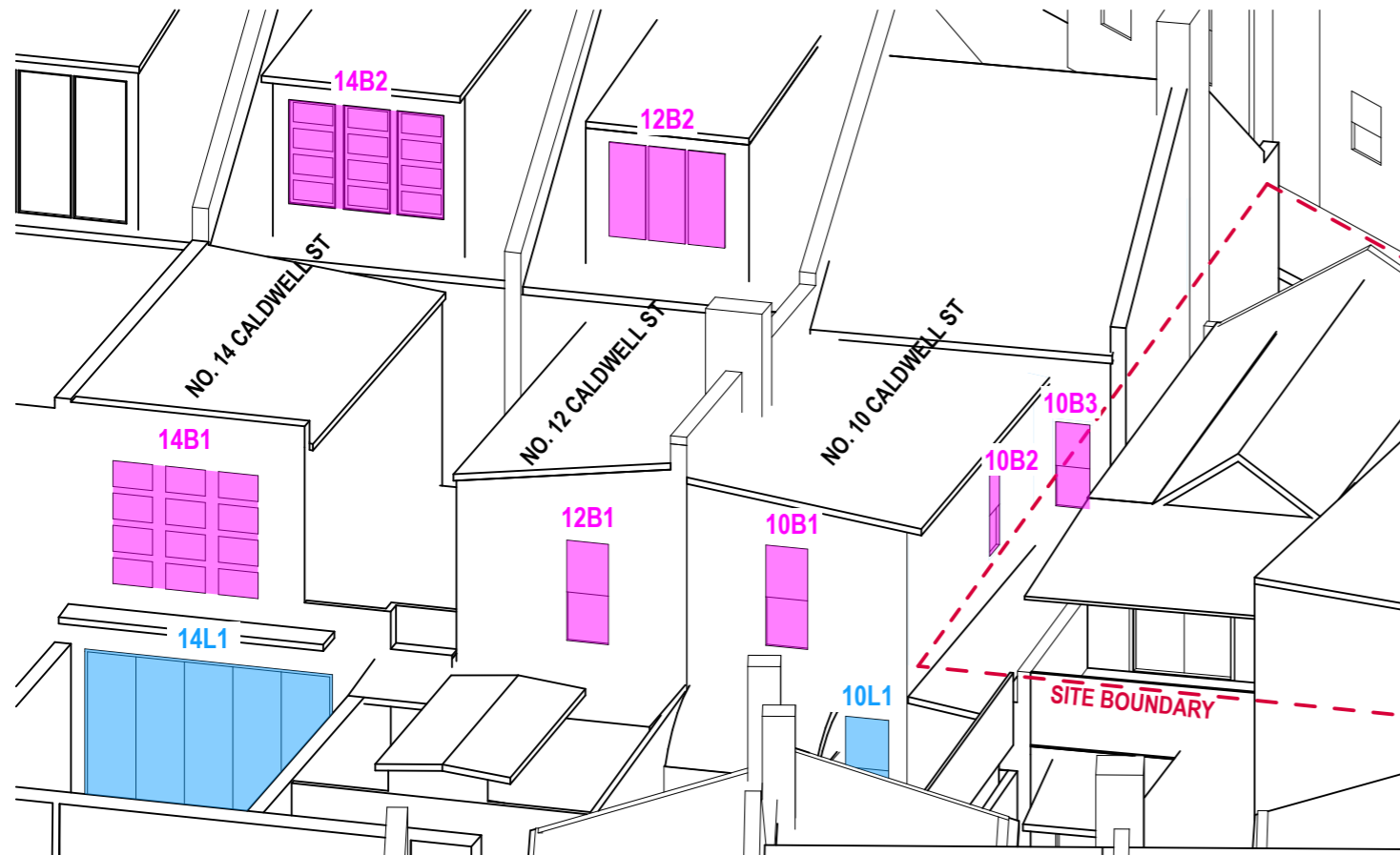


Attachment A4

Solar Access Study

SHADOW ANALYSIS SUMMARY



LEGEND

- BED ROOM WINDOW
- LIVING ROOM WINDOW
- SITE BOUNDARY

NEIGHBOURING TERRACE WINDOWS IMPACTED BY OVERSHADOWING

WINDOW	TOTAL HOURS OF SUN ON JUNE 21 BETWEEN 9AM - 3PM		
	EXISTING BUILDING	PROPOSED ENVELOPE	DCP COMPLIANT ENVELOPE
10L1	1.25 hours	0.25 hours	0 hours
10B1	2.5 hours	1 hour	0 hours
12B1	2.25 hours	1.25 hours	1.25 hours
12B2	2.5 hours	2.5 hours	2.5 hours
14L1	2.75 hours	2.75 hours	2.75 hours
14B1	2.75 hours	2.75 hours	2.75 hours
14B2	2.75 hours	2.75 hours	2.75 hours

NOTE: Windows 10B2 and 10B3 of number 10 Caldwell st are not included in calculations as they are along site side boundary and are not windows to primary living areas. Refer excerpt from City of Sydney DCP 2012 below:

4.1.3.1 Solar access

- (5) Overshadowing of windows along side boundaries by new development is permissible, except in the circumstances within provision (6) below.
- (6) Daylight access is to be addressed where:
 - (a) the side windows of an adjoining dwelling are facing and/or perpendicular to the boundary and are less than 1.5m from the side boundary; and
 - (b) the side windows in (a) are the only windows to the primary living area of a neighbouring dwelling;

CONCLUSION:

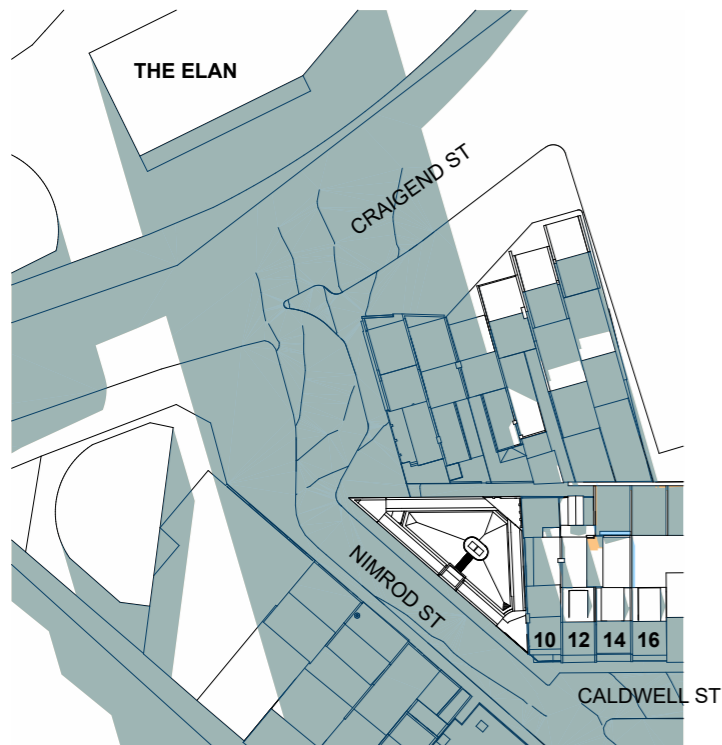
Proposal with a shaped roof form will mitigate overshadowing to neighbouring residences better than the DCP envelope

10 Caldwell Street - The proposed building envelope reduces solar access from 2.5 hours to 1 hour. The DCP compliant envelope reduces solar access to 0.

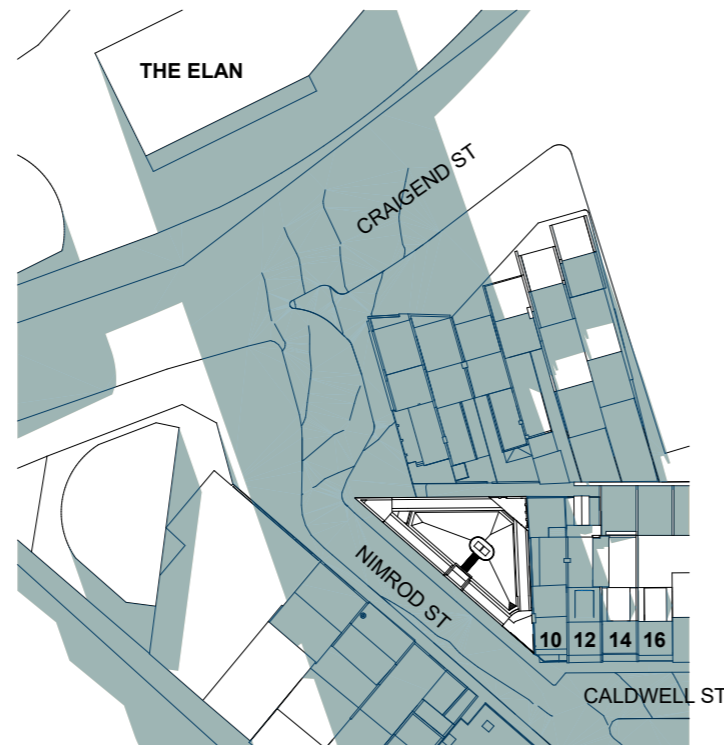
12 Caldwell Street - The proposed development reduces solar access to one bedroom window (12B1) however does not reduce overall existing solar access of 2.5 hours. This is consistent with DCP compliant envelope.

14 Caldwell Street - The proposed development does not reduce overall solar access. This is consistent with DCP compliant envelope.

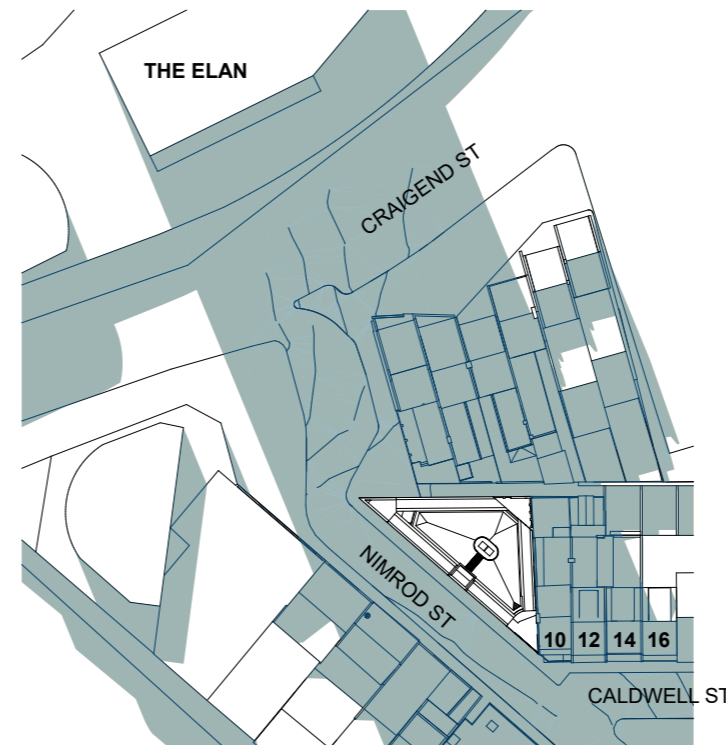
AERIAL SHADOW DIAGRAMS 21 JUNE 09:00am - 10:15am



1 21 JUNE 09:00AM
1:1000



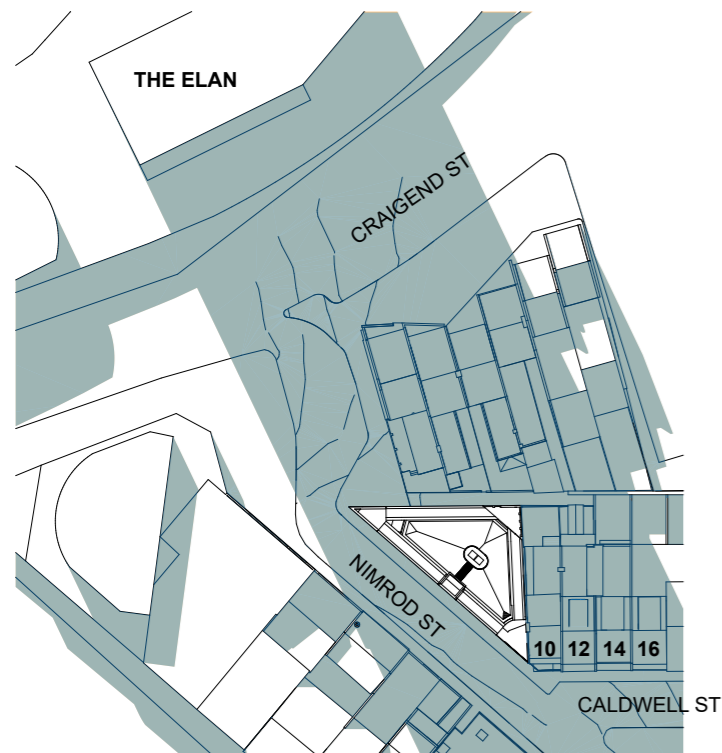
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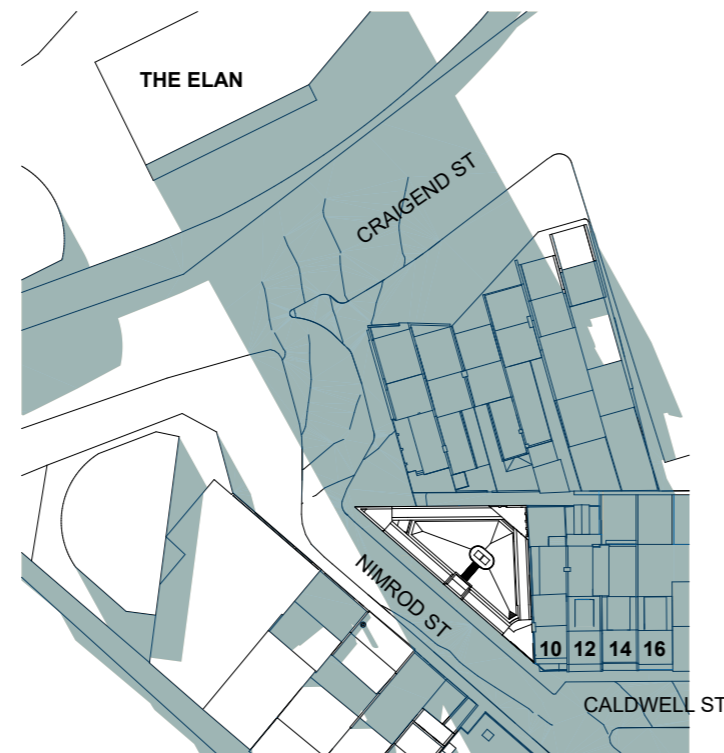
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LEGEND

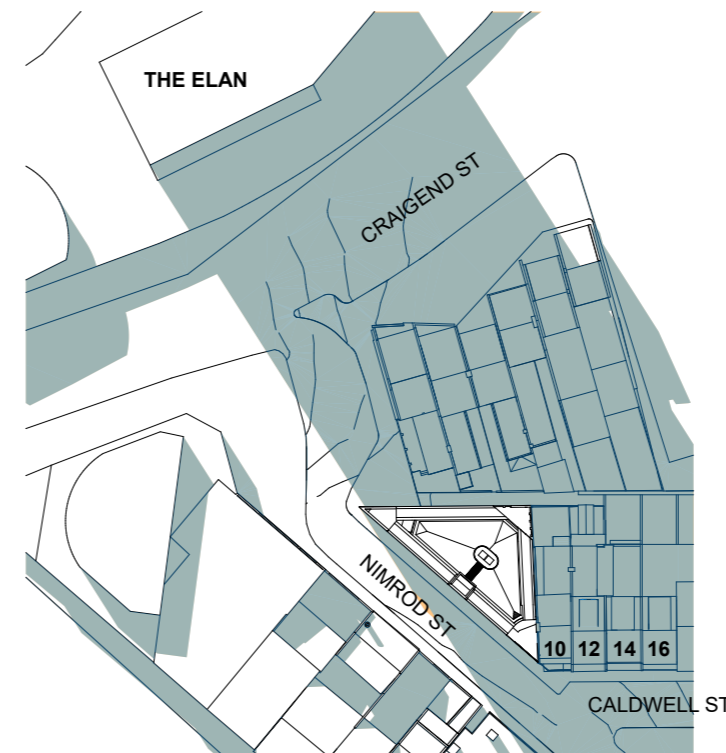
- EXISTING SHADOW
- NEW SHADOW



4 21 JUNE 09:45AM
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5 21 JUNE 10:00AM
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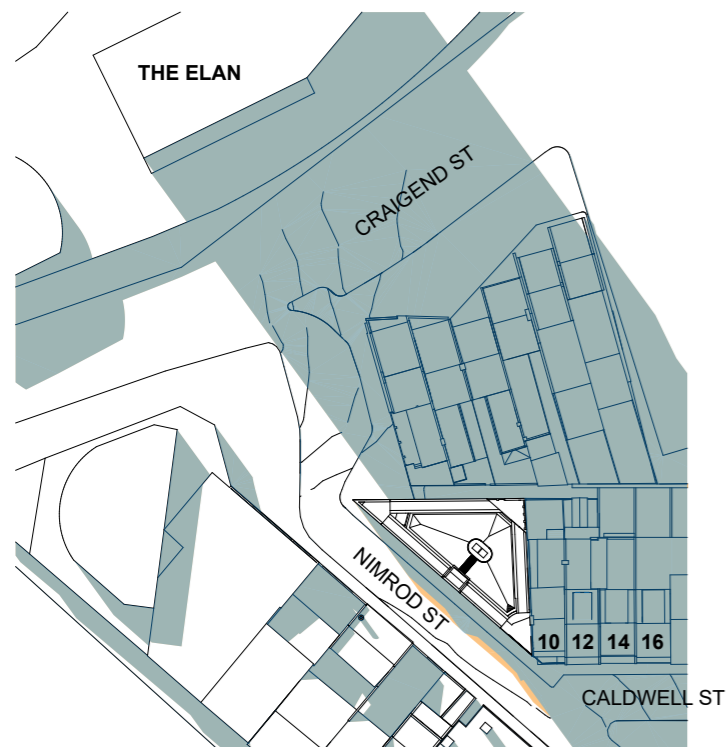


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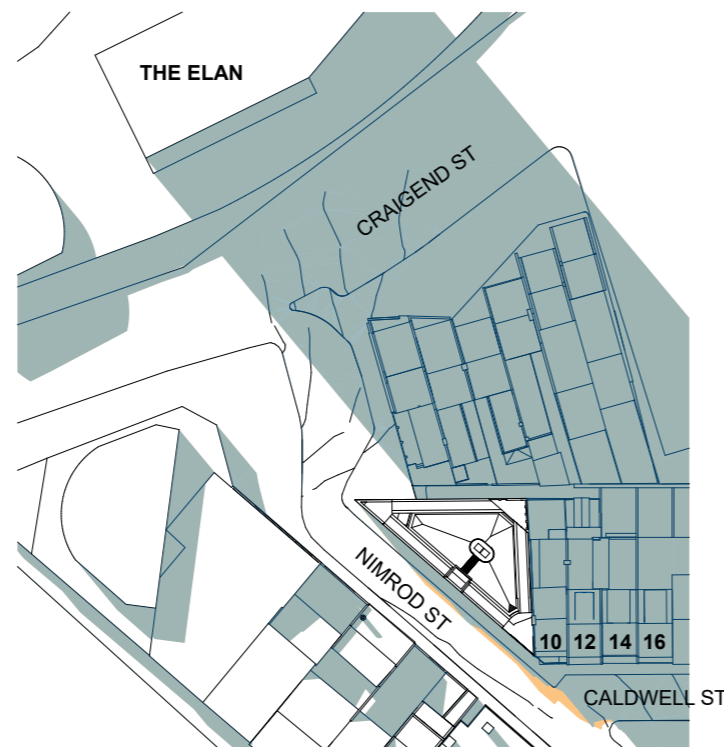
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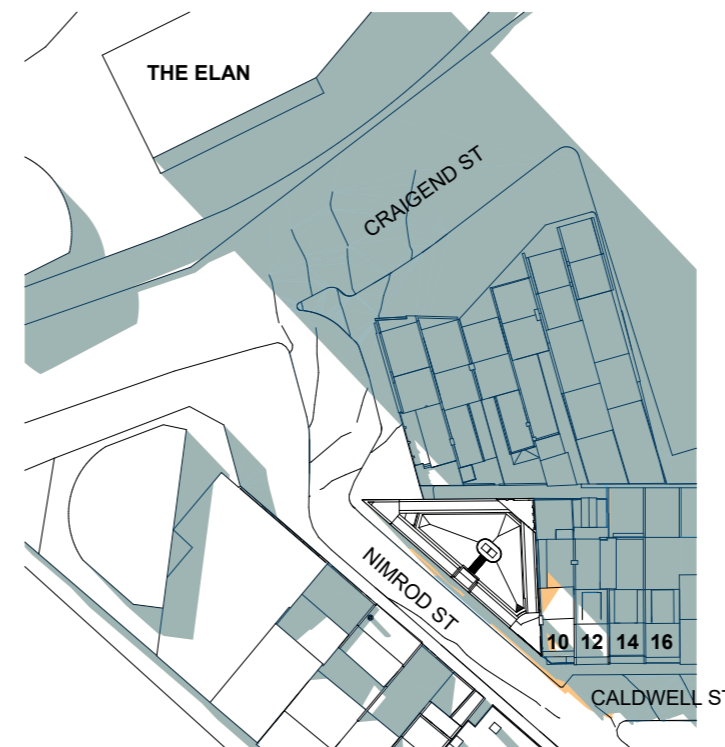
AERIAL SHADOW DIAGRAMS 21 JUNE 10:30am - 11:45am



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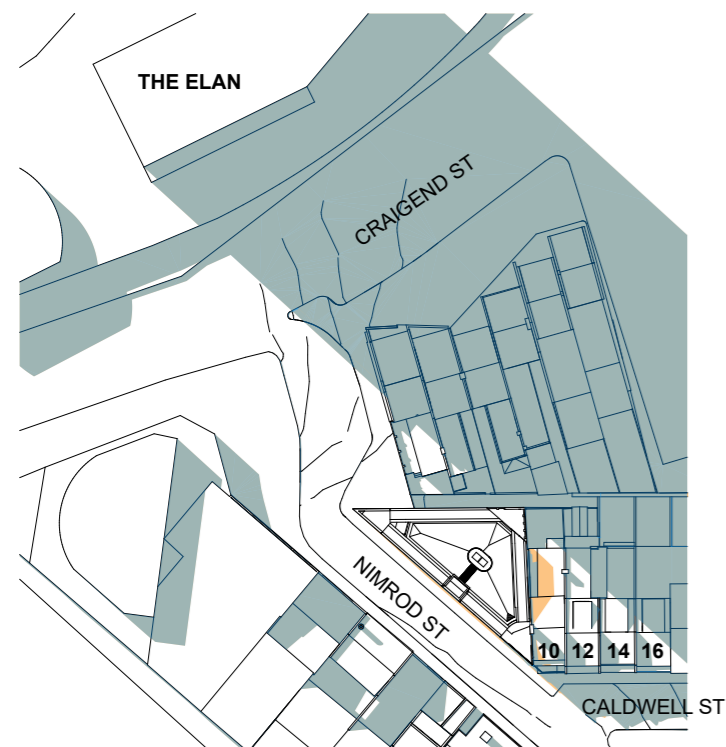
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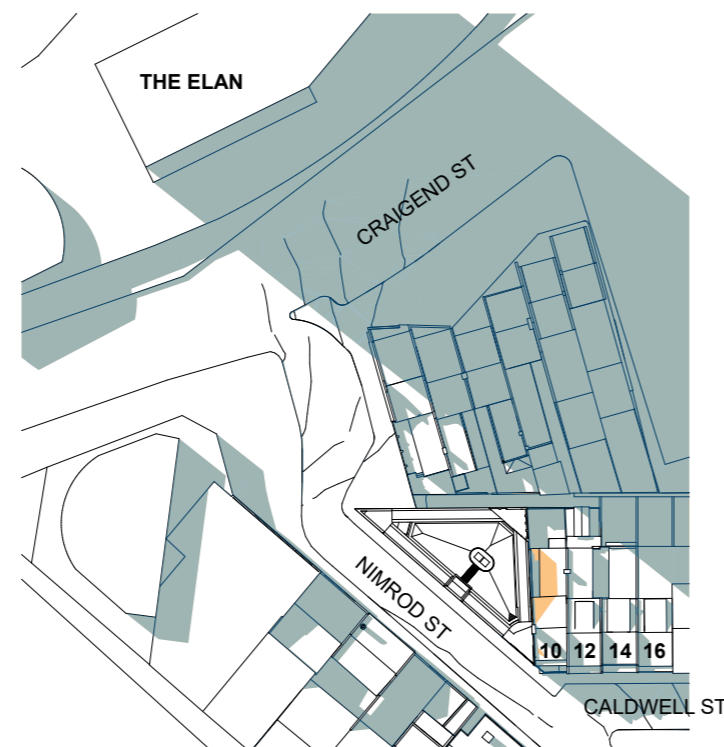
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LEGEND

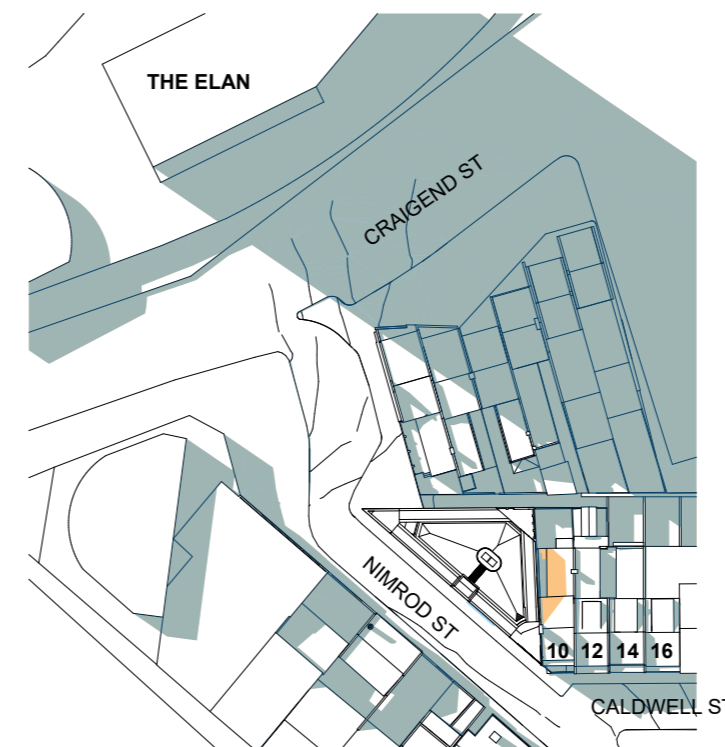
- EXISTING SHADOW
- NEW SHADOW



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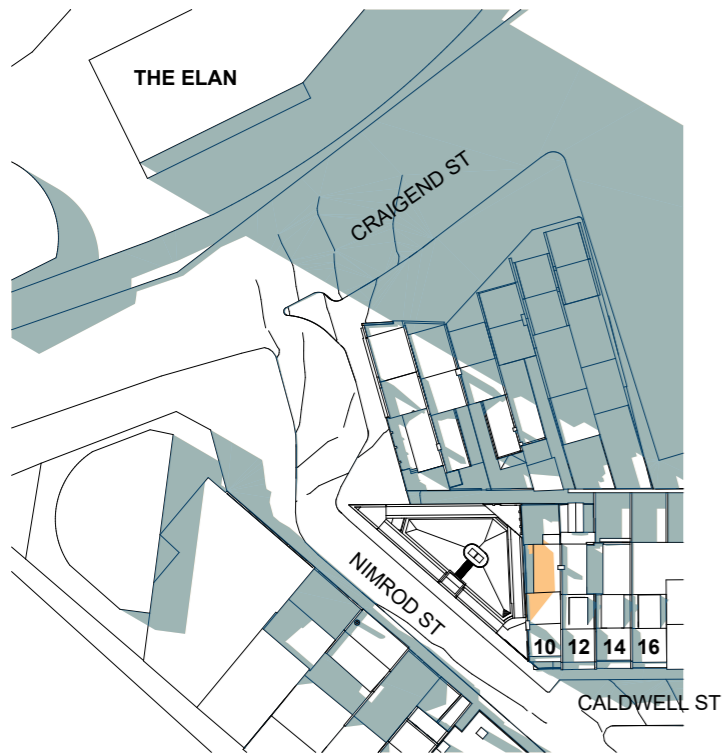


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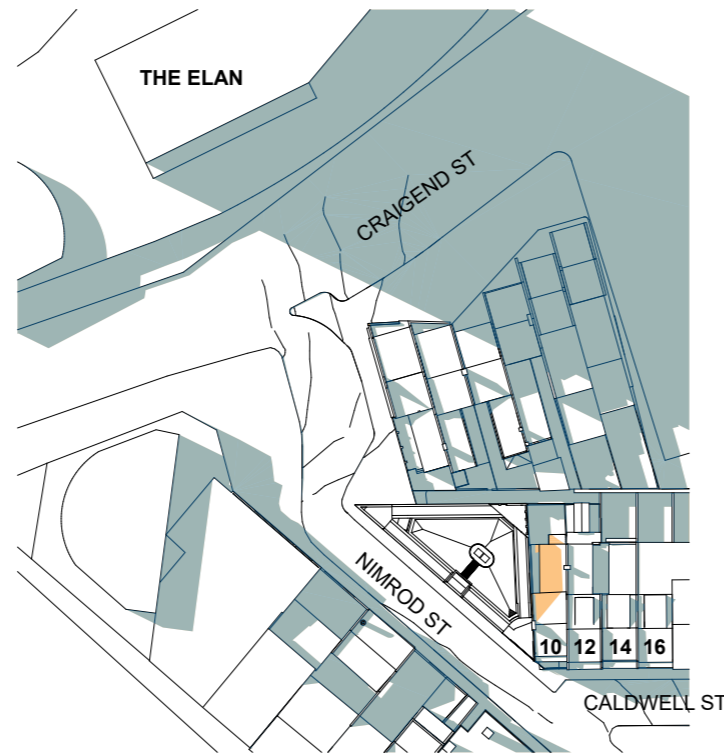
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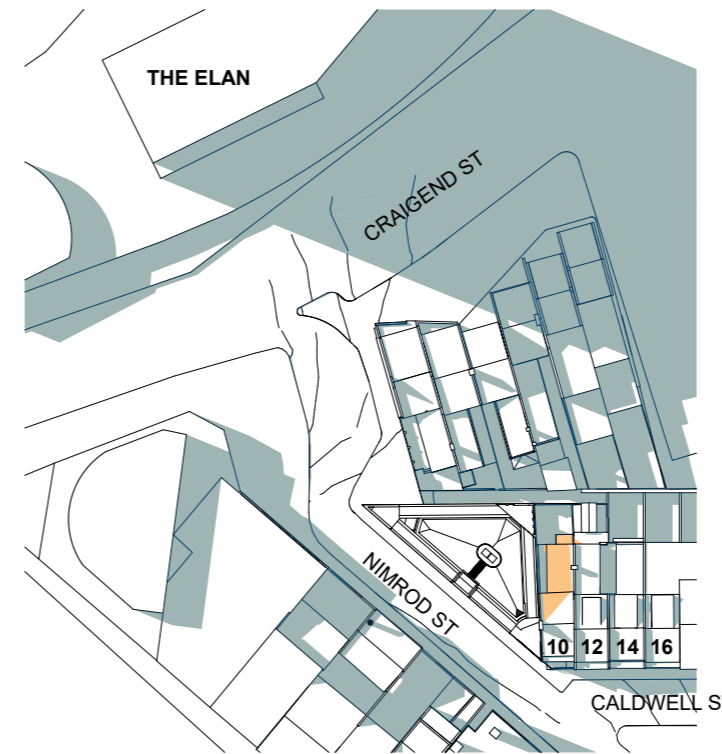
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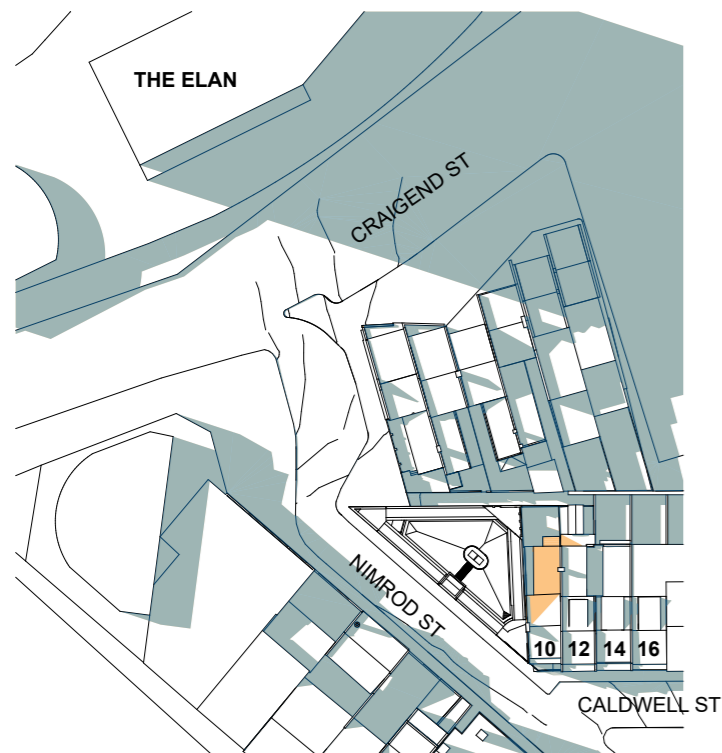
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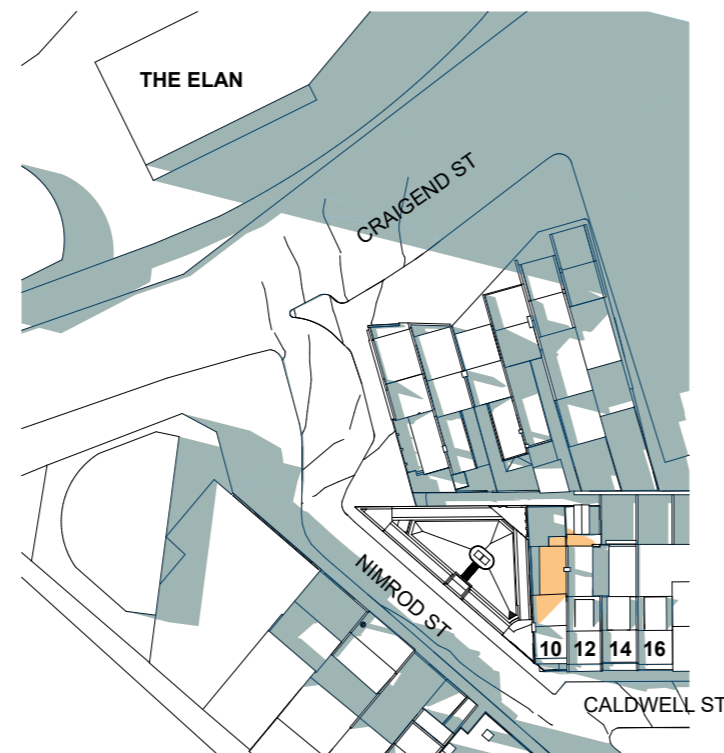
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LEGEND

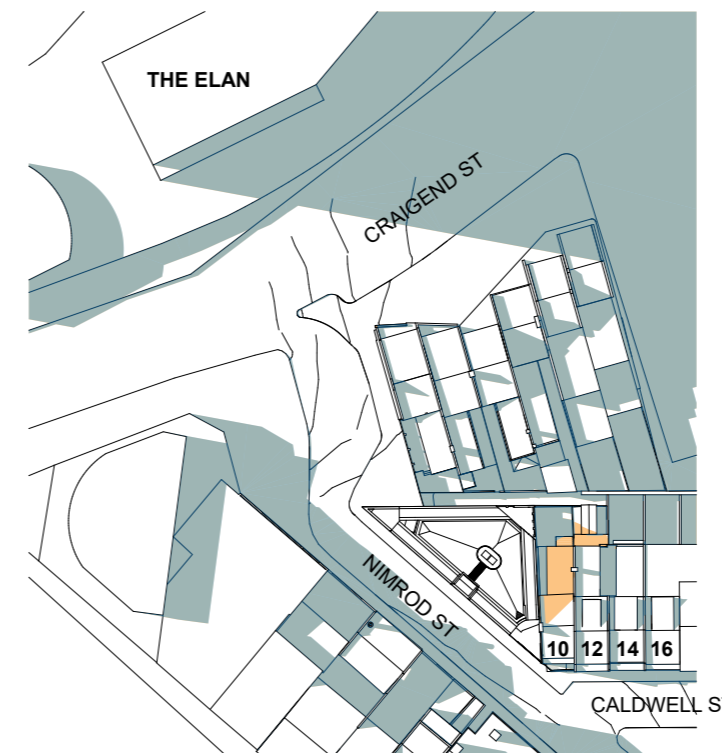
- EXISTING SHADOW
- NEW SHADOW



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5 21 JUNE 01:00PM
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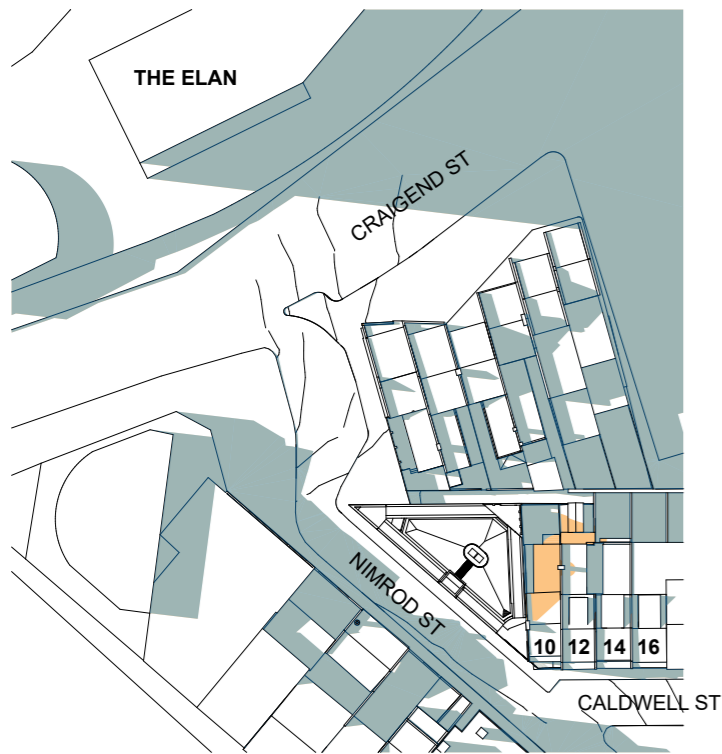


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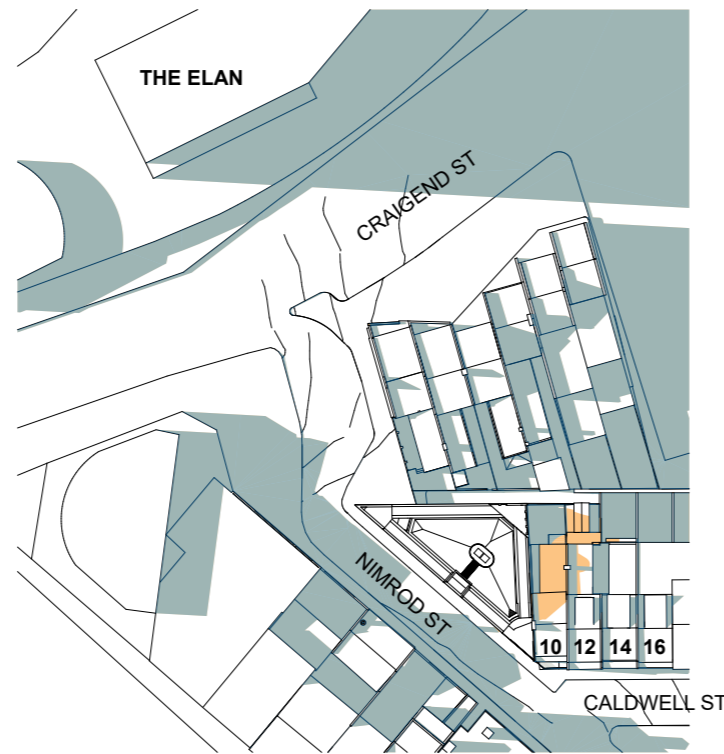
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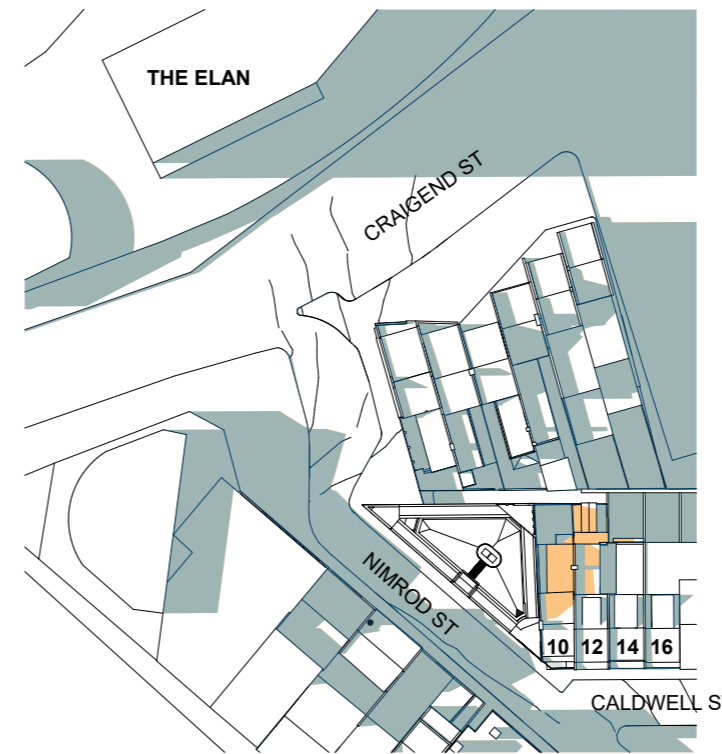
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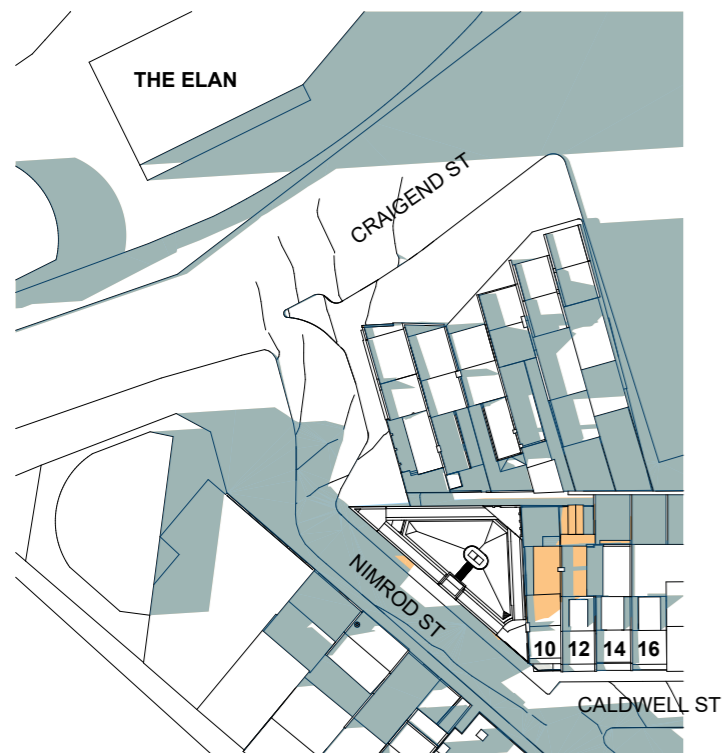
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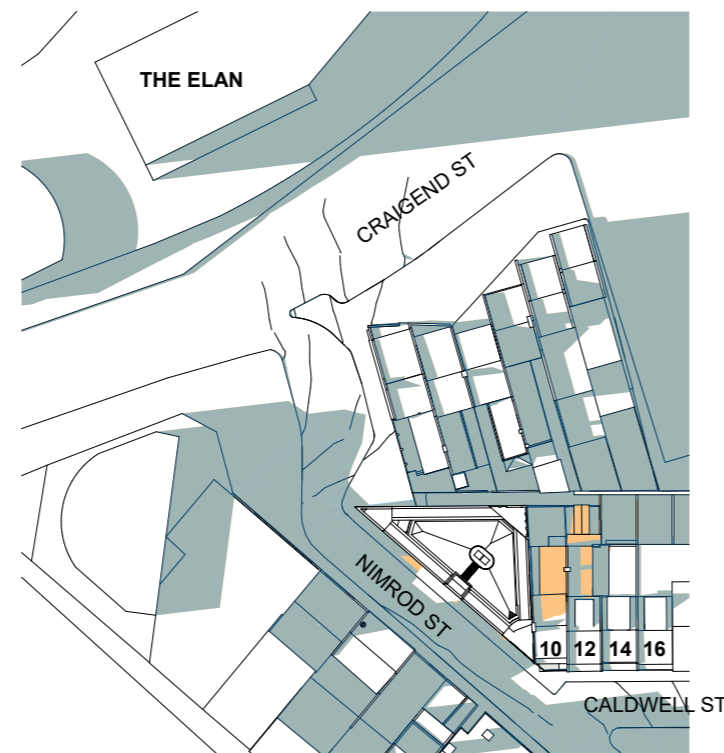
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LEGEND

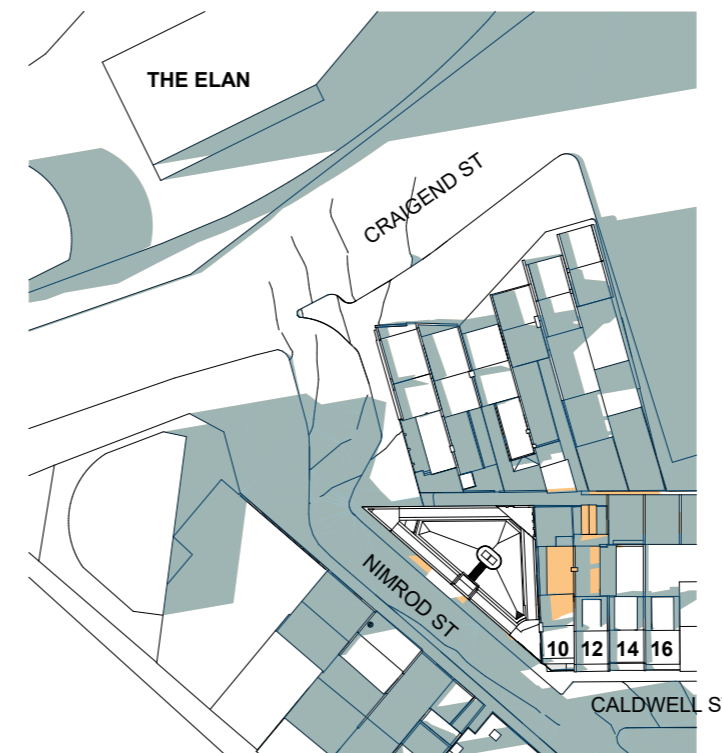
- EXISTING SHADOW
- NEW SHADOW



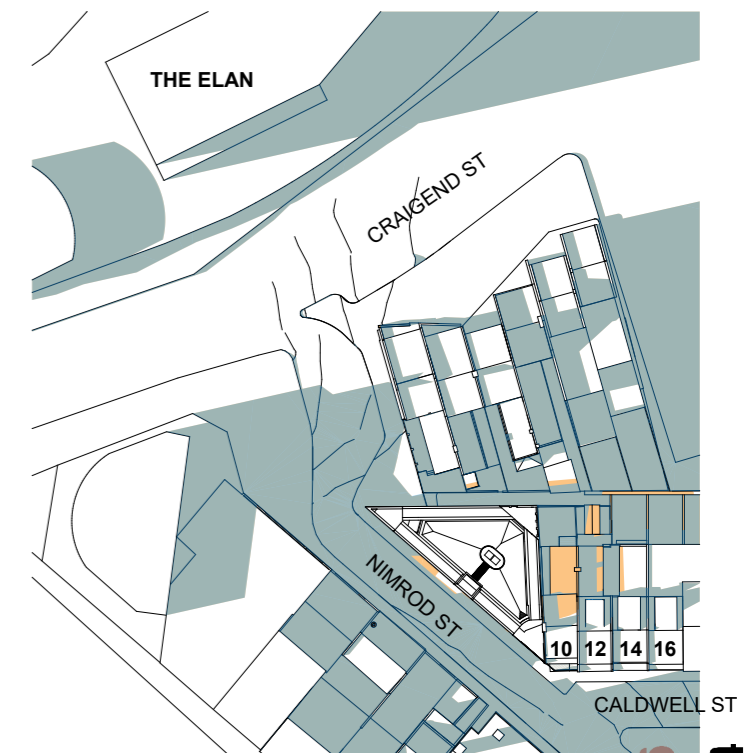
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5 21 JUNE 02:30PM
1:1000



6 21 JUNE 02:45PM
1:1000



7 21 JUNE 03:00PM
1:1000

187



3D SHADOW DIAGRAMS 21 JUNE 9AM - 10:45AM

REAR OF NO. 10, 12 & 14 CALDWELL STREET

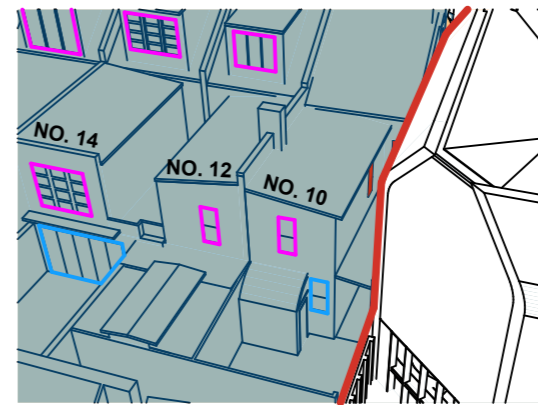
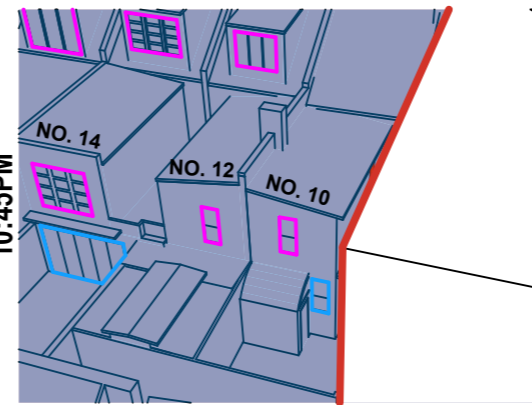
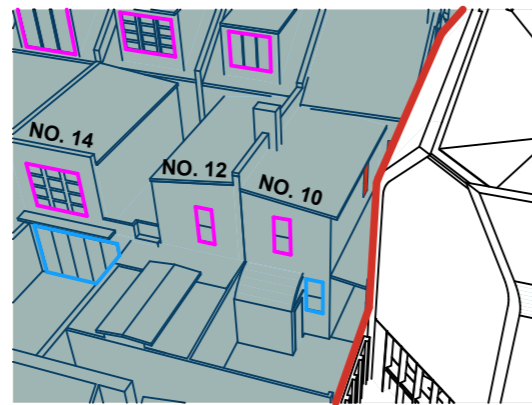
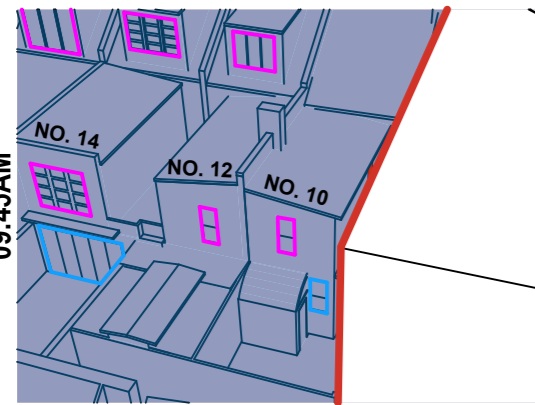
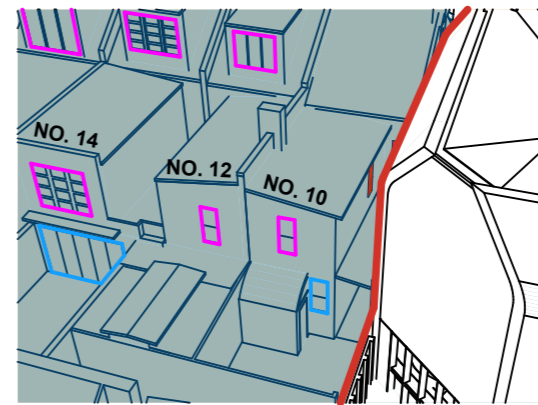
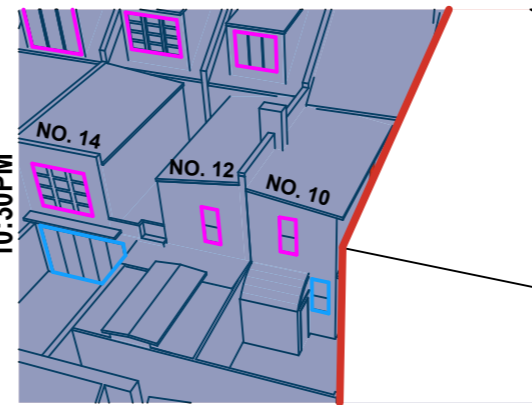
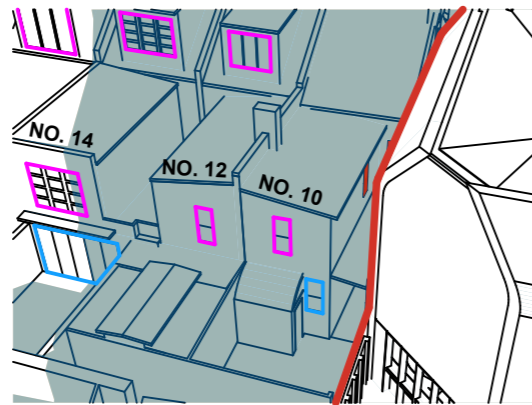
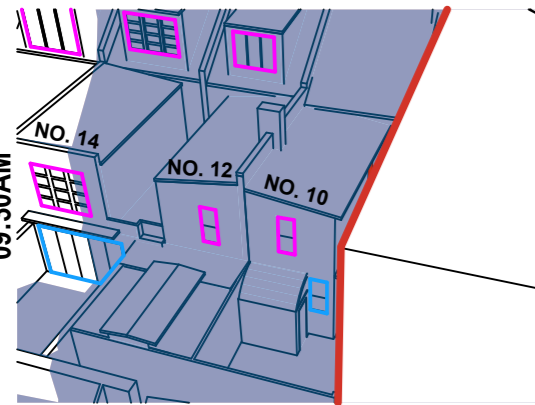
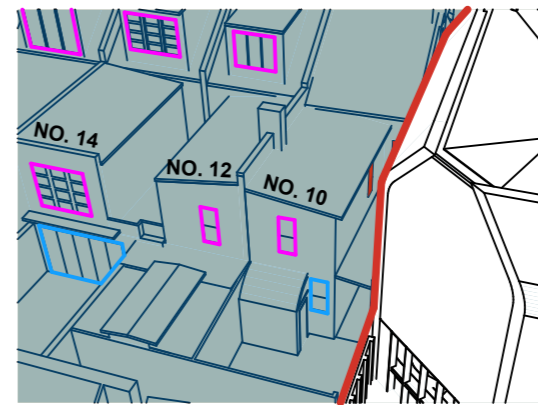
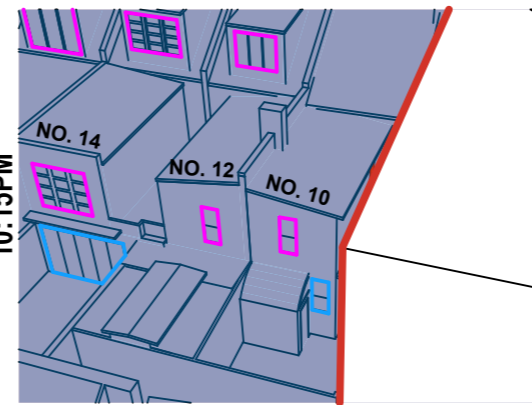
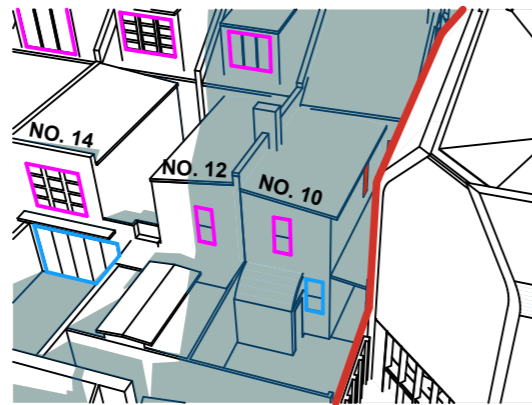
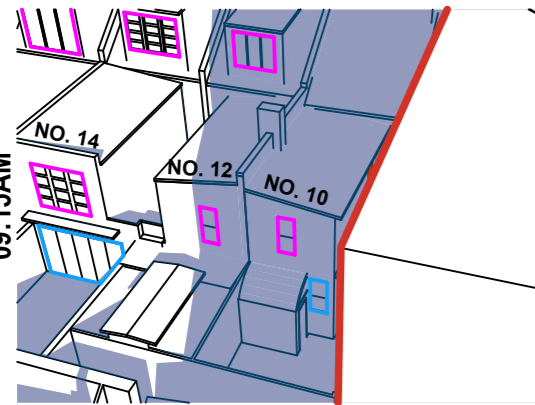
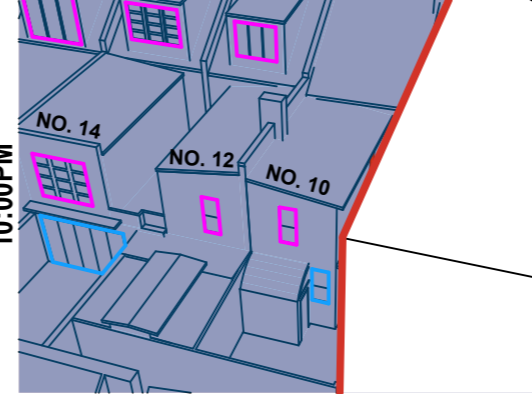
188

CURRENT PERMISSIBLE ENVELOPE






PROPOSED L.E.P MODIFIED ENVELOPE

CURRENT PERMISSIBLE ENVELOPE

PROPOSED L.E.P MODIFIED ENVELOPE



LEGEND

-  EXISTING SHADOW
-  SHADOW OF CURRENT PERMISSIBLE ENVELOPE (9M)
-  PROPOSED SHADOW
-  LIVINGROOM WINDOWS
-  BEDROOM WINDOWS

PROPOSED BUILDING ENVELOPE

1. Walls of proposed development that are above 9m are folded back to minimise shadow cast on neighbouring dwellings.
2. Rear corner of the proposed development is chamfered to significantly reduce shadow cast on neighbouring dwellings.
3. Plant enclosure (bringing proposed height from 10.24m to 12.725m) is placed at the centre of the roof and does not cast any additional shadow to neighbouring dwellings between 9am and 3pm.

NOTE: WINDOWS OF NO. 10 CALDWELL ST HIGHLIGHTED IN RED ARE NOT TO BE INCLUDED IN OVERSHADOWING ANALYSIS AS THEY ARE ALONG THE SITE SIDE BOUNDARY AND ARE NOT WINDOWS TO PRIMARY LIVING AREAS. REFER DCP 4.1.3.1 SOLAR ACCESS (5)(6)



3D SHADOW DIAGRAMS 21 JUNE 11AM-12:45PM

REAR OF NO. 10, 12 & 14 CALDWELL STREET

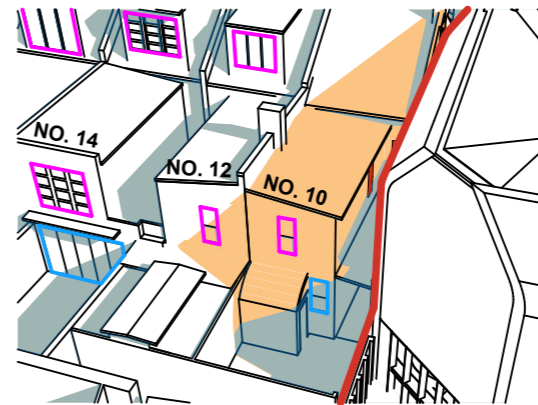
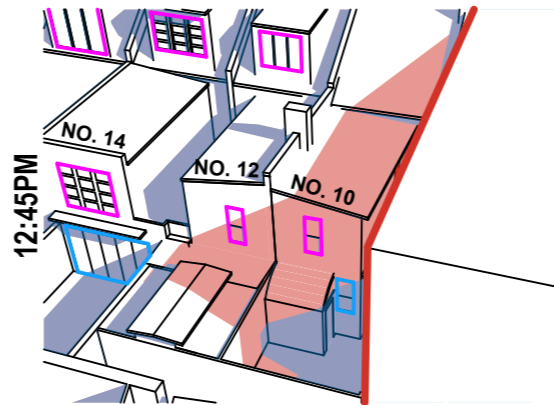
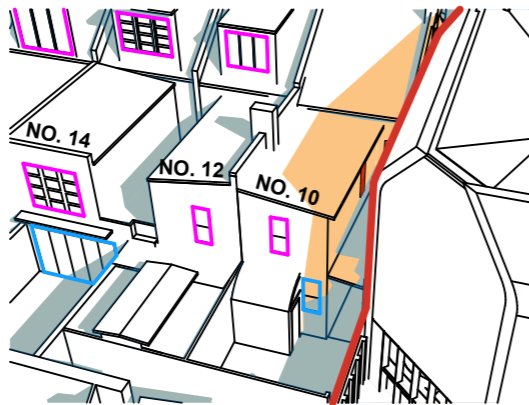
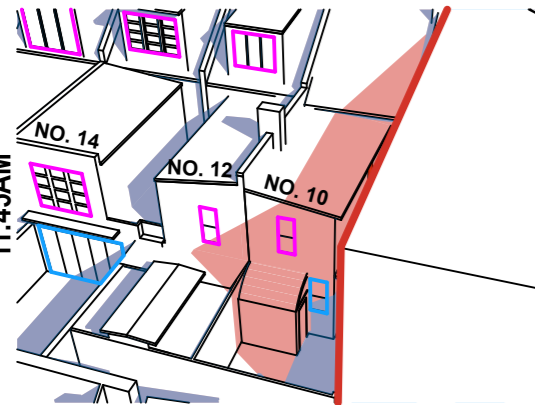
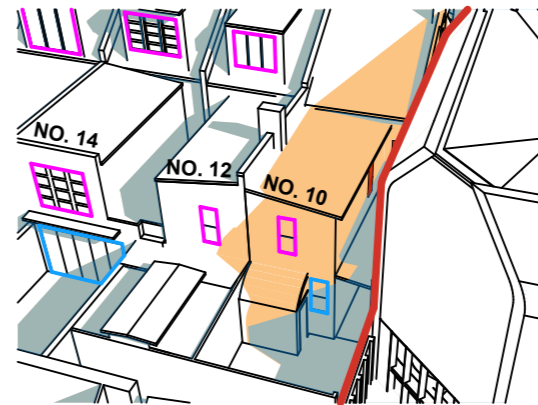
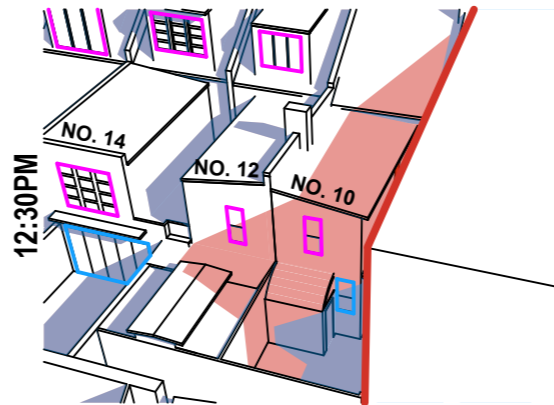
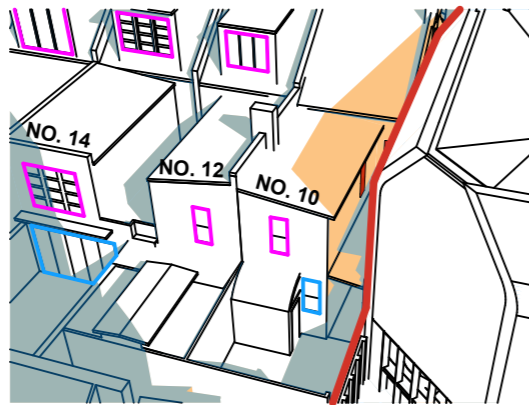
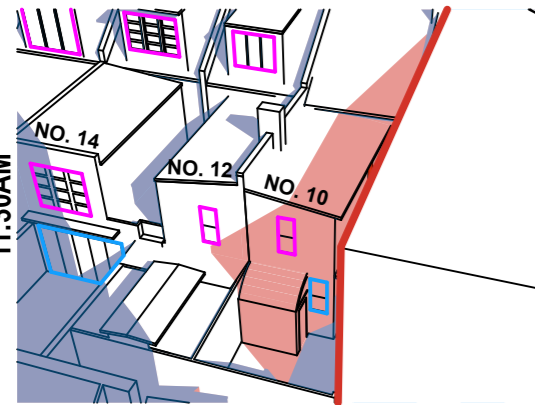
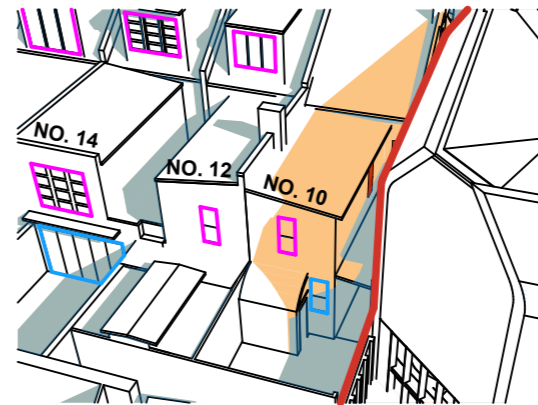
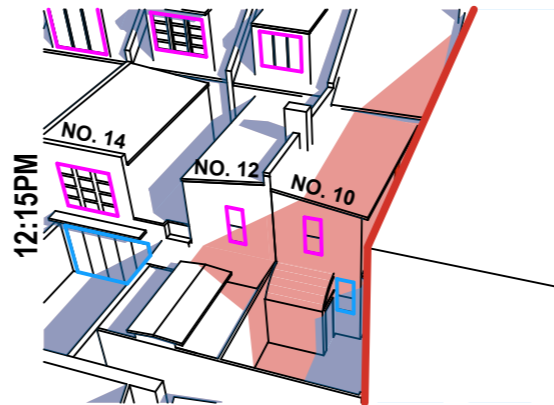
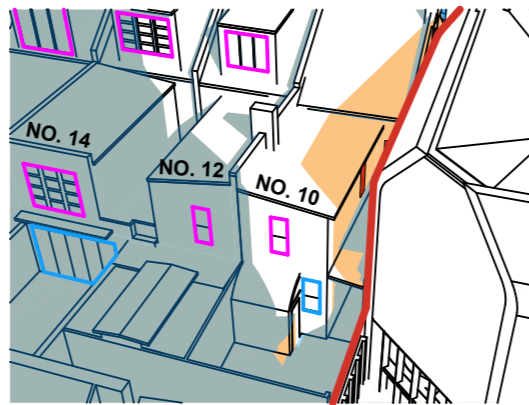
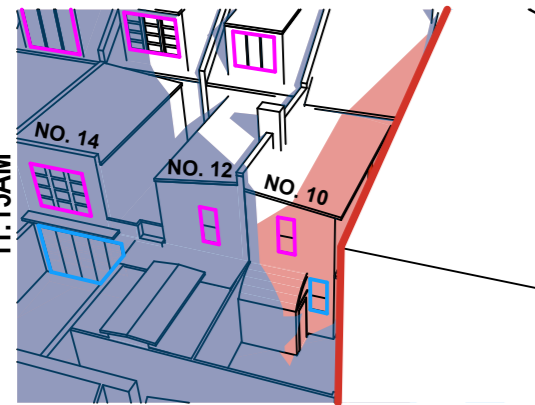
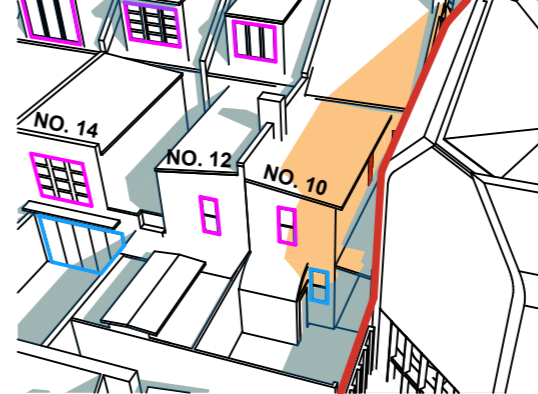
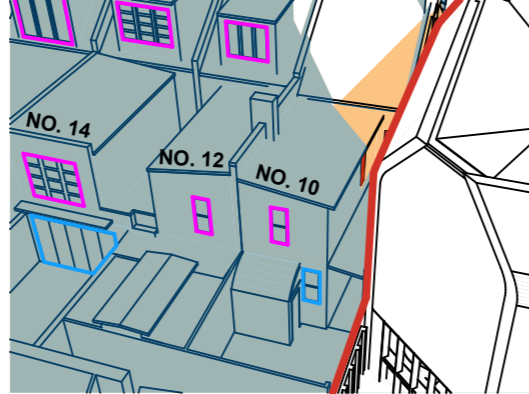
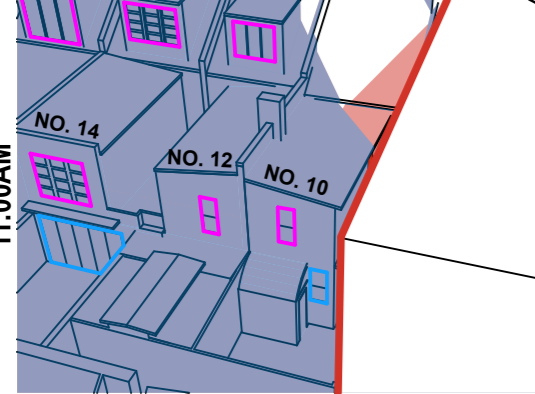
181

CURRENT PERMISSIBLE ENVELOPE






PROPOSED L.E.P MODIFIED ENVELOPE

CURRENT PERMISSIBLE ENVELOPE

PROPOSED L.E.P MODIFIED ENVELOPE



LEGEND

-  EXISTING SHADOW
-  SHADOW OF CURRENT PERMISSIBLE ENVELOPE (9M)
-  PROPOSED SHADOW
-  LIVINGROOM WINDOWS
-  BEDROOM WINDOWS

PROPOSED BUILDING ENVELOPE

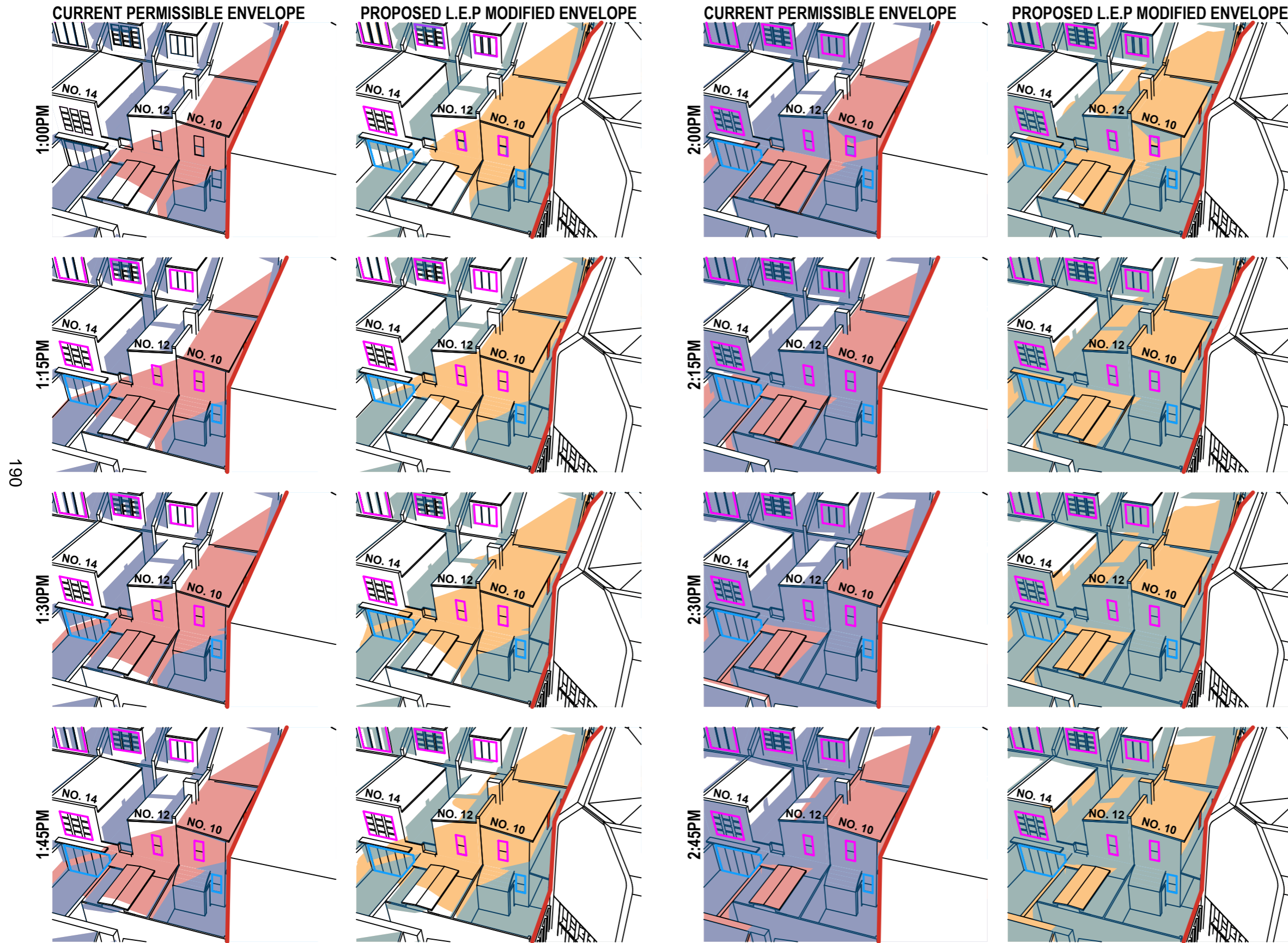
1. Walls of proposed development that are above 9m are folded back to minimise shadow cast on neighbouring dwellings.
2. Rear corner of the proposed development is chamfered to significantly reduce shadow cast on neighbouring dwellings.
3. Plant enclosure (bringing proposed height from 10.24m to 12.725m) is placed at the centre of the roof and does not cast any additional shadow to neighbouring dwellings between 9am and 3pm.

NOTE: WINDOWS OF NO. 10 CALDWELL ST HIGHLIGHTED IN RED ARE NOT TO BE INCLUDED IN OVERSHADOWING ANALYSIS AS THEY ARE ALONG THE SITE SIDE BOUNDARY AND ARE NOT WINDOWS TO PRIMARY LIVING AREAS. REFER DCP 4.1.3.1 SOLAR ACCESS (5)(6)



3D SHADOW DIAGRAMS JUNE 21 1PM-2:45PM

REAR OF NO. 10, 12 & 14 CALDWELL STREET



LEGEND

- EXISTING SHADOW
- SHADOW OF CURRENT PERMISSIBLE ENVELOPE (9M)
- PROPOSED SHADOW
- LIVINGROOM WINDOWS
- BEDROOM WINDOWS

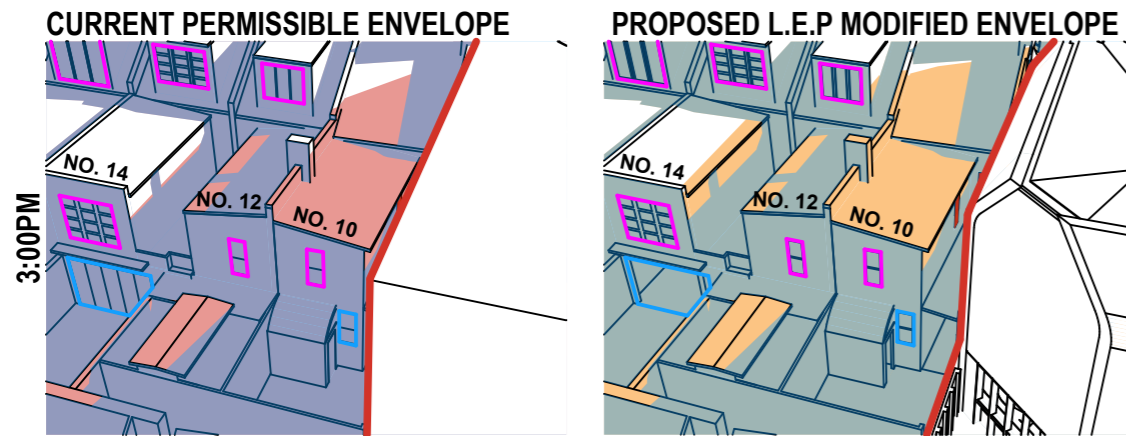
- PROPOSED BUILDING ENVELOPE**
1. Walls of proposed development that are above 9m are folded back to minimise shadow cast on neighbouring dwellings.
 2. Rear corner of the proposed development is chamfered to significantly reduce shadow cast on neighbouring dwellings.
 3. Plant enclosure (bringing proposed height from 10.24m to 12.725m) is placed at the centre of the roof and does not cast any additional shadow to neighbouring dwellings between 9am and 3pm.

NOTE: WINDOWS OF NO. 10 CALDWELL ST HIGHLIGHTED IN RED ARE NOT TO BE INCLUDED IN OVERSHADOWING ANALYSIS AS THEY ARE ALONG THE SITE SIDE BOUNDARY AND ARE NOT WINDOWS TO PRIMARY LIVING AREAS. REFER DCP 4.1.3.1 SOLAR ACCESS (5)(6)



3D SHADOW DIAGRAMS 21 JUNE 3PM

REAR OF NO. 10, 12 & 14 CALDWELL STREET



LEGEND

- EXISTING SHADOW
- SHADOW OF CURRENT PERMISSIBLE ENVELOPE (9M)
- PROPOSED SHADOW
- LIVINGROOM WINDOWS
- BEDROOM WINDOWS

PROPOSED BUILDING ENVELOPE

1. Walls of proposed development that are above 9m are folded back to minimise shadow cast on neighbouring dwellings.
2. Rear corner of the proposed development is chamfered to significantly reduce shadow cast on neighbouring dwellings.
3. Plant enclosure (bringing proposed height from 10.24m to 12.725m) is placed at the centre of the roof and does not cast any additional shadow to neighbouring dwellings between 9am and 3pm.

NOTE: WINDOWS OF NO. 10 CALDWELL ST HIGHLIGHTED IN RED ARE NOT TO BE INCLUDED IN OVERSHADOWING ANALYSIS AS THEY ARE ALONG THE SITE SIDE BOUNDARY AND ARE NOT WINDOWS TO PRIMARY LIVING AREAS. REFER DCP 4.1.3.1 SOLAR ACCESS (5)(6)

191



EYE OF THE SUN DIAGRAMS 21 JUNE 9:00-9:30AM

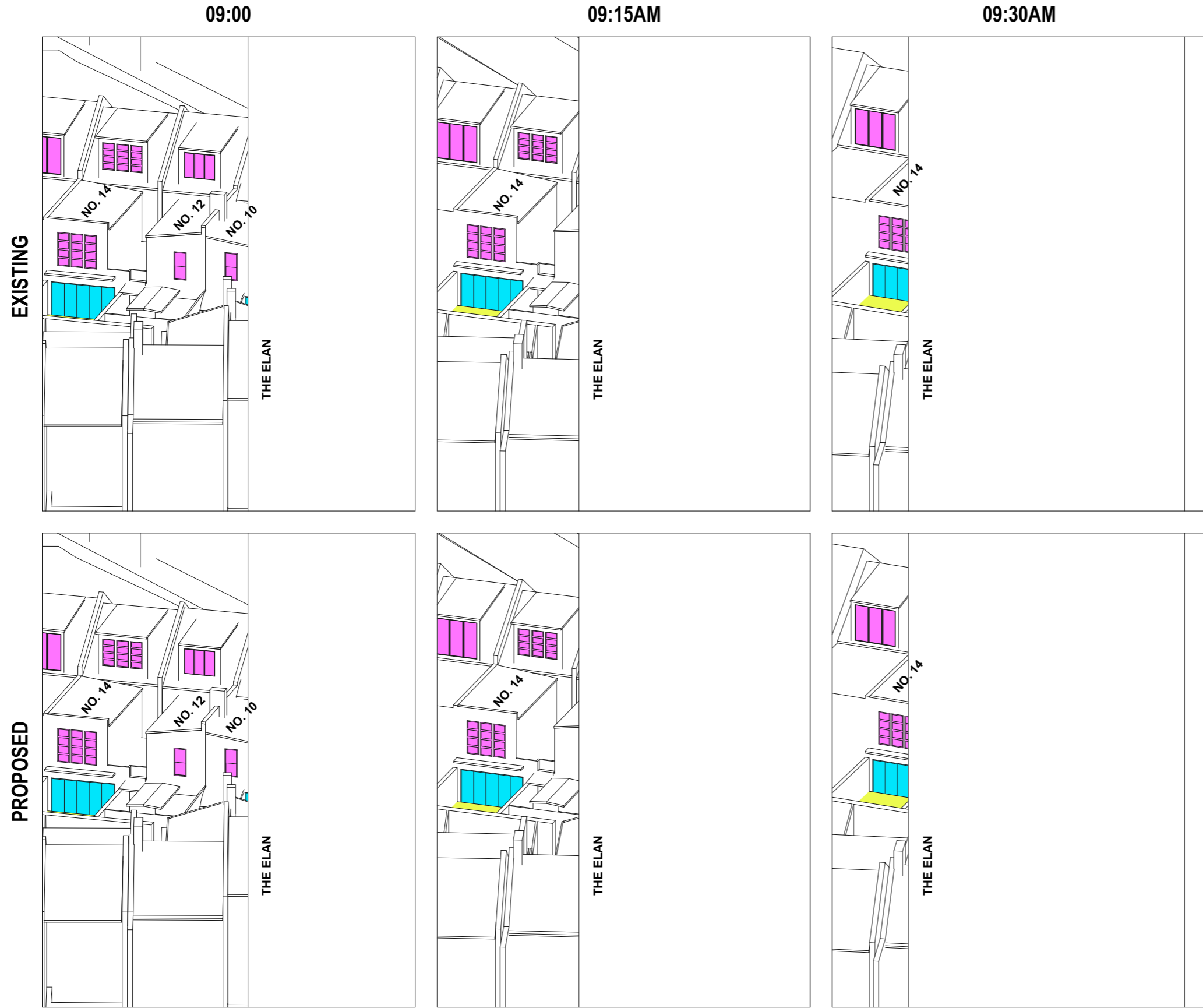
LEGEND

- BED ROOM WINDOW
- LIVING ROOM WINDOW
- PRIVATE OPEN SPACE
- COMMUNAL OPEN SPACE

PROPOSED BUILDING ENVELOPE

1. Walls of proposed development that are above 9m are folded back to minimise shadow cast on neighbouring dwellings.
2. Rear corner of the proposed development is chamfered to significantly reduce shadow cast on neighbouring dwellings.
3. Plant enclosure (bringing proposed height from 10.24m to 12.725m) is placed at the centre of the roof and does not cast any additional shadow to neighbouring dwellings between 9am and 3pm.

NOTE: WINDOWS OF NO. 10 CALDWELL ST HIGHLIGHTED IN RED ARE NOT TO BE INCLUDED IN OVERSHADOWING ANALYSIS AS THEY ARE ALONG THE SITE SIDE BOUNDARY AND ARE NOT WINDOWS TO PRIMARY LIVING AREAS. REFER DCP 4.1.3.1 SOLAR ACCESS (5)(6)



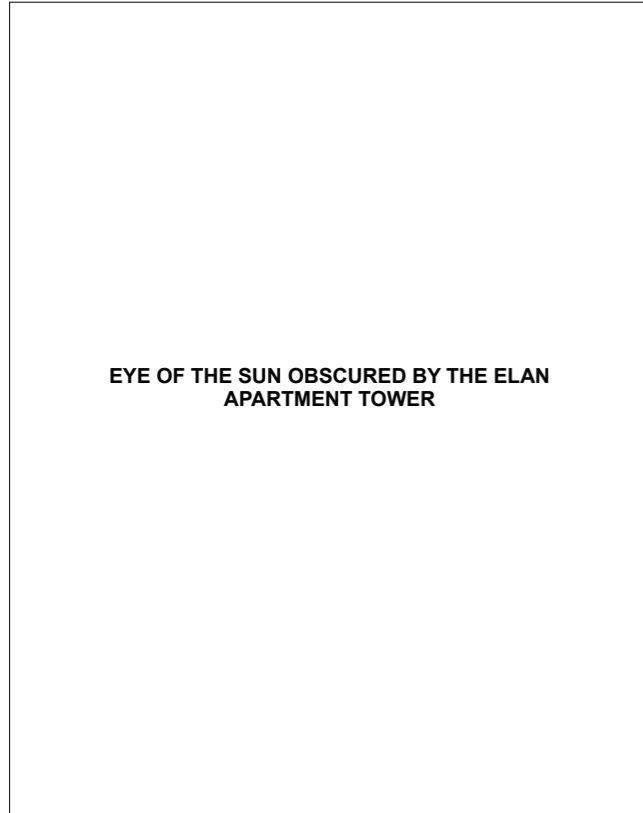
192

EYE OF THE SUN DIAGRAMS 21 JUNE 9:45-11:15

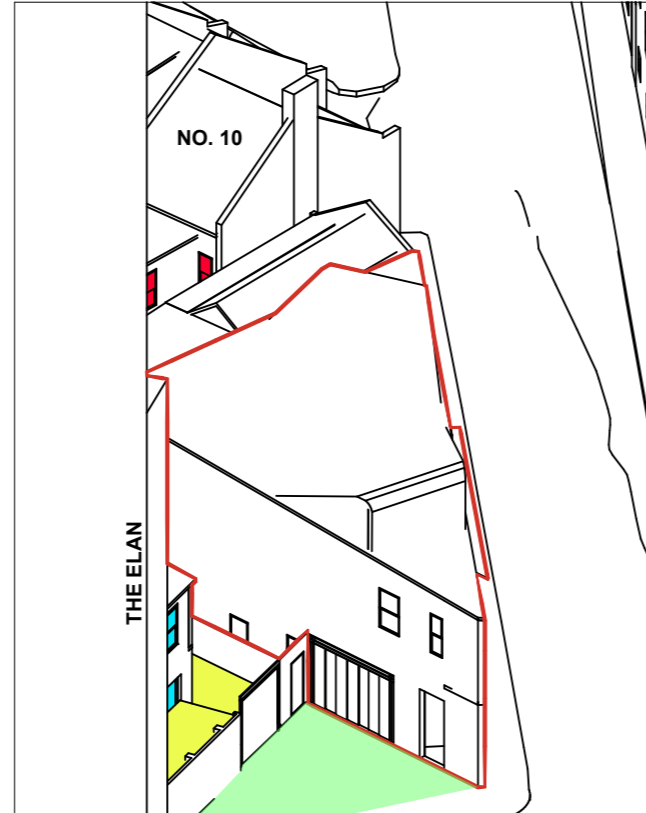
193

EXISTING

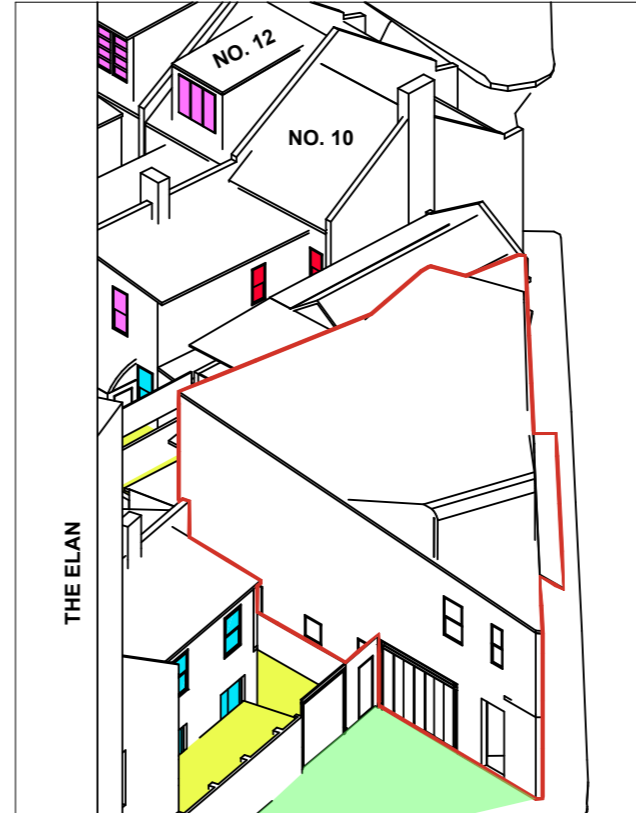
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11:00AM



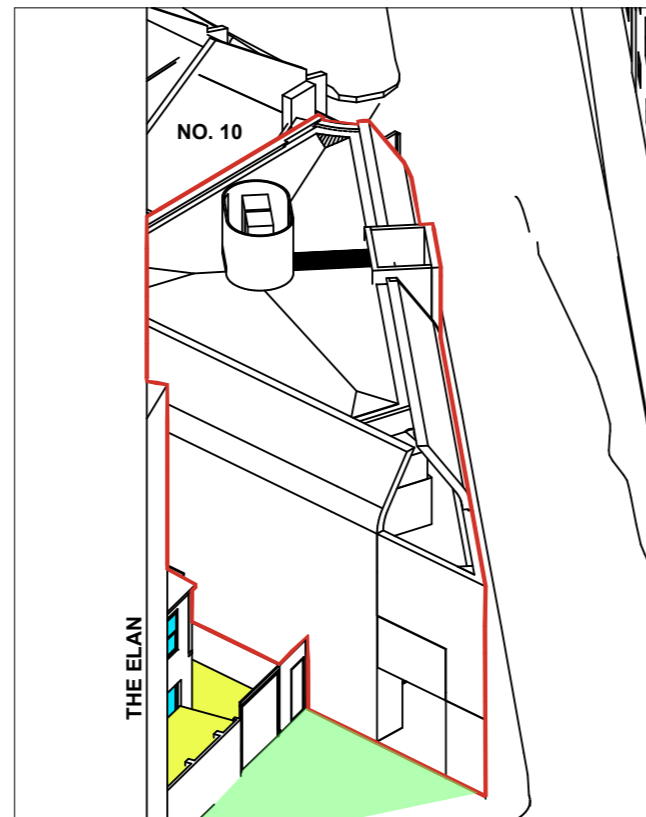
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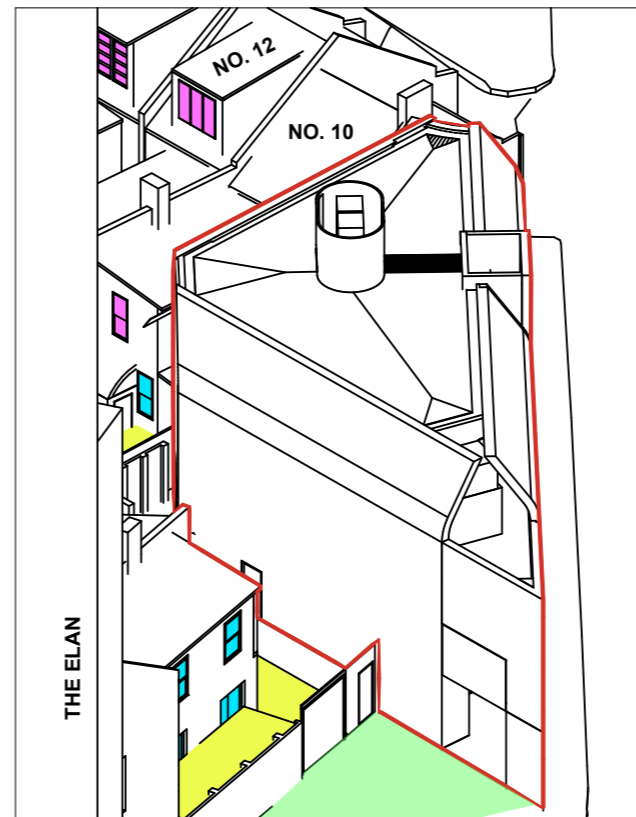
PROPOSED

EYE OF THE SUN OBSCURED BY THE ELAN APARTMENT TOWER

NO. 10



NO. 10



LEGEND

- BED ROOM WINDOW
- LIVING ROOM WINDOW
- PRIVATE OPEN SPACE
- COMMUNAL OPEN SPACE

PROPOSED BUILDING ENVELOPE

1. Walls of proposed development that are above 9m are folded back to minimise shadow cast on neighbouring dwellings.
2. Rear corner of the proposed development is chamfered to significantly reduce shadow cast on neighbouring dwellings.
3. Plant enclosure (bringing proposed height from 10.24m to 12.725m) is placed at the centre of the roof and does not cast any additional shadow to neighbouring dwellings between 9am and 3pm.

NOTE: WINDOWS OF NO. 10 CALDWELL ST HIGHLIGHTED IN RED ARE NOT TO BE INCLUDED IN OVERSHADOWING ANALYSIS AS THEY ARE ALONG THE SITE SIDE BOUNDARY AND ARE NOT WINDOWS TO PRIMARY LIVING AREAS. REFER DCP 4.1.3.1 SOLAR ACCESS (5)(6)

EYE OF THE SUN DIAGRAMS 21 JUNE 11:30AM-12:00PM

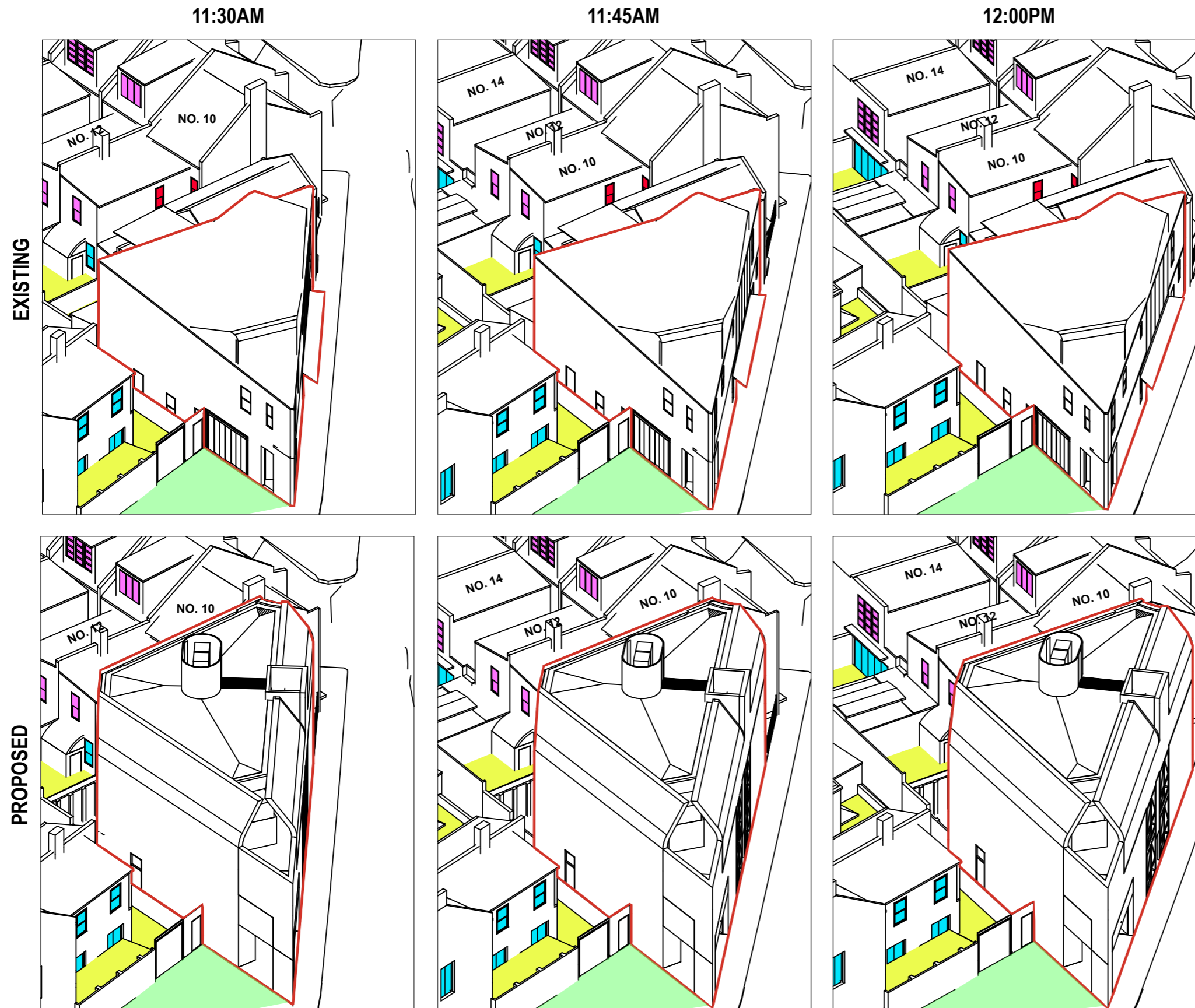
LEGEND

- BED ROOM WINDOW
- LIVING ROOM WINDOW
- PRIVATE OPEN SPACE
- COMMUNAL OPEN SPACE

PROPOSED BUILDING ENVELOPE

1. Walls of proposed development that are above 9m are folded back to minimise shadow cast on neighbouring dwellings.
2. Rear corner of the proposed development is chamfered to significantly reduce shadow cast on neighbouring dwellings.
3. Plant enclosure (bringing proposed height from 10.24m to 12.725m) is placed at the centre of the roof and does not cast any additional shadow to neighbouring dwellings between 9am and 3pm.

NOTE: WINDOWS OF NO. 10 CALDWELL ST HIGHLIGHTED IN RED ARE NOT TO BE INCLUDED IN OVERSHADOWING ANALYSIS AS THEY ARE ALONG THE SITE SIDE BOUNDARY AND ARE NOT WINDOWS TO PRIMARY LIVING AREAS. REFER DCP 4.1.3.1 SOLAR ACCESS (5)(6)



EYE OF THE SUN DIAGRAMS 21 JUNE 12:15AM-1:00PM

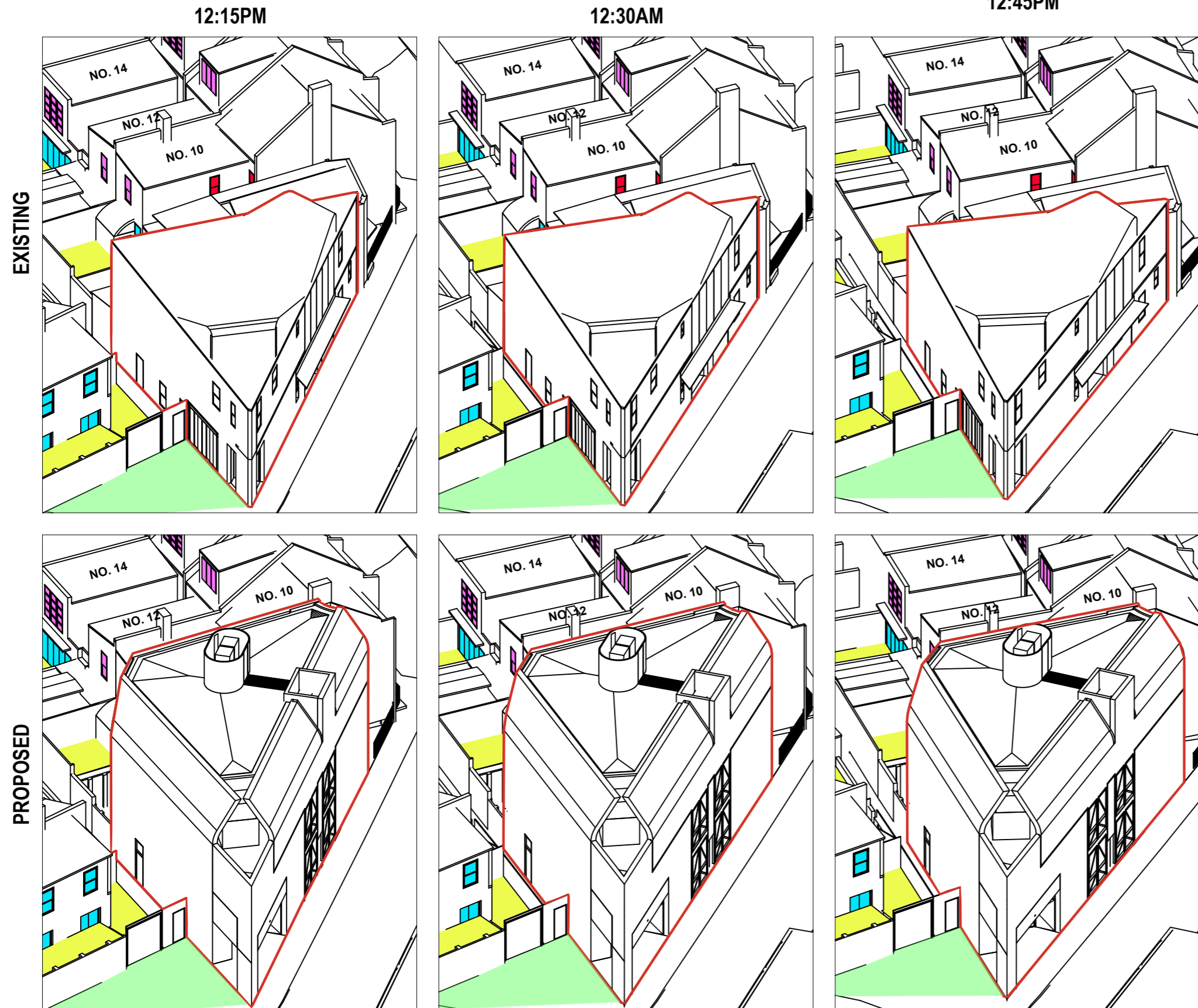
LEGEND

- BED ROOM WINDOW
- LIVING ROOM WINDOW
- PRIVATE OPEN SPACE
- COMMUNAL OPEN SPACE

PROPOSED BUILDING ENVELOPE

1. Walls of proposed development that are above 9m are folded back to minimise shadow cast on neighbouring dwellings.
2. Rear corner of the proposed development is chamfered to significantly reduce shadow cast on neighbouring dwellings.
3. Plant enclosure (bringing proposed height from 10.24m to 12.725m) is placed at the centre of the roof and does not cast any additional shadow to neighbouring dwellings between 9am and 3pm.

NOTE: WINDOWS OF NO. 10 CALDWELL ST HIGHLIGHTED IN RED ARE NOT TO BE INCLUDED IN OVERSHADOWING ANALYSIS AS THEY ARE ALONG THE SITE SIDE BOUNDARY AND ARE NOT WINDOWS TO PRIMARY LIVING AREAS. REFER DCP 4.1.3.1 SOLAR ACCESS (5)(6)



EXISTING

PROPOSED

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EYE OF THE SUN DIAGRAMS 21 JUNE 1:00PM-1:30PM

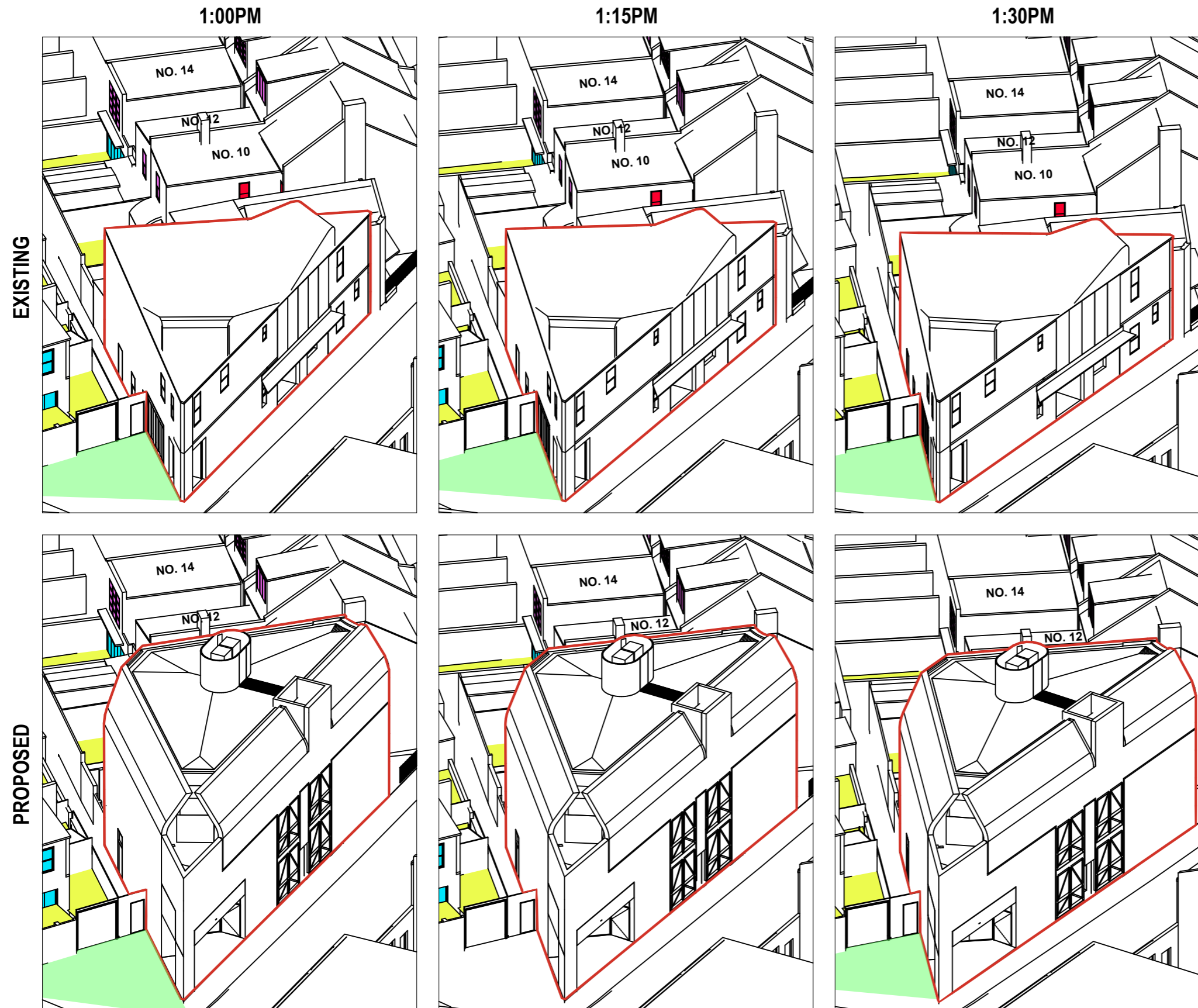
LEGEND

- BED ROOM WINDOW
- LIVING ROOM WINDOW
- PRIVATE OPEN SPACE
- COMMUNAL OPEN SPACE

PROPOSED BUILDING ENVELOPE

1. Walls of proposed development that are above 9m are folded back to minimise shadow cast on neighbouring dwellings.
2. Rear corner of the proposed development is chamfered to significantly reduce shadow cast on neighbouring dwellings.
3. Plant enclosure (bringing proposed height from 10.24m to 12.725m) is placed at the centre of the roof and does not cast any additional shadow to neighbouring dwellings between 9am and 3pm.

NOTE: WINDOWS OF NO. 10 CALDWELL ST HIGHLIGHTED IN RED ARE NOT TO BE INCLUDED IN OVERSHADOWING ANALYSIS AS THEY ARE ALONG THE SITE SIDE BOUNDARY AND ARE NOT WINDOWS TO PRIMARY LIVING AREAS. REFER DCP 4.1.3.1 SOLAR ACCESS (5)(6)



EYE OF THE SUN DIAGRAMS 21 JUNE 1:45PM-2:15PM

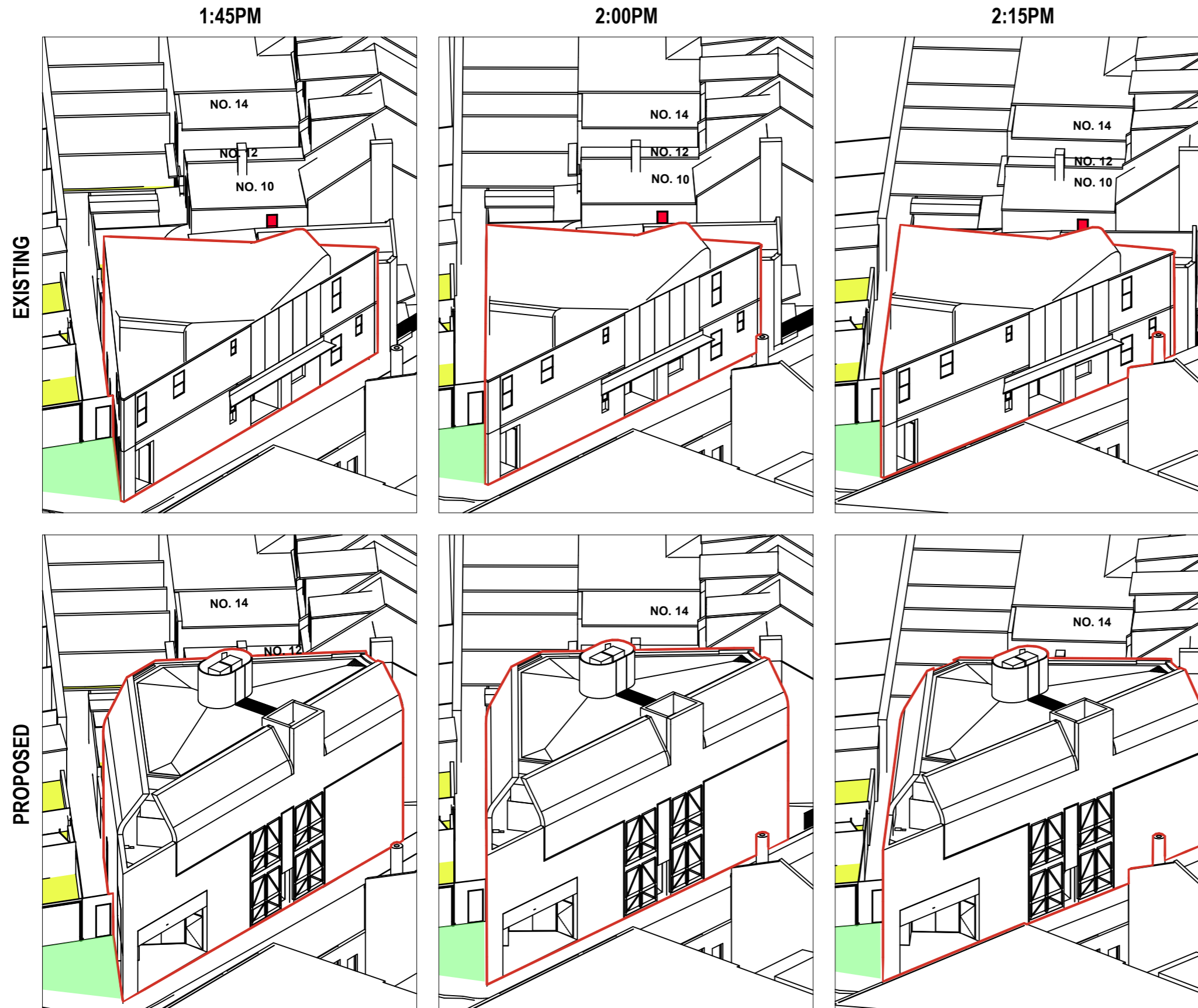
LEGEND

- BED ROOM WINDOW
- LIVING ROOM WINDOW
- PRIVATE OPEN SPACE
- COMMUNAL OPEN SPACE

PROPOSED BUILDING ENVELOPE

1. Walls of proposed development that are above 9m are folded back to minimise shadow cast on neighbouring dwellings.
2. Rear corner of the proposed development is chamfered to significantly reduce shadow cast on neighbouring dwellings.
3. Plant enclosure (bringing proposed height from 10.24m to 12.725m) is placed at the centre of the roof and does not cast any additional shadow to neighbouring dwellings between 9am and 3pm.

NOTE: WINDOWS OF NO. 10 CALDWELL ST HIGHLIGHTED IN RED ARE NOT TO BE INCLUDED IN OVERSHADOWING ANALYSIS AS THEY ARE ALONG THE SITE SIDE BOUNDARY AND ARE NOT WINDOWS TO PRIMARY LIVING AREAS. REFER DCP 4.1.3.1 SOLAR ACCESS (5)(6)



EXISTING

PROPOSED

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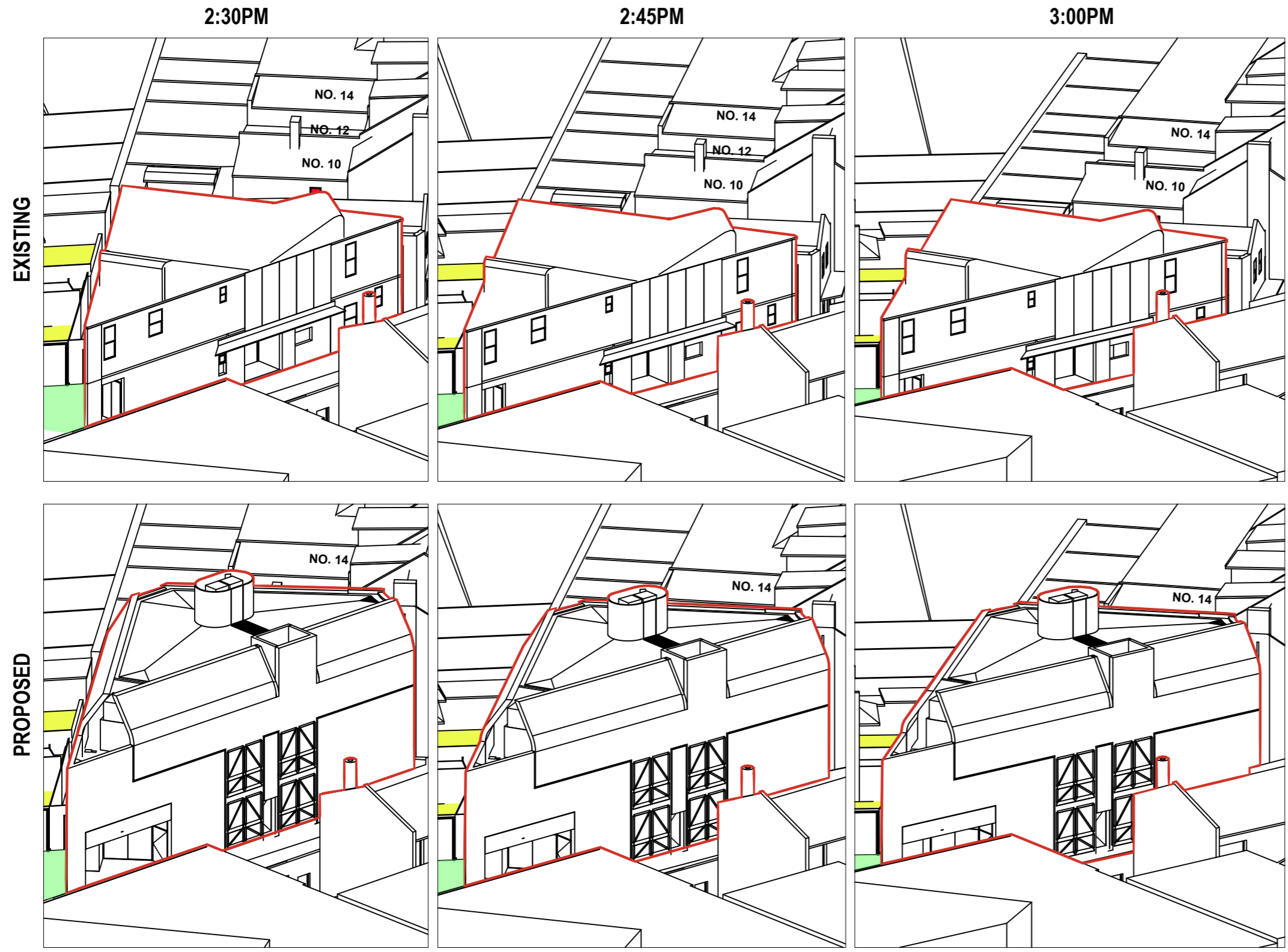
EYE OF THE SUN DIAGRAMS 21 JUNE 2:30PM-3:00PM

LEGEND

- BED ROOM WINDOW
- LIVING ROOM WINDOW
- PRIVATE OPEN SPACE
- COMMUNAL OPEN SPACE

- PROPOSED BUILDING ENVELOPE**
1. Walls of proposed development that are above 9m are folded back to minimise shadow cast on neighbouring dwellings.
 2. Rear corner of the proposed development is chamfered to significantly reduce shadow cast on neighbouring dwellings.
 3. Plant enclosure (bringing proposed height from 10.24m to 12.725m) is placed at the centre of the roof and does not cast any additional shadow to neighbouring dwellings between 9am and 3pm.

NOTE: WINDOWS OF NO. 10 CALDWELL ST HIGHLIGHTED IN RED ARE NOT TO BE INCLUDED IN OVERSHADOWING ANALYSIS AS THEY ARE ALONG THE SITE SIDE BOUNDARY AND ARE NOT WINDOWS TO PRIMARY LIVING AREAS. REFER DCP 4.1.3.1 SOLAR ACCESS (5)(6)



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