

Pymont Over Station Development

Appendix C Solar Analysis Report

August 2024

sydneymetro.info



Engineering Design &
Assurance Technical Partner



SOLAR ANALYSIS REPORT



Sydney
Metro
West

PYRMONT
OVER STATION
DEVELOPMENT

Solar Analysis Report

LIMITATION

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REVISION	DATE	DOCUMENT	CONTET CHECK	TECHNICAL REVIEW
A	30-08-2021	Solar Analysis Report	Awkar Ruel	Ross Seymour

Sydney Metro West

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01. REQUEST FOR INFORMATION

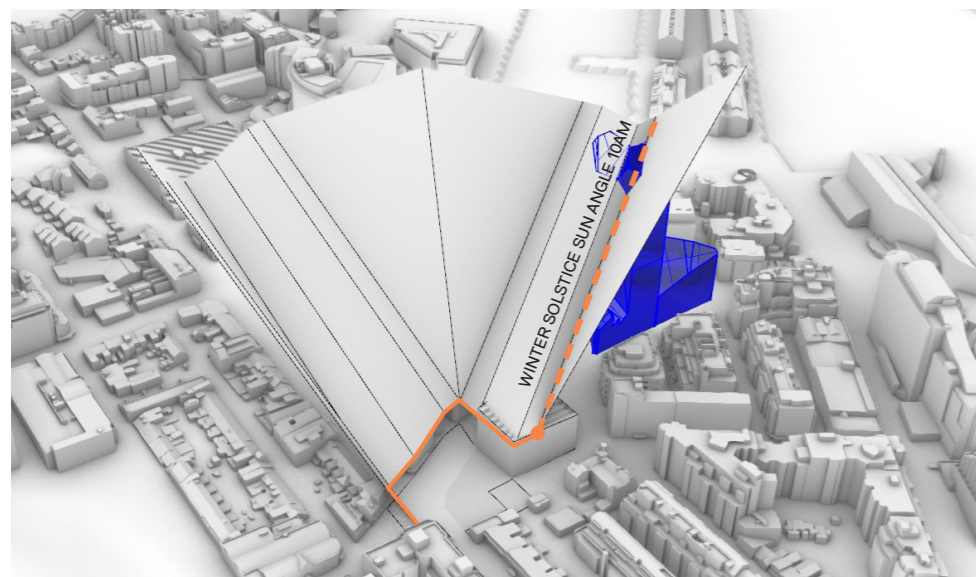
Sydney Metro lodged a Concept State Significant Development Application for over station development at Pyrmont Station in March 2024. The EIS for the Concept SSDA was placed on public exhibition between 12 March 2024 and 8 April 2024.

This Solar Analysis Sketchbook responds to specific matters raised by the Department of Planning, Housing and Infrastructure (DPHI) in their Request for Additional Information on the EIS dated 19 April 2024.

1. Prepare and submit a 3D CAD model of Elizabeth Healey Sun Access Plane and the proposed in consultation with Council to confirm compliance with the Sun Access Plane control.

The 3D model demonstrates that the envelope complies with the solar access plane and does not cast any additional shadows onto Elizabeth Healey Reserve. However, the proposed envelope does impeded the solar plane at point A1 during Winter solstice at 10am. In spite of this, the envelope doesn't impact the Reserve due to existing the shadows casted by the Woolshed building (137 Pyrmont Street).

Elizabeth Healey Sun Access Plane
Based on Pyrmont Peninsula Place Strategy Urban Design Report Vol.3 issued in 29 June 2022

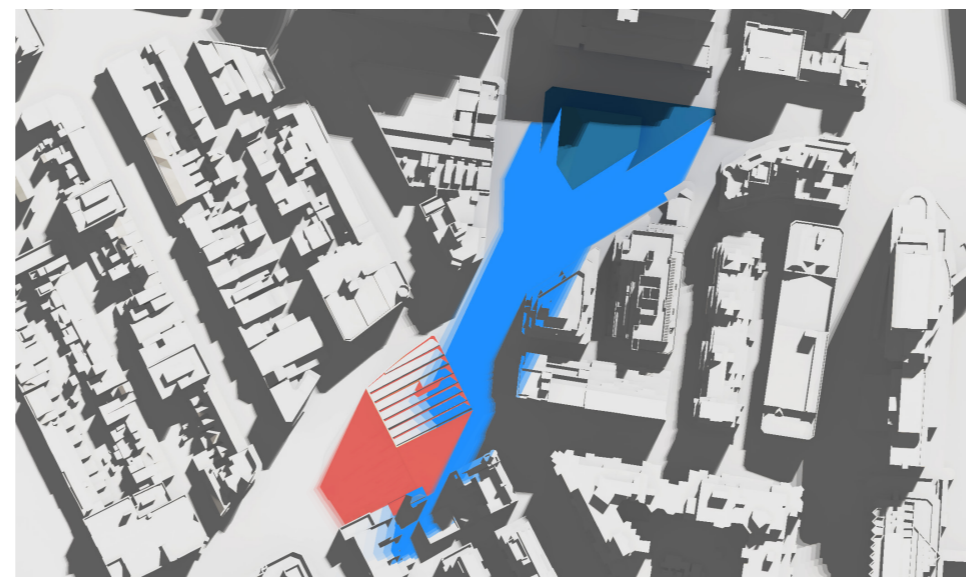


Elizabeth Healey Reserve sun access plane and proposed envelope in blue

2. Submit additional diagrams and sections illustrating the Sun Access Plane and its interaction with the proposal and existing buildings between the site and the Reserve, particularly 137 Pyrmont Street.

Detailed shadow diagrams at 5-minute intervals during the winter solstice between 10am and 10:20am highlights the impact of the envelope on the surrounding building particularly 137 Pyrmont Street and the Reserve. Noting that 137 Pyrmont Street is a commercial building and thus doesn't require solar and daylight access assessment under neither the Sydney Development Control Plan 2012 or Apartment Design Guide.

EXISTING SHADOW EXISTING SHADOWS FROM 137 PYRMONT STREET BUILDING ADDITIONAL OVERSHADOWING FROM PROPOSED ENVELOPE



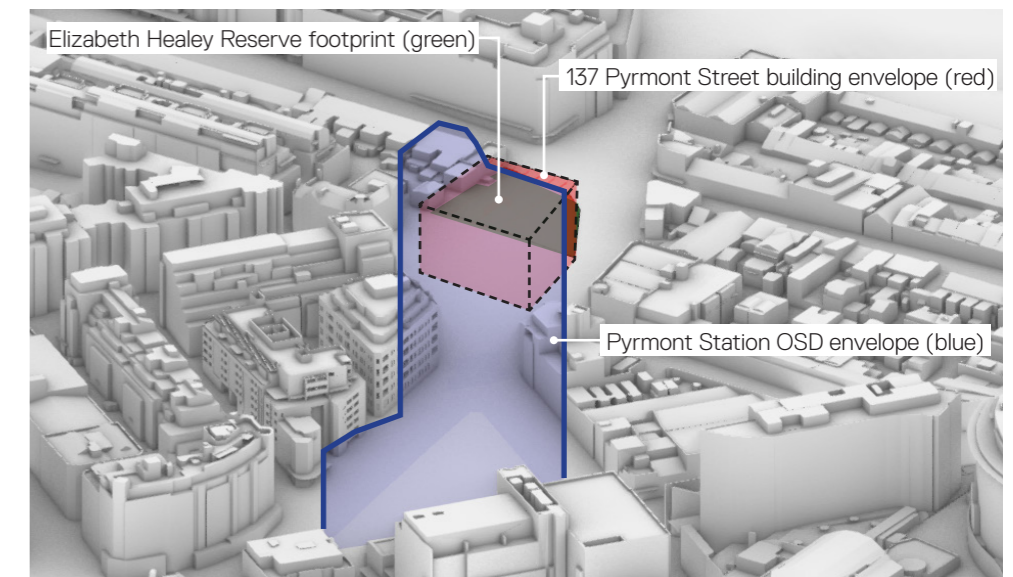
Shadow Diagrams - Winter Solstice from 10:00-10:20 am

3. Provide additional shadow diagrams showing the full extent of Elizabeth Healey Reserve and illustrating:

- The proposal's overshadowing impacts at 5-minute intervals at mid-winter between 10am and 10:20am.
- The boundaries of the Reserve.
- Sun's eye views with the boundaries of the Reserve showing.

The full extent of Elizabeth Healey Reserve has been based on the diagrams shown in Pyrmont Peninsula Place Strategy Urban Design Report Vol.3 issued in 29 June 2022.

The Elizabeth Healey Reserve footprint has been nominally indicated on the shadow diagrams within this document. The proposed envelope doesn't cast any additional shadows on the Reserve in the prescribed times

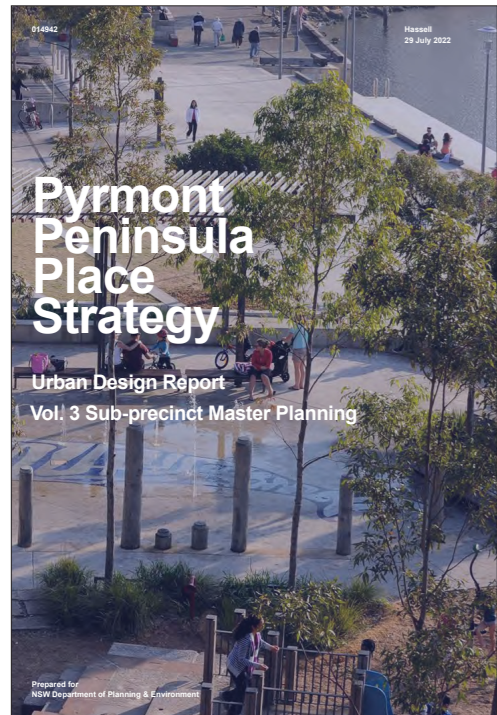


View from Sun - Winter Solstice - 10:00 am

02. PYRMONT PENINSULA PLACE STRATEGY

Solar Access to Elizabeth Healey Reserve

For the purpose of this study the full extent of Elizabeth Healey Reserve and the sun access plane has been based on the information provided in *Pyrmont Peninsula Place Strategy Urban Design Report Vol.3* issued in 29 June 2022.



Pyrmont Peninsula Place Strategy. Urban Design Report Vol.3

Elizabeth Healey Reserve

Proposed SAP Control

Type	Sun Access Plane
Intended Period of Protection	10am - 2pm, all year
Primary Plane Date	21 June
Primary Plane Time	10, 12, 14.00
Legal description	Area
1/DP173041	683.05 m ²
1/DP1010011	361.99 m ²
n/a*	107.4 m ²
n/a**	284.65 m ²

Notes:

Existing local park and road reserve to be converted to park

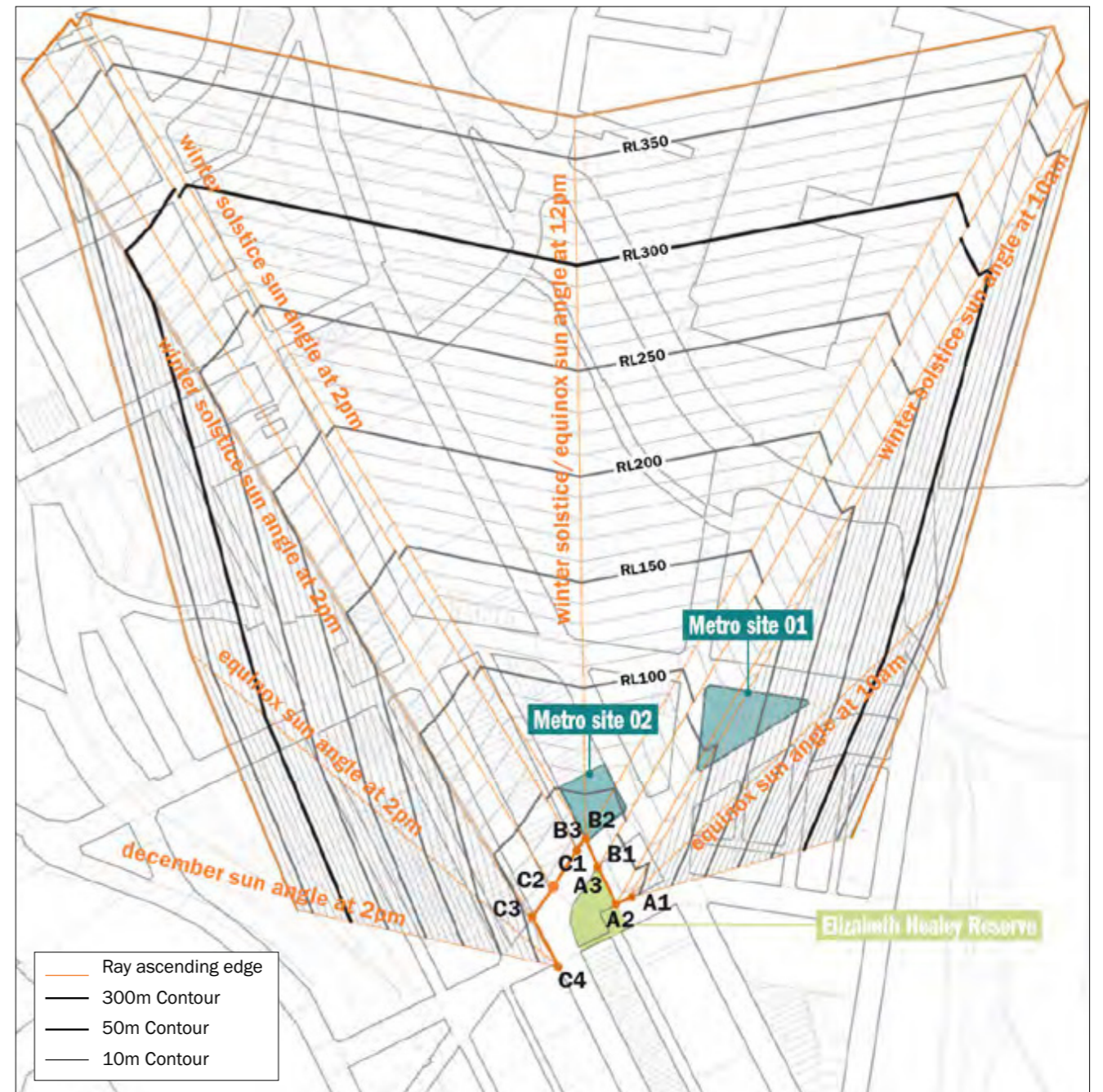
*existing outdoor seating area

** existing road reserve converted to park

Boundary ref:	MGA 56 Coordinates		Estimated natural ground level	Associated HOB control
	Easting	Northing		
A1	333102.8	6250654.2	17.5	22
A2	333091.6	6250648.7	16	22
A3	333077.9	6250675.5	14.5	22
B1	333077.9	6250675.5	14.5	15
B2	333071.6	6250696.4	14.5	15
B3	333062.7	6250688.2	14	15
C1	333062.7	6250688.2	14	12
C2	333044.7	6250660.6	13	12
C3	333029.5	6250639.2	12.5	12
C4	333045.6	6250603.6	13.5	12

Based upon DPE cadaster and City of Sydney 1m contour model. All to be confirmed by survey.

Solar Protection Rays				
Date	Time	Sun Location		
		Azimuth	Altitude	
Summer Solstice - 22 Dec	10am	74.55°	63.21°	
Autumn Equinox - 21 Mar	10am	46.60°	45.48°	
Winter Solstice - 21 June	10am	29.98°	26.34°	
Winter Solstice - 21 June	12pm	359.16°	32.72°	
Winter Solstice - 21 June	2pm	328.63°	25.69°	
Spring Equinox - 23 Sept	2pm	310.49°	44.16°	
Summer Solstice - 22 Dec	2pm	282.25°	60.44°	



Elizabeth Healey Reserve sun access plane (Hassell)

03. ELIZABETH HEALEY RESERVE EXTENT



Figure 1 SIX Maps Aerial Imagery overlapped with CADASTRAL

04. PROPOSED BUILDING ENVELOPE

There were two solar analysis planes that were considered in the formation of the proposed building envelope. The first relating to overshadowing of the nearby public open space know as Elizabeth Healey Reserve, whilst the second aligned to the provisions to minimise overshadowing to neighbouring apartments in compliance with the Apartment Design Guide (ADG).

1. No Additional Overshadowing Plane

Consistent with the guidance within the Pymont Peninsula Design Guidelines, the proposed building envelope ensures no additional overshadowing is created to Elizabeth Healey Reserve.

A solar access plane is cast to Elizabeth Healey Reserve on June 21st (mid-winter) between 10am - 2pm, which is then informs the sculpting of the proposed building envelope to ensure no overshadowing, refer to Figure 1.

2. Minimise Overshadowing of Neighboring Apartments

An additional solar access plane has been applied to the proposed building envelope. This enables a selection of apartments to retain solar access on the north facade of buildings located at 21 Pymont Bridge Rd and 1-5 Harwood St. These solar access planes ensure that the building envelope allows for a minimum of 2hrs of solar access on the 21st of June, as shown in Figure 3.

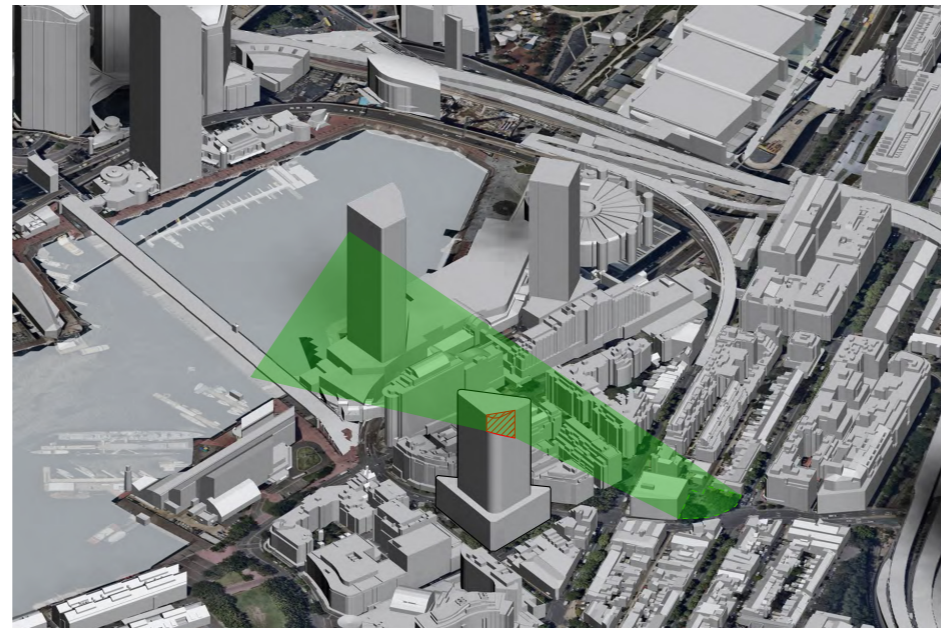


Figure 1 Elizabeth Healey Reserve

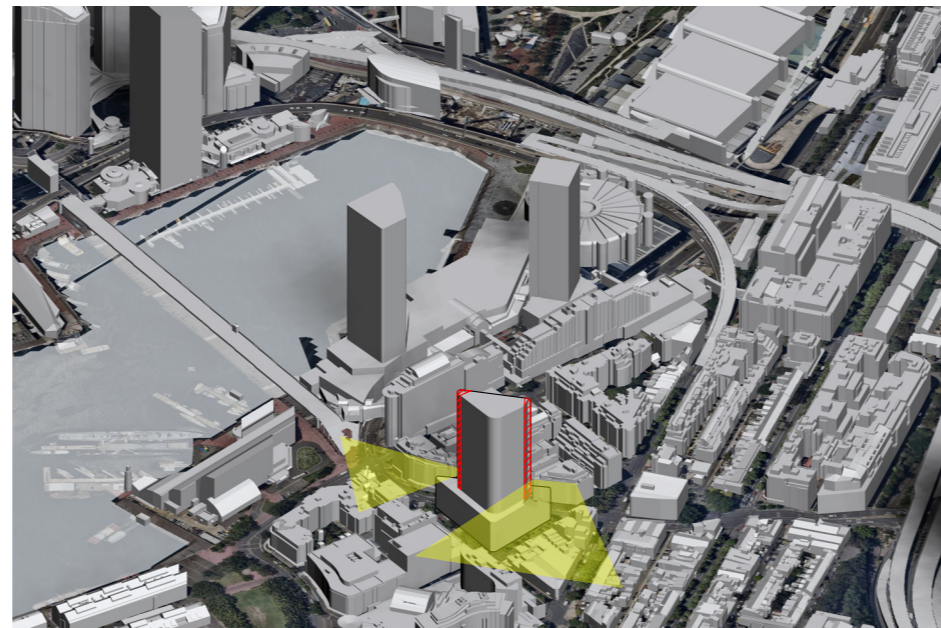


Figure 3 1 Pymont Bridge Rd & 1-5 Harwood St

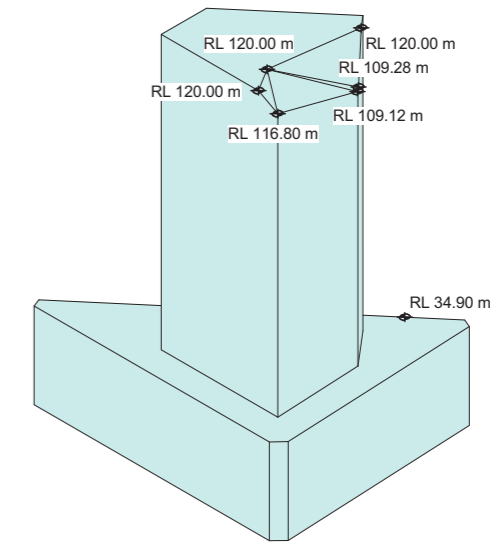


Figure 2 Proposed Envelope

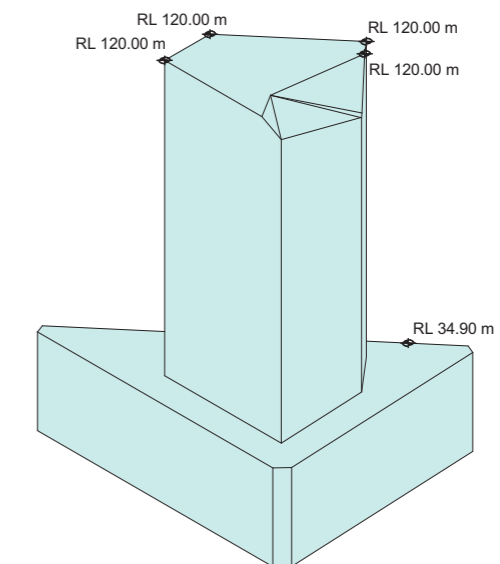


Figure 4 Proposed Envelope

05. ELIZABETH HEALEY RESERVE SHADOW IMPACT

The following section provides overshadowing diagrams at 5 minute intervals at mid-winter between 10 am and 10:20 am with the full extent of the Elizabeth Healey Reserve as defined by the Pymont Peninsula Place Strategy.

It also provides diagrams showing the sun's eye view during these 5 min intervals with the boundaries of the proposed building envelope and the Elizabeth Healey Reserve as well as, any existing buildings specifically 137 Pymont Street

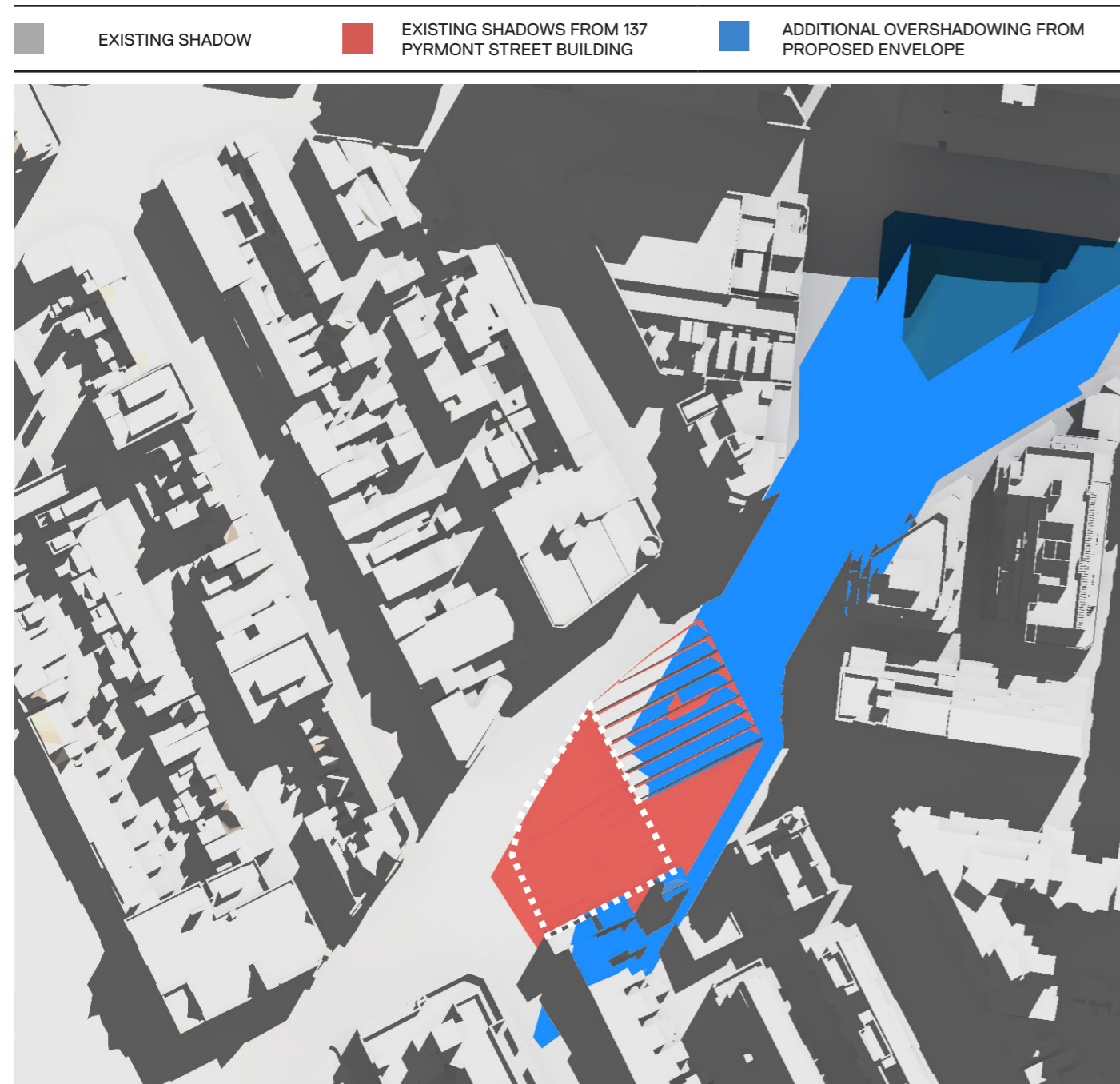


Figure 5 Elizabeth Healey Reserve Shadow Diagram - Winter Solstice - 10:00 am



Figure 6 View from Sun - Winter Solstice - 10:00 am

05. ELIZABETH HEALEY RESERVE SHADOW IMPACT

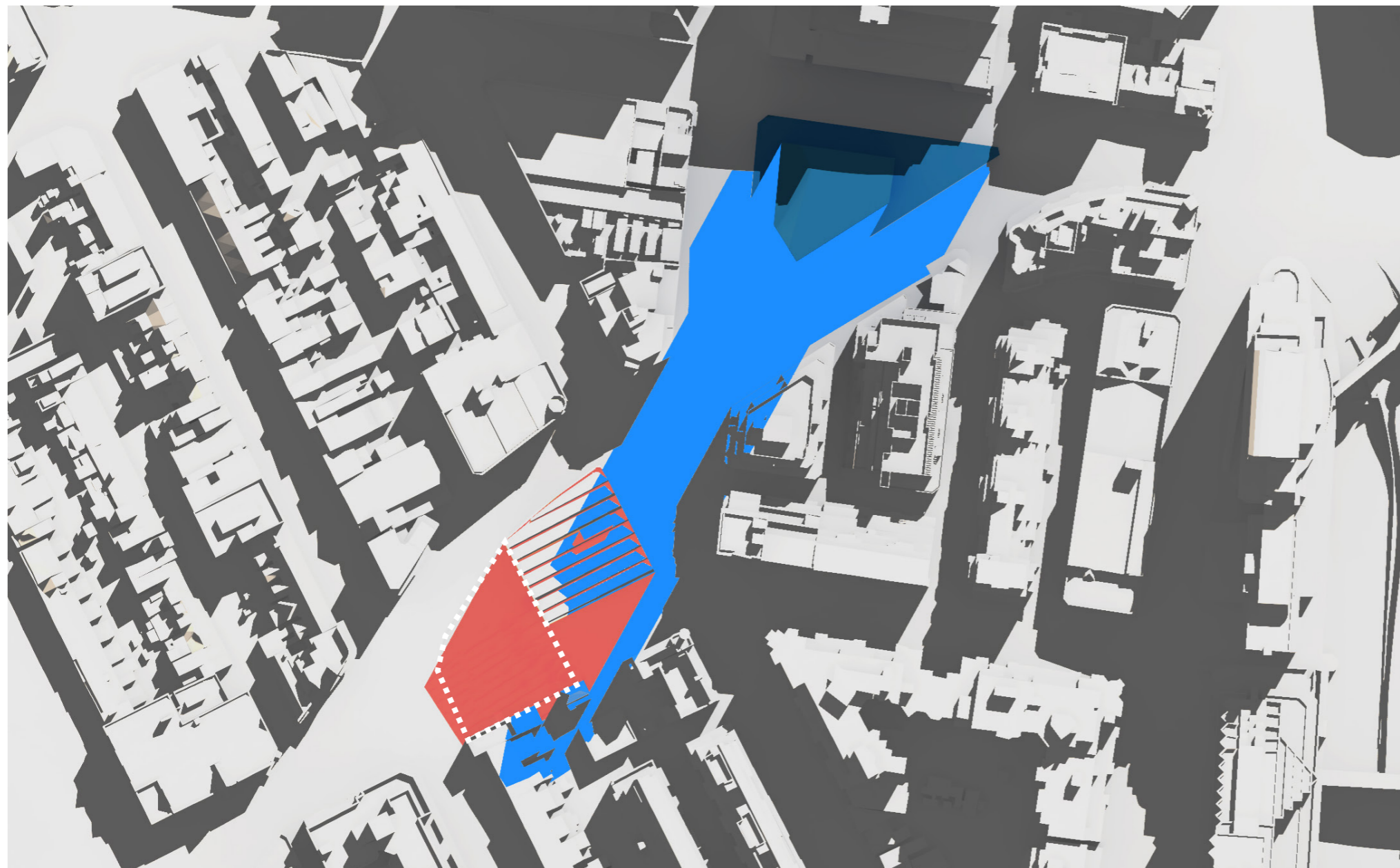


Figure 7 Elizabeth Healey Reserve Shadow Diagram - Winter Solstice - 10:05 am

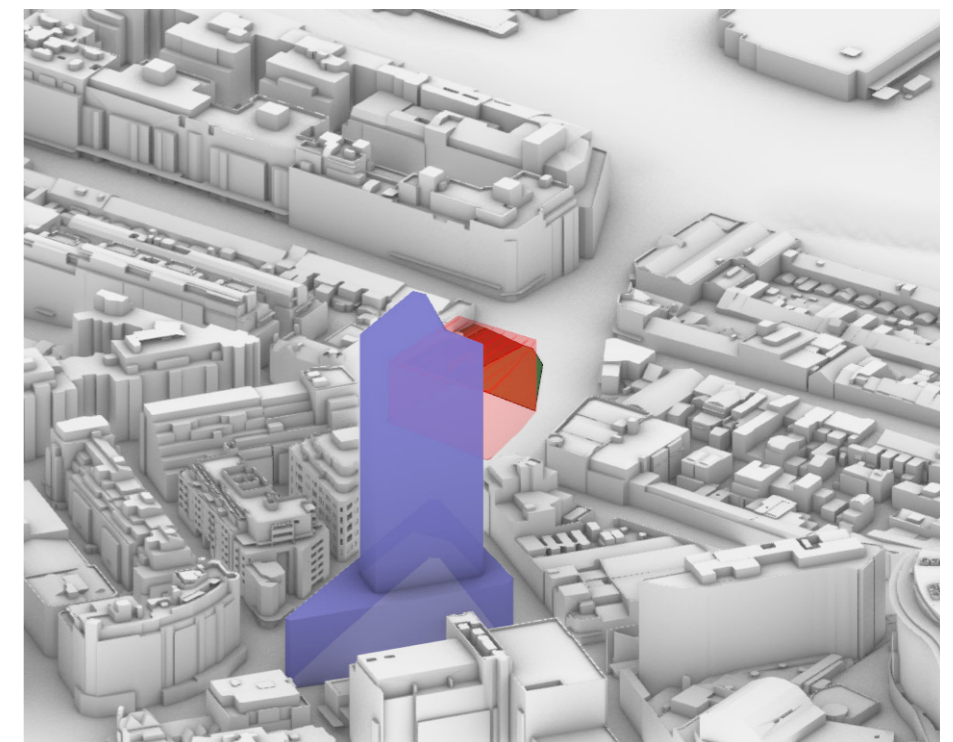


Figure 8 View from Sun - Winter Solstice - 10:05 am

05. ELIZABETH HEALEY RESERVE SHADOW IMPACT

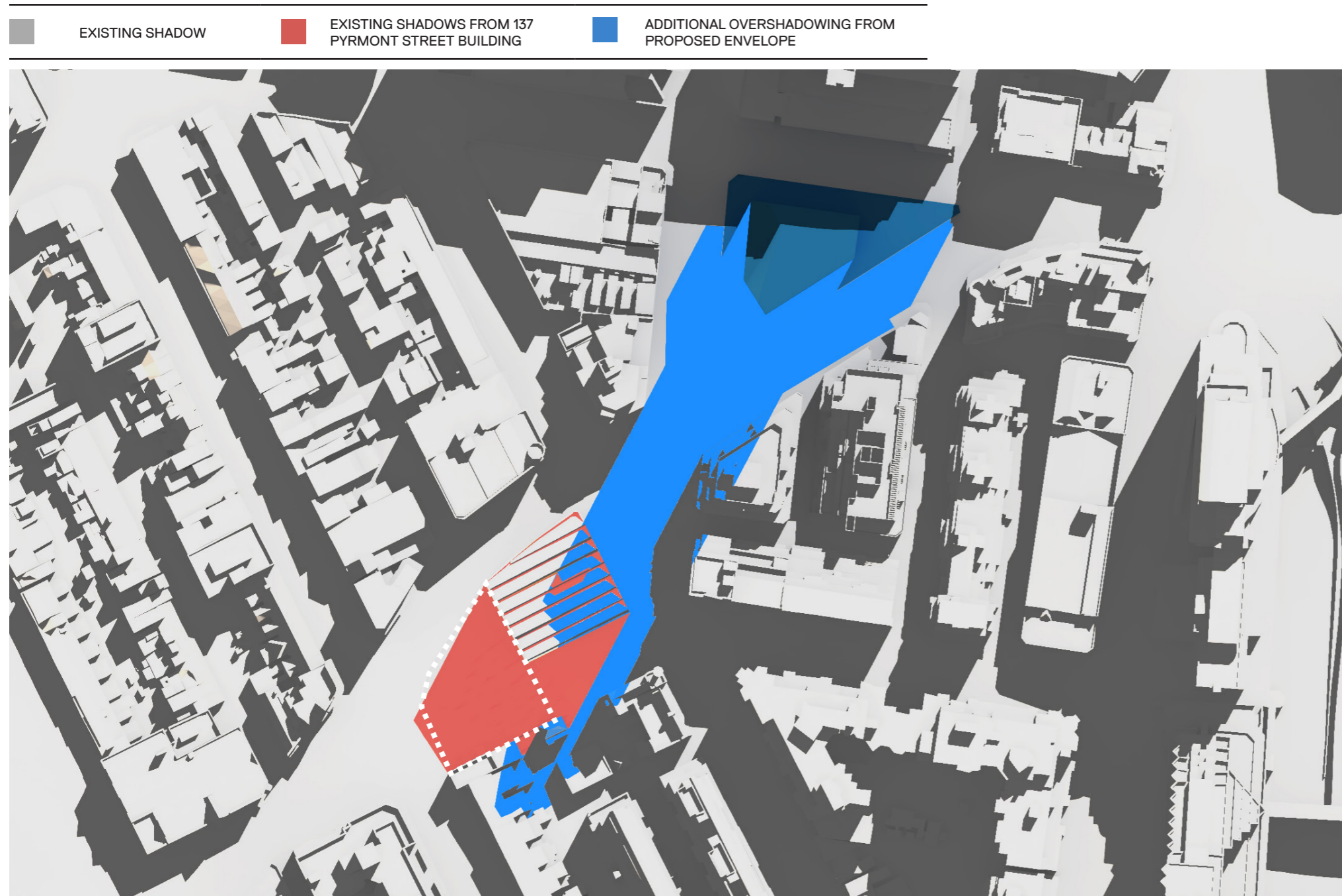


Figure 9 Elizabeth Healey Reserve Shadow Diagram - Winter Solstice - 10:10 am

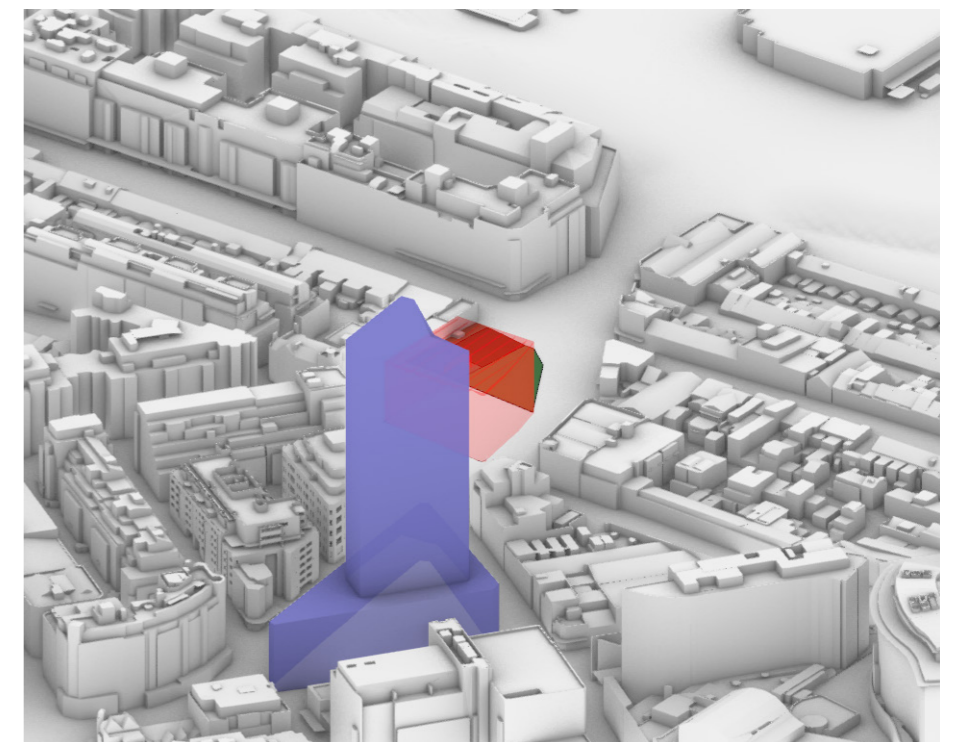


Figure 10 View from Sun - Winter Solstice - 10:10 am

05. ELIZABETH HEALEY RESERVE SHADOW IMPACT

EXISTING SHADOW EXISTING SHADOWS FROM 137 PYRMONT STREET BUILDING ADDITIONAL OVERSHADOWING FROM PROPOSED ENVELOPE

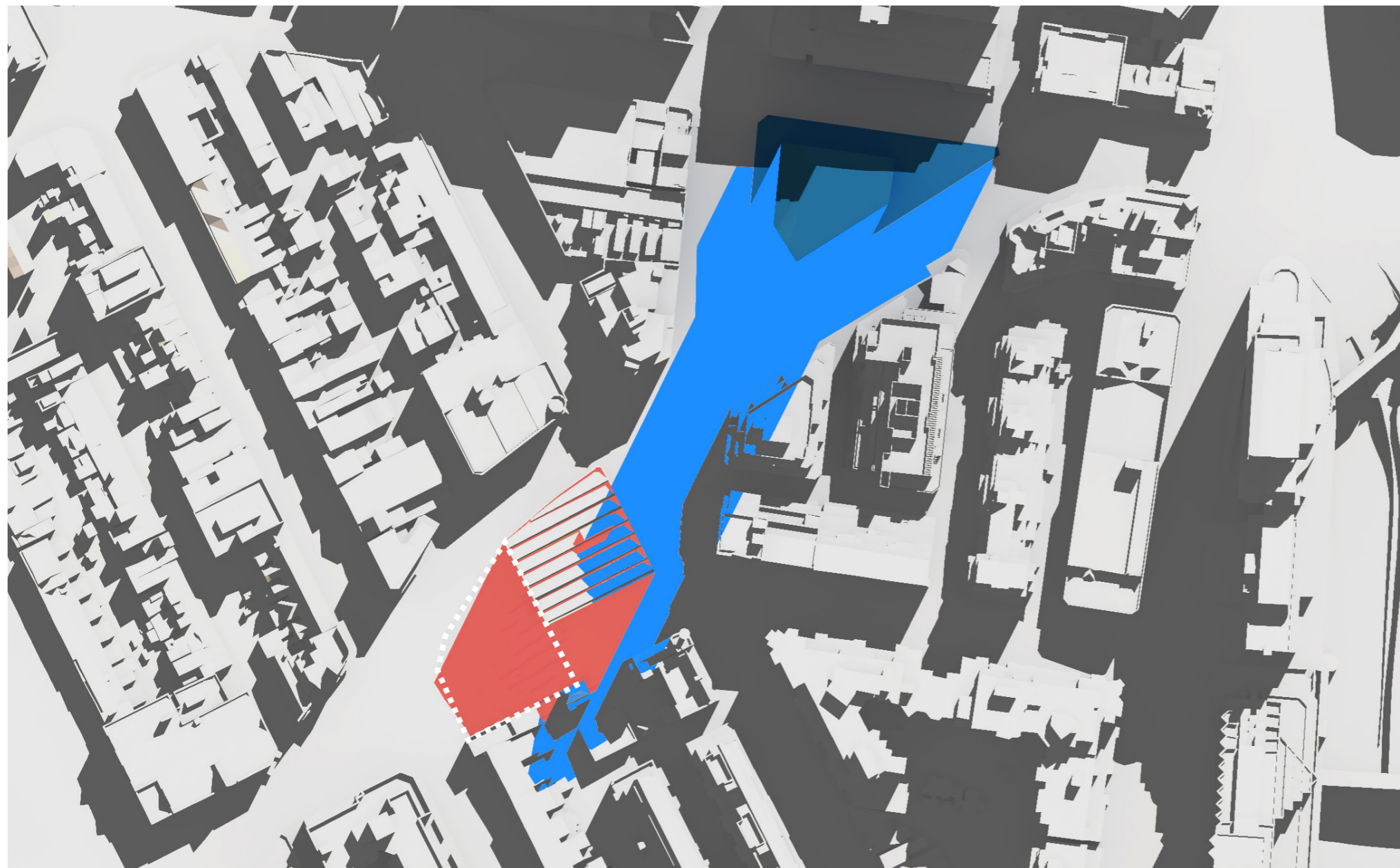


Figure 11 Elizabeth Healey Reserve Shadow Diagram - Winter Solstice - 10:15 am

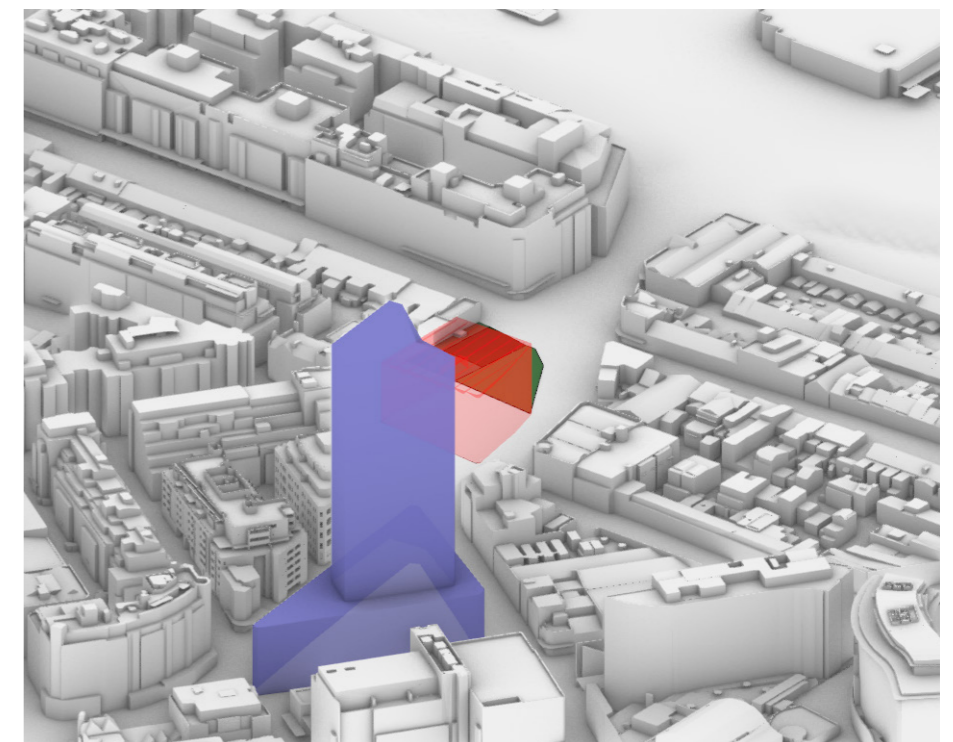


Figure 12 View from Sun - Winter Solstice - 10:15 am

05. ELIZABETH HEALEY RESERVE SHADOW IMPACT

EXISTING SHADOW EXISTING SHADOWS FROM 137 PYRMONT STREET BUILDING ADDITIONAL OVERSHADOWING FROM PROPOSED ENVELOPE

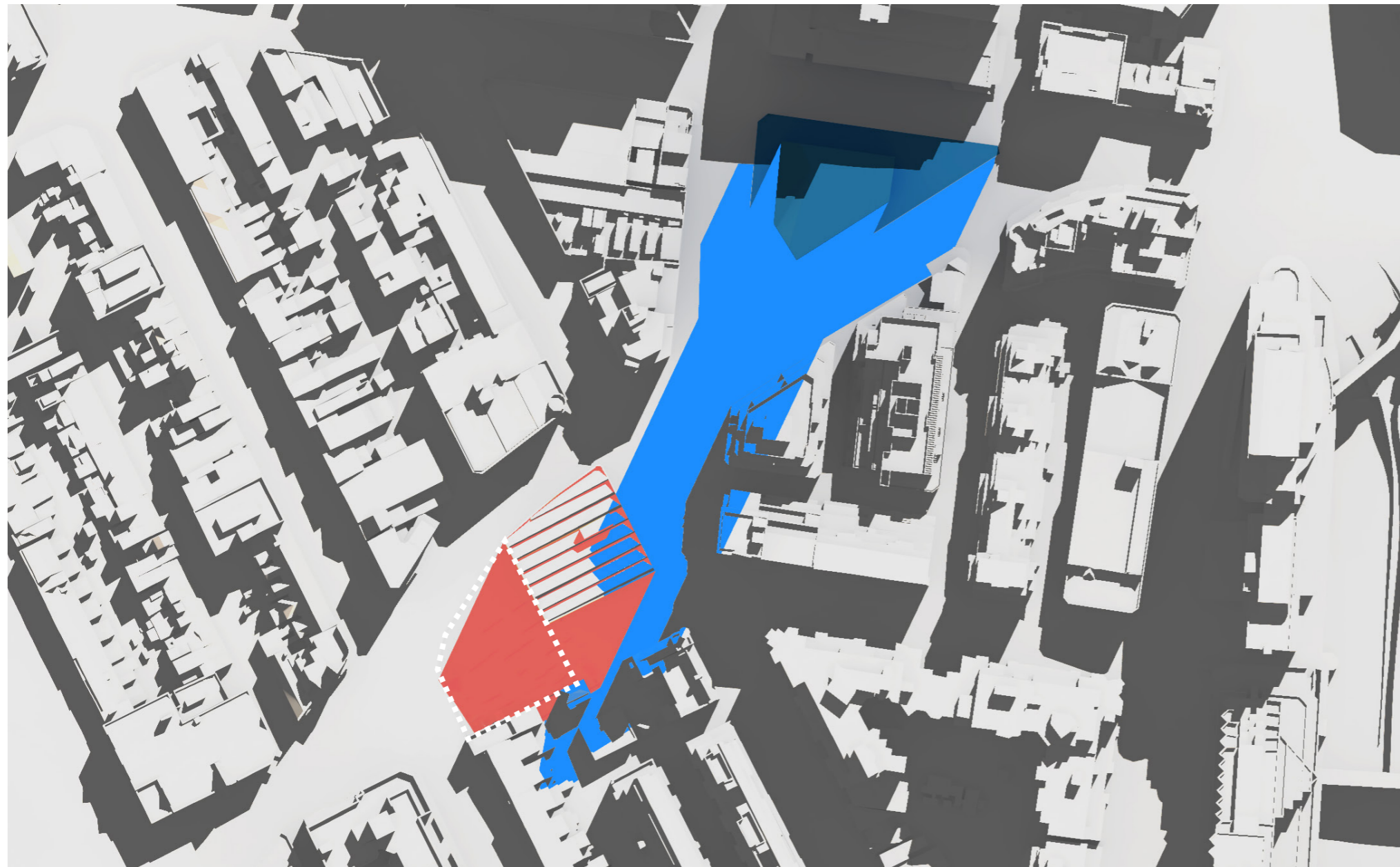


Figure 13 Elizabeth Healey Reserve Shadow Diagram - Winter Solstice - 10:20 am

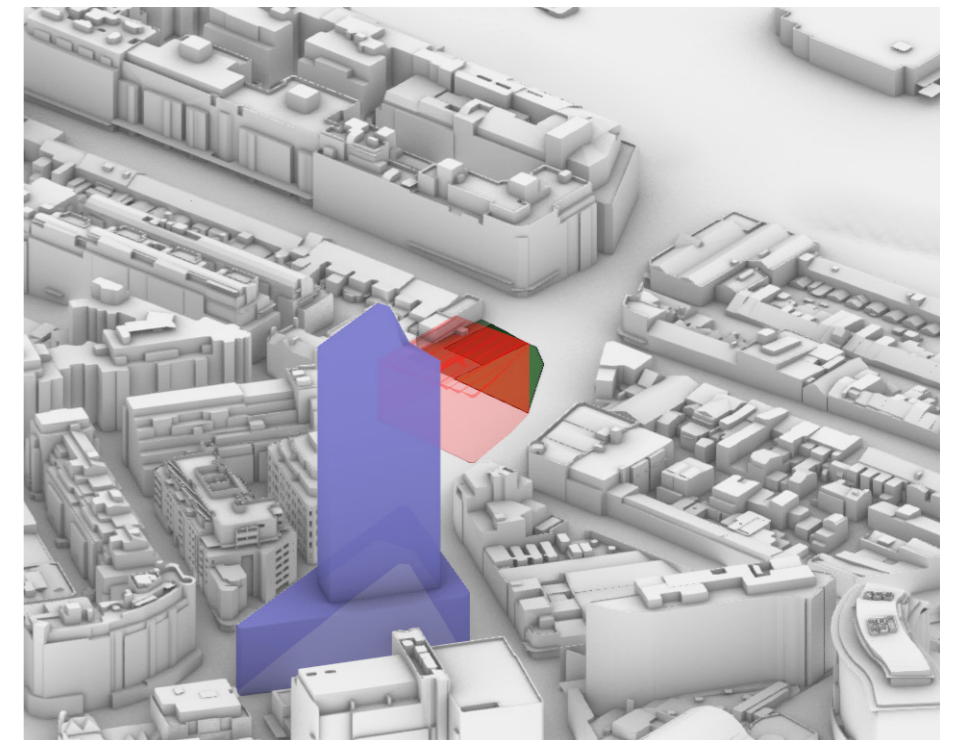


Figure 14 View from Sun - Winter Solstice - 10:20 am