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**Appendix A - Part 01**  
Shadow studies





## 07 Appendix A - Part 01 Shadow Studies Report

### Methodology

The overshadowing studies contained within this report illustrate the shadowing impact of the maximum proposed built form envelope.

They have been produced by HASSELL using 3D Studio Max, and have been based on the following base information:

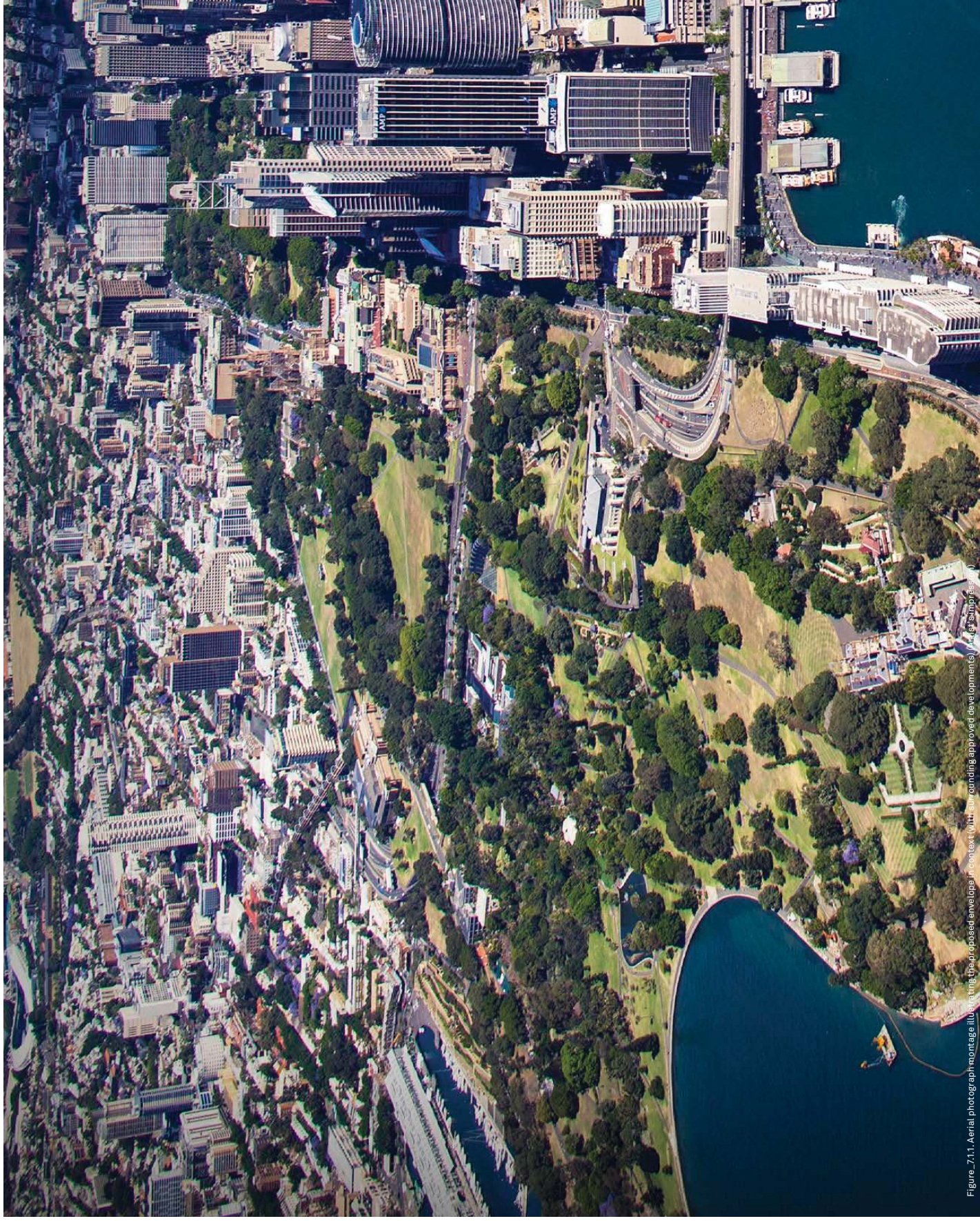
- \_ City model supplied by the City of Sydney including city buildings and topography (The supplied model has an accuracy of +/- 300mm)
- \_ Proposed envelope model of the Lend Lease tower, podium and plaza prepared by HASSELL
- \_ Indicative massing models of approved schemes located on other sites in the APDG block

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 information prepared by other parties.

### Summary of Results

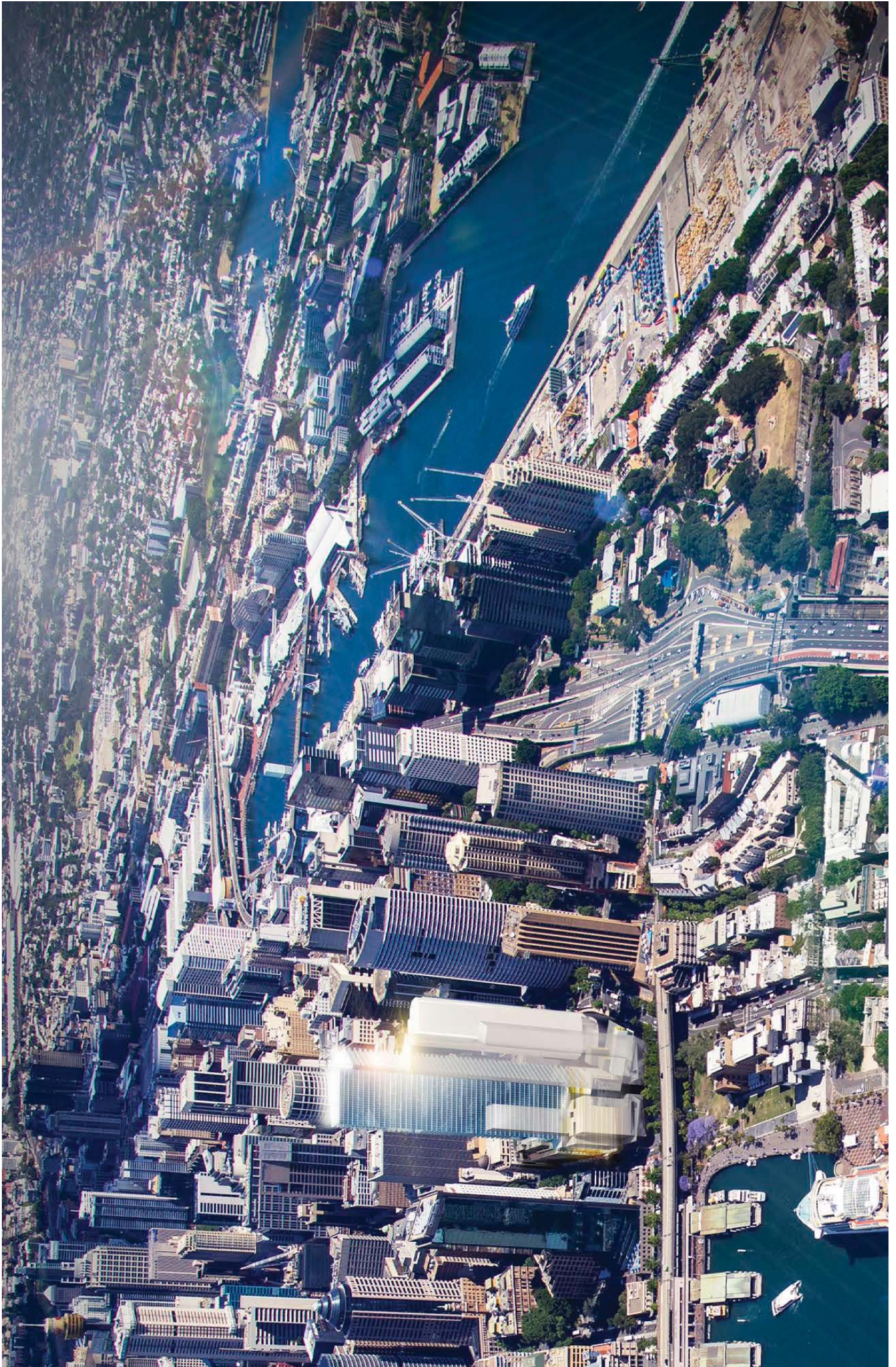
The APDG block is not on land affected by the Sun Access Plane as defined by the Sydney LEP 2012 Sun Access Protection Map.

The proposed tower envelope is clearly shown to have no negative impact on; Macquarie's Place, Australia Square and Lang Park between the control dates and times specified in the Sydney LEP 2012.



Figure\_7.11. Aerial photograph montage illustrating the proposed envelope in context (with surrounding approved developments) (not to scale)







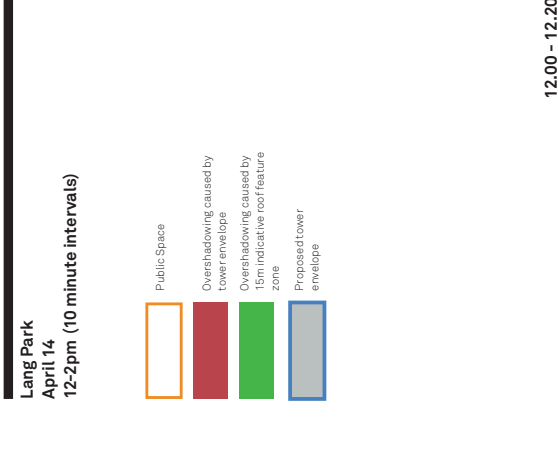
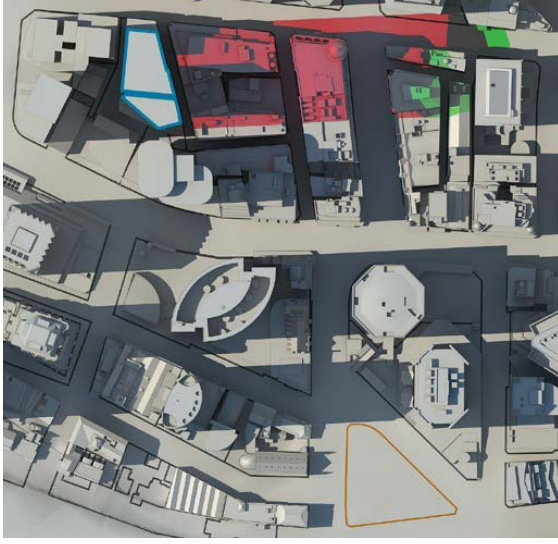
# 07 Appendix A - Part 01

## Shadow Studies Report

Lang Park

April 14





12-2pm (10 minute intervals)





**07 Appendix A - Part 01**  
**Shadow Studies Report**

**Lang Park**  
**April 14**  
**12-2pm (10 minute intervals)**

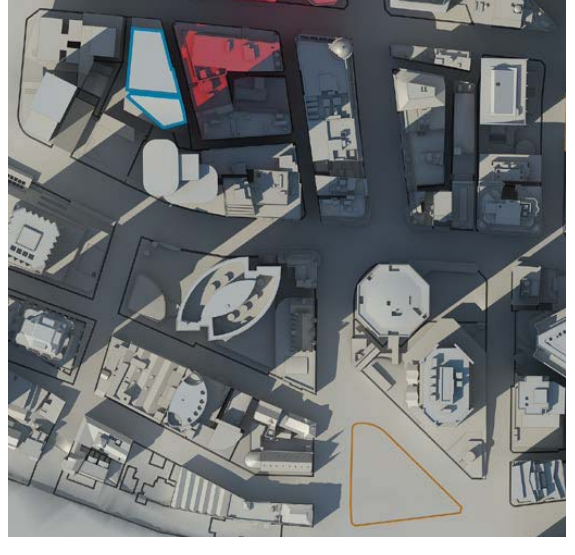
-  Public Space
-  Overshadowing caused by tower envelope
-  Overshadowing caused by 15m indicative roof feature zone
-  Proposed tower envelope



1.00 - 1.20



1.30 - 1.50





# 07 Appendix A - Part 01 Shadow Studies Report

Lang Park  
April 14  
12-2pm (10 minute intervals)

- Public Space
- Overshadowing caused by tower envelope
- Overshadowing caused by 15m indicative roof feature zone
- Proposed tower envelope







2.00



**07 Appendix A - Part 01**  
Shadow Studies Report

Lang Park  
June 21  
12-2pm (10 minute intervals)

-  Public Space
-  Overshading caused by tower envelope
-  Overshading caused by 15m indicative roof feature zone
-  Proposed tower envelope



12.00 - 12.20



12.30 - 12.50









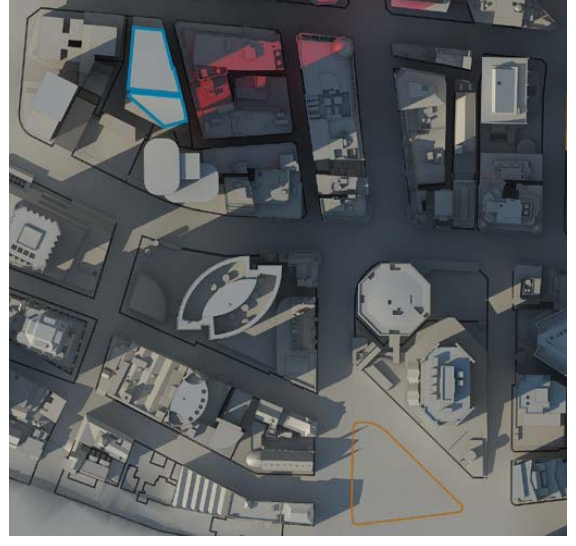
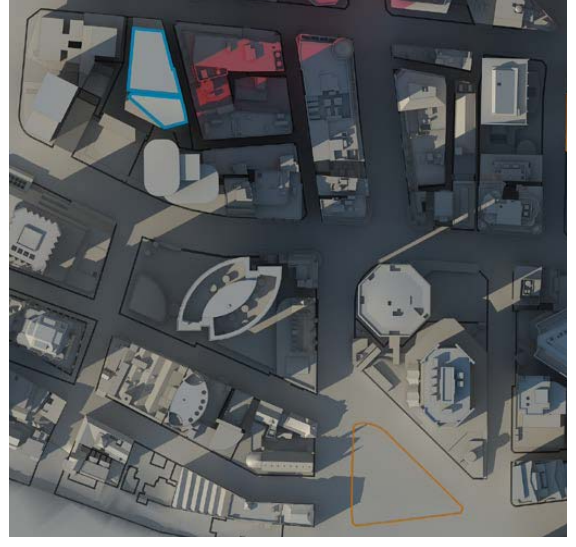
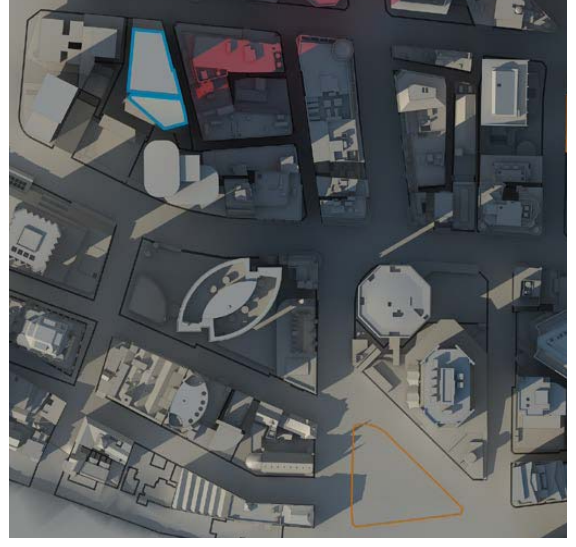
# 07 Appendix A - Part 01

## Shadow Studies Report

Lang Park  
June 21

12-2pm (10 minute intervals)

-  Public Space
-  Overshadowing caused by tower envelope
-  Overshadowing caused by 15m indicative roof feature zone
-  Proposed tower envelope



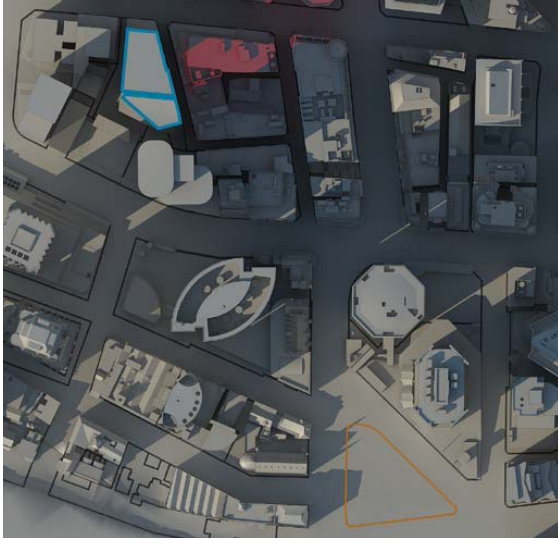
1.00 - 1.20

1.30 - 1.50



Lang Park  
June 21  
12-2pm (10 minute intervals)

- Public Space
- Overshading caused by tower envelope
- Overshading caused by 15m indicative roof feature zone
- Proposed tower envelope







2.00



# 07 Appendix A - Part 01

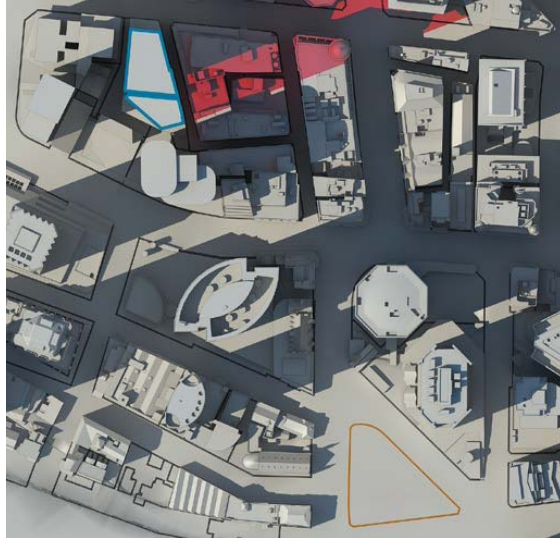
## Shadow Studies Report

Lang Park  
 August 31  
 12-2pm (10 minute intervals)

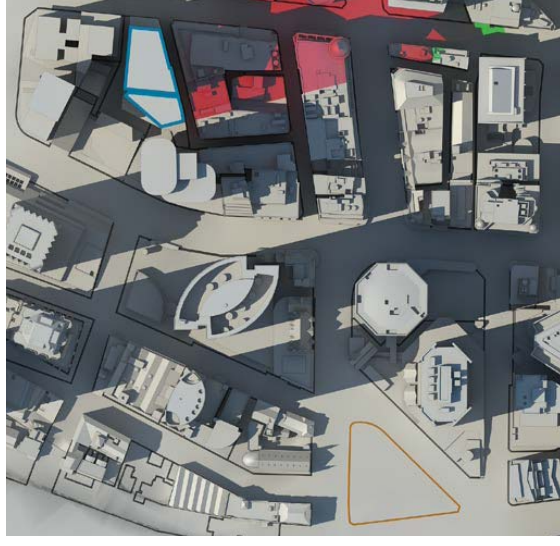
-  Public Space
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-  Overshadowing caused by 15m indicative roof feature zone
-  Proposed tower envelope



12.00 - 12.20







12.30 - 12.50





**07 Appendix A – Part 01**  
Shadow Studies Report

Lang Park  
August 31  
12-2 (10 minute intervals)

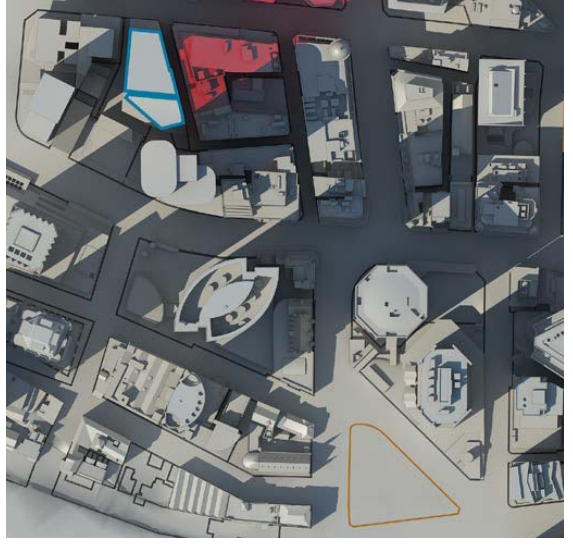
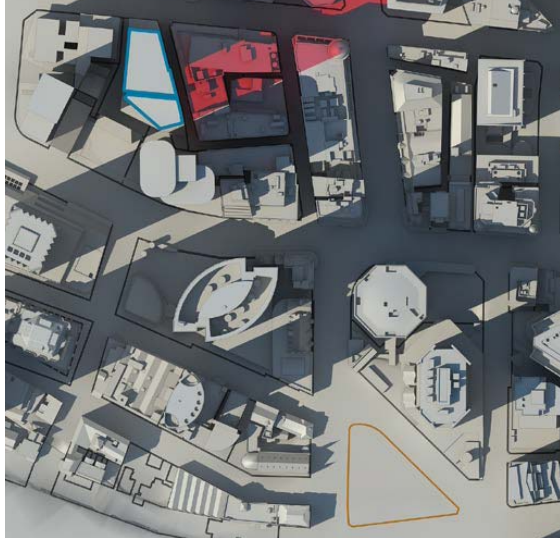
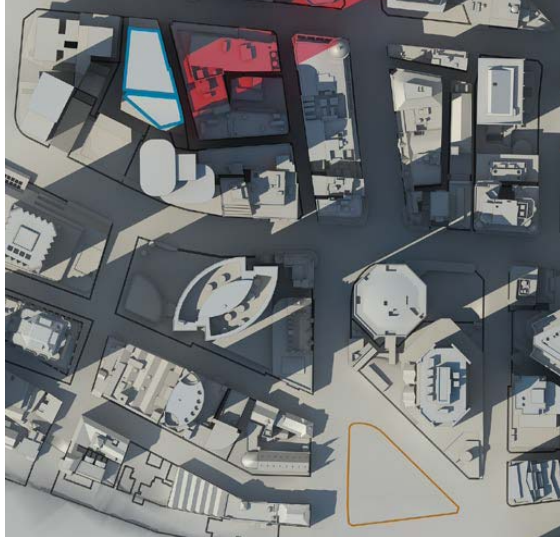
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-  Proposed tower envelope



1.00 - 1.20



1.30 - 1.50





# 07 Appendix A - Part 01 Shadow Studies Report

Lang Park  
August 31  
12-2pm (10 minute intervals)

- Public Space
- Overshadowing caused by tower envelope
- Overshadowing caused by 15m indicative roof feature zone
- Proposed tower envelope







2.00



**07 Appendix A - Part 01**  
Shadow Studies Report

**Australia Square**

April 14  
12-2pm (10 minute intervals)

-  Public Space
-  Overshadowing caused by tower envelope
-  Overshadowing caused by 15m indicative roof feature zone
-  Proposed tower envelope



12.00 - 12.20



12.30 - 12.50





# 07 Appendix A - Part 01

## Shadow Studies Report

### Australia Square

April 14

12-2pm (10 minute intervals)



1.00 - 1.10



1.30 - 1.50

Australia Square

April 14  
12-2pm (10 minute intervals)

- Public Space
- Overshadowing caused by tower envelope
- Overshadowing caused by 15m indicative roof feature zone
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2.00







# 07 Appendix A - Part 01 Shadow Studies Report

## Australia Square

June 21

12-2pm (10 minute intervals)

-  Public Space
-  Overshadowing caused by tower envelope
-  Overshadowing caused by 15m indicative roof feature zone
-  Proposed tower envelope



12.00 - 12.20



12.30 - 12.50







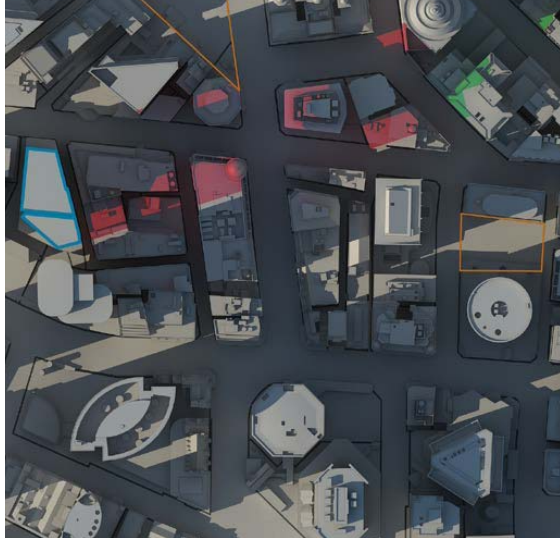


**07 Appendix A - Part 01**  
Shadow Studies Report

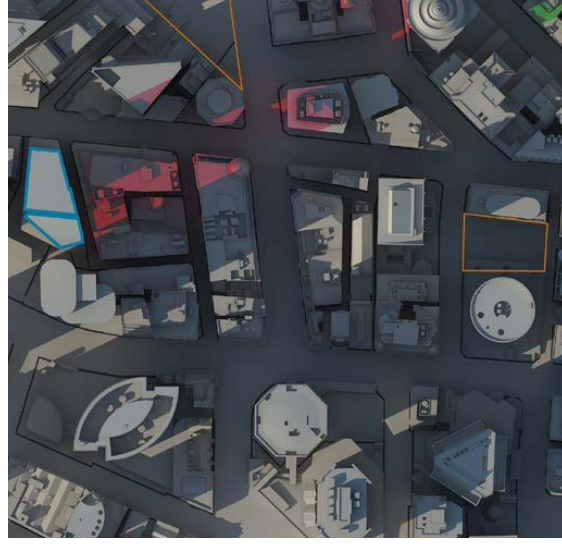
**Australia Square**

June 21  
12-2pm (10 minute intervals)

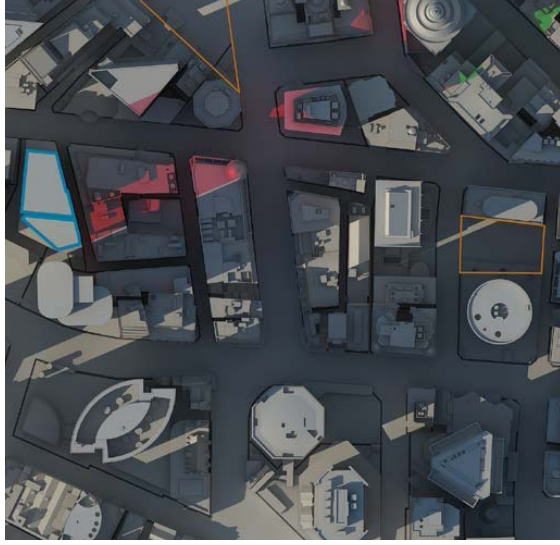
-  Public Space
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1.00 - 1.20



1.30 - 1.50







Australia Square  
June 21  
12-2pm (10 minute intervals)

- Public Space
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- Overshadowing caused by 15m indicative roof feature zone
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2.00

**07 Appendix A - Part 01**  
Shadow Studies Report

**Australia Square**

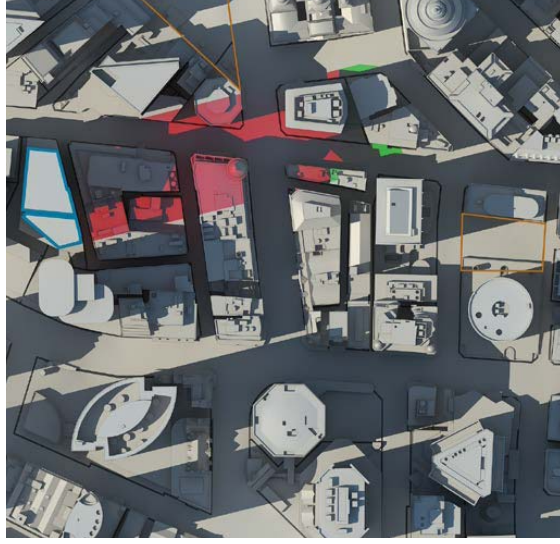
August 31

12-2pm (10 minute intervals)

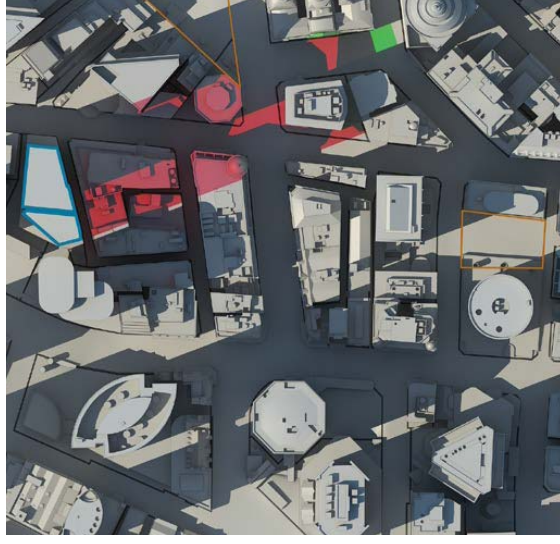
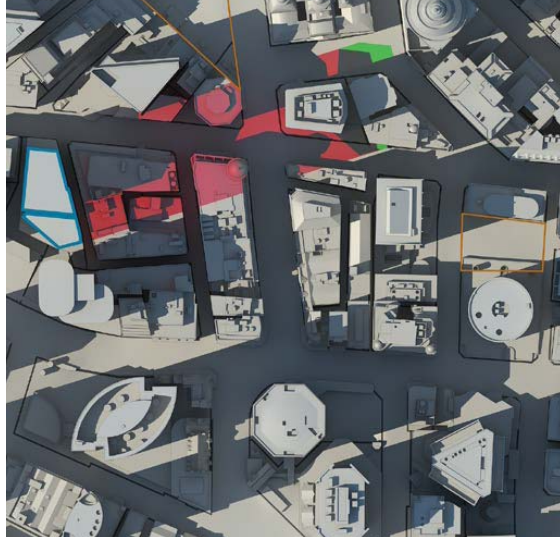
-  Public Space
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-  Proposed tower envelope



12.00 - 12.20



12.30 - 12.50









# 07 Appendix A - Part 01

## Shadow Studies Report

**Australia Square**  
**August 31**  
**12-2 (10 minute intervals)**

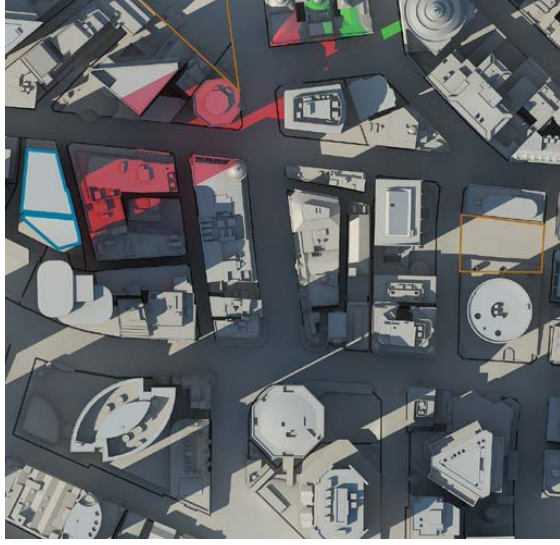
-  Public Space
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-  Proposed tower envelope



1.00 - 1.20



1.30 - 1.50



# 07 Appendix A - Part 01

## Shadow Studies Report

### Australia Square

August 31

12-2pm (10 minute intervals)

- Public Space
- Overshading caused by tower envelope
- Overshading caused by 15m indicative roof feature zone
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2.00







# 07 Appendix A - Part 01

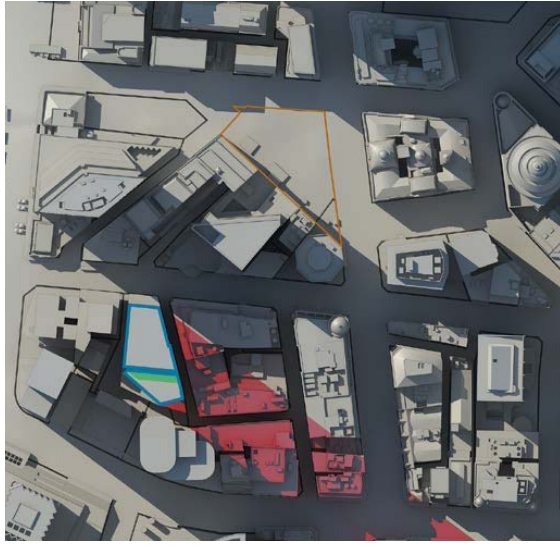
## Shadow Studies Report

### Macquarie Place

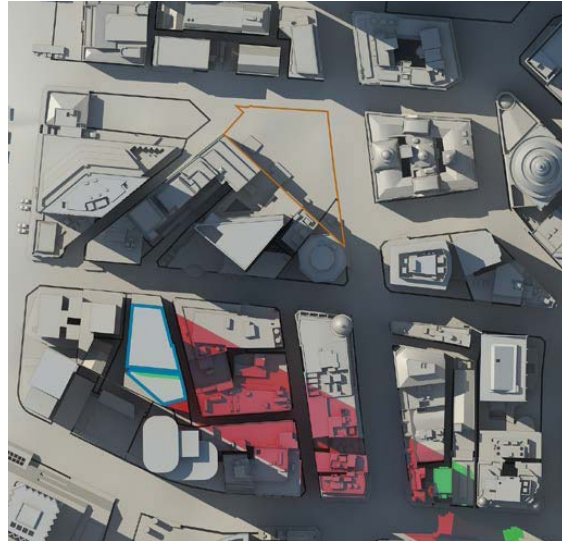
April 14

10-2 (10 minute intervals)

-  Public Space
-  Overshadowing caused by tower envelope
-  Overshadowing caused by 15m indicative roof feature zone
-  Proposed tower envelope



10.00 - 10.20







10.30 - 10.50

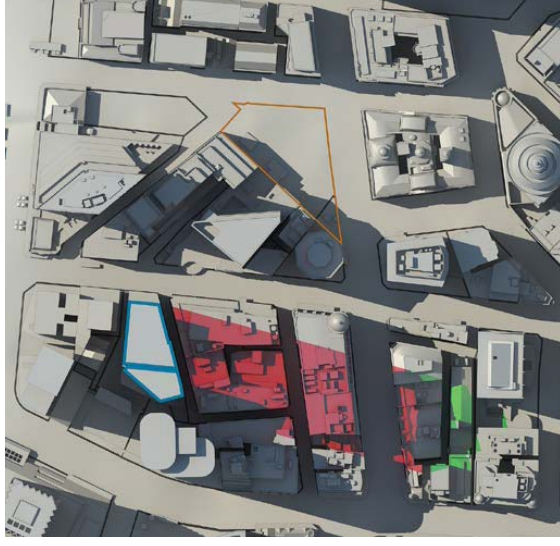
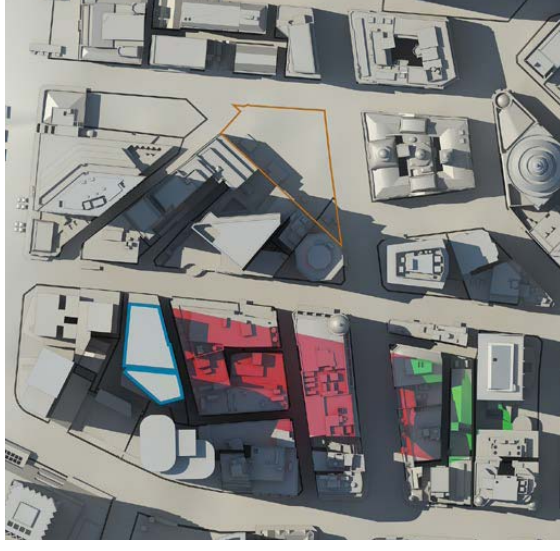




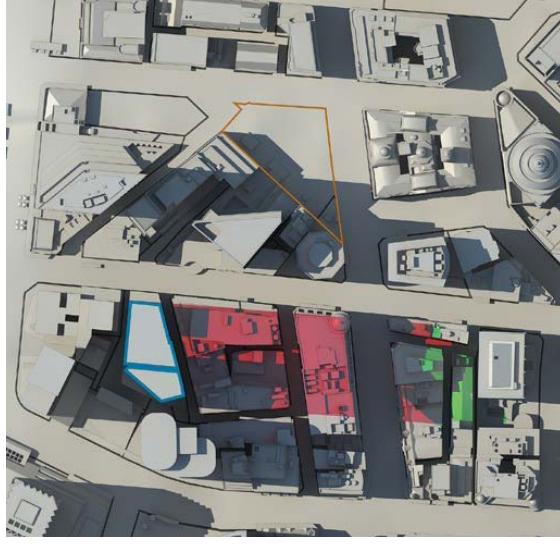
**07 Appendix A - Part 01**  
Shadow Studies Report

**Macquarie Place**  
April 14  
10-2pm (10 minute intervals)

-  Public Space
-  Overshadowing caused by tower envelope
-  Overshadowing caused by 15m indicative roof feature zone
-  Proposed tower envelope



11.00 - 10.20



11.30 - 11.50







# 07 Appendix A - Part 01

## Shadow Studies Report

### Macquarie Place

April 14  
10-2pm (10 minute intervals)

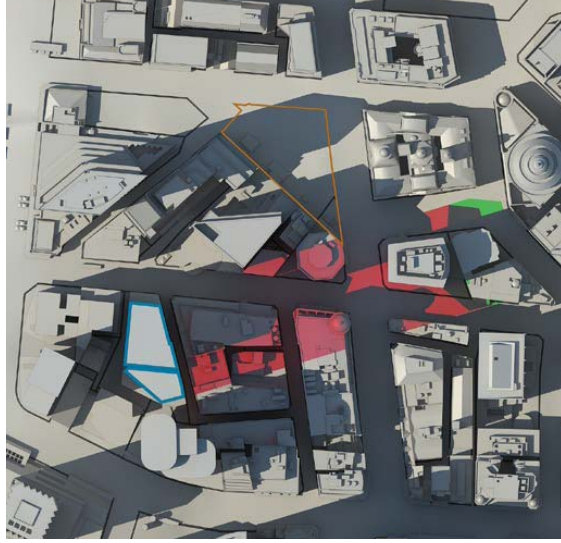
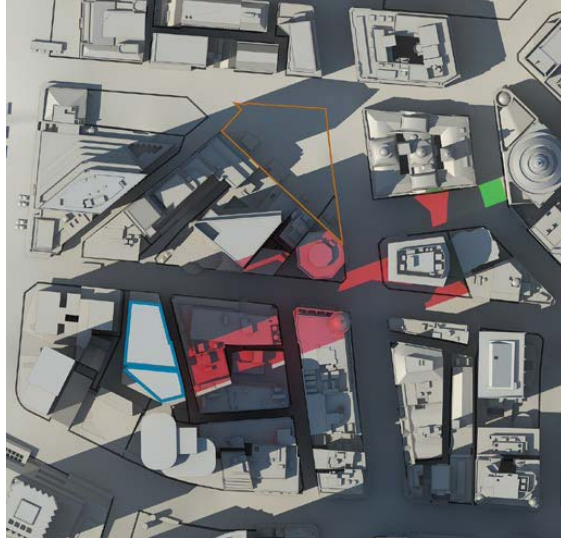
-  Public Space
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12.00 - 12.20







12.30 - 12.50





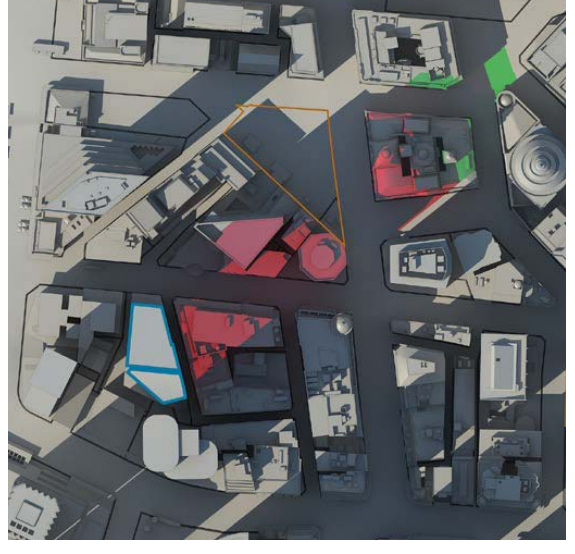
**07 Appendix A - Part 01**  
Shadow Studies Report

**Macquarie Place**  
April 14  
10-2 pm (10 minute intervals)

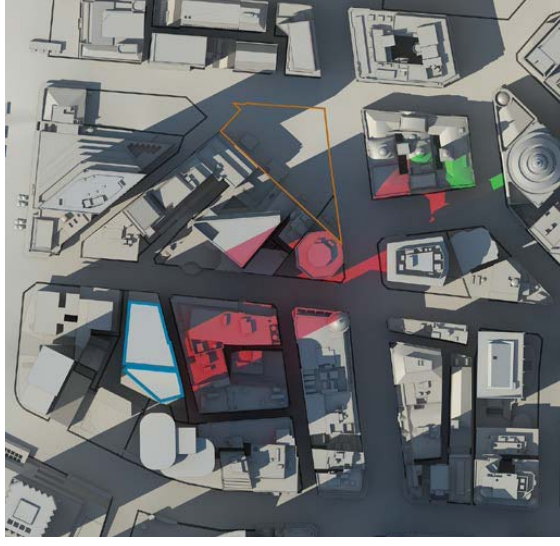
-  Public Space
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1.00 - 1.20



1.30 - 1.50

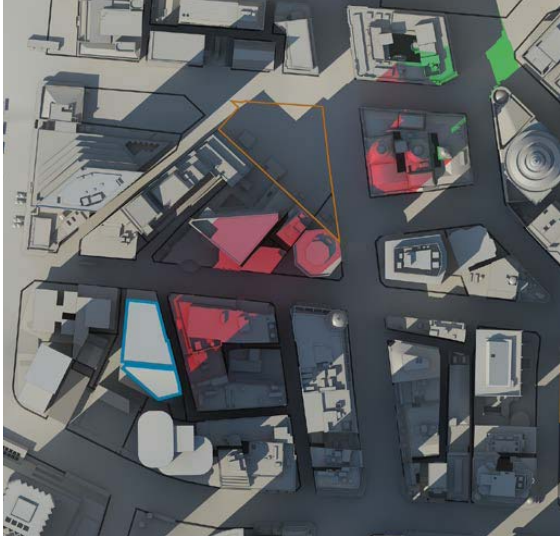




# 07 Appendix A - Part 01 Shadow Studies Report

**Macquarie Place**  
April 14  
10-2pm (10 minute intervals)

- Public Space
- Overshadowing caused by tower envelope
- Overshadowing caused by 15m indicative roof feature zone
- Proposed tower envelope







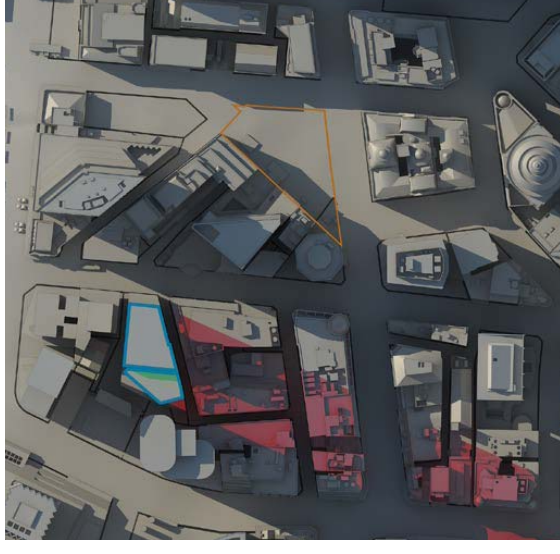
2.00

**07 Appendix A - Part 01**  
Shadow Studies Report

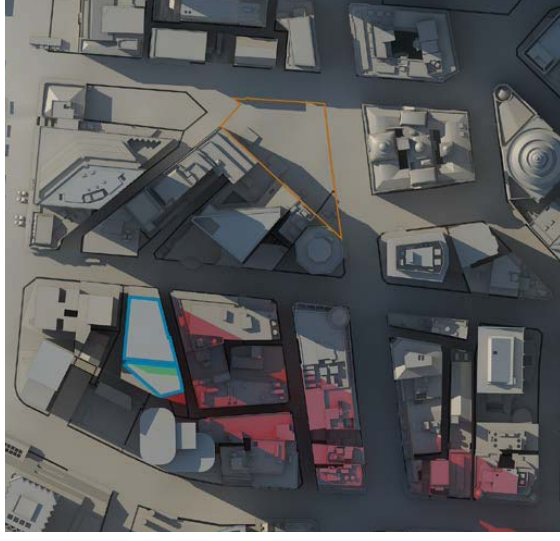
**Macquarie Place**

June 21  
10-2pm (10 minute intervals)

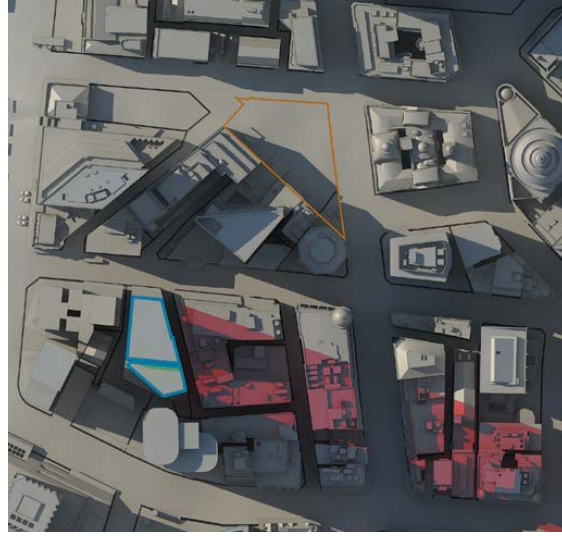
-  Public Space
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10.00 - 10.20



10.30 - 10.50









**07 Appendix A - Part 01**  
Shadow Studies Report

**Macquarie Place**

June 21

10-2pm (10 minute intervals)

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-  Proposed tower envelope



11.00 - 11.20



11.30 - 11.50









**07 Appendix A - Part 01**  
Shadow Studies Report

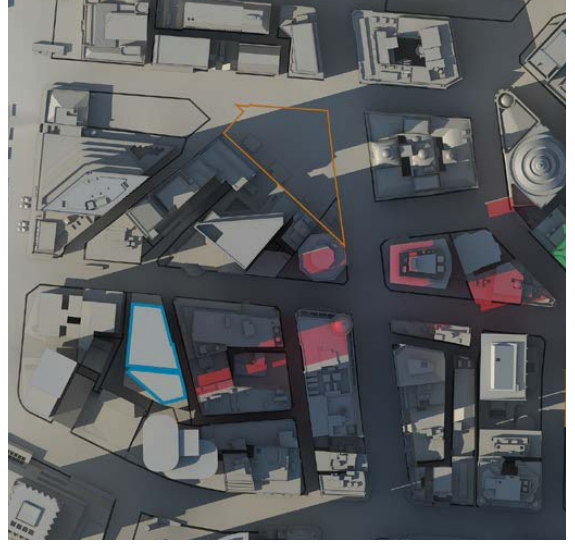
**Macquarie Place**

June 21  
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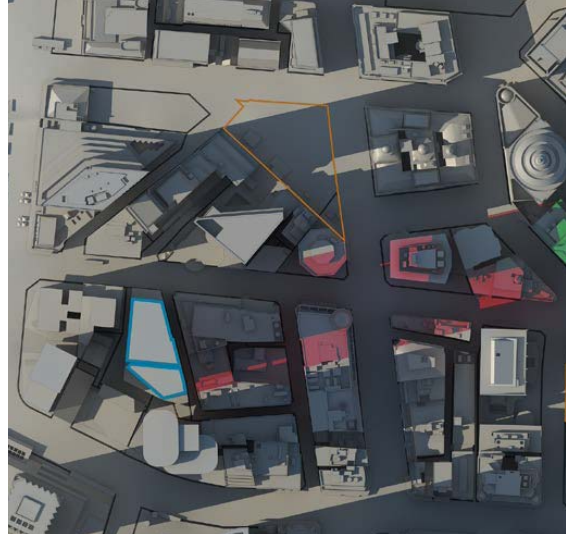
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-  Proposed tower envelope



12.00 - 12.20



12.30 - 12.50









# 07 Appendix A - Part 01

## Shadow Studies Report

### Macquarie Place

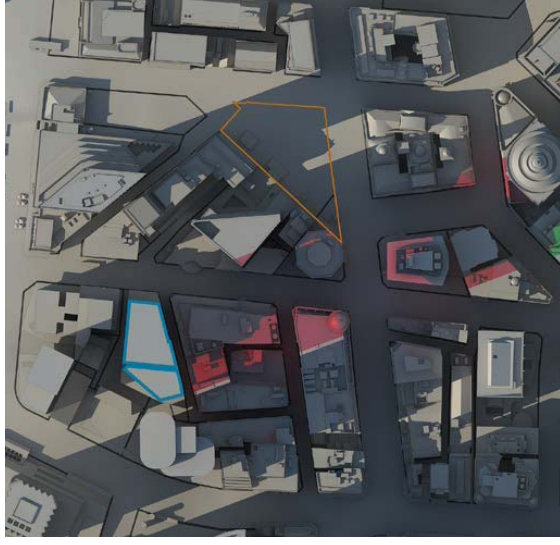
June 21

10-2pm (10 minute intervals)

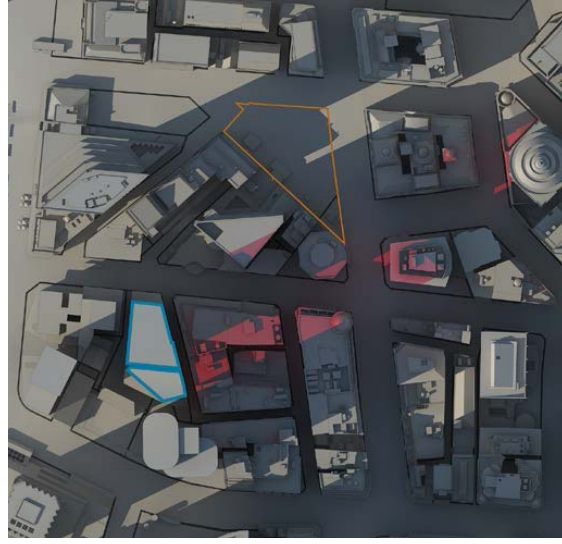
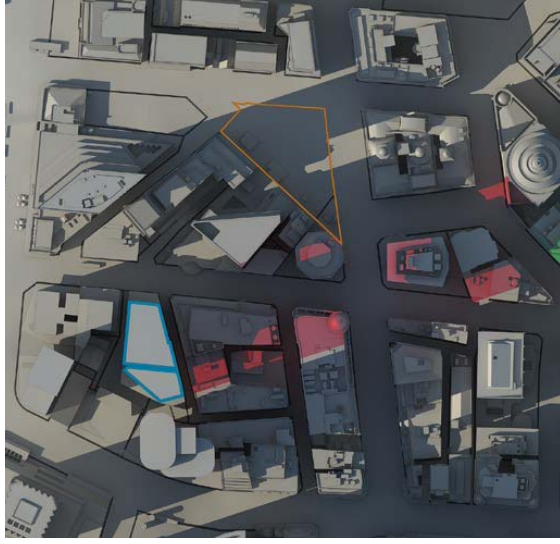
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1.00 - 1.20



1.30 - 1.50



**07 Appendix A - Part 01**  
Shadow Studies Report

**Macquarie Place**

June 21  
10-2pm (10 minute intervals)

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2.00







# 07 Appendix A - Part 01

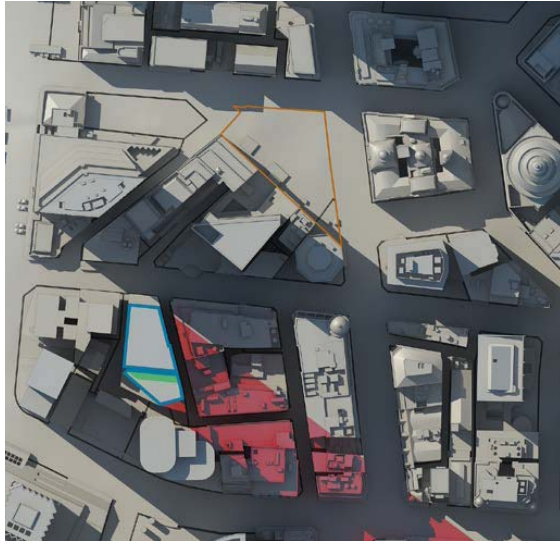
## Shadow Studies Report

### Macquarie Place

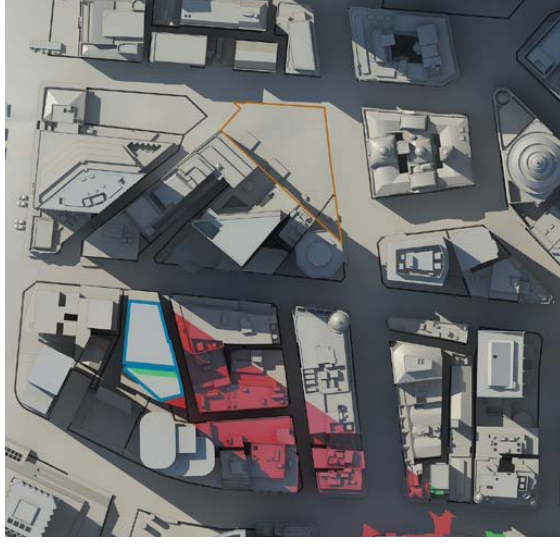
August 31

10-2pm (10 minute intervals)

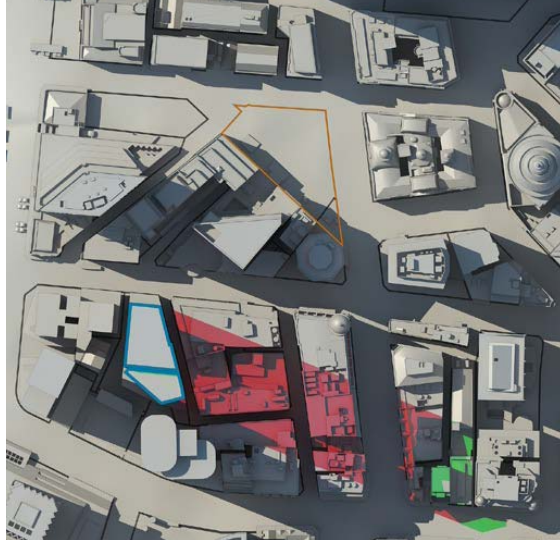
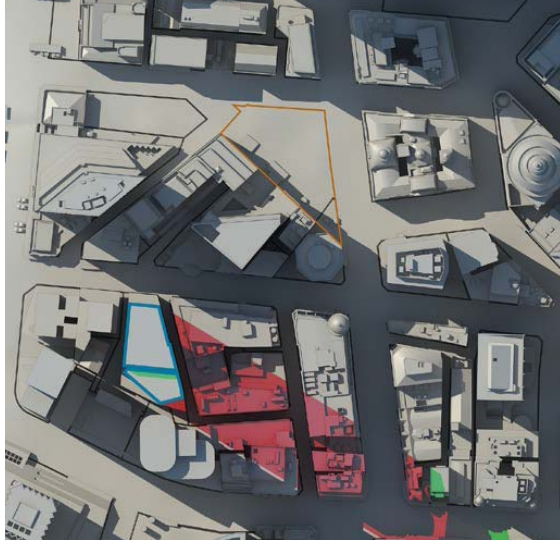
-  Public Space
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-  Proposed tower envelope



10.00 - 10.20







10.30 - 10.50





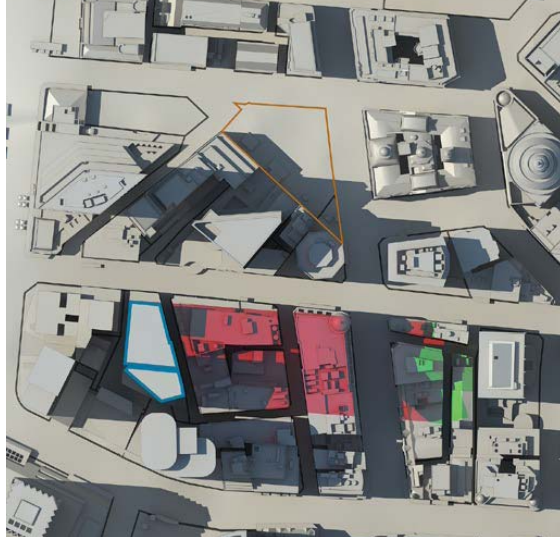
**07 Appendix A - Part 01**  
Shadow Studies Report

**Macquarie Place**  
August 31  
10-2pm (10 minute intervals)

-  Public Space
-  Overshadowing caused by tower envelope
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-  Proposed tower envelope



11.00 - 11.20



11.30 - 11.50







# 07 Appendix A - Part 01

## Shadow Studies Report

### Macquarie Place

August 31  
10-2pm (10 minute intervals)

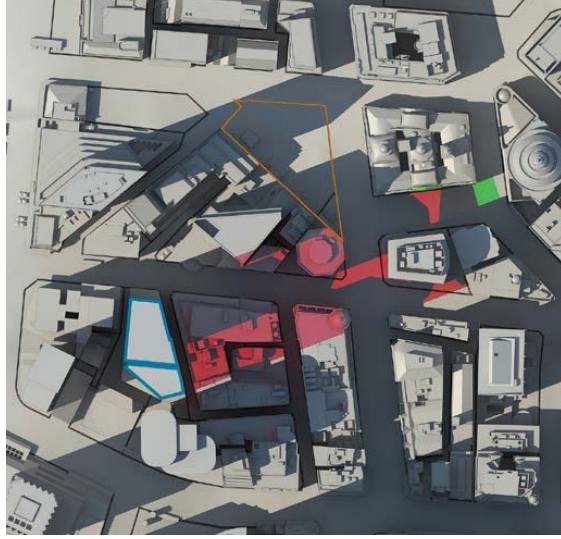
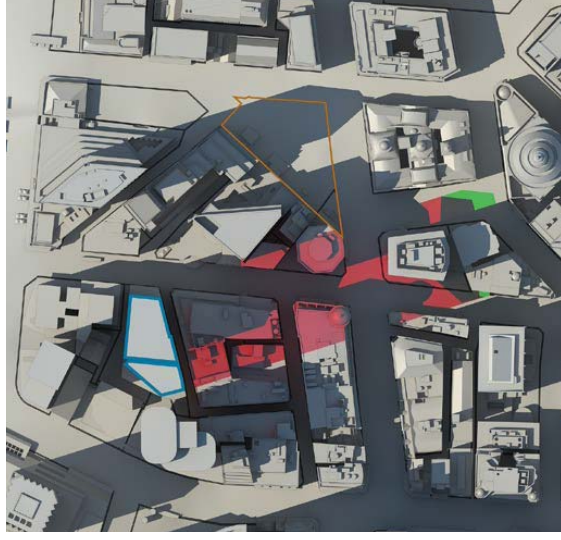
-  Public Space
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-  Overshadowing caused by 15m indicative roof feature zone
-  Proposed tower envelope



12.00 - 12.20







12.30 - 12.50

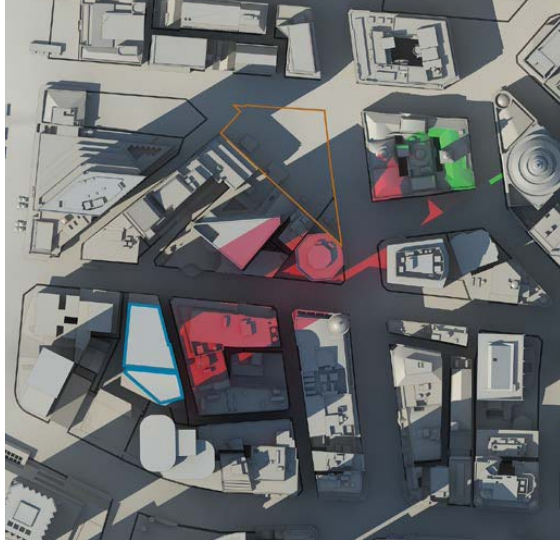




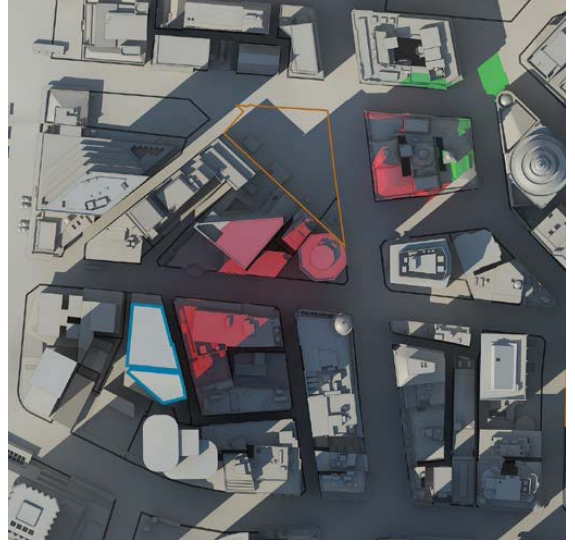
**07 Appendix A - Part 01**  
Shadow Studies Report

**Macquarie Place**  
August 31  
10-2pm (10 minute intervals)

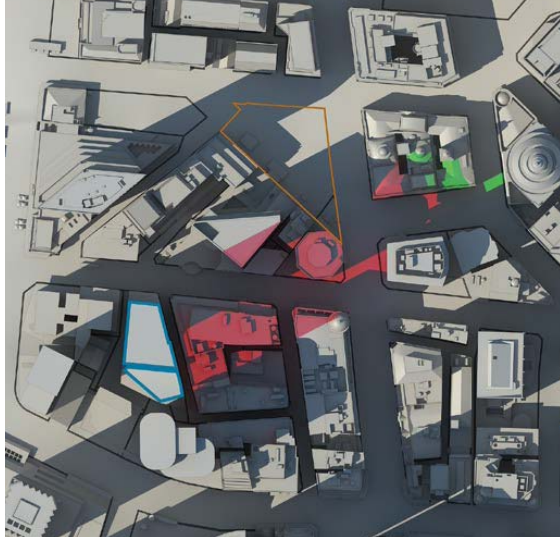
-  Public Space
-  Overshading caused by tower envelope
-  Overshading caused by 15m indicative roof feature zone
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1.00 - 1.20



1.30 - 1.50

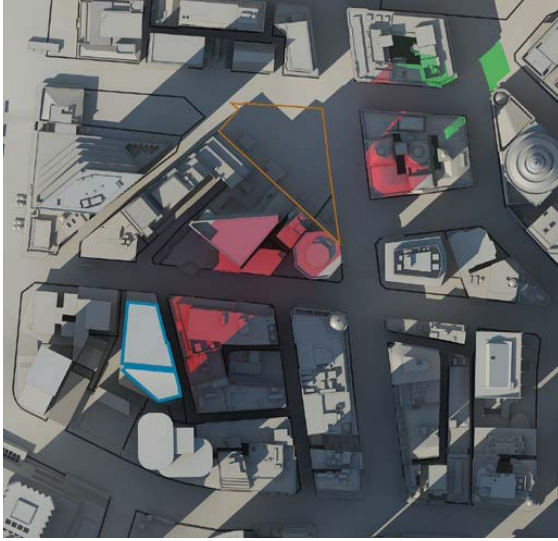




# 07 Appendix A - Part 01 Shadow Studies Report

**Macquarie Place**  
August 31  
10-2pm (10 minute intervals)

- Public Space
- Overshadowing caused by tower envelope
- Overshadowing caused by 15m indicative roof feature zone
- Proposed tower envelope



2.00





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**Appendix A - Part 02**  
Publicly Accessible  
Square (Plaza) Solar  
Access Comparison





## 07 Appendix A - Part 02 Publicly Accessible Square (Plaza) Solar Access Comparison

### Analysis Area

The scope of the analysis area is defined by the publicly accessible square as set out in the Public Domain Plan in the Sydney DCP 2102. This is to be compared to the publicly accessible square as defined by the new proposed public plaza.

### Dates/Times Assessed

April 14 and August 31 between 10am and 2pm were selected in accordance with Sydney LEP 2012 control dates and times. In addition, June 21 was included to demonstrate the 'worst case scenario'.

### 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:

- \_City model supplied by the City of Sydney including city buildings and topography. (The supplied model has an accuracy of +/- 300mm)

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- \_Indicative massing models of approved schemes located on other sites in the APDG Block

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 information prepared by other parties.

### Summary of Results

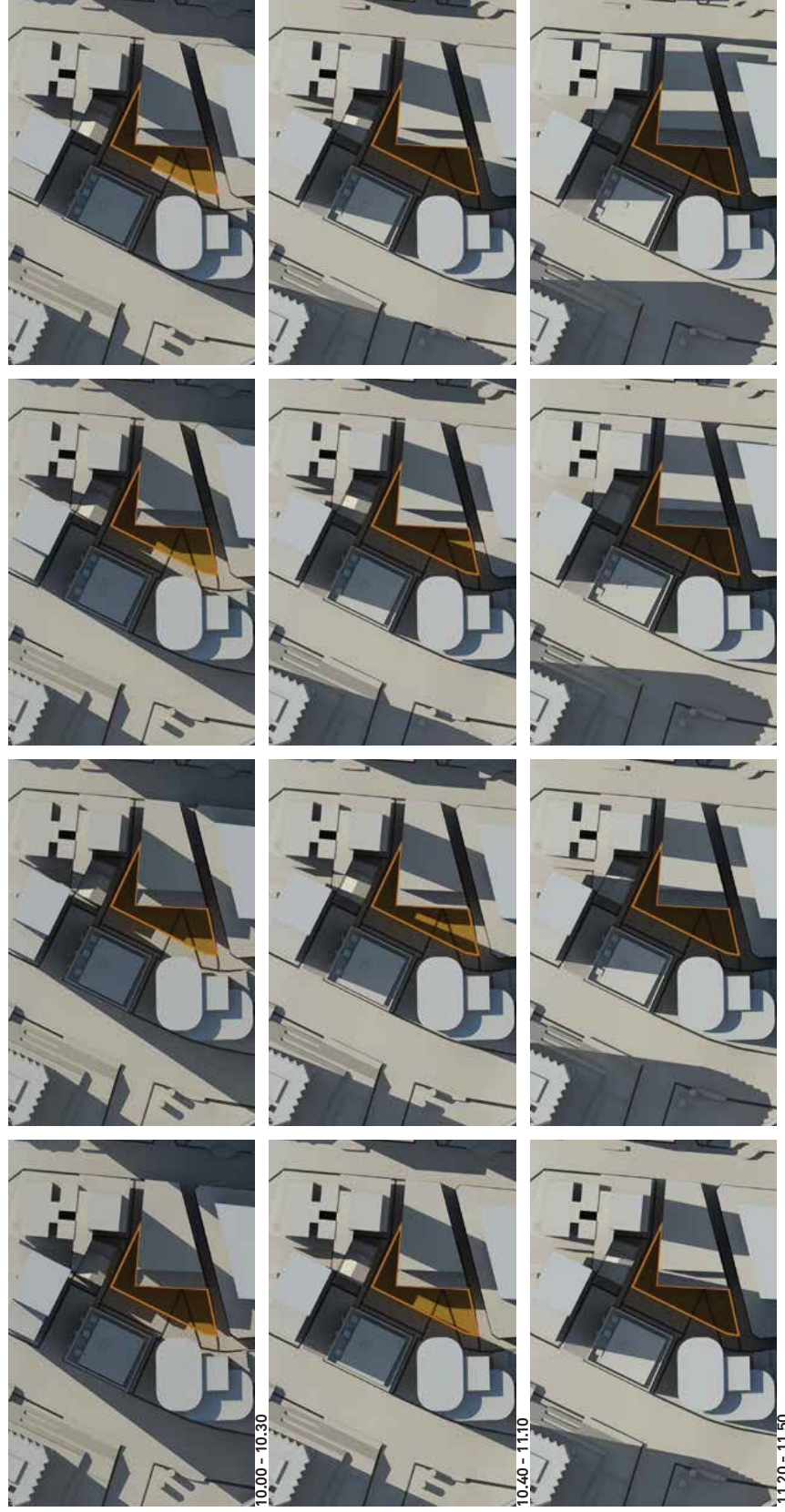
The solar studies in this appendix illustrate that there is a significant improvement to the levels of solar access to the proposed George Street plaza in comparison to the publicly accessible square in the current DCP 2012. For further analysis and comparison, refer to Chapter 06, 'Planning Provisions - Solar Study Comparison.'

### DCP Scheme

April 14

10-2pm (10 minute intervals)

Publicly accessible square



**07 Appendix A - Part 02**  
Publicly Accessible Square  
(Plaza) Solar Access Comparison

DCP Scheme  
April 14  
10-2pm (10 minute intervals)



Publicly accessible square



12.00 - 12.30



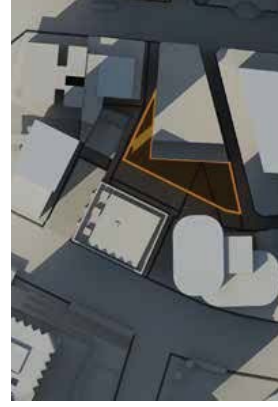
12.40 - 1:10



1.20 - 1.50



2.00





**07 Appendix A - Part 02**  
**Publicly Accessible Square**  
**(Plaza) Solar Access Comparison**

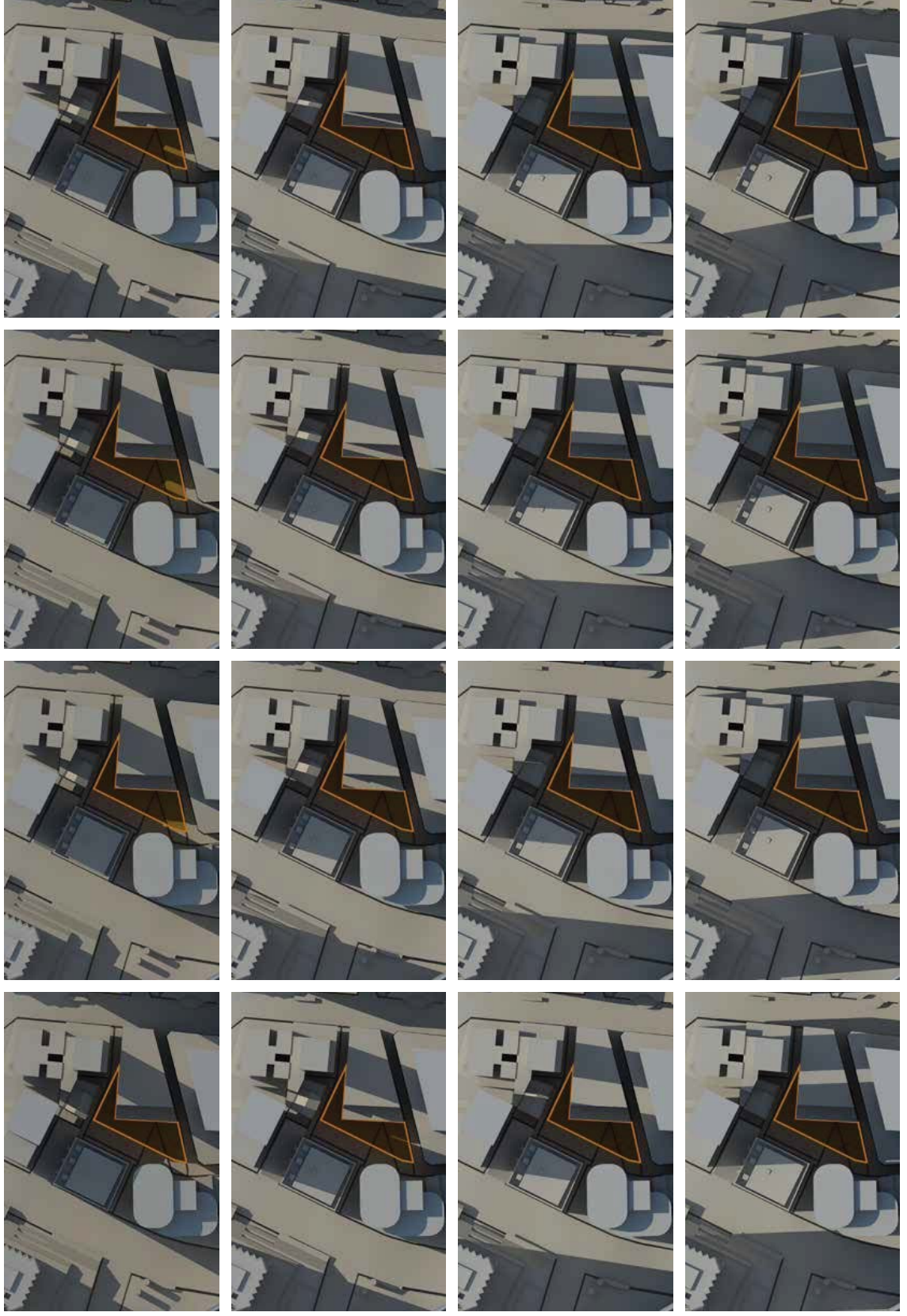
DCP Scheme

June 21

10-2pm (10 minute intervals)



Publicly accessible square



10.00 - 10.30

**The plaza in the DCP scheme will receive up to 8% solar access between 10am and 2pm in mid-winter**

10.40 - 11.10

11.20 - 11.50

12.00 - 12.30

**07 Appendix A - Part 02**  
Publicly Accessible Square  
(Plaza) Solar Access Comparison

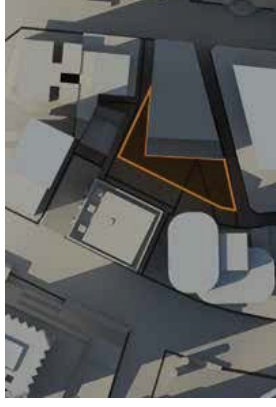
DCP Scheme  
June 21  
10-2pm (10 minute intervals)



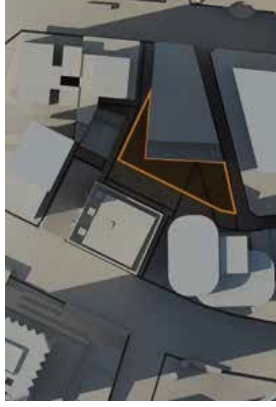
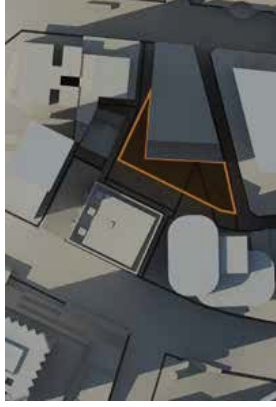
Publicly accessible square



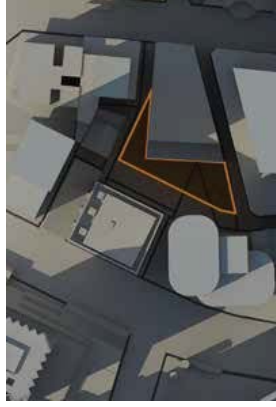
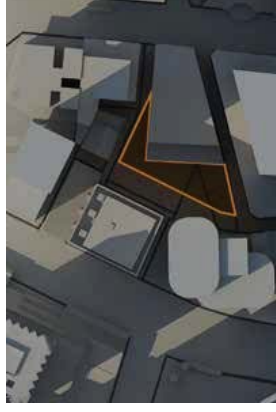
12.40 - 1.10



1.20 - 1.50



2.00





**07 Appendix A - Part 02**  
**Publicly Accessible Square**  
**(Plaza) Solar Access Comparison**

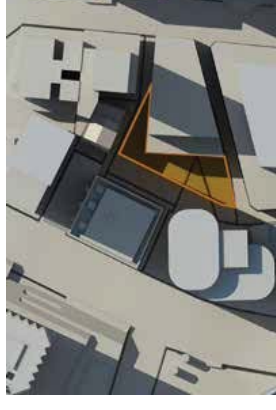
DCP Scheme  
 August 31  
 10-2pm (10 minute intervals)



Publicly accessible square



10.00 - 10.30



10.40 - 11.10



11.20 - 11.50



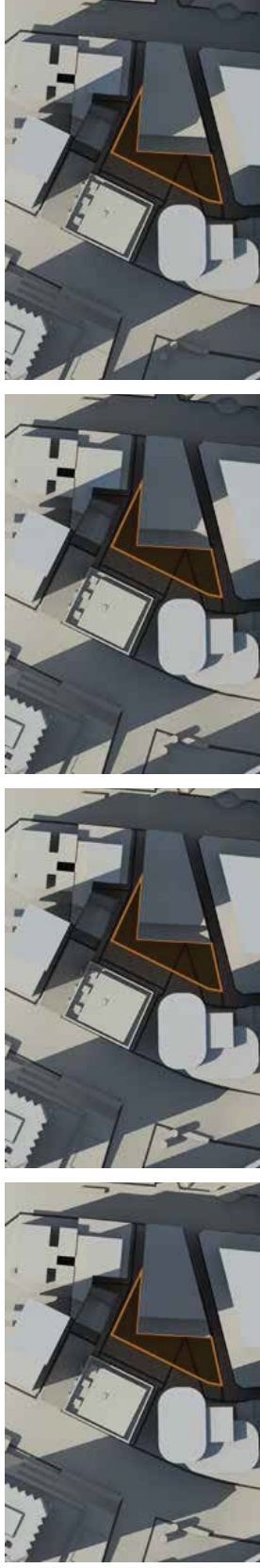
12.00 - 12.30

**07 Appendix A - Part 02**  
Publicly Accessible Square  
(Plaza) Solar Access Comparison

DCP Scheme  
August 31  
10-2pm (10 minute intervals)



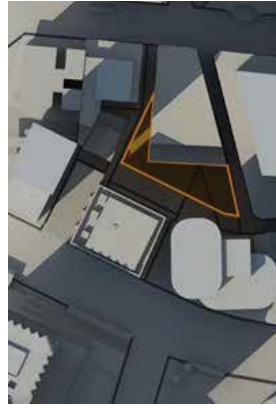
Publicly accessible square



12.40 - 1.10



1.20 - 1.50



2.00



**07 Appendix A - Part 02**  
**Publicly Accessible Square**  
**(Plaza) Solar Access Comparison**



**Proposed Public Plaza (including adjacent publicly accessible land at 200 George Street) April '14**  
**10-2pm (10 minute intervals)**



Publicly accessible square including adjacent publicly accessible land at 200 George Street

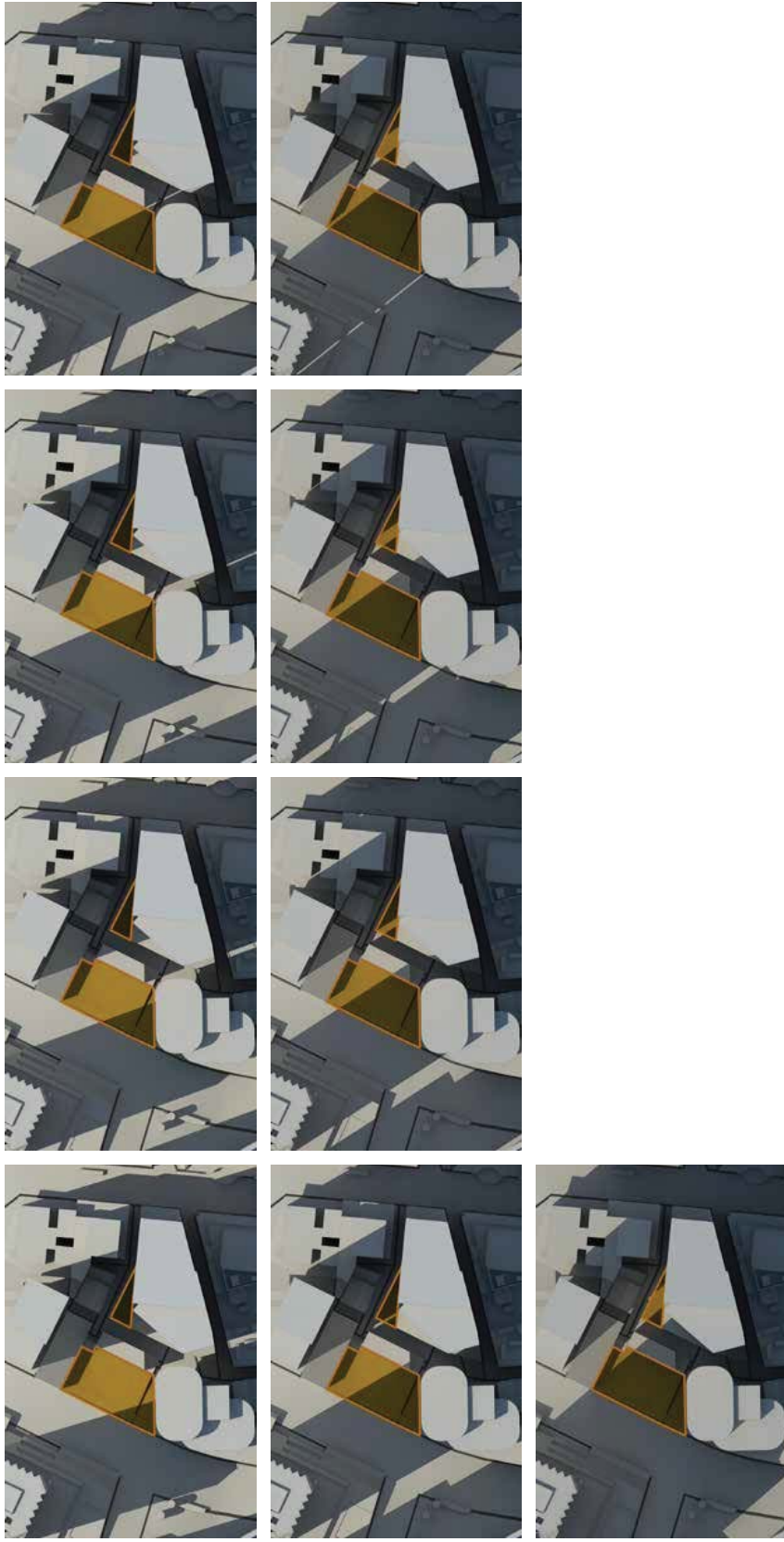
10.00 - 10.30

10.40 - 11.10

11.20 - 11.50

12.00 - 12.30

**07 Appendix A - Part 02**  
**Publicly Accessible Square**  
**(Plaza) Solar Access Comparison**



**Proposed Public Plaza (including adjacent publicly accessible land at 200 George Street)**  
 April 14  
 10-2pm (10 minute intervals)



Publicly accessible square including adjacent publicly accessible land at 200 George Street

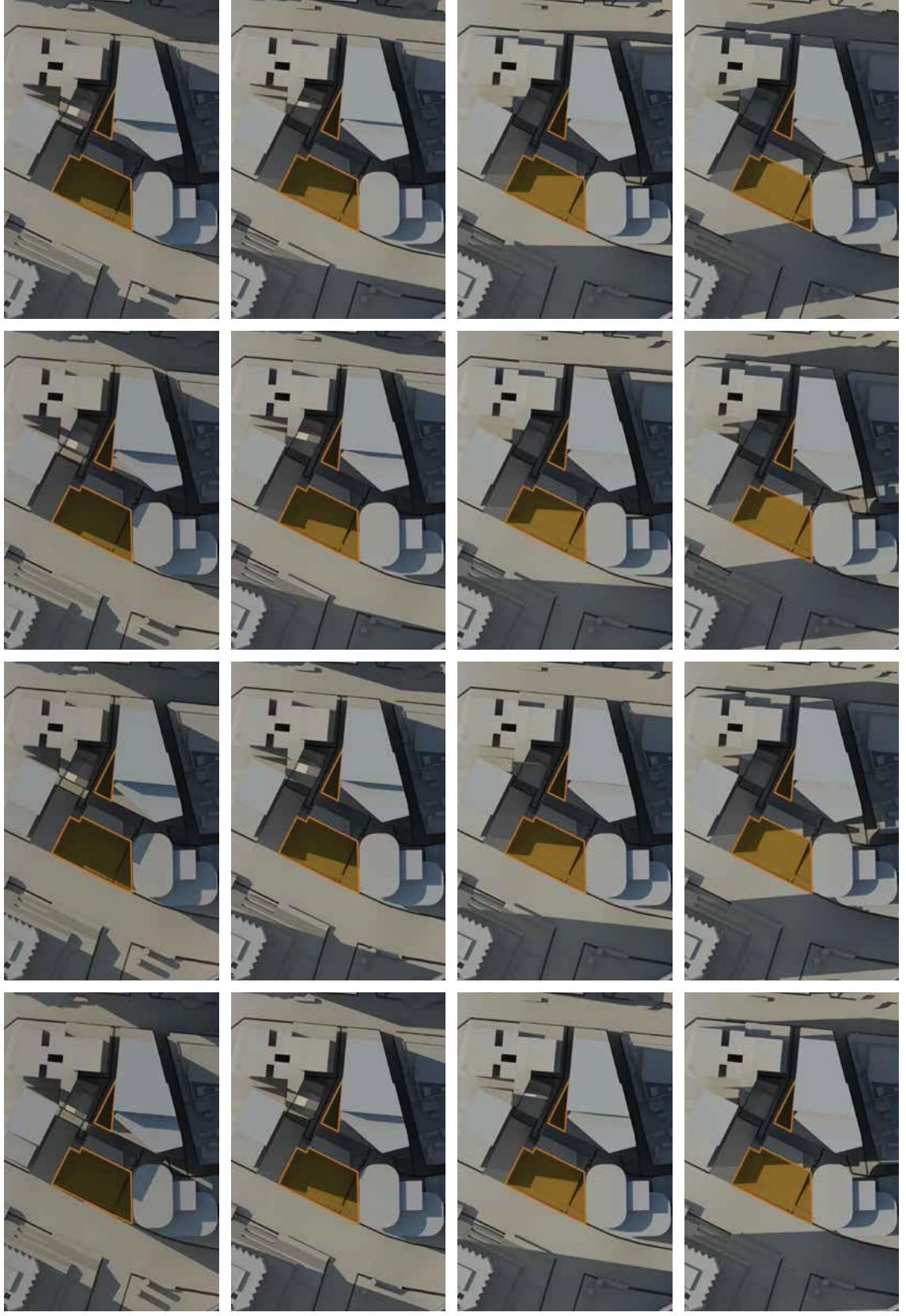
12.40 - 1.10

1.20 - 1.50

2.00



**07 Appendix A - Part 02**  
**Publicly Accessible Square**  
**(Plaza) Solar Access Comparison**



**Proposed Public Plaza (including adjacent publicly accessible land at 200 George Street) June '21 10-2pm (10 minute intervals)**



Publicly accessible square including adjacent publicly accessible land at 200 George Street

10.00 - 10.30

10.40 - 11.10

11.20 - 11.50

12.00 - 12.30

**07 Appendix A - Part 02**  
**Publicly Accessible Square**  
**(Plaza) Solar Access Comparison**



**Proposed Public Plaza (including adjacent publicly accessible land at 200 George Street) June 21 10-2pm (10 minute intervals)**



Publicly accessible square including adjacent publicly accessible land at 200 George Street.

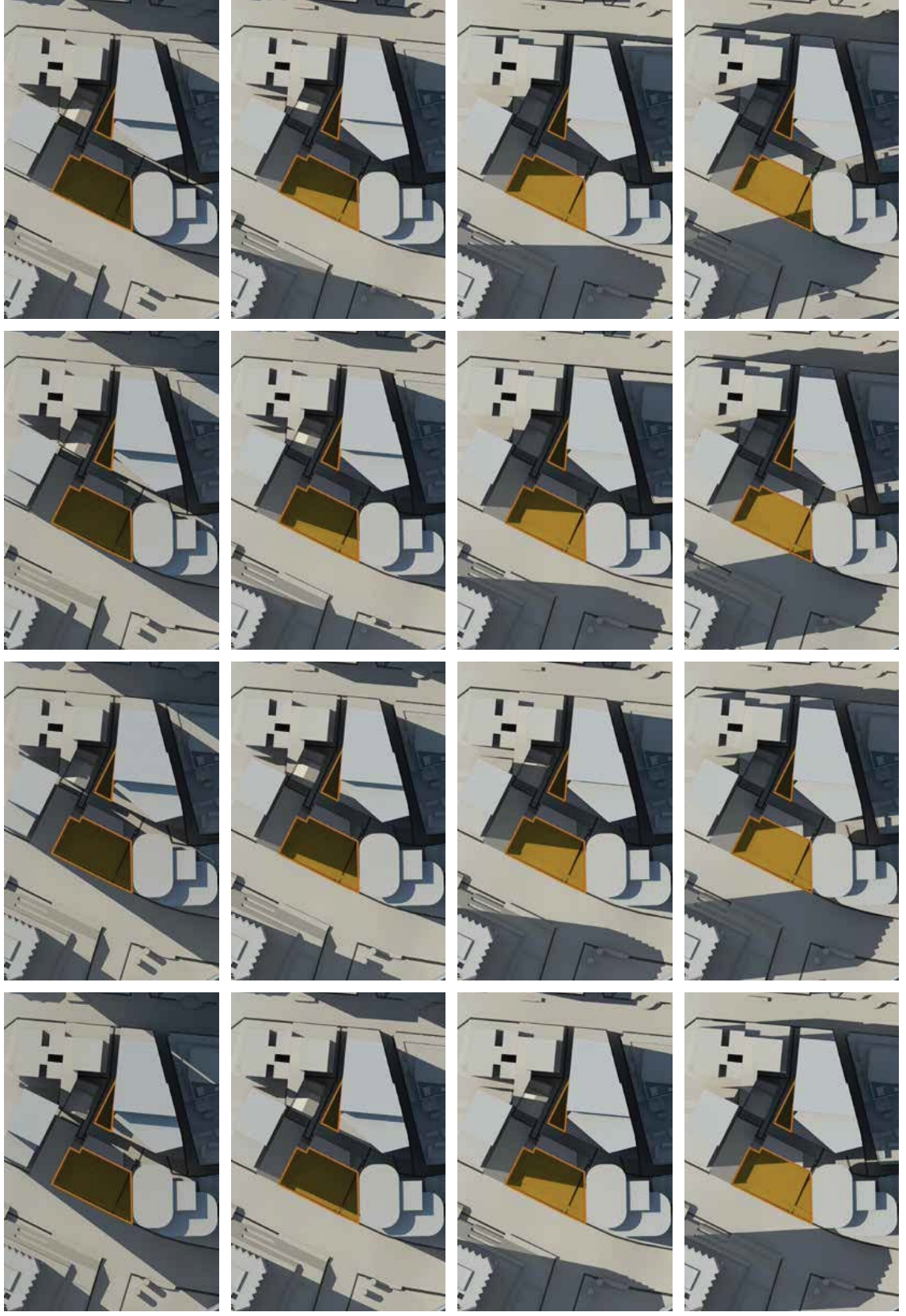
12.40 - 1.10

1.20 - 1.50

2.00



**07 Appendix A - Part 02**  
**Publicly Accessible Square**  
**(Plaza) Solar Access Comparison**



**Proposed Public Plaza (including adjacent publicly accessible land at 200 George Street) August 31 10-2pm (10 minute intervals)**



Publicly accessible square including adjacent publicly accessible land at 200 George Street

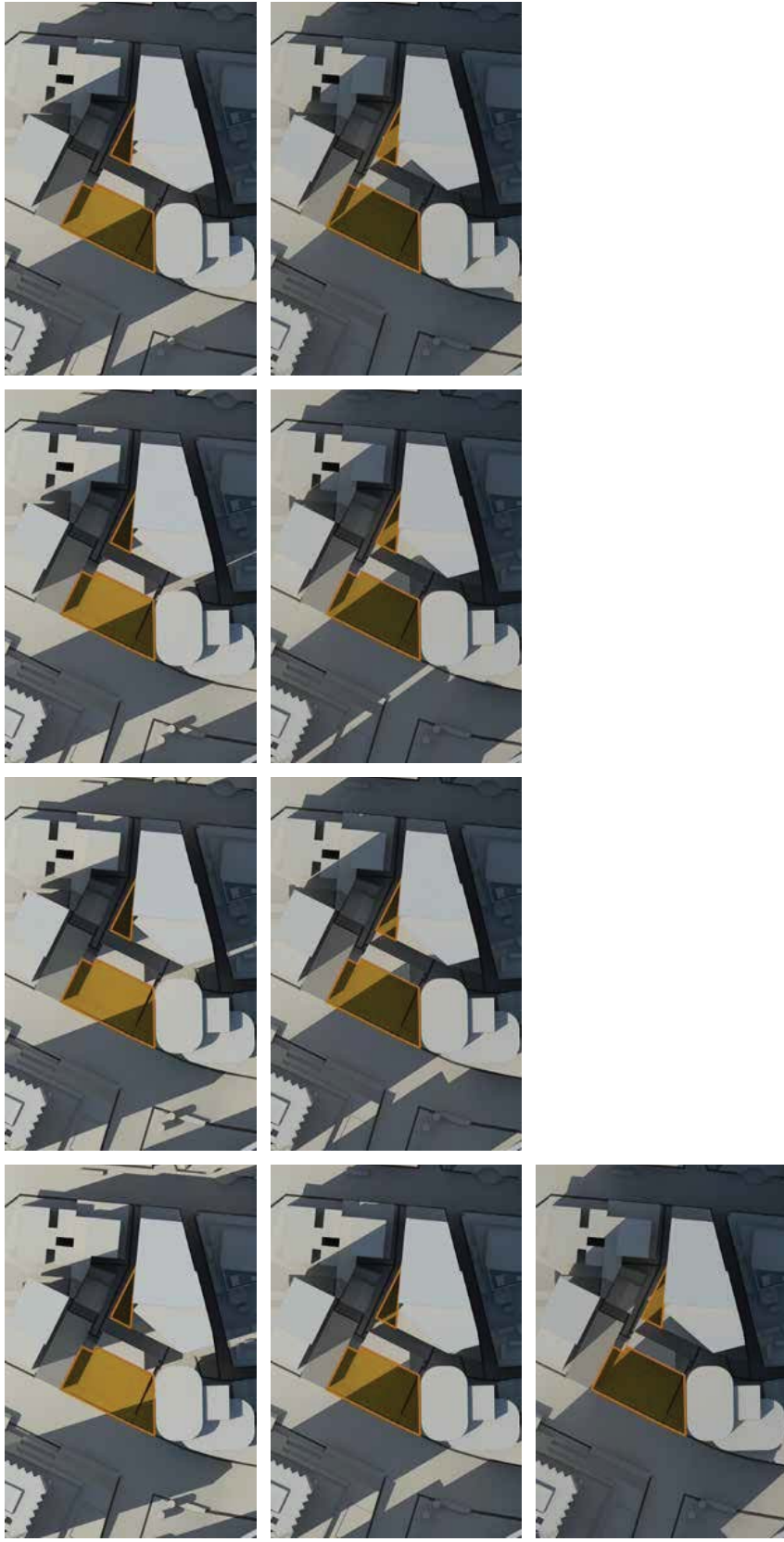
10.00 - 10.30

10.40 - 11.10

11.20 - 11.50

12.00 - 12.30

**07 Appendix A - Part 02**  
**Publicly Accessible Square**  
**(Plaza) Solar Access Comparison**



**Proposed Public Plaza (including adjacent publicly accessible land at 200 George Street) August 31 10-2pm (10 minute intervals)**



Publicly accessible square including adjacent publicly accessible land at 200 George Street

12.40 - 1.10

1.20 - 1.50

2.00