

AMP CIRCULAR QUAY PRECINCT MASTER PLAN SHADOW AND SUN ACCESS REPORT

Prepared for AMP Capital
12 December 2012

Architecture	Australia
Interior Design	China
Landscape Architecture	Hong Kong SAR
Planning	Singapore
Urban Design	Thailand
	United Kingdom

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Introduction

This shadow and sun access report has been prepared for AMP Capital in support of a formal request to the City of Sydney for an amendment to the Sydney LEP 2012 (SLEP) and Sydney DCP 2012 (DCP) and forms part of the Planning Justification Report submission for the AMP Circular Quay Precinct. The shadow and sun access report should be read in conjunction with the urban design report.

The Precinct

The AMP Circular Quay Precinct is made up of the area bounded by Loftus, Bridge, Phillip and Alfred Streets (but excluding land to the north of Customs House Lane and south of the east-west leg of Loftus Lane), it comprises the following buildings under the control of AMP Capital Investors:

The Bridge and Alfred Block

- 50 Bridge Street Tower (AMP Centre)
- 33 Alfred Street Tower (Sydney Cove Local heritage listed)
- The Young and Loftus Block**
- 5-7 Young Street (Hinchcliff House, State heritage listed)
- 9-13 Young Street
- 15-17 Young Street
- 2-10 Loftus Street (AMP General House)
- 12 Loftus Street (Gallipoli Club, Local heritage listed)
- 20 Loftus Street

The proposed amendments to the SLEP and DCP seek to facilitate a significant redevelopment of the AMP Circular Quay Precinct by transferring a notional floor space entitlement from the Young and Loftus block to the Bridge and Alfred Street block. This transfer of floor space from a constrained site to another more able to accommodate it will enable a significant transformation, reinforcing the economic viability and amenity of one of the key parts of the city.

Methodology

The overshadowing studies contained within this report have been produced by HASSELL using 3D Studio Max, and have been based on the following base information (see appendix):

- City model supplied by the City of Sydney, including city buildings and topography (The supplied model has an accuracy of +/- 300mm)
 - Survey Drawings prepared by Denny Linken & Co:
 - Plan showing detail and levels at First Government House Place and Macquarie Place Park (22/10/2012)
 - Plan showing elevations Young Street & Loftus Street (20/07/2012)
 - Survey Drawings prepared by Frank M Mason & Co:
 - Plan showing spot levels and features over AMP property between Young and Loftus Streets (22/02/2001)
 - Sections showing typical structure north-south
 - Plan showing location of buildings and structures at 50 Bridge Street (Sheet 1)
 - Plan showing location of buildings and structures at 50 Bridge Street (Sheet 2)
- The proposed master plan has been based on solar access envelopes described in the 'Solar Impact Report' by PSN Matter (12/09/2011)

The shadow studies contained within this report are accurate to the implied limits of the supplied base information. HASSELL does not accept responsibility for the accuracy of this base information.

Clause 6.16 - Sun access planes**Sydney Local Environment Plan (LEP) 2011 - Draft**

The objective of this clause is to ensure that buildings maximise sunlight access to the public places set out in this clause.

The consent authority must not grant consent to development on land if the development will result in any building on the land projecting higher than any part of a sun access plane taken to extend over the land under this clause.

- Macquarie Place

Approximately 35 metres above the junction of the eastern alignment of Loftus Street and the northern alignment of Loftus Lane and approximately 35 metres above the junction of the eastern alignment of Loftus Street and the southern alignment of Customs House Lane.

- Royal Botanic Gardens

Approximately 45 metres above the western alignment of Macquarie Street where that alignment is directly below the southern alignment of the Canill expressway and approximately 45 metres above the western alignment of Macquarie Street 94 metres roughly north from the junction of the western alignment of Macquarie Street and the northern alignment of Bent Street.

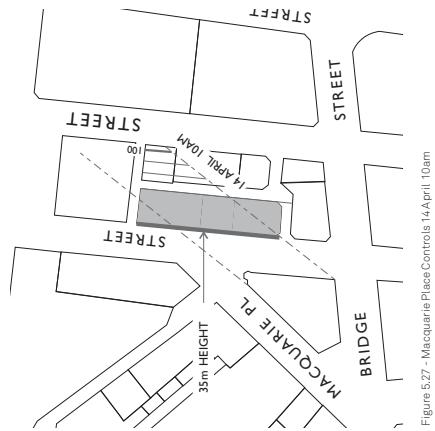
Section 5 - Specific Areas**Sydney Development Control Plan (DCP) 2010 - Draft**

Figure 5.27 - Macquarie Place Controls 14 April 10am

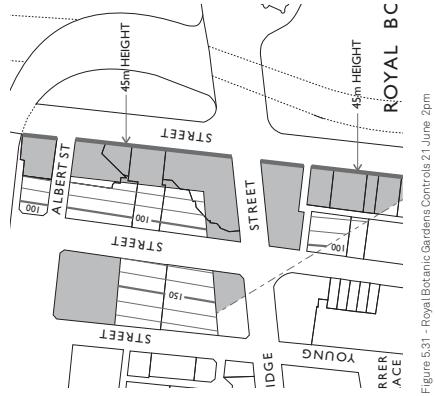


Figure 5.31 - Royal Botanic Gardens Controls 21 June 2pm

Clause 6.17 - Sun access controls**Sydney Local Environment Plan (LEP) 2011 - Draft**

The objective of this clause is to ensure that buildings maximise sunlight access to the public places set out in this clause.

The consent authority must not grant consent to development on land if the development will result in any building on the land projecting higher than any part of a sun access plane taken to extend over the land under this clause.

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Approximately 35 metres above the junction of the eastern alignment of Loftus Street and the northern alignment of Loftus Lane and approximately 35 metres above the junction of the eastern alignment of Loftus Street and the southern alignment of Customs House Lane.

- Royal Botanic Gardens

Approximately 45 metres above the western alignment of Macquarie Street where that alignment is directly below the southern alignment of the Canill expressway and approximately 45 metres above the western alignment of Macquarie Street 94 metres roughly north from the junction of the western alignment of Macquarie Street and the northern alignment of Bent Street.

Clause 6.18 - Overshadowing of certain public places**Sydney Local Environment Plan (LEP) 2011 - Draft**

The consent authority must not grant consent to development that results in any part of a building causing additional overshadowing between 14 April and 31 August in any year of any of the following locations during the times specified below:

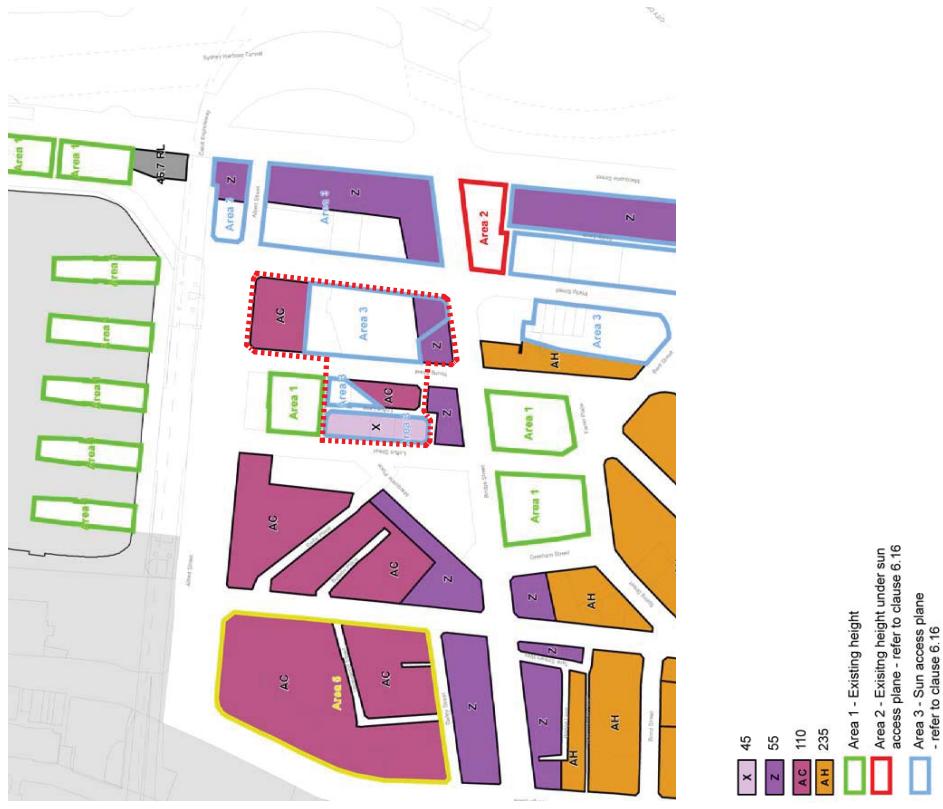
- First Government House Place—between 12.00–14.00

- Macquarie Place (beyond the shadow that would be cast by a wall with a 35 metre street frontage height on the eastern alignment of Loftus Street) between 10.00–14.00

A development causes additional overshadowing if the total overshadowing of the relevant location during the specified times is greater after the development is carried out than the overshadowing of that location during the specified times caused by buildings existing as at 1 January 2010.

Built Form Controls Review

Height of Buildings Map (Sydney Local Environment Plan 2011 Draft)
Maximum Building Height (m)



Sun Access Protection Map (Sydney Local Environment Plan 2011 Draft)
Land Affected by Sun Access Planes



Executive Summary

By adopting a precinct-wide approach to the redistribution of floor space the master plan seeks to transfer the unrealised floor space from the Young and Loftus block to the Bridge and Alfred block.

The lower scaled Young and Loftus buildings will provide an increase in morning sunlight to Macquarie Place in mid winter, with the transferred floor space being accommodated within an extension to the 50 Bridge Street tower which whilst projecting through the Botanic Gardens sun access plane does so in a way that ensures no additional overshadowing to the Botanic Gardens at the control time of 2pm on 21st June.

A summary of the shadow and sun access analysis is as follows:

Botanic Gardens

- No additional overshadowing to the Botanic Gardens beyond that cast by the existing building at the control time of 2pm on 21st June (mid winter)
- Negligible impact to the Botanic Gardens outside of control time (at 2pm on 21st June) beyond that cast by an LEP compliant envelope

Macquarie Place

- Improved solar access and reduced overshadowing to Macquarie Place
 - 680 m² increase in solar access at 9am 21st June (mid winter)
 - 460 m² increase in solar access at 10am 21st June (mid winter)
- No additional overshadowing to Macquarie Place beyond that cast by an LEP compliant envelope at control times of 10am to 2pm on 14th April
- Improved solar access to the Loftus Street and Loftus Lane public domain

First Government House Place

- No additional overshadowing of First Government House place.
- A modest net increase in solar access in mid winter has been achieved by offsetting a small (20 m²) additional shadow at 12pm with a (30 m²) improvement in solar access at 2pm.
- See appendix A for detailed study.

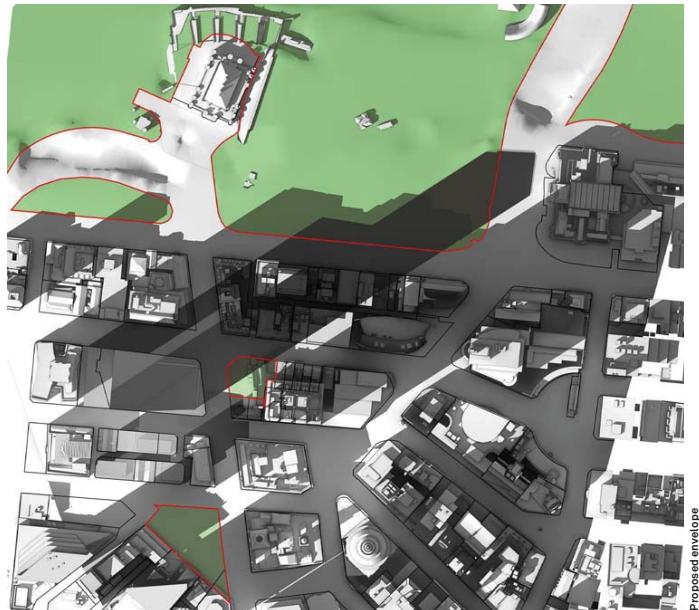
Australia Square and Chifley Square

- No additional overshadowing

Date
21 June

Time
2 pm

**No additional
overshadowing to
the Botanic Gardens
at 2pm in mid winter**



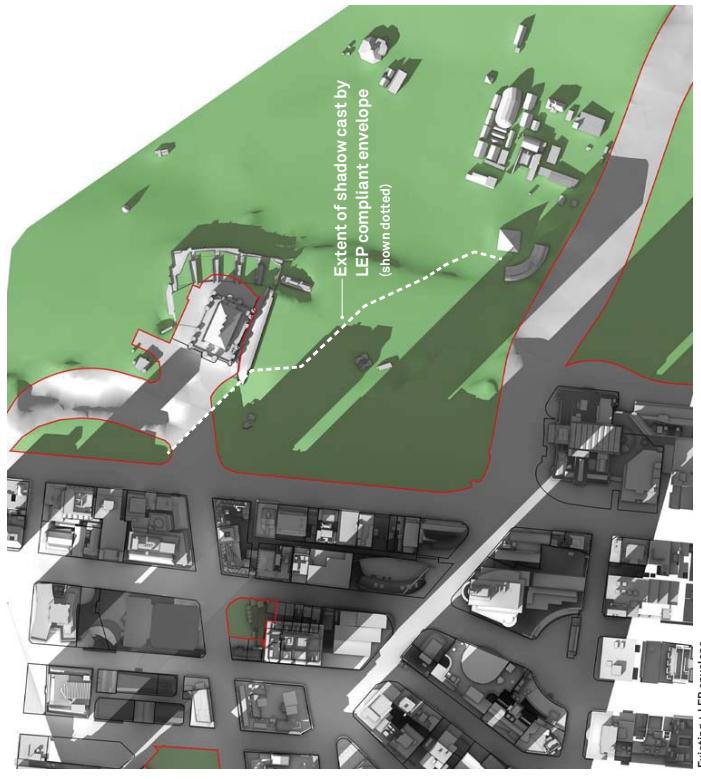
Botanic Gardens (control time)



Executive Summary

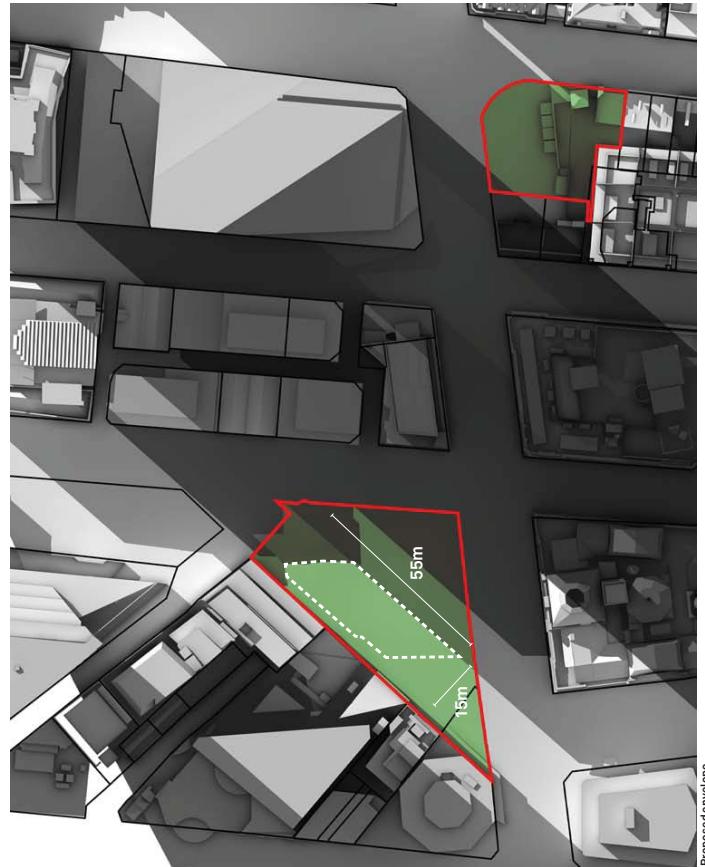
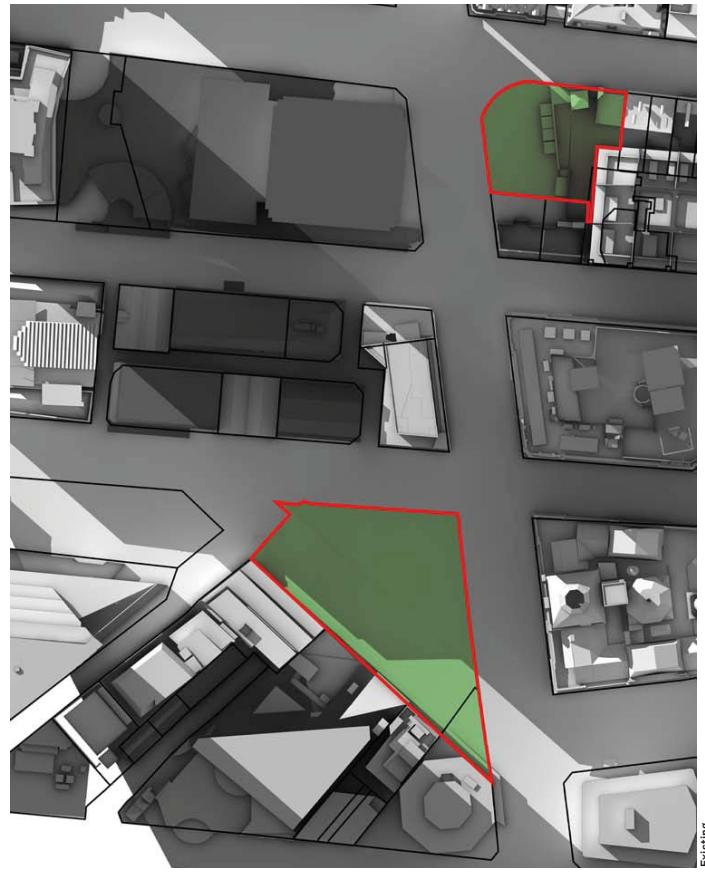
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Botanic Gardens (beyond control time)



Time
3 pm
Date
21 June

**680 m² additional solar access
at 9am in mid winter**

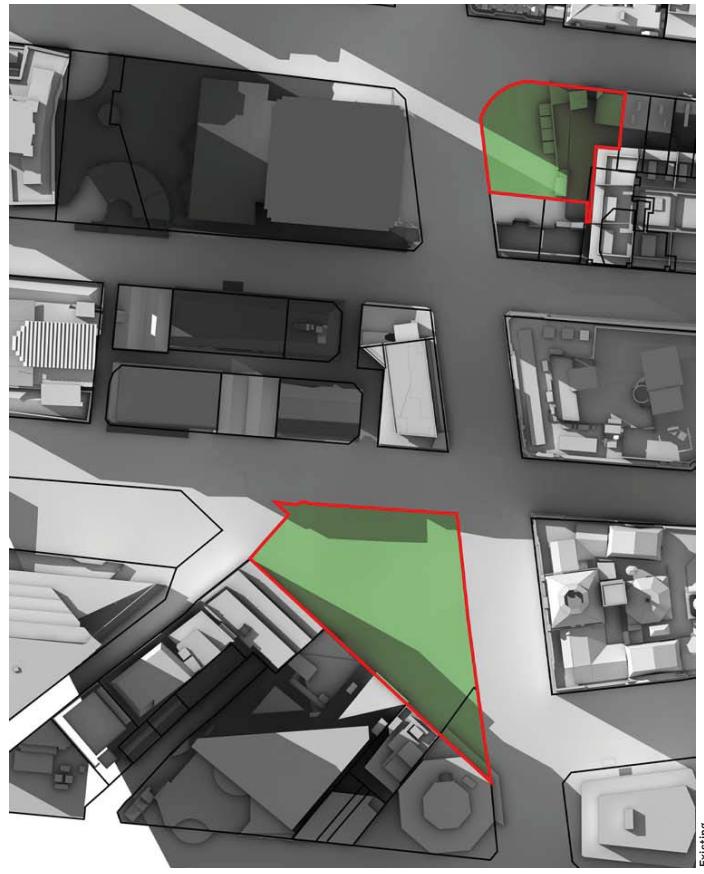


Date
21 June
Time
9 am
1

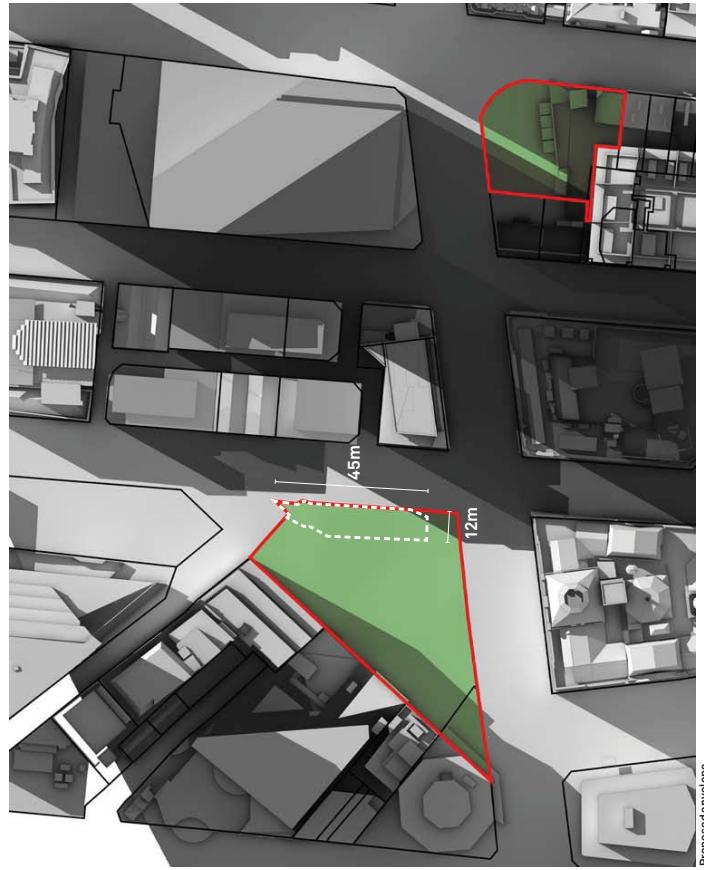
Executive Summary

Macquarie Place

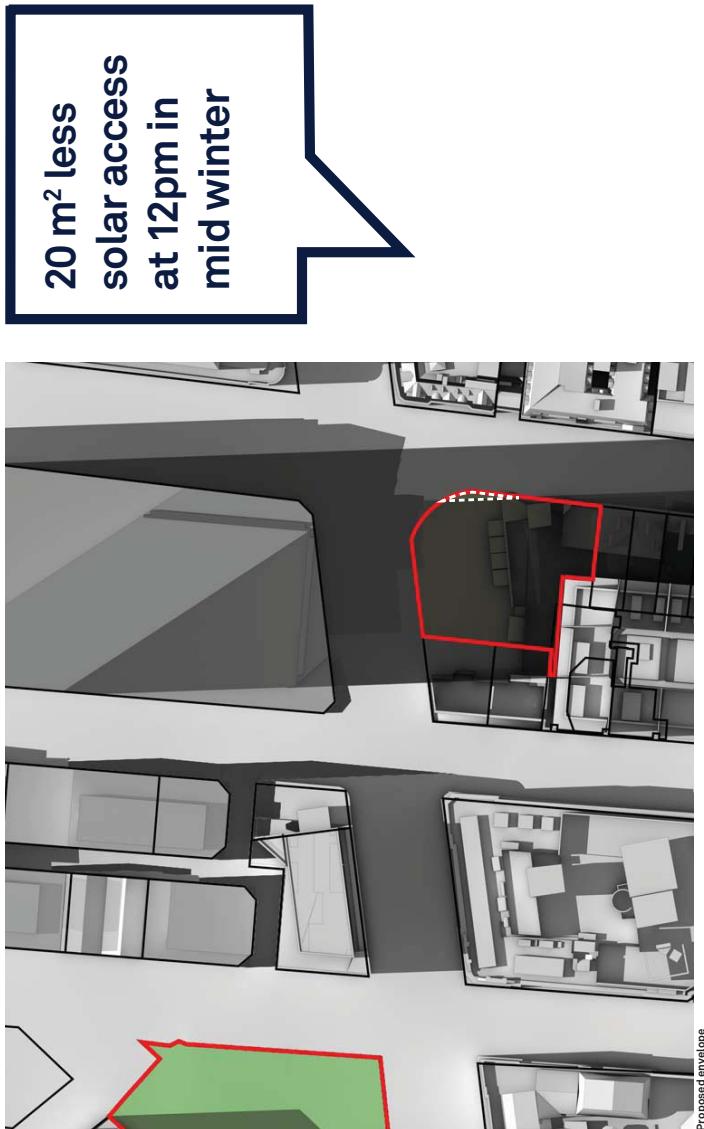
**460 m² additional solar access
at 10am in mid winter**



Existing



Proposed envelope



Date
21 June
Time
12 pm
1



First Government House Place

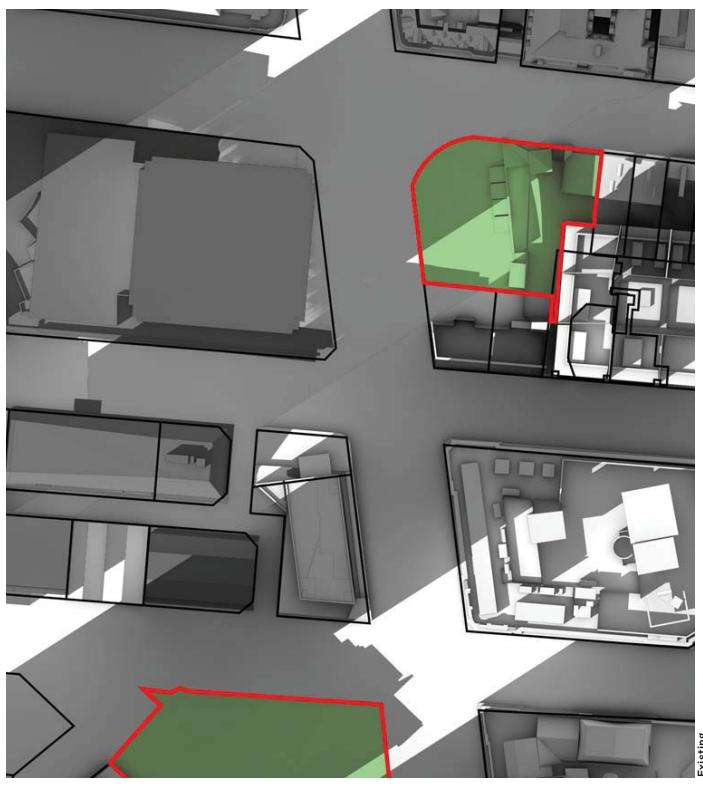
See appendix A for more details

Executive Summary

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First Government House Place

See appendix A for more details



Existing



Proposed envelope



Proposed envelope



Proposed envelope



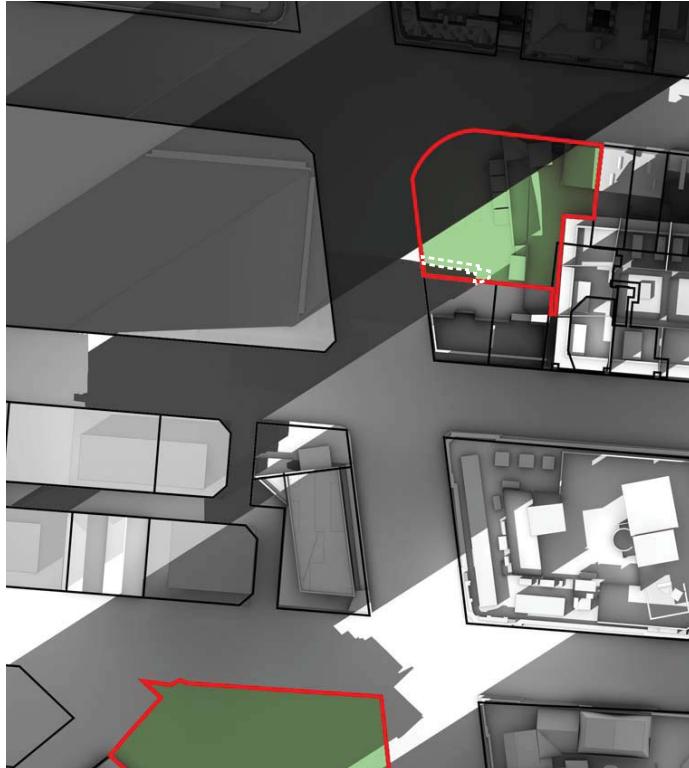
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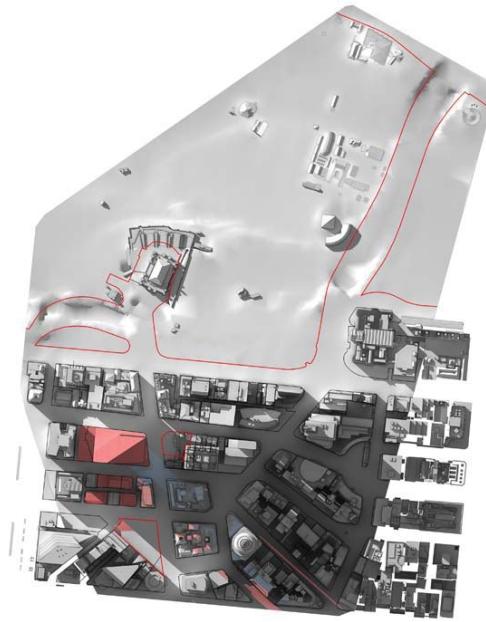
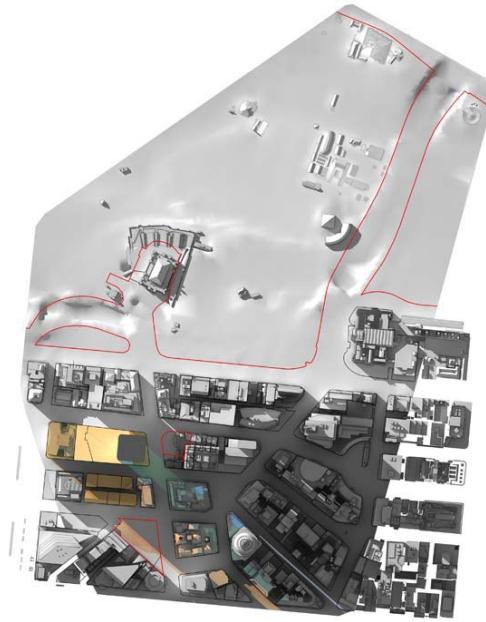
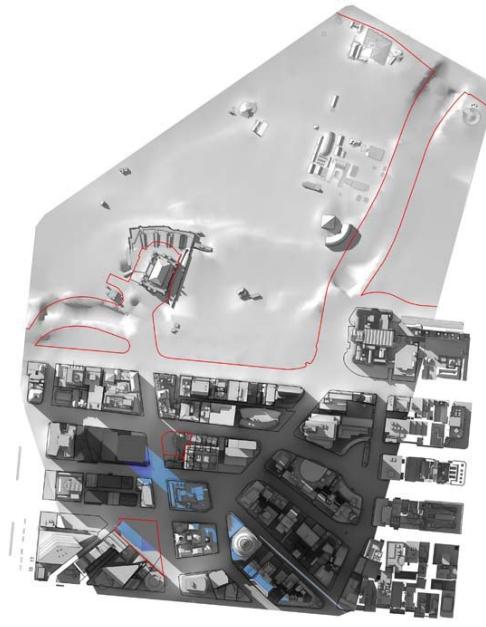
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Date 21 June
Time 2 pm

Winter Solstice 21 June

Shadow and Sun Access Study

21

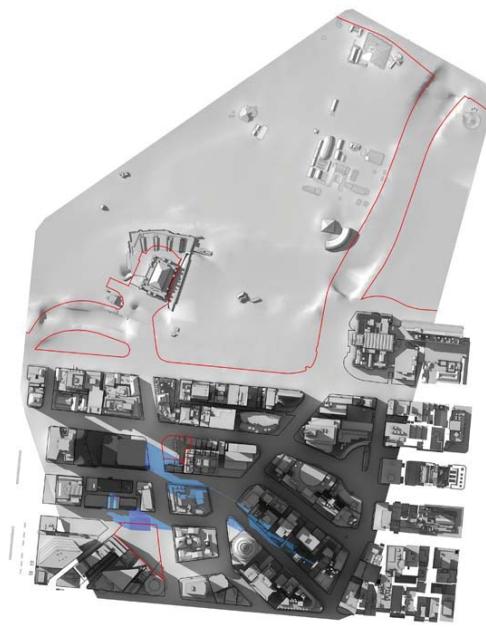
Winter Solstice



Time
9 am
Date
21 June
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22 Shadow and Sun Access Study

Winter Solstice



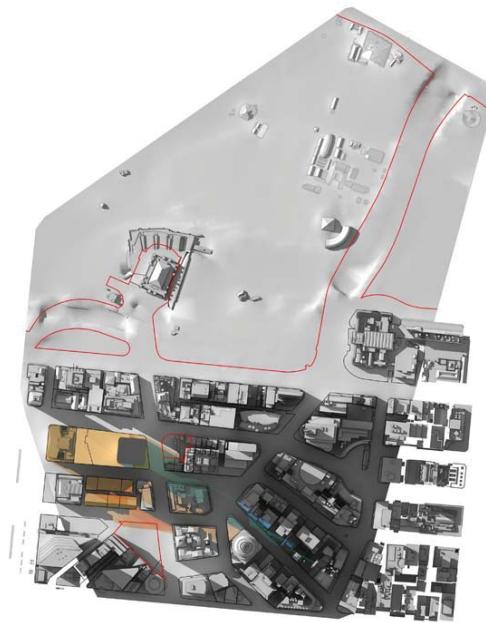
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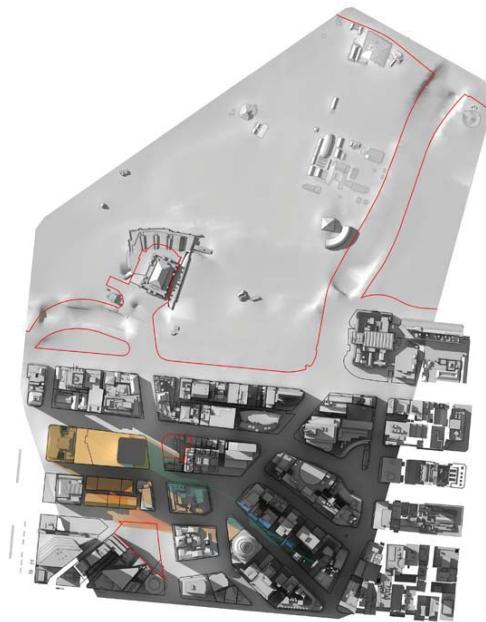
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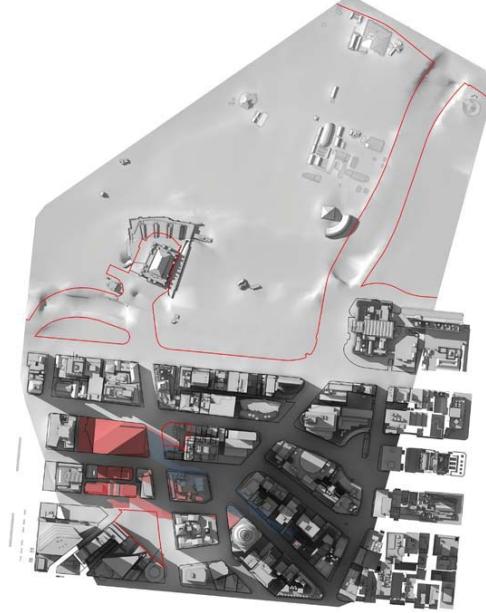
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Proposed envelope



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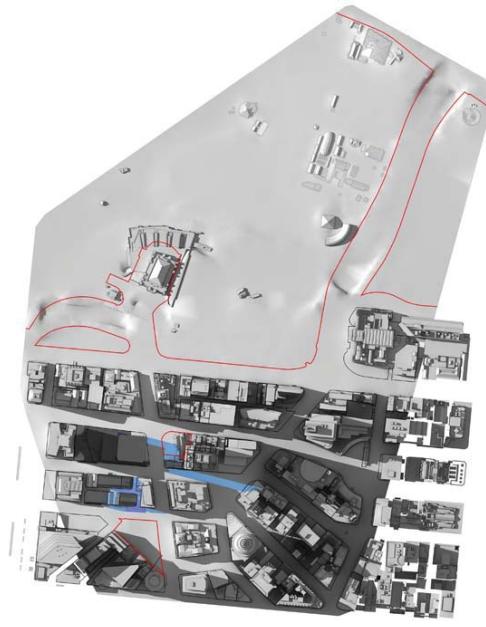
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Date
21 June
Time
10 am
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Shadow and Sun Access Study

23

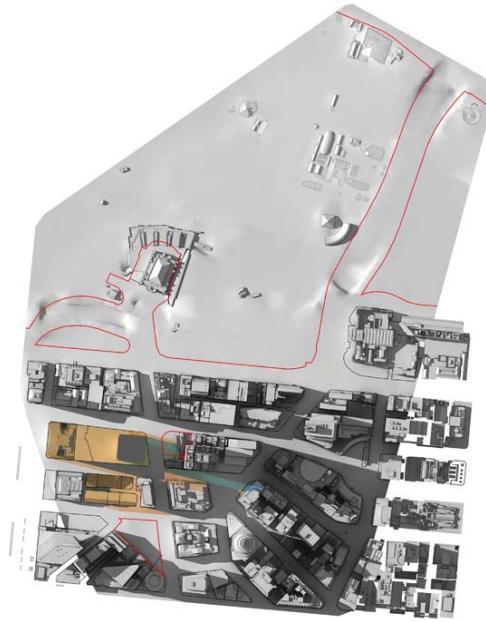
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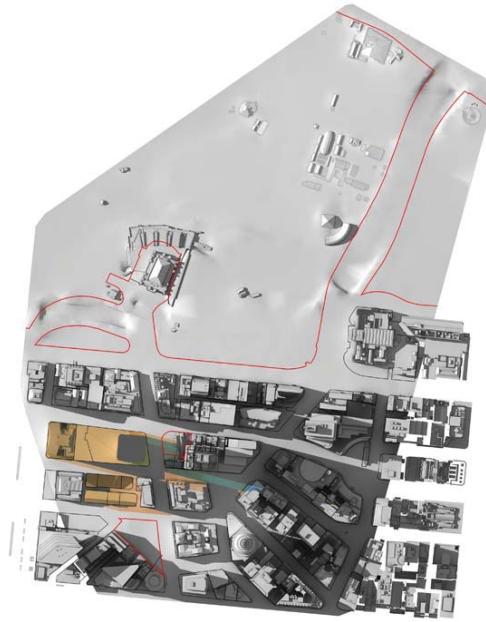
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Legend

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- Proposed envelope



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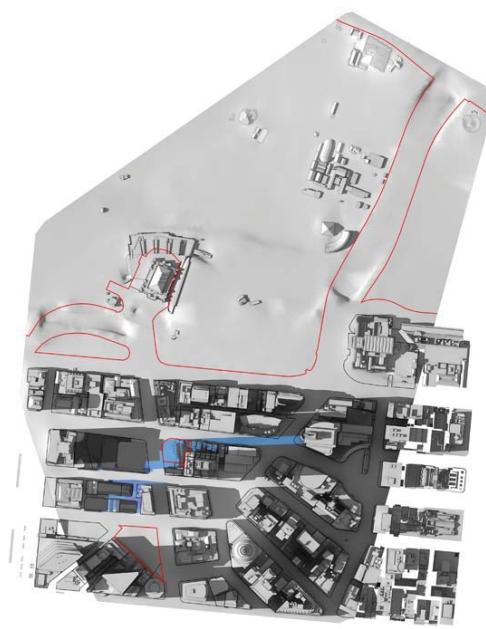


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Time
11 am
Date
21 June
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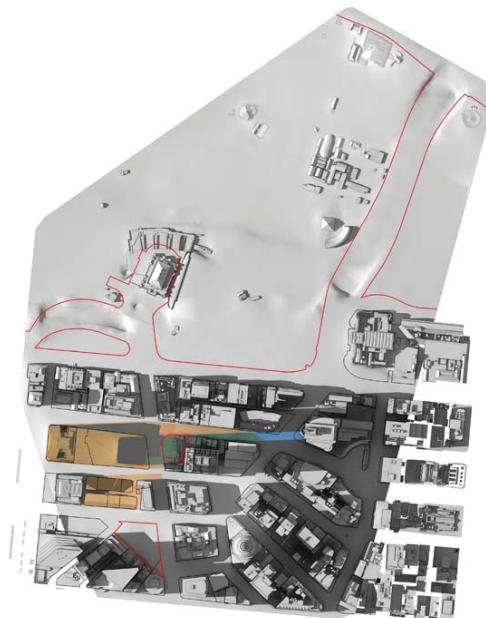
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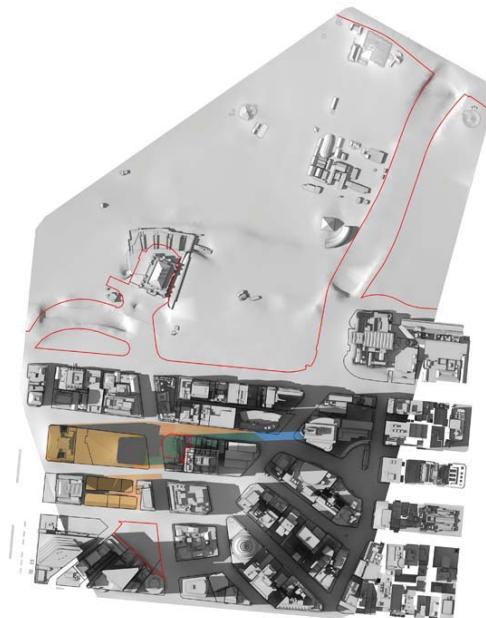
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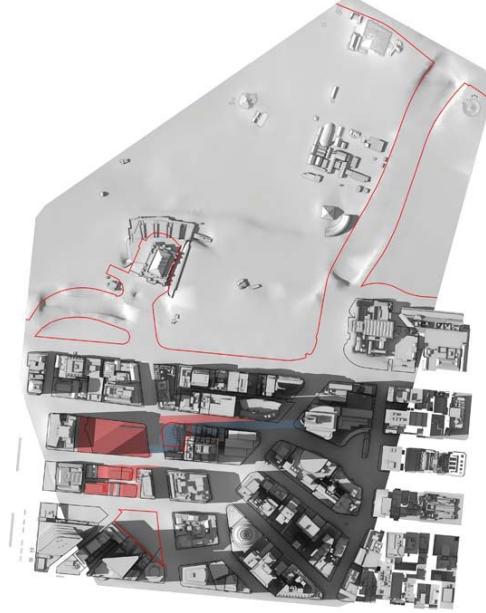
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LEP envelope



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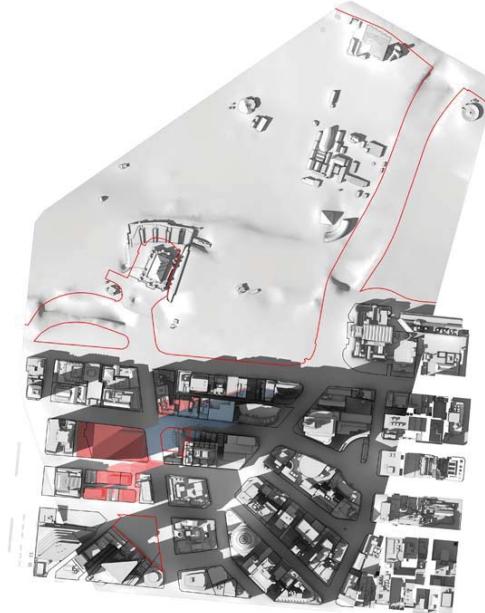
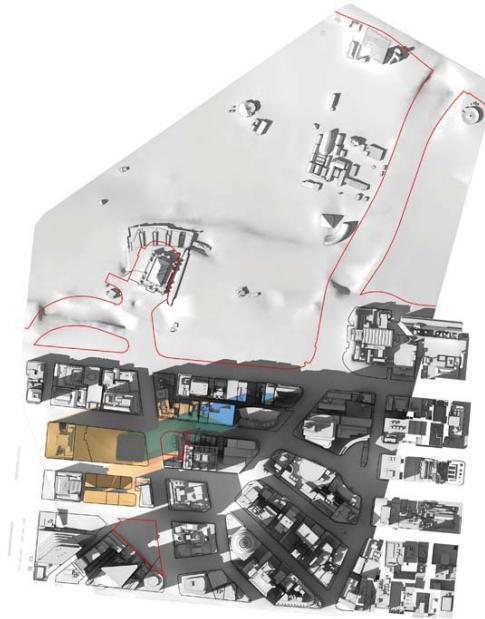
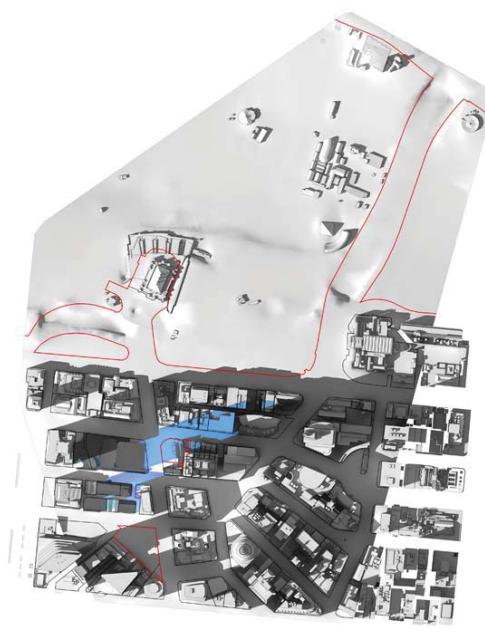


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Date
21 June
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Shadow and Sun Access Study

25

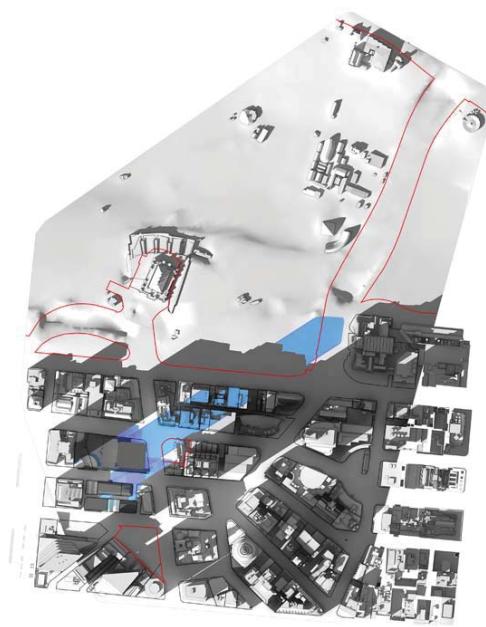
Winter Solstice



Time
1 pm
Date
21 June
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HASSELL

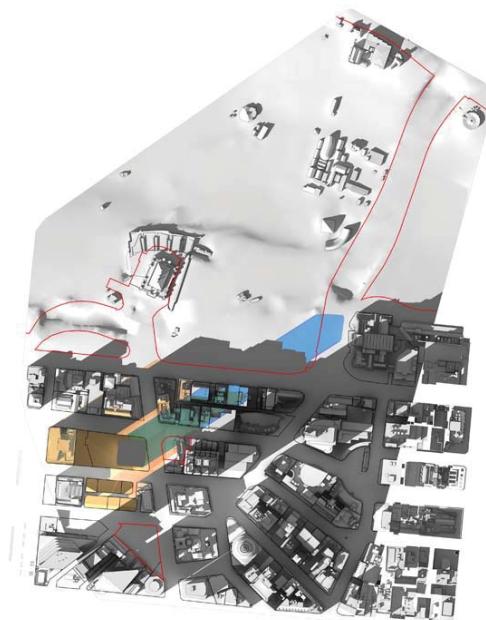
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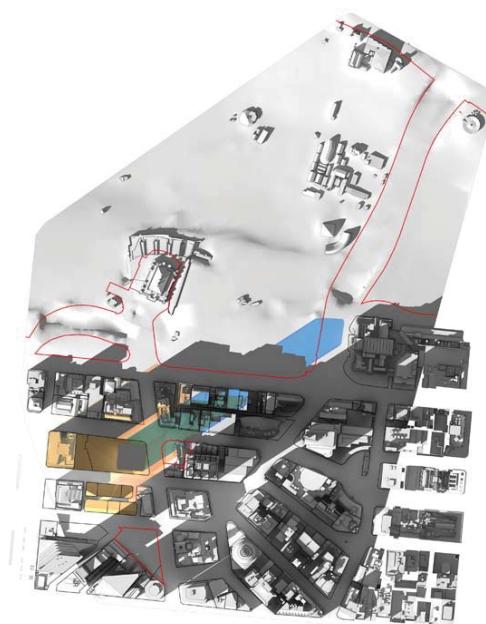
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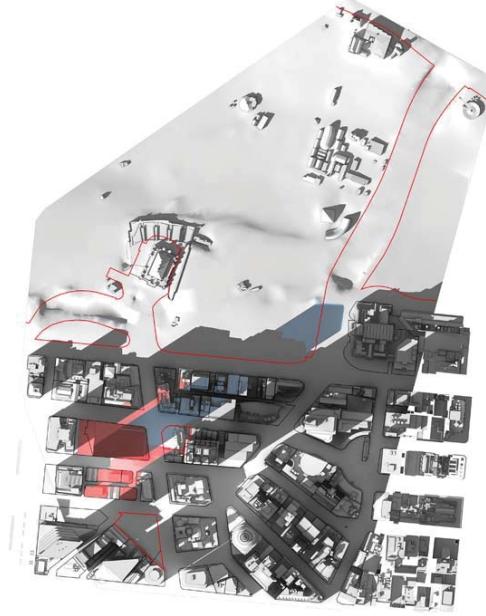
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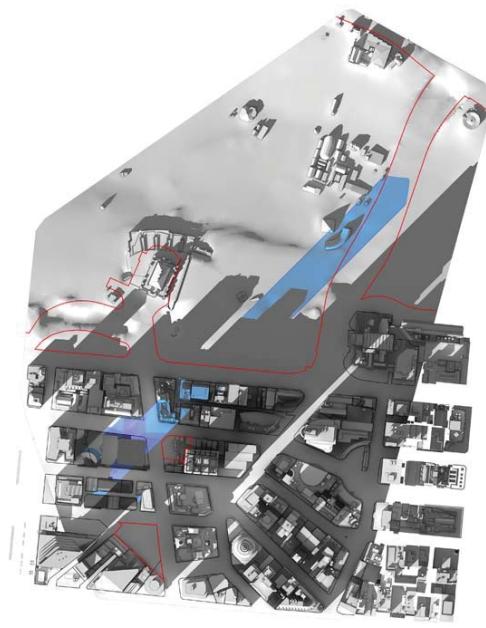


Time 2 pm
Date 21 June
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Shadow and Sun Access Study

27

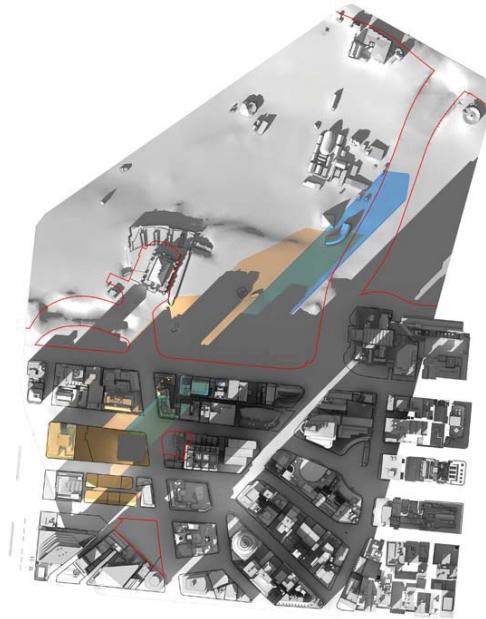
Winter Solstice



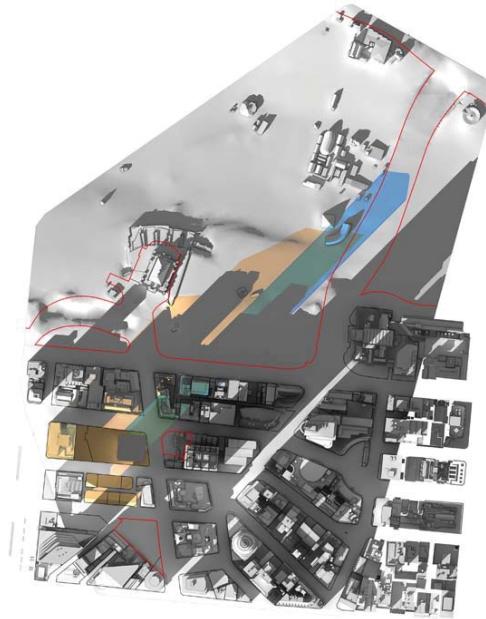
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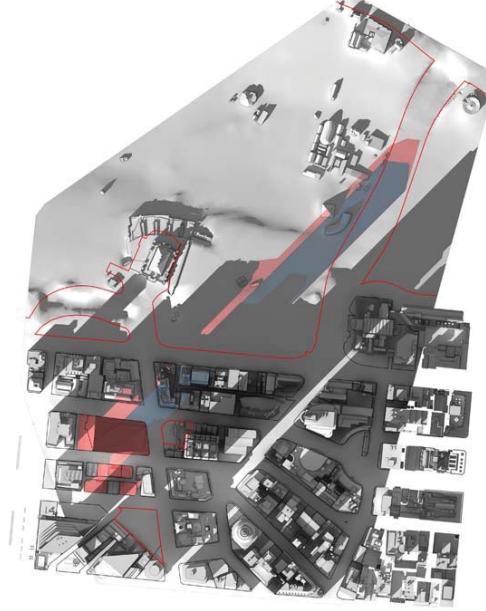
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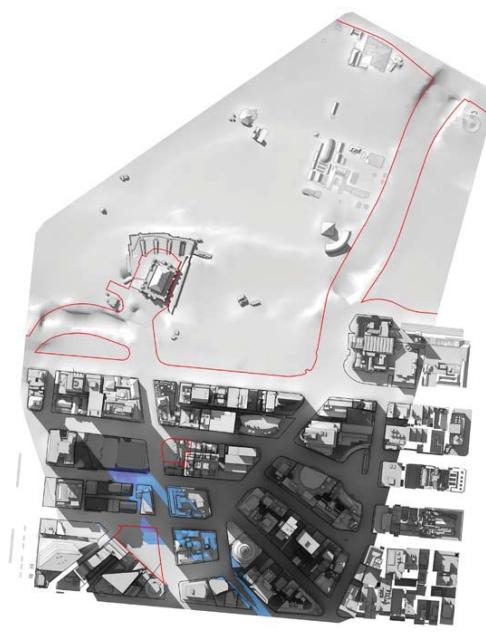


Time 3 pm
Date 21 June
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Shadow and Sun Access Study

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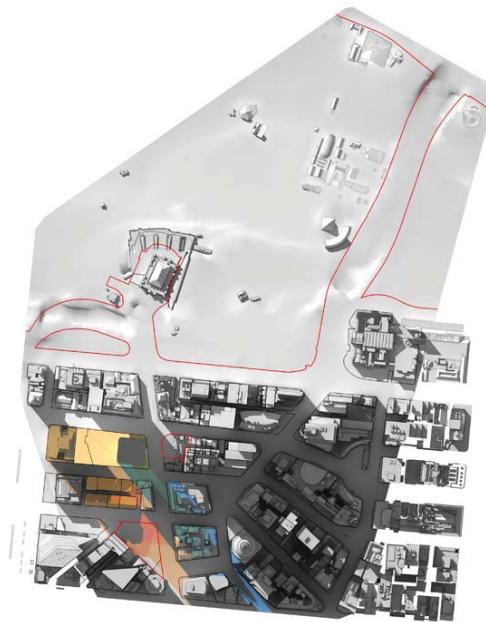
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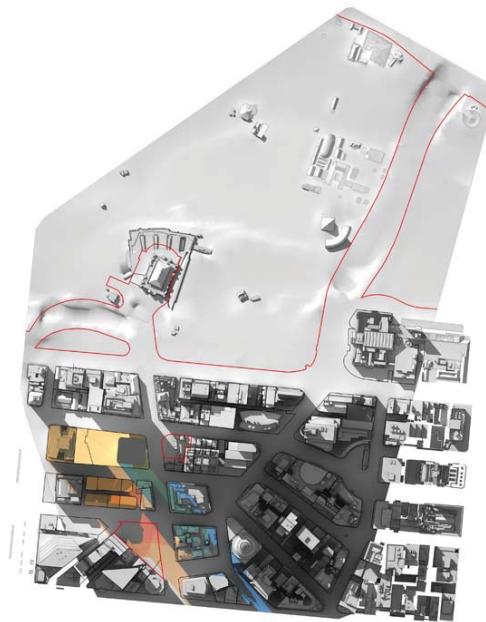
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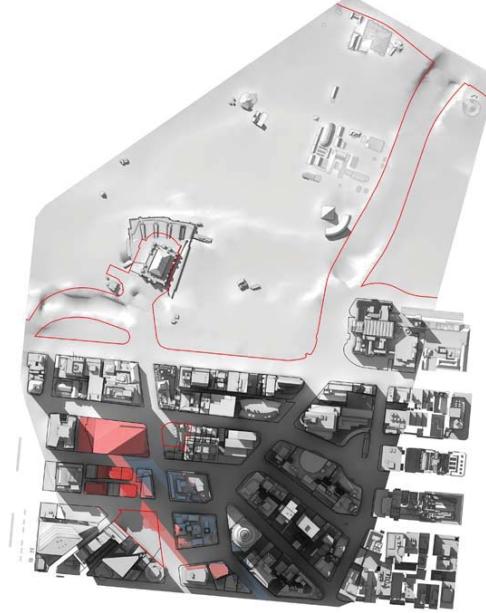
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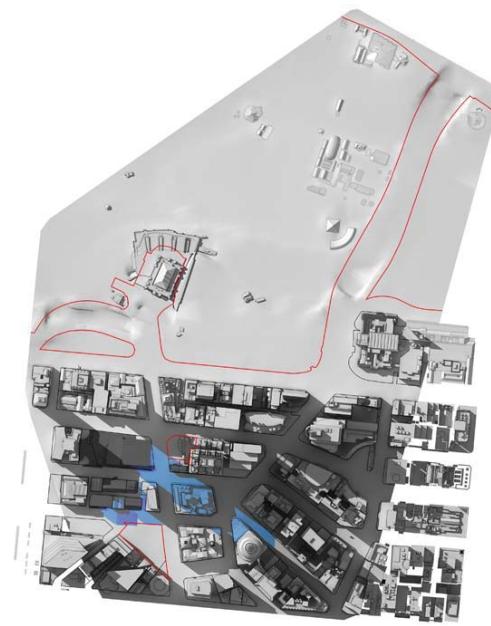


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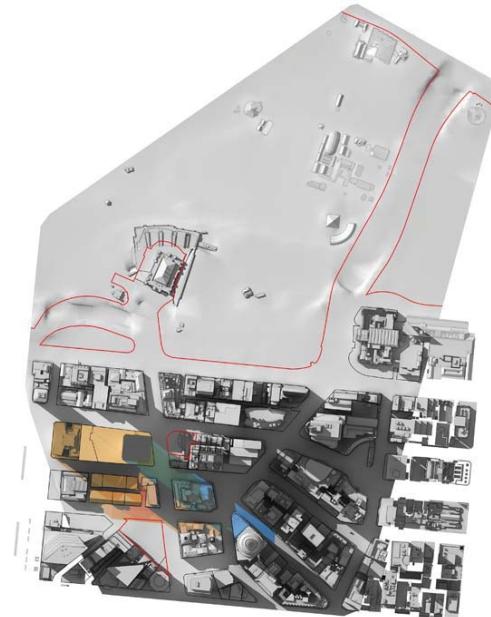


Time 9 am
Date 14 April
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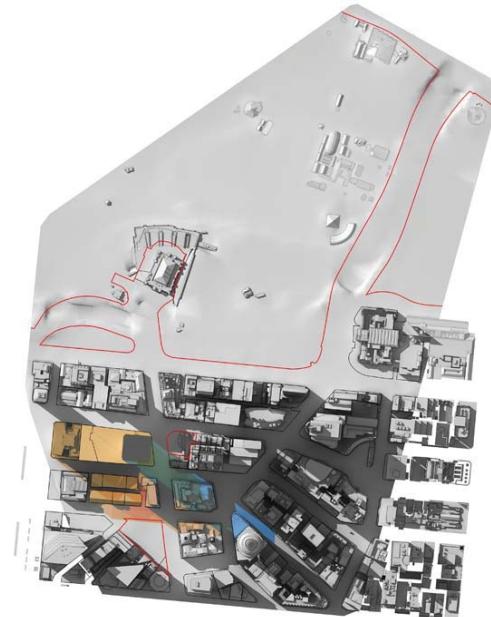
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Existing situation



LEP envelope



Proposed envelope



Proposed envelope

Time
10 am
Date
14 April

Shadow and Sun Access Study

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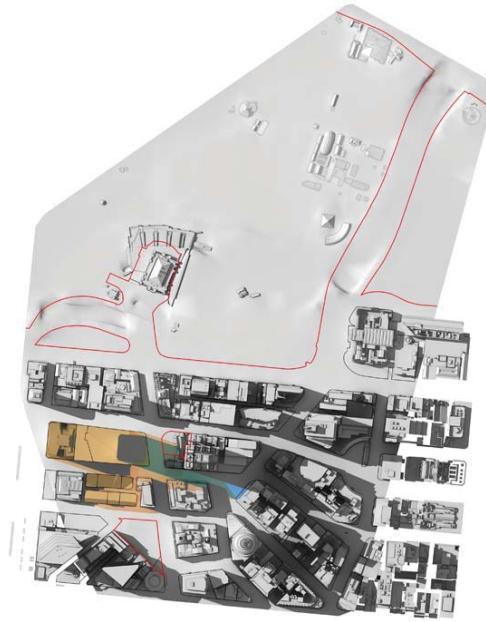
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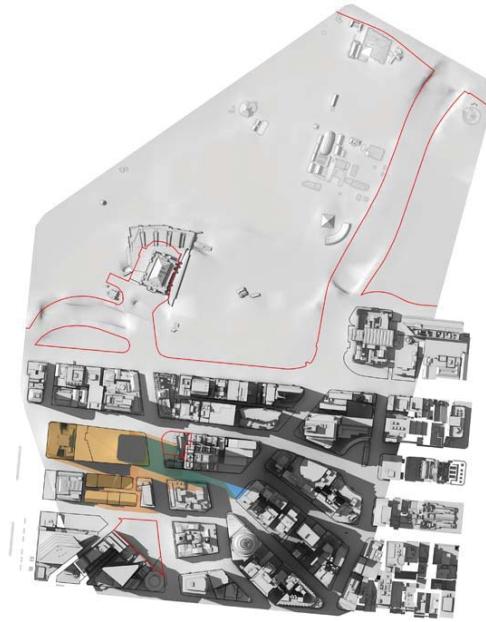
Existing situation

Legend

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LEP envelope



Proposed envelope

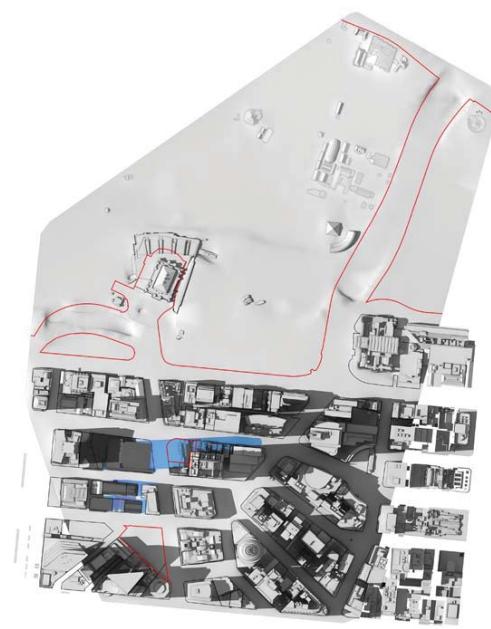


Time
11 am
Date
14 April
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Shadow and Sun Access Study

34

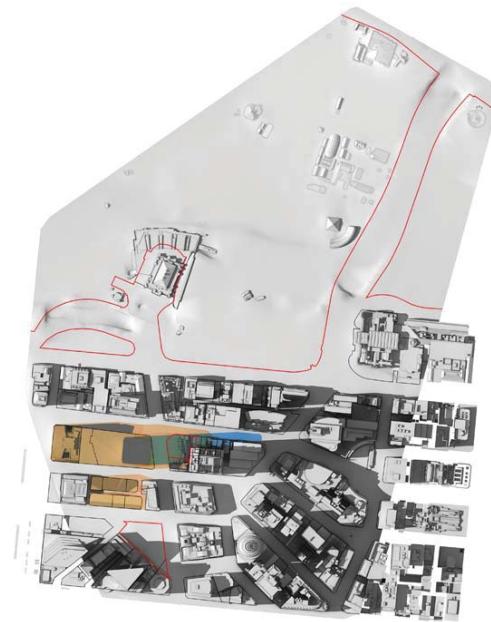
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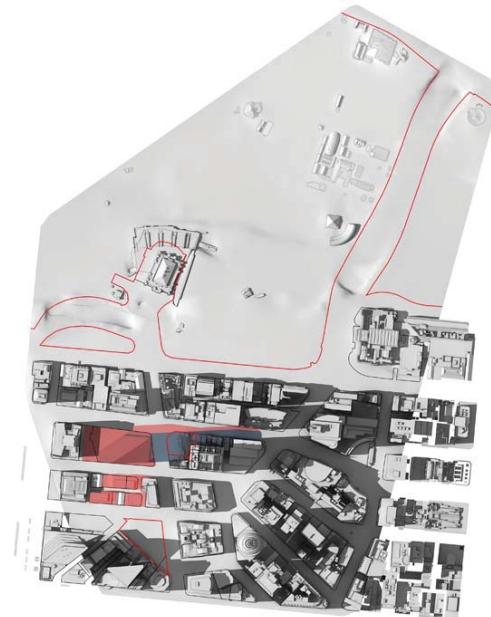
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Legend

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LEP envelope



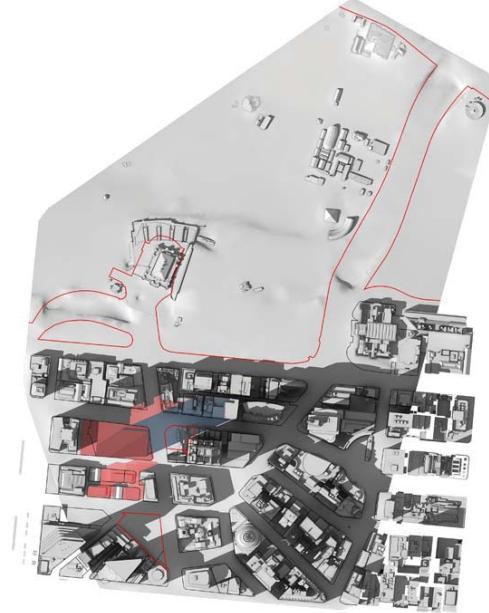
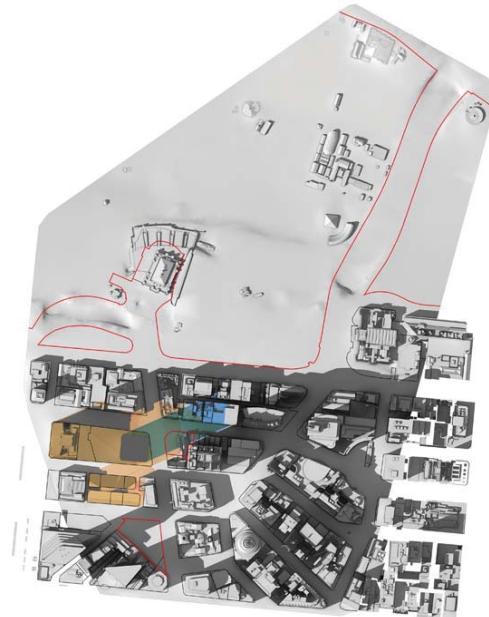
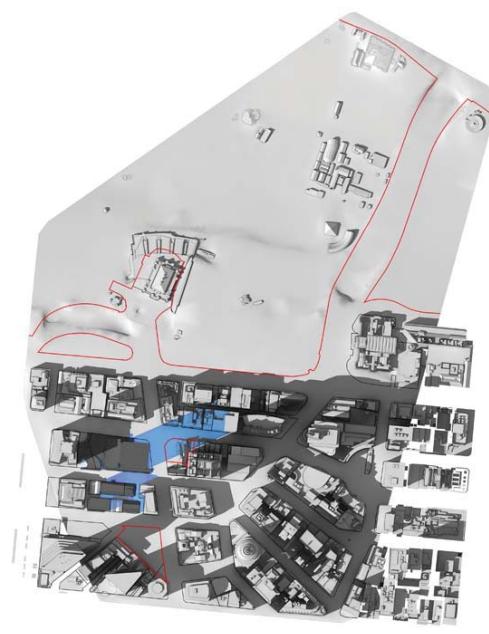
Proposed envelope

Time
12 pm
Date
14 April
○

Shadow and Sun Access Study

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LEP Control Date

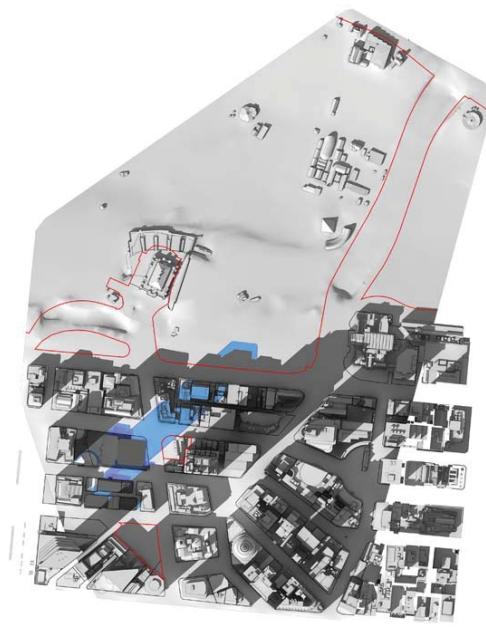


Legend

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- LEP envelope
- Proposed envelope

Date
14 April
Time
1 pm

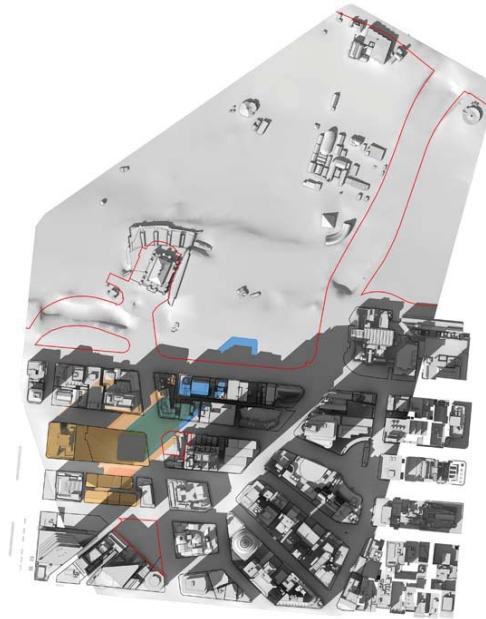
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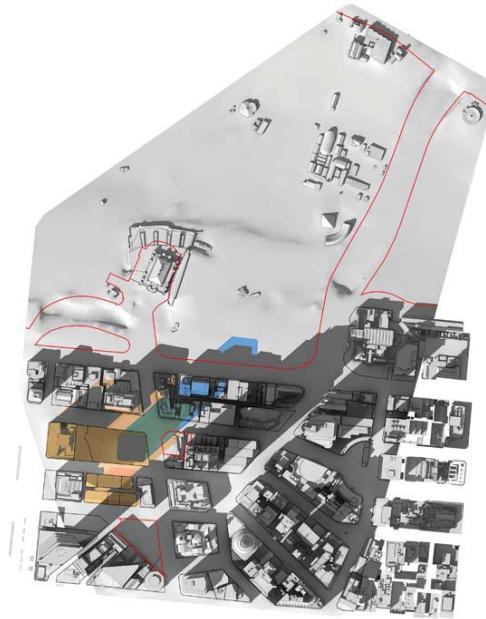
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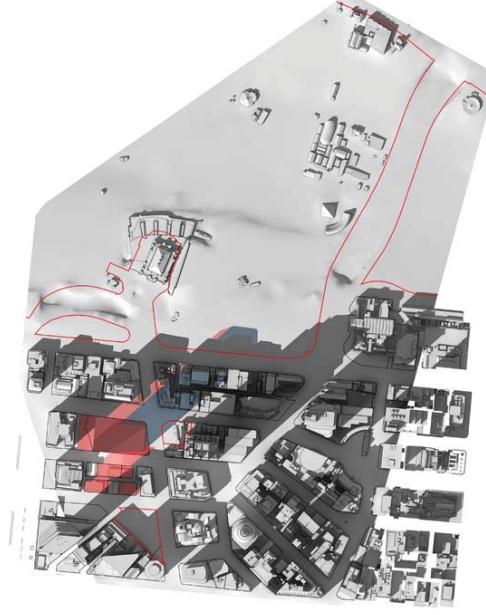
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- █ LEP envelope
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LEP envelope



Proposed envelope

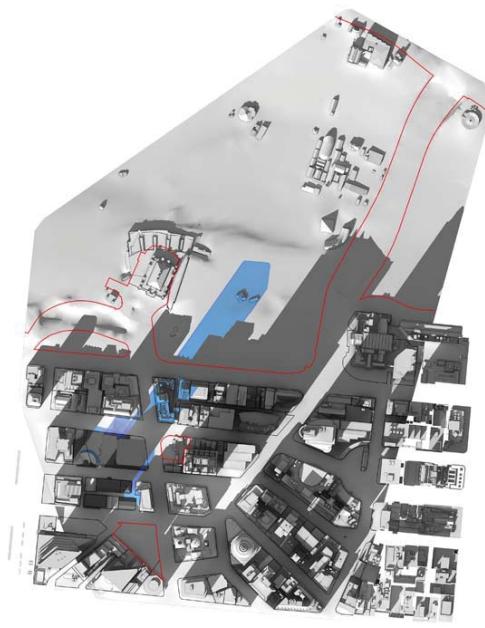


Time 2 pm
Date 14 April
○ ⊥

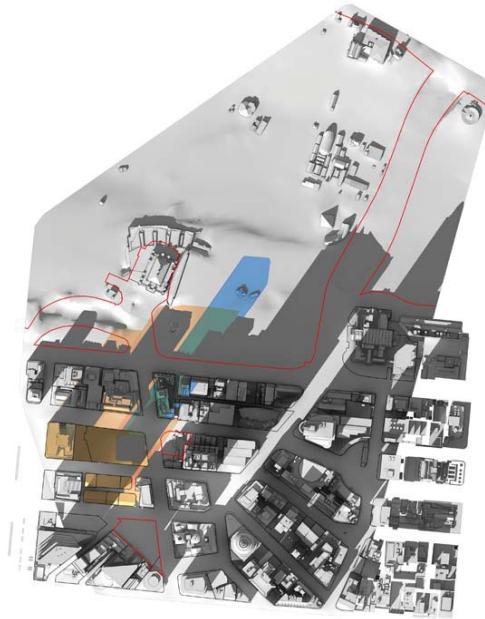
Shadow and Sun Access Study

37

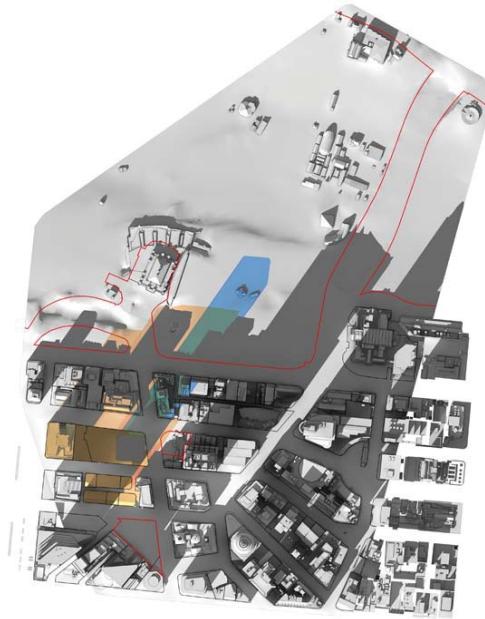
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Existing situation



LEP envelope



Proposed envelope

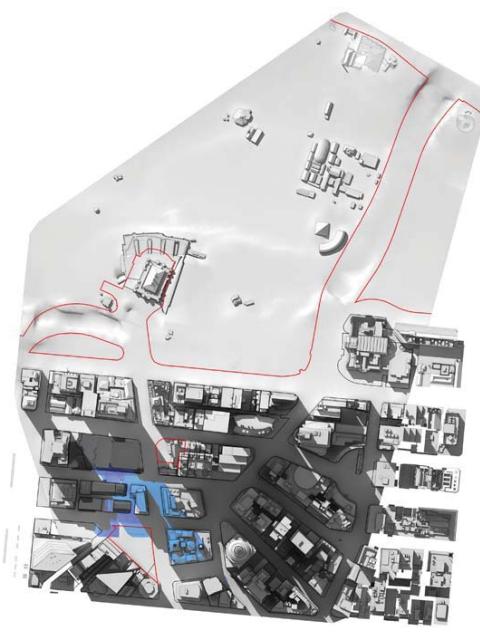


Proposed envelope

Time
3 pm
Date
14 April

Shadow and Sun Access Study

Spring Equinox



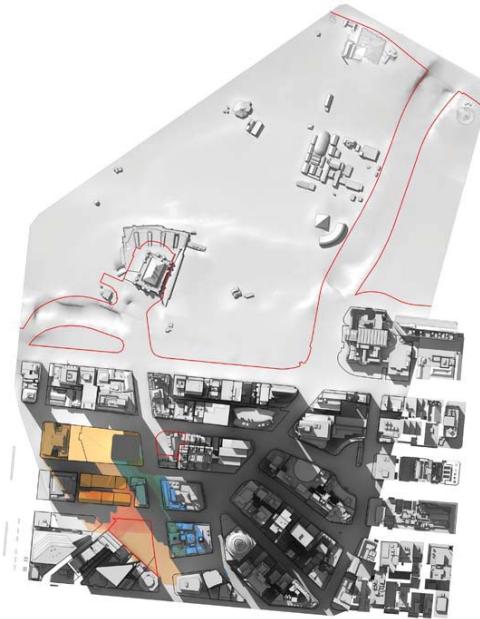
Existing situation

Proposed envelope

LEP envelope

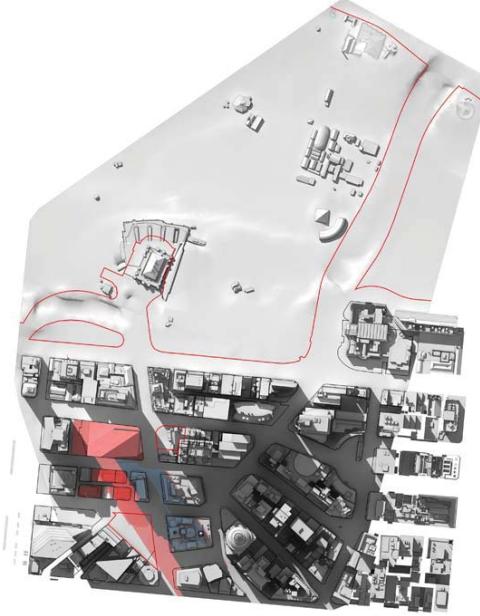
Legend

- Existing situation
- LEP envelope
- Proposed envelope



Proposed envelope

LEP envelope



Proposed envelope

Date 23 September
Time 9 am

42
Shadow and Sun Access Study

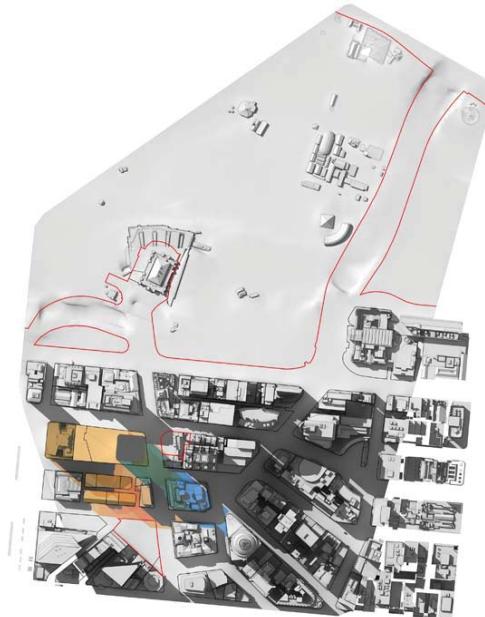
Spring Equinox



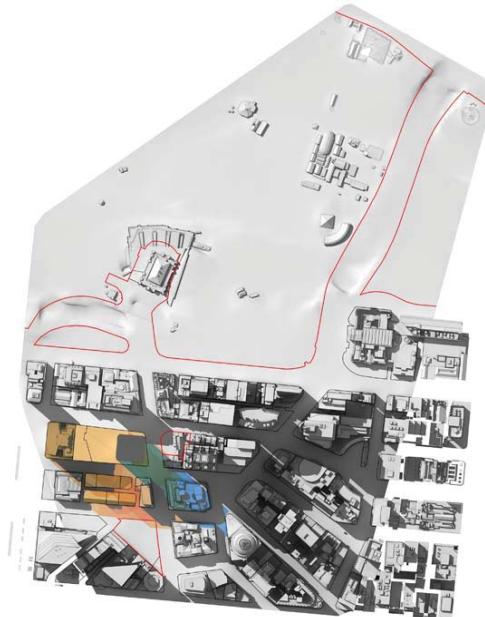
Existing situation

Legend

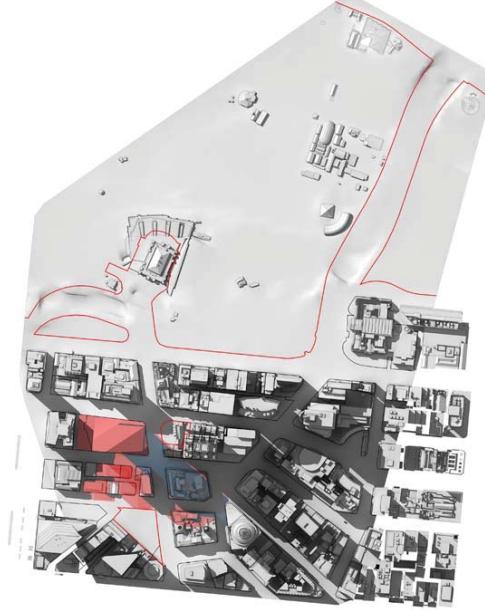
- Existing situation
- LEP envelope
- Proposed envelope



LEP envelope



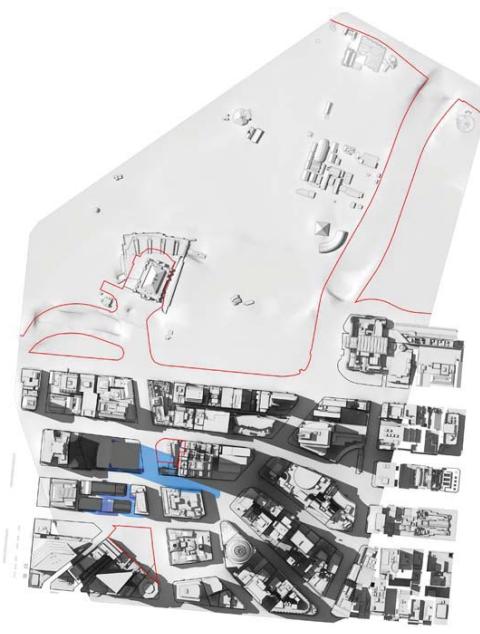
Proposed envelope



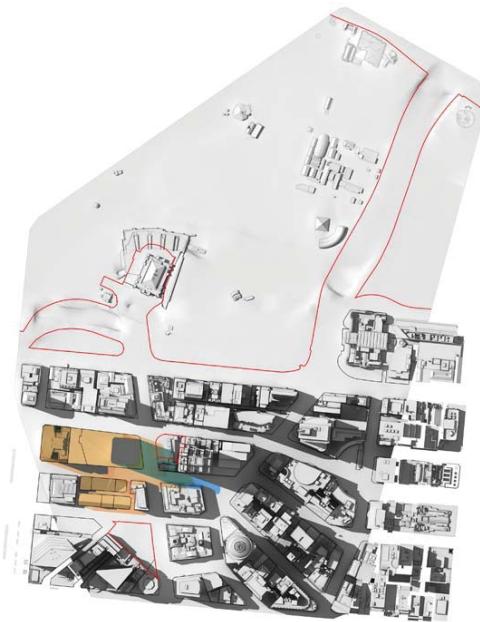
Time 10 am
Date 23 September
○

Shadow and Sun Access Study

Spring Equinox



Existing situation



LEP envelope

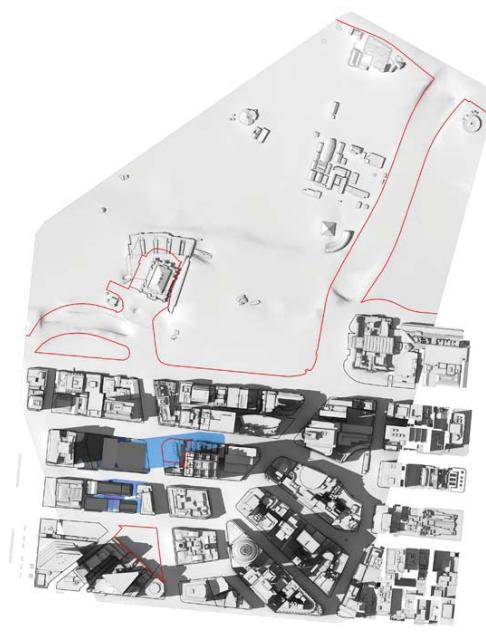
Proposed envelope

Time
11 am
Date
23 September

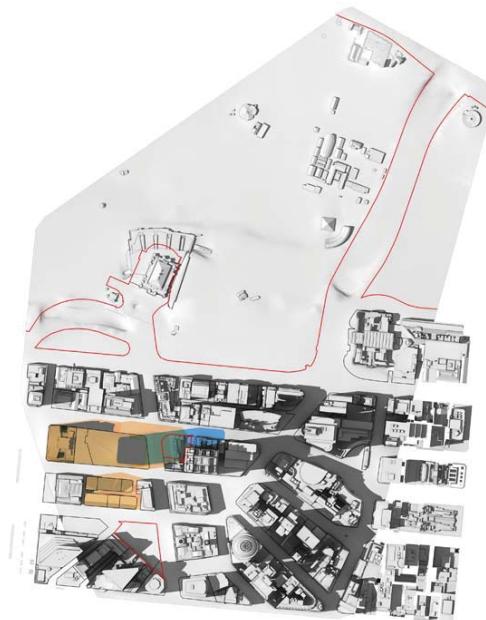
Shadow and Sun Access Study

44

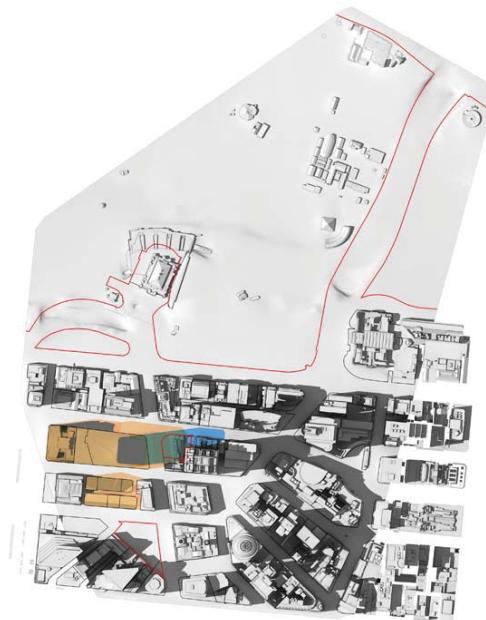
Spring Equinox



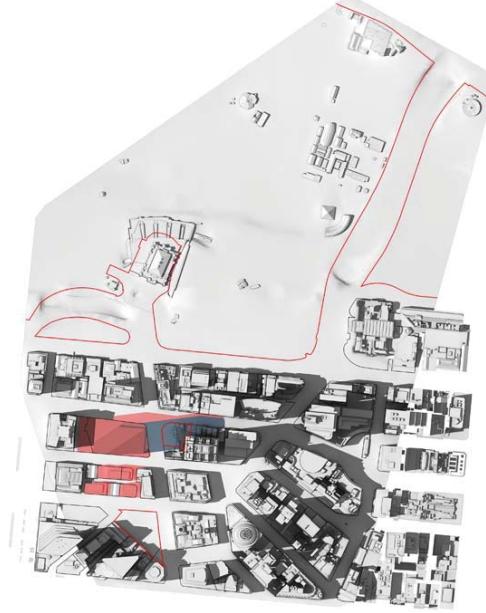
Existing situation



LEP envelope



Proposed envelope



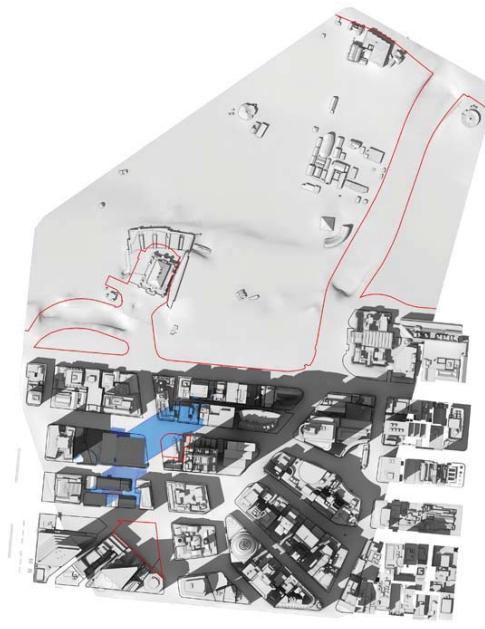
Proposed envelope

Time 12 pm
Date 23 September

Shadow and Sun Access Study

45

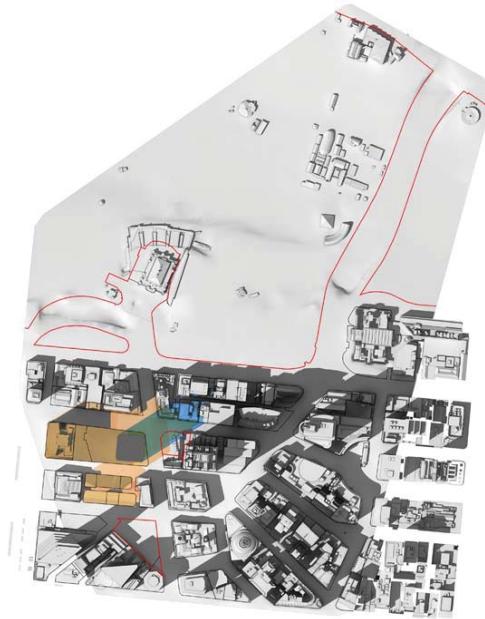
Spring Equinox



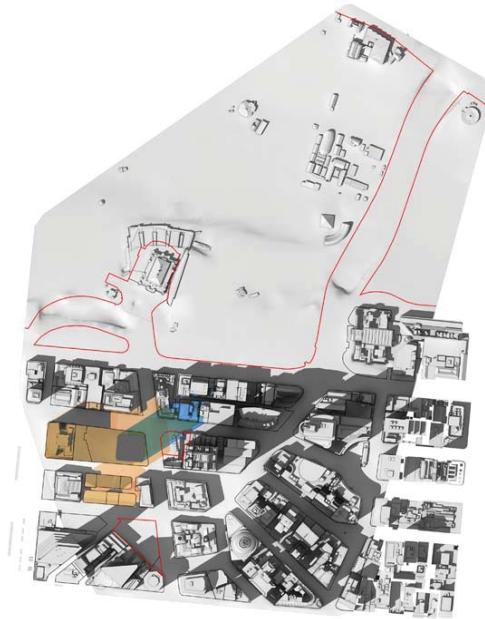
Existing situation

Legend

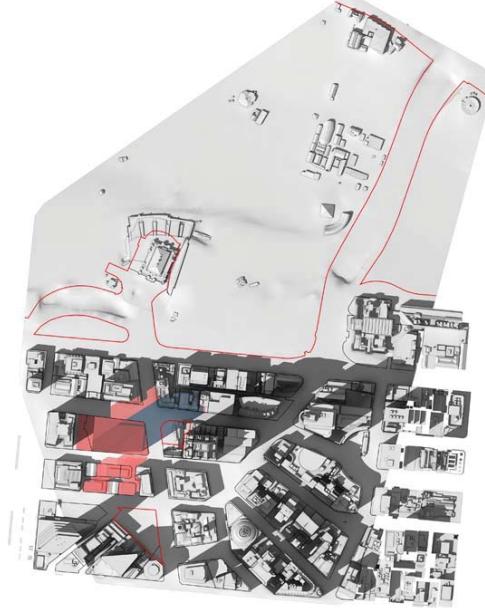
- Existing situation
- LEP envelope
- Proposed envelope



LEP envelope

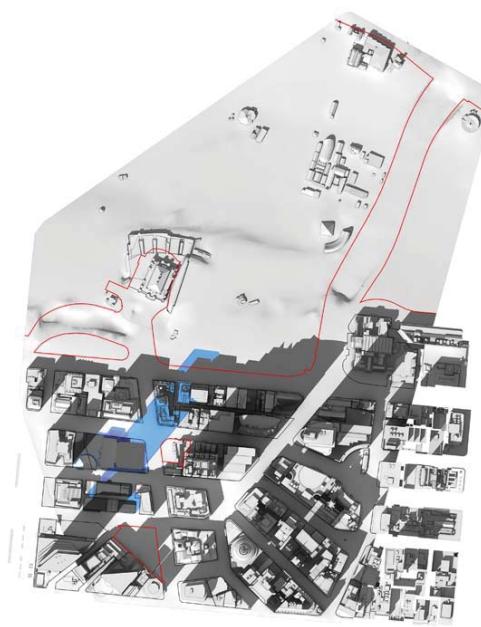


Proposed envelope



Legend
Date 23 September
Time 1 pm
○

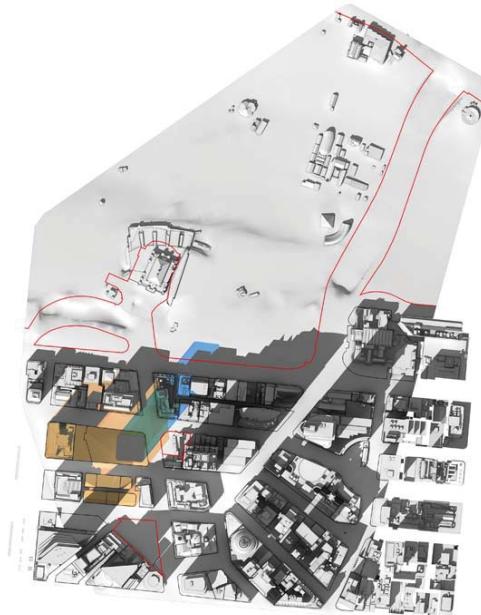
Spring Equinox



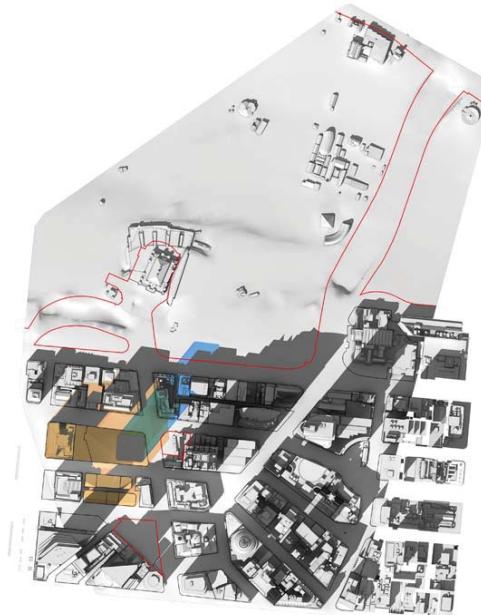
Existing situation

Legend

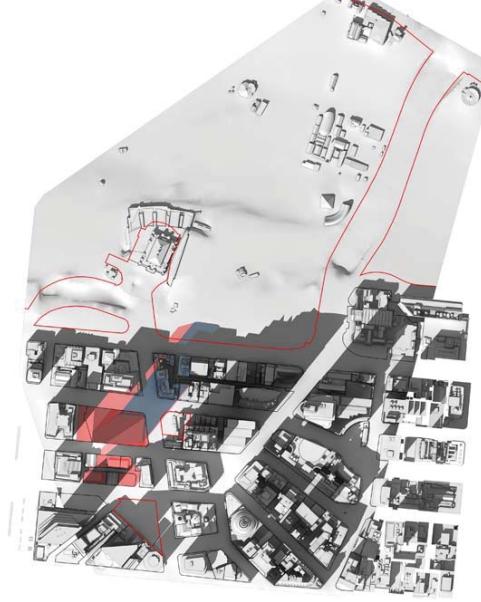
- Existing situation
- LEP envelope
- Proposed envelope



LEP Envelope



Proposed Envelope

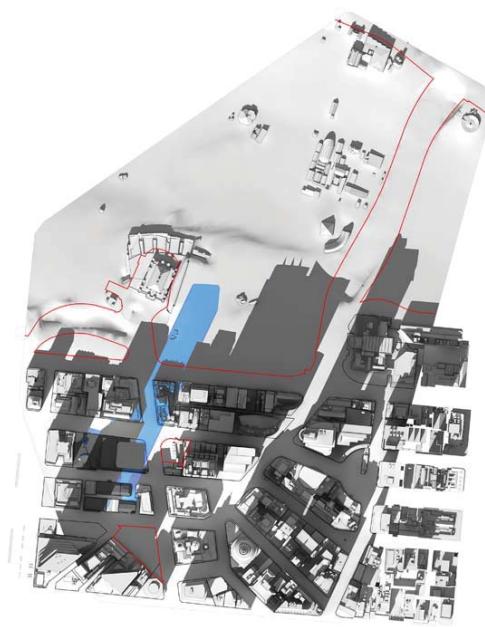


Time 2 pm
Date 23 September
○

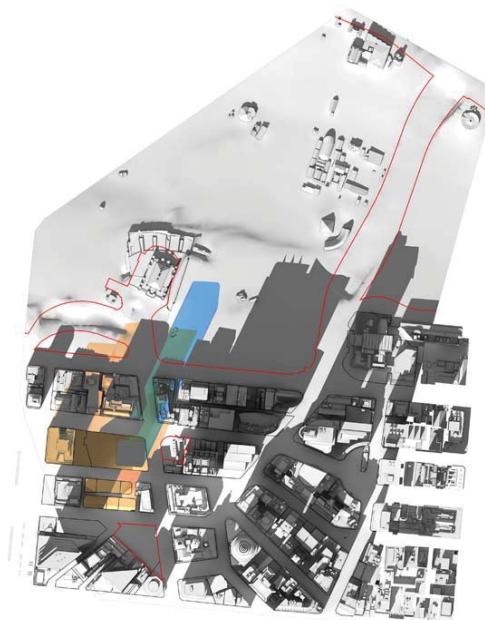
Shadow and Sun Access Study

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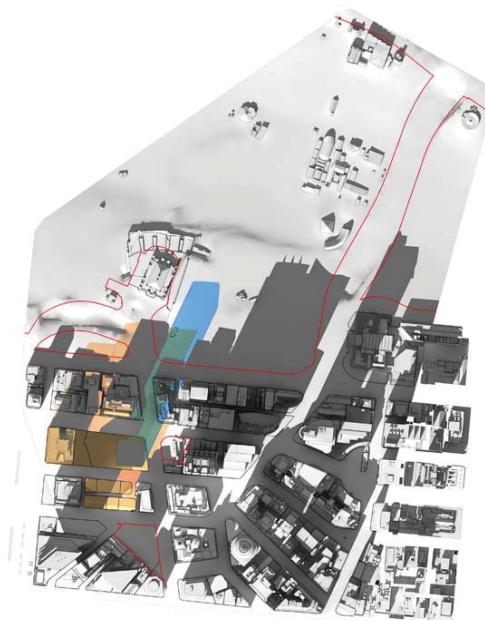
Spring Equinox



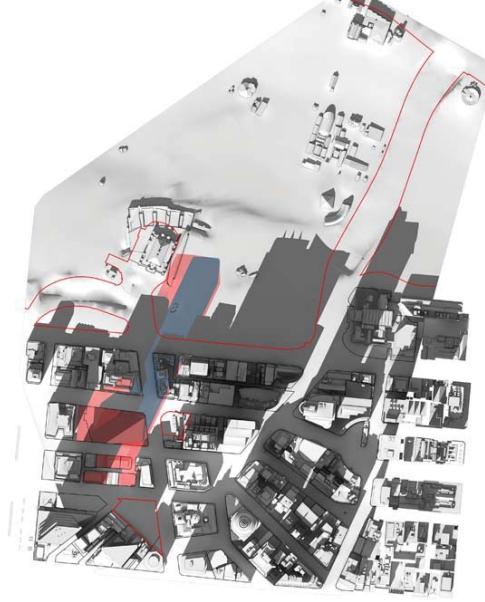
Existing situation



LEP Envelope

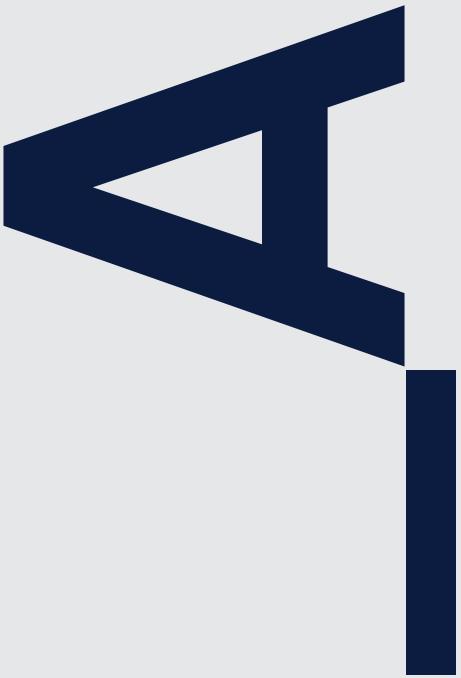


Proposed Envelope



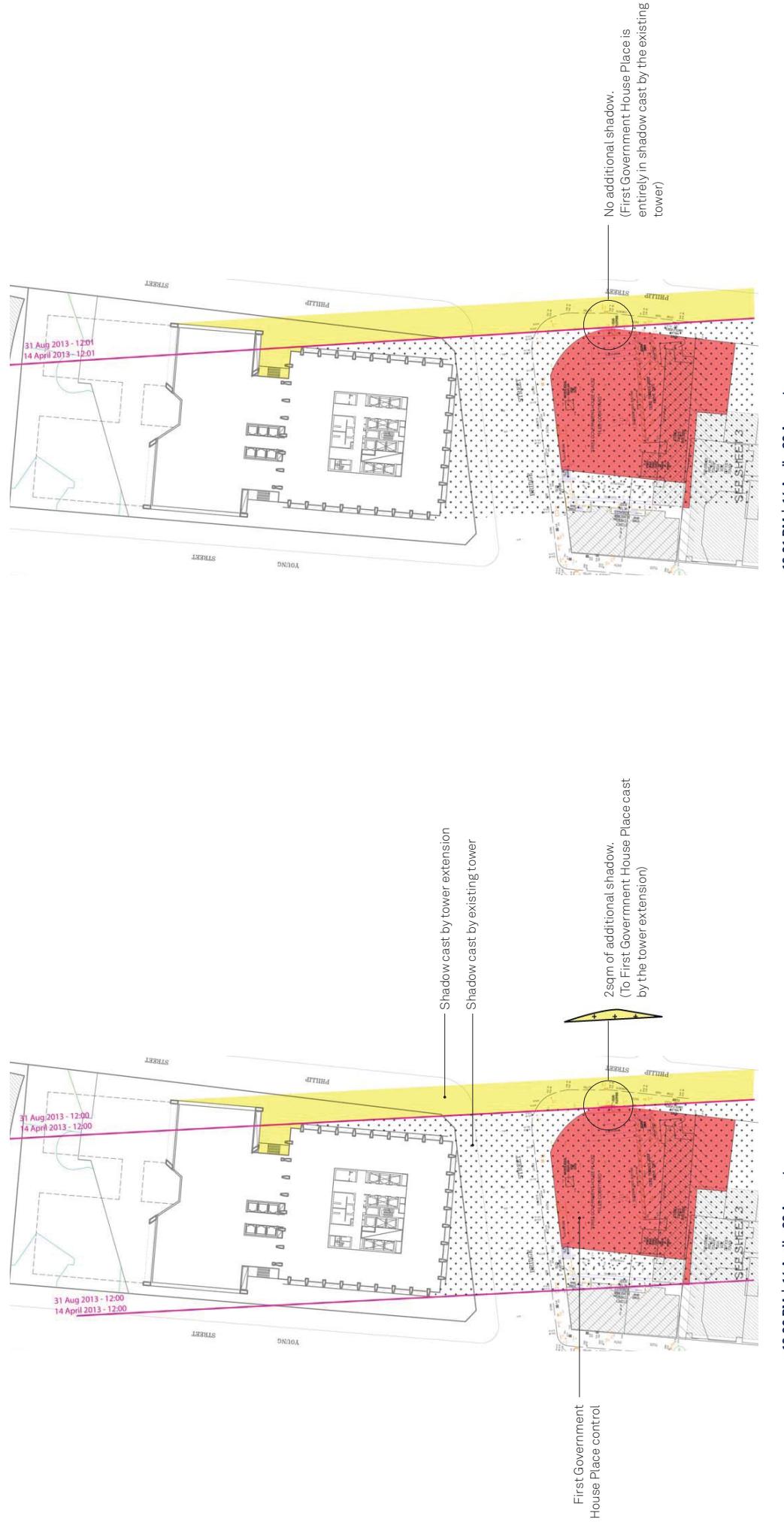
Proposed Envelope

Time 3 pm
Date 23 September
○



0.1% of the overall control area is overshadowed at 12pm
(2sqm of 1,376sqm)

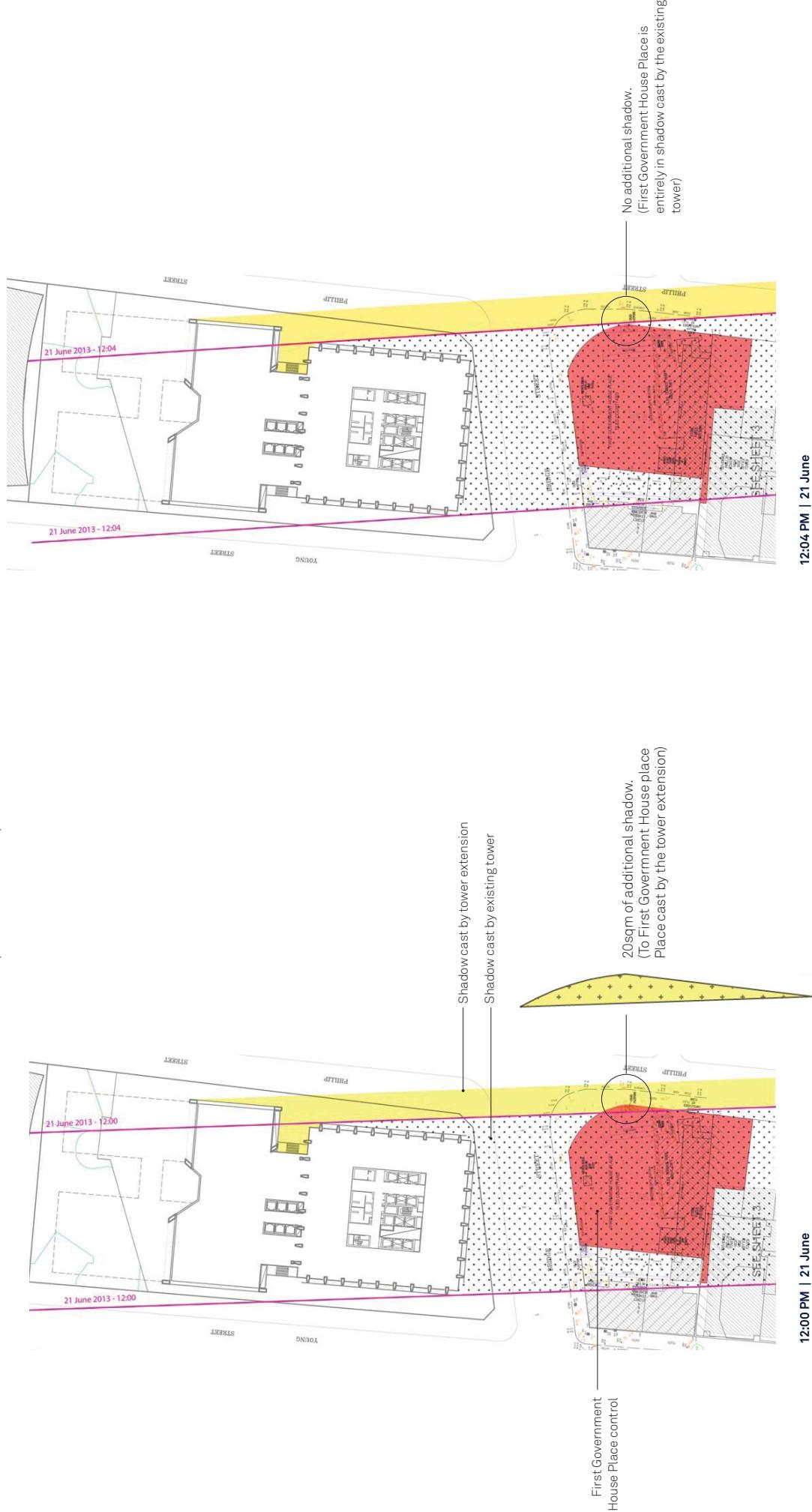
0.8% of the control time is overshadowed
(1 minute of 2 hours)



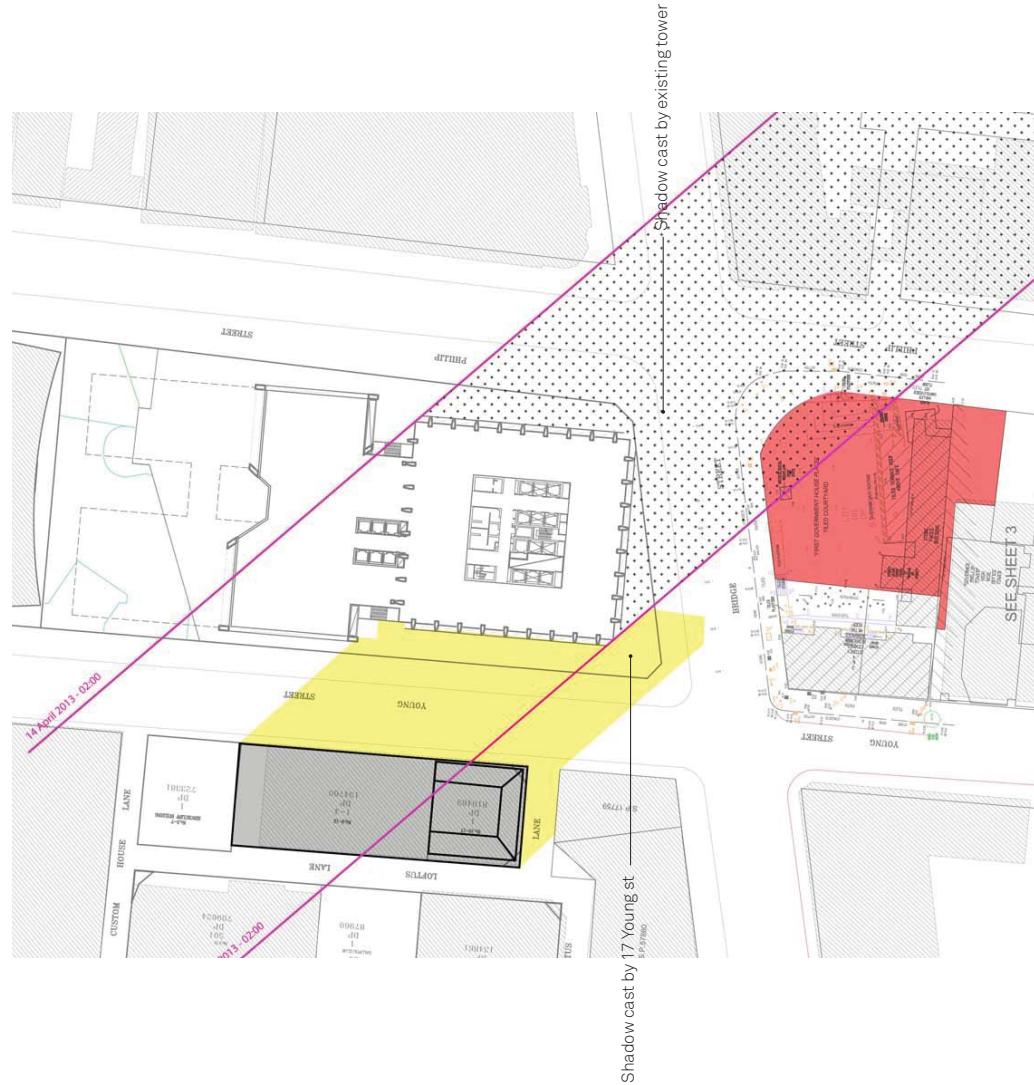
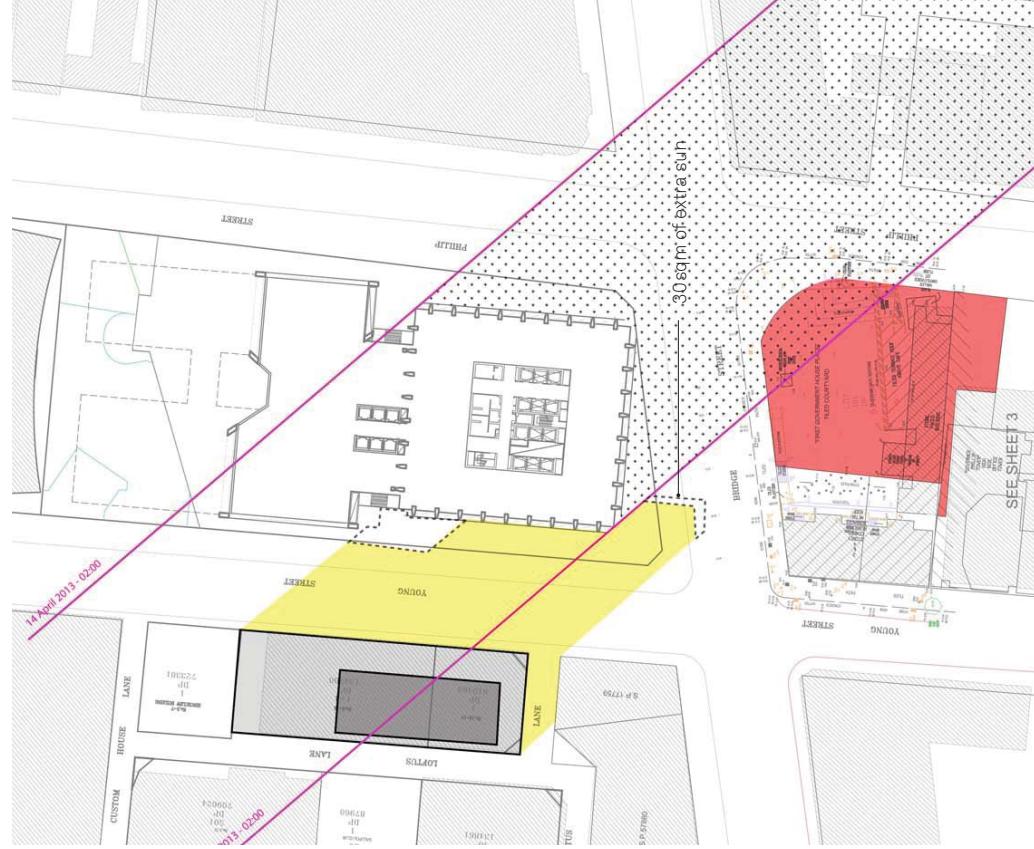
First Government House Place Study

1.4% of the overall control area is overshadowed at 12pm
(20sqm of 1,376sqm)

6.6% of the control time is overshadowed
(4 minutes of 2 hours)

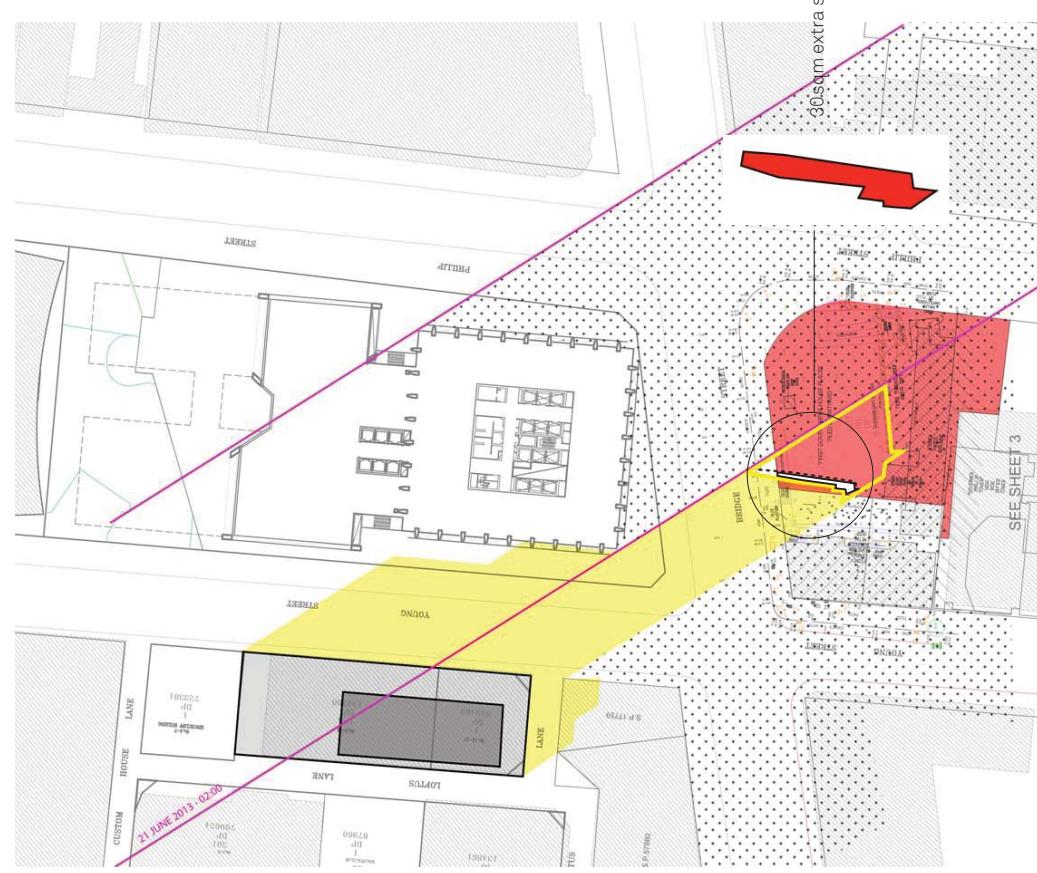


No Change To First Government House Place



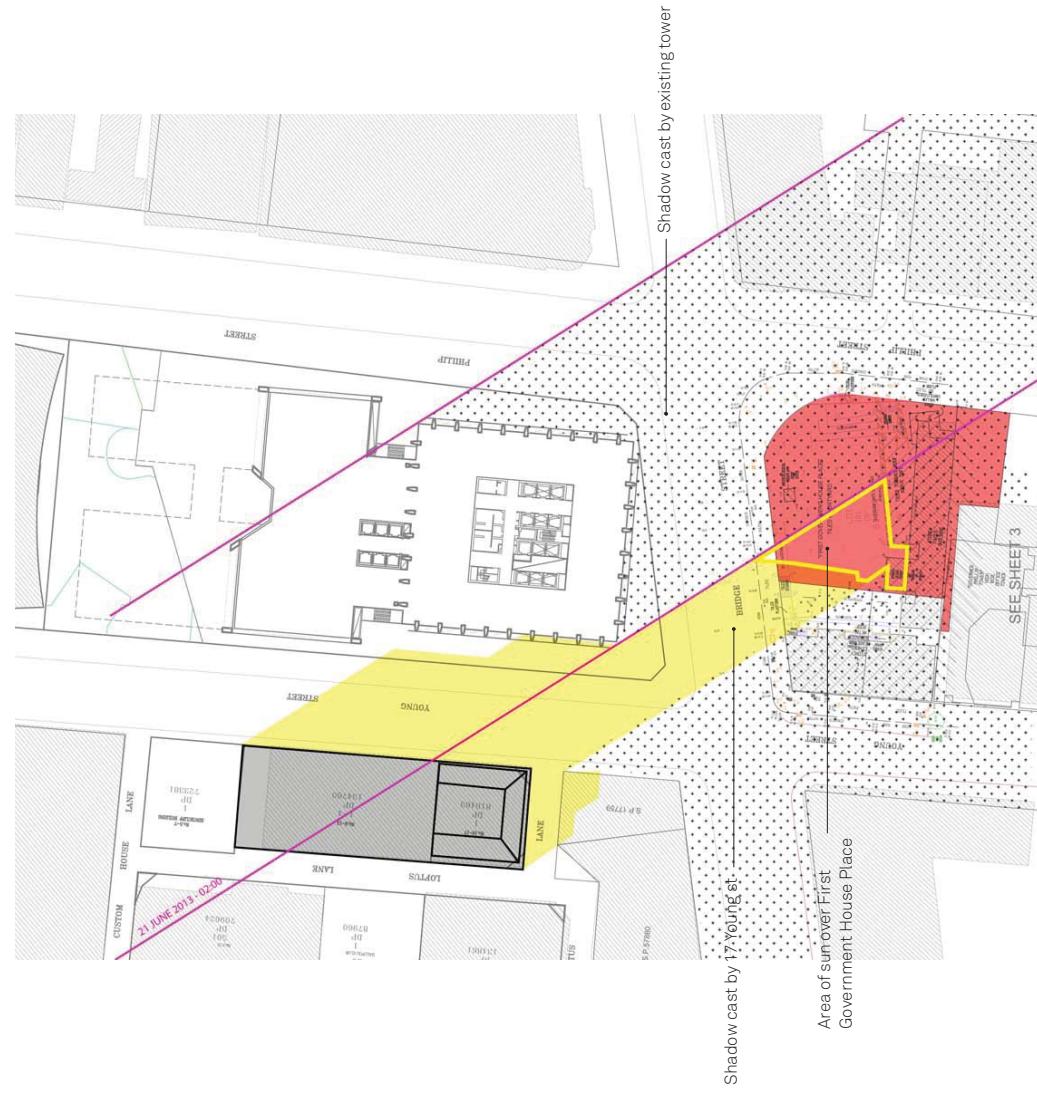
First Government House Place Study

30m² extra sun at 2pm
(As a result of reduced massing to 17 Young Street building)



Existing
2:00 PM | 21 June

Proposed
2:00 PM | 21 June



HASSELL

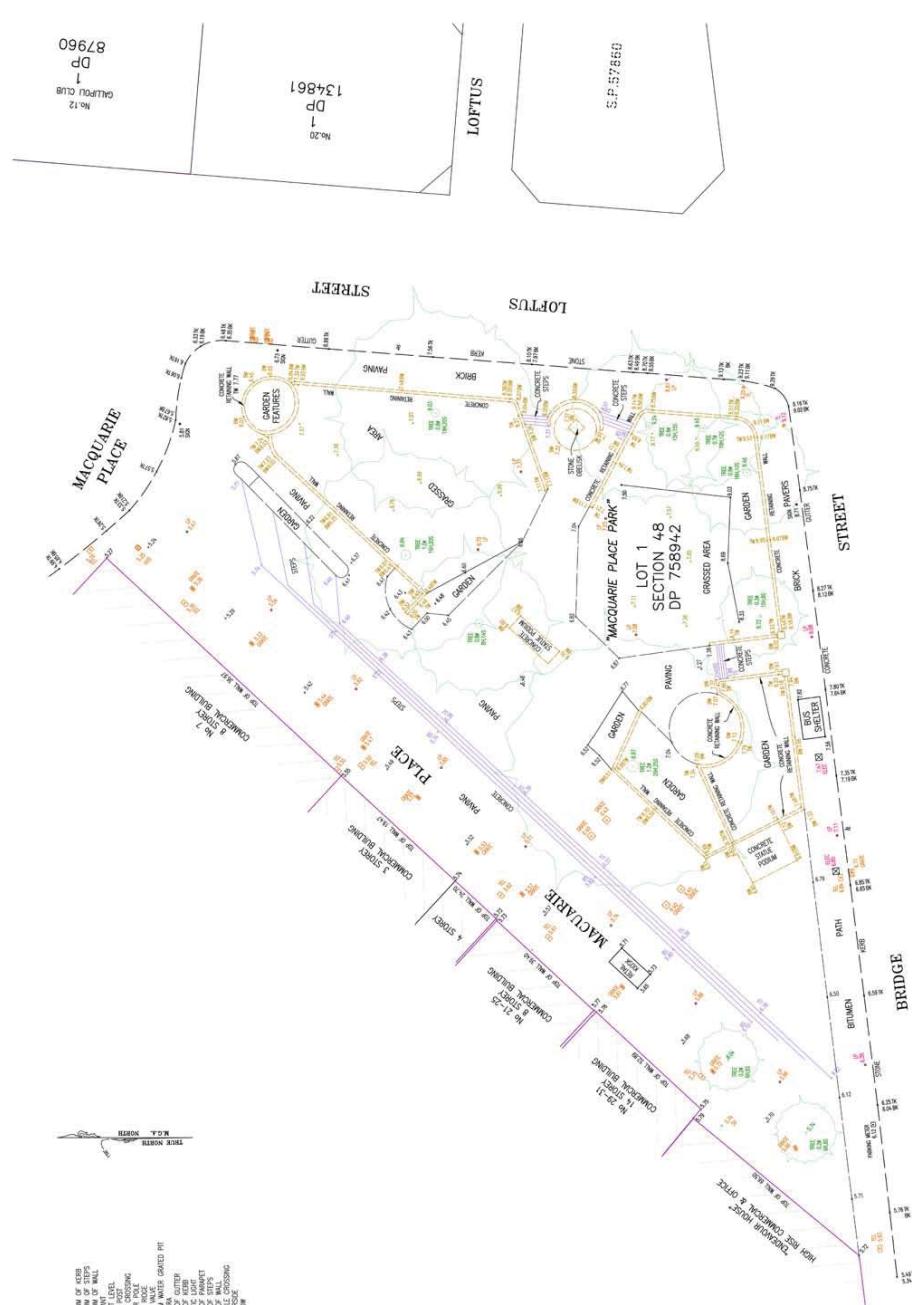




EE SHEET 2

PLAN SHOWING DETAIL AND LEVELS AT
"FIRST GOVERNMENT HOUSE PLACE" & "MACQUARIE PLACE PARK"
BRIDGE STREET
STONEY

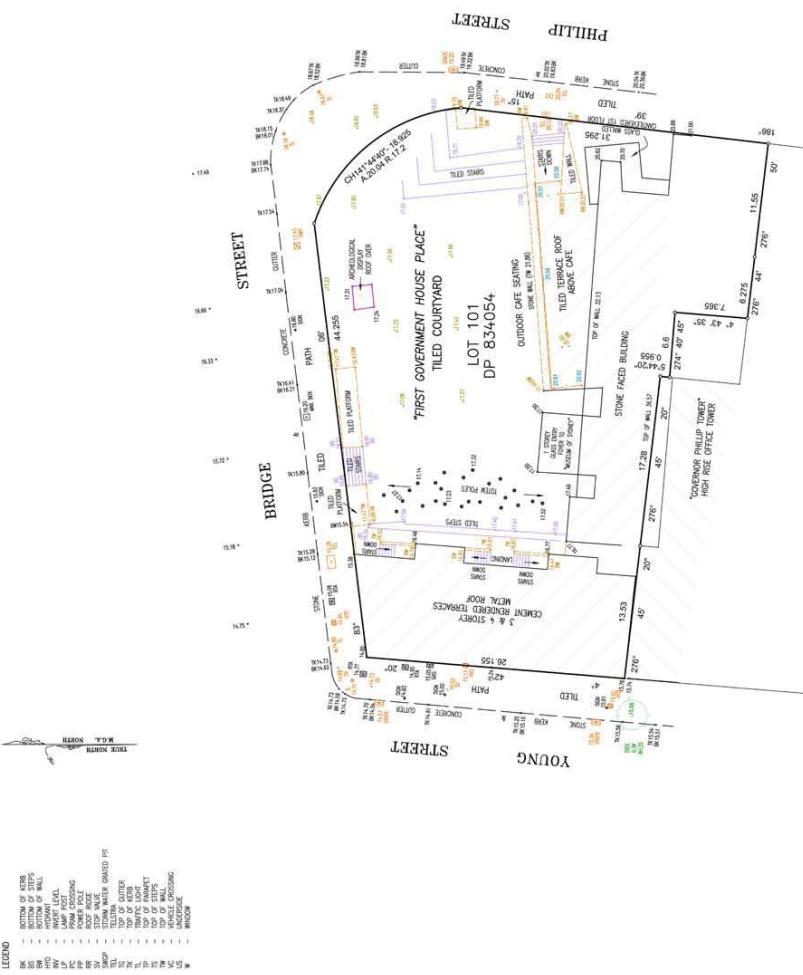
PLAN SHOWING DETAIL AND LEVELS AT
FIRST GOVERNMENT HOUSE PLACE" & "MACQUARIE PLACE PARK"
BRIDGE STREET
SYDNEY



PLAN SHOWING DETAIL AND LEVELS AT
"FIRST GOVERNMENT HOUSE PLACE" & "MACQUARIE PLACE PARK"
BRIDGE STREET
SYDNEY

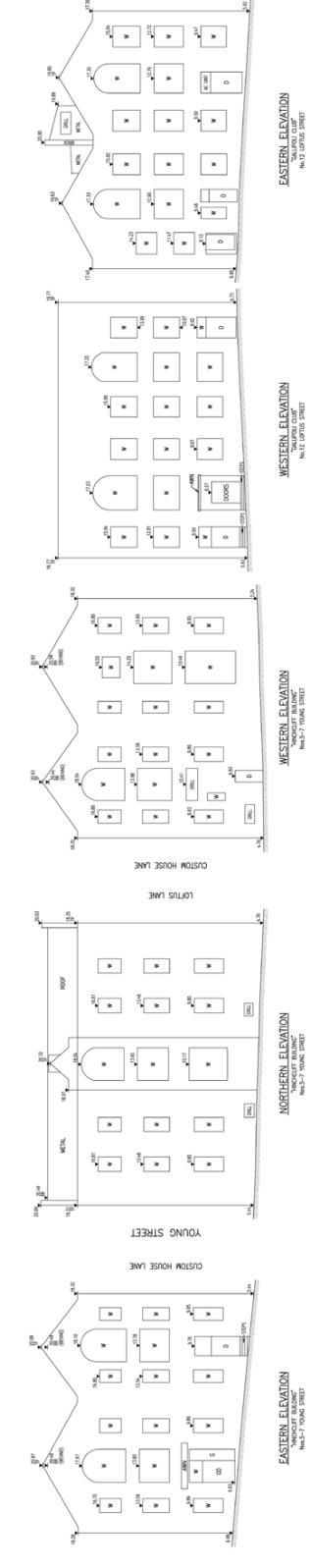
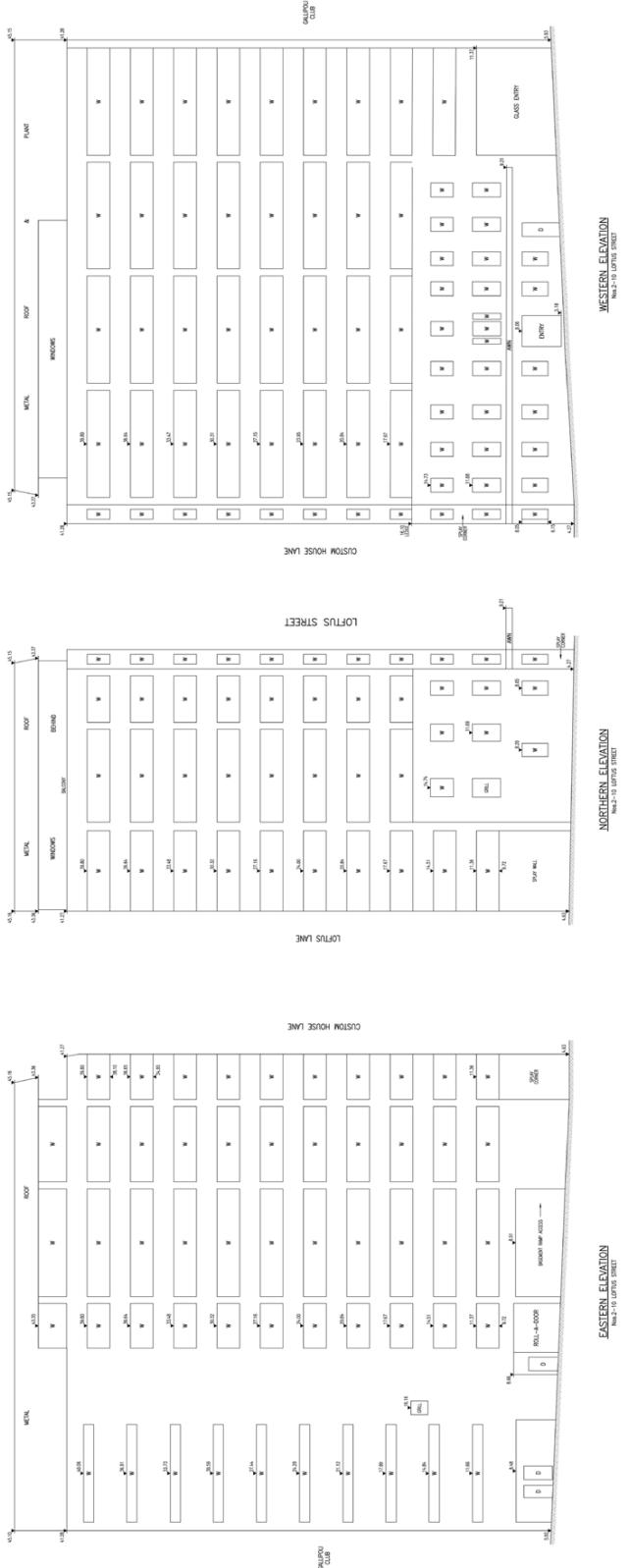
PLAN SHOWING DETAIL AND LEVELS AT
"FIRST GOVERNMENT HOUSE PLACE" & "MACQUARIE PLACE PARK"
BRIDGE STREET
SYDNEY

HASSELT



PLAN SHOWING DETAIL AND LEVELS AT
"FIRST GOVERNMENT HOUSE PLACE" & "MACQUARIE PLACE PARK"
BRIDGE STREET
SYDNEY

12-11-12 KB/DW SUBJECT BOY ADDED & PLAN SHIFTED TO MAG
DATE BY REVISION

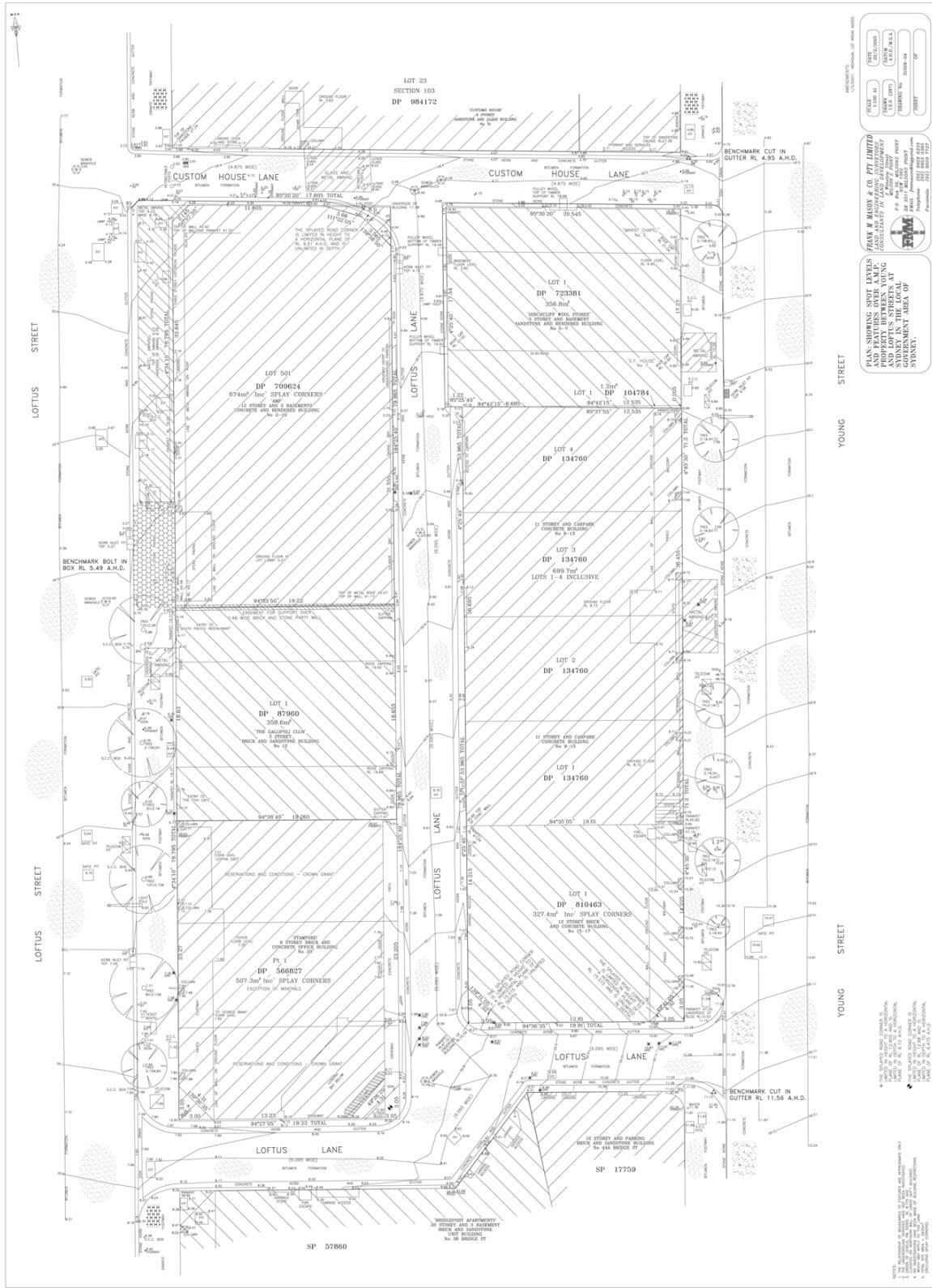


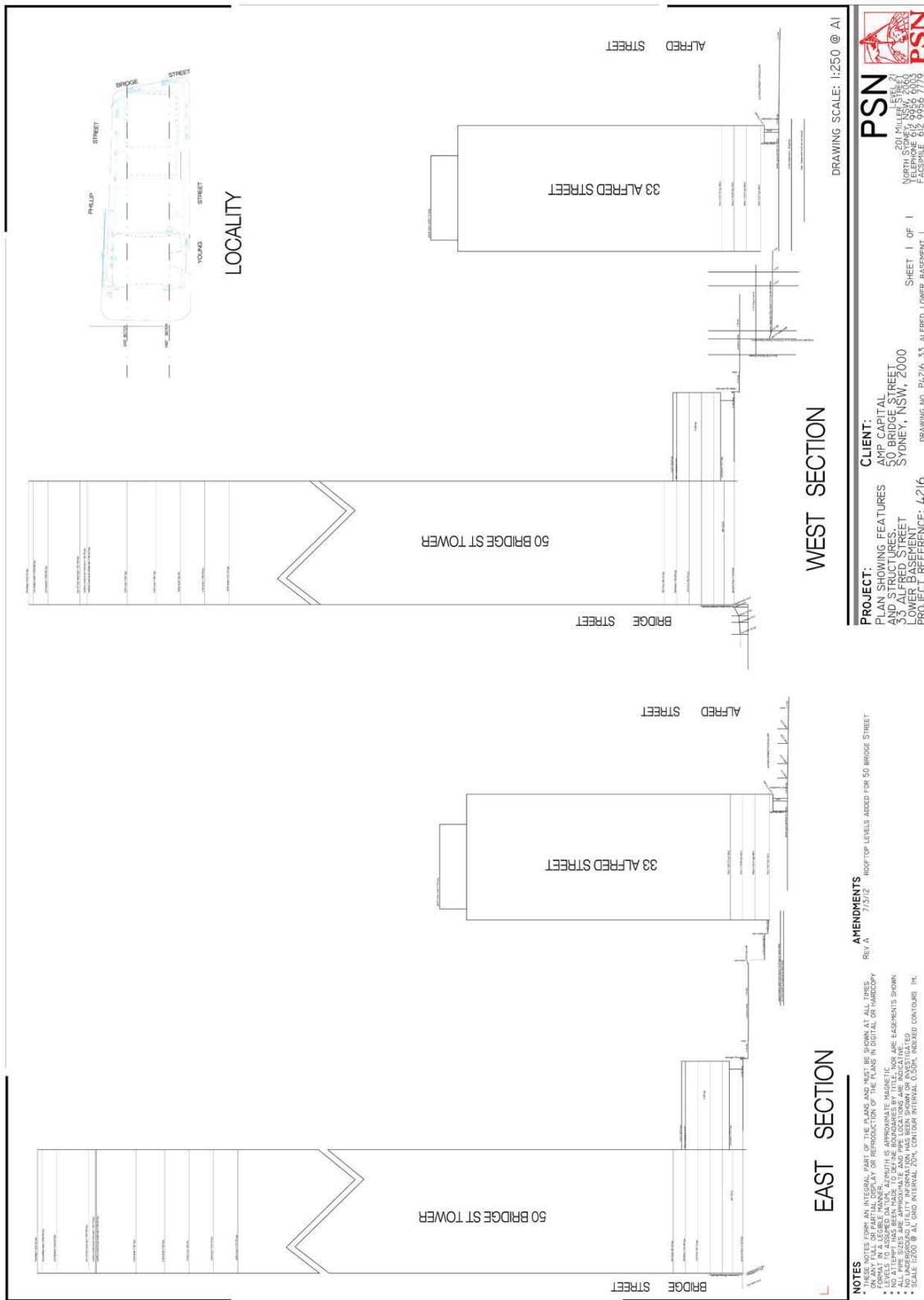
PLAN SHOWING ELEVATIONS
YOUNG STREET & LOFTUS STREET
SIXTY-FIVE

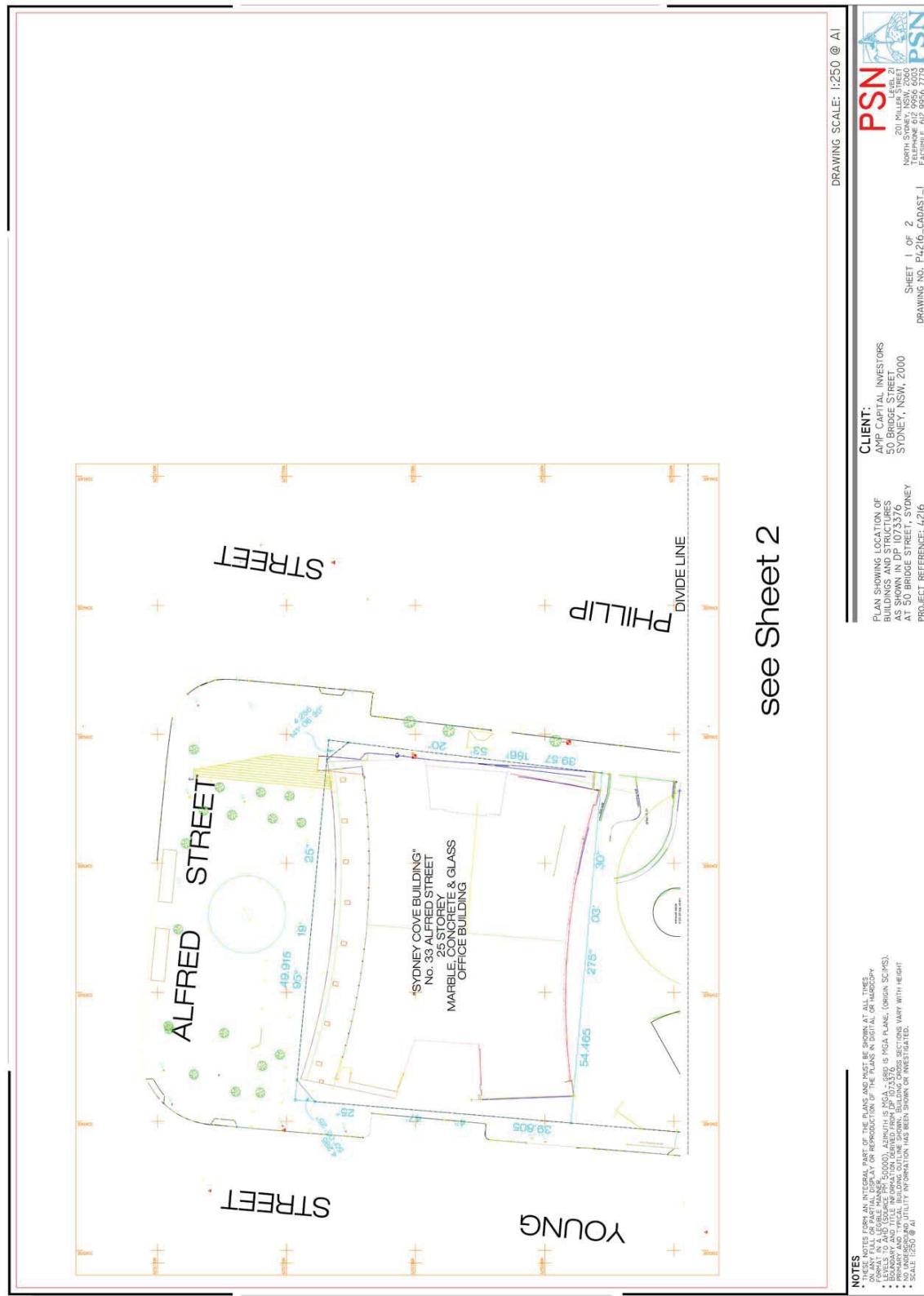
卷之三

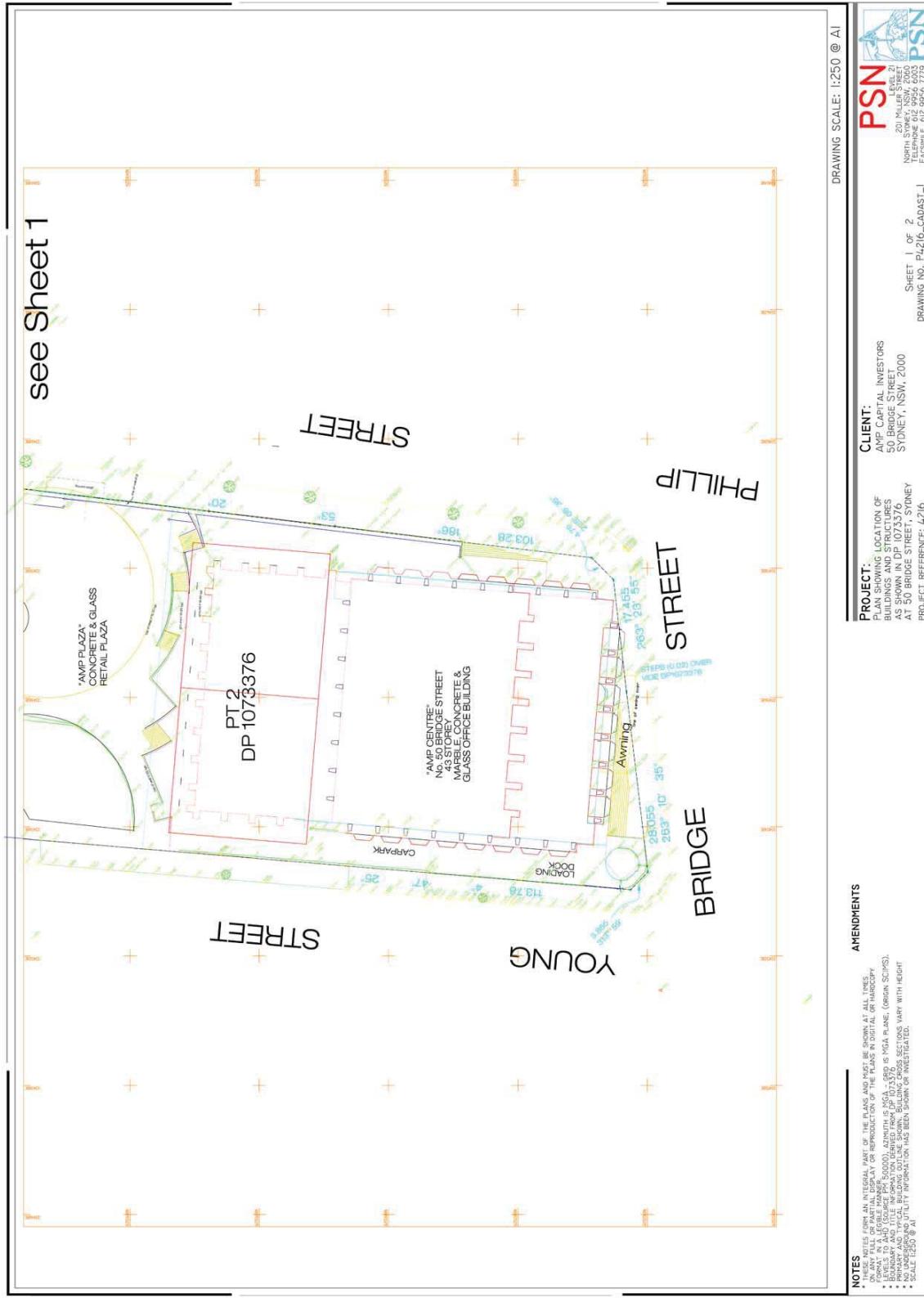
1160

HASSEH









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