

# **Attachment A2**

## **Urban Design Report (Part 3)**

# ENVELOPE DESIGN



# PROPOSED MASSING COMPLIANCE

## Pedestrian Wind Environment Report

All wind points analysed are equal to or better than existing conditions.  
- Windtech, Pedestrian Wind Environment Report.

## View Sharing Impact Analysis

"For all views considered based on the CGIs, view loss per dwelling is limited in qualitative terms, and the view impact per dwelling based on the information available, is reasonable and acceptable." - Urbis, View Sharing Impact Analysis



## Solar

The design guidance in ADG relating to overshadowing of adjoining property states solar access to neighbouring properties must not be reduced by more than 20% (compliant as an average per apartment).

**The envelope for the planning proposal is defined by three key metrics that impact the urban environment. With Solar being a key driver, The Central Sydney Planning Strategy acknowledges and anticipates overshadowing as the city grows.**

Vision: 'Introducing a new planning pathway for heights and densities above the established maximums limits will increase growth opportunities for employment floor space, promote the efficient use of land, and encourage innovative design. It will also unlock opportunities for the delivery of cultural, social and essential infrastructure and improved public spaces commensurate with growth.'

Location based aspirations: 'These opportunities are focused in those

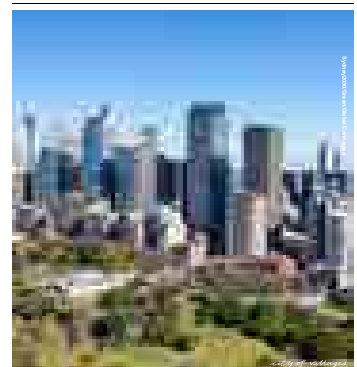
areas of Central Sydney less constrained by sun access planes.'

Use based aspirations: 'Prepare a guideline to allow additional height for employment-related development where there is no additional overshadowing of protected places.'

Aims: 'To ensure the development of new commercial buildings is not unreasonably impeded by existing residential buildings' and .... 'To ensure that new development is not impeded by the preservation of private views'.

## Central Sydney Planning Strategy

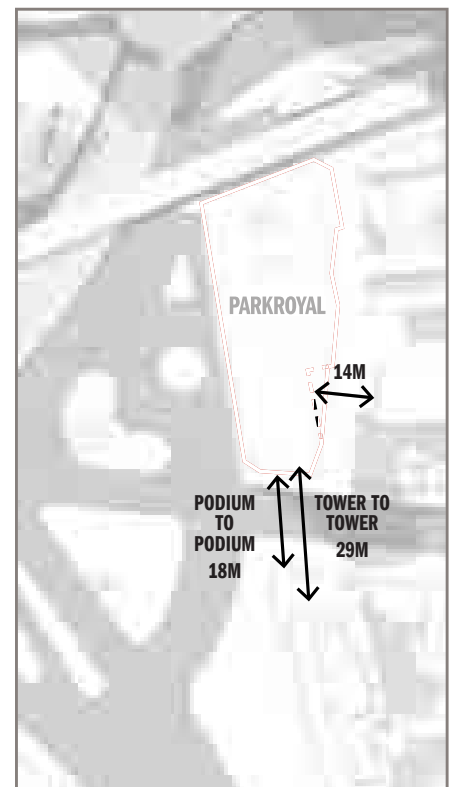
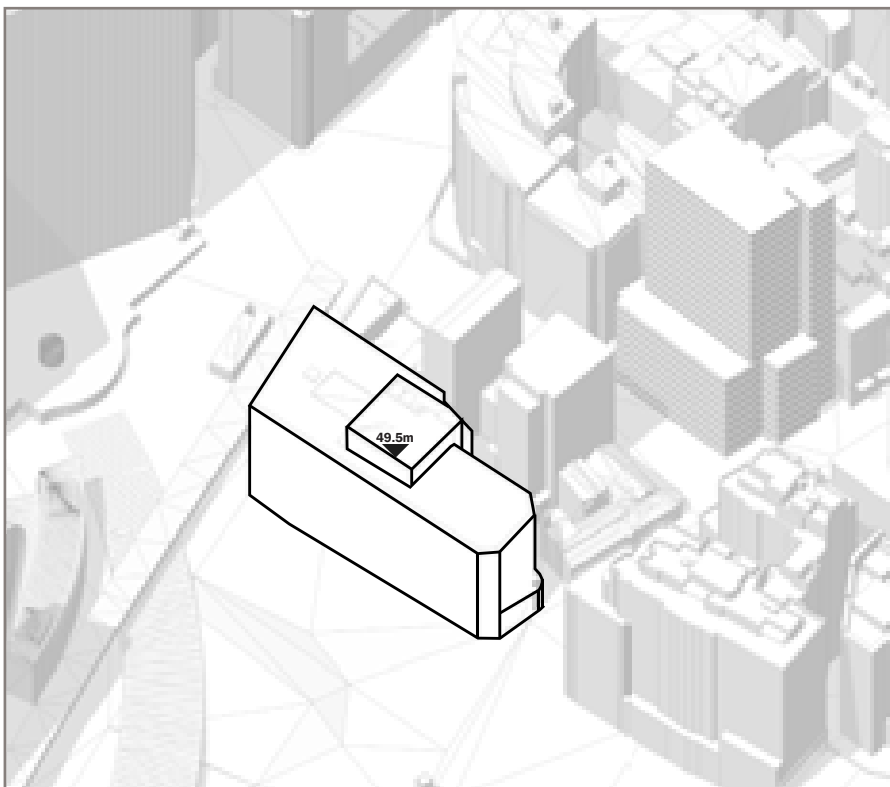
2016–2036



# MASSING

## Existing Building

The existing hotel is directly north of adjacent residential developments, however it maintains large building separations to mitigate view impacts and solar impacts. Where overshadowing is a risk at the south of the site, the building separation is over 18m, mitigating impacts.



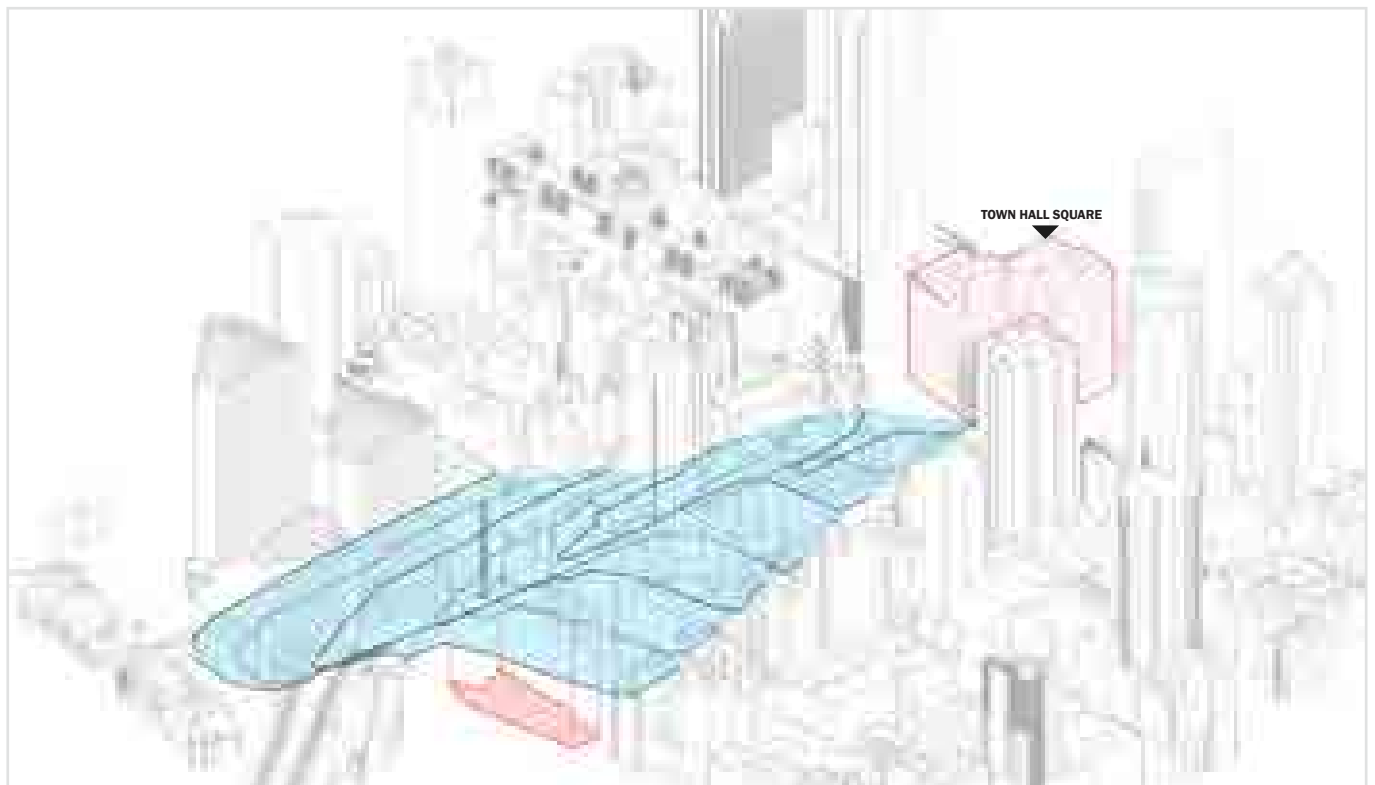
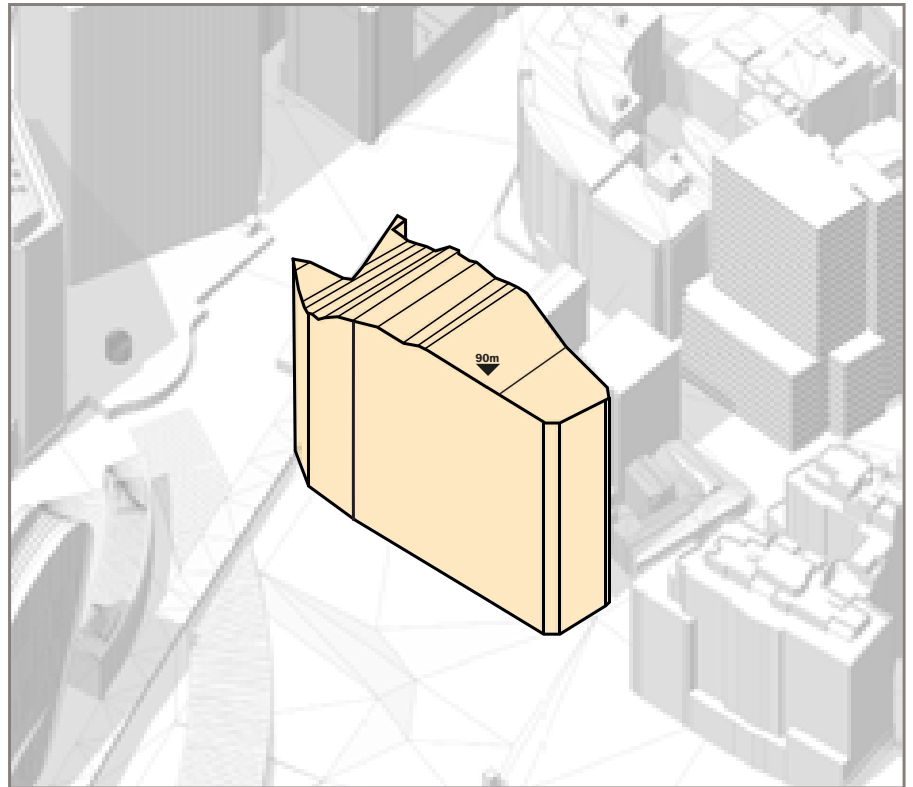
# MASSING

## Step 1 - Extrude the site boundary to intersect with the Town Hall Solar Plane

### Maximum envelope under Town Hall Solar Plane.

Sydney Local Environmental Plan (LEP) 2012 Clause 6.19 lists the future Town Hall square as one of the Public Places in the City Centre which must not be additionally overshadowed by new development.

The Town Hall envelope, as defined by the Town Hall solar plane, reaches a maximum height of RL 90m.

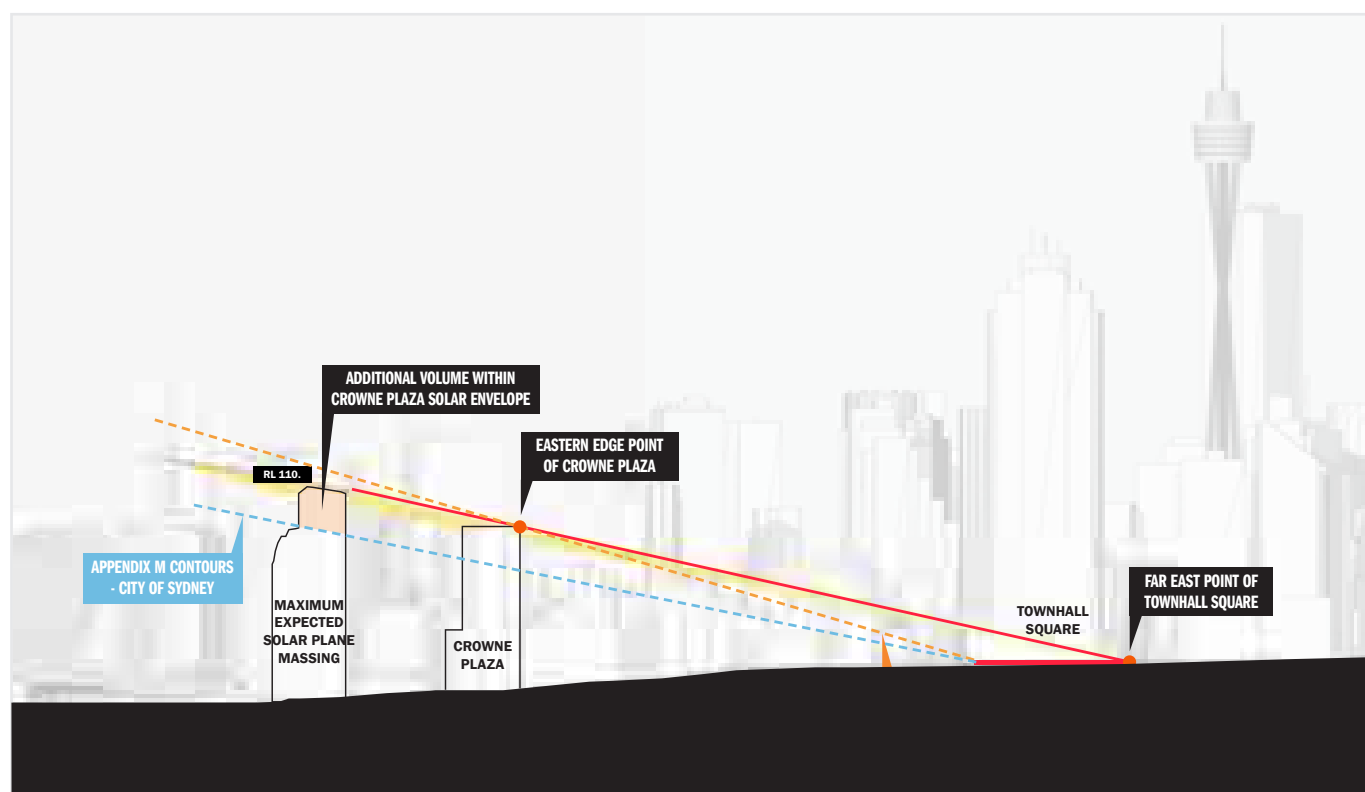
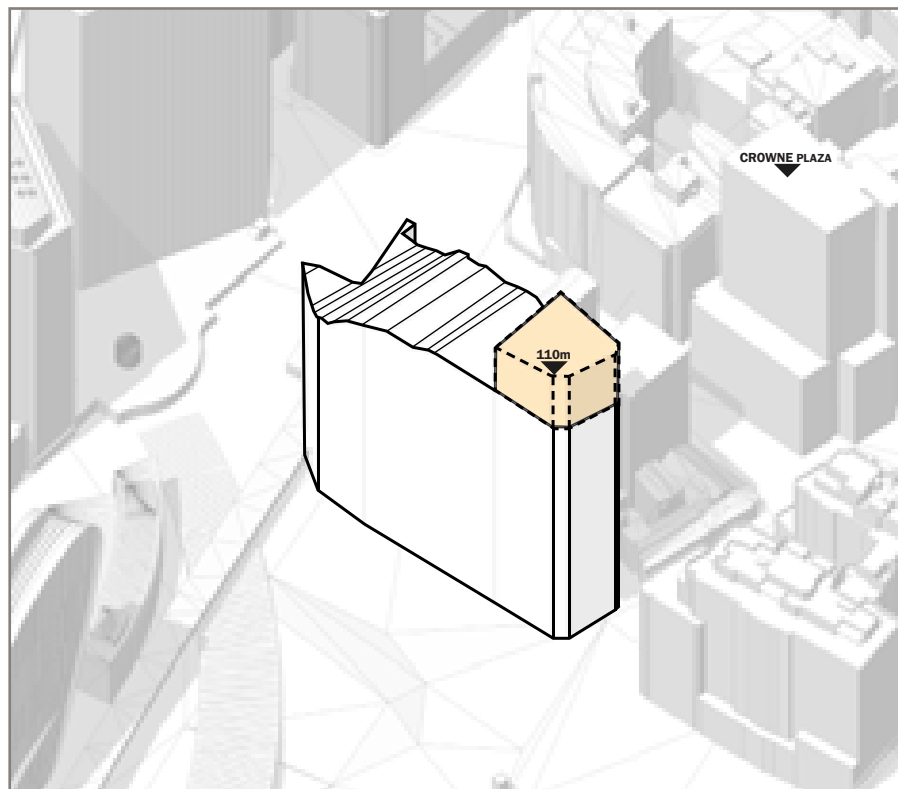


## Step 2 - Increase height within the shadow of other developments

Since the Crowne Plaza, positioned between the project site and Town Hall Square, exceeds the town hall solar plane, it permits additional height on the site without further overshadowing the square.

The revised solar plane is created by connecting key points from Town Hall to Crowne Plaza and includes lines from the northeast and northwest corners of Town Hall Square to the far points of the Crowne Plaza.

By linking the far-west points of Town Hall Square to the southeast corner of Crowne Plaza, a higher plane is formed. Additional height beyond the Town Hall solar plane is feasible behind Crowne Plaza without compromising sunlight access to Town Hall Square.



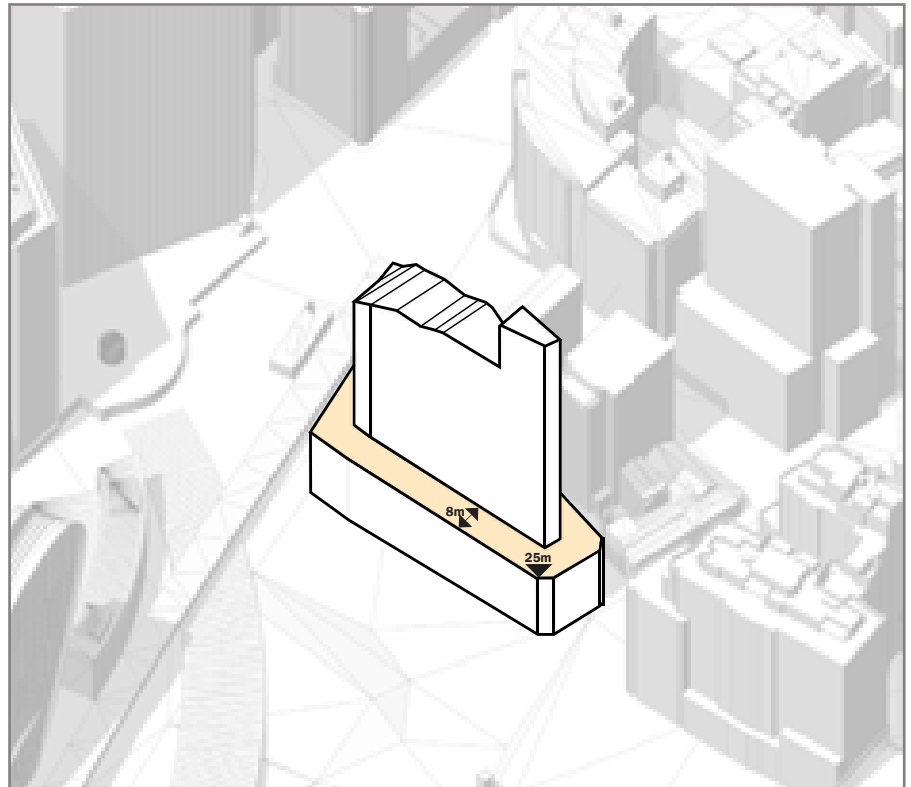
# MASSING

## Step 3 - Apply DCP setbacks

### 25m podium and 8m setbacks as per CoS.

Step 3 involves applying the City of Sydney's guidance, which sets the introduction of a 25 meter podium followed by an 8 meter setback for the tower above.

However, even with the application of these 8-meter setbacks, there is minimal overshadowing relief provided to the surrounding residential buildings, given the site's direct northern orientation in relation to Millennium Towers and Maestri Towers. As such, it is the overall height of the development, rather than the width, that contributes to overshadowing in this context.





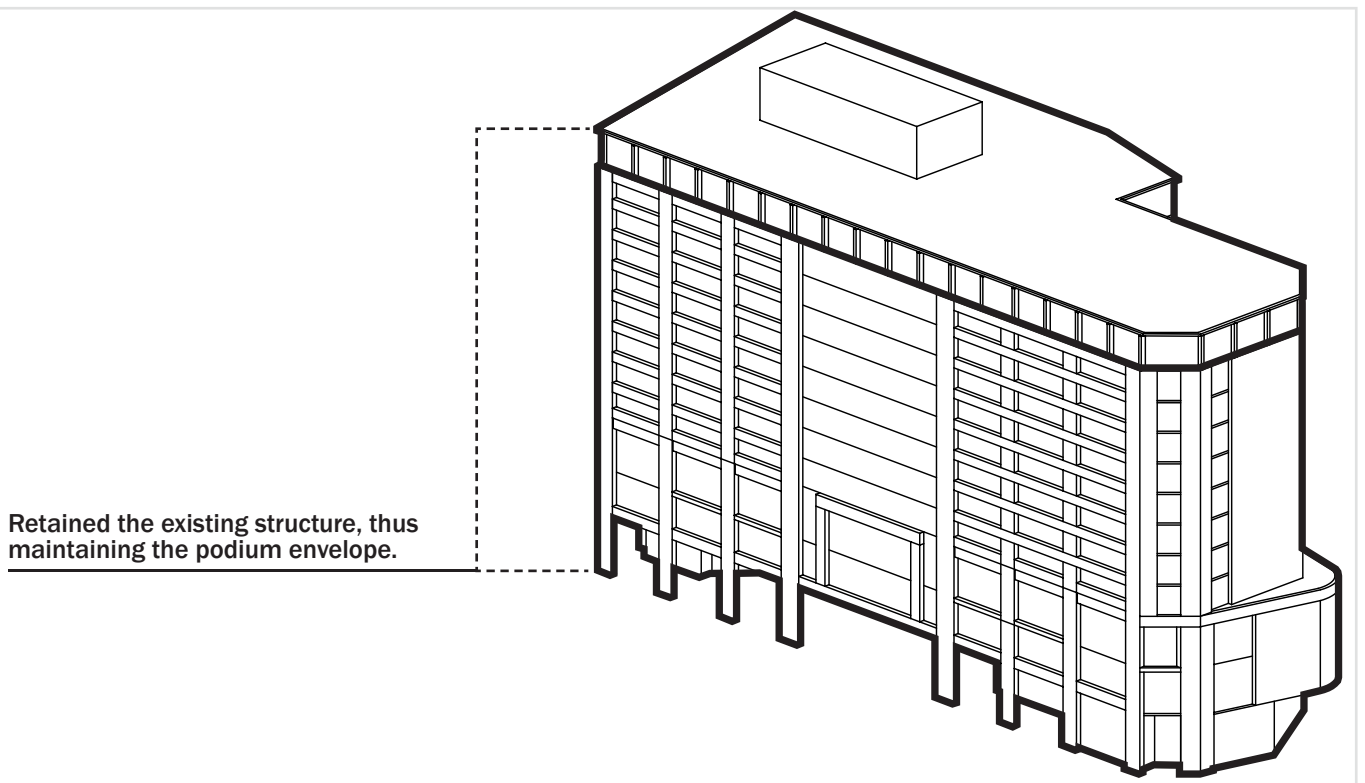
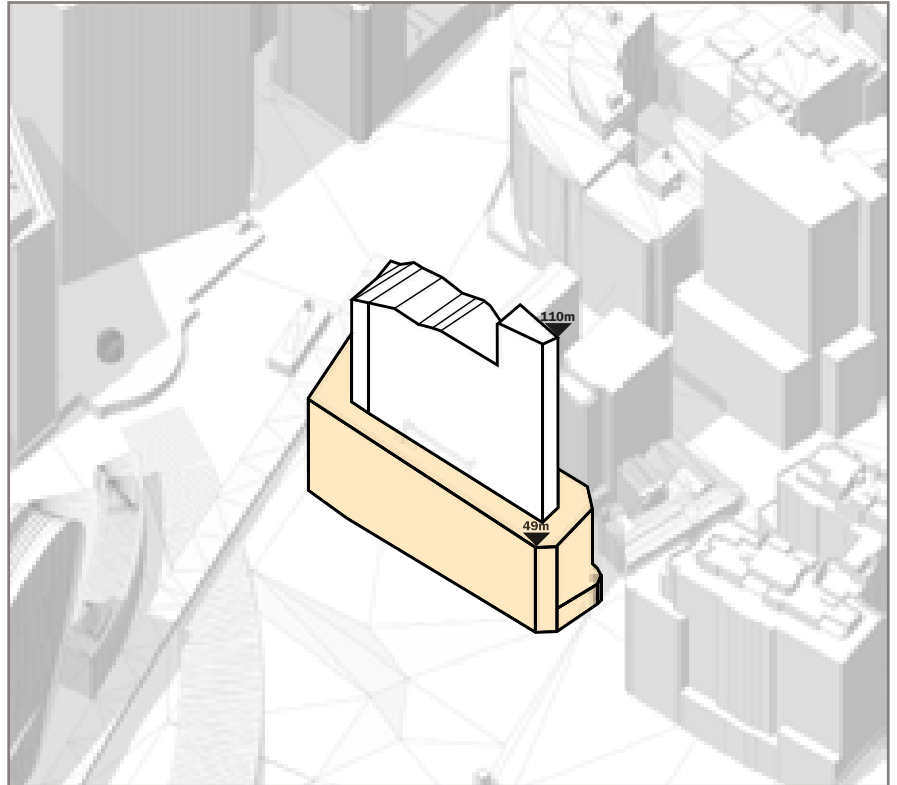
# MASSING - DCP BASE CASE ENVELOPE

## Step 4 - Overlay the existing building which will be retained

### Retained existing building envelope.

Given that the project's proposal significantly depends on the merit of adaptive reuse, the existing built envelope is set to be retained. Therefore, the next step in developing the DCP base case envelope involves overlaying the current building, which exceeds the City of Sydney's 25-meter podium guidance.

This approach ensures alignment with adaptive reuse principles and sustainability measures.



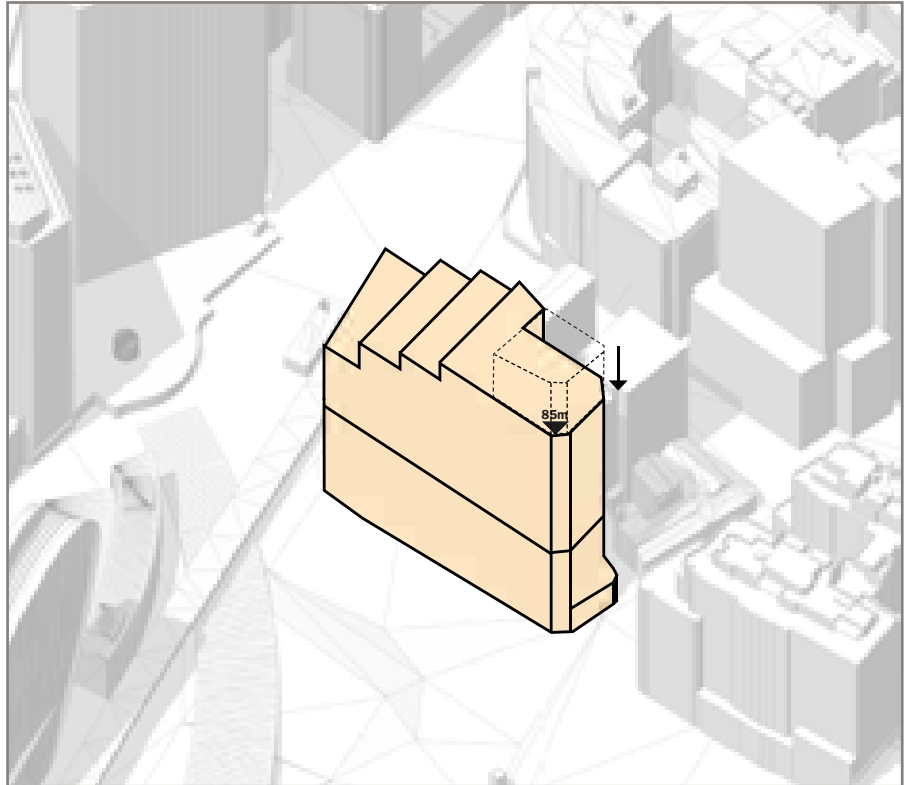
Retained the existing structure, thus maintaining the podium envelope.

# MASSING - PROPOSED ENVELOPE

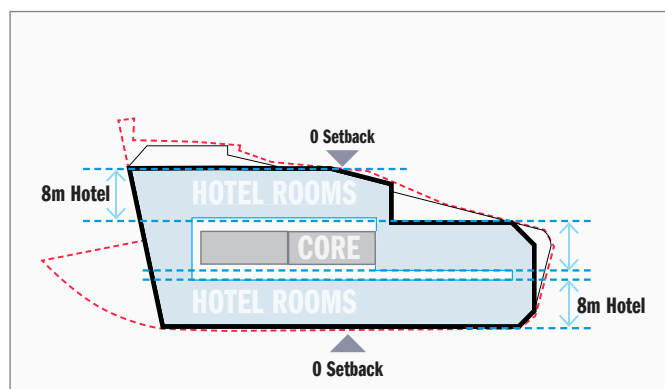
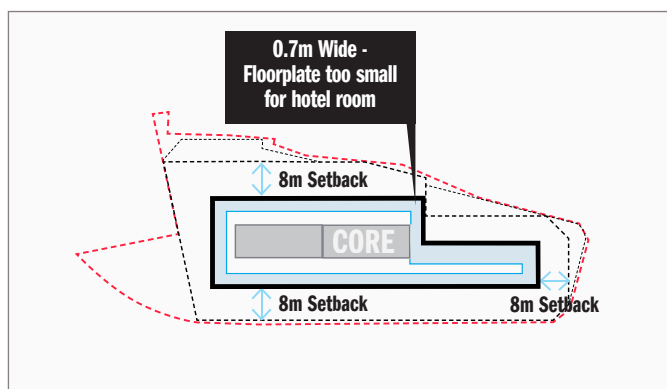
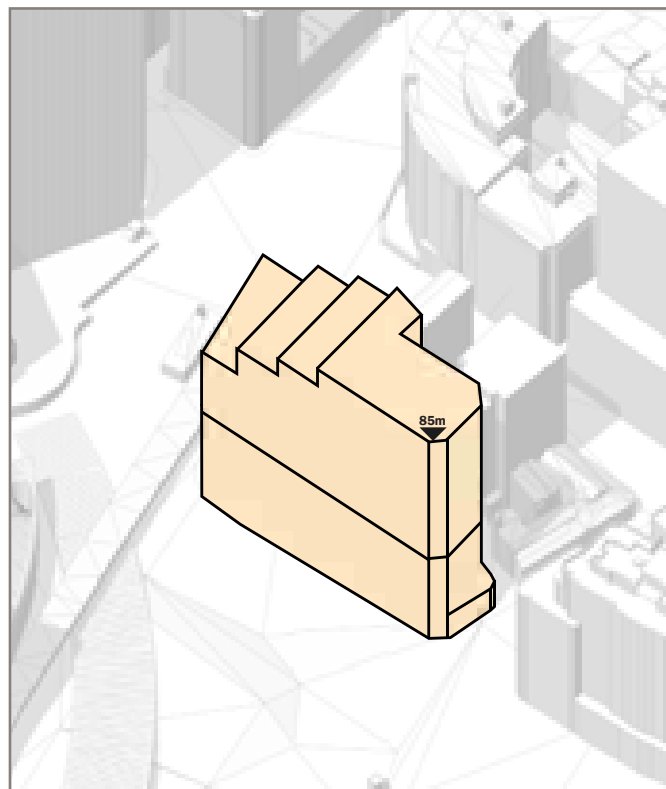
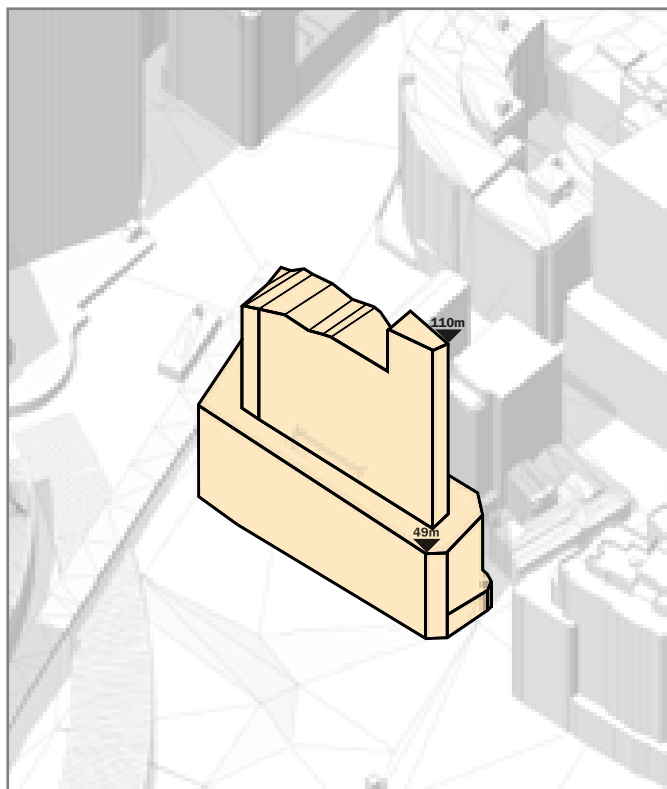
## Step 5 - Reduce height to mitigate solar impacts to neighbouring residential properties

### Optimise envelope against planning context.

The proposed envelope features a reduced height compared to the base case to mitigate solar impact on adjacent residential properties.



# 28 STOREYS → 23 STOREYS



## Schedule 11 Comparison Envelope

The Schedule 11 Envelope floorplate is not useable as floor area in a hotel or commercial building due to the narrow width.

Given a residential development is directly south of the project site the height of the proposed envelope creates a long shadow to the buildings to the south, and thus the altered proposed envelope looks to reduce the proposed height.

## Proposed Envelope

Being lower than the comparison envelope, this massing "provides equivalent or improved wind comfort, wind safety and daylight levels in adjacent Public Places relative to a base case building massing." - Schedule 11

# MASSING - SCHEDULE 11 VS PROPOSED

The City of Sydney DCP Schedule 11 provides "procedures for demonstrating compliance with variation provisions for setbacks, separations and tapering in Central Sydney." This planning proposal has followed this procedure.

## SCHEDULE 11 BASE ENVELOPE

As the subject site is greater than 1,000m<sup>2</sup>, the initial step in the procedure is to determine a base case massing for comparison.

### BASE ENVELOPE REQUIREMENTS

Under the City of Sydney Central Sydney Planning Strategy, the maximum heights of both the Schedule 12 Comparison Envelope and the Proposed Envelope are determined by relevant Solar Access Planes and No Additional Overshadowing Controls. In the 'Solar Envelope' section of this report three factors have determined the maximum height of the total envelope:

The Future Town Hall Square Solar Plane

Solar Access to Living Areas of Adjacent residential properties

View Impact Analysis from Neighbouring buildings

### PROCEDURE B: Equivalent of improved wind comfort and wind safety and daylight levels in adjacent public places

In order to demonstrate compliance with Section 5.1.1.1(3)(b) and Section 5.1.1.3(5) in regards to varying Minimum Street Setbacks and Side

and Rear Setbacks, Building Form Separations and Tapering provisions respectively, the following procedure must be followed:

(1) Procedure B can only be used to vary setbacks for sites larger than 1000m<sup>2</sup>. [COMPLIANT]

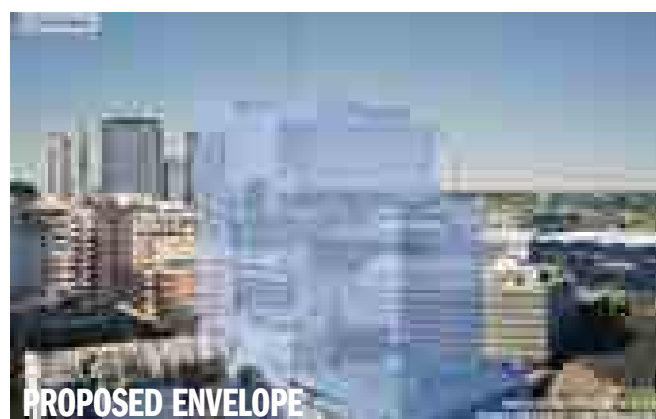
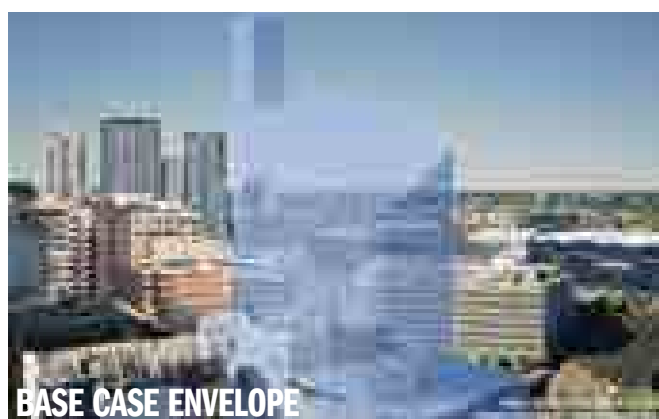
(2) Where (1) is satisfied, variation to relevant setbacks may be permitted to building massing that provides equivalent or improved wind comfort [COMPLIANT], wind safety [COMPLIANT] and daylight levels in adjacent Public Places [COMPLIANT] relative to a base case building massing with complying Height, Street Frontage Heights, Street Setbacks, Side and Rear Setbacks an Tapering [COMPLIANT: EXISTING BUILDING RETAINED AS PODIUM, HEIGHT UNDER SOLAR PLANE, AND BUILDING SITS UNDER 120M - NO TAPER]

(3) The base case building massing with complying Street Frontage Heights, setbacks and tapering is established by modelling 3 dimensional podium and tower components as follows:

(a) The podium is modelled by extruding the subject site boundary vertically 35m above existing ground level (as it varies around the site perimeter) for buildings up to 120m high and 25m above ground level for taller buildings.

(b) The Tower Component is modelled by defining an area set out by the required street, side and rear streetwall setbacks identified under the DCP, excluding areas over heritage items and Tower Component areas narrower than 6m wide. For Tower Components where at least one face is longer than 30m the resultant area is chamfered with a 10m radius at all external corners. The resultant shape is extruded to the maximum permissible building height as it varies around the site. The resulting tower form must be tapered by scaling it horizontally in both horizontal directions (X and Y) by 95% between 120-240m and by 90% above 240m above ground level.

# VIEW IMPACT ASSESSMENT



**The proposal is located within a highly urbanised location which includes development of varied height and scale, similar to the proposal.**

is limited in qualitative terms, and the view impact per dwelling based on the information available, is reasonable and acceptable.

- The affected views of 273 Sussex Street would likely only be on the top two levels orientated to the west, with all levels below already looking at the existing built-form of the hotel on site. Views to the north, east and south would be unaffected.
- None of the views to be affected include icons, and the views assessed would not be considered as iconic in Tenacity terms.
- The views affected were not

considered to be scenic or highly valued views.

- The Sydney DCP 2012 contemplates views versus outlooks and that views cannot be guaranteed, and that private views should not unduly restrict the economic performance or growth of Central Sydney.
- "The proposal is highly compatible in visual terms with its surrounding context."
- For all views considered based on the CGIs, view loss per dwelling

# KEY PEDESTRIAN STREET VIEWS

**George Street – Bathurst  
Street Intersection**





**Sussex Street – Bathurst Street Intersection**



# KEY PEDESTRIAN STREET VIEWS

**Druitt Street – Kent Street Intersection**







**Darling Harbour Walk**



# KEY PEDESTRIAN STREET VIEWS

## Western Distributor





**Harbour Street**



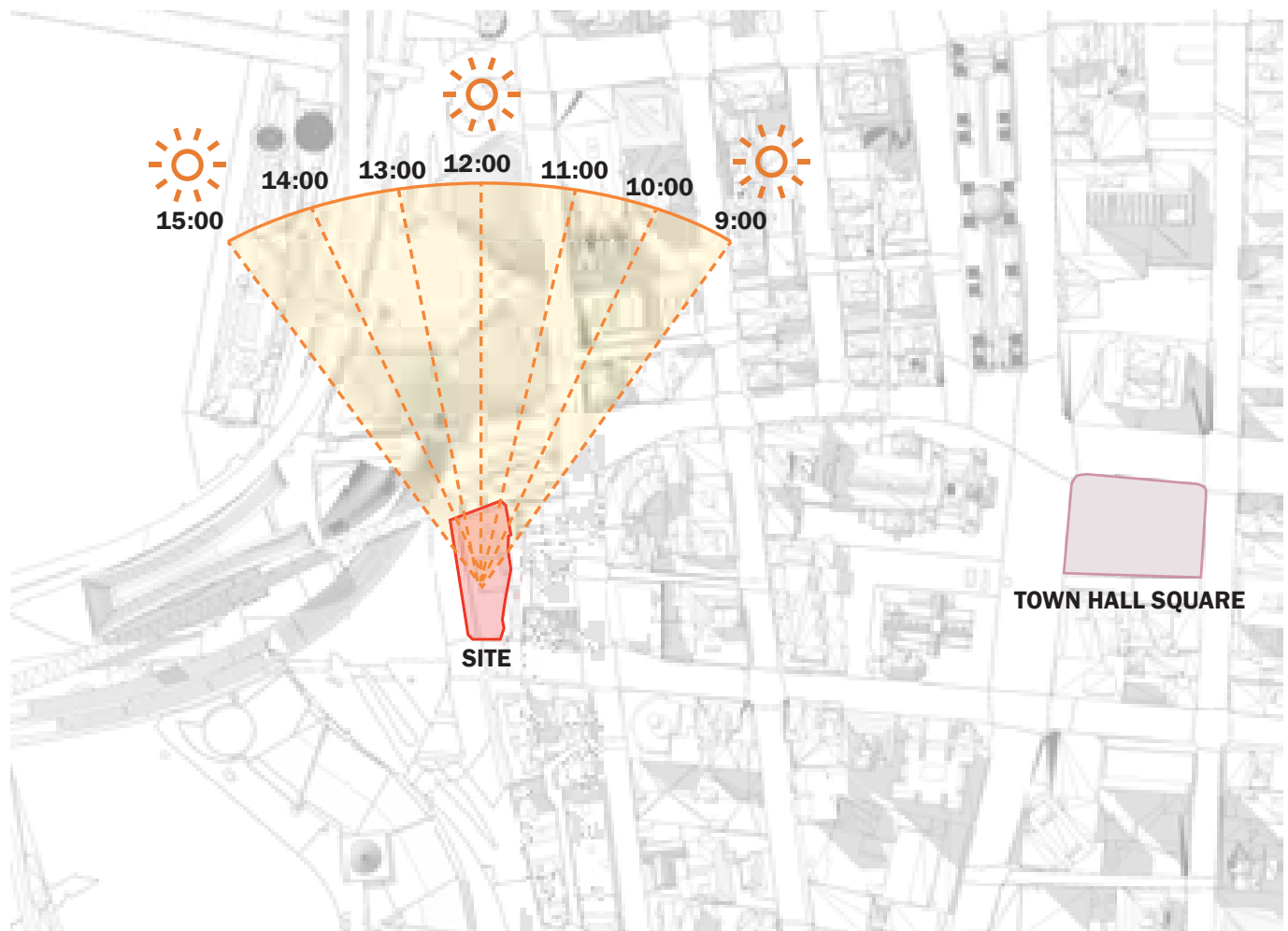
# SOLAR ANALYSIS



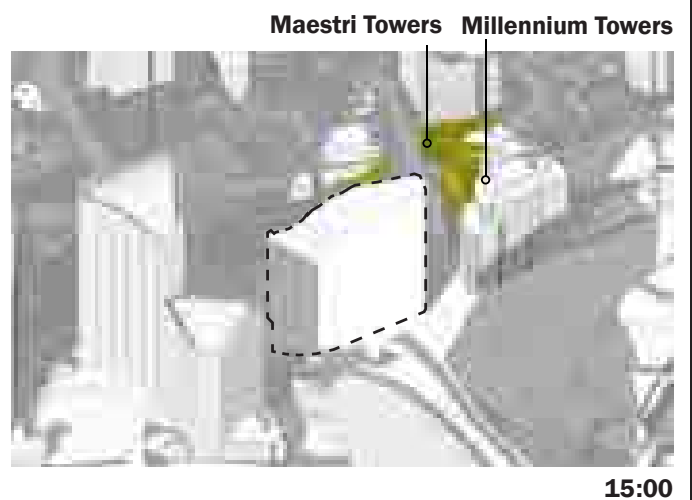
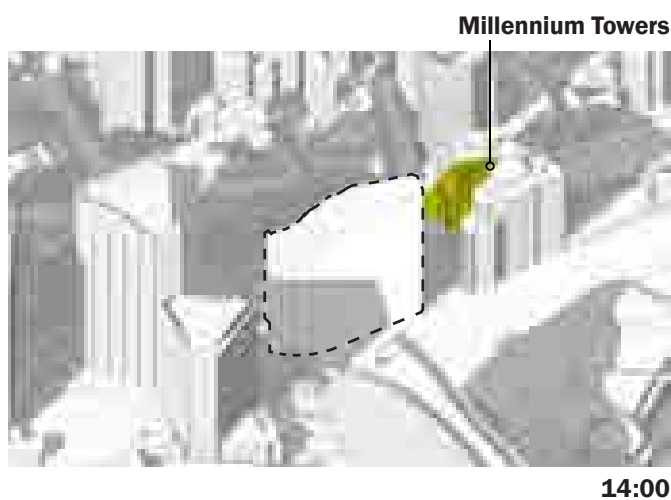
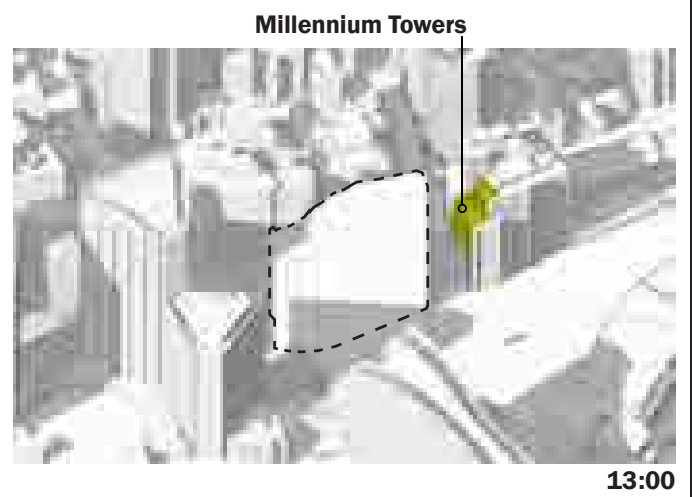
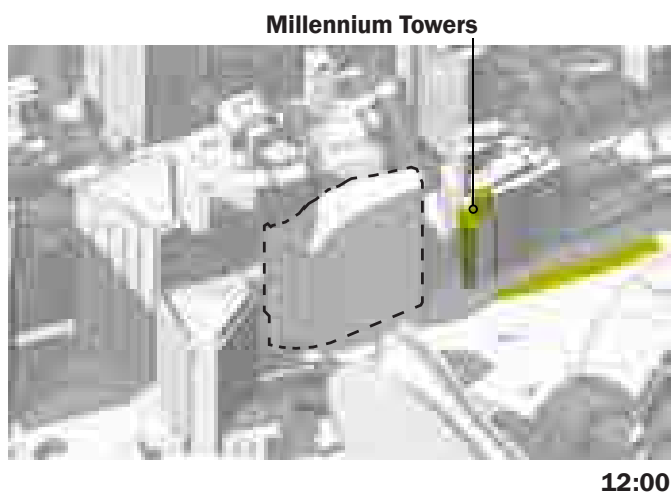
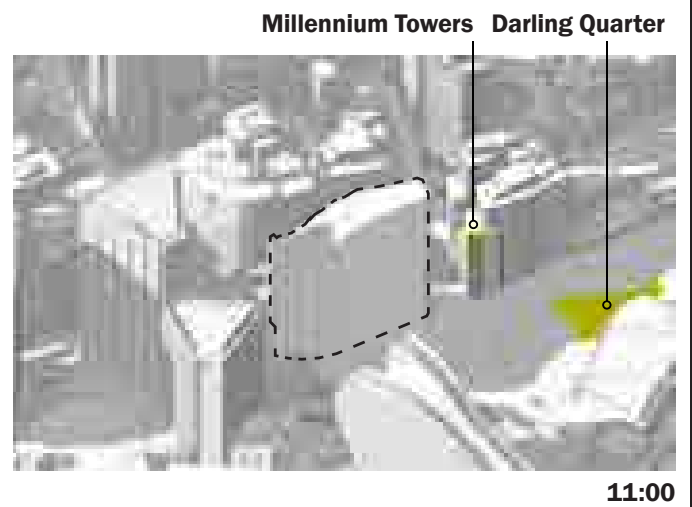
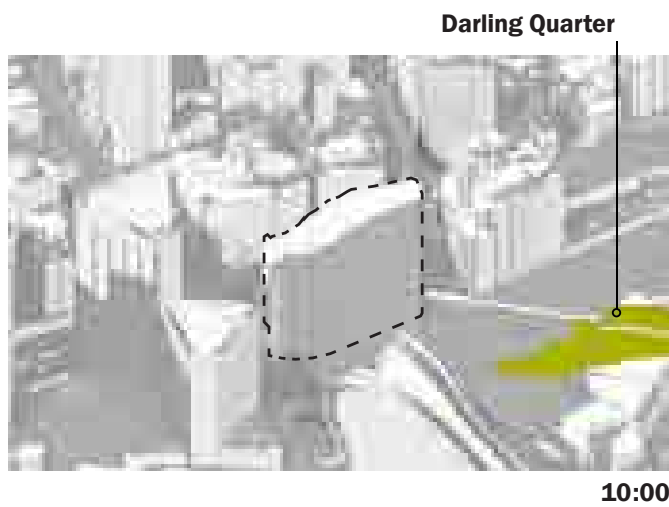
# HOW DO SHADOWS MOVE ACROSS THE SITE?

Winter Solstice 09:00-15:00

Understanding Overshadowing Impact On Adjacent Buildings



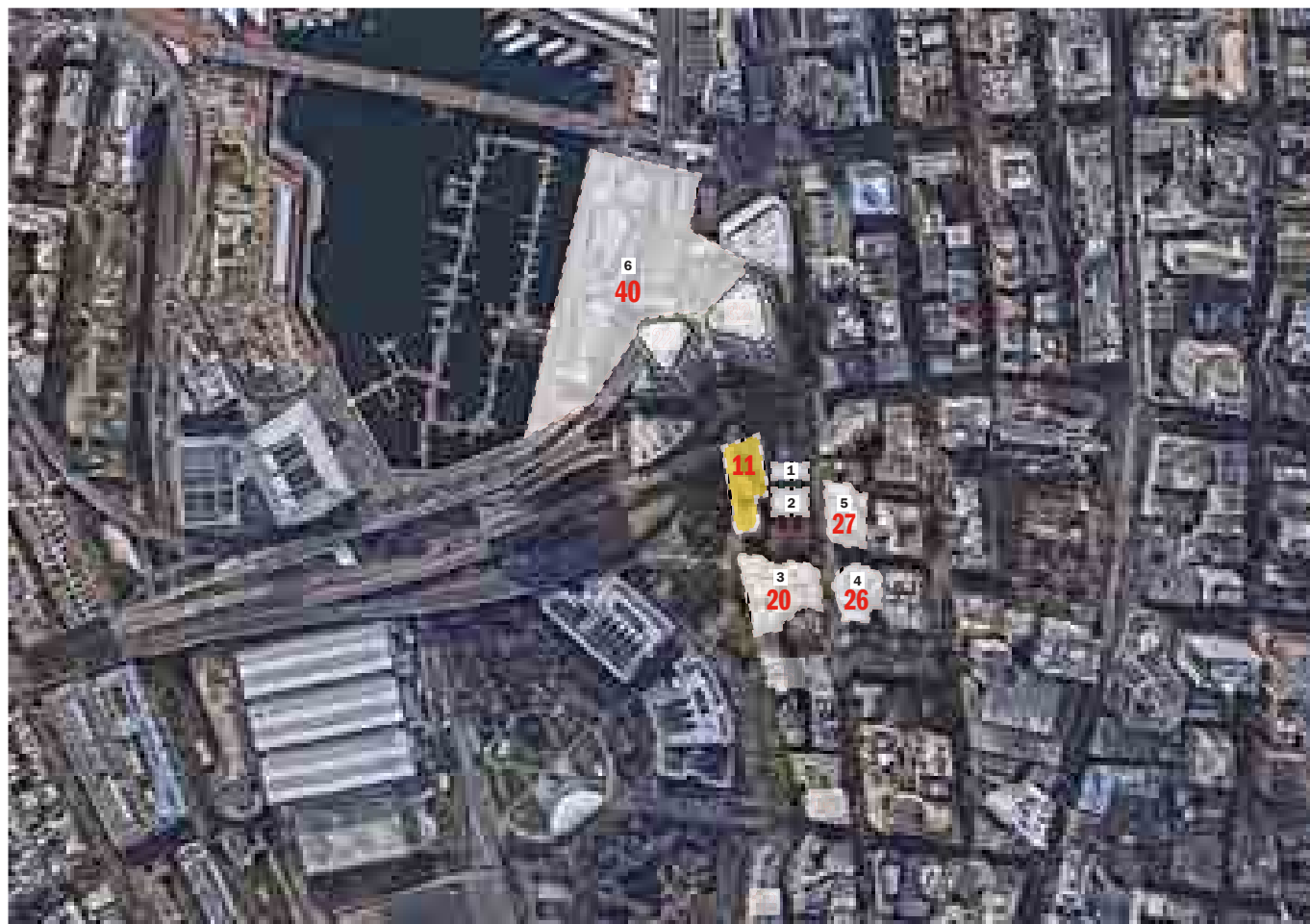
→ The site sits north of residential buildings along Bathurst street.



→ The Town Hall envelope massing will cast shadows on the neighbouring Millennium Towers between 11:00 AM and 3:00 PM and on Maestri Towers between 2:00 PM and 3:00 PM during the winter solstice.

# OVERSHADOWING IMPACT

## Overshadowing Impact to Neighbouring Residential Buildings

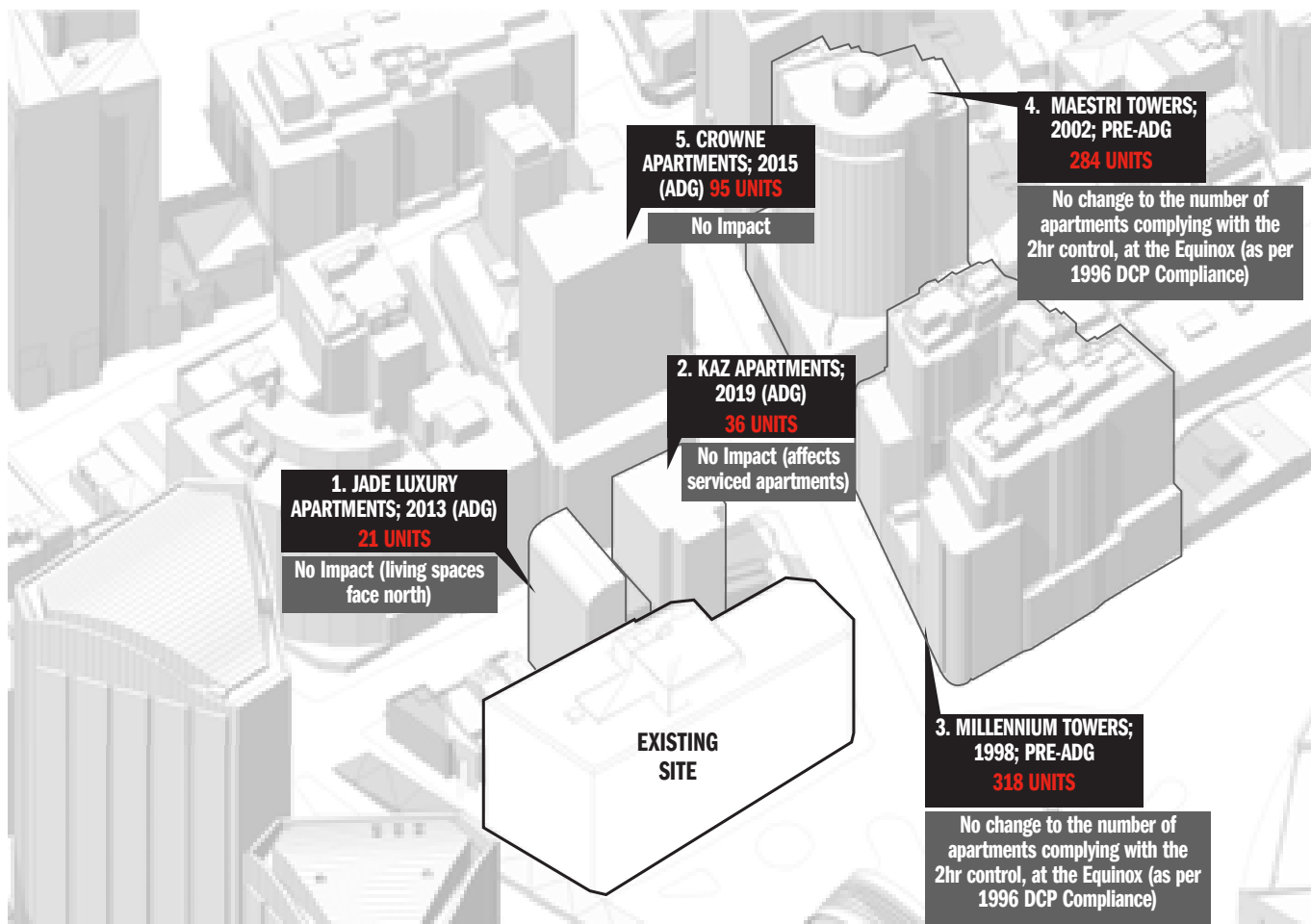


## Future Context and Building Heights Around the Site; Changing Context Predominantly 20 Storeys+

### Neighbouring Developments:

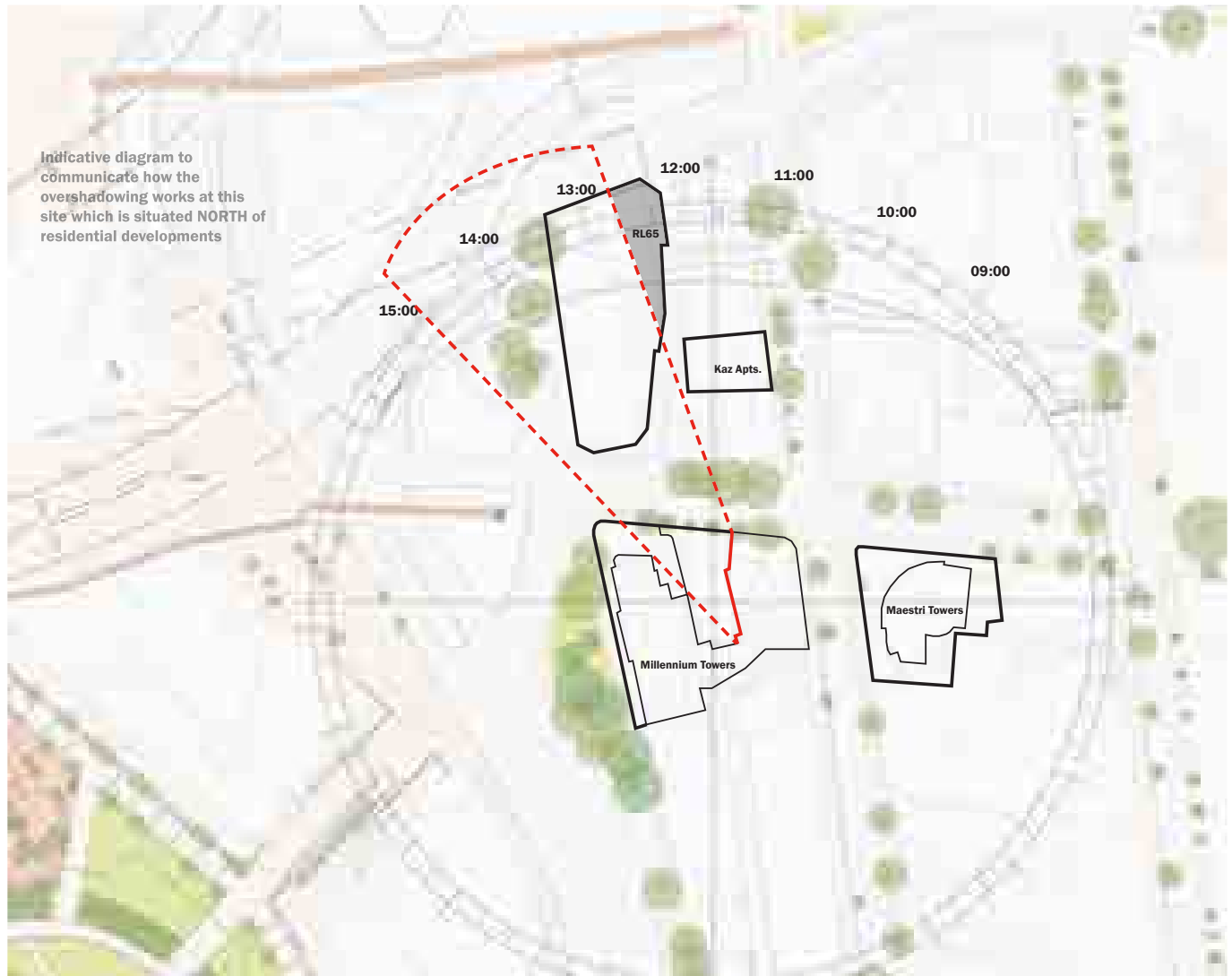
- |  |   |
|--|---|
| 1. Jade Apartments 267 Sussex St.;<br>12 Storeys       | 4. Maestri Towers 298 Sussex St.; 26<br>Storeys |
| 2. Kaz Tower 273-279 Sussex St.; 13<br>Storeys         | 5. Crowne Plaza 58 Bathurst St.; 27<br>Storeys  |
| 3. Millennium Towers 289-295 Sussex<br>St.; 22 Storeys | 6. Cockle Bay Towers; 40 Storeys                |





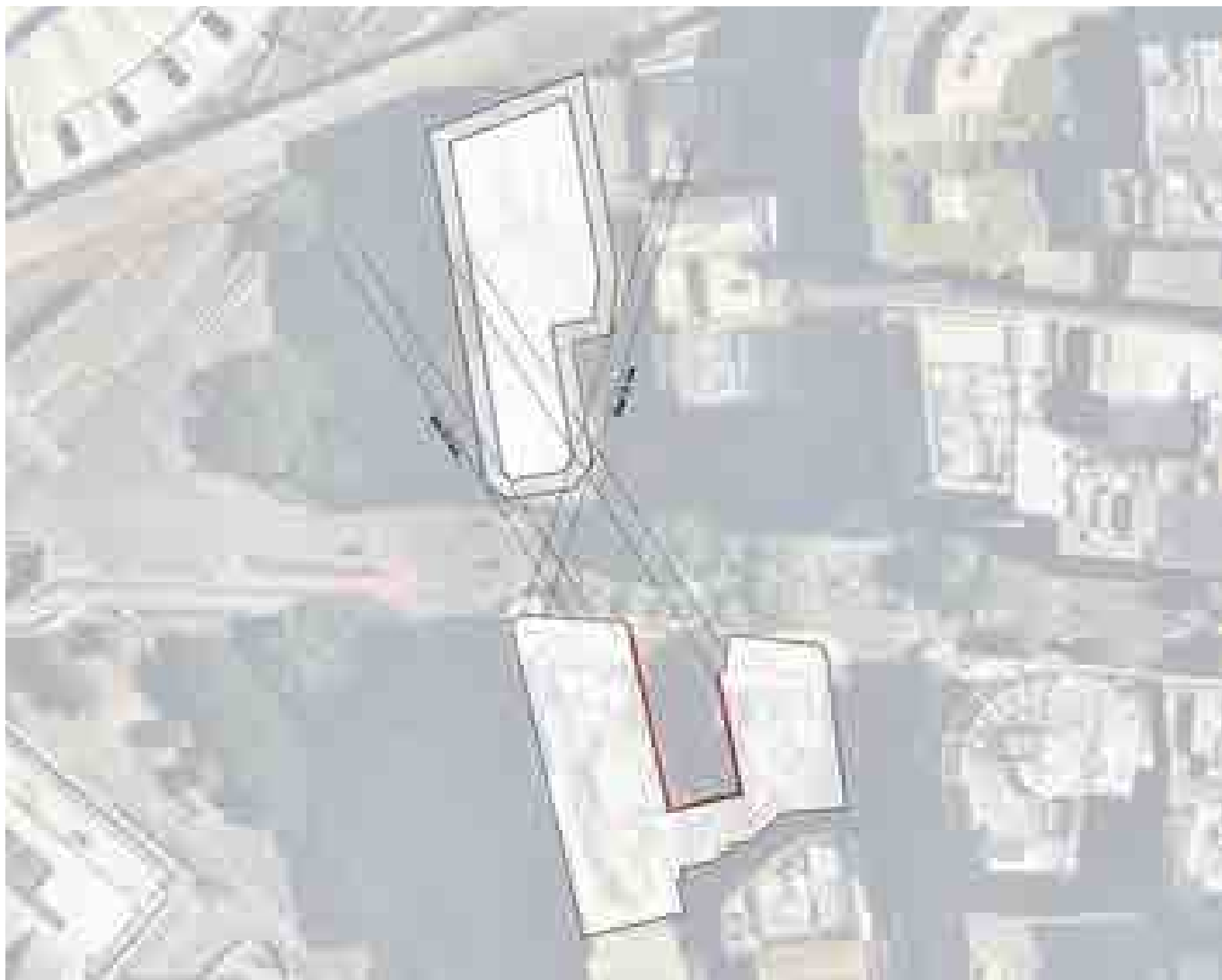
# OVERSHADOWING IMPACT

## Overshadowing Impact to Neighbouring Residential Buildings



### Sun Path Overview

- The largest impact that 150 day street is having on residential properties is to Millennium Towers.
- The inner courtyard of Millennium towers is overshadowed by itself during morning hours of the winter solstice dates due to the angular geometry.
- To preserve the afternoon solar access to the millennium courtyard, the central part of the 150 Day St site must be clear of any building which is not feasible



## Approach To Setbacks

- Proposed massing aligns to the existing building to enable all existing structure to be retained and strengthened as the building height increases.
- Current building is reflective of a minimal width for 2 hotel rooms with a central corridor.
- Overshadowing of the central courtyard apartments to Millennium towers is not affected by setbacks, but rather by the height of any proposal to the north.
- Building height is impacting the overshadowing of the courtyard and has been mitigated in the schedule 11 massing development proposal.

# SOLAR SUMMARY

**This planning proposal will facilitate development that is consistent with the City's vision for Central Sydney, providing additional employment generating floor space and a new hotel while delivering design excellence and public domain improvements.**

Millennium Towers and Maestri Towers, are substantially non-compliant with the ADG design criteria achieving:

- Millennium Towers
  - 37% of apartments achieve at least 2 hours of direct solar access in mid winter
  - 16% of apartments have less than 15 minutes of direct solar access in mid winter
- Maestri Towers
  - 29% of apartments achieve at least 2 hours of direct solar access in mid winter
  - 49% of apartments have less than 15 minutes of direct solar access in mid winter

Despite meeting the minimum building separation distances under ADG, given the existing CBD context and these buildings being located directly south of 150 Day Street, minimising overshadowing in accordance with Council's DCP and Guidelines may unduly restrict future commercial and visitor accommodation growth for the site.

Suggested amendments to DCP Controls:

Millennium Towers and Maestri Towers were both designed prior to

2000 with the relevant development Controls pre-dating the ADG and Sydney DCP. As such, we consider it reasonable for the consideration of Solar access controls at the time of assessment.

Maestri Towers (originally approved in 1997), was subject to the development controls of the Central Sydney Development Control Plan 1996. The relevant solar access controls applicable at the time of assessment of Maestri Towers are as follows:

- 6.1.4. Living rooms and private open space should be the main recipients of sunlight in dwelling units. Where possible, sun access should be for a minimum of two hours per day on the equinox (March 21) measured on the main window of the rooms or at the front edge of the open space. Buildings should be designed to maximise the number of dwelling units with sun access to the principal windows.
- 6.1.5. On west facing facades subject to direct sunlight, external shading or other energy saving measures should be integrated into the design of residential buildings and serviced apartments. Alternatively, the area of glazing should be restricted to about 2% of the floor area served,

in accordance with solar design principles,

- 6.1.6 The maximum depth of a habitable room from a window providing light and air to that room is to be 10 metres.

Millennium Towers (originally approved December 1995) pre-dates the Central Sydney Development Control

Plan 1996. Following review of Z95-00757, there does not appear to be any consideration for solar access in

The assessment of the proposed apartments. As the solar access controls in Central Sydney Development Control Plan 1996 came into effect soon after the approval of Z95-000757, and in the absence of any other solar access controls at the time of assessment, we consider it reasonable in this instance to consider the Central Sydney Development Control Plan 1996 in determining solar access to Millennium Towers.

Noting the difficulty for older residential development to satisfy current solar access requirements under the ADG and Sydney DCP, we propose that the following provisions be included within the DCP as part of the housekeeping amendment:

- The assessment of solar access to neighbouring residential development approved prior to the commencement of the ADG, be assessed in accordance with the relevant solar access control at the time, and
- A reduction in the number of apartments achieving solar access compliance is not reduced by more than 20% (consistent with Objective 3B-2 of the ADG).

**Where a neighbouring residential 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%.**

**Millennium Towers  
(Equinox; Pre-ADG)**

**2%**

Average percentage reduction in solar hours access at equinox.

**NO CHANGE TO THE  
NUMBER OF APARTMENTS  
COMPLYING WITH THE 2  
HOUR CONTROL**

**Maestri Towers  
(Equinox; Pre-ADG)**

**3%**

Average percentage reduction in solar hours access at equinox.

**NO CHANGE TO THE  
NUMBER OF APARTMENTS  
COMPLYING WITH THE 2  
HOUR CONTROL**

**Kaz Apartments  
(Winter Solstice; ADG)**

**6%**

Average percentage reduction in solar hours access at equinox.

**2 OUT OF 35 APARTMENTS  
MOVED FROM OVER 2  
HOURS TO UNDER 2 HOURS  
(6%)**

**Jade Apartments  
(Winter Solstice; ADG)**

**0%**

Percentage reduction in solar hours access at equinox.

**NO CHANGE TO THE  
NUMBER OF APARTMENTS  
COMPLYING WITH THE 2  
HOUR CONTROL**

**Crowne Towers  
(Winter Solstice; ADG)**

**0%**

Percentage reduction in solar hours access at equinox.

**NO CHANGE TO THE  
NUMBER OF APARTMENTS  
COMPLYING WITH THE 2  
HOUR CONTROL**

# WIND ANALYSIS



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# WIND TUNNEL & PEDESTRIAN IMPACT ASSESSMENT

Massing Development Aligned to Wind Effects

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**Anytime a building height is increased, down-drafts from the facade onto the street must be assessed and considered through design. This building massing has been designed to minimise down-drafts from the taller façades.**

Through ongoing workshops with the Wind Consultant, two reports have been developed - A Pedestrian Environment Statement & A Wind Tunnel Assessment.

The wind consultants Pedestrian Wind Environment Statement evaluates the impact of the proposed development on local wind conditions, underscoring the necessity for design modifications such as impermeable awnings and perimeter screening. These

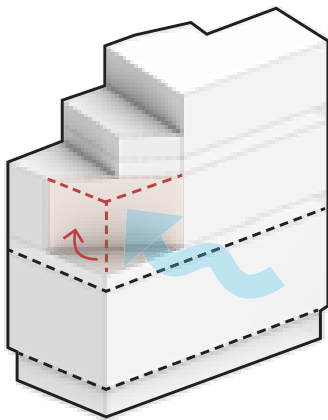
adjustments aim to enhance pedestrian comfort in outdoor spaces, including ground-level footpaths and amenity floor terraces in the upper massing.

The initial massing of the building was iteratively tested in a Wind Tunnel Assessment to ensure alignment with existing conditions.

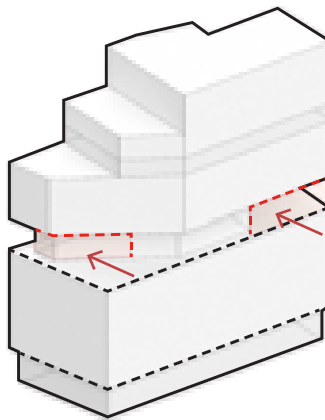
During a collaborative workshop with the wind consultant, significant massing strategies were proposed to

counteract the down-wash effects of westerly winds, which have influenced the building's overall form. These strategies include an 8-meter high void across levels 11 and 12 on the northern and southern aspect of the building enhancing both wind mitigation and the architectural character of the development.

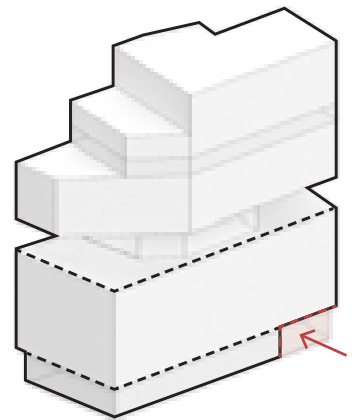




NW winds result in recessing the corners at the north of the site to address strong winds.



To minimise down-drafts to bathurst street voids between the new and existing massing have been exaggerated.



To reduce wind speeds at the corner of Day Street and Bathurst Street, a recess at ground floor has been exaggerated.

# WIND TUNNEL & PEDESTRIAN IMPACT ASSESSMENT

Improved wind conditions

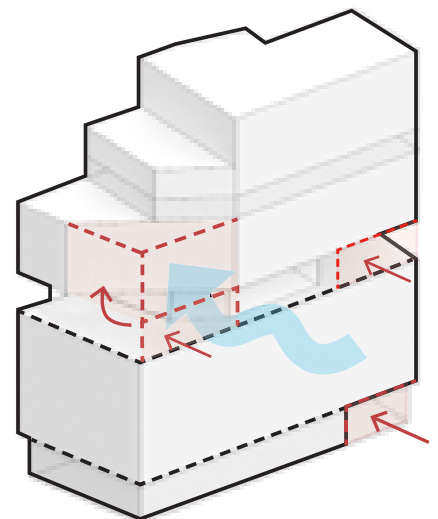
**We have developed multiple strategies in collaboration with our wind consultant. These strategies were iteratively tested through wind-tunnel analyses and have shown to improve the existing wind conditions at a multitude of assessment points.**

The existing site conditions were measured by Windtech during wind tunnel testing.

The results of the study indicate that wind conditions for some of the trafficable outdoor locations currently exceed the relevant criteria for comfort and/or safety as set by City of Sydney.

The proposed expansion of the existing PARKROYAL Hotel has been designed to not have any impact on

existing street level conditions and in many cases improve a windy area of the city.



Points significantly improved by the proposed envelope massing (annual gust):



# DEVELOPMENT PROPOSAL



# SUMMARY: BUILDING ENVELOPE

Refer Appendix 3

## Building Setout

The proposed building utilises the existing hotel structure to support this new massing and is therefore setout based on the location of the existing columns.

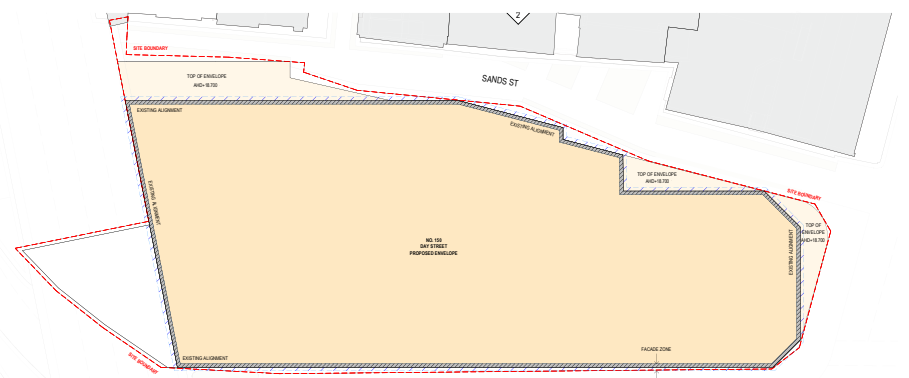
The existing podium columns are aligned to the boundary at the west, and therefore the new building is also setout to the western boundary.

The second factor defining the new building setout is the geometry of the site boundary which tapers to the south of the site. This tapering means that the building massing is defined by the width of a central corridor and a hotel room either side of this corridor - thus resulting in minimal setbacks to the south and east, following the extents of the existing building in the upper floors.

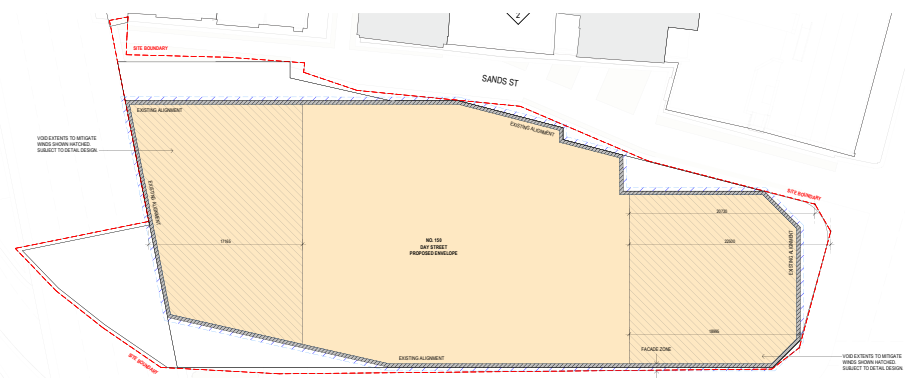
At the upper floors the building steps back at the northern boundary in response to the town hall solar plane.



Podium Setback



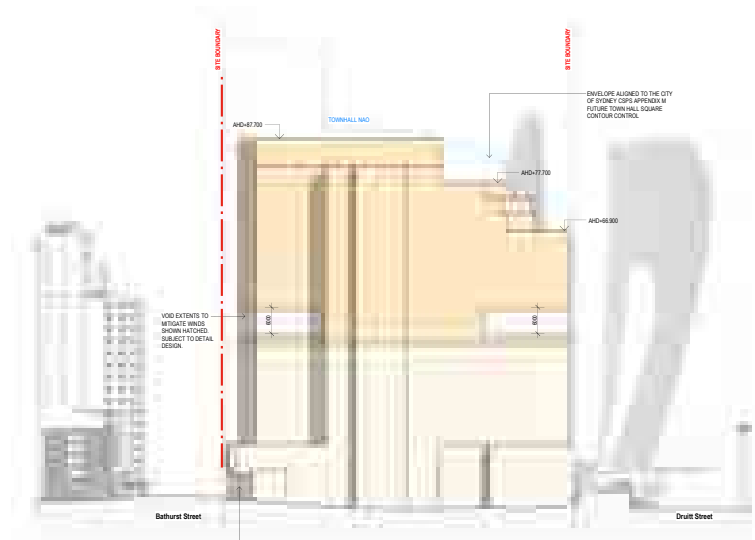
Tower Setback



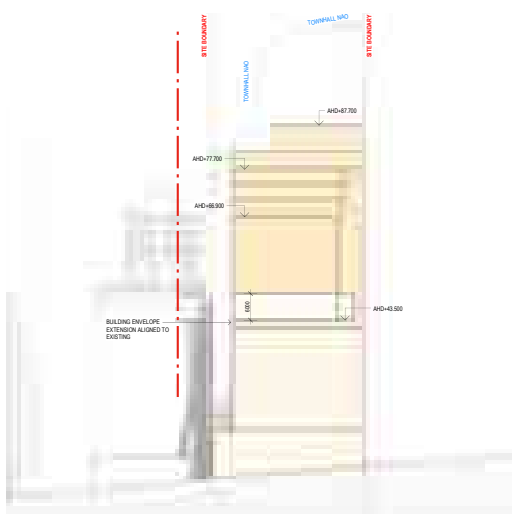
Transfer Floor Setback



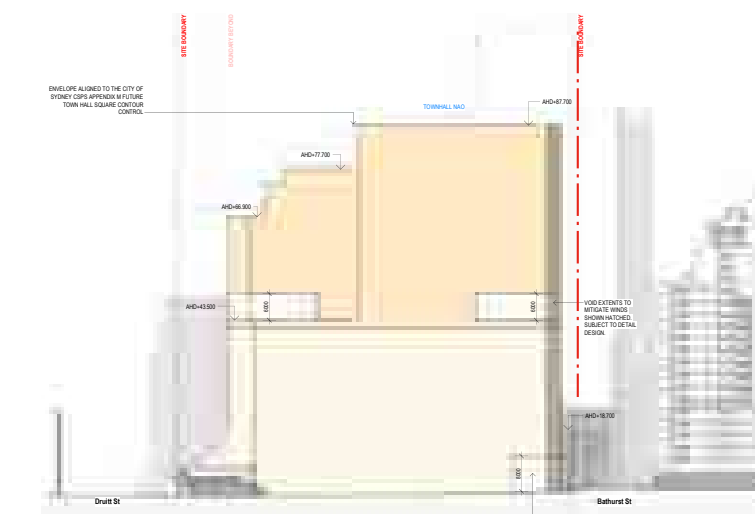
**SOUTH ELEVATION**



**EAST ELEVATION**



**NORTH ELEVATION**



**WEST ELEVATION**

## Drawing List

### Site Conditions

## GA Plans

### GA Elevations

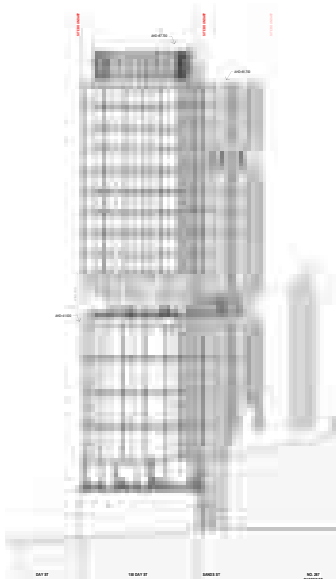
## GFA Plans

[illegible]

NORTH

A simple compass rose with four lines pointing North, South, East, and West. The North line is slightly thicker than the others.

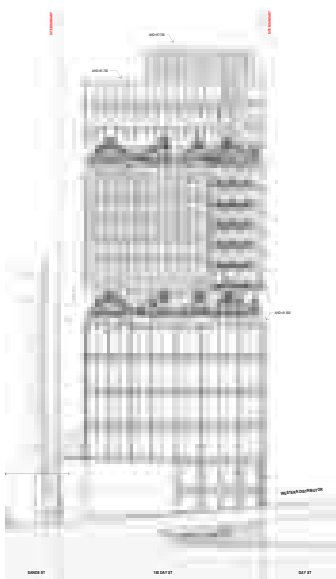




PROPOSED SOUTH ELEVATION



PROPOSED EAST ELEVATION



PROPOSED NORTH ELEVATION



PROPOSED WEST ELEVATION

# INDICATIVE SCHEME FSR PROPOSAL

## Current Planning Controls: DCP Design Excellence Strategy

Although the site is not located in tower cluster, the proposed reference scheme demonstrates compliance against Section 3.3.8 City of Sydney DCP.

- The proposed development retains the existing building. The existing facade is built to the boundary & a new massing is aligned above structurally.
- The additional floors complies with the design excellence standards listed.

### 15m Architectural Roof Feature Zone



5m Clear floor to floor for ground & first floors & allowances for new pedestrian links & public domain improvements supported by urban design analysis.



Existing building retained:

L00 = 5.4m

L01 = 4.3m

L02 = 5m

### 3.3m floor to floor for typical hotel floors



New hotel = 3.4m

A full plant level at least for every 20 occupied levels at minimum 6m floor to floor should be provided for plant equipment with no floor space



Every 10 levels, with flexible use floor space

A minimum proportion of the entire design envelope for architectural articulation and external façade depth and external sun shading (not occupied by floor space) of 8.0% up to a maximum value of 16% articulation.



Minimum 16% floor space exclusions allocated to building core and other internal non-floor space elements.

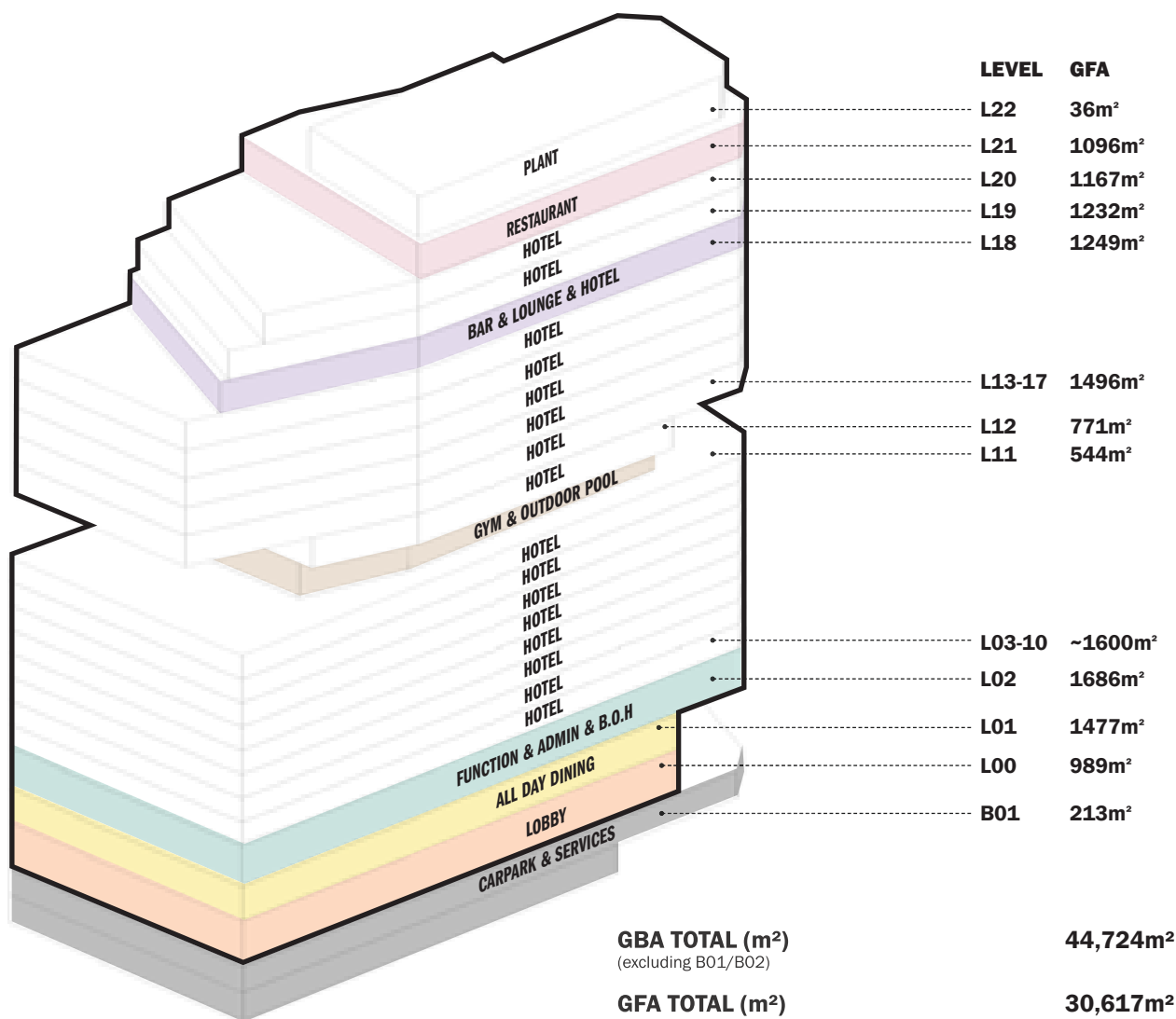


Average 21% achieved across all floors existing and proposed.

Vehicle access, servicing, services, balconies, voids or other areas are not counted as floor space.



Existing / Proposed	Hotel Operator	Level	Use	GBA (m2)	GFA (m2)	Keys	F2F (m)	Height RL (m)	AHD (m)	
Lift Overrun									84.1	87.70
Proposed	Pan Pacific Hotel Group	Level 22	Plant	898.0	36		6.00	78.1	81.70	
Proposed	Leased Restaurant	Level 21	Leased Restaurant	1465.0	1096		4.00	74.1	77.70	
Proposed	Pan Pacific Hotel Group	Level 20	Hotel	1529.0	1167	24	3.40	70.7	74.30	
Proposed	Pan Pacific Hotel Group	Level 19	Hotel	1592.0	1232	26	3.40	67.3	70.90	
Proposed	Pan Pacific Hotel Group	Level 18	Hotel Amenity, BOH + Plant	1807.0	1249	13	4.00	63.3	66.90	
Proposed	Pan Pacific Hotel Group	Level 17	Hotel	1807.0	1496	31	3.40	59.9	63.50	
Proposed	Pan Pacific Hotel Group	Level 16	Hotel	1807.0	1496	31	3.40	56.5	60.10	
Proposed	Pan Pacific Hotel Group	Level 15	Hotel	1807.0	1496	31	3.40	53.1	56.70	
Proposed	Pan Pacific Hotel Group	Level 14	Hotel	1807.0	1496	31	3.40	49.7	53.30	
Proposed	Pan Pacific Hotel Group	Level 13	Hotel	1807.0	1496	31	3.40	46.3	49.90	
Proposed	Pan Pacific Hotel Group	Level 12	Hotel	1565.0	771	11	3.40	42.9	46.50	
Existing Structure	Park Royal & Pan Pacific Hotel Group	Level 11	Hotel Amenity, BOH + Plant	1841.0	544		5.00	37.9	41.50	
Existing Structure	Park Royal	Level 10	Hotel + Pool Plant	1928.0	1462	34	2.85	35.1	38.65	
Existing Structure	Park Royal	Level 09	Hotel	1928.0	1612	38	2.85	32.2	35.80	
Existing Structure	Park Royal	Level 08	Hotel	1928.0	1590	38	2.85	29.4	32.95	
Existing Structure	Park Royal	Level 07	Hotel	1928.0	1612	38	2.85	26.5	30.10	
Existing Structure	Park Royal	Level 06	Hotel	1928.0	1590	38	2.85	23.7	27.25	
Existing Structure	Park Royal	Level 05	Hotel	1928.0	1612	38	2.85	20.8	24.40	
Existing Structure	Park Royal	Level 04	Hotel	1928.0	1590	38	2.85	18.0	21.55	
Existing Structure	Park Royal	Level 03	Hotel	1928.0	1612.0	38	2.85	15.1	18.70	
Existing Structure	Park Royal & Pan Pacific Hotel Group	Level 02	Hotel Amenity, BOH + Plant	2079.0	1686.0		5.00	10.1	13.70	
Existing Structure	Park Royal & Pan Pacific Hotel Group	Level 01	Hotel Amenity, BOH + Plant	2030.0	1477.0		4.30	5.8	9.40	
Existing Structure	Park Royal & Pan Pacific Hotel Group	Level 00 (Ground)	Hotel Lobbies, BOH, Loading, Plant	2016.0	989.0		5.40	0.4	4.00	
Existing Structure	Park Royal & Pan Pacific Hotel Group	BASEMENT 01	Valet Carpark + Plant	2031.0	213.0		3.10			
Existing Structure	Park Royal & Pan Pacific Hotel Group	BASEMENT 02	BOH + Plant	1412.0	0.0		3.40			
GBA TOTAL (m2)				44724.0						
GFA TOTAL (m2)					30617					
SITE AREA (m2)					2281					
FSR					13.5					



**GBA TOTAL (m<sup>2</sup>)** **44,724m<sup>2</sup>**  
(excluding B01/B02)

**GFA TOTAL (m<sup>2</sup>)** **30,617m<sup>2</sup>**  
(excluding B01/B02)

**SITE AREA (m<sup>2</sup>)** **2,281m<sup>2</sup>**

**FSR** **13.5**

#### KEYS

PARKROYAL KEYS 300

PAN PACIFIC HOTEL GROUP 229

**HOTEL KEYS TOTAL 529\***

**\*Key number to be confirmed and reduced once larger suites are located.**

# **ATTACHMENT A: SOLAR ANALYSIS**



# MILLENNIUM TOWERS



# OVERSHADOWING OVERVIEW



- Millennium Tower sits directly south of 150 Day st and it is therefore affected by the proposed development.
- The building contains 318 apartments on 20 floors.
- The impact on Millennium tower occurs in the afternoon between 12.30 and 3 pm.
- Because the site sits directly north of Millennium tower, additional setbacks have small impact on the overshadowing whilst the height directly affects the

- overshadowing into the courtyards apartments.
- The overshadowing impact is greater during the Winter solstice and is greatly reduced by the equinox time as the building was designed to perform at equinox as per the pre-ADG guidance.



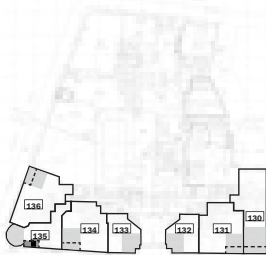
# APARTMENTS CONFIGURATION

DA1995

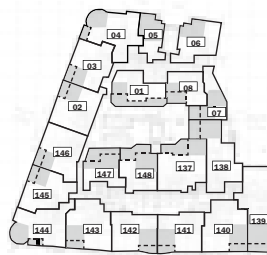
Living Areas Windows (3D Analysis)



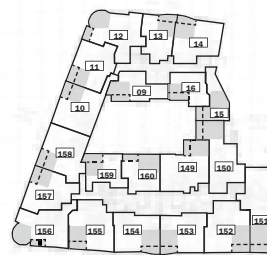
Level 1



Level 2



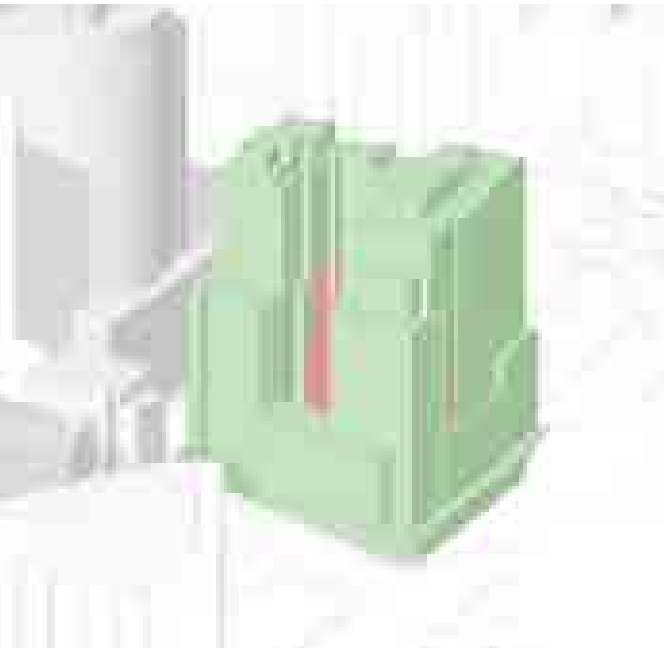
Level 3-5



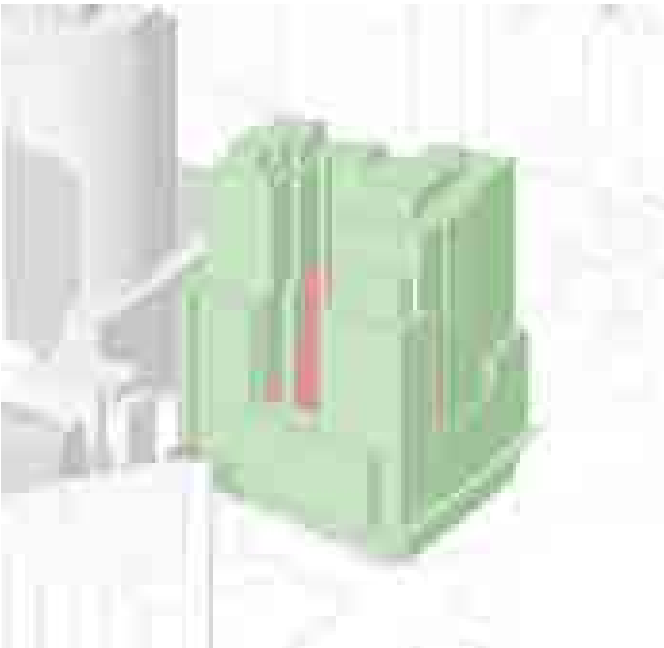
# OVERSHADOWING: MARCH (EQUINOX)

Existing Vs. Proposed

March Existing



March Proposed



Receives Sunlight > 2 Hours  
Receives Sunlight < 2 Hours

Average Change Per Apartment(%)	Existing Above 2 Hours	Proposed Above 2 Hours	x>2 to x<2
	92/318	92/318	0
-2%	29%	29%	0%

ALL COMPLIANT 2HR+ UNITS REMAIN 2HR+

TOTAL AVERAGE IMPACT IS 2% ACROSS 318 APARTMENTS

# OVERSHADOWING: JUNE (WINTER SOLSTICE)

Existing Vs. Proposed

12 Units Moved Into Below 2hrs (4%)



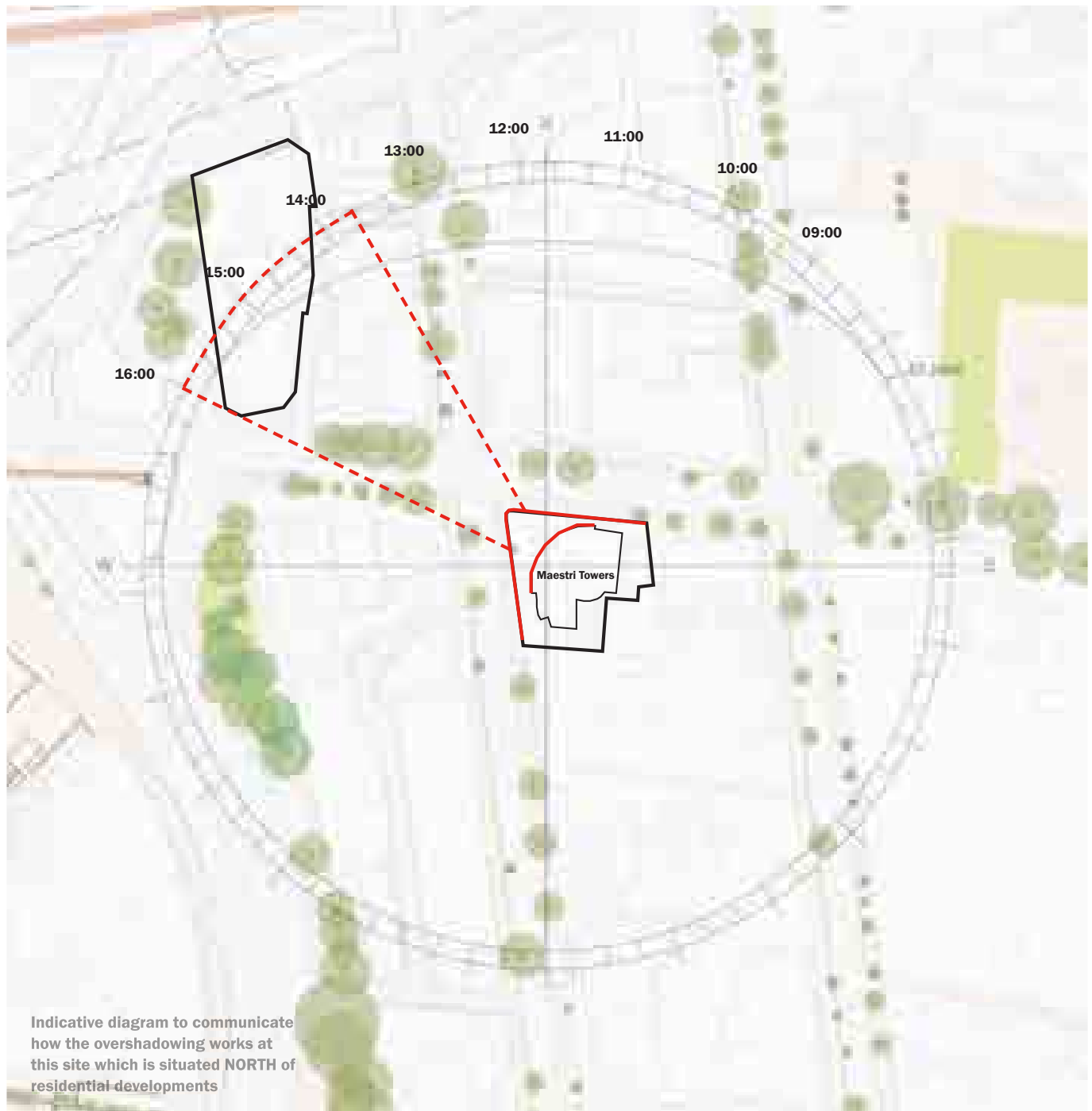
Average Change Per Apartment(%)	Existing Above 2 Hours	Proposed Above 2 Hours	x>2 to x<2
	118/318	106/318	12
-18%	37%	33%	4%

TOTAL AVERAGE IMPACT IS 18% ACROSS 318 APARTMENTS (BELOW 20%)

# MAESTRI TOWERS



# OVERSHADOWING OVERVIEW



- Maestri Tower sits south east of 150 Day st and it is therefore affected by the proposed development.
- The building contains 284 apartments on 26 floors.
- The impact on Maestri tower occurs in the afternoon between 13.30 and 15.00.
- Because of the distance to the proposed building on 150 Day St, the overshadowing only impacts the west facing portion of the podium and the first 2 floors of the base of the tower.

- The overshadowing impact is greater during the Winter solstice and is greatly reduced by the equinox time as the building was designed to perform at equinox as per the pre-ADG guidance.

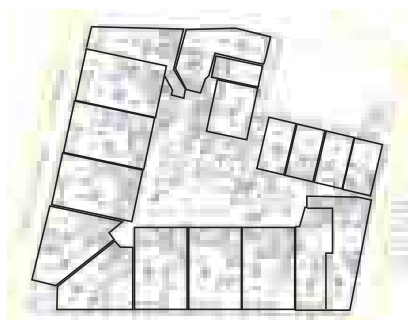
# APARTMENT CONFIGURATION

DA1998 13/10

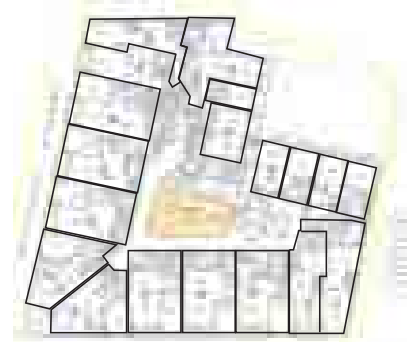
Level 1



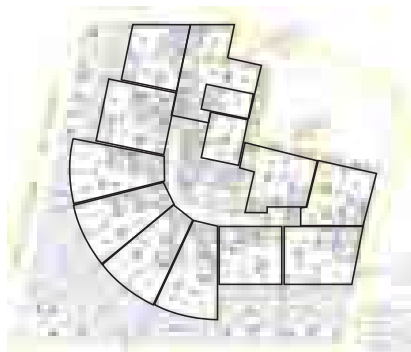
Level 2



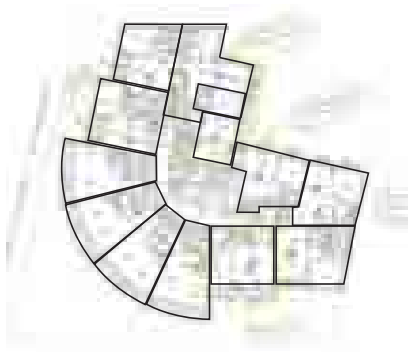
Level 3 to 7



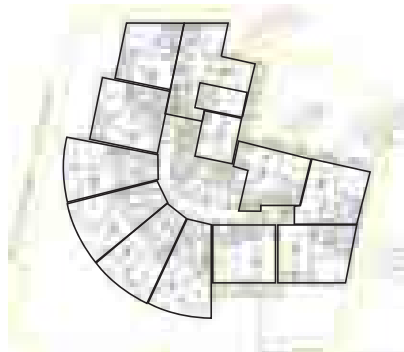
Level 8



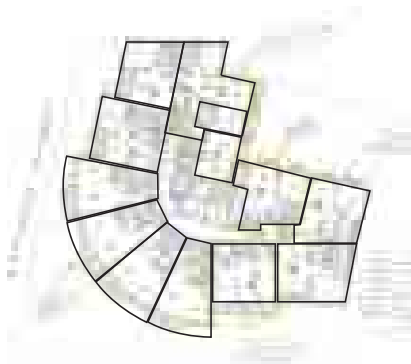
Level 9



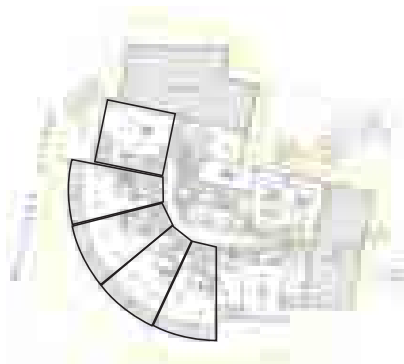
Level 10/12/14...24



Level 11/13/15...23



Level 25



# OVERSHADOWING: MARCH (EQUINOX)

## Existing Vs. Proposed

March Existing



March Proposed



- Receives Sunlight > 2 Hours
- Receives Sunlight < 2 Hours

Average Change Per Apartment(%)	Existing Above 2 Hours	Proposed Above 2 Hours	x>2 to x<2
	89/284	89/284	0
-3%	31%	31%	0%

ALL COMPLIANT 2HR+ UNITS REMAIN 2HR+

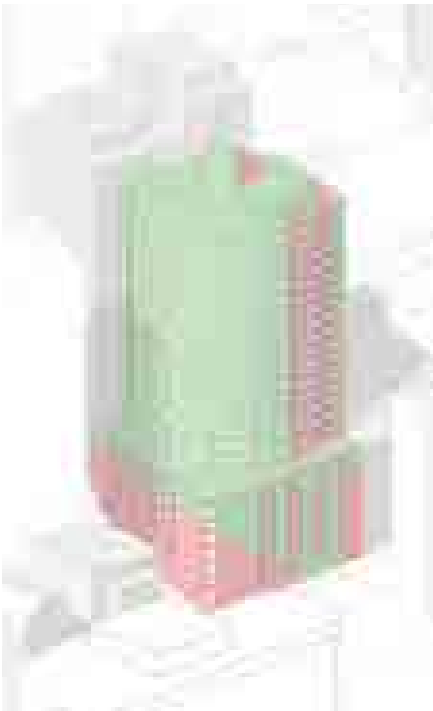
TOTAL AVERAGE IMPACT IS 3% ACROSS 284 TOTAL APARTMENTS



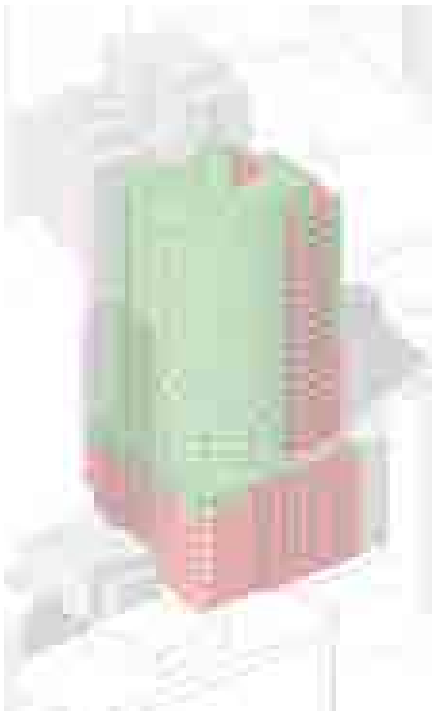
# OVERSHADOWING: JUNE (WINTER SOLSTICE)

Existing Vs. Proposed

June Existing



June Proposed



6 Units Moved To Below 2hrs (2%)



Receives Sunlight > 2 Hours  
Receives Sunlight < 2 Hours

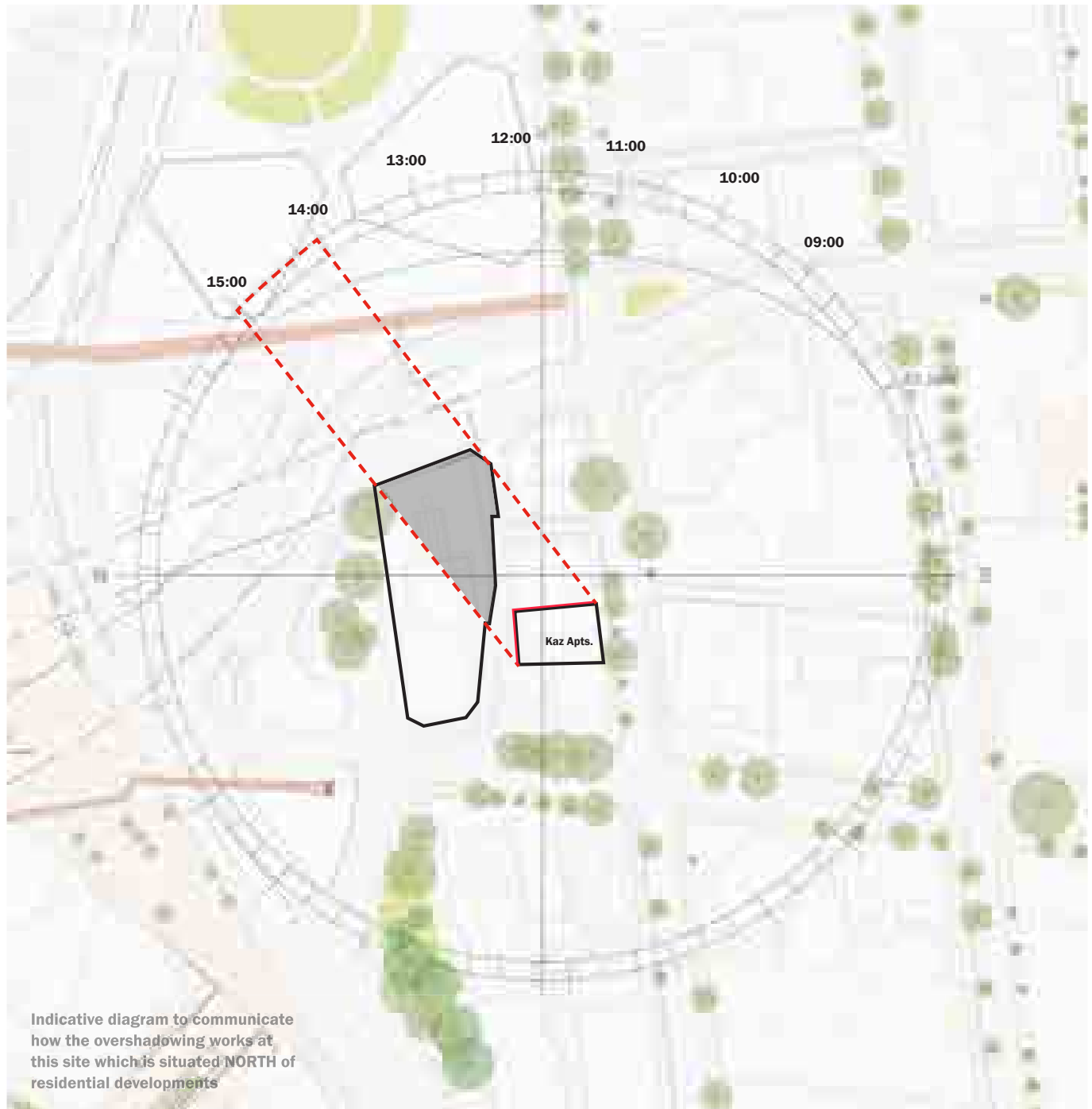
Average Change Per Apartment(%)	Existing Above 2 Hours	Proposed Above 2 Hours	x>2 to x<2
	83/284	77/284	6
-8%	29%	27%	2%

TOTAL AVERAGE IMPACT IS 8% ACROSS 284 TOTAL APARTMENTS

# KAZ TOWER



# OVERSHADOWING OVERVIEW



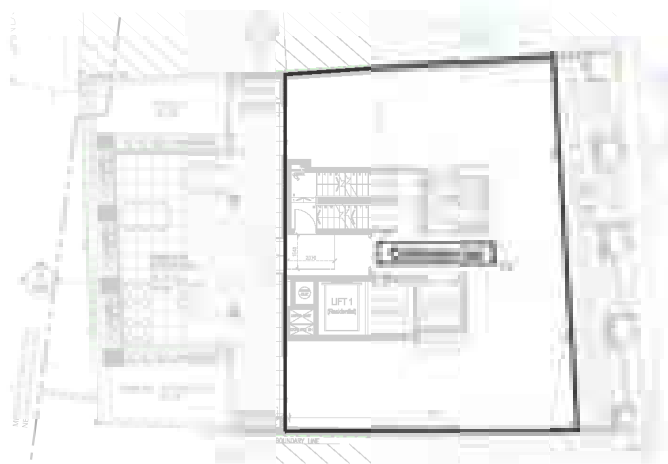
- Kaz Tower sits east of 150 Day st and it is therefore affected by the proposed development.
- The building contains 36 apartments on 13 floors.
- The impact on Kaz tower occurs in the afternoon between 14.00 and 15.00.
- Because the existing building is already affecting Kaz tower, the additional overshadowing is minimal.
- The overshadowing impact is greater during the Winter

solstice but remains fairly consistent through out the year.

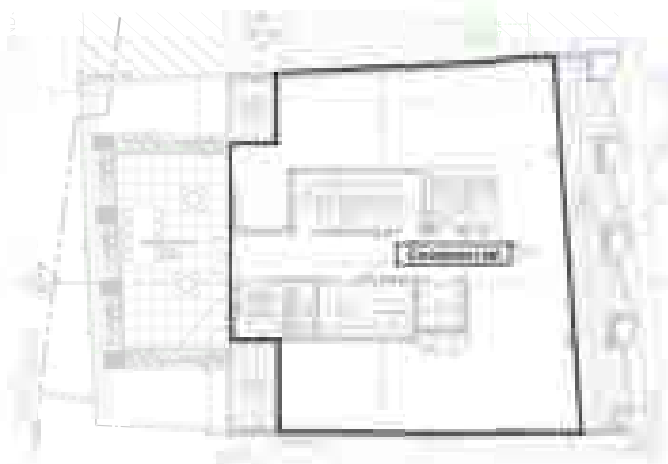
# APARTMENT CONFIGURATION

D/2014/1307/B

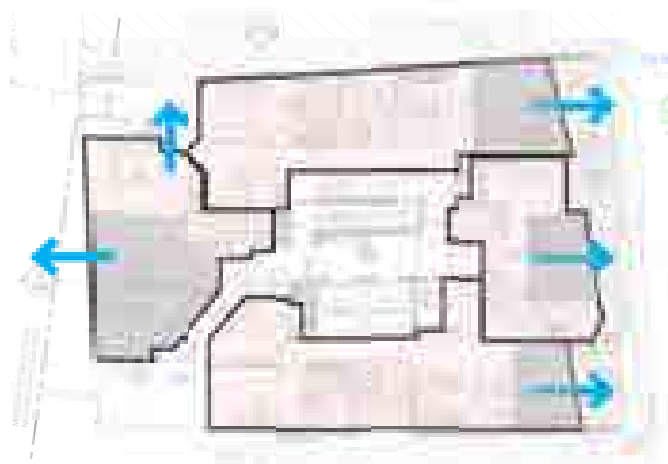
Level 2



Level 3



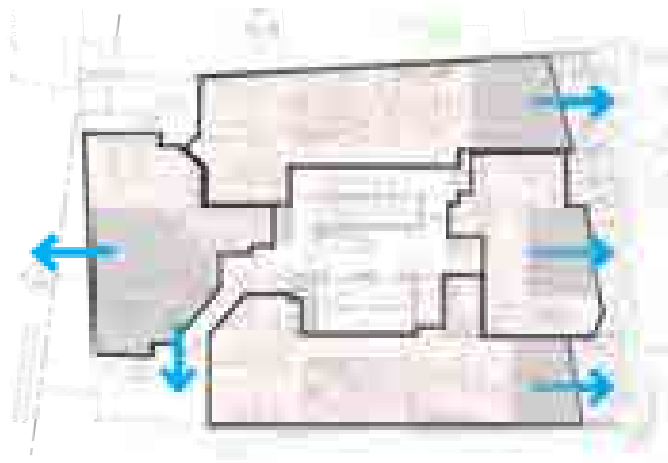
Level 4-8



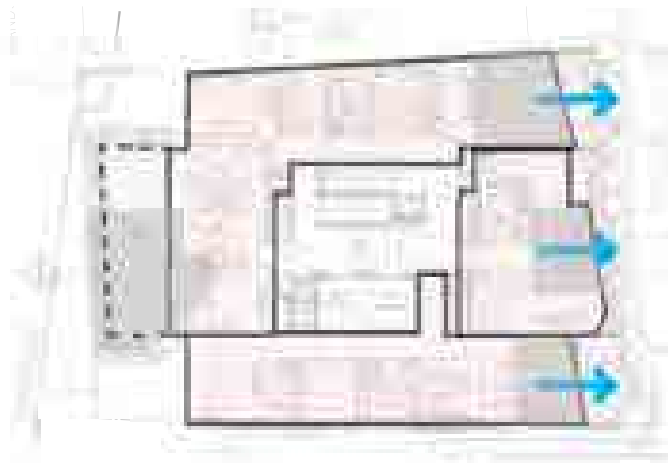
Level 9-11



Level 12



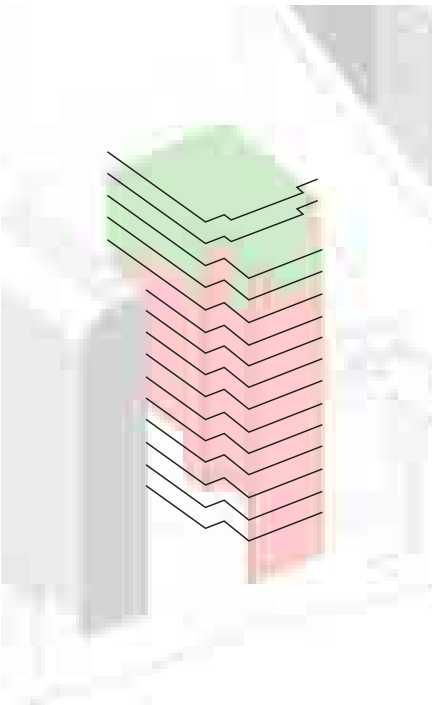
Level 13



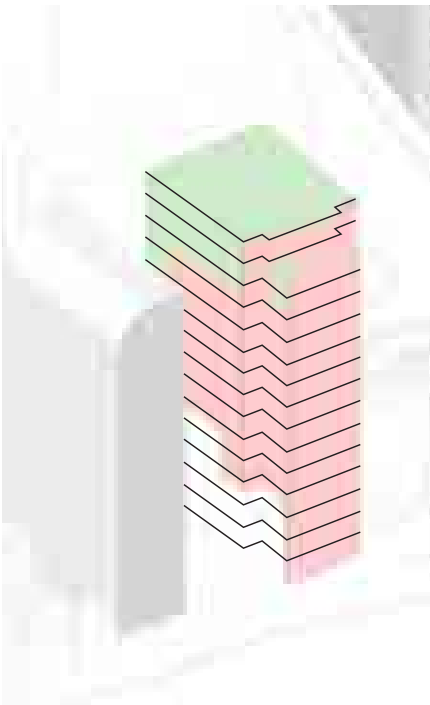
# OVERSHADOWING: JUNE (WINTER SOLSTICE)

## Kaz Apartments - Existing vs Proposed

June Existing



June Proposed



2 Affected Units



Receives Sunlight > 2 Hours  
Receives Sunlight < 2 Hours

Average Change Per Apartment (%)	Existing Above 2 Hours	Proposed Above 2 Hours	x>2 to x<2
	21/36	19/36	2
-5%	58%	53%	6%

TOTAL AVERAGE IMPACT IS LESS THAN 20% ACROSS 36 APARTMENTS

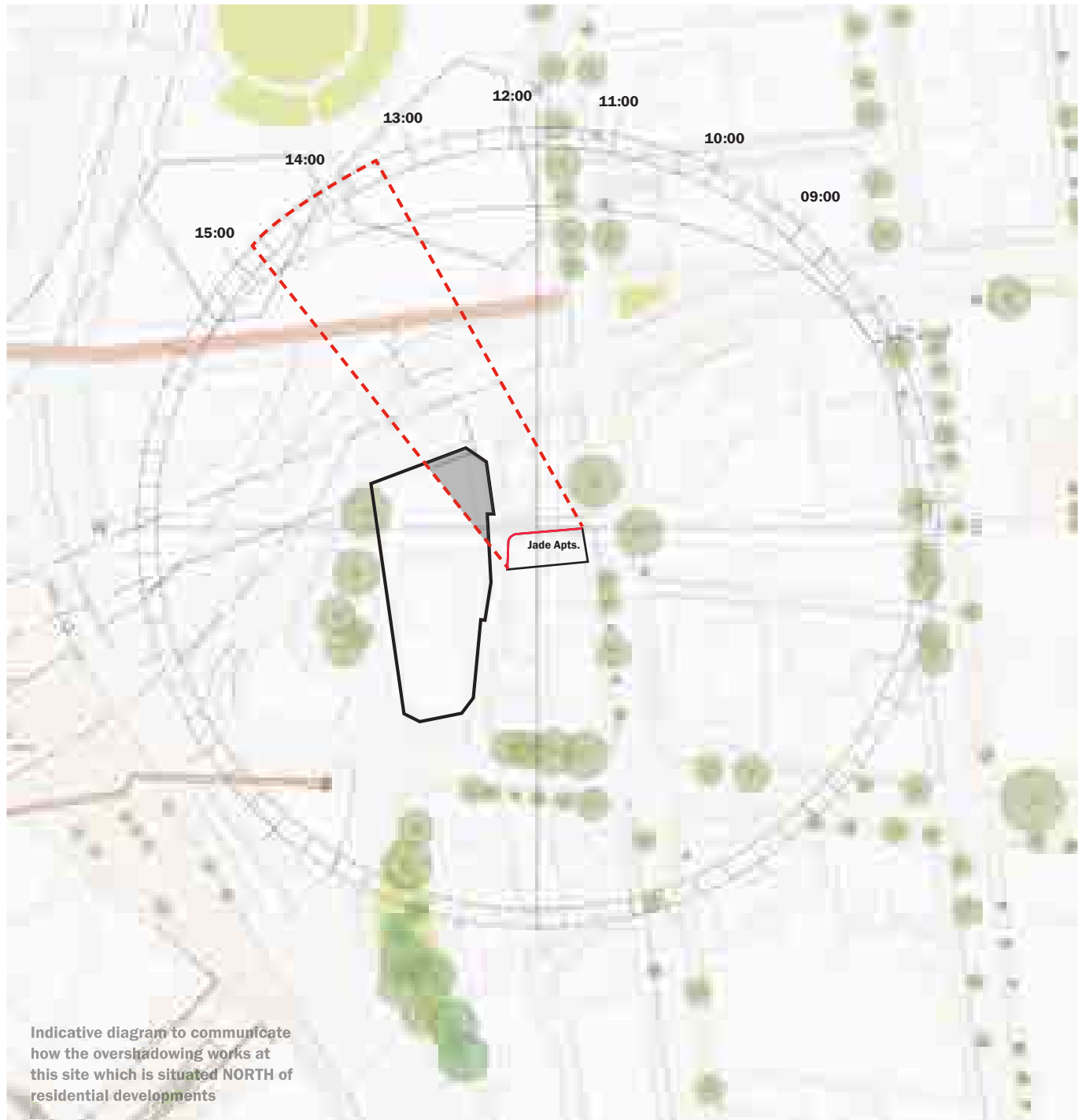


# JADE APARTMENTS





# OVERSHADOWING OVERVIEW



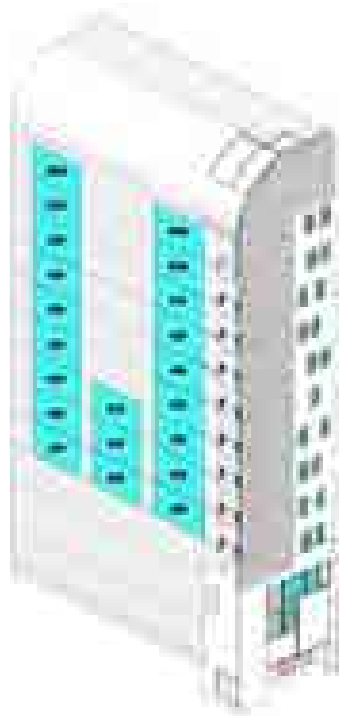
- Jade Tower sits east of 150 Day st and it is therefore affected by the proposed development.
- The building contains 21 apartments on 11 floors. All living spaces receive sun access from the north elevation.
- The impact on Jade tower occurs in the afternoon between 13.30 and 3 pm.
- Because the existing building is already affecting Jade tower, the additional overshadowing is minimal.

- The overshadowing impact is greater during the Winter solstice but remains fairly consistent through out the year.

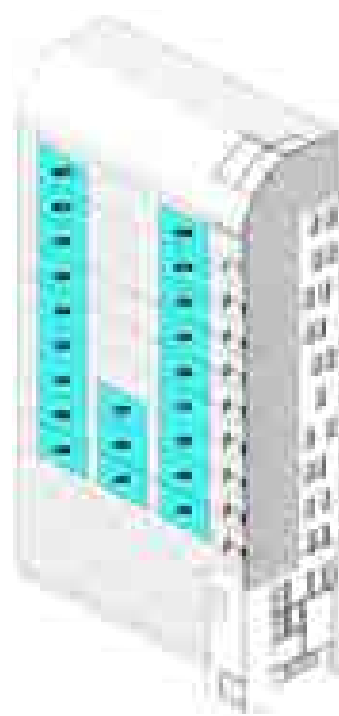
# APARTMENT CONFIGURATION

D/2010/1358-02

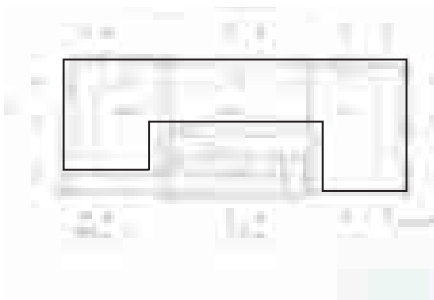
All Windows



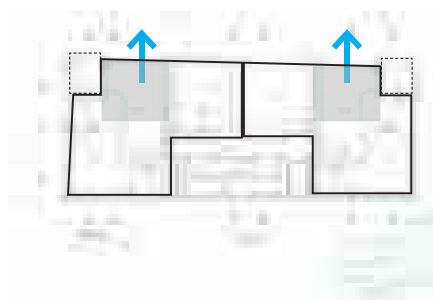
Living Area Windows



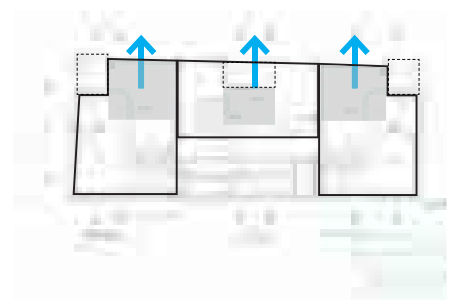
Level 1



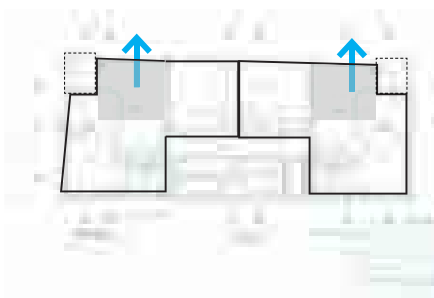
Level 2



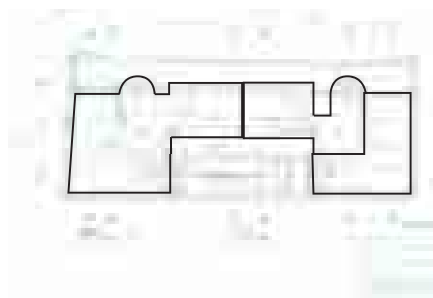
Level 3-5



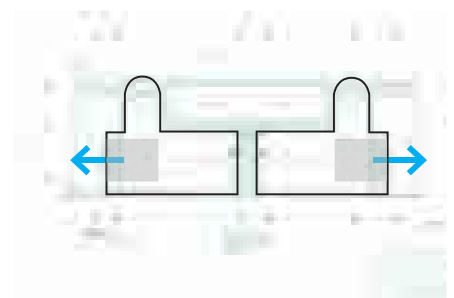
Level 6-10



Level 11



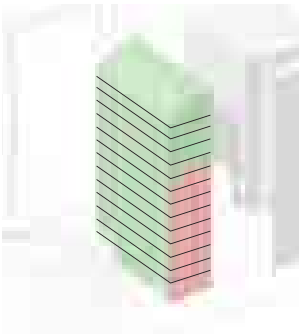
Level 12



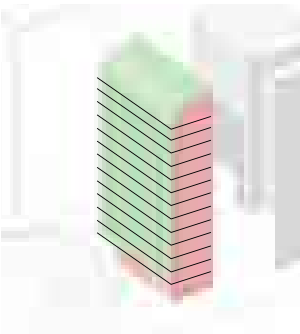
# ADDITIONAL OVERSHADOWING:

## Existing Vs. Proposed

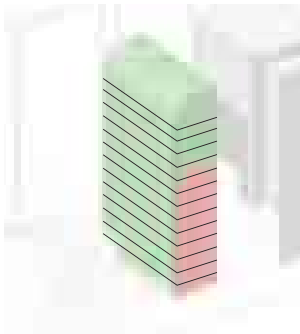
March Existing



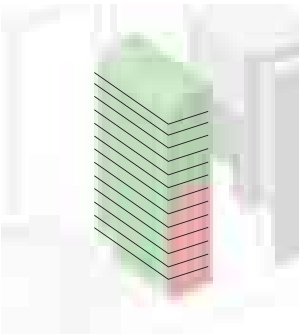
June Existing



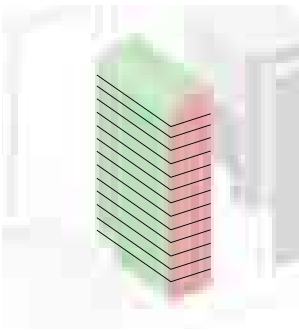
September Existing



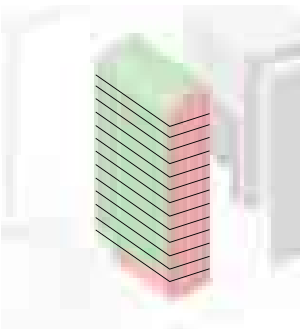
December Existing



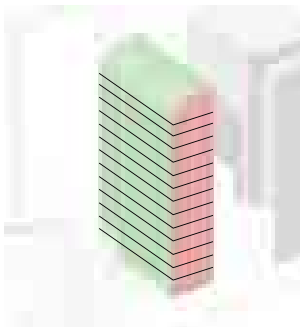
March Proposed



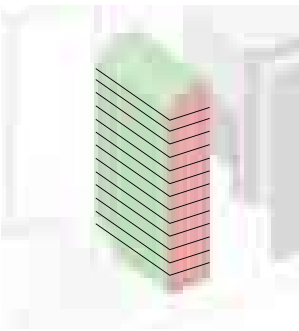
June Proposed



September Proposed



December Proposed



Receives Sunlight > 2 Hours  
Receives Sunlight < 2 Hours

Average Change Per Apartment (%)	Existing Above 2 Hours	Proposed Above 2 Hours	x>2 to x<2
	20/21	20/21	
0%	95%	95%	0%

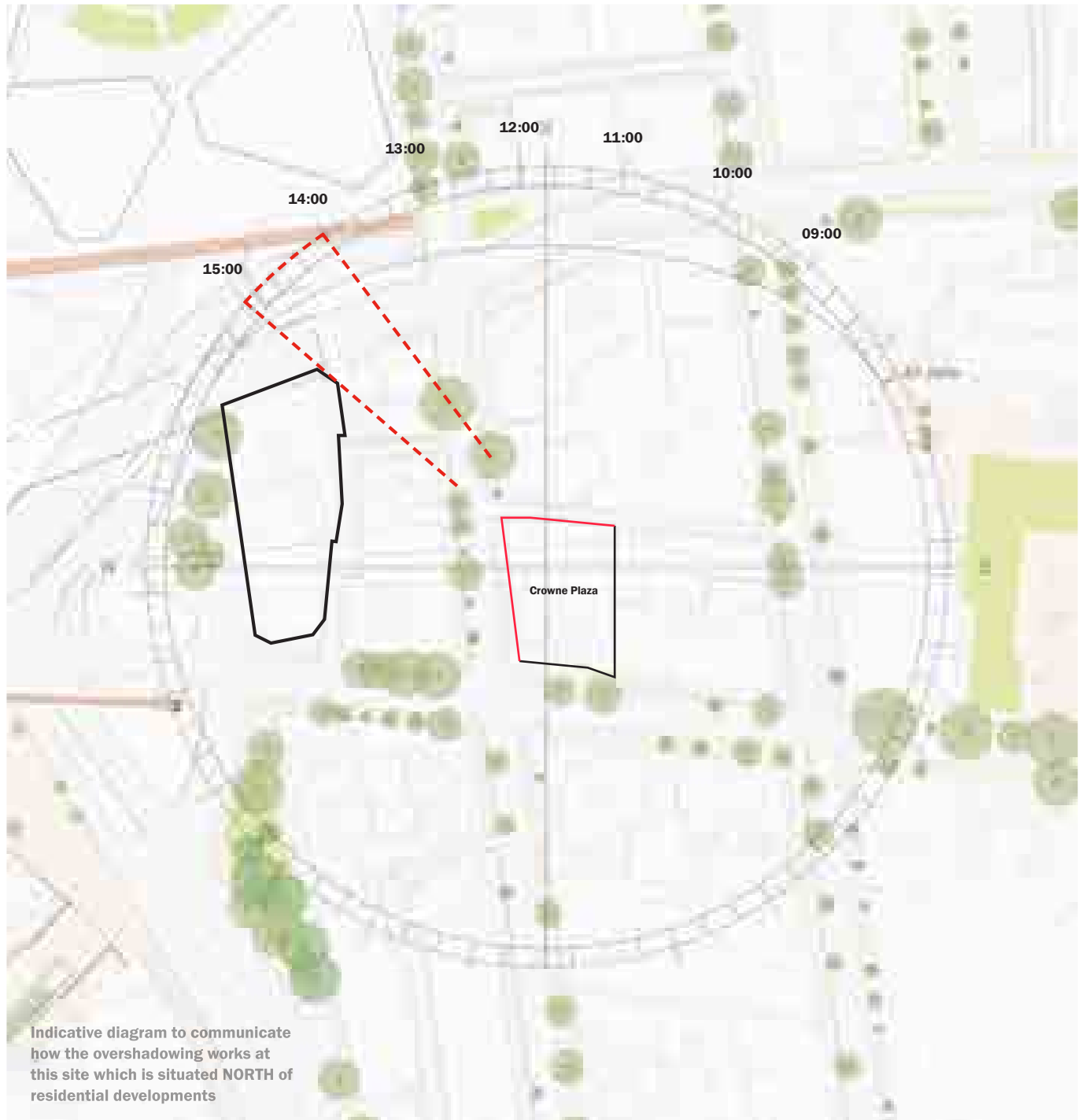
TOTAL IMPACT TO LIVING AREAS IS 0% ACROSS 21 APARTMENTS



# CROWNE PLAZA



# OVERSHADOWING OVERVIEW



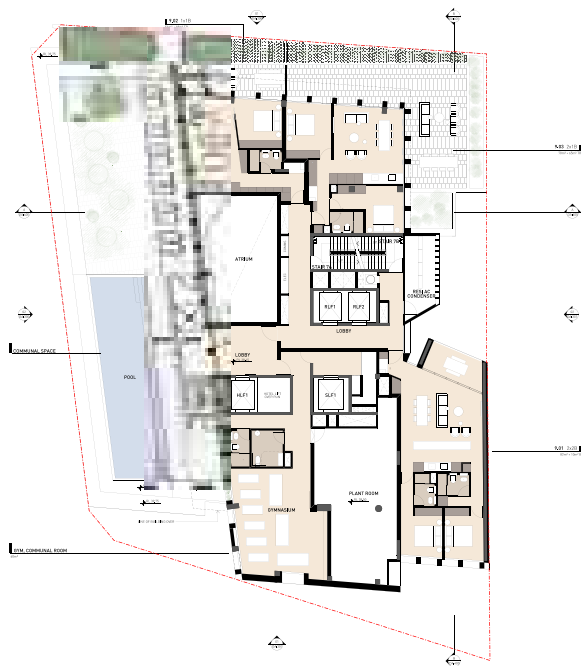
- The Crowne Plaza Solar Plane establishes the maximum allowable height for any building volumes to ensure no additional shadows are cast on Town Hall Square. This plane is defined as the lowest surface created by connecting points from the Town Hall to the Crowne Plaza.
- The boundary of the Crowne Solar Plane is defined by connecting (a) the far northeast point from Town Hall Square and the far northwest point of Crowne Plaza;

(b) the far southeast point from Town Hall Square and the far south point of Crowne Plaza. The Crowne Solar Plane is generated by connecting and extending the two boundaries.



# APARTMENT CONFIGURATION

**Level 09 (First Residential Floor)**



**Level 10: 4 Units  
2 Units Face West**



**Level 11-16: 7 Units  
3 Units Face West**



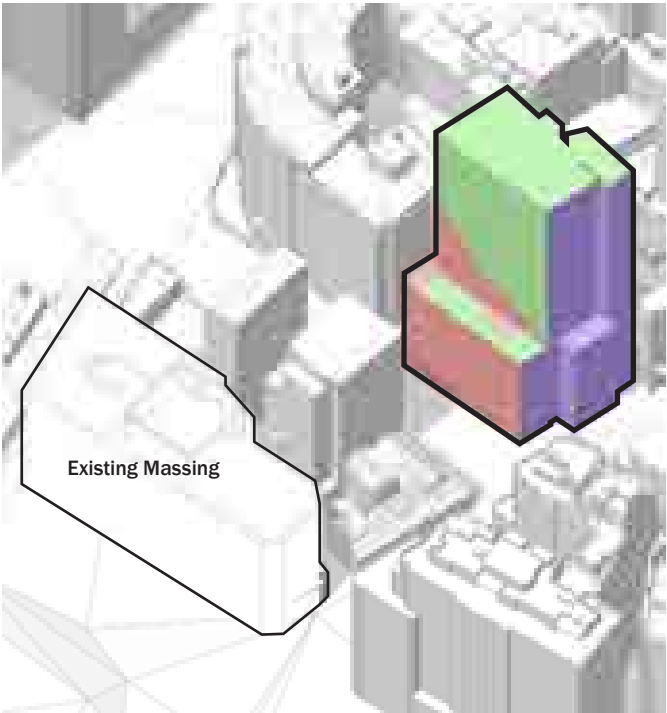
**Level 17-20: 6 Units  
2 Units Face West**



# OVERSHADOWING: JUNE (WINTER SOLSTICE)

Existing Vs. Proposed

Existing



Proposed



- Receives Sunlight > 2 Hours
- Receives Sunlight < 2 Hours
- Receives Sunlight < 15 Minutes

- Impacted < 2 Hours

Average Change Per Apartment (%)	Existing Above 2 Hours	Proposed Above 2 Hours	x>2 to x<2
	67/95	67/95	0
0	71%	71%	0

TOTAL IMPACT TO LIVING AREAS IS 0% ACROSS 95 APARTMENTS (NOT INCLUSIVE OF COMMERCIAL PODIUM)

