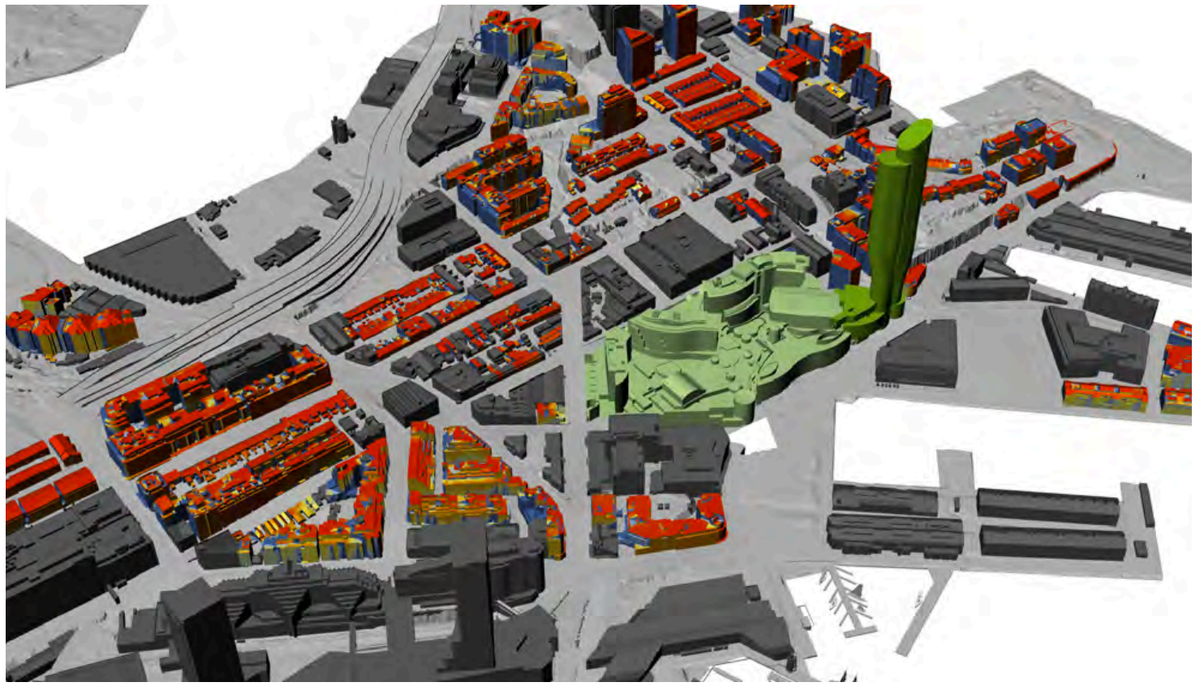
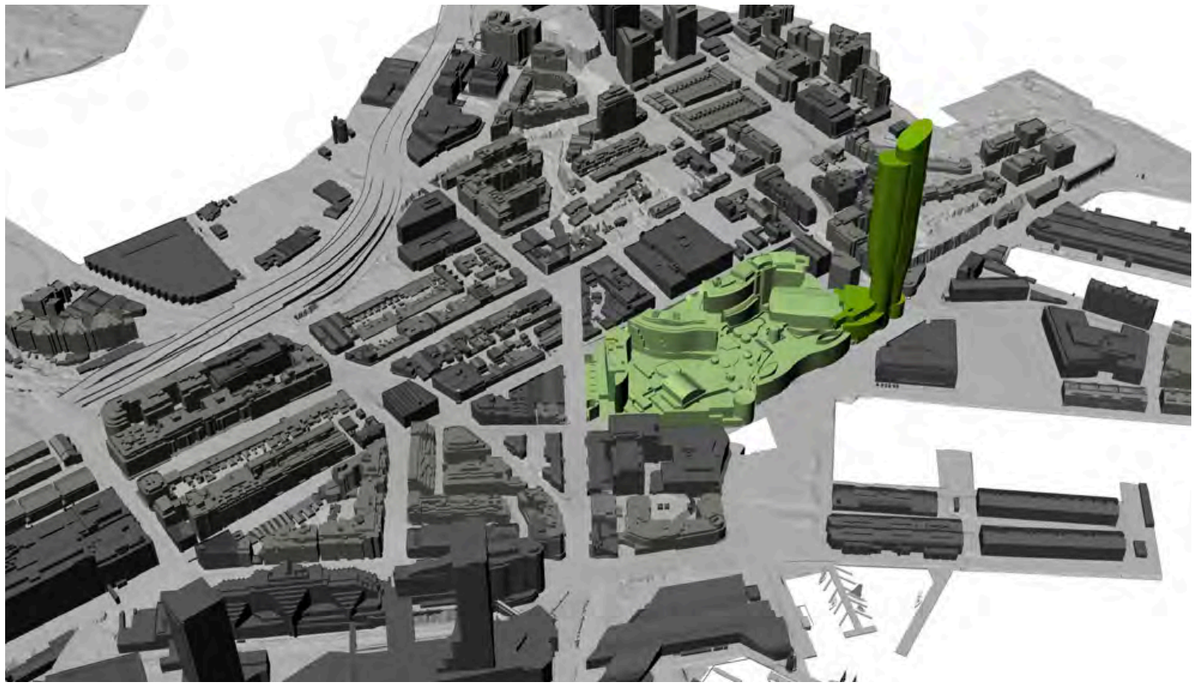


SUN ACCESS HEAT MAP
SOUTHEAST AERIAL PERSPECTIVE

Graphic identifies non-residential buildings in dark grey, the existing Star Resort in light green, the proposed tower in green, and all surrounding residential properties in the blue-red scale colouring.

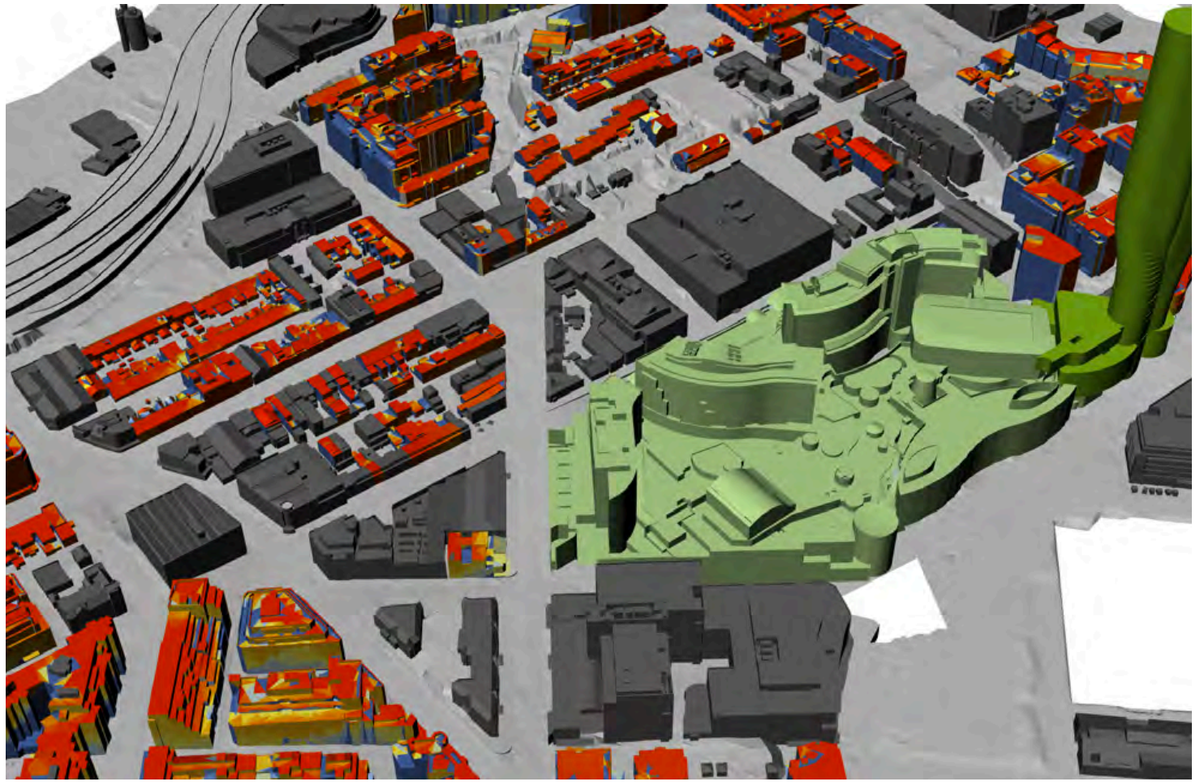
The blue scale denotes those areas of residential properties not presently receiving 2 hours, and the yellow-red scale denotes all areas receiving more than 2 hour of sunlight between 9am - 3pm in mid-winter.

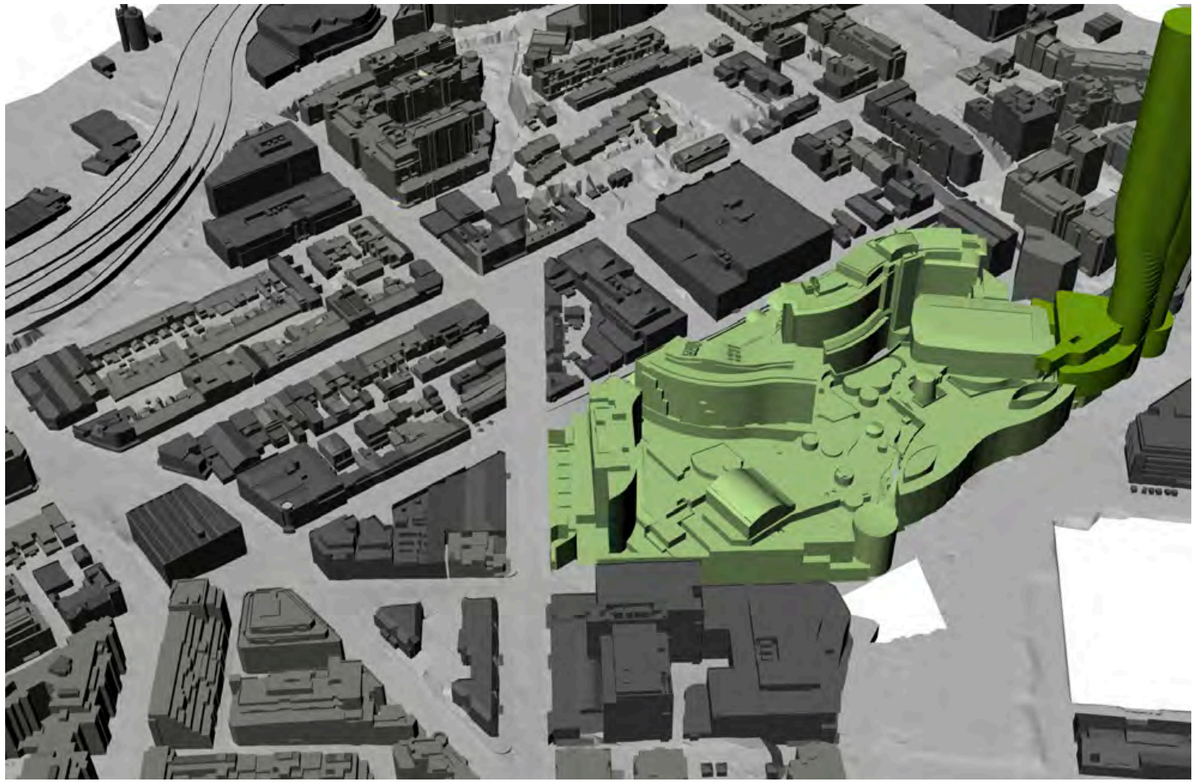


OVERSHADOWING IMPACT
SOUTHEAST AERIAL PERSPECTIVE

In these diagrams, anything grey either maintains more than 2hrs under the proposed, or already receives less than 2hrs.

The yellow-red scale colouring denotes where the proposed tower reduces solar access to neighbours to below 2hrs where that context currently receives more than 2hrs.





SUN ACCESS HEAT MAP
WESTERN AERIAL PERSPECTIVE

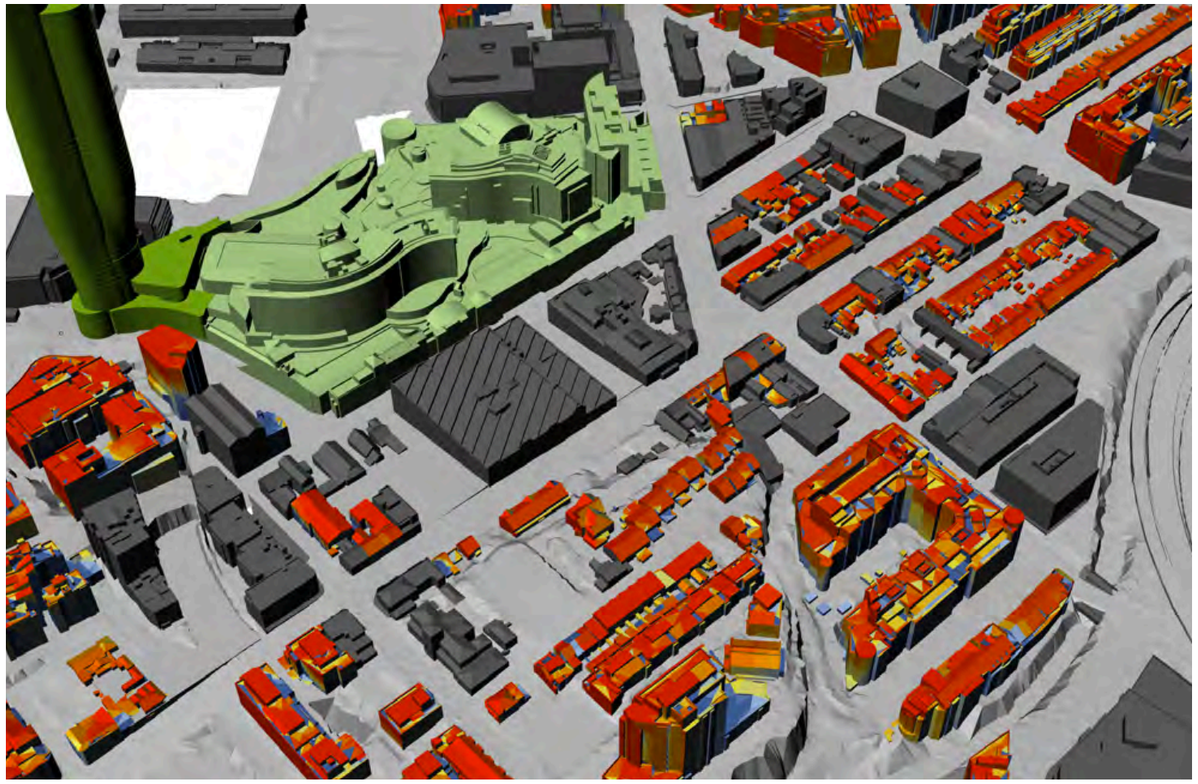
Graphic identifies non-residential buildings in grey, the existing Star Resort in light green, the proposed tower in green, and lastly all surrounding residential properties in the blue-red scale colouring.

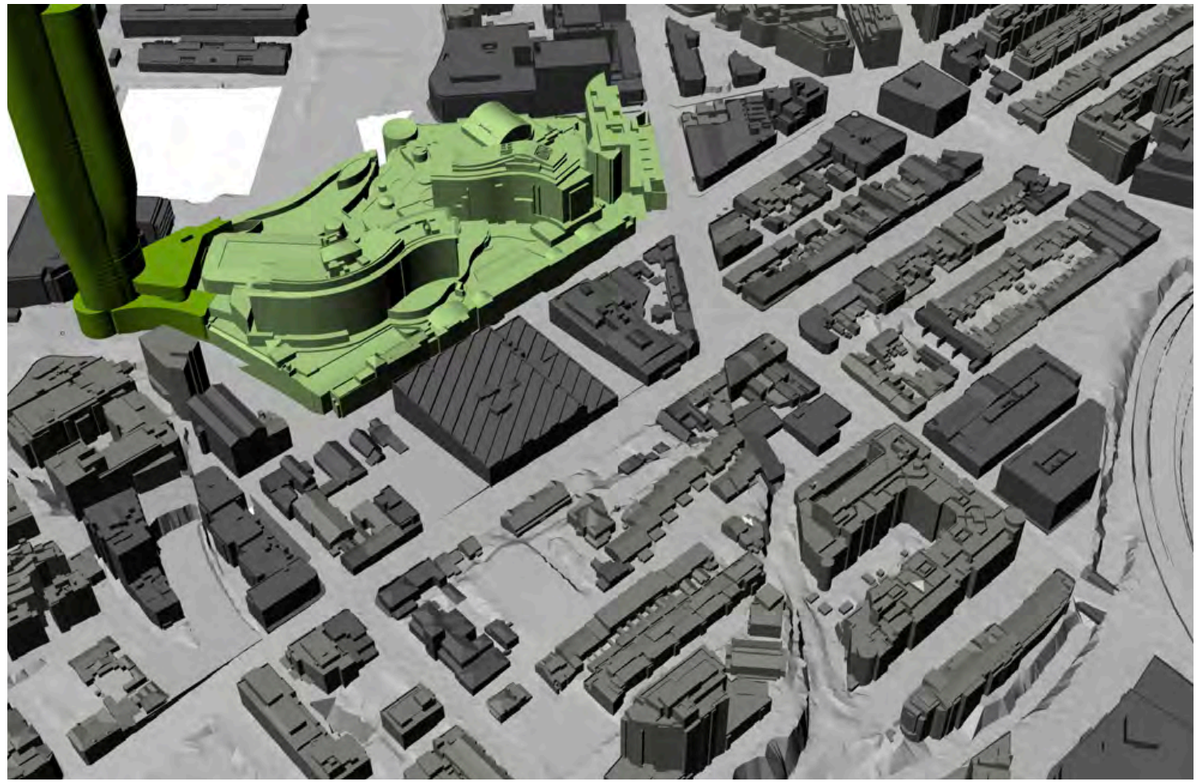
The blue scale denotes those areas of residential properties not presently receiving 2 hours, and the yellow-red scale denoting all areas receiving more than 2 hour of sunlight between 9am - 3pm in mid-winter.

OVERSHADOWING IMPACT
WESTERN AERIAL PERSPECTIVE

Anything grey either maintains more than 2hrs under the proposed, or already receives less than 2hrs.

The yellow-red scale colouring denotes where the proposed tower reduces solar access to neighbours to below 2hrs where that context currently receives more than 2hrs.





SUN ACCESS HEAT MAP
NORTHEAST AERIAL PERSPECTIVE

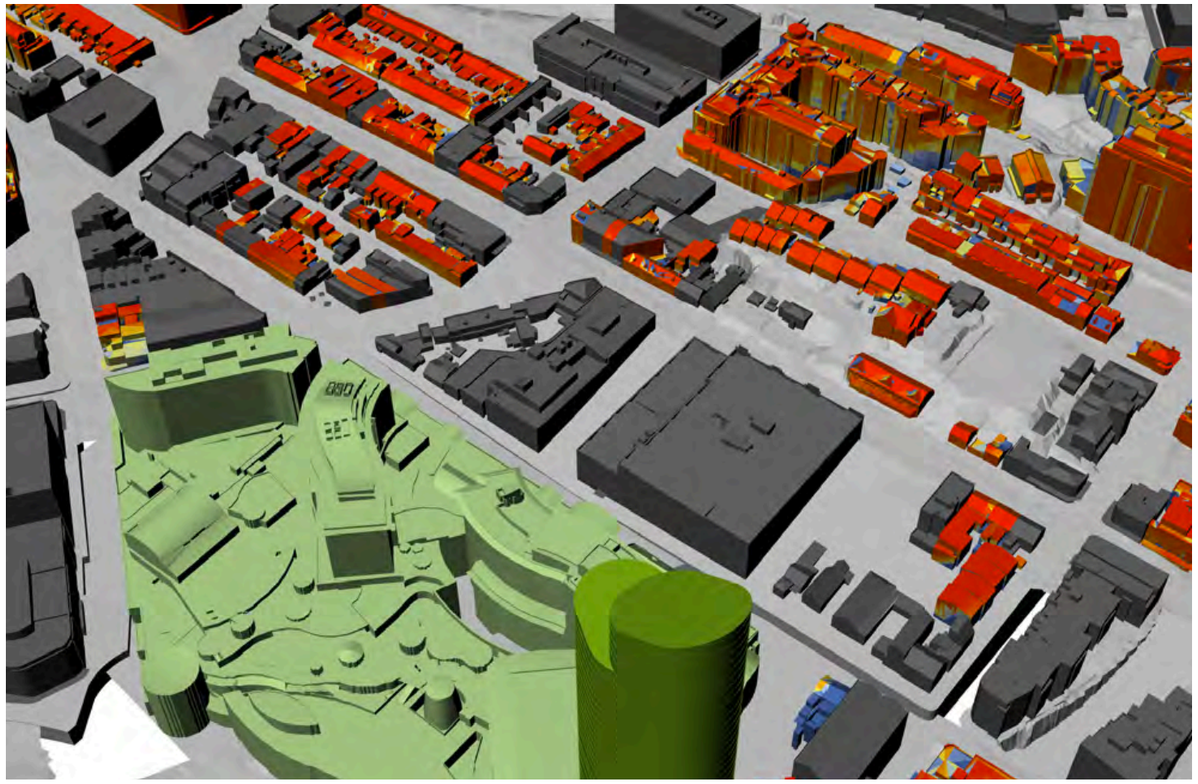
Graphic identifies non-residential buildings in grey, the existing Star Resort in light green, the proposed tower in green, and lastly all surrounding residential properties in the blue-red scale colouring.

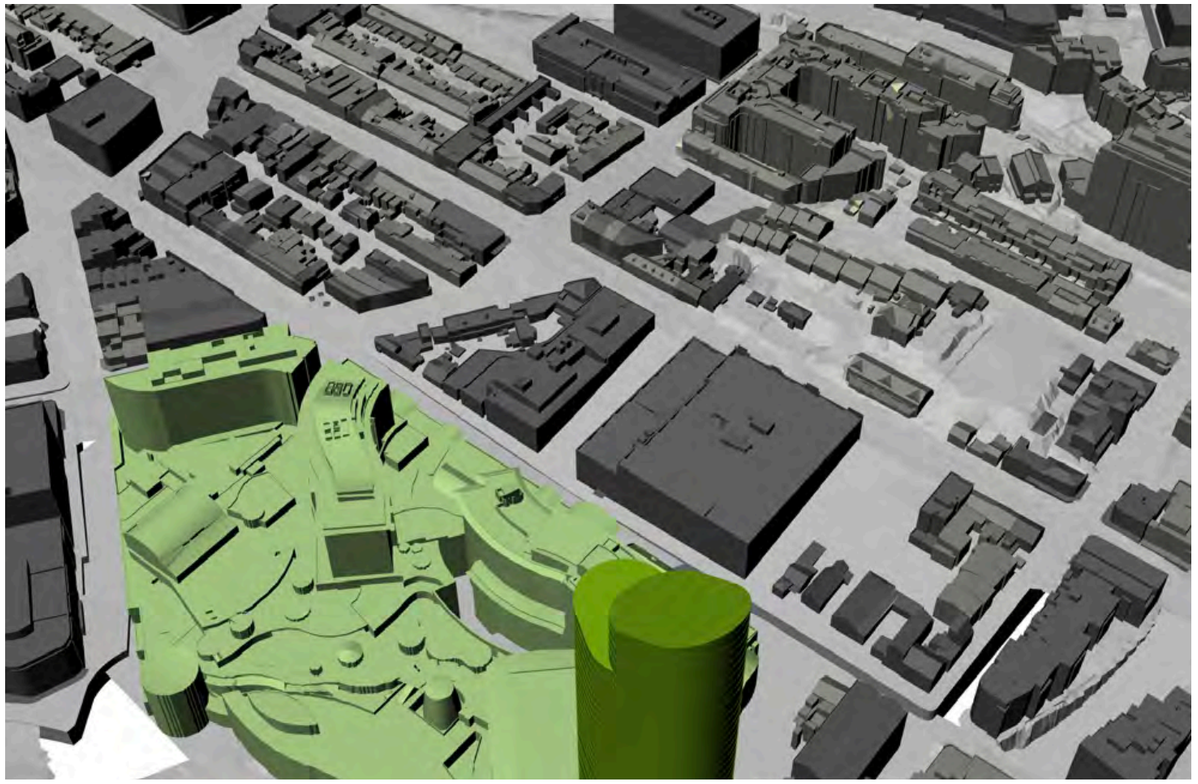
The blue scale denotes those areas of residential properties not presently receiving 2 hours, and the yellow-red scale denoting all areas receiving more than 2 hour of sunlight between 9am - 3pm in mid-winter.

IMPACT
NORTHEAST AERIAL PERSPECTIVE

Anything grey either maintains more than 2hrs under the proposed, or already receives less than 2hrs.

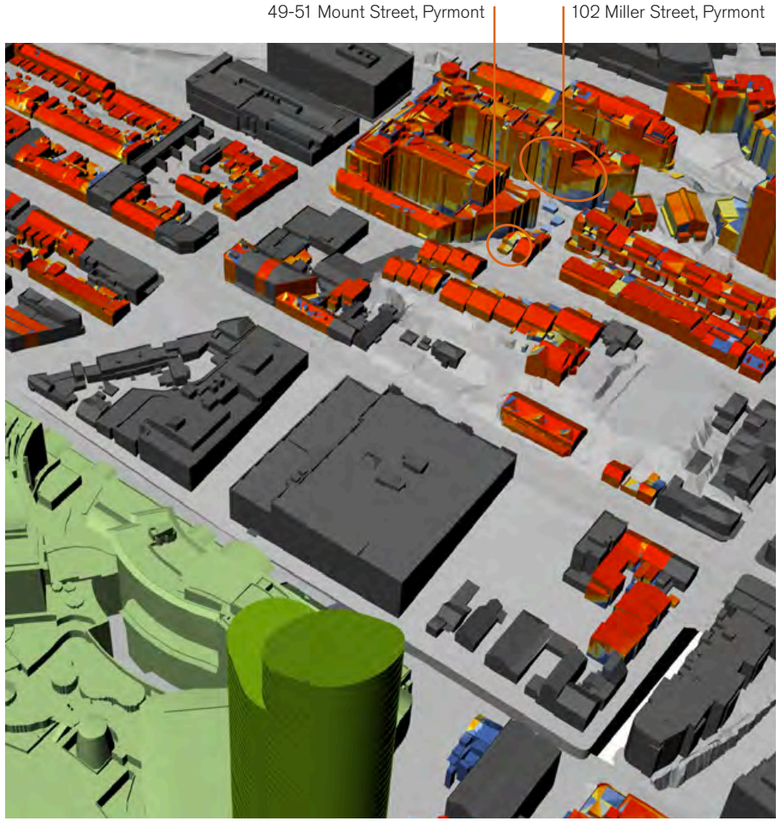
The yellow-red scale colouring denotes where the proposed tower reduces solar access to neighbours to below 2hrs where that context currently receives more than 2hrs.



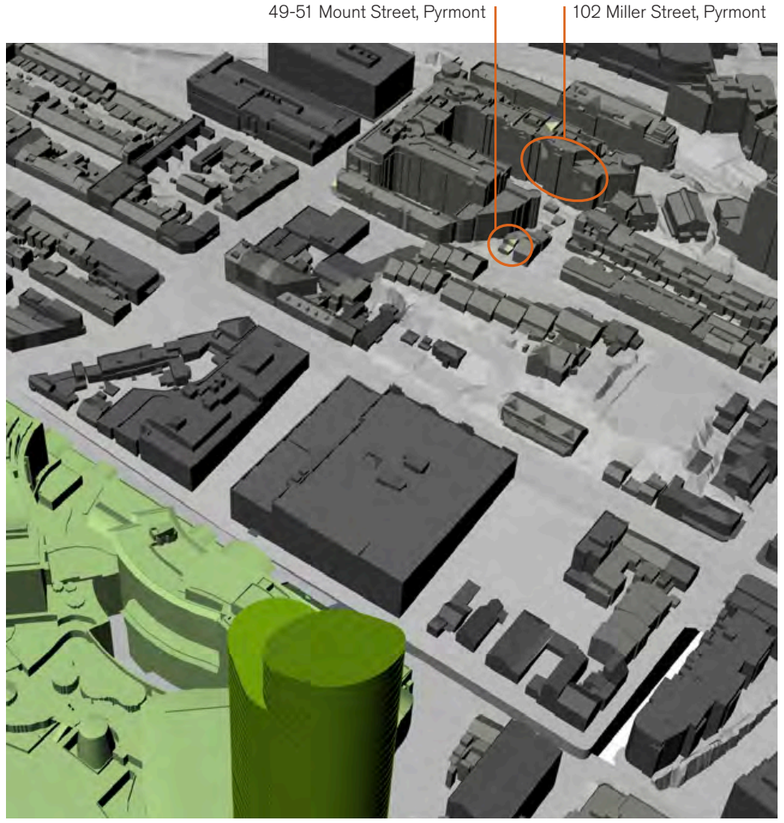


Daylight impacts on adjacent properties (continued)

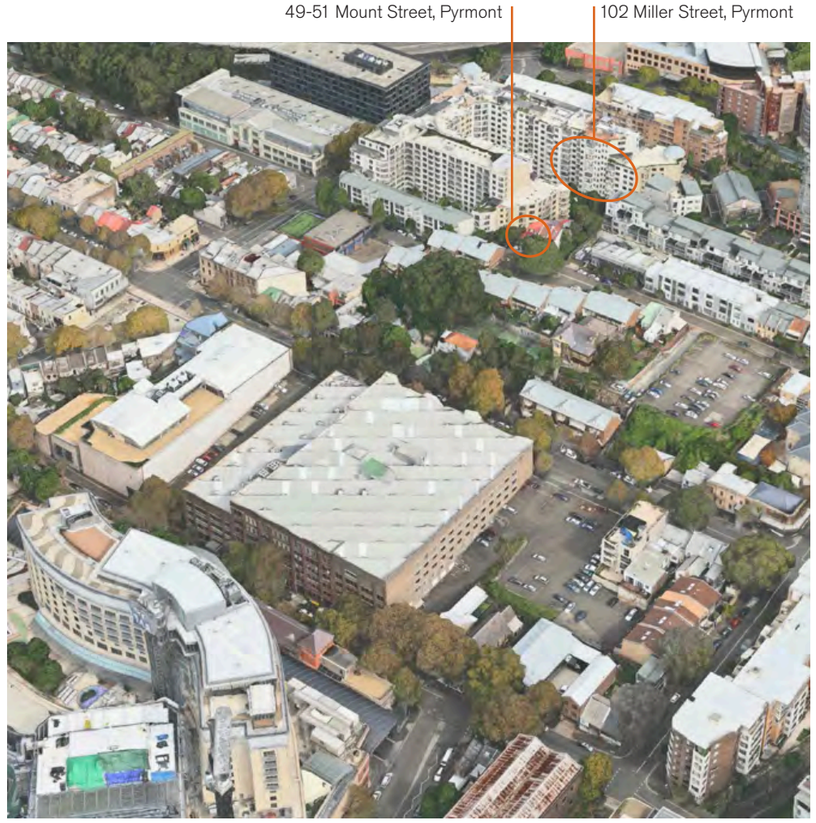
Evaluating the results reveal that in most instances (though there are not many) where sun access falls below 2 hours occurs on roofs. There are however 3 instances where a small portion of facade drops below 2 hours, as identified below.



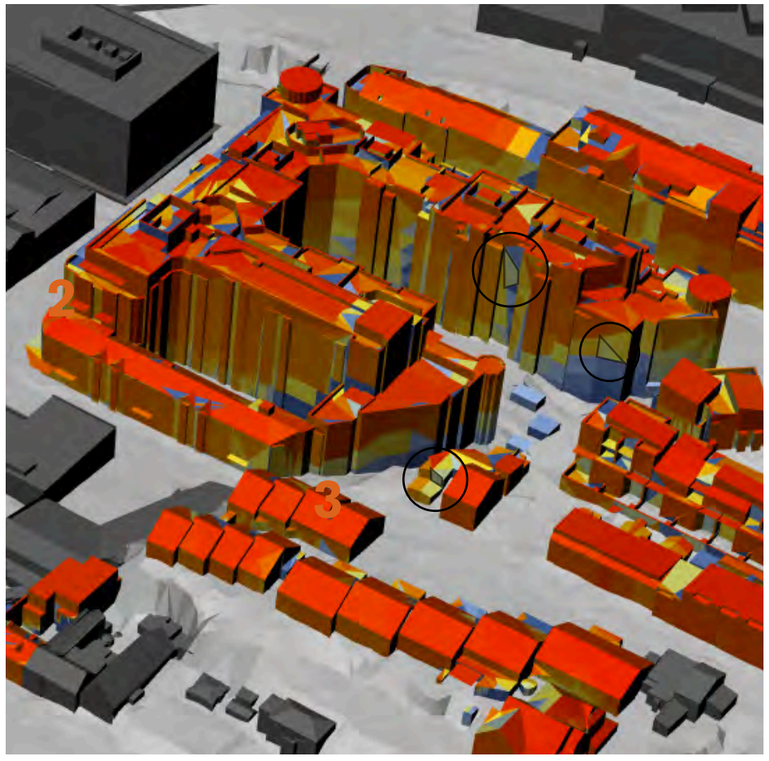
Northeast Sun Access modelling excerpt focussing on 102 Miller Street, Pyrmont

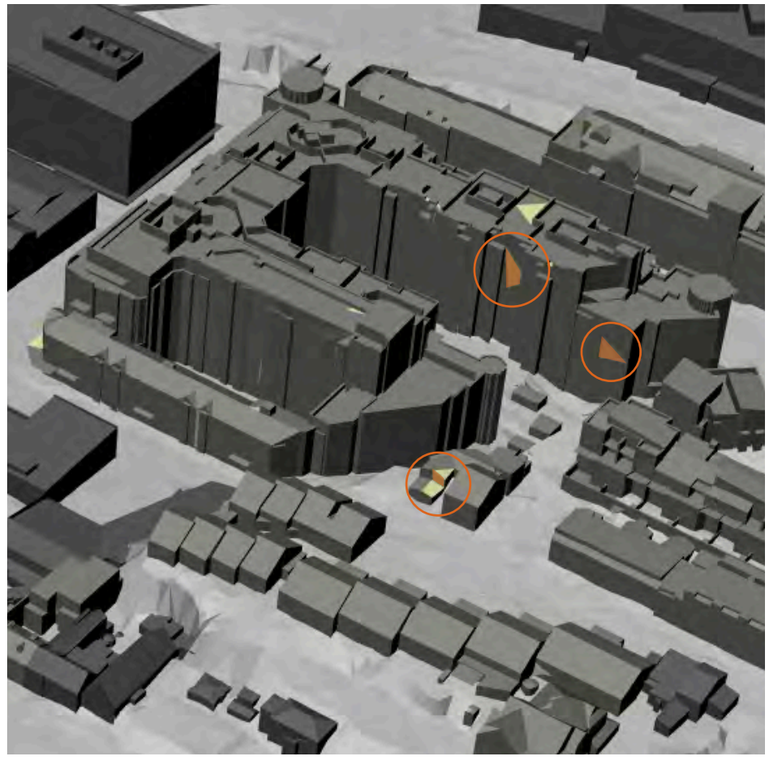


Northeast Overshadowing modelling excerpt focussing on 102 Miller Street, Pyrmont



Northeast aerial excerpt focussing on 102 Miller Street, Pyrmont. Courtesy of Apple Maps.





1 **49-51 Mount Street, Pyrmont** Sun access to one of two street-facing second story windows will fall below 2 hours, where it presently recieves more than 2 hours. The other window maintains 2 hours sun acess. This overshadowing will not affect living room or balcony sun access compliance.

2 **102 Miller Street, Pyrmont** Sun access to one bedroom window on the courtyard-facing facade on the 8th floor will fall below 2 hours sun access, where it presently recieves more than 2 hours. The balcony, living room and master bedroom windows maintain 2 hours sun access. The apartment plan is included to idenitfy the bedroom window.

3 **102 Miller Street, Pyrmont** Sun access to one window on the sandstone-bluff facing 4th floor will fall below 2 hours sun access, where it presently recieves more than 2 hours. The balcony, living room and master bedroom windows maintain 2 hours sun access. The apartment plan is included to idenitfy the bedroom window.

14.14 Sun access impacts on adjacent properties currently recieving less than 2 hours sun access

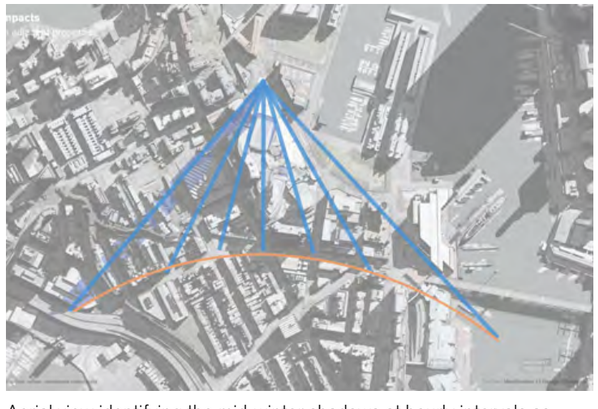
This solar access analysis utilises detailed solar mapping software and 'suns eye views' to determine whether any residential properties presently recieving less than 2 hours of mid-winter sun access has that sun access reduced further by 20% with the introduction of the proposed tower. This is in response to objective 3B-2 of the ADG.

The analysis identifies;

1. Any properties presently recieving less than 2 hours of mid-winter sun access affected by the proposed tower

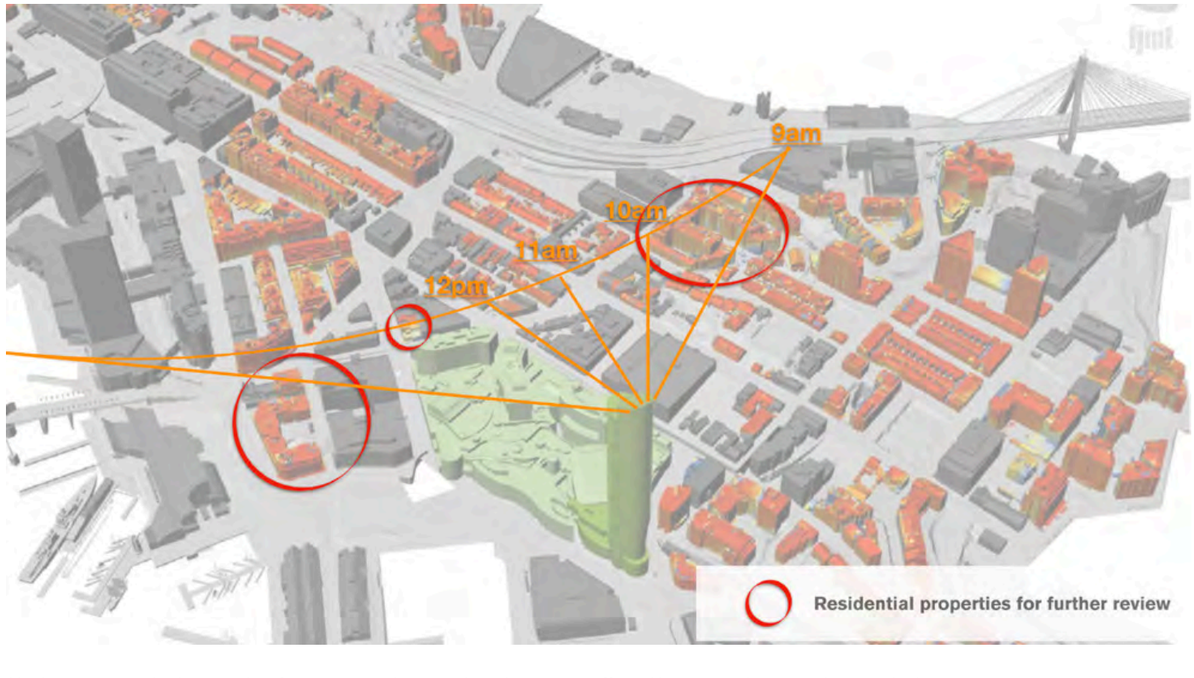
2. For any properties affected, whether living rooms or balconies are affected. Living rooms and balconies are recognised as the critical spaces for sun access to a property.

3. For any living rooms and balconies affected, whether the sun access reduction exceeds 20% of sun presently recieved. Eg 60 minutes of sun access, less 12 minutes would be a 20% reduction.



Aerial view identifying the mid-winter shadows at hourly intervals as they move across Pyrmont

North eastern aerial solar map with tower mid-winter shadow projection



North eastern aerial solar map identifying non-complying residential properties affected by proposed tower mid-winter shadow projection

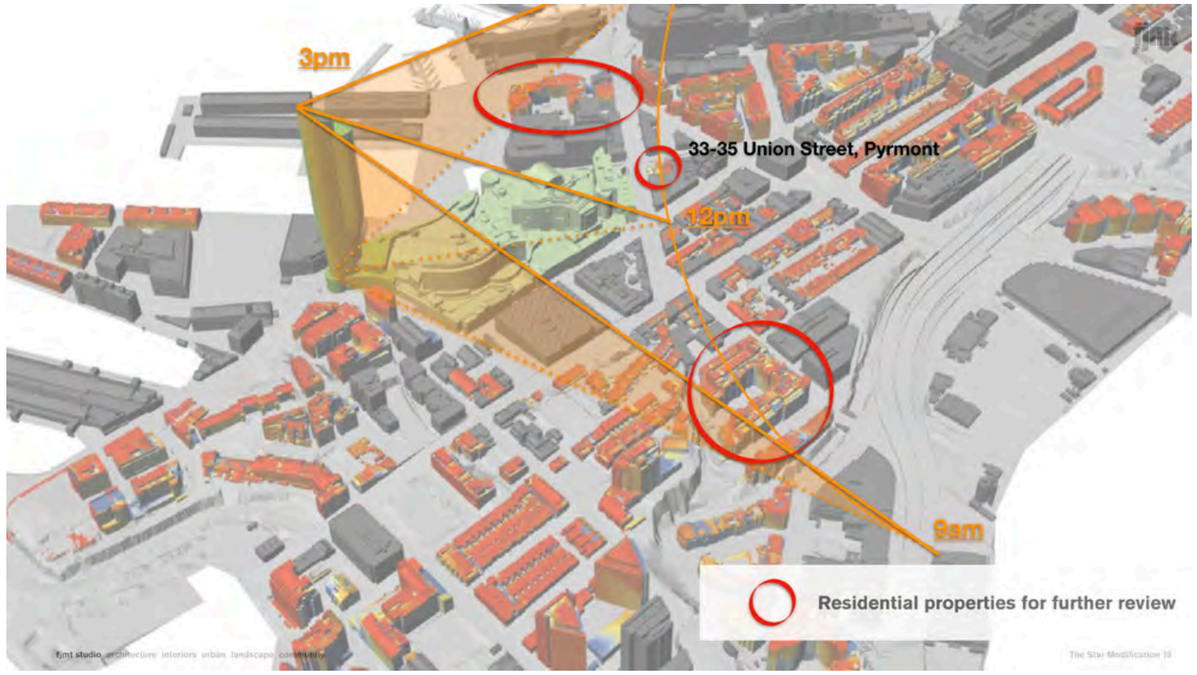
1. Properties presently recieving less than 2 hours of mid-winter sun

The solar mapping used for this analysis is the same solar mapping as was used to identify the environmental impact of the proposed tower on complying sun access in Section 14.2 of this report.

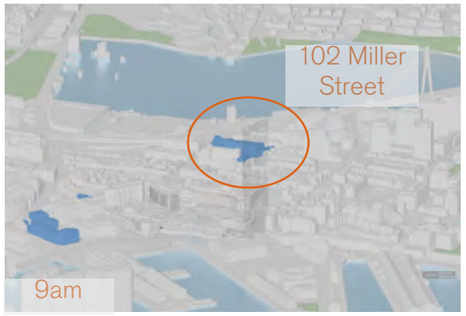
Solar mapping reveals three adjoining properties with dwellings presently recieving less than 2 hours of sun access on mid-winter, for further analysis on proceeding pages.

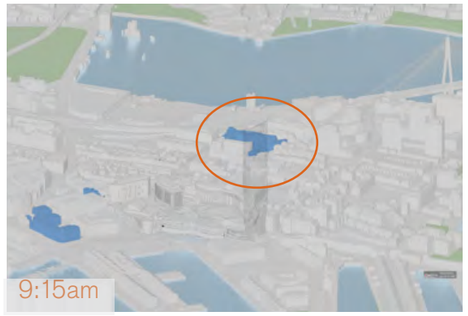
- 102 Miller Street, Pyrmont
- 33-35 Union Street, Pyrmont
- 1-27 Murray Street, Pyrmont

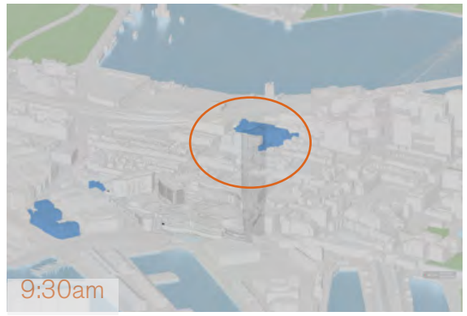
Western aerial solar map with tower mid-winter shadow projection



Western aerial solar map identifying non-complying residential properties affected by proposed tower mid-winter shadow projection


102 Miller Street
9am


9:15am


9:30am


9:45am


10am


10:15am


10:30am


10:45am


11am


11:15am

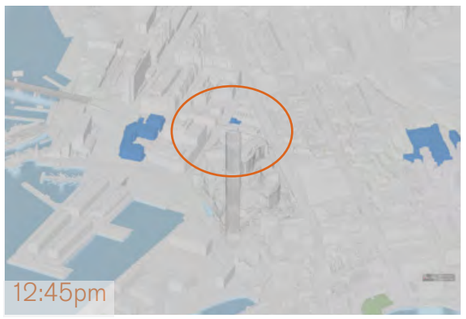

11:30am


11:45am


12pm


12:15pm


33-35 Union Street
12:30pm

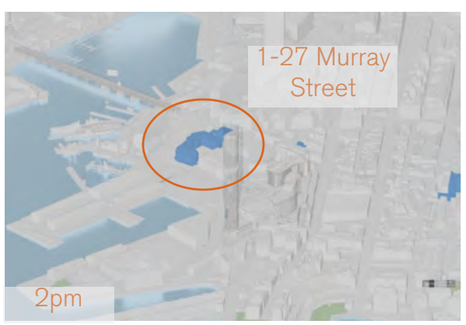

12:45pm


1pm


1:15pm


1:30pm

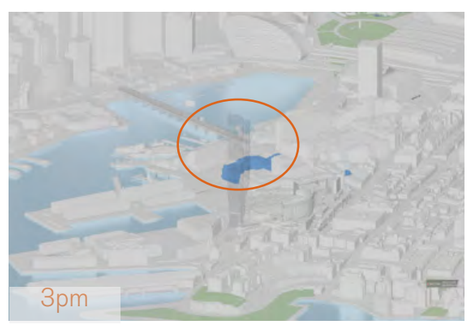

1:45pm


1-27 Murray Street
2pm


2:15pm


2:30pm


2:45pm


3pm

Suns eye views

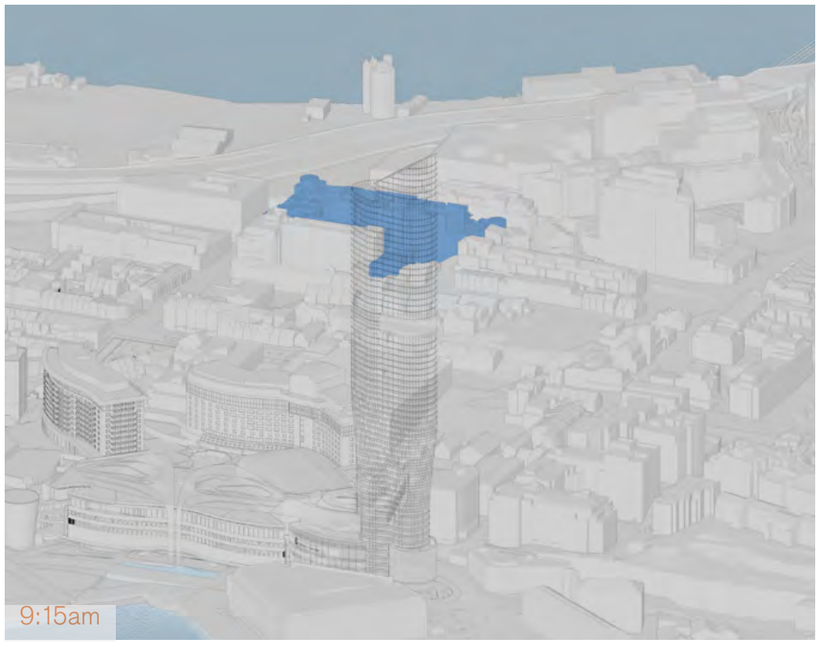
'Suns eye views' position a sequence of cameras to match the position of the sun as it moves across the sky through the day. The resultant effect is we see what the sun sees. This has become a popular method for illustrating sun access, or indeed overshadowing.

The sequence adjacent illustrates 15 minute intervals for the compliance hours of 9am to 3pm on the 21st of June (winter solstice).

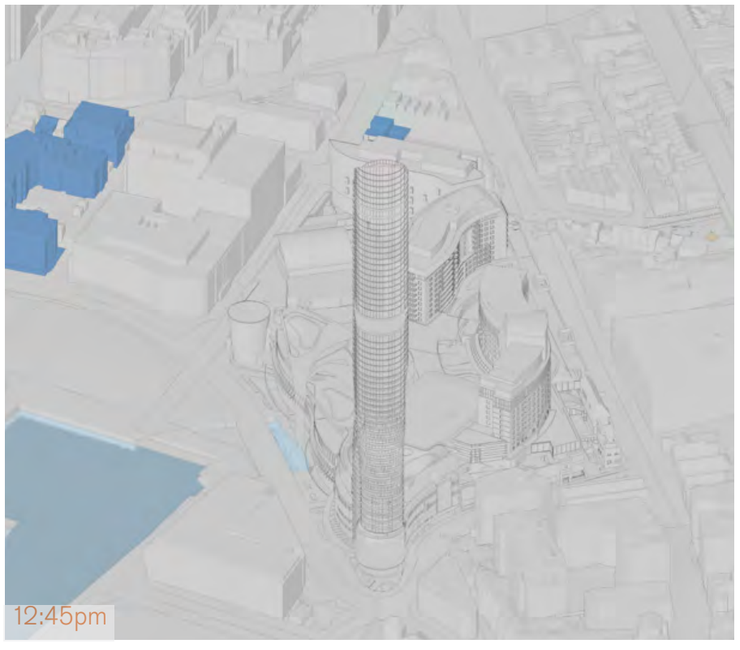
The three properties identified on the previous page have been highlighted, and we note;

- 102 Miller Street, Pyrmont: overshadowing from proposed tower between 9-945am to the east facades. Further analysis is included on the following pages.
- 33-35 Union Street, Pyrmont: no overshadowing, nil environmental impact from proposed tower.
- 1-27 Murray Street, Pyrmont: overshadowing from proposed tower between 2-3pm to the north and west facades. Further analysis is included on the following pages.

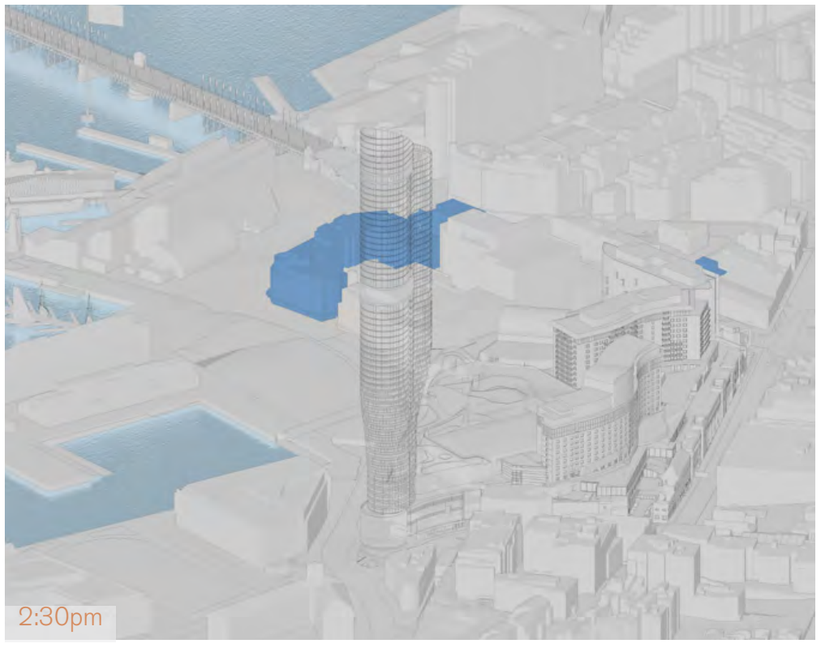
102 Miller Street



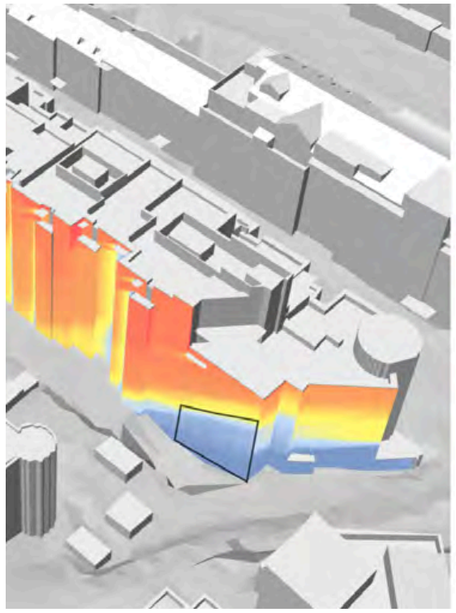
33-35 Union Street



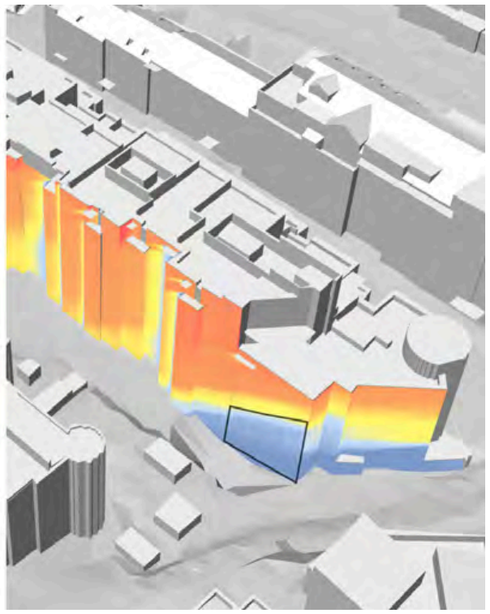
1-27 Murray Street



102 Miller Street



Existing - June 21 Solar map



With proposed Tower - June 21 Solar map

Portion of facade affected by proposed tower outlined.

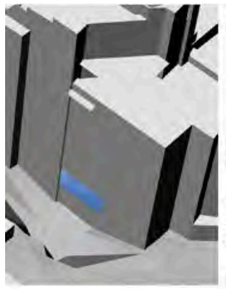
East-facing facade in detail with impacted zone highlighted in orange.

1. Balcony, further analysis required

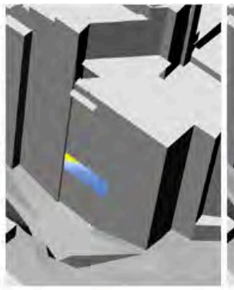
2. Living room window, further analysis required

3. Bedroom windows, no further analysis required

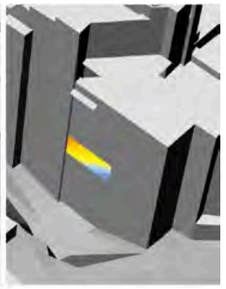
Solar mapping and floor plan analysis reveals there are three units not presently recieving 2+ hours of mid-winter sun access with living spaces and/or balconies affected by the proposed tower shadow.



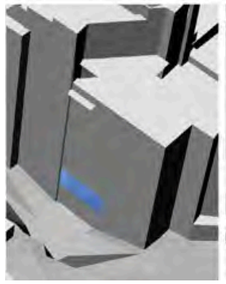
Unit 1 - Existing



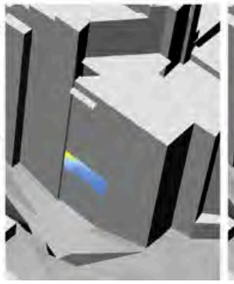
Unit 2 - Existing



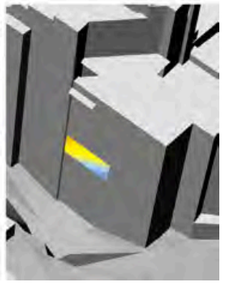
Unit 3 - Existing



Unit 1 - With proposed tower



Unit 2 - Proposed



Unit 3 - Proposed

Analysis:

Unit 1 is unaffected.

Unit 2 recieves just under 39 minutes of mid-winter sun in existing conditions. This reduces by less than 2 minutes with the proposed tower to 37 minutes = 4.5% reduction.

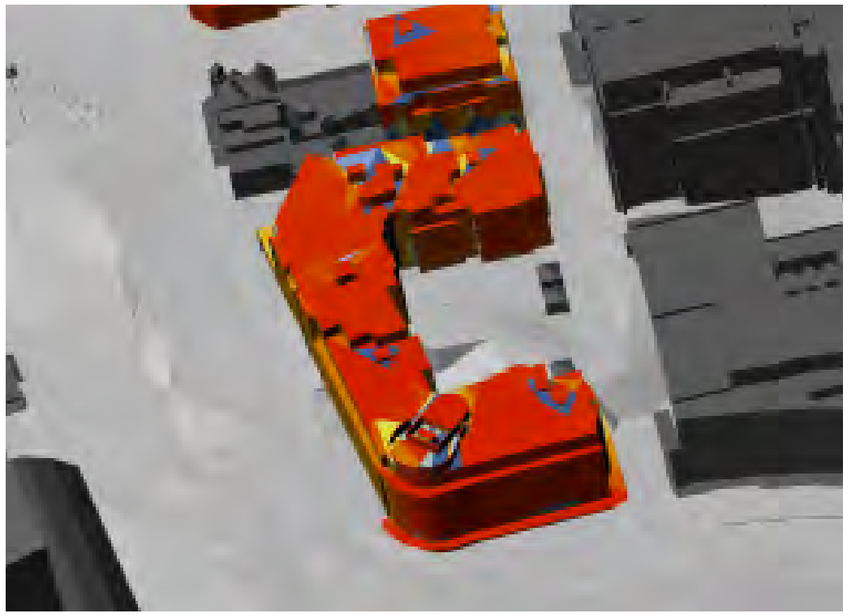
Unit 3 recieves just under 117 minutes of mid-winter sun. This reduces by around 12 minutes to 105 minutes = 9.7% reduction.

Unit 4 and above recieves 2+ hours of mid-winter sun access so are not included in this study.

Nil units at 102 Miller Street presently recieving less than 2 hours of mid winter sun have that sun access reduced by 20%.

1-27 Murray Street

Northern Aerial solar map



North-oriented units all recieve 2+ hours of mid-winter sun, do not form further part of this analysis.

Western Aerial solar map

These units in blue recieve less than 2 hours of mid winter sun. Require further analysis, refer to the diagram to the right.

These west-oriented units all recieve 2+ hours of mid-winter sun, do not form further part of this analysis.

Western Aerial view (courtesy of Apple Maps)

Diagram above shows the west facing facade in detail for 1-27 Murray Street.

Diagram below shows unit marketing plans overlayed on Google Maps to identify internal apartment planning. Analysis reveals no living rooms or balconies are located on the west facade.

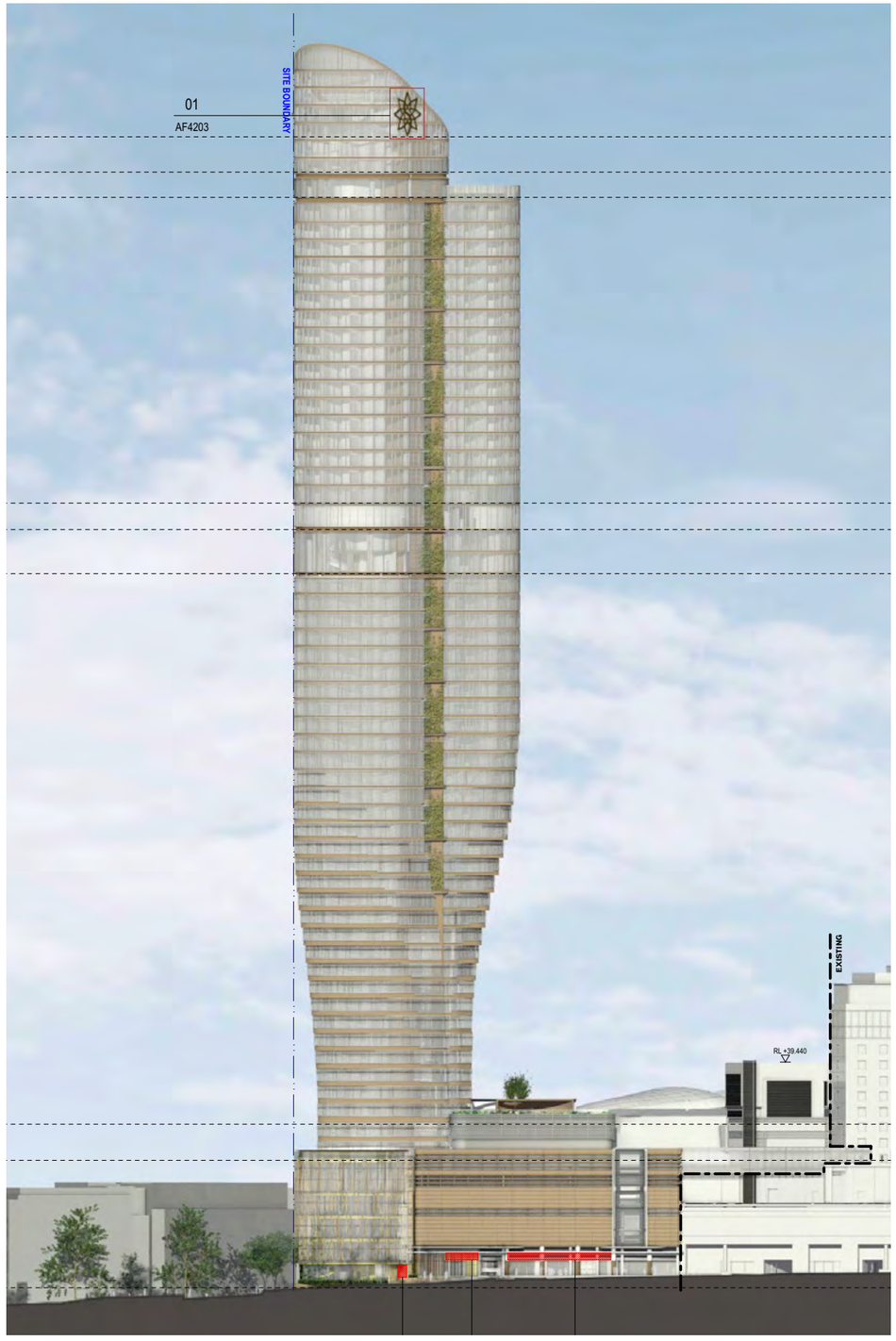
Therefore, there are no units currently recieving less than 2 hours of sun access at 1-27 Murray Street impacted by the proposed tower.

14.15 **Signage - Tower**

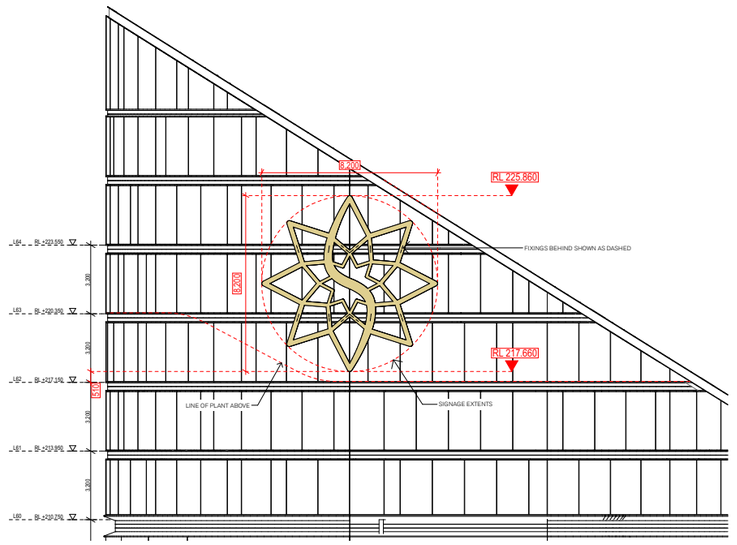
Tower Signage

Tower signage zones have been scaled to ensure appropriately and complimentarily proportions relative to the tower size, and located to avoid obstructing sensitive vision panel areas.

Given the predominant views to the tower are from the east and west, which correlates with the broader elevations of the tower form, two signage zones have been identified for the top of the tower. The Star logo is proposed for both the East and West facade.



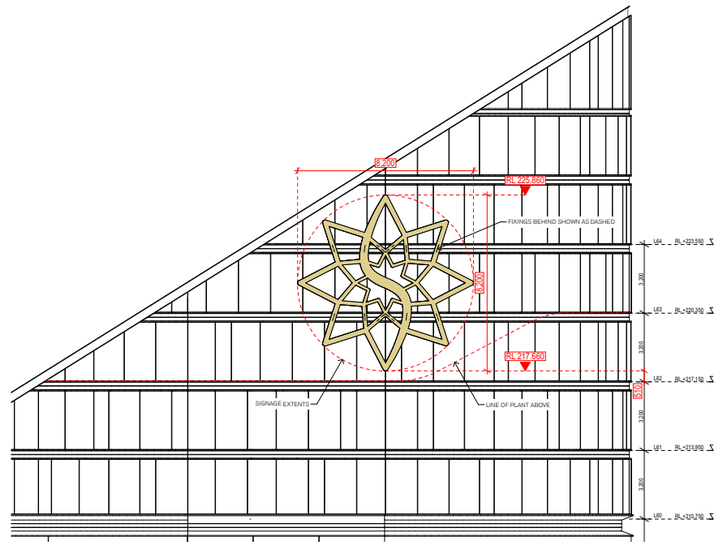
East elevation, The Star & Ritz-Carlton signage in context



West facade top of tower, proposed The Star signage

View from Port Jackson

West elevation, The Star & Ritz-Carlton signage in context



East facade top of tower, proposed The Star signage

View from Barangaroo Headland Park

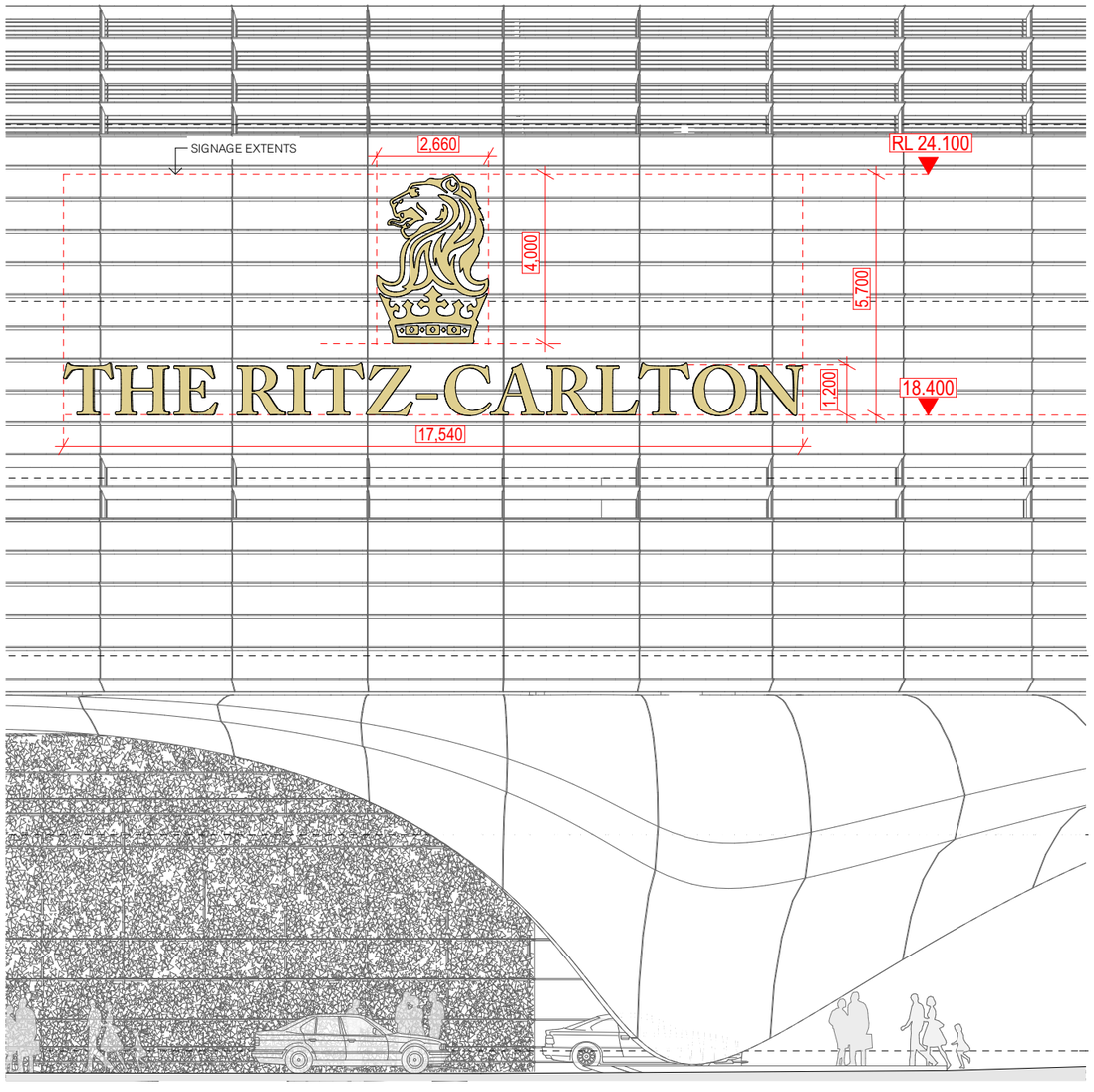
14.16 **Signage - Podium**

Podium Signage

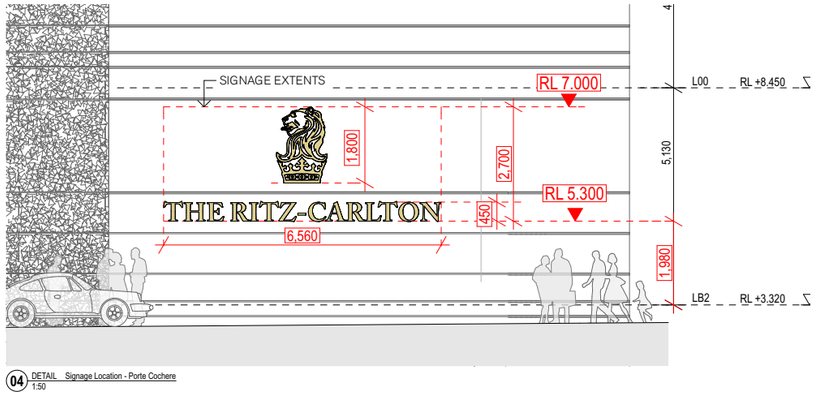
There are two streets addressed by Modification 13 works, Pirrama Road to the east, and Jones Bay Road to the northwest.

Signage is proposed along the Pirrama Road works identifying the Star arrival lobby, Light rail station, revamped F&B offerings, and importantly the new Ritz Carlton hotel lobby.

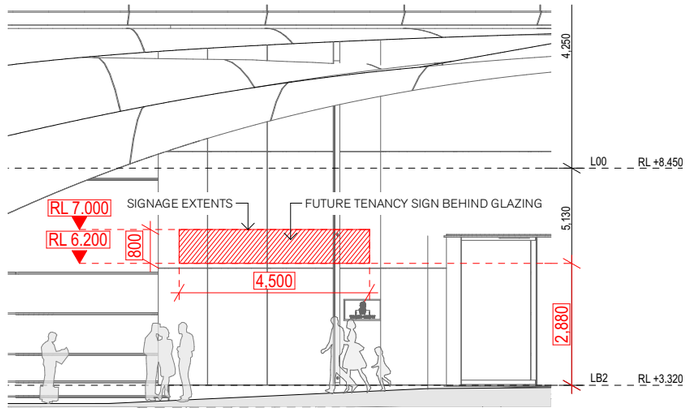
Signage to Jones Bay road has been identified for (from south to north) the new F&B tenancies, residents lobby, and the Neighbourhood Centre.



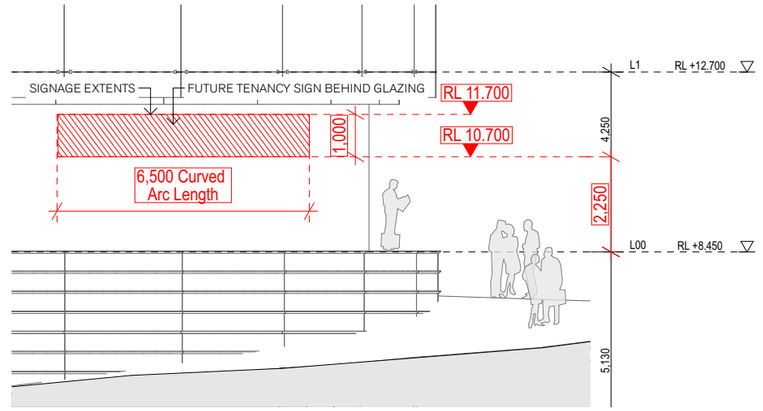
Pirrama Rd addressing The Ritz Carlton signage



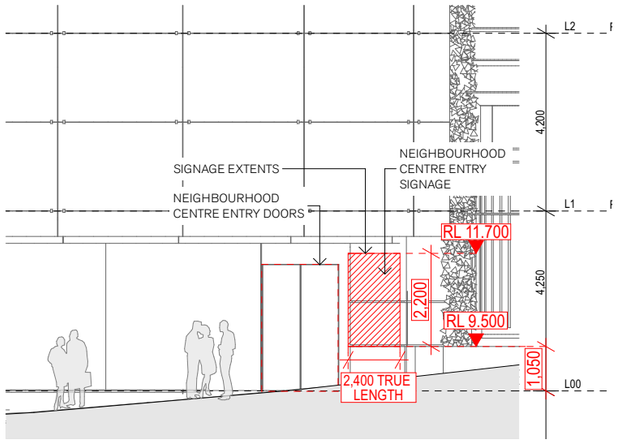
Pirrama Rd, Ritz Carlton drop-off



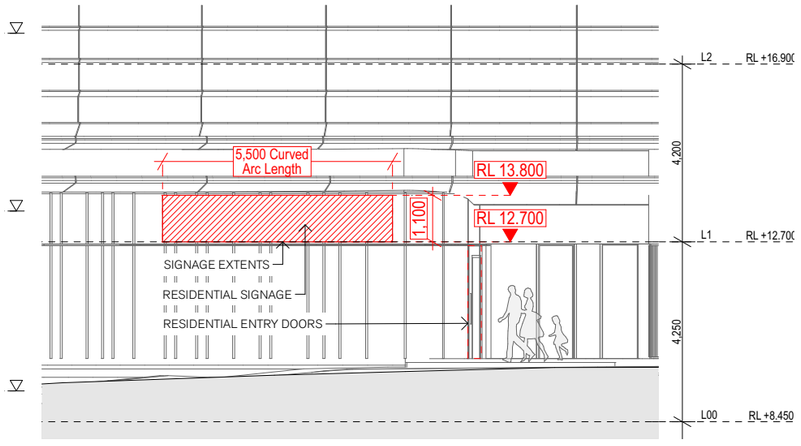
Pirrama Rd, Ritz Carlton lobby retail tenancy



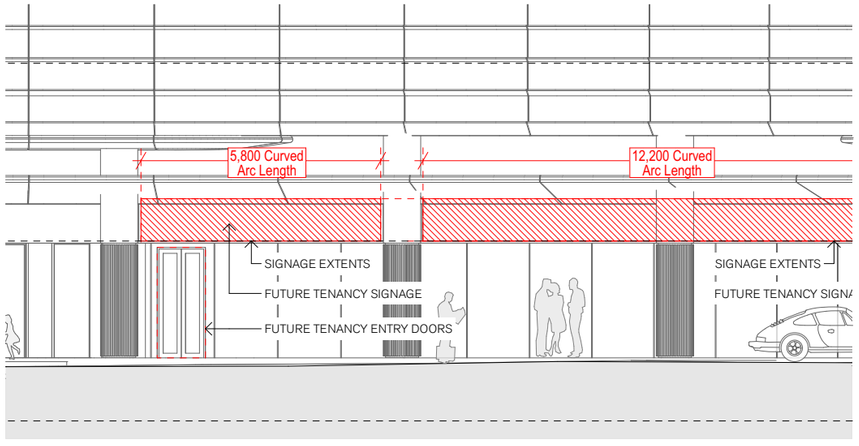
Pirrama Rd, neighbourhood centre tenancy



Jones Bay Rd, neighbourhood centre entry



Jones Bay Rd, residential lobby entry



Jones Bay Rd, retail colonnade

14.17 **External Lighting**

Focus for external lighting is on the key design features including the roof top, form articulation, and the new podium elements.

Tower Lighting

The Ritz Carlton Hotel and Residential Tower will be a landmark hotel destination for Sydney. The distinctive curved geometric form of the tower will create a strong visual presence both during daytime and night-time hours.

The proposed illumination of the tower will be provided by the internal lighting of hotel and residential spaces to create a lantern effect illuminating the curvilinear façade at night. To complement the internal lighting, two ribbons of light will create highlights to the façade at the Sky Lobby and Club Lounge levels. Subtle integrated lighting to the eastern and western vertical façade slots will emphasize the sculptural and interlocking form of the tower.

The top of the tower will be illuminated with integrated architectural lighting to enhance the sandstone finishes and angled roof profile. The Club Lounge Level includes an external terrace area. Light sources will be low level and localized to the terrace and will not affect surrounding areas.

Illumination of the tower will be integrated into the architecture and designed in accordance with Australian Standard 4282-1997 Control of the Obtrusive effects of outdoor lighting and consider luminance, hue, colour rendering and light distribution, in order to enhance the visual identity of the tower at night.