

Appendix A : Urban Design Statement

Project Team

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Town Planner	City Plan Services
Architecture and Urban Design	Tzannes Associates
Surveyor	Lockley

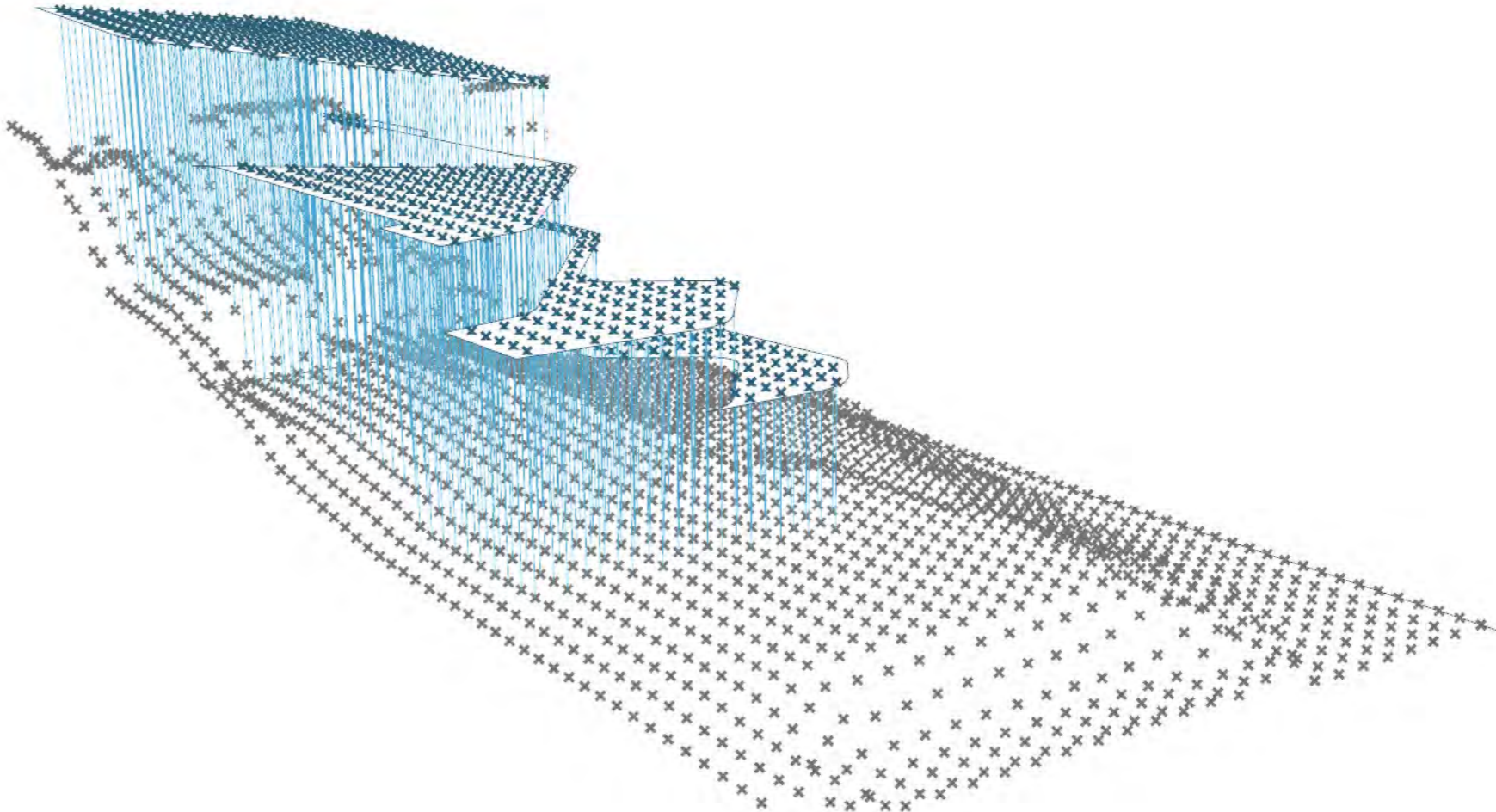
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1.1 Introduction

This report has been prepared by Tzannes Associates for and on behalf of Yarranabbe Developments Pty Ltd

It accompanies a Planning Proposal Application to Woollahra Council and provides background, explanatory material and additional information about the design brief and ambition, key driving factors, site opportunities and constraints, consultative process and design analysis which informed the architectural aspects of the proposal.



1.1.1 Urban Design Methodology

Tzannes undertook a detailed urban design assessment looking at the implications of building 5 residential dwellings on 83 and 83A Yarranabbe Road.

The assessment considered

1. Existing conditions
2. A compliant building envelope derived from applicable planning controls.
3. A Planning Proposal (PP) envelope generated from the objectives of
 - Maintaining or improving views from adjoining properties,
 - Maintaining or improving required solar access
 - Improving the built form by ameliorating excessively disparate massing on adjoining properties when viewed from the harbour, and
 - Ameliorating the negative effects of the on grade car park at 85 Yarranabbe Road.

1.1.2 Existing Conditions

The existing site condition consists of two single detached dwellings on 83 and 83A Yarranabbe Road. The existing built mass establishes current conditions for the measurement of views, solar access, building heights, setbacks, site density and street front character. Trees have been removed for the base measurement of views and solar access creating more expansive views and greater solar access than currently exists.

1.1.3 Compliant Envelope

A complying envelope was generated using the current Woollahra LEP and DCP controls. This envelope

1. Maintains the two individual sites to achieve five individual dwellings. A 3 storey dual occupancy is placed on lot 83A (Harbour side block). A 3 unit residential flat building is placed on lot 83 (street front block).
2. Minimum Street frontage – The scheme complies with the street frontage control limiting residential flat buildings to 3 units or less on a lot with a frontage less than 21m.
3. Building Height – Both building envelopes comply with a maximum height of 9.5m from existing ground level.
4. Side setbacks – Minimum side boundary setbacks of 3.0m are achieved. This side setback is increased on a pro rata basis by 0.5m for each metre or part thereof that the building height adjacent to the boundary exceeds 6.0m.
5. Rear Setback – The residential flat building on 83 is setback the required 25% of lot length from the rear boundary.
6. Foreshore Building line – The detached 3 storey dual occupancy dwelling is set to the permissible 12m foreshore setback line.
7. Street Front Setback – There is no street front setback control. The envelope is brought to the street front boundary.

Tzannes Associates have identified the following negative outcomes arising from the application of the existing controls.

1. Two buildings instead of one – Two buildings are required to provide five dwellings. This is a result of two controls. The street frontage of 18m limits the unit count in a residential flat building to 3 units. The foreshore building line for a residential flat building is 30m. These controls make the amalgamation of the two lots into one for the development of a residential flat building unfeasible by limiting a RFB to 3 units and effectively removing 83A as a developable site.
2. Poor environmental amenity - Inefficient, deep and narrow floor plates with poor view and solar amenity. The landscaped area between the RFB and the dual occupancy building is severely overshadowed.
3. Irregular, inefficient and excessive bulk at both the street and harbour front. A presentation of 9.5m at both Yarranabbe Road frontage and the 12m Harbour foreshore line.
4. A minimal foreshore building setback.
5. The compliant envelope reduces precinct and neighbouring views due to excessive bulk and height at the street and harbour front.
6. The compliant envelope reduces solar access to neighbouring properties.

1.1.4 Planning Proposal Envelope

Based on the assessment of the existing conditions and the compliant building envelope, Tzannes Associates designed a Planning Proposal envelope. This envelope ameliorates the negative outcomes of a compliant envelope and satisfies the following urban design criteria.

1. Yield – Increases the site's dwelling density from 2 dwellings to 5. A single residential flat building is in keeping with the neighbouring context.
2. Building, environmental and economic efficiency – Consolidates

two sites and two buildings into one. Ameliorates the access issues associated with providing vehicular access to the harbour front lot which is currently serviced by a suspended concrete driveway. Provides environmental and economic efficiencies by sharing construction, structure, services, façade and infrastructure.

3. Views- Maintains or improves existing precinct and neighbouring views toward the harbour, particularly the iconic views of the Harbour Bridge and Sydney Opera house. The Planning Proposal massing allows the envelope to be limited to a height of 5.7m at Yarranabbe Road with a setback of 6m from this property boundary rather than the permissible 9.5m height with no defined setback. This maintains or improves views to the Southern neighbours. The planning proposal mass is setback back 18m from the harbour foreshore line as opposed to the 12m of a compliant envelope. This increases harbour views from 85 Yarranabbe Road and 77-81 Yarranabbe Road.
4. Solar Access – Maintains or improves required solar access to adjacent neighbours and provides significant improvements compared to a compliant scheme. In particular the Planning Proposal envelope maintains winter solstice solar access to the North East kitchen windows of 77-81 Yarranabbe Road. This is achieved by subtracting a large volume on the North West allowing winter solar access to the said windows. Winter Solstice sun access is also improved to 85 Yarranabbe road in comparison to the existing conditions and a compliant envelope. The envelope provides opportunity for good solar access to all units of the future building development.
5. Street front presentation – Provides an envelope that minimises car parking and car parking utilities on Yarranabbe Road. The Planning Proposal Envelope provides the opportunity for a residential unit and an attractive and inviting building entrance at Yarranabbe Road.
6. Logical and Efficient Massing – Provides an envelope which allows the development of 5 residential flats in a stepped mass. This mass contributes to the desired precinct character which emphasises the stepping of development on the hillside.

Provides a mass with efficient floor plates accessing improved solar, view and ventilation amenity. The Planning Proposal Envelope ameliorates the negative massing consequences of a highly irregular topography not suited to the 9.5m height limitation from existing ground level.

7. Opportunity for Architectural excellence – Provides a site specific envelope responding to the desired future character of the precinct. The envelope provides the opportunity for a unique and tailored architectural response shaped by performative responses to urban and environmental conditions.

1.1.5 Technical Methodology

Tzannes used detailed 3D modelling, drafting and digital simulation tools to develop and assess two building control envelopes for the site. The site's topography, buildings and neighbouring context were constructed and assembled from survey data, architects drawings, models, on site measurement and photography.

Digital simulation was used to measure and assess the following base criteria:

1. Views and Visual Impact
2. Solar Access and Shadow Impact

1.1.6 Views

Goal: Determine existing neighbouring view corridors and develop a building envelope for the planning proposal which maintains or improves these base criteria.

Method

1. The site and the neighbouring context were modelled digitally in 3D.
2. The model was placed in a wider digital context model which includes the Harbour Bridge, the Opera house, Circular Quay and the city North CBD. This allowed the measurement and assessment of significant precinct views.
3. The model uses the existing built site development as the base case measurement for existing views. This measurement removes the existing site vegetation providing a greater view than currently exists.
4. Viewing points were placed on the neighbouring buildings at the most marginal limits. That is, the views most likely to be impeded by a new development. Lines were drawn between these viewpoints and the point of view obstruction on the existing buildings of 83 and 83A.
5. A 2D plane of vision was generated from this line and a circular surface projected to determine the existing view lines in the precinct context.
6. These existing view lines provided part of the volumetric extent of the proposed building envelope.
7. The PP envelope and the compliant envelope were assessed for view impact by placing cameras in the 3D scene from key neighbouring views and comparing existing and proposed view corridors.
8. These montages are included in the report.

1.1.7 Solar Access

Goal: Determine existing solar access to neighbours and subject site and develop a building envelope which maintains or improves the required solar access to neighbours interiors.

Method

1. The site and the neighbouring context were modelled digitally in 3D.
2. Digital day lighting systems were applied using Autodesk Revit, Autodesk 3D StudioMax, and Rhinoceros using the Ladybug plugin by Mostapha Sadeghipour Roudsari <https://www.facebook.com/LadyBugforGrasshopper>
3. Existing daylight access was measured for the site using winter solstice 21 June to determine the most marginal sun access.
4. Particular attention was given to winter daylight access for the Eastern façade kitchen windows of 77-81 Yarranabbe Road, the Western neighbour.
5. A daylight access cone was generated for the Eastern kitchen windows of 77-81. This cone was subtracted from the PP envelope to maintain solar access these windows.
6. The combination of solar access and the existing view lines provided the volumetric extent of the proposed building envelope for the PP.
7. The PP envelope was assessed using daylight hour access and shadow studies to demonstrate the positive effects of the PP envelope.
8. The compliant envelope derived from the existing planning controls was also measured and compared to the PP envelope. This comparison shows the PP envelope maintains or improves current winter solstice solar access and provides an improved result compared to a compliant envelope.

1.2 The Site

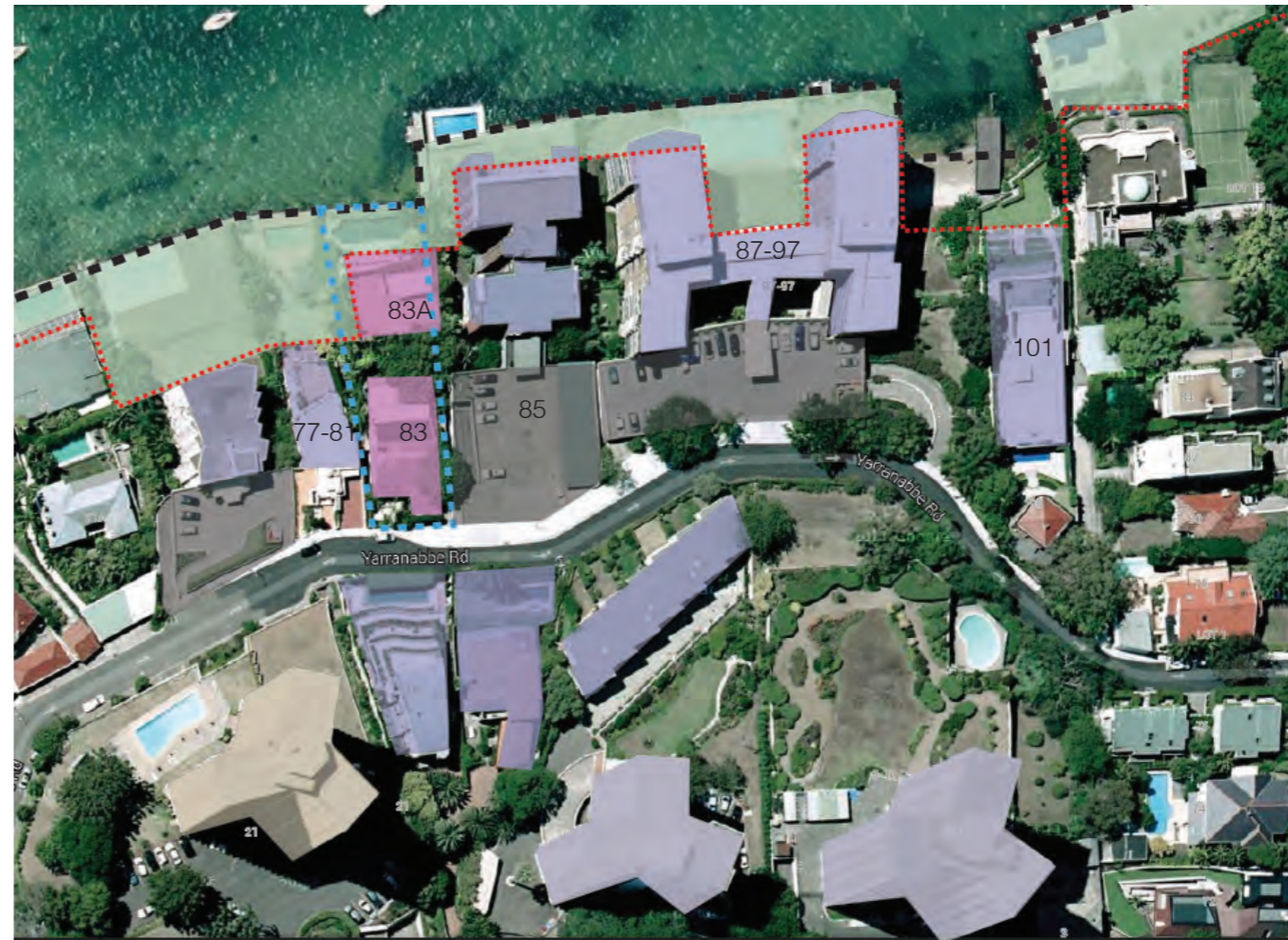
1.2.2 Precinct Context









- The site comprises two lots, 83 and 83A Yarranabbe Road which currently have single residential dwellings.
- The site is surrounded by residential flat buildings. (RFB) which range in height from 5 to 22 storeys.



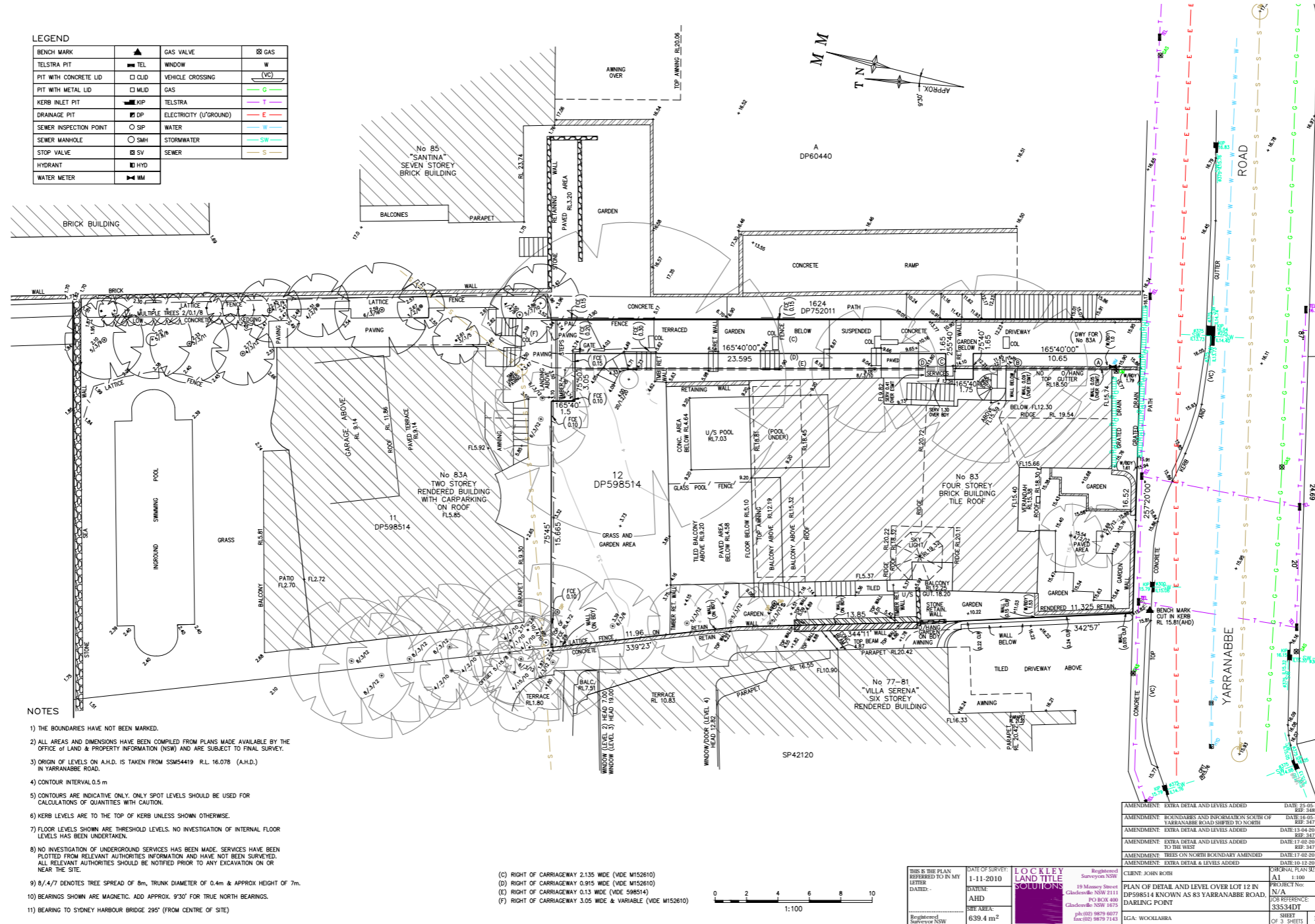
1.2.3 Usage

- The precinct contains single dwellings and residential flat buildings.
- The site has two detached dwellings.
- The site is surrounded by residential flat buildings.
- 85 Yarranabbe Road to the East is a seven storey brick building.
- 77-81 Yarranabbe Road to the West is a six storey rendered building.
- To the South are high rise residential flat buildings.



	Detached Dwelling		Existing Setback		Existing Foreshore Setback
	Residential Flat Building		Public Open Space		High Tide Mark
			Open Carpark		Site Boundary

1.2.4 Survey



NOT TO SCALE

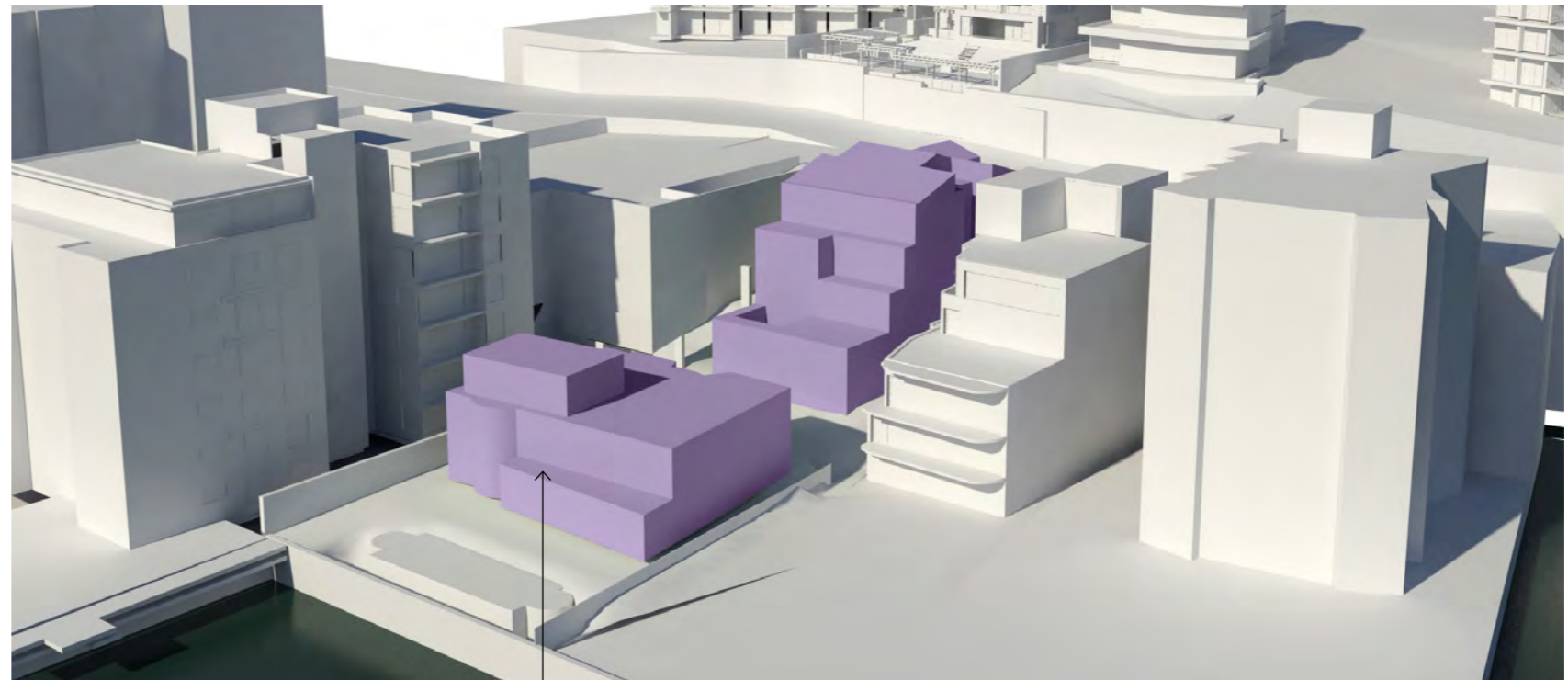
1.2.5 Street Front Character

- The street frontage is characterised by hard stand parking lots and garage entrances.
- The Southern side of Yarranabbe Road is fronted by a 4-5m high masonry wall with 1 basement parking entrance.



1.2.6 Foreshore Context

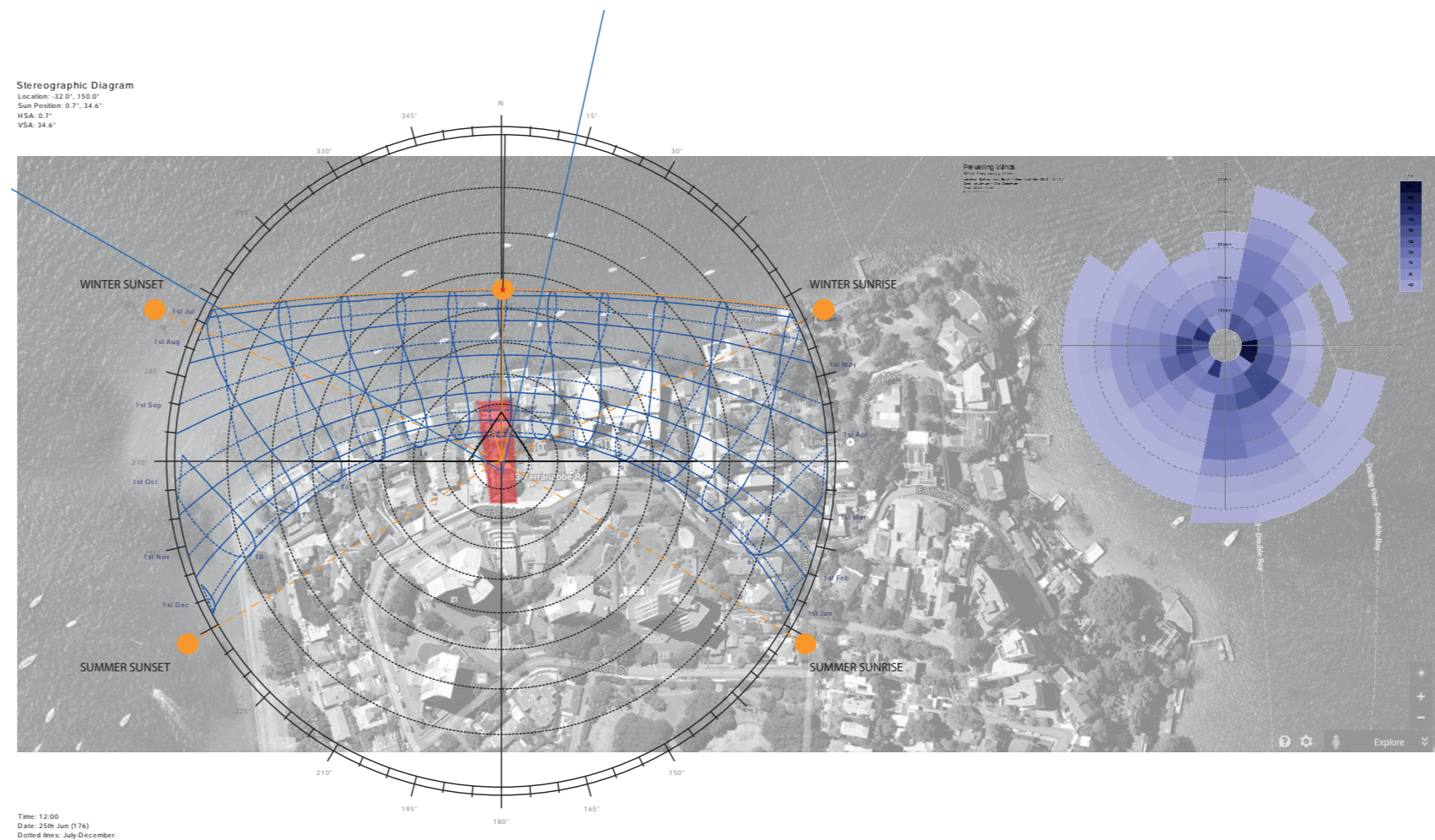
- The harbour front is characterised by a sandstone seawall fronting private residences.
- 83A fronts the harbour and has a three storey detached residence set 12m from the foreshore.
- 83 and 83A share access to a wooden jetty aligned to their Eastern boundary.
- The site is surrounded by residential flat buildings.
- There are inconsistent building setbacks from the harbour foreshore line.
- 85 Yarranabbe Road to the immediate East is a 7 storey residential flat building set 7m from the foreshore line.
- 77-81 Yarranabbe Road is a 6 storey residential flat building set 30m from the foreshore.



Existing built form

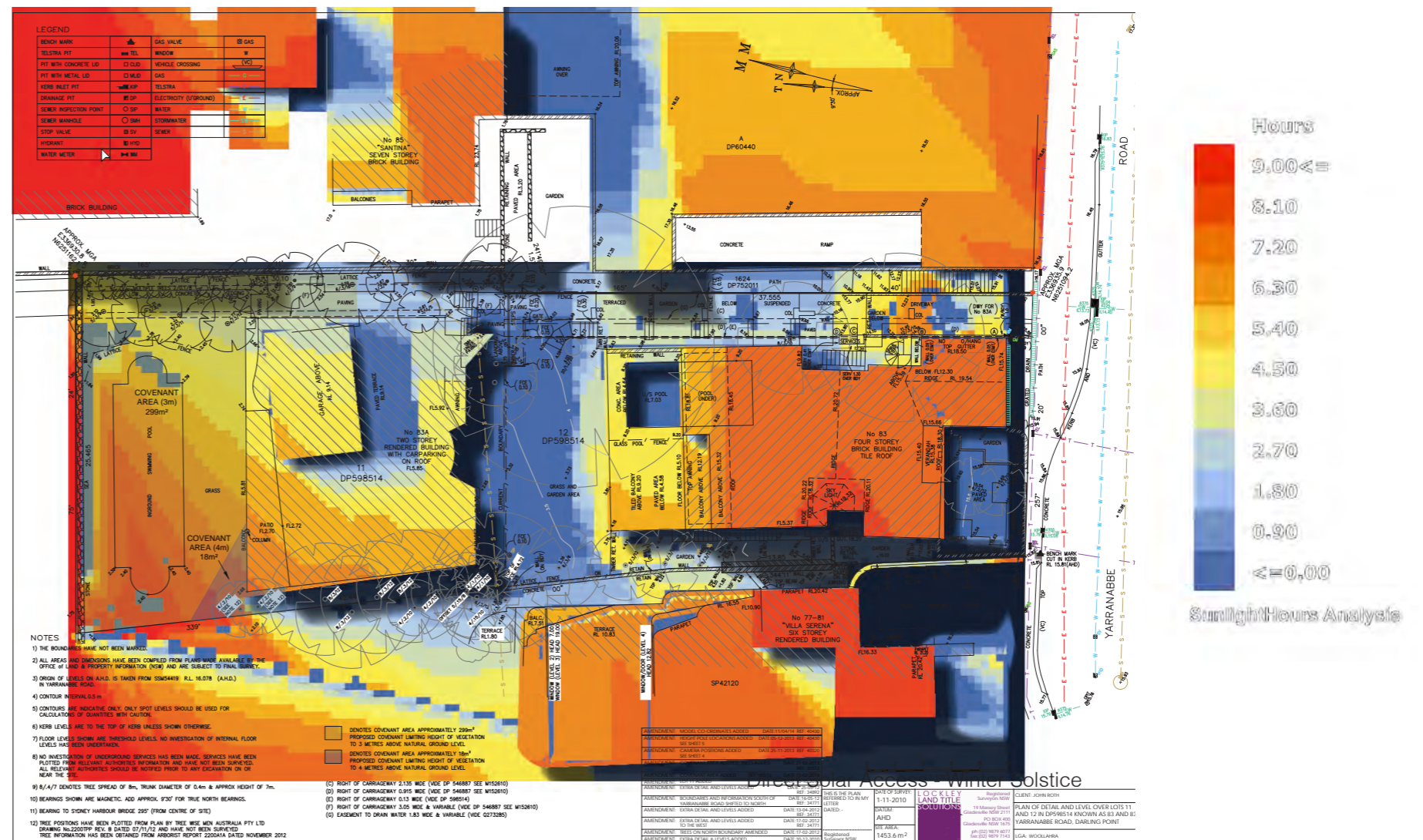
1.2.7 Aspect, Orientation, Solar And Wind

- The site is aligned along a near North South axis with harbour views to the North.
- The site is long and narrow with limited exposure to direct sunlight.
- A 7 storey residential building at 85 Yarranabbe Road on the site's Eastern boundary significantly overshadows the site in the morning.
- A 6 storey residential flat building at 77-81 Yarranabbe Road on the Western boundary overshadows part of the site in the afternoon.



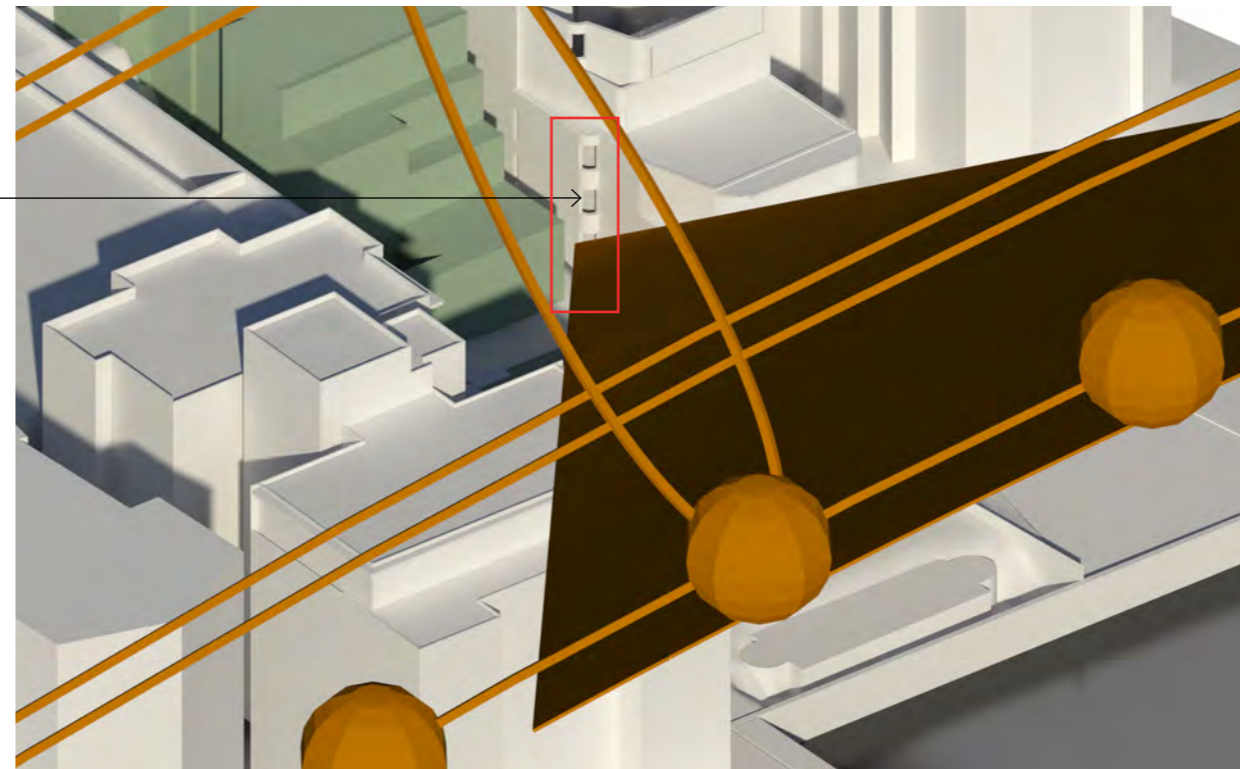
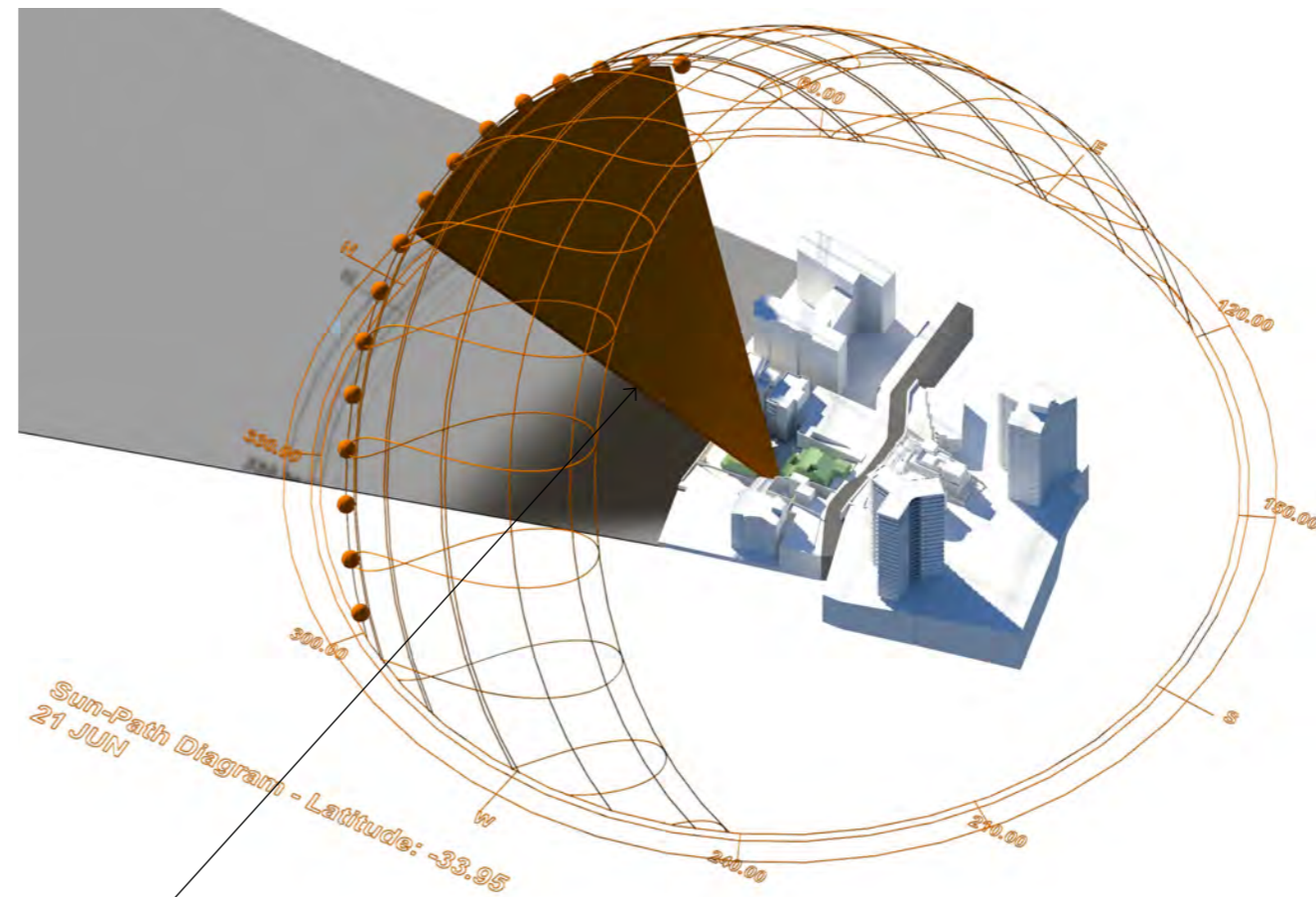
1.2.8 Solar Access

- The 2 lots are oriented North South.
- The lots have limited solar access
- Lot 83A is overshadowed in the morning by 85 Yarranabbe Road.
- Lot 83 is overshadowed in the morning by 85 Yarranabbe Road and in the afternoon by 77-81 Yarranabbe Road.
- The yard separation between 83A and 83 Yarranabbe Road receives limited direct solar access in summer and zero direct solar access in winter.



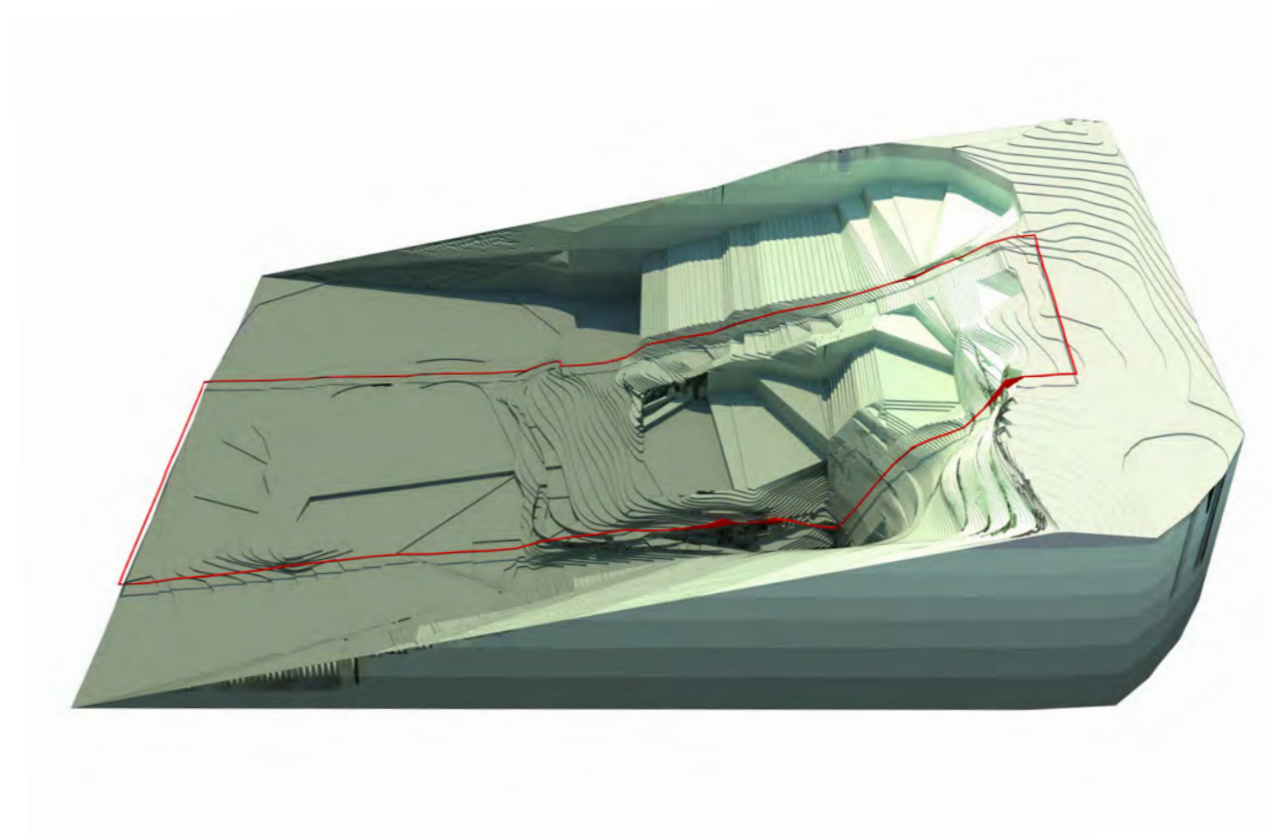
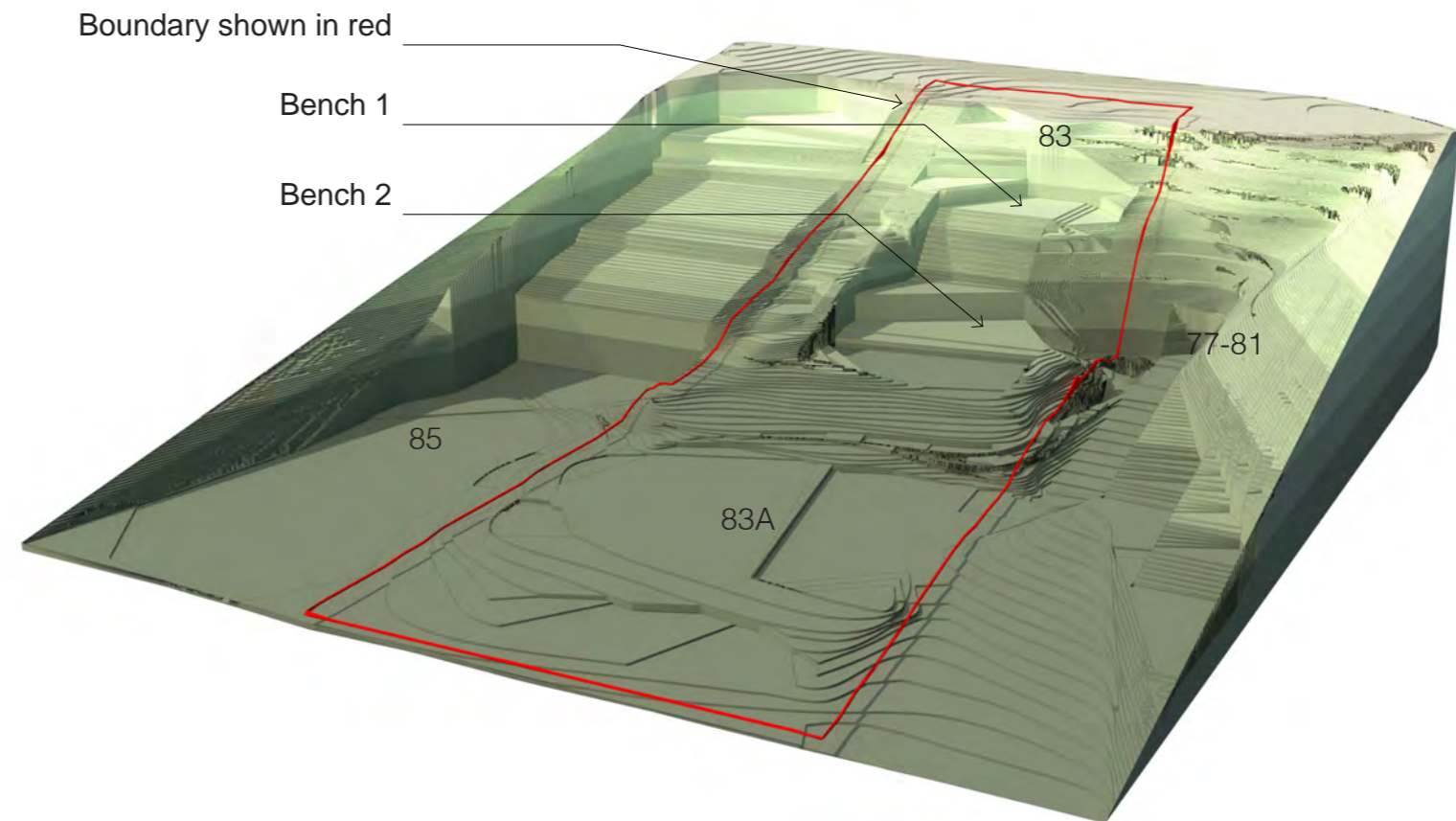
1.2.9 Solar Access To 77-81 Yarranabbe Road

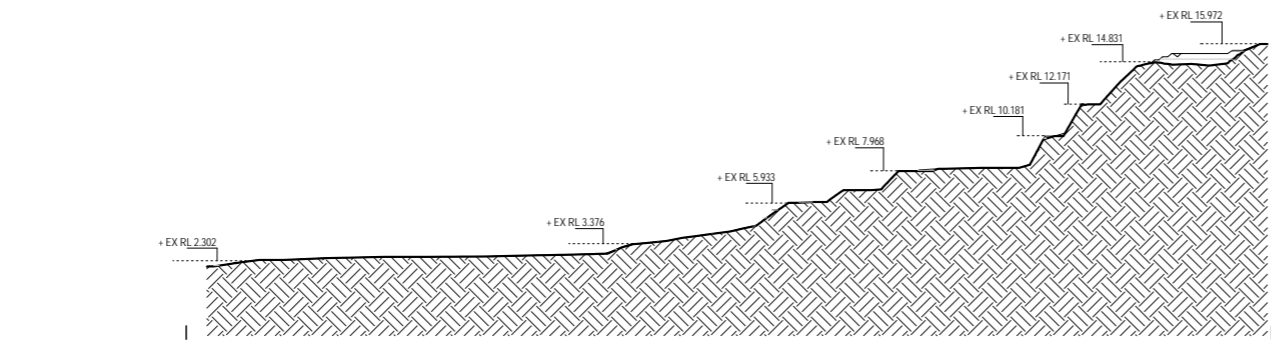
- Kitchen Windows on the Eastern wall of 77-81 Yarranabbe Road receive winter solstice sun access on level 2 and 3 from 9:30am and on level 1 from 10am
- Winter solstice solar access is illustrated in the adjoining diagrams.
- Avoiding built form within this solar cone maintains existing access to winter sunlight.
- Extent of winter solstice sun access to the Eastern facade kitchen windows of 77-81 Yarranabbe Road.
- 77-81 Eastern facade kitchen windows viewed from winter solstice sun path



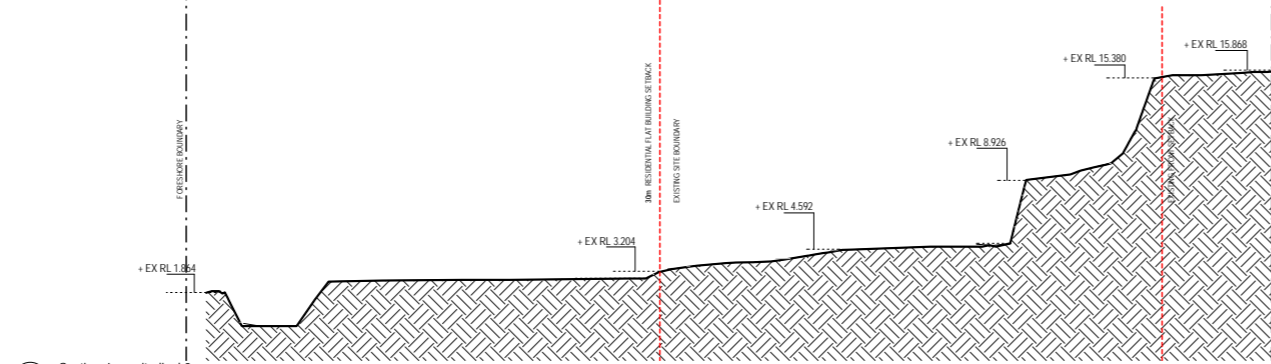
1.2.10 Topography

- The site has been extensively excavated creating an extremely varied and uneven topography.
- The application of a height control based on height from existing ground level creates an unsatisfactory building envelope.
- Lot 83 slopes steeply from Yarranabbe Road toward the harbour.
- Lot 83 has been excavated creating 2 distinct benches for building on the steep slope off Yarranabbe Road.
- Lot 83A is flat and meets a man made seawall.
- The lots also slope downward from East to West.
- The lots are approximately 1.5 - 2m higher than lot 77-81 and 0.5m higher than 85 near the sea wall.

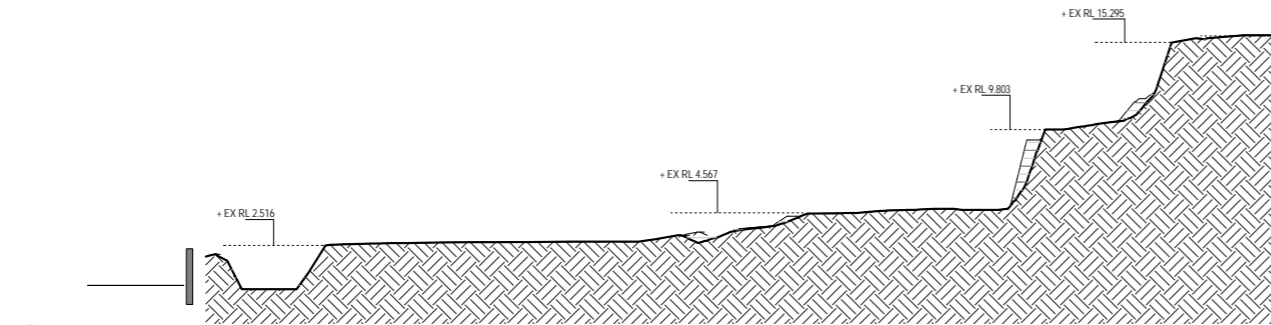




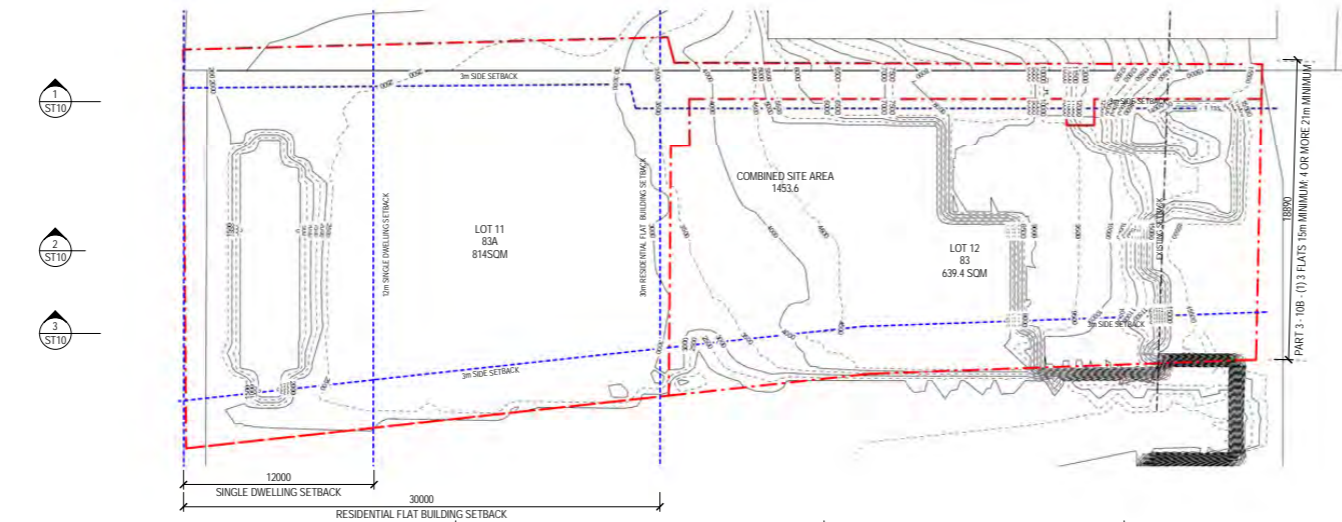
1 Section Longitudinal
Scale 1:200



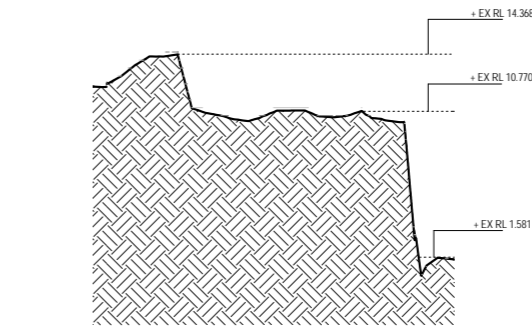
2 Section Longitudinal 2
Scale 1:200



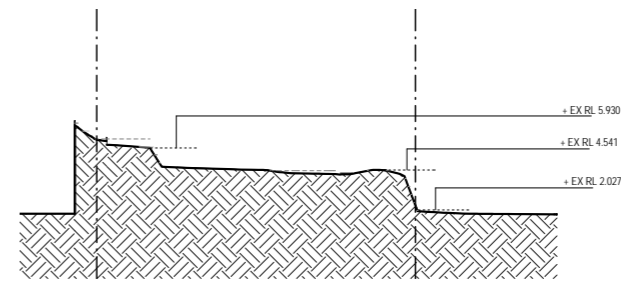
3 Section Longitudinal 3
Scale 1:200



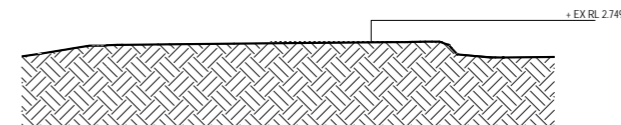
7 SITE-TOPOGRAPHY
Scale 1:200



4 Cross Section 4
Scale 1:200



5 Cross Section 5
Scale 1:200



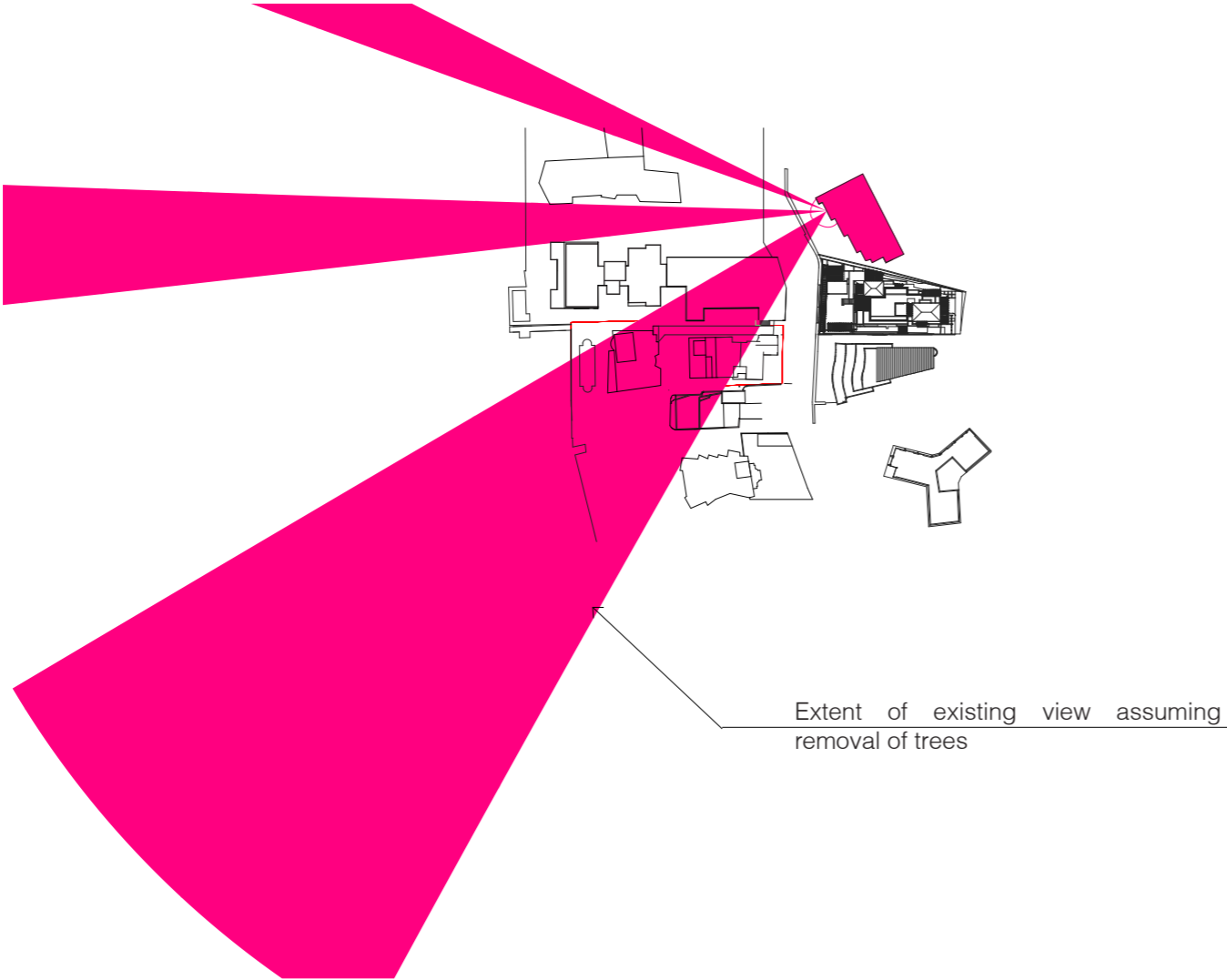
6 Cross Section 6
Scale 1:200

1.2.11 Views

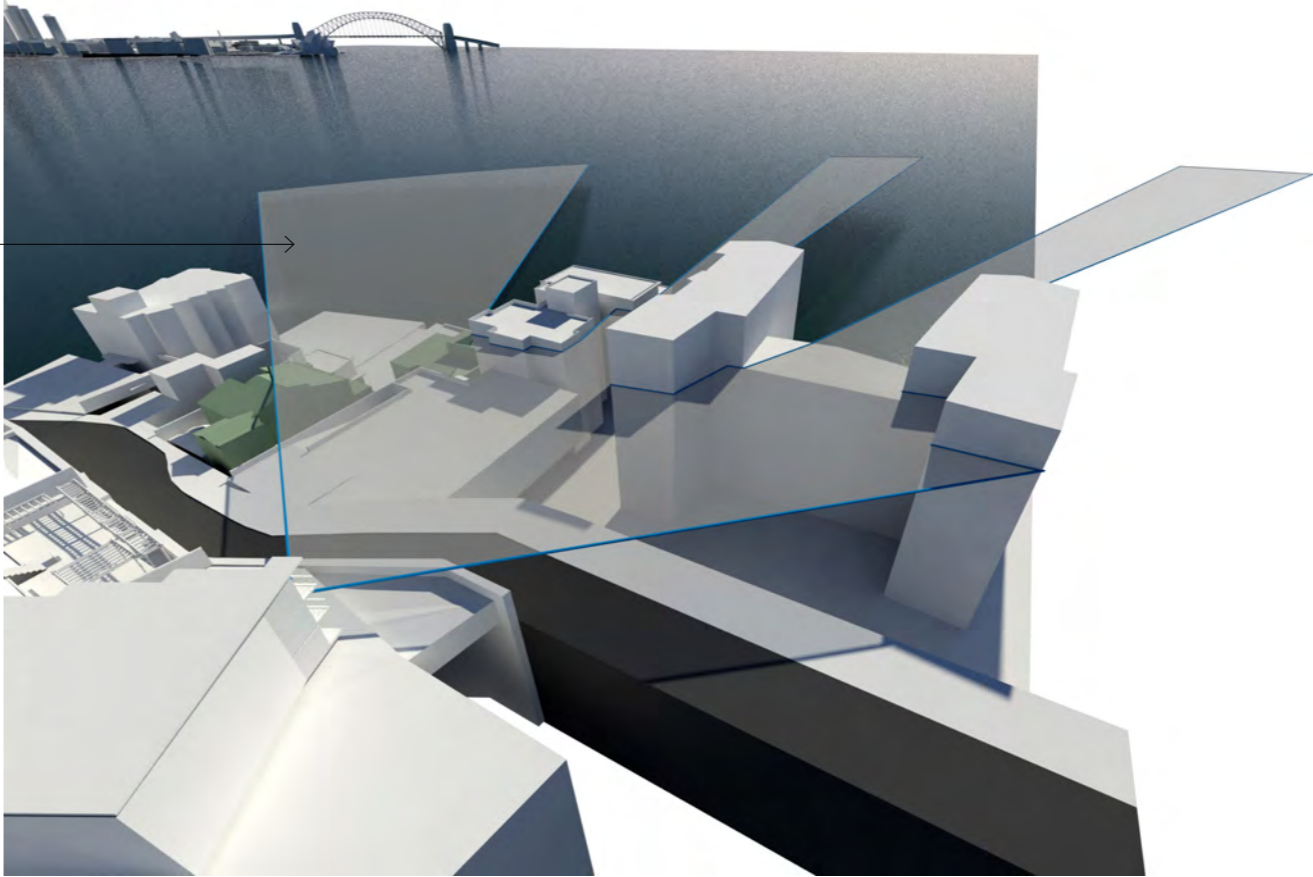
- The site has extensive harbour views to the North and West
- Views are constrained to the East by the adjacent seven storey unit block.
- There are significant views to the harbour over the site from the South and South East as shown opposite.
- Detailed view studies from adjoining properties are on the following pages.



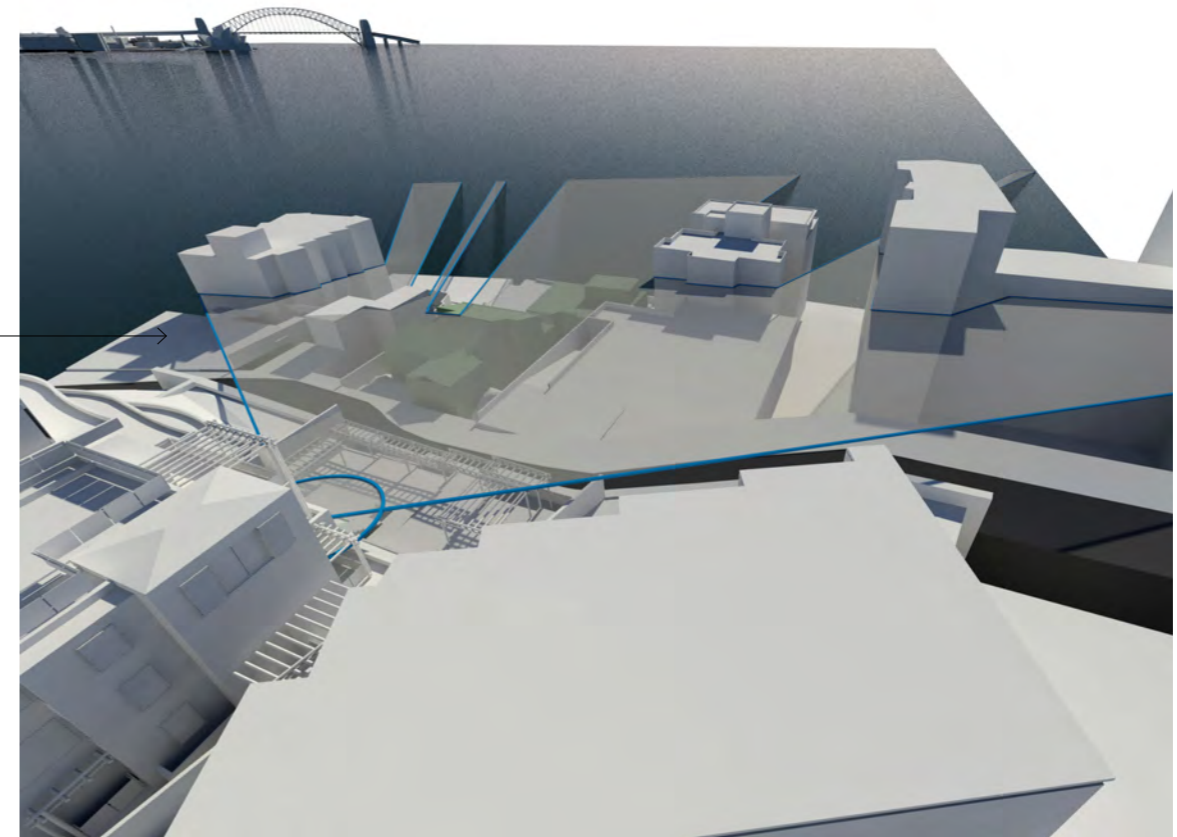
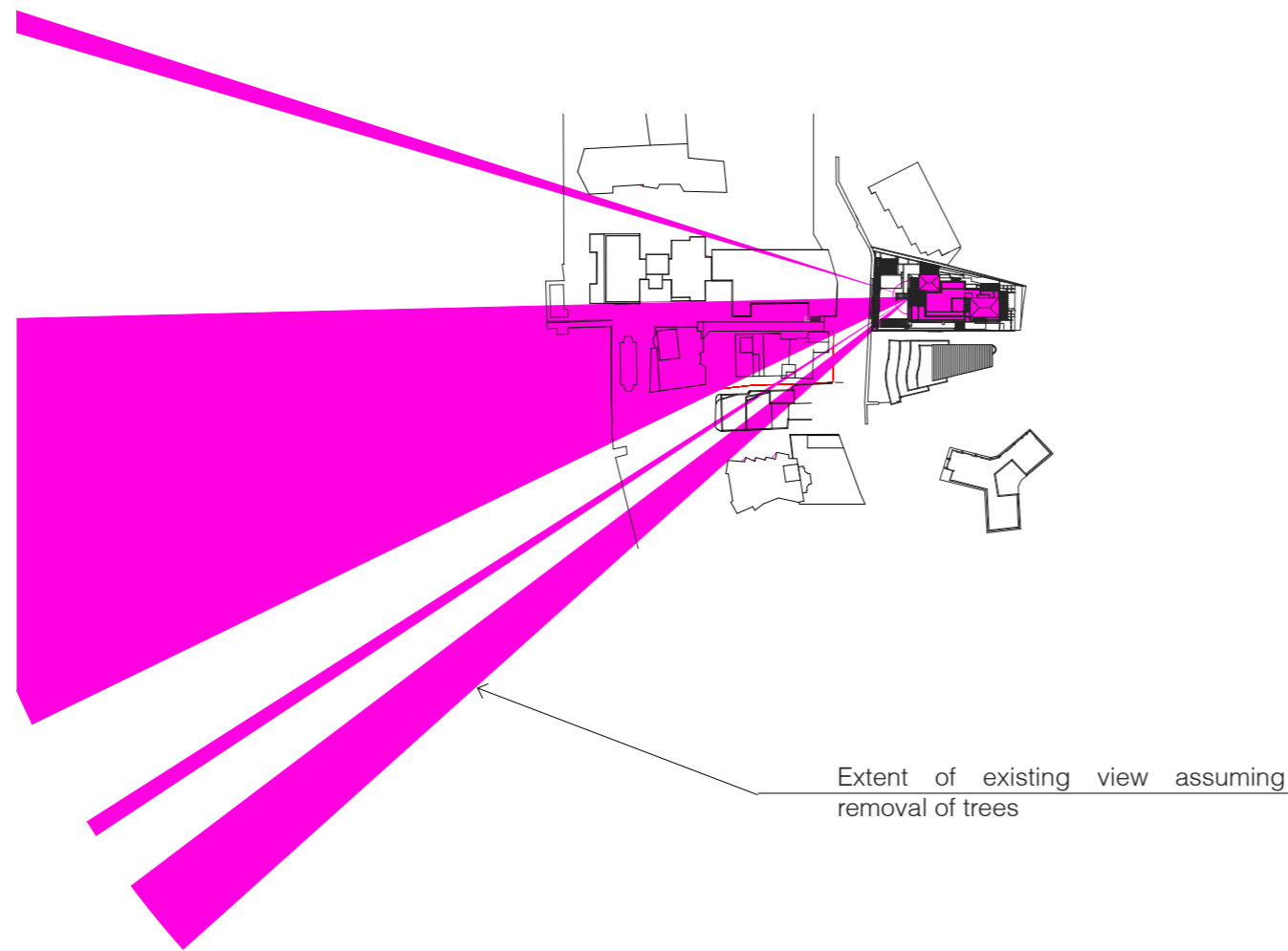
1.2.12 Views 13-15 Thornton St Unit 4 _Level 1



Note: All view studies have been undertaken with the removal of existing trees. This has given more expansive precinct views than are currently available. Design work has been undertaken to maintain or improve these measured view corridors.

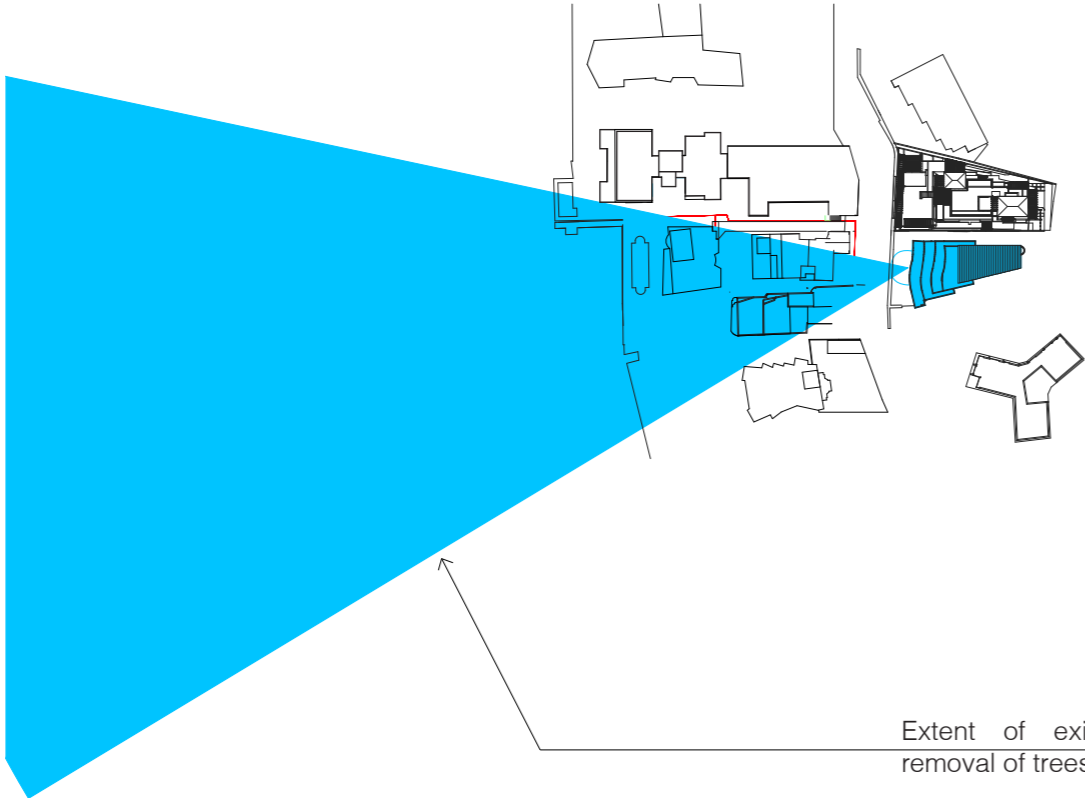


1.2.13 Views 17 Thornton St_Level 2

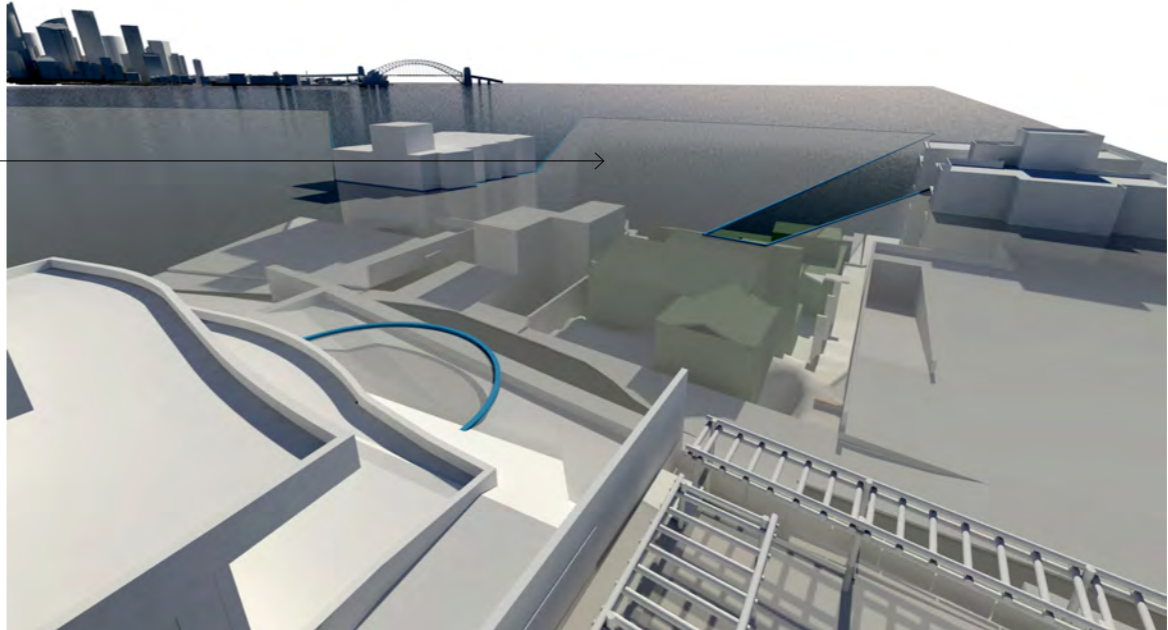


1.2.14 Views

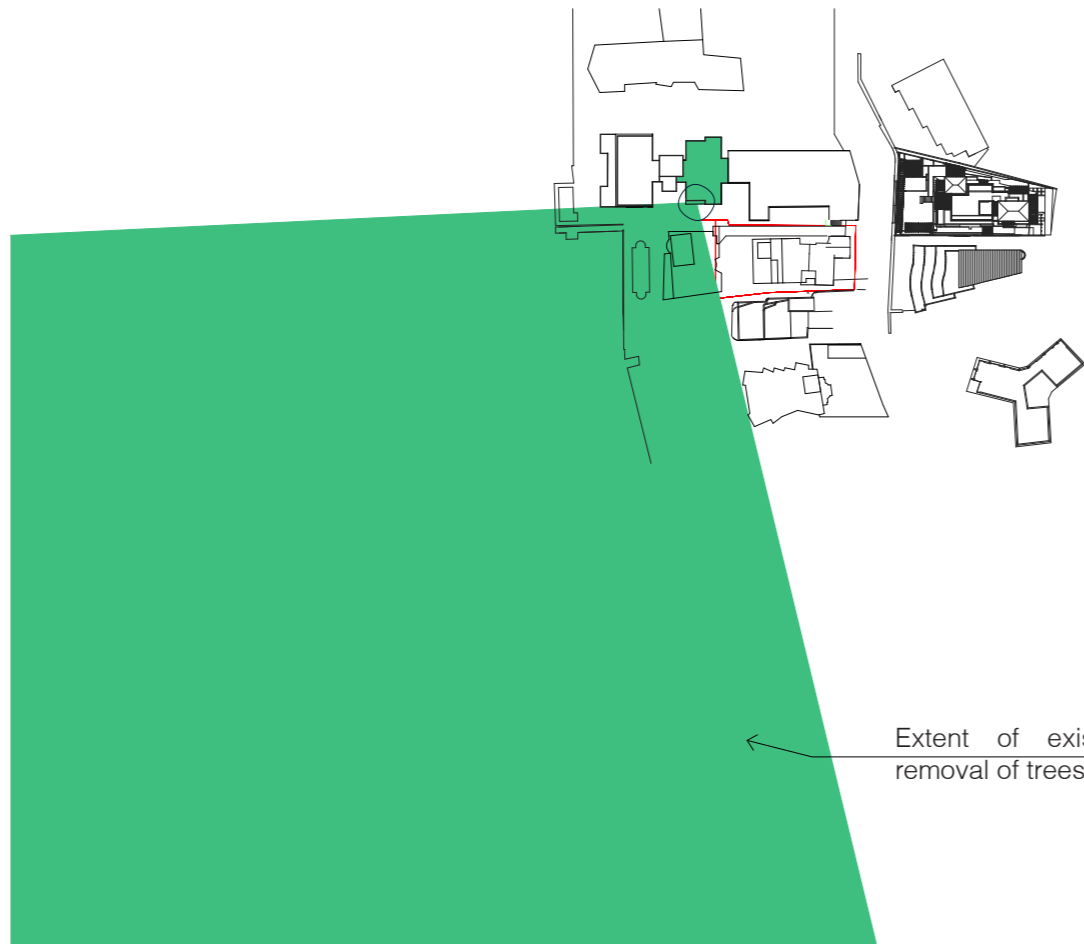
17A Thornton St_ Level 1



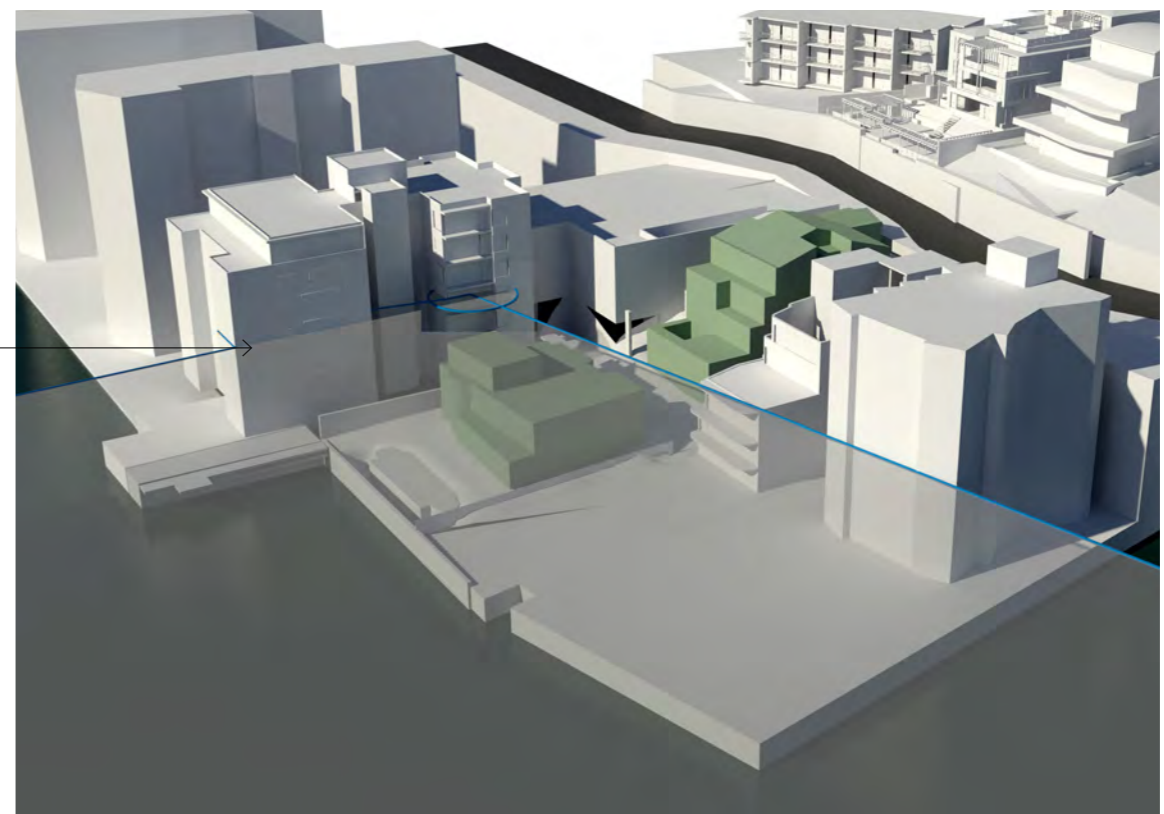
Extent of existing view assuming removal of trees



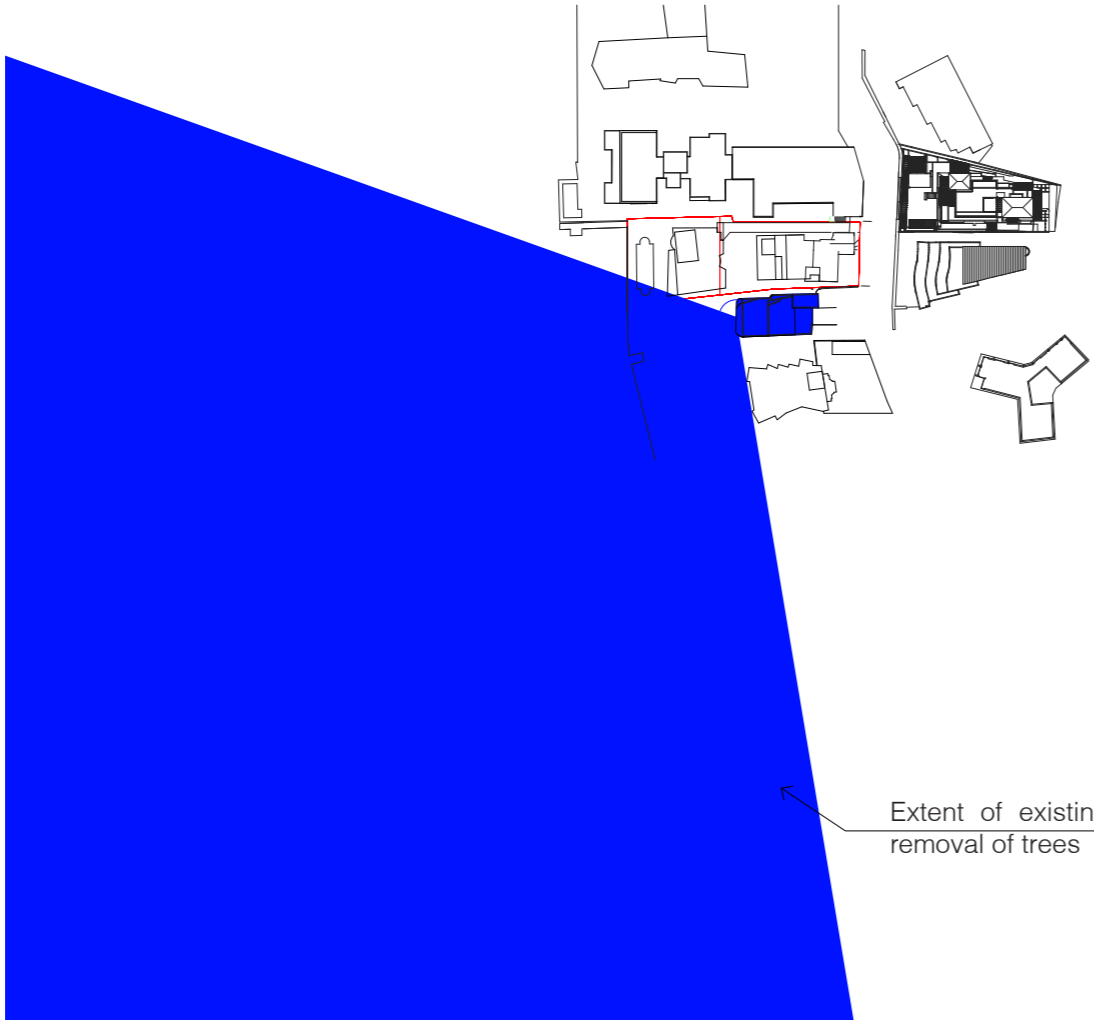
1.2.15 Views 85 Yarranabbe Road South Level 4



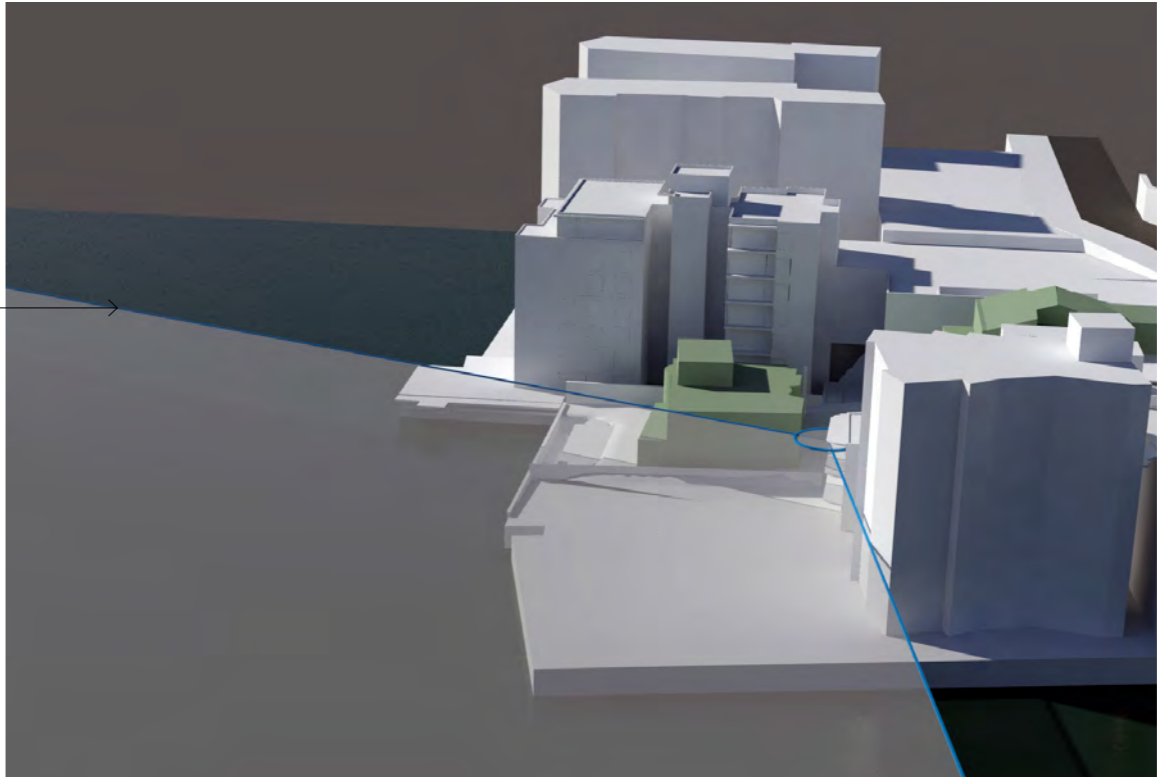
Extent of existing view assuming removal of trees



1.2.16 Views 77-81 Yarranabbe Road_Level 3



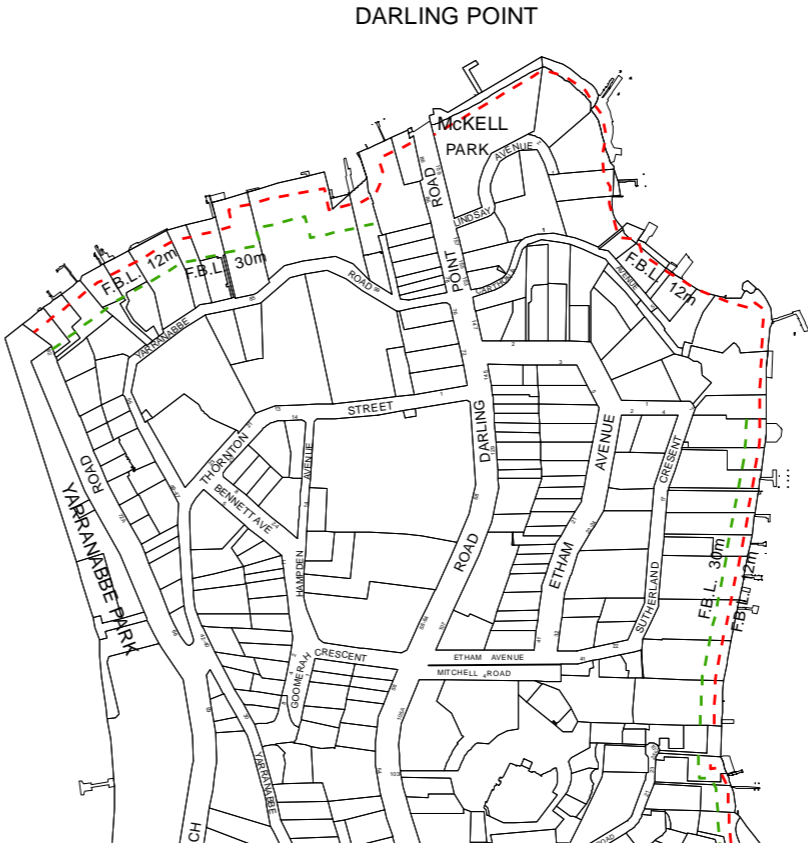
Extent of existing view assuming removal of trees



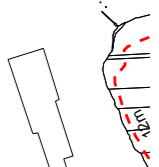
1.3 Planning Provisions

1.3.1 LEP - Foreshore Building Line

LEGEND	
	FORESHORE BUILDING LINE
F.B.L. 12m	12 METRES
F.B.L. 30m	30 METRES
[Dotted line symbol]	AREAS EXCLUDED FROM PLAN
[Dash-dot line symbol]	LOCAL GOVERNMENT AREA BOUNDARY

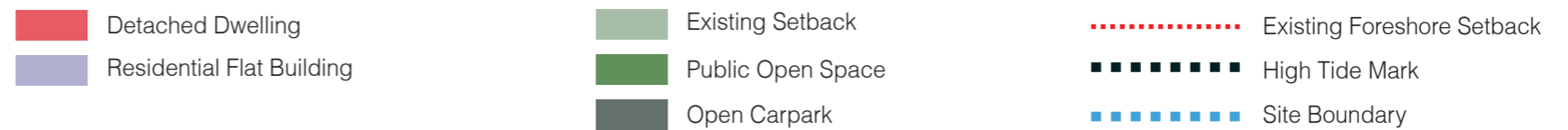


Double Bay



1.3.2 LEP- Foreshore Building Line- Existing Conditions

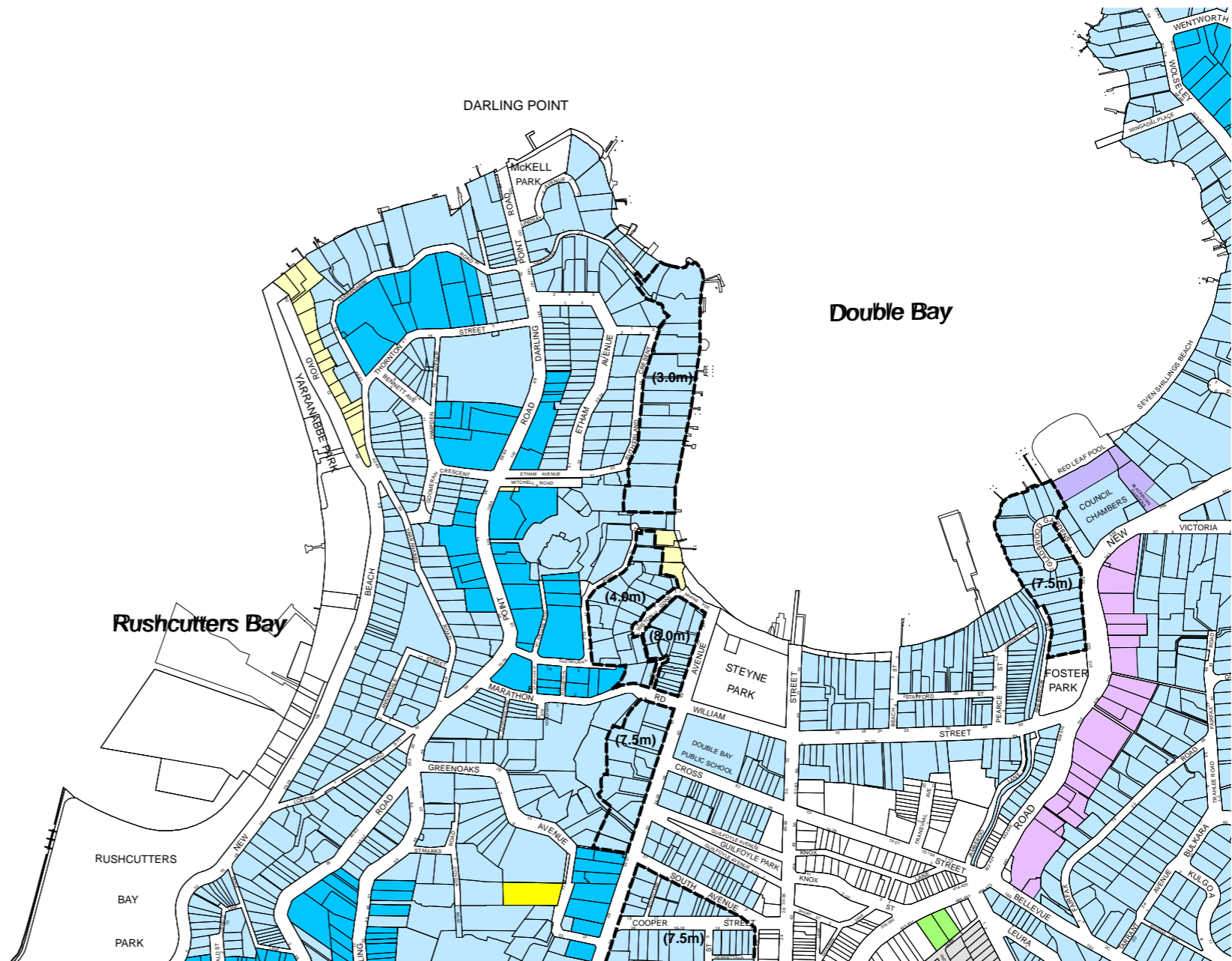
- 83A Yarranabbe Road is setback 12m from the foreshore line.
- 85 and 87 Yarranabbe Road are set 7m from the foreshore line.
- 77 -81 Yarranabbe is setback 30m from the foreshore line.



1.3.3 LEP - Height Control













- The current 2009 LEP specifies a 9.5m height limit from existing ground line.
- The Draft LEP 2013 specifies a height of 10.5m from existing ground line.

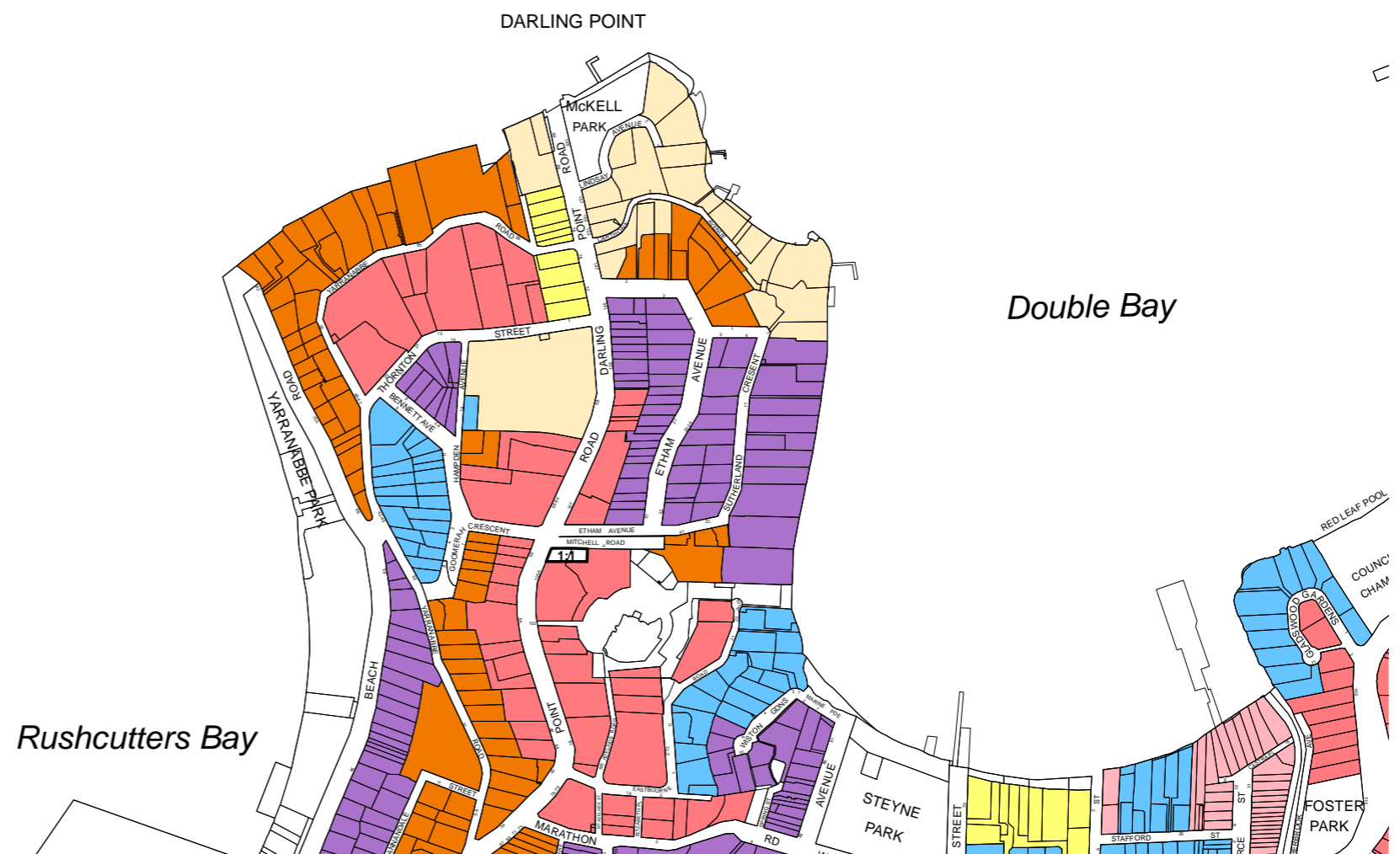
LEGEND	
	6.5m MAXIMUM HEIGHT
	8.2m MAXIMUM HEIGHT
	9.0m MAXIMUM HEIGHT
	9.5m MAXIMUM HEIGHT
	10.5 MAXIMUM HEIGHT
	11.5m MAXIMUM HEIGHT
	12.0m MAXIMUM HEIGHT
	13.0m MAXIMUM HEIGHT
	13.5m MAXIMUM HEIGHT
	15.0m MAXIMUM HEIGHT
	16.5m MAXIMUM HEIGHT
	18.0m MAXIMUM HEIGHT
	21.5m MAXIMUM HEIGHT
	24.0m MAXIMUM HEIGHT
GENERAL	
	AREAS EXCLUDED FROM THE PLAN
	LOCAL GOVERNMENT AREA BOUNDARY
<small>Base Mapping Data supplied by New South Wales Department of Lands, Panorama Avenue BATHURST NSW 2795 www.lands.nsw.gov.au</small>	



1.3.4 LEP - FSR and Minimum Lot Sizes - Current LEP

- The Woollahra LEP 1995 specifies a maximum FSR of 0.875:1
- The 1995 LEP does not specify a minimum lot size

LEGEND	
MINIMUM ALLOTMENT SIZE	MAXIMUM FLOOR SPACE RATIO
	1100m ²
	675m ²
	400m ²
	350m ²
	230m ²
	0.625:1
	0.75:1
	0.875:1
	1:1
	1.25:1
GENERAL	
1. FLOOR SPACE RATIO STANDARDS APPLYING TO THE LAND ZONED "BUSINESS" ARE GIVEN ON THE MAP	
2.  AREAS EXCLUDED FROM PLAN	
3.  LOCAL GOVERNMENT AREA BOUNDARY	





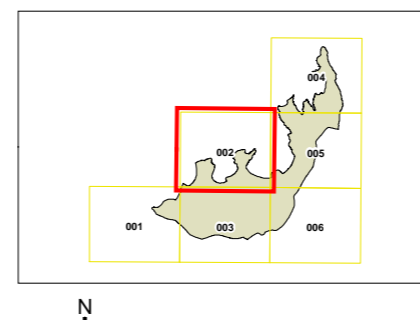
**Woollahra Local Environmental Plan
DRAFT FOR EXHIBITION 2013**

Lot Size Map - Sheet LSZ_002

Minimum Lot Size (sq m)

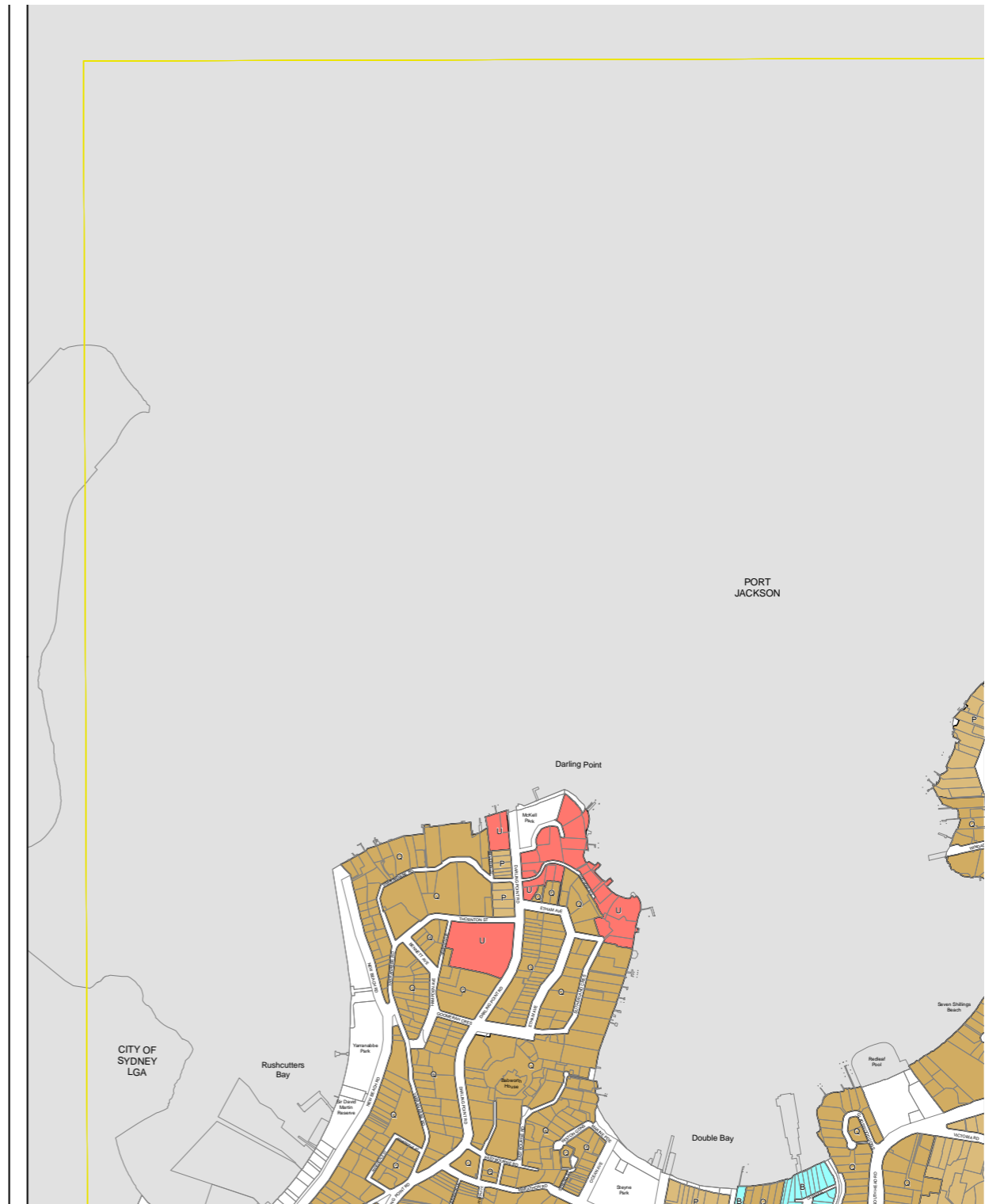
B	230
E	350
F	400
P	675
Q	700
U	1100

Cadastre
 Cadastre 25/7/13 © Woollahra Municipal Council



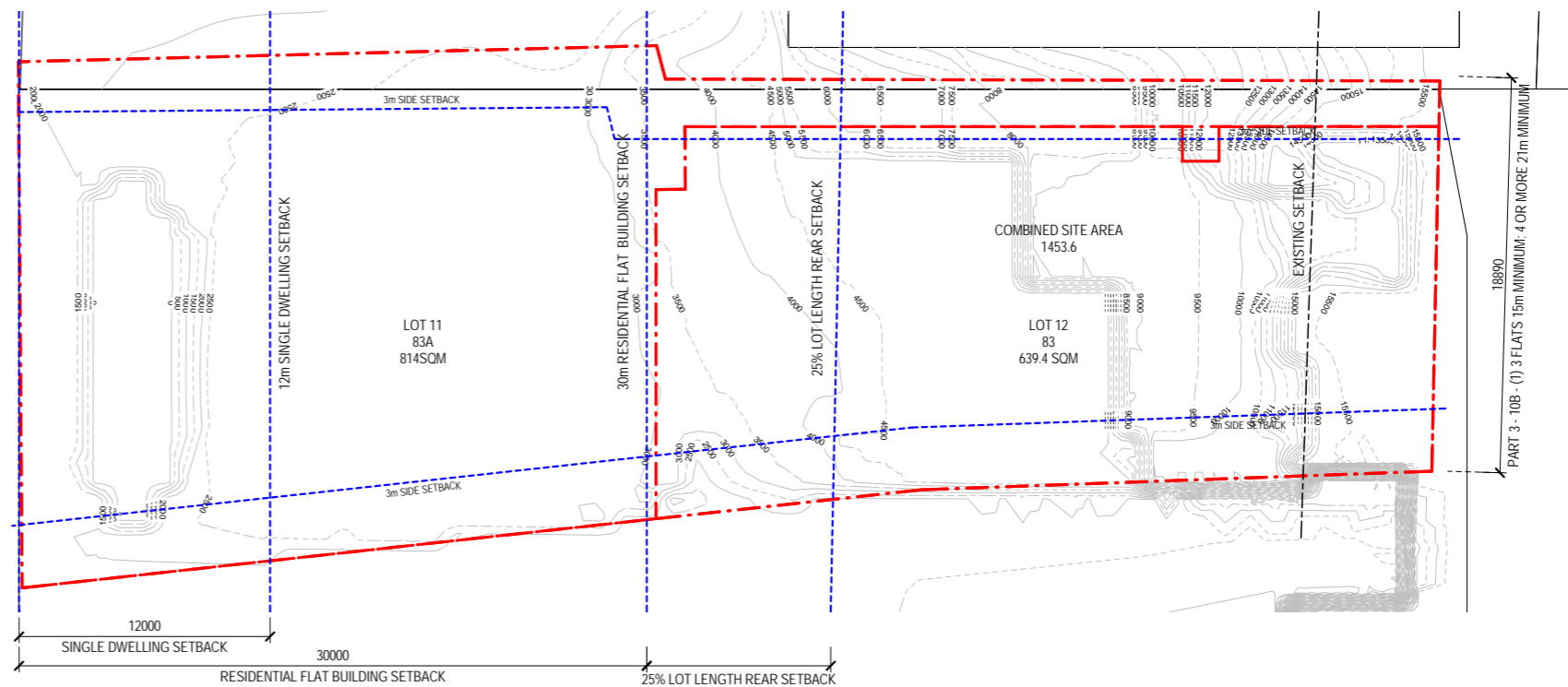
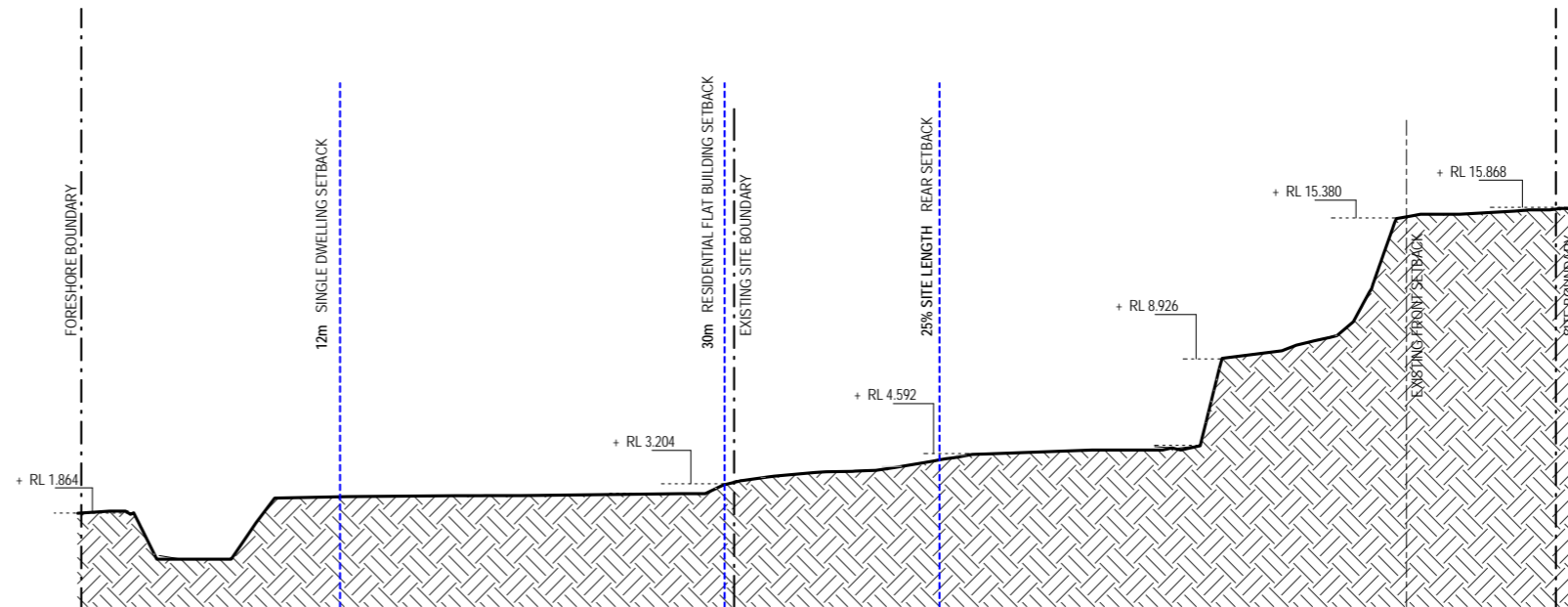
1.3.5 FSR and Minimum Lot Sizes - Draft LEP 2013

- The Draft LEP specifies a maximum FSR of 0.9 : 1
- The Draft LEP 2013 specifies a minimum lot size of 700Sqm



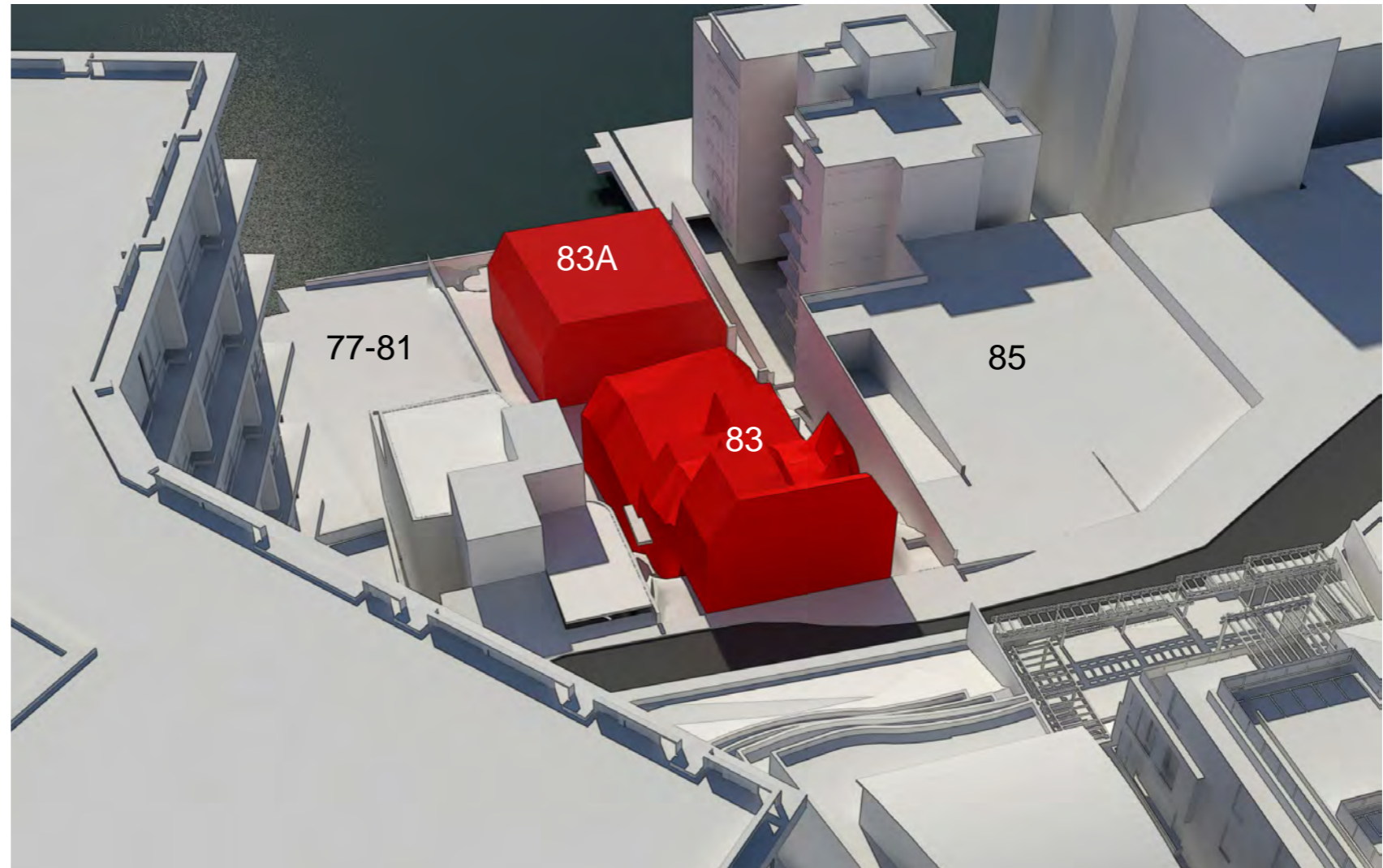
1.3.6 DCP Controls

- Front Setbacks - C 5.2.2 Unless otherwise indicated in Part 4 the front setbacks are consistent with those of adjoining buildings.
- C 5.2.3 Buildings have a minimum rear setback of 25% of the average site length
- Side boundary setbacks - C 4.1.4 Where the site lot width is equal to or exceeds 18.0m at the front alignment, development has a minimum side boundary setback of 3.0m .This side setback is increased on a pro rata basis by 0.5m for each metre or part thereof that the building height adjacent to the boundary exceeds 6.0m.

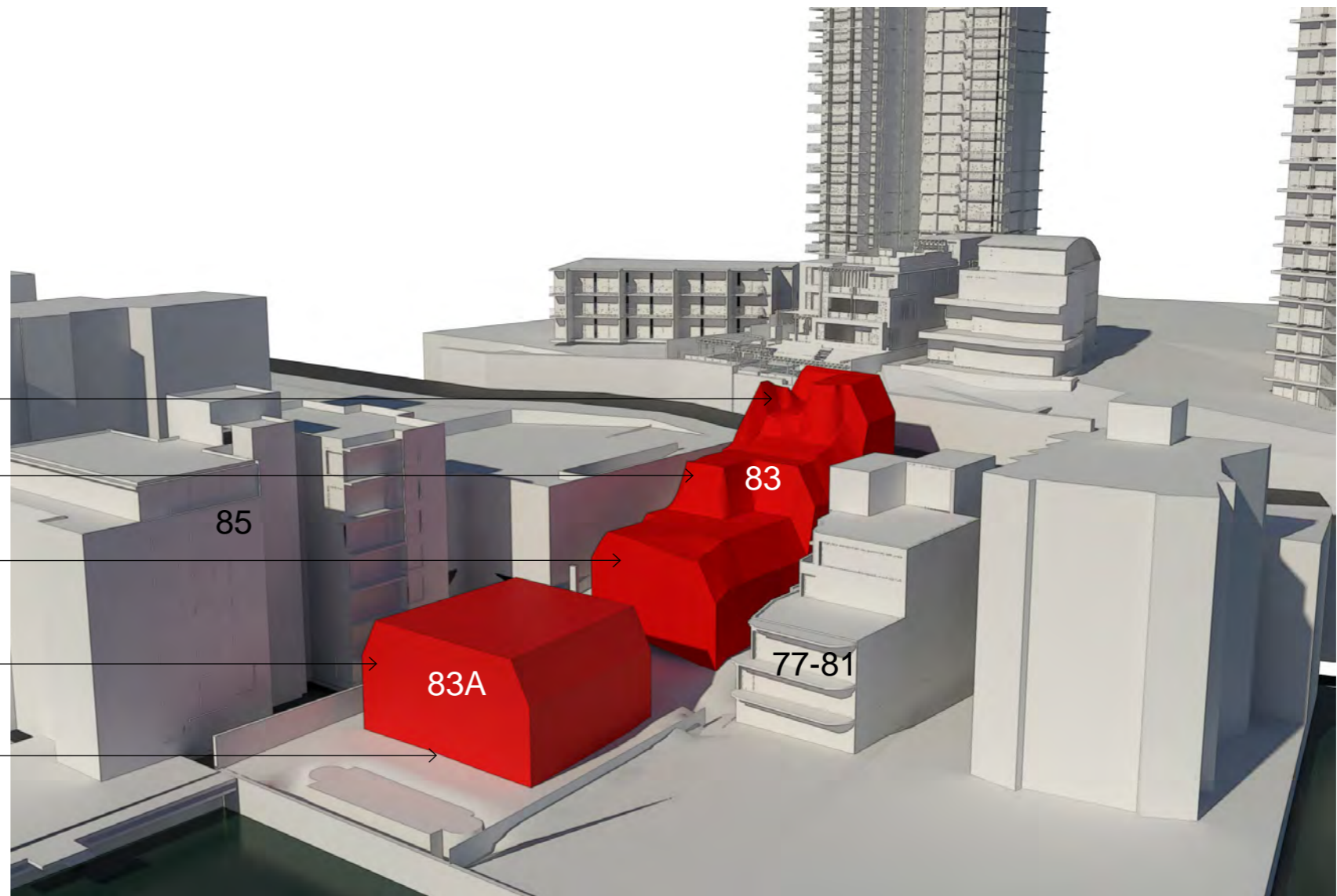


1.3.7 Compliant Building Envelope

- The envelope illustrated under 4.6 is the geometric realisation of the existing development controls on the site.
- 83A and 83 Yarranabbe Road are maintained as separate lots.
- 83A provides an envelope for a dual occupancy detached dwelling located on the 12m foreshore building line.
- Both envelopes maintain a 3m side setback increasing on a pro rata basis by 0.5m for each metre or part thereof that the building height adjacent to the boundary exceeds 6.0m
- Both envelopes heights are set at 9.5m from existing ground level.
- The RFB rear setback is 25%of the lot length.
- The RFB street front setback is left for future determination. The adjacent building setbacks are carparks and carpark utilities.



- Residential flat building on 83 Yarranabbe Road.
- 9.5m high building envelopes complying with DCP side setback control.
- 83 Yarranabbe Road rear setback is 25% of lot length.
- Dual occupancy building on 83A.
- 12m foreshore line setback

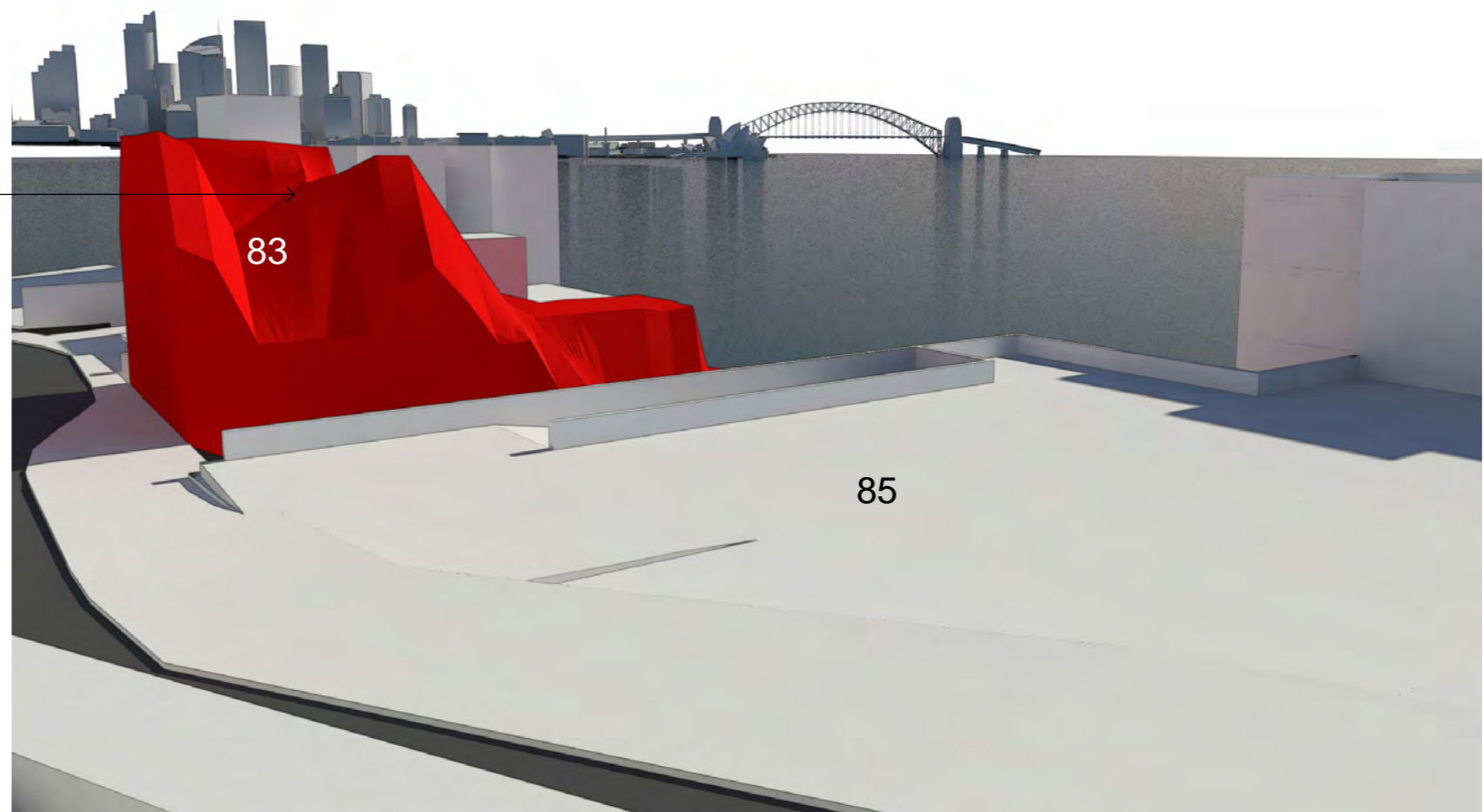


Control envelope derived from a strict application of the height and setback controls.

Foreshore envelope is set to the 12m foreshore setback line.

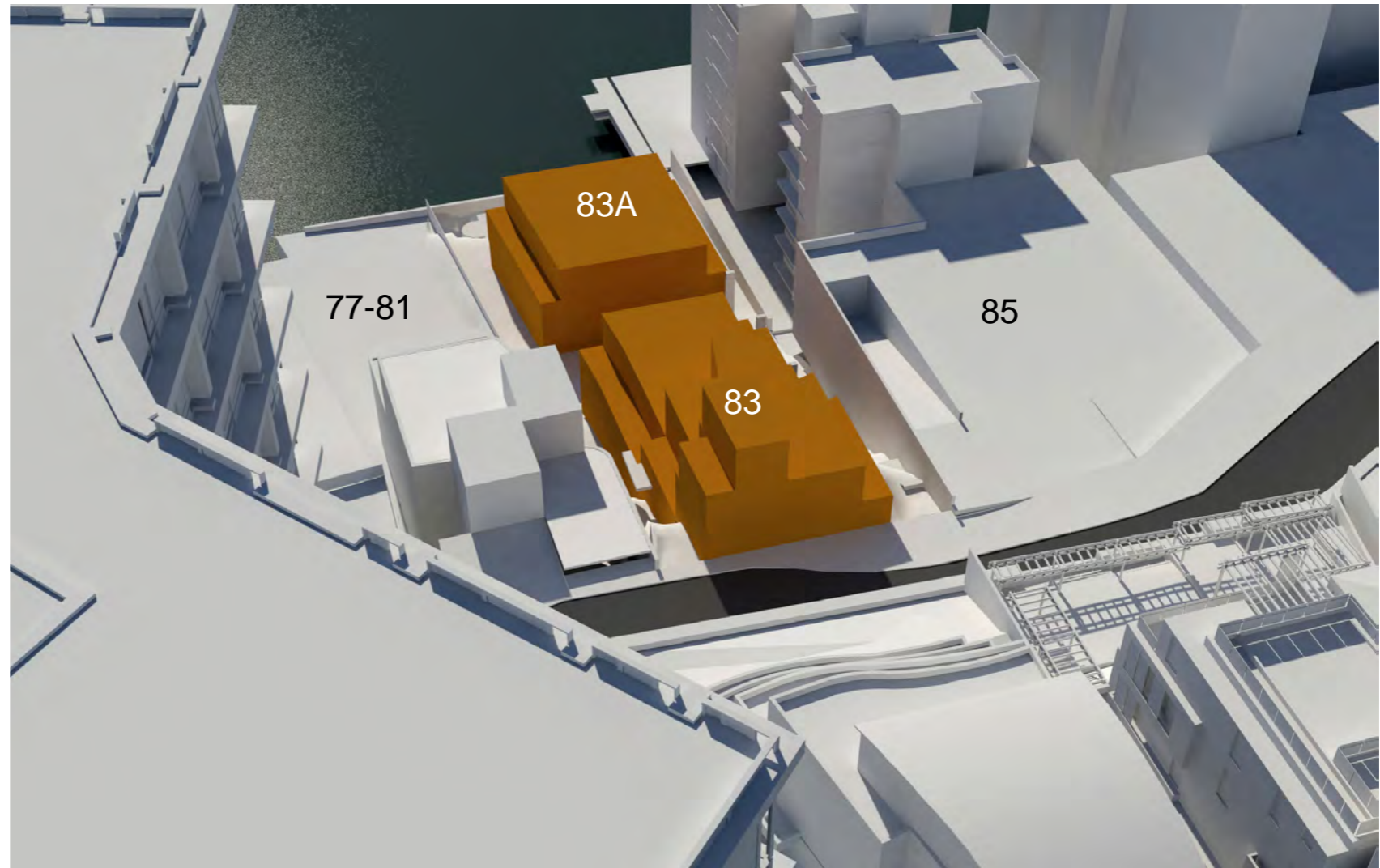


9.5m envelope height at Yarranabbe Road.



1.3.8 Compliant Building Form

- A potential building form derived from the compliant envelope demonstrates the shortcomings of the planning controls on the site.
- 2 buildings rather than one consolidated residential flat building are required to provide 5 residential dwellings.
- 83A's developable envelope maintains the current building footprint and increases the extent of the third storey within the 9.5m height control.
- The residential flat building on 83 Yarranabbe Road has a rear setback of 25% of lot length resulting in a building separation which limits access to light and views.
- Excessive height on Yarranabbe Road creates view loss to neighbours and precinct.
- The highly varied topography of the site means a building complying with a 9.5m height limit from existing ground has uneven, inefficient massing and floor plates. These floor plates do not step with the perceived gradient of the lot and have poor environmental and view amenity.

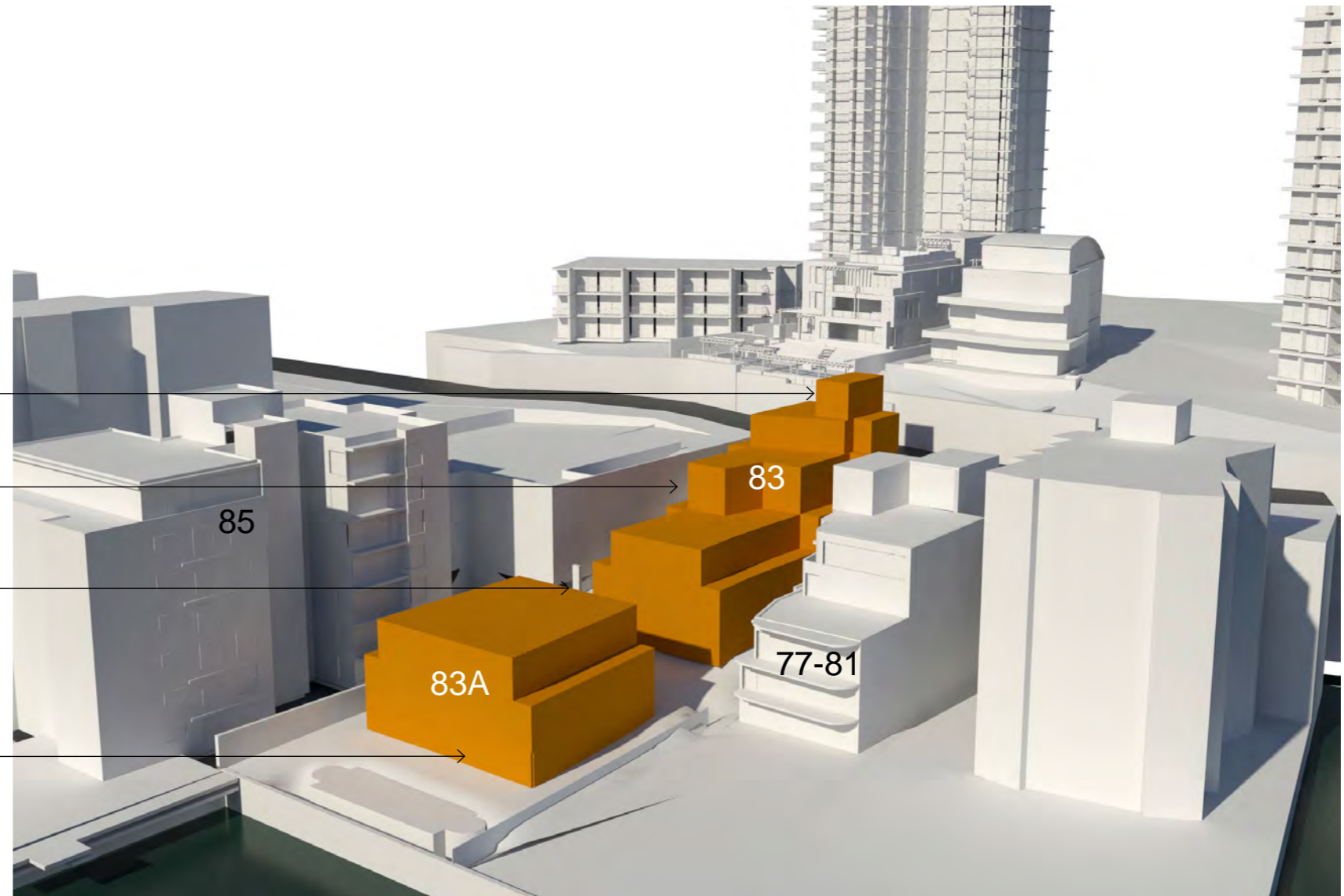


Residential flat building on 83 Yarranabbe Road.

9.5m high building envelopes complying with DCP side setback control. Street level area limited to foyer and car parking service provision.

Compliant setback between dual occupancy and residential flat building provides compromised solar and view amenity to development and 77-81 Yarranabbe Road.

Dual occupancy building on 83A with compliant height and setbacks.

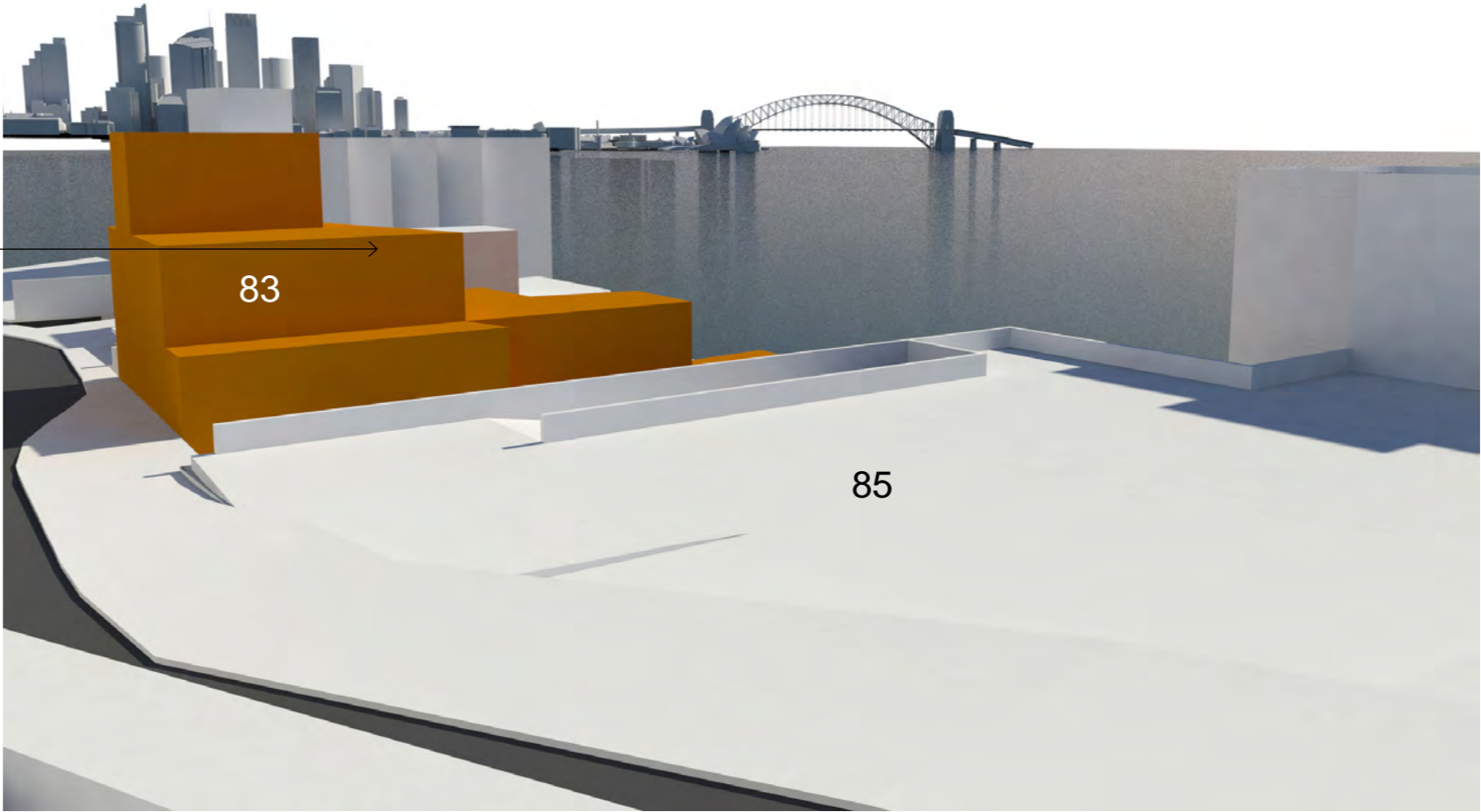


Building forms derived from a strict application of the height and setback controls.

Foreshore building is set to the 12m foreshore setback line.



Built form is required to street front boundary to accommodate a 2 storey unit at street level (Lv5 and Lv6), a residential lift lobby and a carpark lift lobby. A lift overrun and motor room are contained in the highest portion of the allowable 9.5m envelope.

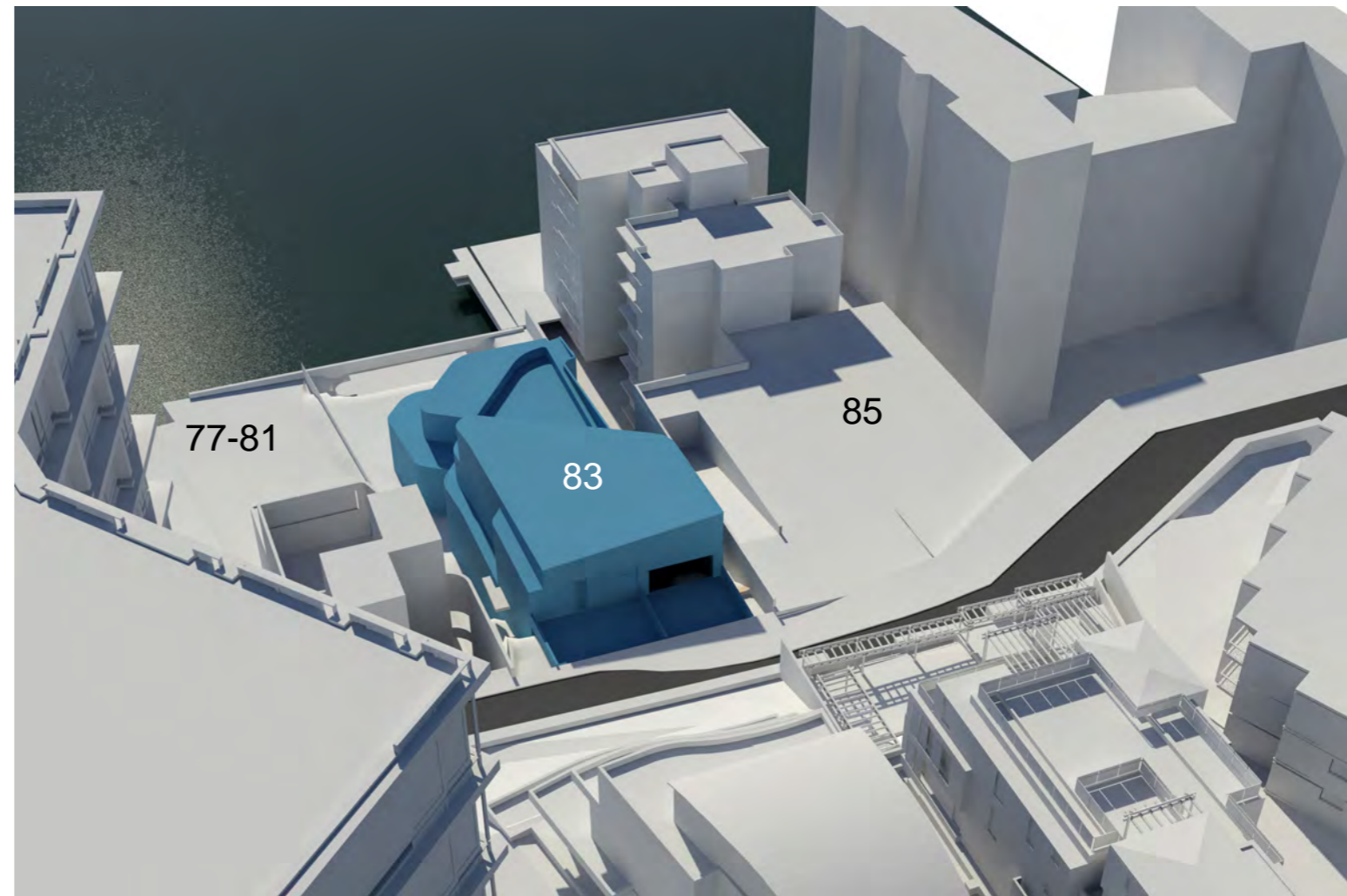


1.4 The Planning Proposal And Built Form Principles

1.4.1 Planning Proposal Envelope

Given the short comings of a compliant scheme a Planning Proposal (PP) envelope was designed to achieve the following criteria.

1. Yield – Increases the site's dwelling density from 2 dwellings to 5
2. Building, environmental and economic efficiency – Consolidates two sites and two buildings into one.
3. Views- Maintains or improves existing precinct and neighbouring views toward the harbour, particularly the iconic views of the Harbour Bridge and Sydney Opera house. Views are maintained and in some cases improved to 13-15 ,17 ,17A Thornton Street and 85 and 77-81 Yarranabbe Road and street level. Provides improved view opportunity for five residential units
4. Solar Access – Maintains winter solstice solar access to adjacent neighbours. In particular maintains solar access to the North East kitchen windows of 77-81 Yarranabbe Road. This is achieved by subtracting a large volume on the North West from the possible PP envelope allowing winter solar access to the said windows. The PP envelope improves winter solstice solar access to the lower western units of 85 Yarranabbe Road. The envelope provides opportunity for good solar access to all units of the future building development.
5. Street front presentation – Provides an envelope that minimises car parking and car parking utilities on Yarranabbe Road. Provides the opportunity for a residential unit and an attractive and inviting building entrance at Yarranabbe Road.
6. Logical and Efficient Massing – Provides an envelope which allows the development of 5 residential flats in a stepped mass that reinforces the topography of the site and precinct. Provides a mass with efficient floor plates accessing improved solar, view and ventilation amenity.
7. Opportunity for Architectural excellence – Provides a site specific envelope that responds to its context. In doing so this provides opportunity for a unique and tailored architectural response.



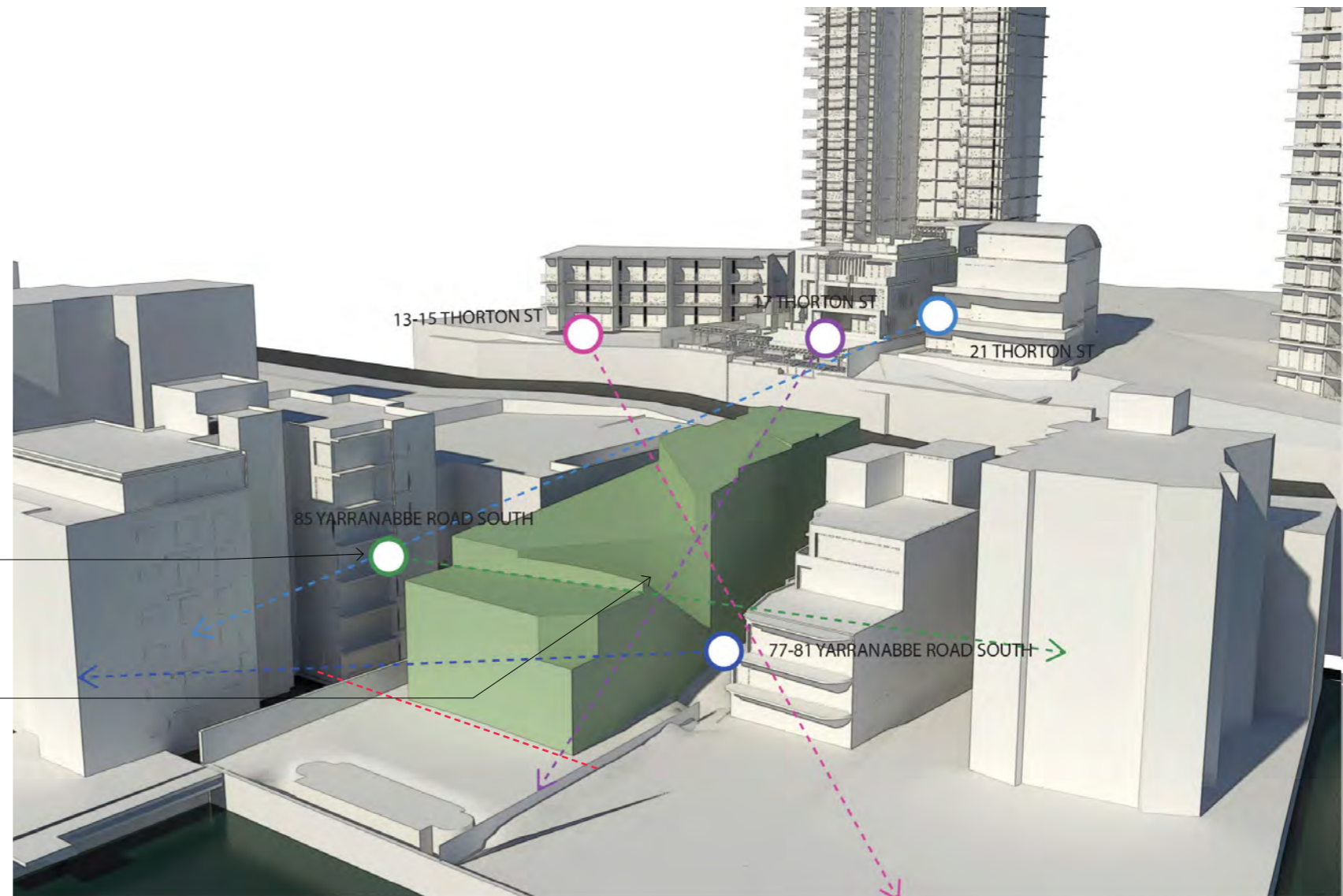
1.4.2 Planning Proposal Envelope Base Envelope

A Planning Proposal envelope mass was constructed by extruding a block defined by

- **18m foreshore building line.** This setback aligns with the Southern mass of 85 Yarranabbe Road.
- The setback provides an additional 6m of foreshore space compared to the compliant envelope solution.
- The setback provides improved view corridors to 85 Yarranabbe Road.
- **3m side setbacks** complying with precinct controls.
- **6m street front setback** matching the existing houses setback on Yarranabbe Road.

This mass then had volumes removed by

- Subtracting the neighbouring view corridors. This maintains the most marginal views and results in zero view loss. View corridors are maintained and improved for 77-81, 85 Yarranabbe Road and 13-15, 17, 17A Thornton Street.
- Subtracting a “solar cone” maintaining winter solstice sun access to the North East kitchen windows of 77-81 Yarranabbe Road. Winter solar access is improved for 77-81 and 85 Yarranabbe Road when compared to current conditions and a compliant envelope.



1.4.3 Planning Proposal Envelope Refinement

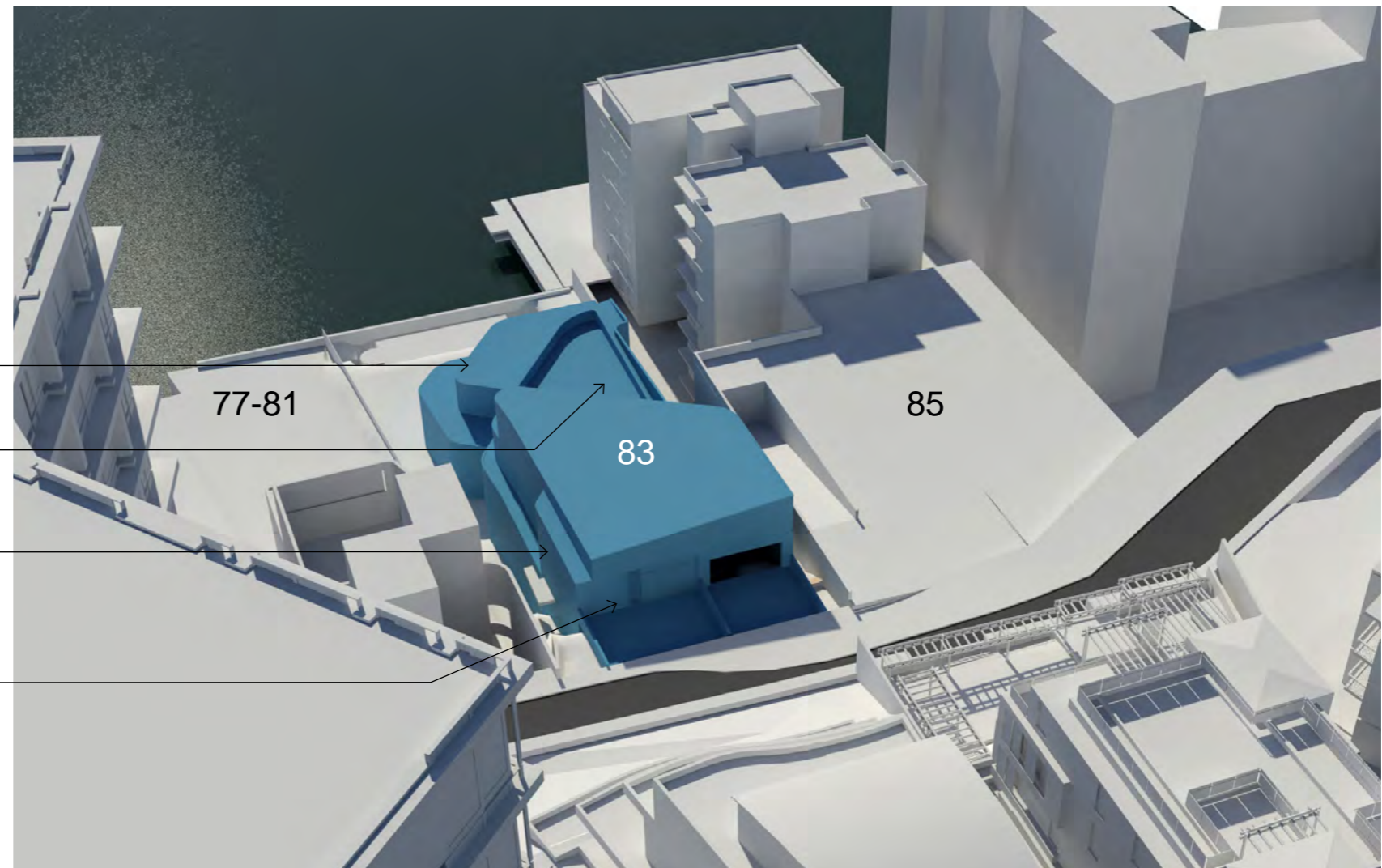
2 Lots consolidated into 1 with a single residential flat building with 5 units.

Building setback 18m from harbour foreshore.

Upper envelope mass angled to provide uninterrupted Opera House and Harbour bridge views from street level and above.

Western setback stepped to provide solar amenity to 77-81 Yarranabbe Road and to provide a clear access way to Harbour front

Yarranabbe Road setback maintained. Height reduced from 9.5m to 5.7m on Yarranabbe Road.



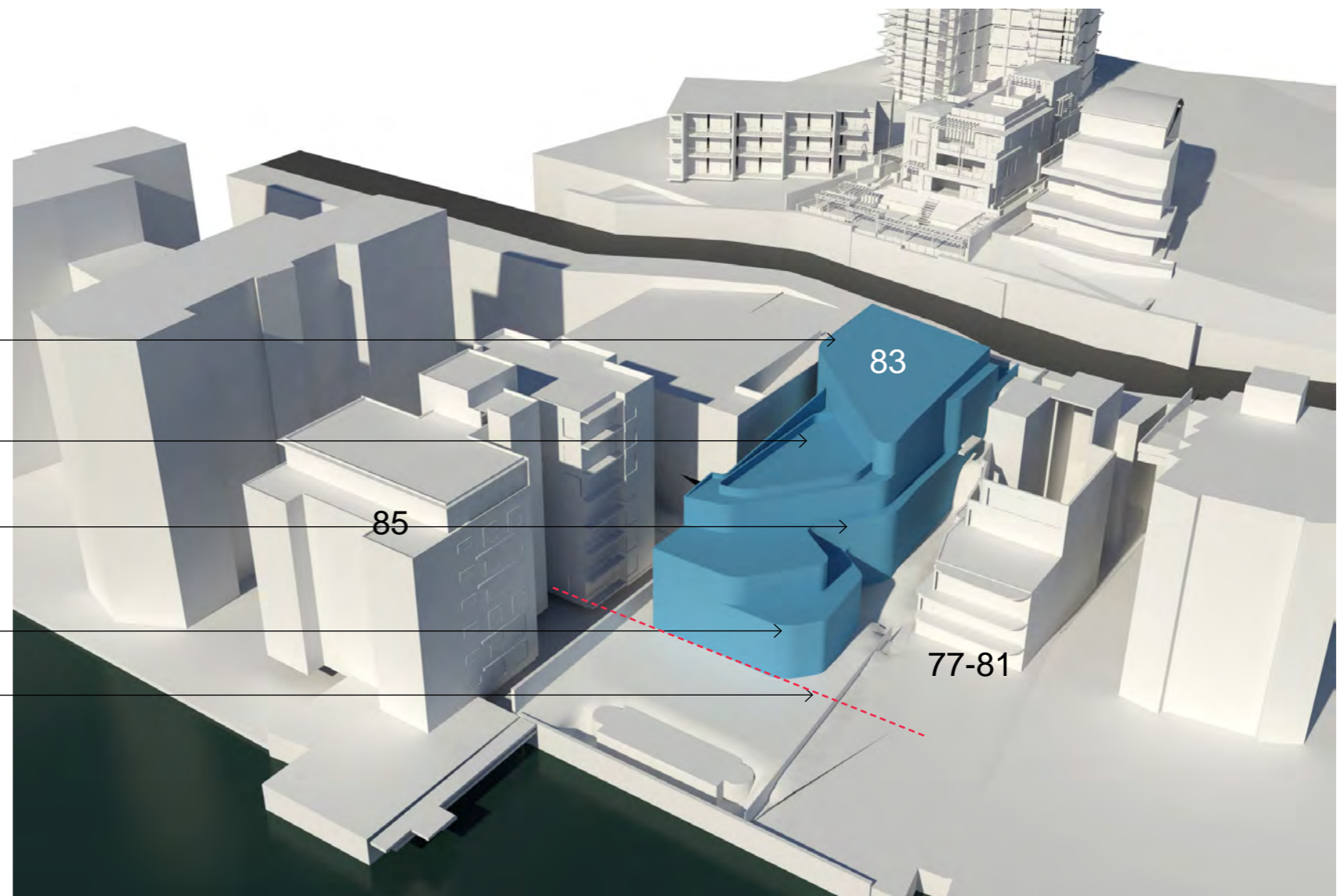
Angled roof from South to North and East to West increases summer sun access to 77-81 Yarranabbe Road.

Sight lines maintained and increased to Opera house and Harbour bridge.

Mass angled and removed to maintain and increase winter solstice solar access to 77-81 Yarranabbe Road. Landscaped outlook provided to 77-81 kitchen windows.

Sight lines maintained and increased to 85 and 77-81 Yarranabbe Road.

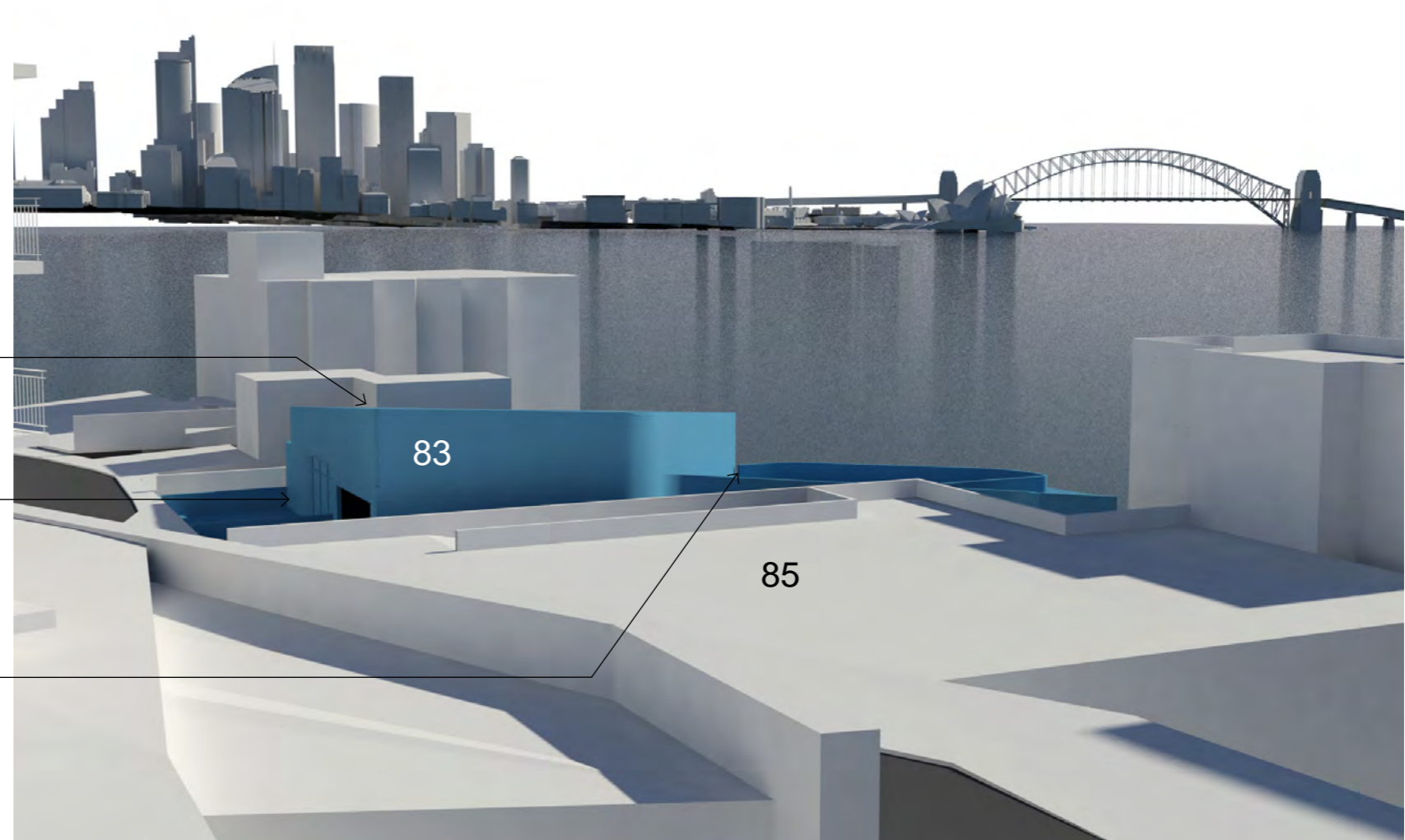
Building setback 18m from harbour foreshore. Aligns with Southern mass of 85 Yarranabbe Road.



Roof shaped to maximise neighbouring views to the harbour and summer morning solar access to 77-81.

Mass setback 6m from street front lot boundary.
Opportunity for attractive lobby, visitor parking and landscape elements.

Envelope shaped to maintain and increase neighbour and street views to the Opera house and Harbour bridge.



The envelope provides significant environmental amenity benefits to the site and its neighbours. The stepped form twists and steps to open solar and view access to its floor plates and the Eastern facade of 77-81.

The consolidation of two buildings into one provides an 18m harbour foreshore setback.


View and solar access amenity is increased by responding to site specific conditions.





1.5 Scheme Comparisons

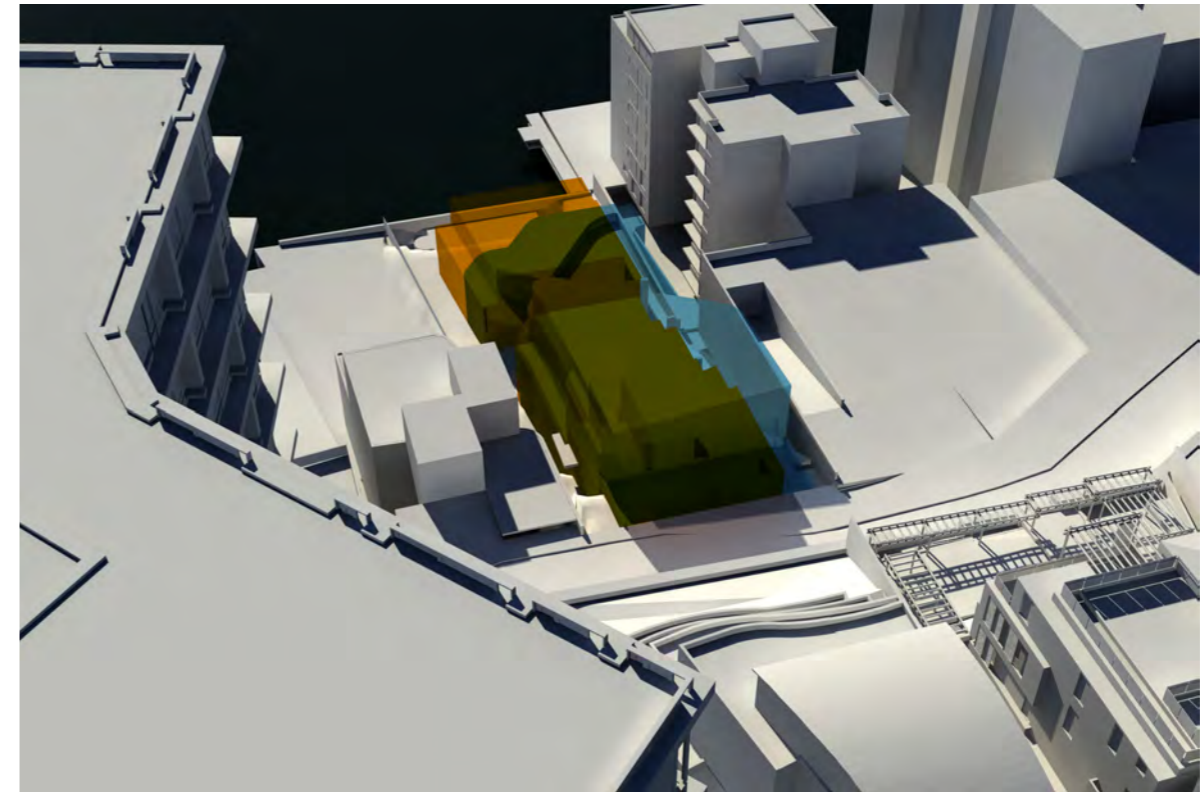
1.5.1 Massing Comparison

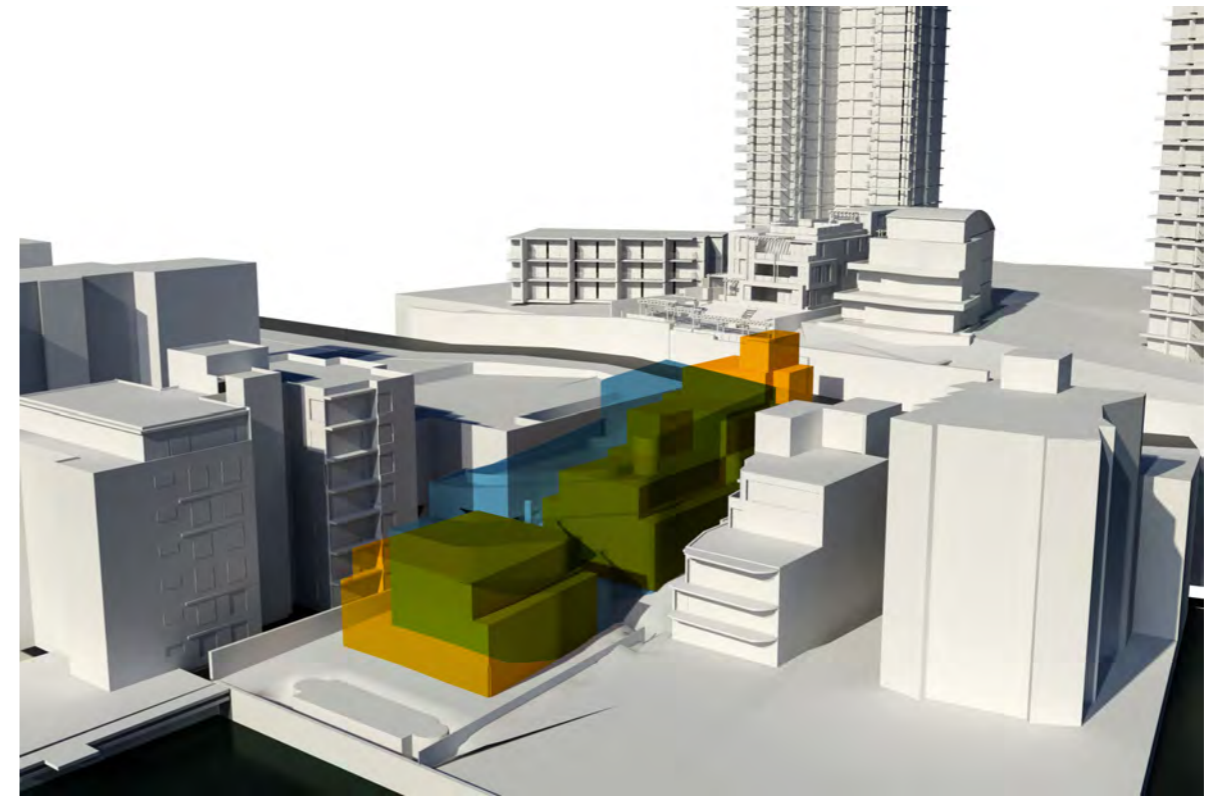
- The Compliant building form envelope and the Planning Proposal Envelope are overlaid for mass comparison.
- The Compliant envelope has more mass situated toward the harbour foreshore and the street front at Yarranabbe Road.
- The Planning Proposal Envelope has more mass located in the middle of the site.
- The Planning Proposal Envelope provides greater solar and view access than the compliant envelope for both the development and its neighbours.

Compliant Envelope Built Form study 

Planning Proposal Envelope 

Envelope common area 





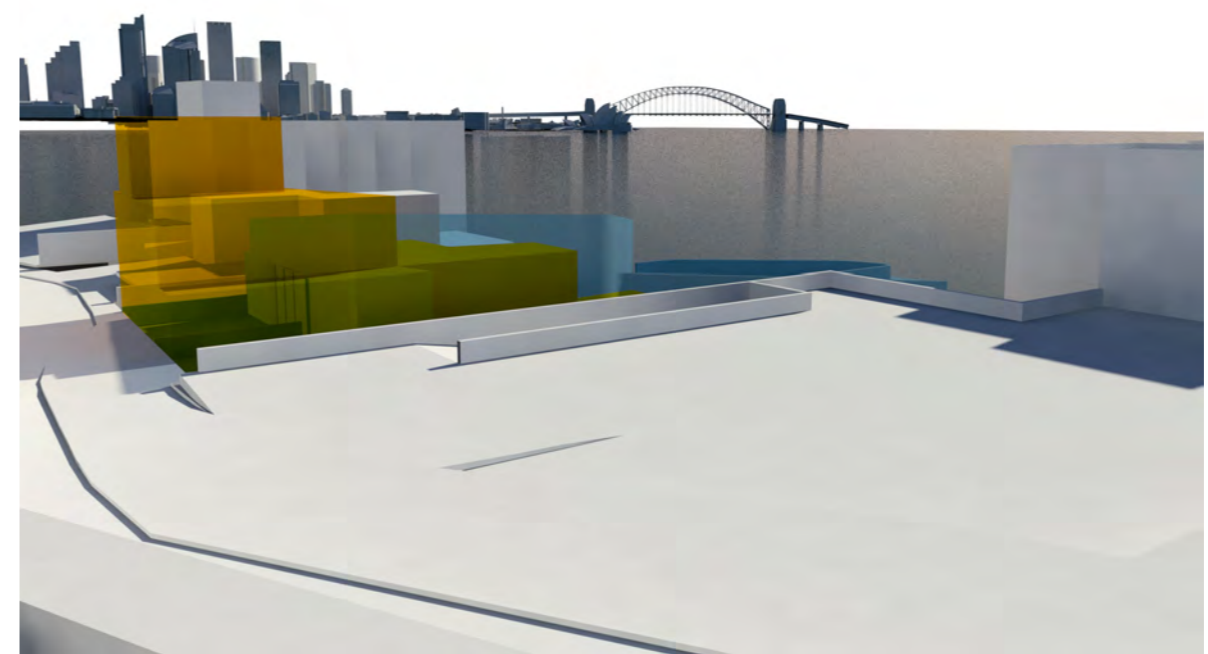
Compliant Envelope Built Form study



Planning Proposal Envelope



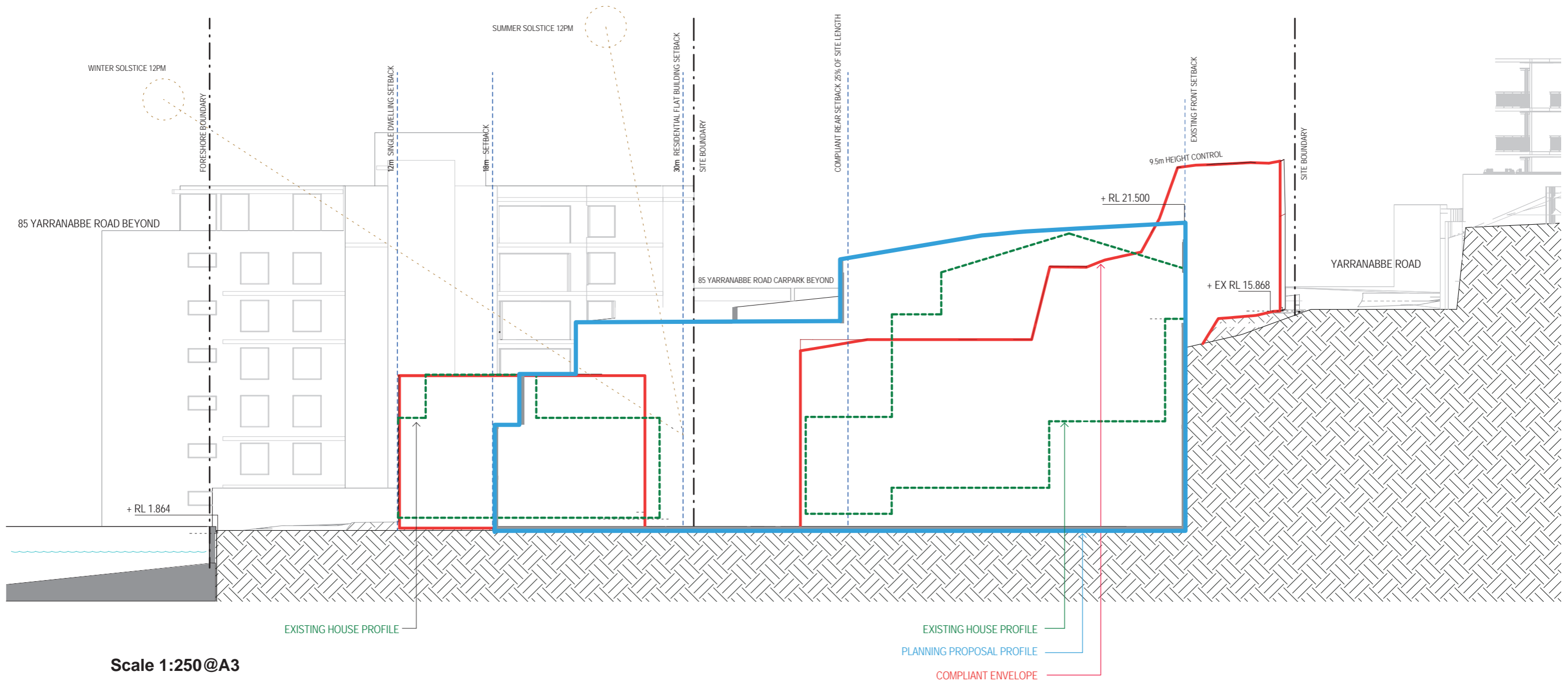
Envelope common area



1.5.2 Section Comparison

Section through

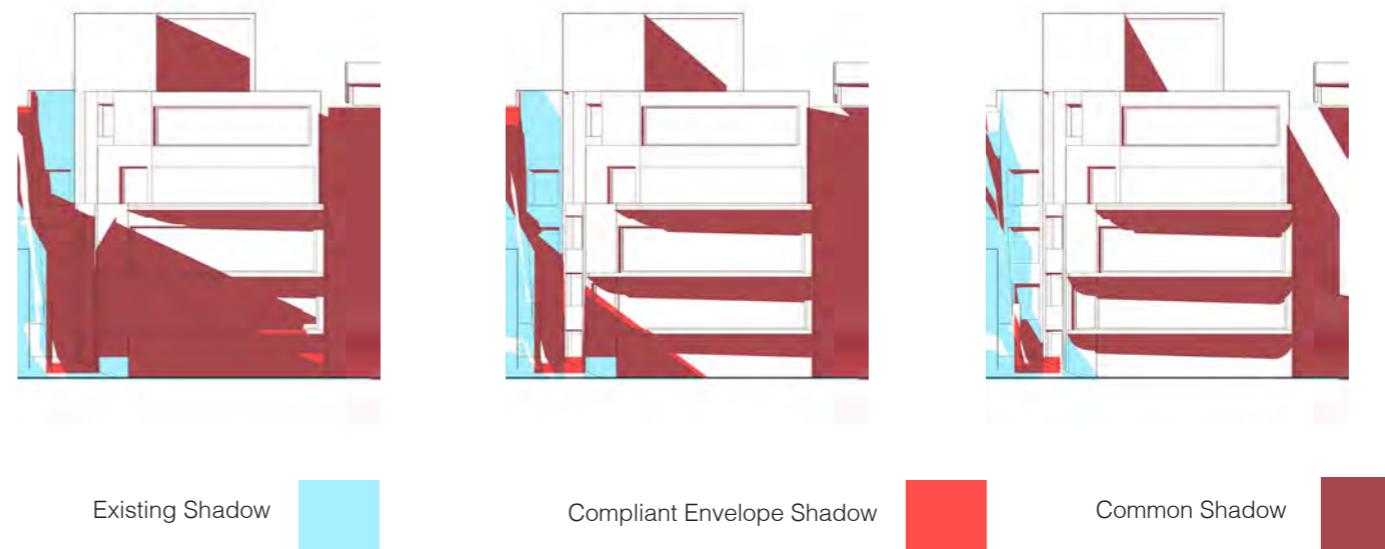
- Current Built Form- Green Line
- Compliant Envelope - Red Line
- Planning Proposal Envelope - Blue Line



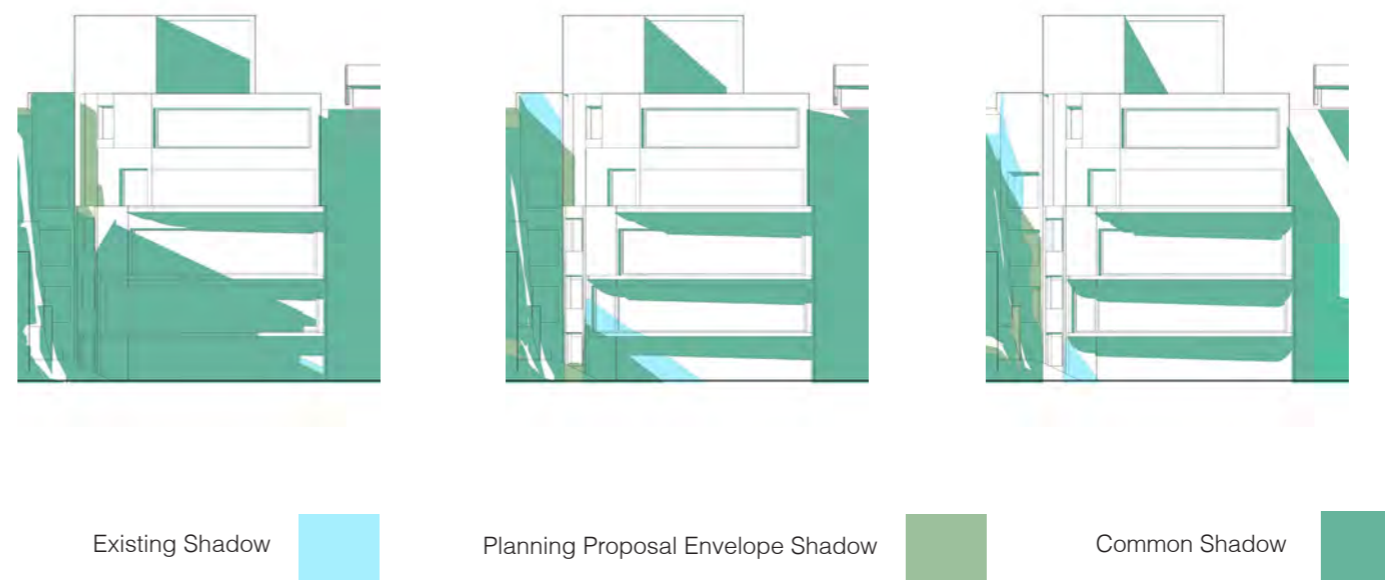
1.5.3 Solar Access Comparison

- The Compliant Envelope and Planning Proposal Envelope were assessed for their overshadowing impacts during the winter solstice.
- The Compliant Envelope has greater overshadowing upon 77-81 Yarranabbe Road than the current condition.
- The Planning Proposal envelope provides greater winter solstice solar access to 77-81 than the current condition and the compliant envelope.
- Particular attention was given to maintaining or improving winter solstice access to 77-81 Yarranabbe Road.
- The Planning Proposal envelope provides greater winter solar access to 85 Yarranabbe than the current condition and the compliant envelope.
- Shadow diagrams shown on page 55 demonstrate winter solar access improvement to four units on levels 1-4 located on the South West of 85 Yarranabbe road.

Compliant Envelope

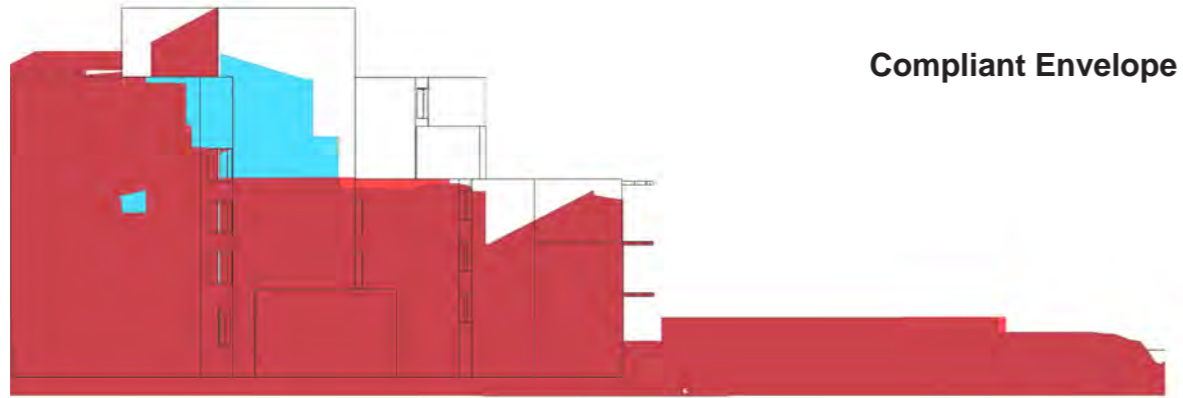


Planning Proposal Envelope



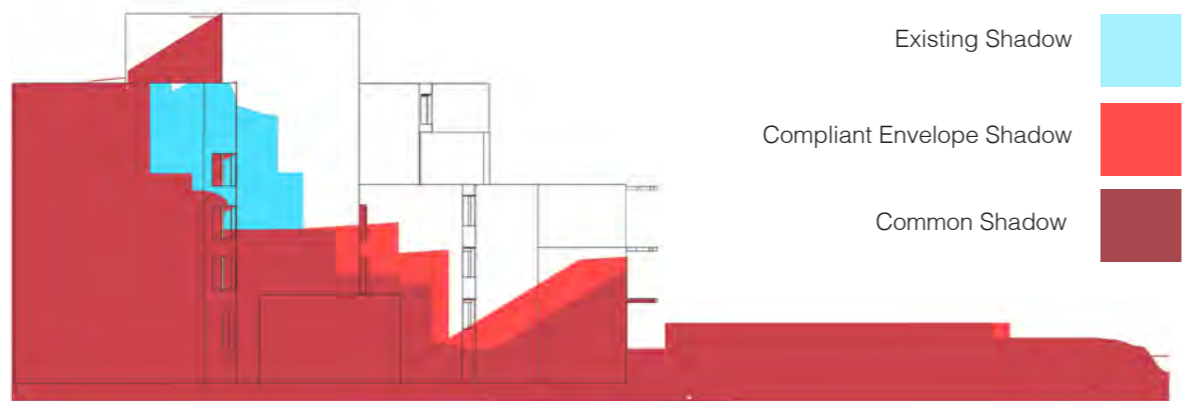
Note: 85 Yarranabbe road overshadows 83 and 77-81 Yarranabbe Road until 9am during winter solstice. Relevant overshadowing calculated from 9am to 12pm when overshadowing onto 77-81 Yarranabbe occurs.

77-81 Yarranabbe Road - Eastern Facade Winter Solstice Shadow



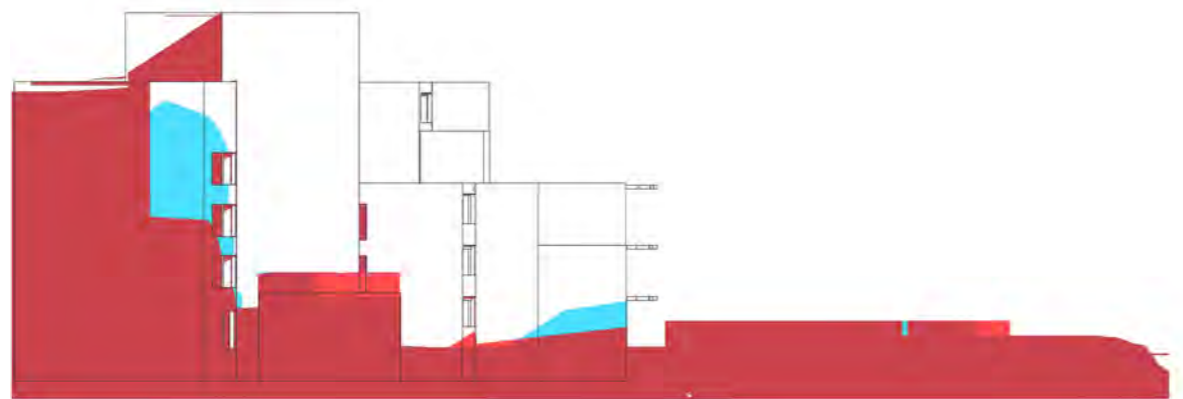
Compliant Envelope

9am_June 21

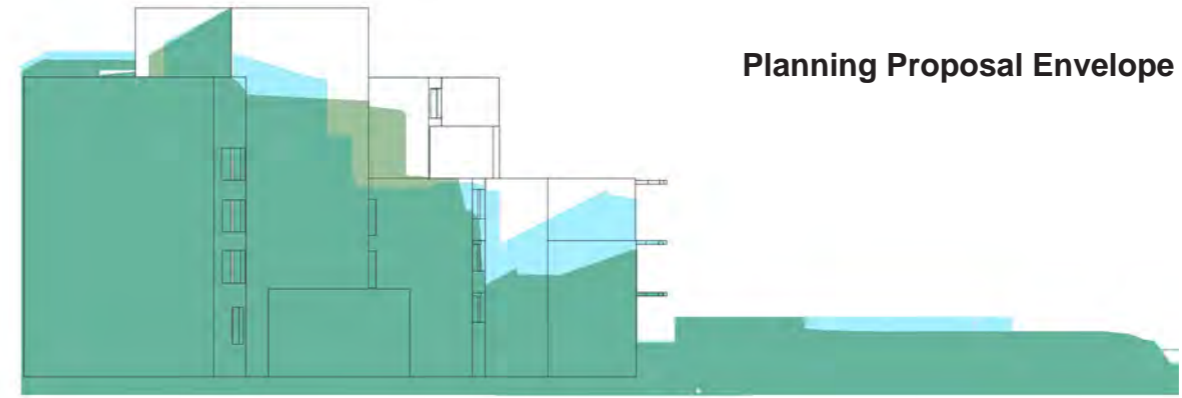


Existing Shadow
Compliant Envelope Shadow
Common Shadow

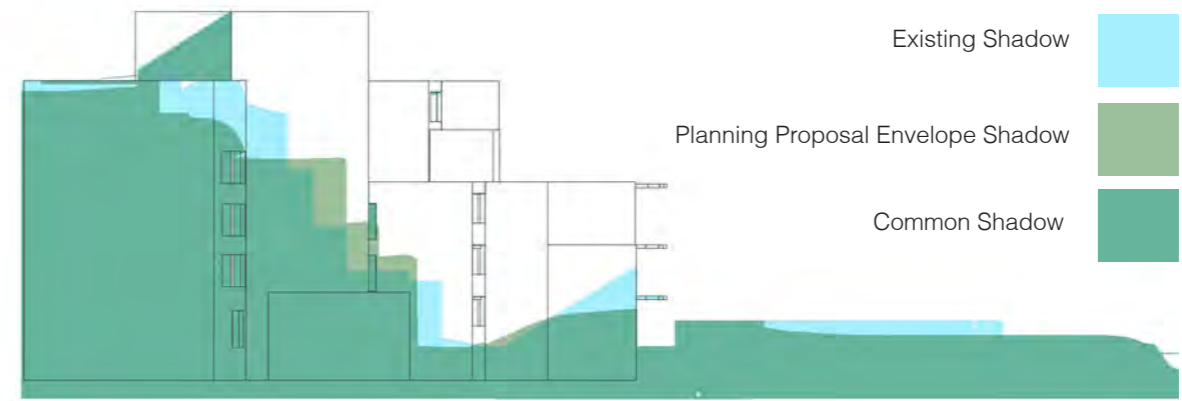
10am_June 21



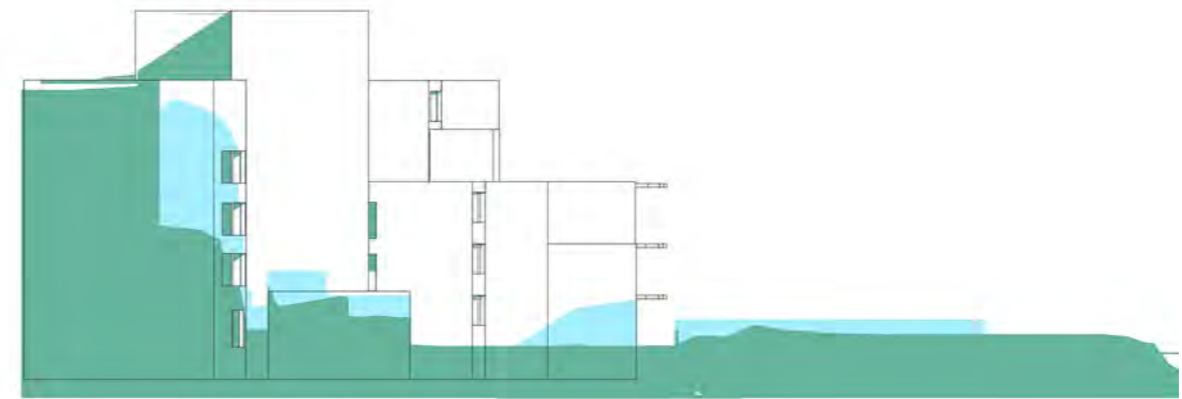
11am_June 21



Planning Proposal Envelope



Existing Shadow
Planning Proposal Envelope Shadow
Common Shadow



Note: Shadows not cast upon 85 Yarranabbe Road during winter solstice until 3pm.

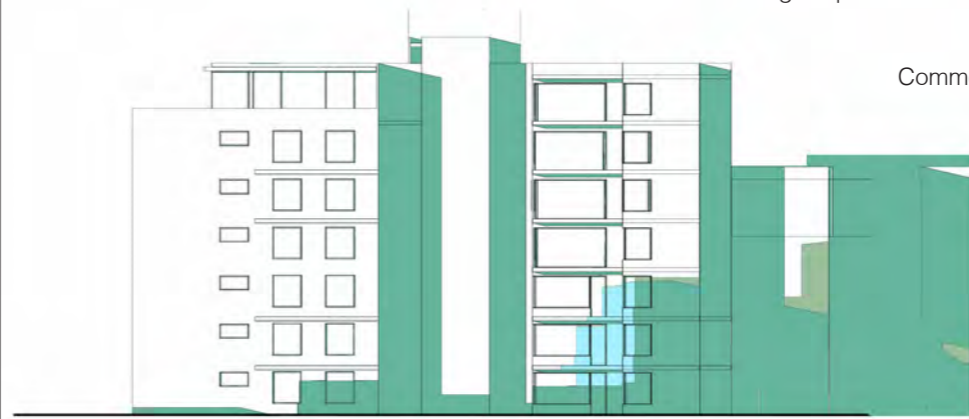
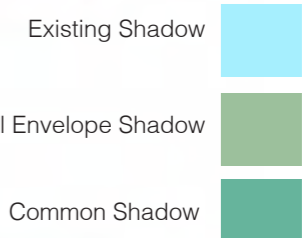
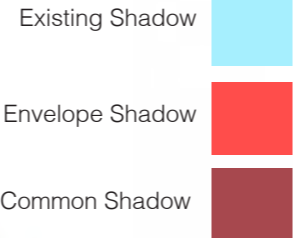
85 Yarranabbe Road - Western Facade Winter Solstice Shadow

Compliant Envelope

Planning Proposal Envelope



3pm_June 21



4pm_June 21



5pm_June 21

1.5.4 View Impact Analysis - 13-15 Thornton St_Unit 5 Level 2



1.5.5 View Impact Analysis- 17A Thornton St_Level 1



1.5.6 View Impact Analysis- 17 Thornton St Level 4



Existing Built Form



Compliant Envelope



Compliant Built Form

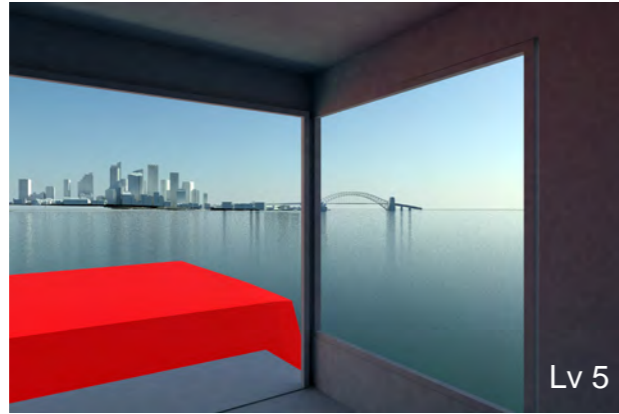
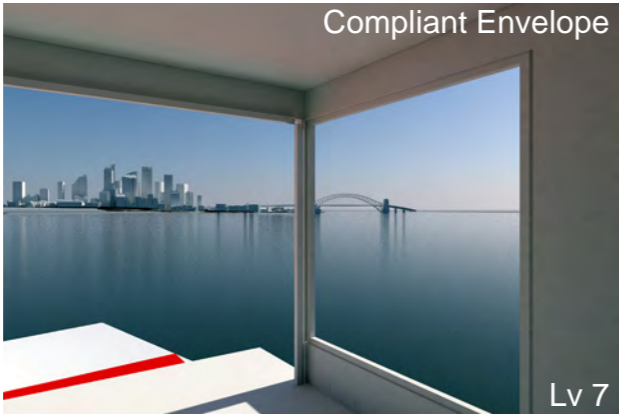


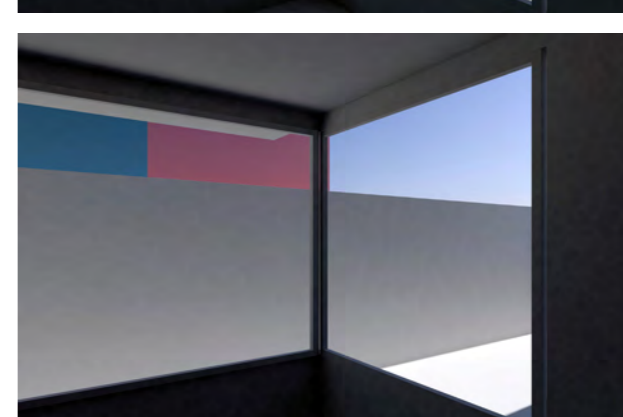
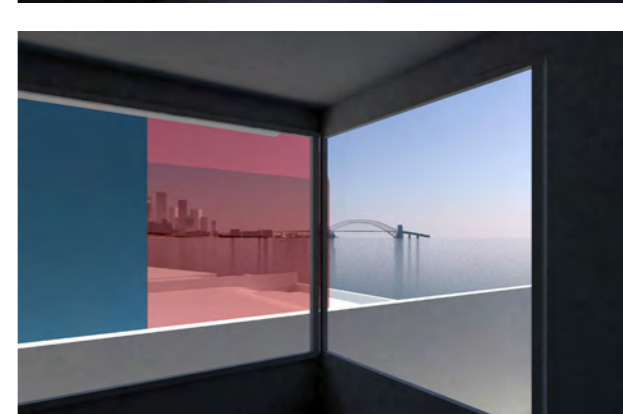
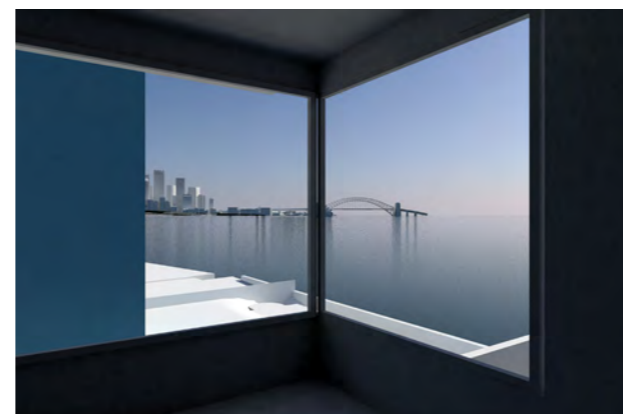
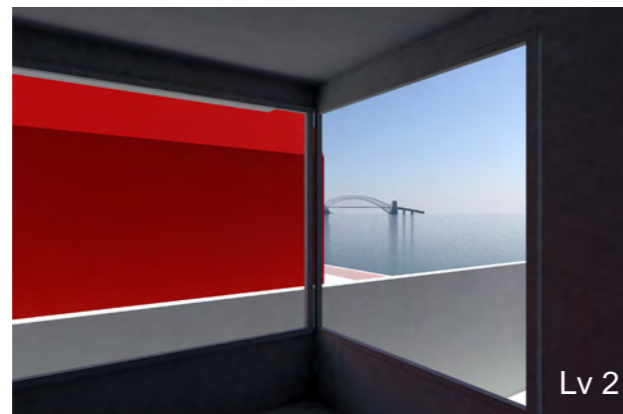
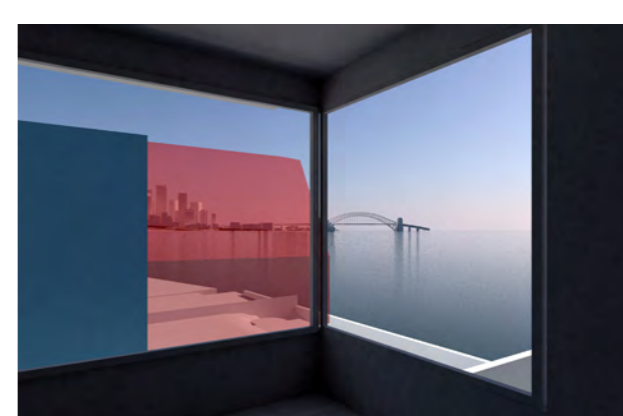
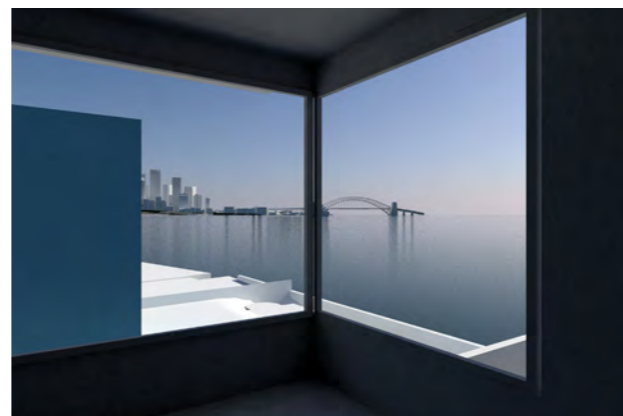
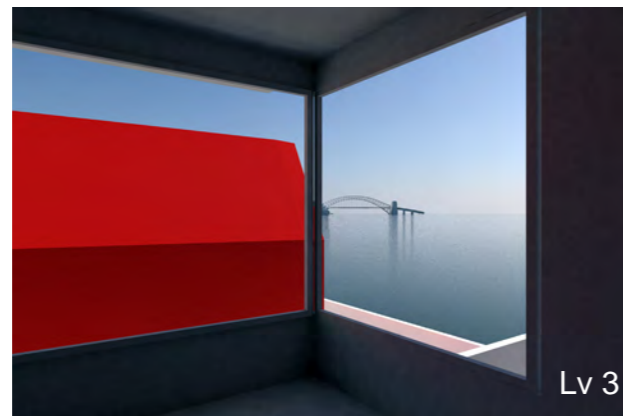
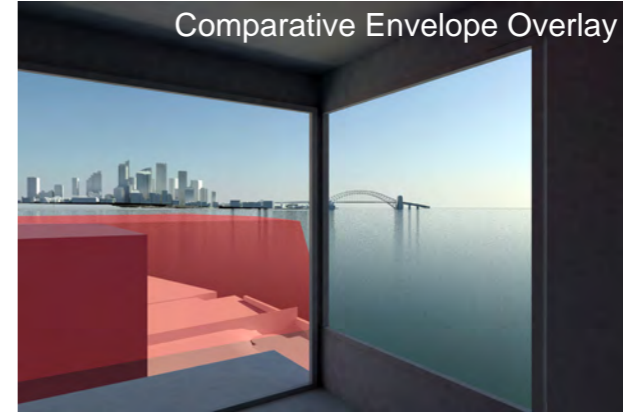
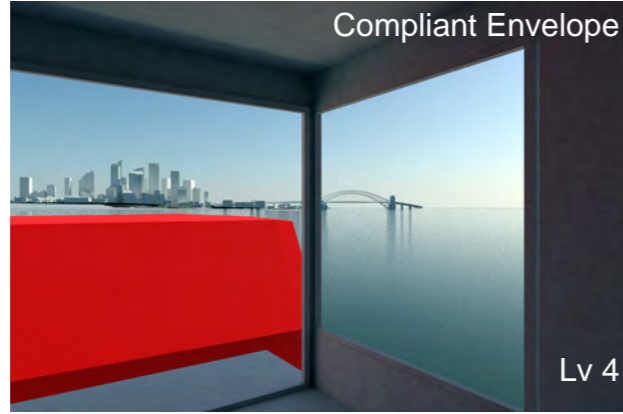
Planning Proposal Envelope

1.5.7 View Impact Analysis- Harbour View

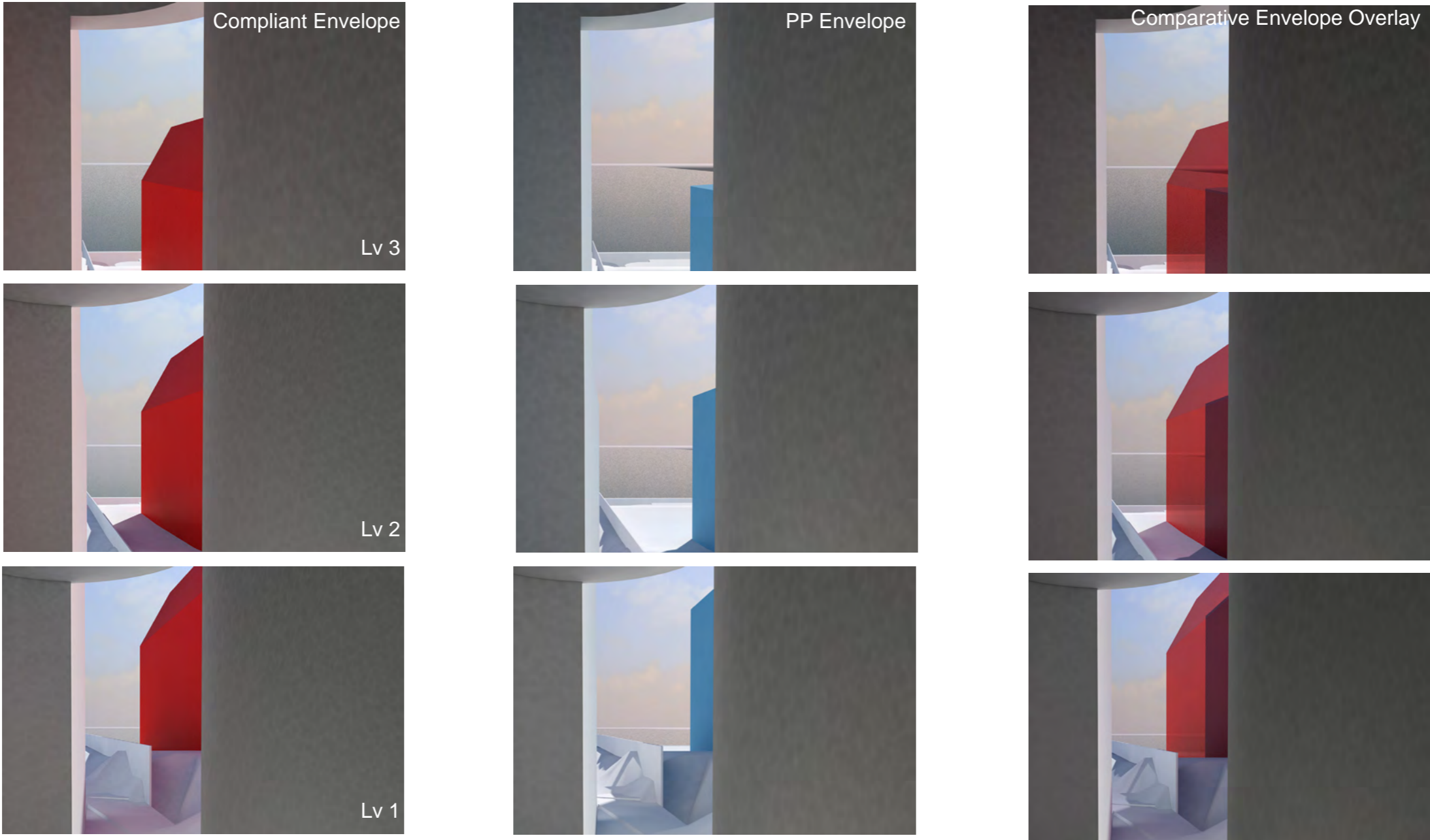


1.5.8 View Impact Analysis- 85 Yarranabbe Road



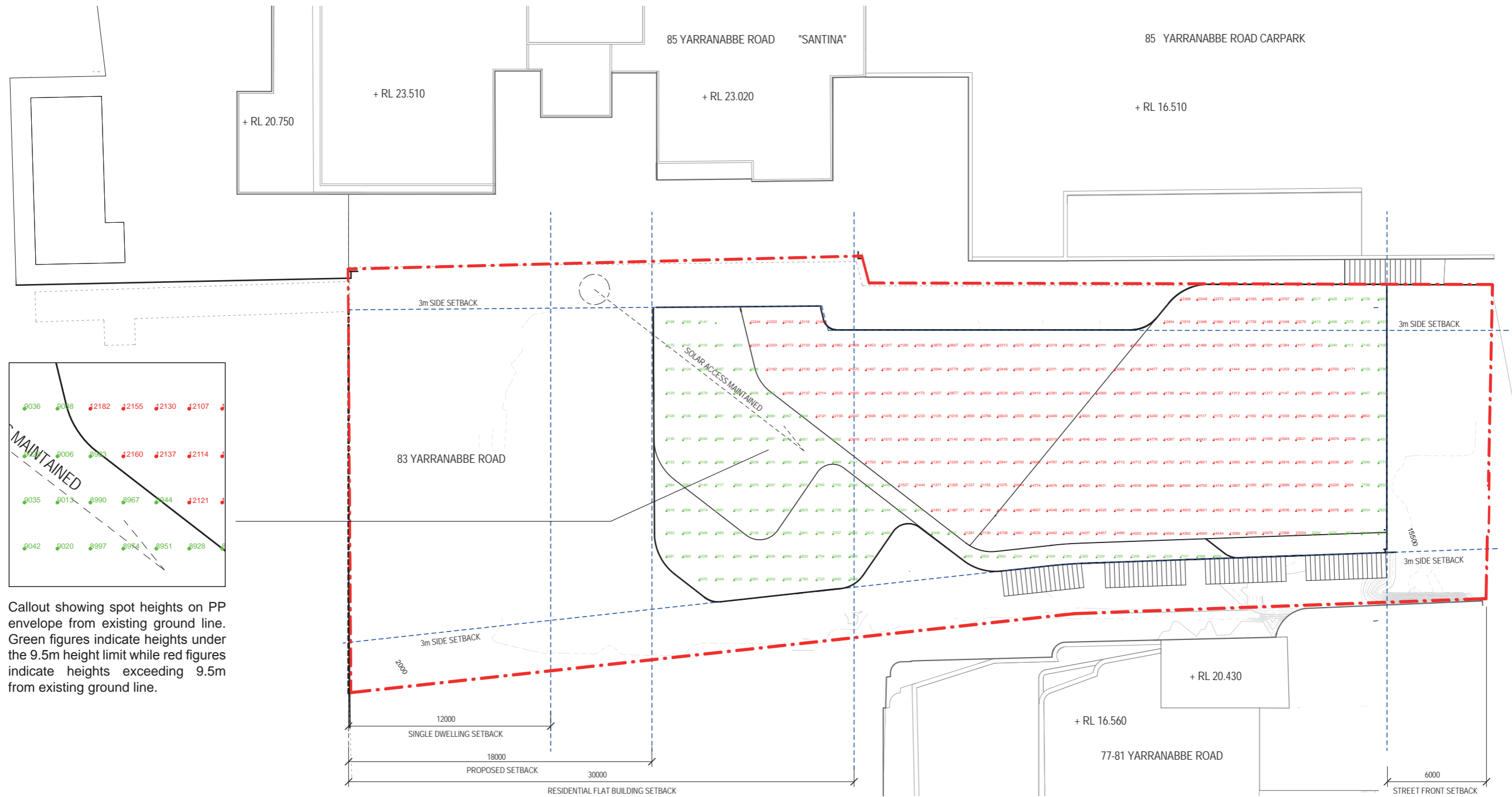


1.5.9 View Impact Analysis- 77-81 Yarranabbe Road - Kitchen windows East



1.6 Control Drawings

1.6.1 Planning Proposal Envelope Height And Setback Map_Heights Shown From Existing Ground Line At One Metre Grid Intervals



1.6.2 Planning Proposal Envelope Height And Setback Map _ Heights Shown In RL Heights

