

An aerial photograph of a residential neighborhood. A yellow outline highlights a specific property located near a road and a railway line. The surrounding area is densely packed with houses and trees.

**242-244 BEECROFT ROAD  
SSDA**

**DESIGN REPORT**

**BENNETT AND TRIMBLE**

**19/3/20**



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## URBAN DESIGN EPPING NORTH WEST URBAN TRANSFORMATION

Prepared for	Landcom
Prepared by	Bennett and Trimble
Issue	B
Date	19/3/20

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# INTRODUCTION

The purpose of this Urban Design Report is to describe the analysis and design principles that underpin a reference concept design for a State Significant Development Application (SSDA) for a site at 242-244 Beecroft Road, Epping.

Multiple site strategies and built form studies were investigated with two selected for additional testing. From these, the preferred option was further developed as the concept design.

Preliminary planning for the buildings has been undertaken in order to test amenity through compliance with the Apartment Design Guide (ADG) focussing on solar access, natural cross ventilation, communal open space and building separation. Typical apartment plans have been developed to determine an achievable yield, a schedule of areas, and ADG compliance.

Structure of Report:

**A Site Analysis** includes context analysis of the site, opportunities and constraints on the site, a summary of relevant planning controls

**Design Vision** including Urban Design Guidelines for the site, public domain and landscape principles, and a summary of specific urban design constraints and responses.

A summary of key **Apartment Design Guide Principles**.

**A Concept Design** for the site has been developed to test massing and urban form within planning controls, capacity and yield, ADG compliance for cross ventilation and daylight provisions, and typical floorplate efficiency.

They have been tested to demonstrate a development model that maximises the development yield within setback and building separation controls, the ADG, and the height limit, and that is commercially realistic in this market.

**Concept Images** have been prepared with indicative massing, landscaping and common open space. The reference scheme has been shown in the context of proposed and approved developments in the immediate context.





# SUMMARY OF CHANGES

1:2000

The following changes have been made following the receipt of the SSDA submissions:

**Through Site Link**

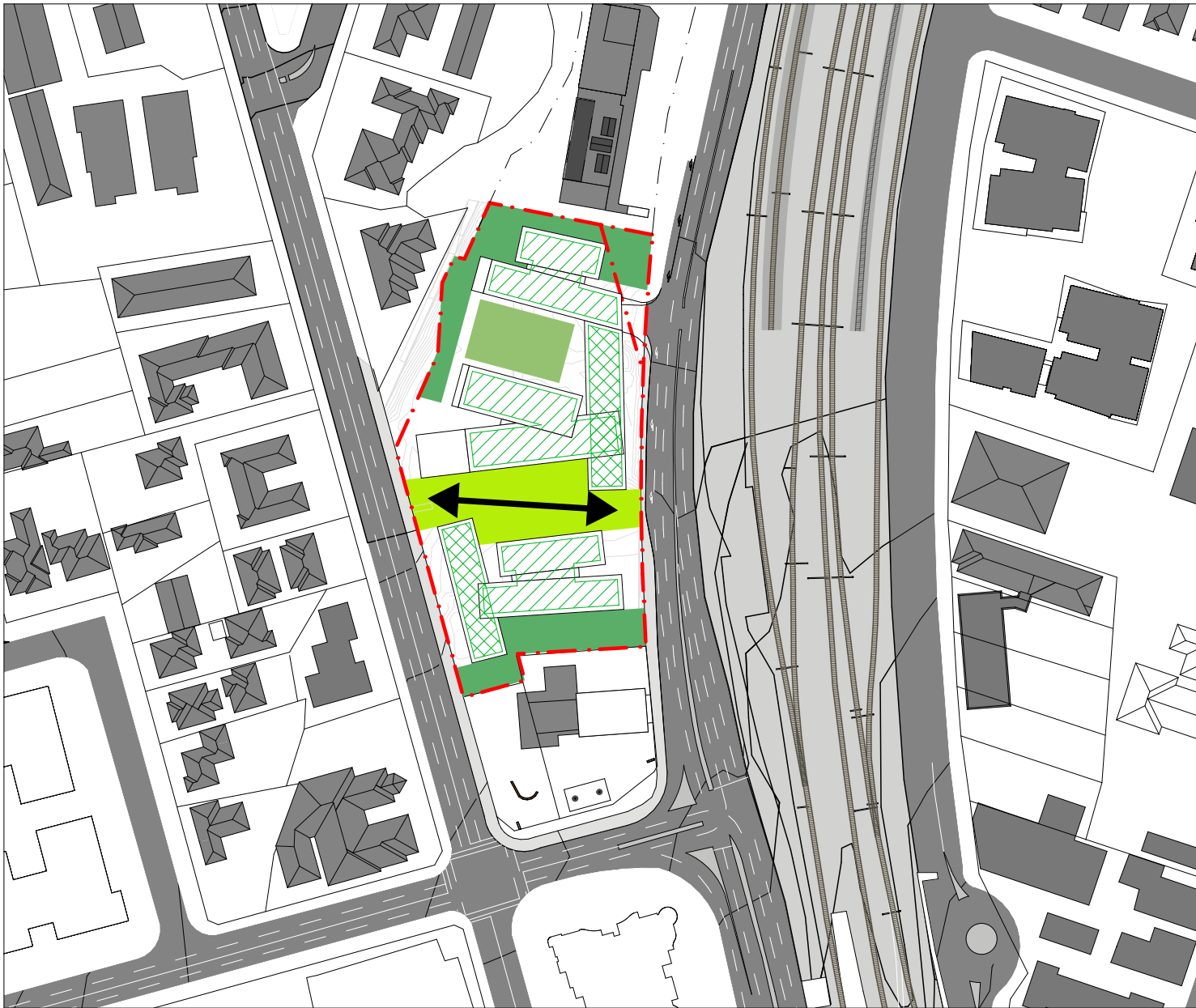
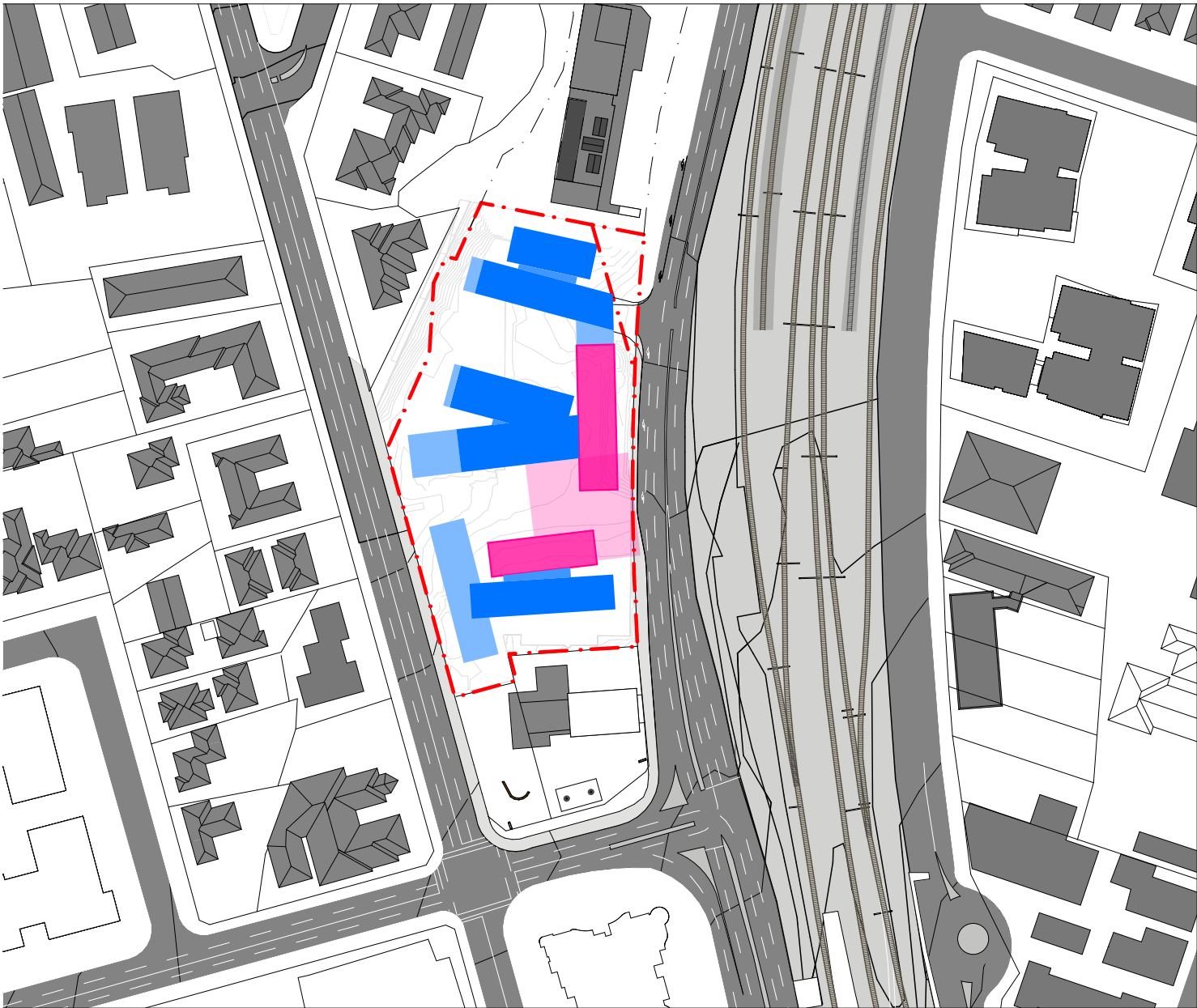
- The through site link has been redesigned as a wider public, accessible, pedestrian link, that steps down from Beecroft Road to Ray Road.
- The Ray Road building has been shortened to accommodate this change.

**Non Residential Uses**

- The Non Residential Uses have been redistributed to sit adjacent to Beecroft Road and the new through site link at Beecroft Road.
- A floor to ceiling height of 3.3m has been allowed for by lowering the ground level of the proposed development.

In addition to this, the Urban Design Report has been expanded to further clarify the design process, and rationale. The following sections have been added or expanded:

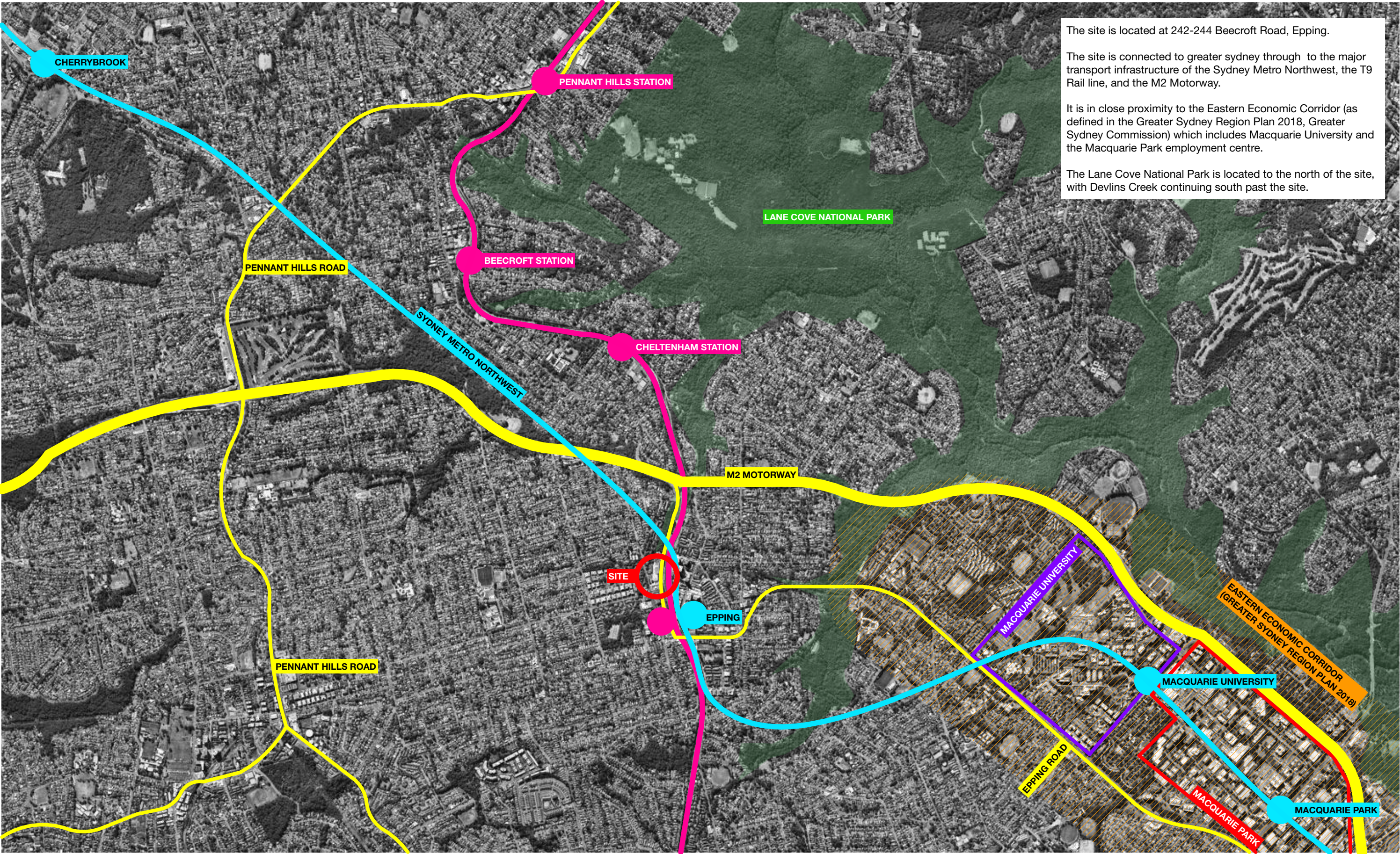
- Site Analysis - Local Character
- Site Analysis - Constraints
- Site Analysis - Summary
- Urban Design Principles
- Public Domain and Landscape Principles
- Assess and Connectivity
- Setbacks and Alignments
- Height in Stories
- Activation and Ground Floor Uses
- Noise Mitigation
- Overshadowing - 246-250 Beecroft Road
- ADG - Design Principles summary





# SITE ANALYSIS - REGIONAL CONTEXT

1:25000



The site is located at 242-244 Beecroft Road, Epping.

The site is connected to greater sydney through to the major transport infrastructure of the Sydney Metro Northwest, the T9 Rail line, and the M2 Motorway.

It is in close proximity to the Eastern Economic Corridor (as defined in the Greater Sydney Region Plan 2018, Greater Sydney Commission) which includes Macquarie University and the Macquarie Park employment centre.

The Lane Cove National Park is located to the north of the site, with Devlins Creek continuing south past the site.



# SITE ANALYSIS - LOCAL CONTEXT

1:5000

The site is located at 242-244 Beecroft Road, Epping.

The site is located between Beecroft Road to the east and Ray Road to the west. A service station is located to the south of the site, and a services facility for Sydney Metro is located to the north.

Devlins Creek runs along the north west boundary in a concrete canal.








Epping Town Centre, and the Metro and Rail stations are located across Carlingford Road to the south of the site.

Significant residential developments have been recently completed on Carlingford Road and across the rail line from the site.

**Epping Town Centre**

The NSW Department of Planning, Industry and the Environment, Parramatta and Hornsby councils, and the local community have worked closely to identify opportunities to revitalise the Epping Town Centre area. Key initiatives include:

- Guidelines for the Epping Town Centre
- Upgrades to the sports ground at West Epping
- Upgrades to Boronia Park (within walking distance of the site) and to improve safety around Rawson and Bridge Streets
- Rezoning for new homes
- Buildings for mixed commercial and residential use within a 400 metre radius of the railway station
- Four new conservation areas, and new heritage items

-  SITE
-  MAIN ROADS
-  BIKE PATHS
-  BUS ROUTES
-  GREEN SPACE
-  HERITAGE
-  DEVLINS CREEK





# SITE ANALYSIS - LOCAL CHARACTER

1:5000



**WEST**  
Immediately to the west, along Ray Road and Edensor Street, is characterised by medium density housing of 3-4 Stories. Further to the east, the area is predominately detached brick cottages.

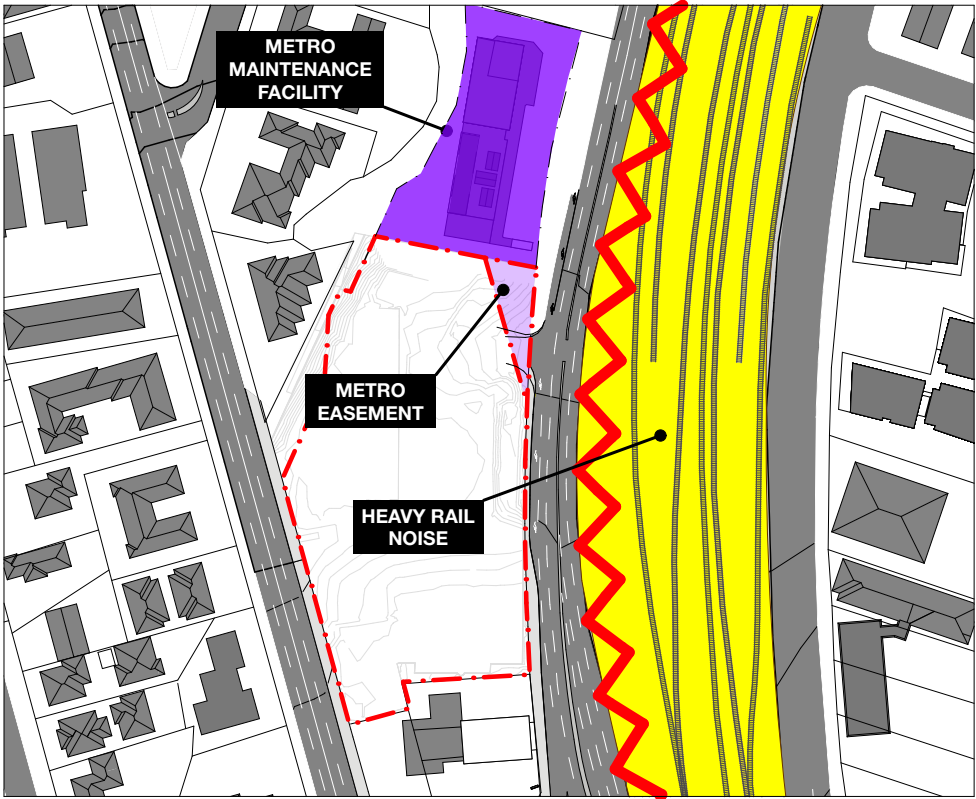
New 6 Storey apartment buildings along Carlingford Road have redefined this area or Epping as a medium density area.





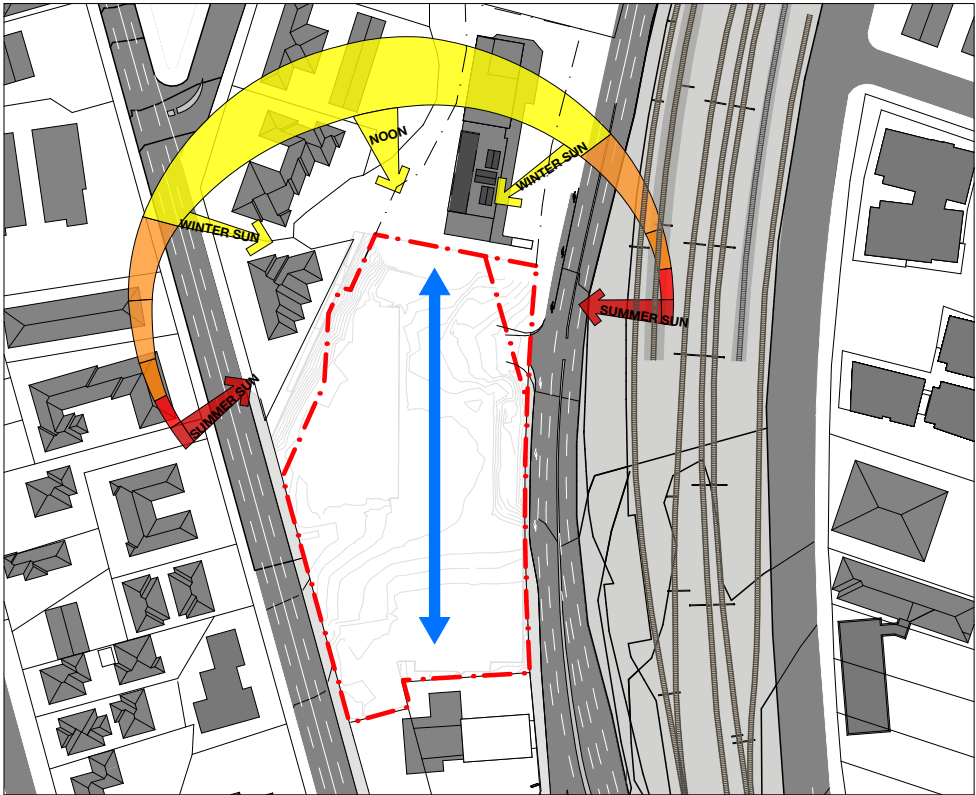
# SITE ANALYSIS - CONSTRAINTS

1:2500



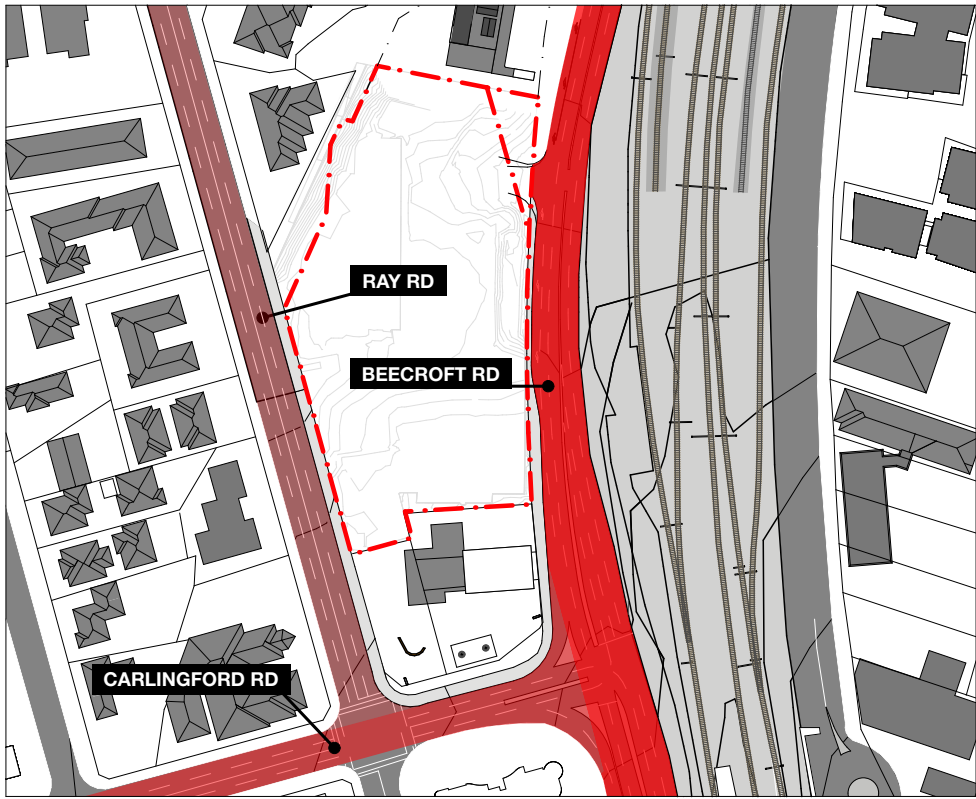
## HEAVY RAIL AND METRO CORRIDORS

- The site is located adjacent a heavy rail corridor. Acoustics and noise issues related to this use will need to be addressed in the site planning.
- The site is also adjacent the Sydney Metro rail corridor and Epping Service Facility.



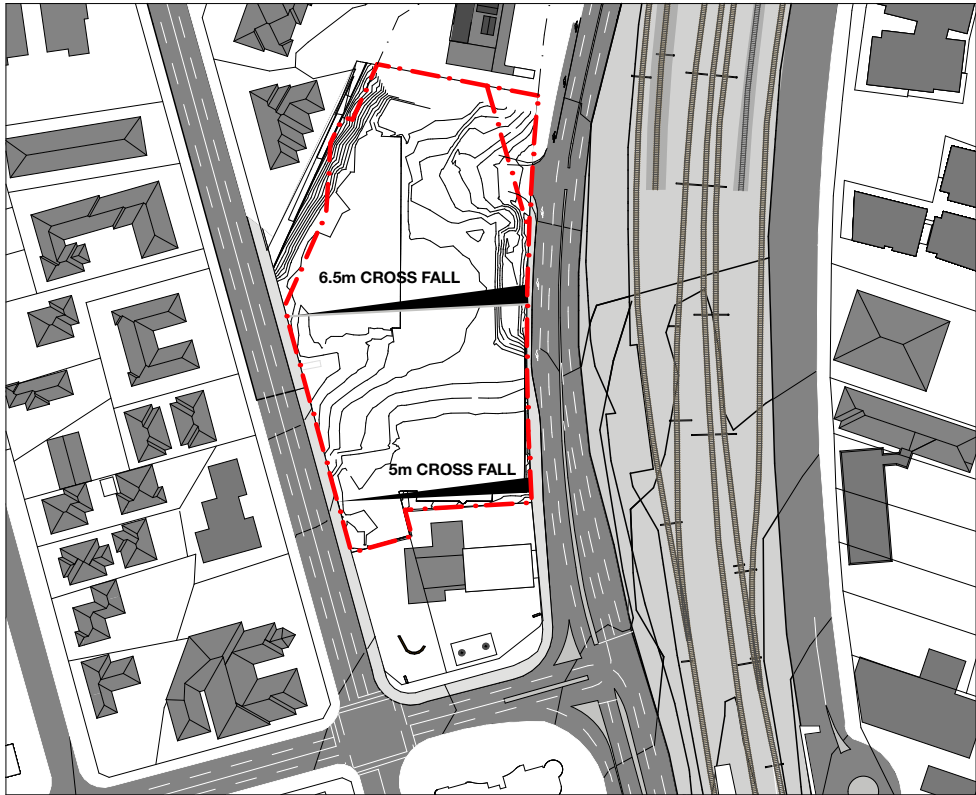
## SITE ORIENTATION

- The site is oriented North South.
- Future residential uses will need to address the potential for overshadowing, and access to natural daylight



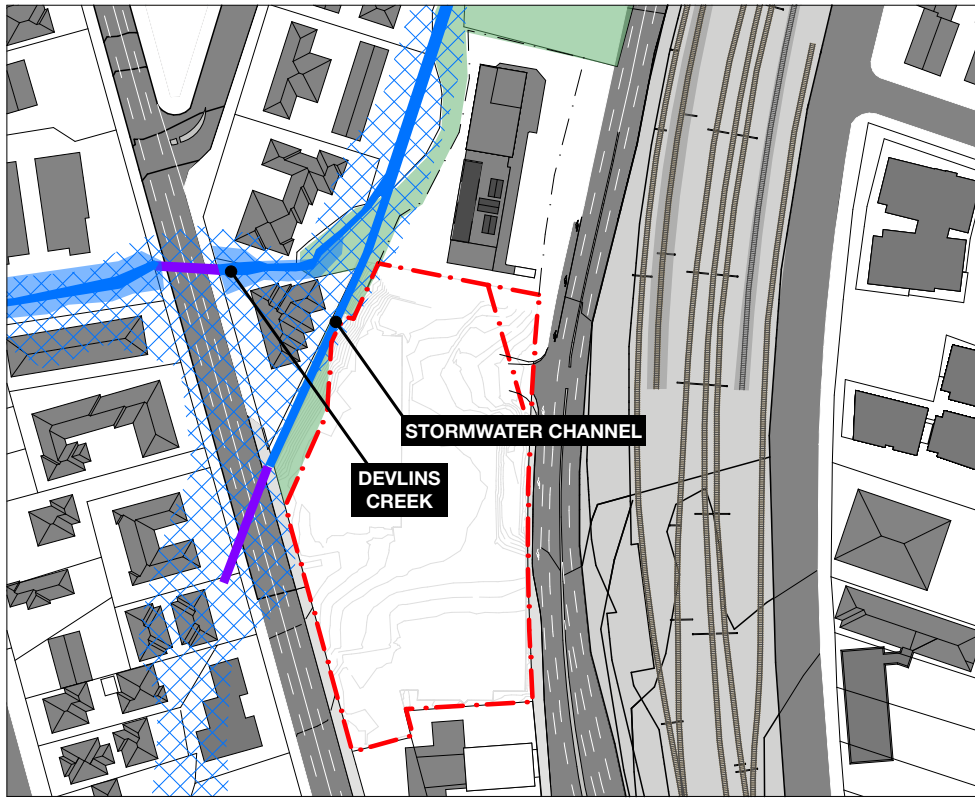
## ADJACENT ROADS

- The site is located adjacent the State Classified Main Road of Beecroft Road, and near the intersection of the State Classified Main Road of Carlingford Road.
- The intersection of Beecroft Road and Carlingford Road is a busy intersection



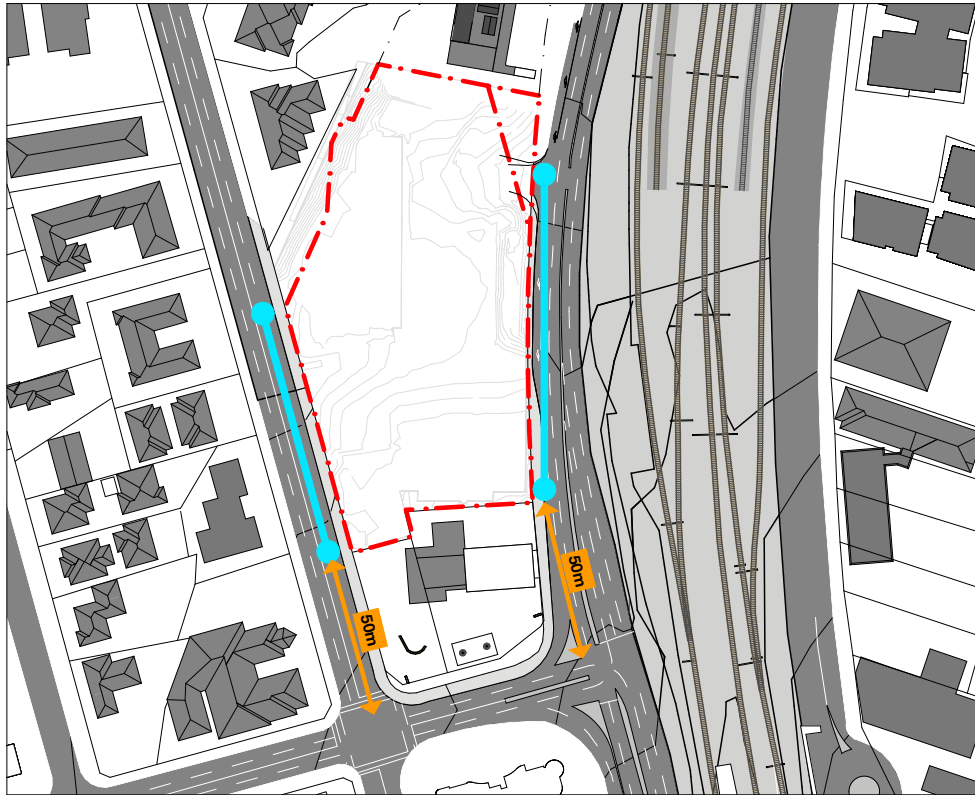
## TOPOGRAPHY

- The site falls 5-6.5m from East to West from Beecroft Road to Ray Road
- The north west boundary of the site falls to Devlins Creek



## DEVILINS CREEK

- Devlins Creek runs along the north west boundary of the site in a concrete canal and continues under Ray Road.
- No permanent structures within 1m of Stormwater Channel



## ACCESS AND ADDRESS

- Limited street frontage due to site boundary and orientation
- Proximity to major and busy intesection
- Street frontage and address off busy Roads



**1:2500**





# DESIGN VISION

1:2000

## LANDSCAPE STRATEGIES

The site planning is defined by the following landscape strategies:

- A landscaped through site link
- Perimeter deep soil planting
- Public and private ground level open space

The landscaped through site link is to:

- Improve local connectivity
- Provide an address and outlook for non-residential uses
- Provide an accessible and safe route through the site
- Form a publicly accessible landscaped forecourt to the non-residential uses

Perimeter deep soil areas are to:

- Reinforce the dense landscape corridor along Devlins Creek
- Provide a natural buffer between the proposed development and neighbouring properties
- Provide areas of planting for privacy and screening to lower street level apartments

Communal open space is located on the rooftops of the towers and podiums, as well as in the northern ground level courtyard between the towers. The variety and number of communal spaces in the development allows for the provision of a range of spaces to cater to different uses, characteristics, and typologies, including, BBQ areas, communal gardens, outdoor gyms, and gathering spaces for large and small groups, and individuals.

## URBAN DESIGN STRATEGIES

The urban form is defined by:

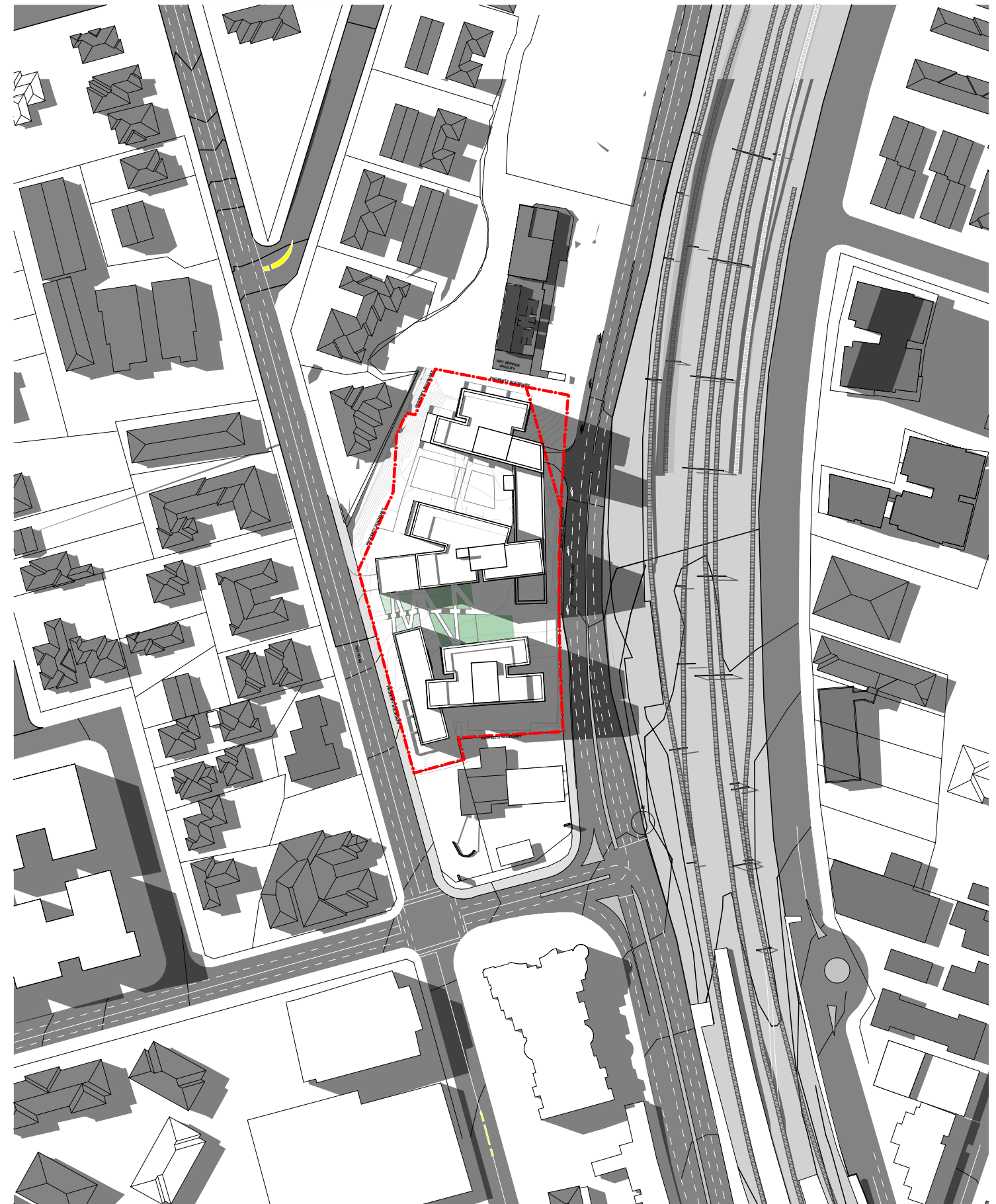
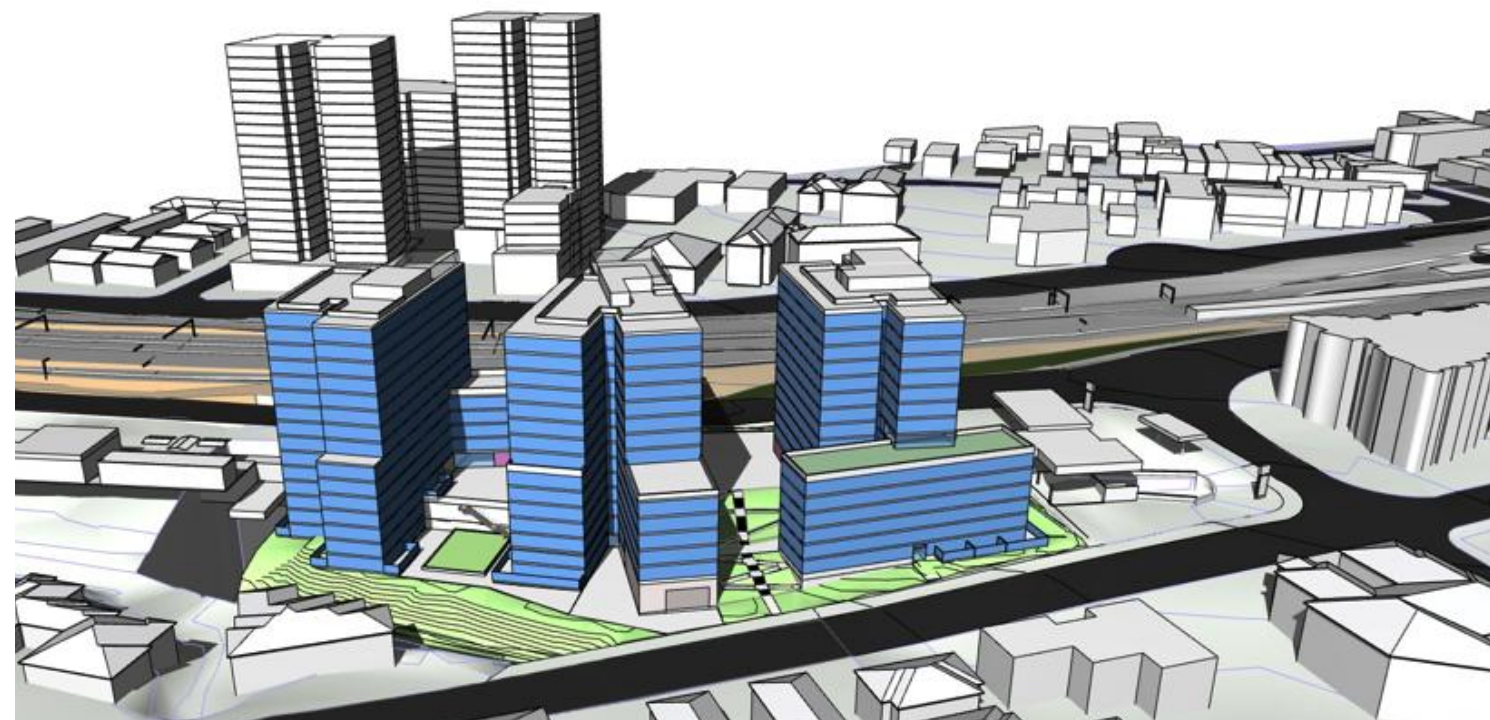
- Low street defining buildings along the Ray Road and Beecroft Road frontages
- Tower buildings arranged from north to south, oriented to address the surrounding context and to maximise resident amenity through access to natural daylight, protection from noise sources, and to provide cross ventilation
- Non residential uses located along the Beecroft Road frontage, and facing the new through site link

The low scale buildings:

- Are positioned and arranged to provide a street frontage and address to the site.
- Provide a transition in scale from the tower building to the surrounding context
- Introduce opportunities for communal open space at rooftop level

The towers are to be:

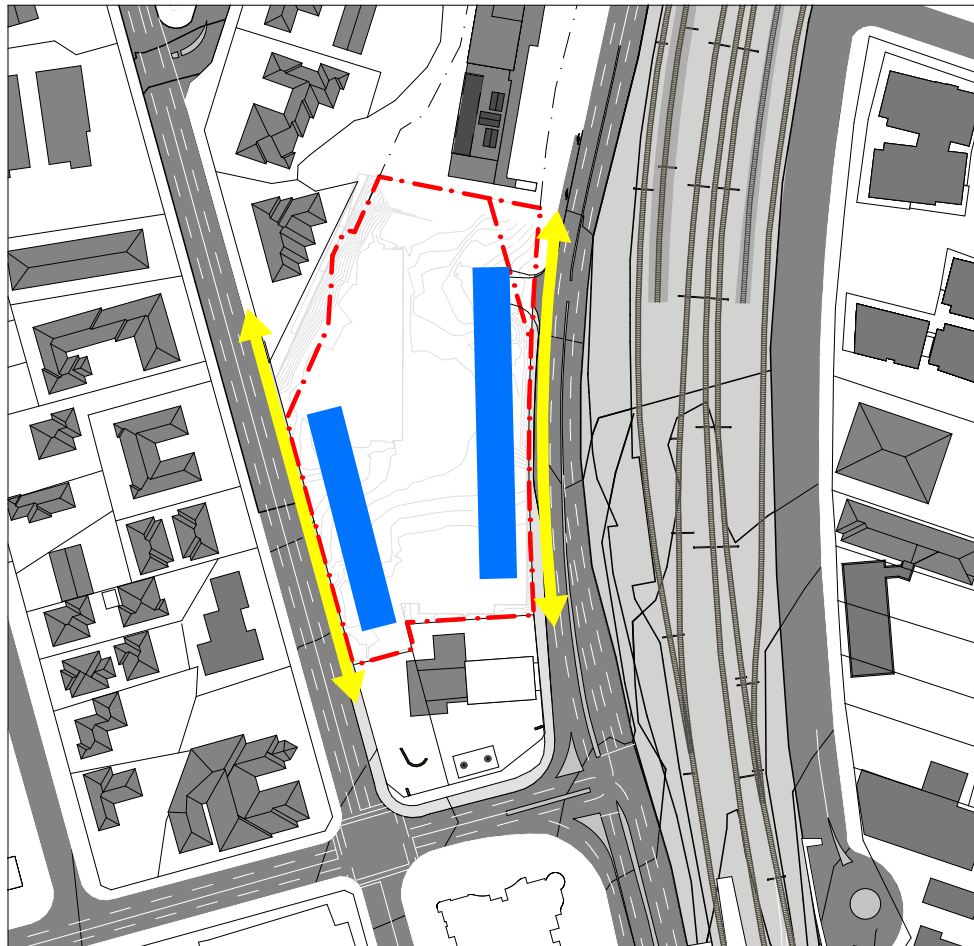
- Arranged on the site to optimise access to daylight, privacy, and building separation
- Oriented east/west to minimise the length of facade exposed to rail and road noise, and to open the primary facade to the north
- Broken down into smaller elements that are to respond to the geometry of the site, increase solar access, cross ventilation and outlook, and reduce the apparent scale of the buildings
- Within the LEP height plane
- Of a consistent architectural expression, with materials and colours that may vary between towers





# DESIGN GUIDELINES

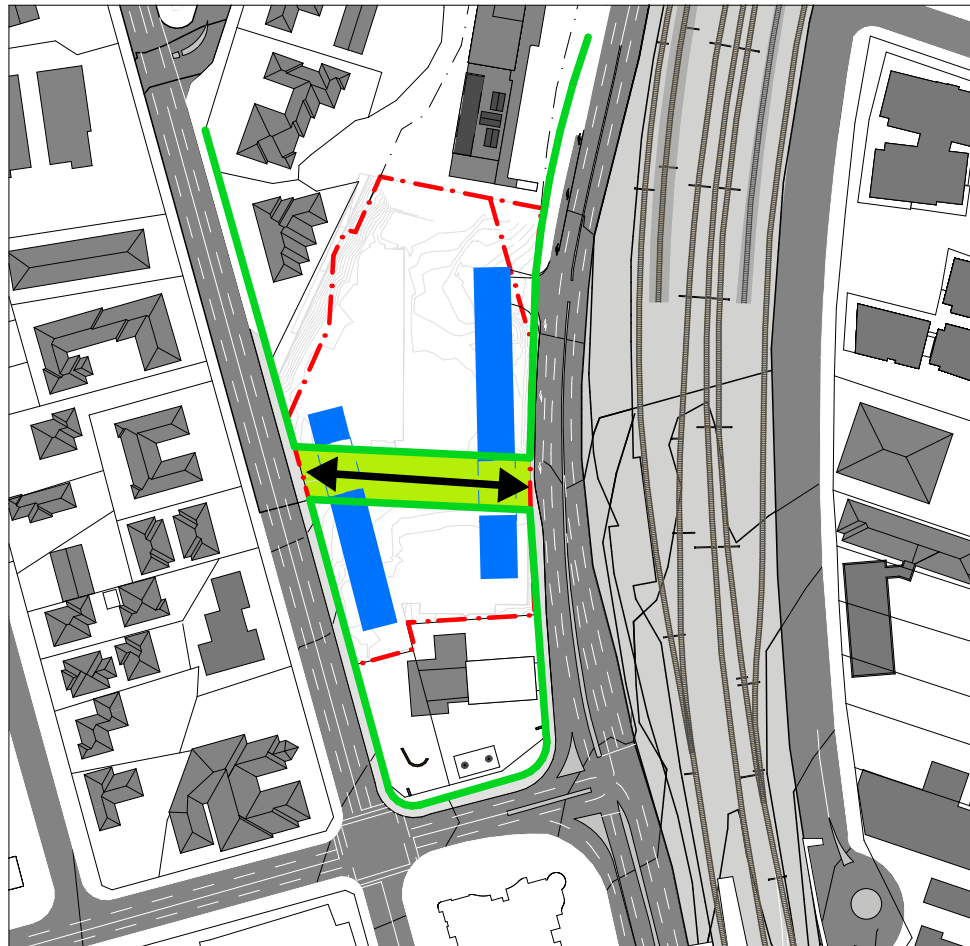
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## 1. INTRODUCE LOW SCALE STREET DEFINING BUILDINGS ALONG BEECROFT ROAD AND RAY ROAD

### DESIGN GUIDELINES

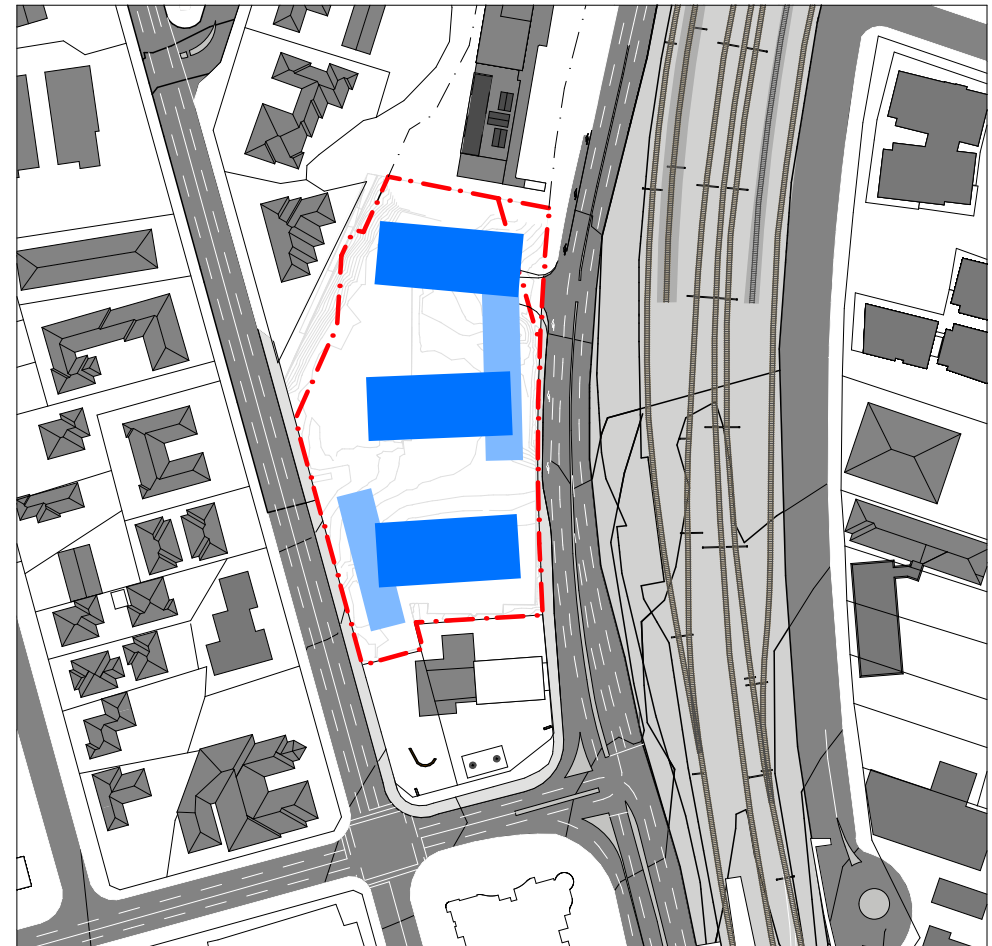
- 1.1 Locate low scale buildings along the site's two street frontages at Ray Road and Beecroft Road
- 1.2 Buildings to meet the Apartment Design Guide
- 1.3 Apartment design to encourage passive surveillance of street, courtyards, common areas
- 1.4 Building design to incorporate balconies, facade treatments and screening to provide articulation and modelling to built form
- 1.5 Incorporate communal open space on rooftops
- 1.6 Use high quality, durable materials along public space, streets, and communal spaces
- 1.7 Architectural expression and character, to be consistent through development with variety and difference introduced through colour and material selection
- 1.8 Residential lobbies designed to be inviting and have a clear identity and entry point



## 2. CREATE NEW THROUGH SITE LINK TO BREAK DOWN THE SCALE OF THE URBAN BLOCK AND INCREASE AREA CONNECTIVITY.

### DESIGN GUIDELINES

- 2.1 Provide an accessible route through the site for pedestrians between Beecroft Road and Ray Road
- 2.2 Use through site link to break down the length of building frontage along Ray Road and Beecroft Road
- 2.3 Use deep soil areas within through site link to provide mature trees, for shade and privacy
- 2.4 Provide clear and legible access to residential lobbies located along the through site link
- 2.5 Provide a range of areas for seating, planting, waiting.
- 2.6 Use high quality and durable materials for the public domain
- 2.7 Incorporate Water Sensitive Urban Design for the management of stormwater
- 2.8 Incorporate lighting and sightlines to ensure user safety and comply with Crime Prevention Through Environmental Design principles



## 3. POSITION TALLER BUILDINGS AS A SEQUENCE OF TOWERS FOLLOWING THE SITE ORIENTATION

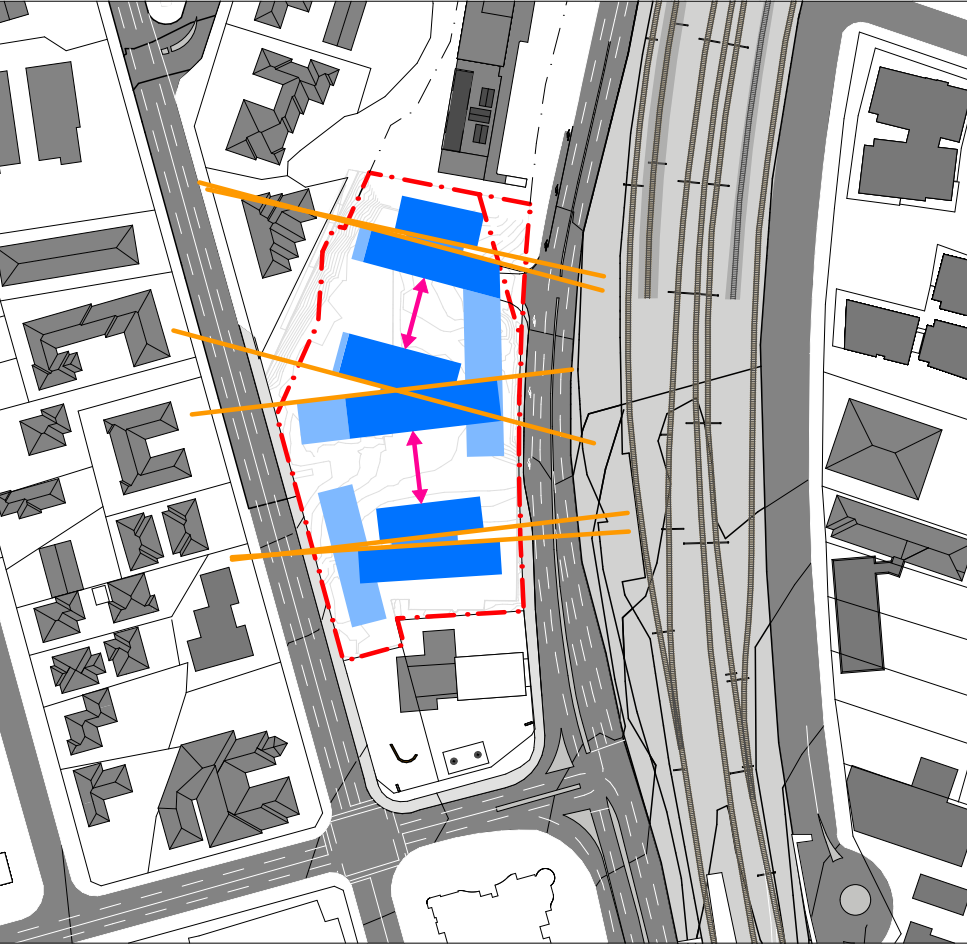
### DESIGN GUIDELINES

- 3.1 Locate towers in a north to south arrangement along Beecroft Road
- 3.2 Orient towers east/west to present the narrow edge to the street front and to maximise daylight access to residences
- 3.3 Arrange towers with an appropriate (minimum ADG) separation to allow for daylight access, visual and acoustic privacy
- 3.4 Apartment design to encourage passive surveillance of street, courtyards, common areas
- 3.5 Building design to incorporate balconies, facade treatments and screening to provide articulation and modelling to built form
- 3.6 Incorporate communal open space on rooftops to cater to a range and variety of uses and users
- 3.7 Use high quality, durable materials
- 3.8 Architectural expression and character, to be consistent through development with variety and difference introduced through colour and material selection



# DESIGN GUIDELINES

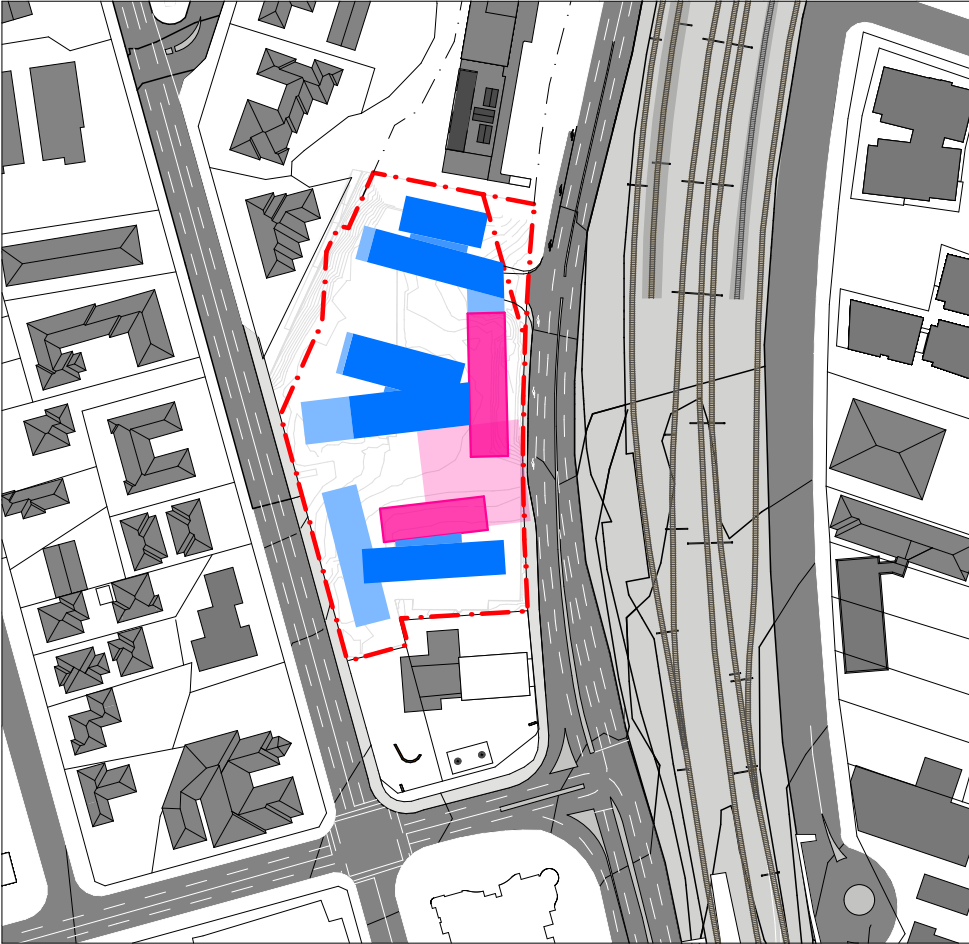
1:2500



4. SHAPE AND ORIENT TALL BUILDINGS TO MAXIMISE SOLAR AMENITY, CROSS VENTILATION, AND ASPECT, AND TO BREAK DOWN THE SCALE OF THE BUILDINGS

## DESIGN GUIDELINES

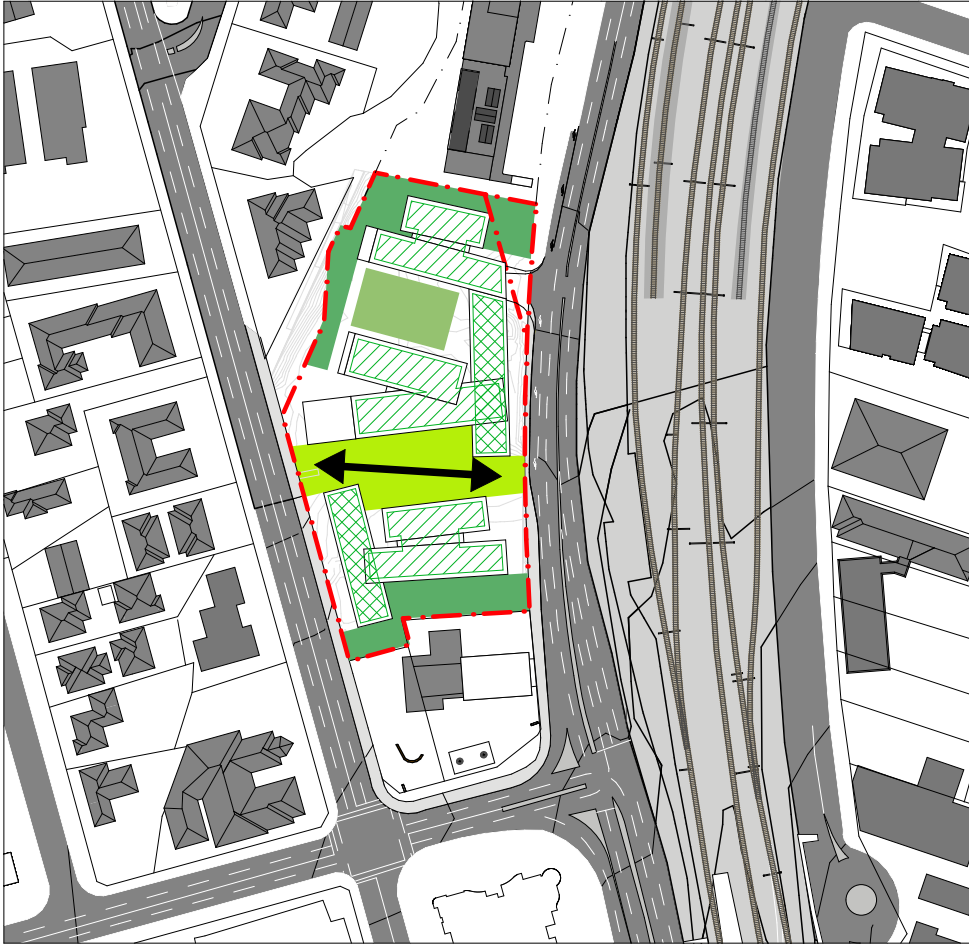
- 4.1 Split towers into smaller elements to:
  - 4.1.1 allow for greater daylight access
  - 4.1.2 increase cross ventilation opportunities
  - 4.1.3 present a more slender facade area to the street
- 4.2 Use breaks in towers to provide natural daylight and ventilation to residential lobbies
- 4.3 Rotate tower elements to increase daylight access and to break down the scale of the built form



5. LOCATE NON-RESIDENTIAL USES AT GROUND LEVEL ADJACENT THE BUSY BEECROFT ROAD AND ADJACENT THE THROUGH SITE LINK

## DESIGN GUIDELINES

- 5.1 Locate non-residential uses at ground level fronting Beecroft Road and the through site link
- 5.2 Provide floor to floor heights suitable for a range of non-residential uses
- 5.3 Use high quality and durable materials for non-residential spaces
- 5.4 Design of non-residential spaces and building facade to be open and inviting, and visible from the public domain
- 5.5 Public domain and common areas fronting the non-residential uses to incorporate seating, planting, and waiting areas with high quality materials and finishes.
- 5.6 Promote activation at street level along Beecroft Road frontage



6. USE LANDSCAPING TO

- DEFINE THE PUBLIC AND PRIVATE DOMAIN AT GROUND LEVEL
- PROVIDE DEEP SOIL BUFFERS TO ADJACENT PROPERTIES
- CREATE NEW ROOFTOP COMMUNAL SPACES OF VARIED CHARACTERS

## DESIGN GUIDELINES

- 6.1 Provide native mature trees and plantings in deep soil areas for shade, privacy, and ecosystem development
- 6.2 Provide a range of areas for seating, planting, waiting along through site link and common areas
- 6.3 Rooftop communal spaces are to provide shading, communal productive gardens, BBQs, areas that accomodate individuals and groups, protection from wind
- 6.4 Provide clear and legible access to residential lobbies located along the through site link
- 6.5 Use high quality and durable materials for the public domain
- 6.6 Incorporate Water Sensitive Urban Design for the management of stormwater
- 6.7 Incorporate lighting and sightlines to ensure user safety and comply with Crime Prevention Through Environmental Design principles



# PUBLIC DOMAIN AND LANDSCAPE PLAN

1:1000, 1:1.86



INDICATIVE GROUND FLOOR PLAN 1:1000



# ACCESS AND CONNECTIVITY

1:1000





# SETBACKS AND ALIGNMENTS

1:1000





# HEIGHT IN STORIES

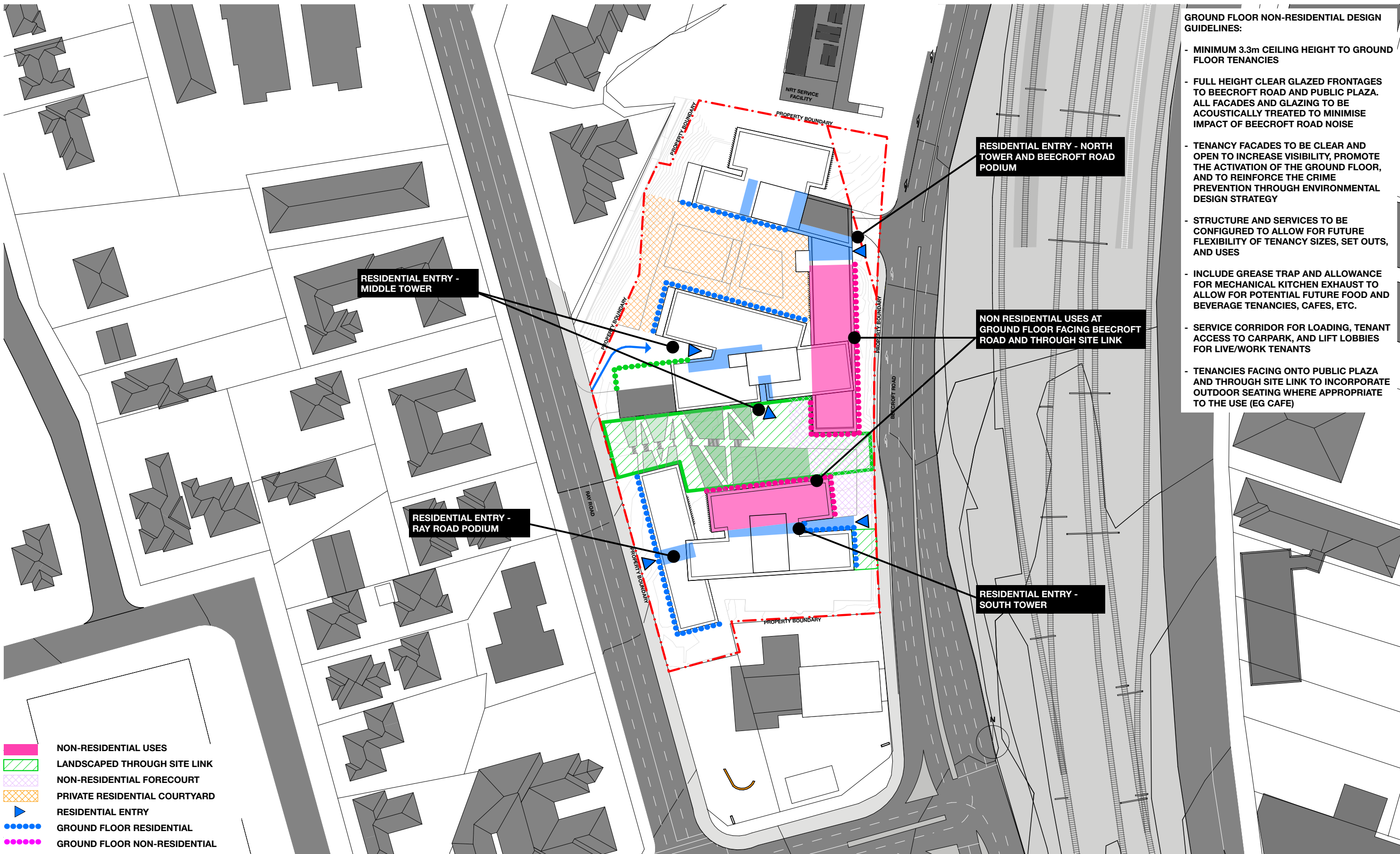
1:1000





# ACTIVATION AND GROUND FLOOR USES

1:1000





# RESIDENTIAL ENTRIES

1:1000

THE LOCATION OF RESIDENTIAL LOBBIES ARE SHOWN ON THE PLAN.

RESIDENTIAL LOBBIES SHOULD BE DESIGNED TO:

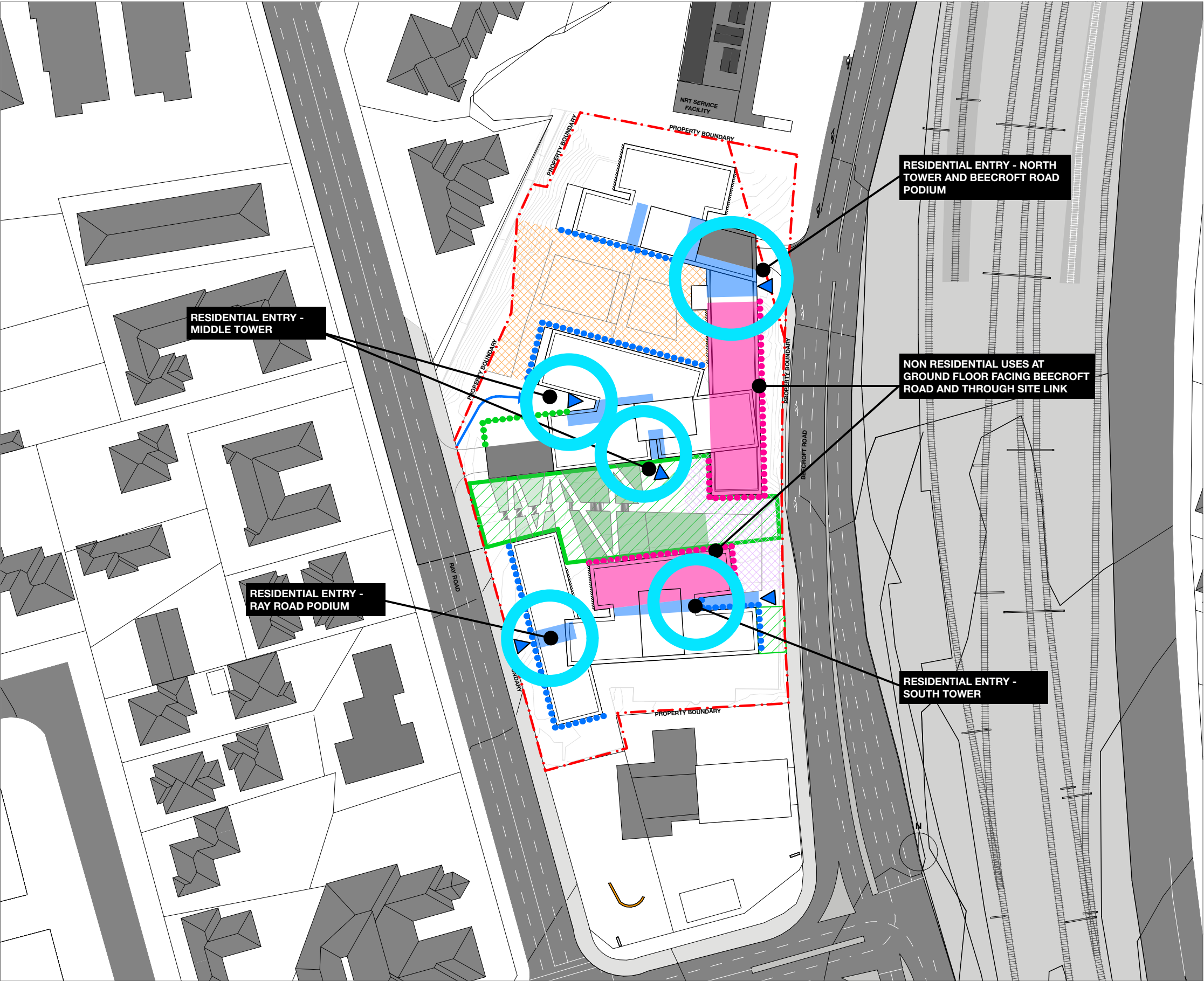
- BE INVITING
- PROVIDE A CLEAR AND LEGIBLE ENTRY POINT
- HAVE ACCESS TO NATURAL DAYLIGHT
- BE LOCATED WITH GOOD VISIBILITY FROM THE PUBLIC DOMAIN
- INCORPORATE LANDSCAPING, PLANTING
- HAVE SPACE AND FURNITURE FOR VISITORS AND WAITING AREAS
- USE DURABLE MATERIALS AND FINISHES OF A HIGH QUALITY
- INCORPORATE AREAS FOR MAIL BOXES AND DELIVERIES



INDICATIVE IMAGE SHOWING ENTRY LOBBY WITH NATURAL LIGHT, SEATING, AND LANDSCAPING  
SOURCE: TURNER ARCHITECTS - WOOLLAWARE



INDICATIVE IMAGE SHOWING ENTRY LOBBY WITH NATURAL LIGHT, SEATING, AND LANDSCAPING. SOURCE: SJB ARCHITECTS - TAPESTRY





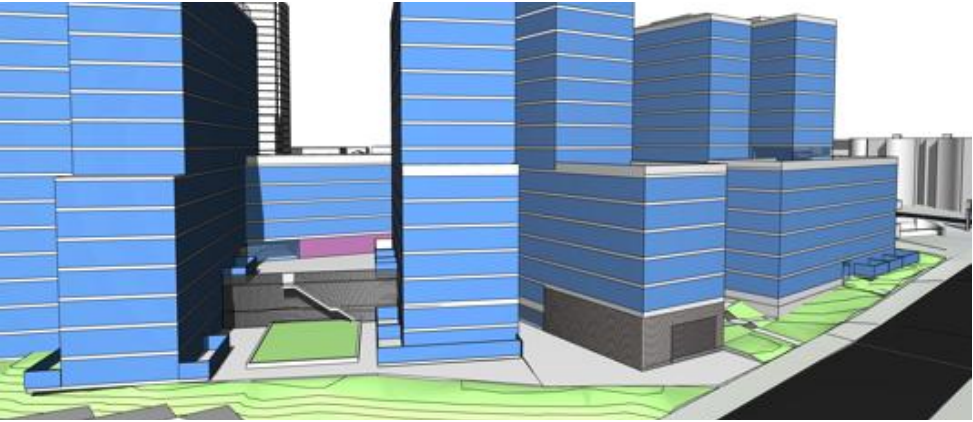
# BASEMENT TREATMENT

1:1000

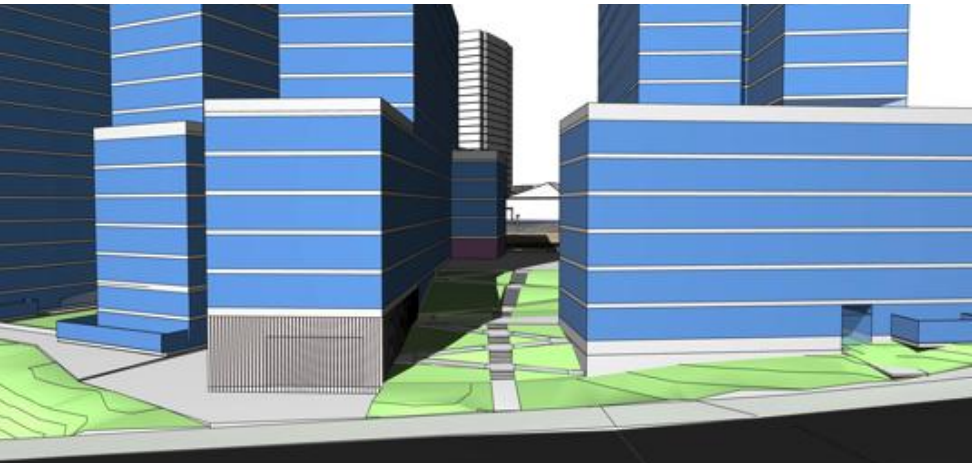
THE LOCATION OF ABOVE GROUND BASEMENT WALLS ARE SHOWN ON THE PLAN.

WHERE BASEMENT WALLS ARE ABOVE GROUND, THEY ARE TO BE TREATED APPROPRIATELY TO CONTRIBUTE POSITIVELY TO THE PUBLIC DOMAIN. POSSIBLE TREATMENTS INCLUDE PUBLIC ART, STONE OR MASONRY FACADES, SCREENING, AND GREEN WALLS.

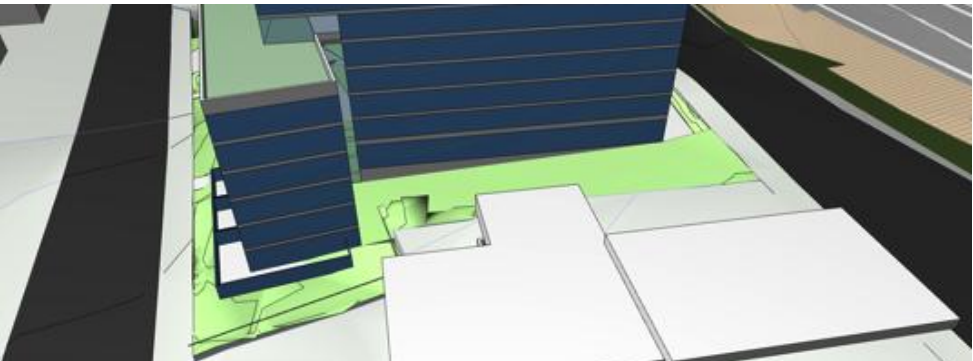
WHERE APPROPRIATE, NATURAL VENTILATION MAY BE PROVIDED TO BASEMENT PARKING AREAS TO REDUCE THE NEED FOR MECHANICAL VENTILATION.



VIEW 1

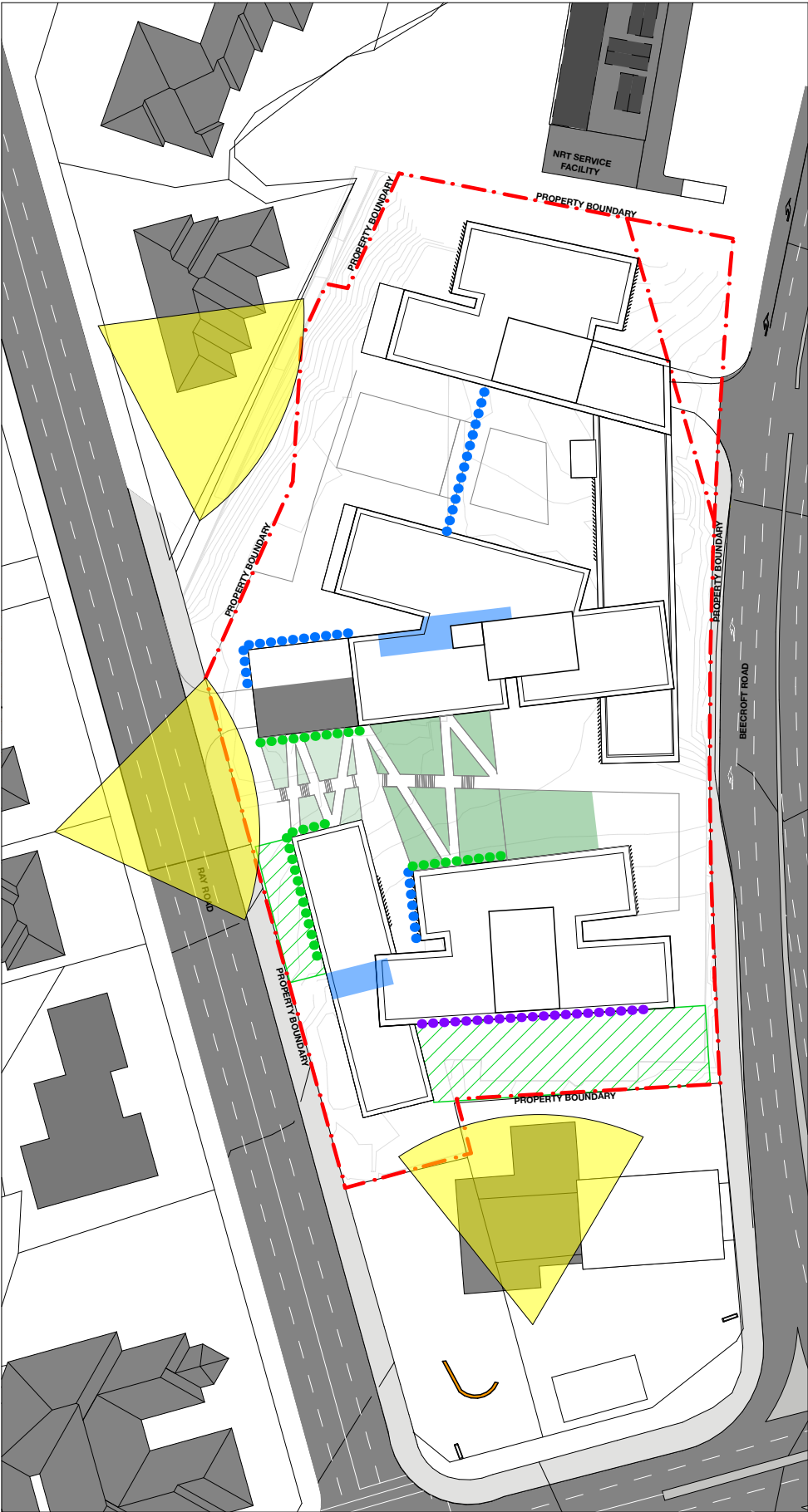


VIEW 2



VIEW 3

- ABOVE GROUND BASEMENT WITH SOLID WALL/ARCHITECTURAL TREATMENT
- ABOVE GROUND BASEMENT WITH DEEP SOIL LANDSCAPING IN FRONT
- ABOVE GROUND BASEMENT WITH NATURAL VENTILATION TO BASEMENT AND DEEP SOIL LANDSCAPING IN FRONT



INDICATIVE IMAGE SHOWING TREATMENT TO ABOVE GROUND BASEMENT WALLS WITH PUBLIC ART, ARCHITECTURAL TREATMENT, LANDSCAPING  
SOURCE: TURNER ARCHITECTS - CENTRALE, NORTH RYDE



INDICATIVE IMAGE SHOWING TREATMENT TO ABOVE GROUND BASEMENT WALLS WITH ARCHITECTURAL TREATMENT AND LANDSCAPING  
SOURCE: TURNER ARCHITECTS - WASHINGTON PARK



INDICATIVE IMAGE SHOWING TREATMENT TO ABOVE GROUND BASEMENT WALLS WITH SET BACK NATURAL VENTILATION TO BASEMENT  
SOURCE: SMART DESIGN - ARLINGTON



# CPTED

1:1000







**CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN**  
THE FOLLOWING CONSIDERATIONS HAVE BEEN MADE WITH RESPECT TO MAKING A SAFE AND SECURE MIXED USE DEVELOPMENT

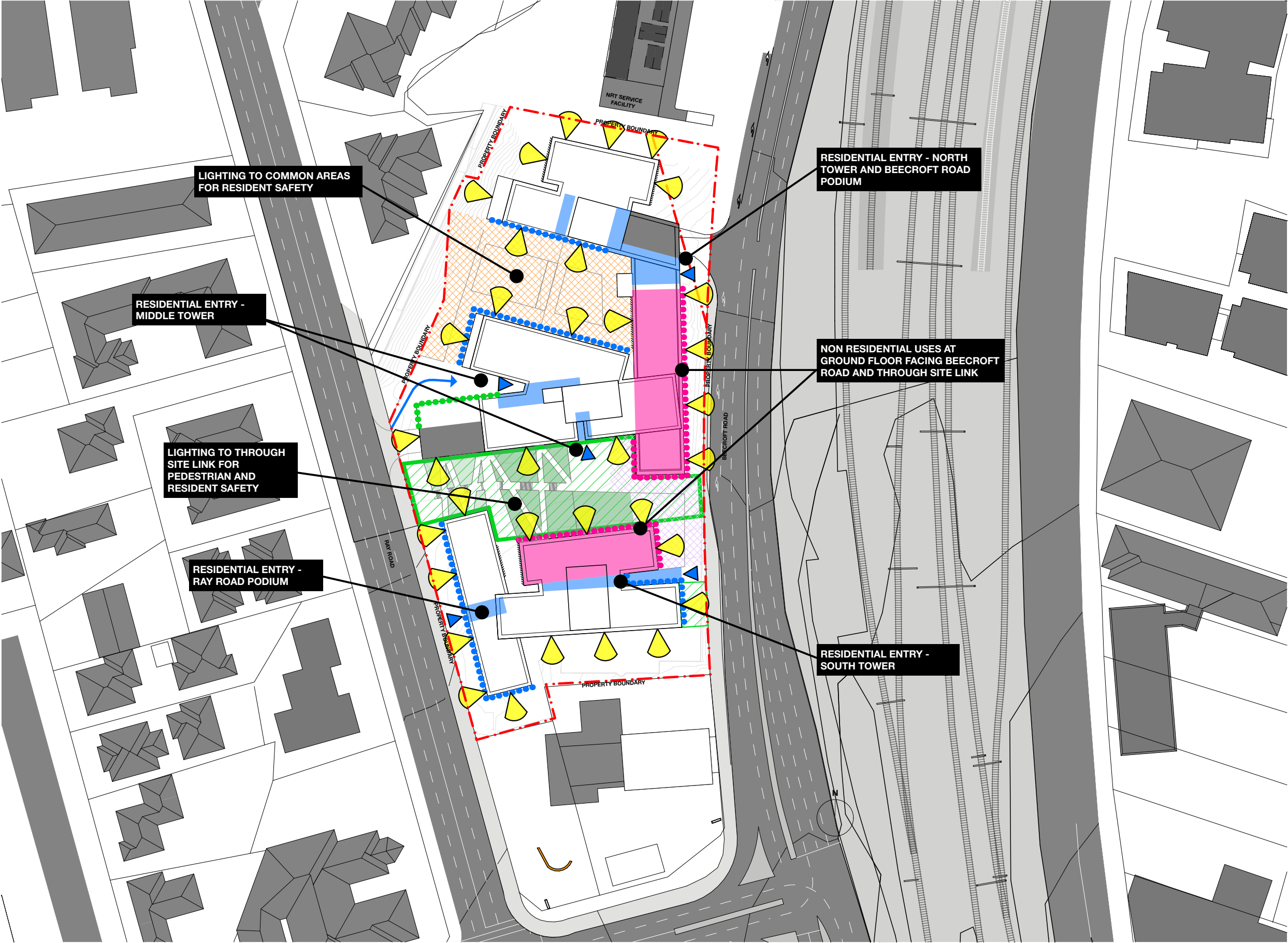
- PRIVATE COURTYARD AND OPEN SPACE**
- ACCESS CONTROLLED AREA
  - PASSIVE SURVEILLANCE FROM RESIDENTIAL APARTMENTS OVERLOOKING THE OPEN SPACE
  - SHARED FACILITIES AND LANDSCAPED AREAS AT GROUND FLOOR TO ENCOURAGE TERRITORIAL REINFORCEMENT

- PUBLIC COURTYARD AND OPEN SPACE**
- PASSIVE SURVEILLANCE FROM RESIDENTIAL APARTMENTS OVERLOOKING THE OPEN SPACE
  - ACTIVATION THROUGH MIXED USES AT GROUND FLOOR
  - USE OF LIGHTING TO MAKE A COMFORTABLE AND SAFE OUTDOOR SPACE AT ALL HOURS
  - SHARED FACILITIES AND LANDSCAPED AREAS AT GROUND FLOOR TO ENCOURAGE TERRITORIAL REINFORCEMENT

- THROUGH SITE LINK**
- PASSIVE SURVEILLANCE FROM RESIDENTIAL APARTMENTS OVERLOOKING THE OPEN SPACE
  - ACTIVATION THROUGH MIXED USES AT LOWER LEVELS
  - USE OF LIGHTING TO MAKE A COMFORTABLE AND SAFE OUTDOOR SPACE AT ALL HOURS

 PASSIVE SURVEILLANCE FROM APARTMENTS

-  NON-RESIDENTIAL USES
-  LANDSCAPED THROUGH SITE LINK
-  NON-RES FORECOURT
-  PRIVATE RESIDENTIAL COURTYARD
-  RESIDENTIAL ENTRY
-  GROUND FLOOR RESIDENTIAL





# NOISE MITIGATION

1:1000





# OVERSHADOWING - 246 BEECROFT ROAD

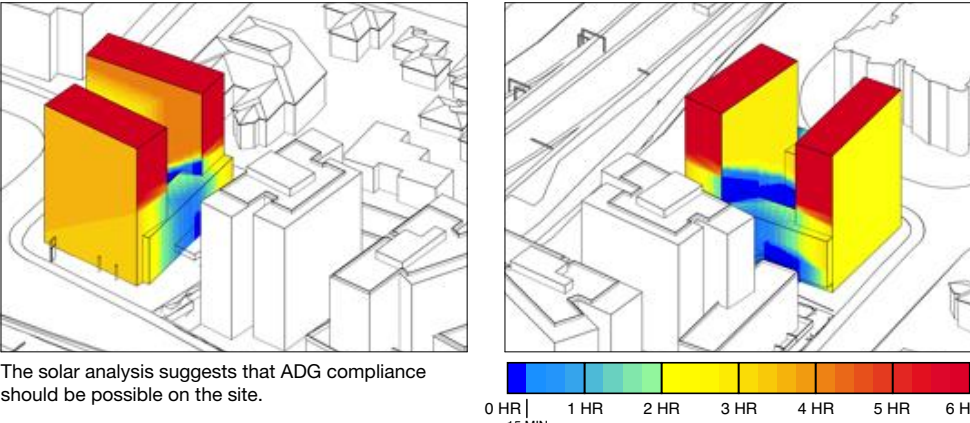
1:1000

An indicative massing has been prepared for 246-250 Beecroft Road, on the southern boundary of the subject site. The massing is indicative only and has not been tested in detail.

The massing represents the following assumptions:

Site Area: 2,800m<sup>2</sup>  
FSR: 4.5:1

GFA: 12,600m<sup>2</sup>  
GBA: 15,750m<sup>2</sup>

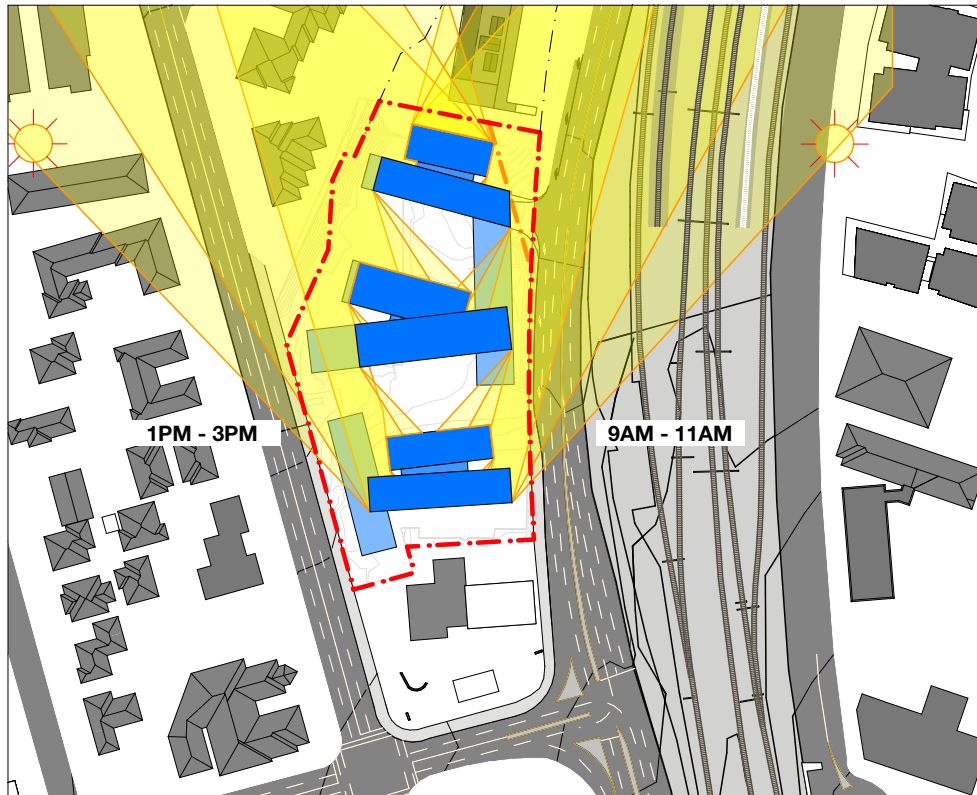




# ADG - DESIGN PRINCIPLES

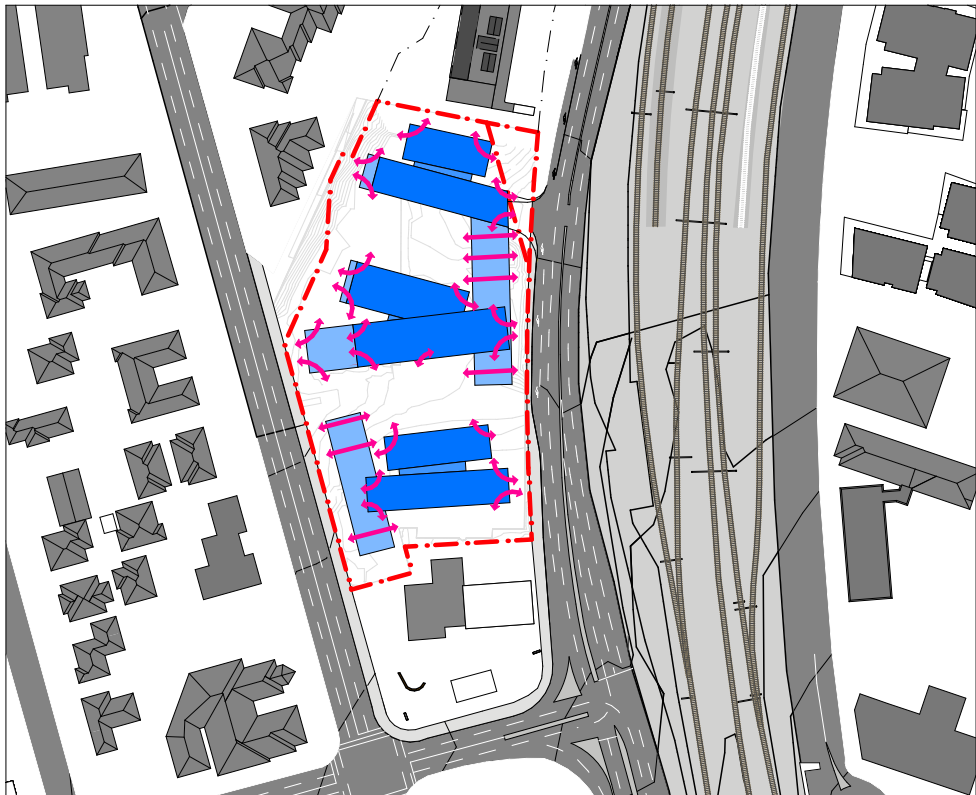
1:2500

The following key elements of the Apartment Design Guide have informed the Concept Design. The Concept Design has been developed to enable full compliance with the ADG for the future developed design. Detailed compliance diagrams are included at the end of this report.



## MAXIMISE SUNLIGHT ACCESS

Building form is configured and oriented to maximise sunlight access to achieve ADP compliance.



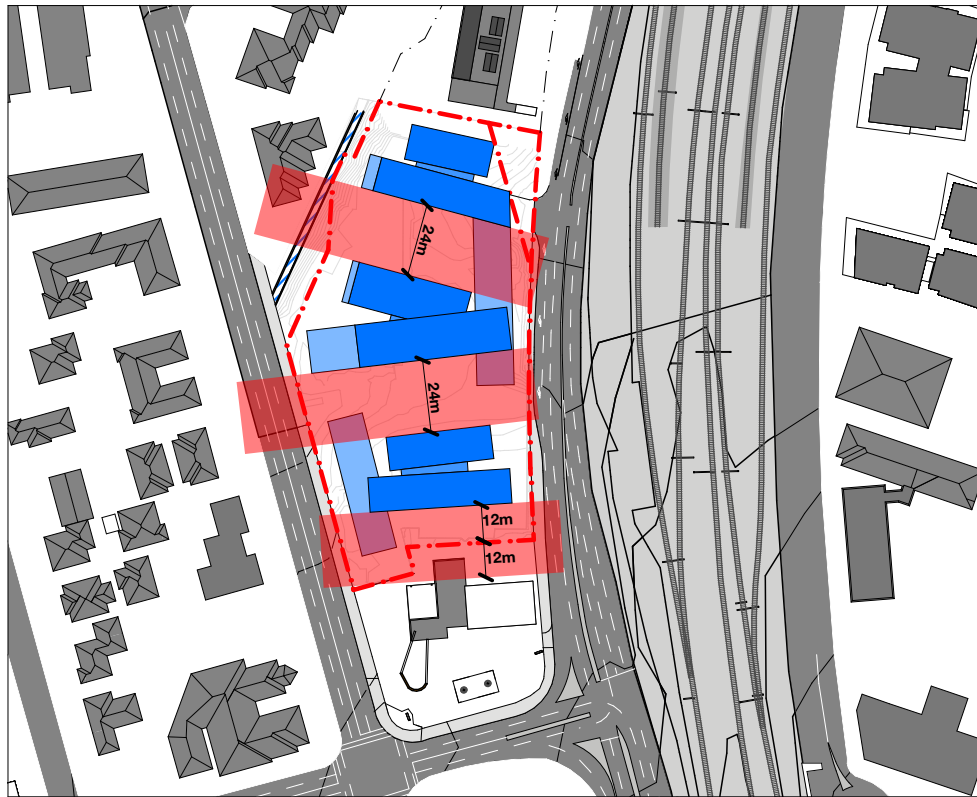
## OPTIMISE NATURAL VENTILATION

Natural ventilation is provided by slender towers with cross ventilated corner apartments and low-rise dual-aspect apartments.



## COMMON AREAS

Cores and lobbies have been arranged for a maximum of eight apartments per lobby to encourage interaction and familiarity with neighbours. All lobbies are naturally ventilated.



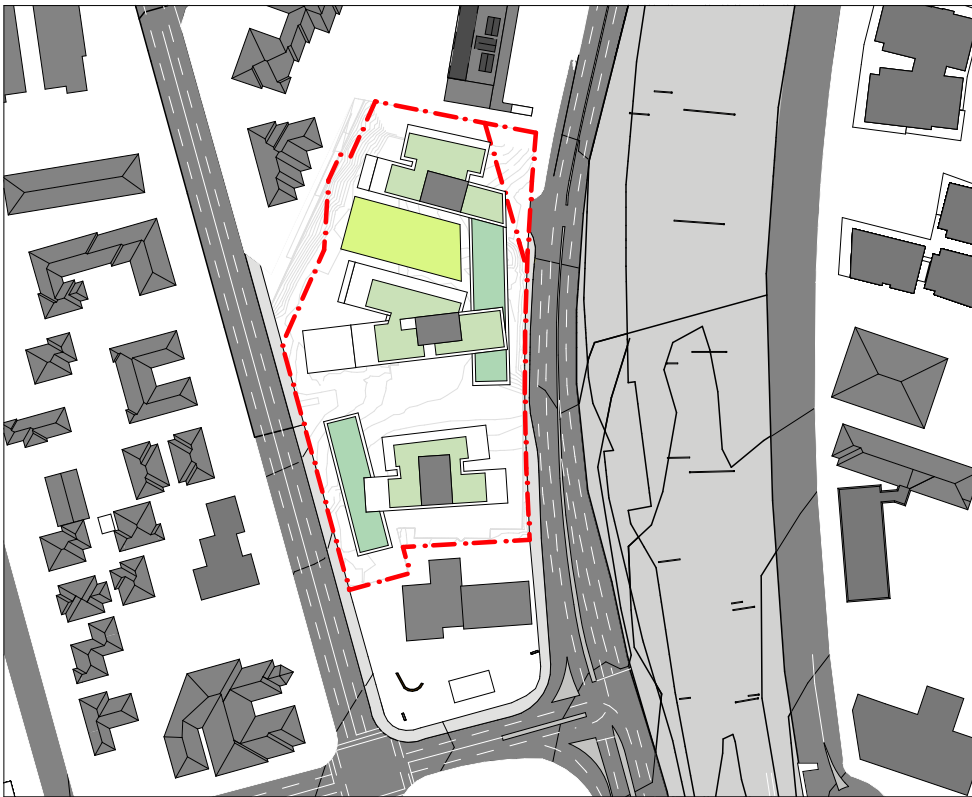
## BUILDING SEPARATION

There is a 24 metre separation between buildings over 8 storeys in compliance with ADG separation requirements.



## DEEP SOIL ZONES

Large Deep Soil zones are located at the northern, eastern, and southern boundaries to provide landscape buffers and separation to adjacent properties. Dedicated deep soil areas are located in the basement to allow for trees to be planted in the ground level courtyards.



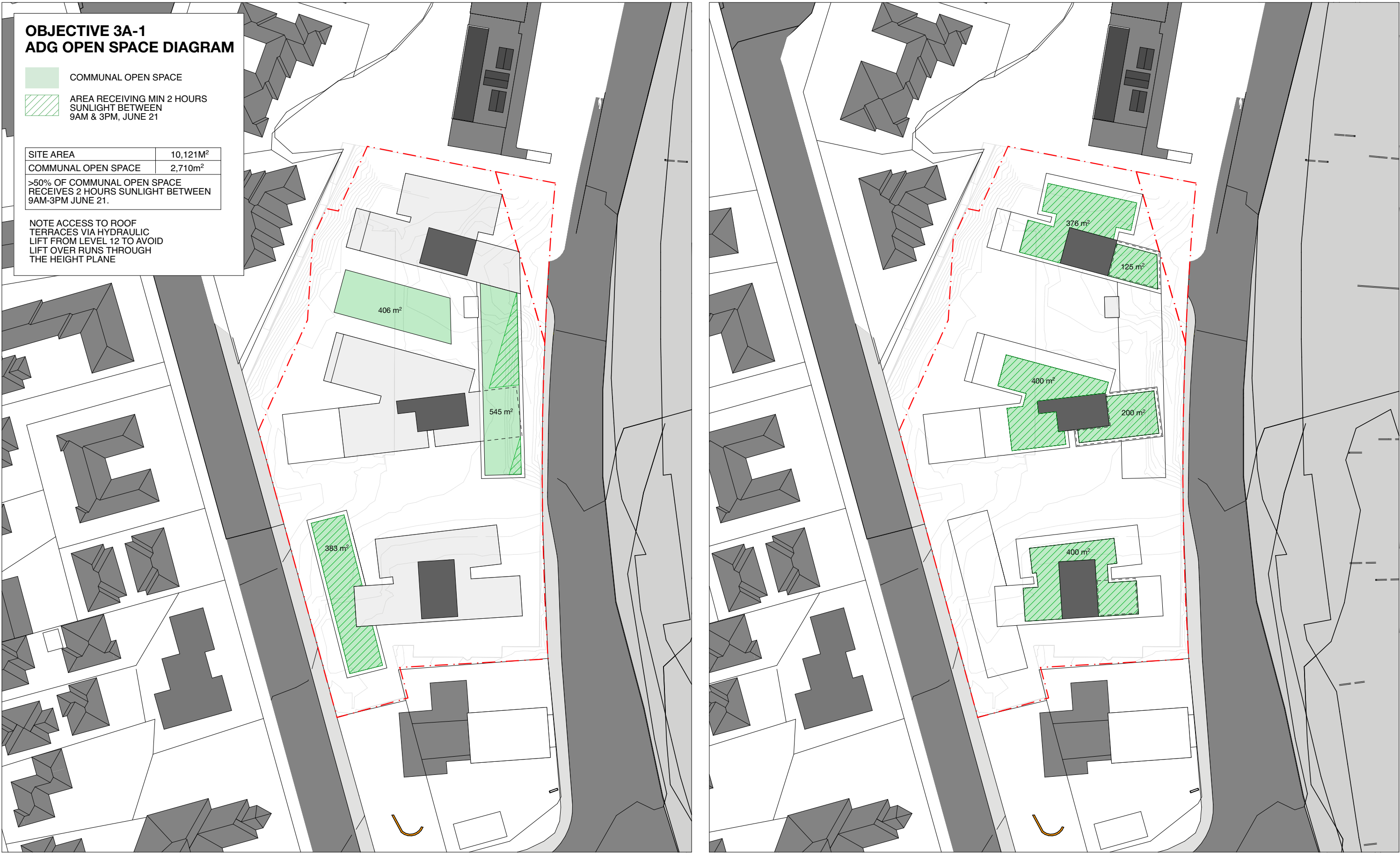
## COMMUNAL OPEN SPACE

Communal open space is provided on the rooftops of the towers, podiums, and at ground level. The rooftops provide excellent access to daylight and privacy. The number of them will make a variety of types of communal spaces and activities possible.



# ADG - COMMUNAL OPEN SPACE

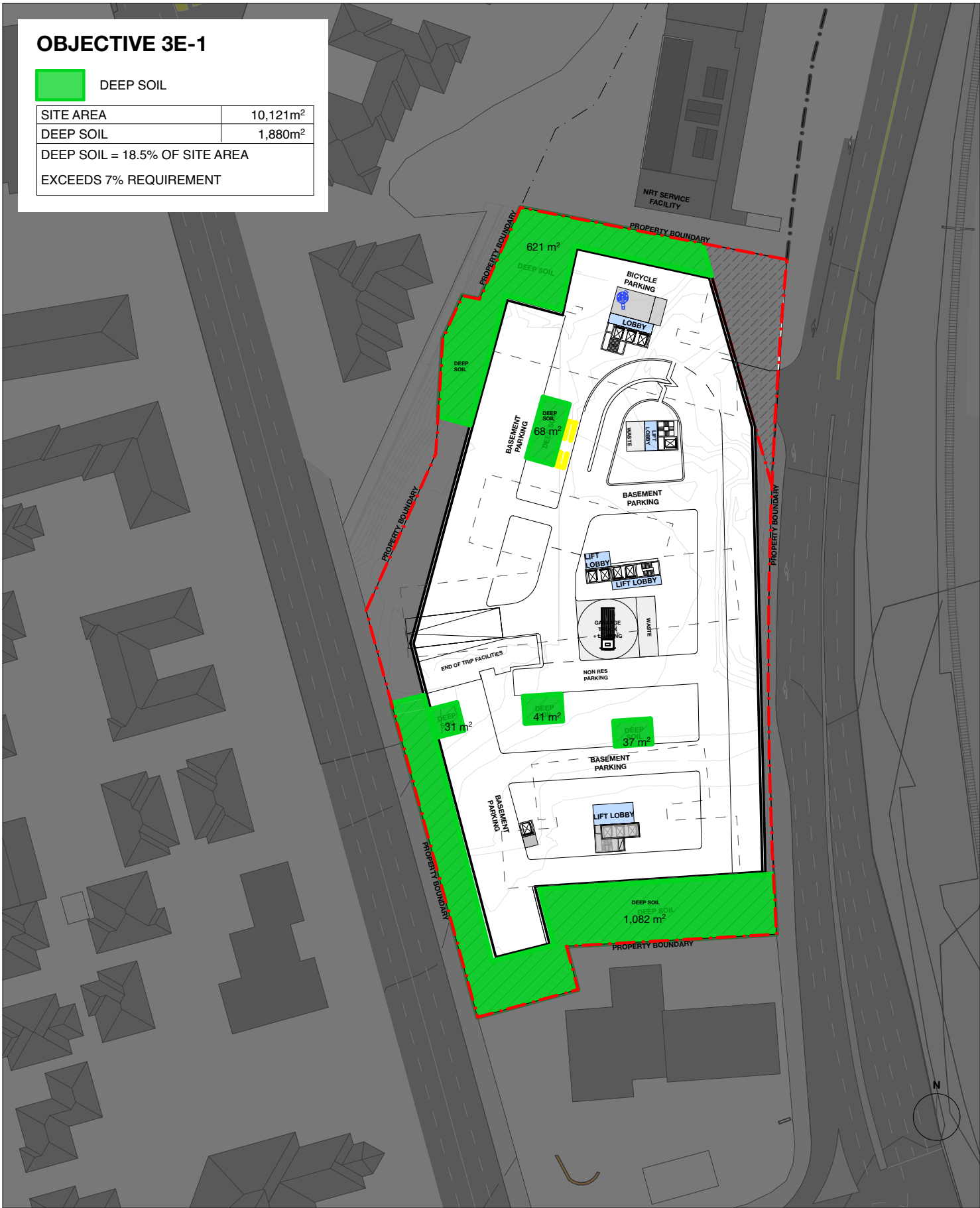
1:1000





# ADG - DEEP SOIL

1:1000



BASEMENT



GROUND FLOOR

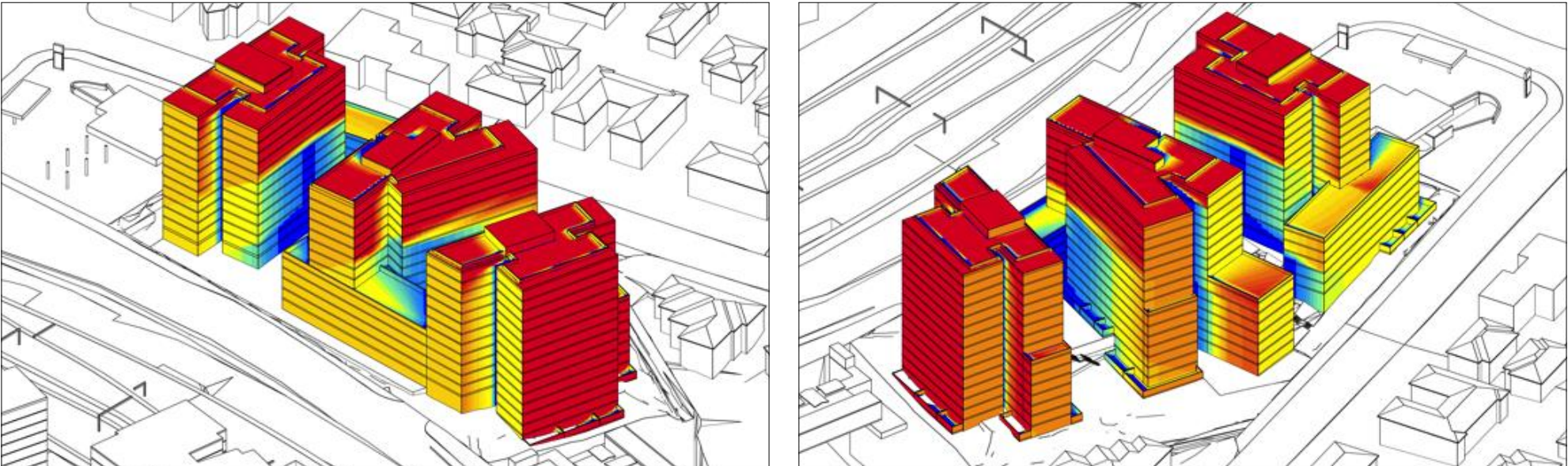


# ADG - VENTILATION AND SOLAR ACCESS

1:2.47  
OBJECTIVE 4A-1 SOLAR AND DAYLIGHT ACCESS  
OBJECTIVE 4B-3 NATURAL VENTILATION

- RECEIVES TWO OR MORE HOURS OF SUNLIGHT BETWEEN 9AM AND 3PM, JUNE 21
- RECEIVES LESS THAN TWO HOURS OF SUNLIGHT BETWEEN 9AM AND 3PM, JUNE 21
- RECEIVES NO DIRECT SUNLIGHT BETWEEN 9AM AND 3PM, JUNE 21
- NATURALLY CROSS VENTILATED APARTMENTS

OBJ 4A-1 - SOLAR AND DAYLIGHT ACCESS	ADG TARGET			COMPLIES
# APARTMENTS RECEIVING 2+ HOURS OF SUNLIGHT BETWEEN 9AM AND 3PM, JUNE 21	min 70% (303)	330	76%	YES
# APARTMENTS RECEIVING NO DIRECT SUNLIGHT BETWEEN 9AM AND 3PM, JUNE 21	max 15% (65)	54	13%	YES
OBJ 4B-3 - NATURAL CROSS VENTILATION				
# APARTMENTS THAT MAY BE NATURALLY CROSS VENTILATED	min 60% (260)	291	67%	YES





# ENVELOPE





# VIEW 1





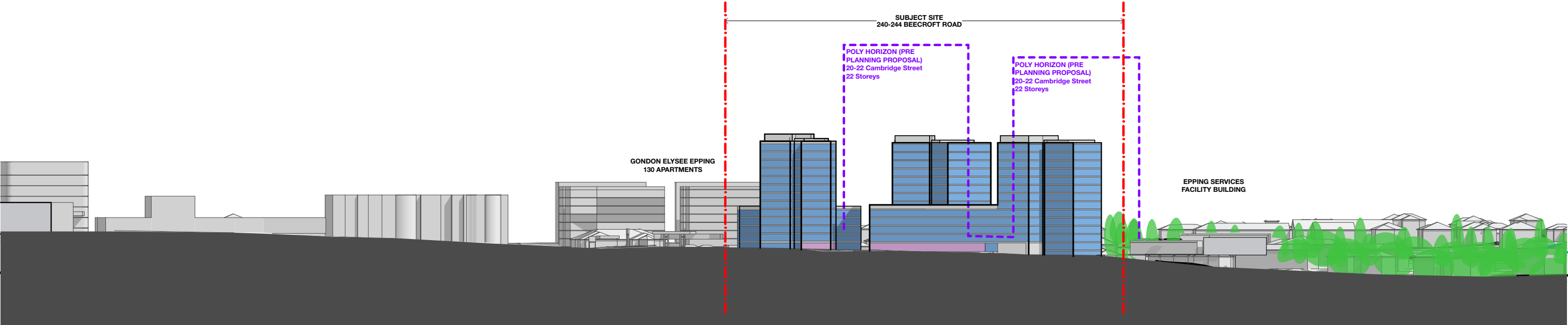
# VIEW 2





# CONTEXT ELEVATION

1:1500

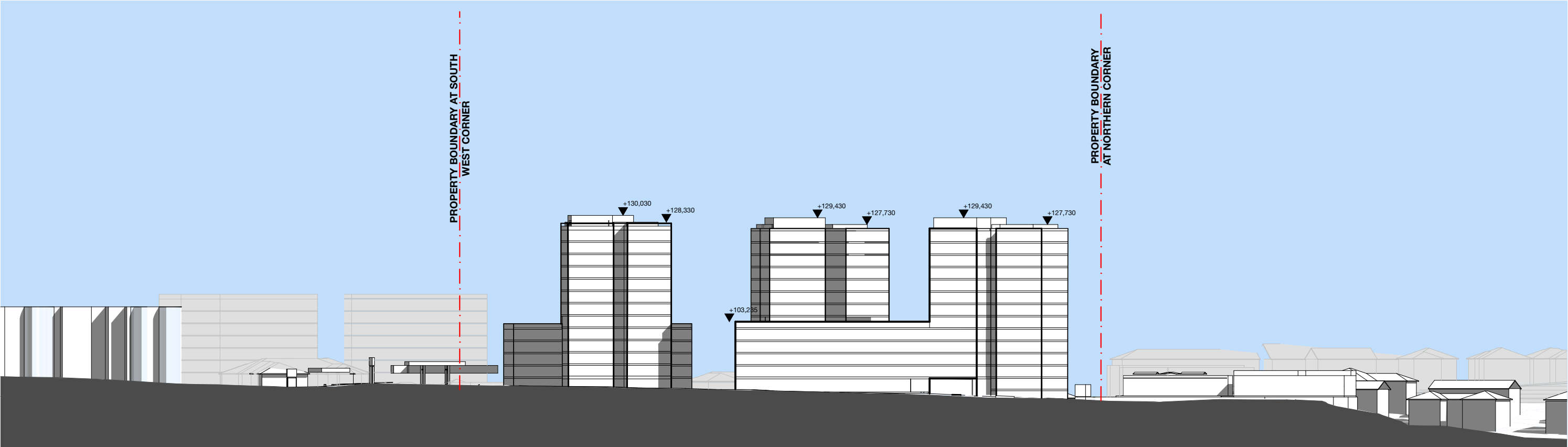


CONTEXT ELEVATION

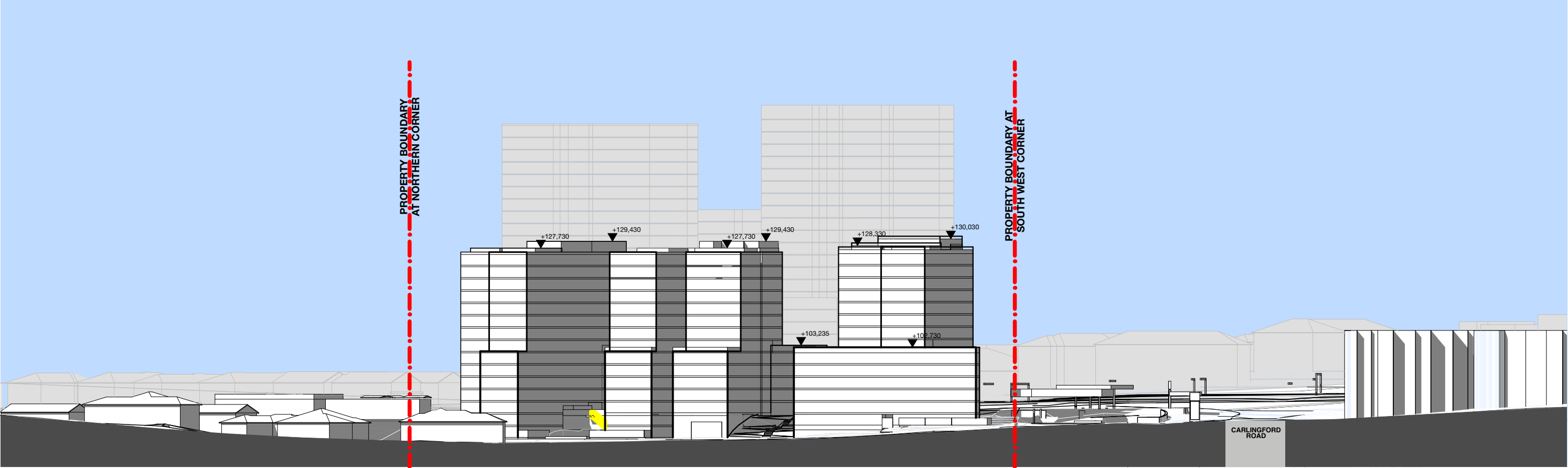


# STREET ELEVATIONS

1:1000



BEECROFT ROAD ELEVATION

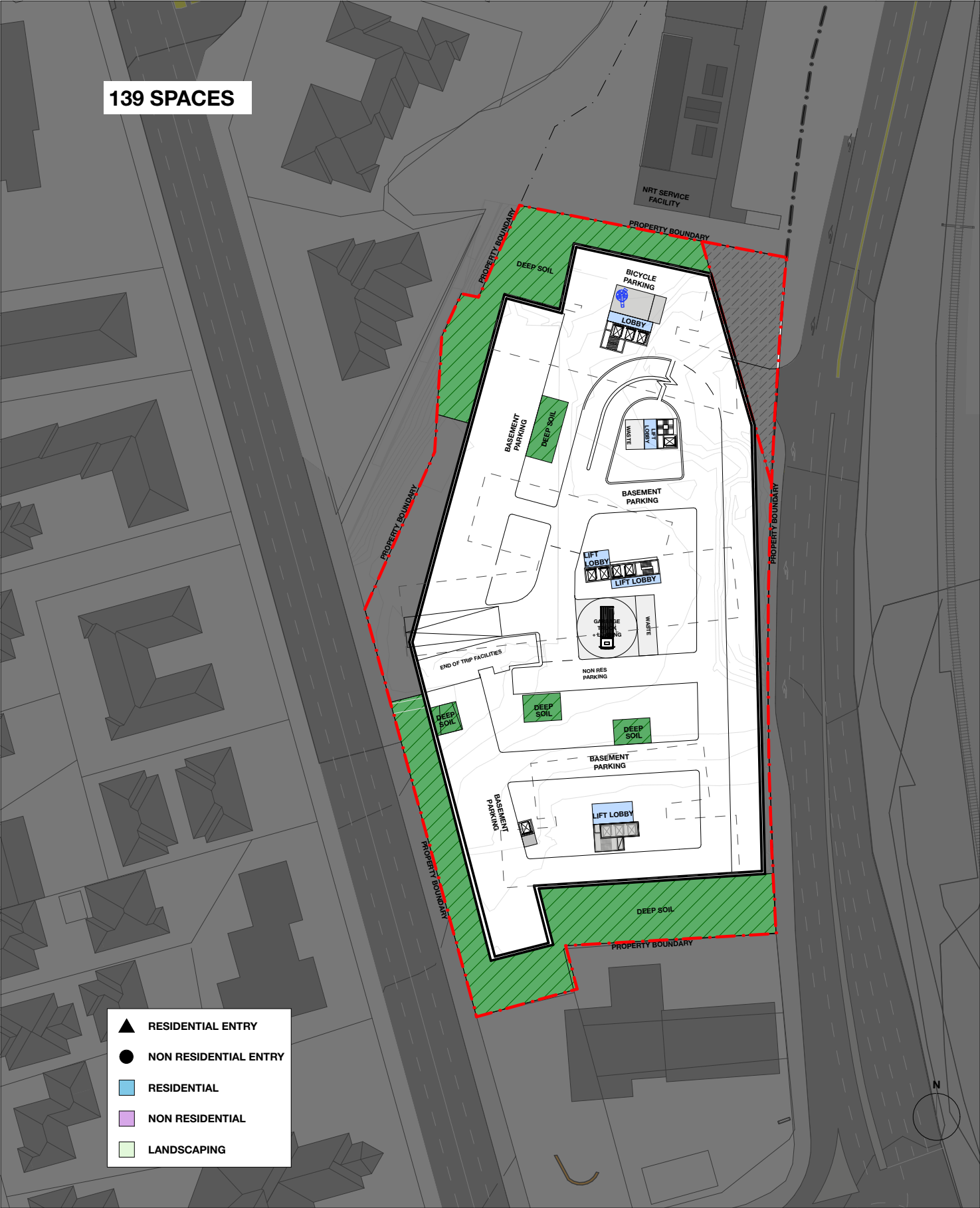


RAY ROAD ELEVATION



# PLANS - P2 & P1

1:1000



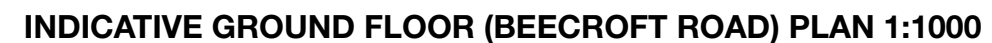
INDICATIVE BASEMENT LEVEL 2 FLOOR PLAN 1:1000



INDICATIVE RAY ROAD ENTRY/BASEMENT LEVEL 1 FLOOR PLAN 1:1000



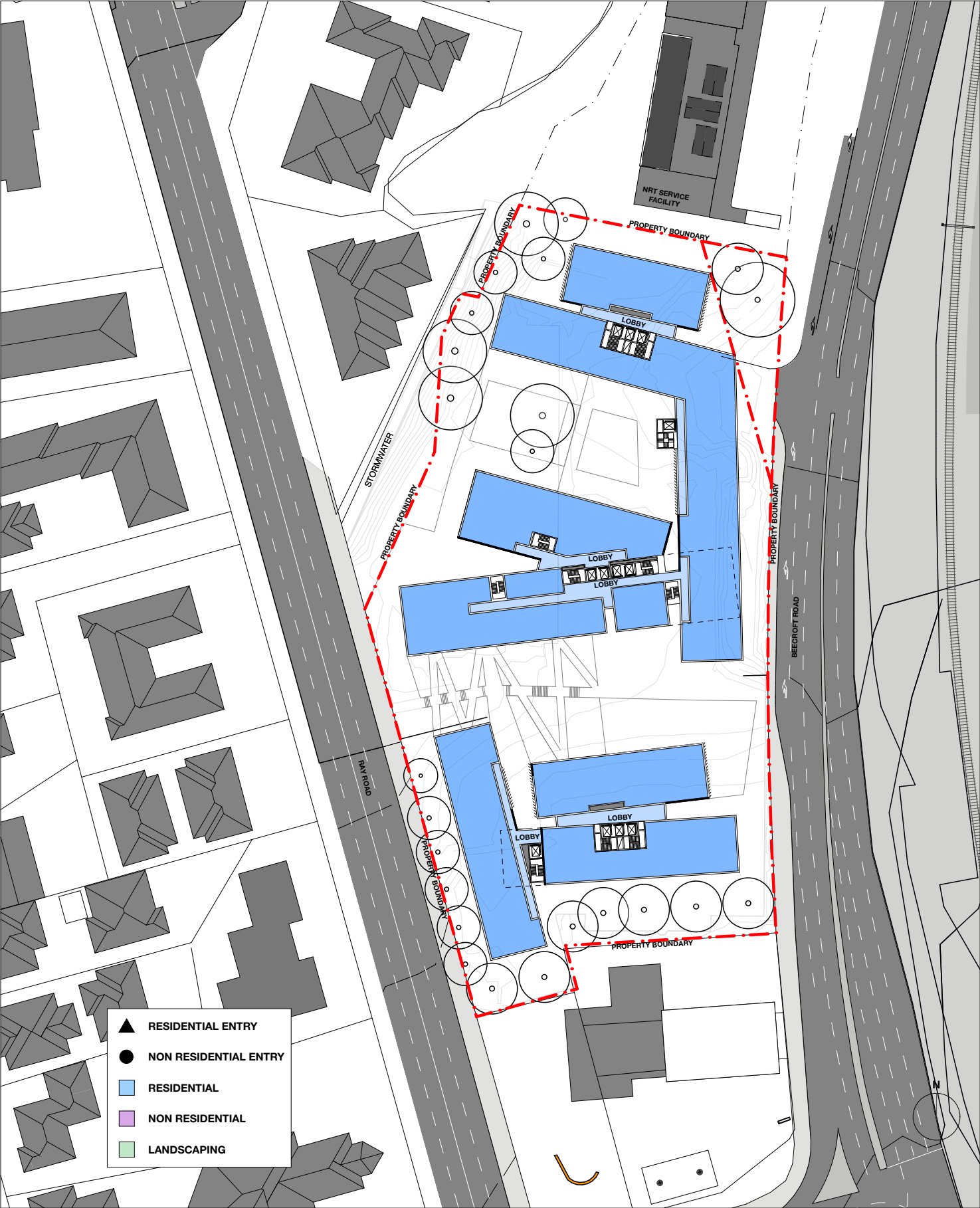
**1:1000**



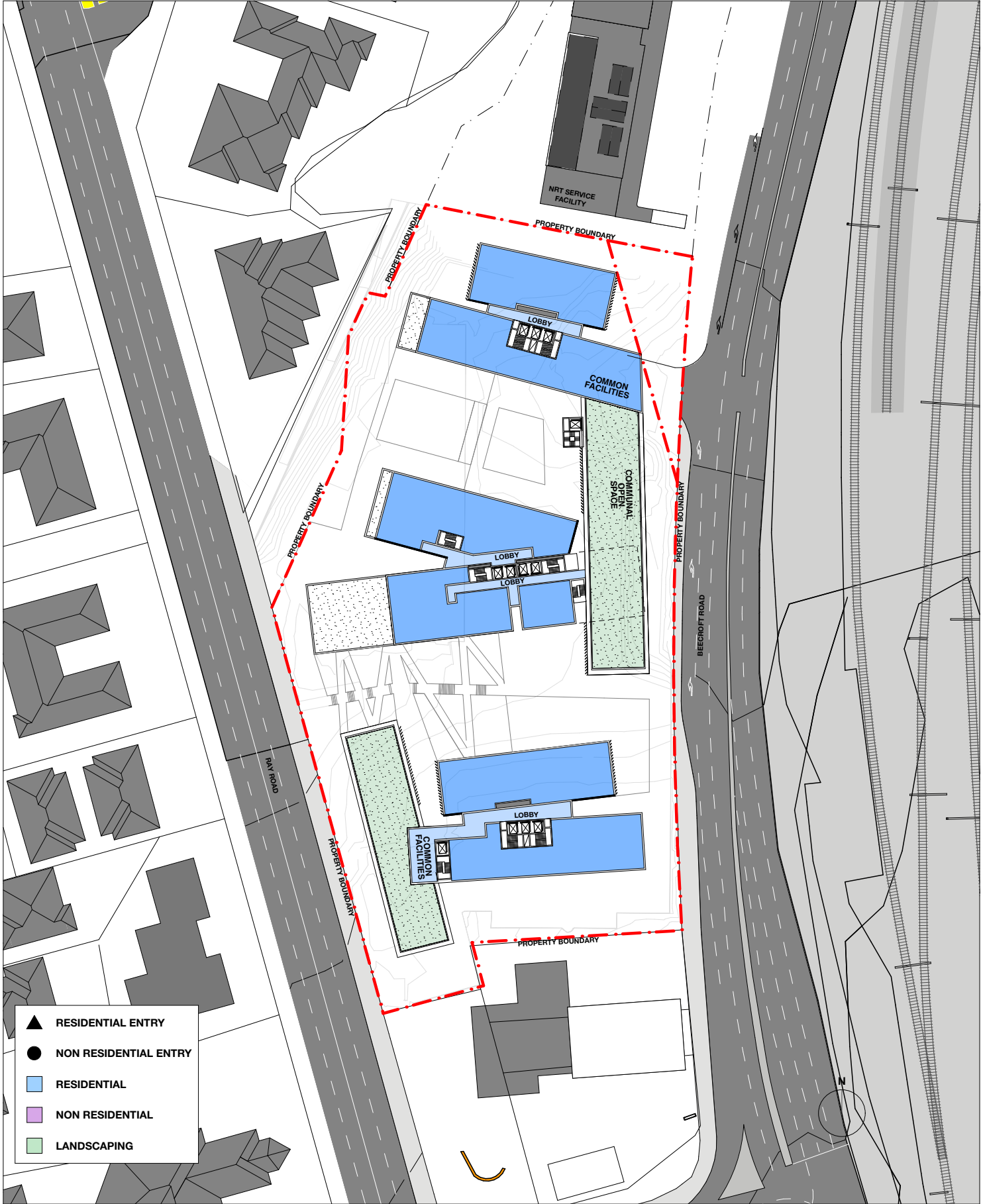


# PLANS- L1-L4 & L5

1:1000



INDICATIVE LEVEL 1-4 FLOOR PLAN 1:1000



INDICATIVE LEVEL 5 FLOOR PLAN 1:1000

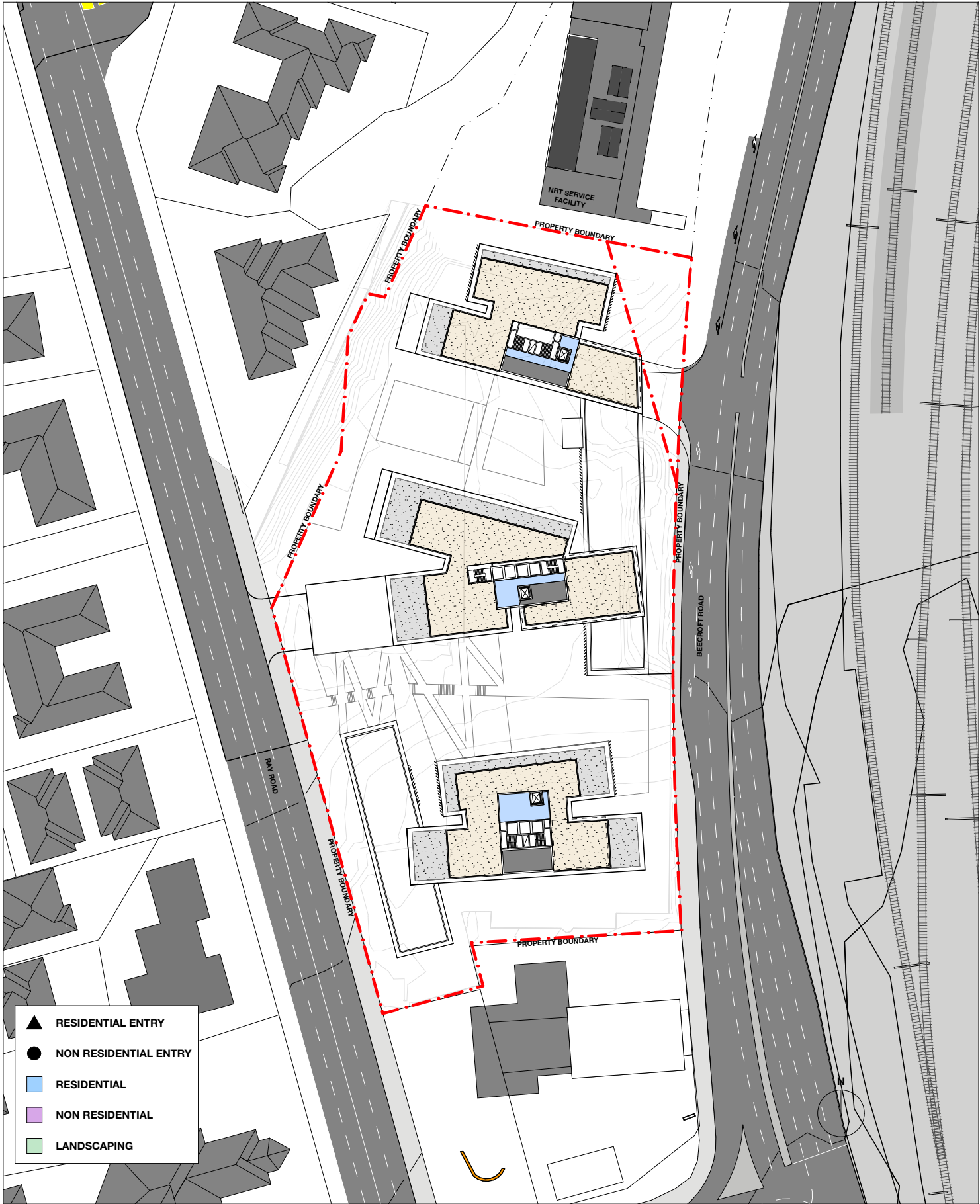


# PLANS - TOWER

1:1000



INDICATIVE TYPICAL TOWER FLOOR PLAN 1:1000

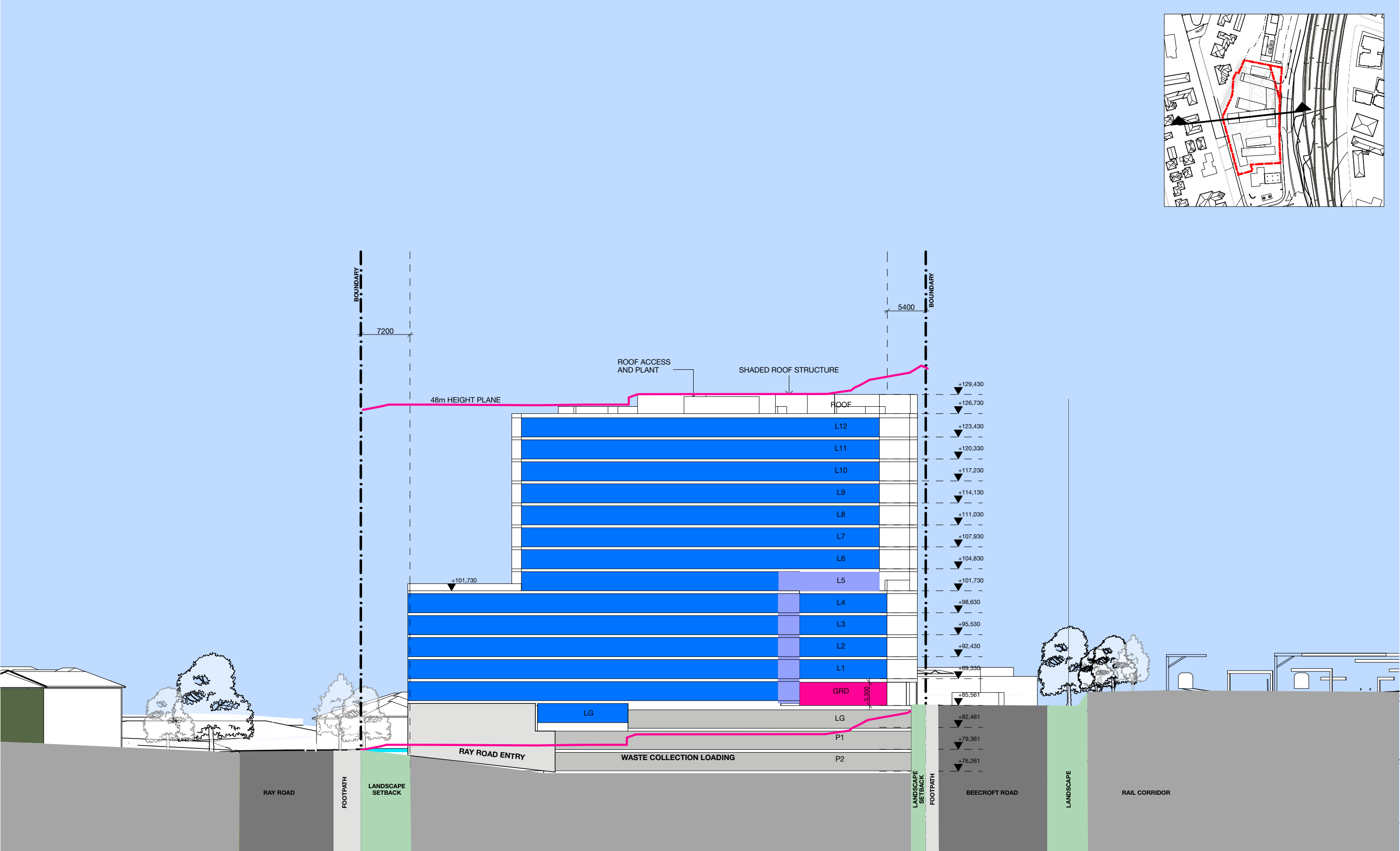


INDICATIVE ROOF PLAN 1:1000



# EAST/WEST SECTION 1

1:500

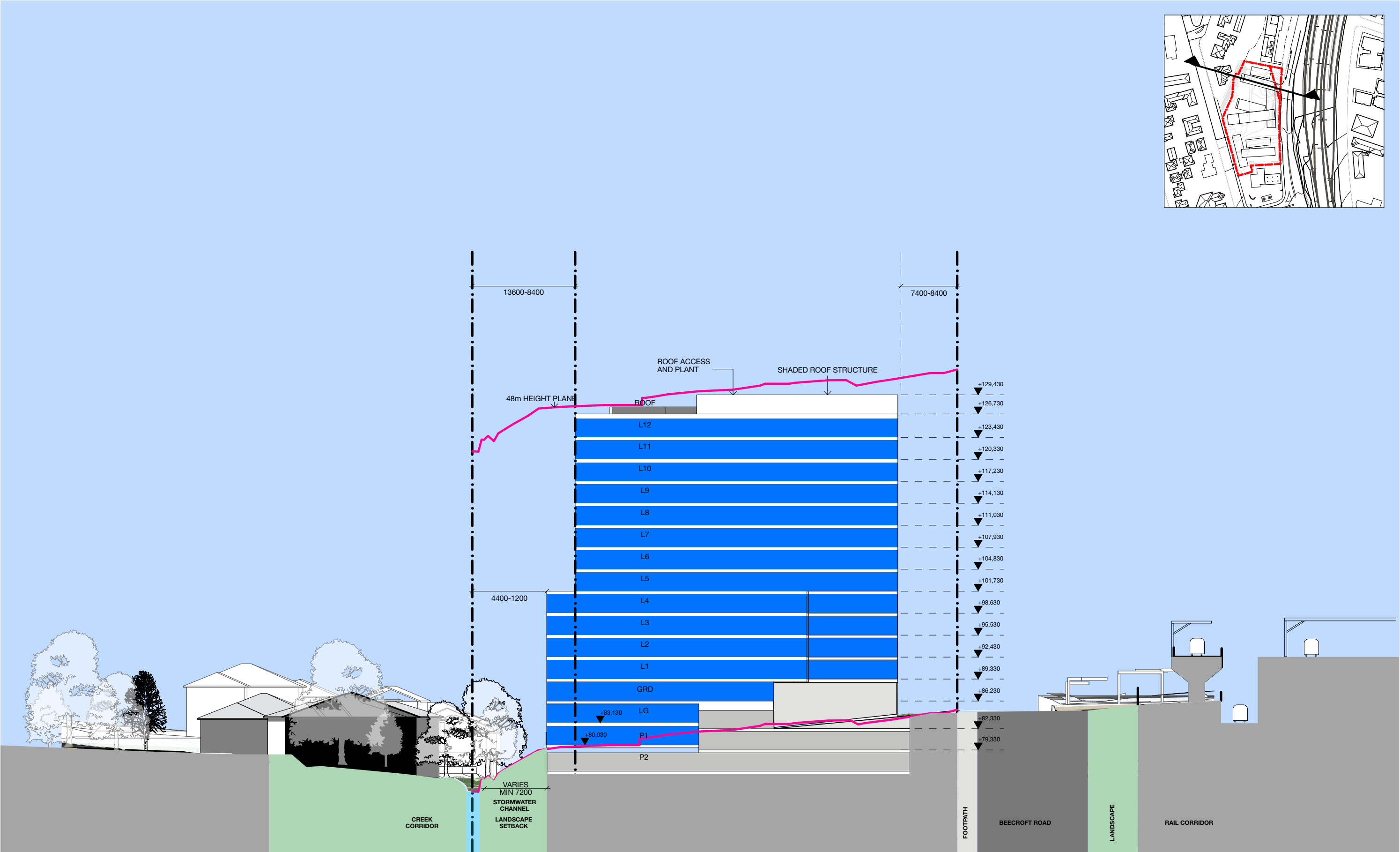


EAST-WEST SECTION 1  
RAY ROAD ENTRY



# EAST/WEST SECTION 2

1:500

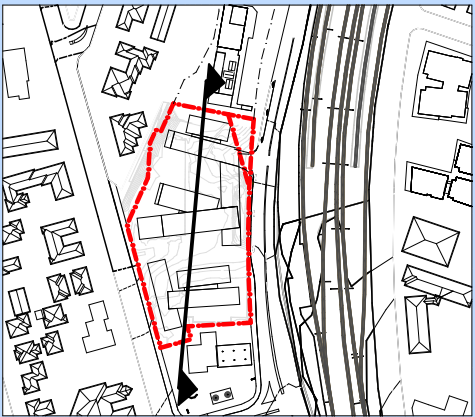
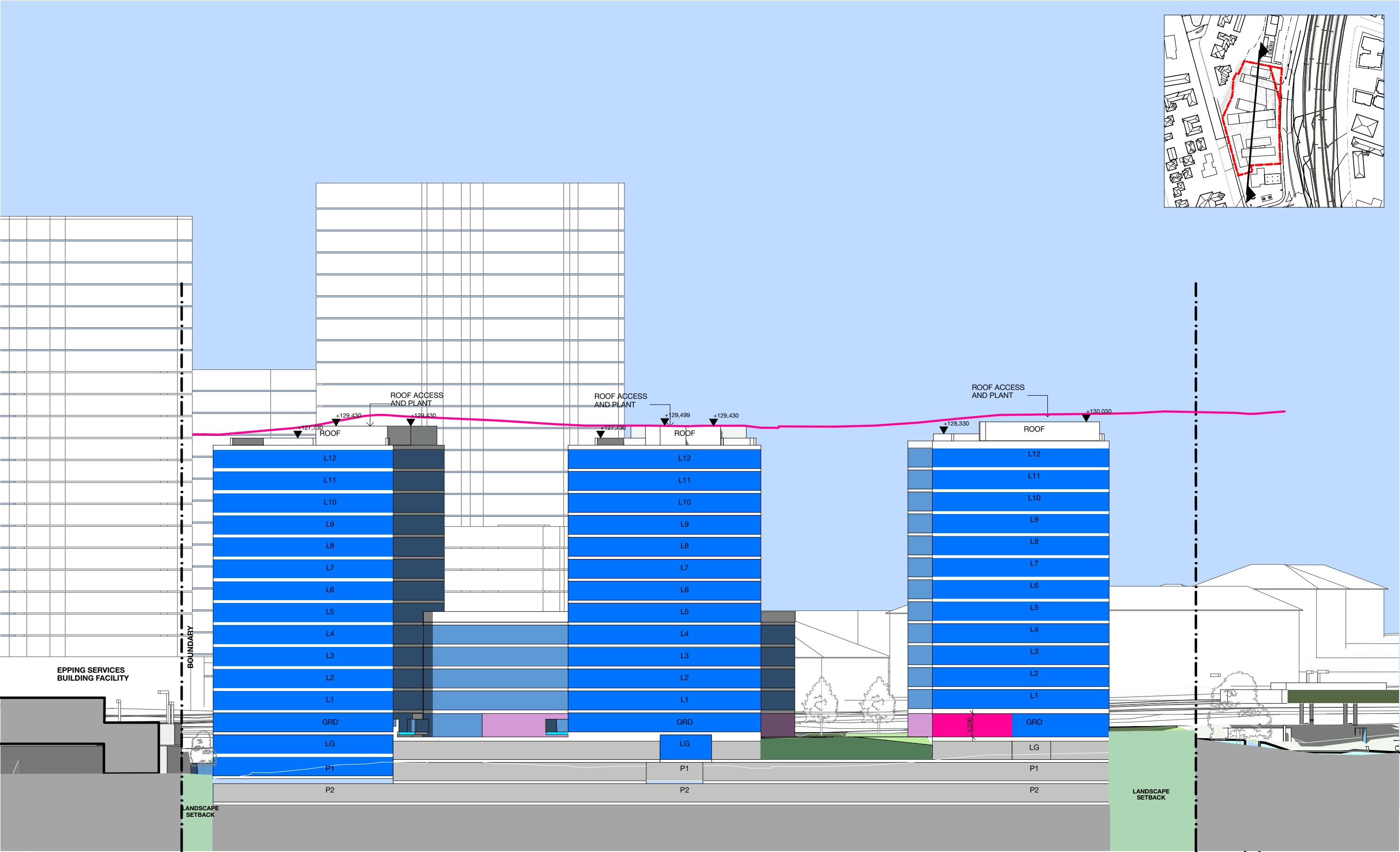


EAST-WEST SECTION 2  
RAY ROAD ENTRY



# NORTH/SOUTH SECTION

1:500

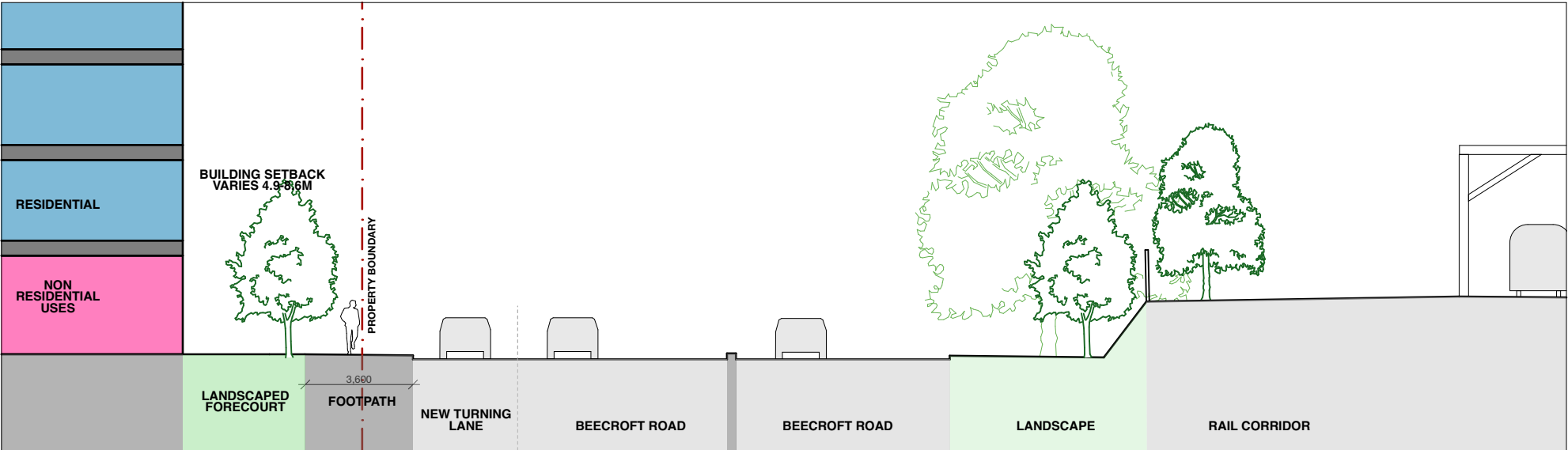
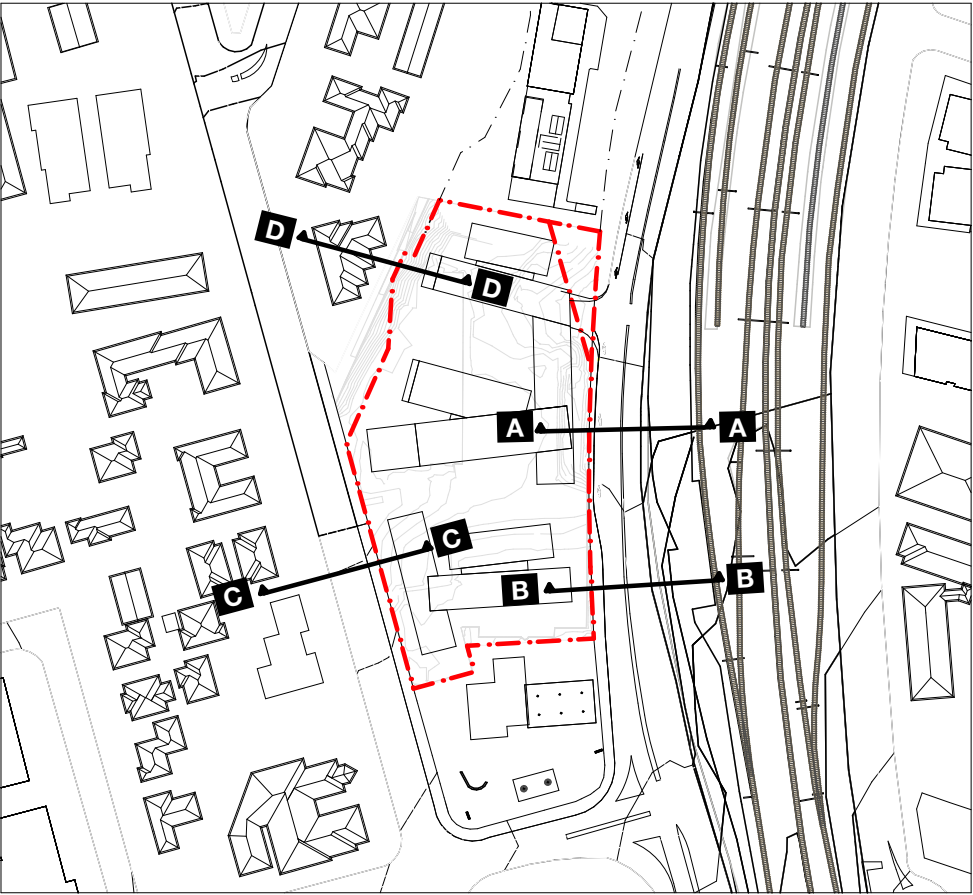


NORTH-SOUTH SECTION  
RAY ROAD ENTRY

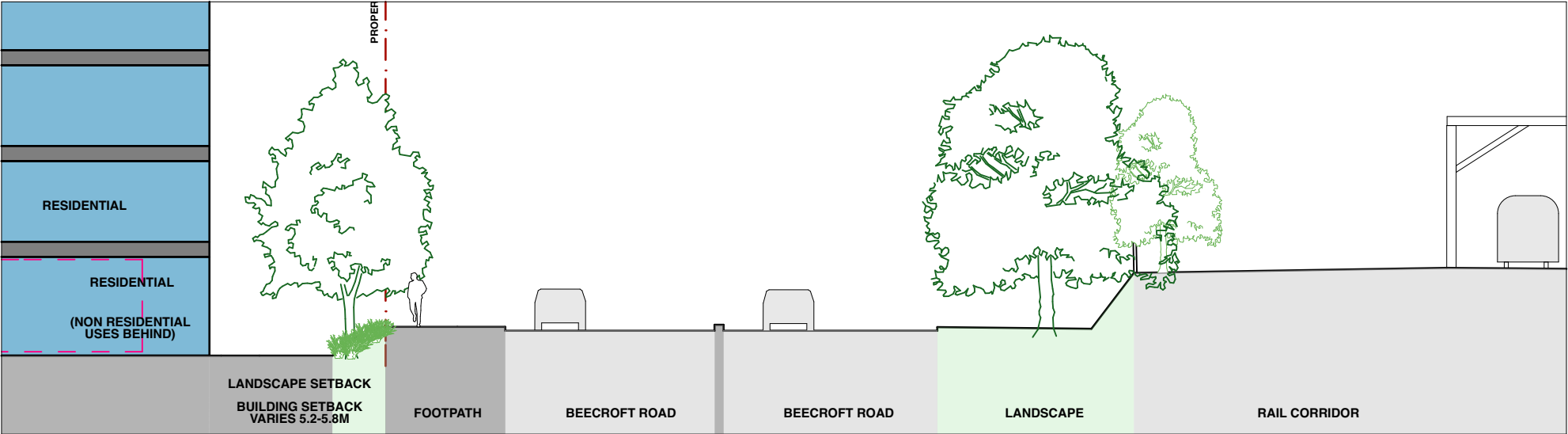


# STREET SECTIONS

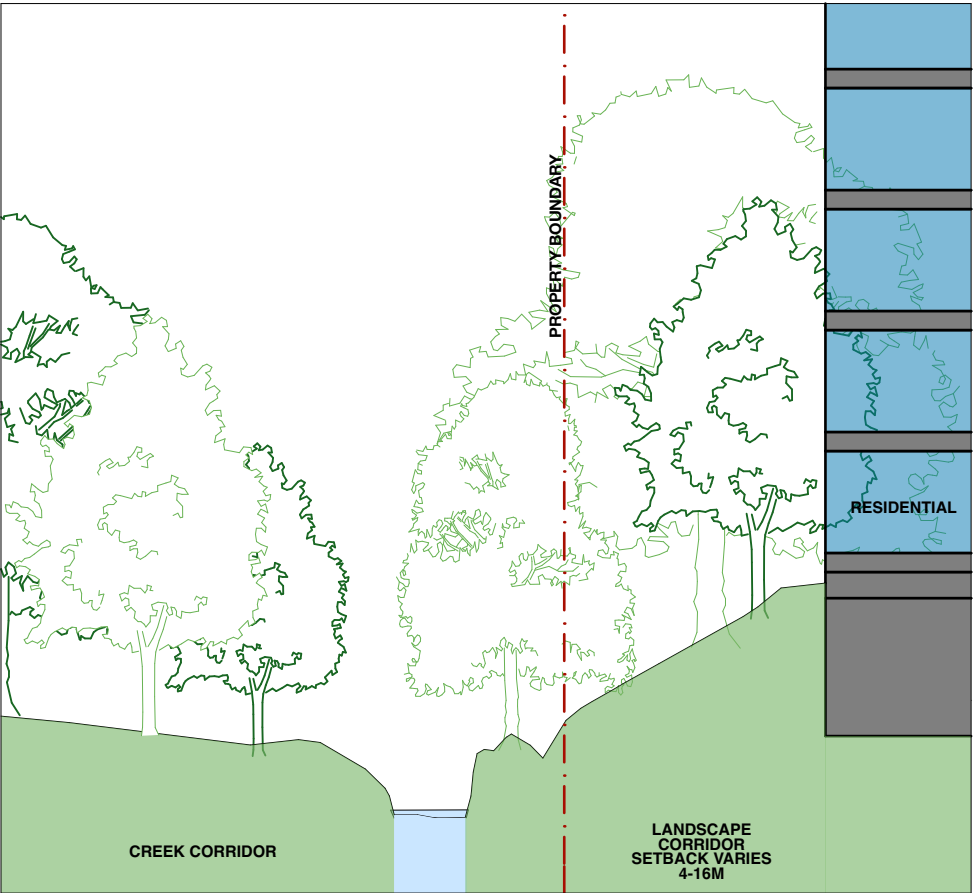
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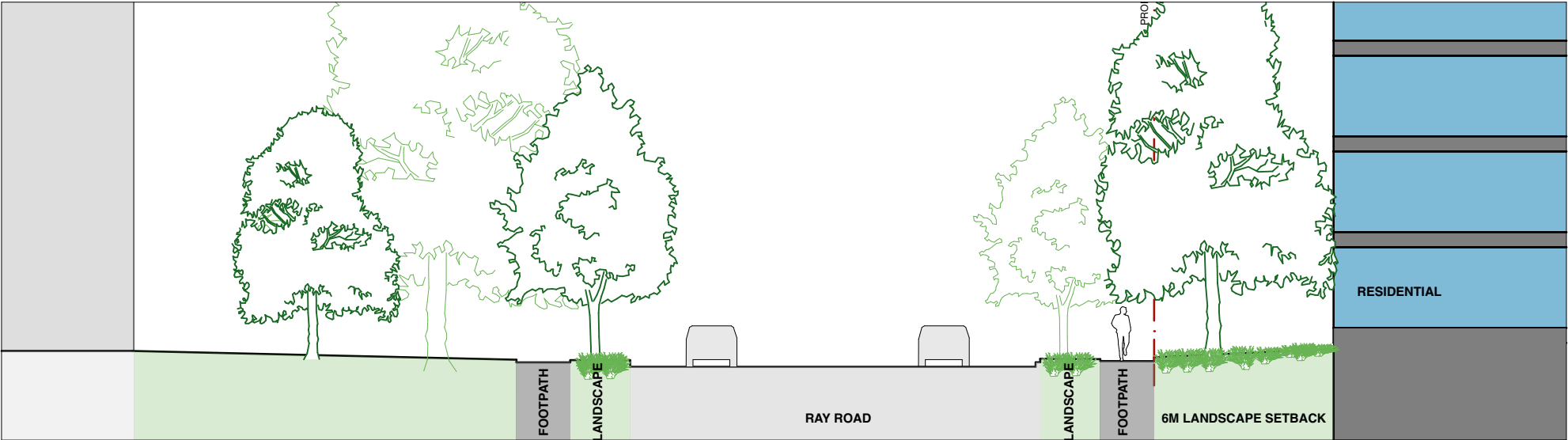
STREET SECTION A - BEECROFT ROAD



STREET SECTION B - BEECROFT ROAD



STREET SECTION D - DEVLINS CREEK ROAD



STREET SECTION C - RAY ROAD



# AREA CALCULATIONS

## AREA SCHEDULE

Site Area	10,121												
	GBA Basement	GBA Non Residential	GFA Non-res	GBA Residential	GFA Residential	TOTAL GFA (Res+ Non Res)	RES NLA	Yield	(As per refecence scheme				
	Measured	Measured	Calculated (GFAx80%)	Measured	Calculated (GBA*80%)		Calculated (GFAx90%)	Studio	1 Bed	2 Bed	3 Bed	Total APTs	No. Car Spaces
P2	7,463					0	0					0	170
P1	5,675			890	712	712	641		2	5		7	110
LG	4,390			1,550	1,240	1,240	1,116		7	6	2	15	66
GRD		885	752	3,290	2,632	3,384	2,369	1	9	11	4	25	
L1				4,300	3,440	3,440	3,096	5	13	20	4	42	
L2				4,300	3,440	3,440	3,096	5	13	20	4	42	
L3				4,300	3,440	3,440	3,096	5	13	20	4	42	
L4				4,300	3,440	3,440	3,096	5	13	20	4	42	
L5				2,870	2,296	2,296	2,066	2	8	13	2	25	
L6				3,050	2,440	2,440	2,196	4	4	15	5	28	
L7				3,050	2,440	2,440	2,196	4	4	15	5	28	
L8				3,050	2,440	2,440	2,196	4	4	15	5	28	
L9				3,050	2,440	2,440	2,196	4	4	15	5	28	
L10				3,050	2,440	2,440	2,196	4	4	15	5	28	
L11				3,050	2,440	2,440	2,196	4	4	15	5	28	
L12				3,050	2,440	2,440	2,196		2	16	6	24	
TOTAL	17,528	885	752	47,150	37,720	38,472	33,948	47	104	221	60	432	346
						FSR 3.8:1			35.0%	51.2%	13.9%		0.80

## Parking

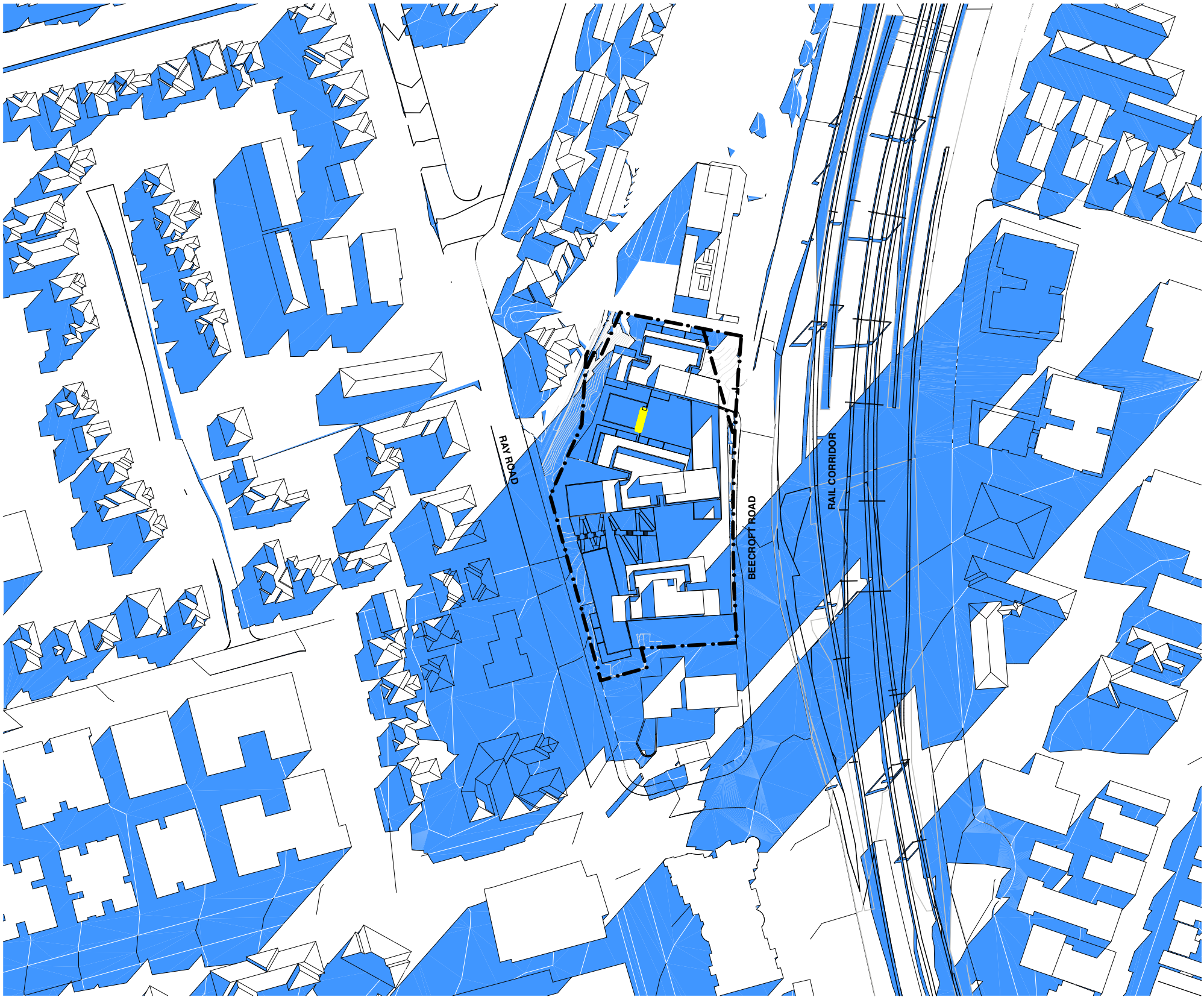
	Max Rate	Min Rate	Source	Max No.
1 BED	0.4		RMS	61
2 BED	0.7		RMS	155
3+ BED	1.2		RMS	72
VISITOR		1 per 7apts		62
CARSHARE		1 per Building	Parramatta DCP	3
NON RES		1 per 70sqm	Parramatta DCP	11
TOTAL CAR SPACES (max)				364
MOTORCYCLE		1 per 25 car spaces		15
BICYCLE		1 per apt + 1 visitor /10 apartment:		476

**NOTE:**  
Area schedule based on the reference design. Further development and testing of this reference scheme will be required to confirm all numbers.  
  
Vistor rates increased to match Hornsby DCP



# SUN STUDIES 9AM

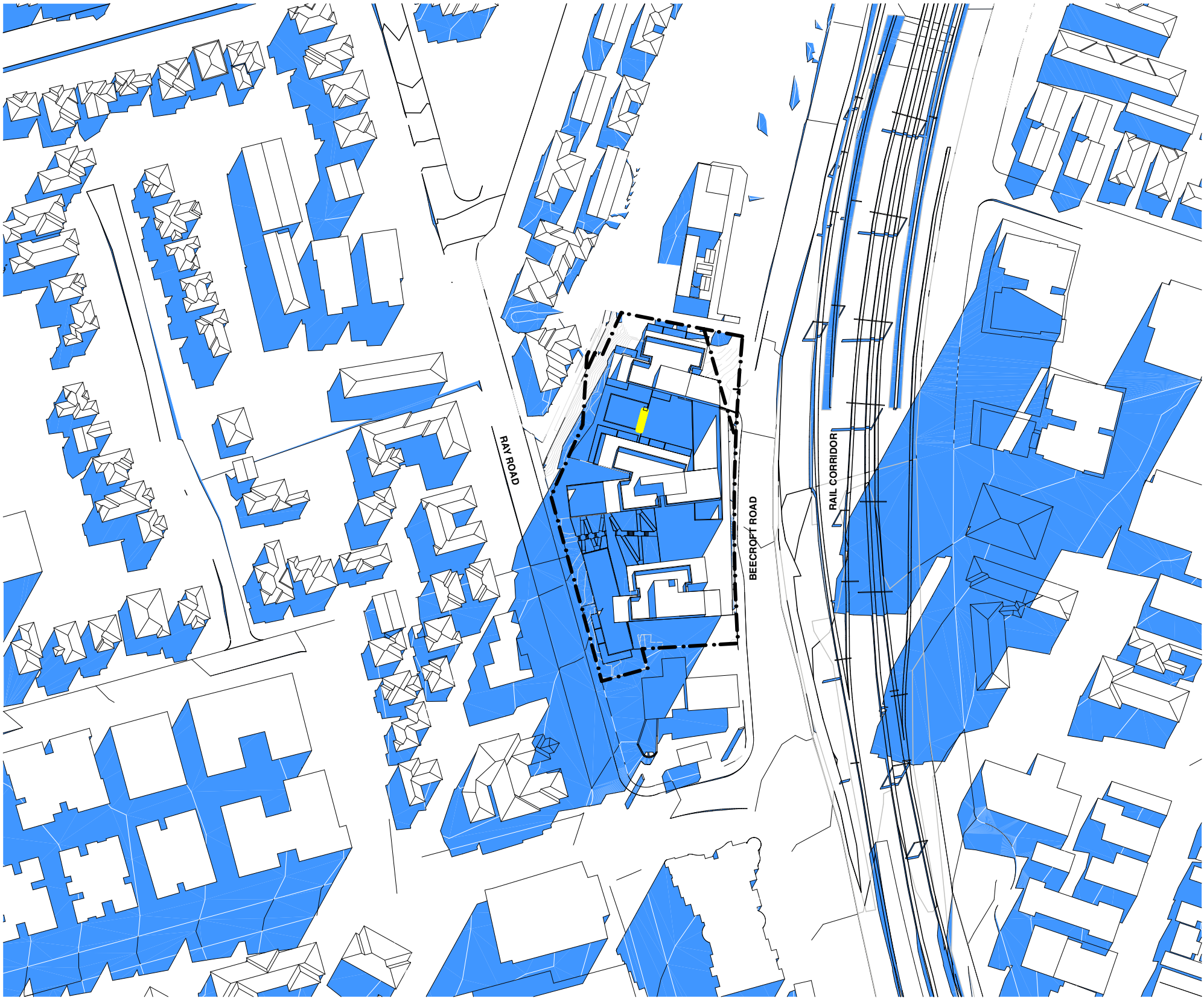
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# SUN STUDIES 10AM

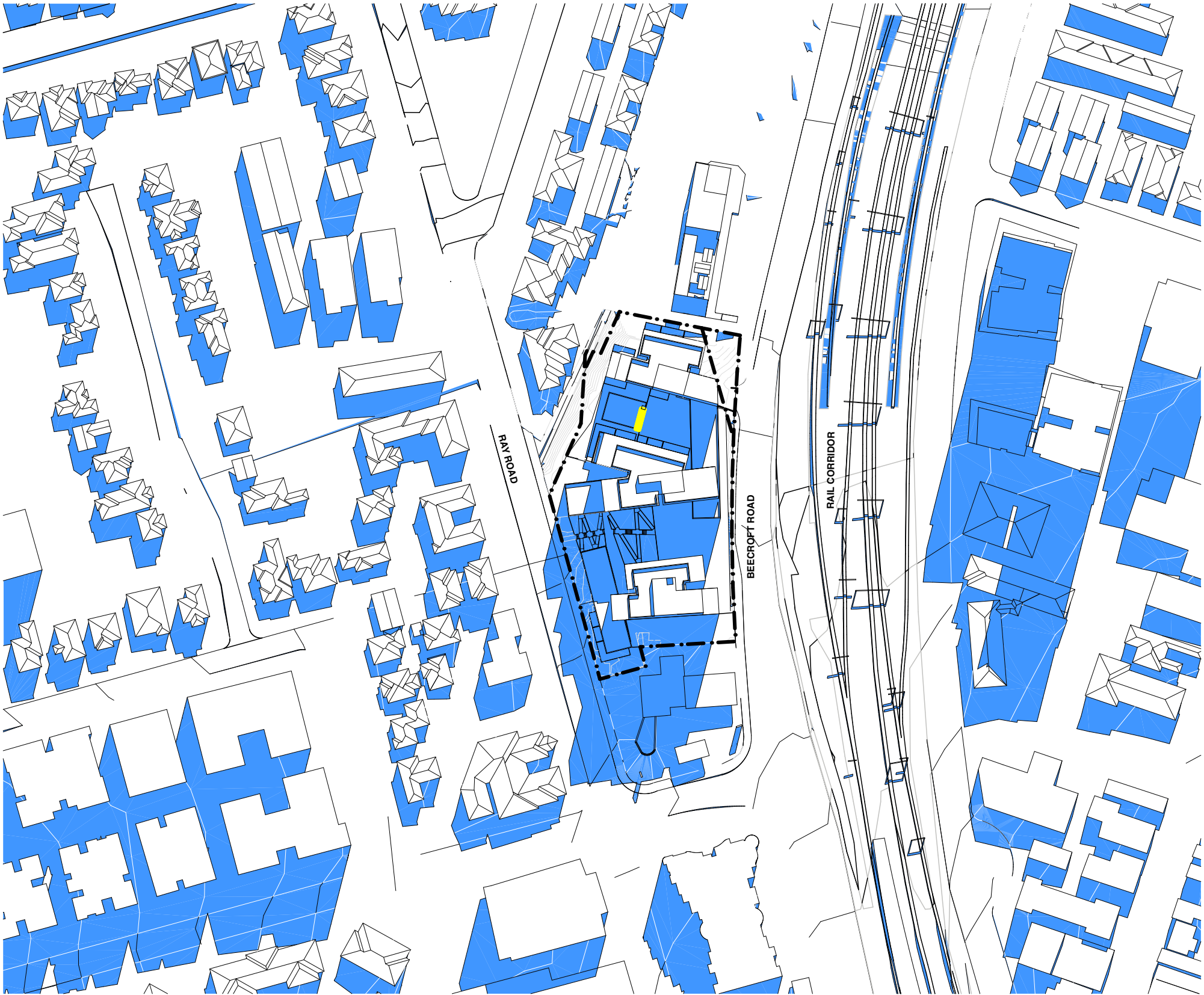
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# SUN STUDIES 11AM

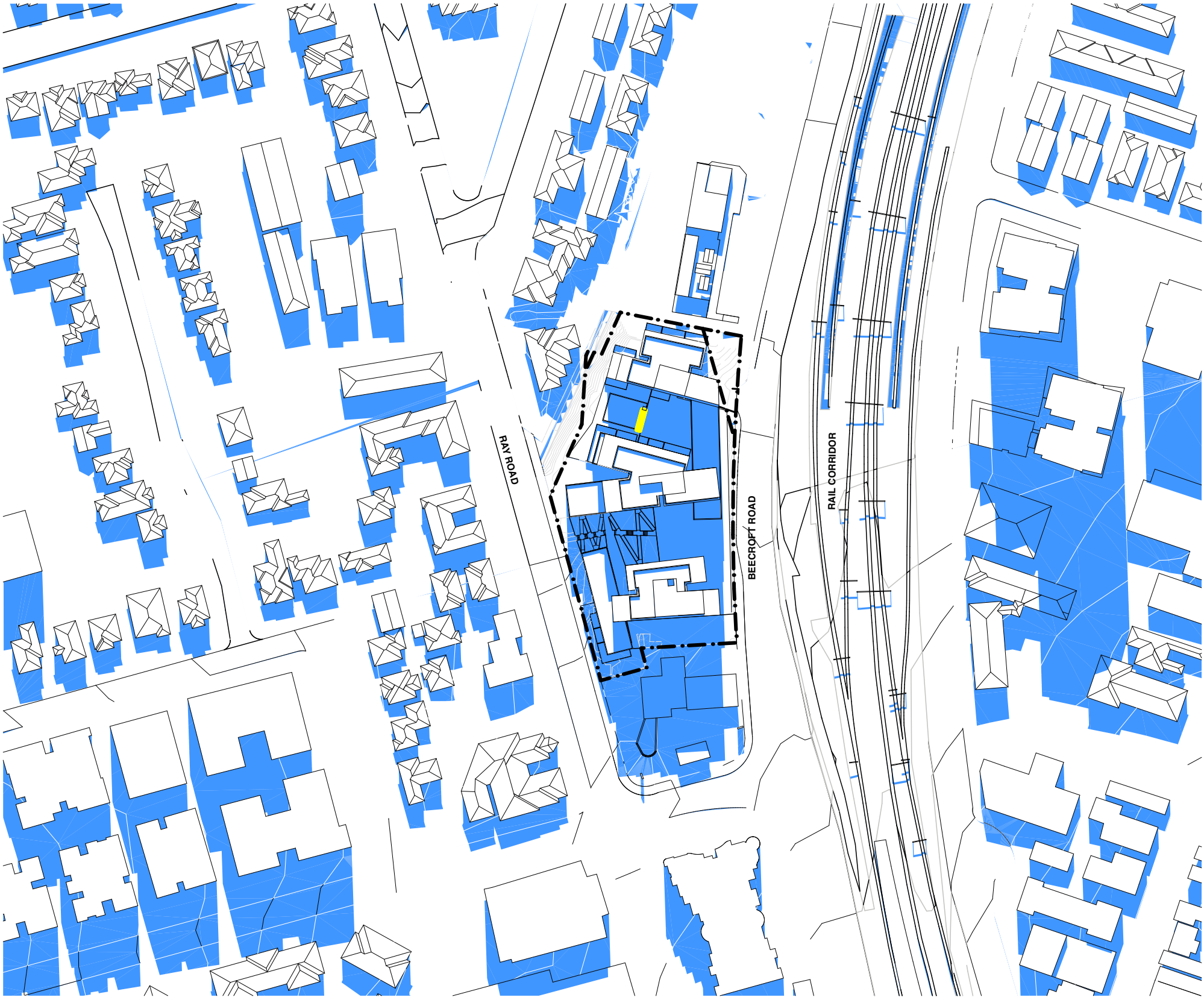
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# SUN STUDIES 12PM

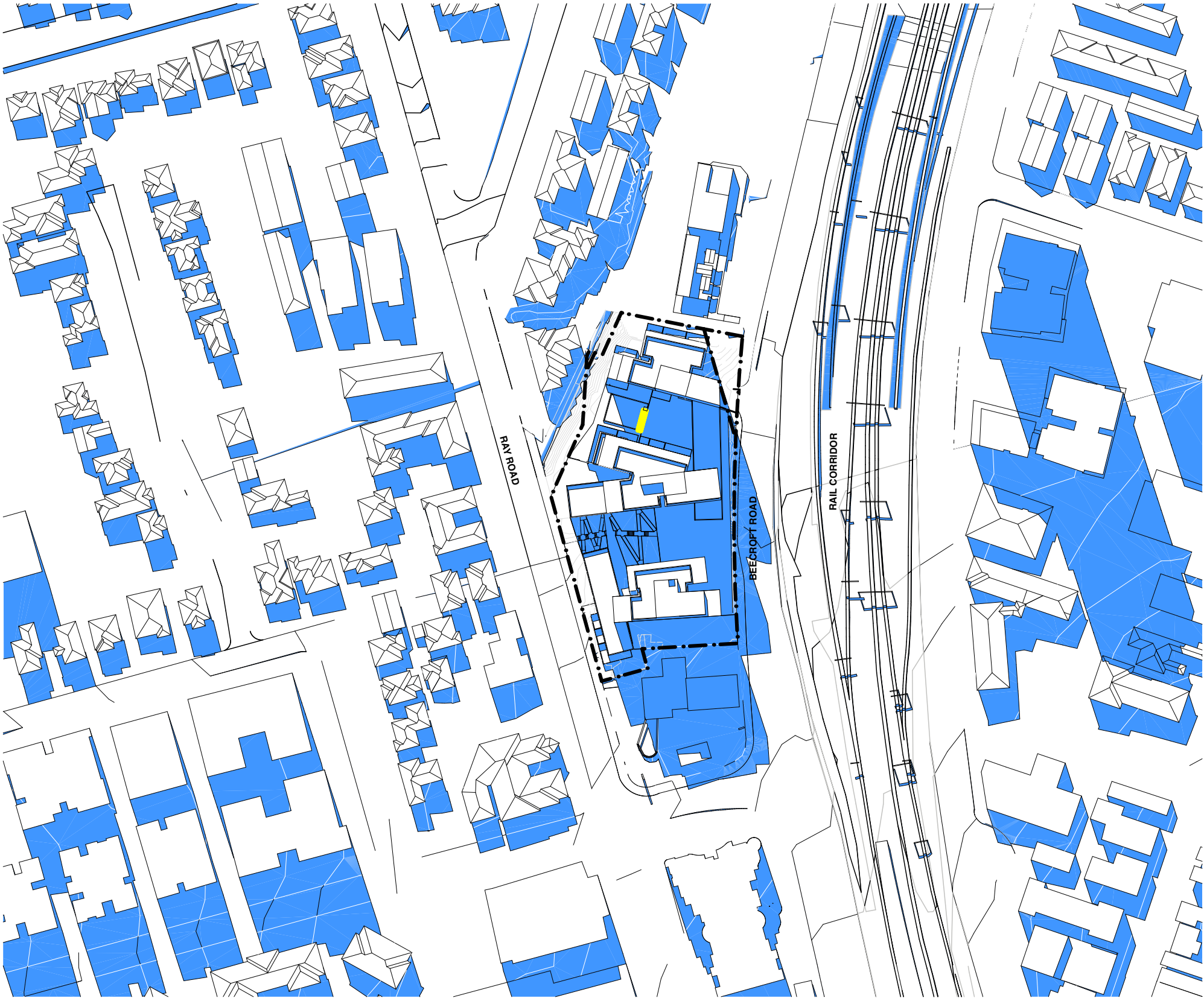
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# SUN STUDIES 1PM

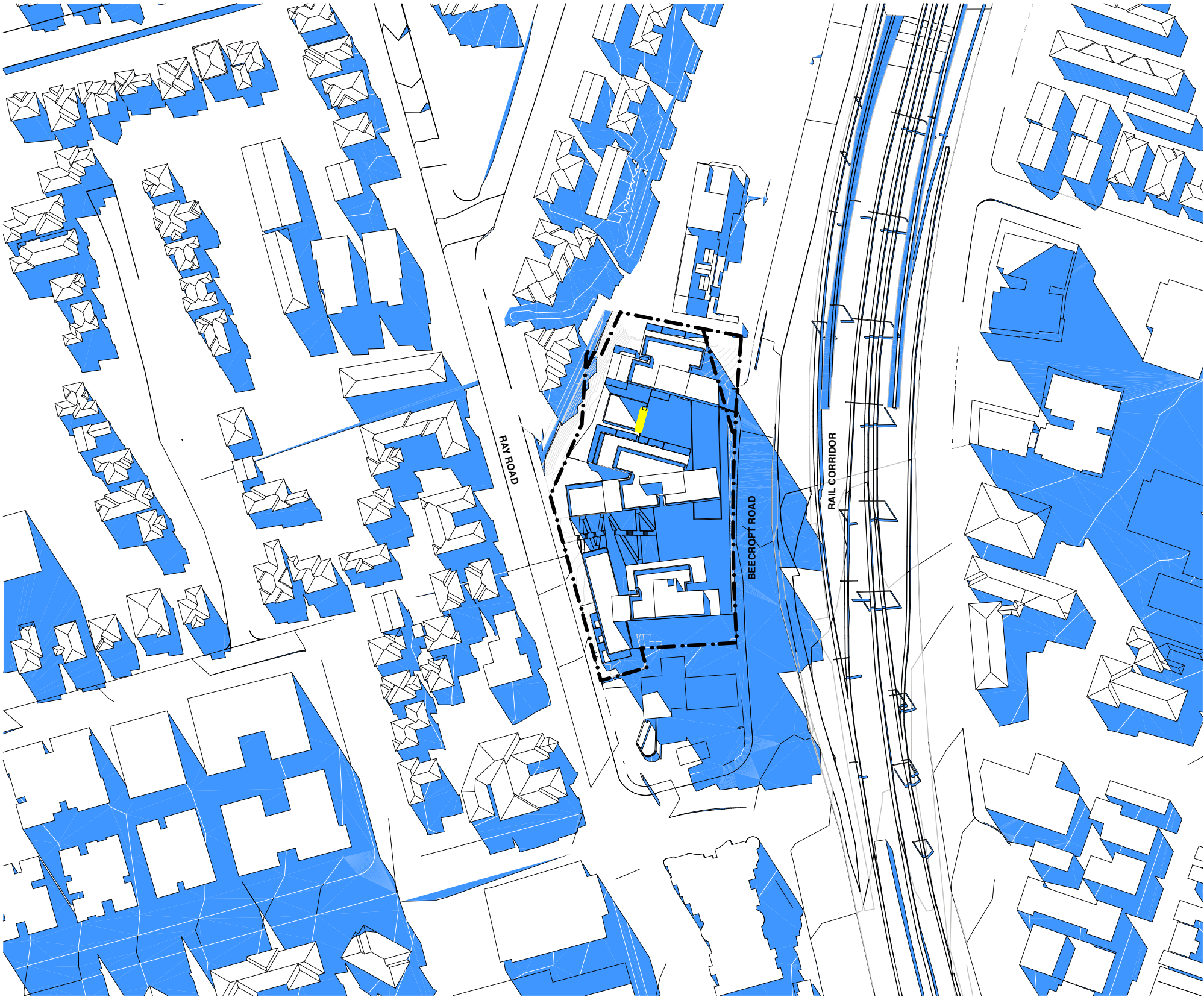
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# SUN STUDIES 2PM

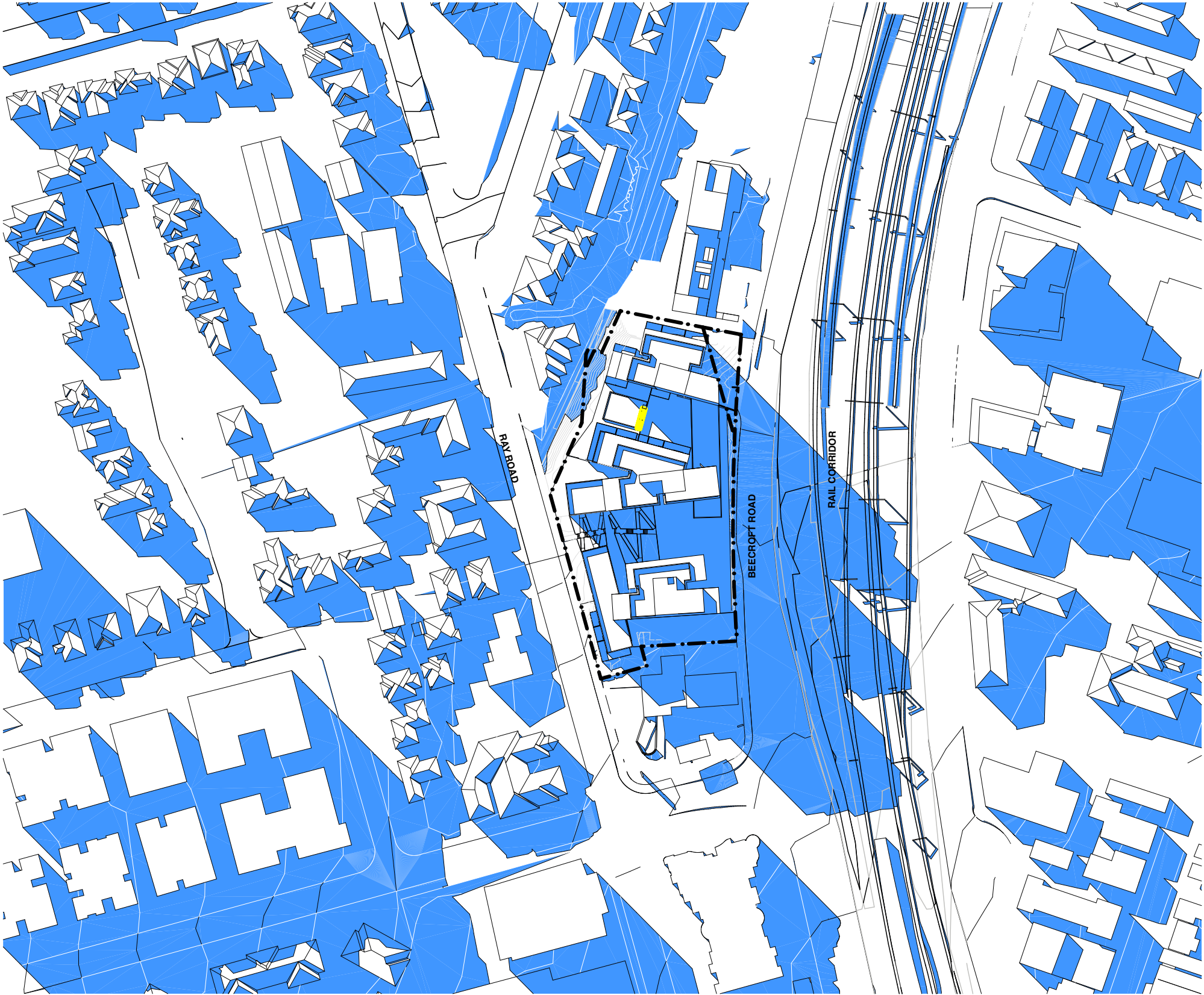
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# SUN STUDIES 3PM

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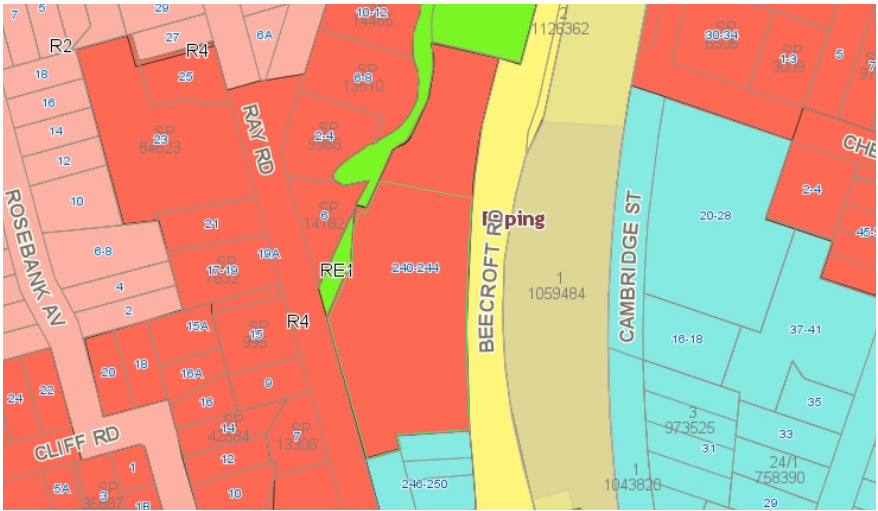
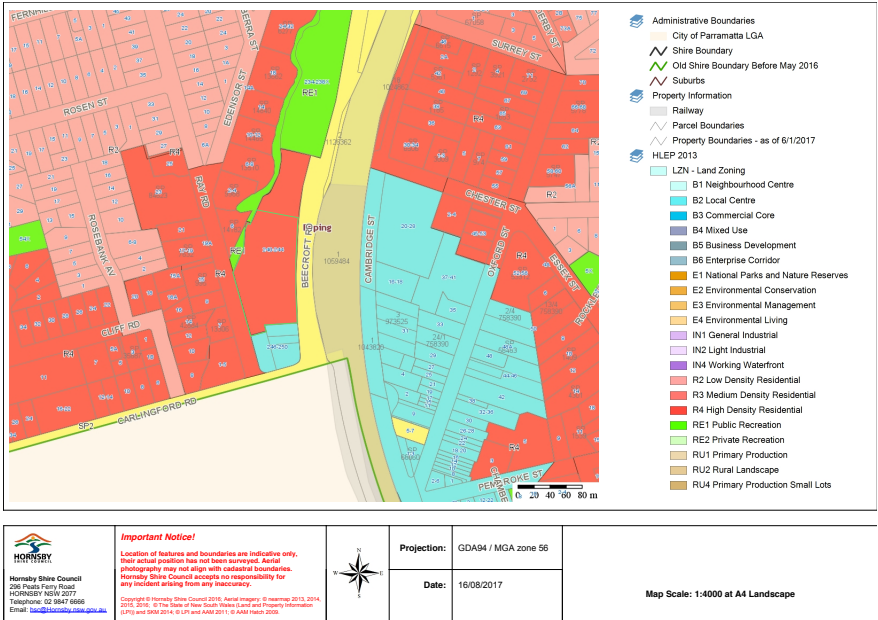




# ANALYSIS - LEP CONTROLS

HORNSBY SHIRE COUNCIL - RELEVANT LEP CONTROLS

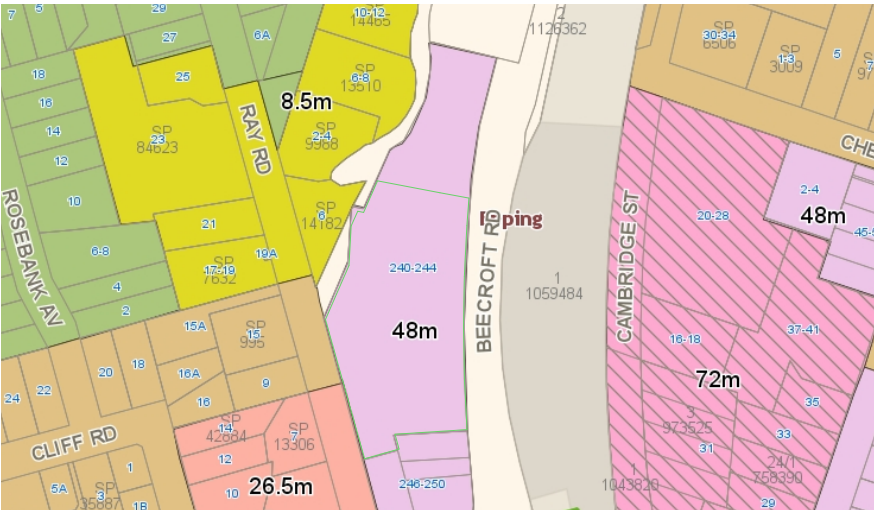
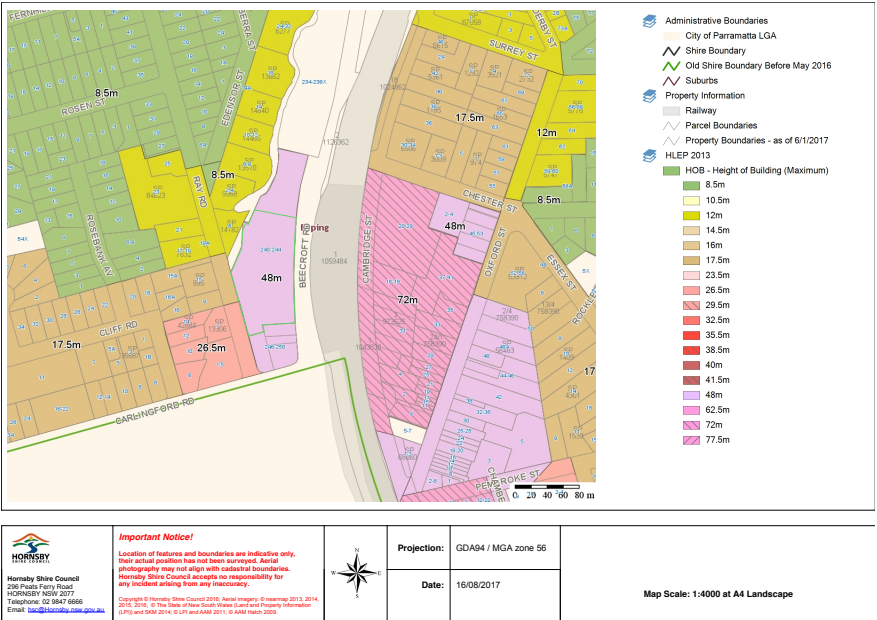
## ZONING



The study areas includes sites that are zoned:

**R4** R4 High Density Residential

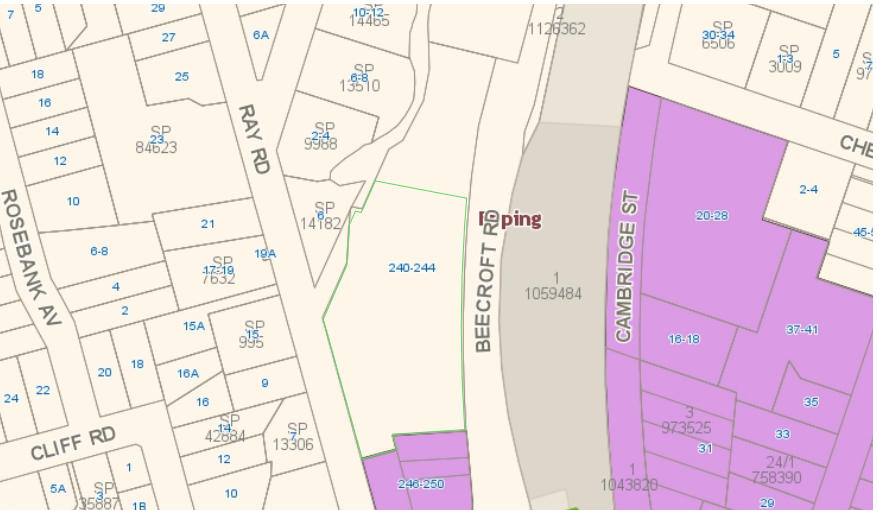
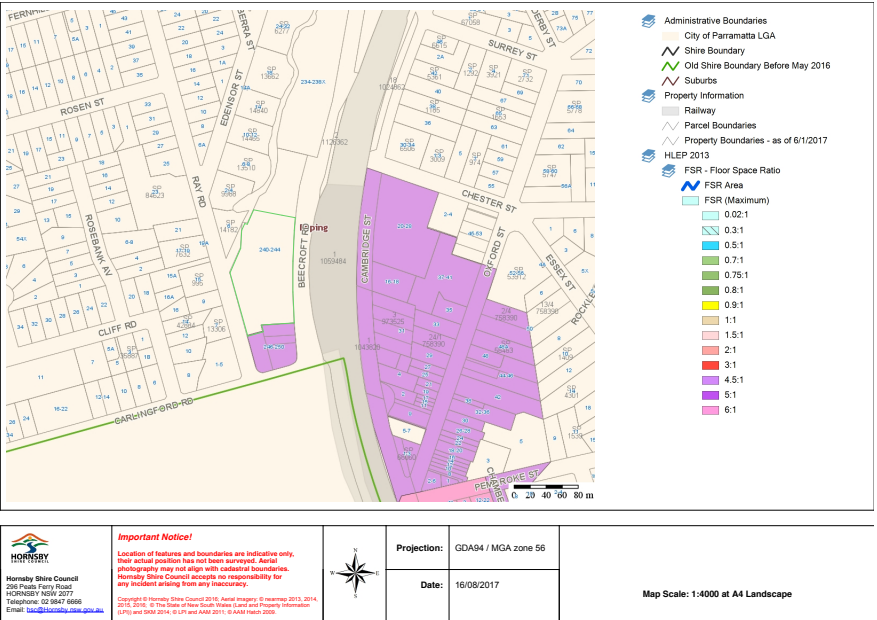
## MAXIMUM BUILDING HEIGHT



The maximum buildings heights are:

**48m**

## FLOOR SPACE RATIO



No floor space ratio applies to the site