

**Cockle Bay Park Development**  
Astoria Tower Overshadowing Assessment

Darling Park Trust and Darling Park Property Trust

03/10/18 rev B

**fjmt studio** architecture interiors urban landscape



# 1.0 Summary

This report provides an assessment of the overshadowing impact of the proposed Concept Envelope on the Astoria Tower (222 Sussex St), including overshadowing impacts after 3pm as requested by DPE.

The assessment was undertaken in the following three steps:

## 1) Compliance with controls - The Apartment Design Guide (ADG)

The ADG provides controls for new residential developments in NSW, including their impact on adjacent existing residential buildings. It should be noted that as there is no residential component to the Cockle Bay proposal the ADG controls are not strictly required for compliance, however are proposed to be a suitable guide for assessing impact on adjacent existing residential buildings.

Sun eye view analysis indicates the proposed envelope results in no additional overshadowing during the control time of 9am - 3pm mid winter (21 June).

## 2) Extension of the ADG control time past 3pm.

As requested by DPE, this control time was then extended past 3pm on mid winter.

Sun eye view analysis at 15 minute intervals indicates the proposed envelope results in no additional overshadowing during the control time of 3pm - sunset mid winter (21 June).

## 3) Additional annual assessment

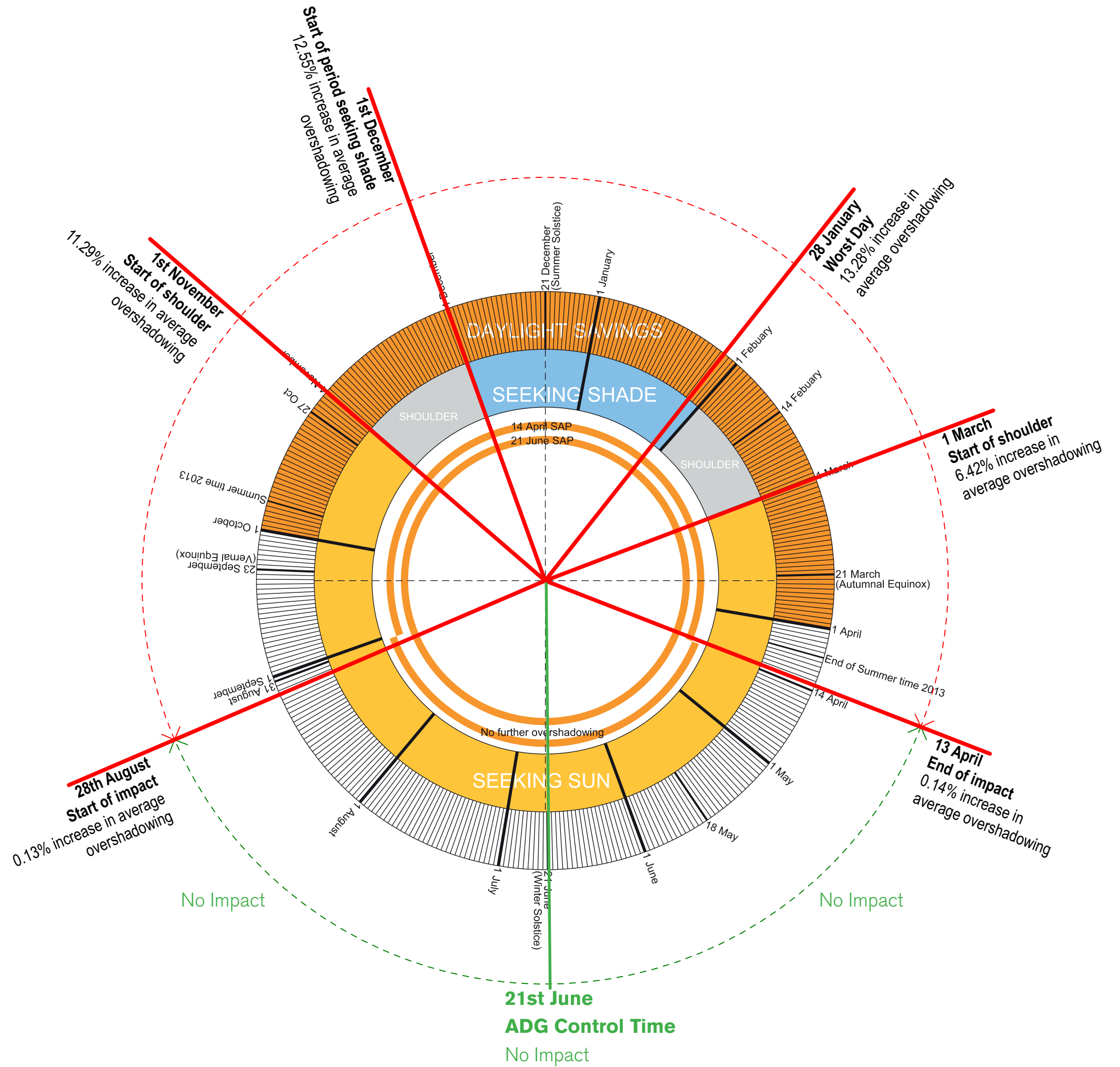
fjmt were then directed to assess the annual impacts outside of the ADG control times.

The analysis indicates that impact will occur on the western facade of the Astoria Tower:

- No impact from 14th April to 27th August
- On the most affected day 28 January, there is an average overshadowing increase of 13.28% across the Astoria western facade, occurring from approx 3.45pm (AEDT) until sunset. On this day shade is typically desirable.
- The percentages and hours represented are based the western facade only. Due to orientation of the buildings and location of DP1, only the western facade has potential to be overshadowed by the proposal. The overall percentages of sun reduction would be reduced when considering impact against the whole building, not just the west facade.
- The assessment has been undertaken using the whole envelope. Built form controls will restrict the size of the building within this envelope (eg. 60% volumetric utilisation), so it is anticipated that the actual affect will be reduced further than this assessment. A building in a more northern position would have less impact then buildings in a southern position.

**Overshadowing Impact Summary**

- Astoria Tower Western Facade
- Proposed envelope



## 2.0 Compliance with controls - The Apartment Design Guide

The ADG provides controls for new residential developments in NSW, including their impact on adjacent existing residential buildings. It should be noted that as there is no residential component to the Cockle Bay proposal these are not strictly required for compliance, however these controls are proposed to be a suitable guide for assessing impact on adjacent residential buildings.

### Objective 3B-2

*Overshadowing of neighbouring properties is minimised during mid winter. Living areas, private open space and communal open space should receive solar access in accordance with sections 3D Communal and public open space and 4A Solar and daylight access. Where an adjoining property does not currently receive the required hours of solar access, the proposed building ensures solar access to neighbouring properties is not reduced by more than 20%.*

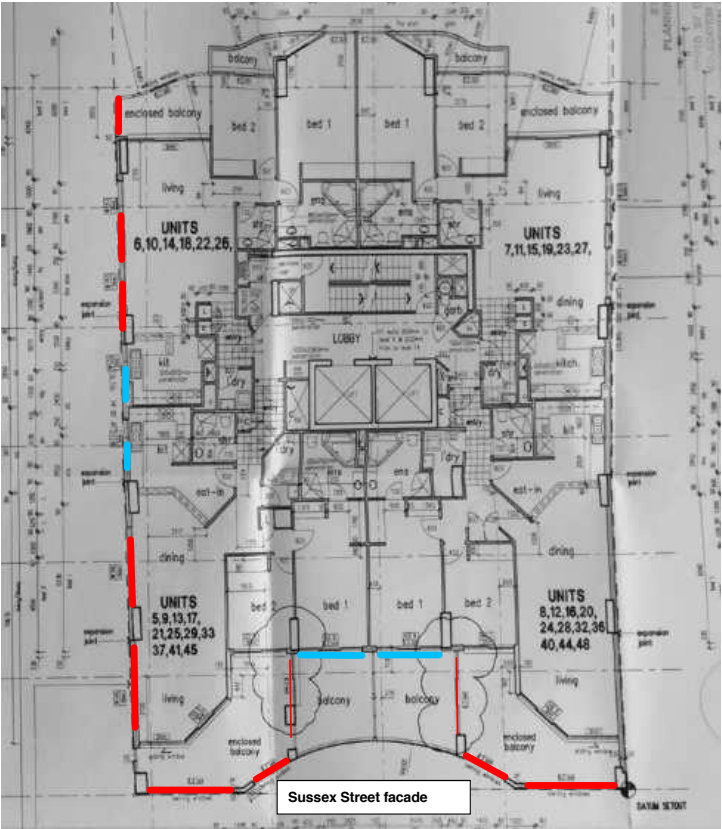
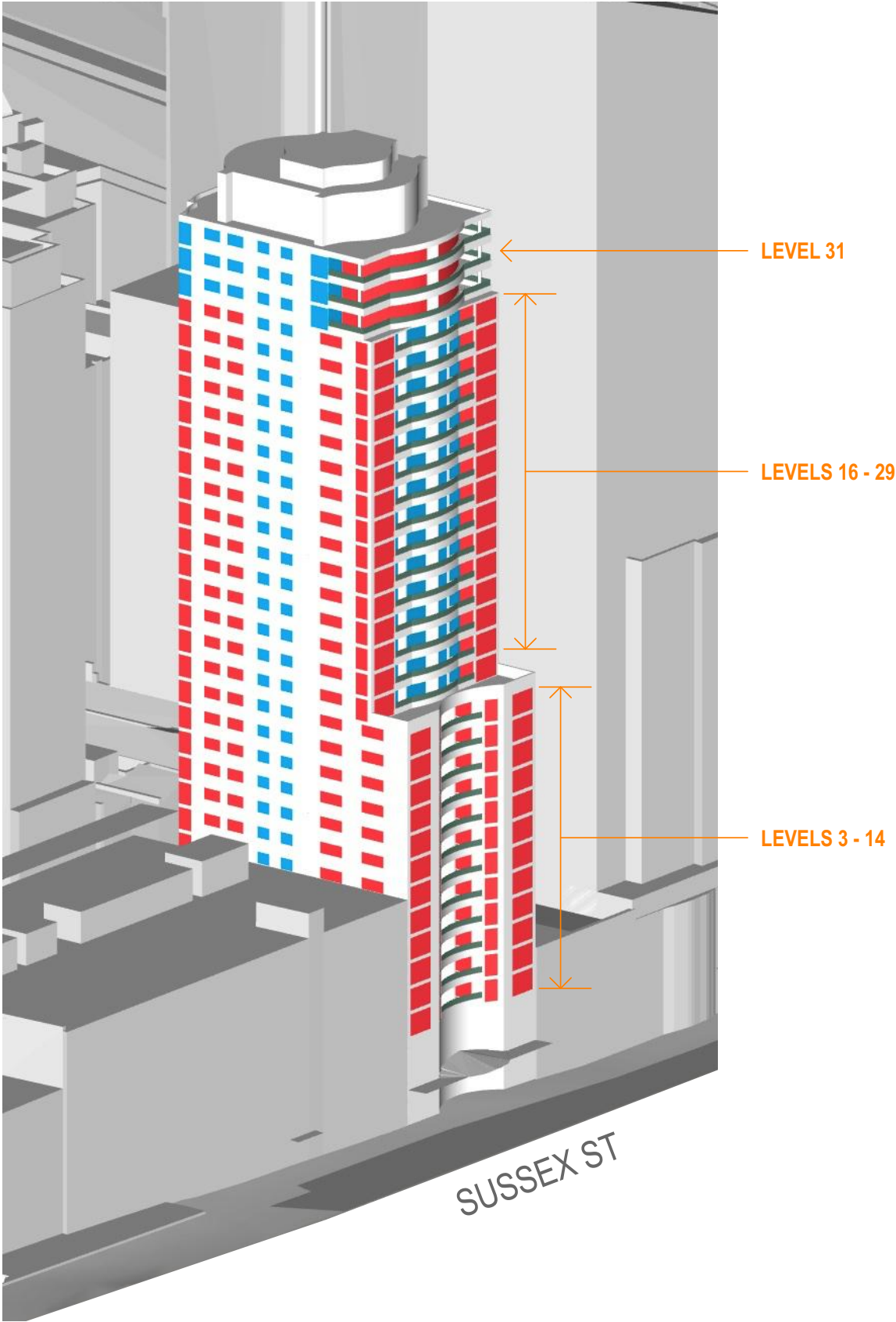
### Objective 4A-1

*To optimise the number of apartments receiving sunlight to habitable rooms, primary windows and private open space. Living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 2 hours direct sunlight between 9 am and 3 pm at mid winter in the Sydney Metropolitan Area.*

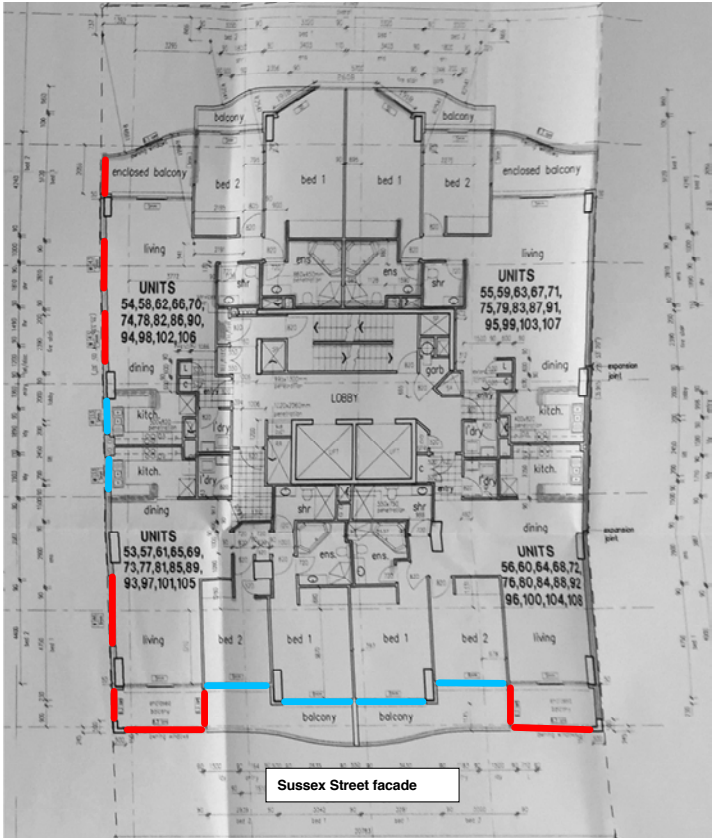
The following sun eye view analysis indicates the proposed envelope results in no additional overshadowing during the control time of 9am - 3pm mid winter (21 June).



222 Sussex St Window Locations



LEVELS 3 - 14

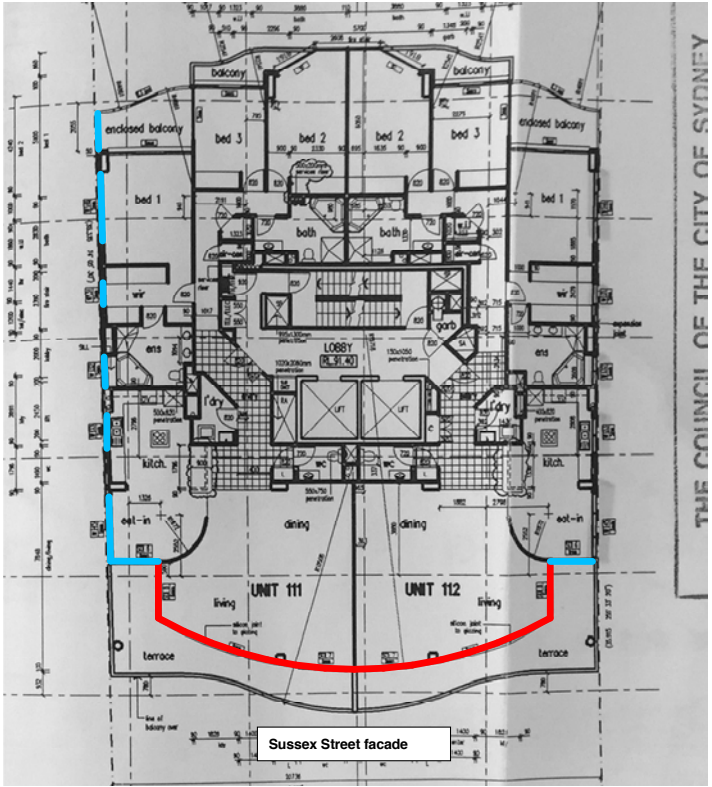


LEVELS 16 - 29

LEGEND

- WINDOW TO LIVING SPACE / ENCLOSED BALCONY
- BEDROOM / KITCHEN / BATHROOM WINDOWS

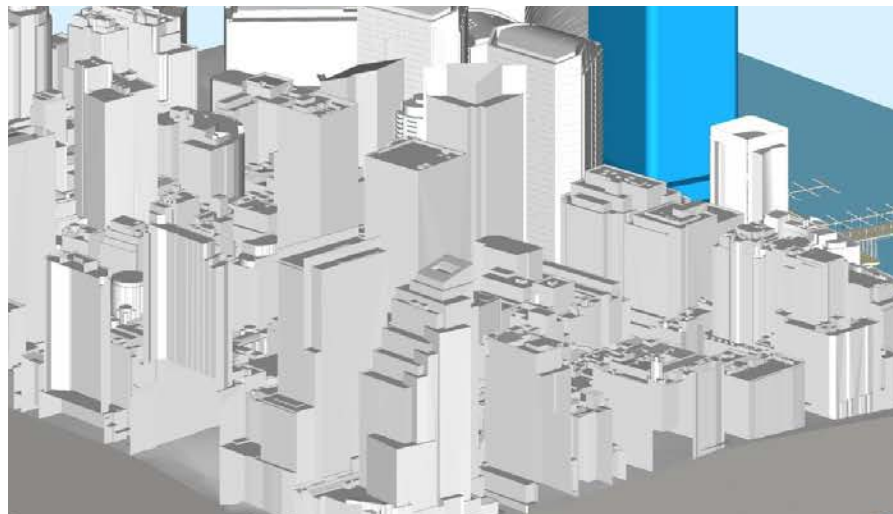
NOTE: APPROXIMATE LOCATIONS BASED ON AVAILABLE INFORMATION



LEVEL 31



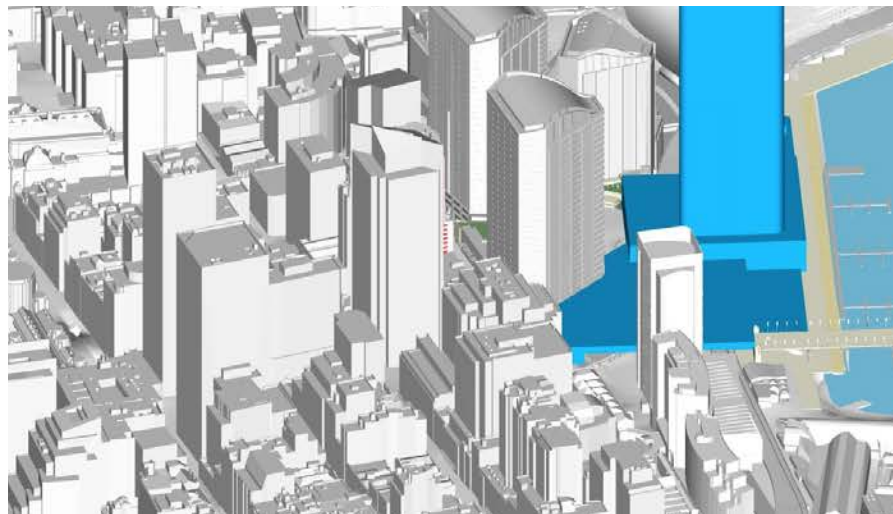
Sun Eye Views - 21st June - 9am to 3pm at hourly intervals



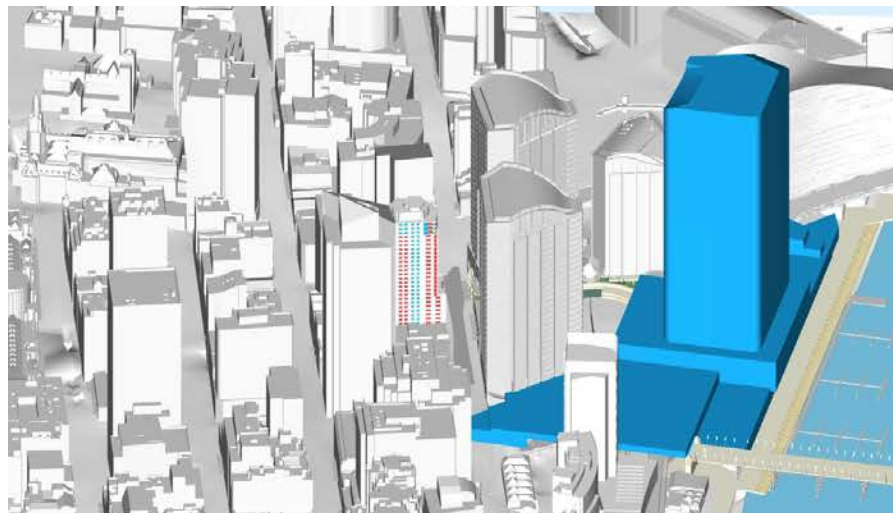
21 June - 9am



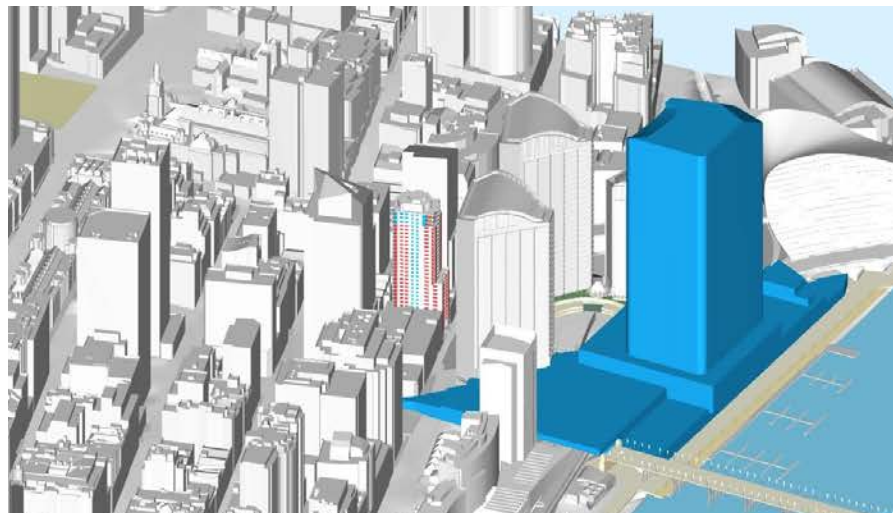
21 June - 10am



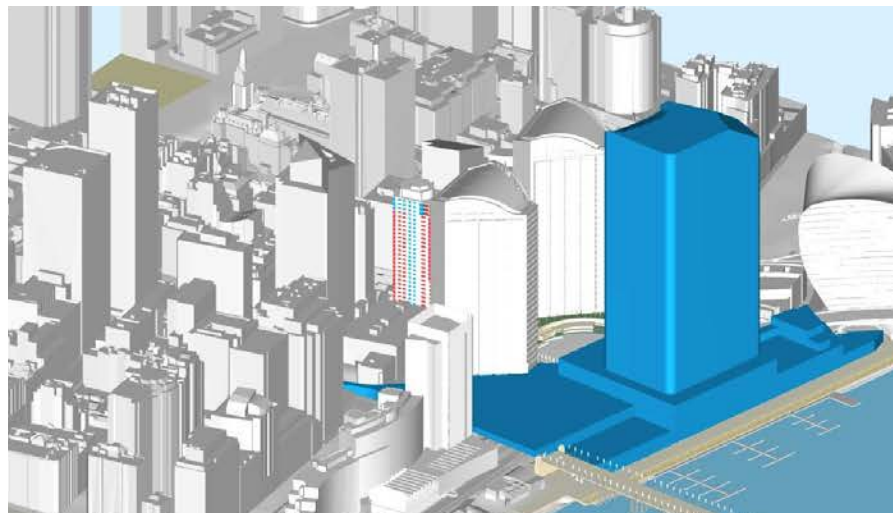
21 June - 11am



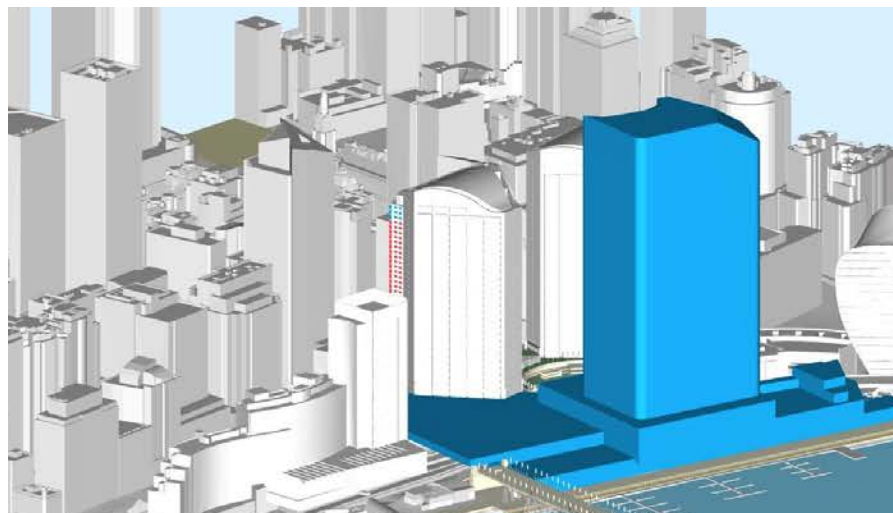
21 June - Midday



21 June - 1pm



21 June - 2pm



21 June - 3pm

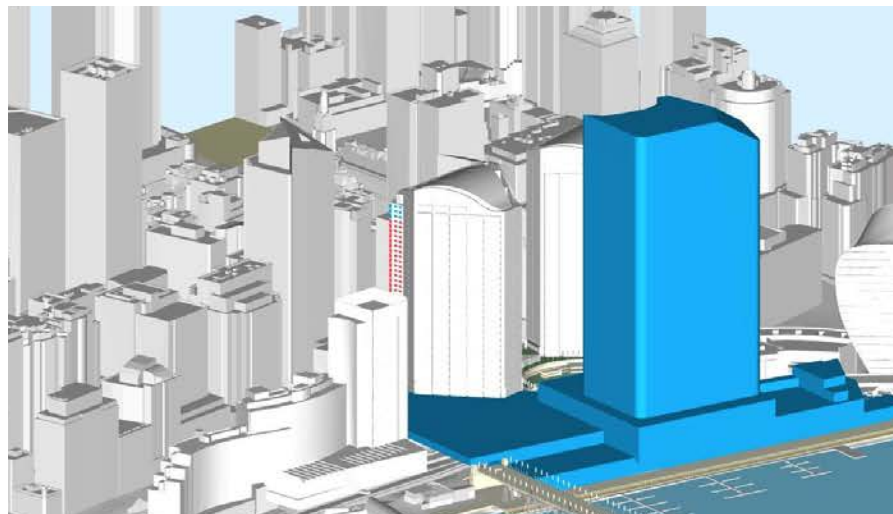
### **3.0    Extension of the control time past 3pm**

As requested by DPE, this control time was then extended past 3pm on mid winter.

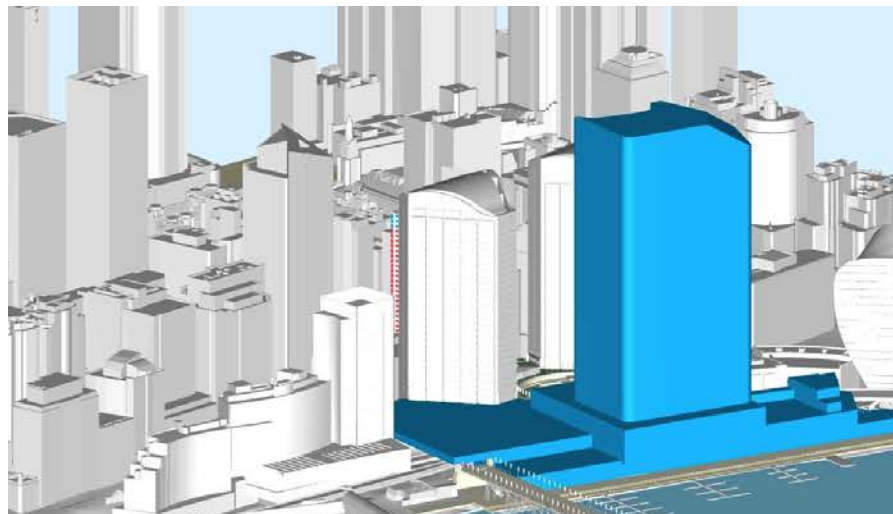
Sun eye analysis indicates the proposed envelope results in no additional overshadowing during the control time of 3pm - sunset mid winter (21 June).



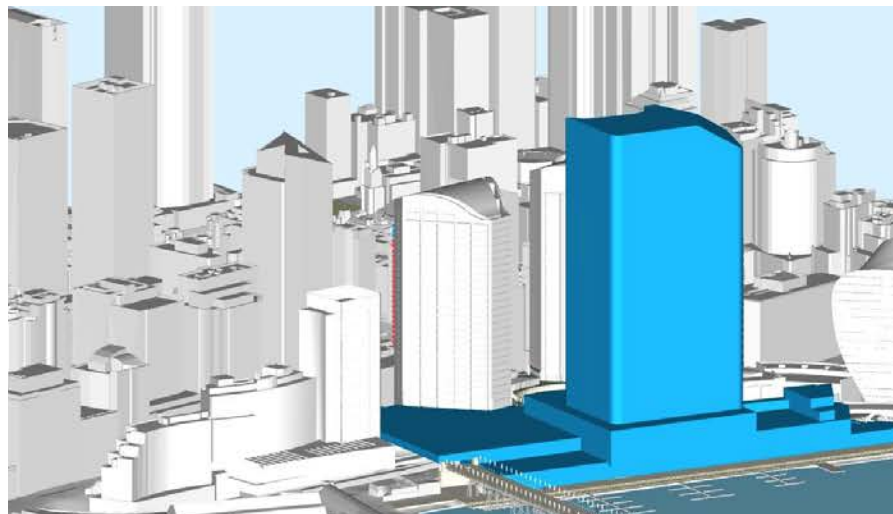
Sun Eye Views - 21st June - 3pm to 5pm (sunset) at hourly intervals



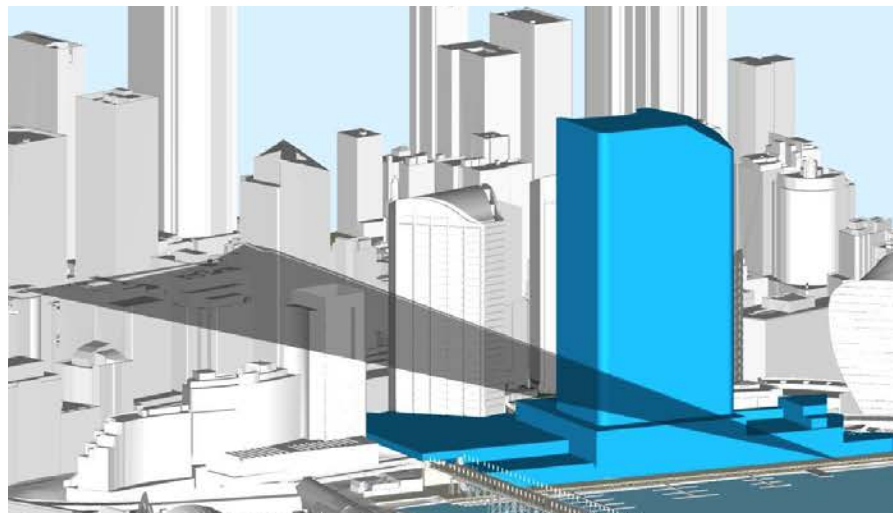
21 June - 3pm



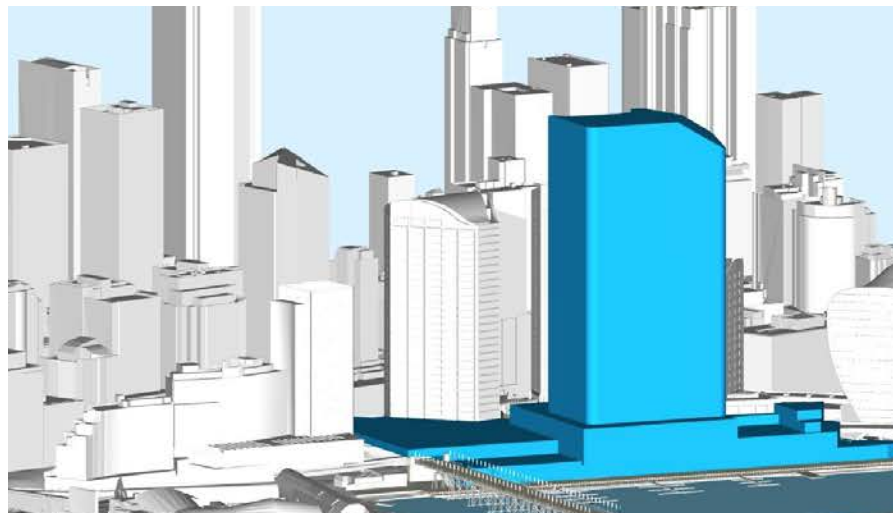
21 June - 3.15pm



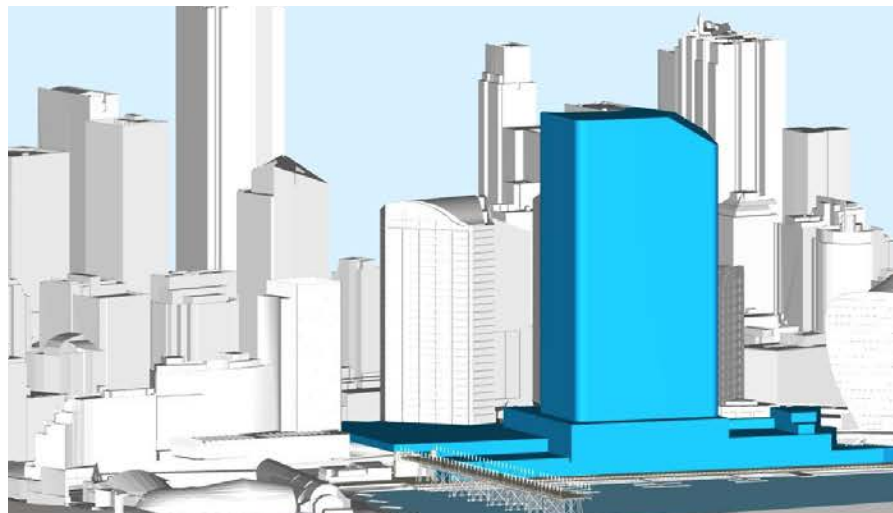
21 June - 3.30pm



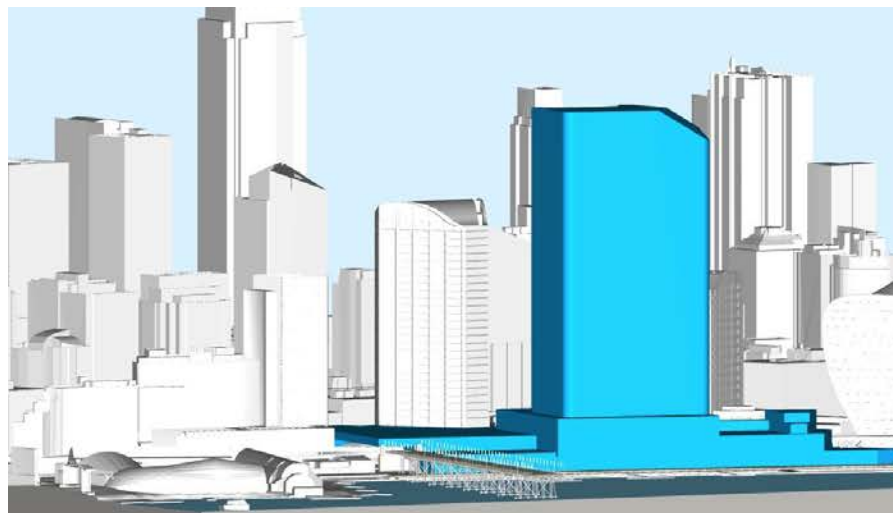
21 June - 3.45pm



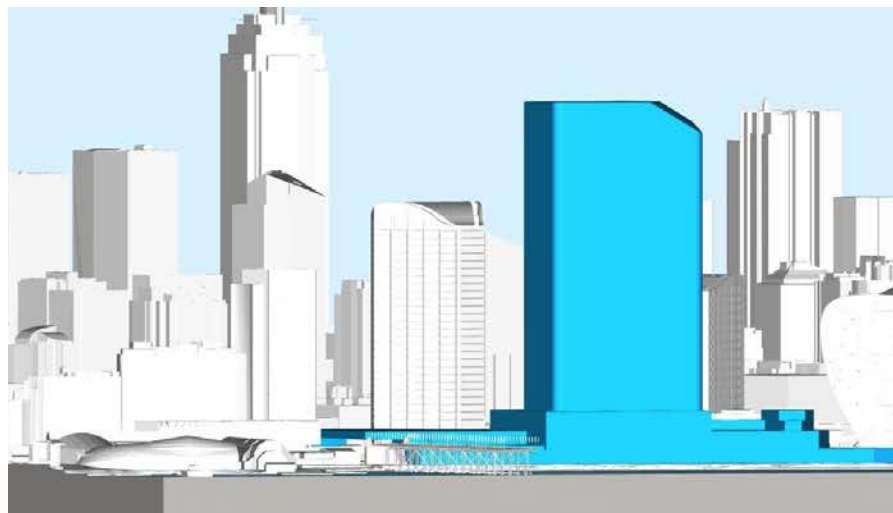
21 June - 4.00pm



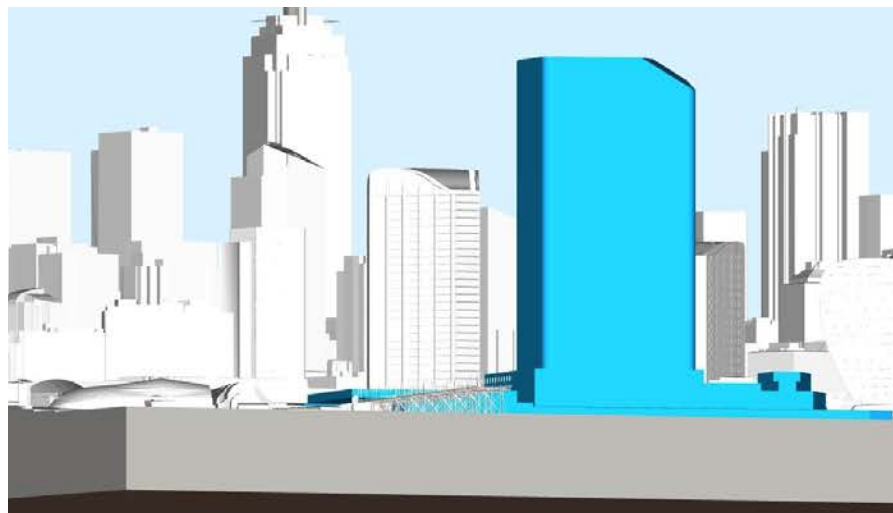
21 June - 4.15pm



21 June - 4.30pm



21 June - 4.45pm



21 June - 5.00pm



## 4.0 Additional annual assessment

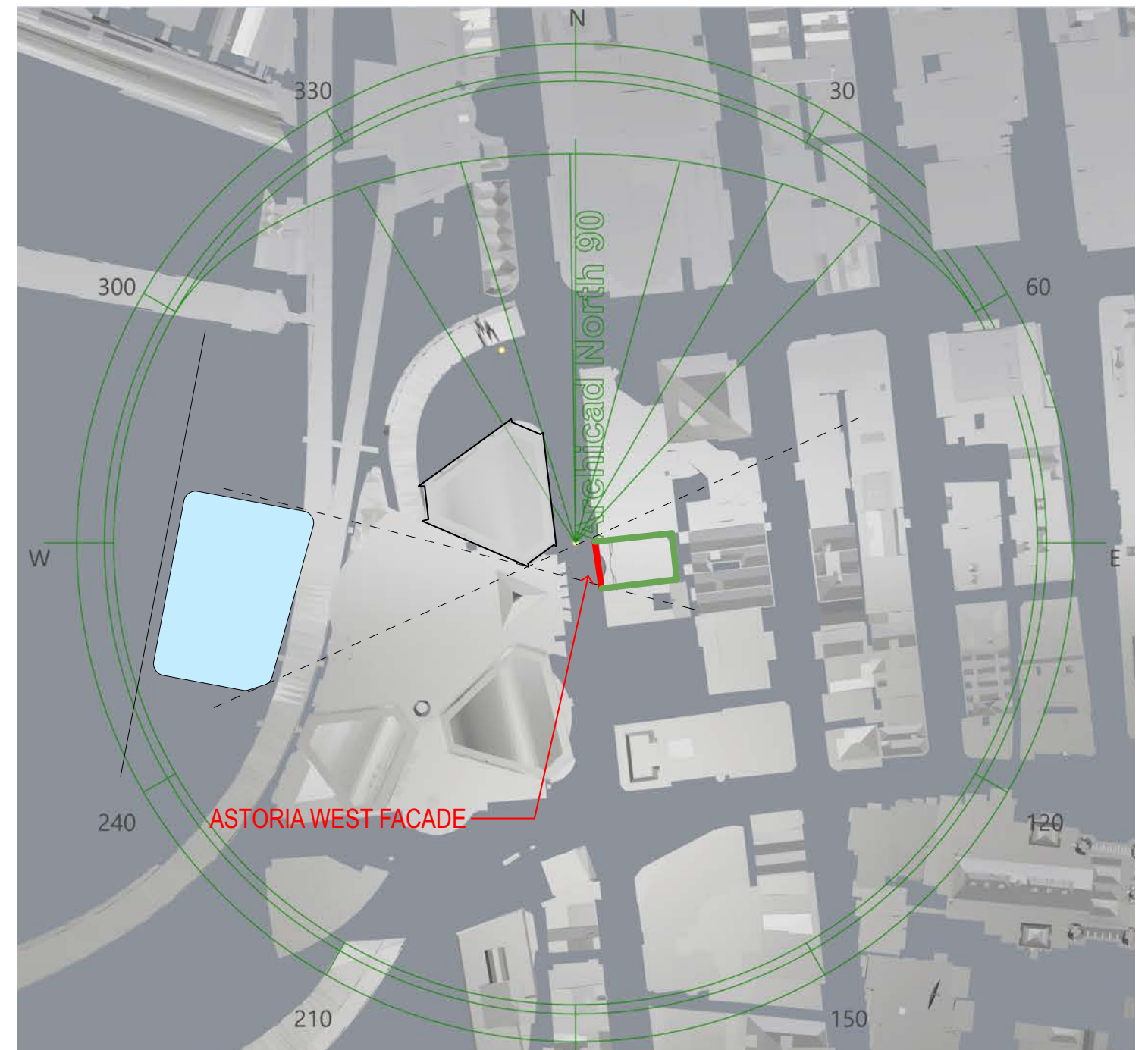
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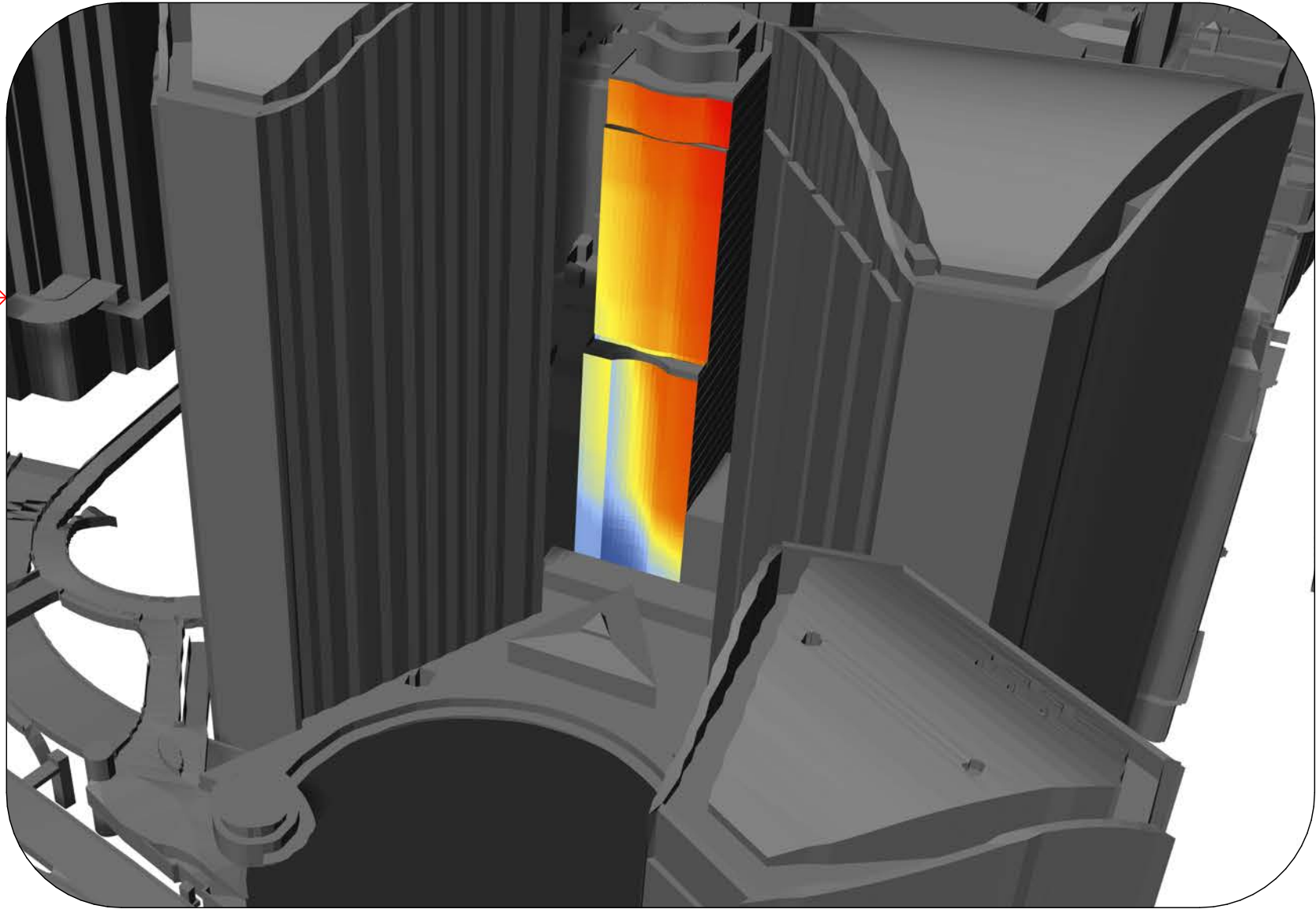
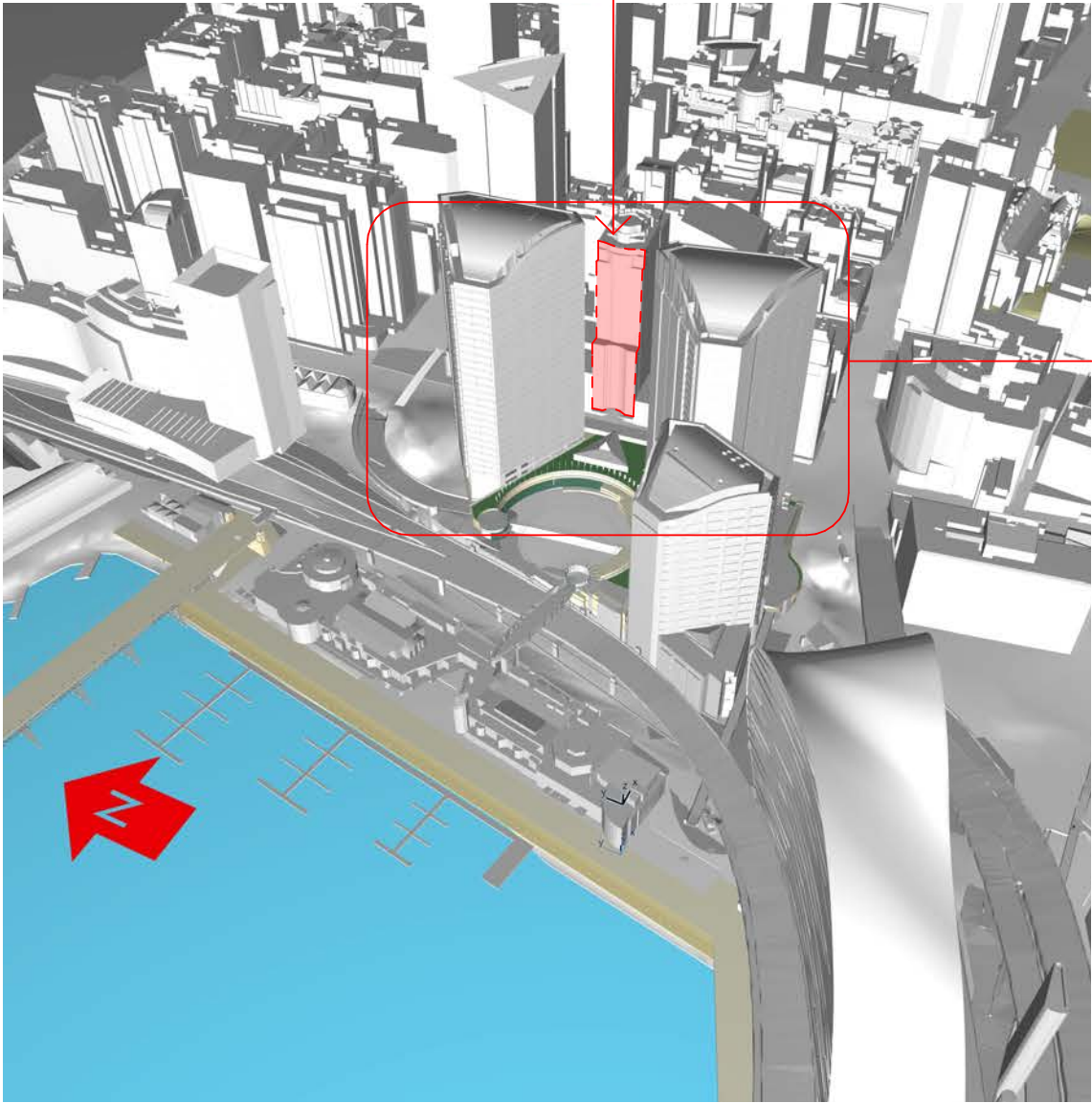
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Annual Hours of Sun Access  
Existing



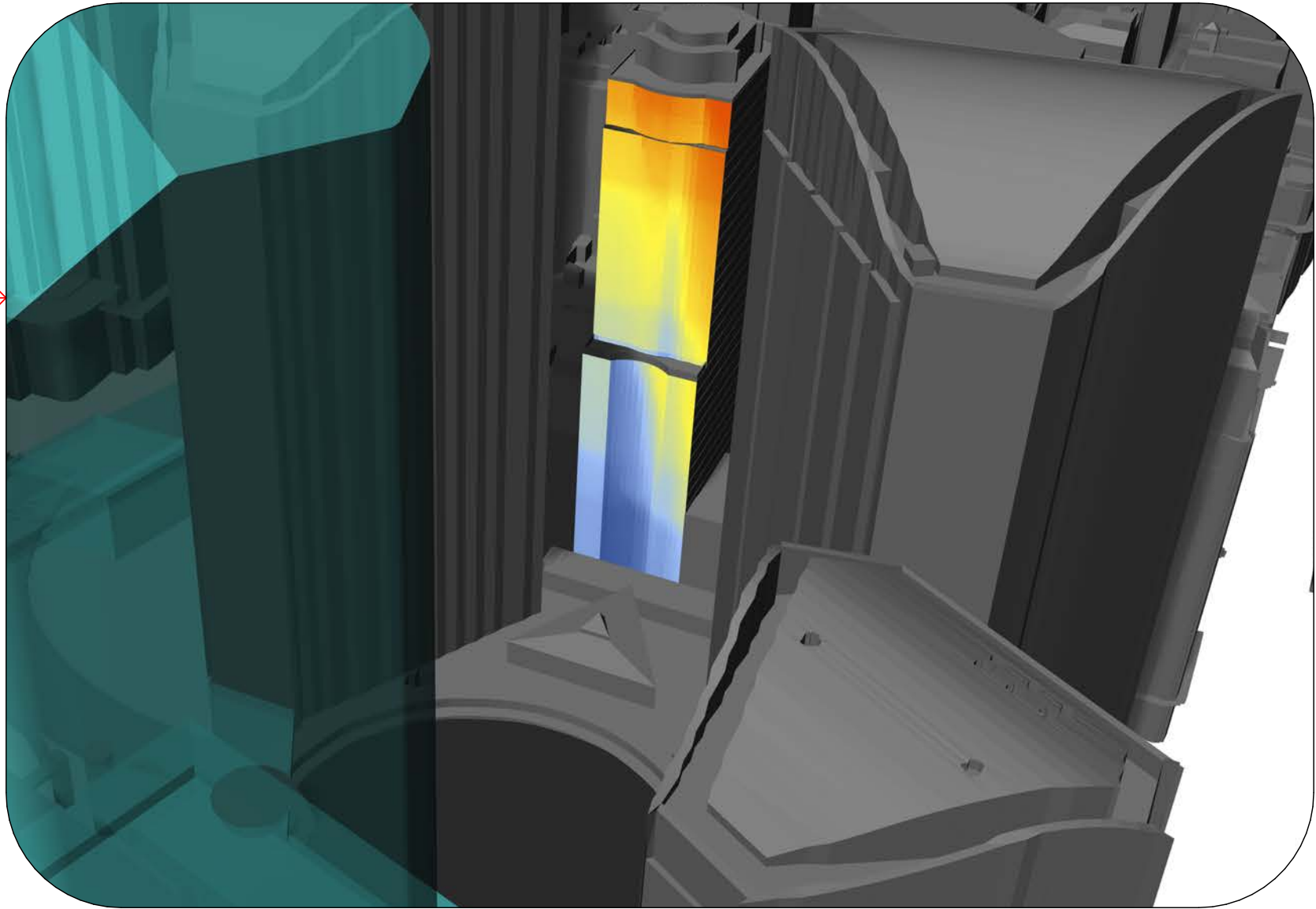
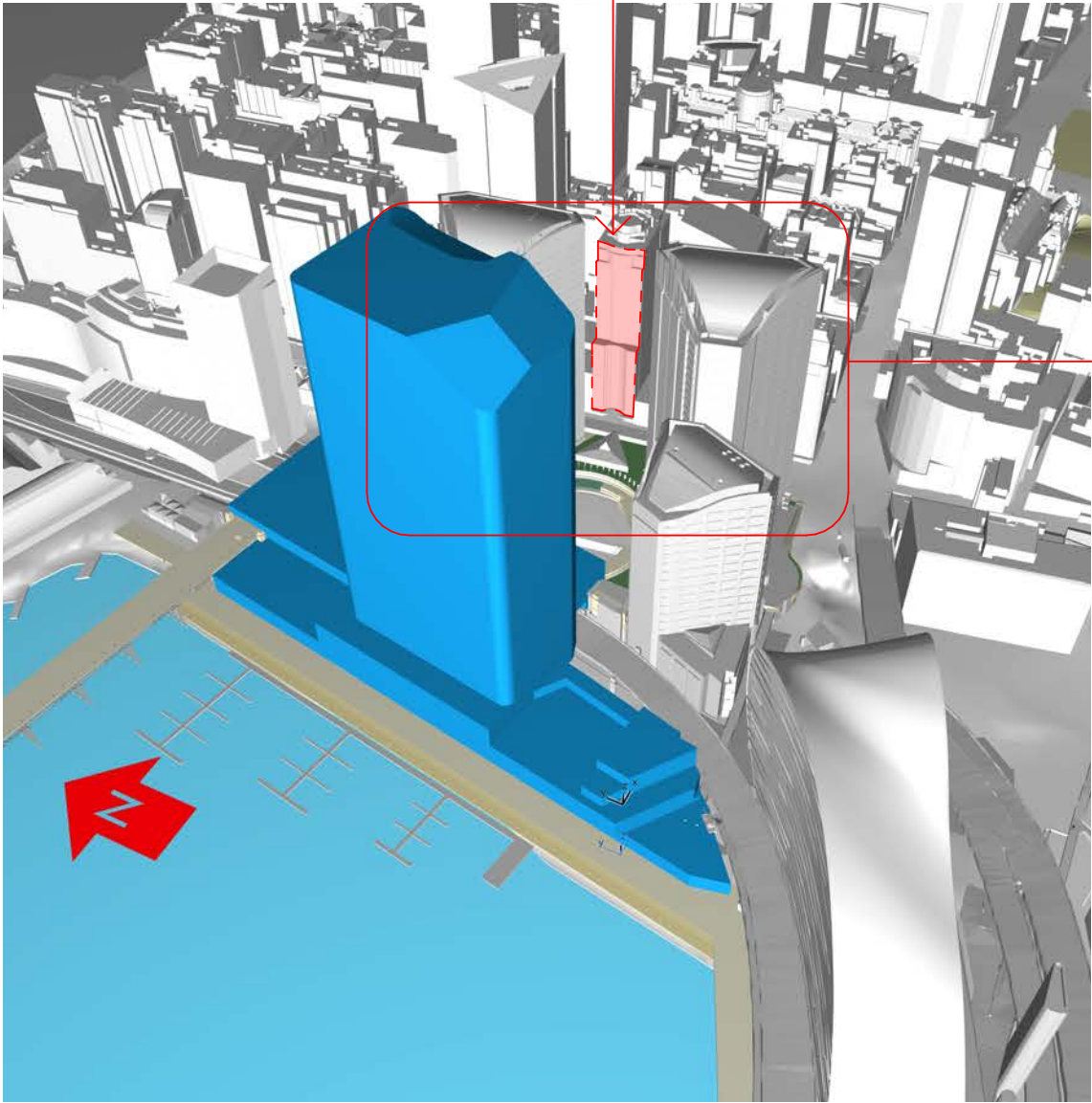
ASTORIA WESTERN  
FACADE ANALYSED





Annual Hours of Sun Access  
Proposed Envelope

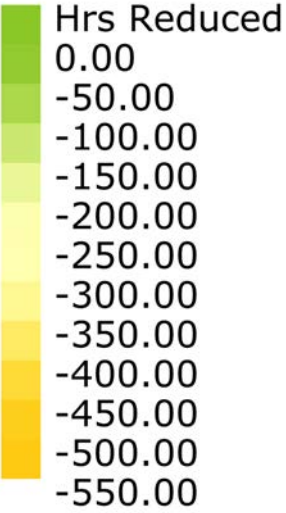
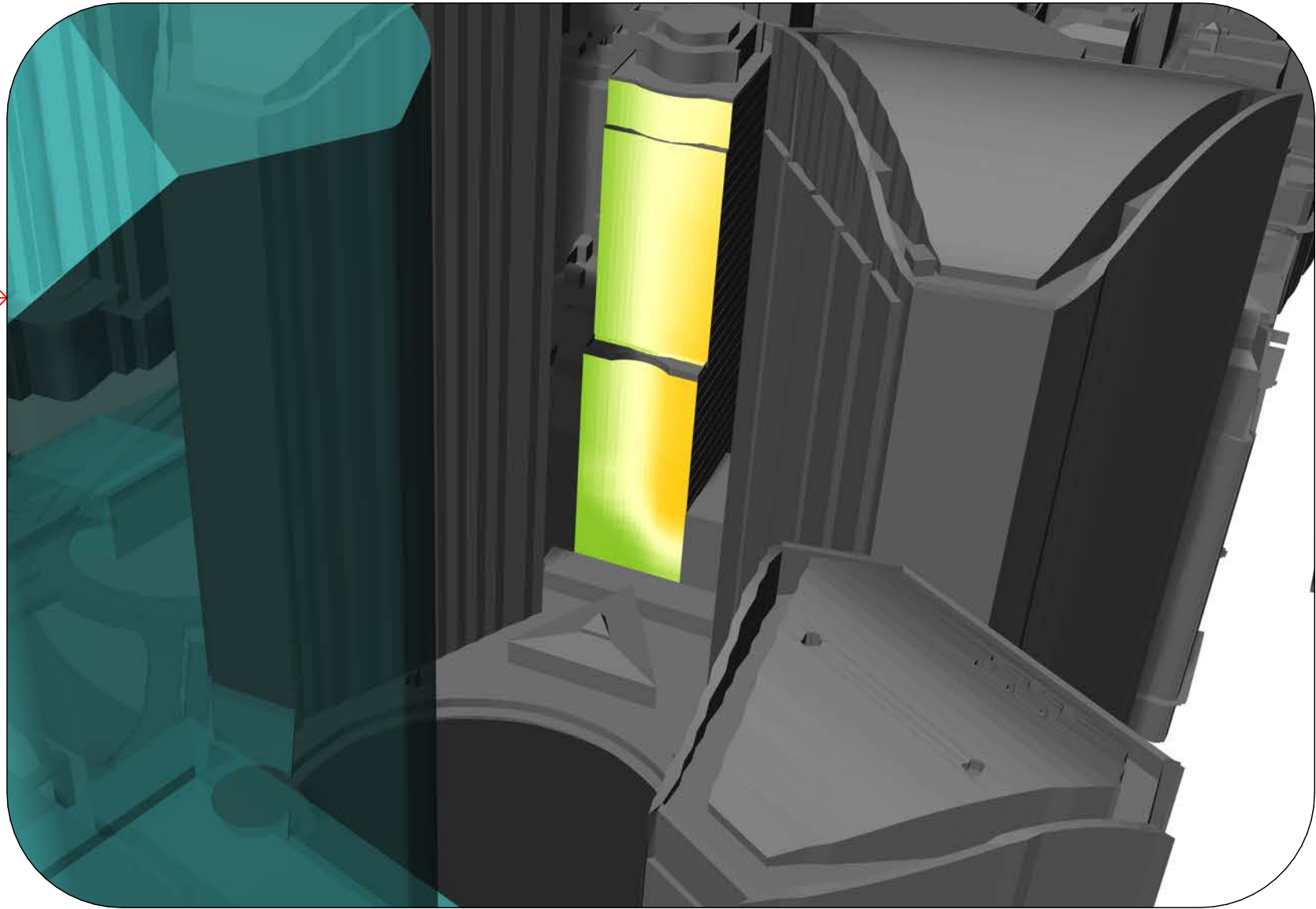
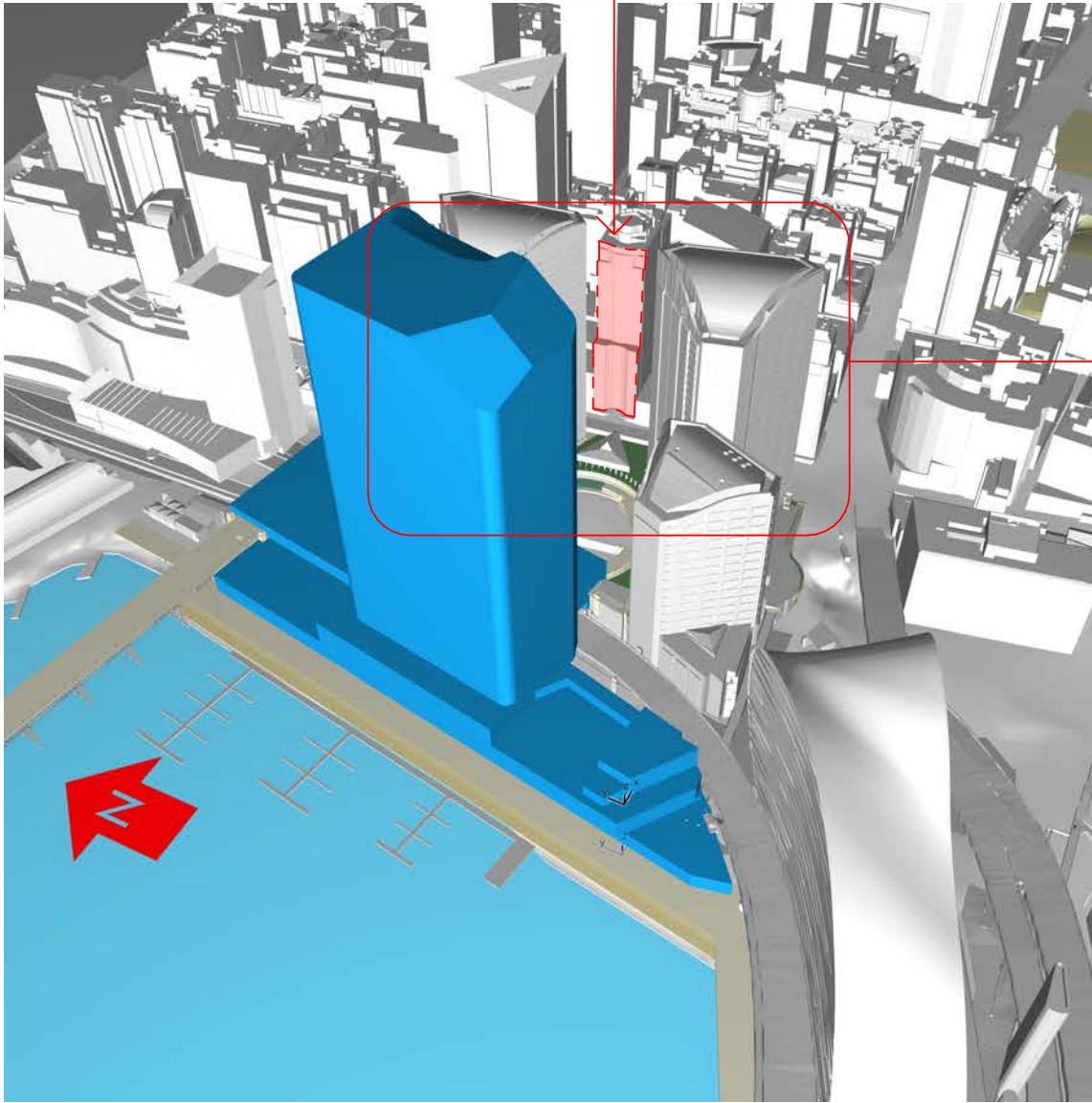
ASTORIA WESTERN  
FACADE ANALYSED





Annual Hours of Sun Reduction  
Proposed Envelope

ASTORIA WESTERN  
FACADE ANALYSED



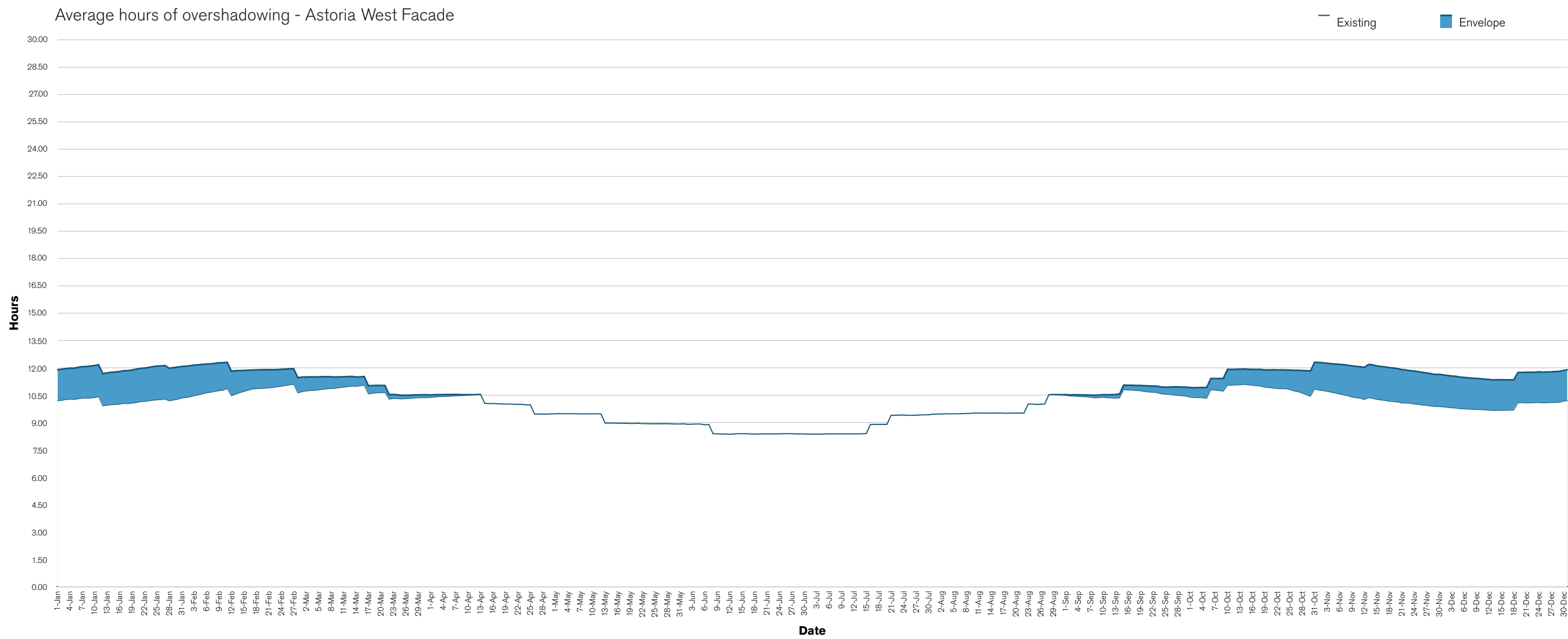
Average hours of overshadowing - sunrise to sunset

Proposed Envelope

The average impact of the envelope is;

- 13.28% average overshadowing increase across the western facade on the most affected day of the year

28 January, with the degree of overshadowing tapering off on either side for a total of 229 affected days from 28th August to 13th April



Duration of most affected day overshadowing  
Proposed Envelope

Analysis of the peak day for indicates the time affected starts at approx 3.45pm (AEDT) until sunset.

