



CONCEPT DESIGN REPORT

FOR
MIXED USE DEVELOPMENT
617 - 621 PACIFIC HIGHWAY
ST. LEONARDS

PLANNING PROPOSAL SUBMISSION

REVISED ISSUE 17 MAY 2017

THE VISION

Introduction

This report provides a detailed analysis of the surrounding context of the site at 617-621 Pacific Highway St Leonards.

The development controls outlined in the St Leonards Crow Nest Planning Study adopted by Council in May 2015 have been carefully studied to inform the design. The site has been identified in that Study as being suitable for a ‘Tall’ building; whilst there is no specific height limit there are Tall Building Principles and aviation authority height controls that apply.

The proposed building height is significantly higher than the existing buildings in the surrounding area but based on our review of current DA submissions and planning proposals it is apparent that **the scale of future buildings in St Leonards will be substantially higher and there will be many buildings in excess of 45 storeys or more.**

The Vision

A building design that sets a new benchmark for mixed use development in St Leonards.

The proposed building includes five levels of basement parking, a seven storey podium (including retail, community and office facilities) and forty one levels of residential apartments. The proposed built form is for a tall, slender tower with a strongly articulated base, middle and top that will act as an urban landmark for the precinct, supporting high quality retail, community and commercial facilities as well as the residential apartments.

In addition the proposed development will stimulate job growth, business activity, streetfront activation, outdoor dining opportunities and enhancement of the public domain.

A tower that will act as an urban landmark for the precinct and provide high quality living and working conditions.



THE SITE

Site Description

617-621 Pacific Highway, St Leonards is a 1067 m² site that is located on a prominent corner in the urban block bounded by Atchison Street to the north, Pacific Highway to the south, Mitchell Street to the east and Christie St to the west.

The site is currently occupied by a 12 storey commercial building at 621 Pacific Highway and a 7 storey commercial building at 619 Pacific Highway.

The site has 3 street frontages to the Pacific Highway, Christie Street and Atchison Street, and to the east is the 16 storey IBM building.

The site has a relatively significant fall from east to west of 4 metres along both the Pacific Highway and Atchison Street frontages.

The site is located within 100m of St Leonards station, within the 'centre' of the St Leonards precinct and is identified as a site for a 'tall' building under North Sydney Councils' development controls.



617-621 PACIFIC HIGHWAY
ST LEONARDS

AERIAL PHOTOGRAPH | ST LEONARDS AND SURROUNDS

SITE ANALYSIS

Topography

St Leonards is located at the top of a prominent **ridgeline** with sloping topography across and beyond the study area. The land varies up to 19 metres in height. **The high points are generally located mid-block, between Mitchell St and Atchison St and sloping away in all directions.** There is a low point in the section between Willoughby Rd and Oxley St towards Crows Nest village centre, where the original creek line used to run. As a result of the steep topography, a number of ground floor entries to buildings are either located above or below street level.

Views & Vistas

The undulating topography of St Leonards in combination with its **mostly orthogonal street grid has created many opportunities for long sightlines and vistas.** These sightlines offer pedestrians a natural means of way finding. Most streets have a strong building line which also assists with wayfinding and establishes a strong spatial character to the area.



TOPOGRAPHY



VIEWS & VISTAS

Public Transport

St Leonards is an established and well serviced transport interchange with around half of all trips made to the area by public transport, 80% of which are by train. The station is the 7th most patronised station on the rail network outside the CBD, with more than 16,000 daily arrivals and departures in 2012 (NSW Bureau of Transport Statistics). Bus routes run frequently along the Pacific Highway and Willoughby Rd.

Vehicular Traffic

The study area is well served by the road network however **congestion is common at the traffic signals on Albany St and Christie St intersections of the Pacific Highway,** resulting in significant vehicle delays at certain times of the day. The congestion is largely a result of regional traffic from the Gore Hill Freeway heading for the Pacific Highway. The remaining intersections operate satisfactorily.



PUBLIC TRANSPORT & PEDESTRIAN ACCESS



VEHICULAR TRAFFIC

EXTRACT FROM ST LEONARDS CROWS NEST PLANNING STUDY 2014

SITE ANALYSIS

Constraints

The key constraints to transforming St Leonards into a high amenity mixed use centre are:

- a lack of useable public open space;
- **no focus for pedestrian activity or retail;**
- **no community facilities;**
- **high volume / speed of traffic on key streets;**
- inconsistent lighting, paving and furniture;
- unsafe laneways.

Opportunities

Conversely, St Leonards offers a number of opportunities that can be capitalised on by future projects in the area:

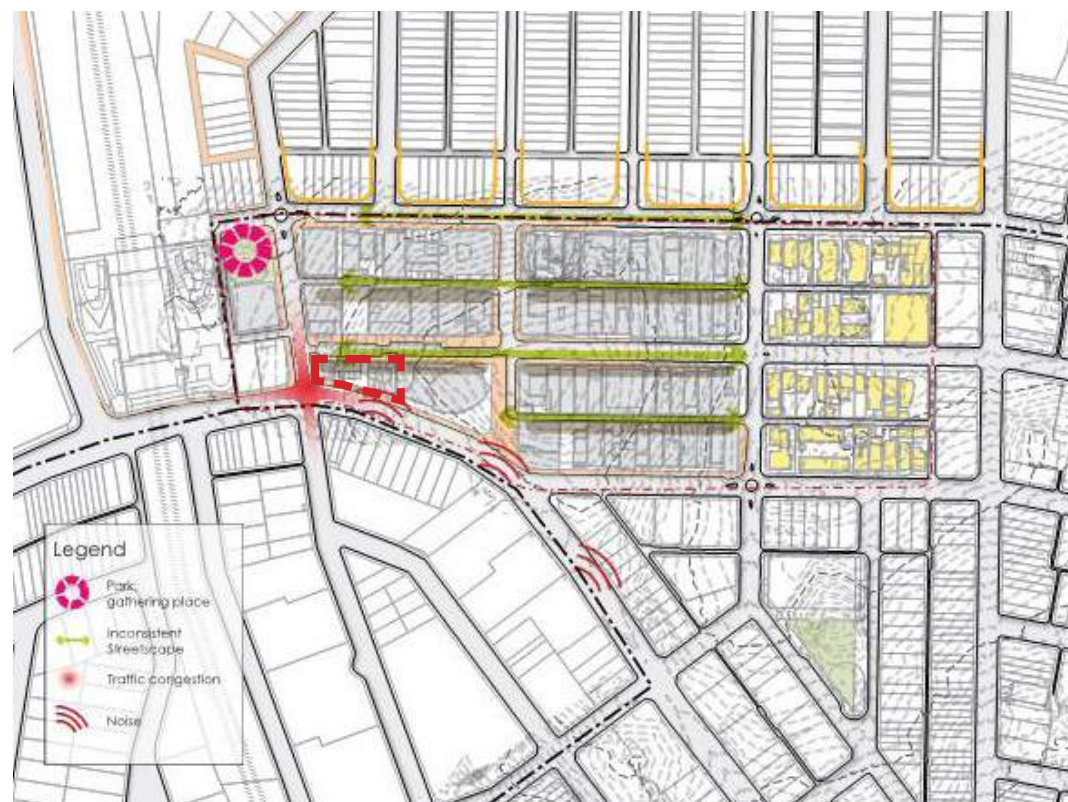
- **strong public transport connections;**
- **'fine bones' of a creative precinct;**
- a few 'anchor' establishments;
- **integrate new community facilities;**
- potential to activate laneways;
- **enhance 'civic' status of Atchison Street.**

Street Activation

There is a slowly emerging cafe and dining character to the area, anchored by key establishments like the Nilgiris on Christie St, the Moody Chef on Atchison St and Bazaar on Albany St. Outdoor dining is best supported by the few cafes along Chandos St that enjoy good sunlight throughout the day. Overall, retail and dining offerings are fragmented and struggle to compete with the high amenity of Willoughby Rd.

Public Open Space

Christie Street Reserve is the only public green space in the study area. As the reserve receives ample sunlight and offers reasonable levels of shade under mature trees, it is well utilised by the working community at lunchtime. At present, Mitchell Street Plaza is the only paved public space, although the forecourt to the IBM building is also publicly available and offers more sheltered seating.



CONSTRAINTS



OPPORTUNITIES



STREET ACTIVATION



PUBLIC OPEN SPACE

EXTRACT FROM ST LEONARDS CROWS NEST PLANNING STUDY 2014

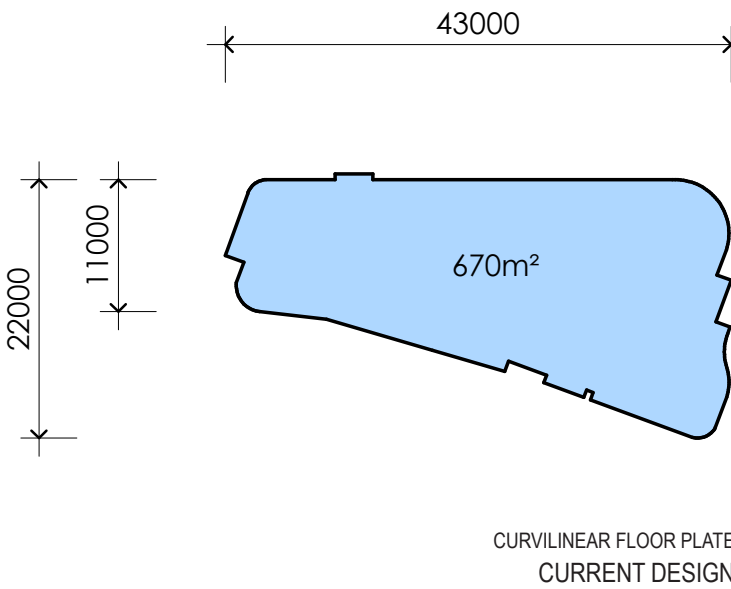
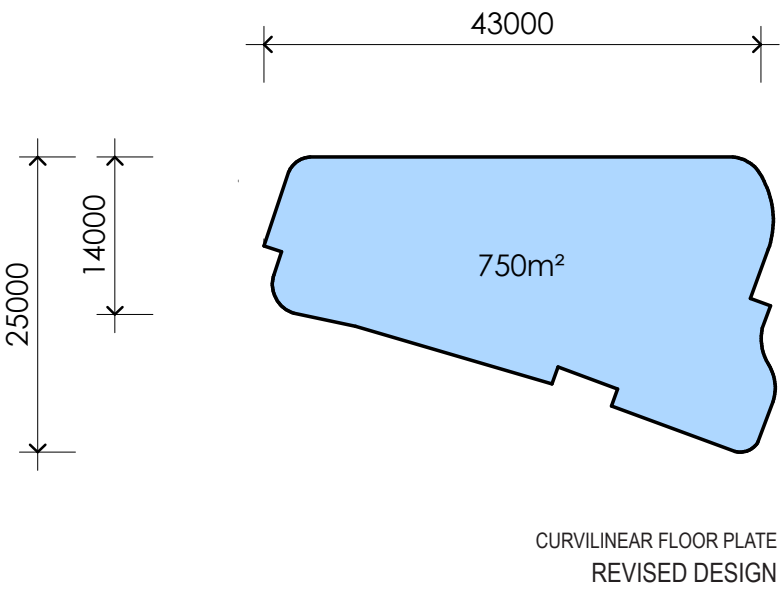
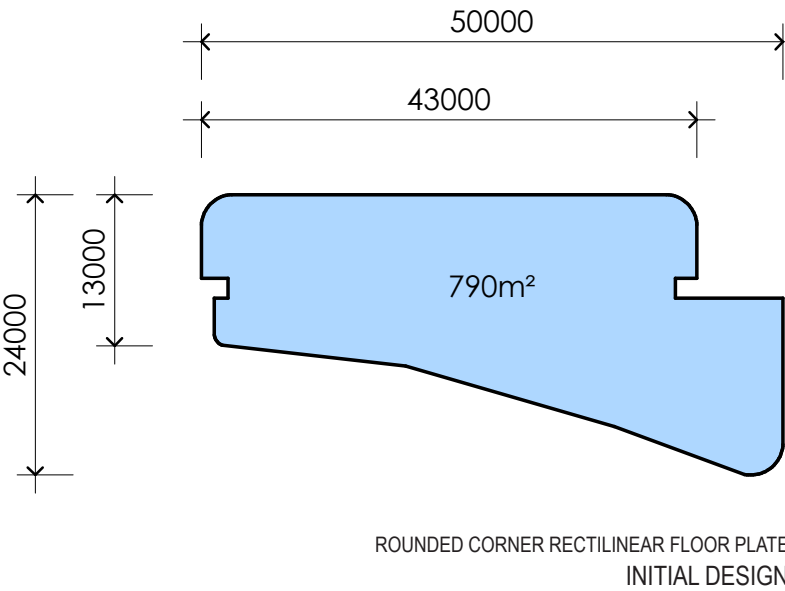
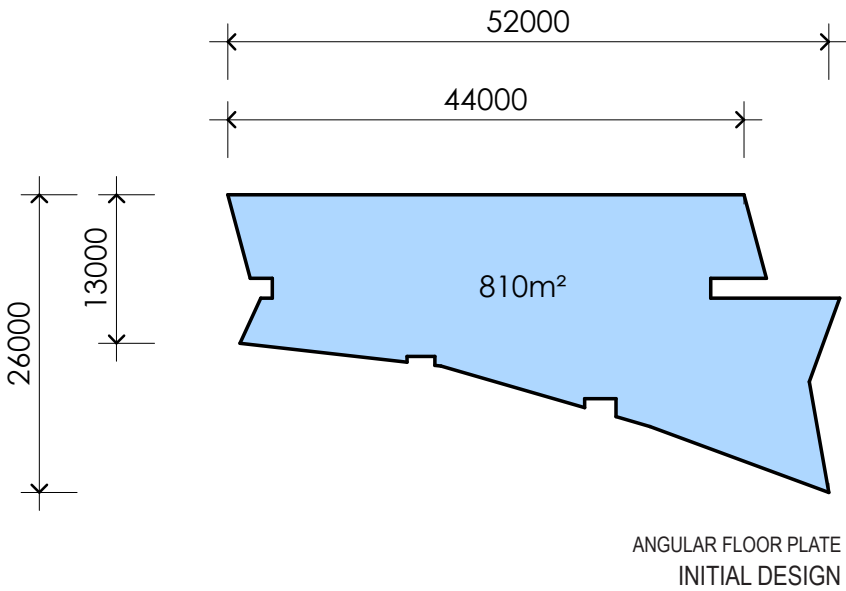
DESIGN EVOLUTION DIAGRAMS
RESIDENTIAL FLOOR PLATES

Residential Floor Plates

A number of initial tower floor plates options were investigated including ‘angular’ and ‘rectilinear’ forms, but due to aesthetics, adverse wind impacts, facade length, size, etc, they were discarded.

A revised design utilising a ‘curvilinear’ form was developed to address some of the above noted issues. A larger floor plate for the low-rise levels was also investigated.

The current design proposes a floor plate which is 10 to 15% smaller than the maximum recommended floor plate size. The current floor plate design complies with the Tall Building Design Principles and will achieve a built form comprising a slender tower above a well proportioned, articulated podium.



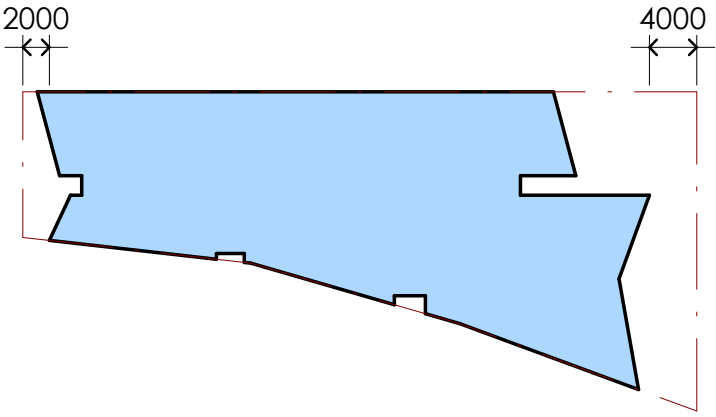
DESIGN EVOLUTION DIAGRAMS
TOWER SETBACKS

Tower Setbacks

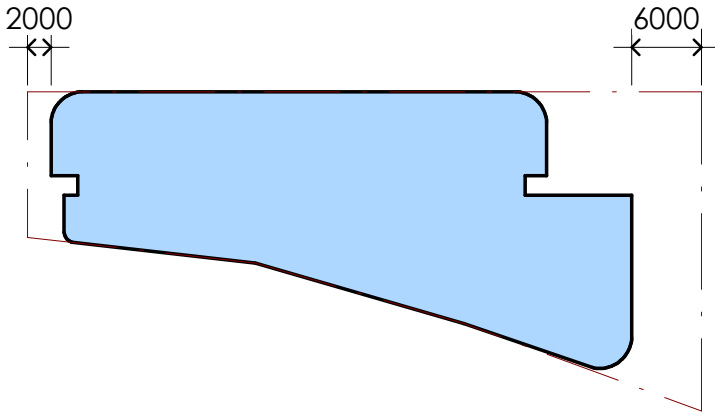
The initial design options adopted a modest (4-6m) setback to the eastern boundary, a small (2m) setback to the western boundary and zero setback to the north & south boundaries.

The revised design increased the western setback but reduced the eastern setback which would have compromised the separation from the existing/future tower elements on the adjoining site.

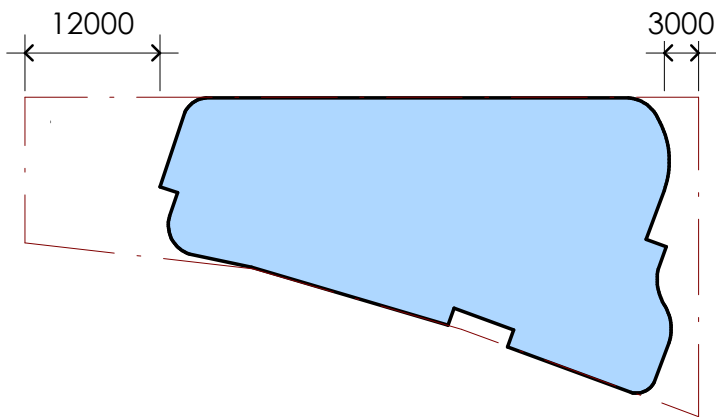
The current design provides a 2m setback to the northern boundary to maintain 24m separation from towers on the opposite side of Atchison Street, and shifted the tower west to achieve a minimum 6m setback to the eastern boundary. The eastern facade will be articulated and window openings oriented to face north/south to maintain privacy and views.



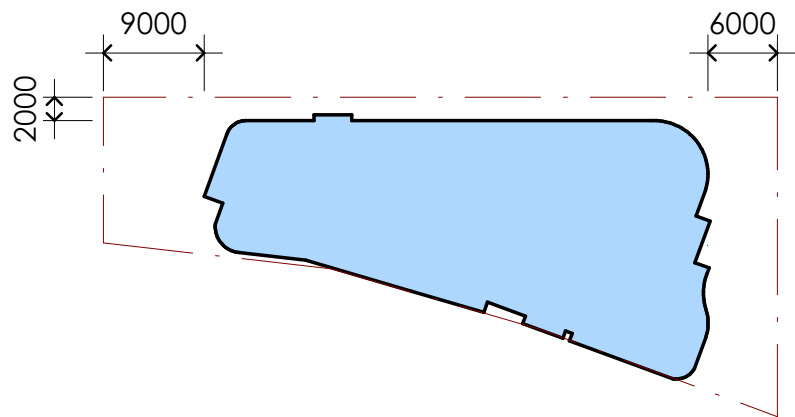
INITIAL DESIGN



INITIAL DESIGN



REVISED DESIGN



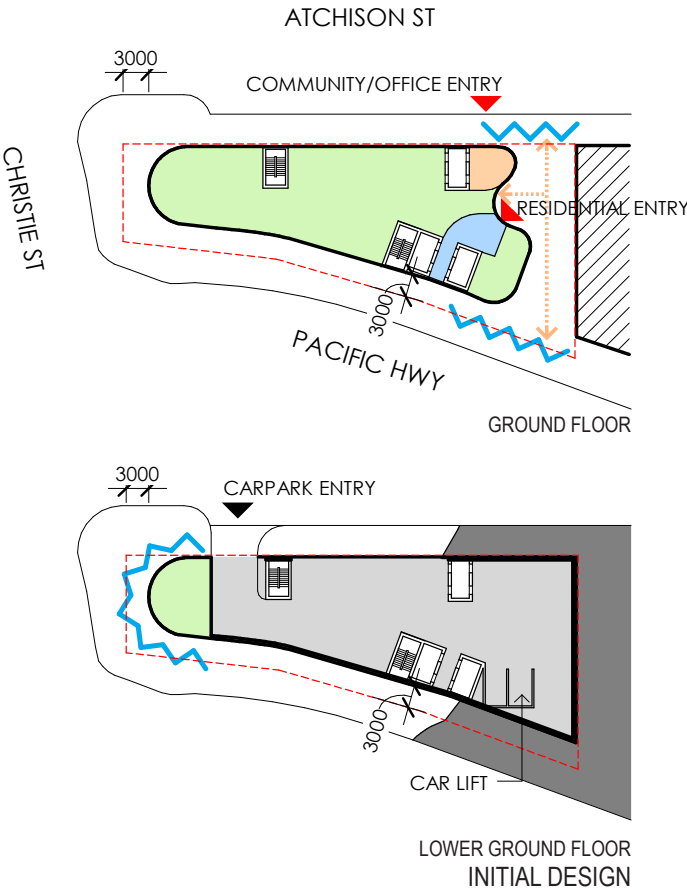
CURRENT DESIGN

Street Activation

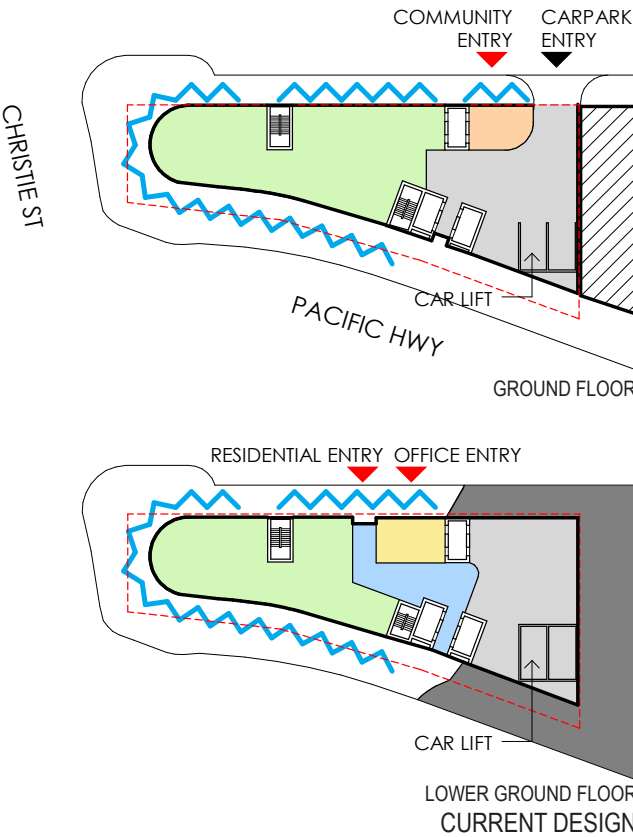
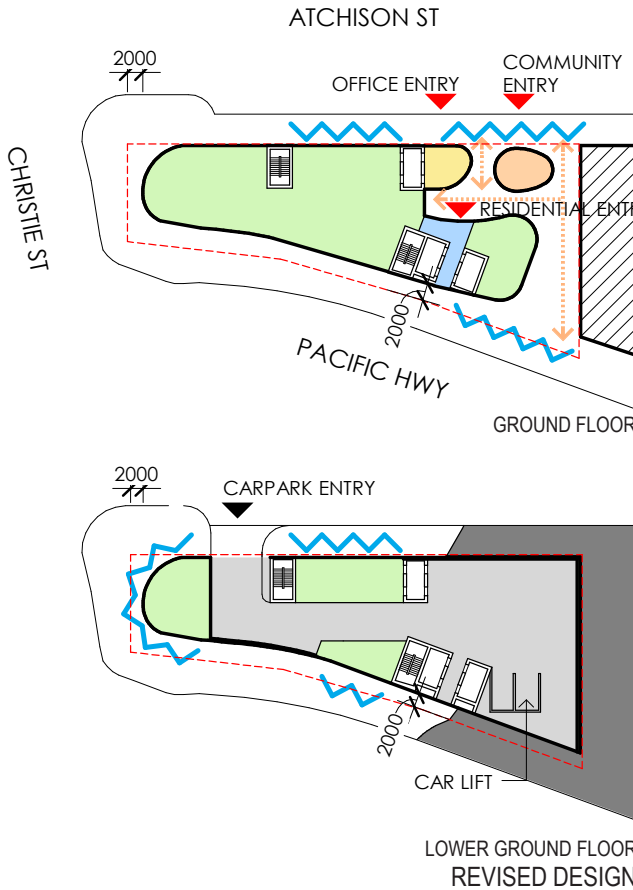
The initial design concept included active street fronts to Christie Street and the eastern most part of Atchison Street & the Pacific Highway via a through site link. The carpark entry was towards the western end of the site & provided access to a basement loading dock and car lifts serving the lower basement levels.

The revised design increased the street front activation along Atchison Street and the Pacific Highway, but retained the same carpark entry and carpark configuration as the initial concept.

The current design substantially increases the extent of retail space on the lower ground level as well as increasing street front activation with the three separate entries for residential, office and community related occupants/visitors. This has been achieved by relocating the carpark entry to the eastern end of the site and placing the loading dock at ground level. Three options were explored related to the carpark entry locations (refer following pages).



STREET ACTIVATION



DESIGN EVOLUTION DIAGRAMS

ALTERNATIVE CARPARK ENTRY OPTIONS

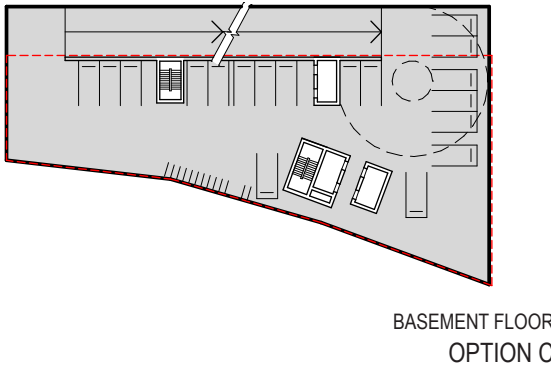
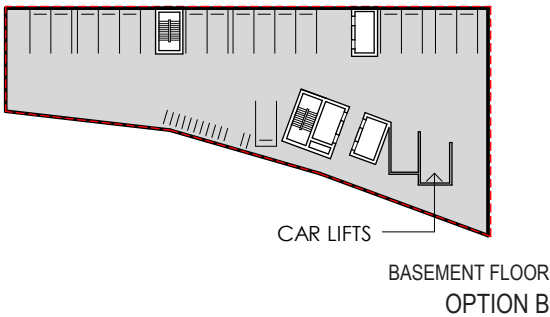
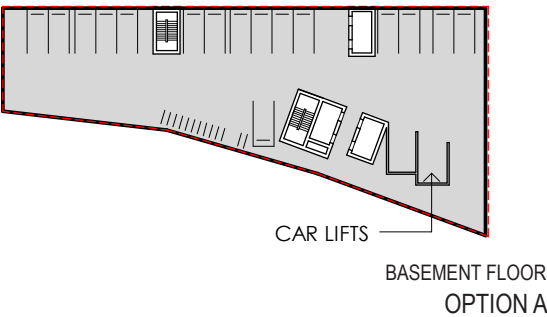
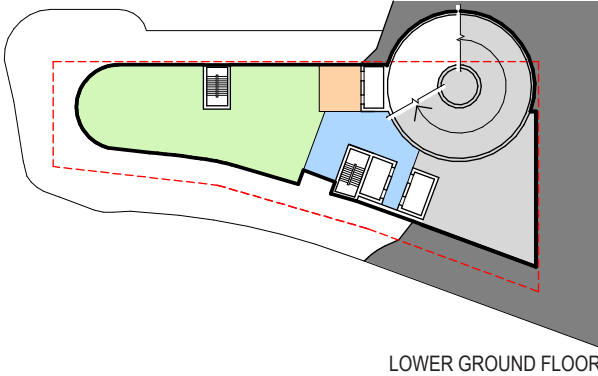
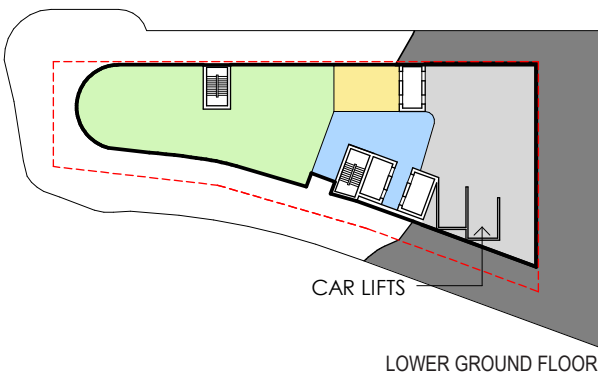
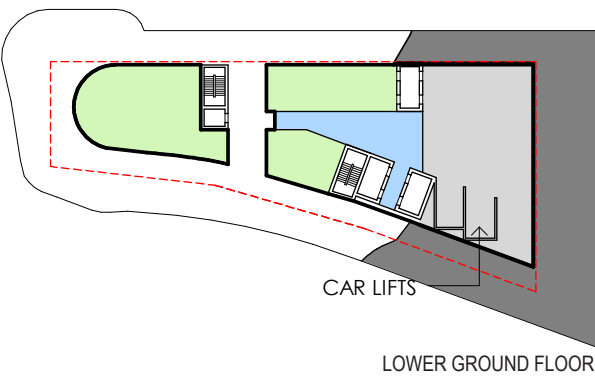
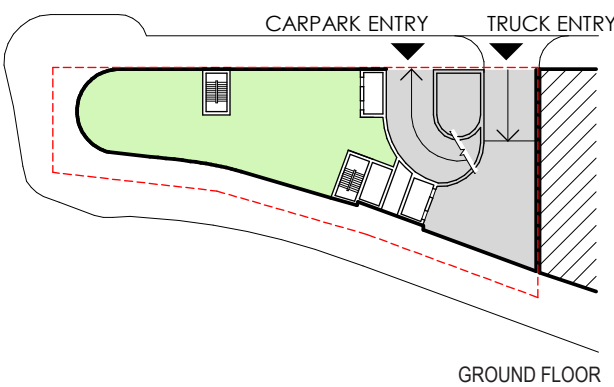
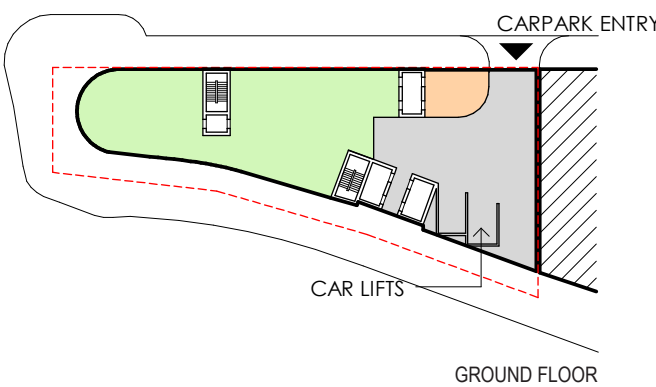
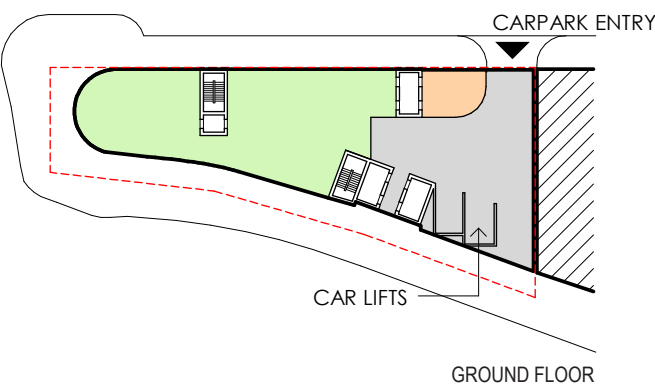
Alternative Carpark Entry Options

Following presentation to the Design Excellence Panel, we investigated 3 options for the relocation of the carpark entry and increased street activation as follows:

Option A
The carpark entry is relocated to the eastern end of the site and the loading dock is positioned at ground level. Car lifts provide access to the basement levels, the lower ground level provides a through site link including entries for the residential tower and combined entry for office/community facilities.

Option B
Has a similar arrangement to option A for the carpark entry, loading dock and car lifts but deletes the through site link and provides separate entrances for each of the residential office and community facilities. The floor plans for the proposed design are based on this option.

Option C
This option has separate carpark and truck entries. It has the potential to replace the car lifts with a ramp that extends under Atchison Street. Due to the increased impact of dual vehicle entries and the complications of building under the street, we do not believe it is a viable option.



DESIGN EVOLUTION DIAGRAMS

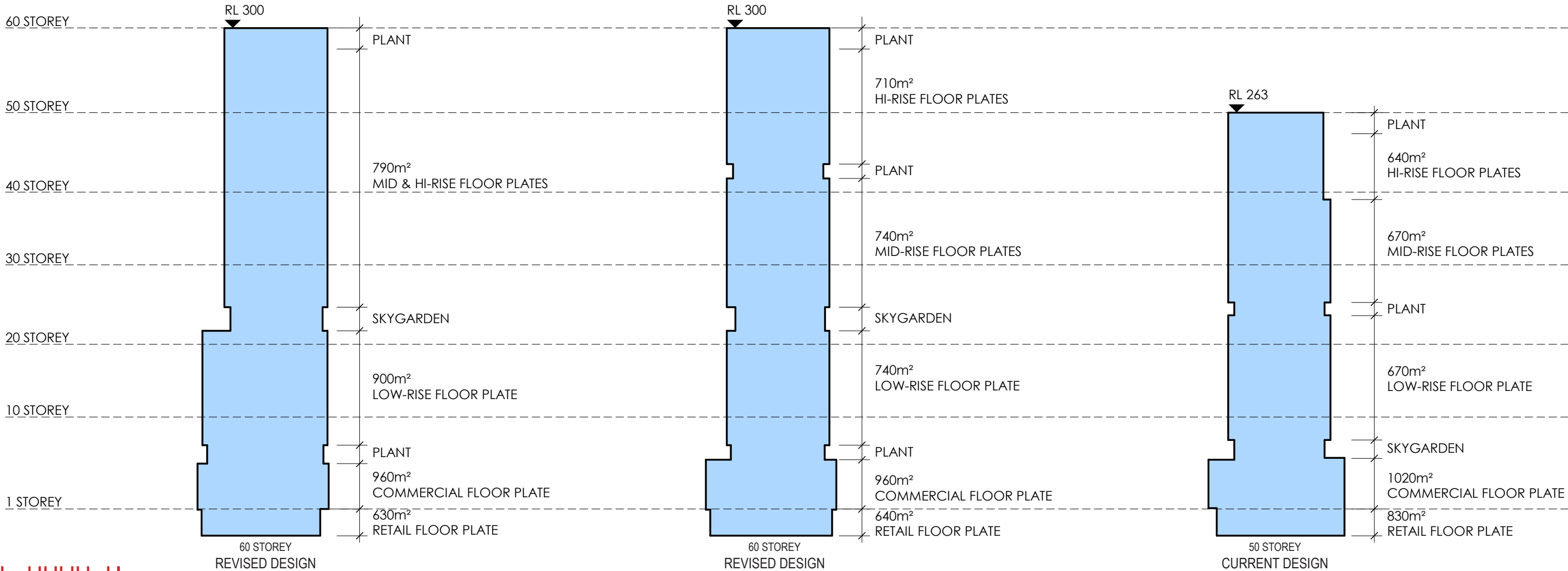
BUILDING HEIGHT / SCALE

Building Height / Scale

The initial and revised design concepts proposed a building in the order of 60 storeys (comprising a 7 storey podium, 3 to 4 plant/skygarden levels and 52 residential levels). The top of the building was around RL 300. Council advised that they would not support a design of this height and raised concerns regarding density, scale, traffic, lift capacity, etc.

Whilst this height would make it the tallest building in St Leonards, the site's close proximity to the train station and prominent location on the Pacific Highway means that it is ideally positioned to support a tower of this scale.

The current design proposes a building of 50 storeys (comprising a 7 storey podium, 3 plant/skygarden levels and 41 residential levels) with a rooftop level of RL263.



DESIGN EVOLUTION DIAGRAMS

PROPOSED DESIGN OVERVIEW

Proposed Design Overview

The current design proposes a building of 50 storeys with a slender tower form atop a well proportioned, articulated podium. Tower floor plate size and length complies with the Tall Building Design principles and maintains a minimum 24 separation to adjacent towers. The extent of street front activation has been maximised with additional retail space, multiple building entry points and relocated carpark entry.

The sites' close proximity to St Leonards train station and prominent location on the Pacific Highway means that it is ideally positioned to support the proposed building. This development will act as an urban landmark for the precinct and provide high quality, living, working and recreational facilities.

50 STOREY HEIGHT (RL 263)

SLENDER TOWER FORM

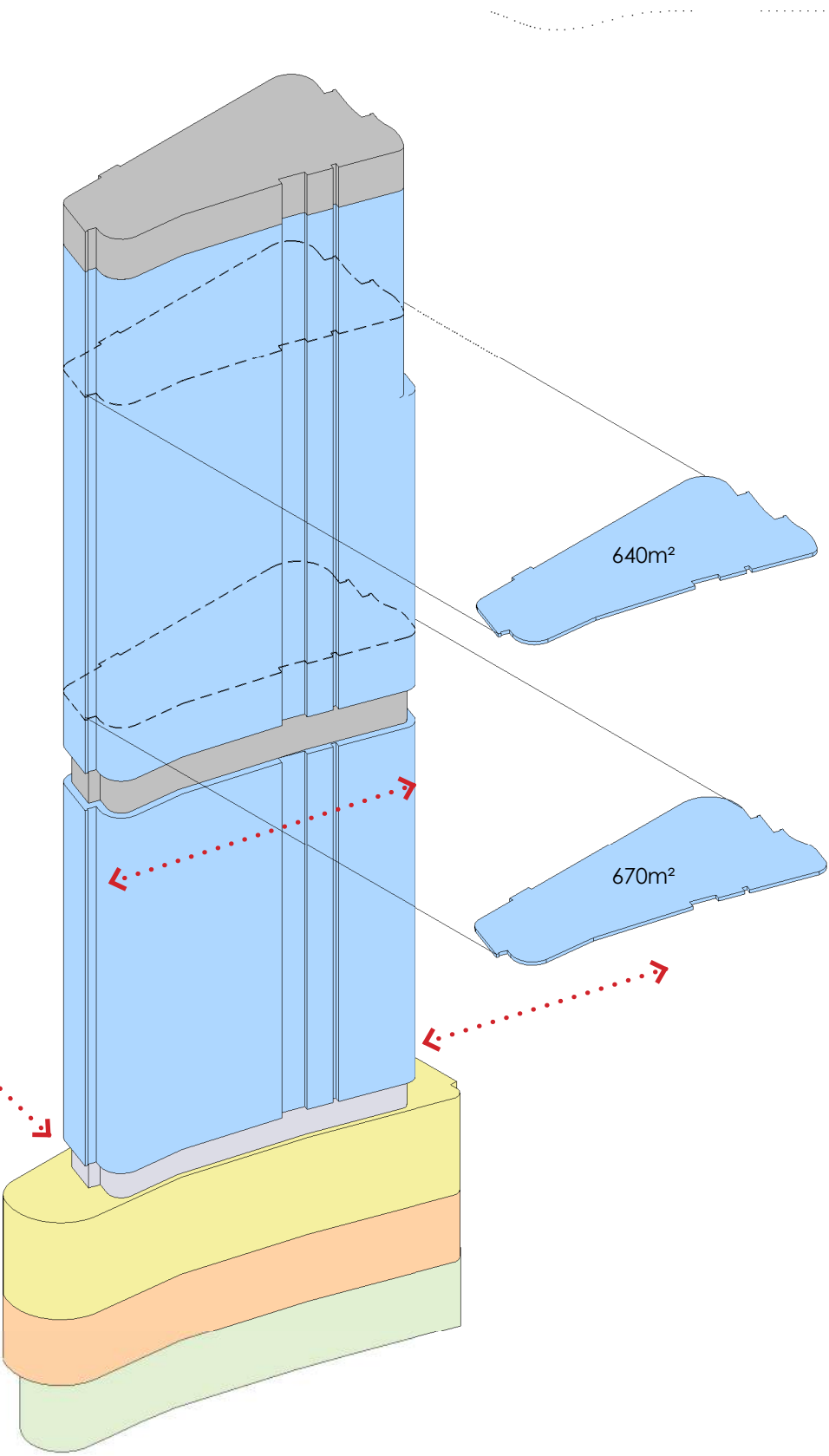
640 / 670m² TOWER FLOOR PLATE

40m MAXIMUM BUILDING LENGTH WITH ARTICULATED FACADES

24m MINIMUM SEPARATION FROM OTHER TOWERS

WELL PROPORTIONED, ARTICULATED PODIUM

ARTICULATED STREETFRONTS MAXIMISED



DEVELOPMENT CONTROLS

Applicable Development Controls

The current development controls applicable to the site are as follows:

- North Sydney Local Environmental Plan (LEP) 2013:
- North Sydney Development Control Plan (DCP) 2013
- SEPP 65 – Apartment design Guide

In addition to these existing controls, the **St Leonards Crows Nest (SLCN) Planning Study for precincts 2 & 3**, which encompasses the site, was endorsed by north Sydney Council in May 2015.

For the purposes of this concept design study, the SLCN planning study has generally been taken as the primary controlling document applicable to the site.

FSR

The site is not FSR limited under either the existing LEP/DCP controls nor the SLCN planning controls.

The SLCN planning study applies a **minimum non-residential FSR of 4.0:1 to the site**. The proposed retail, commercial and community space within the podium would generate a non-residential FSR in excess of 4.0:1.



NON-RESIDENTIAL FSR
EXTRACT FROM ST LEONARDS CROWS NEST PLANNING STUDY 2014

BUILDING SETBACKS

Building Setbacks

A 3 metre ground level setback (for 2 storeys) is nominated for the Christie Street and Pacific Highway frontages.

A four to six storey podium is nominated but there are no above podium setback requirements on any of the street frontage.



GROUND LEVEL SETBACK AND PODIUM HEIGHT



MINIMUM ABOVE PODIUM SETBACK
EXTRACT FROM ST LEONARDS CROWS NEST PLANNING STUDY 2014 | BUILDING SETBACKS

BUILDING HEIGHT

Existing Height Controls

The St Leonards skyline is a prominent feature of the lower north shore being highly visible in and around Sydney.

Current height controls across the three local government areas transition down from 109m from The Forum development (above St Leonards Station) in all directions:

- Along the Pacific Highway in the North Sydney local government area, current height controls step immediately down to 49m and steadily decrease down to 10m at Crows Nest.
- In Lane Cove, current height controls transition down from 138m down to 15m along the Pacific Highway.
- In Willoughby, with the exception of The Forum, the commercial area currently supports a 20m height limit largely in response to the conservation area to its north.

Buildings within the Study Area are generally within the height limits of the North Sydney planning controls with a few notable exceptions - those being the IBM and the Abode buildings.

Future Building Heights

The current approval for 'Air' at 6-16 Atchison St is 95m – well above the 49m limit. This building is currently under construction.

Lane Cove Council is currently progressing a number of development applications that would significantly increase the maximum height south of the Pacific Highway anywhere between 91 to 138m (24 to 34 storeys) on 472-486 Pacific Highway (Mirvac) and 500-504 Pacific Highway (Charter Hall) has a proposed height of around 150m (45 storeys).

There is also a planning proposal for 84-90 Christie Street (Winton) which has a proposed building height of 224m.

It is clear that whilst the current height controls and existing buildings in the vicinity of St Leonards station are 30 storeys or less, in the near future there will be many buildings of 45 or more storeys.

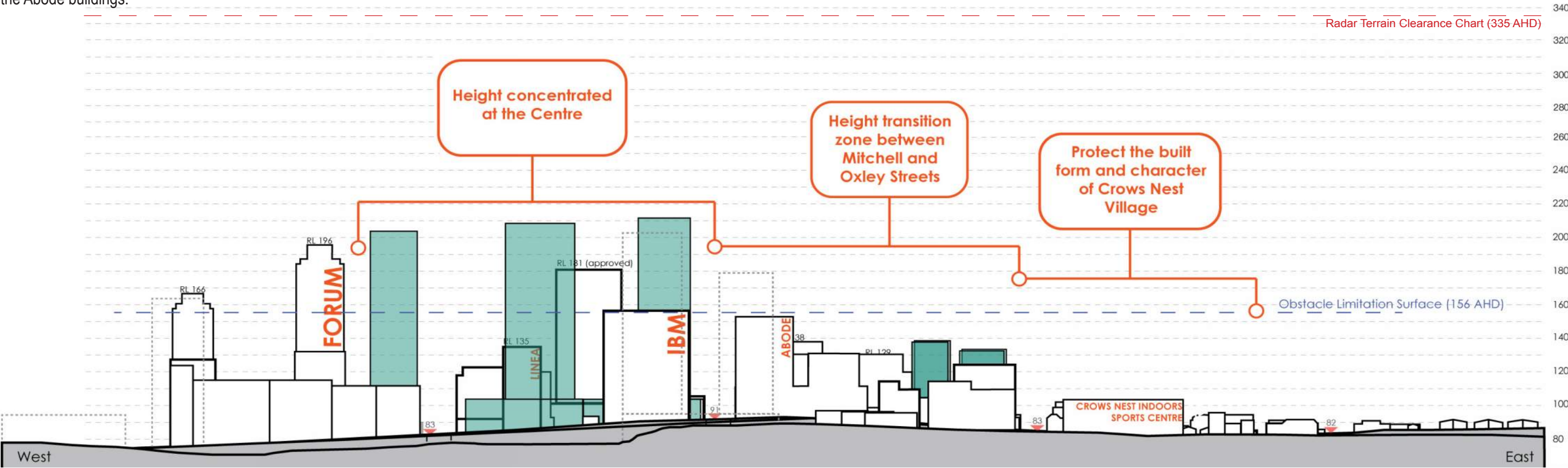
Aviation Height Controls

The diagram below shows the location of the 'Obstacle Limitation Surface' (OLS) and Radar Terrain Clearance Chart (RTCC) that applies to the centre. The OLS and RTCC are a series of surfaces in the airspace surrounding an airport. Development proposing to exceed the OLS requires approval from the aviation division of the Commonwealth Department of Infrastructure and Regional Development, having regard to the advice of the relevant airport, Air services Australia and Civil Aviation Safety Authority.

The overall building height including ancillary features (masts, BMV, etc) and temporary structures (cranes) must be below the RTCC.

We have confirmation from a specialist Aviation consultant (AV Law) that a building height of up to 60 storeys (RL 300 AHD) is likely to be approved by the relevant aviation authorities.

AV Law have also advised that the operations of the RNS Hospital helipad will not be adversely affected by the increased height of the proposed building on 617-621 Pacific Highway.



BUILDING HEIGHT

Proposed Building Envelopes

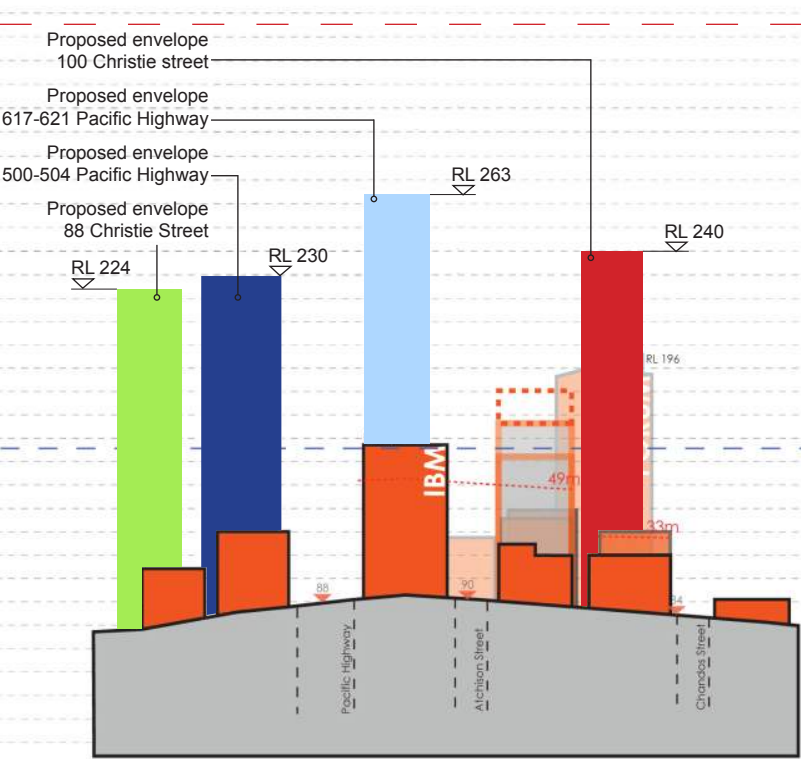
The proposed envelope for redevelopment of 617-621 Pacific Highway would have a maximum overall height of approximately 180 metres (50 storeys) which equates to RL 263 as shown on the section diagrams below and on the page opposite.

There are a number of other planned new developments in the vicinity which propose ‘tall’ towers including:

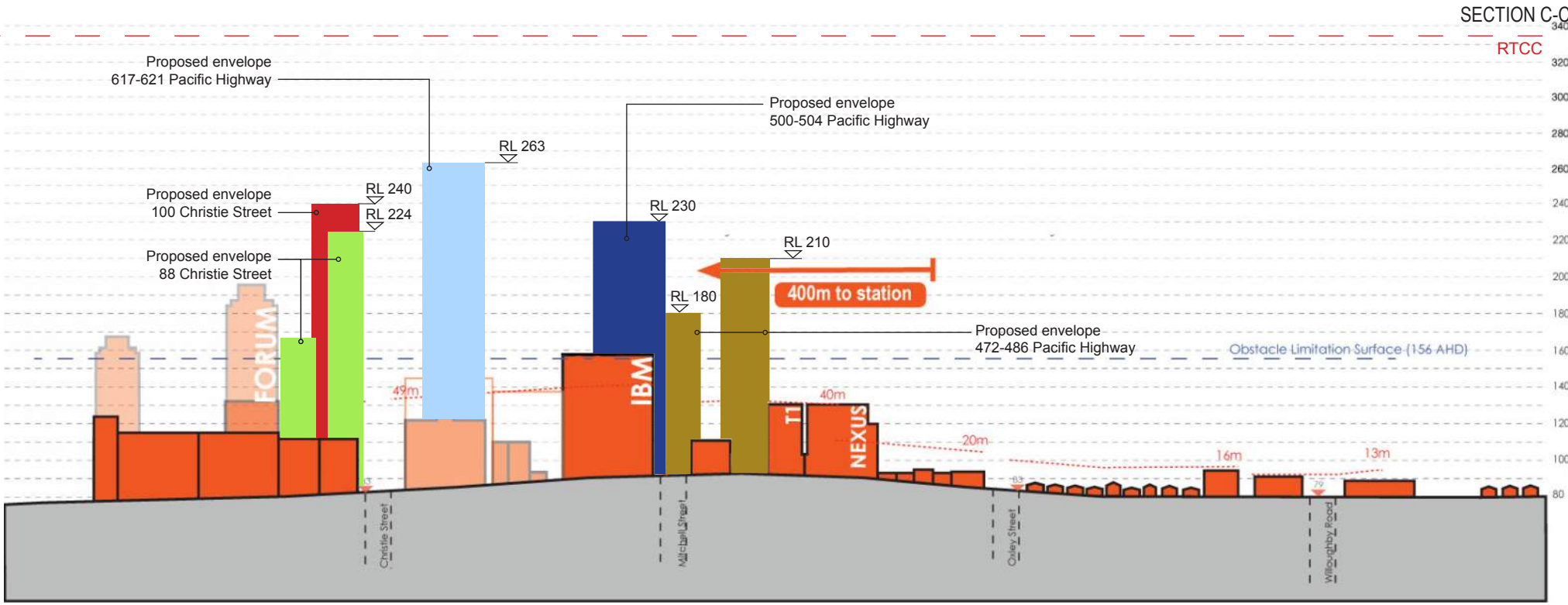
- 472 to 486 Pacific Highway (shown in bronze on diagrams below)
- 500-504 Pacific Highway (shown in blue on diagrams below)
- 100 Christie Street (shown in red on diagrams below)
- 88 Christie Street (shown in green on diagrams below).



KEY PLAN



SECTION W-W



SECTION C-C

EXTRACT FROM ST LEONARDS CROWS NEST PLANNING STUDY 2014

TALL BUILDING DESIGN

Building Height

There are no specific height limits applicable to the site, but the site is identified as being suitable for a 'tall' building and accordingly must demonstrate that the proposed built form envelope:

- reinforces the desired character of the area;
- adheres to the setbacks, podium height, ground level and above podium setbacks;
- maximises sunlight access to streets;
- maximises sunlight access and view sharing of nearby residences;
- provides a high level of residential amenity;
- creates a safe, comfortable, accessible, vibrant, and attractive public realm and pedestrian environment.

Tall Building Design Principles

The design and placement of tall buildings should make a positive contribution to the public domain, fit harmoniously with the surrounding context and skyline.

In addition to the design principles for additional height, the following design principles for tall buildings apply:

- the built form must be a slender tower with a maximum gross buildable area (GBA) of 750m², including balconies, above a well proportioned, articulated podium;

The proposed built form is a slender tower with low, mid and high rise residential floor plates of less than 670m². The residential floor plates are separated by a shared, landscaped 'sky gardens'. The podium level floor plates are around 960m² are also separated from the low rise residential floors by a plant room level to create a tower with a strongly articulated base, middle and top.



EXTRACT FROM ST LEONARDS CROWS NEST PLANNING STUDY 2014 | BUILDING HEIGHTS

TALL BUILDING DESIGN

- large, elongated floor plates are to be avoided by having tower elements with a maximum length of 40m, with breaks and articulation encouraged along elevations;

The proposed low/mid/high rise residential floor plates comply with the recommended length of 40m. The tower form will be strongly articulated by vertical slots/blades, projecting balconies and variations in the facade.

The podium non-residential floor plates will be similarly articulated and variations in the facade materials, texture, colour and detail will further enhance the articulation of the building envelope and tower form.

- the tower element is to achieve a minimum separation distance of 24m from other tall buildings. A minor portion of the building within a 20m separation distance will be considered if environmental and amenity impacts can be mitigated;

The proposed tower is setback six metres from the eastern boundary and more than 24m from the existing IBM tower on the adjoining site. Similarly the proposed tower will be 24m or more from other buildings on Atchison, Christie and Pacific Highway streetfront boundaries. In addition to the 24m separation to the buildings on the opposite side of Atchison Street, the primary outlook from northern apartments is over the top of, or between these buildings.

- the cumulative impact of multiple towers on the public realm must be carefully considered through detailed overshadowing and view analysis;

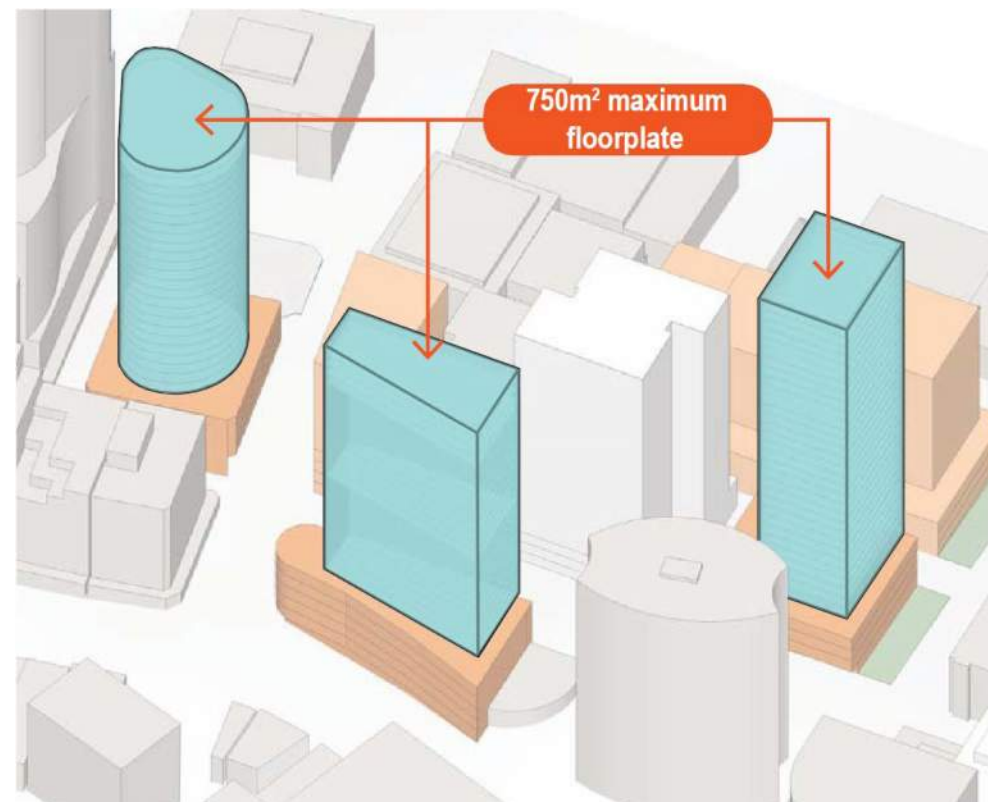
Shadow and view studies have been prepared, but whilst the proposed tower will have a minor impact on the public realm, these impacts are mitigated by the slenderness of the tower, the separation from other towers and the increased street level setbacks.

- the design must mitigate overshadowing and wind impacts, and protect sunlight and views of the sky from streets, parks, properties;

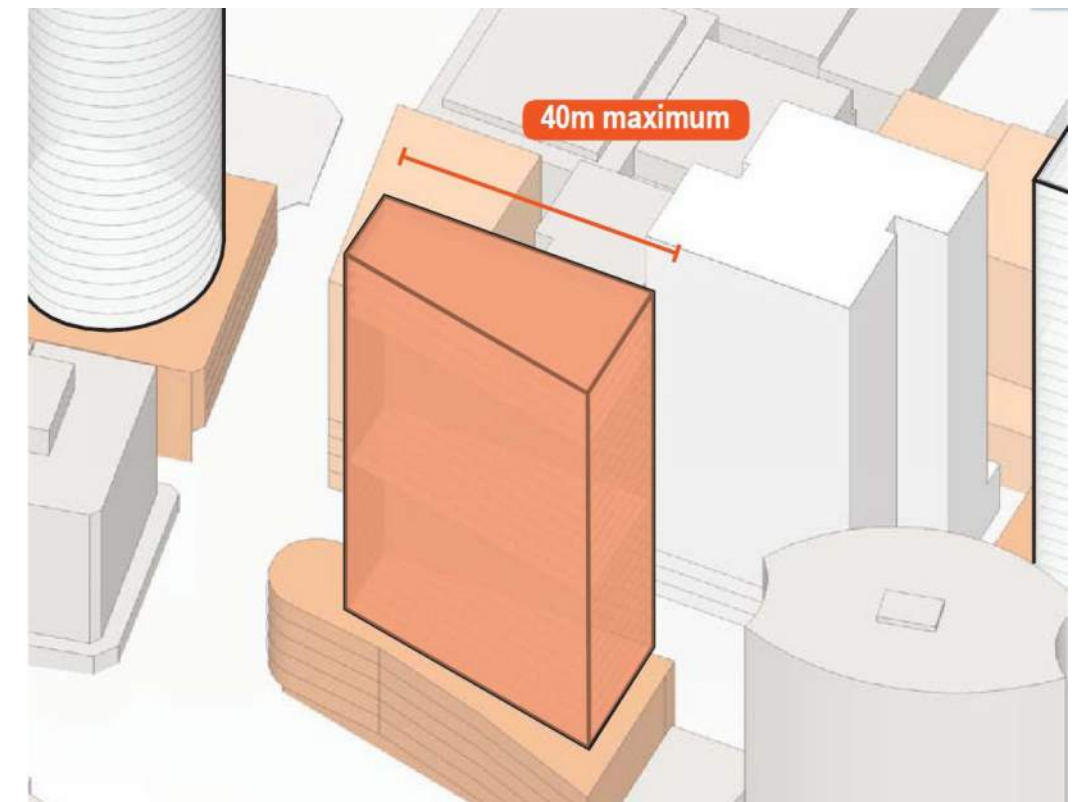
As noted above the building design will mitigate the overshadowing impacts, similarly the proposed design will aim to mitigate wind impacts and protect sunlight and views of the sky.

- ensures high-quality living and working conditions, natural ventilation and privacy for building occupants.

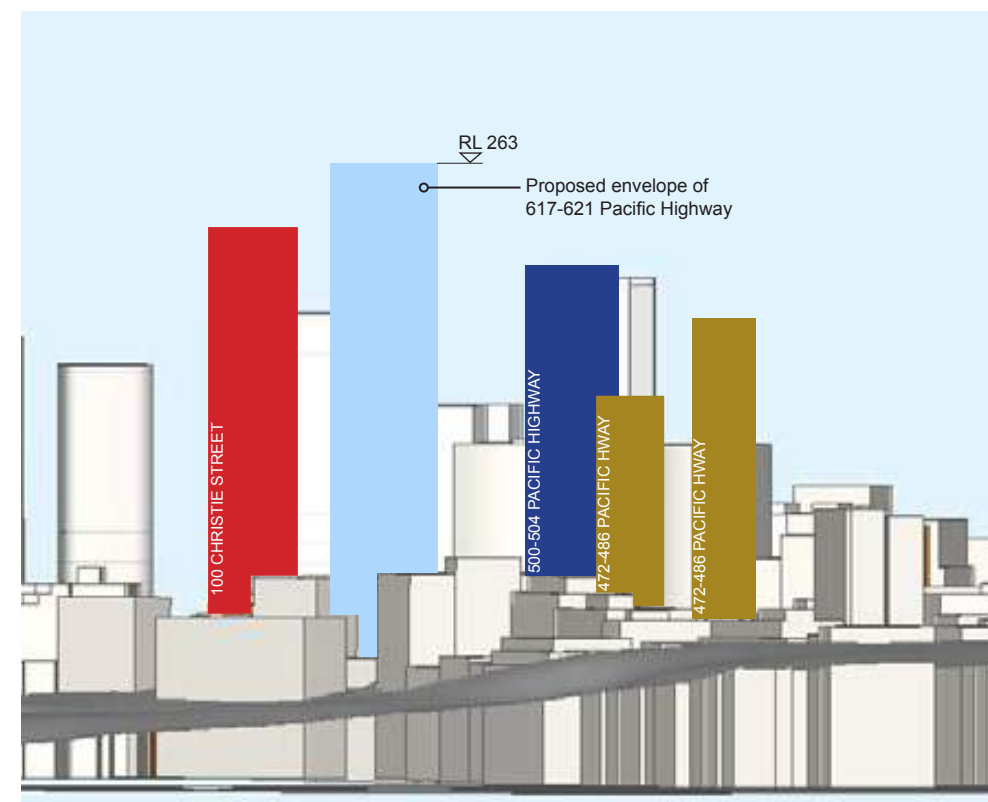
The proposed design will provide high quality living and working conditions for residents, occupants and visitors. The design will optimise sunlight access, natural ventilation and privacy.



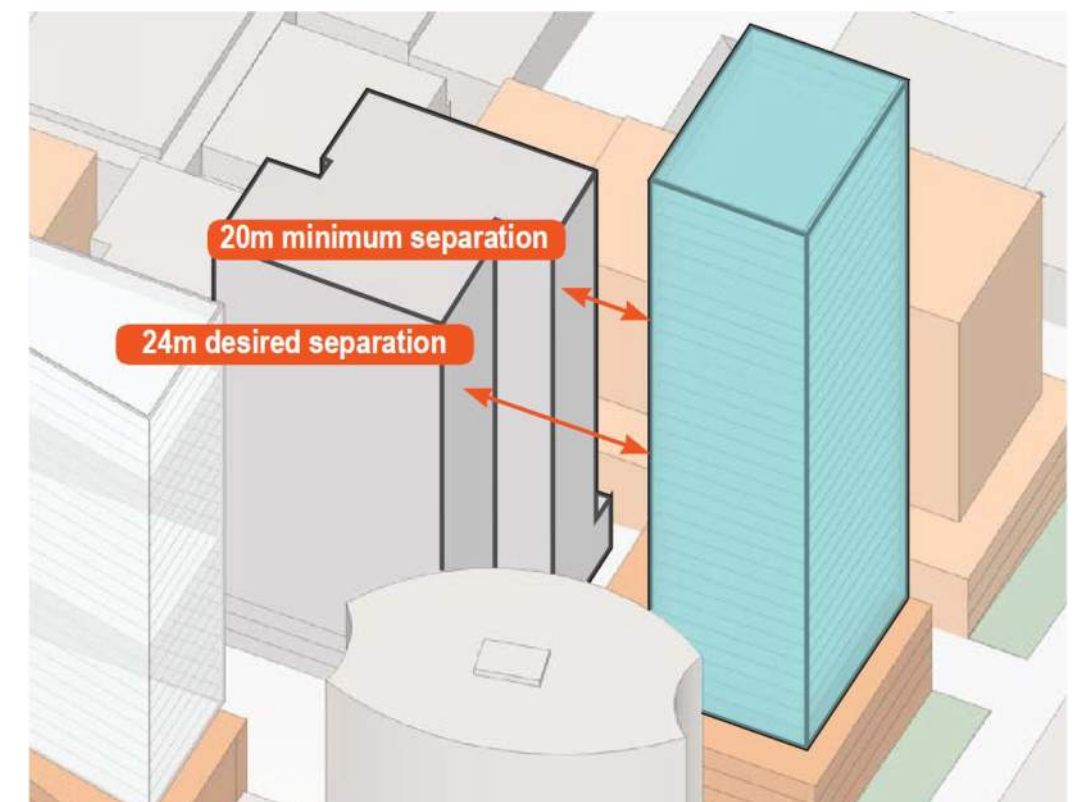
FLOOR PLATE



LENGTH



SECTION



SEPARATION

EXTRACT FROM ST LEONARDS CROWS NEST PLANNING STUDY 2014 | BUILDING HEIGHTS

TALL BUILDING DESIGN

Response to Tall Building Design Principles

This section provides a commentary against Council's Tall Building Design Principles in North Sydney Development Control Plan 2013. Each principle is quoted from Section '6.4 Built Form Strategy' on Page 107 of the St Leonards Crows Nest Planning Study Precincts 2 & 3 dated May 2015.

"If mixed use, the built form must result in a slender residential tower with a maximum gross buildable area (GBA) of 750m², including balconies, above a well proportioned, articulated podium;"

Comments:

The mixed use tower is proposed to accommodate 50 storeys and this height, in proportion with the building length, is able to achieve a pleasant ratio for the tower, creating an elegant built form.

The proposed residential tower has a maximum GBA of 670m² for the low & mid rise residential levels (L7-38) and a maximum GBA of 640m² for the high rise residential levels (L39-48). These are respectively 89% and 85% of the maximum allowed floorplate size. The proposal complies with the above requirement.

The small floorplate allows for efficient circulation, adequate natural ventilation and solar access for the apartment units within the residential tower as well as minimising the visual bulk.

"If commercial, the built form must result in a tower with a maximum gross floor area (GFA) of 1000m²;"

Comments:

The proposal meets the above criterion as the residential tower has a maximum GBA of 960m² for the community facilities & commercial levels (L1-5). The proposal contains three levels of office space, two levels of community facilities and two levels of retail space. These non-residential levels have generous floor-to-floor heights of 4 to 7m, which optimise working conditions for future occupants.

"Tower elements are to achieve a minimum separation distance of 24m from other tall buildings. A minor portion of the building within a 20m separation distance will be considered if impacts can be mitigated;"

Comments:

As demonstrated in Figure 17, the proposed tower has adequate separation from adjacent tall buildings. Specifically, the tower:

- To the north - provides approximately 24m to existing buildings at No. 2 and 6-16 Atchison Street;

- To the east - provides approximately 39m to the IBM building, which is a high-rise commercial building in a good condition; it is considered unlikely to redevelop in the short to medium terms;
- To the west - provides approximately 37m to the existing building at No. 655 Pacific Highway;
- To the south - has generous separation to properties on the opposite side of Pacific Highway due to the width of the highway (approx. 27m).

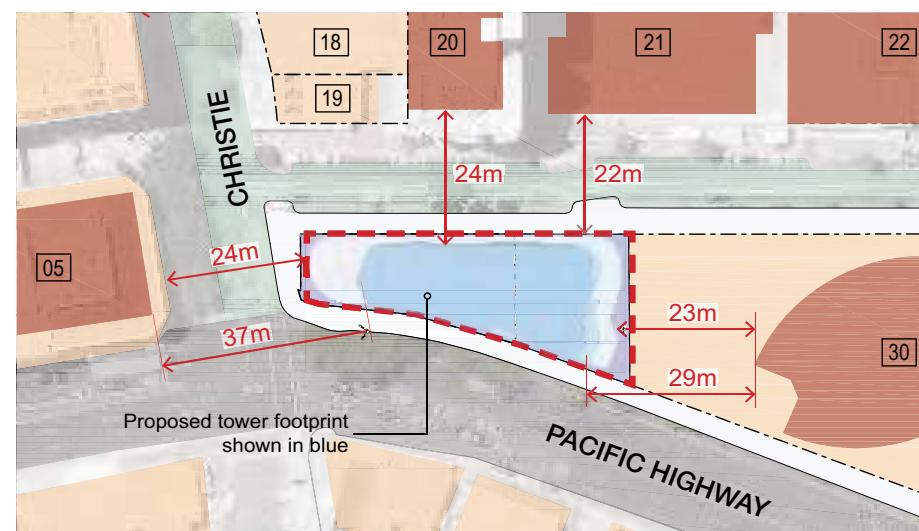


Figure 17. Building separation diagram (Courtesy of Kann Finch)

"The cumulative impact of multiple towers on the public realm must be carefully considered through detailed overshadowing analysis;"

Comments:

As demonstrated in Figures 18, 19 and 20, the proposal will have a slender profile creating a fast moving shadows. This is consistent with Council's masterplan strategy for 100 Christie Street.

A small number of properties, including No.530-542A Pacific Highway, located on the opposite side of the highway are already overshadowed by the existing 12-storey building on the subject site. An increase of the building height beyond 12 storey high on the subject site will not further impact these properties. The slender profile of the tower will in fact reduce the extent of shadow projected on these properties.

At 9am, the shadow of the proposal will largely overlap with the shadow of the future tall building at No.88 Christie Street; similarly, at 3pm its shadow will largely overlap with the future tall building at No.500-504 Pacific Highway. In this circumstance, the proposal will not significantly increase the cumulative shadow impact which is already a

result of a number of approved tall buildings in this area. Furthermore, the shadow of the proposal will not dwell on any significant open space, heritage item or public facilities.

Therefore, it is considered that the proposal meets the objective of the principle.



Figure 18. Shadow diagram - 9am 21 June (Courtesy of Kann Finch)



Figure 19. Shadow diagram - 12pm 21 June (Courtesy of Kann Finch)

TALL BUILDING DESIGN



Figure 20. Shadow diagram - 3pm 21 June (Courtesy of Kann Finch)

- Context shadows
- Shadow of existing 12-storey building on subject site
- Shadow of proposed tower on subject site

“The design must mitigate overshadowing and wind impacts, and protect sunlight and views of the sky from streets, parks, properties;”

Comments:
As discussed previously, the proposal provides adequate building separation to adjacent buildings and has an appropriate built form to maintain sunlight and views of the sky from important vantage points.

The proposed ‘podium+tower’ form will help mitigate ‘wind washing’ effects. The project team has committed to alleviate any potential wind impacts and engaged a wind expert to address this issue. A comprehensive study will be conducted to ensure a comfortable street environment for pedestrians.

GMU’s urban design analysis concludes that the proposed height will be able to achieve a positive outcome in terms of establishing a legible marker for St Leonards’ centre and maintain a pleasant and vibrant public domain interface.



“Large, elongated floorplates are to be avoided with tower elements not exceeding 40m in length, with breaks and articulation encouraged along elevations; and”

Comments:
The proposal is considered to create a positive outcome with an appropriate building length, as:

- The building depth of the tower varies from 12 to 22m measured from north to south; the east-west building orientation allows the proposal to present a very slender profile when viewed from Pacific Highway and Atchison Street;
- The proposal also has small floorplate sizes, which are only 85% to 89% of the maximum floorplate allowed in the DCP;
- The design uses a curvilinear architectural language for the development; the sculpted corners of the tower reduce the perception of bulk when viewed from the surrounding public domain;
- The proposal’s building length, in proportion with its height (50 storeys), will achieve an elegant and slender tower form;
- The building length is reduced to approximately 42m from Level 39 upward to emphasise the slenderness of the form;
- The facades are well articulated to effectively reduce the perception of building length.

The maximum length of the tower is approximately 44m in an east-west direction from. This exceeds the maximum building length allowed by 10%. However, this is a result of the site constraints. The site has a maximum depth of approximately 28m at the eastern end and it is further reduced to 12m in depth at the western end.

To achieve an efficient layout, the floorplate has been extended to the west, but the bulk has been carefully sculpted and articulated and will not cause negative visual impacts. The full length of the tower will only be seen when viewed directly from the north or south where view corridors are very limited due to presence of existing buildings.

On a more regular shaped site, the bulk of footprint could be easily placed on the wider portion of the lot. The rather triangular nature of the site allows for the opportunity to emphasize the narrow portion of the site to achieve a more sculptured profile.

“The design ensures high-quality living and working conditions, natural ventilation and privacy for building occupants.”

Comments:
Based on the indicative floor plan of the proposed residential levels (refer to Figure 21), 3 out of a total of 5 apartments per floor are corner apartments; the remaining 2 single-aspect apartments have depths shallower than 8m with long external facades. This configuration will be able to provide adequate natural ventilation for the future residents.

The proposed apartment layout ensures that no apartments within the tower are directly looking towards each other. The built form envelope also ensures that the apartments are adequately separated from adjoining properties to avoid visual privacy issues.

The design has also maximised the number of apartment units with a northern aspect and ensure apartment sizes exceed the ADG’s requirement.

The proposal provides generous floor-to-floor heights for the commercial offices (4m) and community facility (5m) in the podium. The flexible floorplate layouts and generous sizes will allow a variety of commercial and community uses. The design demonstrates that a high level of amenity can be delivered for future occupants at a later stage.

The proposal has the potential to achieve a positive outcome and meet the most of the objectives of the design principles.

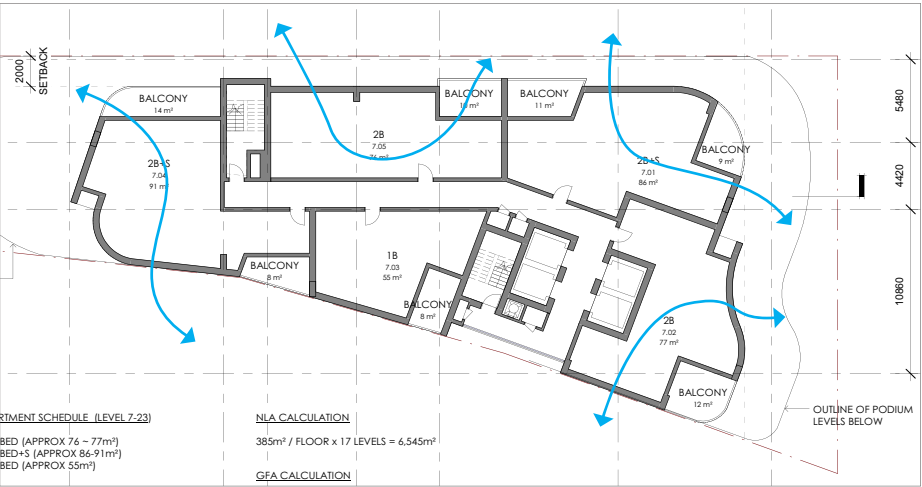


Figure 21. Indicative residential floor plan showing natural ventilation performance (Courtesy of Kann Finch)

PHOTOMONTAGES

PROPOSED ENVELOPE
617-621 PACIFIC HIGHWAY

PROPOSED ENVELOPE
100 CHRISTIE STREET

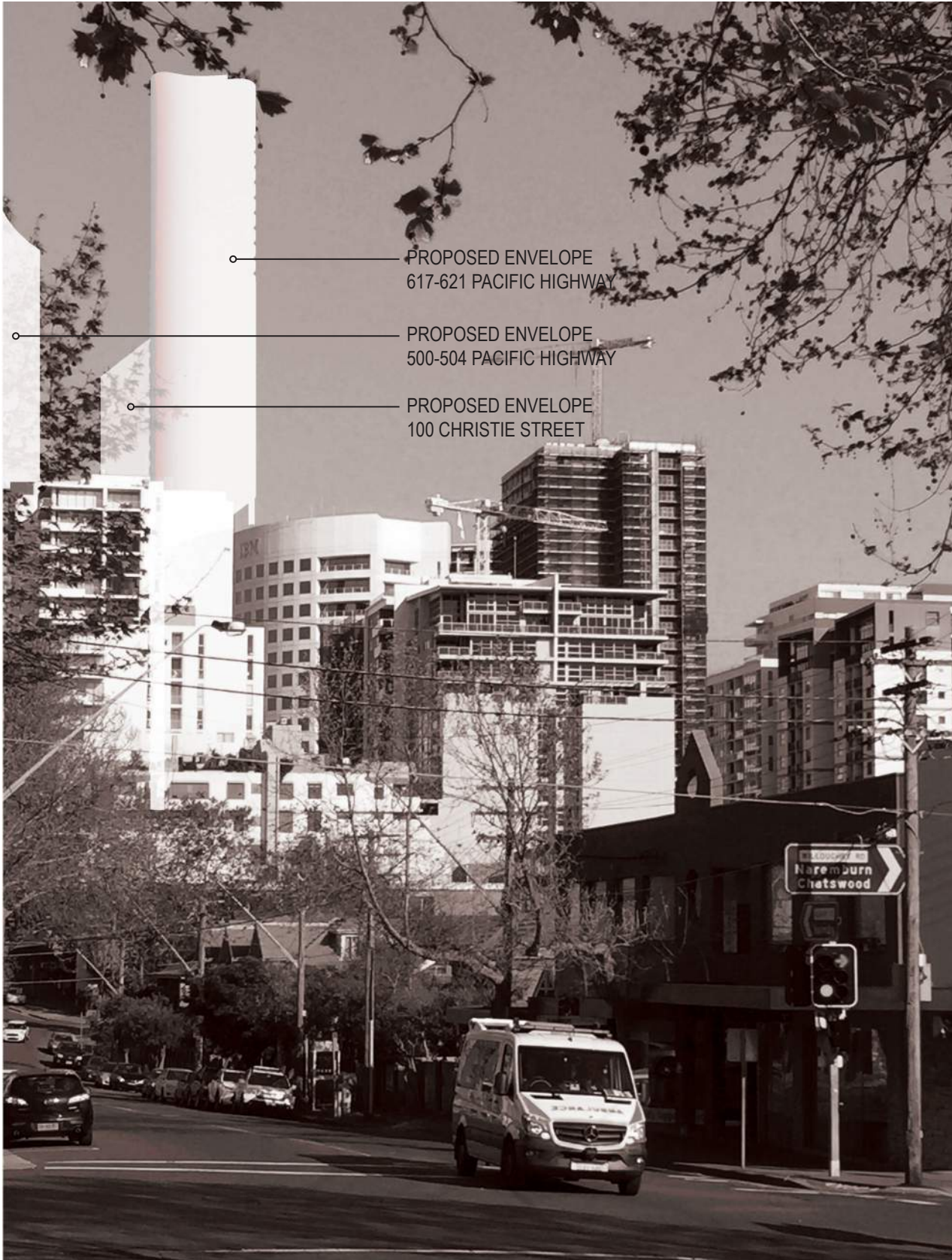


PACIFIC HIGHWAY LOOKING EAST

PROPOSED ENVELOPE
617-621 PACIFIC HIGHWAY

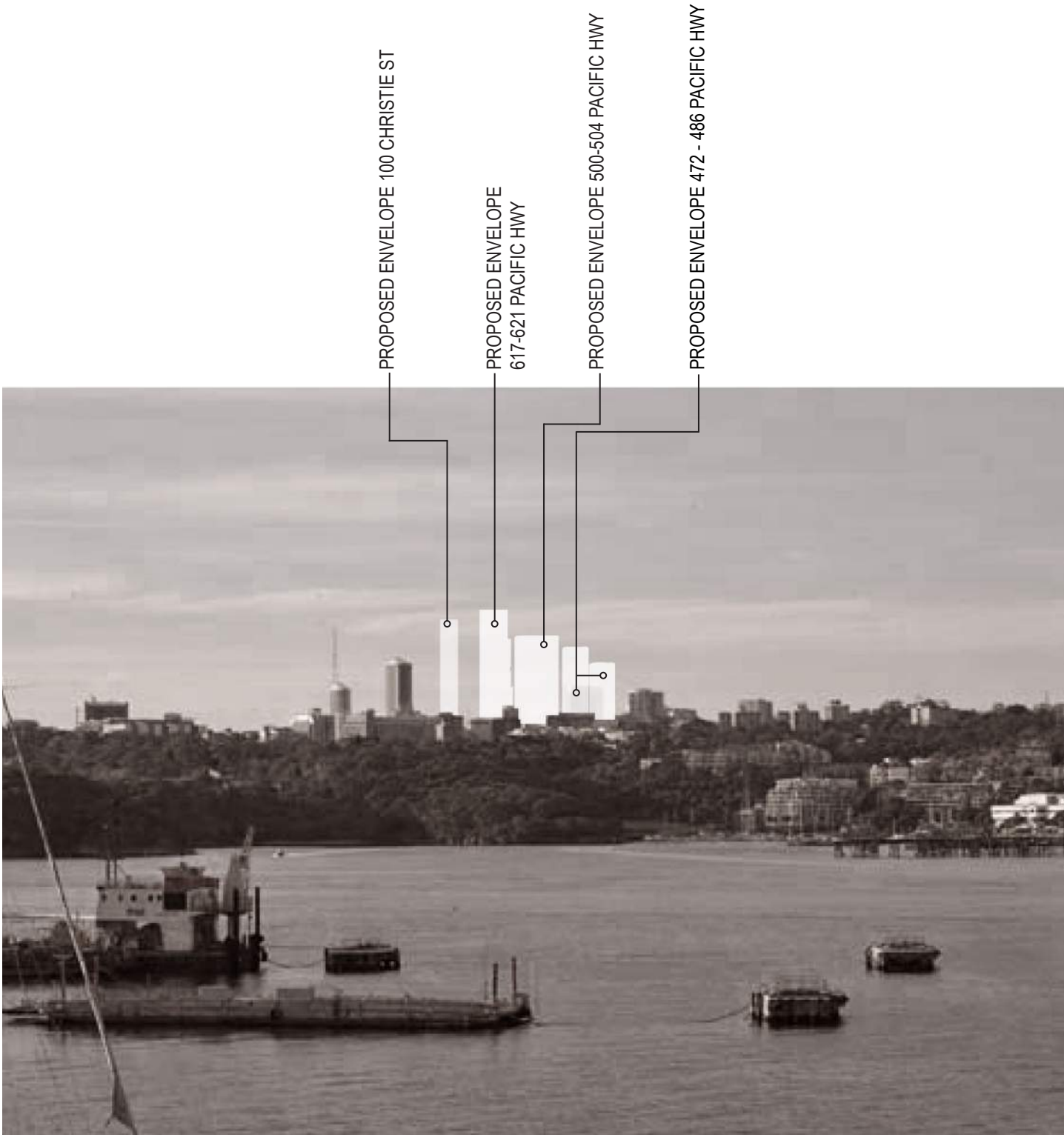
PROPOSED ENVELOPE
500-504 PACIFIC HIGHWAY

PROPOSED ENVELOPE
100 CHRISTIE STREET

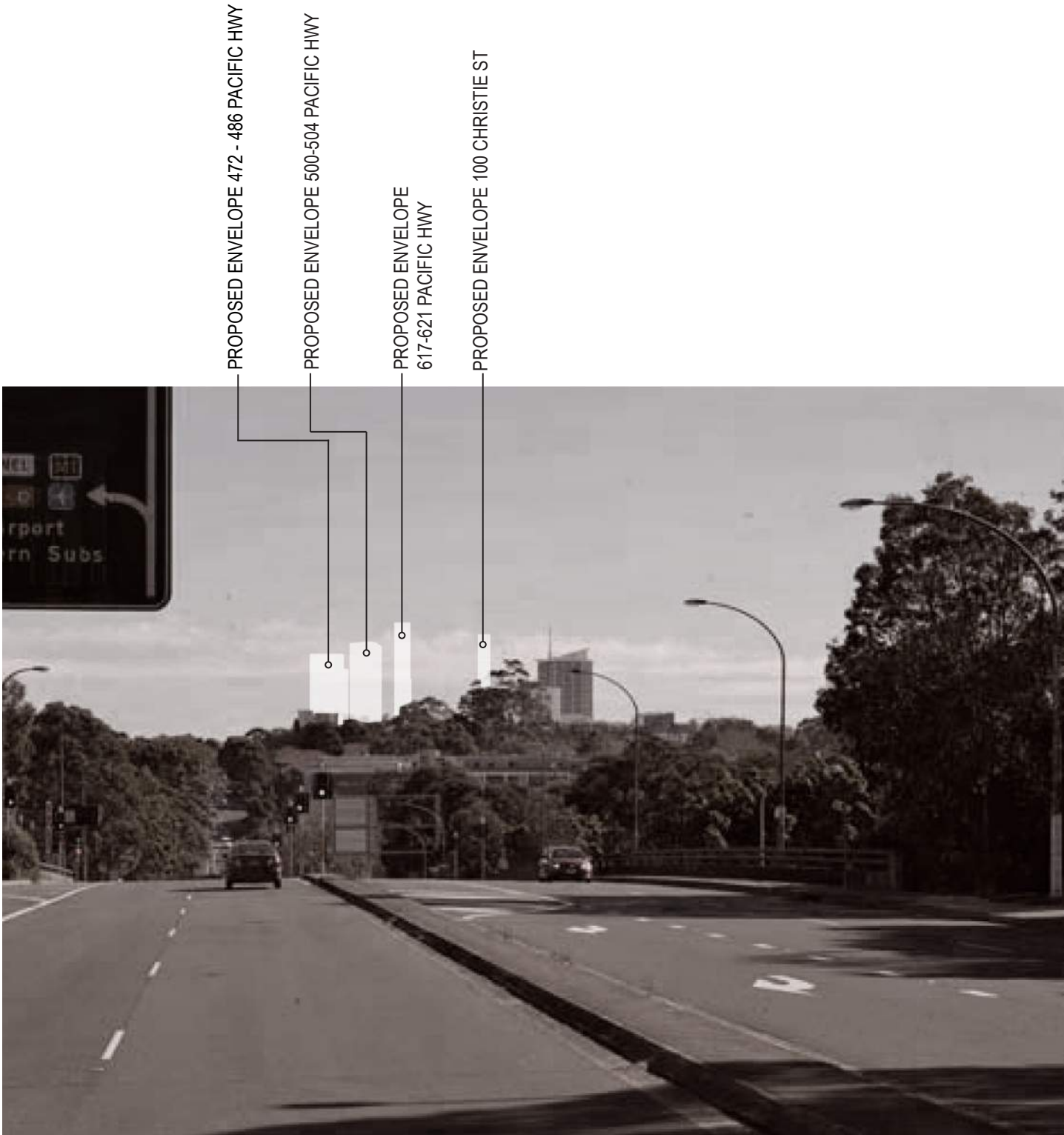


ALBANY STREET LOOKING WEST

PHOTOMONTAGES



NEAR BIRCHGROVE LOOKING NORTH



NEAR NEUTRAL BAY LOOKING WEST

SKYLINE INTEGRATION

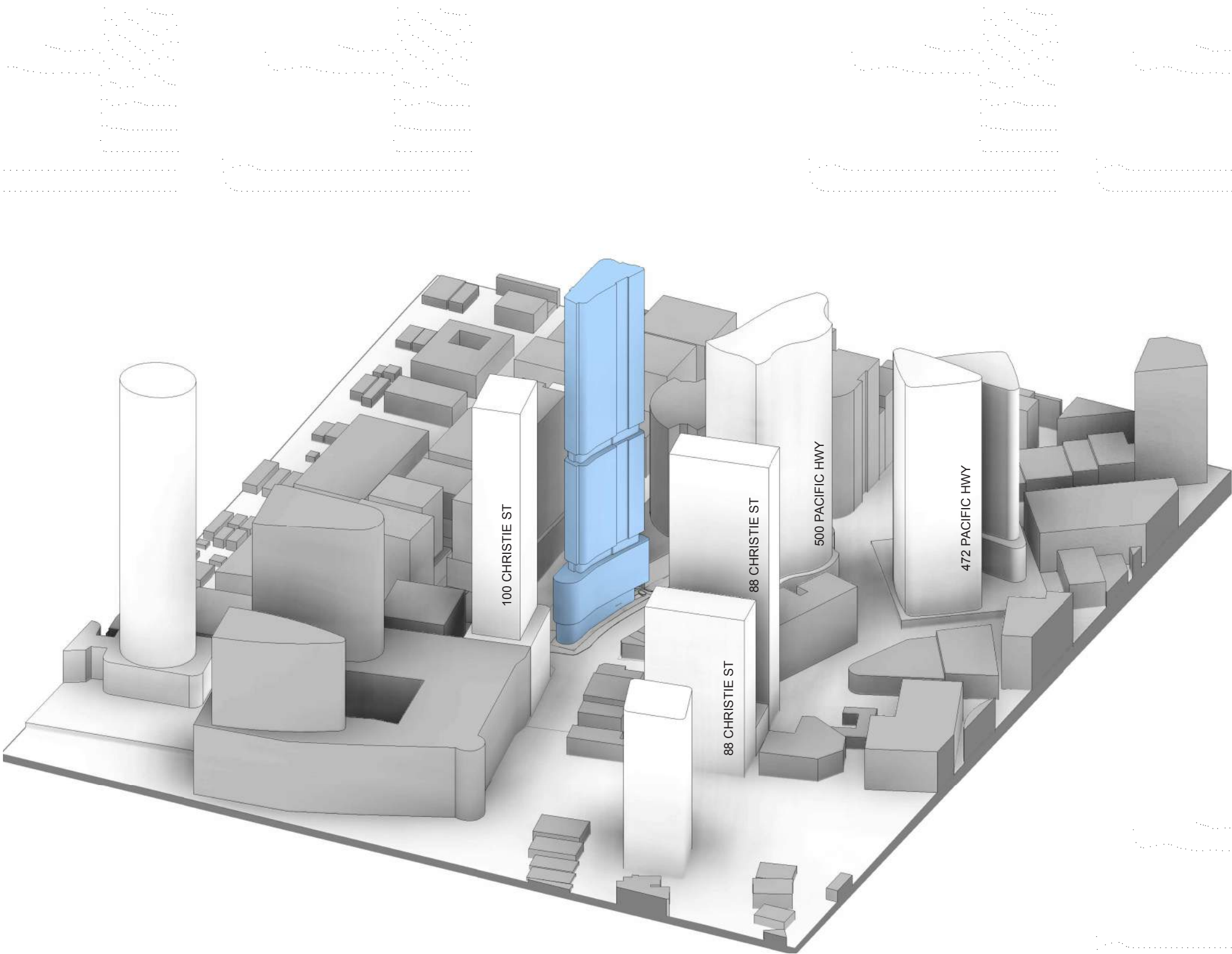
Skyline Integration

In the near future the skyline of St Leonards will include many buildings in excess of 35 storeys. On the southern side of the Pacific Highway there are DAs under review for a 37 storey tower on 500-504 Pacific Highway and 34 storey tower on 472-486 Pacific Highway, as well as a planning proposal for 44 and 25 storey towers on the 88 Christie Street site.

On the northern side of the Pacific Highway the Christie Street Masterplan guidelines envisage either a 36 or 50 storey tower and the St Leonards Central project proposes 38, 48 and 55 storey towers.

Best practice transport oriented design places the tallest buildings closest to areas of the highest activity and transport accessibility. The 50 storey tower (approx. 180m) proposed for the 617-621 Pacific Highway site would make it the tallest building in St Leonards at around RL 263.

Being in close proximity to the train station and fronting directly onto the Pacific Highway, the site is well positioned to support a tower of this scale.

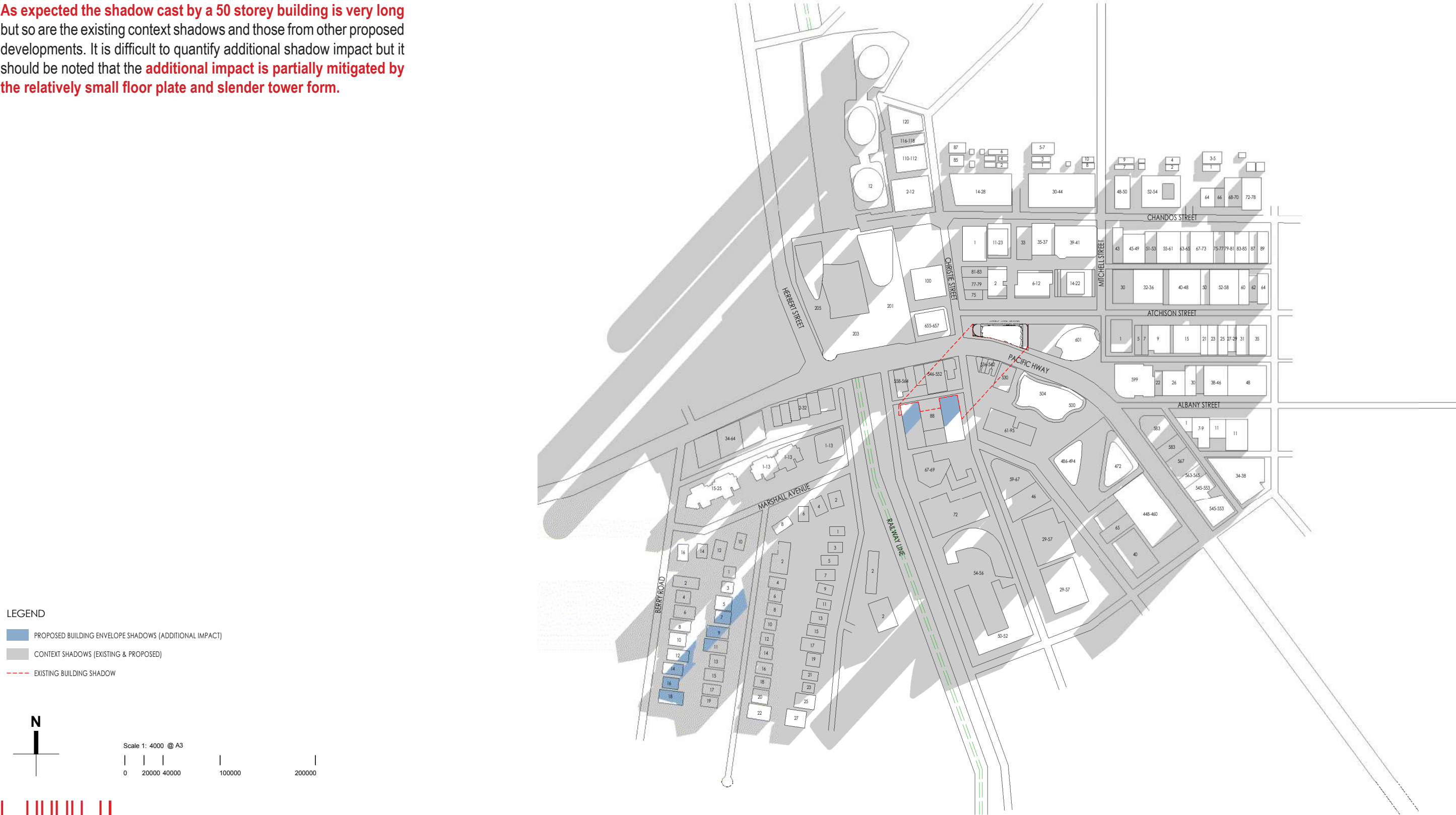


SKYLINE FROM NORTH EAST

SHADOW STUDIES
WINTER SOLSTICE
09:00am

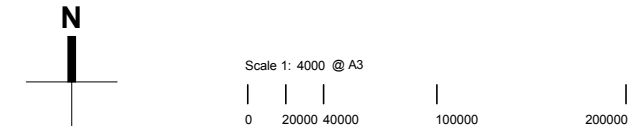
Shadow Impact - Winter Solstice

As expected the shadow cast by a 50 storey building is very long but so are the existing context shadows and those from other proposed developments. It is difficult to quantify additional shadow impact but it should be noted that the additional impact is partially mitigated by the relatively small floor plate and slender tower form.



SHADOW STUDIES
WINTER SOLSTICE
Midday

- LEGEND
- PROPOSED BUILDING ENVELOPE SHADOWS (ADDITIONAL IMPACT)
 - CONTEXT SHADOWS (EXISTING & PROPOSED)
 - EXISTING BUILDING SHADOW



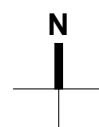
SHADOW STUDIES

WINTER SOLSTICE
03:00pm



LEGEND

-  PROPOSED BUILDING ENVELOPE SHADOWS (ADDITIONAL IMPACT)
 CONTEXT SHADOWS (EXISTING & PROPOSED)
 EXISTING BUILDING SHADOW



Scale 1: 4000 @ A3

SHADOW STUDIES

EQUINOX
09:00am

Shadow Impact - Equinox

The shadow impacts from the proposed 50 storey tower during the equinox are noticeably less than those during the winter solstice.

Similarly any additional shadow impact is partially mitigated by the relatively small floor plate and slender tower form.

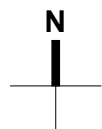


LEGEND

PROPOSED BUILDING ENVELOPE SHADOWS (ADDITIONAL IMPACT)

CONTEXT SHADOWS (EXISTING & PROPOSED)

--- EXISTING BUILDING SHADOW



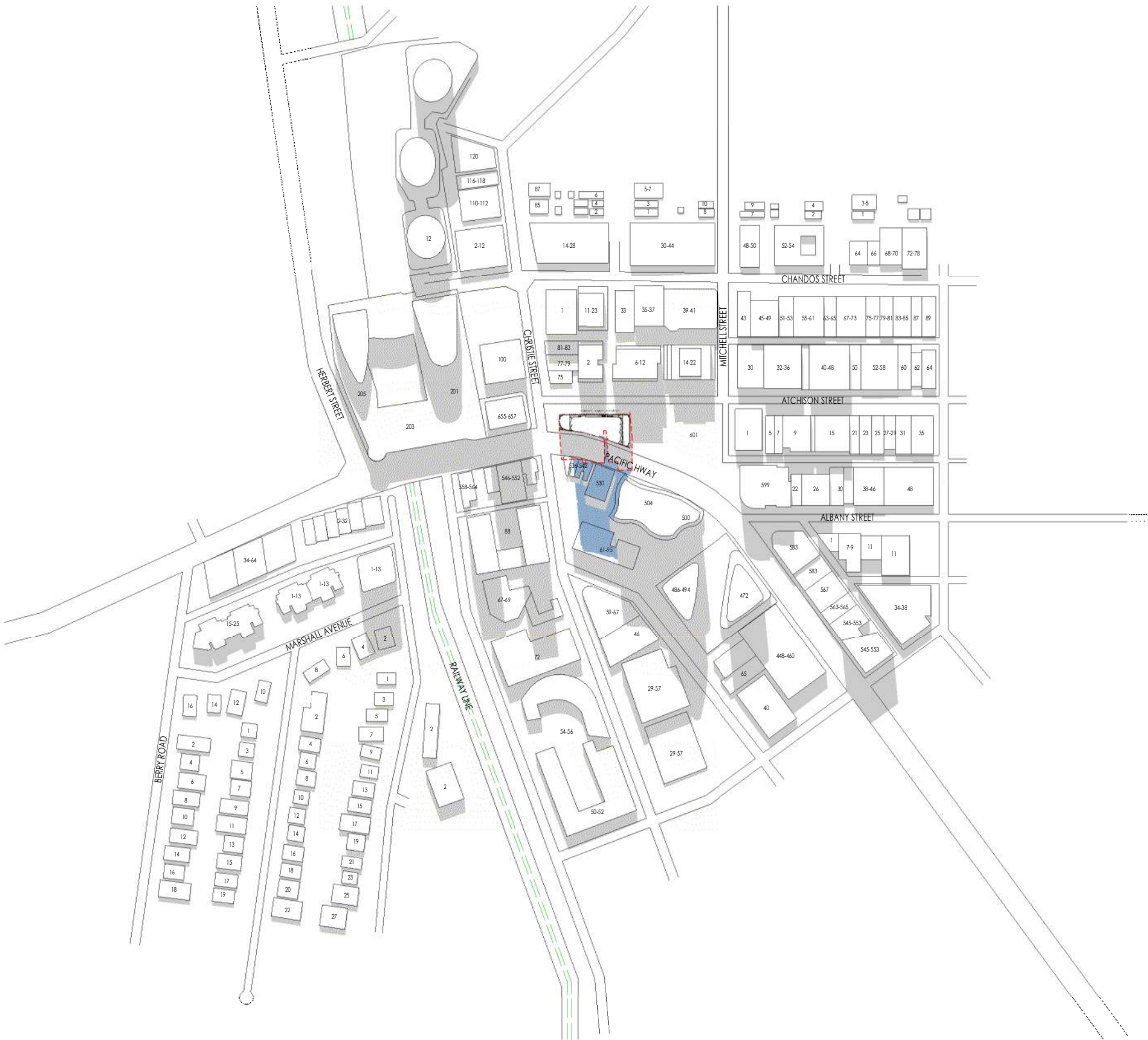
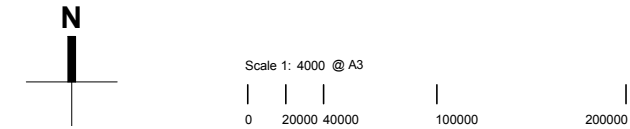
Scale 1: 4000 @ A3

A horizontal number line with five major tick marks. Below the line, the numbers 0, 20000, 40000, 100000, and 200000 are written. The line is divided into four equal segments by these tick marks.

SHADOW STUDIES

EQUINOX
Midday

- LEGEND
- PROPOSED BUILDING ENVELOPE SHADOWS (ADDITIONAL IMPACT)
 - CONTEXT SHADOWS (EXISTING & PROPOSED)
 - EXISTING BUILDING SHADOW



SHADOW STUDIES

EQUINOX
03:00pm

LEGEND

PROPOSED BUILDING ENVELOPE SHADOWS (ADDITIONAL IMPACT)

CONTEXT SHADOWS (EXISTING & PROPOSED)

EXISTING BUILDING SHADOW

N

Scale 1: 4000 @ A3

02000040000100000200000



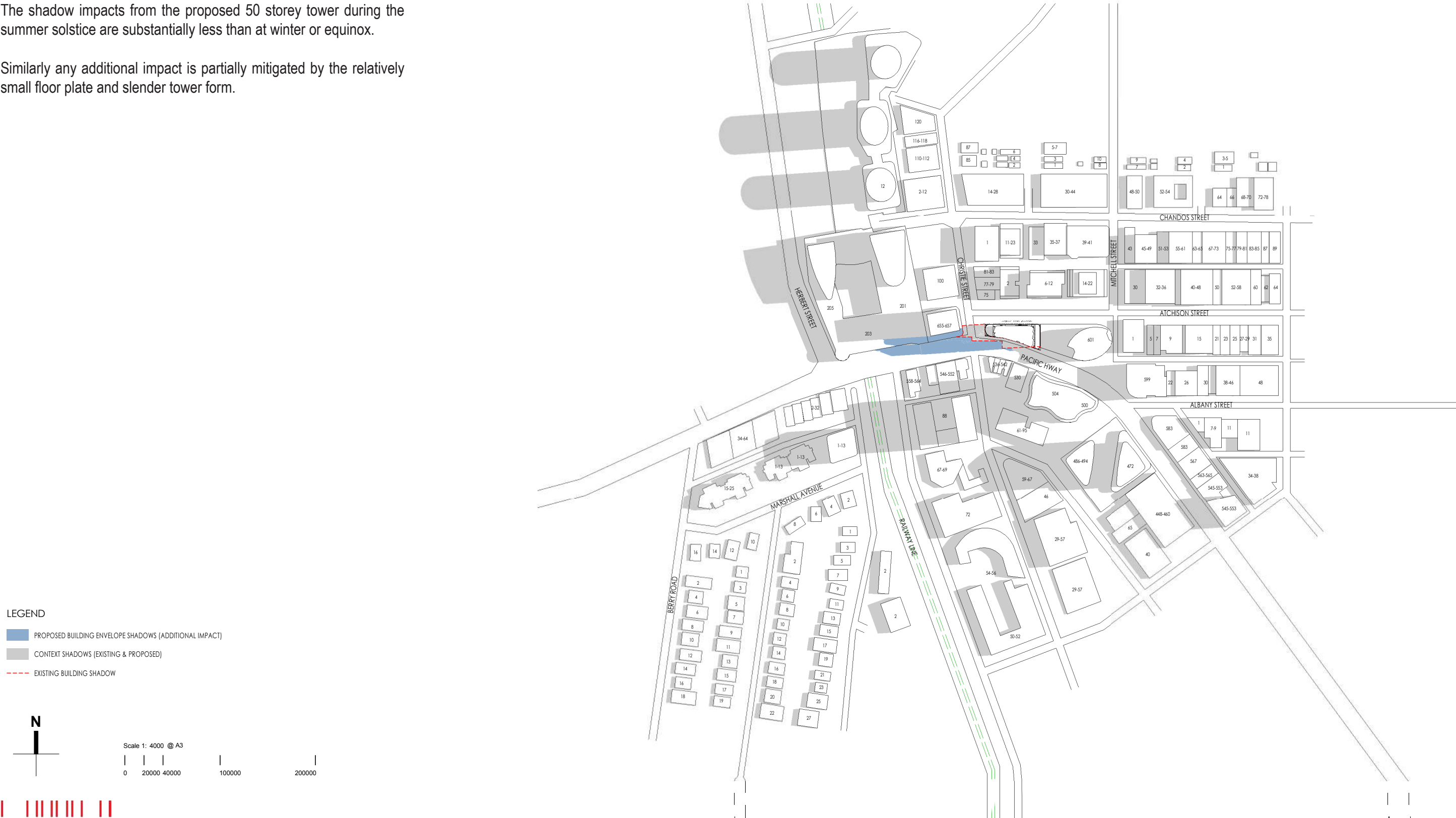
SHADOW STUDIES

SUMMER SOLSTICE
09:00am

Shadow Impact - Summer Solstice

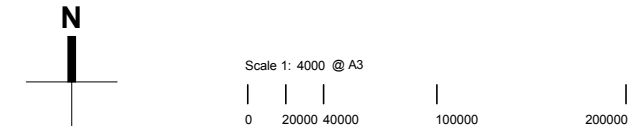
The shadow impacts from the proposed 50 storey tower during the summer solstice are substantially less than at winter or equinox.

Similarly any additional impact is partially mitigated by the relatively small floor plate and slender tower form.



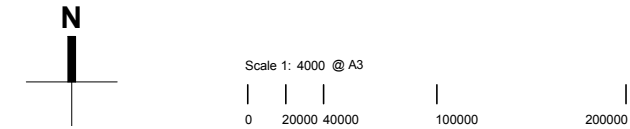
SHADOW STUDIES
SUMMER SOLSTICE
Midday

- LEGEND
- PROPOSED BUILDING ENVELOPE SHADOWS (ADDITIONAL IMPACT)
 - CONTEXT SHADOWS (EXISTING & PROPOSED)
 - EXISTING BUILDING SHADOW



SHADOW STUDIES
SUMMER SOLSTICE
03:00pm

- LEGEND
- PROPOSED BUILDING ENVELOPE SHADOWS (ADDITIONAL IMPACT)
 - CONTEXT SHADOWS (EXISTING & PROPOSED)
 - EXISTING BUILDING SHADOW

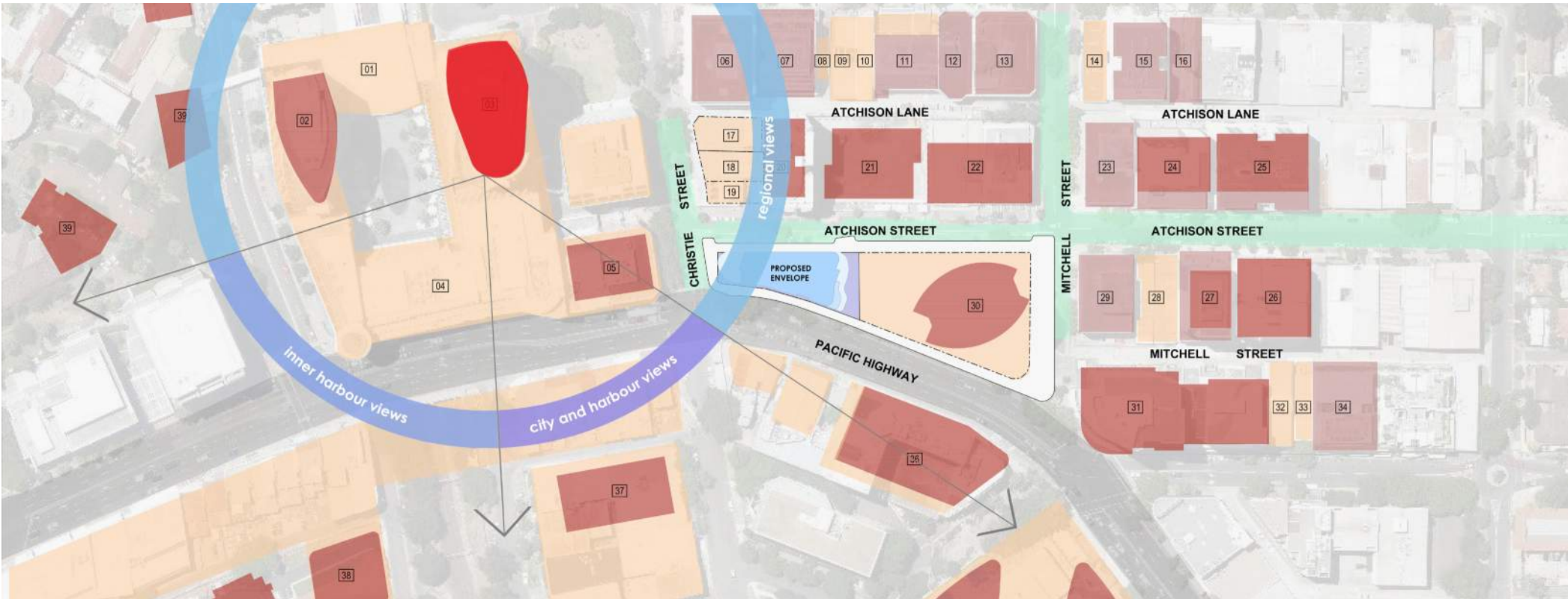


VIEW & VISUAL IMPACT

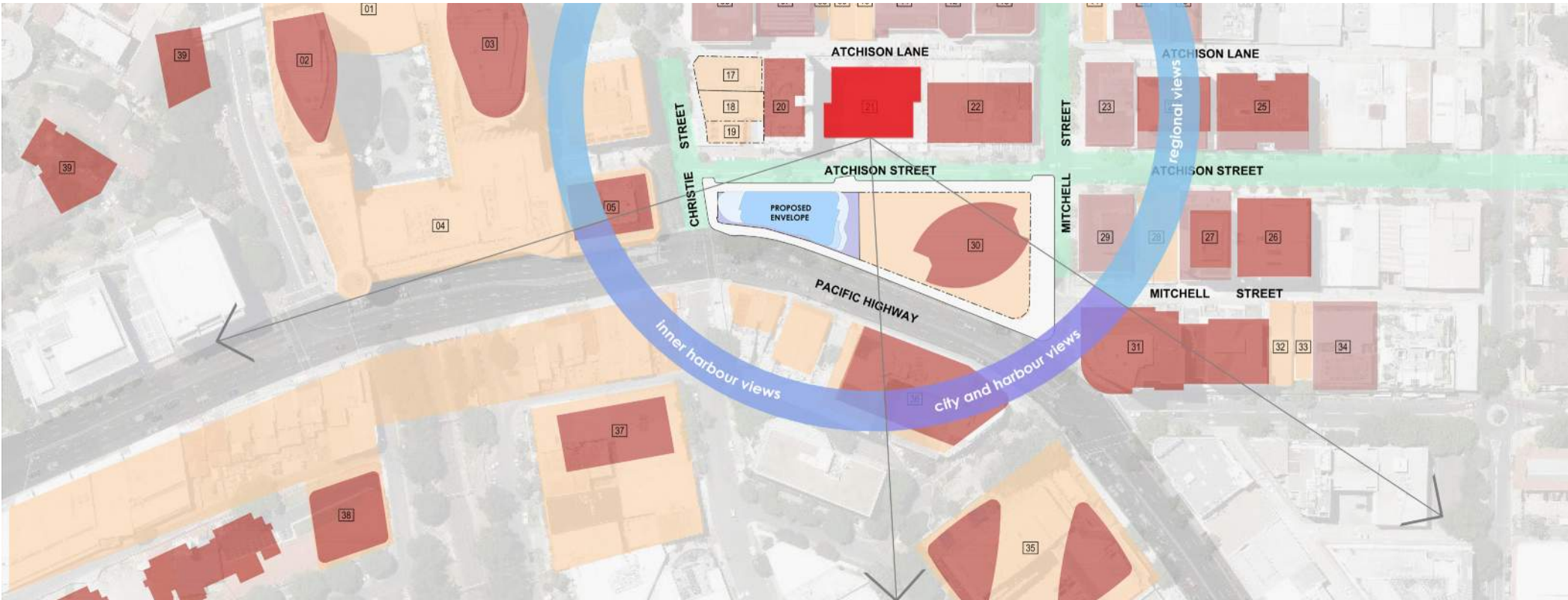
View & Visual Impact

Our preliminary analysis of the potential view and visual impacts of a tall building on the 617-621 Pacific Highway site indicate that the **existing Forum and Air residential towers would be the most affected of the nearby buildings.**

The south east facing apartments in the Forum would lose a **small portion of their regional views** but other proposed developments on 100 Christie and 500 Pacific Highway would have a much greater impact on views. **The south west facing apartments in the Air building would lose a portion of their inner harbour views** but again the proposed 500 Pacific Highway tower would have a much greater impact on their city and harbour views.



VIEWS FROM FORUM BUILDING



VIEWS FROM AIR BUILDING

POTENTIAL MASSING FOR ADJOINING SITE
OPTION A

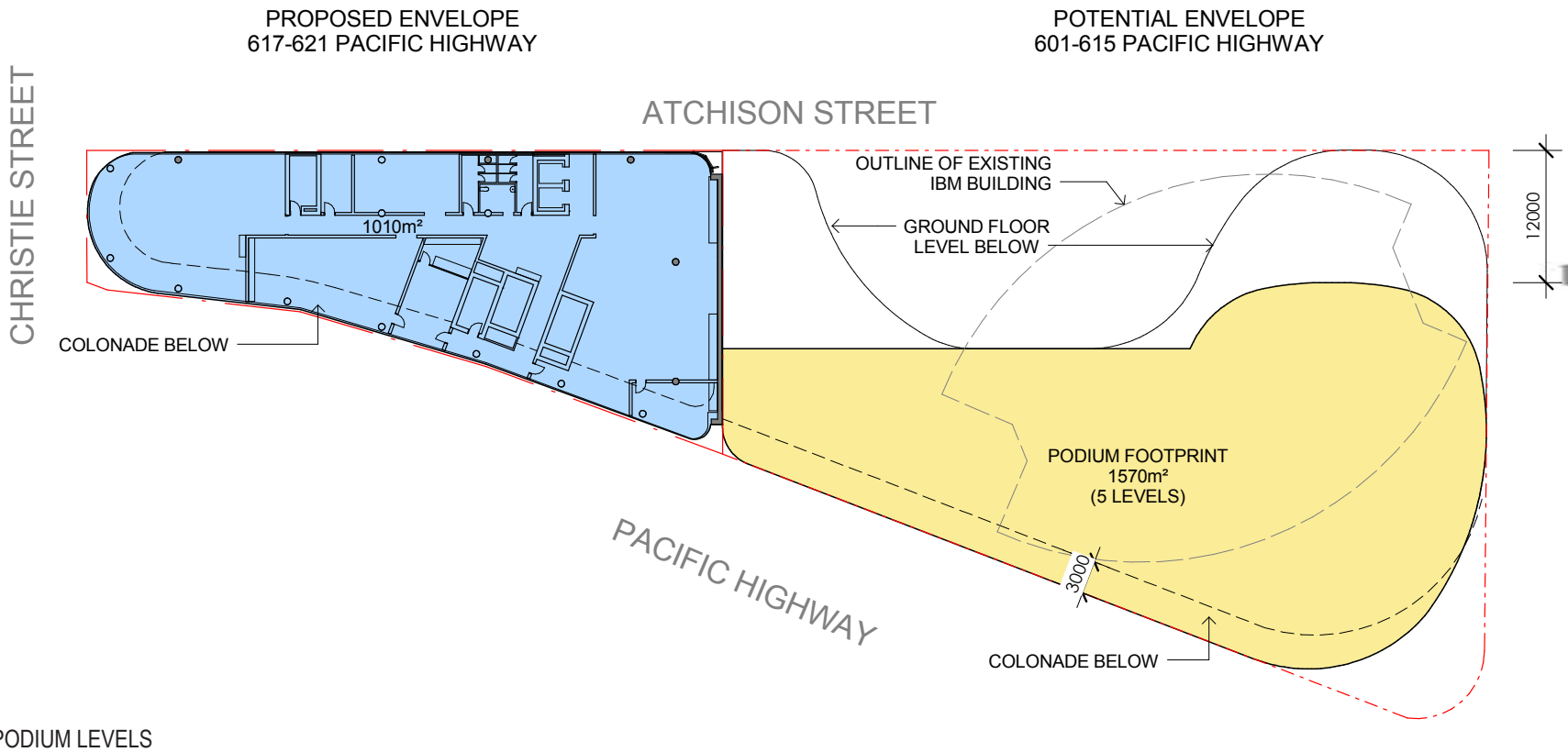
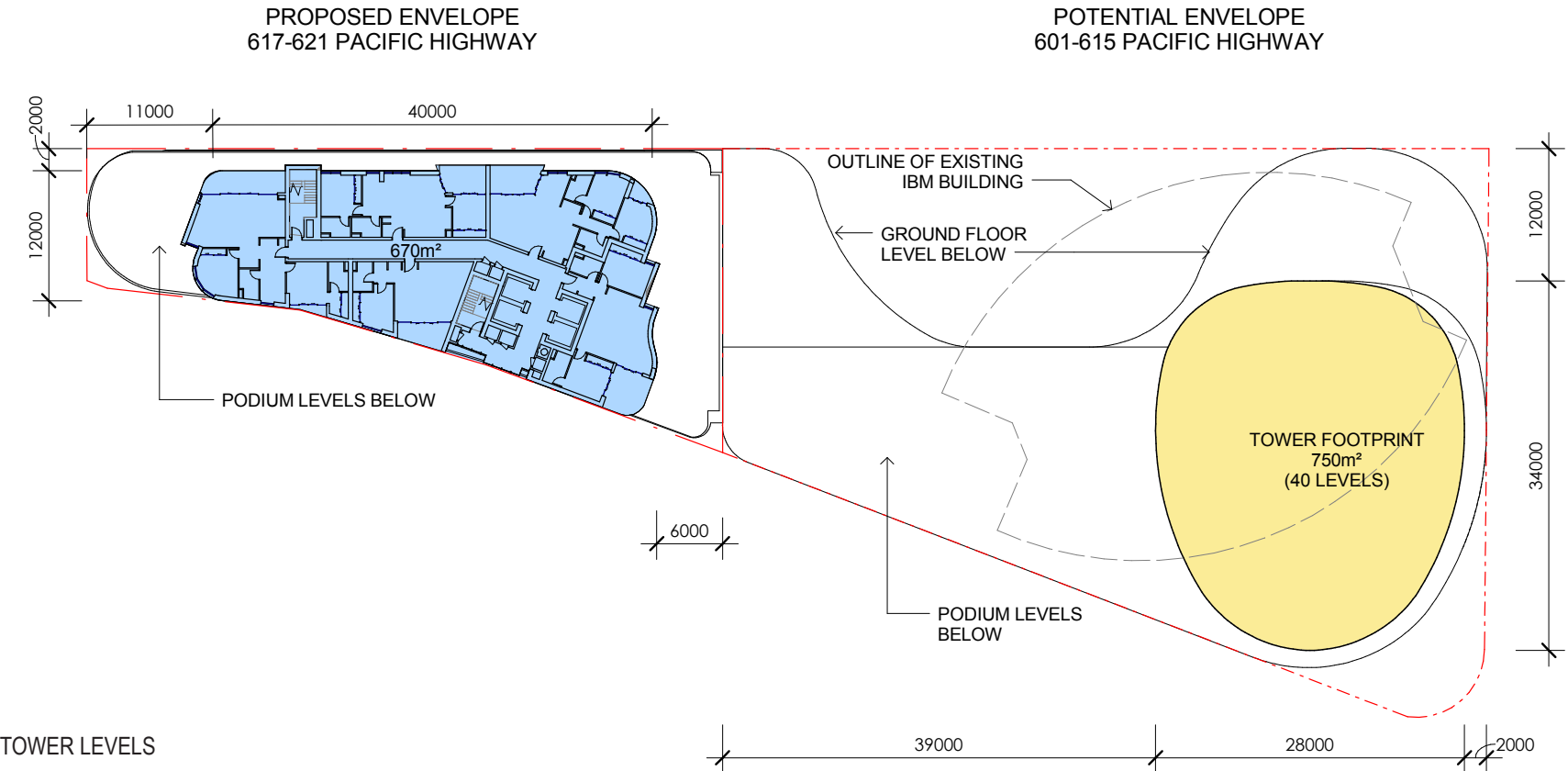
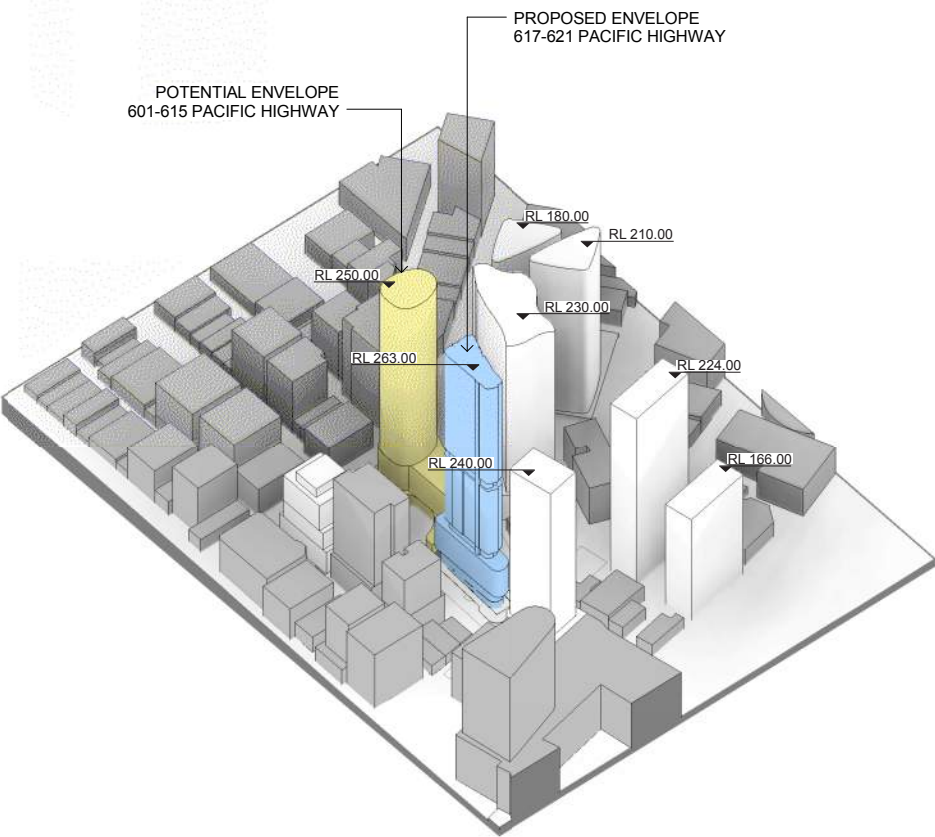
Potential Massing For Adjoining Site

In response to Council's request we have investigated potential massing options for the redevelopment of the adjacent site. The existing 20 storey IBM building currently occupies the adjoining site to the east. We have considered two potential options as follows;

Option A

This option would provide a 6 storey commercial podium with ground level retail creating a consistent street wall along the Pacific Highway, a north facing forecourt and activated street front to Pacific Highway, Mitchell Street and Atchison Street. A 40 level residential tower is positioned on the eastern side of the site to maximise building separation and apartment amenity.

We believe this option represents the best redevelopment outcome in terms of urban design, tall building design and apartment amenity.



POTENTIAL MASSING FOR ADJOINING SITE
OPTION B

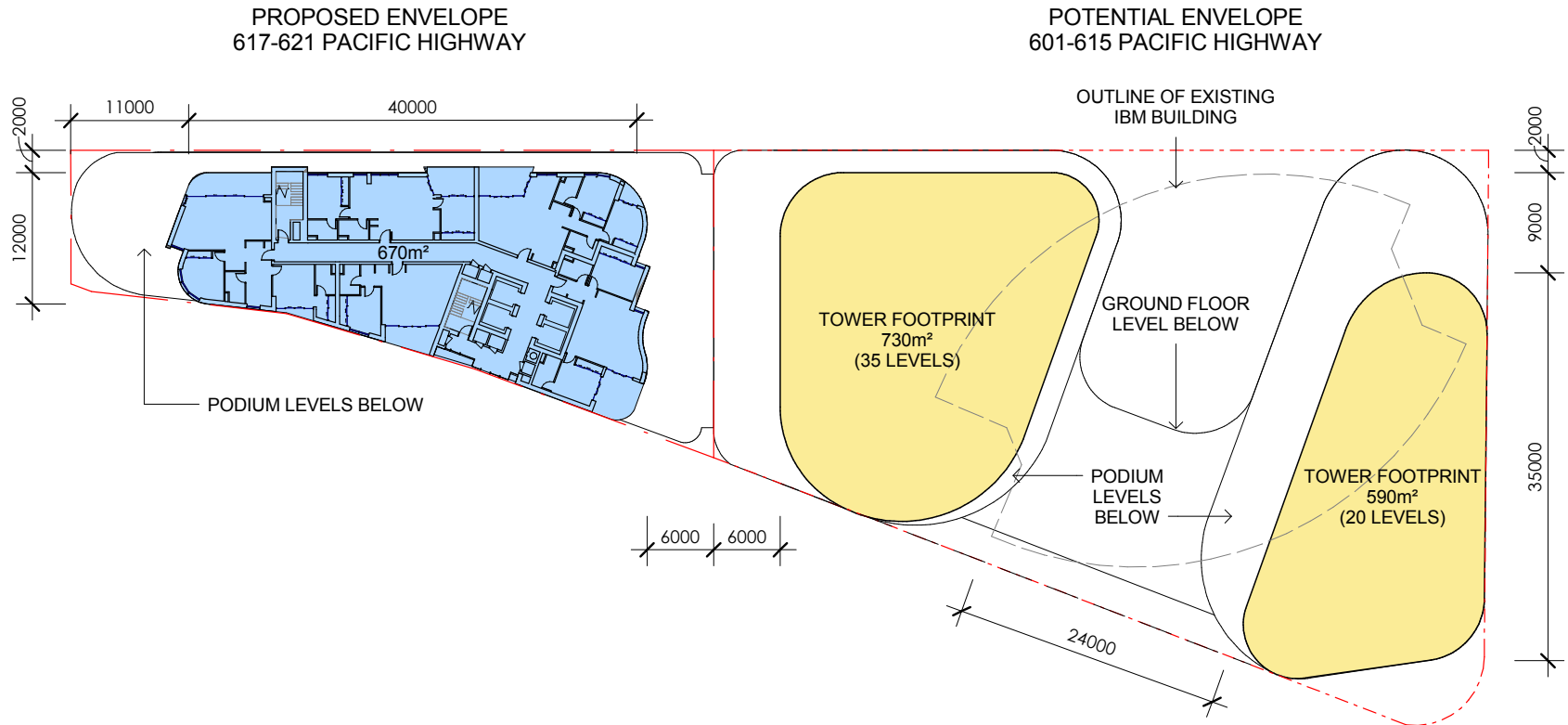
Potential Massing For Adjoining Site

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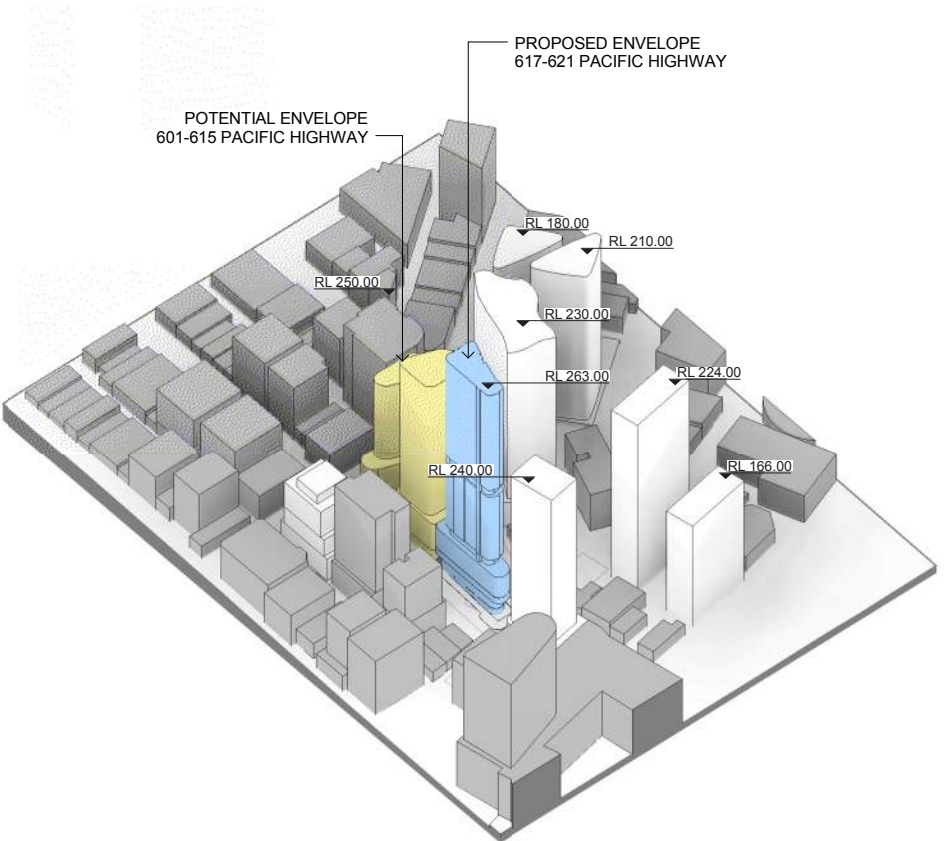
Option B

This option would provide two separate 6 storey commercial podiums with ground level retail creating a north facing forecourt and through site link. It would provide a 35 level residential tower on the western side of the site (6m from boundary) and a smaller 20 level residential tower on the eastern side of the site.

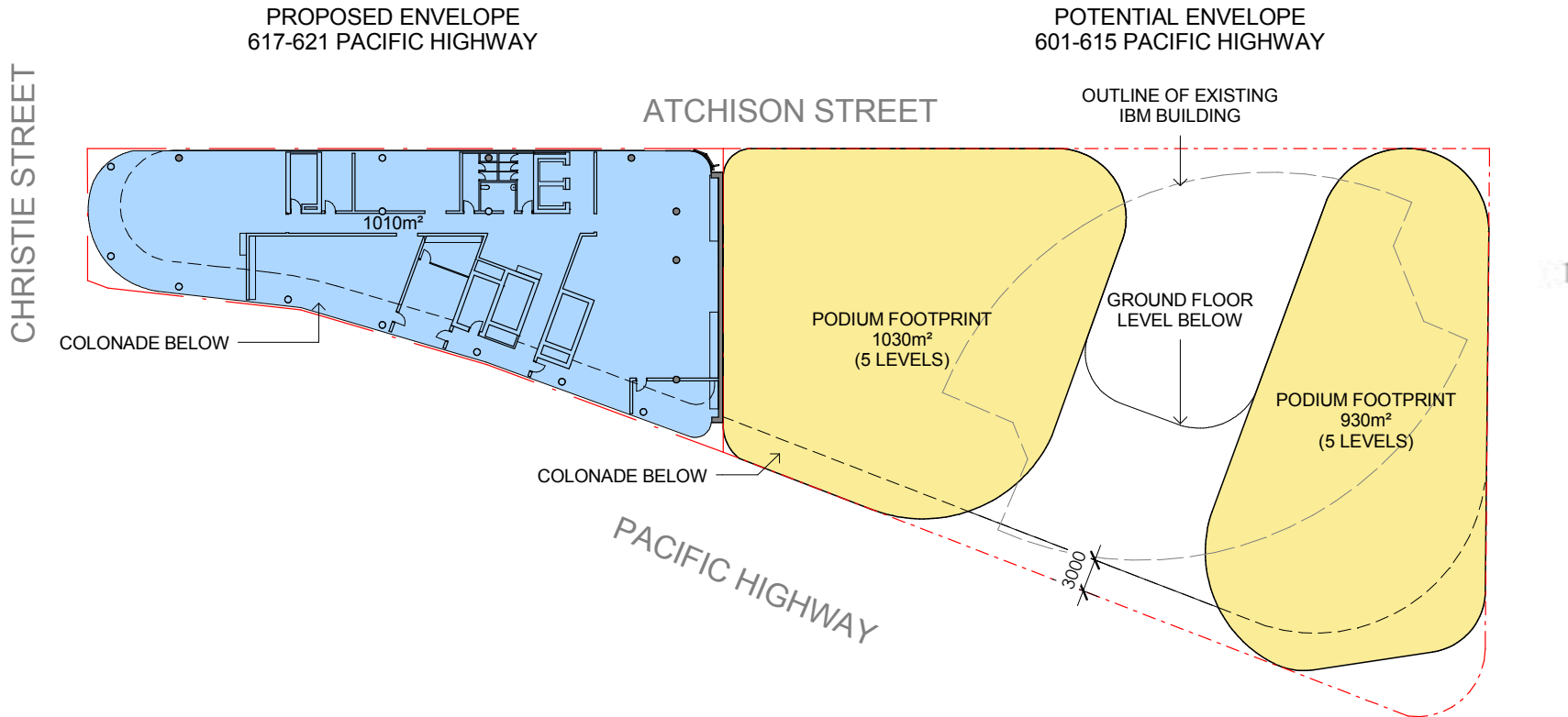
We believe this option is a less likely/undesirable redevelopment outcome in terms of urban design, tall building design and apartment amenity due to the close proximity of the 3 residential towers.



TOWER LEVELS



AXONOMETRIC



PODIUM LEVELS

Facade Design Principles

- Differentiate base, middle & top
- Balconies & shading respond to orientation
- Facade texture decreases from bottom to top
- Height module increases from bottom to top

FACADE ARTICULATION OPTIONS
OPTION A

- ①

Single Storey Module
- ②

Double Storey Module
- ③

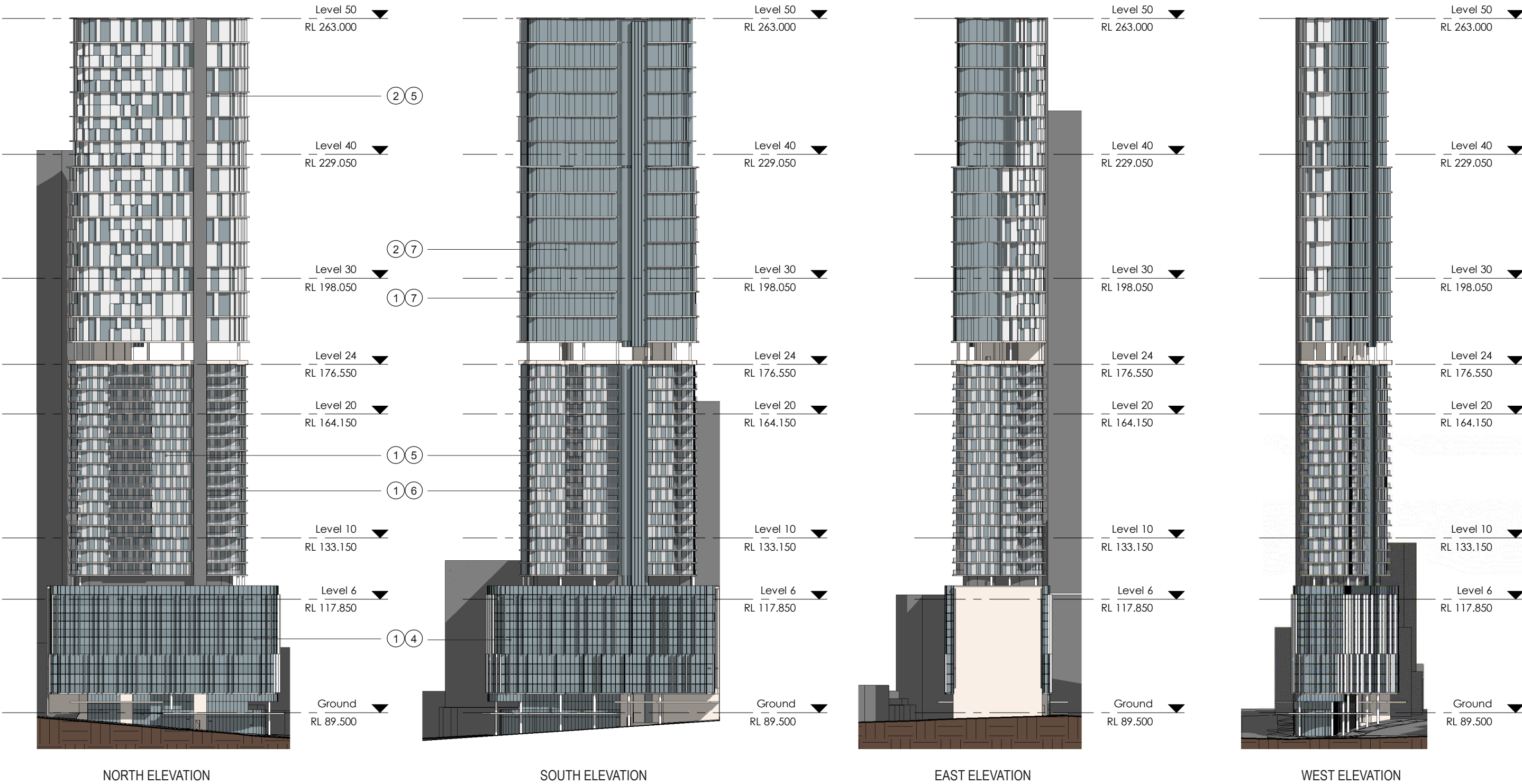
Three Storey Module
- ④

Smooth/Sealed Facade
- ⑤

Articulated/Ventilated Facade
- ⑥

Articulated/Operable Facade
- ⑦

Smooth/Ventilated Facade



FACADE ARTICULATION OPTIONS
OPTION B

- ①

Single Storey Module
- ②

Double Storey Module
- ③

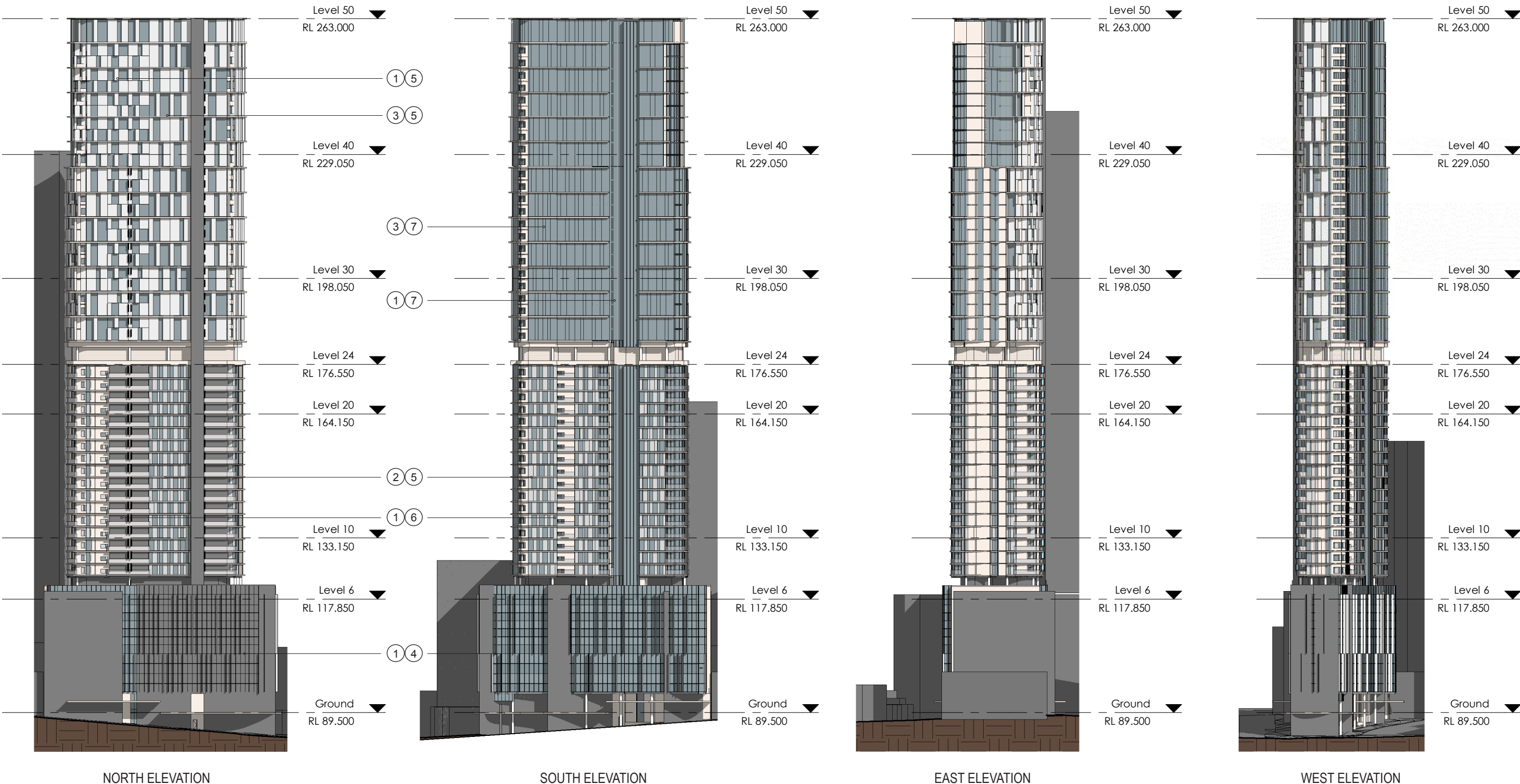
Three Storey Module
- ④

Smooth/Sealed Facade
- ⑤

Articulated/Ventilated Facade
- ⑥

Articulated/Operable Facade
- ⑦

Smooth/Ventilated Facade



FACADE ARTICULATION OPTIONS
OPTION A PERSPECTIVES



VIEW FROM NORTH EAST



VIEW FROM NORTH WEST



VIEW FROM SOUTH EAST



VIEW FROM SOUTH WEST

FACADE PRECEDENT IMAGES



AQUA BUILDING CHICAGO | JEANNE GANG



BILBAO APARTMENTS | OAB & KATSURA



COVE APARTMENTS | SEIDLER



180 SIXTH AVENUE NEW YORK | BKSK



TRUMP TOWER CHICAGO | SOM

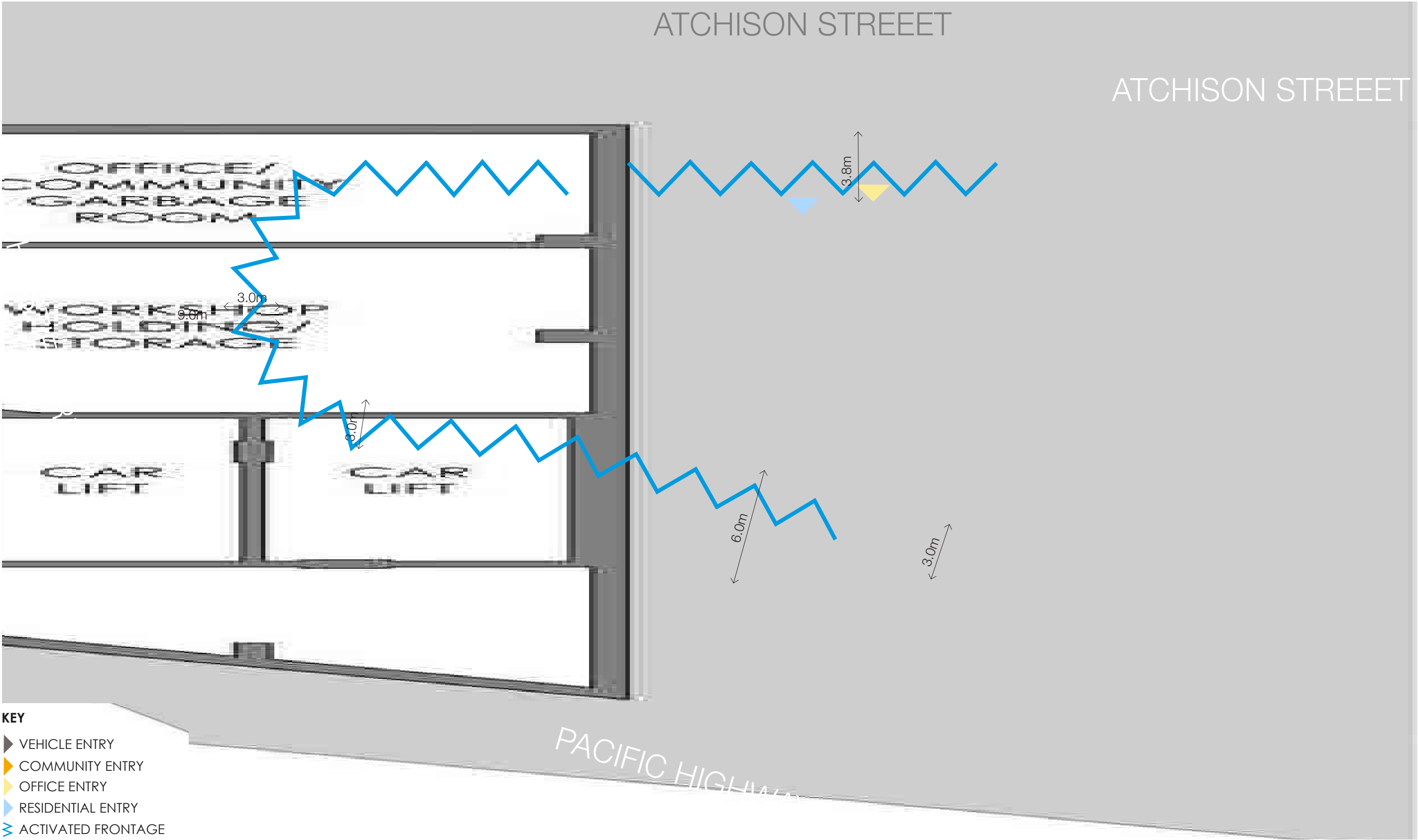


ONE JACKSON SQUARE NEW YORK | KPF

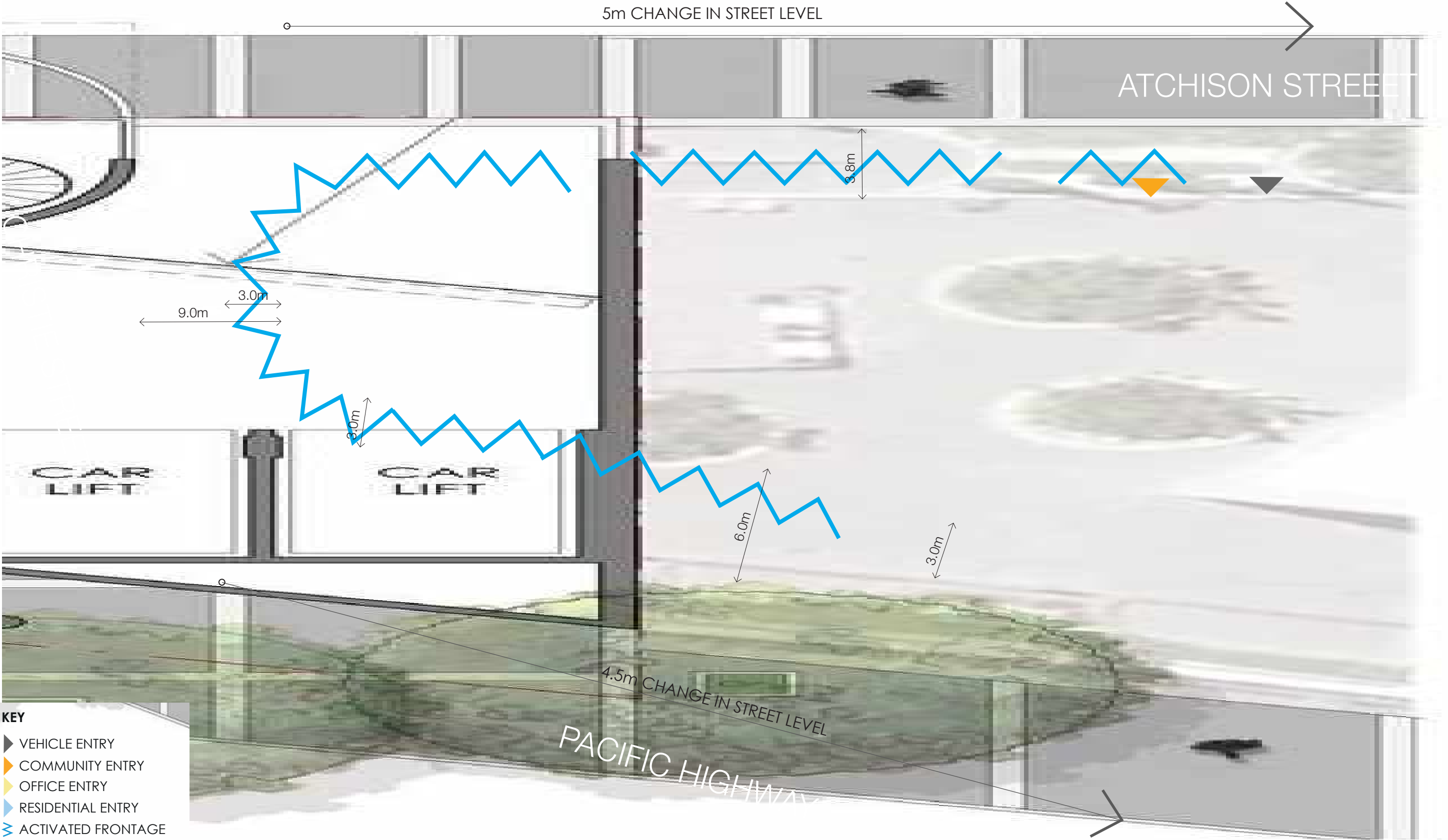


SINGAPORE TOWER | JEAN NOUVEL

PROPOSED PUBLIC DOMAIN PLAN
LOWER GROUND FLOOR



PROPOSED PUBLIC DOMAIN PLAN
GROUND FLOOR



KEY

- ▶ VEHICLE ENTRY
- ▶ COMMUNITY ENTRY
- ▶ OFFICE ENTRY
- ▶ RESIDENTIAL ENTRY
- ▶ ACTIVATED FRONTAGE

STREET ACTIVATION

Principles for Street Activation

The principles recommended by GMU to activate the street edges of the subject site include:

- Maximising the extent and continuity of the activated street edge with retail business.
- Maximising visibility to commercial and residential lobbies from the public domain.
- Providing direct access from the surrounding public domain to retail/community space and building lobbies.
- Activating the through site link with landscaping, seating, street lighting and public art installations to encourage chance meetings and socialisation.
- Minimising the impact of the vehicle entries by using high-quality materials and finishes and limiting their width to a maximum of 6m and avoid the 'black hole' effect with the provision of an artistically design grille or gate.
- Minimising any non-active edges to the public domain.
- Providing high-quality architectural detailing for any exposed part of the facade of the party wall.

Design Outcome

Based on the above principles, the proposal has employed a number of measures for street activation as follows (refer to Figure 16):

- Approximately 75% of the street edge is activated by retail business or commercial / residential lobbies.
- Only approximately 11% of the street edge is a continuous non-active edge and it is treated as a feature wall.
- A total of seven(7) pedestrian entry points are created to retail shops or commercial/residential lobbies from all street edges.
- All retail frontages and lobbies to Atchison Street have level access

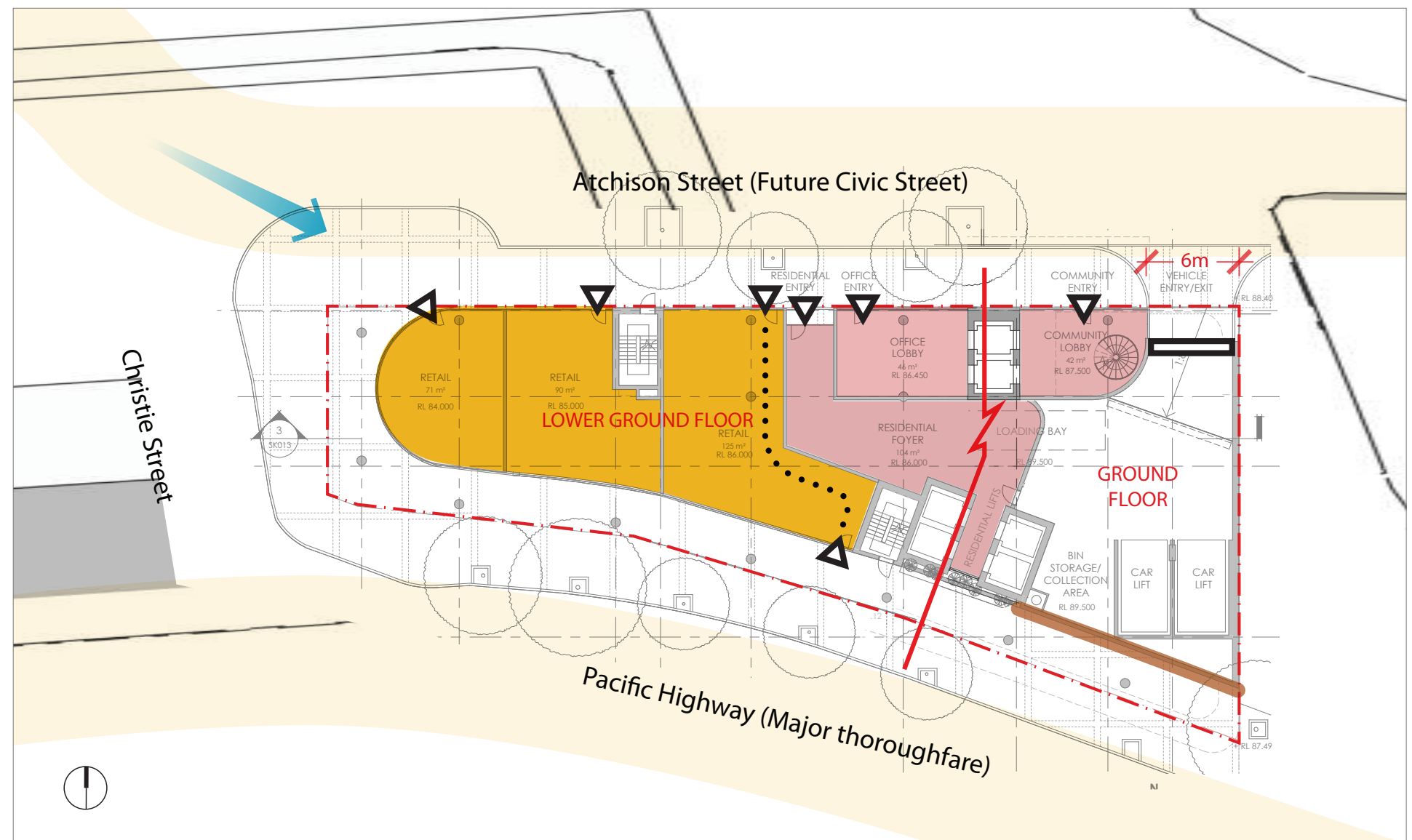


Figure 16. Street activation along the surrounding public domain on the Lower Ground and Ground Levels

- A north-south pedestrian link is provided through a retail shop on the Ground Floor.
- The visibility to the proposed active frontage is maximised from Sergeant Lane, which is a direct link to the railway station.
- The vehicle entry from Atchison Street is limited to 6m wide at the farthest eastern corner.
- Inactive surfaces are minimised and broken down to small components to mitigate their impacts.
- An artistically-designed gate and adequate lighting are provided.

Please refer to the architect and landscape architect's materials for detailed design treatment of the public domain.

- RETAIL BUSINESS
- COMMERCIAL / RESIDENTIAL LOBBY
- ▷ DIRECT STREET ENTRY
- FEATURE WALL
- ... PEDESTRIAN THROUGH-SITE LINK
- ↔ VISIBILITY FROM RAILWAY STATION
- ARTISTICALLY DESIGN GATE / GRILLE

STREET ACTIVATION



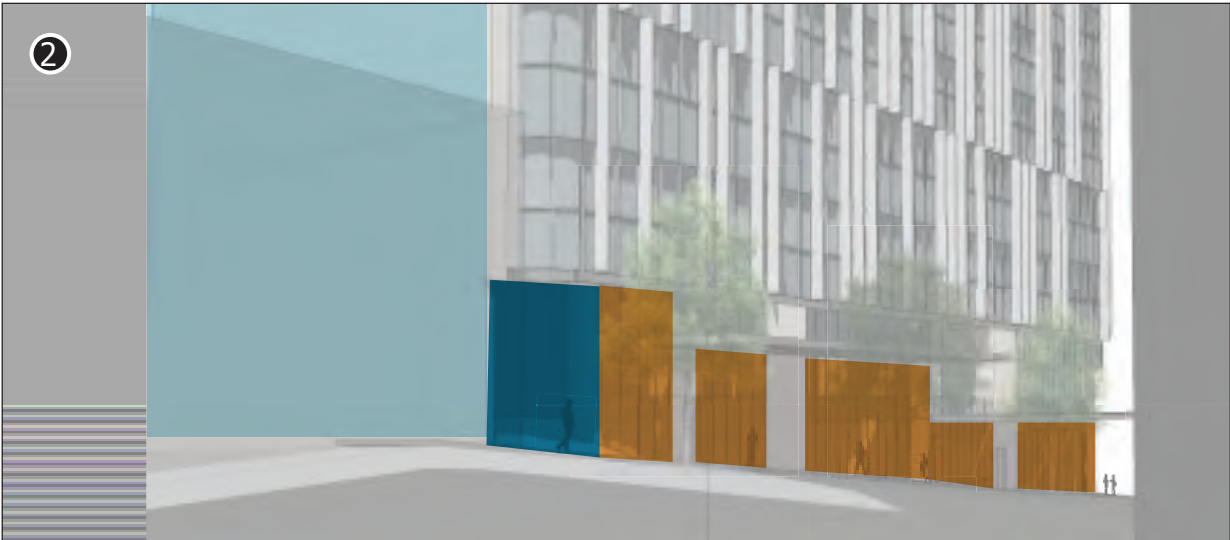
1. View due southeast from the corner of Sergeants Lane and Christie Street



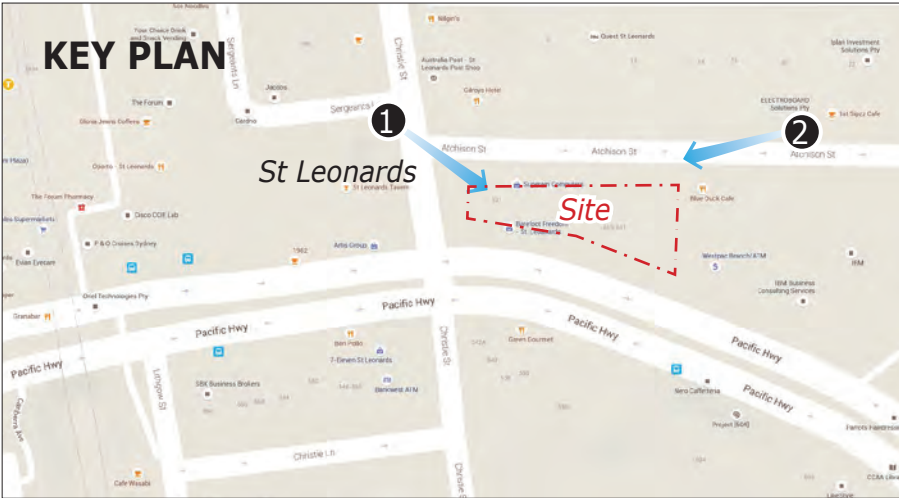
2. View west from the northern footpath of Atchison Street



Street activation on ground level and first level



Street activation on ground level and first level



- STREET EDGE WITH ACTIVE USES
- BLANK FACADE (IF EXPOSED) TO BE TREATED WITH ARCHITECTURAL INTEREST
- ARTISTICALLY-DESIGNED GATE / GRILLE



Examples of activating street edges with active uses and direct street access points.



Example of a vehicle entry with an artistically design gate.

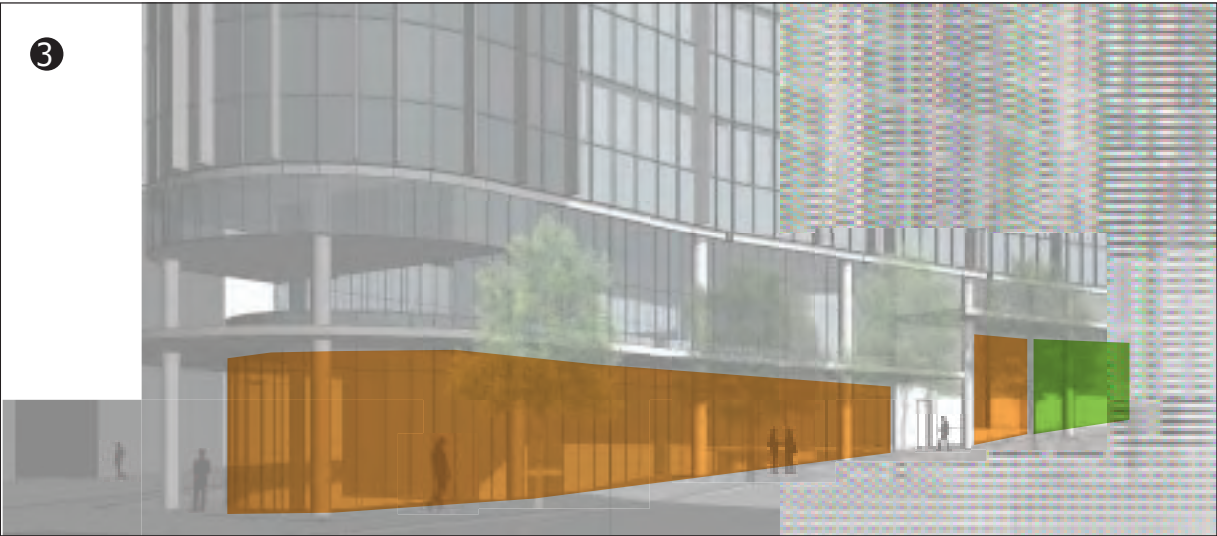
STREET ACTIVATION



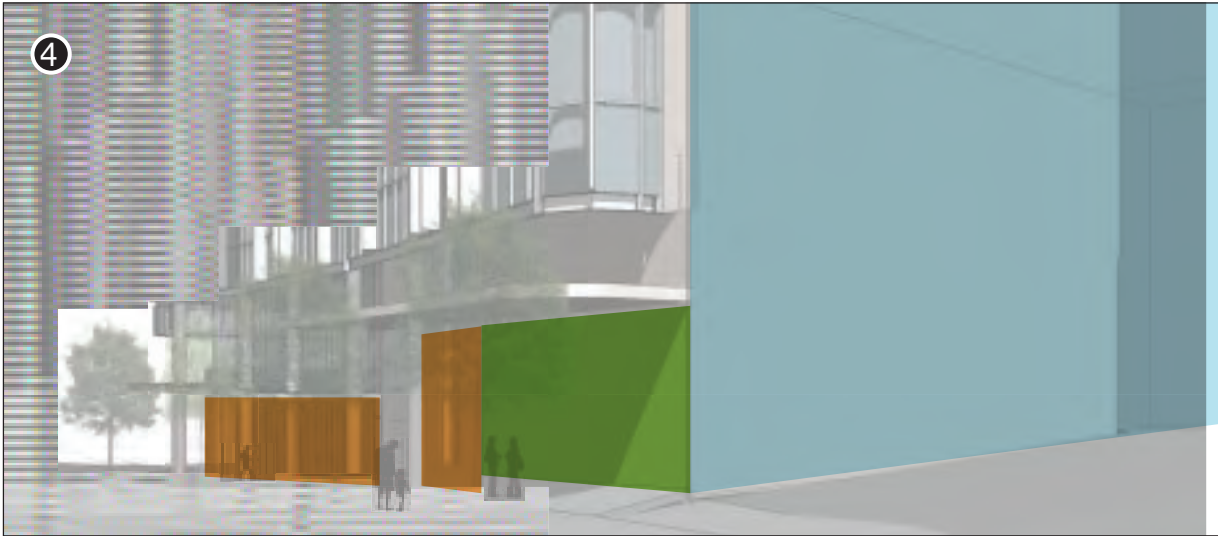
3. View due northeast from the corner of Pacific Highway and Christie Street



4. View due west from the northern footpath of Pacific Highway



Street activation on ground level and first level



Street activation on ground level and first level



- STREET EDGE WITH ACTIVE USES
- BLANK FACADE (IF EXPOSED) TO BE TREATED WITH ARCHITECTURAL INTEREST
- FEATURE WALL



Examples of the intended architectural language



Examples of inactive surface treatment with green wall, architectural detailing or building signs



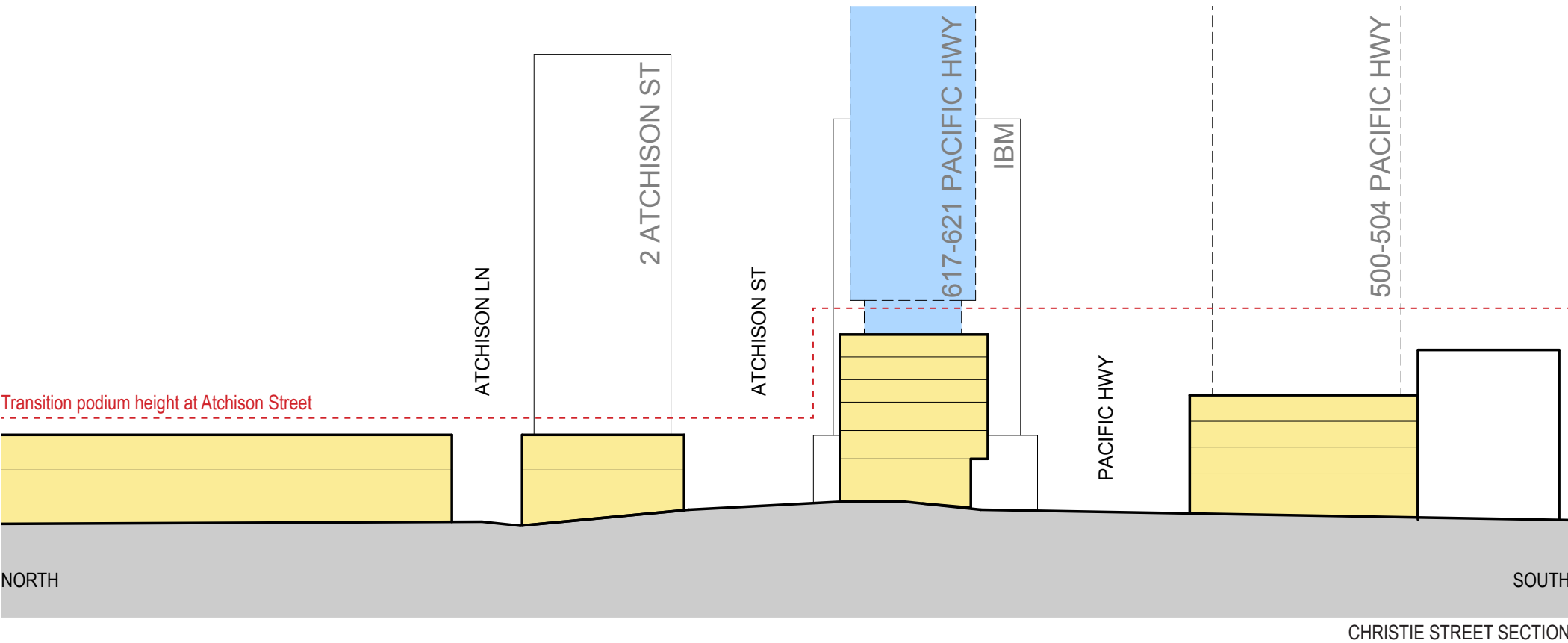
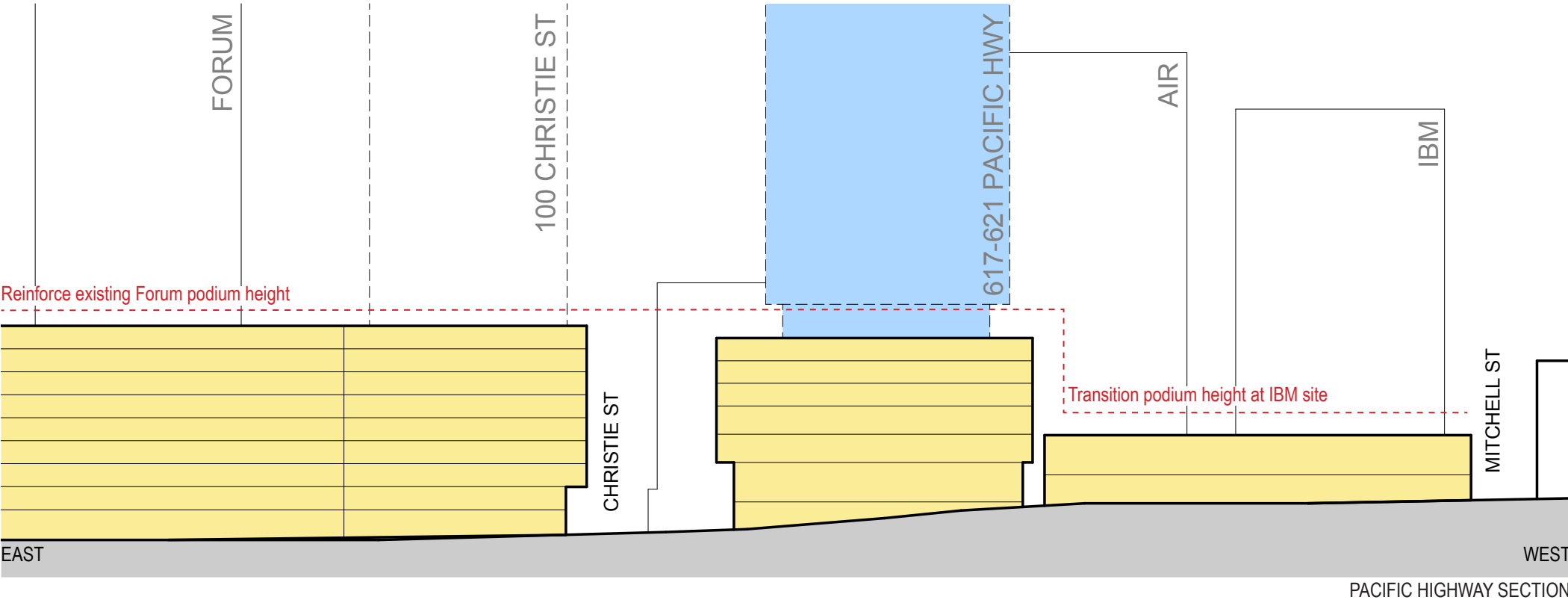
PODIUM HEIGHT

Podium Height

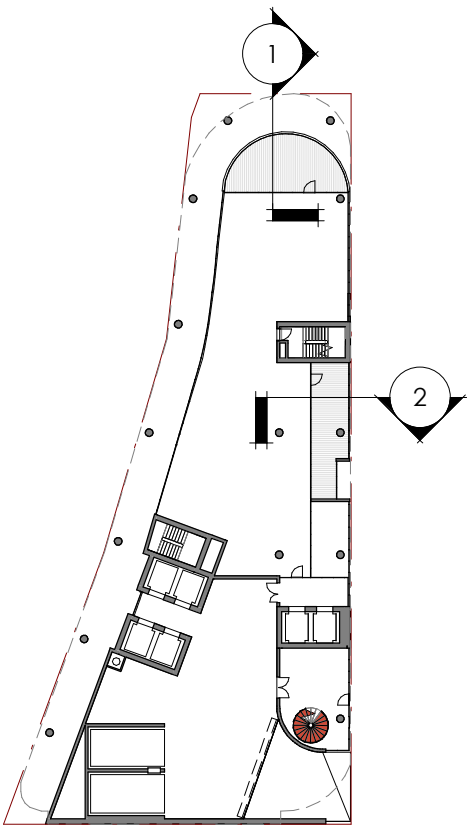
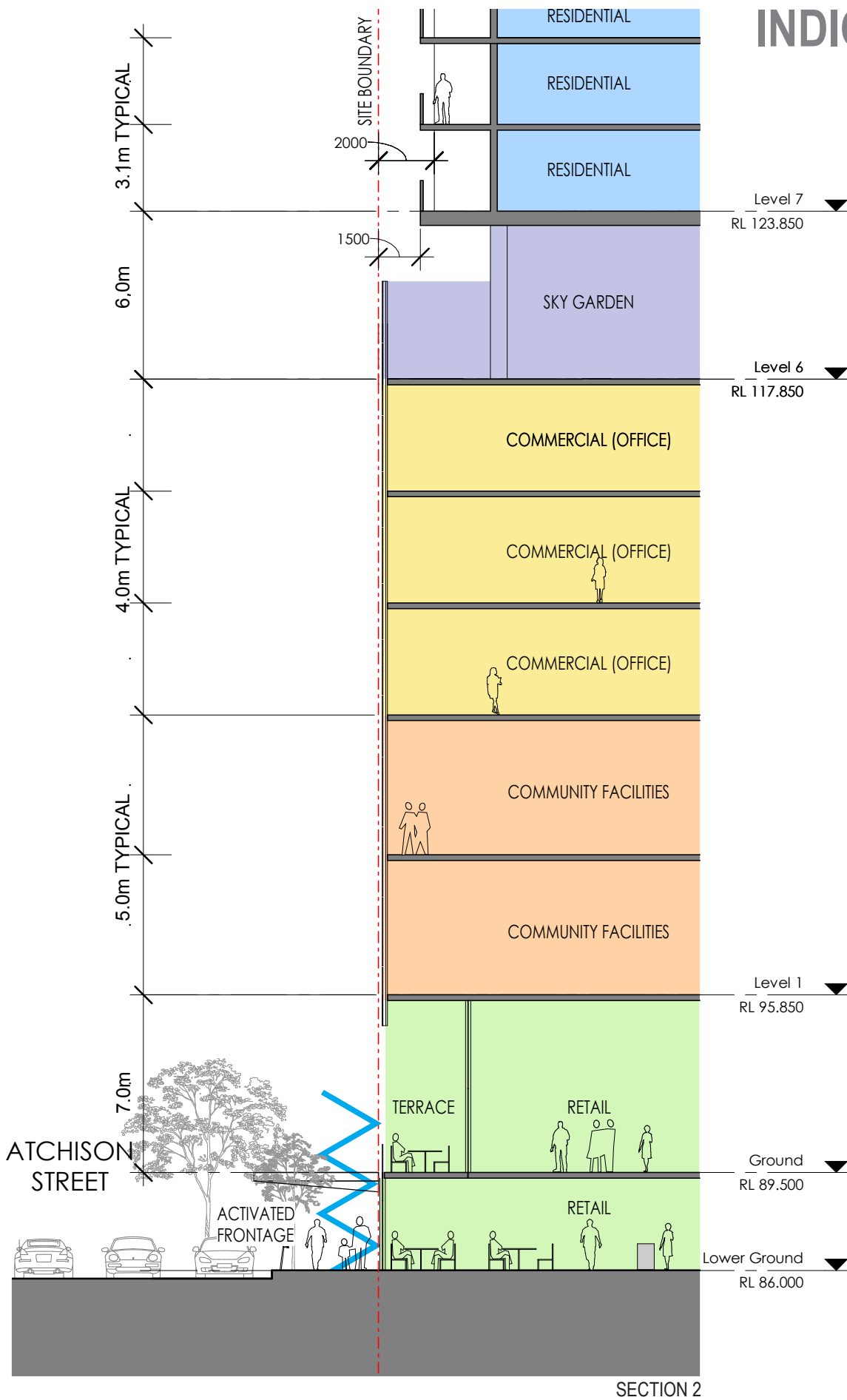
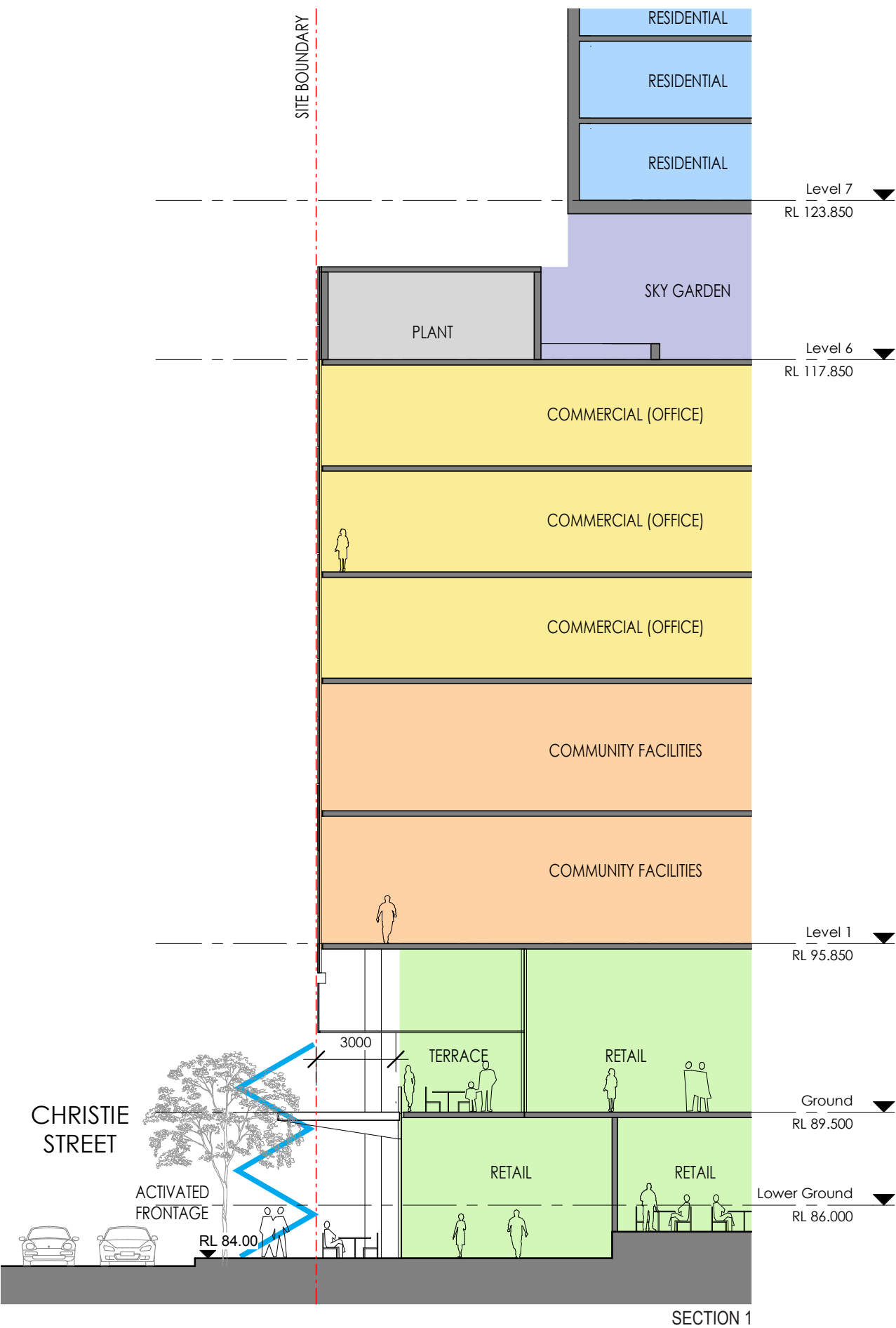
On the **western side of the Pacific Highway** the podium of the existing Forum development establishes a **nine storey (approx. 35m) podium height** which will be reinforced by the proposed podium height of 617-621 Pacific Highway.

On the **eastern side of Christie Street** the existing buildings are **typically two to three storeys (10m) in height**. It is anticipated that the future buildings on the southern side of the Pacific Highway will have podium height of four to five storeys (20m) in height.

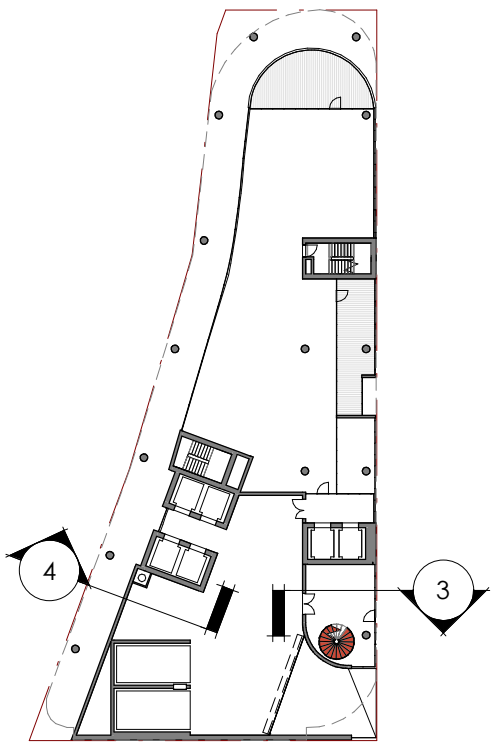
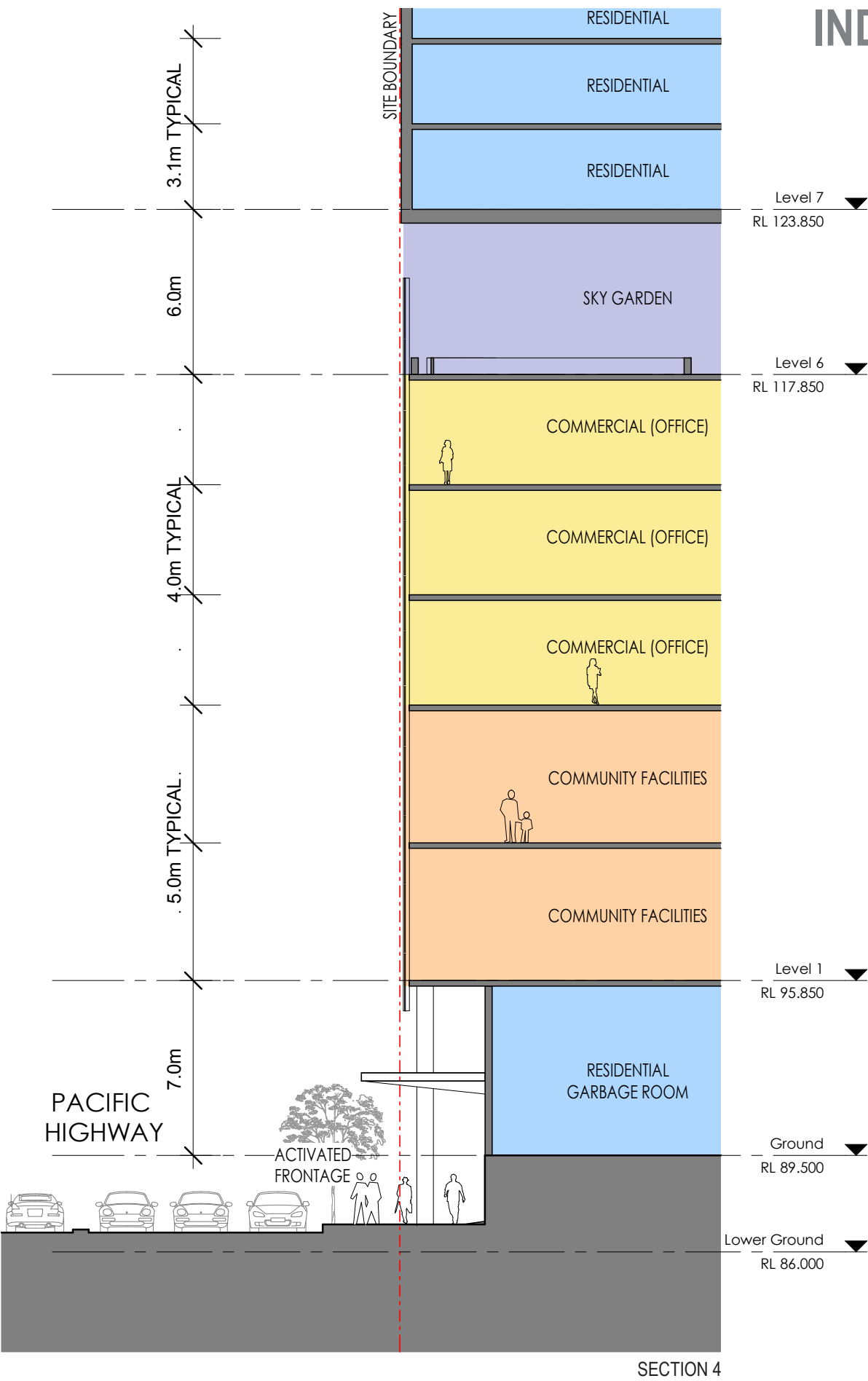
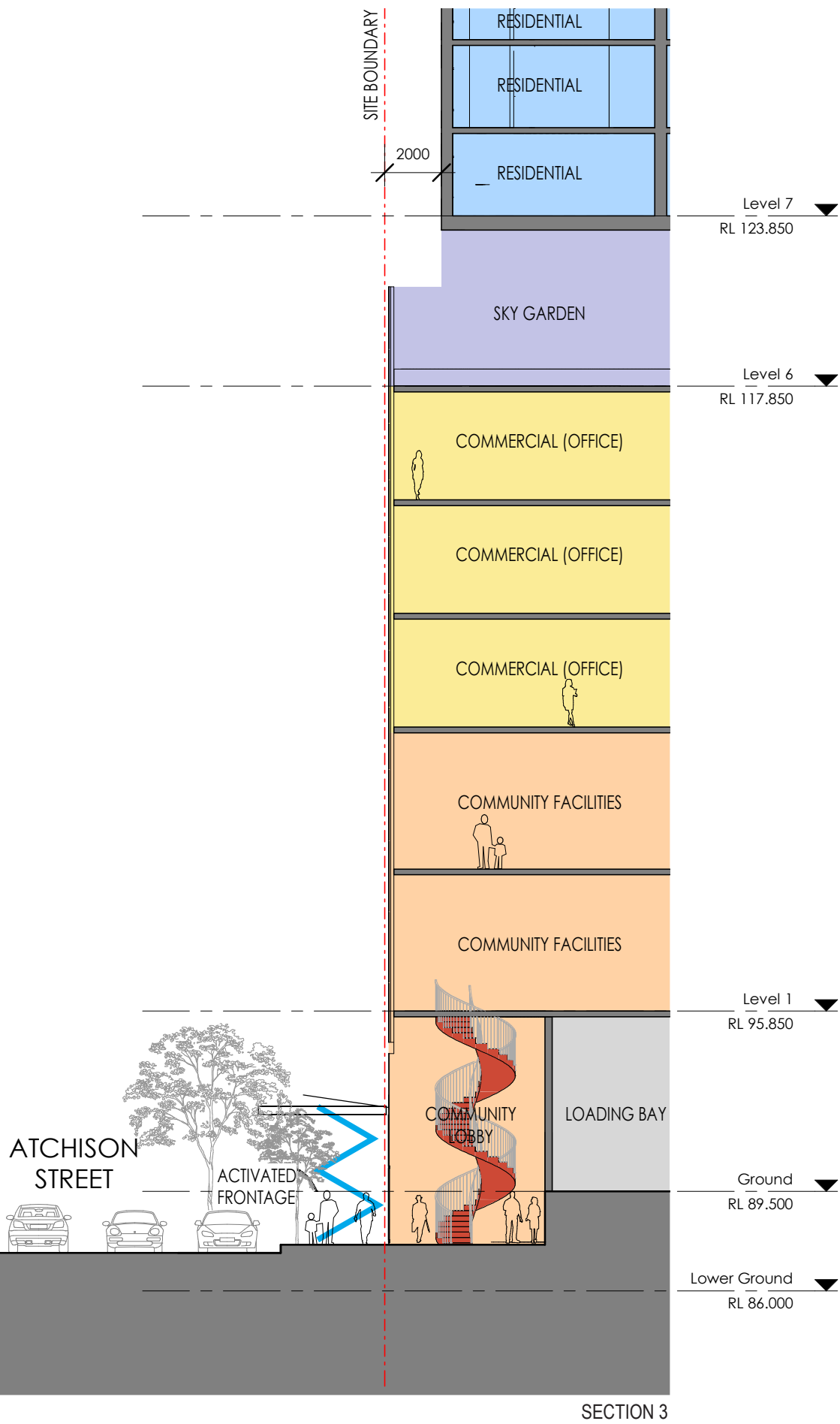
Refer also to indicative podium sections on pages 48-50 of this document which for the podium levels show proposed building setbacks and floor to floor heights.

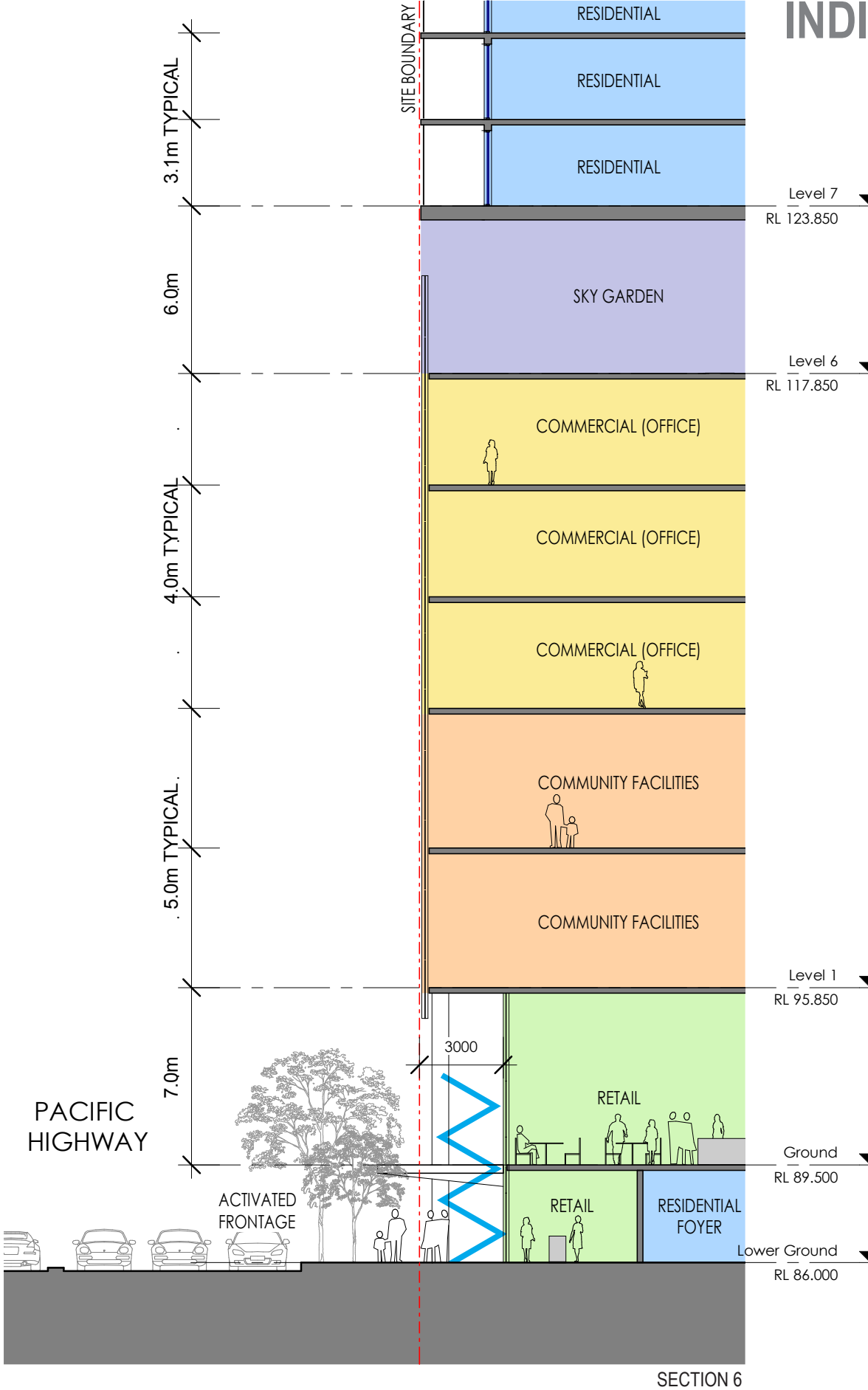
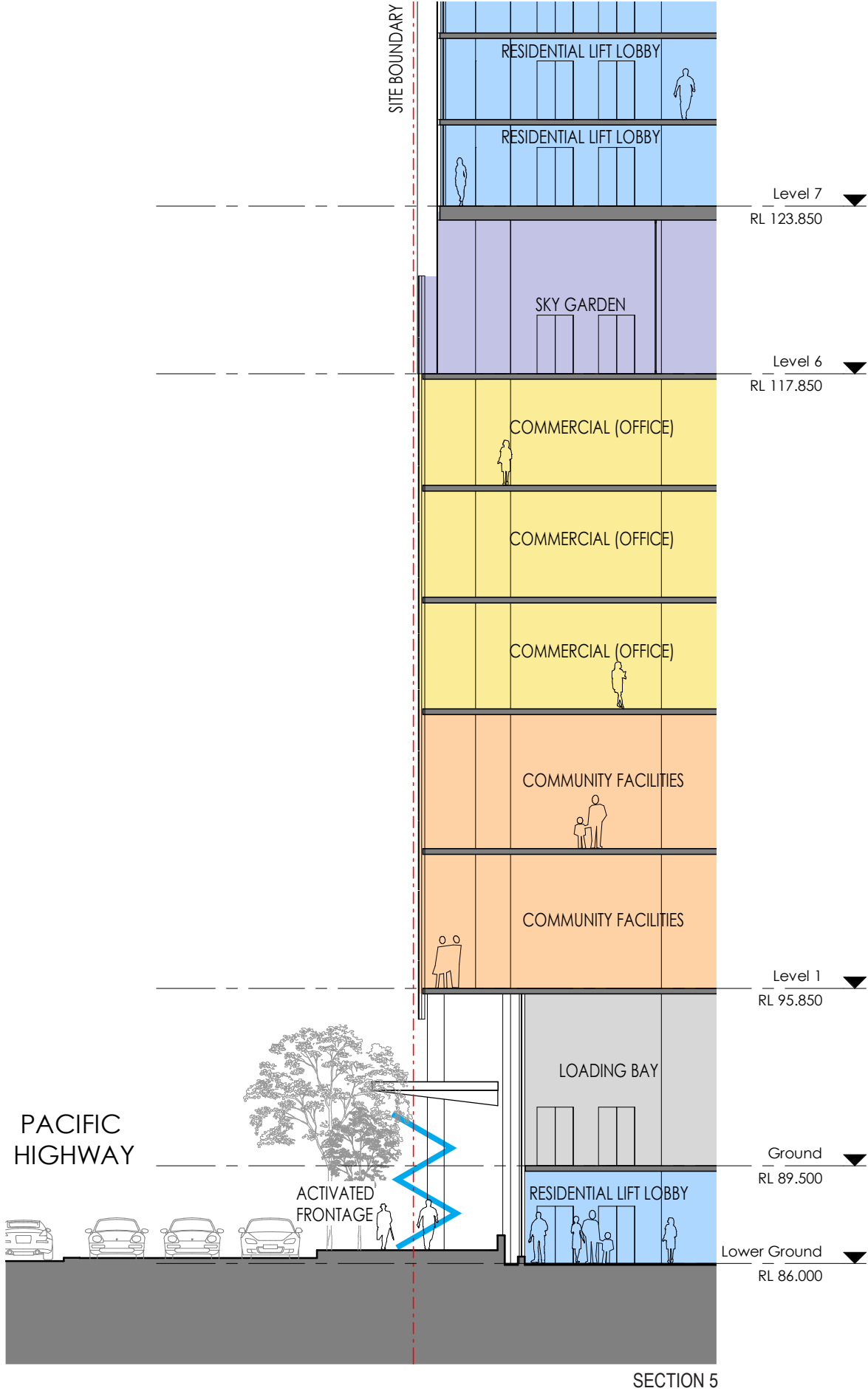


INDICATIVE SECTIONS
PODIUM SECTIONS

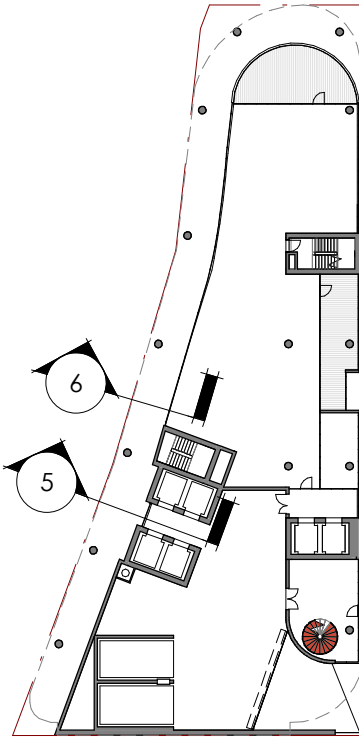


INDICATIVE SECTIONS
PODIUM SECTIONS





INDICATIVE SECTIONS
PODIUM SECTIONS



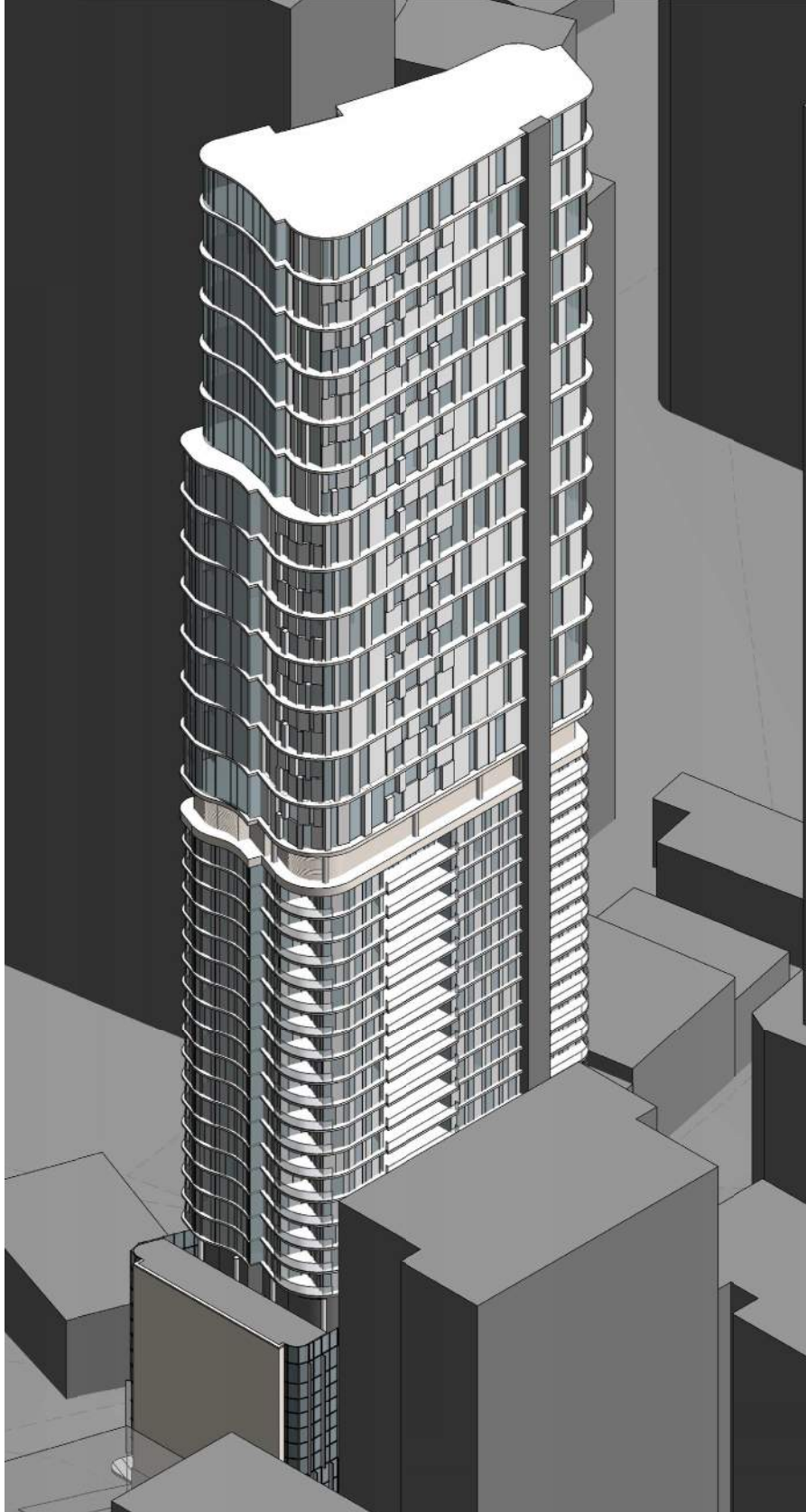
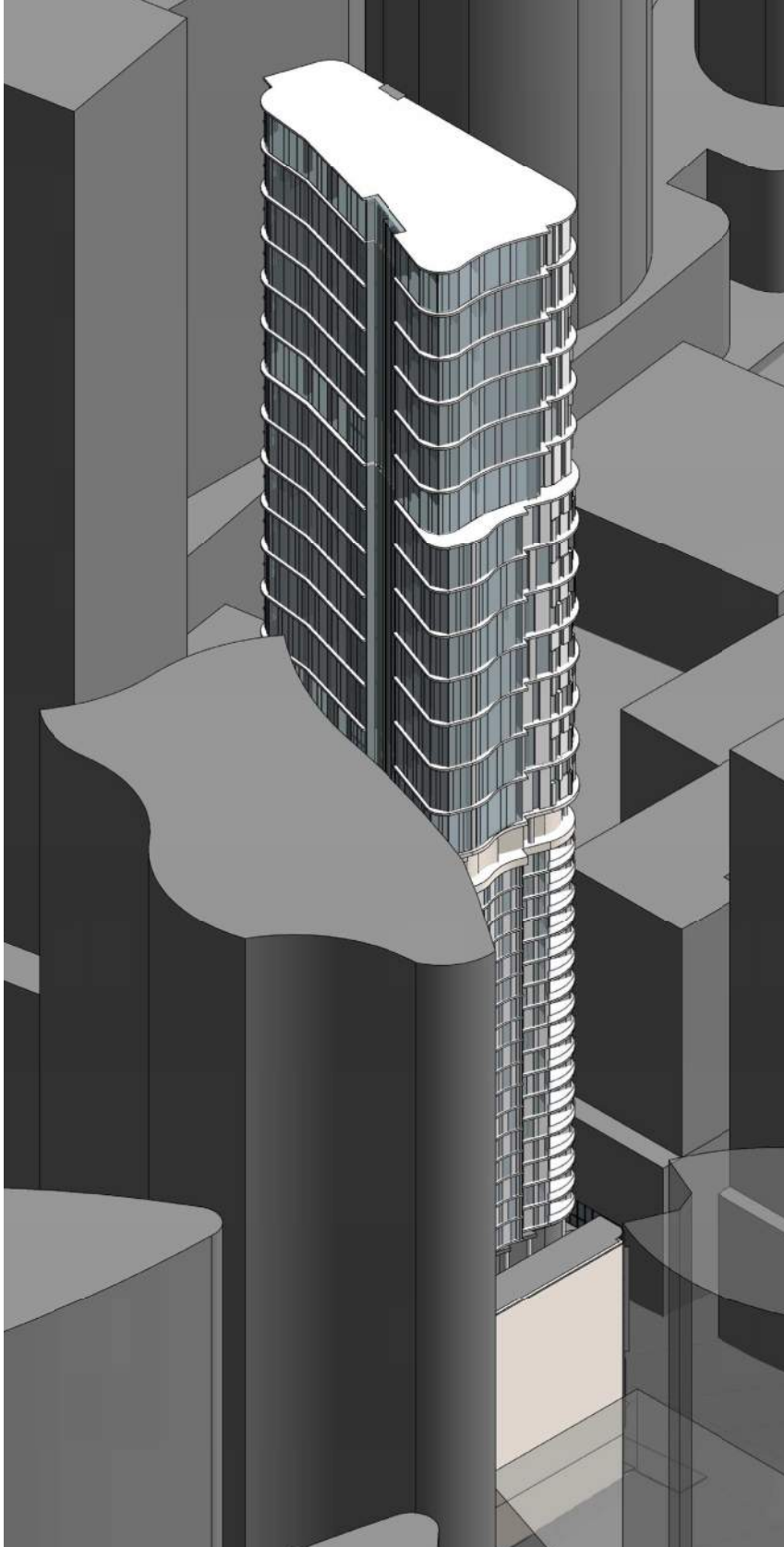
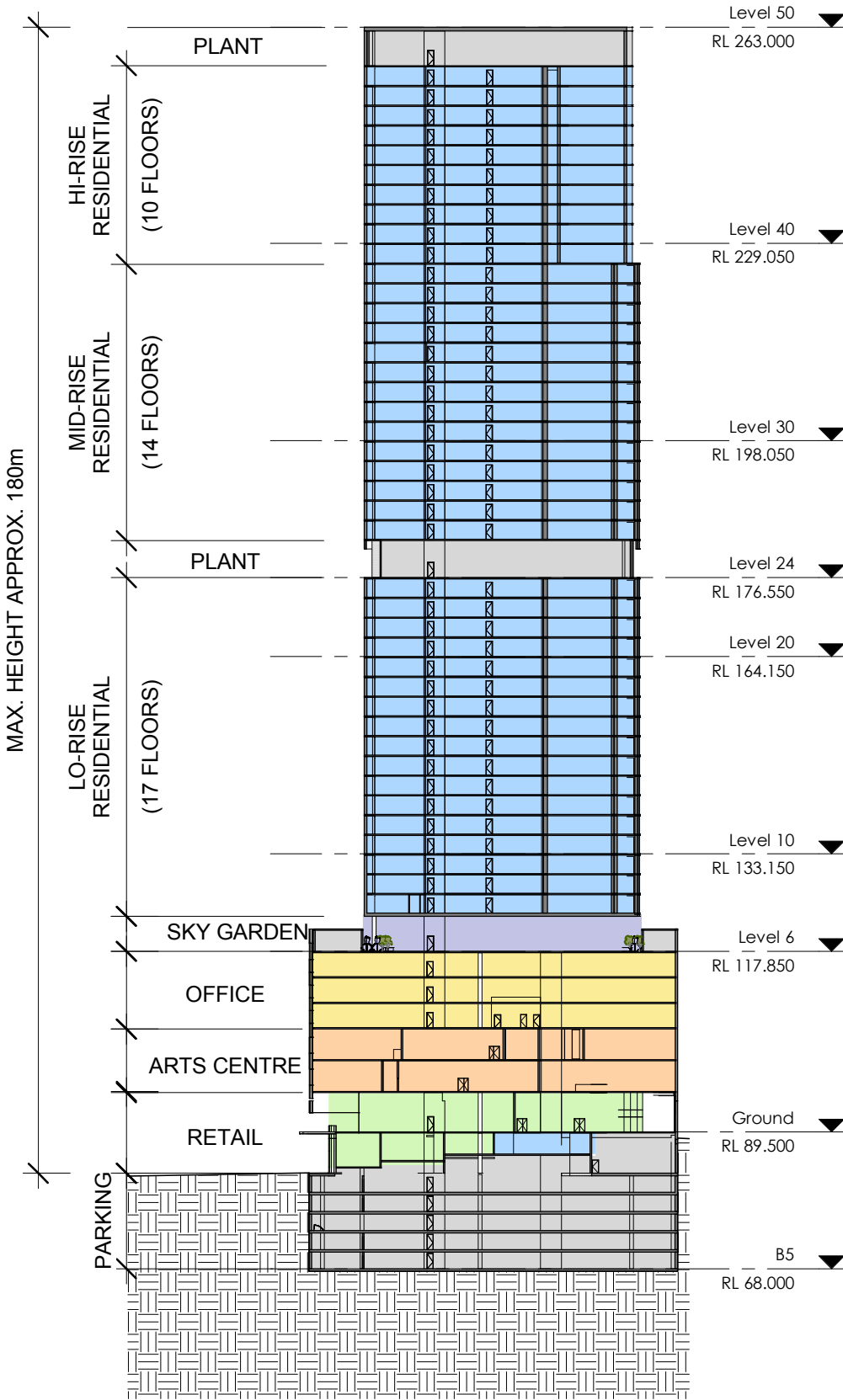
INDICATIVE 3D PERSPECTIVES
STREET LEVEL PERSPECTIVES



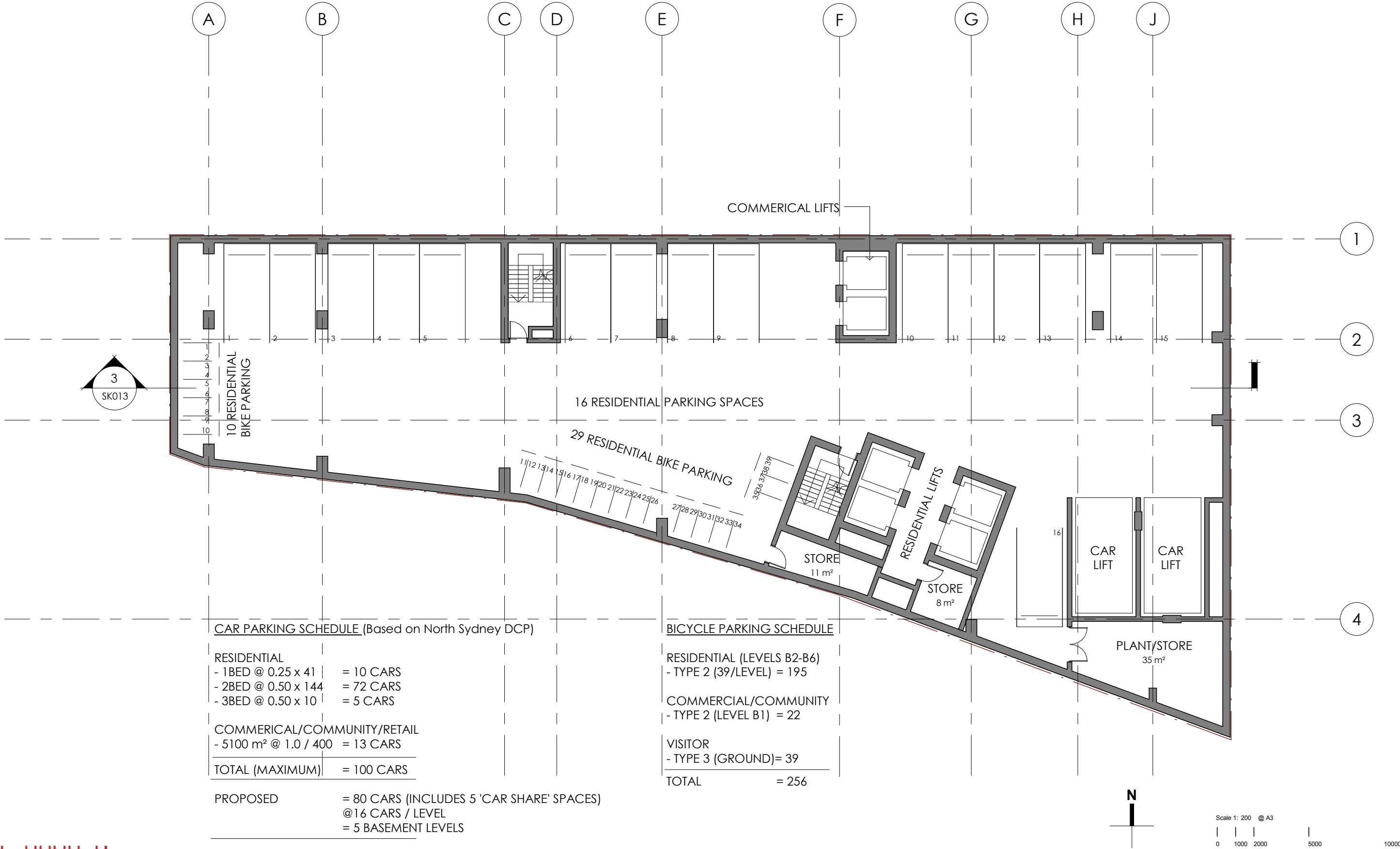
INDICATIVE 3D PERSPECTIVES
STREET LEVEL PERSPECTIVES



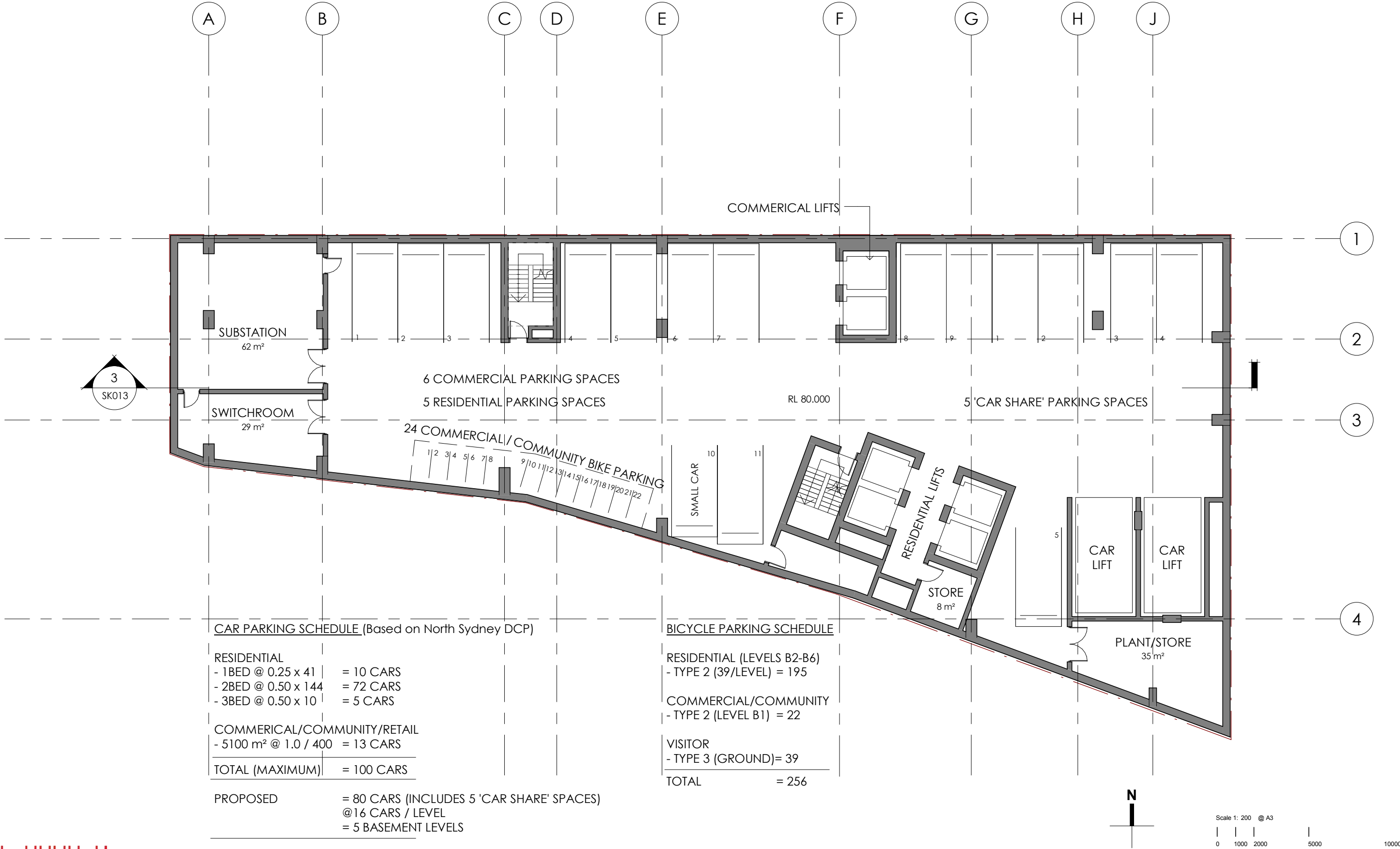
INDICATIVE 3D PERSPECTIVES
SECTION & BIRD'S EYE PERSPECTIVE



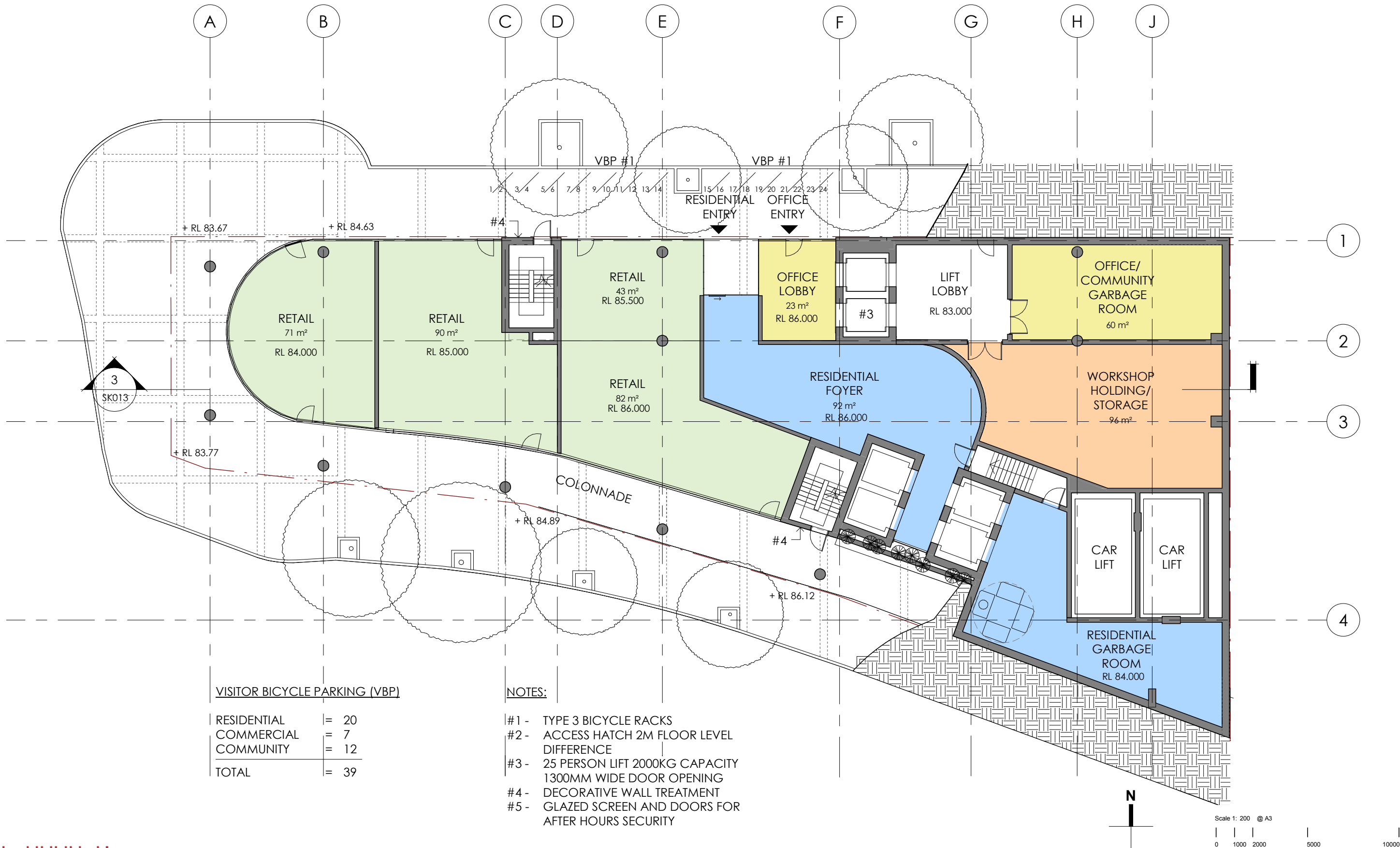
INDICATIVE FLOOR PLANS
TYPICAL BASEMENT FLOOR



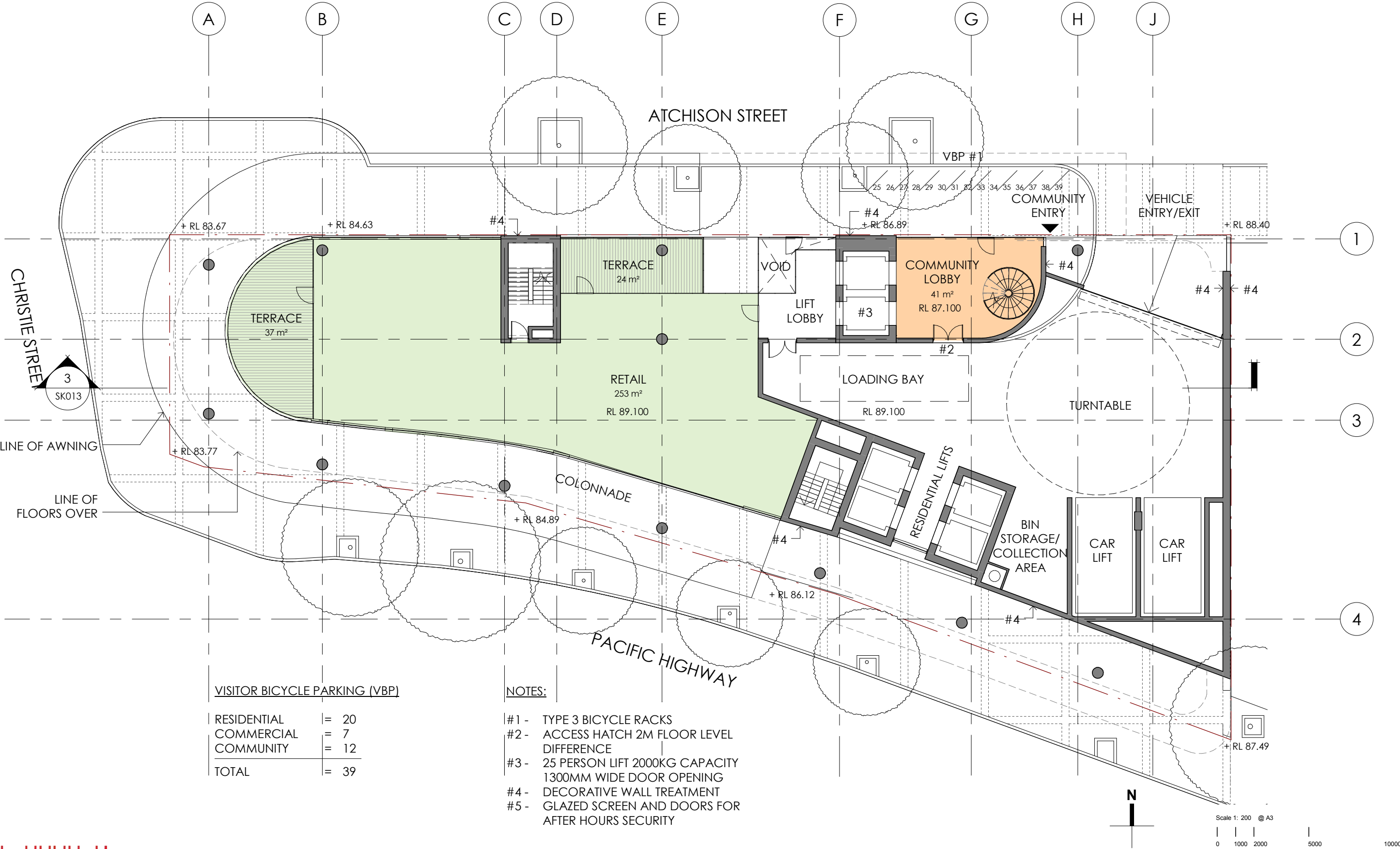
INDICATIVE FLOOR PLANS
BASEMENT LEVEL 1



INDICATIVE FLOOR PLANS
LOWER GROUND LEVEL

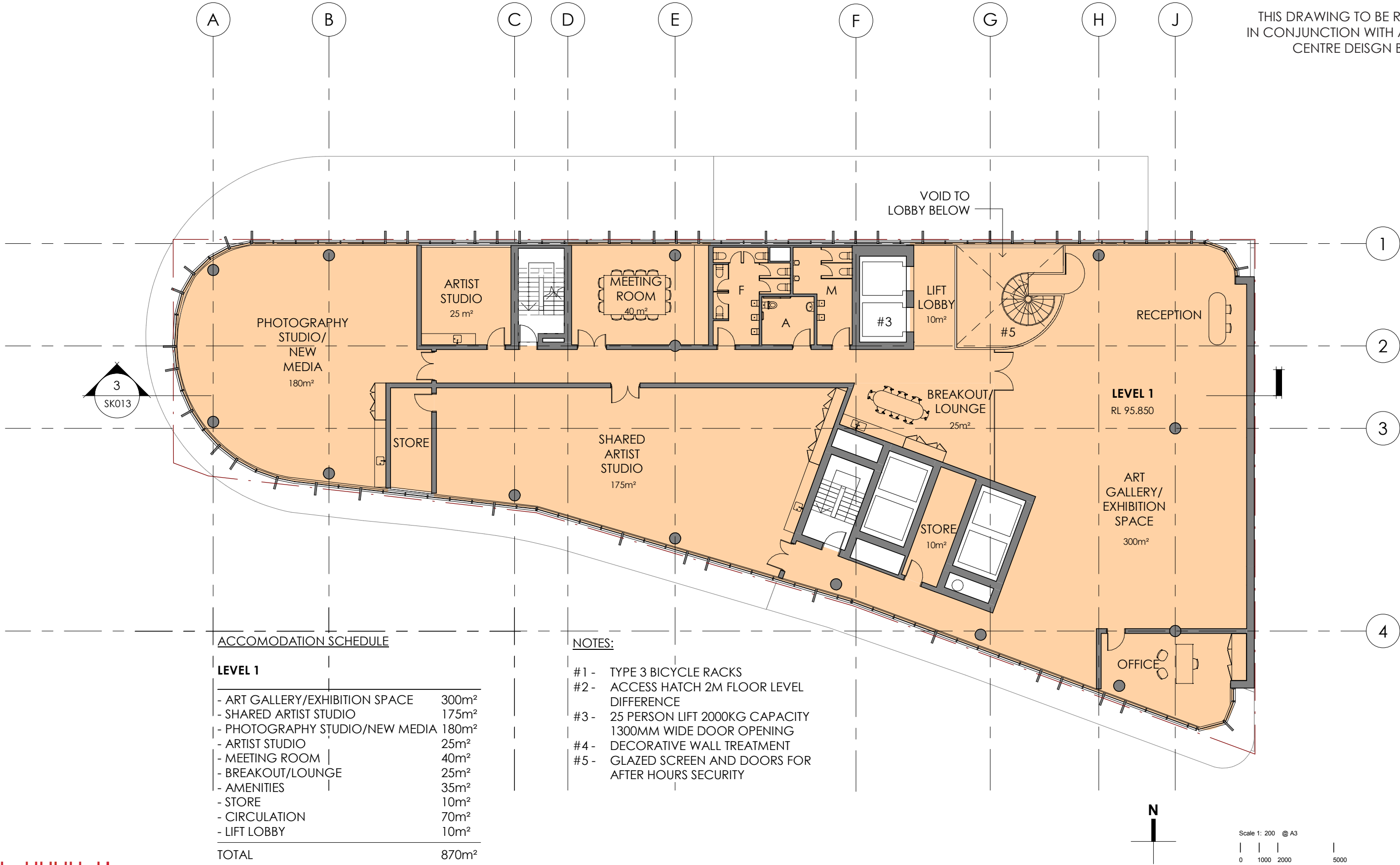


INDICATIVE FLOOR PLANS
GROUND FLOOR



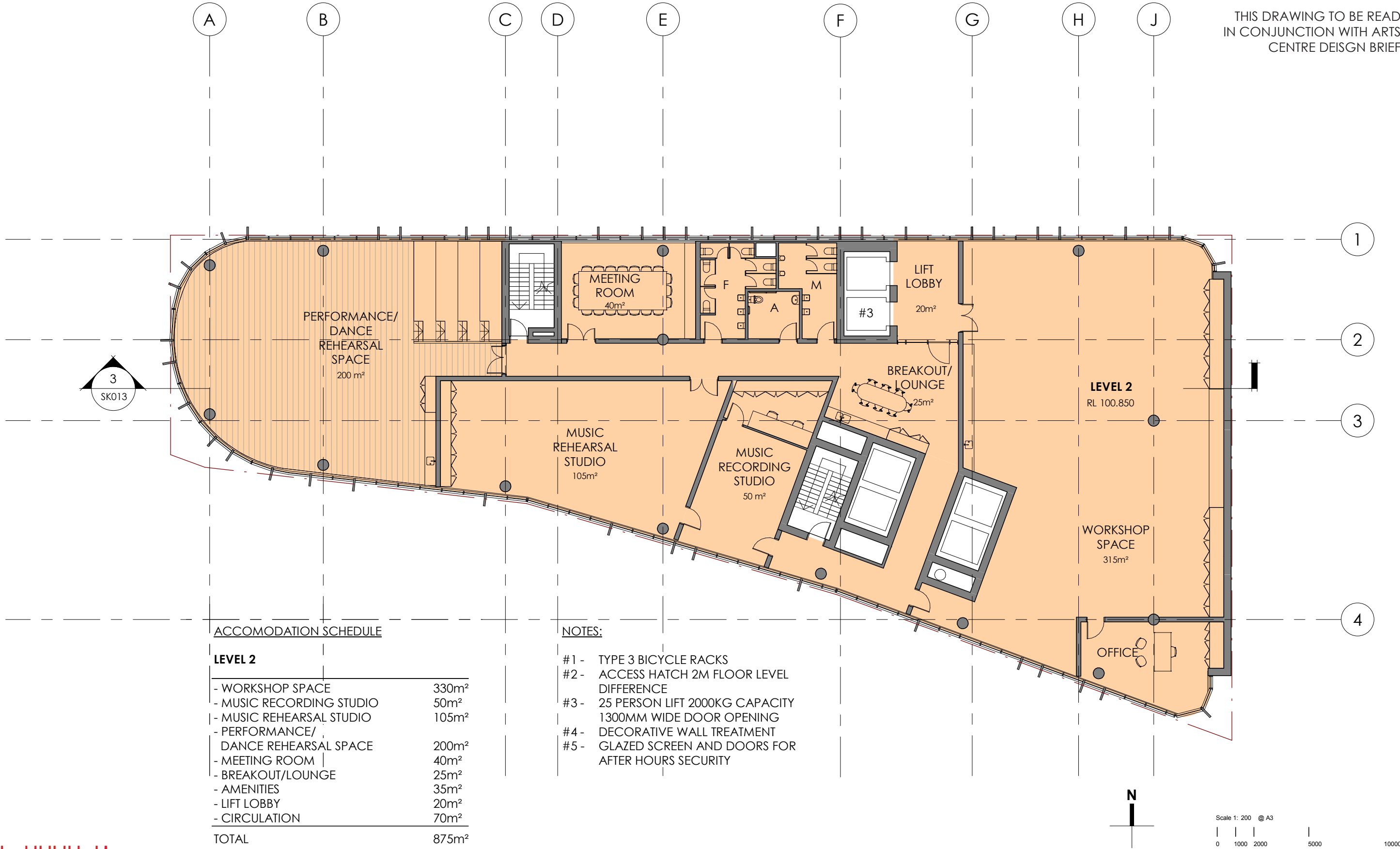
INDICATIVE FLOOR PLANS
COMMUNITY FACILITIES FLOOR (LEVEL 1)

THIS DRAWING TO BE READ
IN CONJUNCTION WITH ARTS
CENTRE DEISGN BRIEF

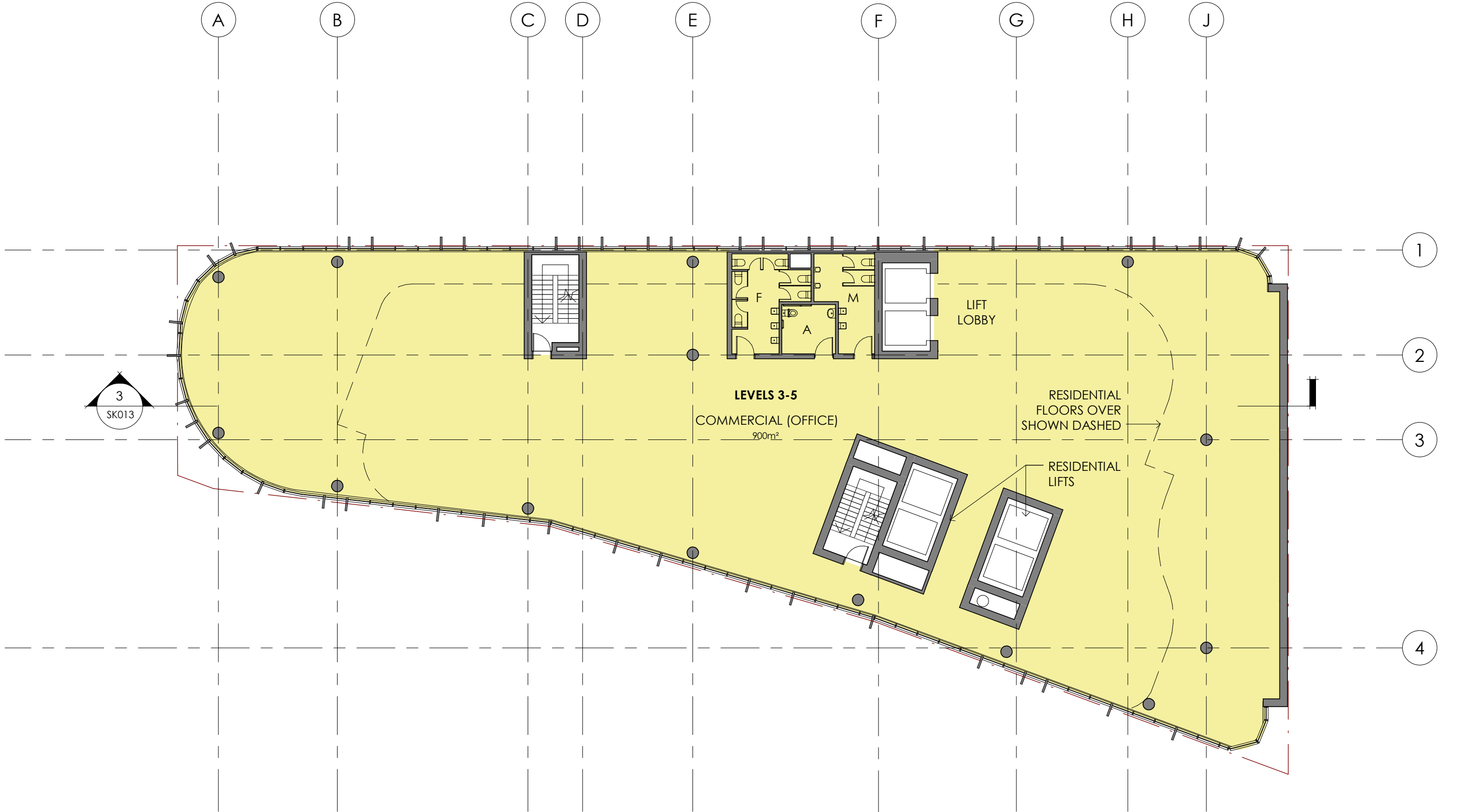


INDICATIVE FLOOR PLANS
COMMUNITY FACILITIES FLOOR (LEVEL 2)

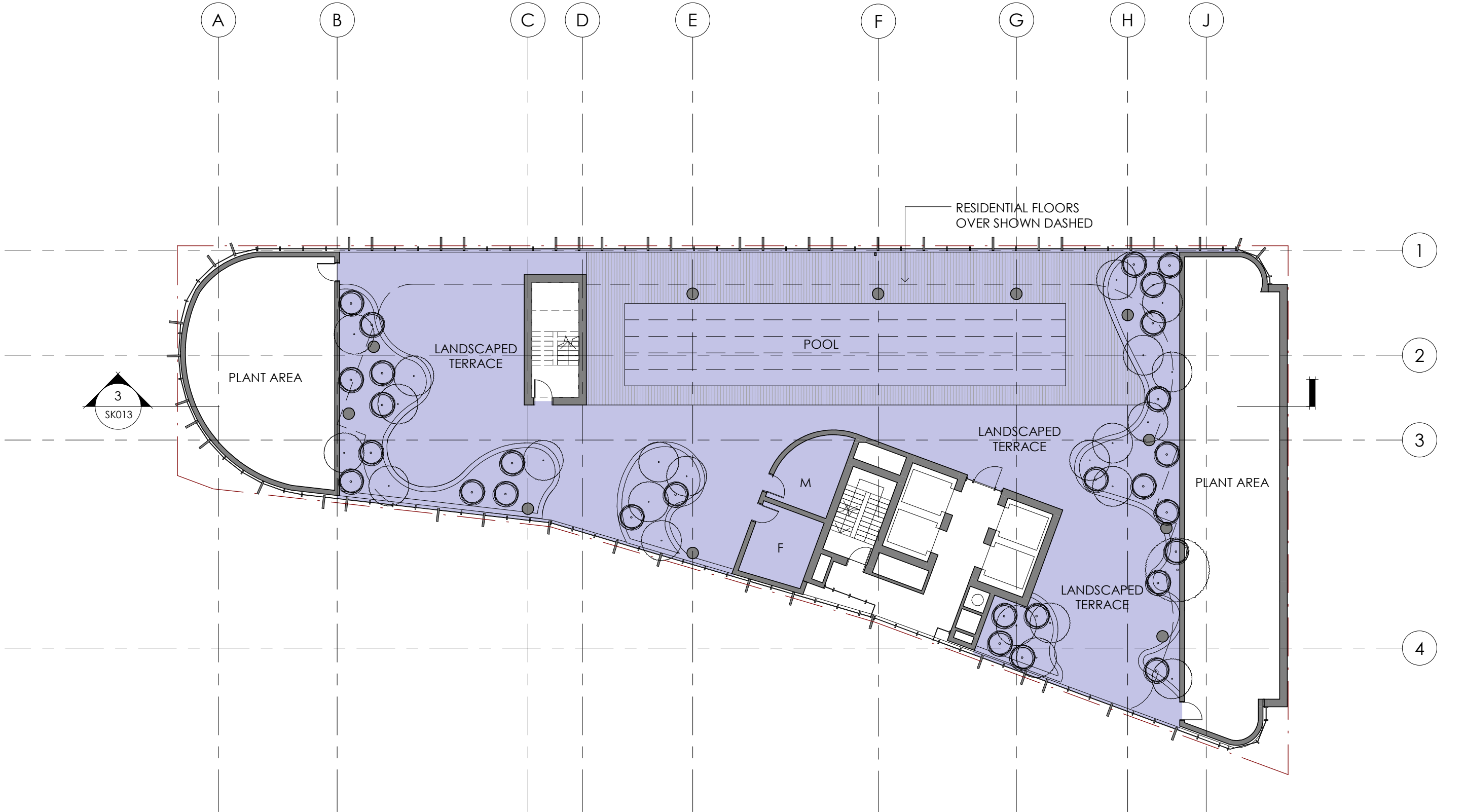
THIS DRAWING TO BE READ
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CENTRE DEISGN BRIEF



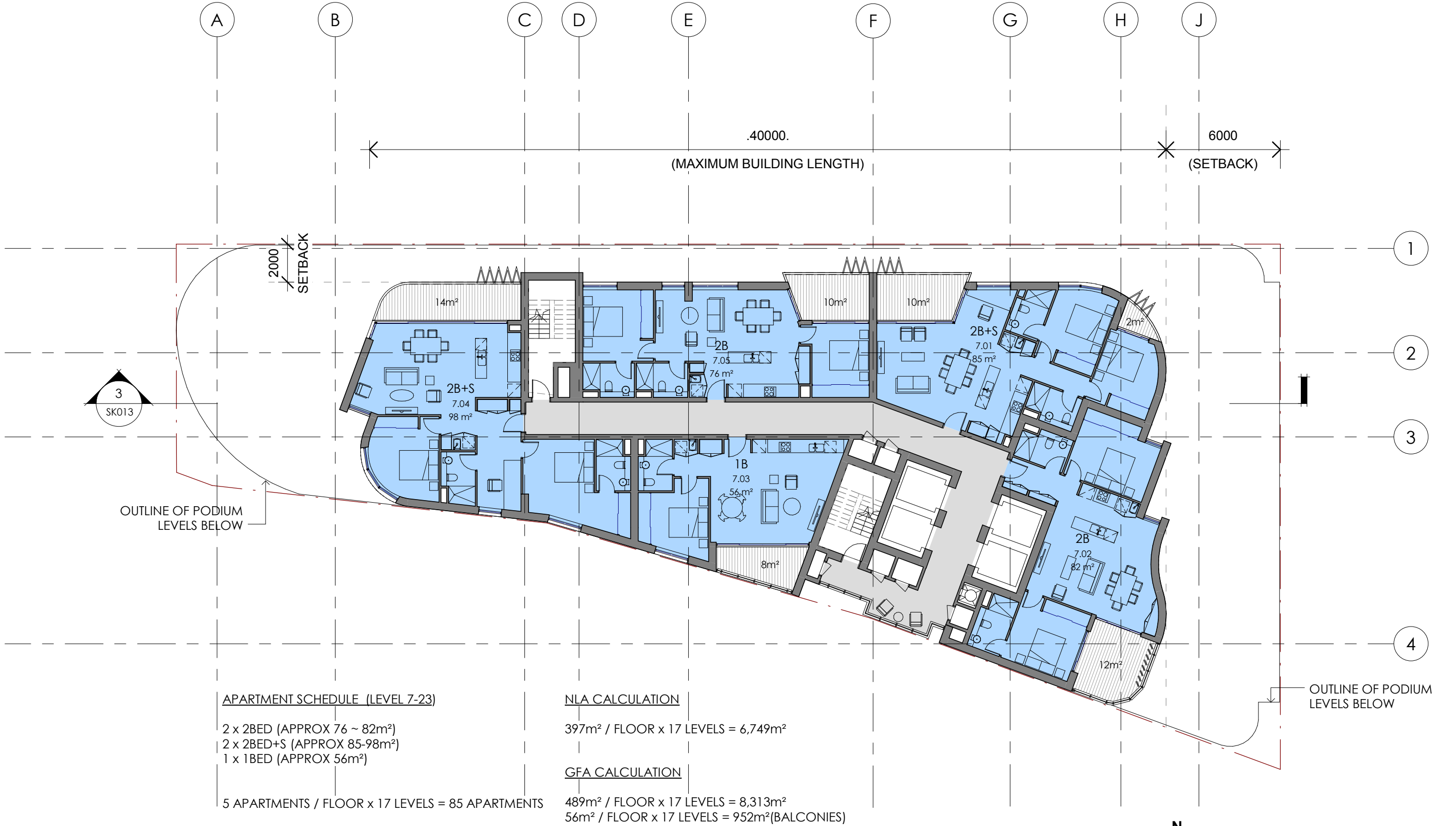
INDICATIVE FLOOR PLANS
COMMERCIAL FLOORS (LEVEL 3-5)



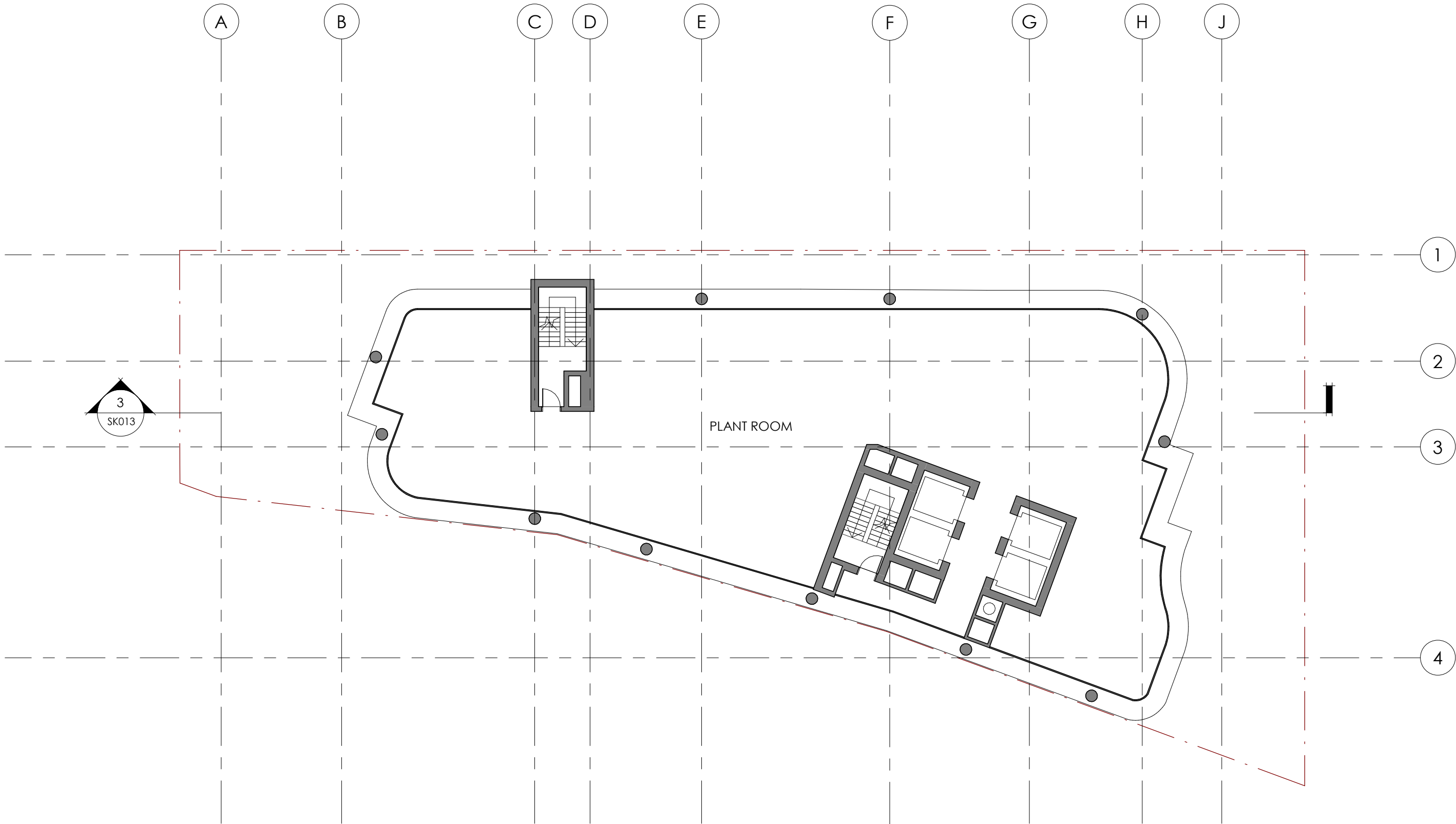
INDICATIVE FLOOR PLANS
SKY GARDEN FLOOR (LEVEL 6)



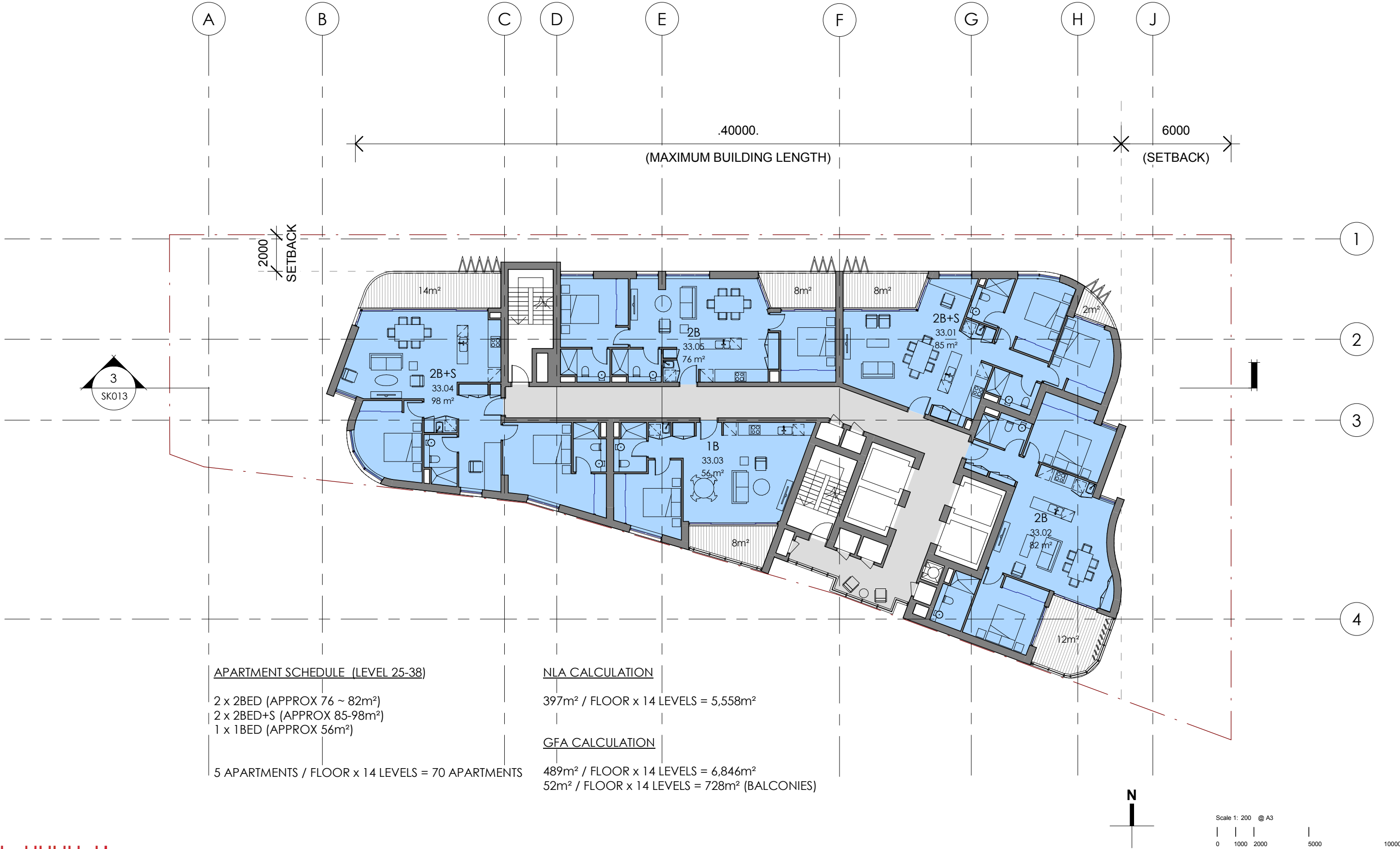
INDICATIVE FLOOR PLANS
LO-RISE RESIDENTIAL FLOORS (LEVEL 7-23)



INDICATIVE FLOOR PLANS
PLANT FLOORS (LEVEL 24 & 49)



INDICATIVE FLOOR PLANS
MID-RISE RESIDENTIAL FLOORS (LEVEL 25-38)



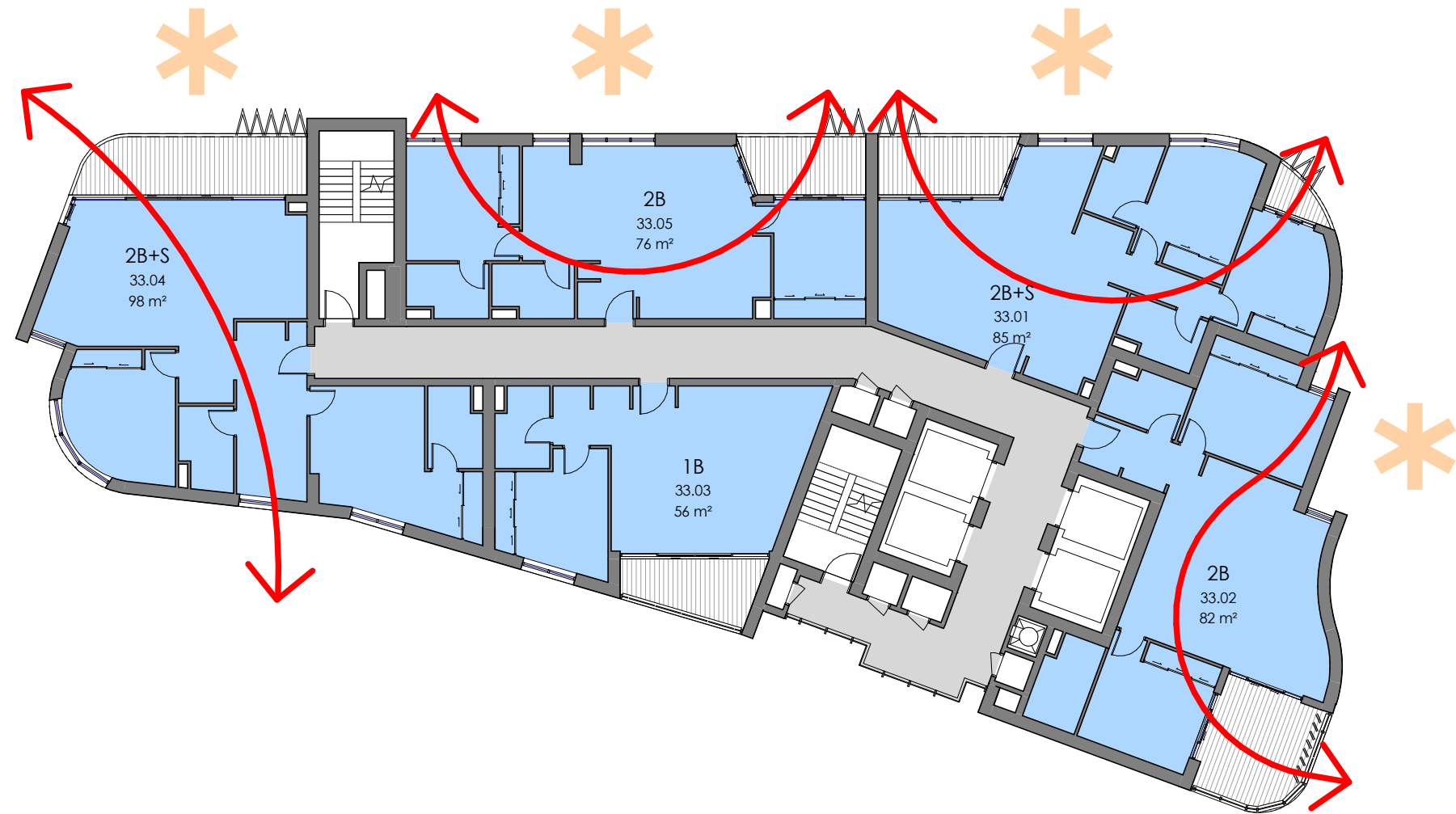
HI-RISE RESIDENTIAL FLOOR (LEVEL 39-48)



SEPP65 / ADG

Indicative Compliance Schedule

DESIGN CRITERIA	LO-RISE	MID-RISE	HI-RISE	AVERAGE TOTAL
4A. Solar Access	80%	80%	75%	78%
4B. Natural Ventilation	80%	80%	75%	78%
4C. Ceiling Height	100%	100%	100%	100%
4D. Size & Layout	100%	100%	100%	100%
4E. Private Open Space	100%	100%	100%	100%
4F. Common Circulation	100%	100%	100%	100%
4G. Private Storage	100%	100%	100%	100%



Apartment Design

The accommodation consists of 195 apartments suited to a variety of lifestyle. The dwelling mix is 41 x 1bedroom (21%), 144 x 2bedroom (74%) and 10 x 3bedroom (5%). Many apartments have studies or media alcoves.

The residential floors have minimum ceiling heights to living/dining/bedrooms of 2.7 metres and 2.4 metres to non-habitable spaces. The floor to floor height is typically 3.1 metres.

Each apartment has access to a secure private open space such as a balcony or winter garden with minimum areas of 8m²/10m²/12m² for 1bed/2bed/3bed respectively.

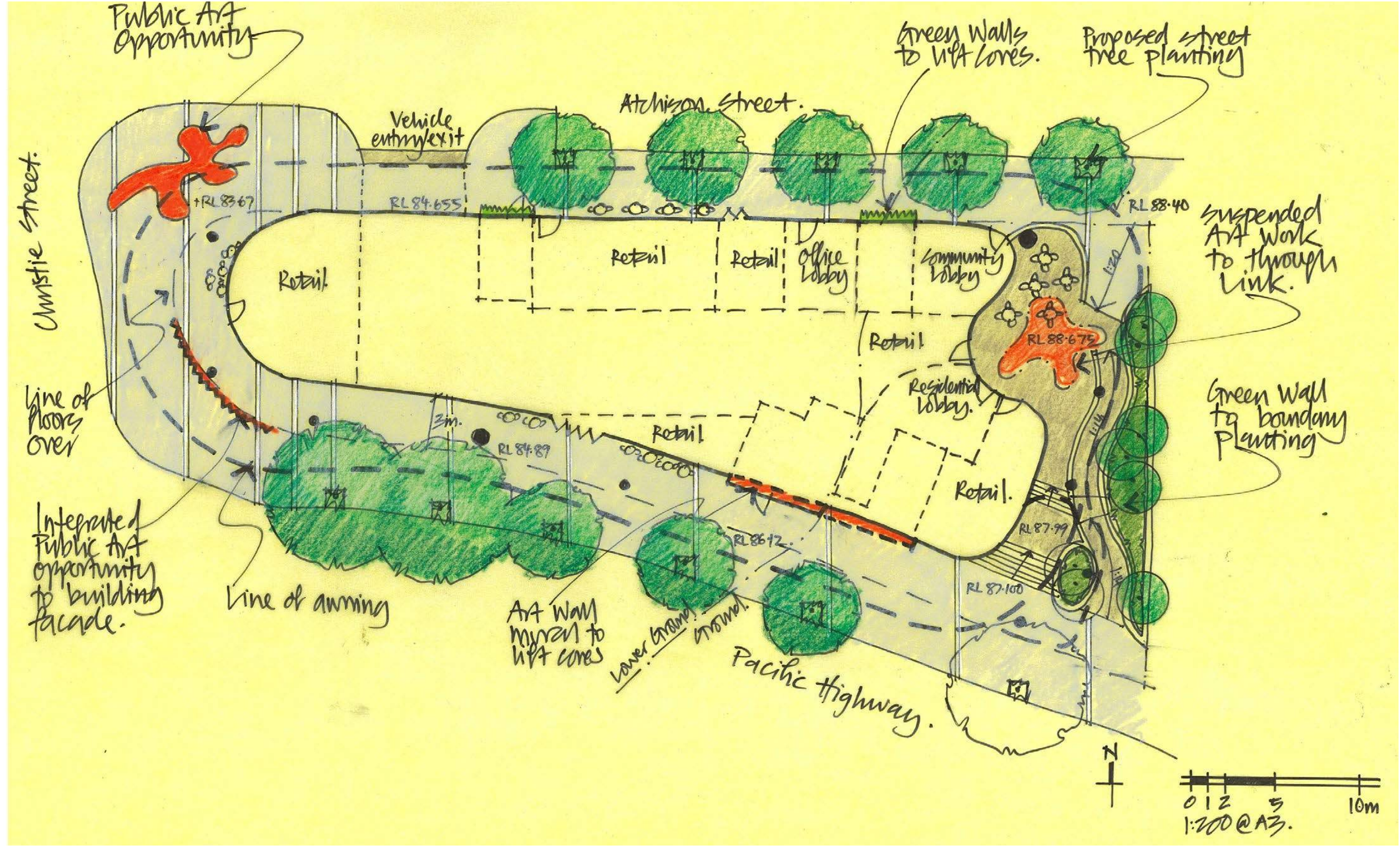
Most apartments have considerably more private open space than the minimum. A communal 'skygarden' space with indoor lounge/meeting rooms and outdoor recreation/pool area will also be provided for residents.

Dual aspect apartments have a maximum depth of 11.0 metres and single aspect apartments have are a maximum of 6.0 metres to enhance daylight access and natural ventilation.

A minimum of 2 hours direct sunlight between 9:00am & 3:00pm in mid winter will be enjoyed by more than 75% of the apartments. Similarly more than 75% of apartments will be naturally cross ventilated.

Each apartment has access to a minimum of 6m³/8m³/10m³ of private storage space (for 1bed/2bed/3bed respectively) via a combination of space within the apartment or secure storage cage within the basement levels.

GROUND FLOOR LANDSCAPE CONCEPT DESIGN



PUBLIC DOMAIN AND LANDSCAPE COMPONENTS

13.1 PUBLIC ART

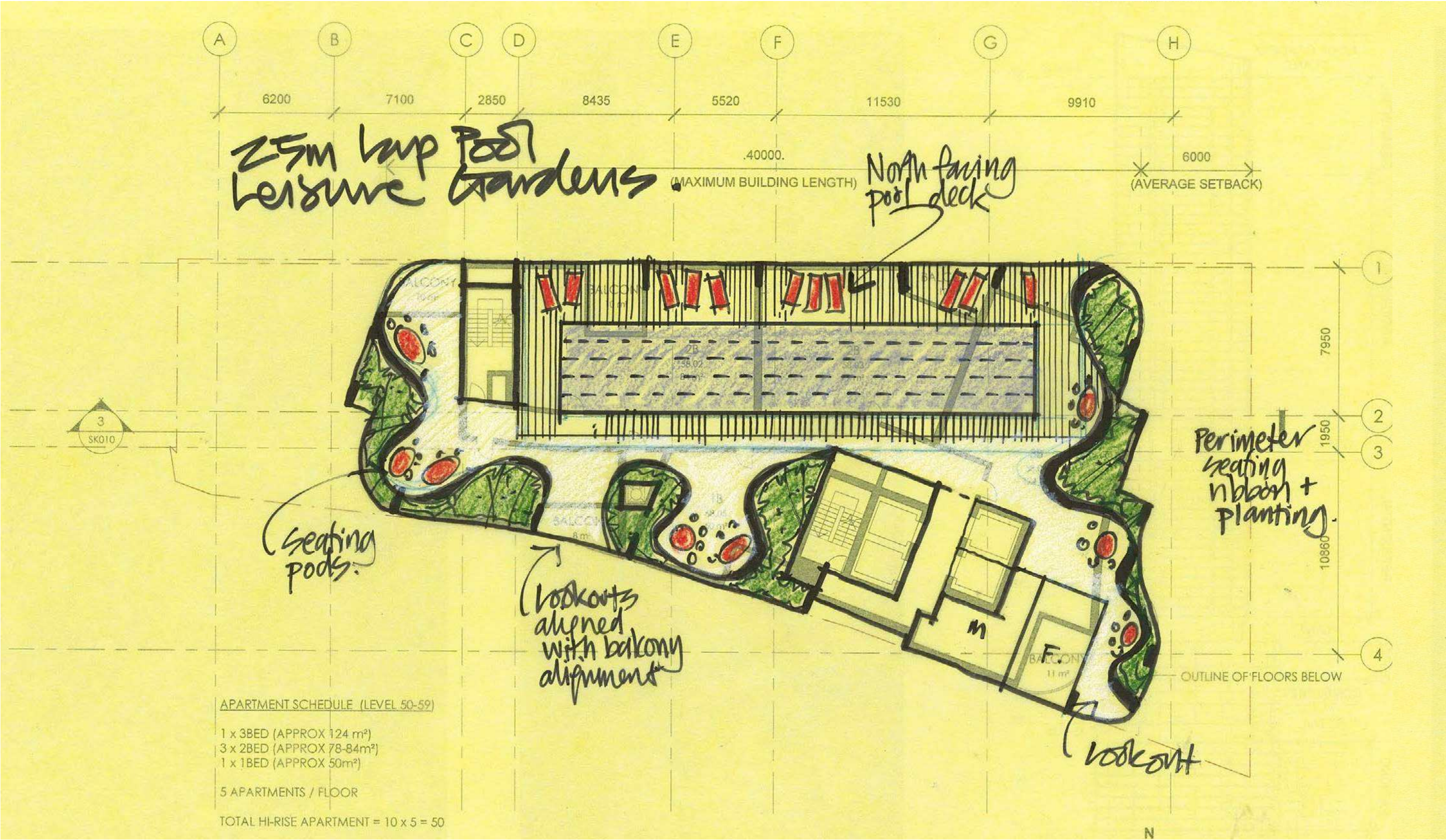


PUBLIC DOMAIN AND LANDSCAPE COMPONENTS

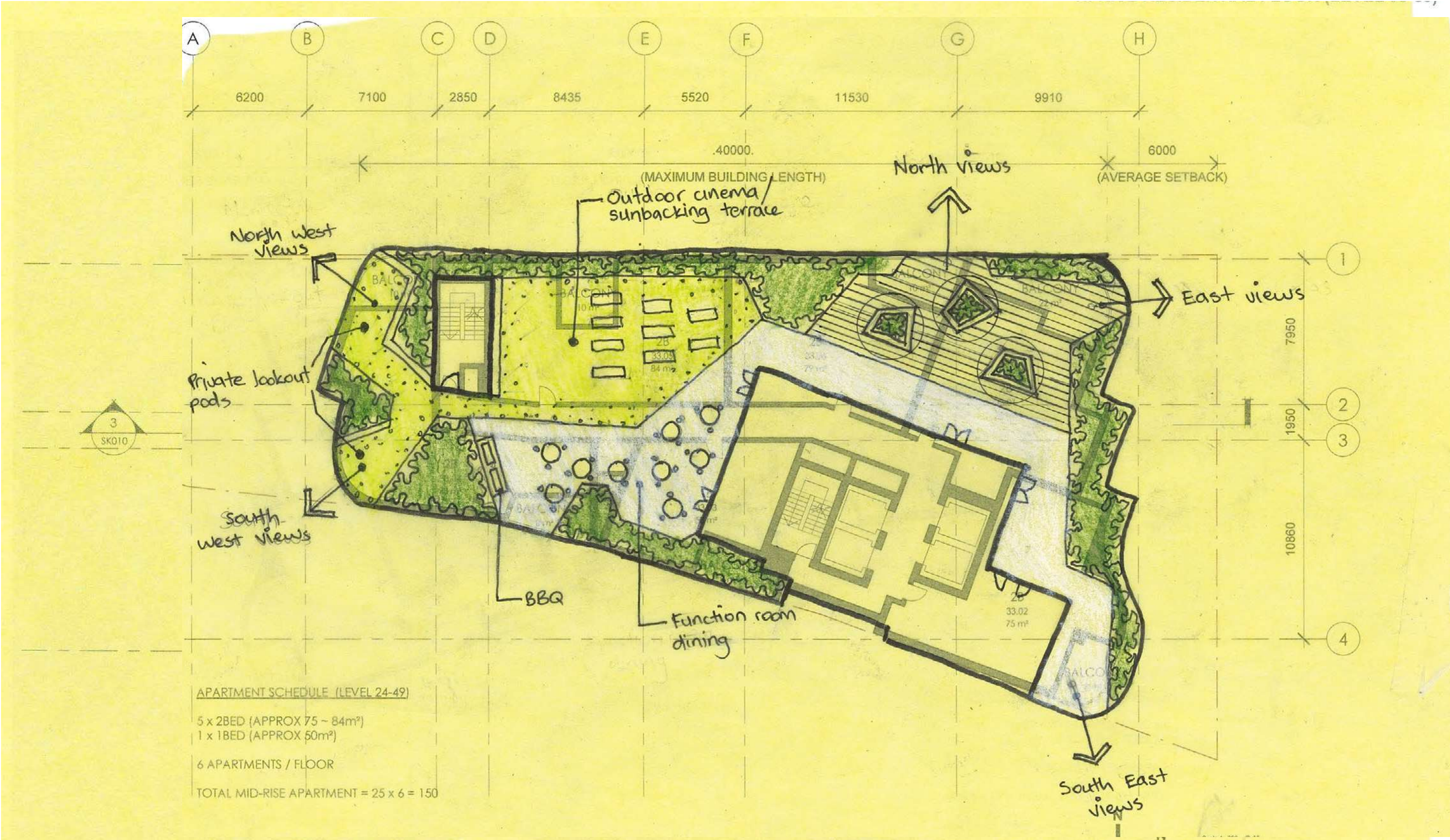
13.2 URBAN ECOLOGY



SKY GARDEN LANDSCAPE CONCEPT PLAN : OPTION A



SKY GARDEN LANDSCAPE CONCEPT PLAN : OPTION B





DEVELOPMENT SUMMARY

Outline Description

The proposed redevelopment of 617-621 Pacific Highway includes five levels of basement parking, a seven storey podium comprised of two retail levels, two floors of community facilities and three levels of office space. A plant room level separates the podium from the seventeen low rise residential floors, a sky garden level providing a shared landscape and recreation facilities for the residents is positioned between the low rise and the fourteen mid-rise residential floors. The building is crowned by ten floors of high-rise residential and a rooftop plant room.

AREA SUMMARY			
Site Area		1067m ²	
		NLA	GFA
Non-Residential			
• Retail		580m ²	610m ²
• Community		1740m ²	1830m ²
• Office		2700m ²	2840m ²
Sub total		5020m ²	5280m ²
FSR (5280/1067 = 4.9:1) but say		Minimum	4.7:1
Residential			
• Low-Rise	- Apartments	6730m ²	8270m ²
	- Balconies		952m ²
• Mid-Rise	- Apartments	5540m ²	6810m ²
	- Balconies		728m ²
• High-Rise	- Apartments	3640m ²	4520m ²
	- Balconies		580m ²
Sub total		15910m ²	21860m ²
Grand total		20930m ²	27140m ²
FSR			
• Non-Residential (5280/1067 = 4.9:1)		Minimum	4.7:1 (but may be up to 4.9:1)
• Residential (incl. balconies) (21860/1067 = 20.5:1)		Maximum	20.5:1 (incl. balconies)
• Total FSR (27140/1067 = 25.4:1)		Maximum	25.4:1
Apartment Summary			
• Low-Rise (17 x 5)		85 apartments	
• Mid-Rise (14 x 5)		70 apartments	
• High-Rise (10 x 4)		40 apartments	
		195 apartments	
• 1 Bedroom (56m ²)		41	(21%)
• 2 Bedroom (76 to 82m ²)		62	(32%)
• 2 Bedroom + Study (85 to 97m ²)		82	(42%)
• 3 Bedroom (120m ²)		10	(5%)



KANNFINCH

50 Carrington Street
Sydney NSW 2000
Australia

T +61 2 9299 4111
E sydney@kannfinch.com

www.kannfinch.com