

19 November 2024

Oscar Brady
Assistant Development Manager
Billbergia
Via email: oscar.brady@billbergia.com.au

Dear Oscar,

PACIFIC HIGHWAY AND WILSON STREET, CHATSWOOD | DESIGN INTEGRITY PANEL REPORT

1. INTRODUCTION

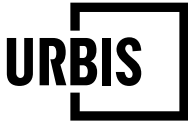
This letter has been prepared on behalf of the Design Integrity Panel (**DIP**), in relation to the Design Integrity Process for the State Significant Development Application at 849, 853, and 859 Pacific Highway and 2 and 8 Wilson Street, Chatswood.

The objective of this process is to ensure that design integrity is continued as the project “transitions” from the original Competition Scheme to a State Significant Development Application that utilises the affordable housing bonus provisions of the Housing SEPP, through the construction phase to the completion of the process.

This letter provides confirmation of the Panel’s commentary on the design elements which are supported, and those elements that require further refinement and resolution. This feedback and commentary are based on the design material presented by PBD Architects on the 23rd October 2024.

The DIP comprises of three Panel members. In accordance with the endorsed Terms of Reference (TOR), this includes three (3) of the five (5) members of the Competition Jury and were nominated in consultation with the Government Architect NSW and Willoughby City Council. The members of the DIP are as follows:

Panel Member	Role / Position
Matthew Bennett	Chair (GANSW endorsed)
Robert Nation	Proponent nominated Juror
Digby Hall	Council nominated Juror



The DIP session was held online and attended by key members of the Design Team and BB Wilson Property Pty Ltd (**the Proponent**). Key stakeholders were also invited to attend the DIP session (including representatives from Willoughby Council and the Department of Planning, Housing and Infrastructure). Urbis as the DIP manager were also in attendance.

2. FUNDAMENTAL ELEMENTS OF DESIGN EXCELLENCE

As outlined in the endorsed Bridging Design Excellence Strategy (dated 24 September 2024), the Jury selected PBD Architects as the preferred scheme to progress to the detailed Development Application (DA) phase, subject to the identified areas for further refinement and resolution being addressed as part of the design integrity process.

Design elements of the scheme that were strongly supported by the Jury during the Competition Phase that should be retained in order to achieve design excellence are provided at **Appendix A**.

3. DESIGN INTEGRITY PANEL AREAS FOR DEVELOPMENT

The following table reflects the DIP’s feedback and responses to the Design Team’s request for clarification during the meeting. This feedback is based on the presentation by the Design Team on the 23rd of October 2024.

All Panel comments and feedback reflect the unanimous position of the DIP session.

Table 1 – Design Integrity Panel Comments

Focus Area	Panel Comment
Elevators	<ul style="list-style-type: none">▪ The panel questioned whether the capacity of the elevators provided can facilitate the increased population in the building.▪ There has been no increase in the number of elevators per tower core (3). The design comp scheme was over-servicing based on the number of apartments, and thus there was no need for an increased number of elevators.▪ The panel was supportive of this.
Breezeways	<ul style="list-style-type: none">▪ The panel asked about the nature of the breezeways in relation to the way in which they terminate and maintain a ventilated condition.▪ PBD responded that they have undertaken a preliminary wind study, which provided feedback that dense planting at the end of each corridor would be sufficient to create a wind buffer, if maintained.▪ Breezeway GFA: Given the nature and quality of the space, the breezeways have been excluded from the GFA calculation, as per the original scheme. All consultants, including the fire

Focus Area	Panel Comment
	<p>engineers, are comfortable with this approach and legal advice has been obtained from Mills Oakley to support this approach.</p>
Car Parking	<ul style="list-style-type: none"> ▪ Following clarification on the adequacy of the car parking provided with the increase of apartments, the panel was supportive of the reduction in excavations on the eastern portion of the site (due to its proximity to the rail corridor) and the increase in overall basement levels from 4 to 6 to allow for additional parking.
Bicycle Parking	<ul style="list-style-type: none"> ▪ The panel questioned the bicycle parking provided relative to the increase in apartments. ▪ The panel is comfortable with suitable bicycle parking being provided in the residents' storage cages.
Communal Open Space	<ul style="list-style-type: none"> ▪ The panel commented on the fact that there is no increase in communal open space in the new scheme, despite an increase in residents. The panel notes that there is already a large component of communal open space with a diversity of uses and services, but commented that an increase in communal open space is something to consider.
Childcare access	<ul style="list-style-type: none"> ▪ The panel is particularly supportive of the maintenance of the childcare facility in the scheme. They also stated their support for keeping the dedicated stairs and elevators for the childcare facility in the scheme.
Glazing of facades.	<ul style="list-style-type: none"> ▪ The panel was concerned about the environmental performance of the façade and glazed space on the eastern façade (and ultimately the enclosed glazed areas between the façade line and the apartment line). ▪ The panel also noted that it was difficult to understand the solid to glazed ratio on the northern façade on the plans provided. ▪ The Panel wanted to know if any testing had been done on the heat loading of the enclosed area.
Miscellaneous	<ul style="list-style-type: none"> ▪ The Panel was supportive of the SSDA process to utilise the Housing SEPP uplift bonuses and add an affordable housing component to the development. ▪ The Panel agreed that the new scheme had improved from the previous scheme.

Focus Area	Panel Comment
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- The panel was happy with the area of the landings on the commercial levels in terms of their flexibility to support a range of potential future uses.

4. PANEL RESPONSES

The DIP issued a Request for Information Letter (RFI) on 23 October 2024. The matters raised in the RFI are outlined in Table 2 below, and the RFI Letter is attached at **Appendix B** for reference.

Table 2 – Summary of the DIP Request for Further Information

Stats	Jury Request for Additional Information
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Design development requiring additional information

- Elevation drawings for each of the building facades clearly indicating solid and glazed elements. (Coloured scale drawings would be preferable, but elevation screenshots of the 3d model will be sufficient if these are more efficient for the team to provide). These elevation drawings should be supported by 3d views to describe typical façade types and treatment including shading elements.
- Detailed descriptions and drawings that explain and illustrate:
 - How thermal comfort is maintained to the eastern and north-eastern apartments with the introduction of full height glazing and glazed louvres to comply with anti-throw requirements.
 - How the visual impact of clutter/personal belongings within these enclosed balconies will be mitigated through solid spandrel elements or similar. This is particularly relevant for lower levels including the affordable housing dwellings when viewed from the public domain, rail corridor and surrounding urban context.
 - How the quality and character of the eastern and north-eastern facades compliments the well-considered balance of solid and glazed elements evident in the western and southern facades.

The Jury noted they are not expecting a fully development graphic presentation or the preparation of finished architectural illustrations. A

Stats	Jury Request for Additional Information
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series of slides that address each of these points will be adequate for review, including annotated screenshots, hand drawings and mark-ups as required.

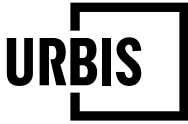
The DIP recommended that a response to the additional information requested be provided to the Panel, and an independent desktop review be undertaken in the first instance. The RFI Letter states that in the case that the matters described above (in **Table 2**) are satisfied, no further sessions are required before the SSDA is lodged.

The design team’s response to the RFI was issued to the Panel on 7 November 2024. The RFI response is available at **Appendix C and Appendix D** for reference.

The Panel issued a second letter to the design team on 13 November 2024, which identified amendments supported by the Panel and additional items for consideration prior to submission of the SSDA. The matters for further consideration are summarised in Table 3 below and the second DIP Letter is provided at **Appendix E** for reference.

Table 3 Additional Matters for Consideration

Matter	Panel Comment
<p>Solid Balustrade Upturn to Residential Balconies up to Level 9</p>	<p>The Panel supports the strategy presented in the supplementary rendered views for solid balustrade upturns for all open and semi-enclosed balconies (to comply with anti-throw requirements) up to level 9 but is concerned these are not adequately illustrated and described on the coloured building elevations. The Panel understands the solid components will be located behind the line of glazing. To clearly illustrate the proposed solution, the solid upturns should be represented with a dotted line and notes for submission and assessment.</p>
<p>Thermal Comfort of Apartments to the Eastern Facade</p>	<p>The Panel has reviewed the supporting letter from GreenPerch (1/11/24) outlining the testing and performance of the east-facing apartments including the semi-enclosed balconies. The design team is encouraged to consider the integration of a number of GreenPerch’s recommendations prior to submission including passive shading elements, glazing and frame specification, and ceiling fans to units and balconies, to establish comfortable levels of amenity for all dwellings.</p>
<p>Lift Lobbies to Towers (Levels 3 - 35)</p>	<ul style="list-style-type: none"> ▪ The Panel remains concerned about the amenity of open tower lift lobbies in windy conditions and questions their inclusion in residential buildings of this height and scale. ▪ Prior to submission, obtain detailed technical advice from a wind consultant to test and evaluate the suitability of the current proposal. Integrate any measures identified by the consultant to support increased amenity in adverse conditions



Matter	Panel Comment
Connecting with Country	Continue to develop the Connecting with Country strategy to inform and enrich the architectural and landscape proposal including the integration of public art and naming opportunities in the public and private domains.

The Panel noted that no further reviews are required by the Design Integrity Panel prior to submission of the proposal for assessment. The applicant accepts these items for consideration and will address these in the EIS submission.


5. PANEL ENDORSEMENT

The DIP Chair confirms that this letter is an accurate record of the DIP feedback and that the DIP endorses the observations and clarifications by consensus.

This letter is to be used to guide further detailed design refinement of the scheme.

The DIP recommends that the matters identified in Table 3 be considered prior to submission of the SSDA.

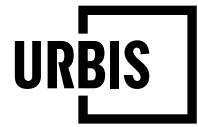
Design Integrity Panel (DIP) Endorsement

Name	Signature	Date
Matthew Bennet (Chair)		19 November 2024

Yours sincerely,



Ella Grimson
Assistant Planner
+61 2 8424 5155
egrimson@urbis.com.au



APPENDIX A

FUNDAMENTAL ELEMENTS OF DESIGN EXCELLENCE

Podium Planning and Massing

- The number, alignments and dimensions of the pedestrian connections through the podium including the extent of covered arcades and links open to the sky.
- The locations of the residential lobbies on O'Brien and Wilson Street establishing clear legibility and way finding for residents and visitors.
- The flexibility in the plan for a range of commercial tenancy sizes and types to activate the surrounding streets and connections through the podium.
- The provision and locations of commercial and childcare lobbies with dedicated lifts and stairways that provide additional activation to the podium connection.
- The articulation of the podium massing as a series of elements that can step with the topography to break down the streetscape scale of the development.
- The locations of the basement/servicing entry and substations (suitability of this strategy will be confirmed post competition with the Proponent, Willoughby Council and relevant stakeholders prior to DA lodgement.
- The strategy to locate the childcare facilities and open space on a single level to the east of the podium.

Landscape and Open Space

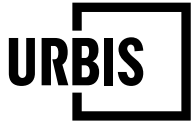
- The intention for a refined and simple palette of materials to create an uncluttered urban environment.
- The extent and character of the landscape proposal including planting throughout the podium levels, pedestrian connections, and eastern access way.
- The bench seating areas and landscape planting throughout the site that provides a welcoming environment for residents and their guests.

Tower Planning and Massing

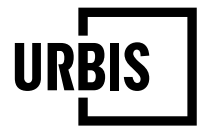
- The proposed internal separation between the towers to comply with the dimensions set out by the site specific DCP controls (the Jury acknowledges this does not achieve separation to ADG requirements but notes these dimensions have been endorsed by Willoughby Council and form a key element of the competition brief).
- The articulation of the towers as a series of bundled forms to reinforce the slenderness and verticality of the proposed massing and to reduce the perceived bulk of the development.
- The high performing in terms of solar amenity and cross-ventilation (including the removal of the south-facing apartment in the southern tower in the revised scheme).
- Residential lobbies that are efficient and well provisioned with natural light and ventilation.

Architectural Expression, Materiality and Character

- The development of a cohesive architectural language and materiality for the tower and podium forms.
- The strategy to use a suite of complimentary materials with varying hues to articulate and differentiate the tower bundles and podium elements including:



- Off-form and precast concrete in light grey tones.
- Pre-finished steel and aluminium elements in a rust-red tonal range.
- The development of a kit of parts within the tower facades that are deployed to:
 - Respond to the specific environmental conditions of each solar aspect with vertical shading elements to east/west facades and horizontal shading elements to northern facades.
 - Support improved privacy outcomes between the towers.
 - Provide subtle variations in the bundled tower forms.
- The current ratio of solid to glazed façade across the building to support the architectural concept and improve residential amenity and environmental performance.
- The articulation of the podium as a series of smaller elements within a consolidated form.



APPENDIX B

DIP - REQUEST FOR FURTHER INFORMATION LETTER

849-859 Pacific Highway & 2-8 Wilson Street Chatswood NSW

Design Integrity Panel

Matthew Bennett (Chair), Digby Hall, Bob Nation

23rd October 2024

Foreword

The focus of this commentary will be on design and amenity impacts and merits of the 30% uplift proposal. The advice provided below does not fetter the discretion of the assessment authority in assessing impacts including but not confined to wind, overshadowing to public domain, shadow impacts on surrounding development, traffic, waste strategy, and the capacity of utilities.

Request for Additional Information

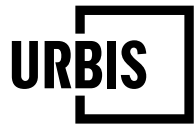
- Thank you for the opportunity to review the amended scheme for this project. The Panel commends the design team for the clarity and thoroughness of the presentation.
- To complete the review process, the Panel requests the following information is provided:
 - Elevation drawings for each of the building facades clearly indicating solid and glazed elements. (Coloured scale drawings would be preferable, but elevation screenshots of the 3d model will be sufficient if these are more efficient for the team to provide.) These elevation drawings should be supported by 3d views to describe typical facade types and treatment including shading elements.
 - Detailed descriptions and drawings that explain and illustrate:
 - how thermal comfort is maintained to the eastern and north-eastern apartments with the introduction of full-height glazing and glazed louvres to comply with anti-throw requirements.
 - how the visual impact of clutter/personal belongings within these enclosed balconies will be mitigated through solid spandrel elements or similar. This is particularly relevant for lower levels including the affordable housing dwellings when viewed from the public domain, rail corridor and surrounding urban context.
 - how the quality and character of the eastern and north-eastern facades compliments the well-considered balance of solid and glazed elements evident in the western and southern facades.

- The Jury is not expecting a fully developed graphic presentation or the preparation of finished architectural illustrations. A series of slides that address each of these points will be adequate for review including annotated screenshots, hand drawings and mark-ups as required.

Thank you again for the opportunity to review this project. Please let us know if you have any questions regarding this request.

Yours sincerely,

Matthew Bennett

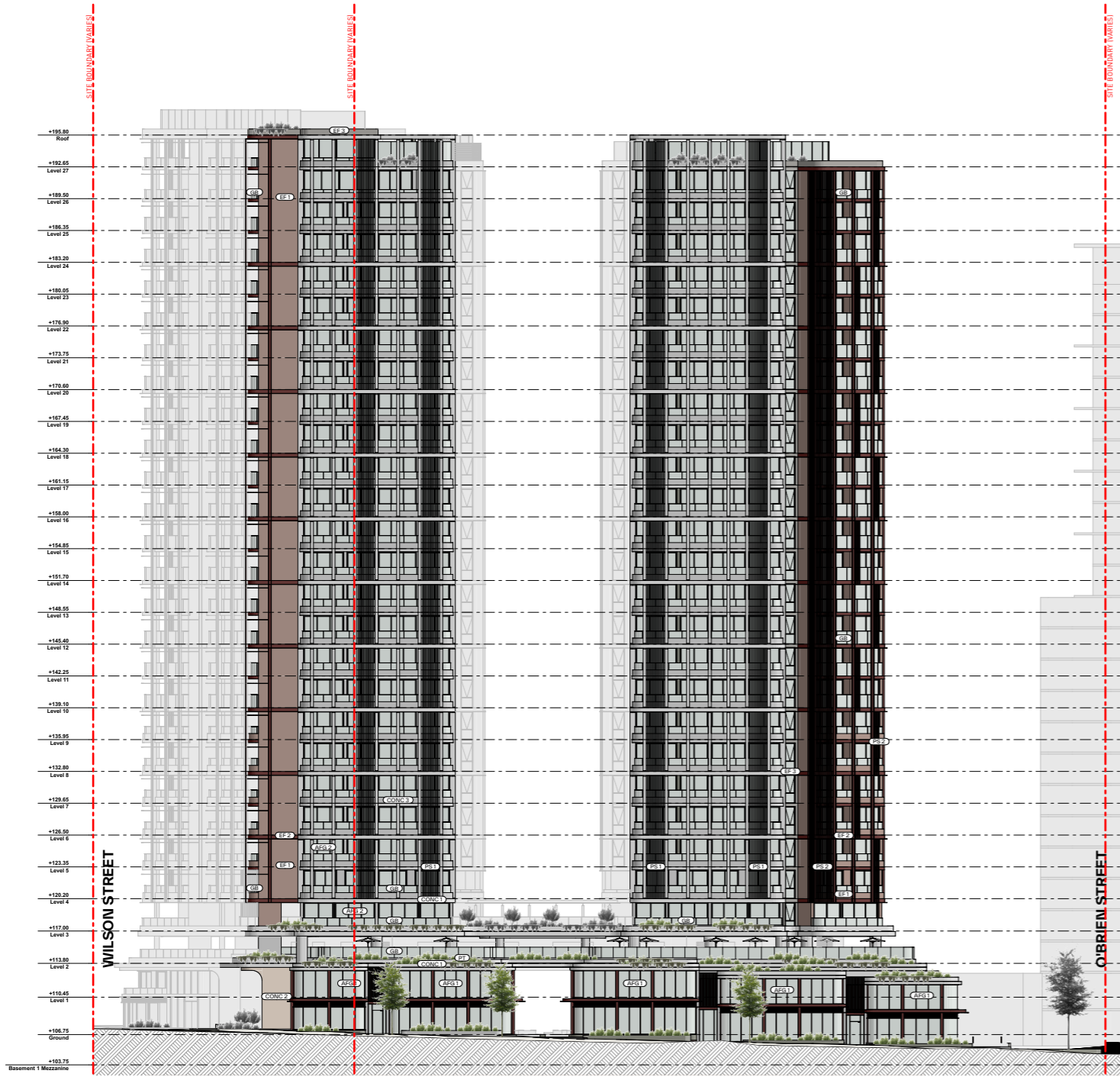


APPENDIX C

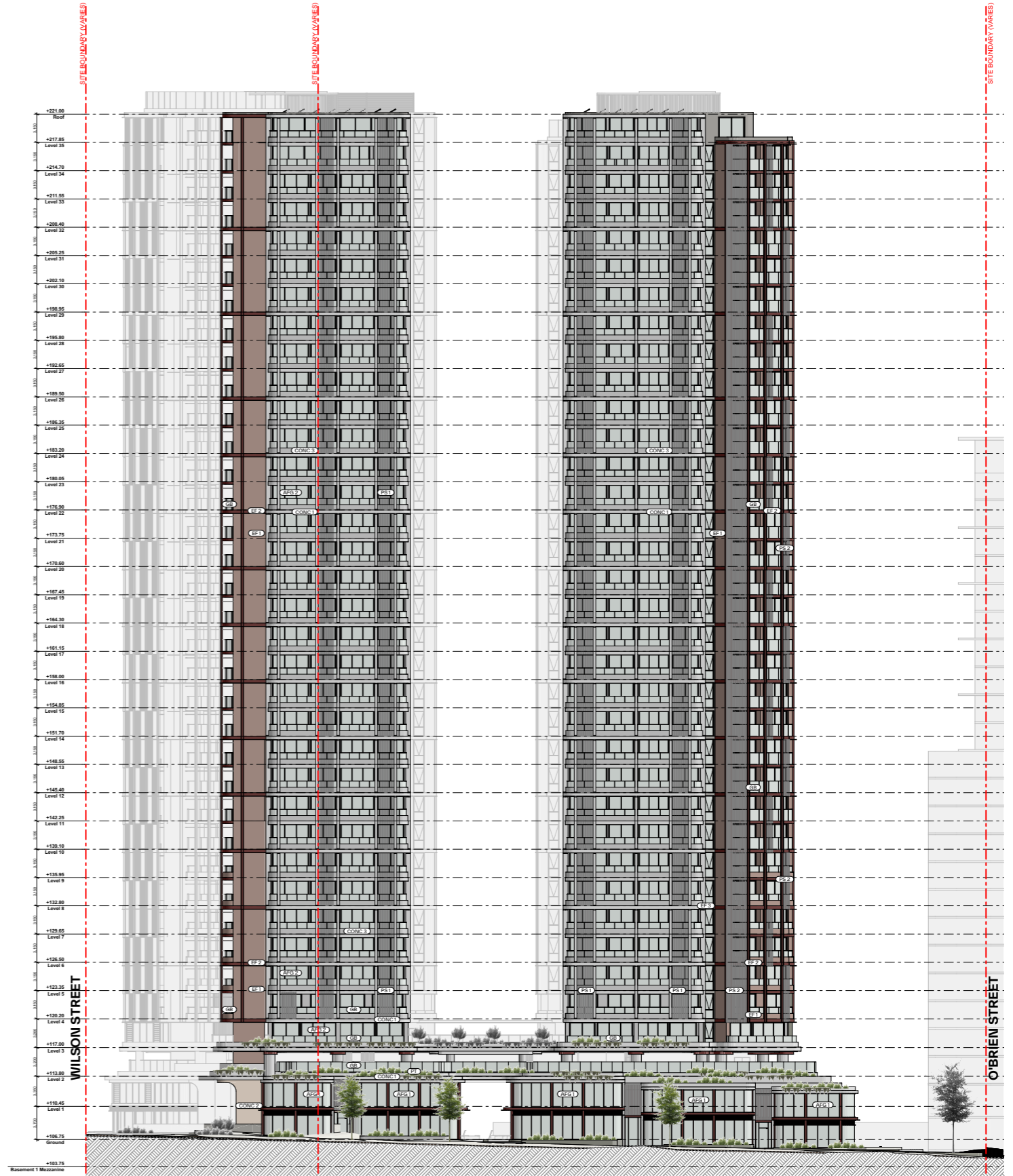
APPLICANT RESPONSE TO RFI - ELEVATIONS AND 3D VIEWS

WEST ELEVATION

DA SCHEME



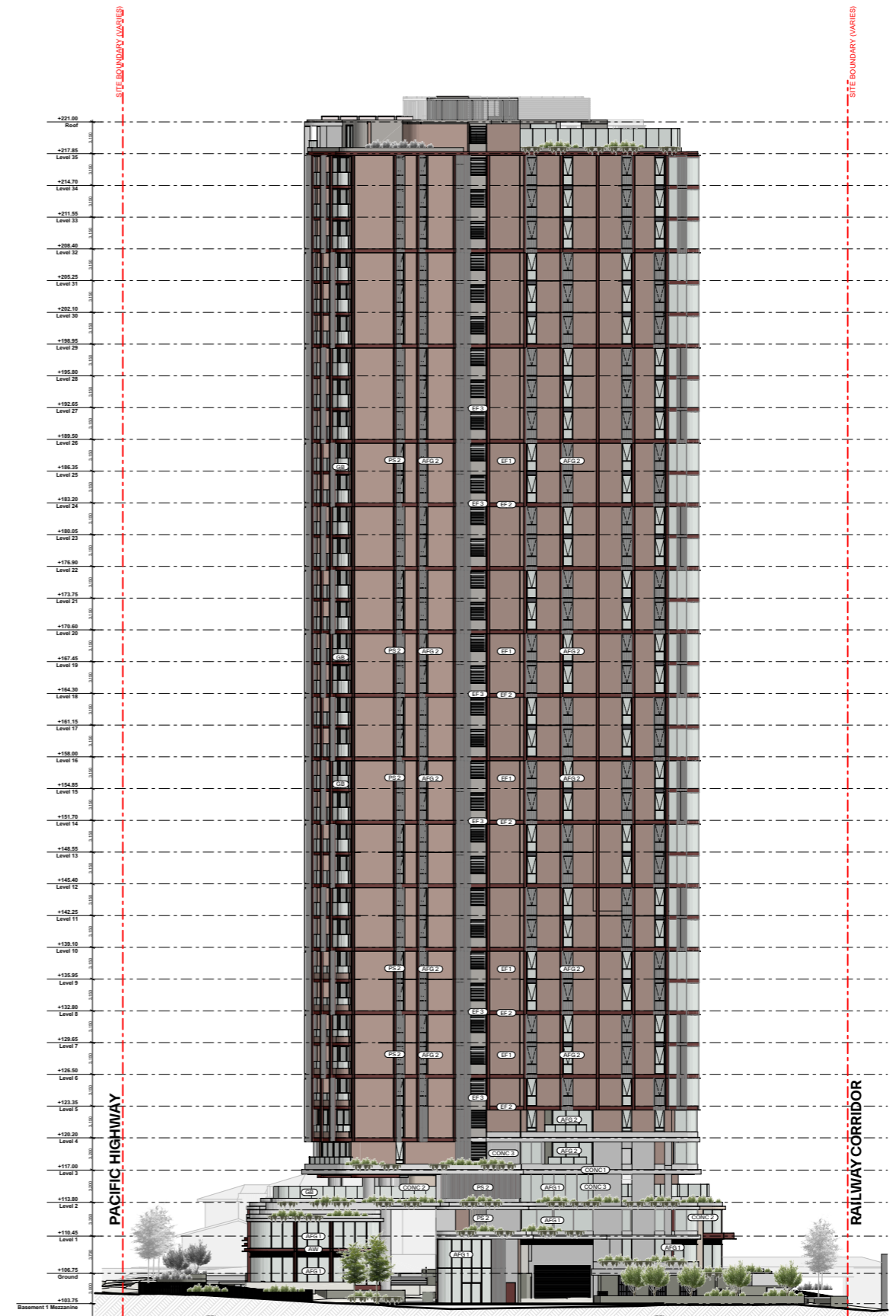
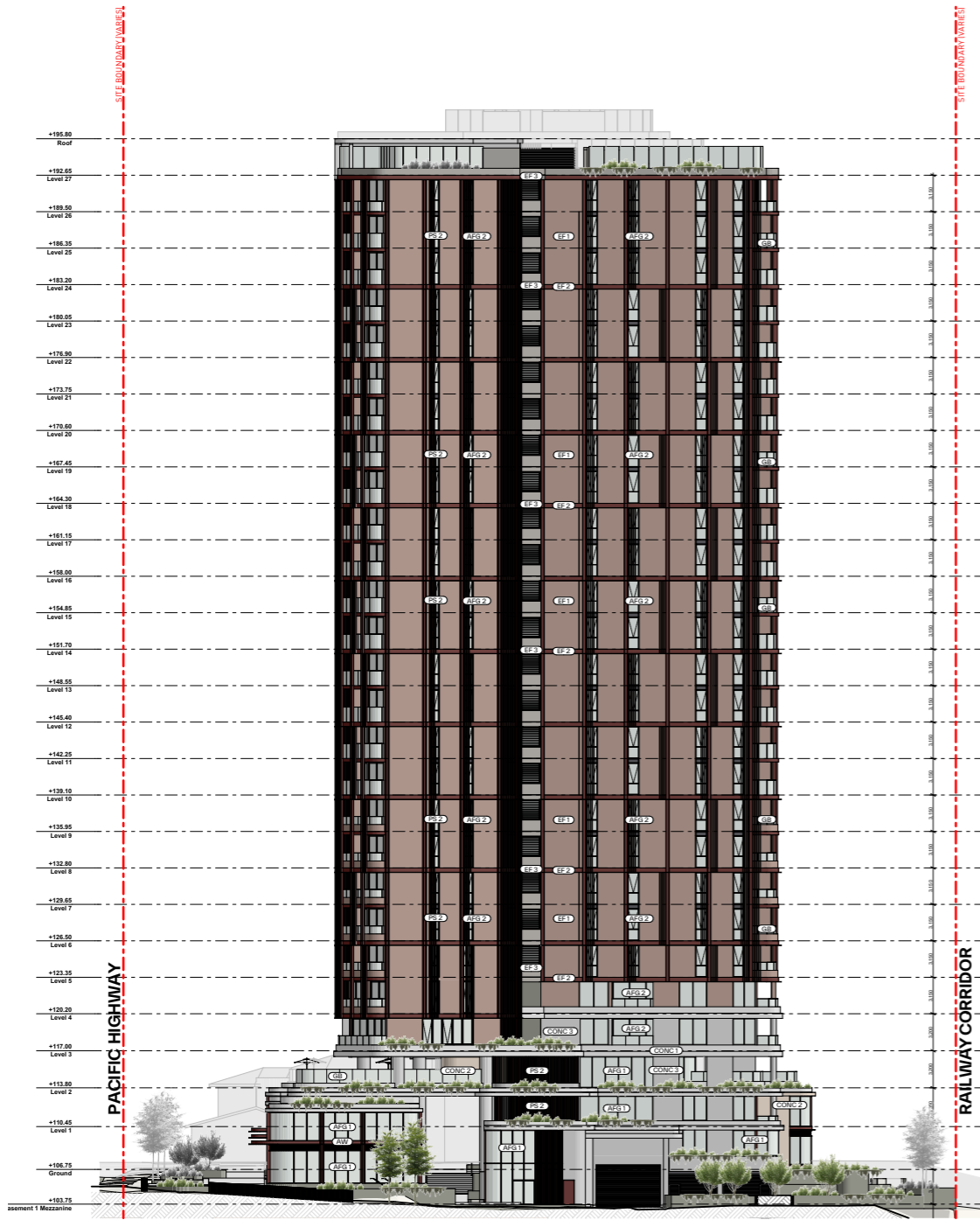
PROPOSED UPLIFT



SOUTH ELEVATION

DA SCHEME

PROPOSED UPLIFT

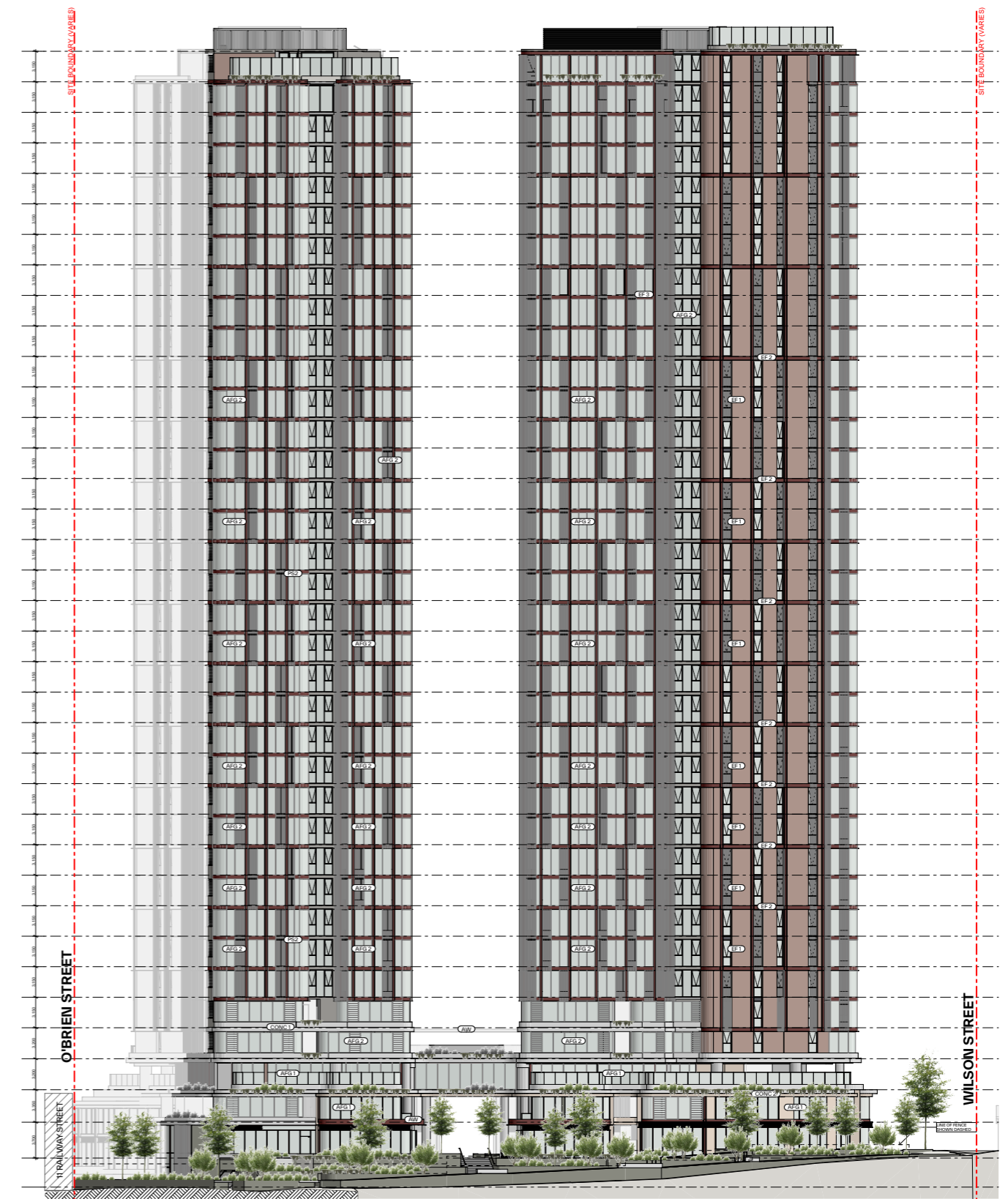


EAST ELEVATION

DA SCHEME



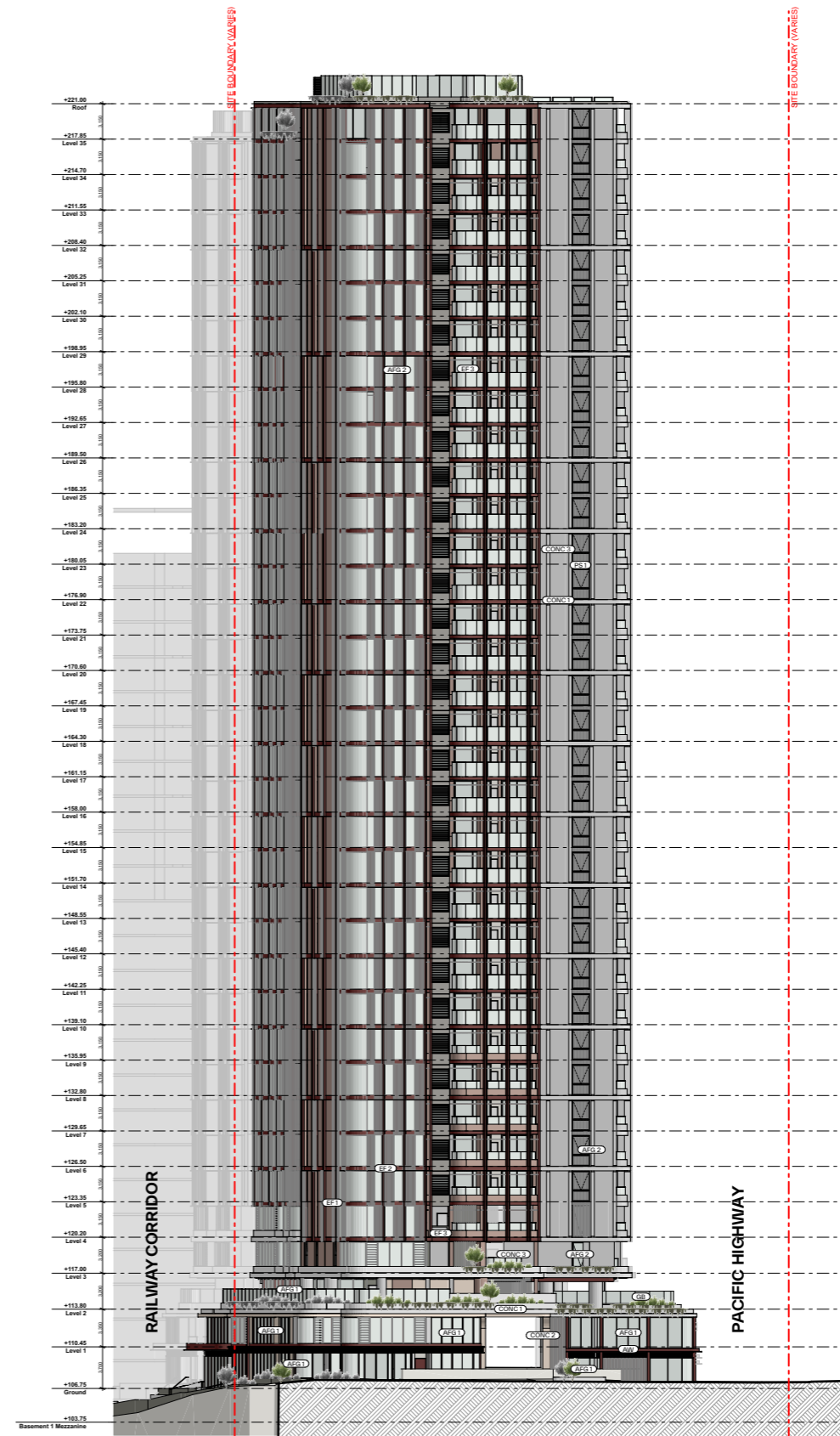
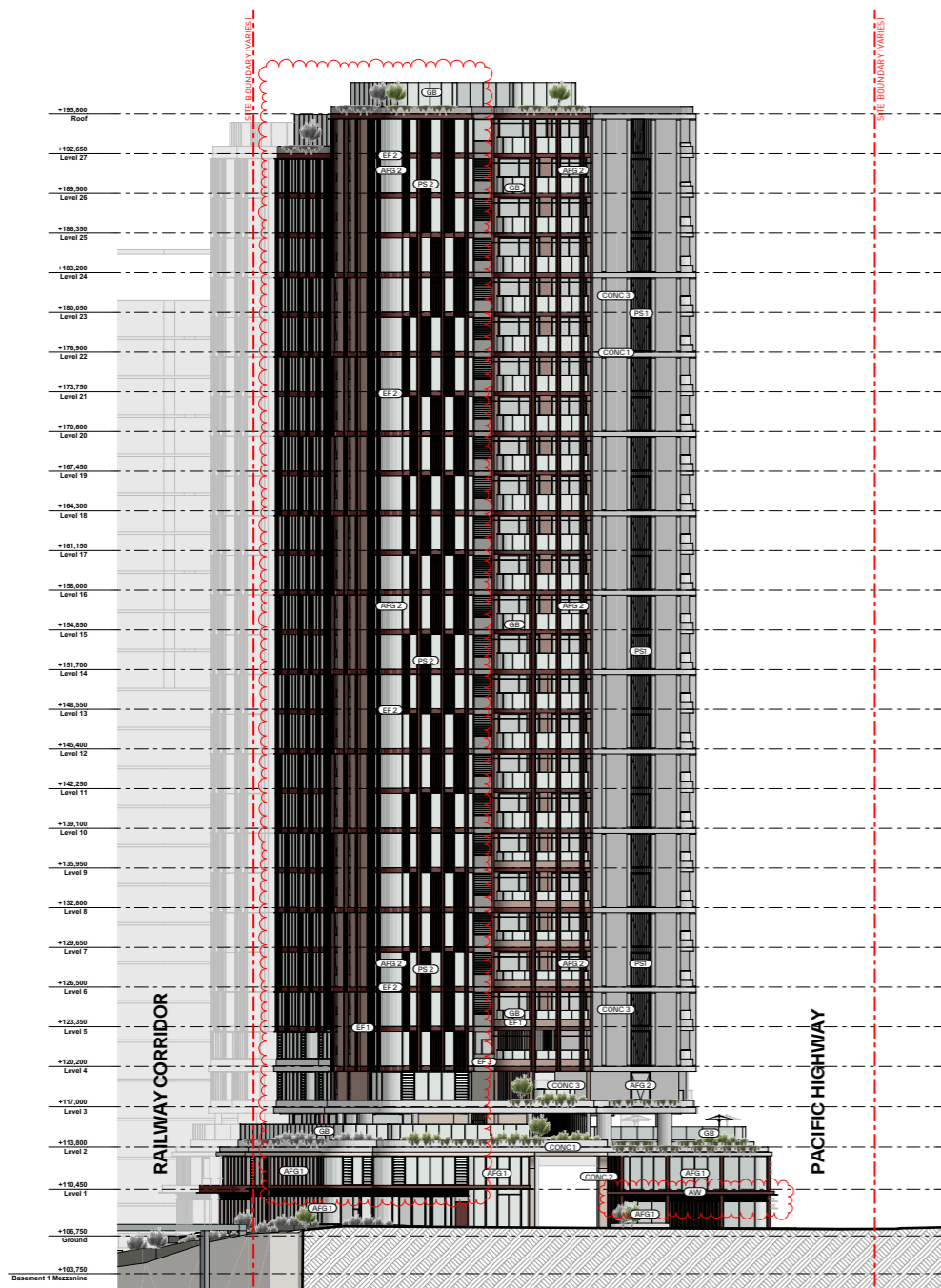
PROPOSED UPLIFT



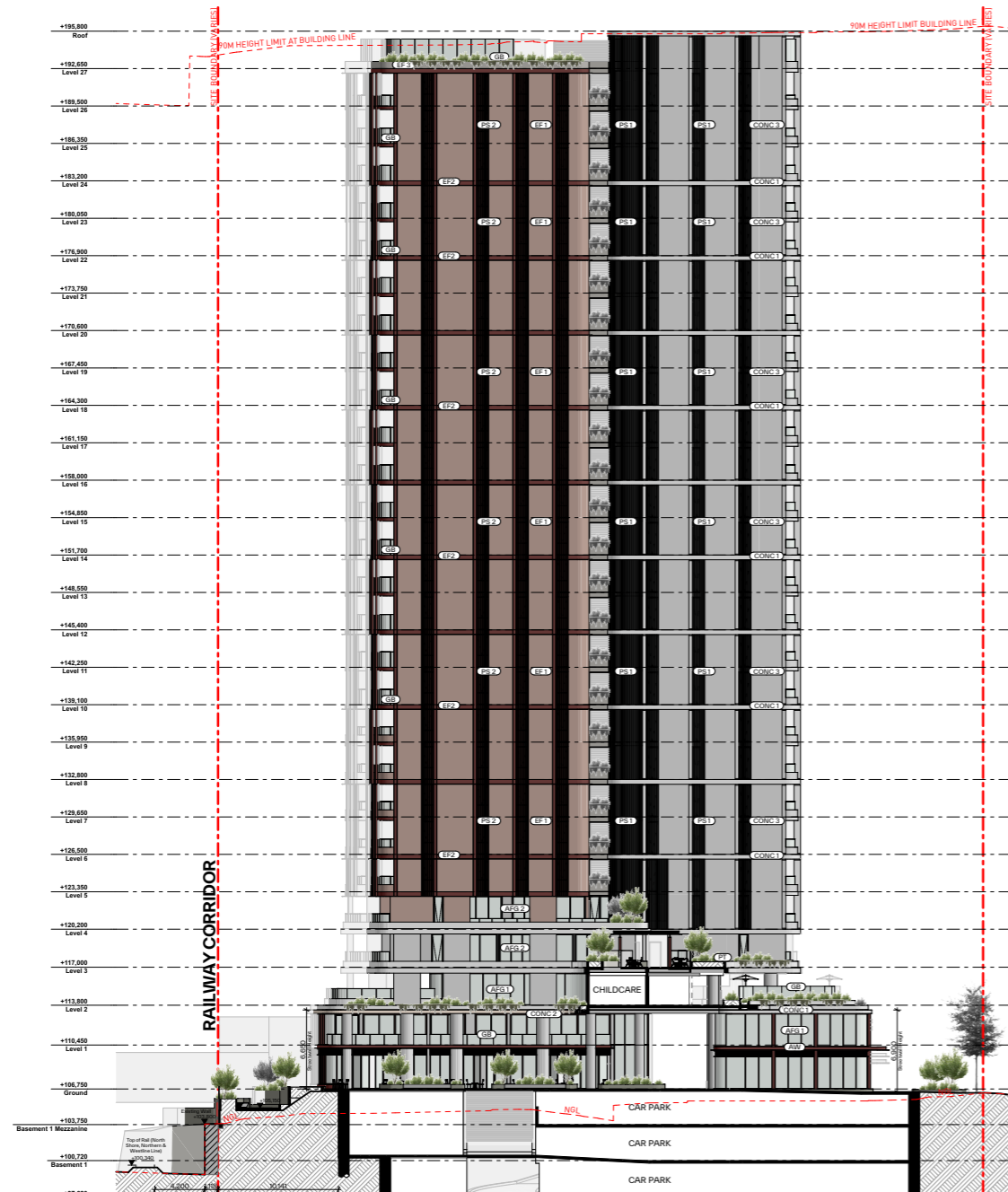
NORTH ELEVATION

DA SCHEME

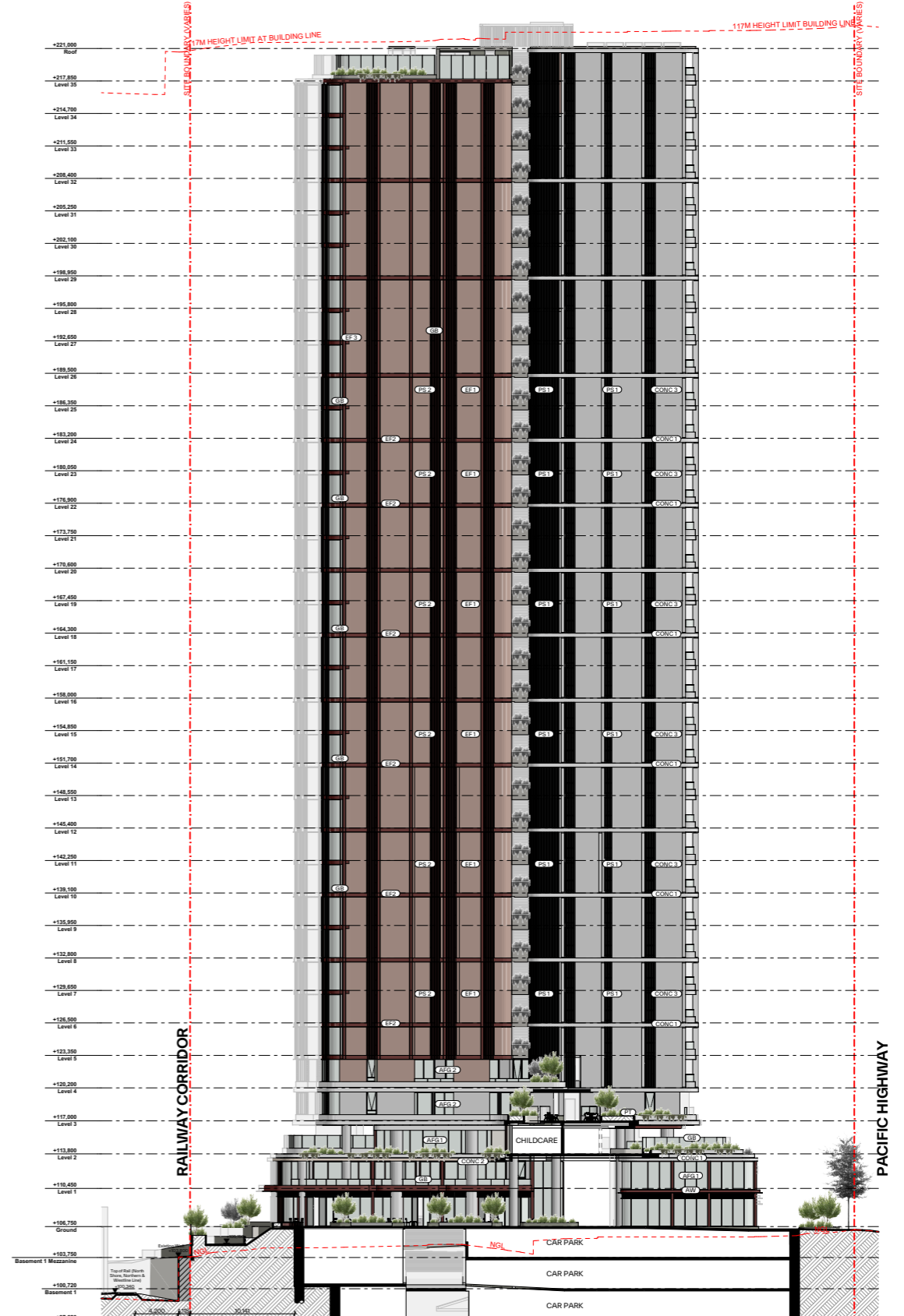
PROPOSED UPLIFT



INTERNAL ELEVATION - NORTH
DA SCHEME

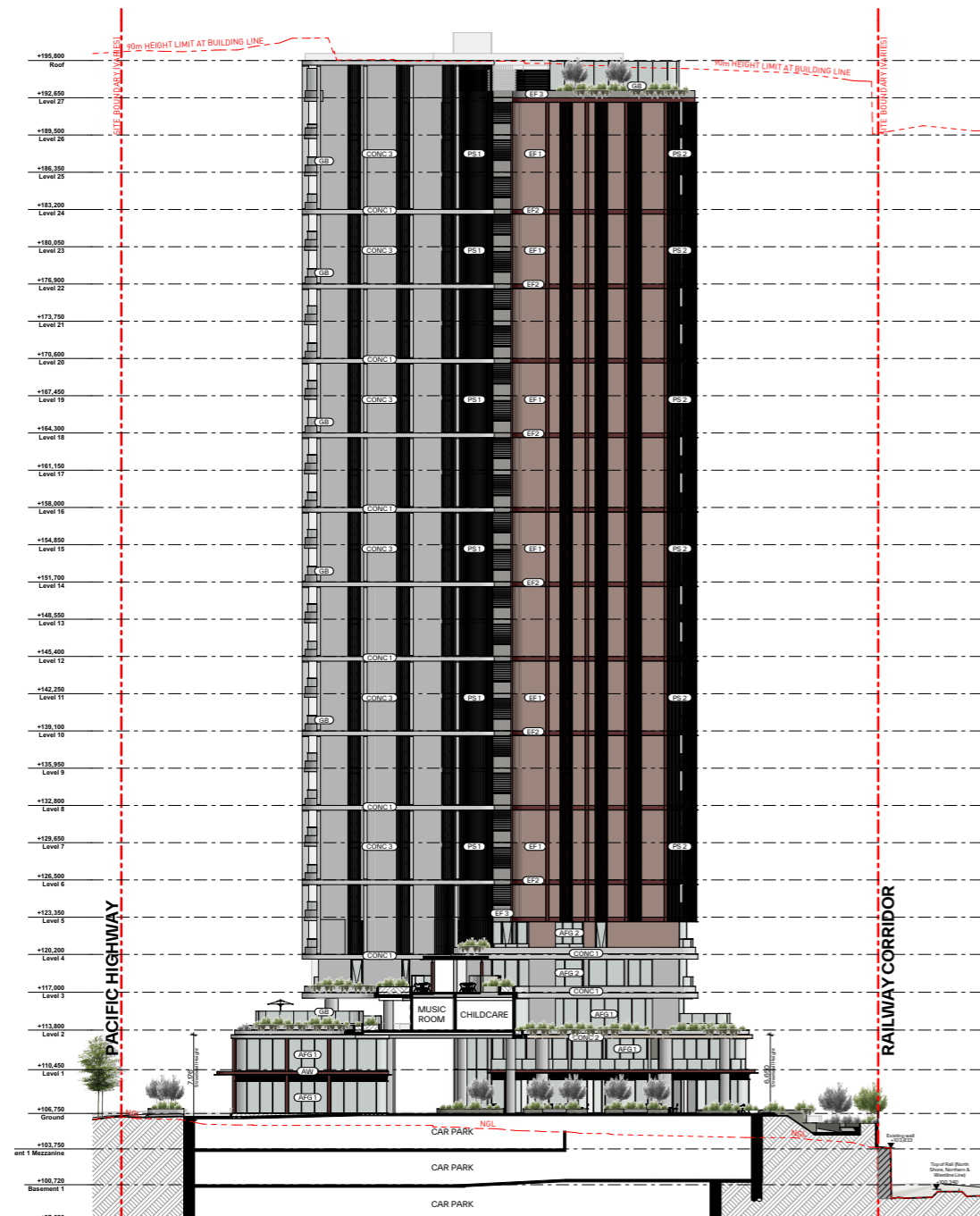


PROPOSED UPLIFT

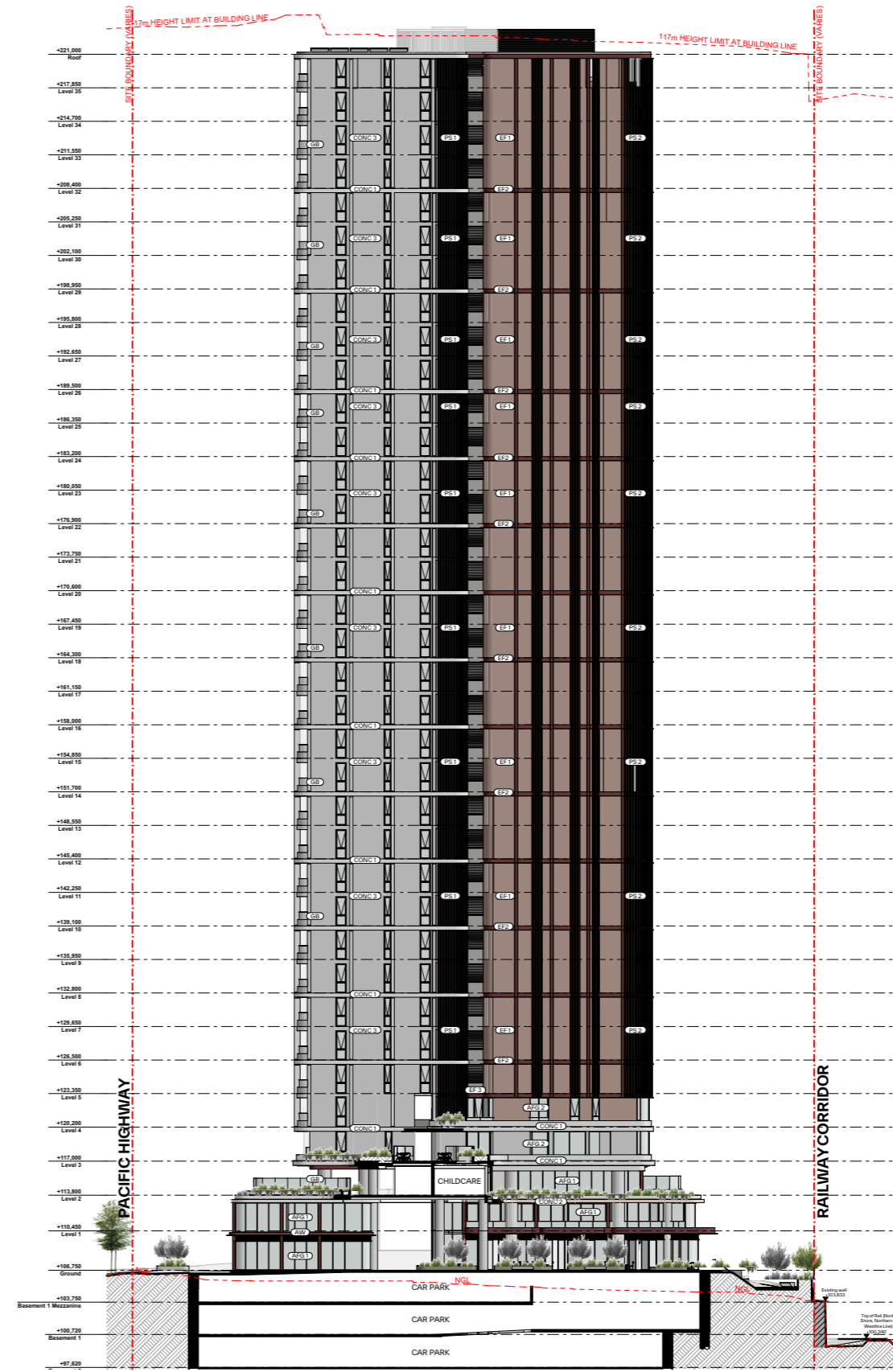


INTERNAL ELEVATION - SOUTH

DA SCHEME



PROPOSED UPLIFT



Balcony treatment includes full-height fixed glazing, vertical aluminium louvers and solid upstand

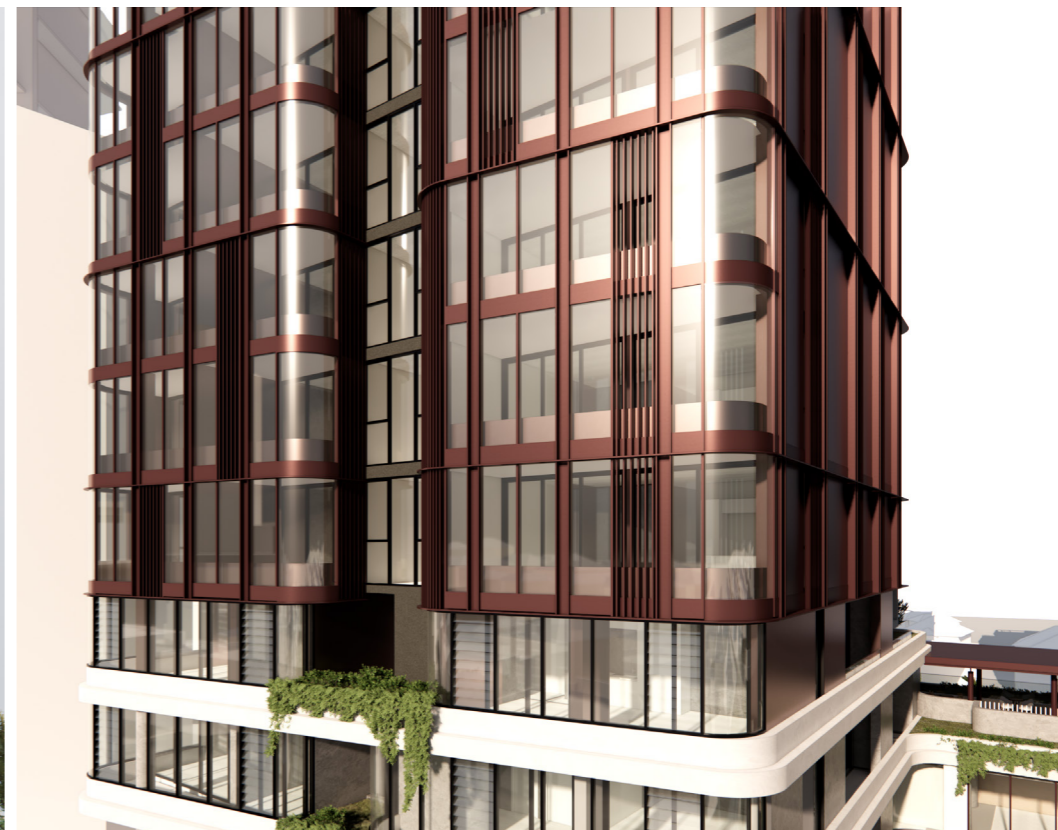
Solid upstand paired with frameless glass balustrade

Northern facade (Wilson St)



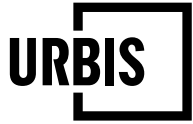
The solid balustrade upturn is proposed to be retained for the first six storeys of the residential component (up to Level 9), including the eastern and northern balconies. This measure not only ensures privacy and manages visual impact but also preserves the solid-to-glazed ratio established throughout the rest of the façade, maintaining the design's consistency and architectural integrity.

Eastern facade



Western facade





APPENDIX D

APPLICANT RESPONSE TO RFI - FAÇADE TREATMENTS AND DETAILED BASIX, NATHERS, ESD AND SECTION J TESTING

7th November 2024

BB Wilson Property Pty Ltd
c/o Billbergia Group Pty Ltd
Locked Bag 1400
Meadowbank NSW 2114

To: Mr Oscar Brady and Mr Donovan Sia
Email: oscar.brady@billbergia.com.au donovan.sia@billbergia.com.au

Subject: **849, 853 and 859 Pacific Highway and 2 and 8 Wilson Street, Chatswood
BASIX, NatHERS, ESD, and Section J – SSDA Design**

Dear Oscar and Donovan

Following our analysis of the documents, we have undertaken some detailed NatHERS, BASIX, Section J and ESD testing on this project. In particular, we have been testing units to the eastern facade (facing the North Shore Rail line), including the new throw proposed risk mitigation measures.

The testing is looking very promising, so far, and the partial enclosure of these balconies through a combination of full height glazing and permanently open louvres does not seem to be hurting the overall star ratings (or the average scores) too much at all, for NatHERS and BASIX. The overall summer loads were slightly higher in some cases, but the average summer scores and star ratings are still very good.

The addition of ceiling fans to living rooms greatly assisted this summer performance and now the average scores are on track to be very high (hopefully around 7.5stars in NatHERS).

We should add that NatHERS is not particularly well-equipped to measure the temperature and performance of these external (unenclosed spaces). If these balconies were fully enclosed then NatHERS would treat them like additional, air-conditioned living zones. However, given these balconies to the Eastern facade have been designed to maintain a permanently fixed open component of 30% or above, they have been modelled more like balconies rather than internal zones.

That said, the use of some simple passive thermal tactics (in the real-world) will help to keep the east-facing balconies performing well, in our opinion. The use of some shading devices and generous openings (mostly on 2 dual-aspect locations) will help too much heat build-up.

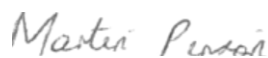
Furthermore, the use permanent fixed openings will ensure that night-time flushing will always occur. The use of external ceiling fans may also help this process and also help to add low-energy passive cooling options, for the residents using these spaces.

The use of these fans may be investigated for future incorporation, however their use will not affect the NatHERS or BASIX scores, either way. The ceiling fans may help the real-world performance, but without intricate CFD modelling and wind testing, the true passive benefits of the fans may be hard to quantify and to justify.

Overall, we are confident that the balconies to the eastern facade, incorporating the new throw risk mitigation measures, won't overheat to extreme conditions. That said, the final glass type and frame types will also influence that decision. A balance between daylighting and passive cooling must be ensured.

We hope that this advice is satisfactory and look forward to completing our certification for this fantastic new project. Please don't hesitate to call or email anytime, if you wish to discuss any aspects in more detail.

Yours sincerely, GREENPERCH Pty Ltd *per*



Martin Pinson
Senior ESD Consultant Australasia

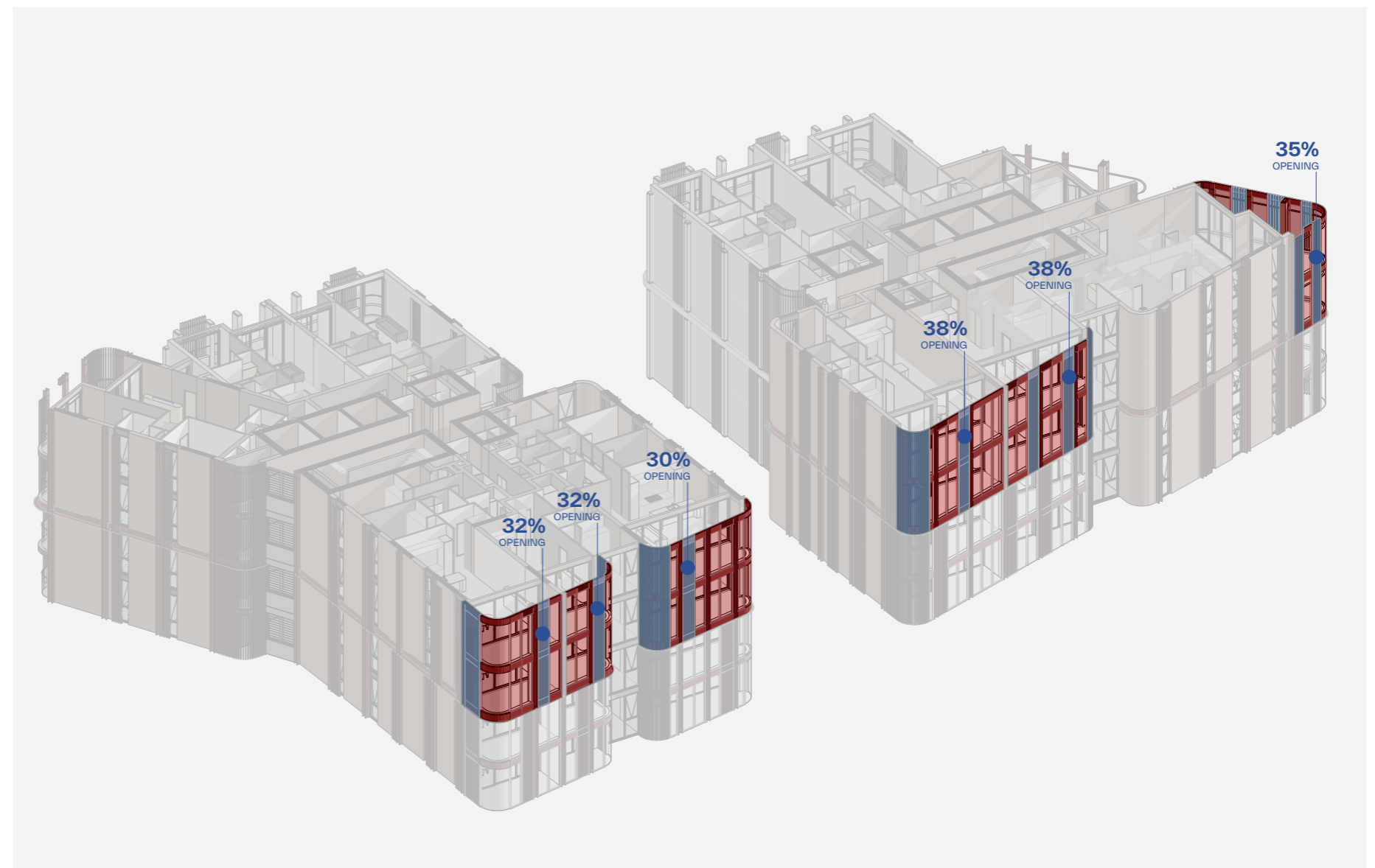
04.6 EASTERN FACADE TREATMENT

Treatment to Eastern Facade Balconies

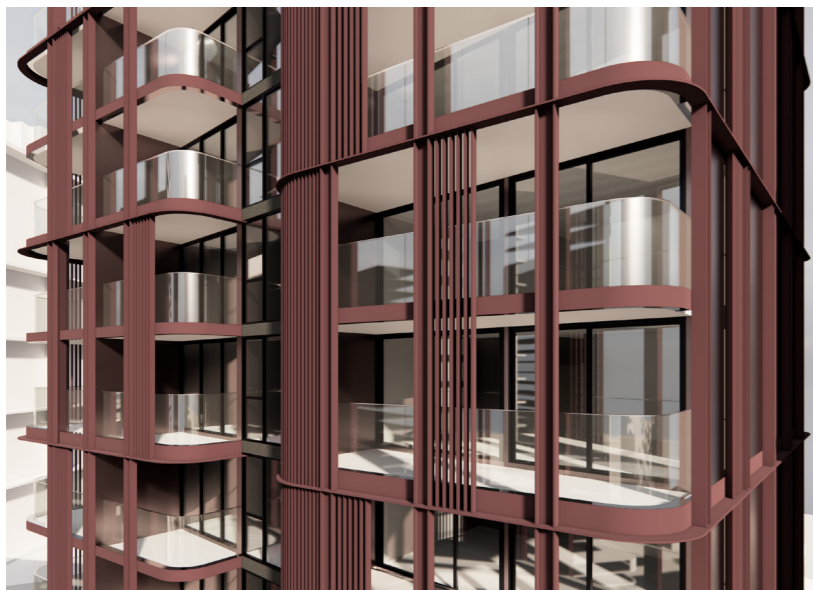
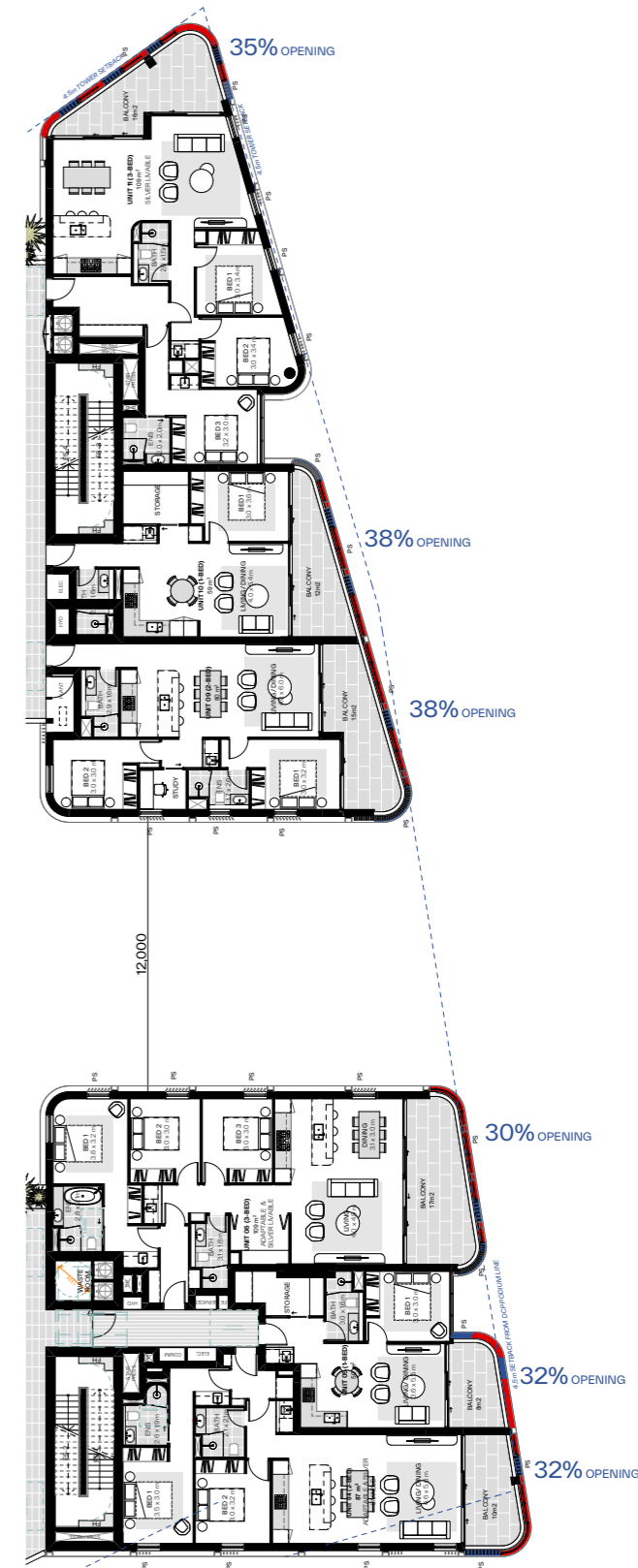
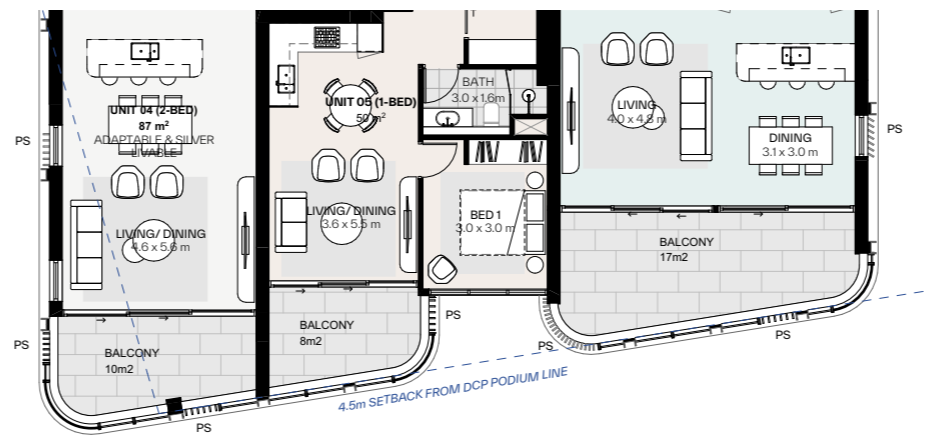
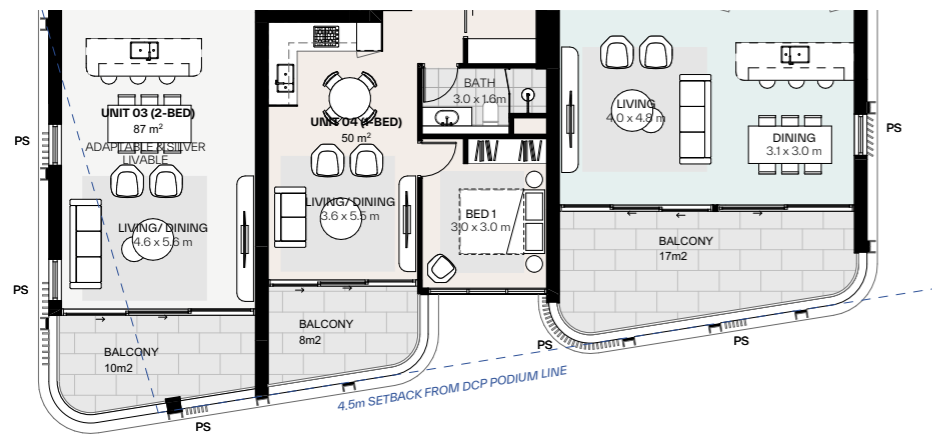
Transport for NSW has established design requirements that outline standards for the interface between developments and rail corridors. Several changes have been made to the design excellence scheme on the eastern and north-eastern facades to comply with these requirements.

On these facades, within 20 meters of the rail corridor boundary, balconies now feature a combination of full-height fixed glazing, vertical aluminium louvers, and horizontal glass louvers (to the podium levels). This design approach adheres to the standards by limiting the maximum opening sizes to minimize potential throw risks to the rail corridor, whilst providing a substantial fixed open component, to prevent full enclosure of any balconies and maintain natural ventilation. Additionally, childcare and rooftop open spaces on the eastern facade include 1.8-meter-high glass balustrades.

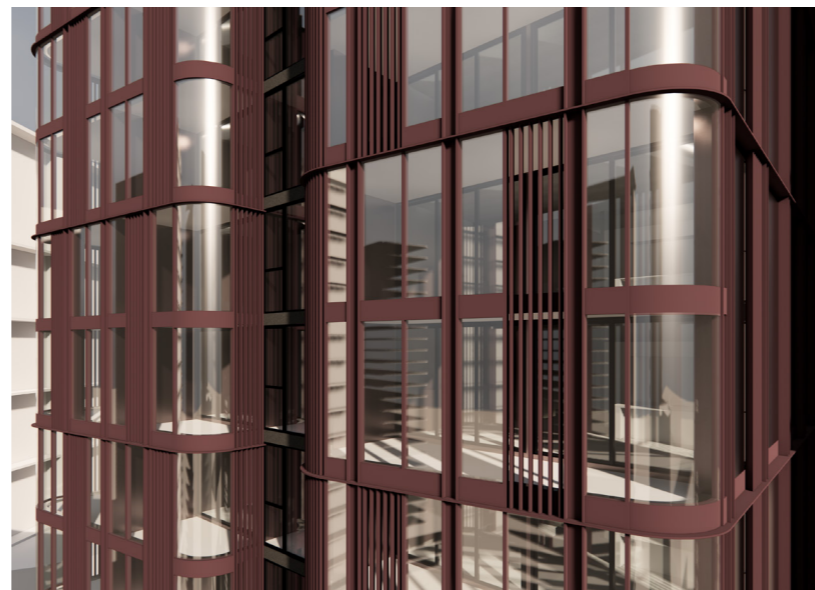
These changes have been carefully implemented to comply with the guidelines while maintaining the original design intent of the excellence scheme.



Eastern Facade Balcony Treatment - Typical Level
Solid to void ratio calculation

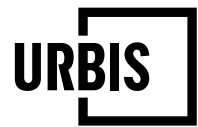


Design Excellence Scheme



Post Facade Treatment - typical levels

Balcony Treatment - Typical Level



APPENDIX E

DIP LETTER 2

849-859 Pacific Highway & 2-8 Wilson Street Chatswood NSW

Design Integrity Panel

Matthew Bennett (Chair), Digby Hall, Bob Nation

13th November 2024 - DIP Comments #2

Foreword

The focus of this commentary will be on design and amenity impacts and merits of the 30% uplift proposal. The advice provided below does not fetter the discretion of the assessment authority in assessing impacts including but not confined to wind, overshadowing to public domain, shadow impacts on surrounding development, traffic, waste strategy, and the capacity of utilities.

1. Amendments Supported by the Panel

The Panel broadly supports the amended scheme presented by PBD Architects as it is consistent with the design and quality of the Design Excellence Competition proposal. In particular the Panel supports the:

- Increased height resulting in slender tower forms
- Refinement of the ground floor and podium planning to improve legibility and amenity
- Retention of the childcare facilities as a non-residential use on the site
- Provision of affordable housing with a shared ground floor lobby and access to communal open space facilities
- Refinement of the apartment plans while retaining high levels of natural cross ventilation and solar access.

2. Amendments Requiring Further Consideration

The Panel has reviewed the original briefing pack and supplementary material and has identified several items requiring further consideration for the scheme to achieve design excellence.

(a) Solid Balustrade Upturn to Residential Balconies up to Level 9

- The Panel supports the strategy presented in the supplementary rendered views for solid balustrade upturns for all open and semi-enclosed balconies (to comply with anti-throw requirements) up to level 9 but is concerned these are not adequately illustrated and

described on the coloured building elevations. The Panel understands the solid components will be located behind the line of glazing. To clearly illustrate the proposed solution, the solid upturns should be represented with a dotted line and notes for submission and assessment.

(b) Thermal Comfort of Apartments to the Eastern Facade

- The Panel has reviewed the supporting letter from GreenPerch (1/11/24) outlining the testing and performance of the east-facing apartments including the semi-enclosed balconies. The design team is encouraged to consider the integration of a number of GreenPerch's recommendations prior to submission including passive shading elements, glazing and frame specification, and ceiling fans to units and balconies, to establish comfortable levels of amenity for all dwellings.

(c) Lift Lobbies to Towers (Levels 3 - 35)

- The Panel remains concerned about the amenity of open tower lift lobbies in windy conditions and questions their inclusion in residential buildings of this height and scale.
- Prior to submission, obtain detailed technical advice from a wind consultant to test and evaluate the suitability of the current proposal. Integrate any measures identified by the consultant to support increased amenity in adverse conditions.

(d) Connecting with Country

- Continue to develop the Connecting with Country strategy to inform and enrich the architectural and landscape proposal including the integration of public art and naming opportunities in the public and private domains.

Conclusion

- The Design Integrity Panel recommends further refinement of the scheme is undertaken to respond to the items identified in this letter for the proposal to achieve Design Excellence.
- No further reviews are required by the Design Integrity Panel prior to submission of the proposal for assessment.