Darling Square NW Plot
Design Report for Section 96 Application (Mod 3) To Modify SSD 6013

October 2016

WOODS BAGOT™

Contents

Appendix

1.0 Introduction

Approval for SSD 6013 Mod 2 was granted on 26 November 2015. This report has been prepared to support a section 96 application. It describes a range of minor amendments as the result of design development for the project.

The changes are addressed under the following sections:

- Ground Floor (2.1)
- Facades (2.2)
- Roof (2.3)

The amendments at ground floor will enhance the ability to deliver an activated ground plane, with improved public domain interfaces and a greater design resolution.

The amendments to the façade further refine the building envelope and provide for better architectural detailing primarily through the adoption of an innovative technique of screening.

The amendments for the roof largely address the design development of the building maintenance strategy and enhancement of internal planning.

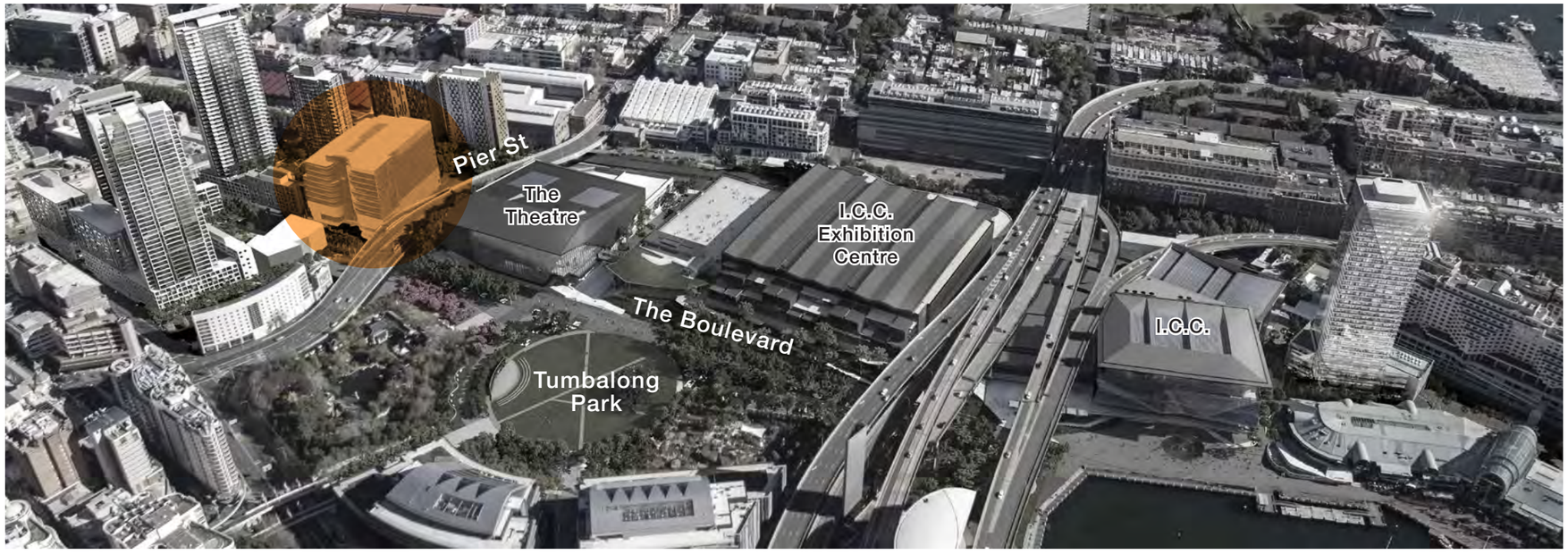


Figure 1.01 : Aerial image of proposed development located within the Sydney International Convention, Exhibition and Entertainment Precinct (SICEEP)

2.0 Amendments to Ground Floor

The changes include:

1. Reconfiguring the interface between the South East corner of the building and the Boulevard;
2. Redirecting the fire escape walkway along the West edge of the building;
3. Enhancing the design of the Dicksons Lane retail façades;
4. Provision of two small tenant identification signs to identify the retail tenancies within the under croft at the East of the building;
5. Confirming the details of the flood mitigation strategy for the two retail tenancy entries below the 1 in 100 year flood level;
6. Rationalising the substation louvre at the North façade; and
7. All active uses on the ground plane are now retail.

These elements are discussed in more detail below.

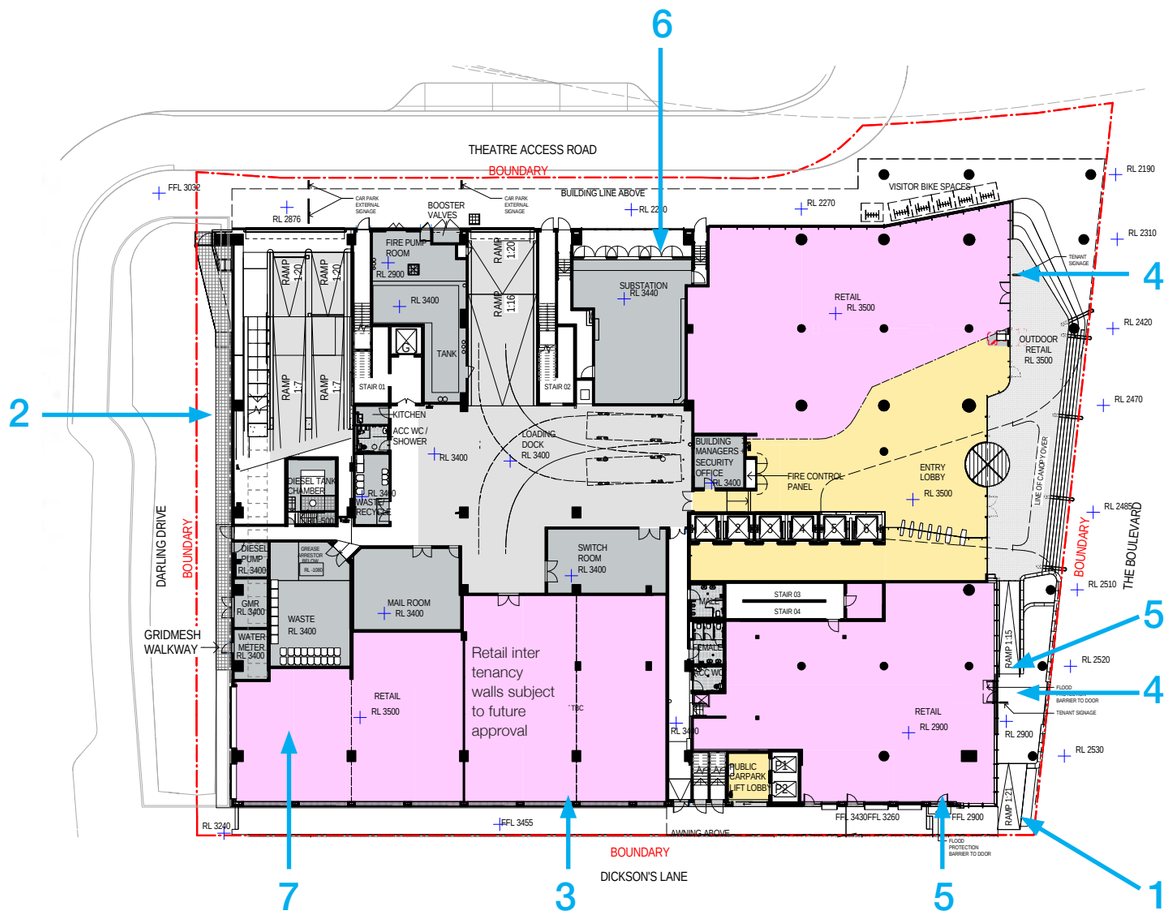


Figure 2.01 : Section 96 NW Plot Ground Plan Design Proposal

2.1 South East Retail Corner

The structure has been reconfigured to strengthen the connection between the corner of the building and the Boulevard, including:

1(a) The structural beam along the edge of the building has been rationalised to open the corner and allow for stair access from the Boulevard to the adjacent retail; and

1(b) The ramped pedestrian walkway has been reconfigured to allow for a flat seated area adjacent to the Boulevard.

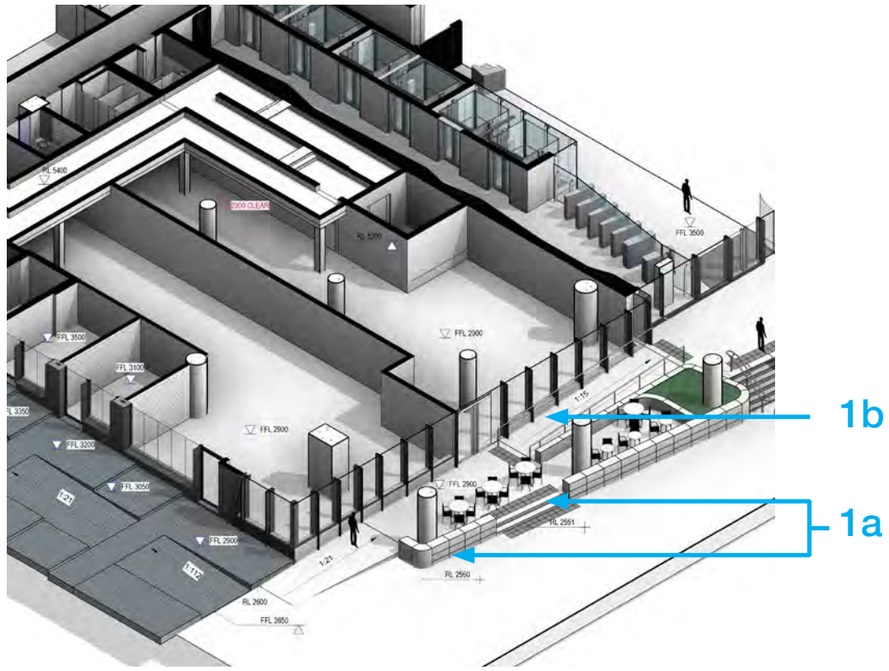


Figure 2.02 : Section 96 NW Plot Proposed Dicksons Lane South East Corner

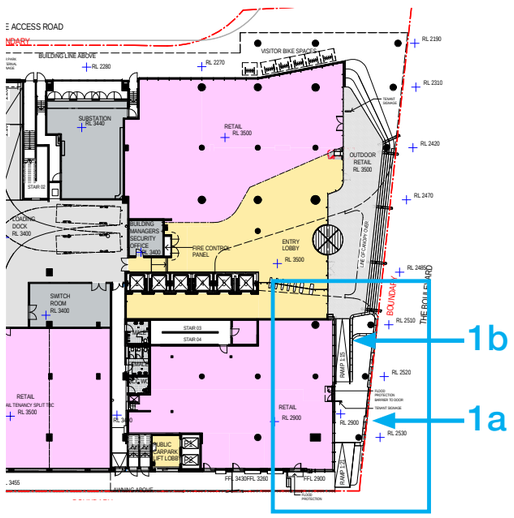


Figure 2.03 : Section 96 NW Plot Proposed Dicksons Lane South East Corner - Perspective

1(c) Mechanically controlled flood barriers have been specified at two of the South East retail entries to address 1 in 100 year flooding requirements for the project. The concealed barriers are integrated into the ground structure with consistent floor finish to ensure minimal impact aesthetically.

The barriers are independently operated via a flood control system. A sensor is included in a remotely located pit and when the sensor is activated in flood conditions the floor barriers raise. A backup power provision is also included in the event of building power failure.
These flood barriers are a refinement of the approved flood mitigation strategy. The refinement of these details has been possible through the detailed design process.

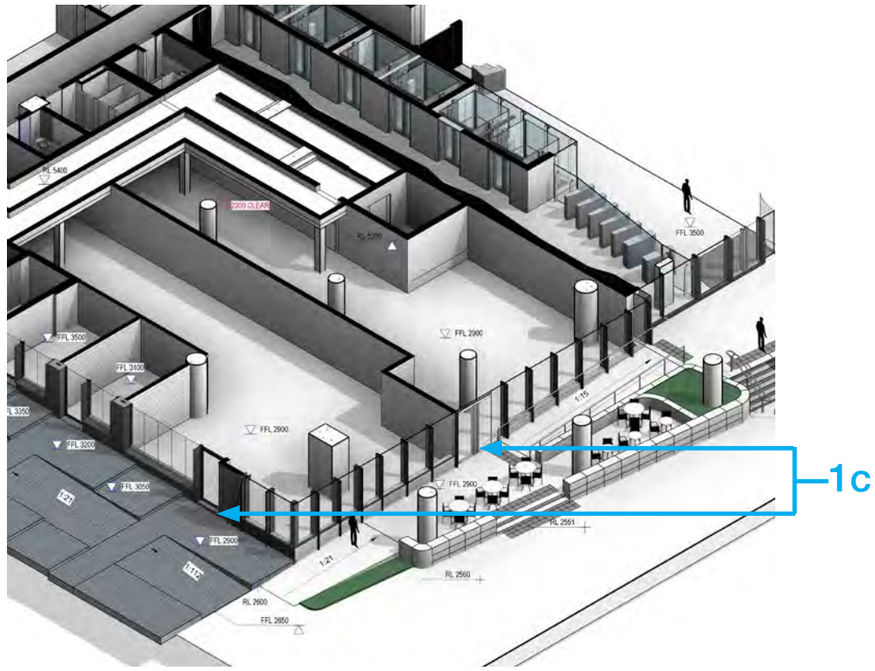
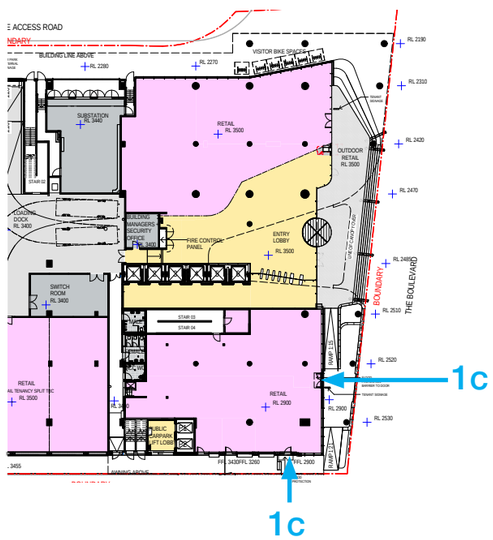


Figure 2.04 : Section 96 NW Plot Proposed Dickson Lane South East Corner



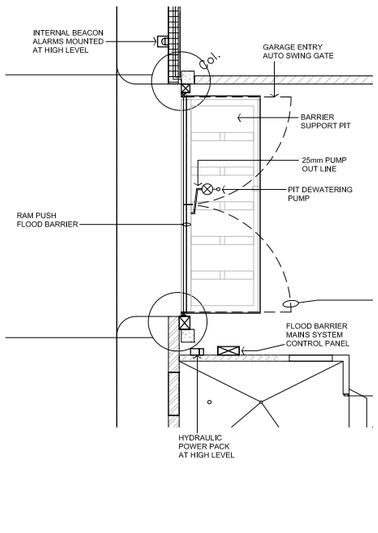
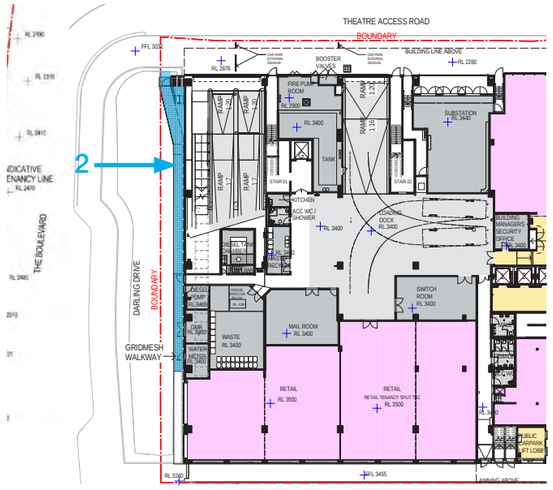


Figure 2.05 : Section 96 NW Plot Proposed Detail of Flood Gate Precedent Images

2.2 Cantilevered West Walkway

The cantilevered walkway along the Western facade which serves as fire escape and maintenance walkway has been redirected towards Theatre Lane. Previously this walkway was diverted to the South West corner fronting Dixons Lane. The proposed change will ensure a more defined and strong architectural corner is created at Dicksons Lane.

The walkway is to be constructed from lightweight painted steel that follows the line of the building whilst allowing the adjoining bioswale to fully function.



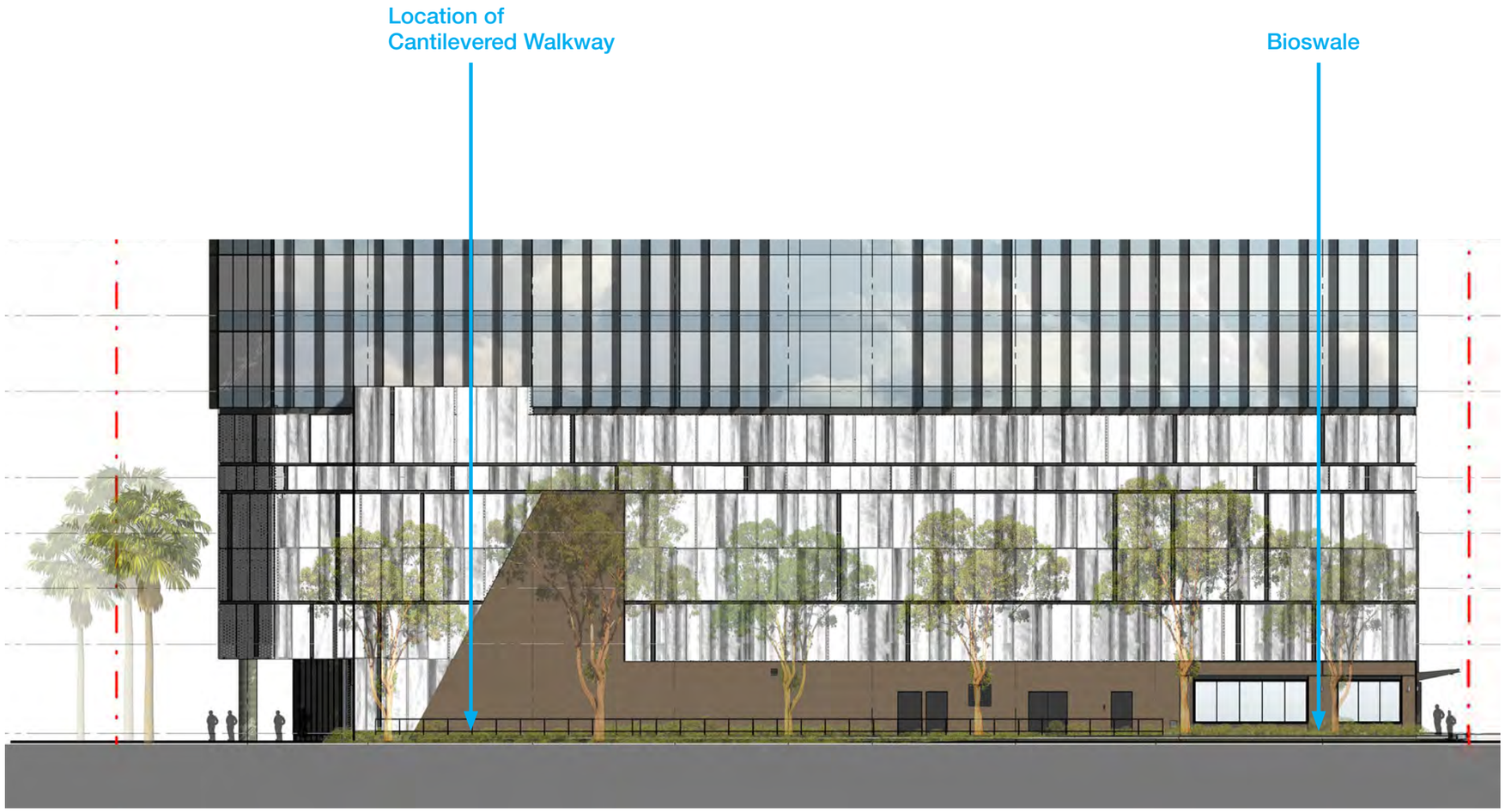


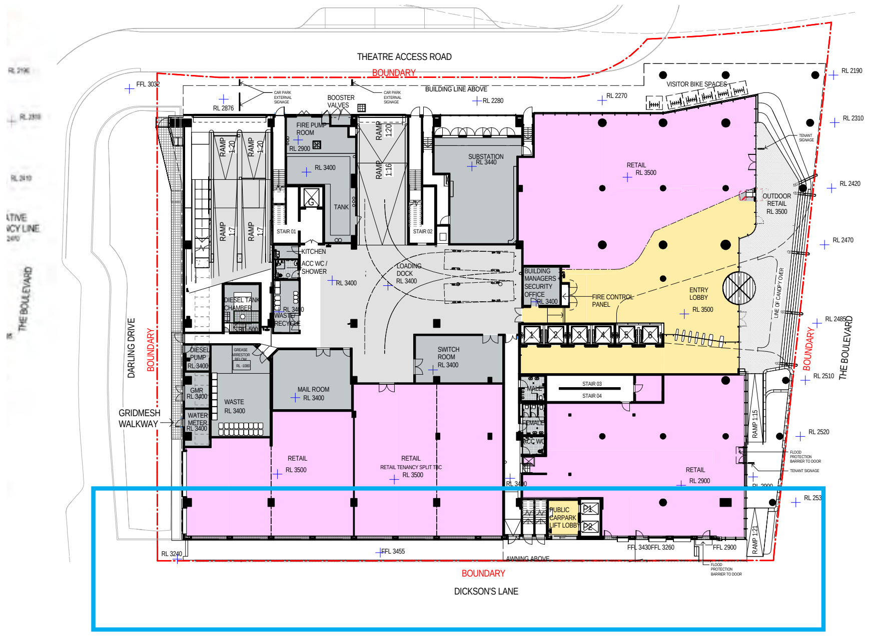
Figure 2.06 : Section 96 NW Plot Proposed View from the West showing Bioswale

2.3 South Retail Facades and Awning

The south elevation at ground level has been crafted to better respond to the laneway environment of Dicksons Lane and better activate the retail and pedestrian atmosphere desired. The materiality has been inspired by the urban context including numerous existing brick buildings. The design consists of a series of brick portals which bring the building to ground and allow for different façades to be inserted between the portals.

Retail façades for tenancies east of the carpark lobby have been designed to have a combination of filigrane steel and glazing. For consistency, the material of the car park entry lobby cladding has been changed to brick. The awning that defines the laneway entry from the Boulevard has been adjusted in length to better define the strength of the south east retail corner.

The awning has also been adjusted in height and materiality to provide a more human scale to the laneway below. The materiality will become cladded metallic finish with decorative perforation to the underside and includes glazed sections to allow light penetration and connection visually to the building above.



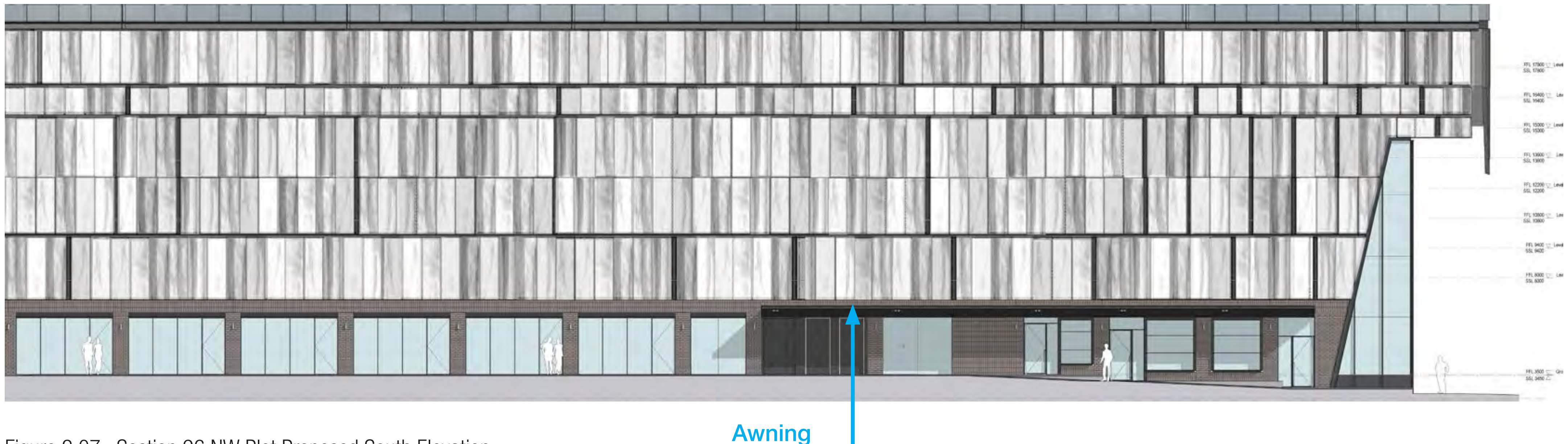


Figure 2.07 : Section 96 NW Plot Proposed South Elevation

Figure 2.08 : Section 96 NW Plot Proposed Dixons Lane Environment - Artist Impression

2.4 Substation Louvres

After ongoing design development in conjunction with Ausgrid the requirement for louvres to the Ground Floor has been rationalised. Where there were previously louvres, stone cladding material has been incorporated. The reveal will be rendered finish to complement the materiality of the surrounding architectural elements. The stone finish has been selected to provide consistent materiality of the podium plinth that continues around from the North to the Eastern Boulevard location.

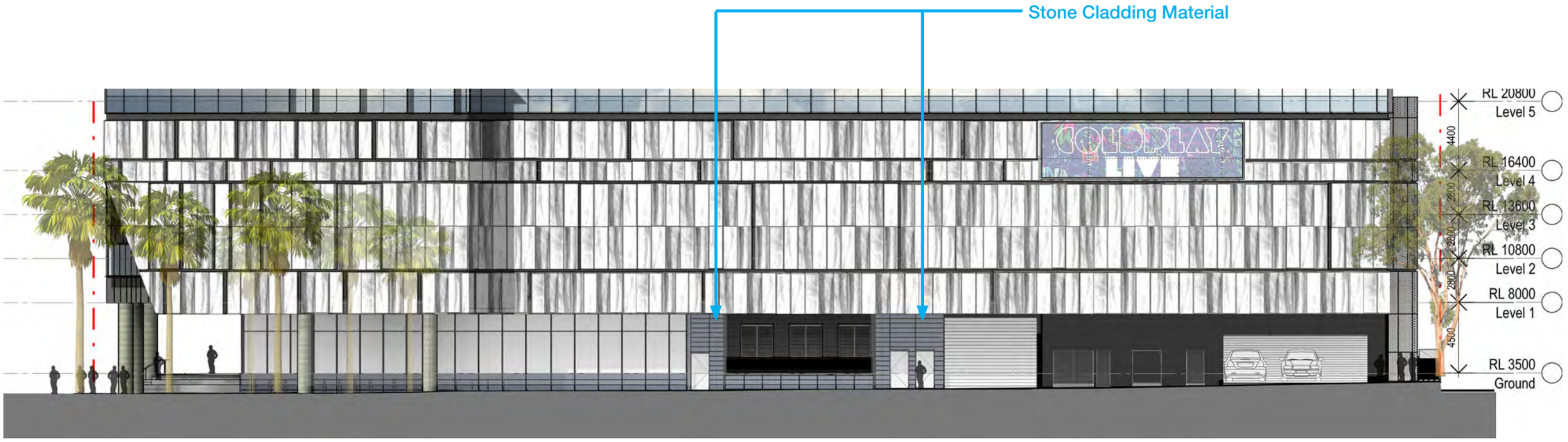


Figure 2.09 : Proposed North Part Elevation Nominating Stone Material

2.5 Retail Tenancy Identification Signs

The retail tenancy identificaiton signage zones are proposed for the two retail tenancies that have entries off the east facade building undercroft. The signs will be fixed to the mullions and will be a maximum size of 500 mm wide x 500 mm deep x 200 mm thick. Final tenancy details will be submitted to the Secretary General for endorsement prior to construction.

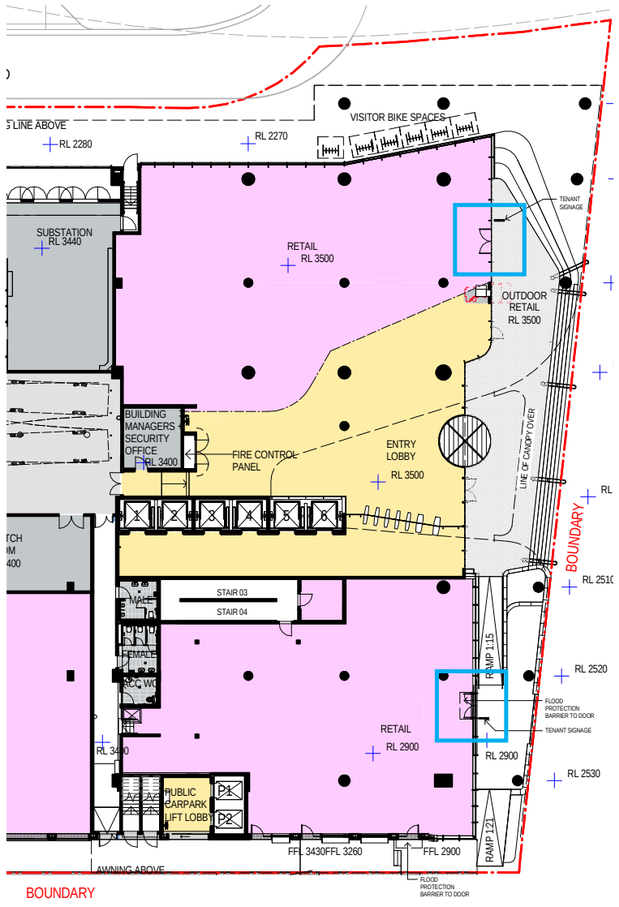


Figure 2.10 : Location of Retail Tenancy Identification Signs

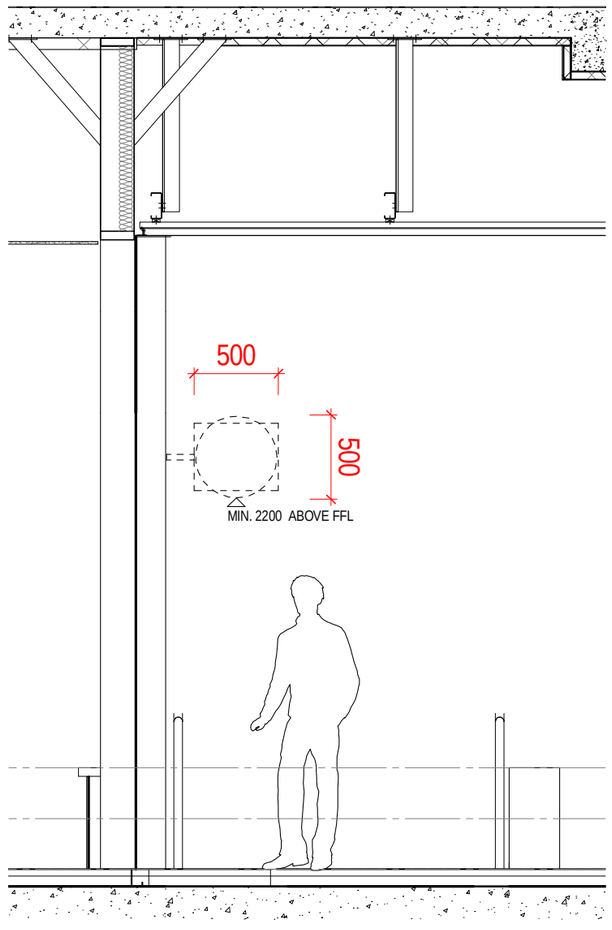


Figure 2.11 : Cross-section of Retail Tenancy Identification Signs

Figure 2.12 : Precedent images

3.0 Amendments to Facades

The amendments to the facade include:

1. Improving the cladding material for the car parking levels; and,
2. Realigning the top edge of the atrium roof at the East facade.
3. Reposition the planter boxes on the level 9 terrace.

Figure 3.01 : Section 96 NW Plot Proposed West Elevation

Figure 3.02 : Section 96 NW Plot Proposed East Elevation

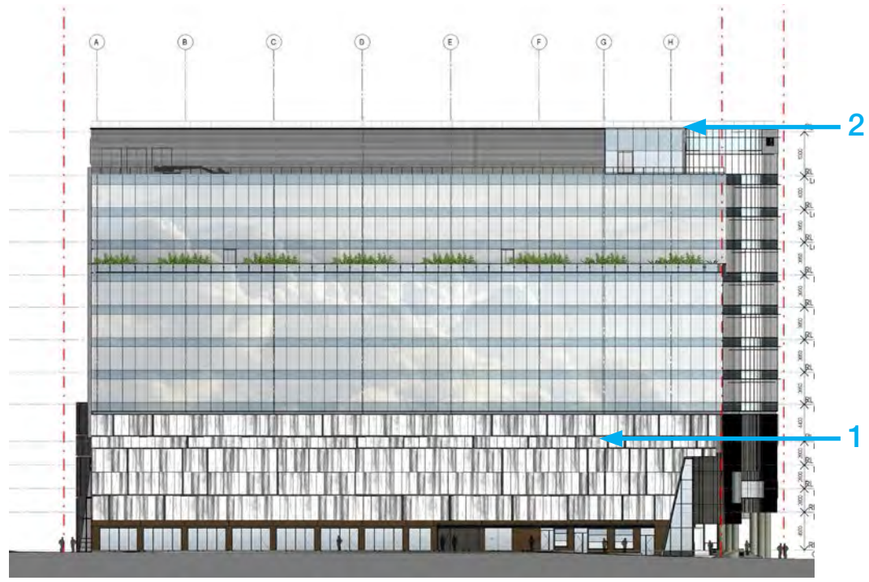


Figure 3.03 : Section 96 NW Plot Proposed Carpark Cladding Material

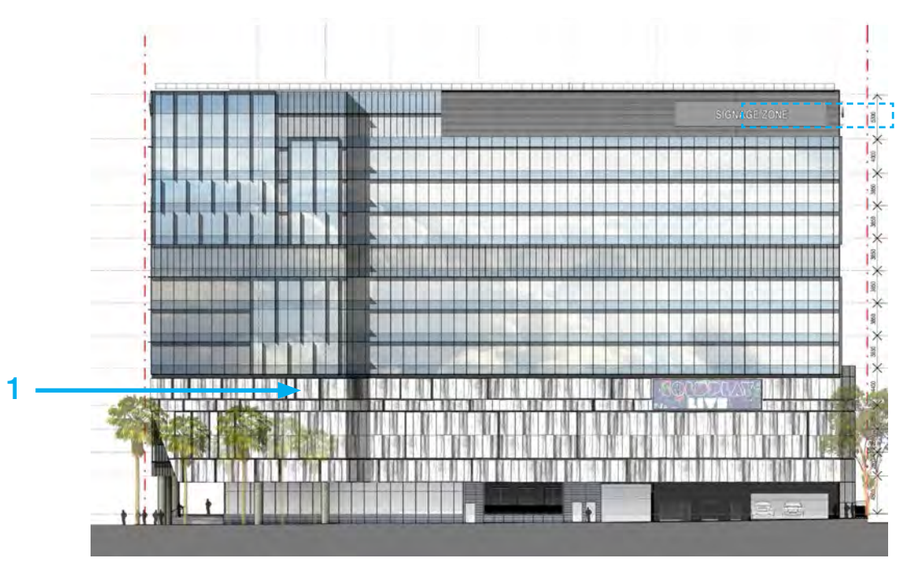


Figure 3.04 : Section 96 NW Plot proposed North Elevation

3.1 Carpark Screen Material

An alternative metal cladding material is now proposed to improve the building aesthetic whilst providing better screening to the car park behind on level 1 to 4 of the North, South and West elevations.

The carpark will be clad in an innovative aluminium cladding material which has screening properties, the opportunity to overlay artwork but still allows for natural ventilation.

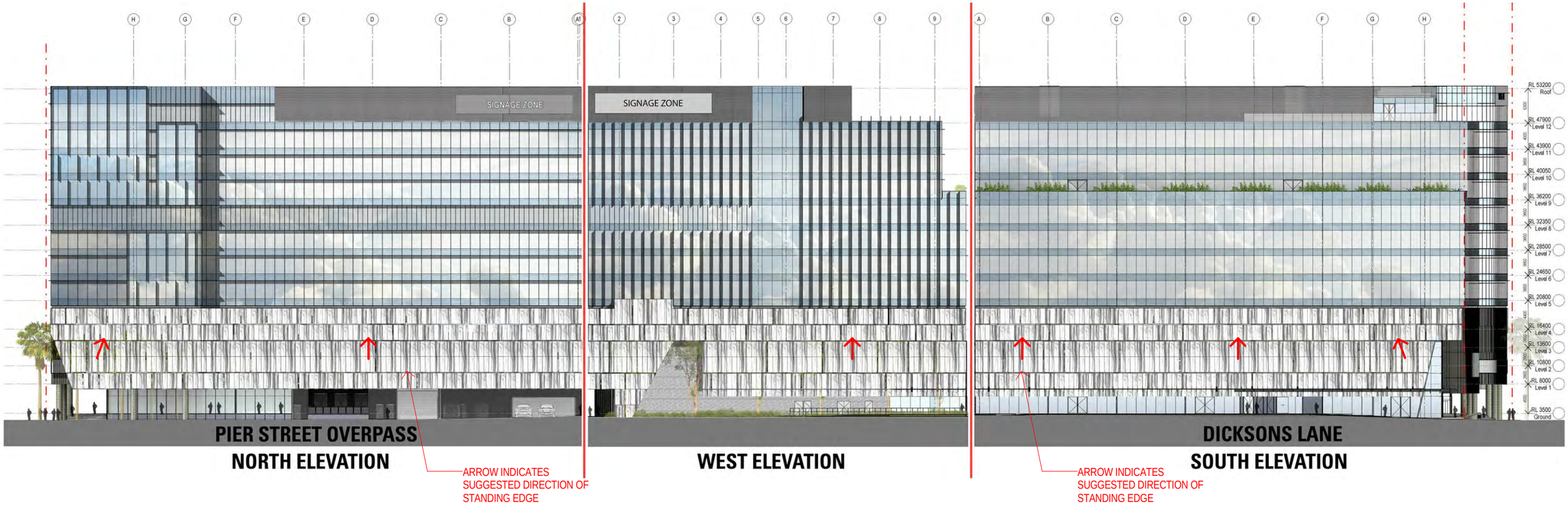


Figure 3.05 : Section 96 NW Plot Proposed Unwrapped North, West and South Elevation

The carpark levels 1-4 will be clad in the proposed 'Ombrae' system to the North, West and Southern elevations.

The Ombrae cladding system allows for a more dynamic and activated 'skin' at the carparking levels. Using computing modelling, the Ombrae system is able to create three dimensional pixels which allow an image to be translated onto an array of optical tiles. Each optical tile is a bevelled and cylindrical "pixel" with an angled surface that reflects a particular amount of light.

The array of optical tiles sculpts the reflected light into an image. The result is a sensory active surface; a dynamic wave of shifting relationships between surface and image, light and shadow, viewer and space.

Given the surrounding content, the proposed image will be a subtle sandstone texture. This pattern has been chosen to acknowledge the materiality of Sydney and at the same time allowing the building to continue to compliment the organic themes within the overall design.

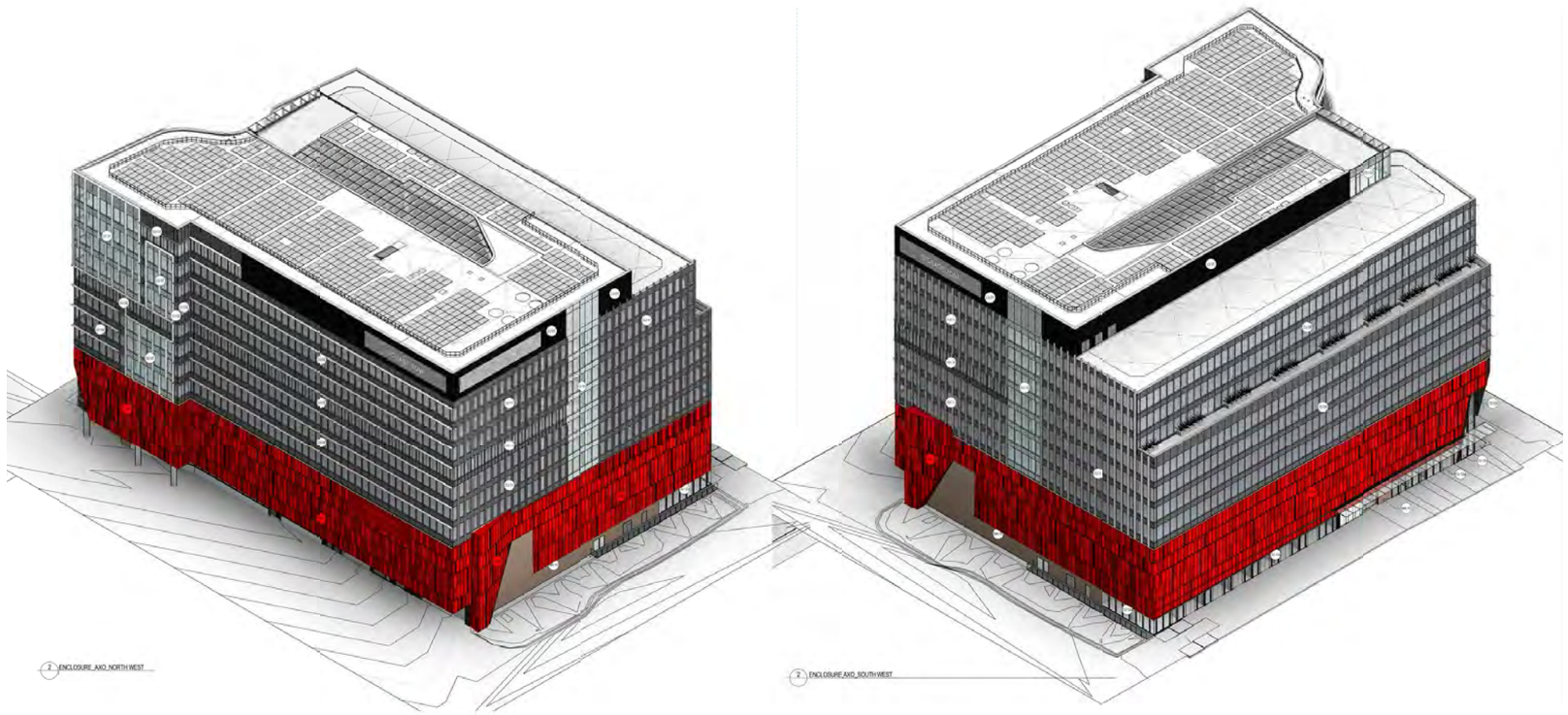


Figure 3.06 : Extent of Carpark Screen Material (shown in red)

A sandstone texture overlay will be developed to incorporate an inherent continuing relationship between the materiality of the surroundings of Sydney and the facade of the building.

The sandstone texture image will be readable by the varying rotation of each optical tile. Because of the rotation and angle, light is reflected differently and shades of colour become visible on the surface of the optical tile.

Figure 3.07 : Ombrae Material Image

Figure 3.08 : Sandstone Reference Image

The following reference examples demonstrate the Ombrae system.

Figure 3.09 : Carpark Component of Stadium Building in Calgary, Canada

Figure 3.10 : Carpark Component of Stadium Building in Calgary, Canada

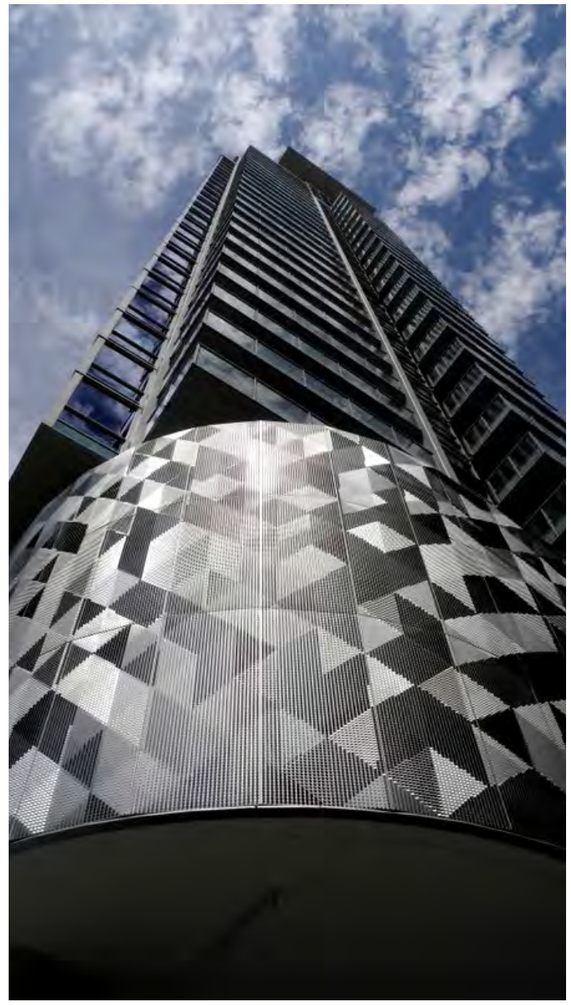


Figure 3.11 : Residential Building in Los Angeles, US

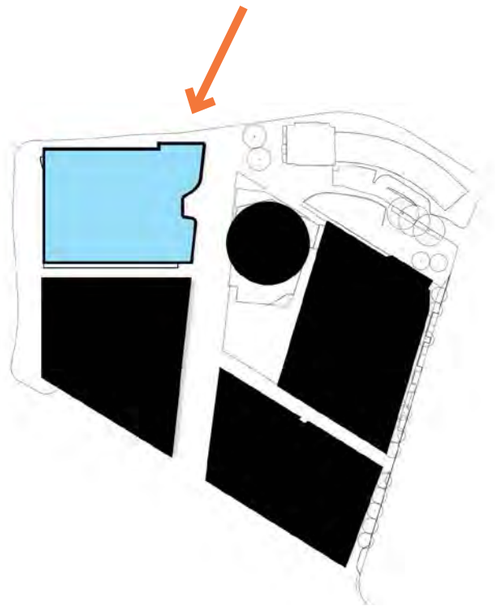


Figure 3.12 : Section 96 NW Plot Proposed View from the South East showing the Ombrae Cladding System on the North Facade

3.2 Atrium Roof Glazing

The top edge of the atrium roof of the Eastern facade has been better aligned to improve the architecture visually when reading the facade. The new alignment adjusts the atrium glazing to be in line with the core behind.

The core element was visible previously and disrupted the intent of having a view of unincumbered glazing that wraps over the building. The adjustment also further improves the look of the Southern Elevation.

The new alignment of this portion of the roof also benefits the interior space as the ceiling height can be consistent across the floor plate.

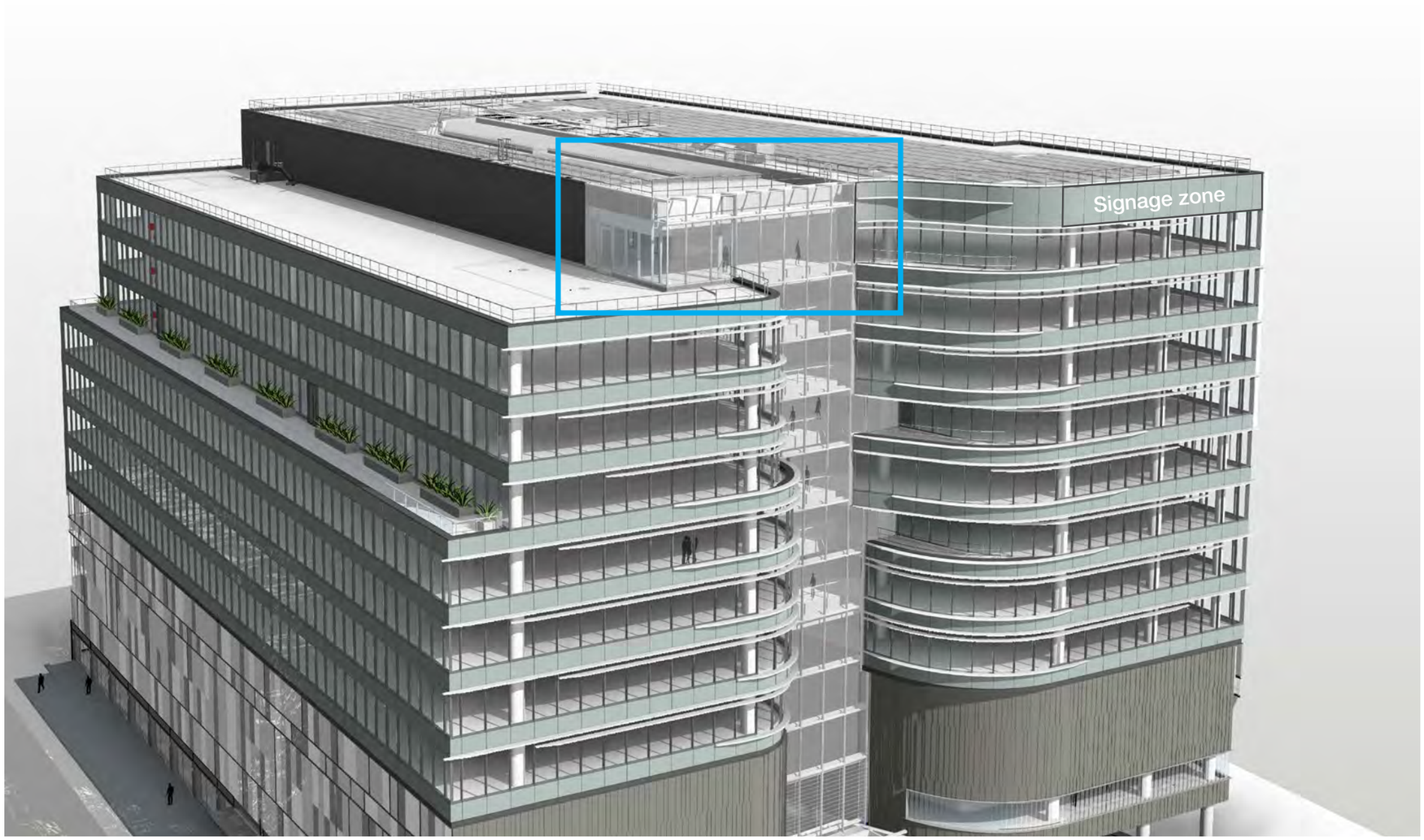


Figure 3.13 : Section 96 NW Plot Proposed Overall View of the Roof

3.3 Planter Boxes at Level 9

Following a safety review, the planter boxes at Level 9 have been repositioned to be adjacent to the facade. The planter boxes were previously located adjacent to the glass balustrade, which presented a potential climbing issue.

Figure 3.14 : Section 96 NW Plot Proposed Overall View of the Roof

Figure 3.15 : Current View from Eastern Distributor

Figure 3.16 : Section 96 NW Plot Proposed View from Eastern Distributor

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4.0 Amendments to Roof

The amendments to the roof include:

1. Locating fall protection balustrades around the perimeter of the level 12 and 13, around the ladder access and around the skylight.
2. Positioning the Building Maintenance Units (BMUs) at level 12 and 13; and
3. Realigning the West end of the atrium glazed roof to mirror the shape of the atrium within the building;
4. Adding automated louvres to the atrium glass roof; and,
5. Locating additional solar panels.

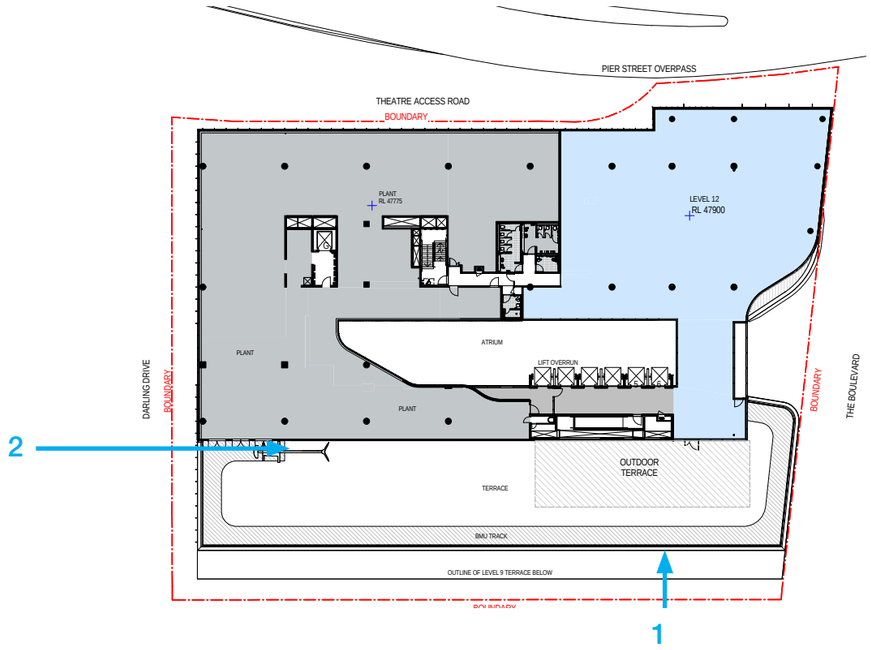

Figure 4.01 : Section 96 NW Plot Proposed Level 12 Plan

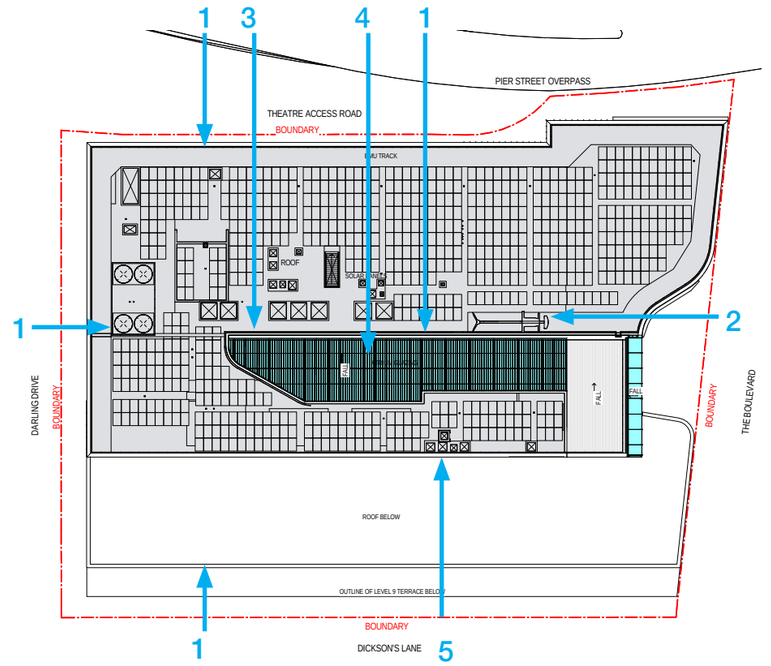

Figure 4.02 : Section 96 NW Plot Proposed Roof Plan with Solar Panels

4.1 Level 12 & 13 BMU & Maintenance Balustrade

Moveable Building Maintenance Units (BMUs) have been incorporated at Levels 12 and 13 to provide access to clean the building facades. The BMUs have been selected to ensure safe access to all elements around the building, including the complicated stepping in and out of the façade at the Eastern elevation.

The BMUs are automated and remotely controlled, allowing maintenance personnel to enter the units safelyat the roof levels and access all elements of the building within the safety of the secure BMU cradle.

When the BMUs are not in use, the machines compress and will be parked in predetermined locations. The parking locations have been selected to ensure that the BMUs will not be visible from the ground below and any visual impact from adjacent buildings will be minimal.

The BMU at Level 12 will be parked adjacent the plantroom louvres and painted in the same color as the louvres (charcoal grey). The BMU on Level 13 will be parked towards the centre of the roof and painted in a silver color that is consistent with the PV panels.

Figure 4.03 : Section 96 NW Plot proposed Roofscape showing parked BMUs and required safety handrails

As part of the technical design development, additional roof ladder cages have been added to assist in fall protection for ease of maintenance and roof access where required.

These cages will serve to promote safe access on the roof as governed by the codes and standards for maintenance access walkways and platforms.

The balustrades are detailed with slim steel to ensure that there is minimal impact visually from adjacent buildings and the view from the ground.

To ensure safe continuous access to the roof areas of the building for maintenance purposes, balustrades have been incorporated to the areas noted below:

1. Edge balustrade to L12
2. Edge balustrade to roof
3. Ladder access to secondary roof access
4. Balustrade to stair access
5. Balustrade around Air Handling Units (AHUs)

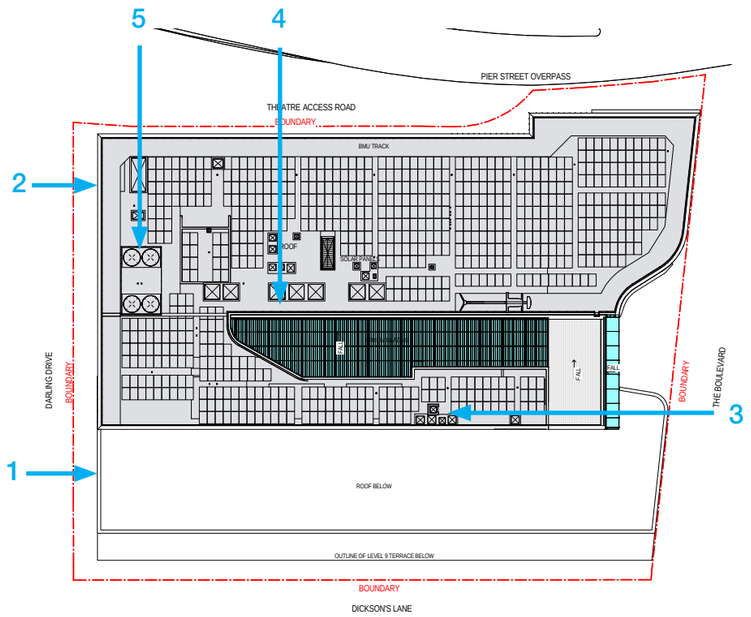

Figure 4.04 : Parameter Plan Envelope Section Diagram

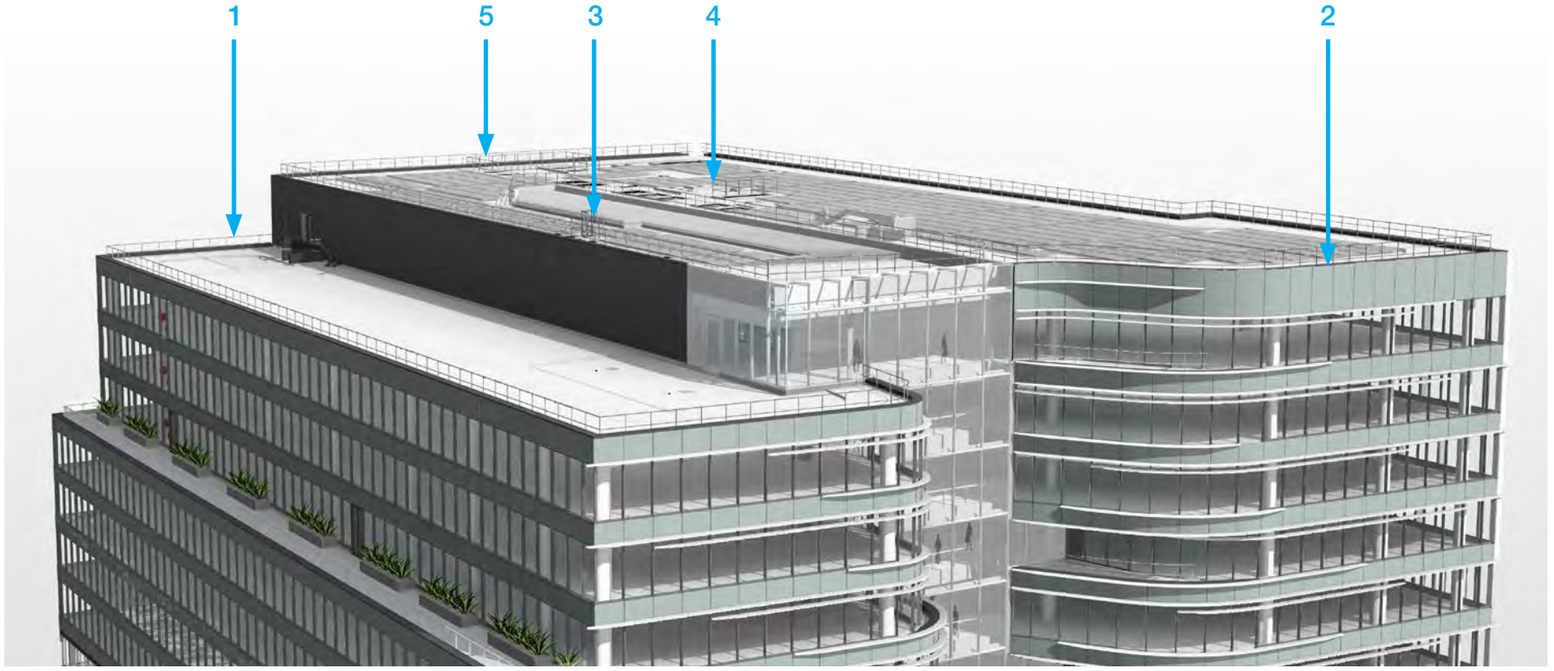

Figure 4.05 : Proposed Roof Perspective

4.2 Glass Roof

The glass roof shape on level 13 has been amended to mirror the floorplate below. Previously the glass roof extended into the plantroom creating an undesirable connection point to the architecture below.

The proposed adjustment to the glass line ensures that the curvilinear architectural language is maintained creating a strong view point from the atrium below.

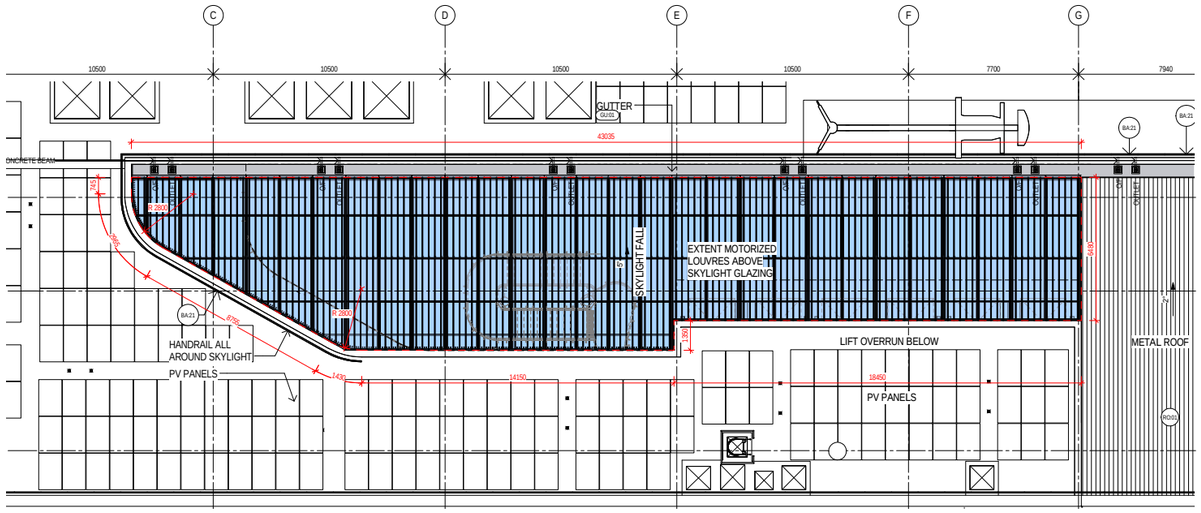

Figure 4.06 : Proposed Atrium Roof Part Plan

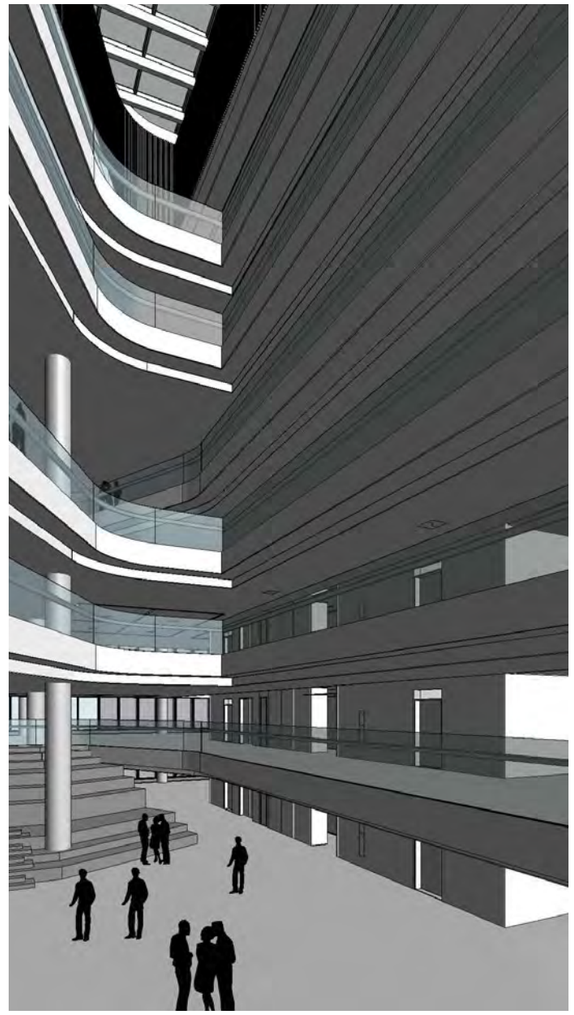

Figure 4.07 : Proposed Internal Atrium Perspective

4.3 Glass Roof Shading

To ensure the most appropriate architectural solar protection response for the building and to allow for lower energy consumption, automated aluminium louvres have been incorporated externally above the atrium glazing. The chosen shading systems consists of motorized aluminium louvres blades which are controlled by a solar tracker system that is programmed so that natural daylight is maximised within the building without creating discomfort to the occupants from direct overhead solar load. The louvre profiles also allow for views to the exterior from the atrium below. The inclusion of the system externally allows for ease of maintenance and cleaning.

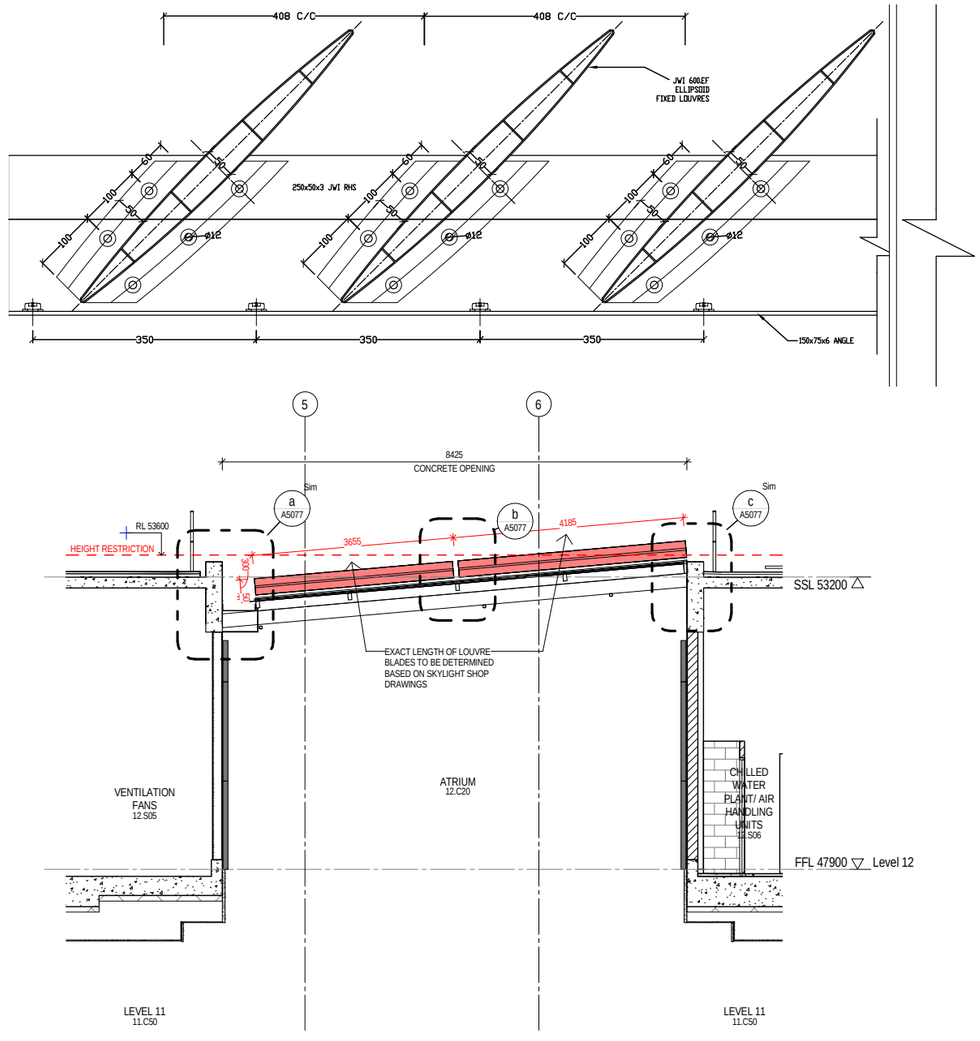

Figure 4.08 : Proposed External Atrium Louvre Shading Blades

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Appendix
Architectural Drawings