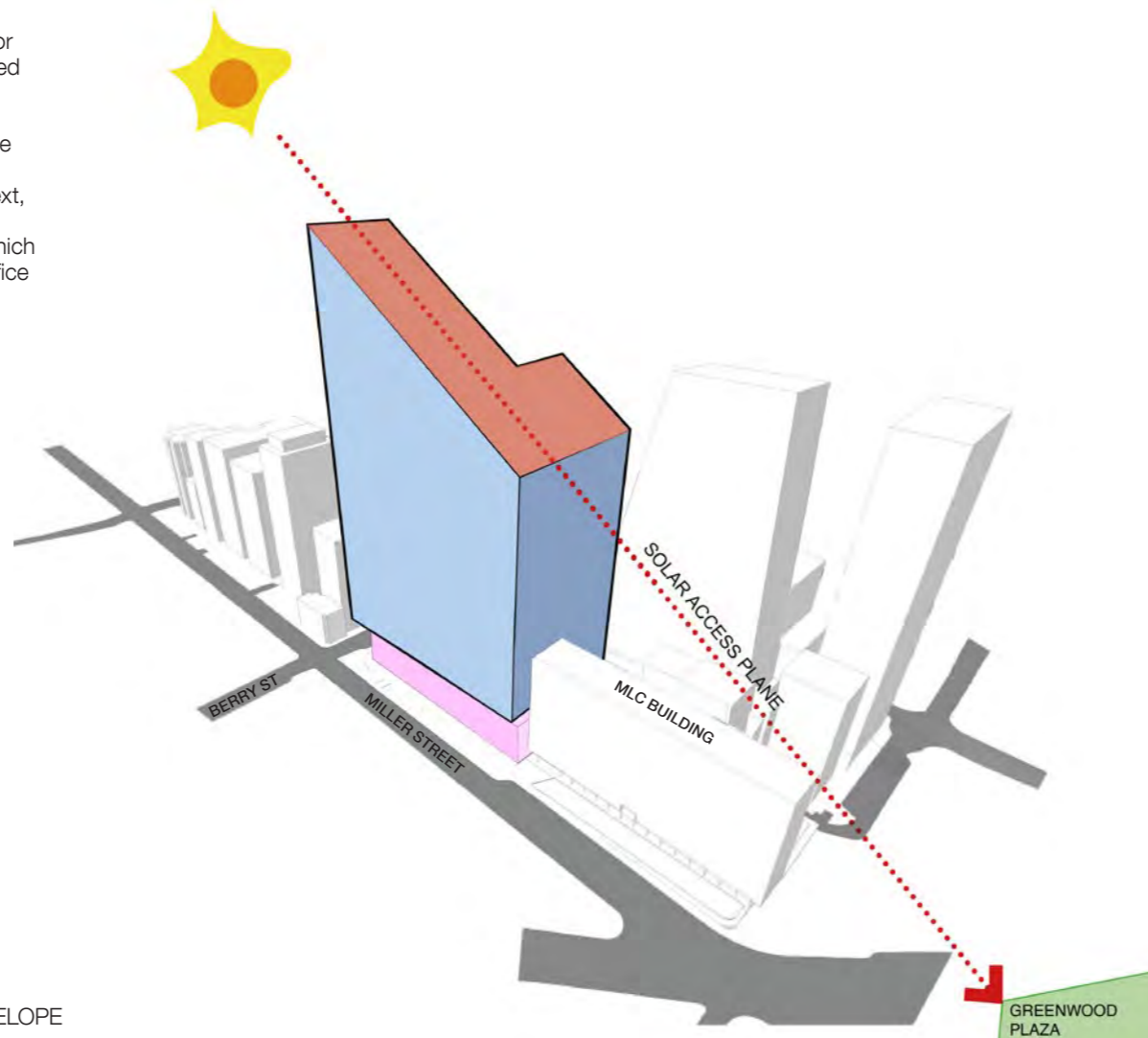
ia Cross

6.0 DESIGN STRATEGY

6.1 DESIGN STRATEGY BUILDING ENVELOPE

BUILDING ENVELOPE

The following diagrams demonstrate the design strategy for the OSD concept SSDA envelope above the CSSI approved design for the Victoria Cross Station. There are a number of key considerations which have informed the design of the building envelope including the requirement to minimise overshadowing to Special Areas and responding to the various setbacks and alignments of the existing built context, minimising the impact of the proposed OSD on the public interface of the station and creating a building envelope which can accommodate an economically viable and efficient office building.



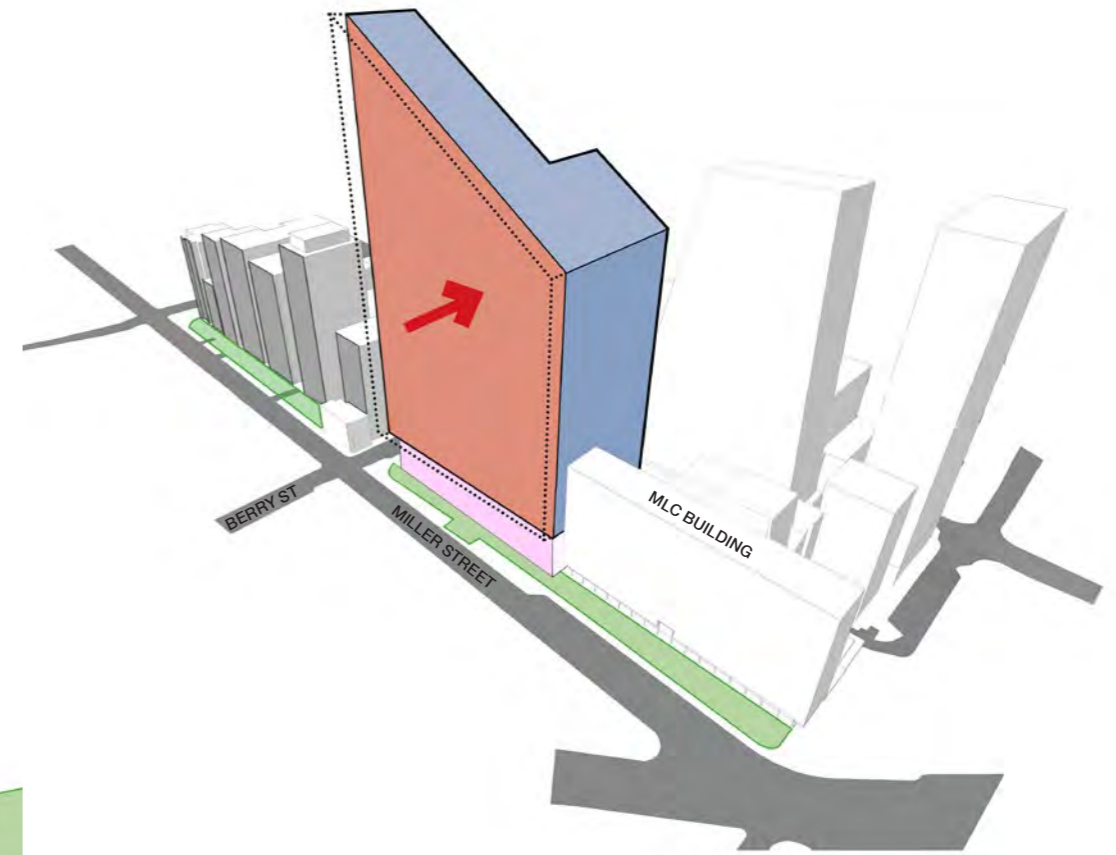
KEY:

- OSD ENVELOPE
- VICTORIA CROSS CSSI
- SPECIAL AREAS

MAXIMUM ENVELOPE FOR ZERO OVERSHADOWING ON GREENWOOD PLAZA

The diagram above demonstrates the proposed maximum achievable building envelope to avoid overshadowing the Greenwood Plaza Special Area between 12pm and 2pm.

The building envelope is generated at the winter solstice, the lowest sun angle (32.7 degrees at 12 noon).

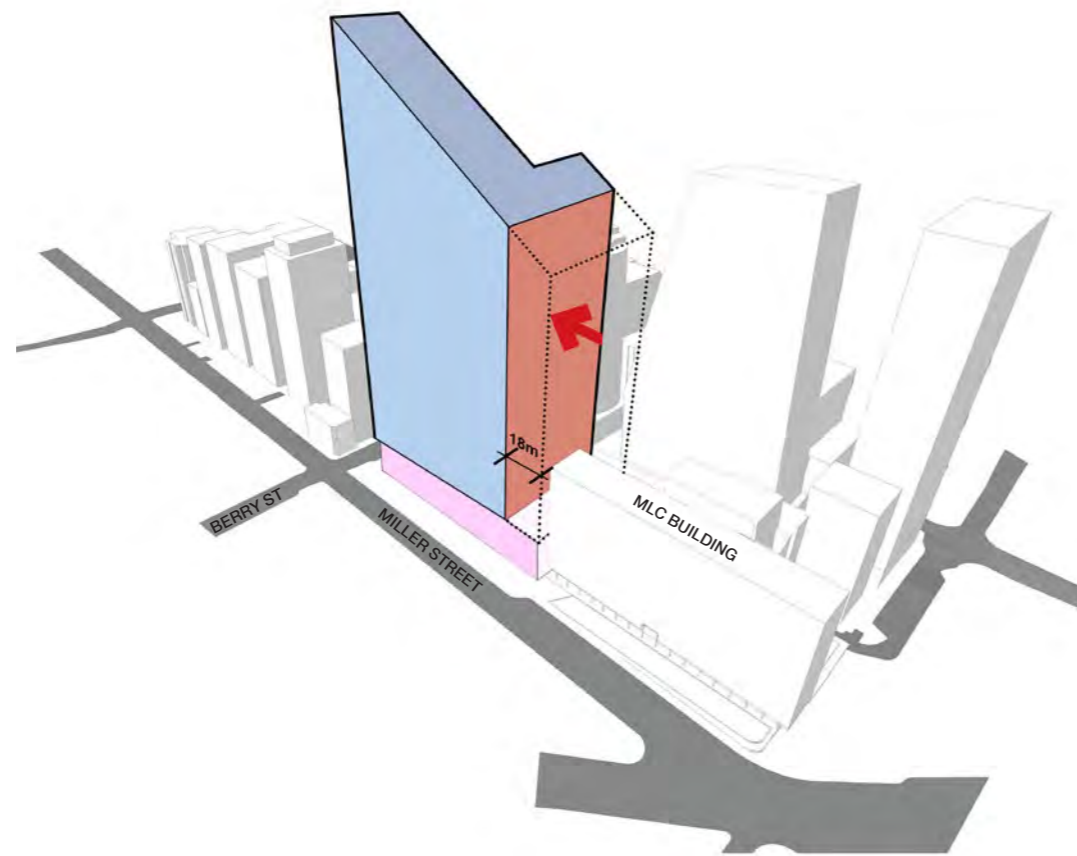


SETBACK TO ALIGN WITH MILLER STREET SPECIAL AREA

The envelope is set back 6m to align with the Victoria Cross Station and the Miller Street 'Special Area'.

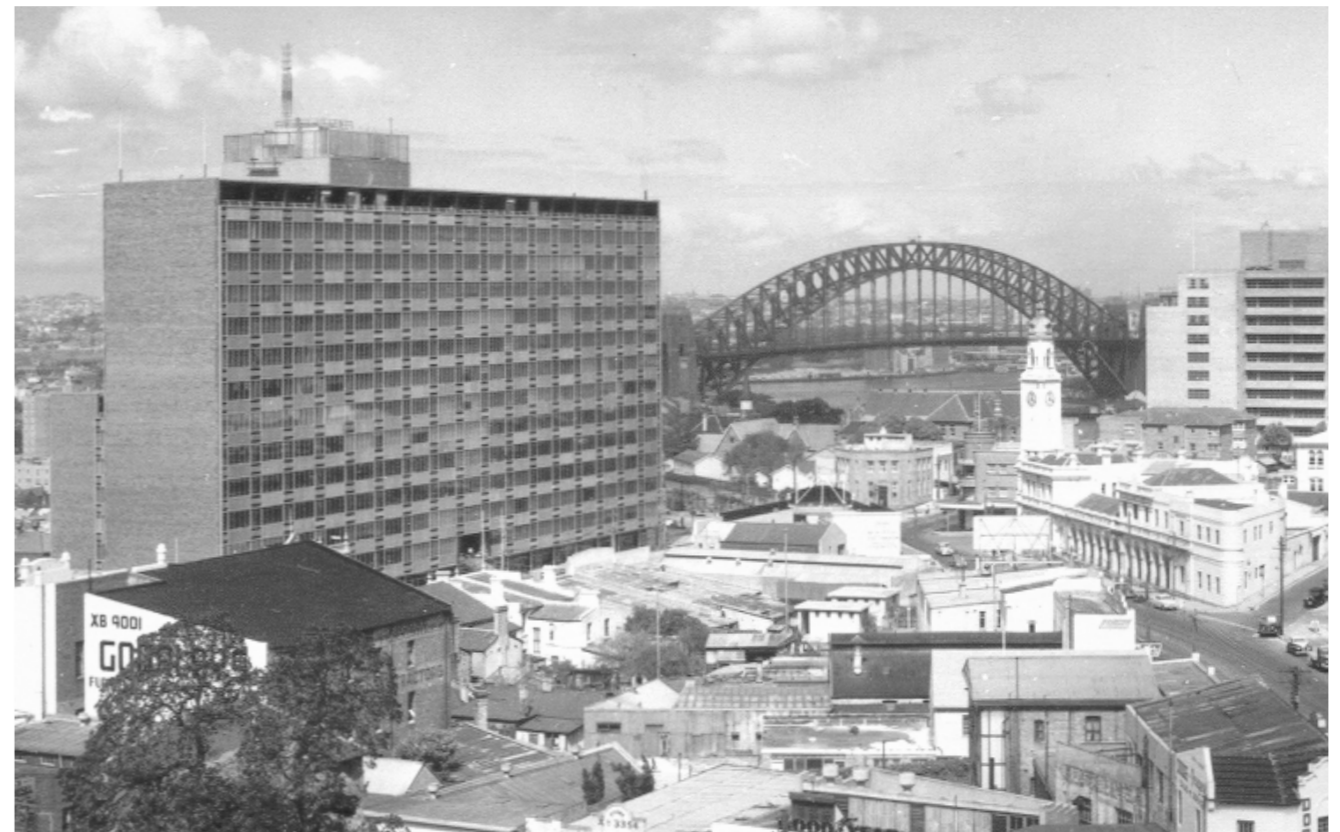
The proposed envelope also aligns with the predominant street wall alignment along Miller Street.

The neighbouring MLC Building was the first high-rise office building in North Sydney and set a new benchmark. The proposed OSD envelope will setback from the south to retain and improve significant views towards the MLC Building's tiled north facade when viewed from the north.



SETBACK TO RESPECT MLC BUILDING AND FACILITATE VIEWS

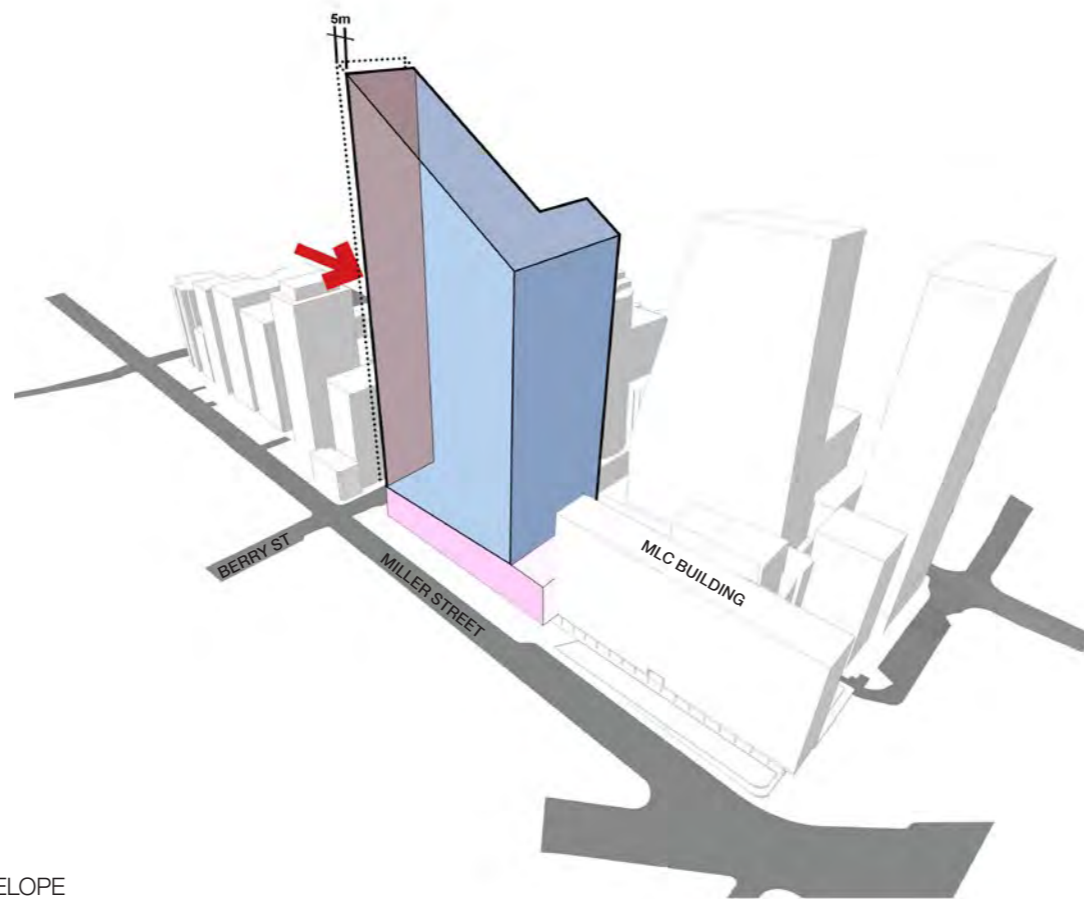
The proposed envelope is setback 18m from the southern boundary to respect the neighbouring heritage MLC building.



HERITAGE LISTED MLC BUILDING

6.1 DESIGN STRATEGY BUILDING ENVELOPE

The northern extent of the proposed envelope is setback from Berry Street to comply with the North Sydney DCP 2013 and to align with the Victoria Cross Station below. The eastern extent of the proposed building envelope is lowered to reference the height of the MLC Building.



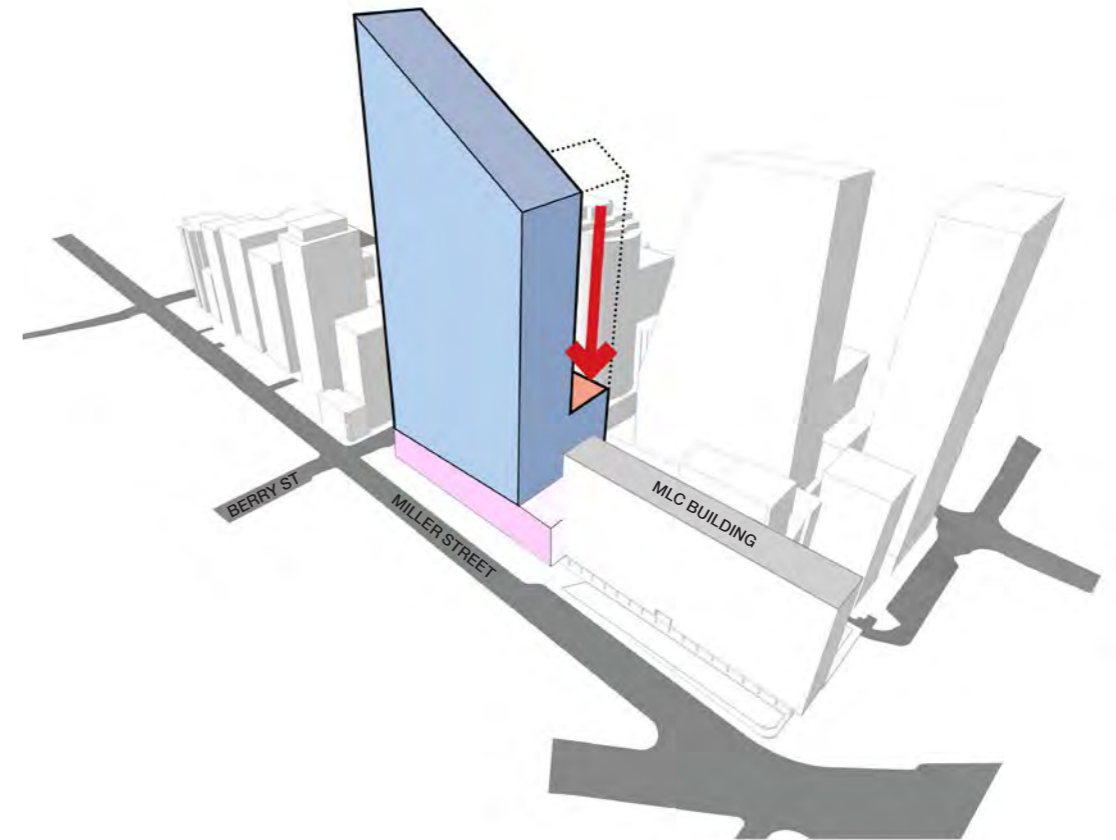
KEY:

■ OSD ENVELOPE

■ VICTORIA CROSS CSSI

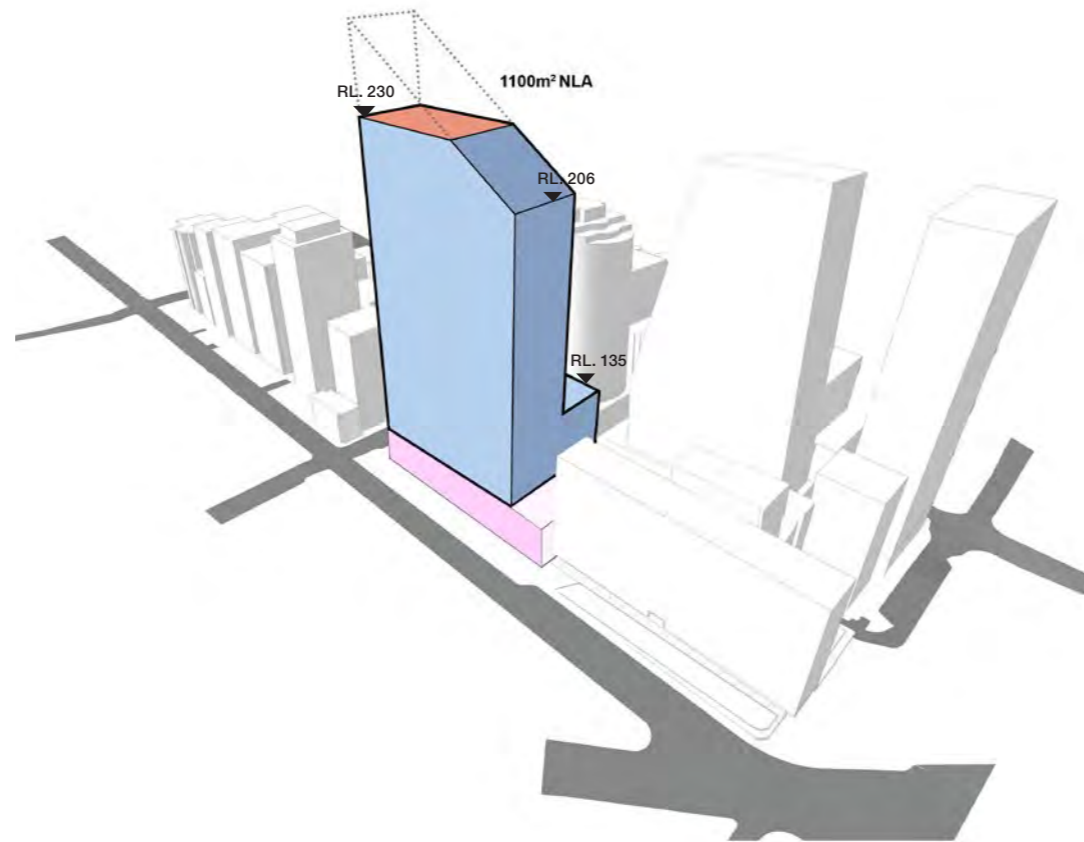
5M SETBACK TO BERRY STREET BOUNDARY

The proposed envelope is setback 5m from Berry Street to align with the Victoria Cross Station CSSI Approval and to comply with the North Sydney DCP.



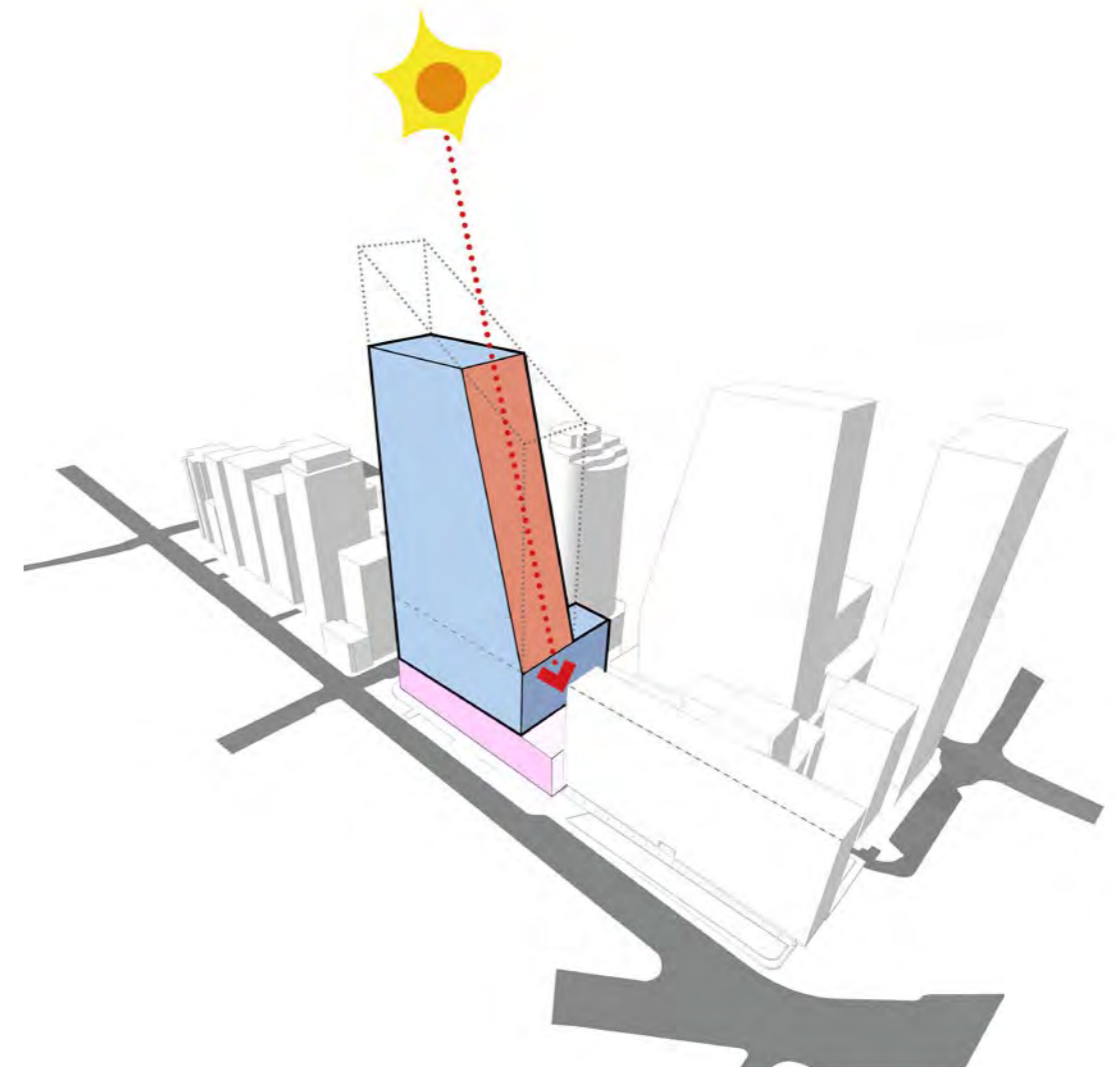
DENISON STREET SETBACK

The eastern leg of the 'L' shaped form is lowered to the height of the MLC Building to reference its height and create an appropriate scale on Denison Street.



HEIGHT OF TOP FLOOR DEFINED BY MINIMUM VIABLE FLOORPLATE WITHIN SUNPLANE

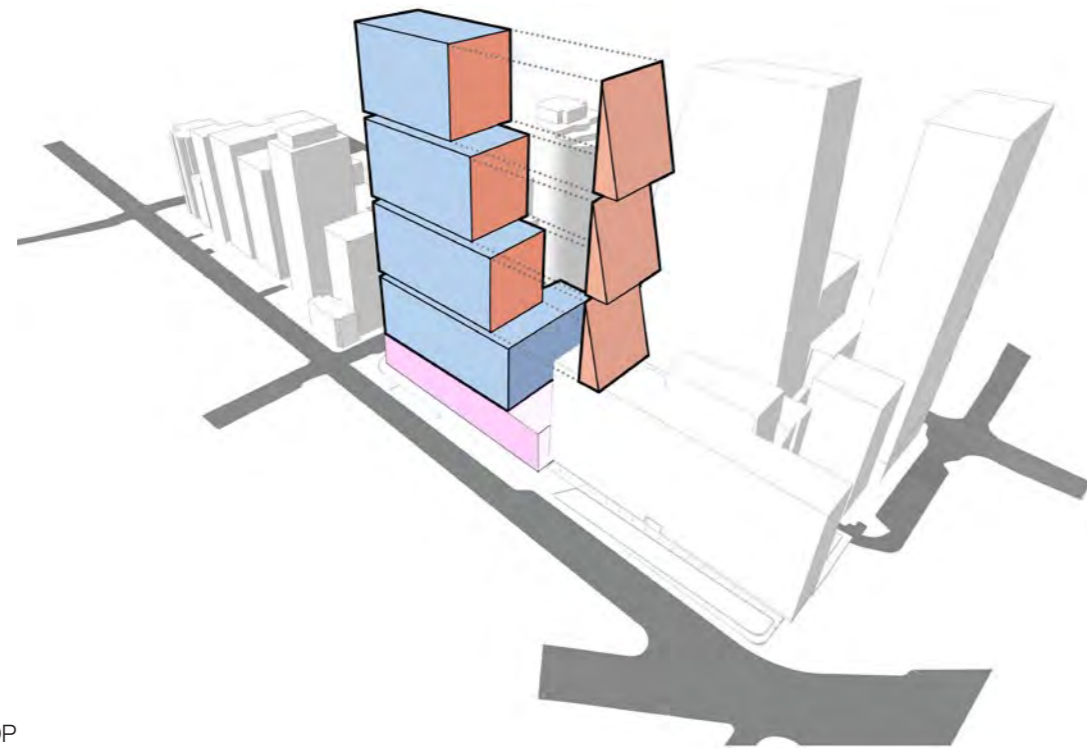
The height of the tower is limited by the diminishing angle of the sun access plane. We have assumed that 1100m² NLA would be the minimum before the floorplates become inefficient.



TAPER SOUTHERN EXTENT OF TOWER FORM TO INCREASE AMENITY TO THROUGH-SITE LINK

In order to increase daylight access to the through site link and to Denison Street to the east, the tower form is tapered.

6.1 DESIGN STRATEGY BUILDING ENVELOPE



KEY:

■ OSD ENVELOP

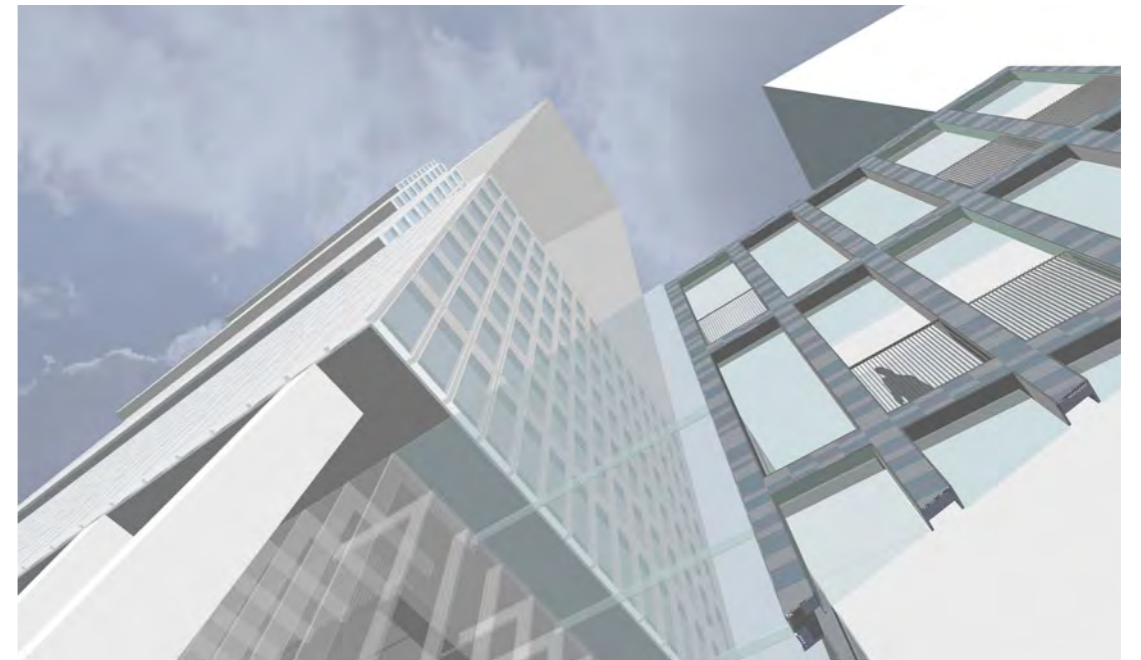
■ VICTORIA CROSS CSSI

RATIONALISE FLOOR PLATES AND REDUCE NUMBER OF ATYPICAL FLOORS

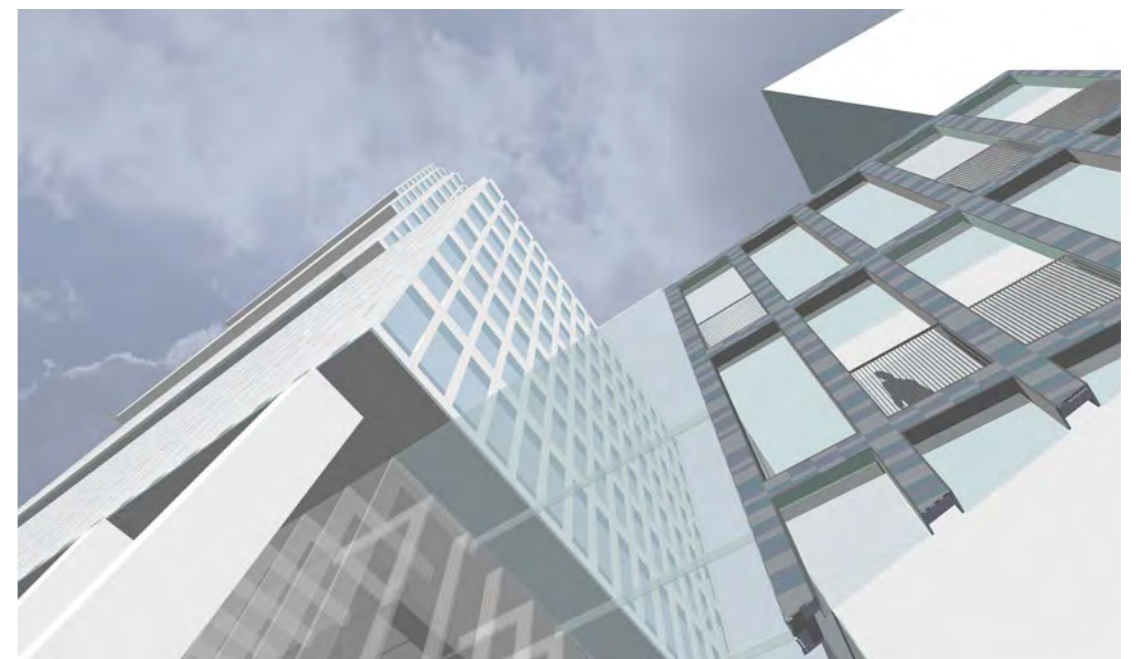
To avoid a large number of atypical floorplates, groups of typical floor plates have been stacked up creating a unique building form.

The stacked volumes break down the scale of the massing and relate to the varying datums of the surrounding built context. The lowest stack relates to the height of the MLC building.

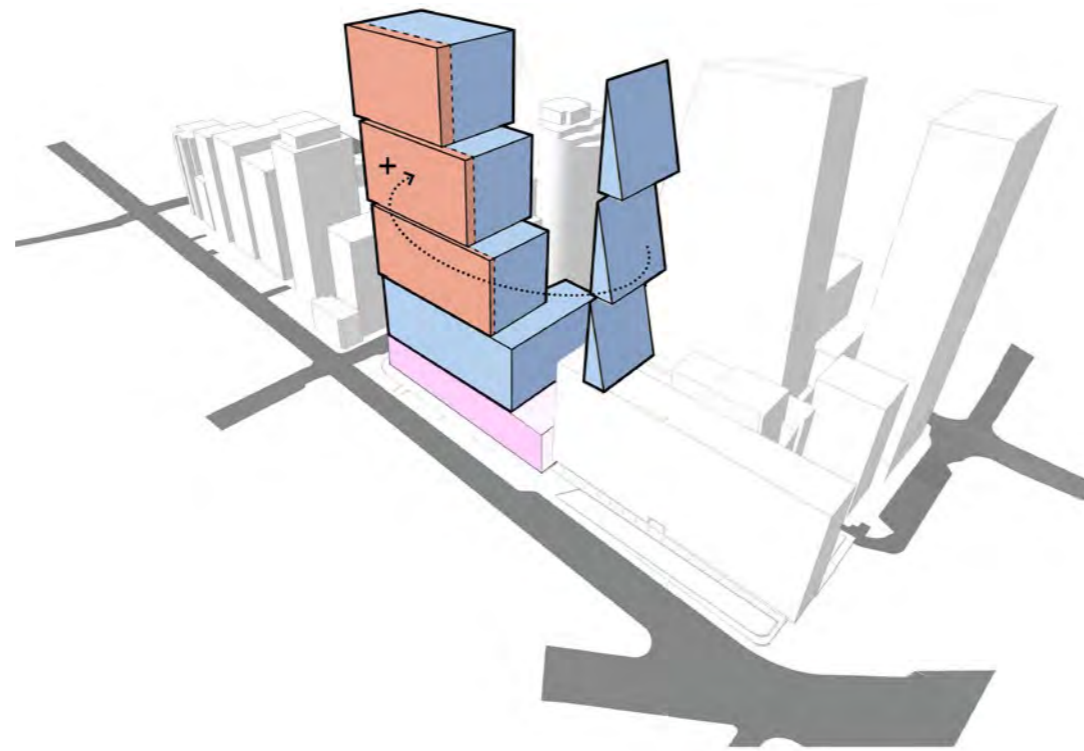
Tapering the southern extent of the tower form increases amenity to Denison Street and the through-site link creating an improved pedestrian experience.



VIEW FROM THROUGH-SITE LINK BEFORE TAPERING TOWER FORM

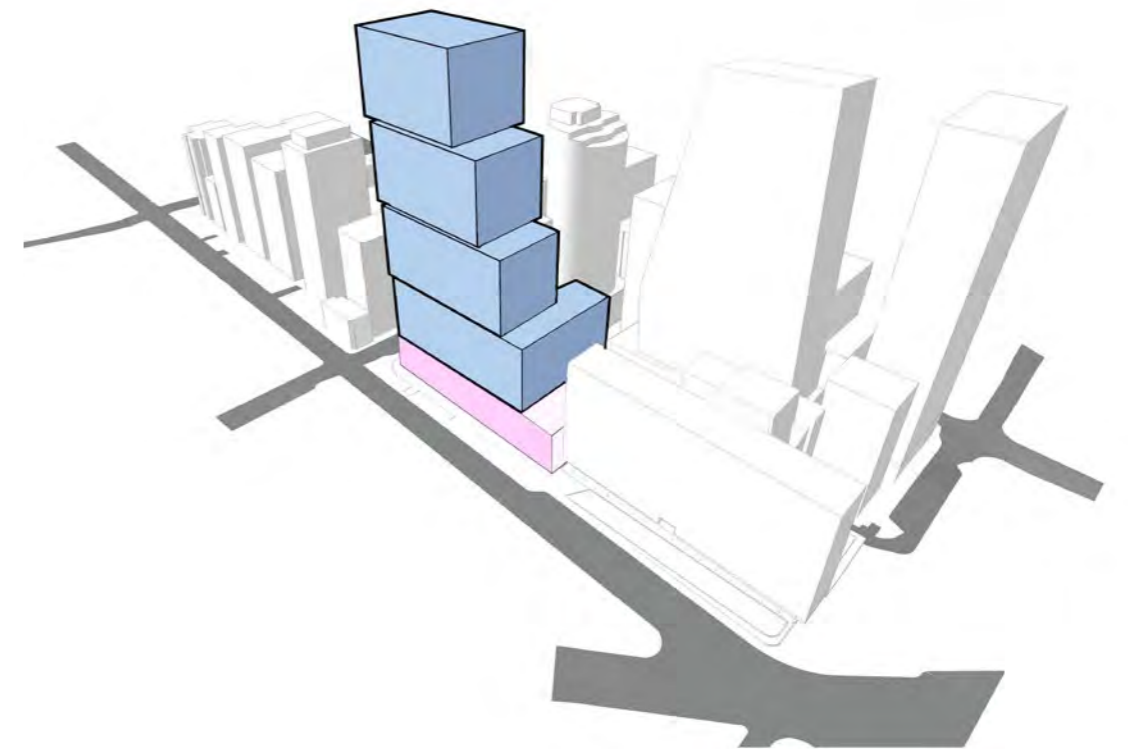


VIEW FROM THROUGH-SITE LINK WITH TAPERING TOWER FORM



REDISTRIBUTE AREA LOST FROM SOUTHERN TAPER

The area lost in the rationalisation of the tower floorplates is redistributed to the western facade. This redistribution of area further enhances the form of the tower allowing it to read as a stepping form in three dimensions.



INDICATIVE DESIGN BUILDING FORM

The indicative building form is a subtly stepping tower form that creates an opportunity for a series of sky gardens overlooking the Sydney Harbour and the North Sydney Skyline.

6.2 DESIGN STRATEGY PUBLIC INTERFACE

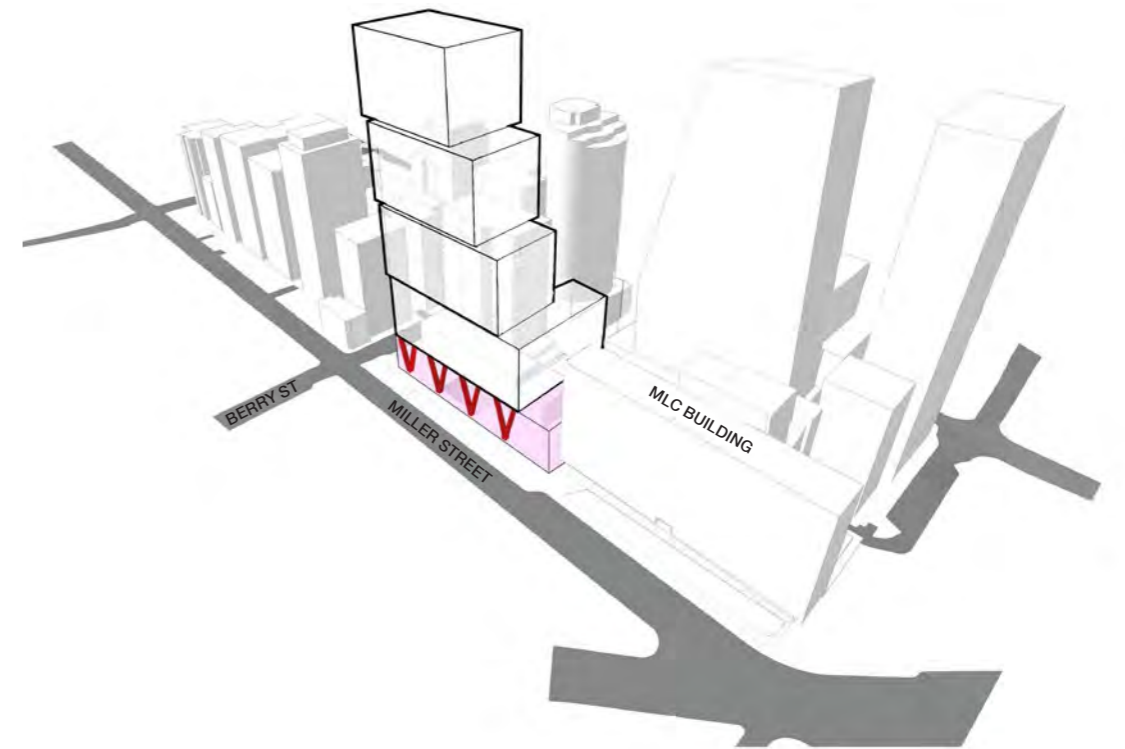
PUBLIC INTERFACE

Although the integrated station development's interface within the public domain is more relevant to the Victoria Cross Station design, one of the key considerations for the indicative OSD design was the impact of the tower structure on the ground plane. The proposed 'Y' columns minimise the impact of the indicative design on the public interface of the Victoria Cross Station. This allows for the OSD lobby, station entry and concourse level to be virtually 'column free', allowing for unimpeded pedestrian flow and ease of way finding.

The public domain is part of the CSSI Approval but will be designed in collaboration with the OSD to ensure the public domain is integrated with the Station and OSD.

Lifting the tower above the ground creates a public space that is further enhanced with the expression of the 'Y' columns. The public domain continues into the space under the tower providing a high level of public amenity.

Our vision is to transform North Sydney's CBD through the creation of a new commercial development that is integrated with the Victoria Cross Station.



MINIMISE THE IMPACT OF THE OSD ON THE PUBLIC INTERFACE

A series of 'heroic' transfer columns create a civic scale colonnade that distinguishes the tower from the Victoria Cross Station.



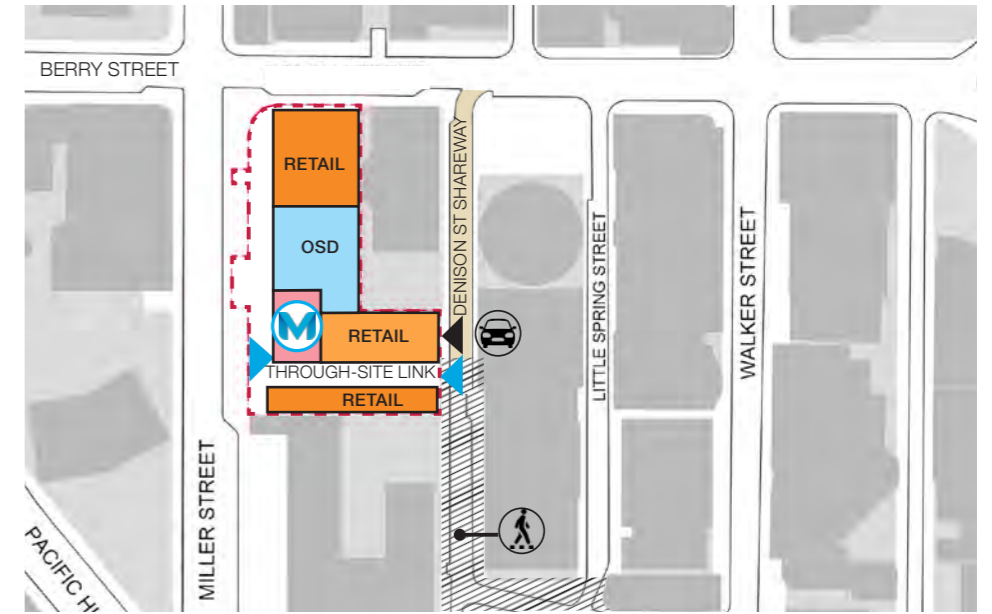
CONCEPT PERSPECTIVE OF THE VICTORIA CROSS STATION AND OSD

6.3 DESIGN STRATEGY THROUGH SITE LINK

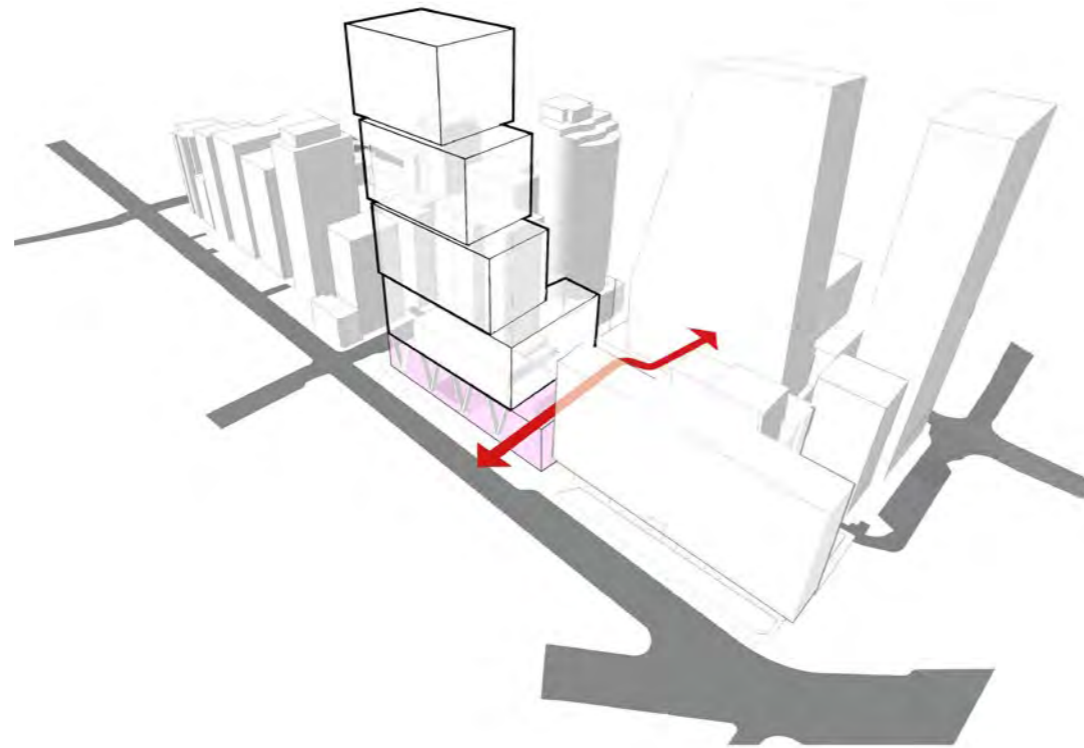
THROUGH-SITE LINK

The through-site link forms part of the CSSI Approval. However to demonstrate the design strategy for the Integrated Station Development the following diagrams illustrate the proposed east-west pedestrian connection from Miller Street to Denison Street to connect to a future link between Denison Street and Walker Street.

- KEY:
- OSD Lobby
 - Station Entry
 - Retail
 - Pedestrian Entry
 - Vehicular Entry
 - Proposed Pedestrianised Zone

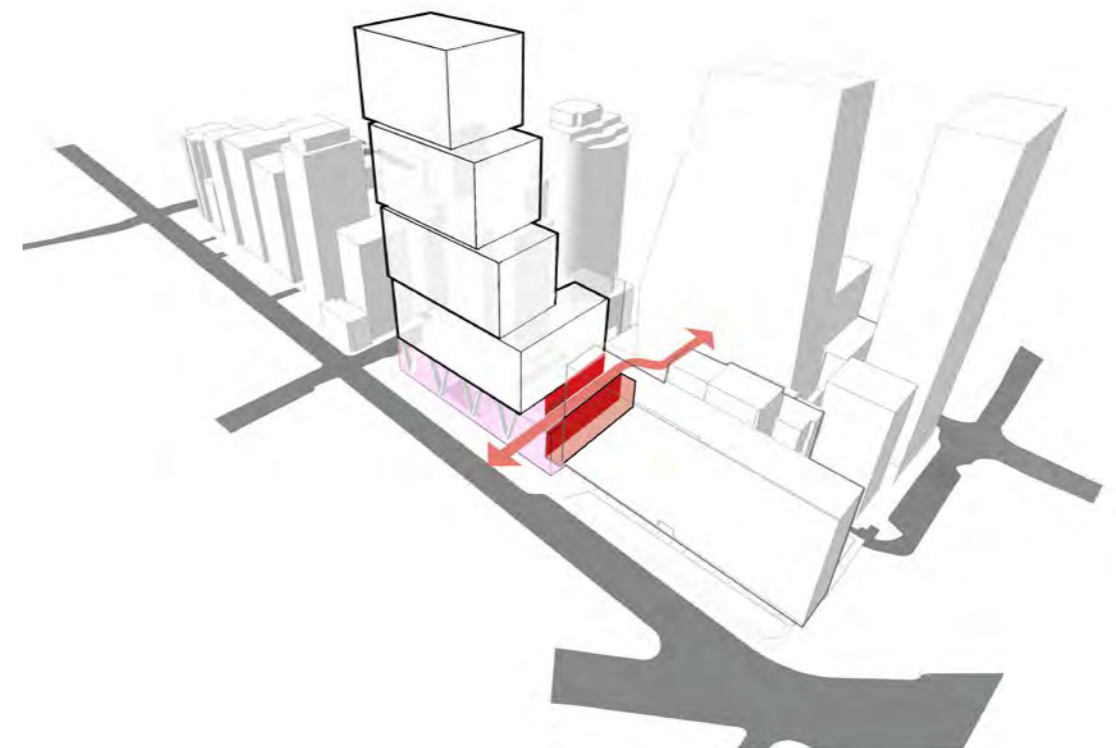


GROUND LEVEL USES AND ENTRIES DIAGRAM



CREATE A THROUGH-SITE LINK

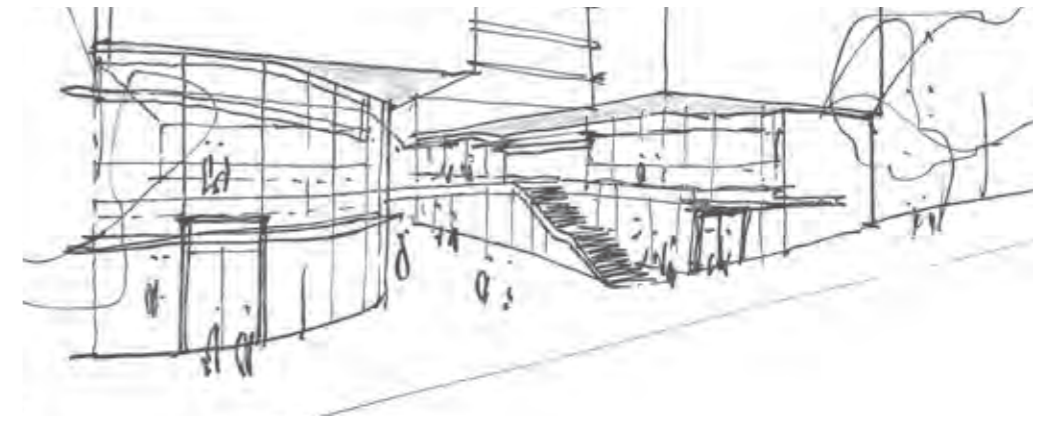
The new through-site link will connect Miller Street to Denison Street and complete the through-site link to Walker Street via 1 Denison Street and the laneway between Little Spring Street and Walker Street.



INSERT A LOW SCALE BUILDING TO DEFINE THROUGH-SITE LINK

The low scale building will define the through site link, creating a human scale, while maintaining views and respecting the scale of the north façade of MLC Building.

The through site link between Miller Street and Denison Street will contribute to the public realm of North Sydney and create a vibrant retail hub. High quality shop fronts will activate the new link creating attractive food and beverage retail opportunities.





VIEW FROM GLADESVILLE BRIDGE



7.0 PLANNING ENVELOPE

7.1 PLANNING ENVELOPE INDICATIVE GROUND FLOOR

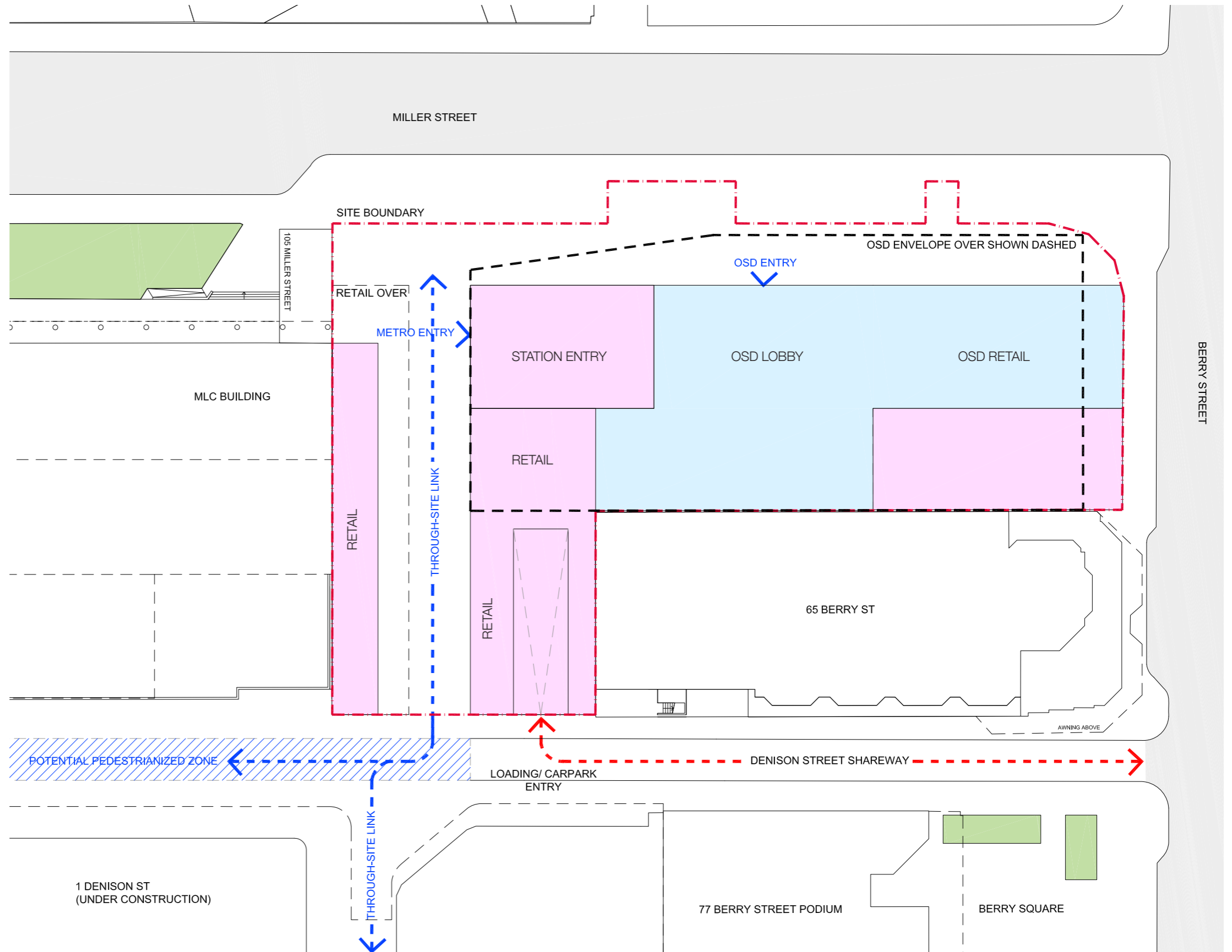
GROUND FLOOR PLAN

The diagram opposite shows the indicative ground floor layout with the station entry, the OSD lobby entry and the low-scale building defining the edge of the through-site link.

Retail tenancies will activate both edges of the through-site link as well as the corner of Miller and Berry Streets. The diagram also indicates the loading dock entry off Denison Street which forms part of the CSSI Approval.

KEY:

- VICTORIA CROSS STATION CSSI APPROVAL - INCLUDES STRUCTURE AND BUILDING INFRASTRUCTURE AND SPACE FOR LIFT CORES, ACCESS, PARKING, RETAIL AND BUILDING SERVICES FOR THE FUTURE OSD
- OSD CONCEPT SSDA BUILDING ENVELOPE APPROXIMATE OSD LOBBY LOCATION- INCLUDES RETAIL, CORE AND PLANT
- PEDESTRIANISED ZONE
- APPROXIMATE LOCATION OF TOWER ENVELOPE OVER
- PEDESTRIAN MOVEMENT
- VEHICULAR MOVEMENT





CONCEPT PERSPECTIVE OF THE VICTORIA CROSS STATION AND OSD VIEWED FROM MILLER STREET

7.2 BUILDING ENVELOPE ELEVATIONS

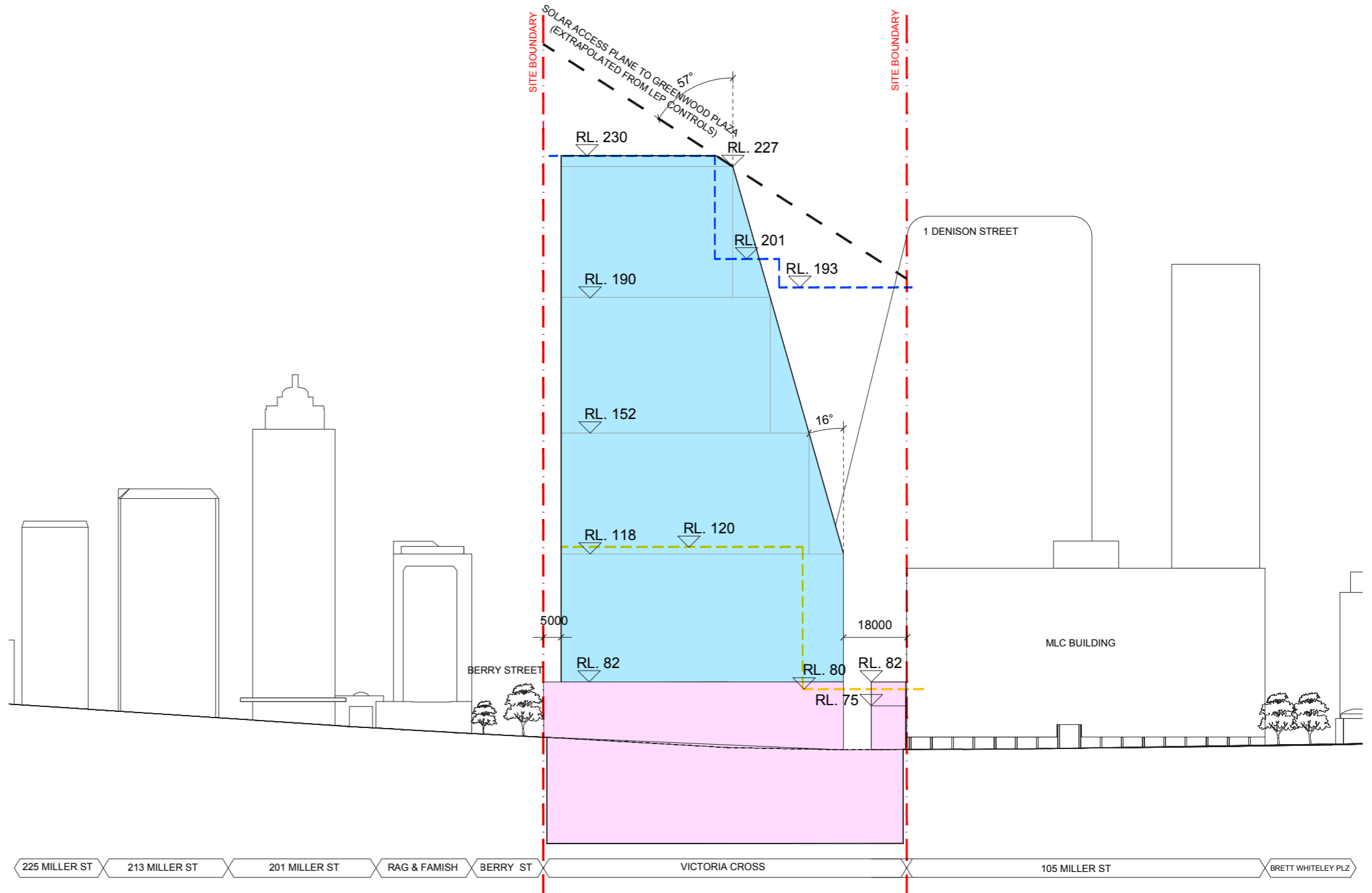
WEST ELEVATION

The following elevations demonstrate the extent of the OSD concept SDA building envelope and the extent of the CSSI Approval.

The proposed OSD building envelope has a maximum height of RL 230 at the northern portion of the site and a height of RL 118 at the southern end.

KEY:

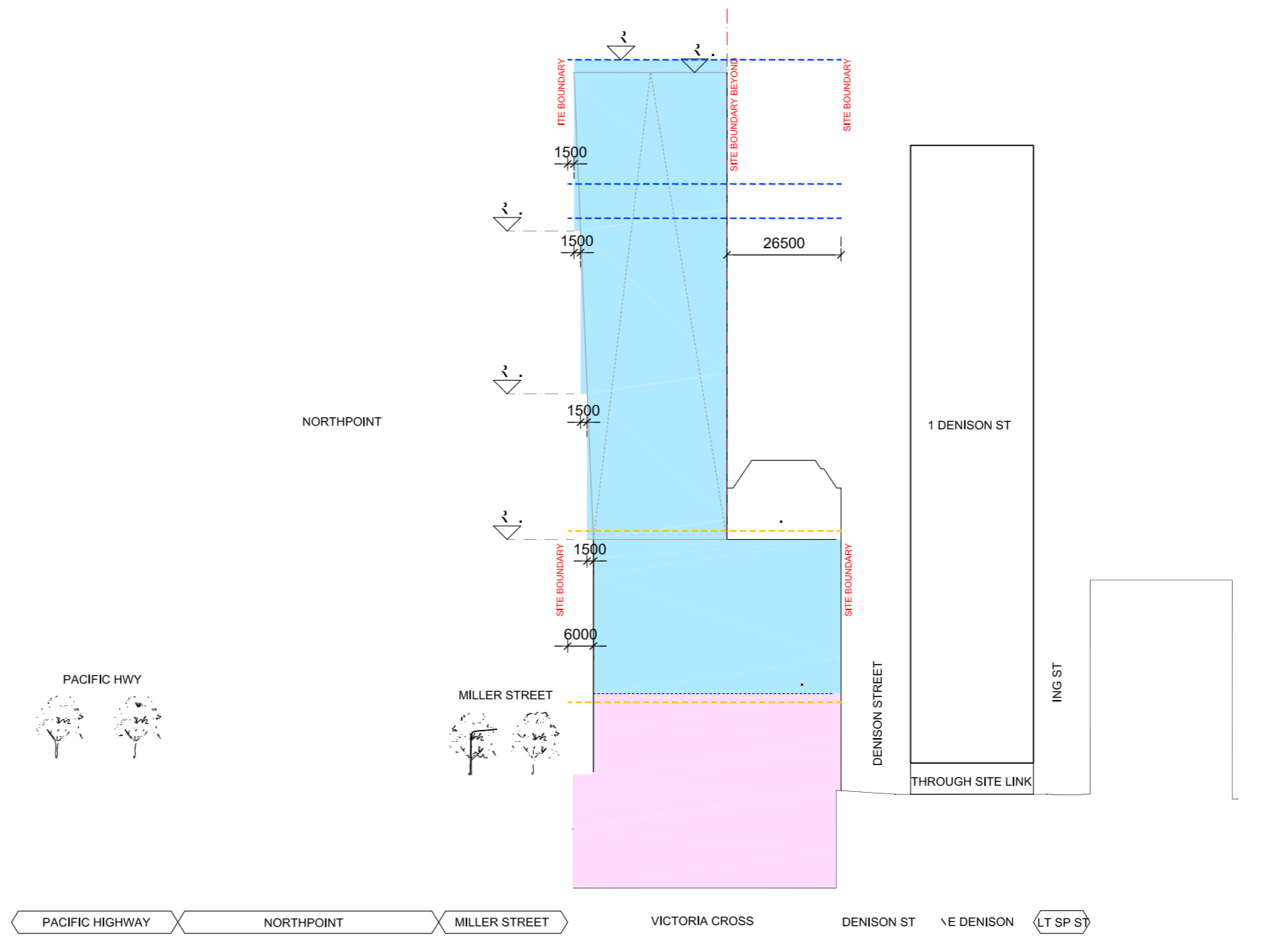
- - - MAXIMUM BUILDING HEIGHT NORTH SYDNEY CENTRE PLANNING PROPOSAL (AS AMENDED BY COUNCIL RESOLUTION 19TH MARCH 2018)
- - - MAXIMUM BUILDING HEIGHT NORTH SYDNEY LEP 2013
- VICTORIA CROSS STATION CSSI APPROVAL - INCLUDES STRUCTURE AND BUILDING INFRASTRUCTURE AND SPACE FOR LIFT CORES, ACCESS, PARKING, RETAIL AND BUILDING SERVICES FOR THE FUTURE OSD
- OSD CONCEPT SDA BUILDING ENVELOPE INCLUDES OSD AREAS INSIDE THE CSSI 'SHELL' BELOW GROUND AND IN THE PODIUM LEVELS



The height of the building envelope has an important role in defining the future built form on the site. The building envelope has been devised to allow the tower massing to be located to the north to maximise amenity and light to the through-site link.

SOUTH ELEVATION

The diagram opposite demonstrates that the concept SSDA building envelope is set back 6m from Miller Street to a height of RL 118. Between RL 118 and RL 190, the building steps forward in 1.5m increments to a setback of 1.5m from the Miller Street property boundary above RL 190 to RL 230.



7.3 BUILDING ENVELOPE AXONOMETRICS

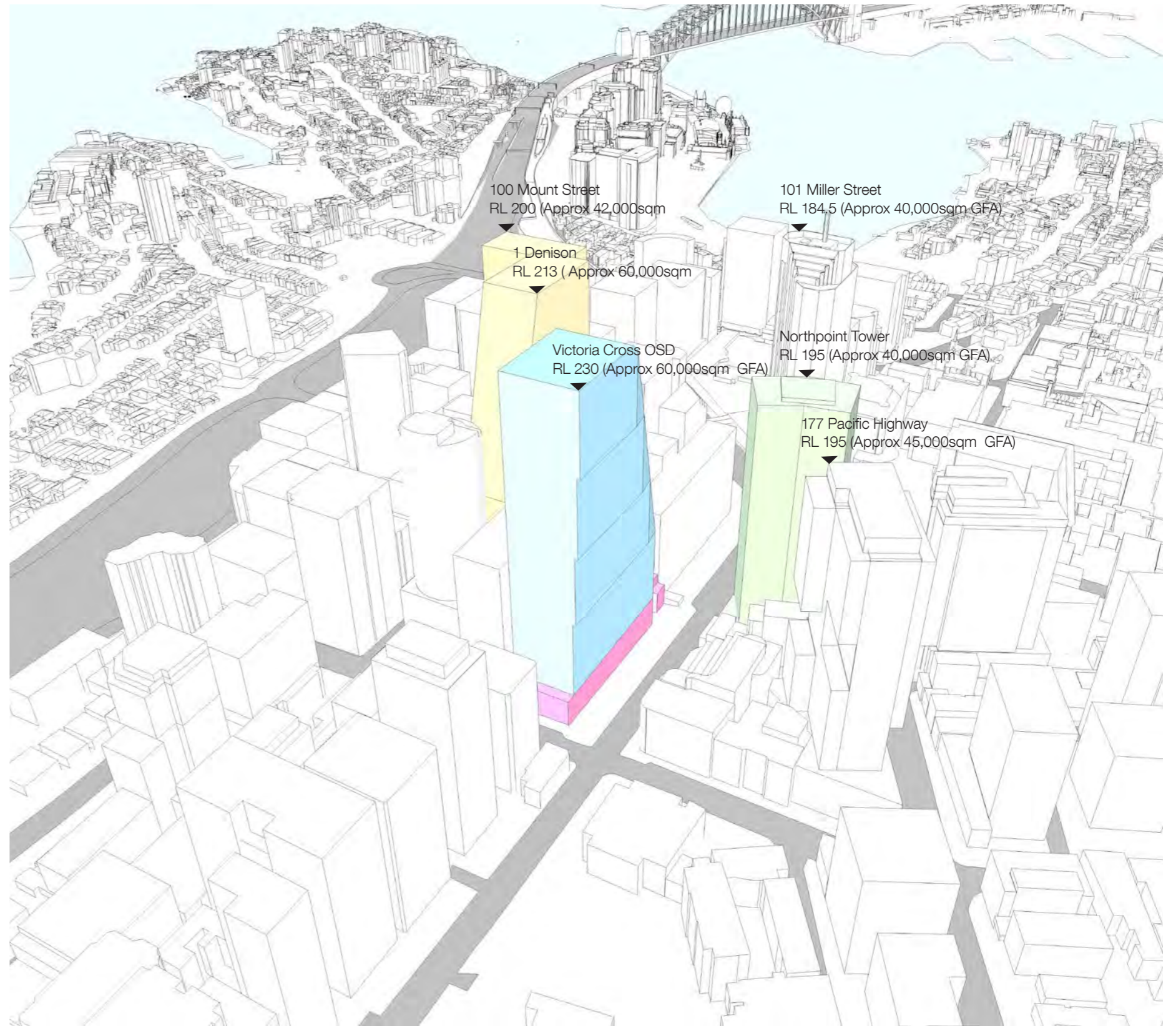
AXONOMETRICS

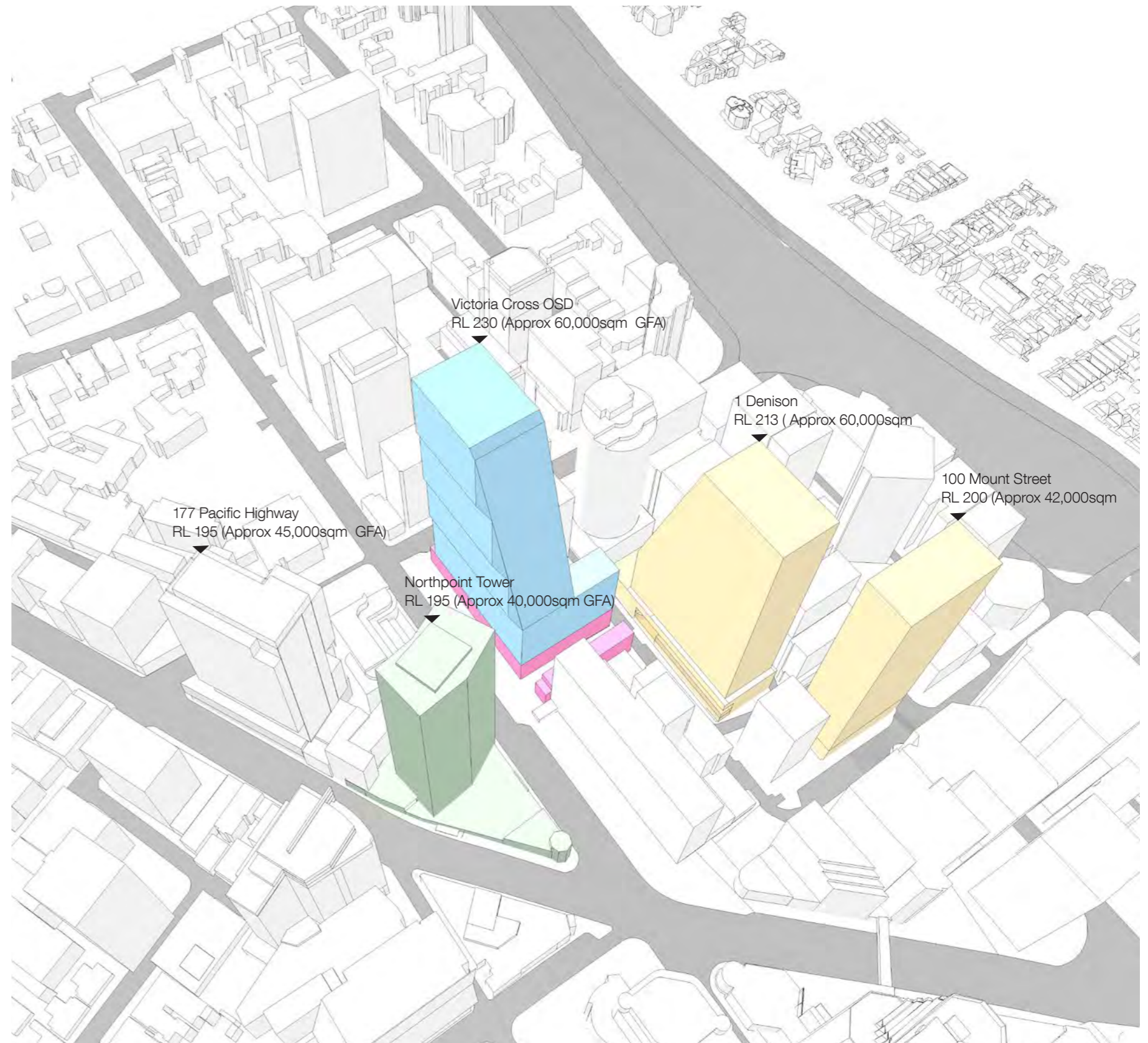
The following axonometric diagrams demonstrate the extent of the OSD concept SSDA building envelope and the extents of the CSSI Approval.

The OSD concept SSDA building envelope has an 'L' shaped floor plate to the lower levels of the building with a frontage to Miller, Berry and Denison Streets, whilst the upper levels of the building are concentrated on the western side of the site fronting Miller Street. The proposed building envelope has a maximum height of RL 230. The southern extent of the OSD slopes down to an RL of 118 with the low-rise portion of the envelope extending through to Denison Street.

KEY:

- VICTORIA CROSS STATION CSSI APPROVAL- INCLUDES STRUCTURE AND BUILDING INFRASTRUCTURE AND SPACE FOR LIFT CORES, ACCESS, PARKING, RETAIL AND BUILDING SERVICES FOR THE FUTURE OSD
- OSD CONCEPT SSDA BUILDING ENVELOPE - INCLUDES OSD AREAS INSIDE THE CSSI 'SHELL' BELOW GROUND AND IN THE PODIUM LEVELS
- UNDER CONSTRUCTION
- UNDER REFURBISHMENT







VIEW FROM BARANGAROO



8.0 ENVELOPE ANALYSIS

8.1 ENVELOPE ANALYSIS SHADOW ANALYSIS

WINTER SOLSTICE JUNE 21ST

SPECIAL AREAS AND RE1 ZONES

The following diagrams demonstrate the shadow impact created by the OSD concept SSDA building envelope in relation to the Special Areas and RE1 zones as identified by the North Sydney Centre Map.

The diagrams are generated at the mid-winter solstice, the lowest sun angle (32.7 degrees).

MILLER STREET SPECIAL AREA

The Miller Street Special Area indicated in turquoise is not overshadowed by the concept SSDA building envelope.

ELIZABETH PLAZA

The Elizabeth Plaza Special Area is proposed to be removed under the North Sydney Centre Planning Proposal.

GREENWOOD PLAZA

The Greenwood Plaza Special Area indicated in green is not

KEY:

 MILLER STREET SPECIAL AREA

 ELIZABETH PLAZA

 GREENWOOD PLAZA

 BRETT WHITELEY PLAZA

 EXISTING SHADOW

 OSD CONCEPT SSDA BUILDING ENVELOPE

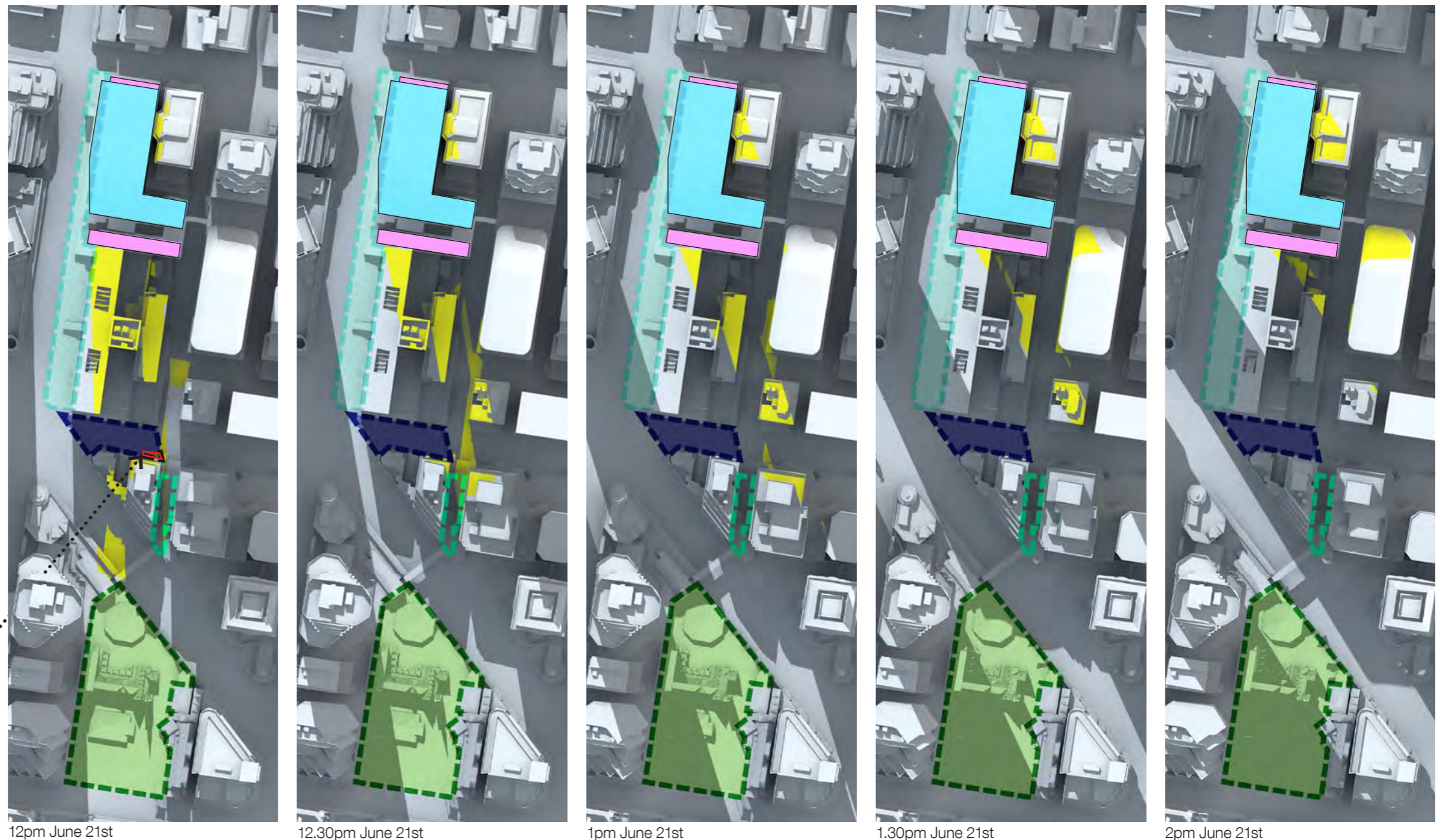
 VICTORIA CROSS STATION CSSI APPROVAL

 OSD SHADOW

 OVSERSHADOWING ISSUE

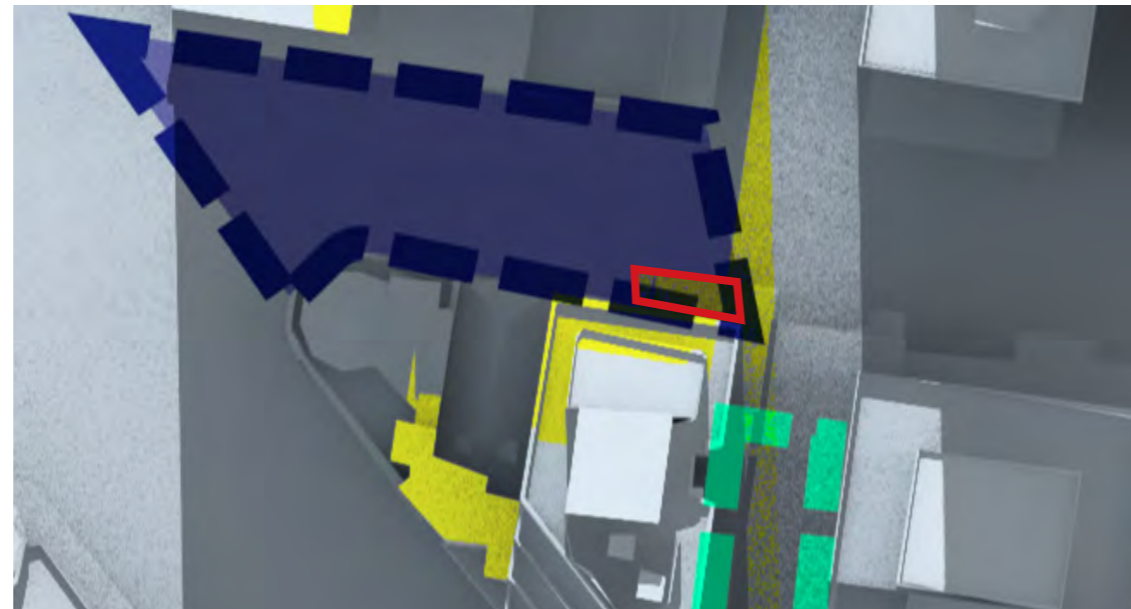
Clause 6.3 (2.) of the North Sydney Local Environment Plan 2013 states that:
 “development consent must not be granted for the erection of a building on land to which the Division applies if:
 (a) The development would result in a net increase in overshadowing between 12 pm and 2 pm on land to which this Division applies that is within Zone RE1 Public Recreation or that is identified as ‘Special Area’ on the North Sydney Centre map.

(It should be noted that The North Sydney Centre Planning Proposal seeks to vary this Clause. Specifically, the amendment proposes that the assessment of shadow impact be limited to the winter solstice and equinox.)



BRETT WHITELEY PLAZA

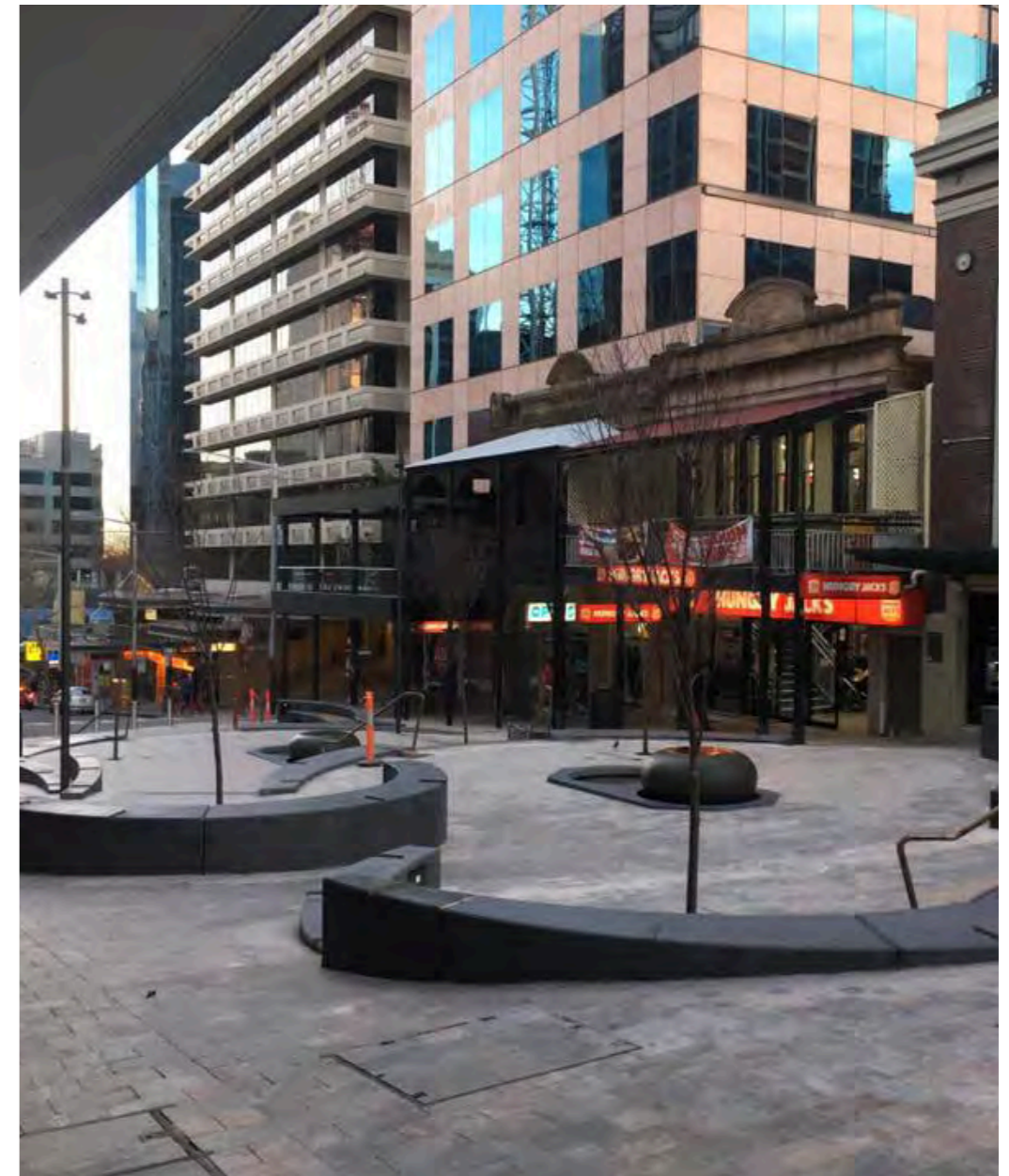
At 12pm on June 21st, there is a minor additional shadow created by the OSD concept SSSA building envelope (37sqm). However as the following diagrams demonstrate the shadow falls on the awning of the building on the south east corner of the plaza and not onto Brett Whiteley Plaza.



Detail view of the shadow created by the concept SSSA envelope on Brett Whiteley Plaza at 12pm June 21st



Overlay of extent of shadow created by the OSD concept SSSA building envelope on Brett Whiteley Plaza at 12pm June 21st



Brett Whiteley Plaza

8.1 ENVELOPE ANALYSIS SHADOW ANALYSIS

WINTER SOLSTICE JUNE 21ST - 12pm to 2pm

BRETT WHITELEY PLAZA

The OSD concept SSDA building envelope creates overshadowing for approximately 25 minutes for a maximum area of 37m² on an existing awning that projects over Brett Whiteley Plaza, therefore there is no net increase in overshadowing.

The integrated station development achieves an average area gain in solar access of 195sqm over 120 minutes on the Miller Street Special Area.

The result is a net gain in solar access of 158.4sqm between 12pm and 2pm on June 21st to the Special Areas and RE1 Zones.

The calculations are as follows:

Average area of solar gain: $(218+166+156+140+120) / 5 = 160\text{m}^2$









Average area of overshadowing: $37 / 5 = 7.4\text{m}^2$

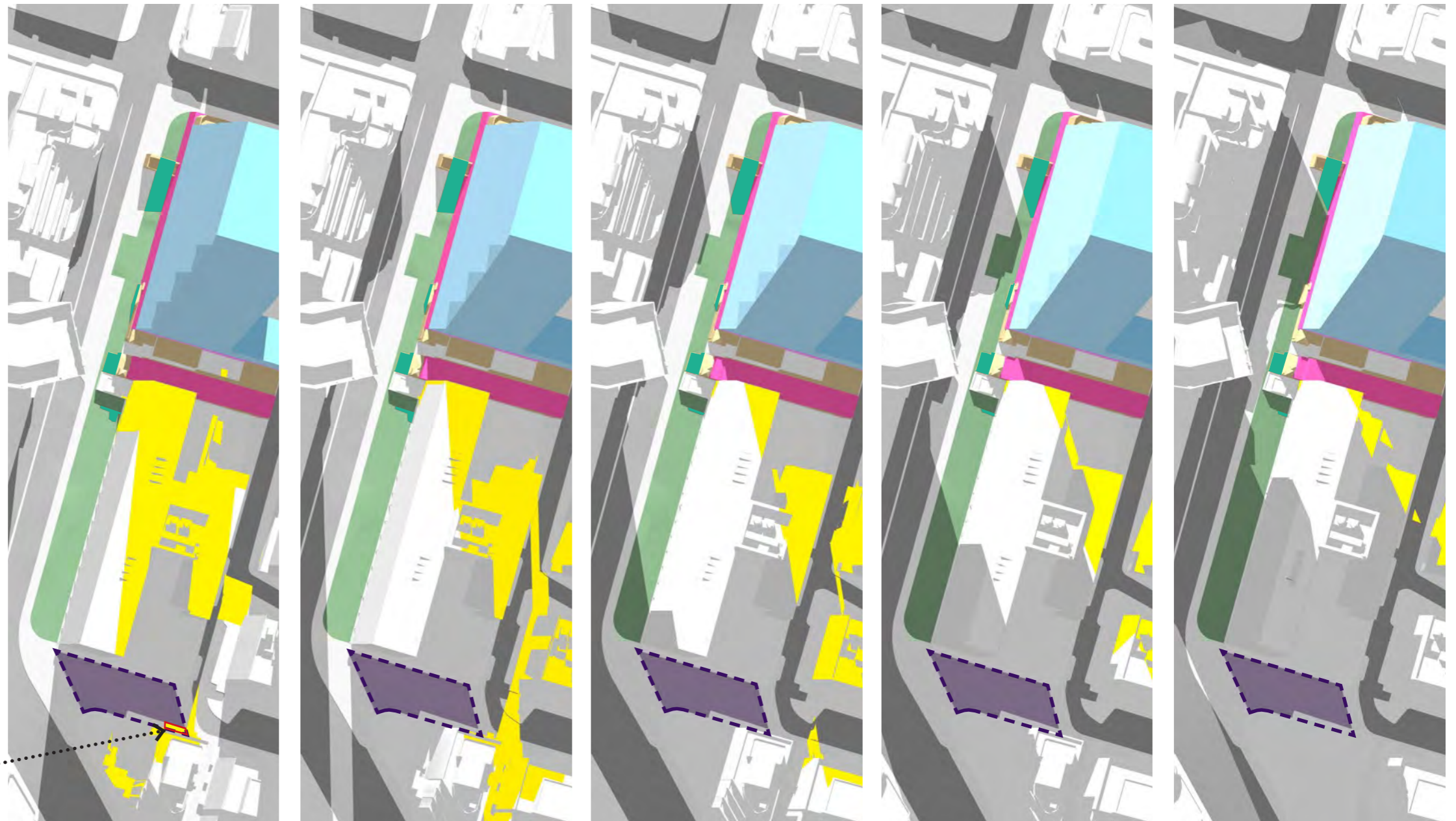
$7.4\text{m}^2 / (120/25) = 1.6\text{m}^2$ average overshadowing over 120 minutes

$160\text{m}^2 / (120/120) = 160\text{m}^2$ average solar gain over 120 minutes

$160\text{m}^2 - 1.6\text{m}^2 = 158.4\text{m}^2$ average solar gain over 120 minutes

KEY:

-  BRETT WHITELEY PLAZA
-  MILLER STREET SPECIAL AREA
-  VICTORIA CROSS STATION CSSI APPROVAL
-  EXISTING SHADOW
-  OSD CONCEPT SSDA BUILDING ENVELOPE
-  OSD SHADOW
-  SOLAR ACCESS GAINED
-  OVERSHADOWING ISSUE



12pm June 21st
Area of solar gain: 217.7m²
Area of overshadowing : 37m²

12.30pm June 21st
Area of solar gain: 164.5m²

1pm June 21st
Area of solar gain: 155.7m²

1.30pm June 21st
Area of solar gain: 139.3m²

2pm June 21st
Area of solar gain: 120.3m²

SUMMER SOLSTICE DECEMBER 21ST - 12pm to 2pm

MILLER STREET SPECIAL AREA

The Miller Street Special Area indicated in turquoise is not overshadowed by the OSD concept SSDA building envelope.

ELIZABETH PLAZA

The Elizabeth Plaza Special Area is proposed to be removed under the North Sydney Centre Planning Proposal.

BRETT WHITELEY PLAZA

The Brett Whiteley Plaza Special Area indicated in purple is not overshadowed by the OSD concept SSDA building envelope.

GREENWOOD PLAZA

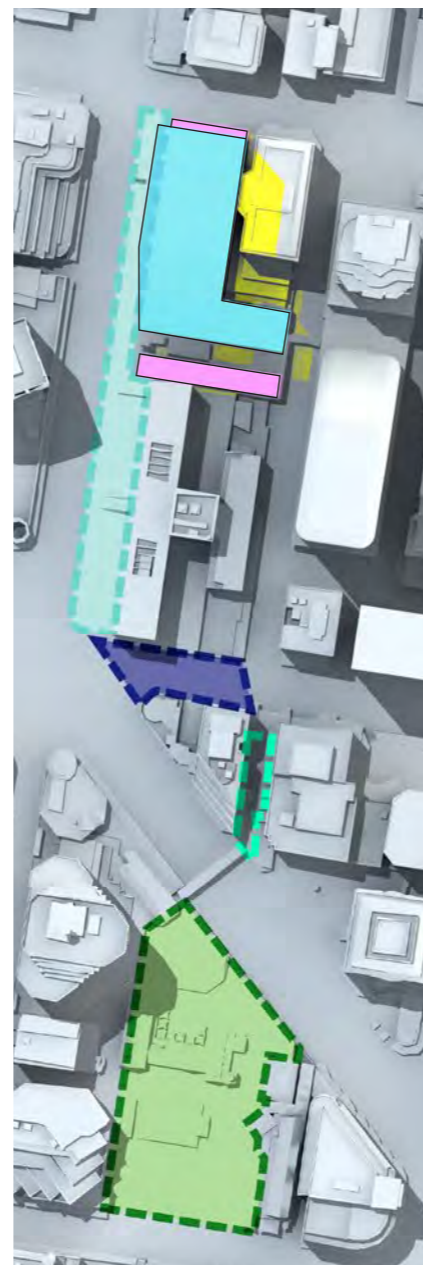
The Greenwood Plaza Special Area indicated in green is not overshadowed by the OSD concept SSDA building envelope.

KEY:

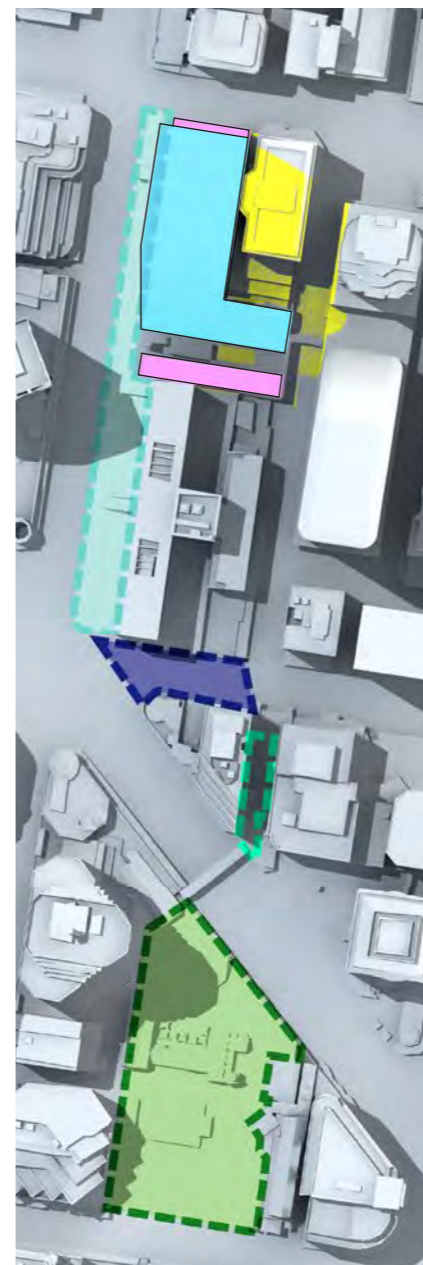
-  MILLER STREET SPECIAL AREA
-  ELIZABETH PLAZA
-  GREENWOOD PLAZA
-  BRETT WHITELEY PLAZA
-  EXISTING SHADOW
-  OSD CONCEPT SSDA BUILDING ENVELOPE
-  VICTORIA CROSS STATION CSSI APPROVAL
-  OSD SHADOW



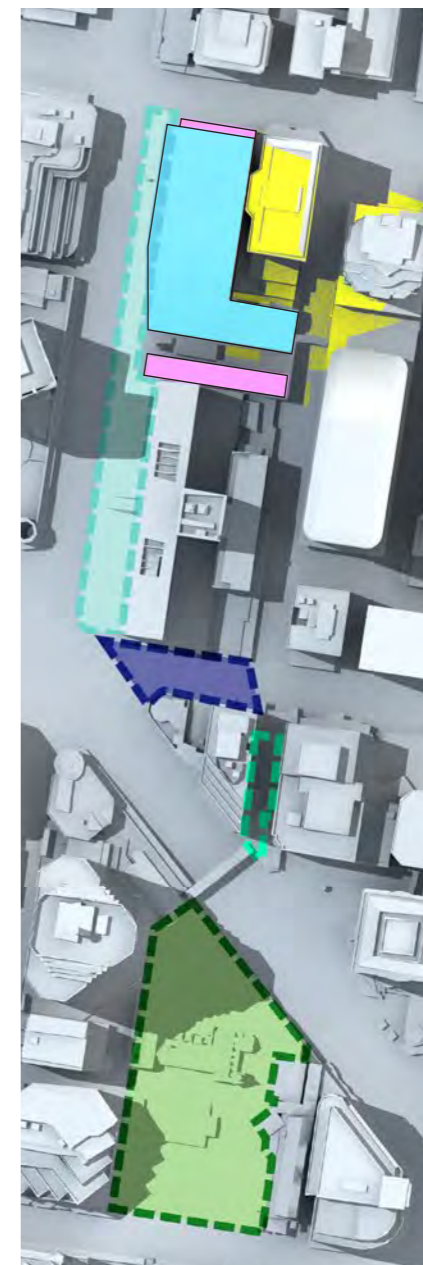
12pm December 21st



12.30pm December 21st



1pm December 21st



1.30pm December 21st



2pm December 21st

8.1 ENVELOPE ANALYSIS SHADOW ANALYSIS

SPRING EQUINOX SEPTEMBER 21ST 12pm to 2pm

MILLER STREET SPECIAL AREA

The Miller Street Special Area indicated in turquoise is not overshadowed by the OSD concept SSDA building envelope.

ELIZABETH PLAZA

The Elizabeth Plaza Special Area is proposed to be removed under the North Sydney Centre Planning Proposal.

BRETT WHITELEY PLAZA

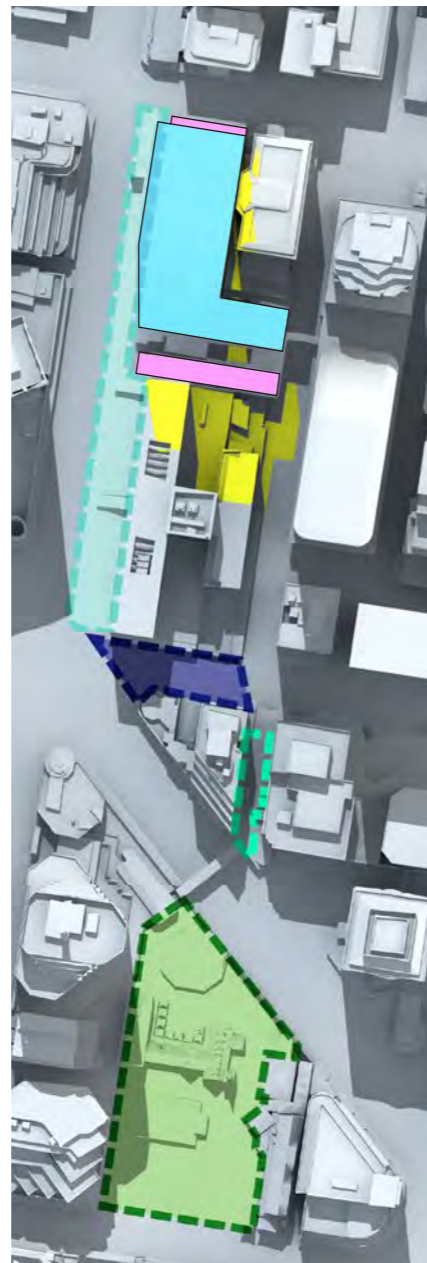
The Brett Whiteley Plaza Special Area indicated in purple is not overshadowed by the OSD concept SSDA building envelope.

GREENWOOD PLAZA

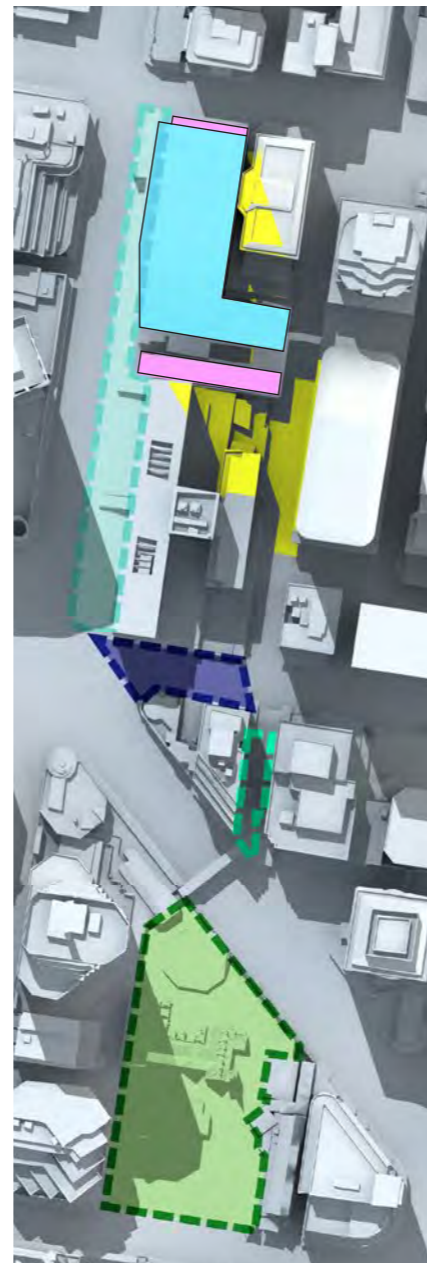
The Greenwood Plaza Special Area indicated in green is not overshadowed by the OSD concept SSDA building envelope.

KEY:

-  MILLER STREET SPECIAL AREA
-  ELIZABETH PLAZA
-  GREENWOOD PLAZA
-  BRETT WHITELEY PLAZA
-  EXISTING SHADOW
-  OSD CONCEPT SSDA BUILDING ENVELOPE
-  VICTORIA CROSS STATION APPROVAL CSSI
-  OSD SHADOW
-  OVERSHADOWING ISSUE



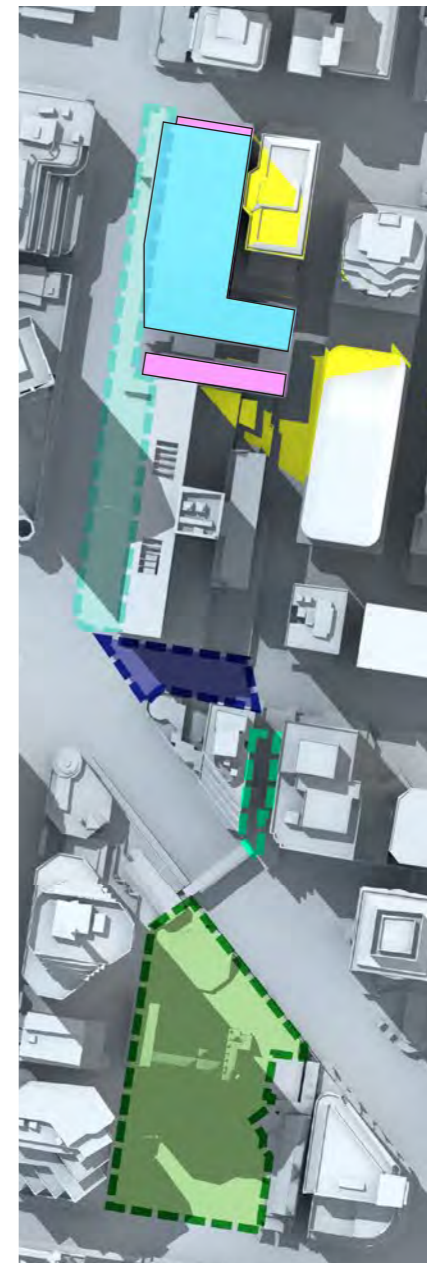
12pm September 21st



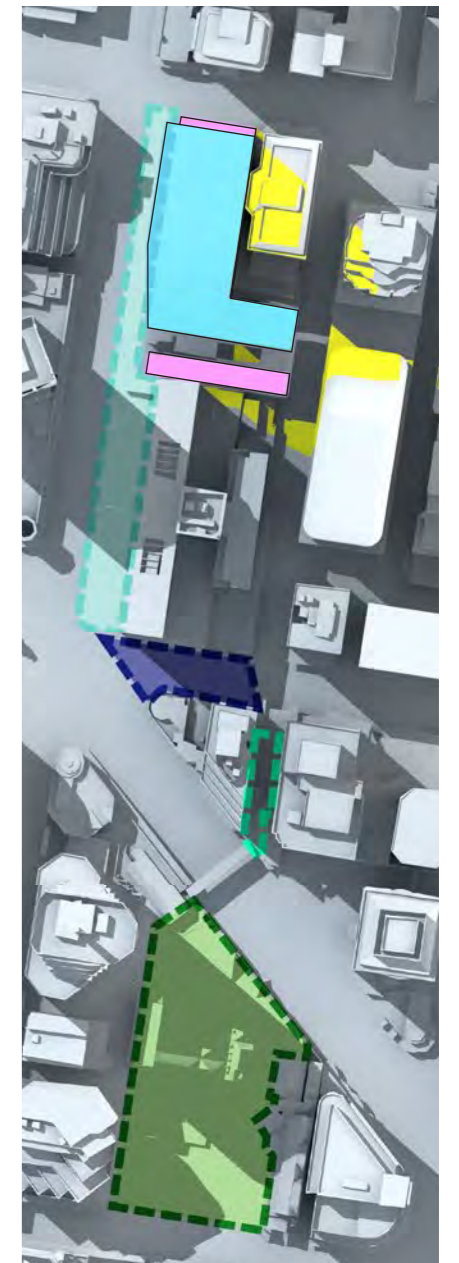
12.30pm September 21st



1pm September 21st



1.30pm September 21st



2pm September 21st

AUTUMN EQUINOX MARCH 21ST 12pm to 2pm

MILLER STREET SPECIAL AREA

There is minimal overshadowing of the Miller Street Special Area created by the OSD concept SSSA building envelope. This minimal overshadowing will be explored in more detail on the next page.

ELIZABETH PLAZA

The Elizabeth Plaza Special Area is proposed to be removed under the North Sydney Centre Planning Proposal.

BRETT WHITELEY PLAZA

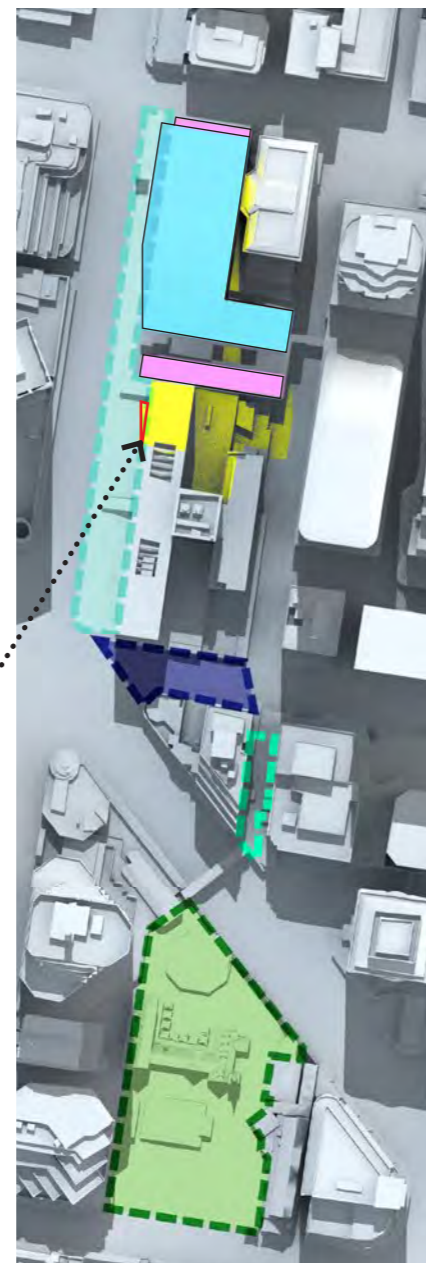
The Brett Whiteley Plaza Special Area indicated in purple is not overshadowed by the OSD concept SSSA building envelope.

GREENWOOD PLAZA

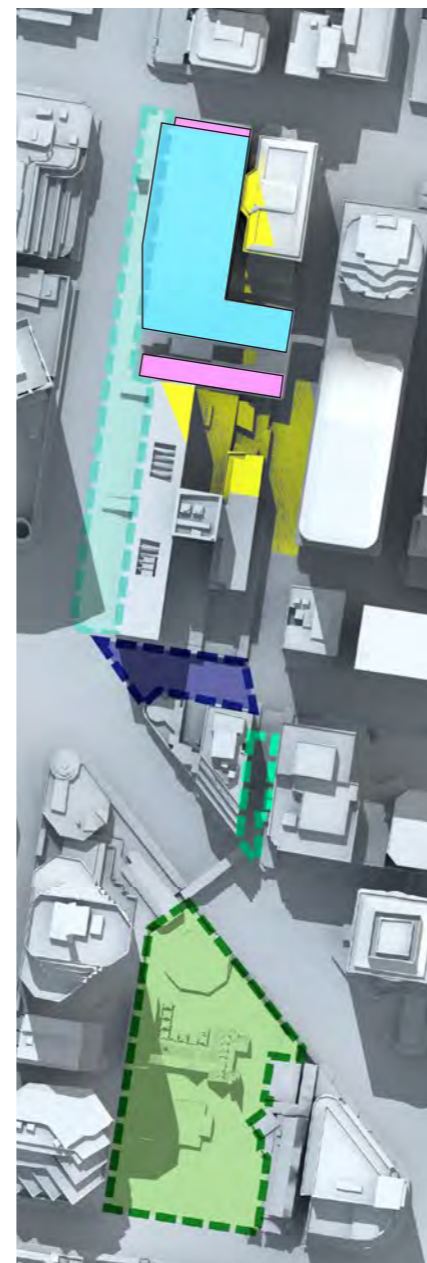
The Greenwood Plaza Special Area indicated in green is not overshadowed by the OSD concept SSSA building envelope.

KEY:

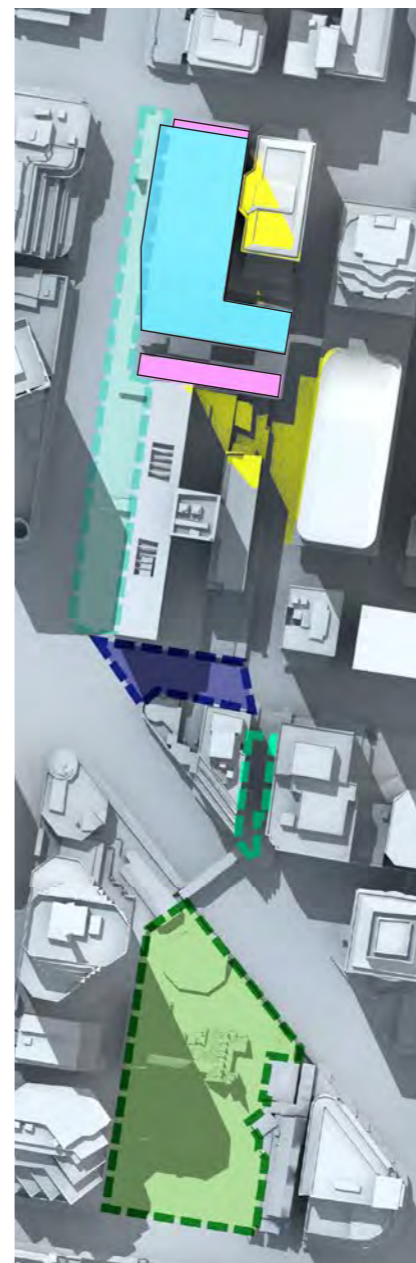
-  MILLER STREET SPECIAL AREA
-  ELIZABETH PLAZA
-  GREENWOOD PLAZA
-  BRETT WHITELEY PLAZA
-  EXISTING SHADOW
-  OSD CONCEPT SSSA BUILDING ENVELOPE
-  VICTORIA CROSS STATION CSSI APPROVAL
-  OSD SHADOW
-  OVERSHADOWING ISSUE



12pm March 21st



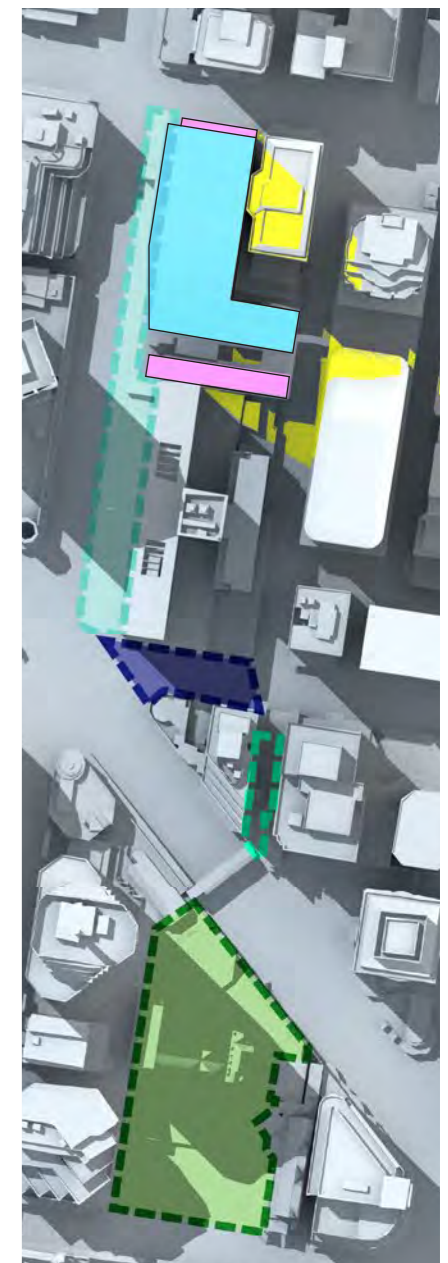
12.30pm March 21st



1pm March 21st



1.30pm March 21st



2pm March 21st

8.1 ENVELOPE ANALYSIS SHADOW ANALYSIS

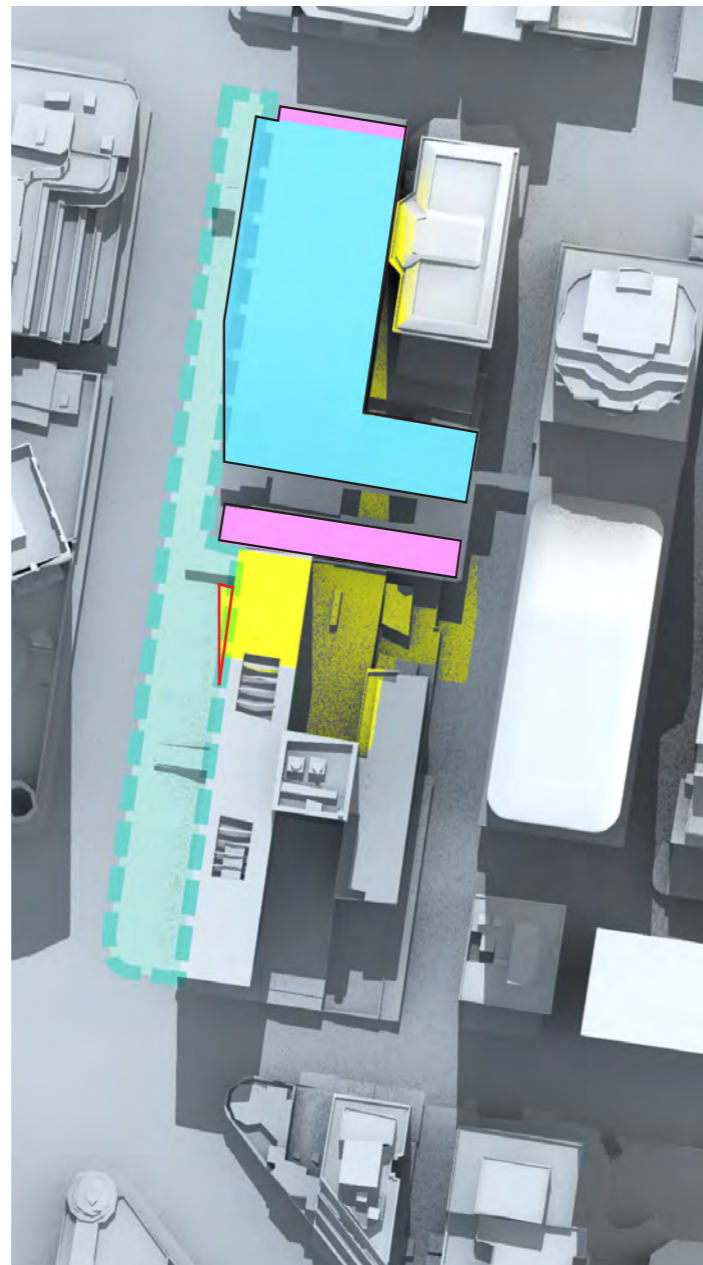
AUTUMN EQUINOX MARCH 21ST

MILLER STREET SPECIAL AREA

The following diagrams show that there is some minimal overshadowing to the Miller Street Special Area at 12pm. However by 12.15pm there is zero overshadowing.

KEY:

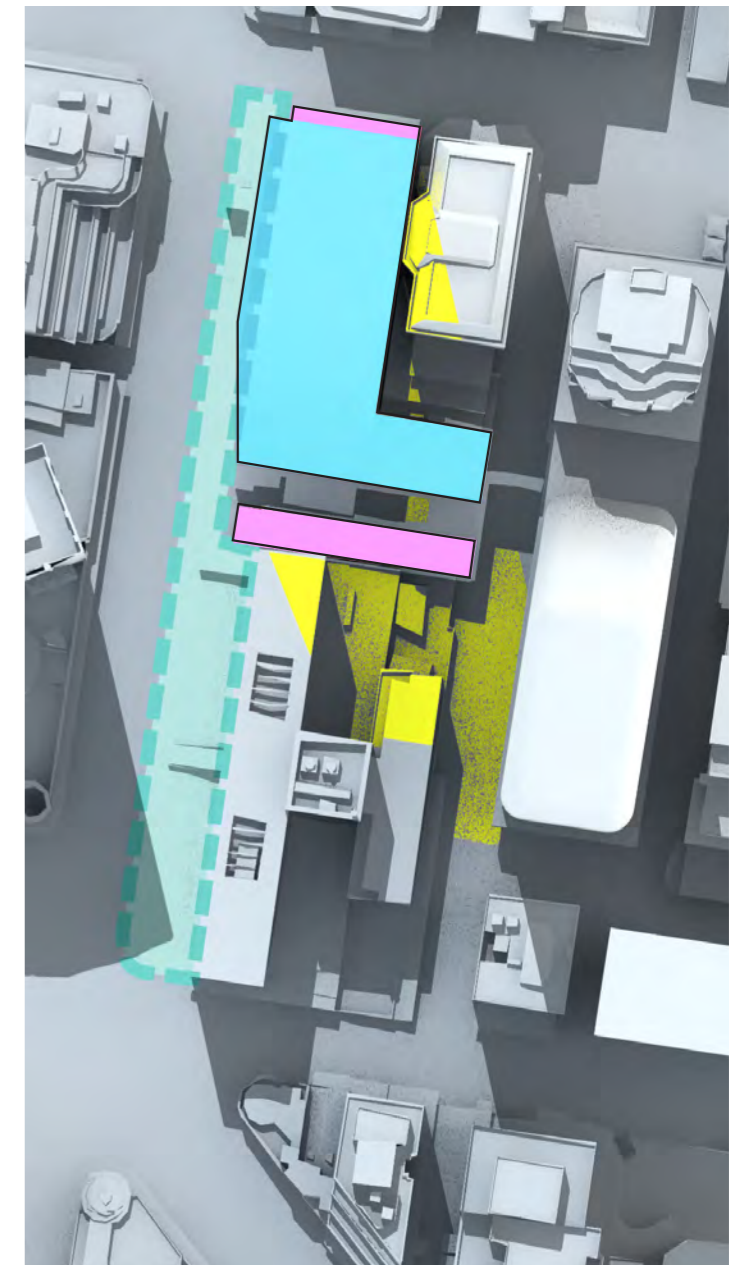
-  MILLER STREET SPECIAL AREA
-  ELIZABETH PLAZA
-  GREENWOOD PLAZA
-  BRETT WHITELEY PLAZA
-  EXISTING SHADOW
-  OSD CONCEPT SSSA ENVELOPE
-  VICTORIA CROSS STATION CSSI
-  OSD SHADOW
-  OVERSHADOWING ISSUE



12pm March 21st



12.15pm March 21st



12.30pm March 21st

AUTUMN EQUINOX MARCH 21ST

MILLER STREET SPECIAL AREA

The OSD concept SSSA building envelope creates overshadowing for approximately 10 minutes for an average area of 33 m2 at 12pm.

The integrated station development achieves an average area gain in solar access of 60.5 sqm over 120 minutes between 12pm and 2pm. The result is a net gain in solar access of 60.2 sqm between 12pm and 2pm on March 21st to the Miller Street Special Area.

The calculations are as follows:

Average area of solar gain: $(69+68+66+64+62+62+60+59+59+59+58+59+41) / 12 = 60.5 \text{ m}^2$

Average area of overshadowing: $33 / 12 = 2.75 \text{ m}^2$

$2.75 \text{ m}^2 / (120/10) = 0.3 \text{ m}^2$ average overshadowing over 120 minutes

$60.5 \text{ m}^2 / (120/120) = 60.5 \text{ m}^2$ average overshadowing over 120 minutes

$60.5 \text{ m}^2 - 0.3 \text{ m}^2 = 60.2 \text{ m}^2$ average solar gain over 120 minutes

KEY:

- MILLER STREET SPECIAL AREA
- VICTORIA CROSS STATION CSSI APPROVAL
- EXISTING SHADOW
- OSD CONCEPT SSSA BUILDING ENVELOPE
- OSD SHADOW
- SOLAR ACCESS GAINED
- OVERSHADOWING ISSUE



12.00pm March 21st
Area of solar gain: 68.6 m2
Area of overshadowing : 33 m2



1.00pm March 21st
Area of solar gain: 60 m2



12.10pm March 21st
Area of solar gain: 68.2 m2



1.10pm March 21st
Area of solar gain: 59 m2



12.20pm March 21st
Area of solar gain: 65.5 m2



1.20pm March 21st
Area of solar gain: 59 m2



12.30pm March 21st
Area of solar gain: 64.2 m2



1.30pm March 21st
Area of solar gain: 58 m2



12.40pm March 21st
Area of solar gain: 62 m2



1.40pm March 21st
Area of solar gain: 59 m2



12.50pm March 21st
Area of solar gain: 62 m2



1.50pm March 21st
Area of solar gain: 41 m2

8.2 ENVELOPE ANALYSIS SHADOW ANALYSIS

WINTER SOLSTICE JUNE 21ST

RESIDENTIAL AREAS

The following diagrams demonstrate the shadow impact created by the OSD concept SSDA building envelope to the residential areas outside the North Sydney Centre. The diagrams are generated at the mid-winter solstice, the lowest sun angle (32.7 degrees).

There is no additional shadow created by the OSD concept SSDA building envelope from 9am till 2.30pm. However, at 3pm it is evident that the building envelope creates a shadow on a total of 3 residential properties on Whaling Road. The diagrams in the next section explore this in more detail.

Clause 6.3 (3.) of the North Sydney Centre Planning Proposal states that: Development consent for development on land to which this Division applies may be granted for development that would exceed the maximum height of buildings shown for the land on the Height of Buildings Map if the consent authority is satisfied that any increase in overshadowing between 9 am and 3 pm will not result in any dwelling located on land to which this Division does not apply:

(a) receiving less than 2 hours of direct sunlight to any window of a habitable room or principle private open space;

(b) or where any window to a habitable room or principle private open space currently receives less than 2 hours of direct sunlight, the amount of direct sunlight access must not be further reduced.



12pm June 21st









12.30pm June 21st



1pm June 21st

KEY:

-  RESIDENTIAL AREA
-  OSD CONCEPT SSDA BUILDING ENVELOPE
-  VICTORIA CROSS STATION CSSI
-  EXISTING SHADOW
-  OSD SHADOW
-  OVERSHADOWING ISSUE



1.30pm June 21st



2pm June 21st



2.30pm June 21st



3pm June 21st

8.3 ENVELOPE ANALYSIS SHADOW ANALYSIS

WINTER SOLSTICE JUNE 21ST

RESIDENTIAL PROPERTIES

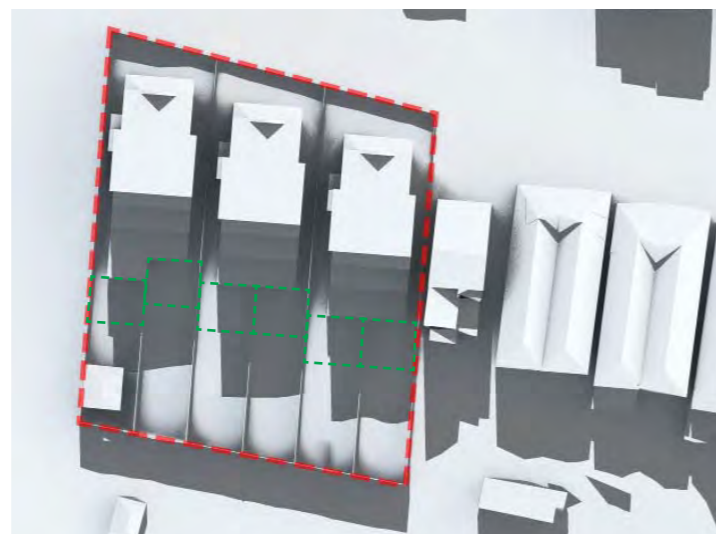
The following diagrams demonstrate the shadow impact created by the OSD concept SSSA building envelope in relation to the residential properties on Whaling Road. The North Sydney Centre Planning Proposal prohibits any additional overshadowing to any window or principle private open space that currently receives less than 2 hours of direct sunlight.

The diagrams show that the windows of residential properties at No's 1,3, 5 and 11 Whaling Road receive at least 2 hours of direct sunlight between 12.30pm and 2.30pm on June 21st. The south facing private open spaces (indicated in a green dashed outline) are not affected by the shadow cast by the OSD concept SSSA building envelope as the shadow falls outside the area defined as the principle private open space.

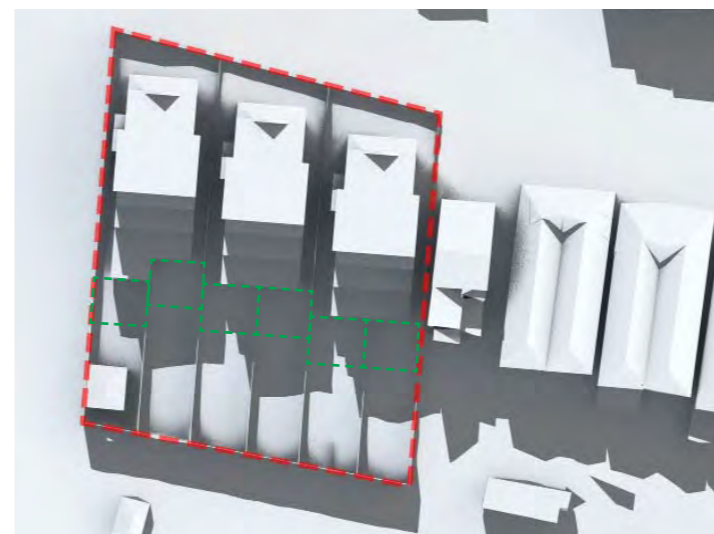
The image below shows the residential property at No.1 Whaling Road. Directly to the west is Alfred Park. Considerable overshadowing is caused by the mature trees that surround the park. We have not taken these into consideration but they would have an impact on the solar access to the property at 1 Whaling Road.



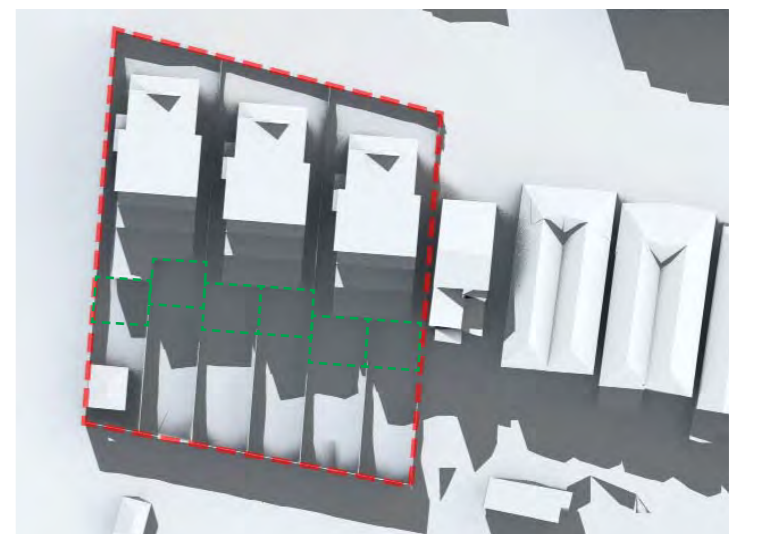
Residential Property at No.1 Whaling Road



12.00pm June 21st



12.30pm June 21st



1pm June 21st

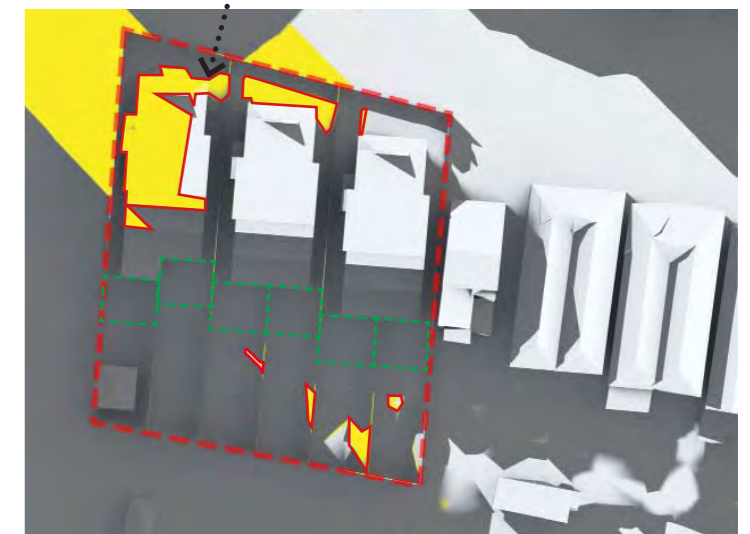
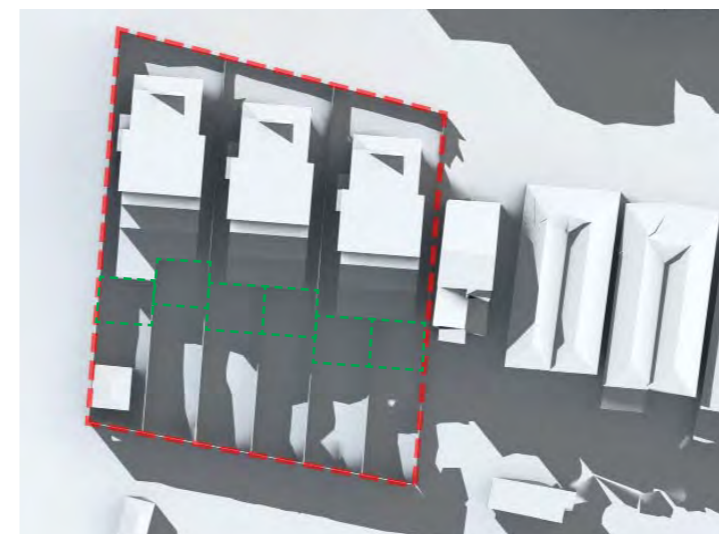
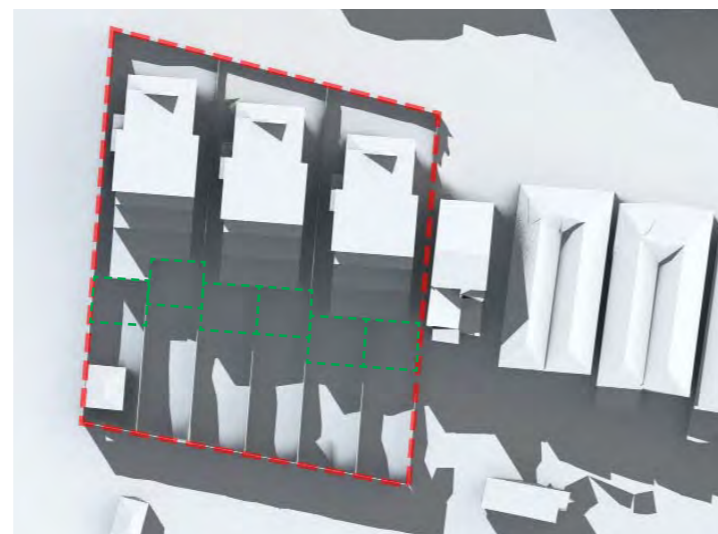
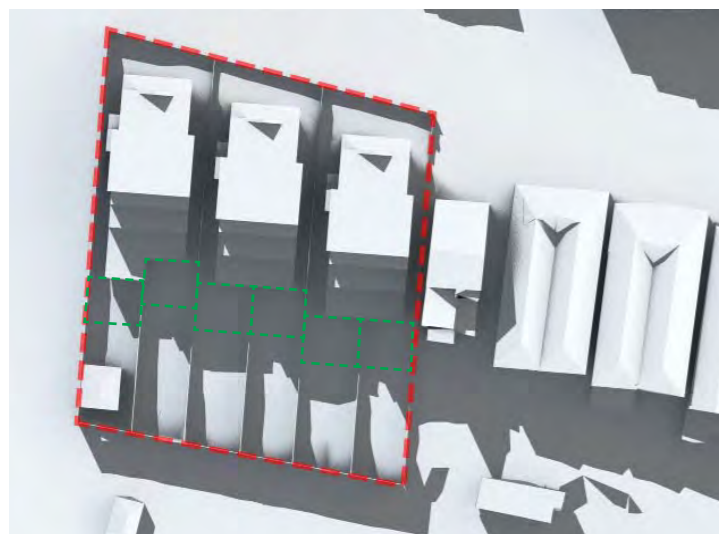
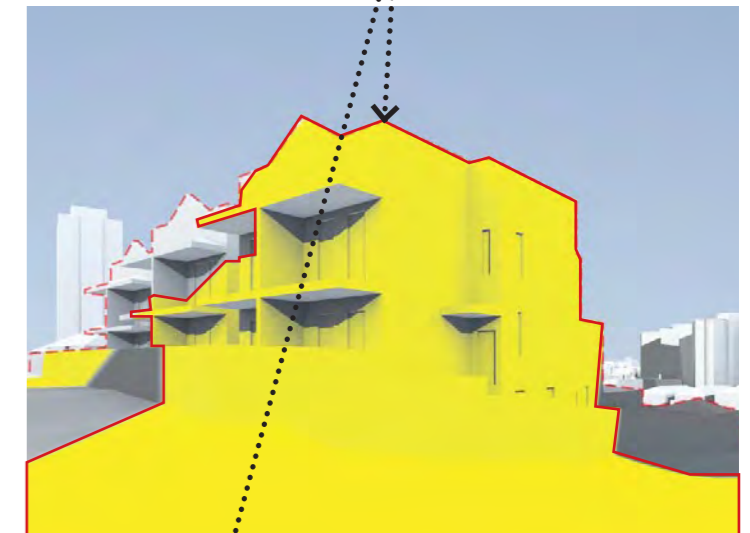
KEY:

EXISTING SHADOW

OSD SHADOW

PRINCIPLE PRIVATE OPEN SPACE
(INFORMED BY NORTH SYDNEY DCP 2013)

OVERSHADOWING ISSUE



1.30pm June 21st

2pm June 21st

2.30pm June 21st

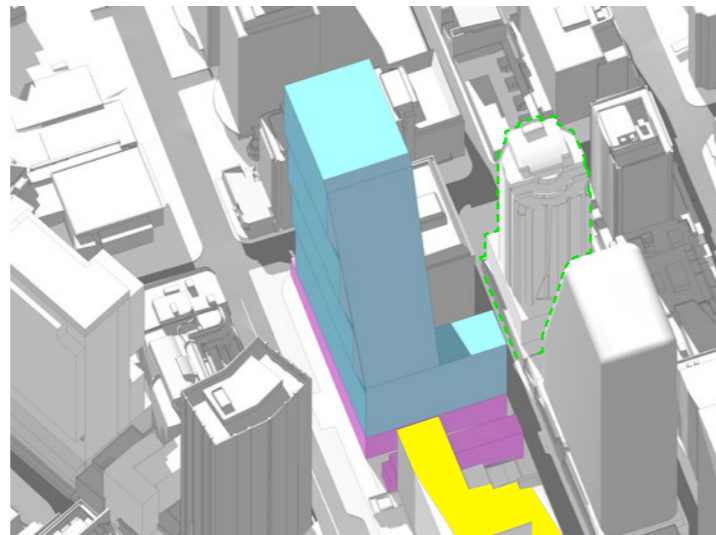
3.00pm June 21st

8.4 ENVELOPE ANALYSIS SHADOW ANALYSIS

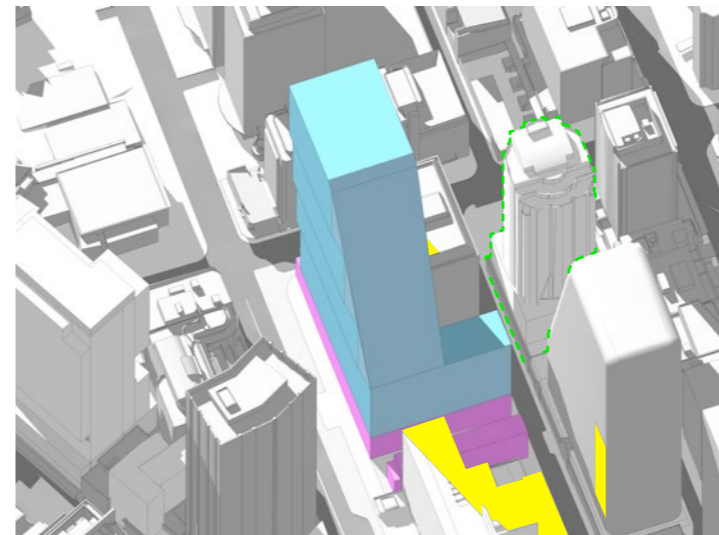
WINTER SOLSTICE JUNE 21ST

BEAU MONDE BUILDING

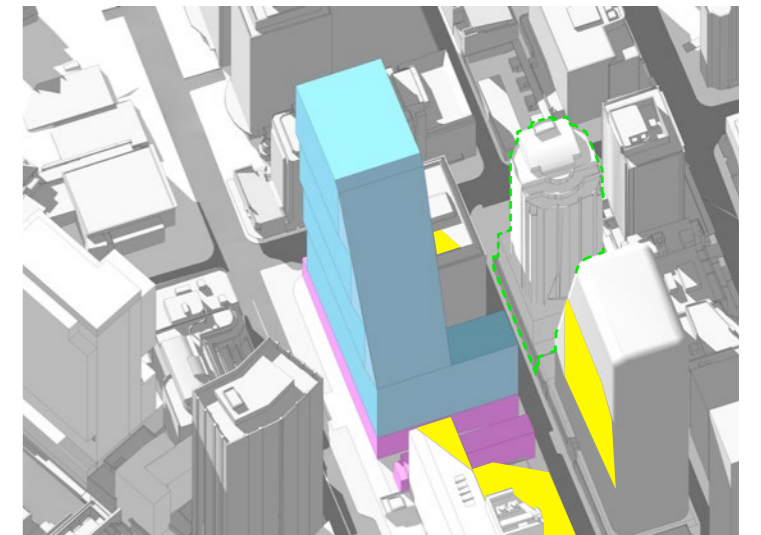
The following diagrams demonstrate that the OSD concept SSDA building envelope has no impact on the Beau Monde Building on the Winter Solstice (June 21st) until around 2.30pm where it begins to cast a shadow on the western façade of the Beau Monde Building. The impact will be assessed in more detail in the next few pages.



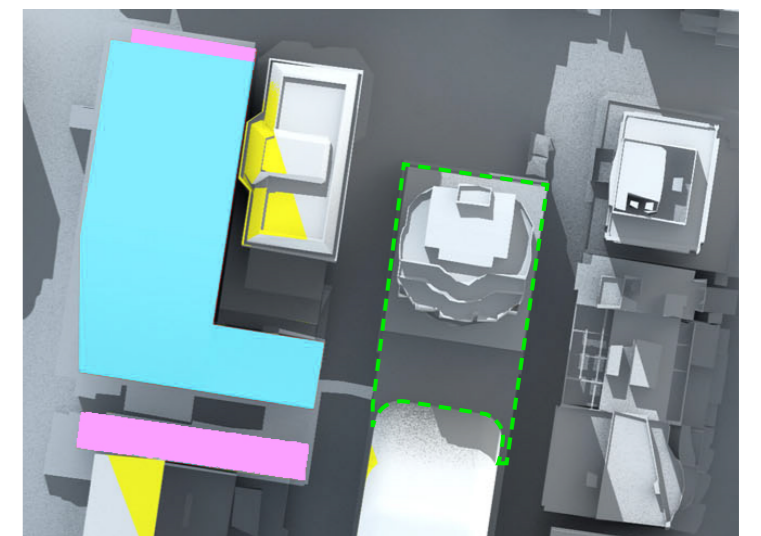
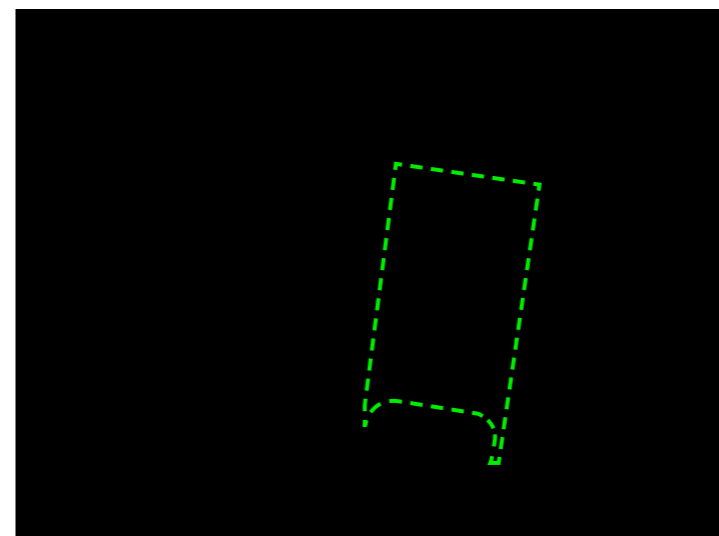
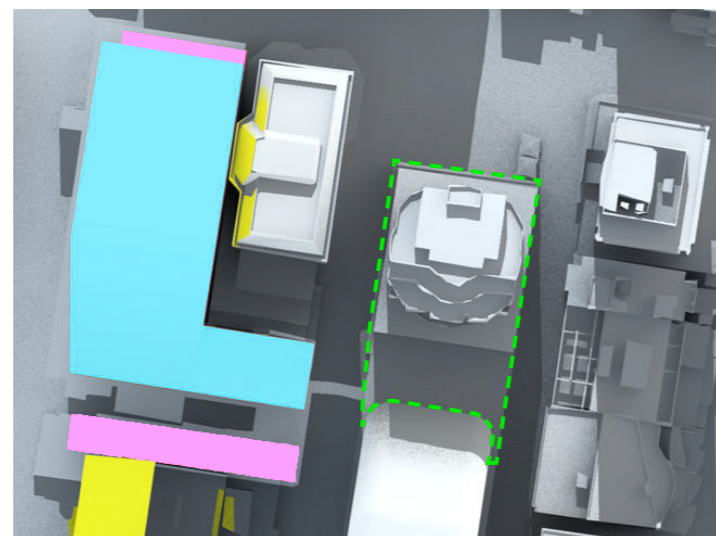
12pm June 21st



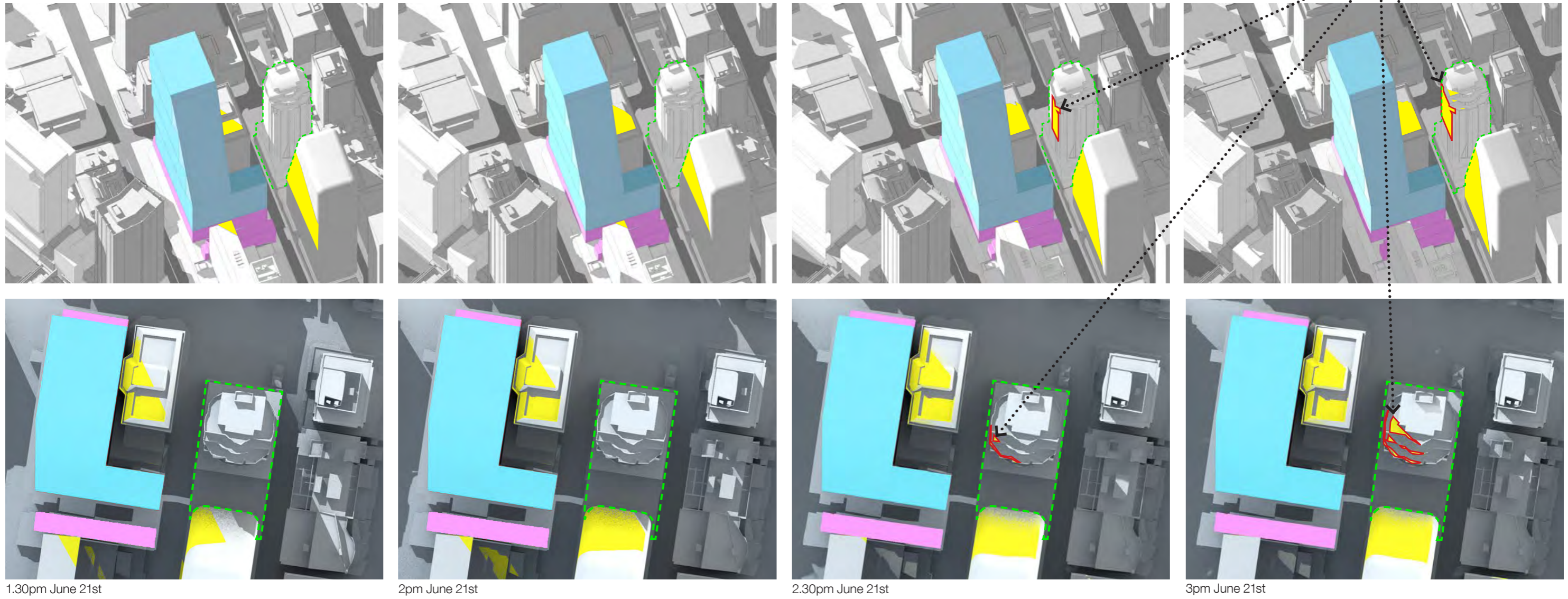
12.30pm June 21st



1pm June 21st



- KEY:
- OSD CONCEPT SSDA BUILDING ENVELOPE
 - VICTORIA CROSS STATION CSSI APPROVAL
 - BEAU MONDE BUILDING
 - EXISTING SHADOW
 - OSD SHADOW
 - OVERSHADOWING ISSUE



1.30pm June 21st

2pm June 21st

2.30pm June 21st

3pm June 21st

8.4 ENVELOPE ANALYSIS SHADOW ANALYSIS

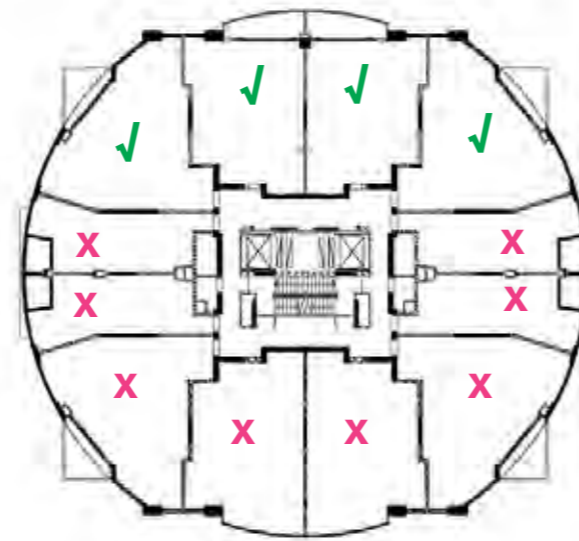
WINTER SOLSTICE JUNE 21ST

BEAU MONDE APARTMENT BUILDING

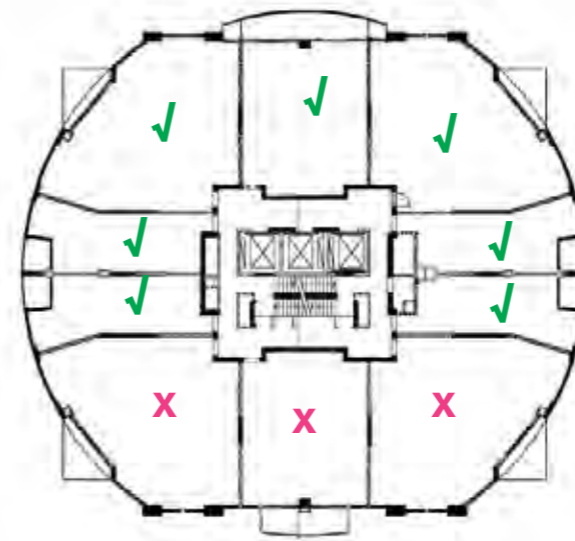
Objective 4A-1 of the Apartment Design Guide States that: "Living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 2 hours direct sunlight between 9am and 3pm at mid winter in the Sydney Metropolitan Area."

The following diagrams show the typical levels of the Beau Monde apartment building and indicate the apartments which receive 2 hours of solar access between 9am and 3pm on the Winter Solstice (June 21st) as per part 4A of the Apartment Design Guide.

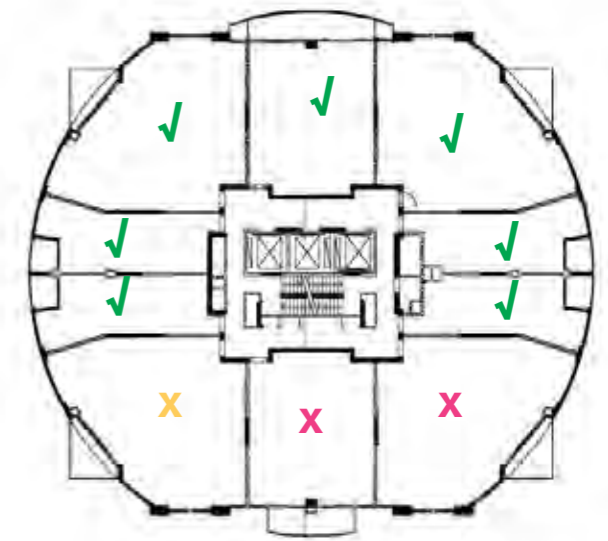
Of a total of 246 apartments in the Beau Monde Building, only 8 apartments are affected by the shadow from the OSD concept SSSA envelope which is approximately 3% of the whole development.



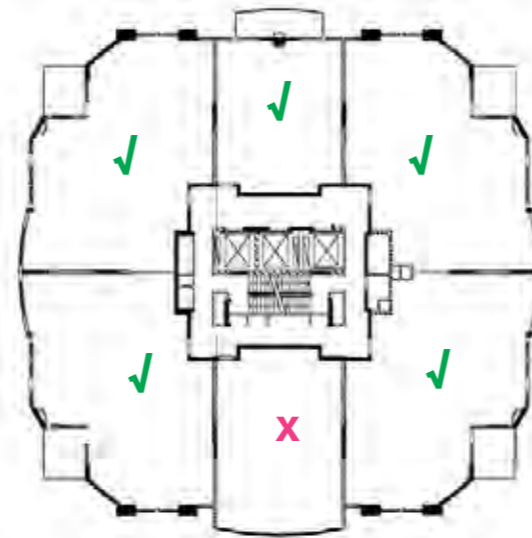
LEVELS 09 - 17



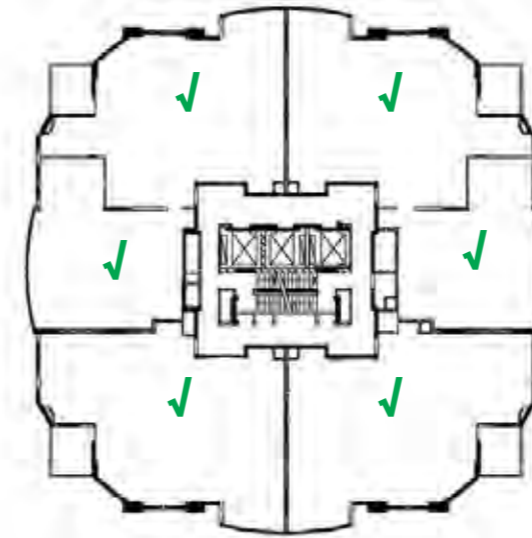
LEVELS 18 - 21



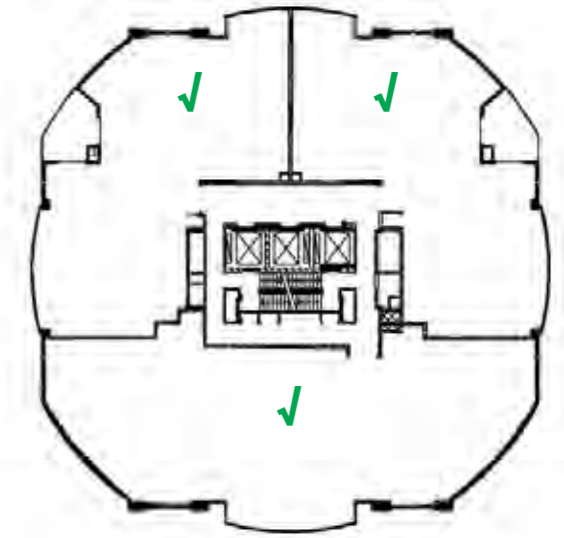
LEVELS 22 - 23



LEVEL 30



LEVEL 31 - 33

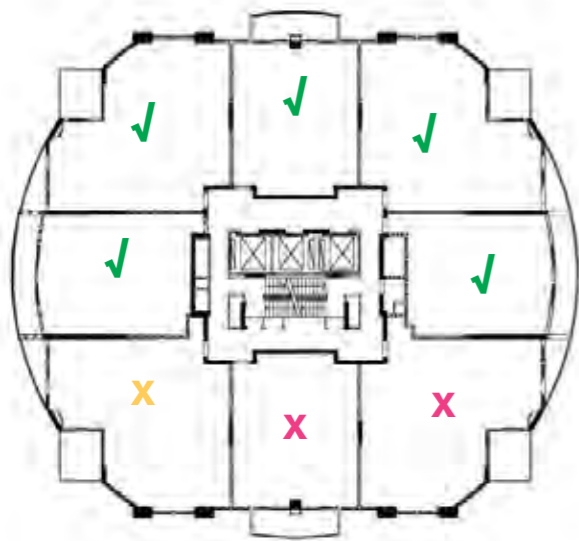


LEVEL 34

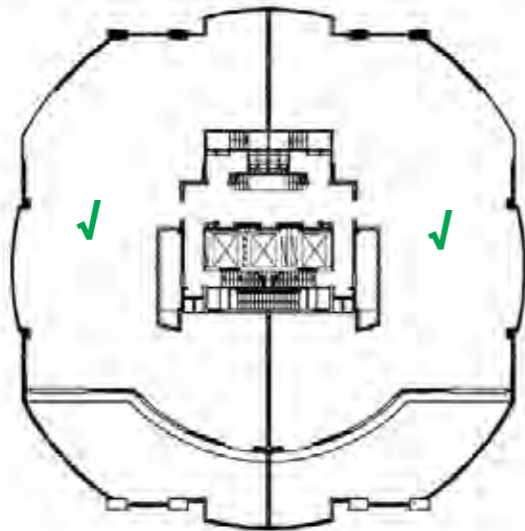


KEY:

- ✓ 2 HOURS SOLAR ACCESS ACHIEVED
- ✗ 2 HOURS SOLAR ACCESS CURRENTLY NOT ACHIEVED
- ✗ SOLAR ACCESS REDUCED TO LESS THAN 2 HOURS AS A RESULT OF THE OSD CONCEPT SSSA ENVELOPE



LEVELS 24 - 29



LEVELS 35 - 36

RESIDENTIAL LEVEL:	NO OF APARTMENTS PER LEVEL:	NO. OF APARTMENTS CURRENTLY ACHIEVING 2HRS OF SOLAR ACCESS:	NO. OF APARTMENTS ACHIEVING 2HRS OF SOLAR ACCESS WITH OSD ENVELOPE:	NO. OF APARTMENTS IMPACTED BY OSD ENVELOPE:
9	12	4	4	0
10	12	4	4	0
11	12	4	4	0
12	12	4	4	0
13	12	4	4	0
14	12	4	4	0
15	12	4	4	0
16	12	4	4	0
17	12	4	4	0
18	10	7	7	0
19	10	7	7	0
20	10	7	7	0
21	10	7	7	0
22	10	8	7	1
23	10	8	7	1
24	8	6	5	1
25	8	6	5	1
26	8	6	5	1
27	8	6	5	1
28	8	6	5	1
29	8	6	5	1
30	6	5	5	0
31	6	6	6	0
32	6	6	6	0
33	6	6	6	0
34	3	3	3	0
35	2	2	2	0
36	1	1	1	0
TOTAL	246	170	162	8
PERCENTAGE	-	69%	66%	3%

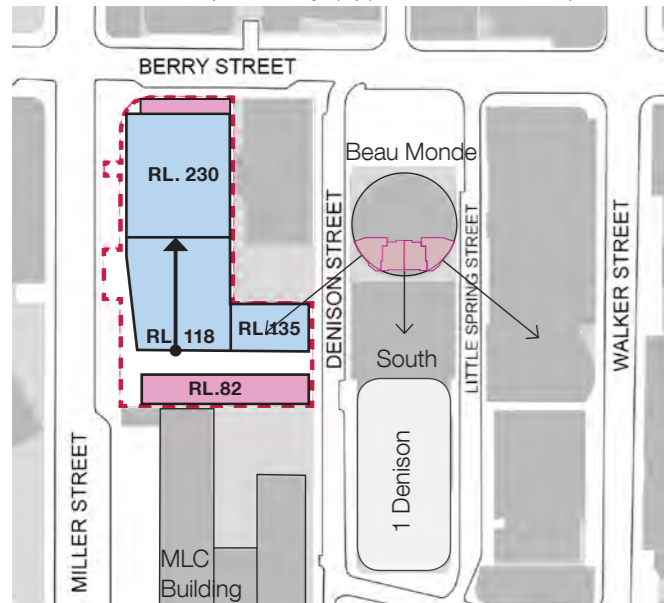
8.4 ENVELOPE ANALYSIS VIEW ANALYSIS

BEAU MONDE APARTMENT BUILDING VIEW ANALYSIS

The following diagrams compare the impact of the OSD concept SSDA building envelope with the proposed maximum building height envelope as indicated in the North Sydney Centre Planning Proposal shown in white. The diagrams compare the view impact from Beau Monde at RL 126 (Level 20) and RL 145.25 (Level 27). The Victoria Cross OSD envelope can only be seen in the south west view (shown in blue). The building envelope of the 1 Denison Street development is shown in beige.

VIEW IMPACT AT RL 126 (LEVEL 20)

At RL 126, the proposed North Sydney Planning Proposal envelope obscures the view to the MLC Building and the harbour beyond. This is due to the massing extending to the southern boundary to a height of RL 193 before it sets back. The OSD concept SSDA building envelope is setback 18m from the southern boundary up to a height of RL 118 facilitating views to the heritage MLC building. Above RL 118 the OSD concept SSDA building envelope tapers away from the southern boundary up to a height of RL 230, offering views to the harbour beyond. In conclusion the OSD concept SSDA building envelope will reduce the visual impact in comparison to the impact created by the North Sydney Planning Proposal envelope. Refer to the view impact Study. (Appendix Z - Visual Impact

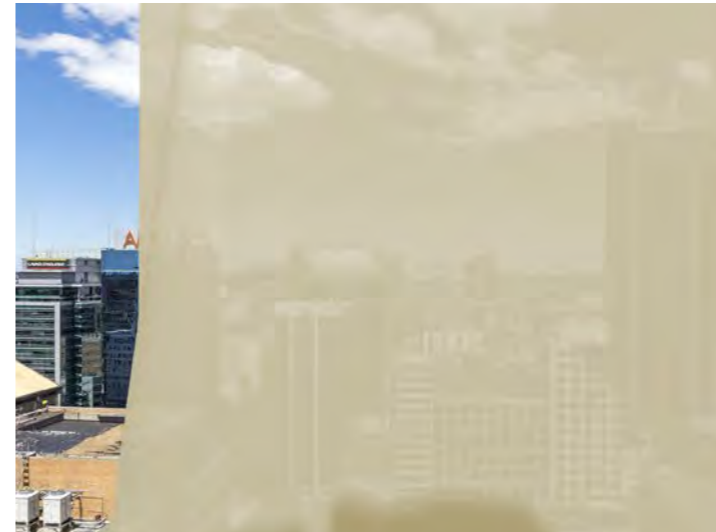


OSD concept SSDA envelope in relation to Beau Monde

View From Beau Monde Apartment Building at RL 126.00 - Building envelope at maximum height permitted under the North Sydney Centre Planning Proposal



South East



South

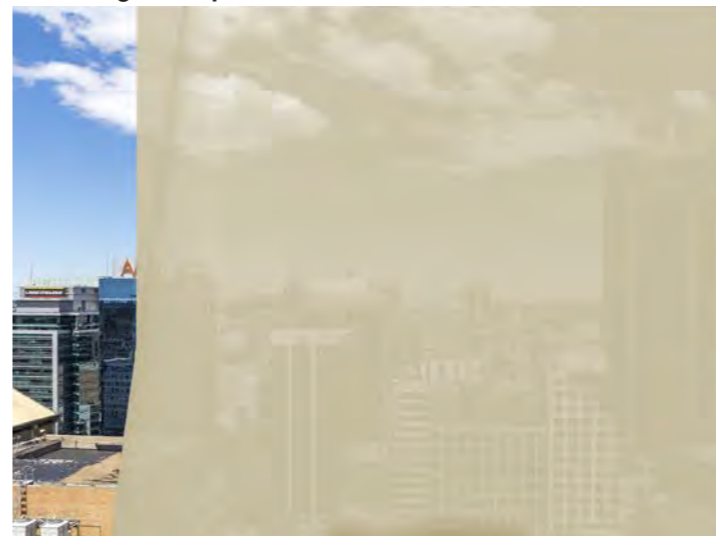


South West

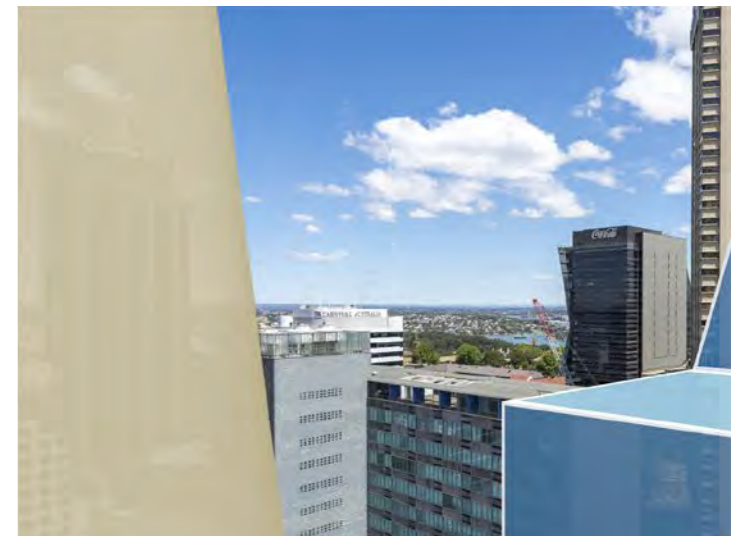
View From Beau Monde Building at RL 126.00 - OSD concept SSDA building envelope



South East



South



South West

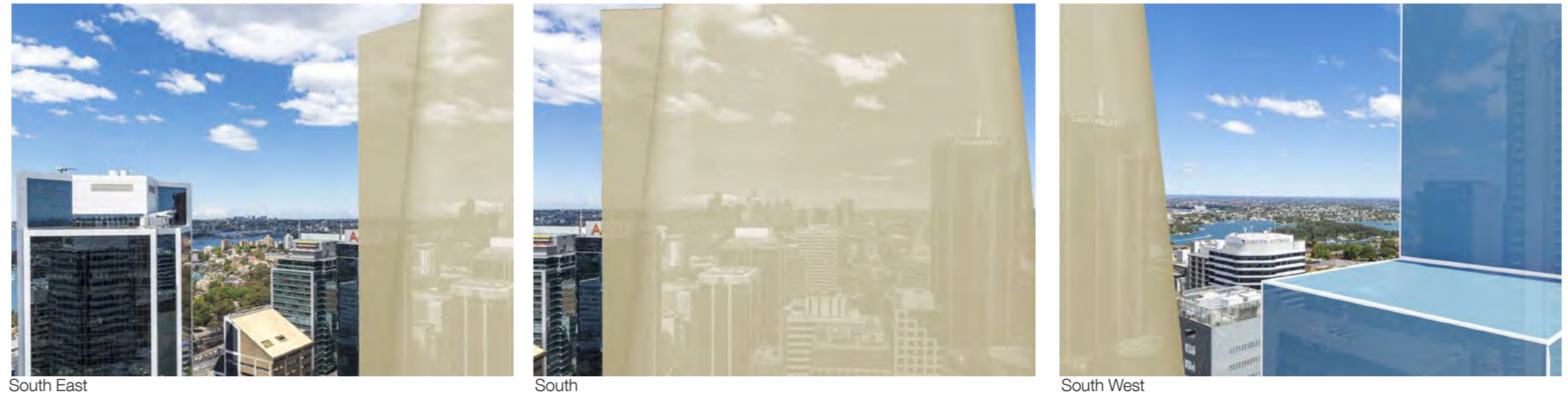
VIEW IMPACT AT RL 145.25 (LEVEL 27)

At RL 145.25, the proposed North Sydney Planning Proposal envelope obscures the view to the MLC building and to the Sydney Harbour beyond. The proposed Victoria Cross OSD building envelope tapers away from the southern boundary above RL118 opening up views to south west.

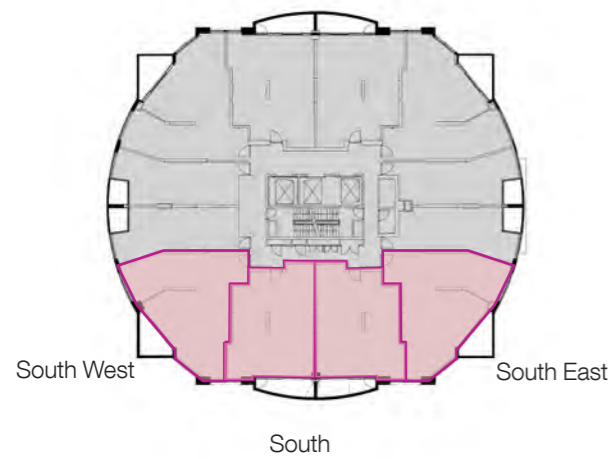
KEY:

- OSD CONCEPT SSDA BUILDING ENVELOPE
- APPROVED ONE DENISON AND 100 MOUNT STREET ENVELOPES
- APARTMENTS ANALYSED

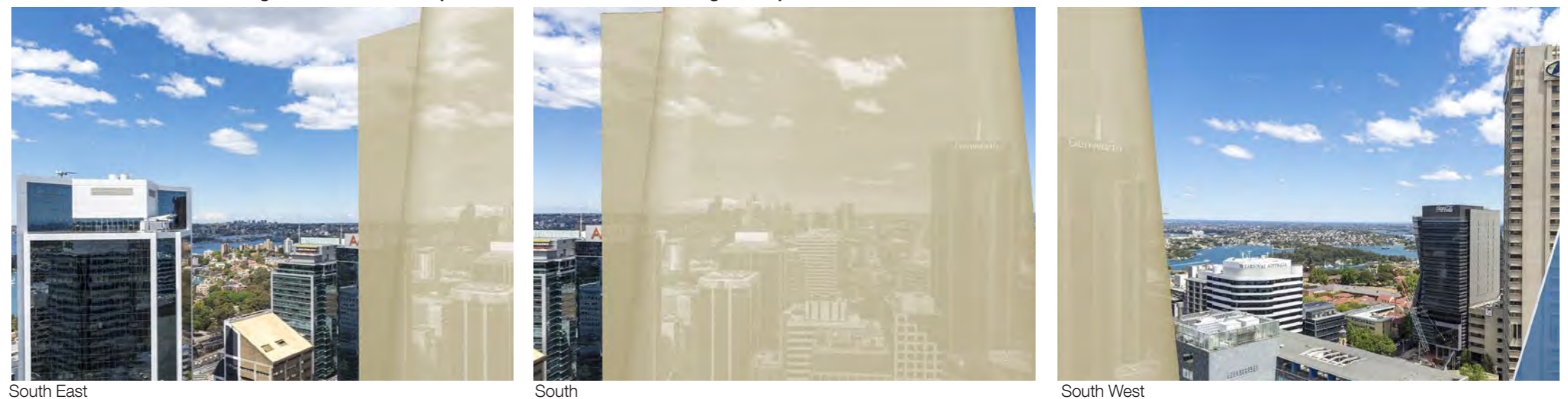
View From Beau Monde Building at RL 145.25 - Building envelope at maximum height permitted under the North Sydney Centre Planning Proposal



Beau Monde Typical Floor Plan:



View From Beau Monde Building at RL 145.25.00 - Proposed Victoria Cross OSD Building Envelope



8.5 ENVELOPE ANALYSIS KEY VANTAGE POINTS & STREETScape LOCATIONS

CITY SCALE VIEW ANALYSIS

The proposed OSD development is envisioned to be located centrally in the North Sydney Centre Skyline so as to identify the station and OSD site as the geographical centre when viewed from the wider Sydney Metropolitan region.

The following photomontages illustrate the impact of the OSD concept SSSA building envelope (shown in blue) on the North Sydney Centre Skyline from various view points. The envelopes of 100 Mount Street and 1 Denison Street (currently under construction) are shown in white.

View from Barangaroo

The proposed OSD Concept SSSA building envelope (blue) can be seen behind 101 Miller Street and to right of Northpoint Tower and is legible as the tallest building in the collection of buildings North Sydney Centre.

View from Sydney Opera House

The proposed OSD concept SSSA building envelope can be seen to the left behind 1 Denison Street and 100 Mount Street.

View from Gladesville Bridge

The proposed OSD concept SSSA building envelope can be seen to the right behind 177 Pacific Highway and is legible as the tallest building in the collection of buildings in the North Sydney Centre. The tapering geometry of the tower's southern facade is legible from this viewpoint.

View from Miller Street North

The northern elevation of the proposed OSD concept SSSA building envelope can be seen along the vista from the northern end of Miller Street, looking south. The gentle stepping out of the envelope towards Miller Street is legible, albeit subtle, from this viewpoint.



View from Barangaroo



View from Gladesville Bridge



View from Sydney Opera House



View from Miller Street North

View from Blues Point Road

The south west corner of the OSD concept SSDA building envelope can be seen behind 101 Miller Street and to the right of the Northpoint Tower.

View from McLaren Street

The proposed OSD concept SSDA building envelope can be seen to the left behind and above 40 Miller Street. The proposed building envelope is clearly the tallest in this collection of buildings along Miller Street announcing the presence of the station and OSD. The gentle stepping out towards Miller Street is legible from this view point.

View from Pacific Highway

The proposed OSD concept SSDA building envelope can be seen to the right of 177 Pacific Highway and is legible as the tallest building in the collection of buildings in the North Sydney Centre.

View from Falcon Street

The proposed OSD concept SSDA building envelope can be seen to the right of 1 Denison Street and Northpoint Tower and is legible as the tallest building in the collection of buildings North Sydney Centre.



View from Blues Point Road



View from Pacific Highway



View from McLaren Street



View from Falcon Street





9.0 INDICATIVE DESIGN

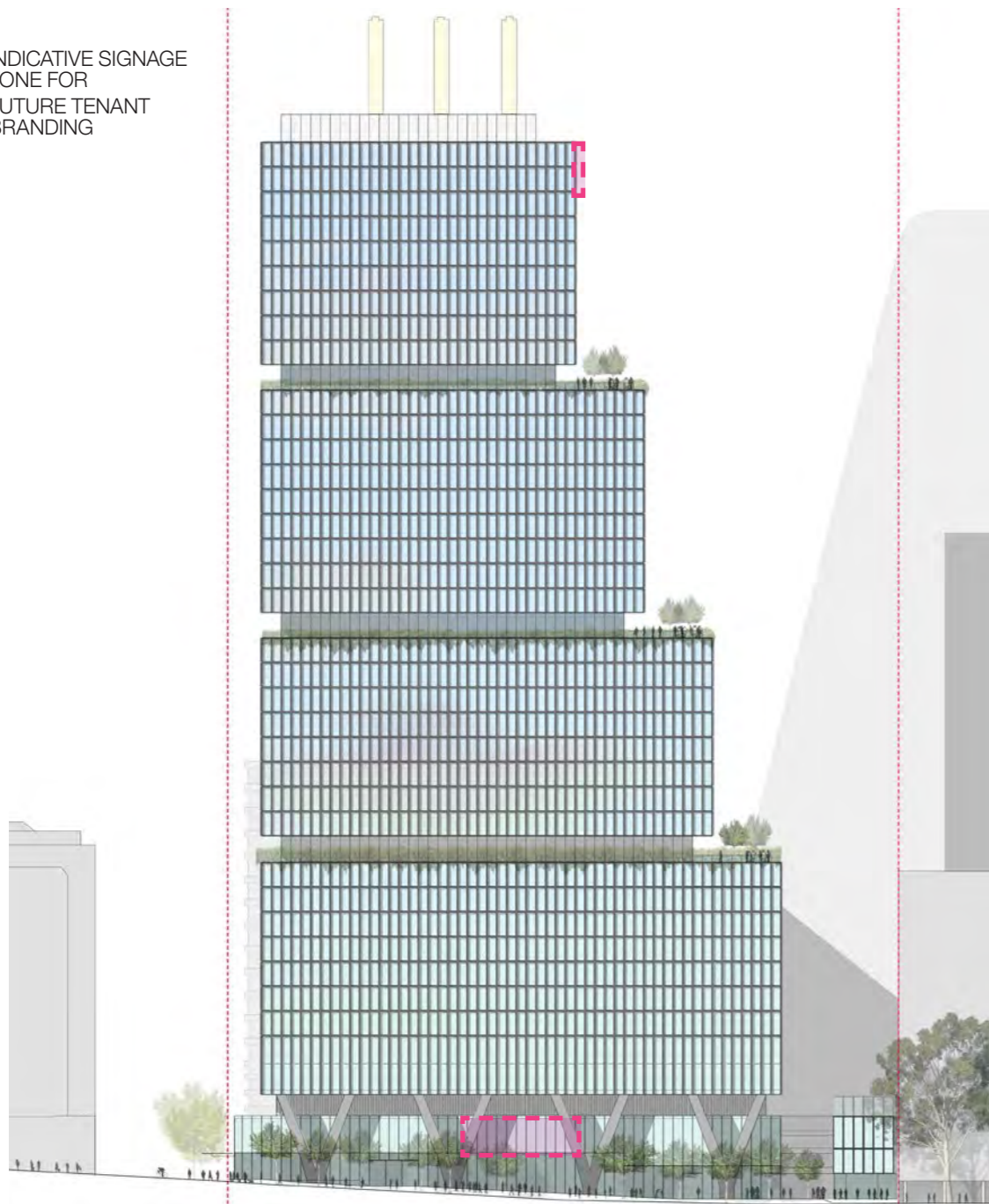


9.1 INDICATIVE DESIGN ELEVATIONS

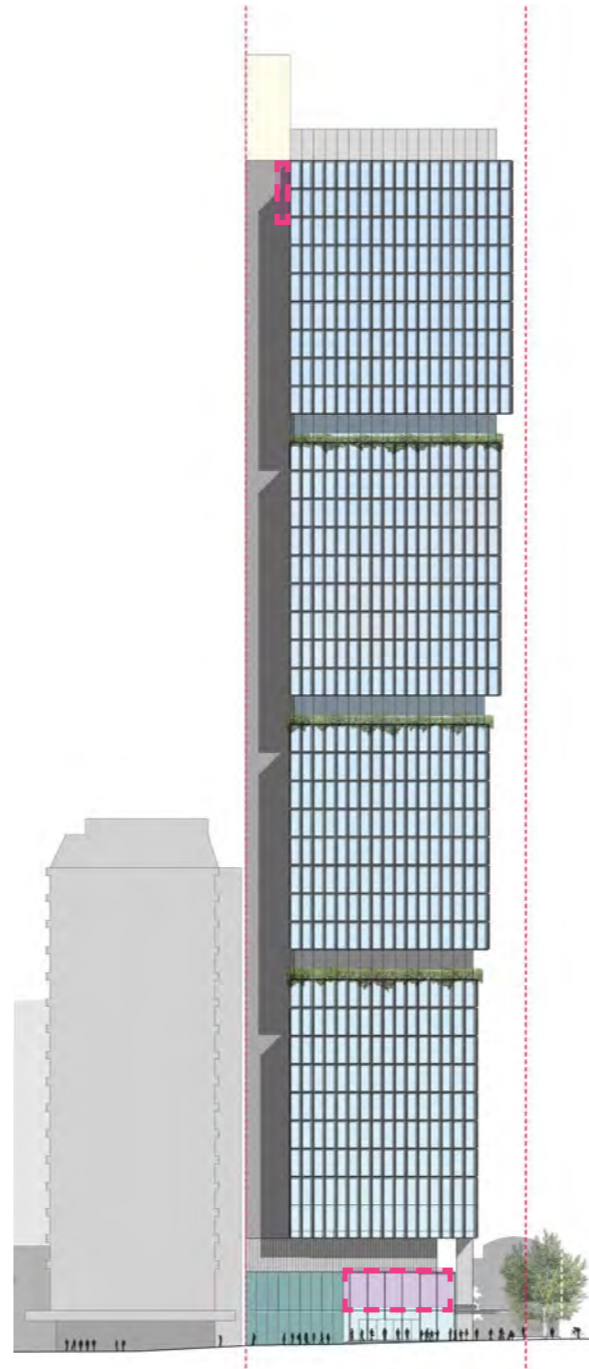
The tower was conceived as a series of stacked boxes which gently step providing each stack of office floorplates with a separate identity like villages in the sky.

KEY:

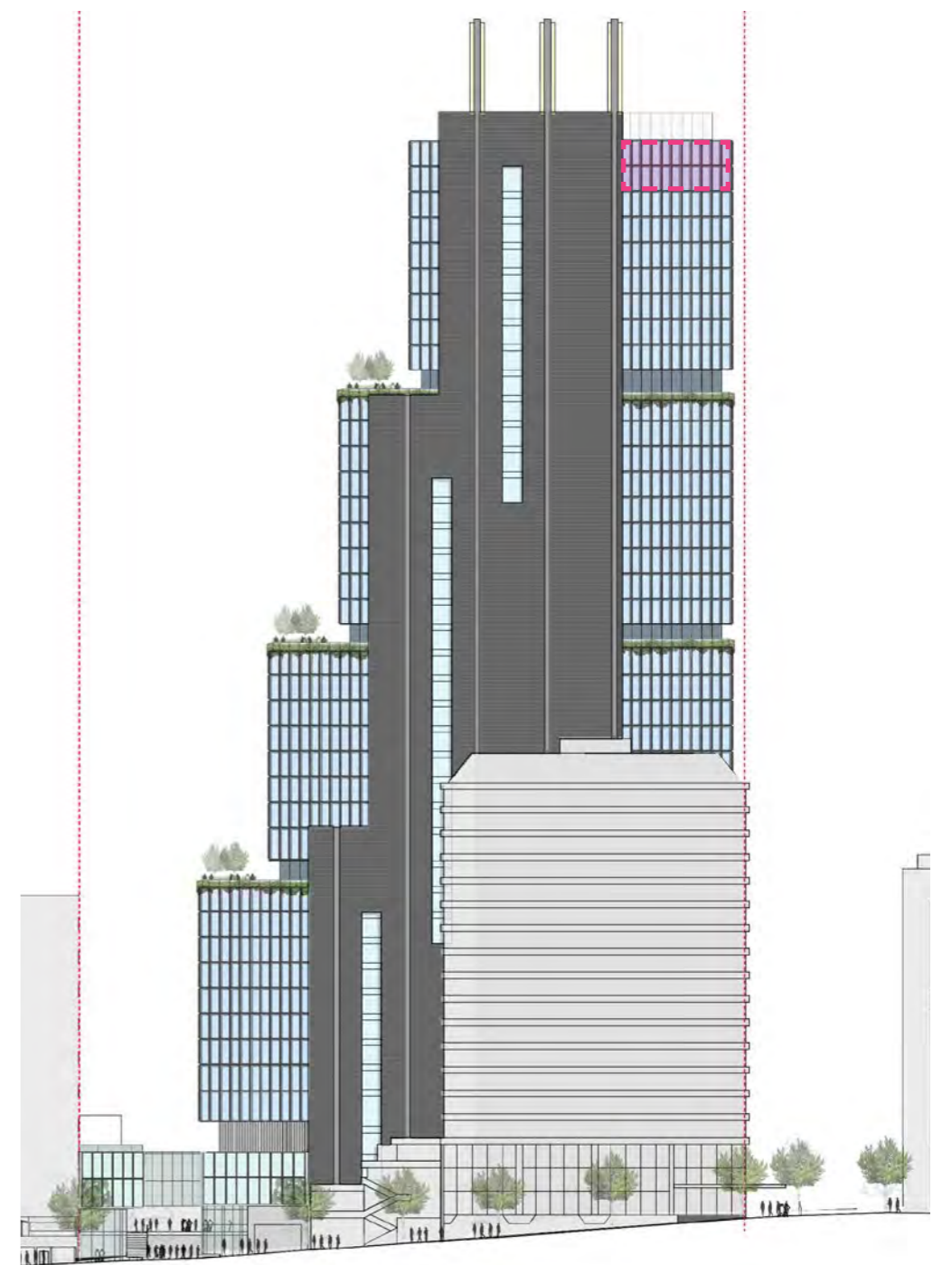
 INDICATIVE SIGNAGE ZONE FOR FUTURE TENANT BRANDING



WEST ELEVATION



NORTH ELEVATION



EAST ELEVATION

TOWER DESIGN PRECEDENTS

The New Museum of Contemporary Art in New York by SANAA (completed in 2007) and 2 World Trade Centre by BIG (under construction) are examples of stepping tower forms. 130 Elizabeth Street by Bates Smart (under construction) is an example of tower form composed of stacked volumes.

This approach is considered to be an appropriate design response for the following reasons:

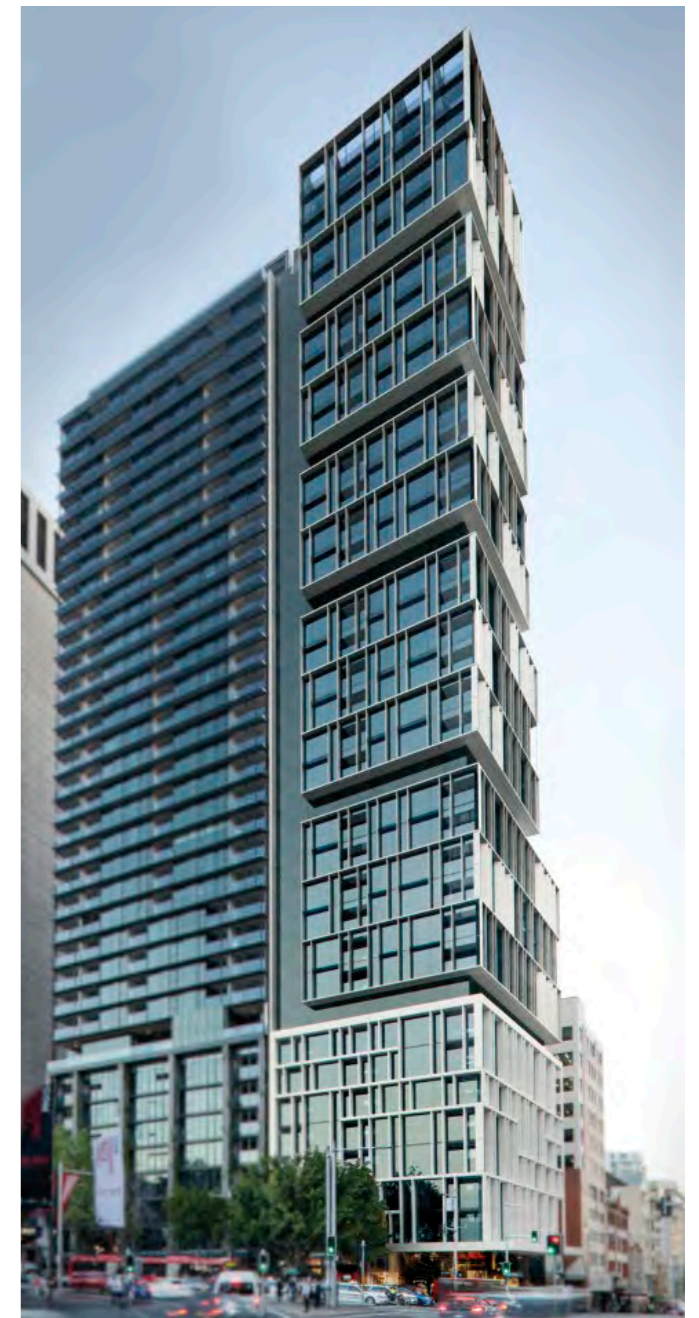
- stacked volumes break down the scale of the massing.
- stacked volumes relate to the varying datums of the surrounding built context.
- lowest stack relates to the height of the MLC Building.
- amenity to the through-site link is improved as the building steps away towards the top.



2 WORLD TRADE CENTRE / BIG / UNDER CONSTRUCTION



NEW MUSEUM OF CONTEMPORARY ART/ SANAA / NEW YORK/ COMPLETED 2007



130 ELIZABETH STREET / BATES SMART / UNDER CONSTRUCTION

9.2 INDICATIVE DESIGN PUBLIC ART

PUBLIC ART MASTERPLAN - SYDNEY METRO CITY AND SOUTHWEST

The provision of Public Art at all station locations (and associated Over Station Developments) must be consistent with the Sydney Metro City & Southwest Public Art Master Plan (SMC&SW Public Art Masterplan)

The key objectives of the SMC&SW Public Art Master Plan are to:

- / Elevate the customer's travel experience
- / Create a benchmark in national transit art
- / Engage and expand diverse audiences for contemporary art
- / Raise awareness of and pride in local histories and cultural diversity
- / Foster creative partnerships

The Public Art Master Plan establishes parameters for artistic excellence, governance mechanisms and a structured art program that will improve the travel experience of TfNSW customers and build a cultural legacy; including

- / defining the vision, locations and process for art to be commissioned and procured; and
- / addressing the requirements for public art for the design and construction phases of the Project.

PUBLIC ART STRATEGY - VICTORIA CROSS OSD

An OSD Public Art Strategy will be developed for the detailed SSDA Application to align with the broader approach to public art outlined in the SMC&SW Public Art Masterplan and the relevant North Sydney Council policies.

The objectives of the OSD Public Art Strategy for the Victoria Cross are to:

- / contribute to the cultural life and enjoyment of commercial areas; and
- / allow for community self-expression

Public Art for the Victoria Cross OSD will be commissioned based on standards of excellence and innovation, integrity of the work, relevance and appropriateness of the artwork to the site context, consistency with current planning, heritage and other relevant policies and cohesion with the SMC&SW Public Art Master Plan for the station.

A further guiding principle for the OSD Public Art Strategy is the enhancement of public thoroughfares, access ways and spaces created through the development of the station and surrounding precinct.



420 GEORGE STREET LOBBY / ARTIST : ALEXANDER KNOX

PUBLIC ART MANAGEMENT PLAN- VICTORIA CROSS OSD

A Public Art Management Plan for the Victoria Cross OSD (OSD Public Art Management Plan) will be developed and implemented by the Contractor responsible for the delivery of the OSD (OSD Contractor).

The OSD Public Art Management Plan must:

/ be consistent with the SMC&SW Public Art Masterplan

/ provide initial public art concepts

/ provide a framework for the commissioning and implementation of public art throughout the design and construction process and operation of the OSD.

The OSD Contractor will also coordinate with the Public Art Working Group to ensure a coordinated approach to public art throughout the Integrated Station Development.

THE PUBLIC ART WORKING GROUP

A Public Art Working Group will be implemented for the Integrated Station development (Station and OSD) to oversee the execution of the OSD Public Art Masterplan and ongoing development, execution and delivery of the artworks.

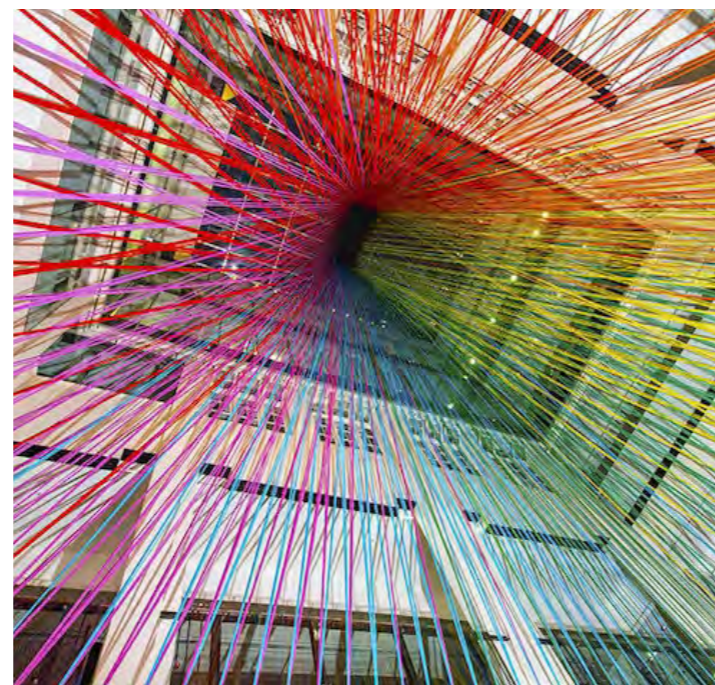
The primary purpose of the Public Art Working Group will be to provide a forum for considering and approving the best approach to curating, procuring, integrating, installing and decommissioning public art as outlined in the OSD Public Art Masterplan and OSD Public Art Management Plan.

A project resource will also be appointed in the role of Public Art Project Manager to manage the artist and the procurement, installation and integration of agreed public art for the Integrated Station Development. The Project Manager will also advocate, educate and promote a strong understanding of public art and its role within the Contractor team during design and construction of the OSD.

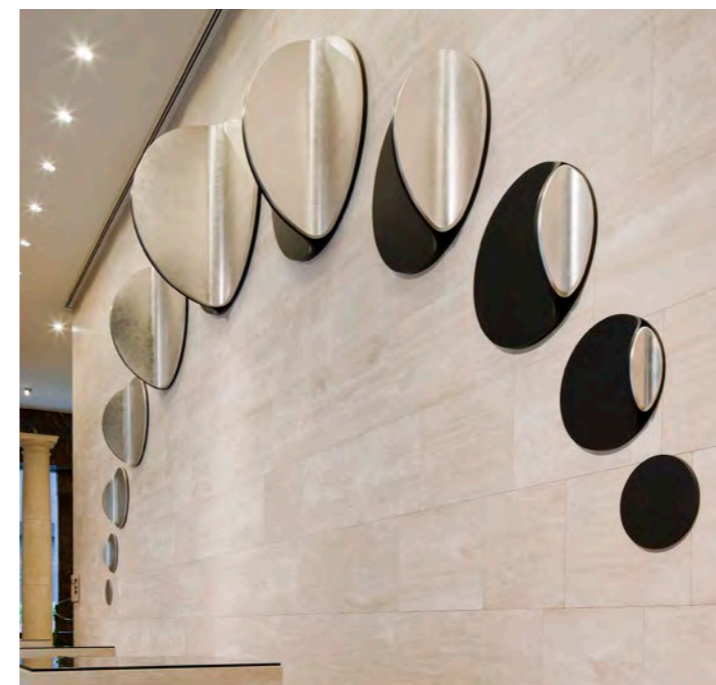
CO-ORDINATION OF PUBLIC ART PLANS

The OSD contractor will co-ordinate with the station contractor through the Public Art Working Group and through the selection of artists from a list decided by the TfNSW Selection Committee. The Committee will be set up in accordance with the Public Art Masterplan.

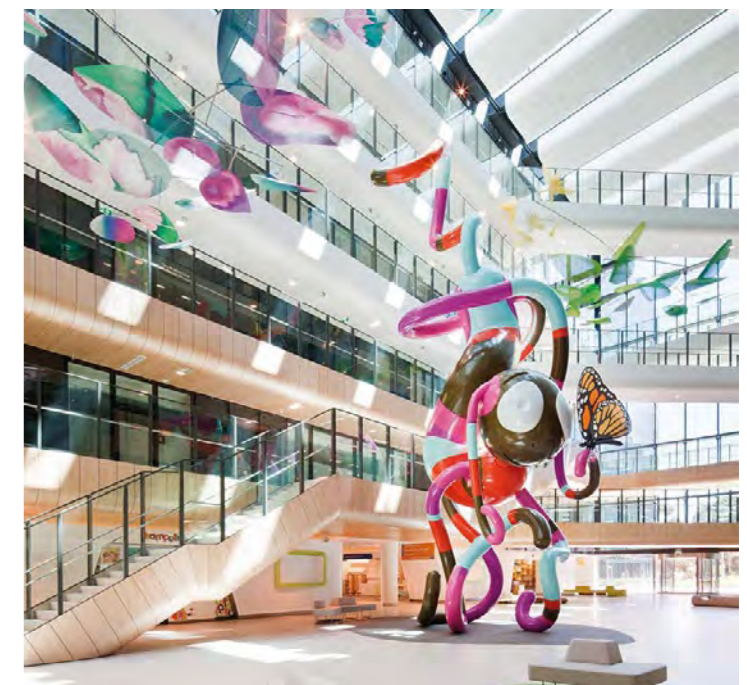
A more detailed OSD Public Art Plan will be developed as part of the future detailed SSD Application for the OSD.



CUSTOMS HOUSE SYDNEY / ARTIST : MEGHAN GECKLER



101 COLLINS STREET / ARTIST : MARION BORGELT



ROYAL CHILDREN'S HOSPITAL / ARTIST : ALEXANDER KNOX

9.2 INDICATIVE DESIGN PUBLIC ART

ARTWORK OPPORTUNITIES

Three opportunities have been identified conceptually for the implementation of OSD Public Art and will be further refined during the detailed design stage. The diagram opposite indicates the three opportunity zones for OSD public art installation. These are:

1. Hanging artwork in the through-site link.

A suspended artwork within the through-site link would be visible from outside the site, would complement the vertical scale of the development adjacent, would improve the visual experience from the commercial zones above and provide character to the space. With the inclusion of lighting, the artwork may improve activation of the space during the evening.

2. Sculptural artwork in the public domain.

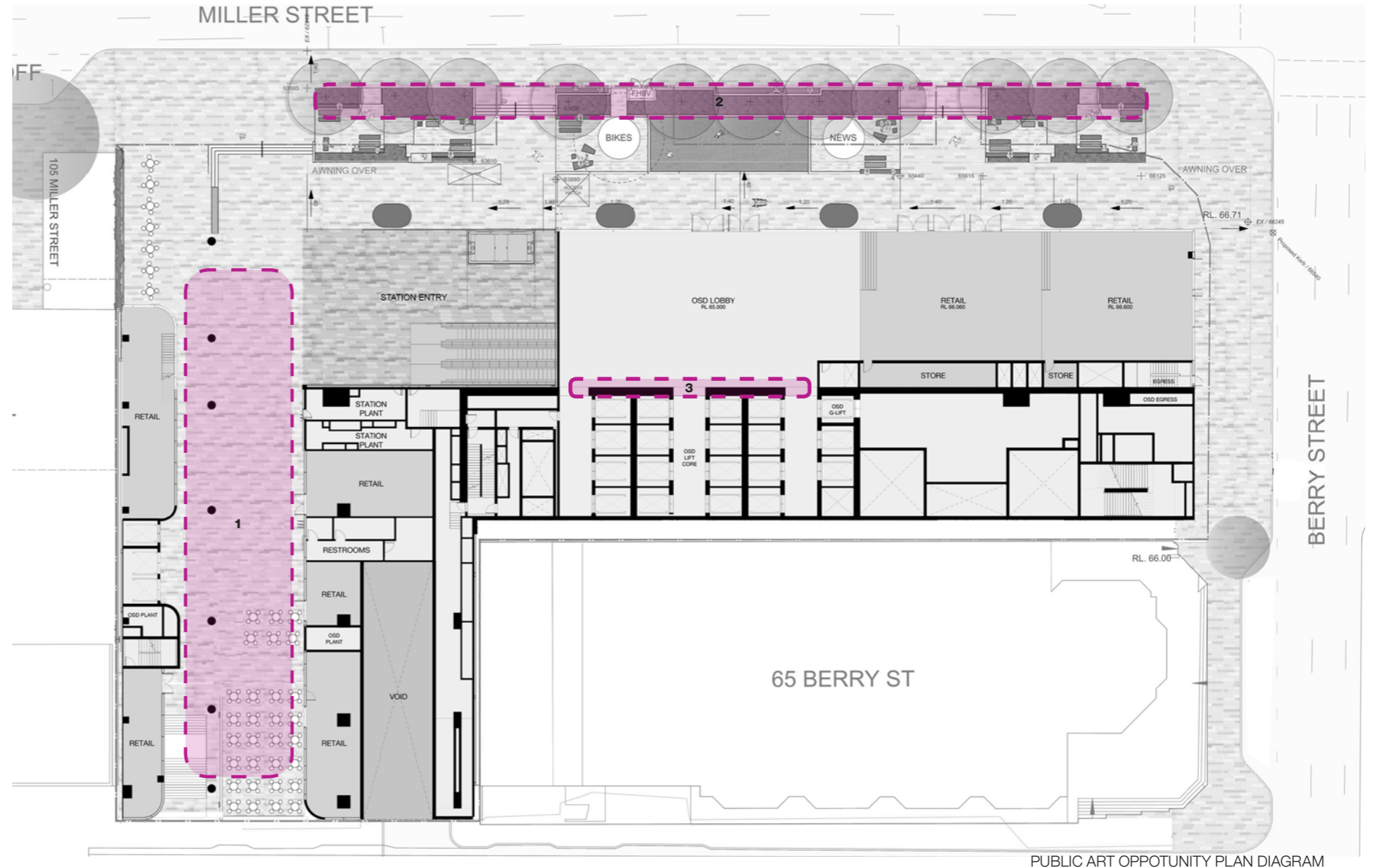
A sculptural piece within the public domain may help to characterise the area, improve wayfinding and provide additional narrative to journeys through the site.

3. Sculptural artwork to lobby wall.

A sculptural or two dimensional artwork to the lobby wall would create a sense of arrival, provide character to the space and improve the general amenity and experience of the lobby. It may also provide an opportunity for heritage or cultural interpretation relevant to the location.

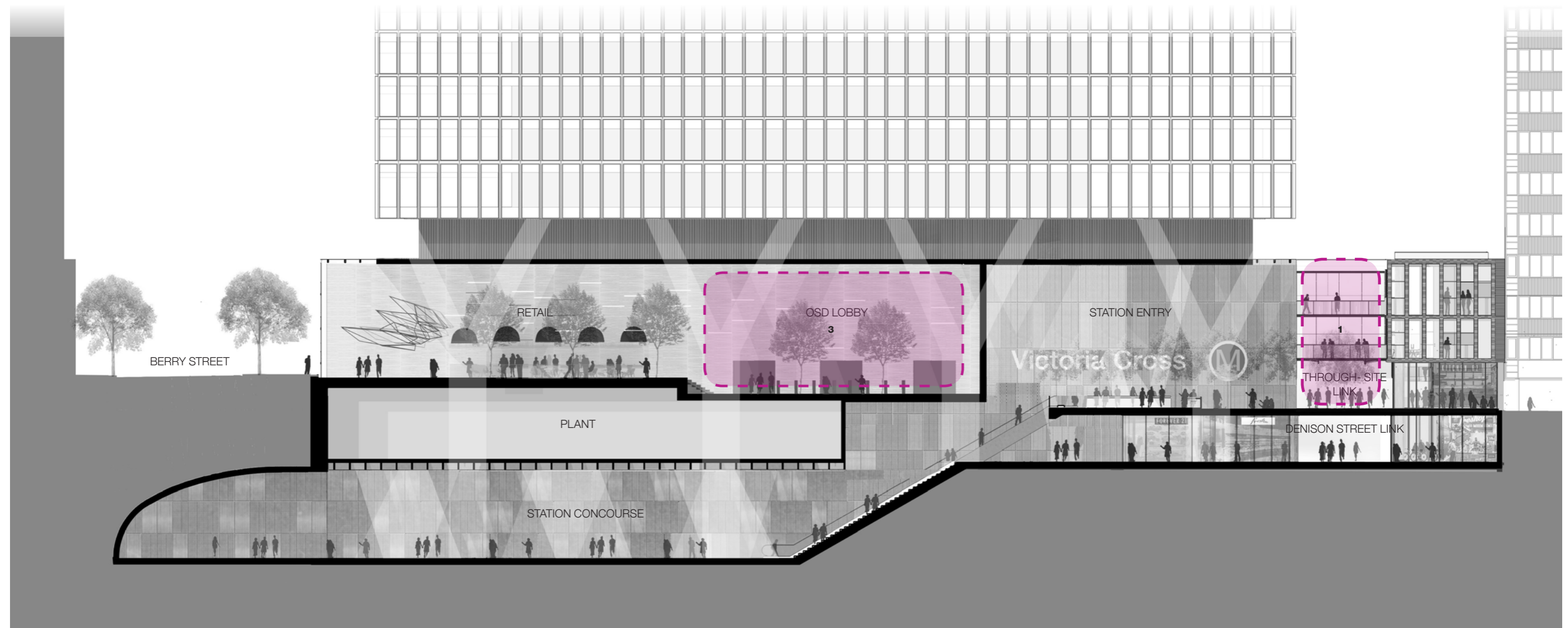
KEY:

 PUBLIC ARTWORK OPPORTUNITY



PUBLIC ART OPPOTUNITY PLAN DIAGRAM

Appropriately located and designed public artworks have the ability to shape our consciousness, create a collective attitude, inspire, influence behaviour and even reduce stress.



PUBLIC ART OPPORTUNITY SECTION DIAGRAM

9.3 INDICATIVE DESIGN SKY GARDENS

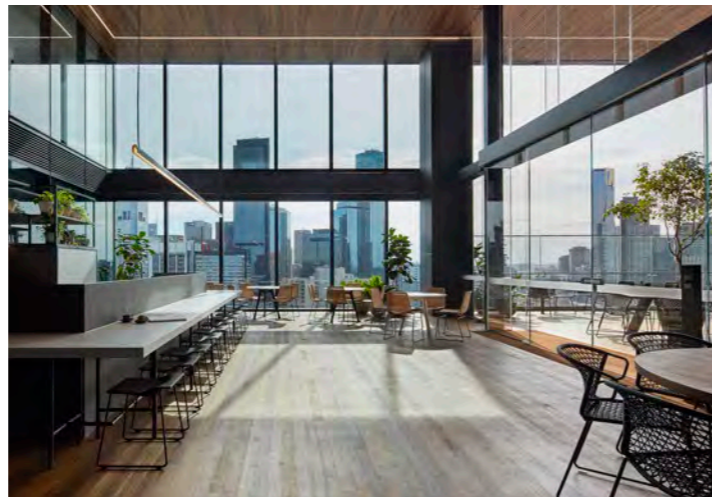
The dramatic stepping of the tower volumes provides an opportunity for each stack of office floorplates with a generous sky garden with views over Sydney Harbour.

SKY GARDENS

The stepping form of the tower provides each stack of offices with a roof terrace. These spaces will be landscaped and become ideal places for informal meetings and social events. Furthermore, given their orientation, the roof terraces will have spectacular views towards to Sydney CBD and Sydney Harbour.



UPPER SKY TERRACE PLAN



MADDOCKS MELBOURNE / BATES SMART



MADDOCKS MELBOURNE / BATES SMART



MADDOCKS MELBOURNE / BATES SMART



CONCEPT PERSPECTIVE OF THE VICTORIA CROSS OSD SKY GARDENS





10.0 INTEGRATED STATION DESIGN



10.1 INTEGRATED STATION DESIGN KEY REQUIREMENTS

INTEGRATED DESIGN

The proposed OSD tower has been designed to be fully integrated with the design of the Victoria Cross Station in terms of architecture, structure and services.

The concept SSDA for the OSD tower seeks approval for a building envelope. A future detailed SSDA for the building (which will allow construction) will be required to be lodged by the developer/ applicant who secures the development rights above the station. However, there are a number of key requirements that will ensure the development of the OSD will not impact on the design and operation of the Station.

Key requirements of the integrated design:

/ Public access to the station from Day 1 that is not compromised by the design and construction of the OSD development.

/ Entrances to the station and the OSD tower will be distinctive and separate from each other.

/ Allow for "column free" areas especially through the station entrance and concourse areas providing feasible pedestrian pathways to the underlying station.

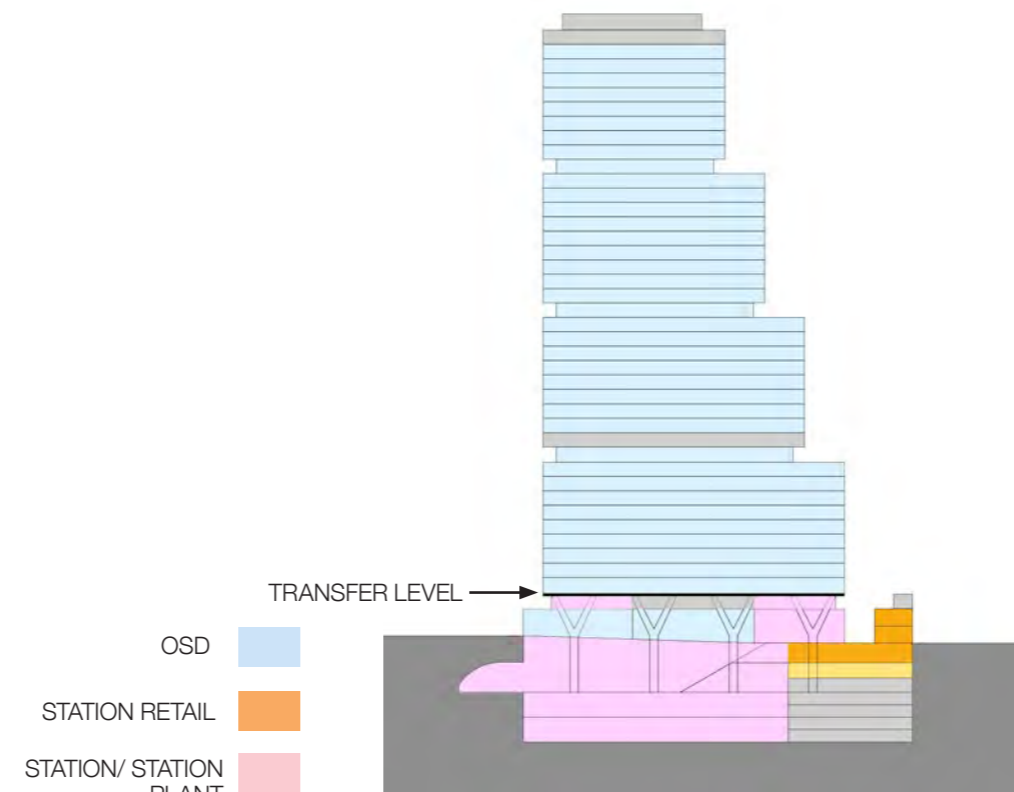
/ Minimise substructure transfers from the OSD through the station.

/ Station and OSD grids align with a minimum number of columns on each floorplate.

/ Maximise the design life of the OSD building. The design life of the OSD building will be 50 years minimum and BCA Importance Level of 4 in accordance with the Building Code of Australia (NCC), AS3600 Concrete Structures and AS4100 Steel Structures. It is noted that the design life of the station structure is 100 years and BCA Importance Level of 4.

/Sustainability outcomes seek to achieve a minimum of 5 Star Green Star with the potential to achieve 6 Star.

/ Whilst the public domain strategy for the ground level is being developed as part of the station design, it is necessary for the landscape strategy for the station and OSD to be integrated.



- OSD
- STATION RETAIL
- STATION/ STATION PLANT
- SHARED LOADING DOCK
- OSD PLANT/ EOT & CAR PARKING

PROGRAM

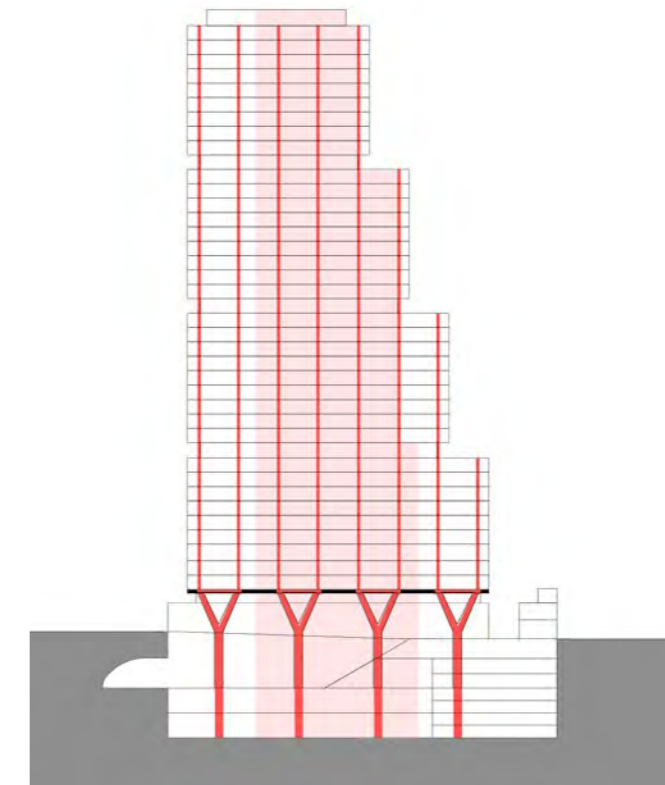
The "transfer level" defines the delineation between the CCSI Approval for the station and the concept SSDA application for the OSD building envelope above.

The diagram above indicates the land use zones beneath the transfer level which include:

- / OSD plant, end of trip facilities and basement car parking
- / Shared loading dock
- / Station plant
- / Station entry and concourse levels
- / Retail tenancies including the through-site link
- / OSD commercial lobby + associated retail space
- / Station plant at level 03

Above the transfer level the tower consists of 37 commercial office floors, a mid level plant floor and an additional 2 floors of plant located at the top of the building.

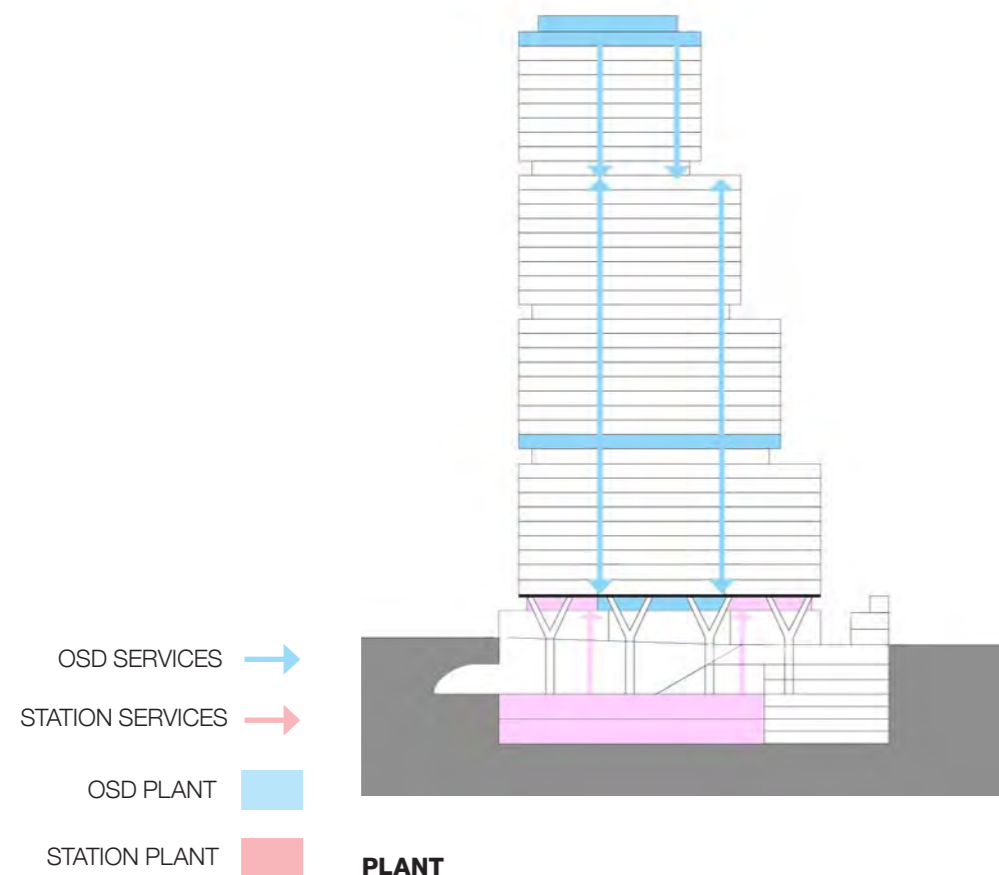
- STRUCTURE
- CORE



STRUCTURE

The core is located on the eastern boundary adjacent to the core of the neighbouring 65 Berry Street tower. This is considered the optimum location to avoid impact on the station entry, circulation and concourse level whilst minimising overlooking to the neighbouring 65 Berry Street site.

The structural strategy provides lateral stability primarily using the core, with some contribution from columns and beams via frame action. A highly efficient and exceptionally flexible 17.8m x 10.5m column grid provides excellent commercial floorplates with large, column free spans suitable for premium grade tenants. At the podium level, 8 tower columns on the Miller Street frontage transfer to 4 "Y" columns, minimising the impact on the station entrance, OSD lobby and the concourse level below.

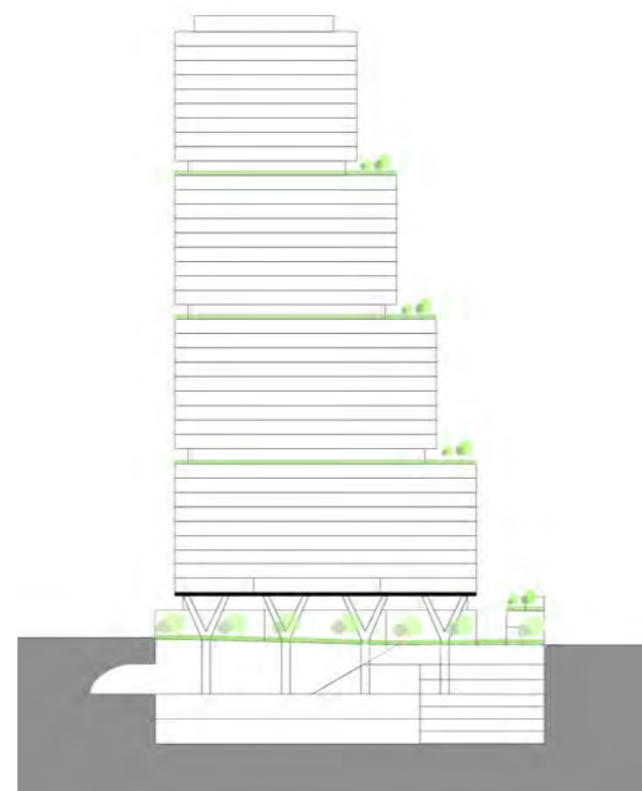


PLANT

The majority of the station plant room is located at basement 07 and basement 04. Air intake and extract for the station occurs at podium level 03 and provides a massing separation between tower and podium forms.

The commercial office stack is serviced by two plant zones, one located at level 14 and the other located over two plant levels on the roof at levels 41 and 42. General building services for the OSD tower, retail and low rise office are located at basement level 07 and podium level 03.

The plant systems and equipment have been kept separate to minimise overlap of plant access and services reticulation.



GREEN SPACE

Every opportunity has been taken to maximise the area of green space. The through-site link has been incorporated as part of the public domain and a series of sky terraces have been created for occupants to take respite and enjoy the views. The public domain is part of the concept CSSI approval but will be designed in collaboration with the OSD to ensure the public domain is integrated with the Station and OSD.

10.2 INTEGRATED DESIGN CONSTRUCTION STAGING

CONSTRUCTION STAGING

Three possible staging scenarios have been identified for delivery of the Integrated Station Development:

/Scenario 1:

The station and OSD are constructed concurrently by constructing the transfer slab first and then building in both directions. Both the station and OSD would be completed in 2024.

/ Scenario 2:

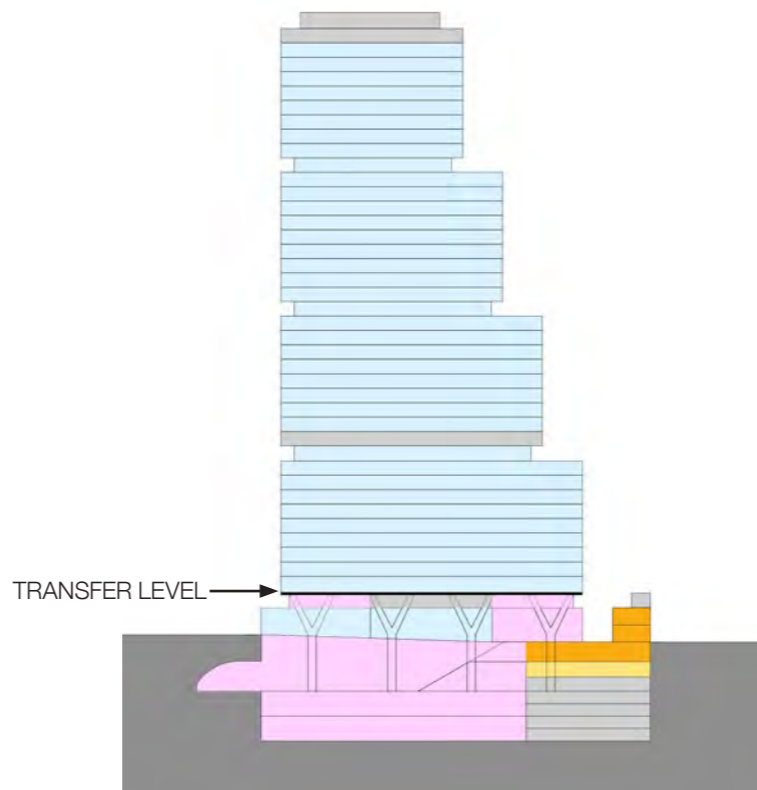
The station is constructed first and ready for operation in 2024. OSD construction may still be incomplete or ready to commence after station construction is completed. This means that some or all OSD construction would likely still be underway upon opening of the station in 2024.

/Scenario 3:

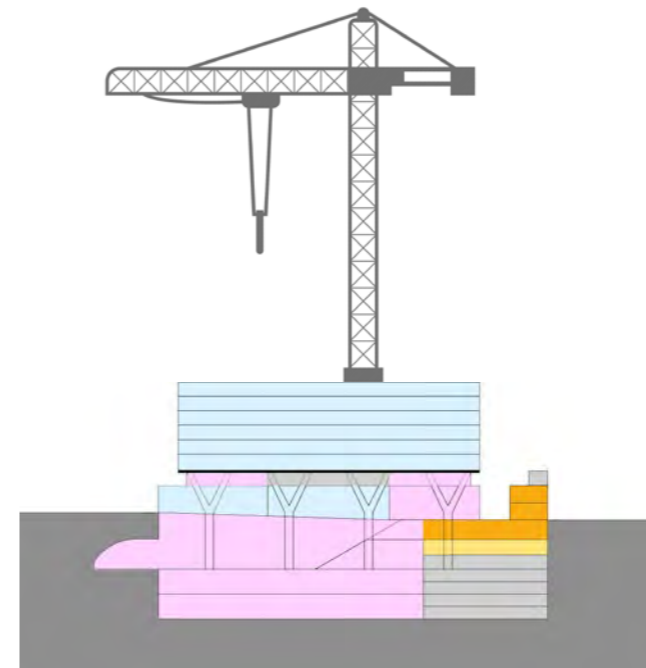
The station is constructed first and ready for operation in 2024. The OSD is built at a later stage, with timing yet to be determined. This creates two distinct construction periods for the station and OSD.

Scenario 1 represents TfNSW's preferred option, as it would provide for completion of the full Integrated Station Development, and therefore the optimum public benefit, at the site at the earliest date possible (i.e. on or near 2024 when the station is operational). However, given the delivery of the OSD could be influenced by property market forces, scenarios 2 or 3 could also occur, where the building above the new station is finished after Victoria Cross Station opens and Sydney Metro services start in 2024.

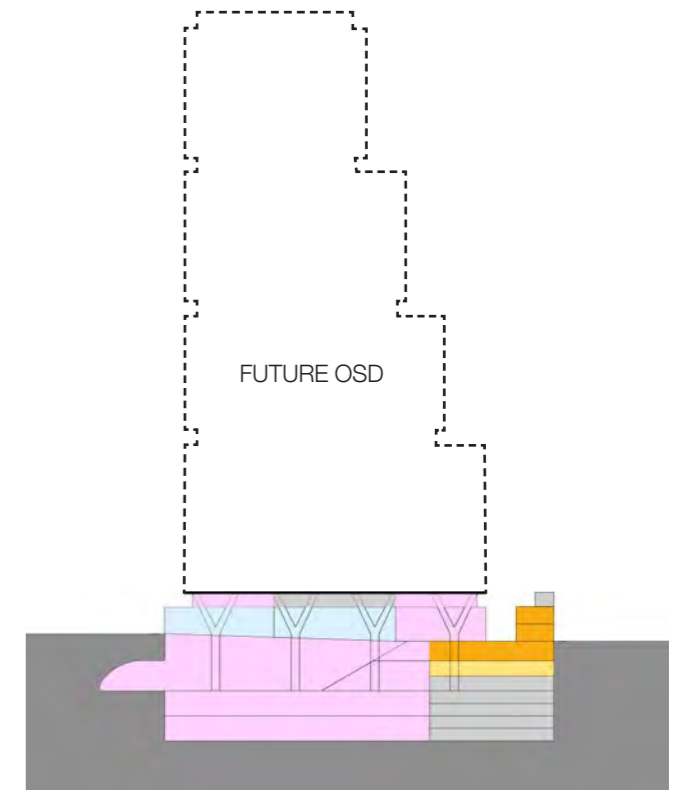
The final staging for the delivery of the OSD would be resolved as part of the detailed SSD application(s).



SCENARIO 1



SCENARIO 2



SCENARIO 3

- OSD
- STATION RETAIL
- STATION/ STATION PLANT
- SHARED LOADING DOCK
- OSD PLANT/ END OF TRIP & CAR PARKING



CONCEPT PERSPECTIVE OF THE VICTORIA CROSS STATION AND OSD

10.3 INTEGRATED DESIGN ENVIRONMENTAL STRATEGY

ENVIRONMENTAL STRATEGY

The aim for the environmental strategy is to achieve minimum 5 Star NABERS Energy (Office Base Building), minimum 4 Star NABERS Water (Office), and 5 Green Star Rating with the potential to upgrade to 6 Green Star.

The project has considered a number of strategies relevant to the Concept SSDA application and the level of design development.

The focus of this is to confirm general sustainability targets and make sufficient spatial allocations to allow for and accommodate facilities and infrastructure to enable the sustainability outcomes be achieved.

A project specific Sustainability Framework has also been developed to guide sustainability considerations and outcomes for the project going forward. Refer to Appendix Q of the EIS.

1

ENERGY & CARBON

The energy strategy will implement leading practice energy conservation practices through passive design and energy efficiency strategies. Consider implementation of low or zero carbon energy technologies to reduce carbon emissions.

2

WATER

The water strategies will focus on reducing the building's water consumption through various efficiency and water re-use measures.

3

TRANSPORT

Transport strategies will facilitate a reduction of the dependency of occupants on private car use as an important means of reducing overall greenhouse gas emissions and increase occupant activity.

4

INTERNAL ENVIRONMENTAL QUALITY

IEQ strategies focus on measures to enhance the comfort and well-being of occupants including thermal, acoustic and visual comfort.

5

MATERIALS

The materials strategy reduces the resource consumption during building construction as well as the amount of waste generated.

6

EMISSIONS

Emissions strategies will concentrate on reducing sources of pollution and emissions in the building to limit environmental harm.



TRAFFIC

The site is located within close proximity to heavy transport infrastructure reducing dependence on vehicle usage.

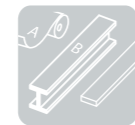
The design incorporates:

- Dedicated parking spaces for low emission vehicles
- Provision of cyclist parking and end of trip facilities to promote more green travel options



INTERNAL ENVIRONMENTAL QUALITY

- Visual amenity supported through a combination of natural daylighting and artificial lighting
- Improved outside air rates and use of low TVOC and low formaldehyde materials to improve indoor air quality



MATERIALS

- Reduced Portland Cement usage
- Recycled material use (i.e.timber, steel and concrete)
- Sustainable timber procurement



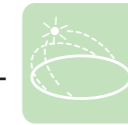
VENTILATION

- Potential for natural ventilation



DENSITY

Increased density facilitates better urban and infrastructure outcomes



FACADE

- High performance glazing system with passive solar design features
- High performance thermal insulation to reduce HVAC energy requirements



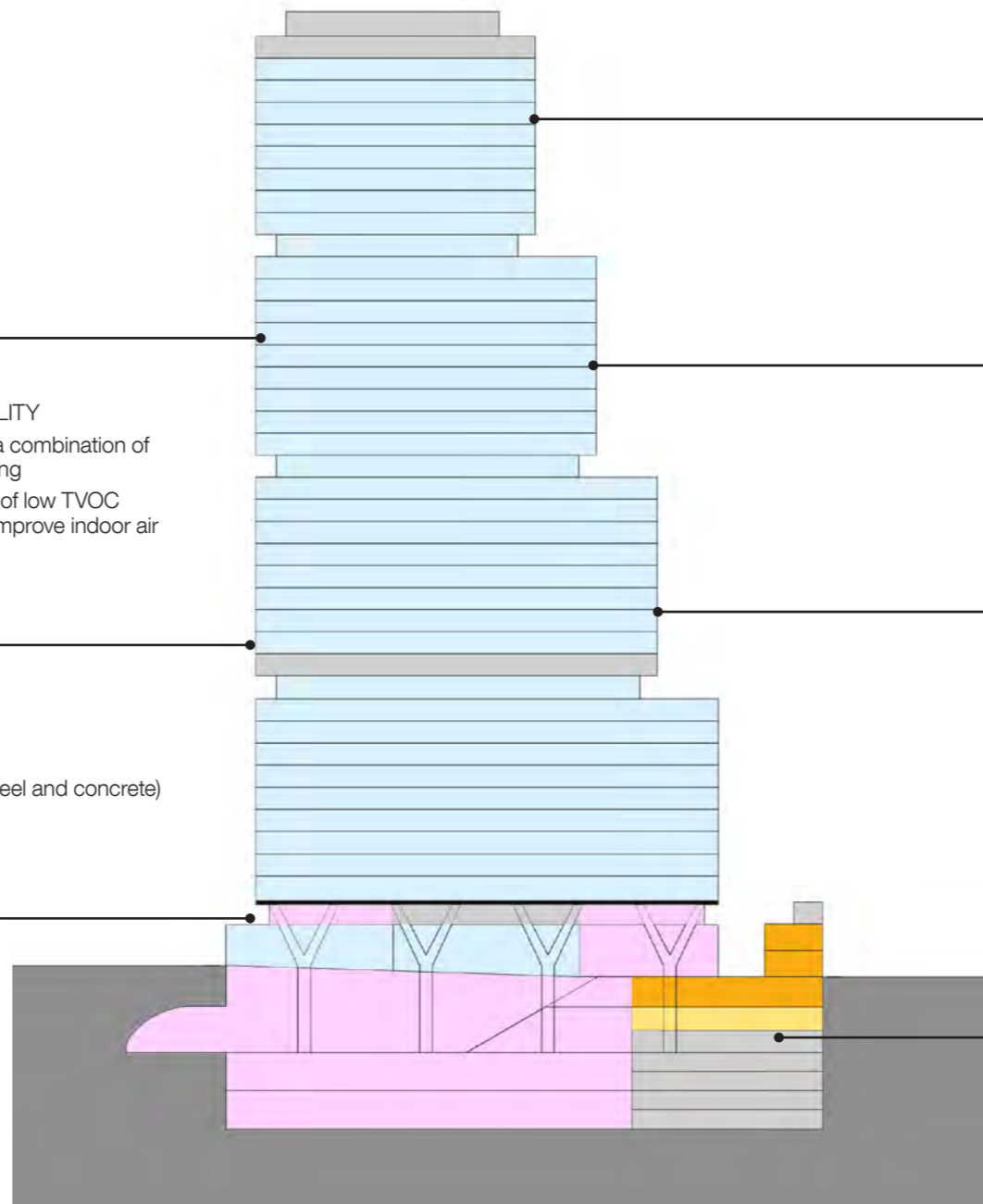
TOWER FORM

-The stepped tower form reduces wind shear enabling efficient structural use of materials



WATER

- Water efficient fixtures
- Stormwater & OSD tank treatment system
- Spatial provision for rainwater harvesting tank



ENVIRONMENTAL STRATEGY DIAGRAM

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