



Government
Property NSW



Sandstone Precinct

Shadow Analysis

25 November 2014

Prepared for Macquarie Capital and
Government Property NSW

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ARCHITECTURE
LANDSCAPE
INTERIORS
MASTERPLANNING
EXHIBITIONS

Sandstone Precinct Shadow Analysis

Introduction

Johnson Pilton Walker (JPW) have been engaged by Macquarie Capital (MAC) and Government Property NSW (GPNSW) to provide architectural advice on the future re-use of the former Lands Department and Education Department Buildings, in 23-33 and 35-39 Bridge Street, Sydney.

Together, these buildings are known as the Sandstone Precinct.

Also assisting MAC and GPNSW are:

- Taylor Thomson Whitting (TTW) – Structural Consultant
- Urbis, (Urbis) – Planning Consultant
- Graham Brooks and Associates, (GBA) – Heritage Consultant

Proposed Re-use

The Sandstone Precinct buildings have been identified by the NSW Government as having the potential for hotel use.

As part of the potential adaptive re-use as a hotel complex it is proposed to allow some increase in built form on the roof of the Education Building.

Additions to the Lands Building roofscape are not anticipated, but may be pursued by potential purchasers of the site(s).

The future re-use of the Sandstone Precinct has been assessed by the NSW Department of Planning (DoP) as a State Significant Development.

The project's SSD Number is 6751.

Purpose of this Report

Pursuant to the Environmental Planning and Assessment Act 1979, Section 78A (8A) and Schedule 2 of the Environmental Planning and Assessment Regulation 2000, the DoP have issued the Secretary's Environmental Assessment Requirements (SEARs).

The SEARs require the preparation of an Environmental Impact Statement (EIS), which has been coordinated and compiled by Urbis, with inputs from the consultant and client team.

This Report has been prepared by JPW as part of the EIS, to specifically address the SEARs requirement for:

3. Amenity

The EIS shall demonstrate how the proposal will achieve a high level of environmental amenity, in particular overshadowing implications on the public realm from the vertical additions to the Education Building; and

Plans and Documents

3. Drawings at an appropriate scale illustrating:

- *the location of any existing building envelopes or structures on the land in relation to the boundaries of the land and any development on adjoining land;*
- *detailed plans, sections and elevations including all temporary and permanent structures;*
- *the height (AHD) of the proposed development in relation to the land; and*
- *shadows from the Education Building showing solar access to the site and surrounding areas at summer solstice (Dec 21), winter solstice (June 21) and the equinox (March 21 and September 21) at 9.00 am, 12.00 midday and 3.00 pm.*

This Report should be read in conjunction with the EIS prepared by Urbis.

Proposed Massing Envelope

The proposed massing of the top of the Education Building has been developed in response to a number of heritage and urban design considerations, including:

- Aligns with, and does not extend above, the top of the existing Lift Motor Room at RL. 58.69, some 44m above the Bridge Street pavement level
- Setbacks from Bridge Street to minimise the visual impact from street level
- Setbacks from Bridge Street to ensure the skylights over the existing gallery space at Level 7 are not affected
- The expressed bays on the east and west façades of the building, which relate to the construction of the building occurring in two stages, define the northern extent of the proposed massing

The proposed massing is described in the drawings included in the appendices.



Subject site

Farrer Place, looking North, with Lands Building at Left and Education Building at Right. Loftus Street runs between the two buildings.

Shadows

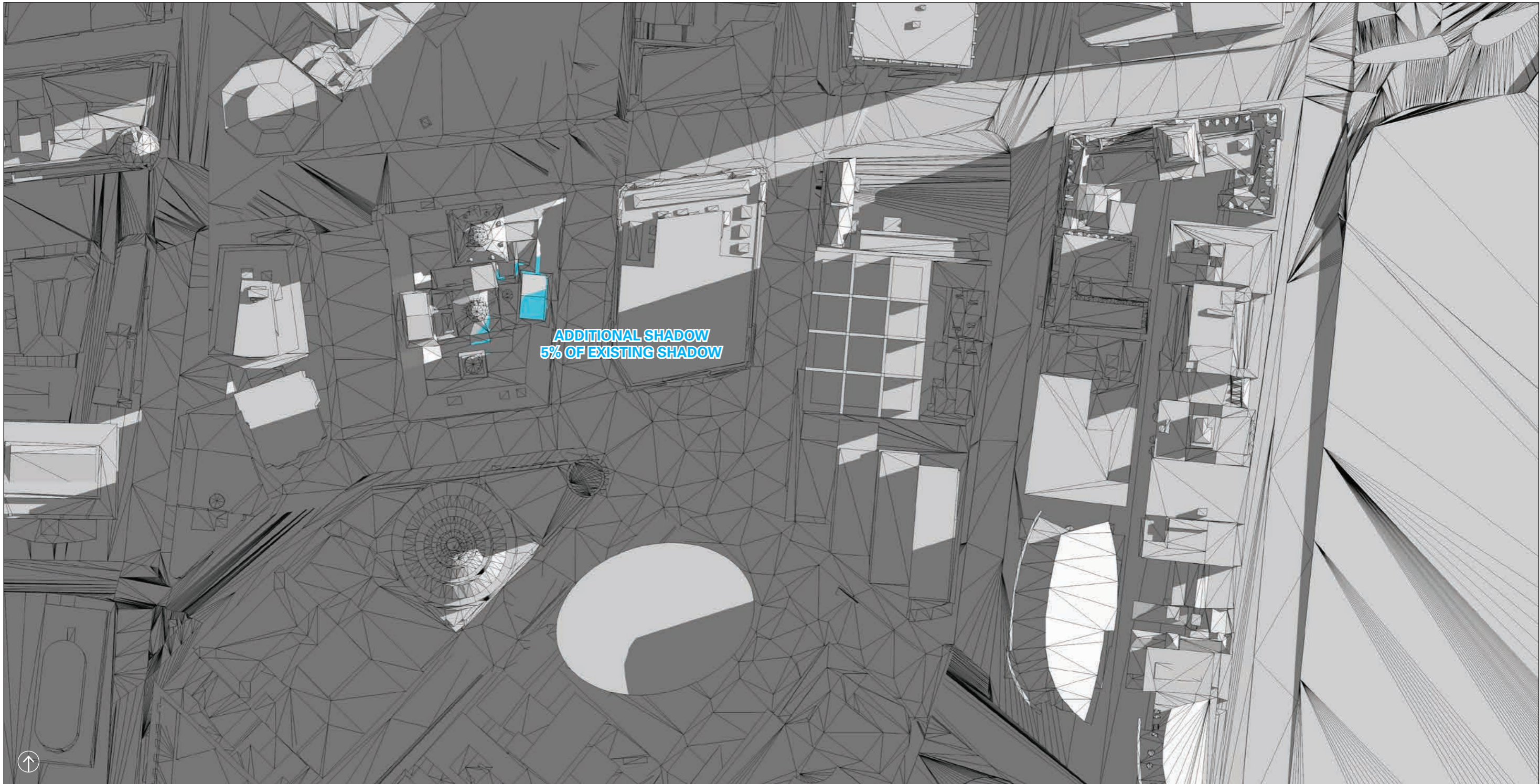
Equinox, March 21, 9AM



Existing Shadows March 21, 9AM



Proposed Shadows March 21, 9AM



ADDITIONAL SHADOW
5% OF EXISTING SHADOW

Blue indicates additional shadow

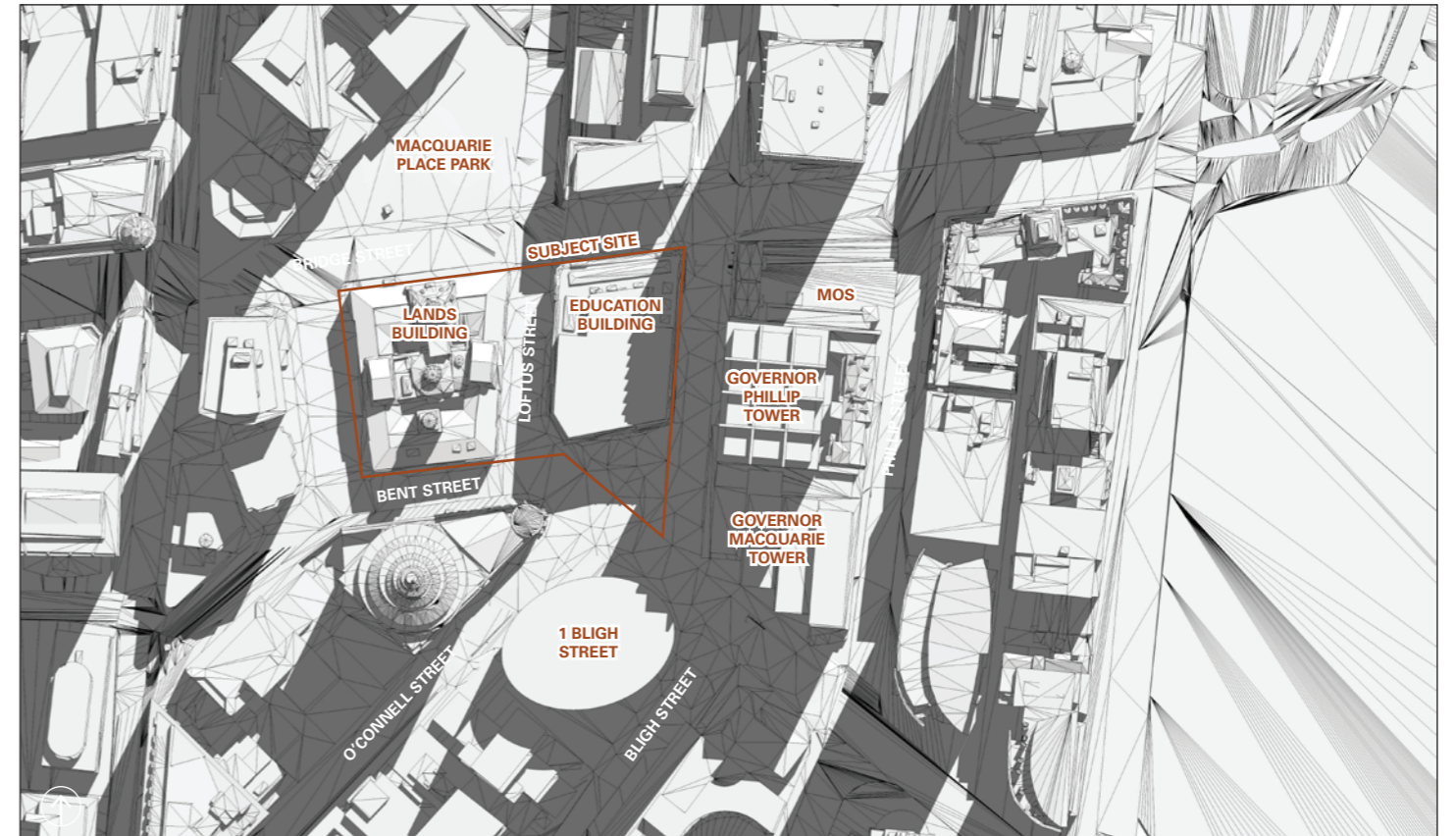
Shadow Comparison March 21, 9AM

Shadows

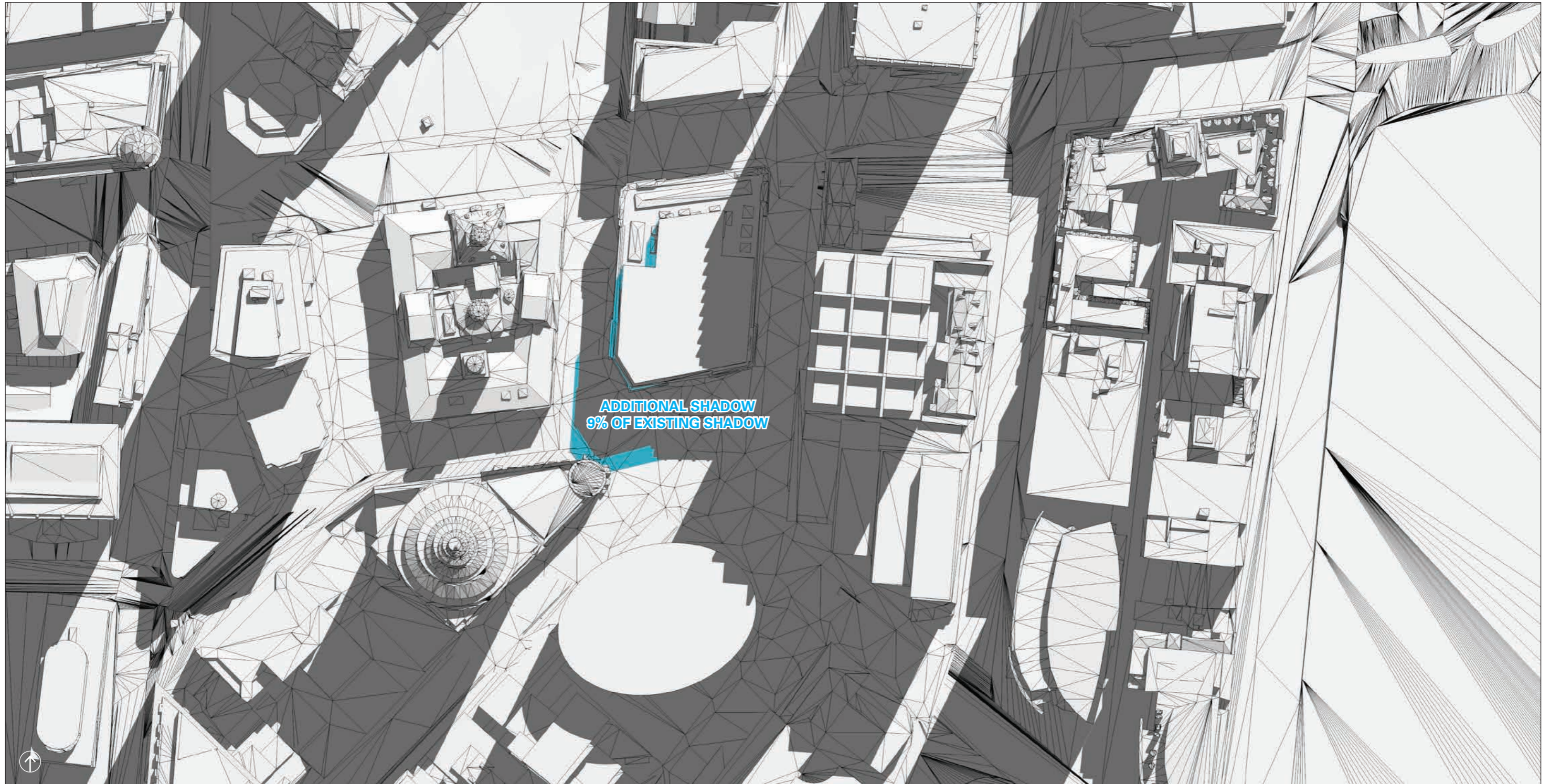
Equinox, March 21, 12 Noon



Existing Shadows March 21, 12 Noon



Proposed Shadows March 21, 12 Noon

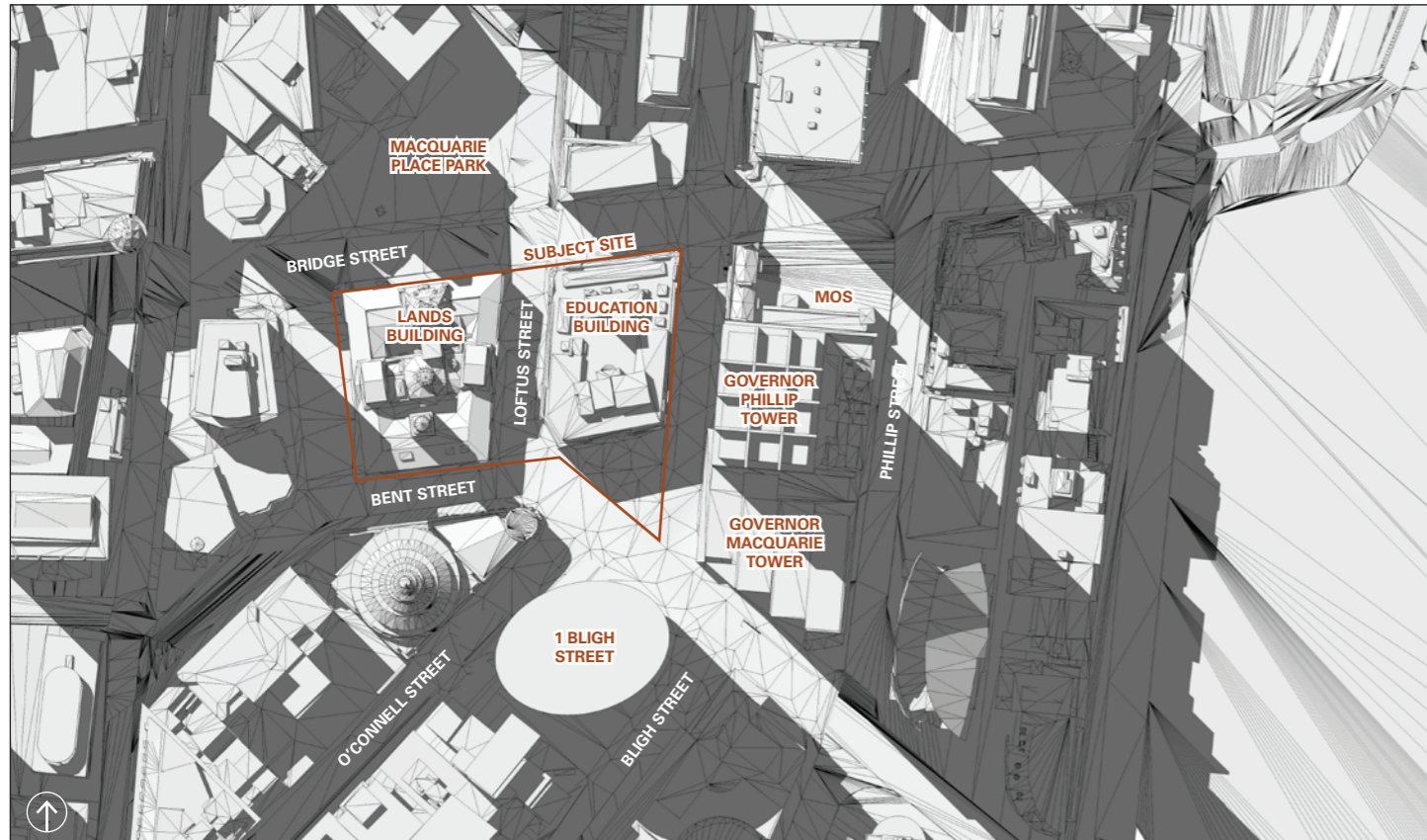


Blue indicates additional shadow

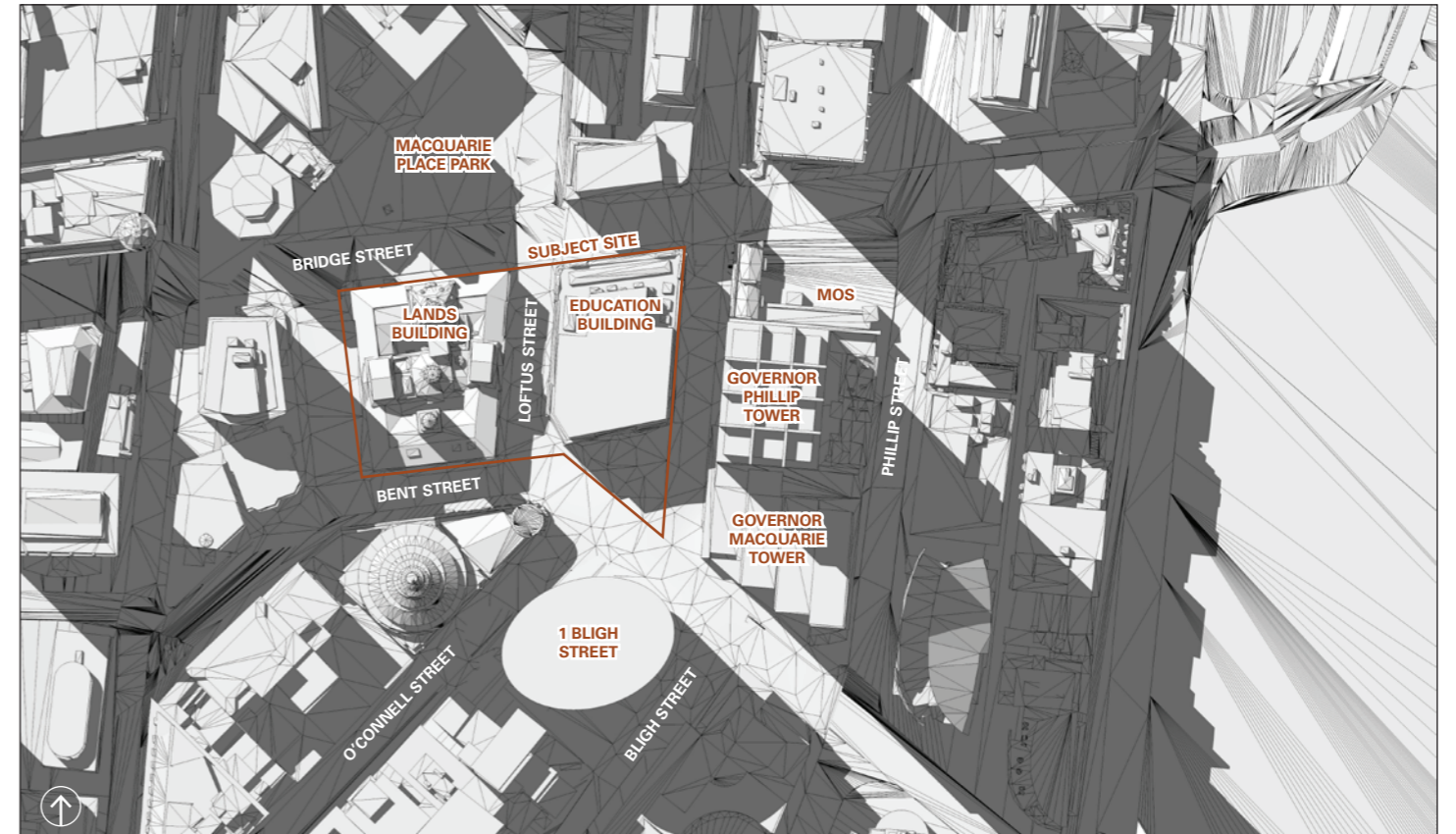
Shadow Comparison March 21, 12 Noon

Shadows

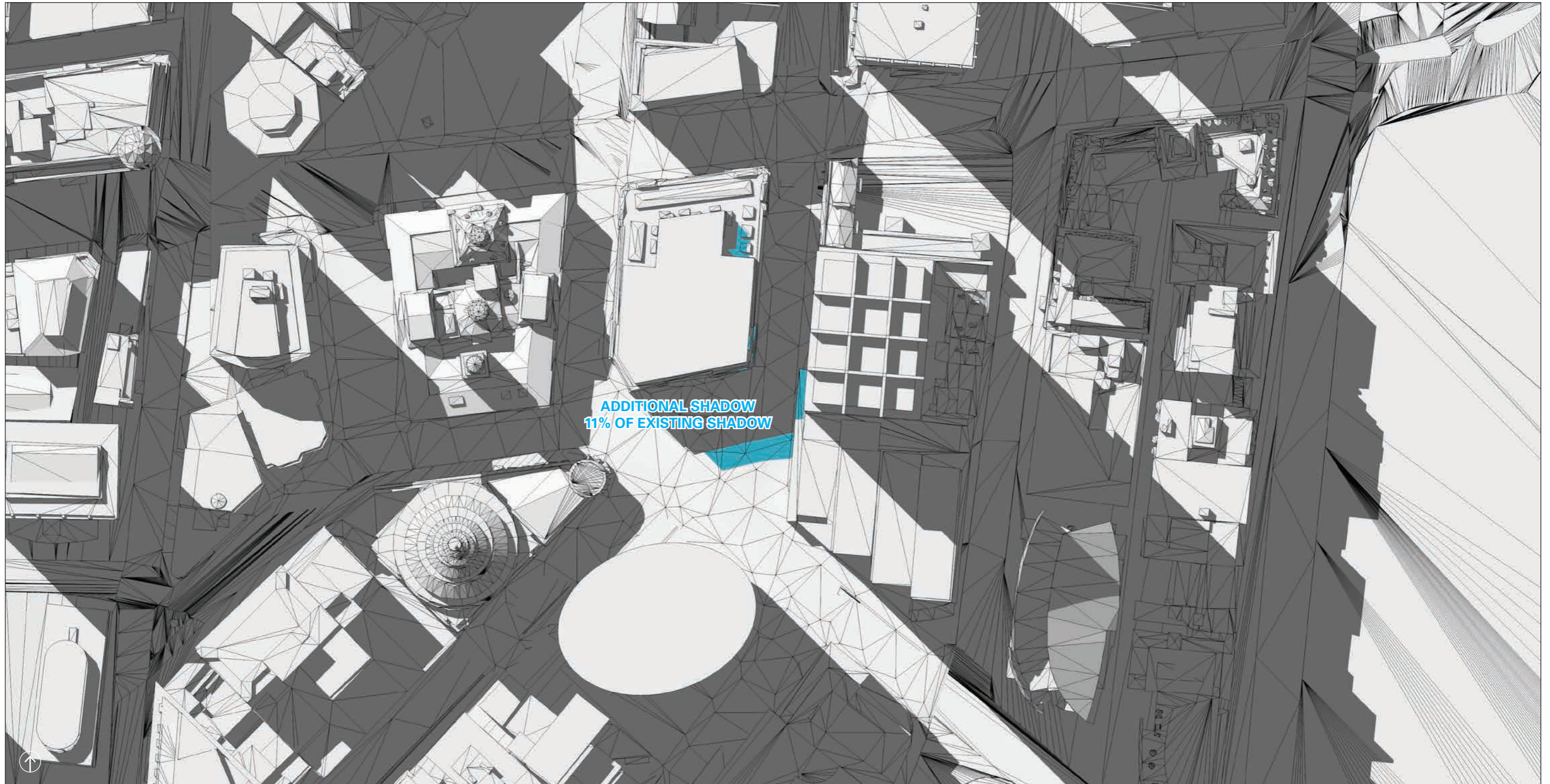
Equinox, March 21, 3 PM



Existing Shadows March 21, 3 PM



Proposed Shadows March 21, 3 PM

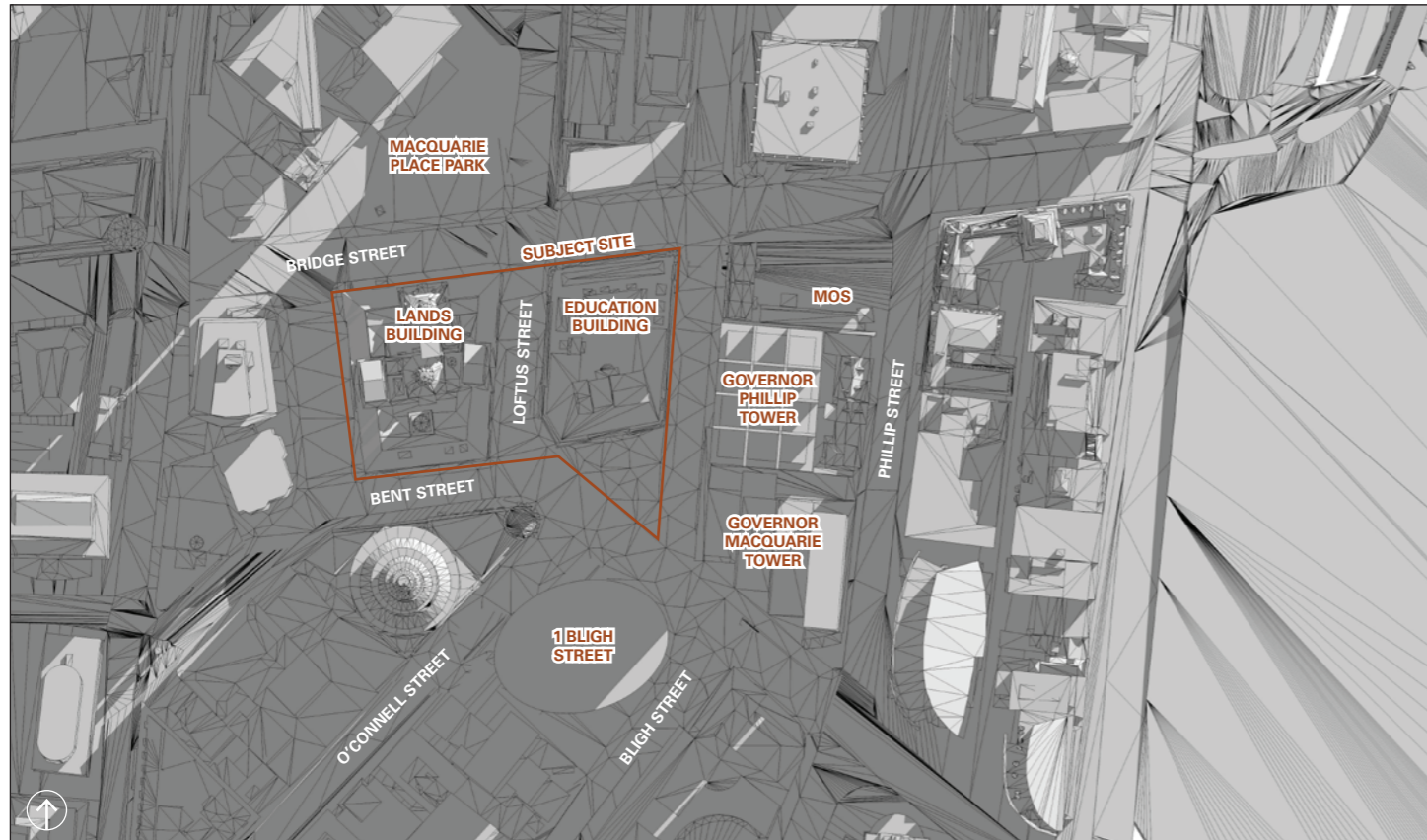


Blue indicates additional shadow

Shadow Comparison March 21, 3 PM

Shadows

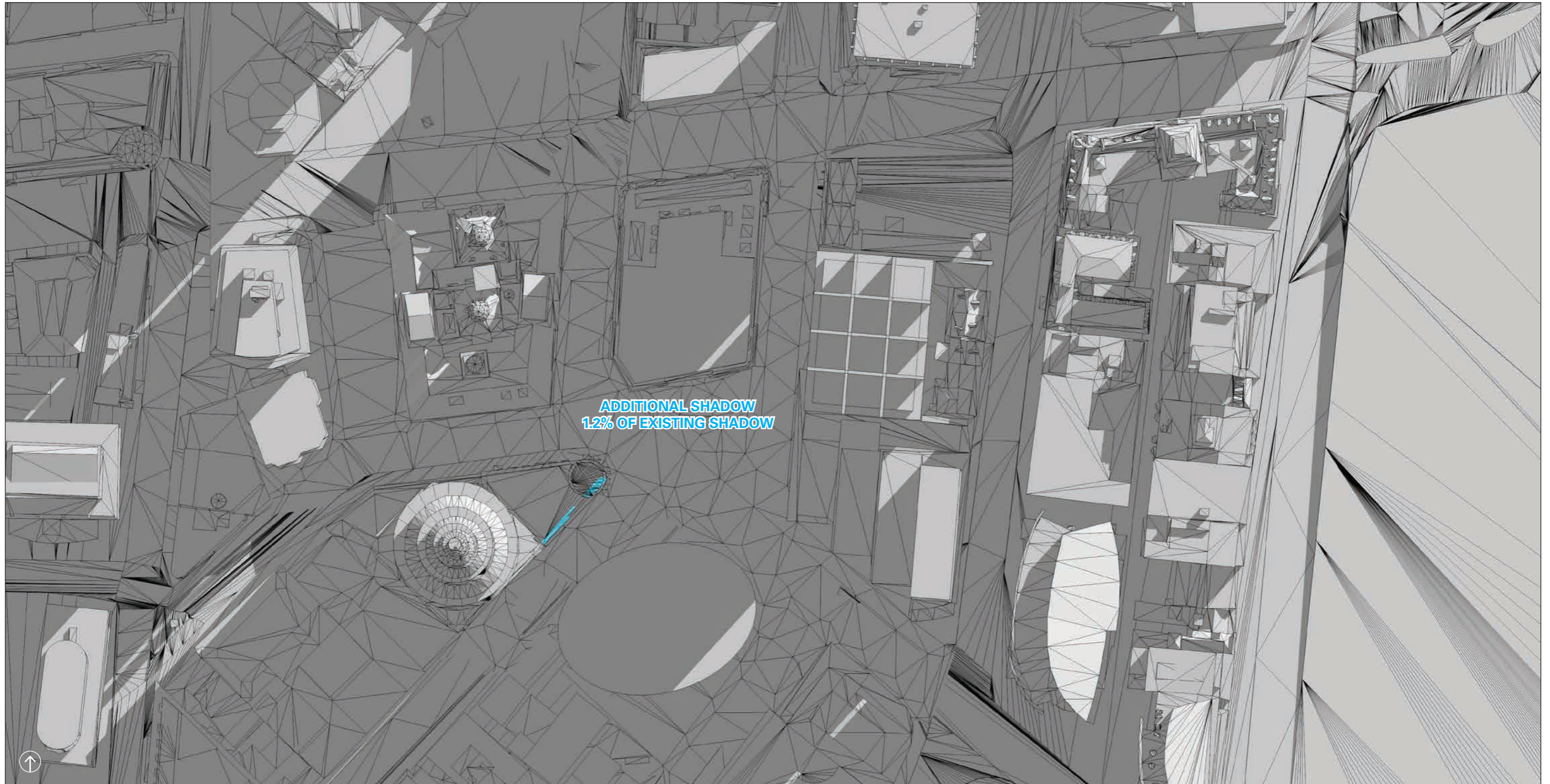
Winter Solstice, June 21, 9AM



Existing Shadows June 21, 9AM



Proposed Shadows June 21, 9AM



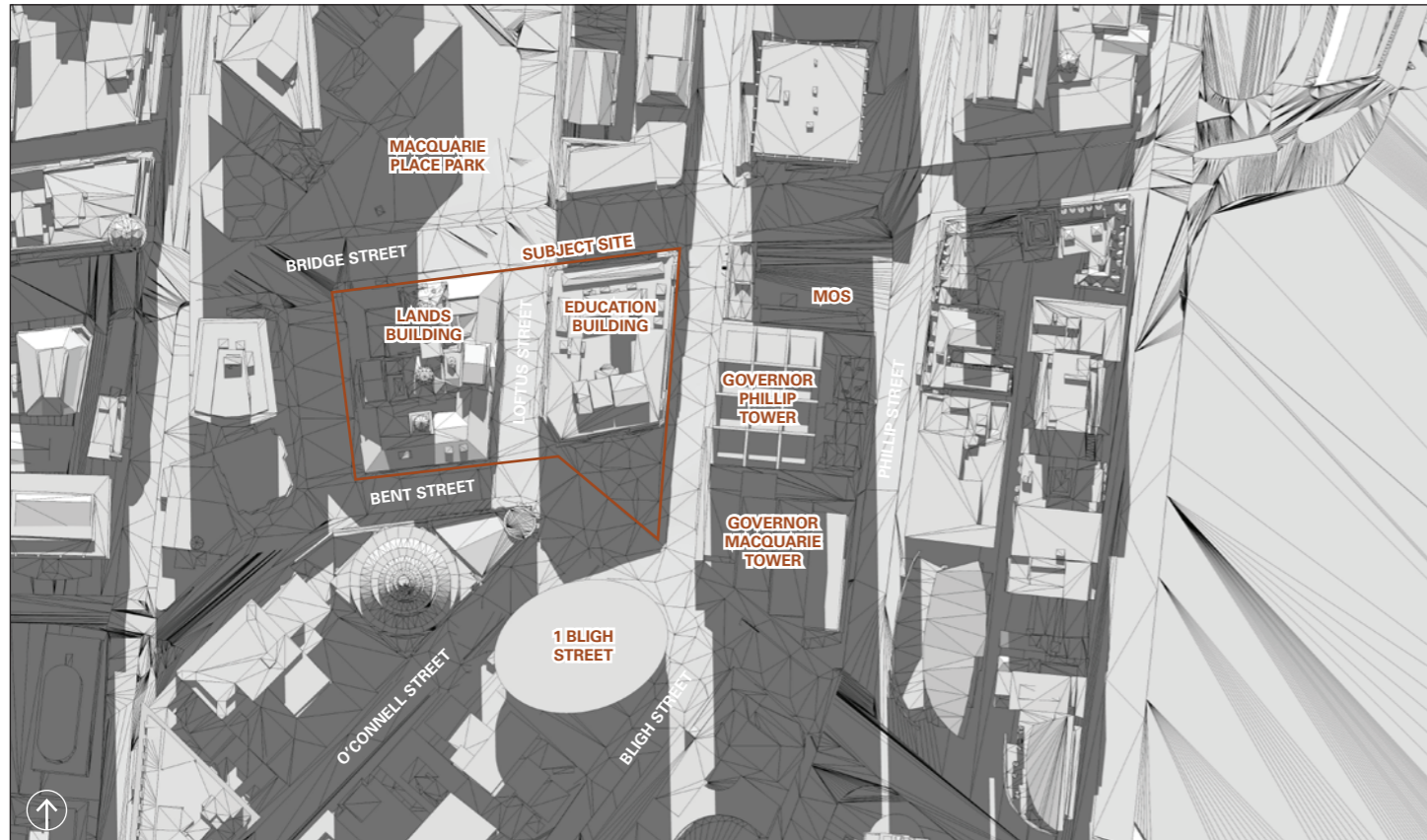
ADDITIONAL SHADOW
1.2% OF EXISTING SHADOW

Blue indicates additional shadow

Shadow Comparison June 21, 9AM

Shadows

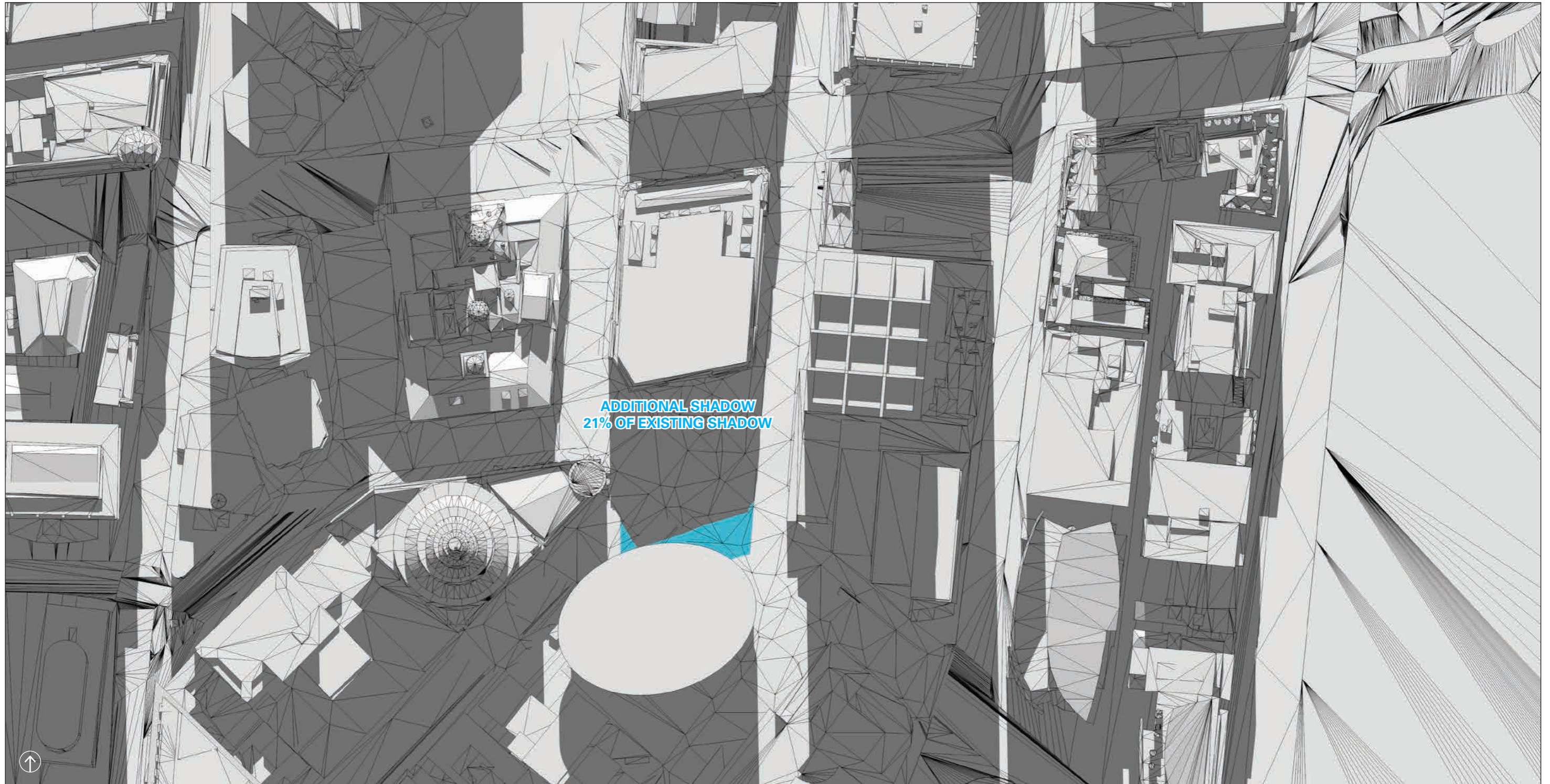
Winter Solstice, June 21, 12 Noon



Existing Shadows June 21, 12 Noon



Proposed Shadows June 21, 12 Noon



Blue indicates additional shadow

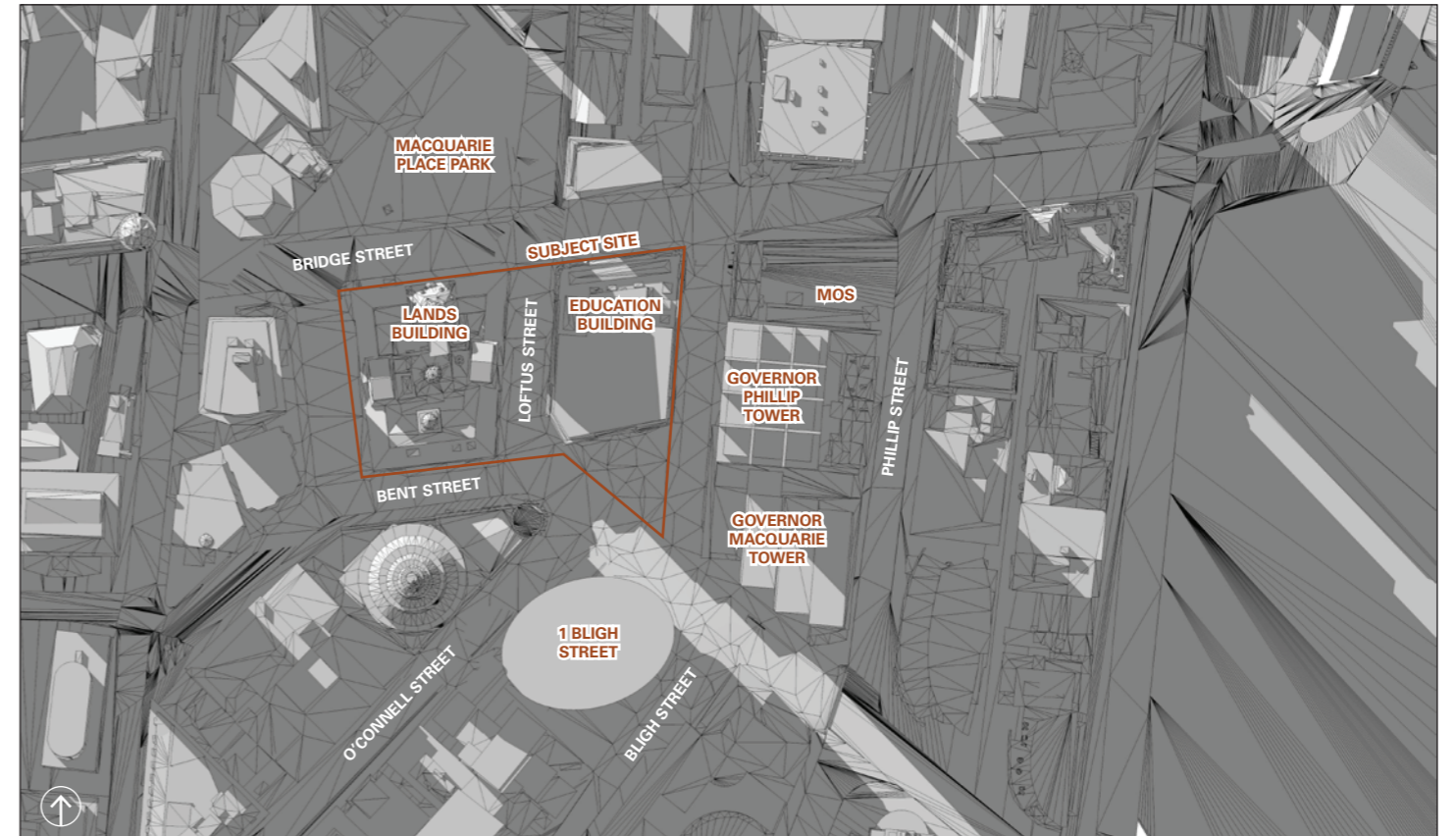
Shadow Comparison June 21, 12 Noon

Shadows

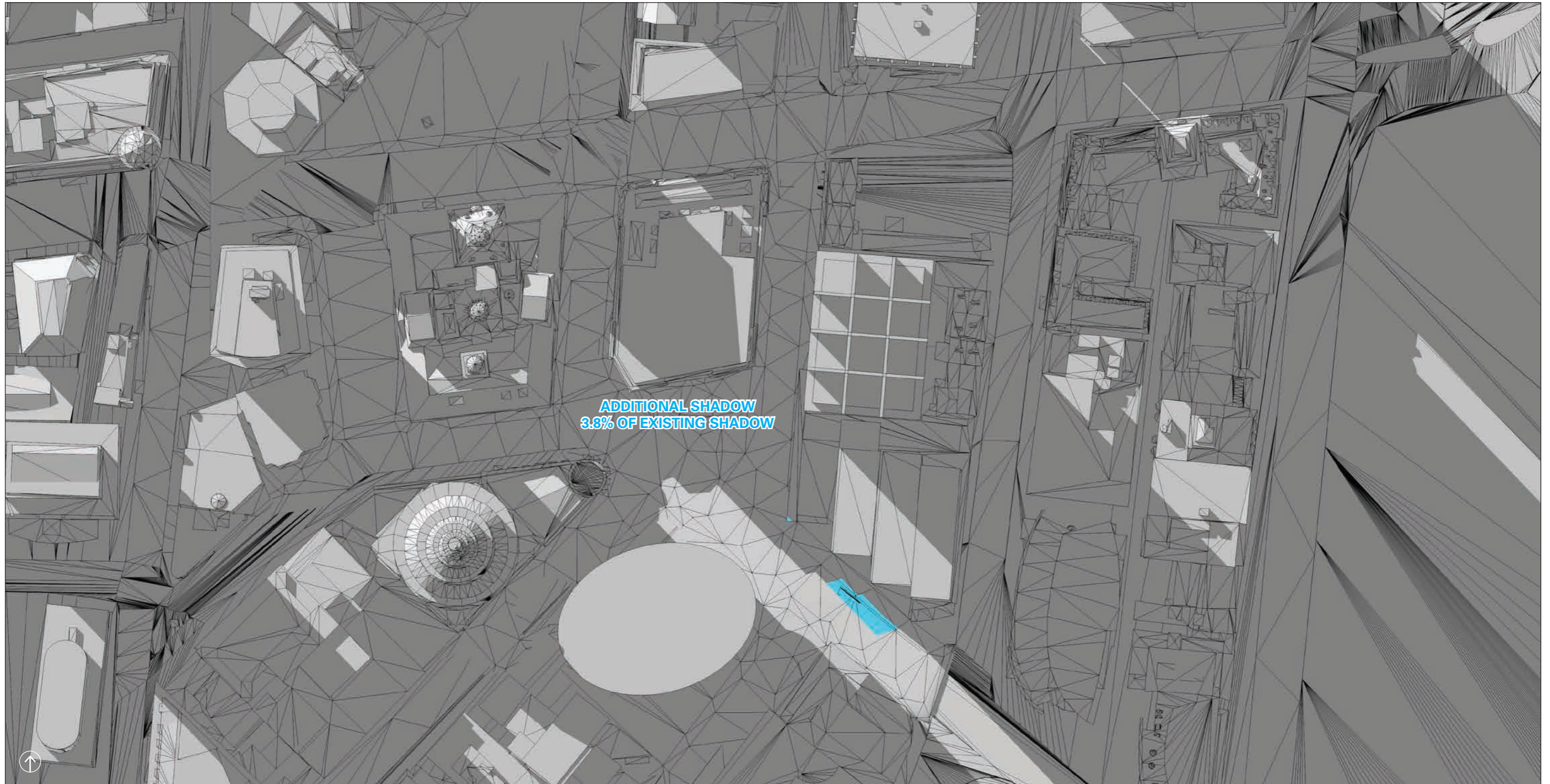
Winter Solstice, June 21, 3 PM



Existing Shadows June 21, 3PM



Proposed Shadows June 21, 3PM



ADDITIONAL SHADOW
3.8% OF EXISTING SHADOW

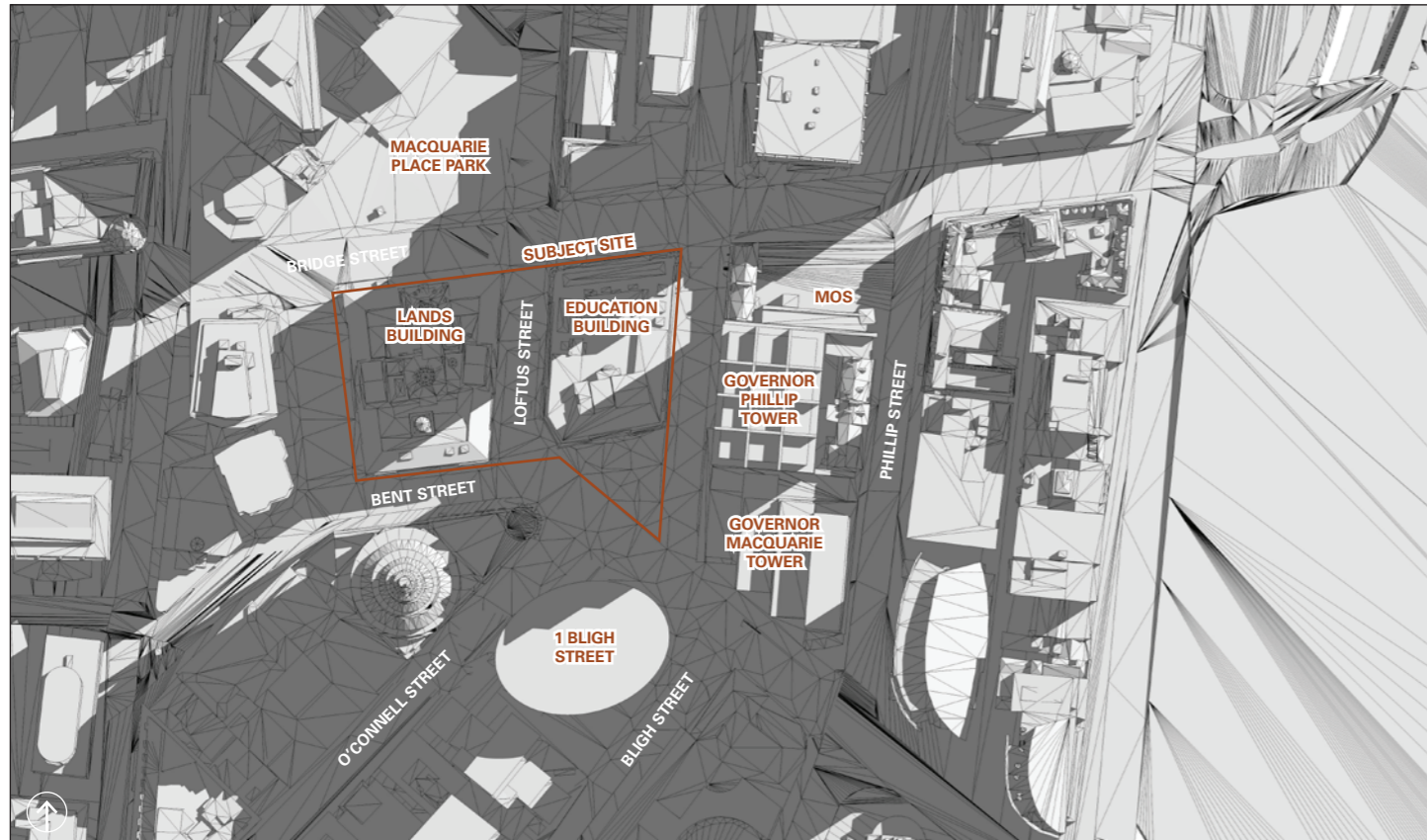


Blue indicates additional shadow

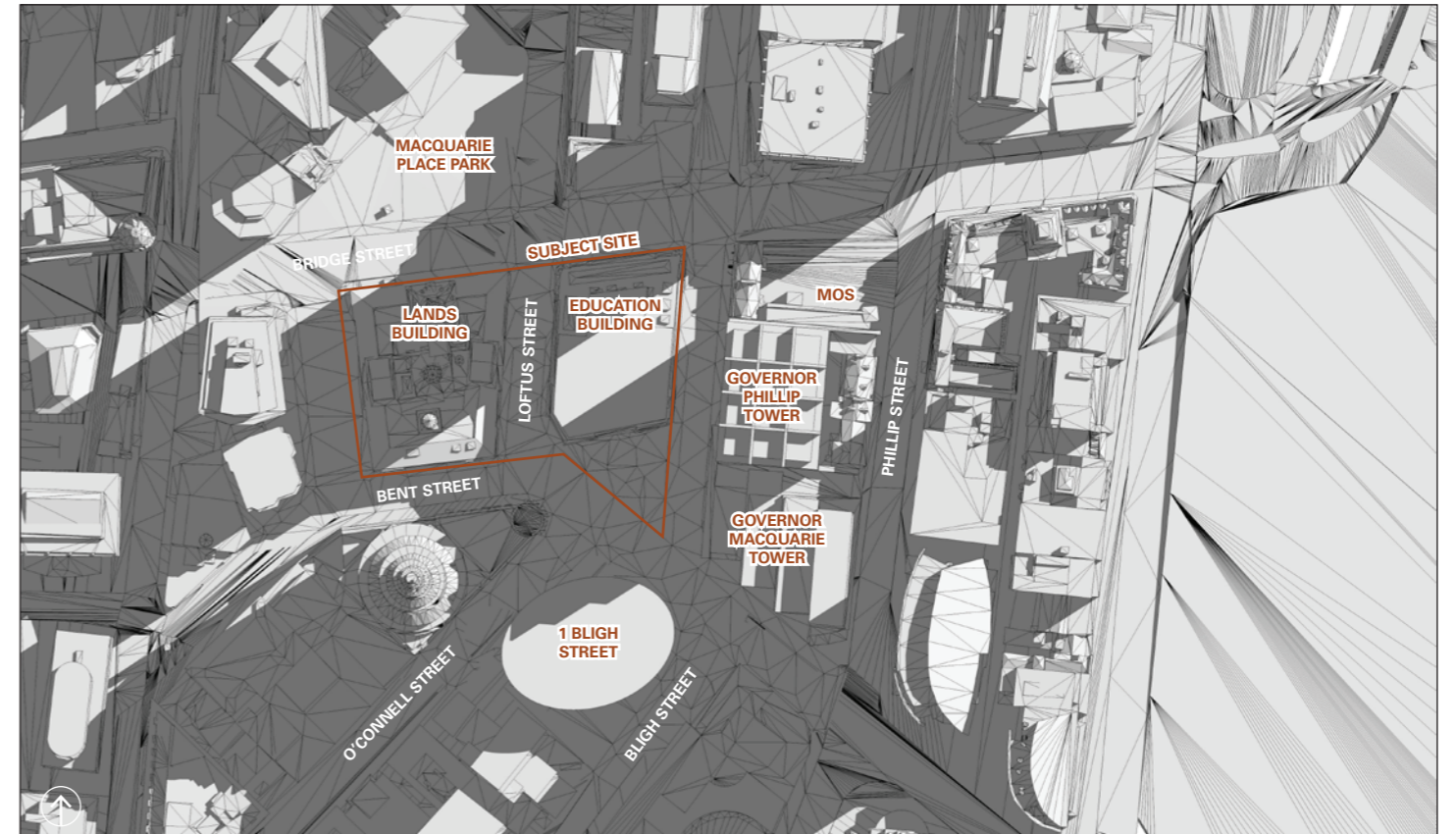
Shadow Comparison June 21, 3PM

Shadows

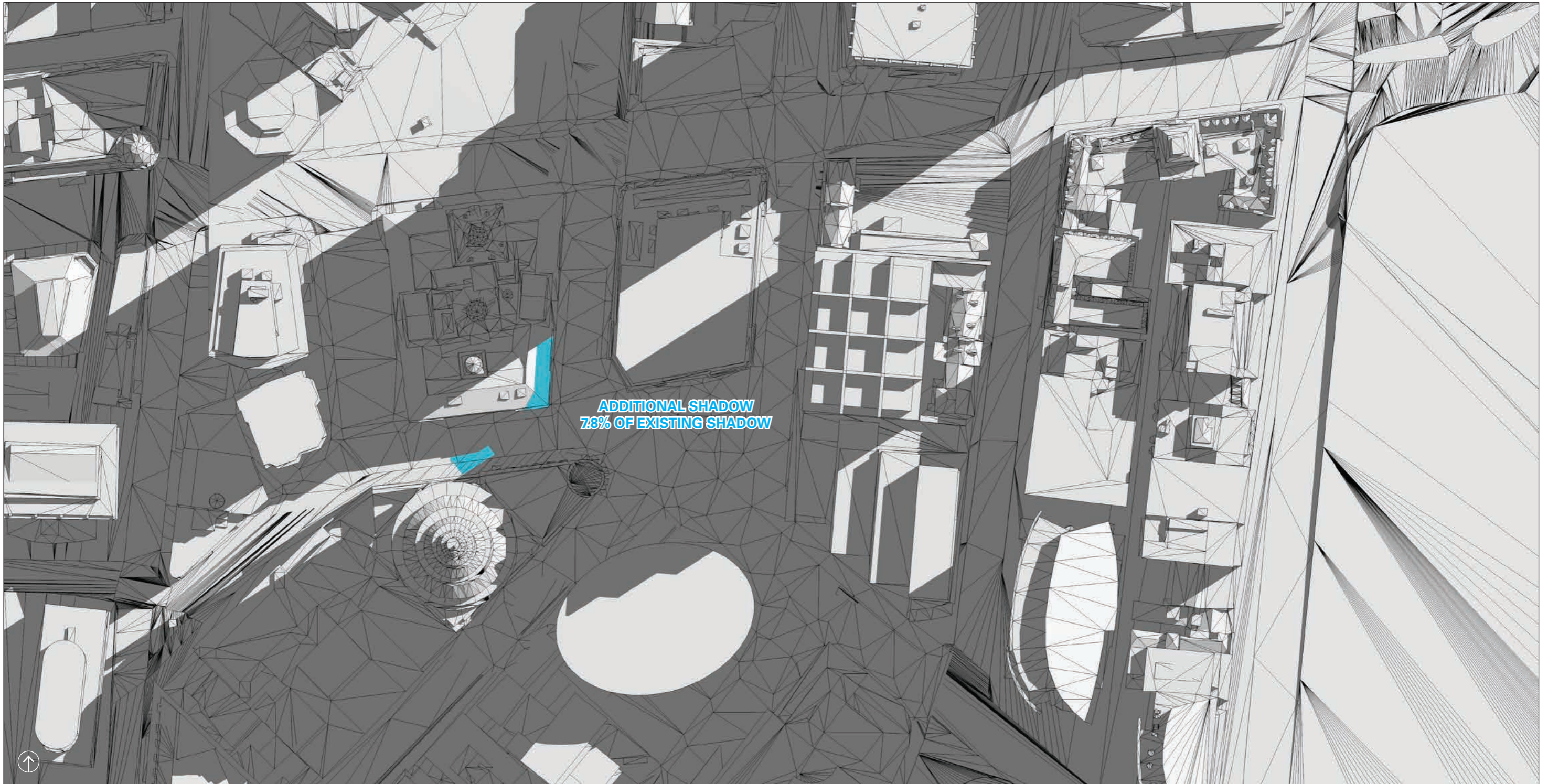
Equinox, September 21, 9AM



Existing Shadows September 21, 9AM



Proposed Shadows September 21, 9AM



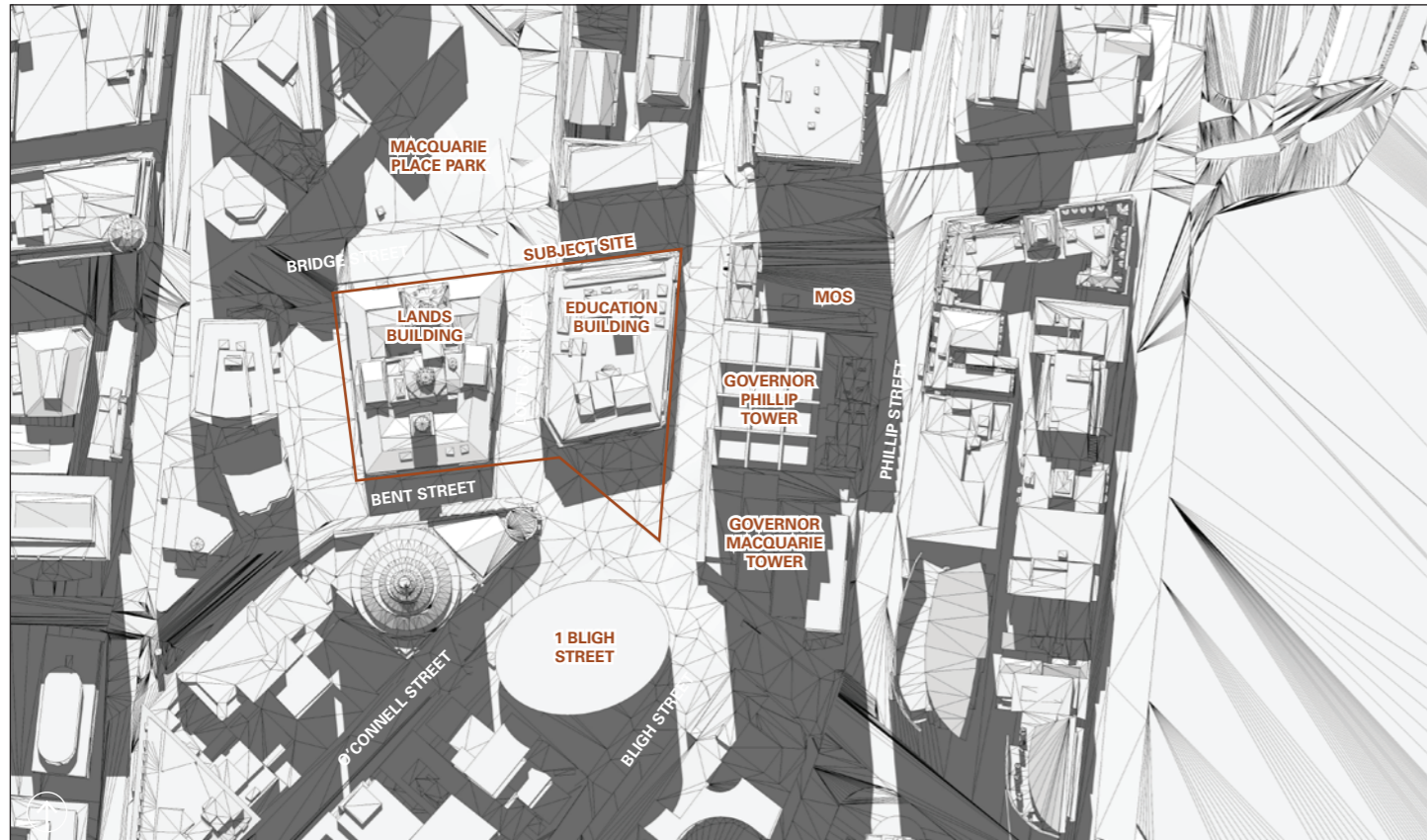
ADDITIONAL SHADOW
78% OF EXISTING SHADOW

Blue indicates additional shadow

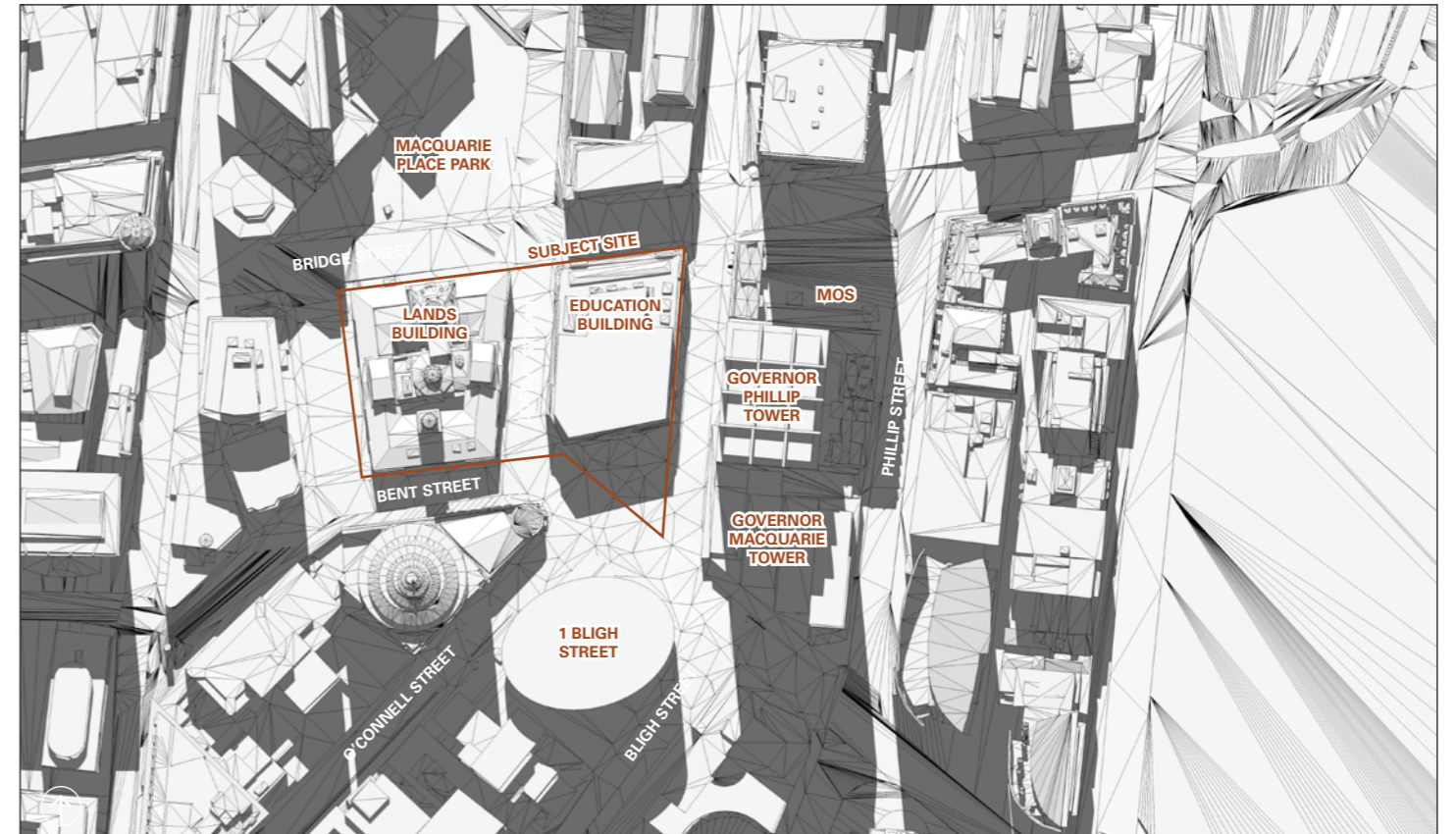
Shadow Comparison September 21, 9AM

Shadows

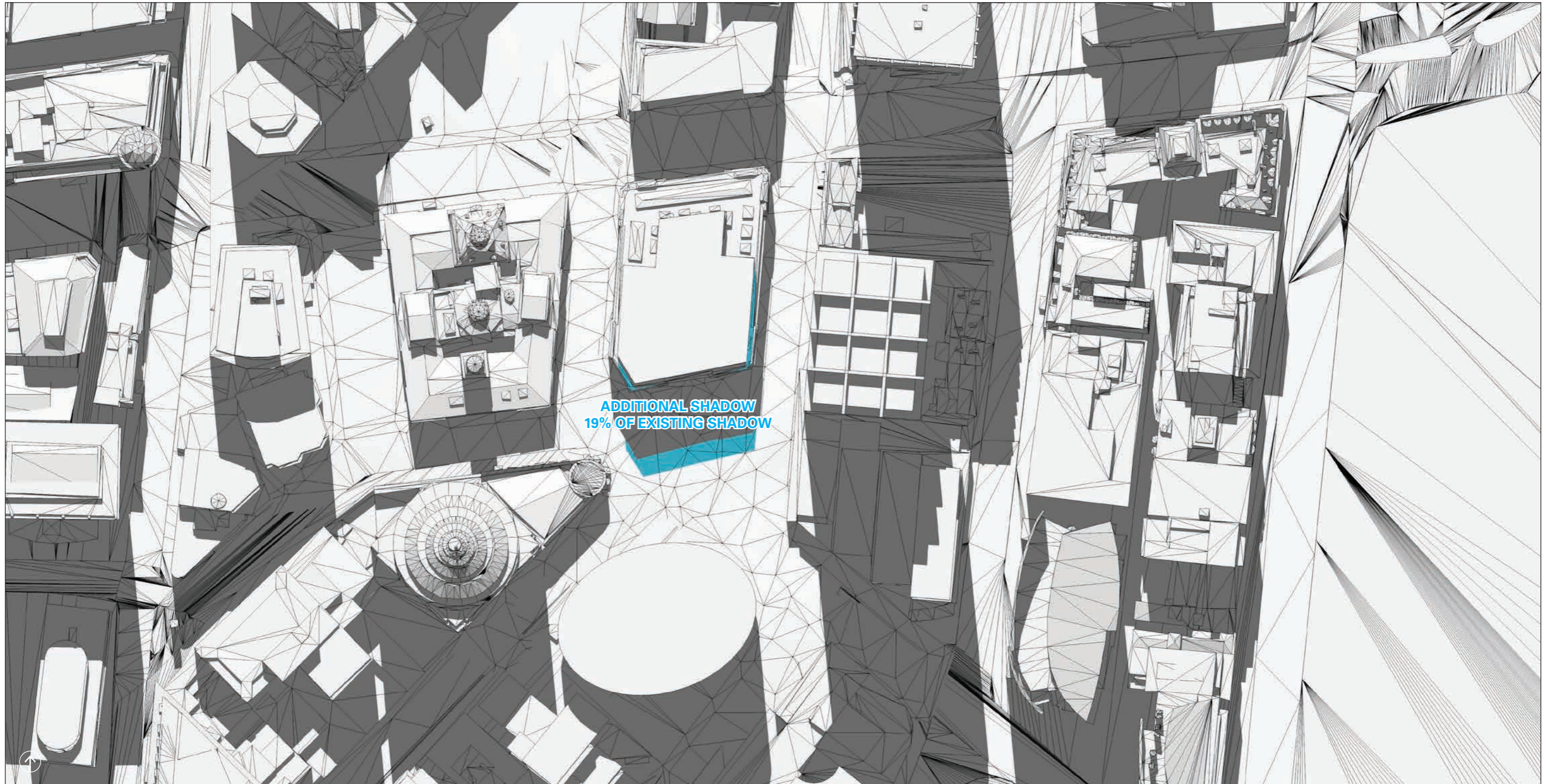
Equinox, September 21, 12 Noon



Existing Shadows September 21, 12 Noon



Proposed Shadows September 21, 12 Noon

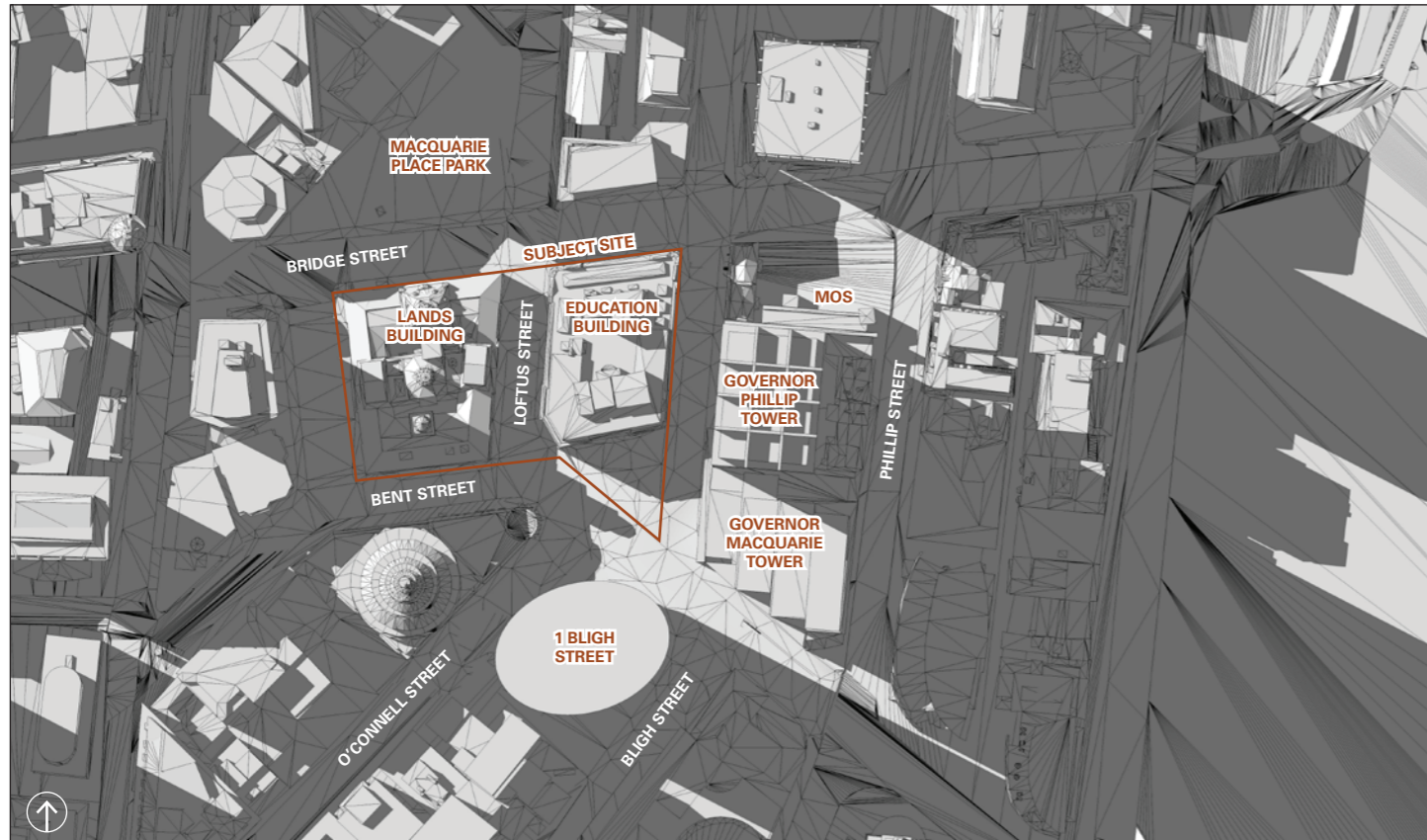


Blue indicates additional shadow

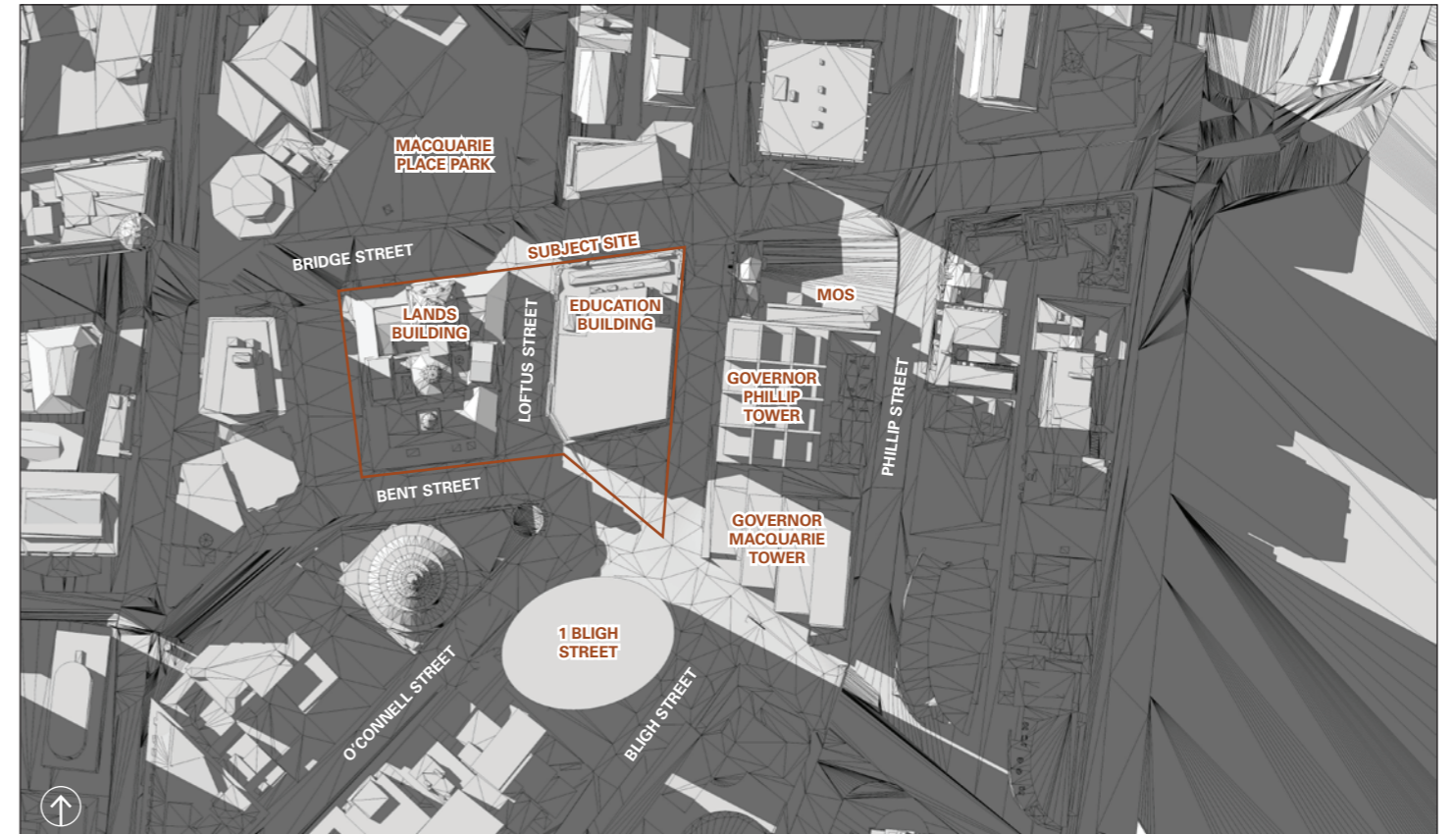
Shadow Comparison September 21, 12 Noon

Shadows

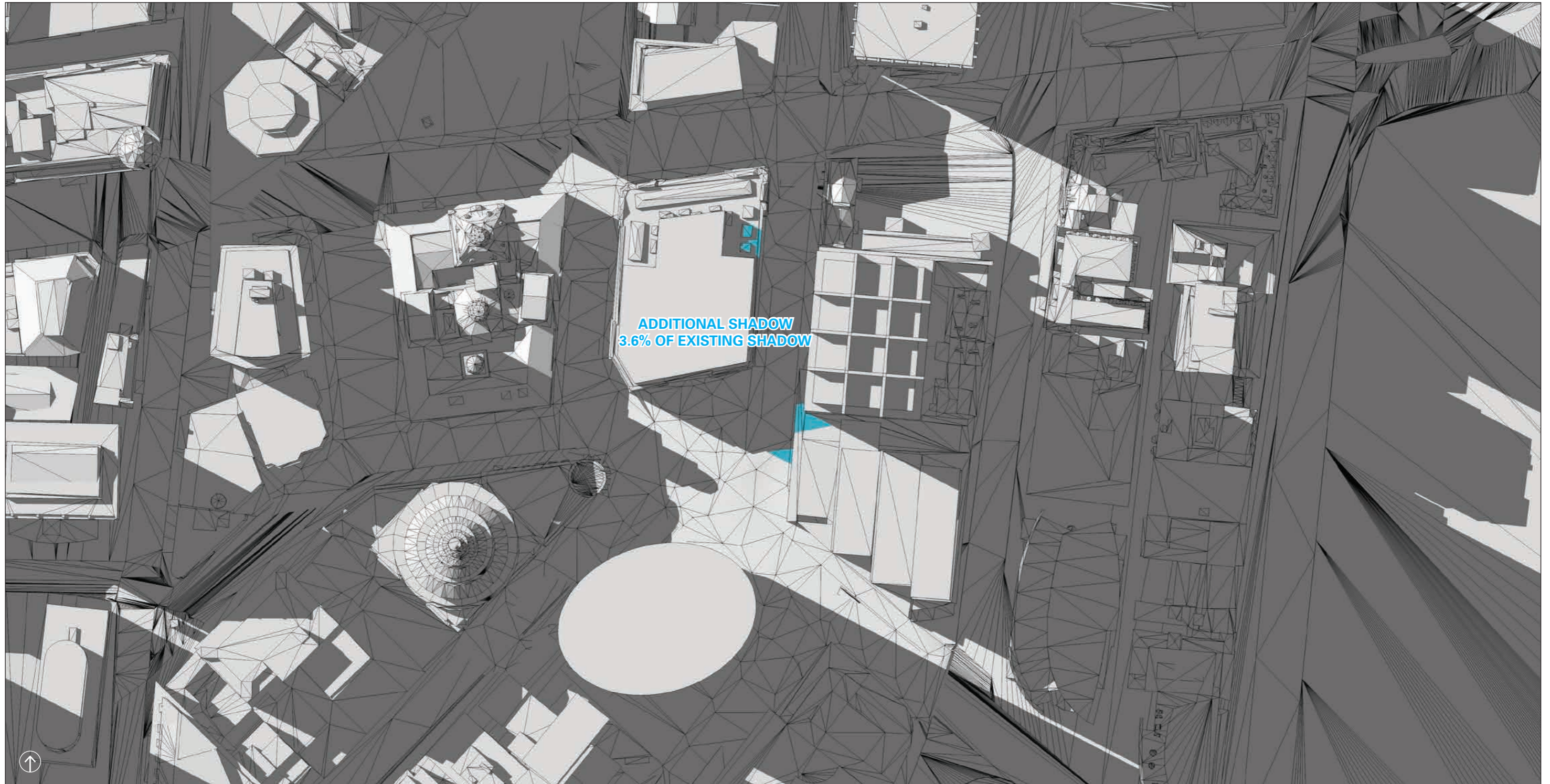
Equinox, September 21, 3PM



Existing Shadows September 21, 3PM



Proposed Shadows September 21, 3PM



ADDITIONAL SHADOW
3.6% OF EXISTING SHADOW

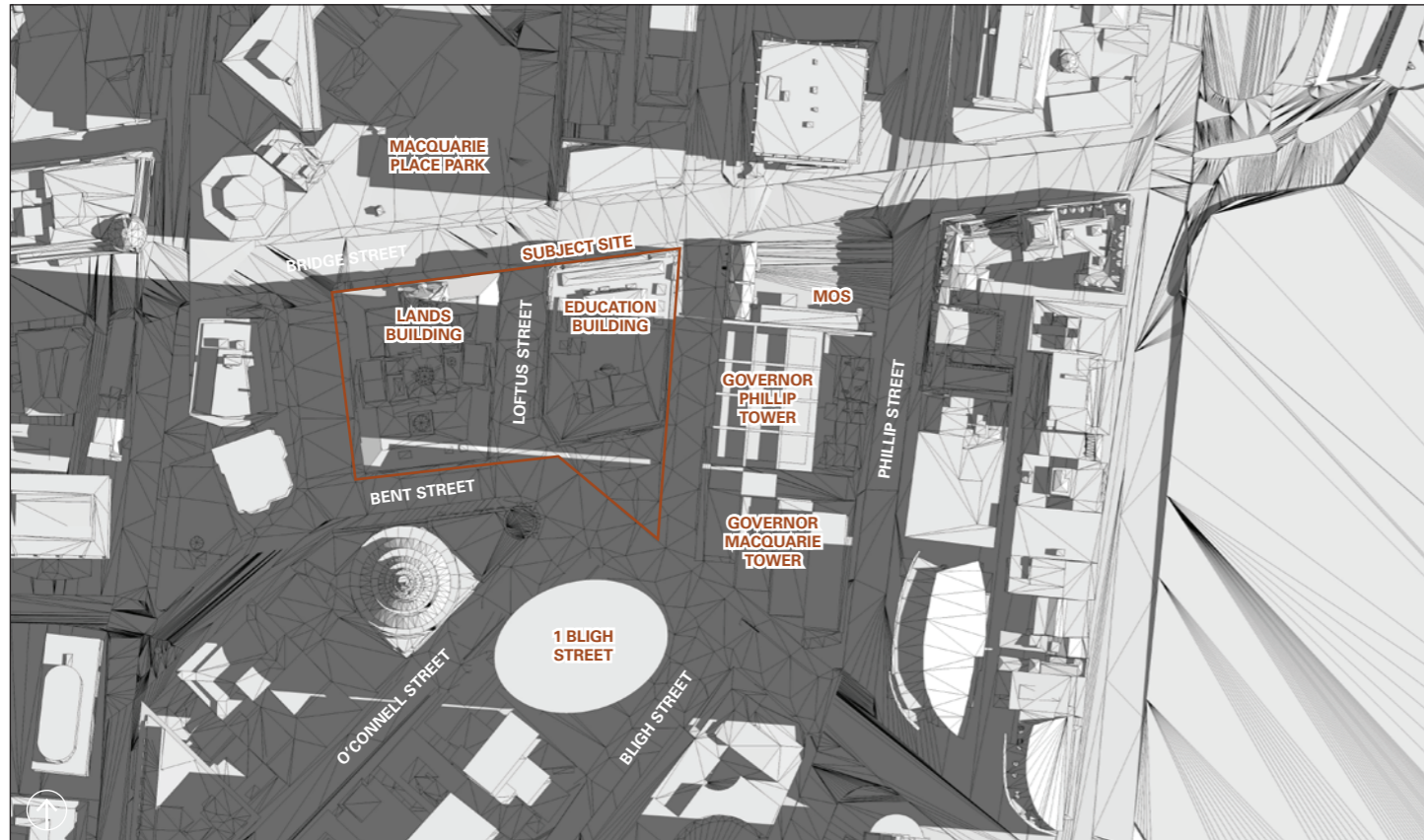


Blue indicates additional shadow

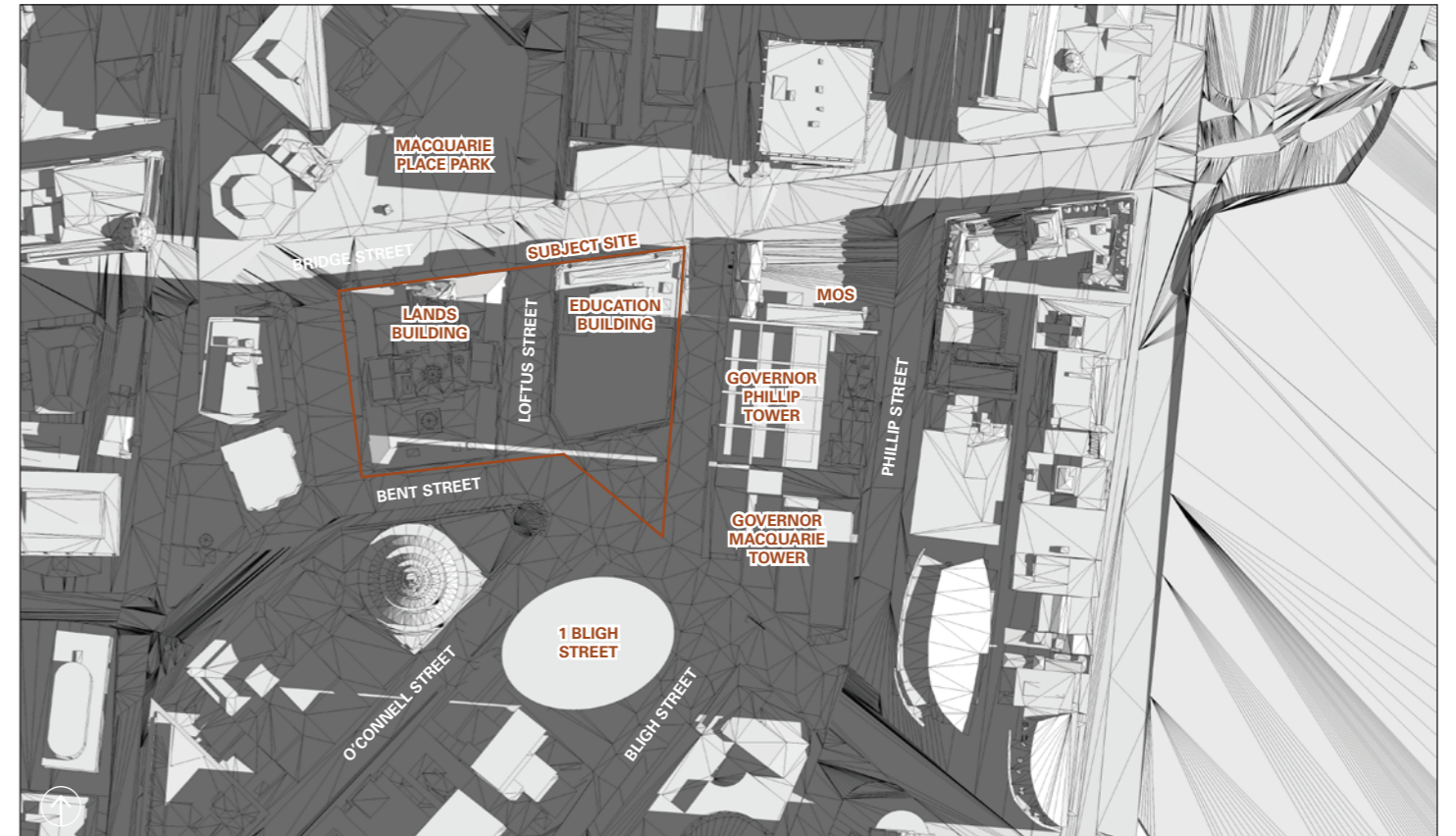
Shadow Comparison September 21, 3PM

Shadows

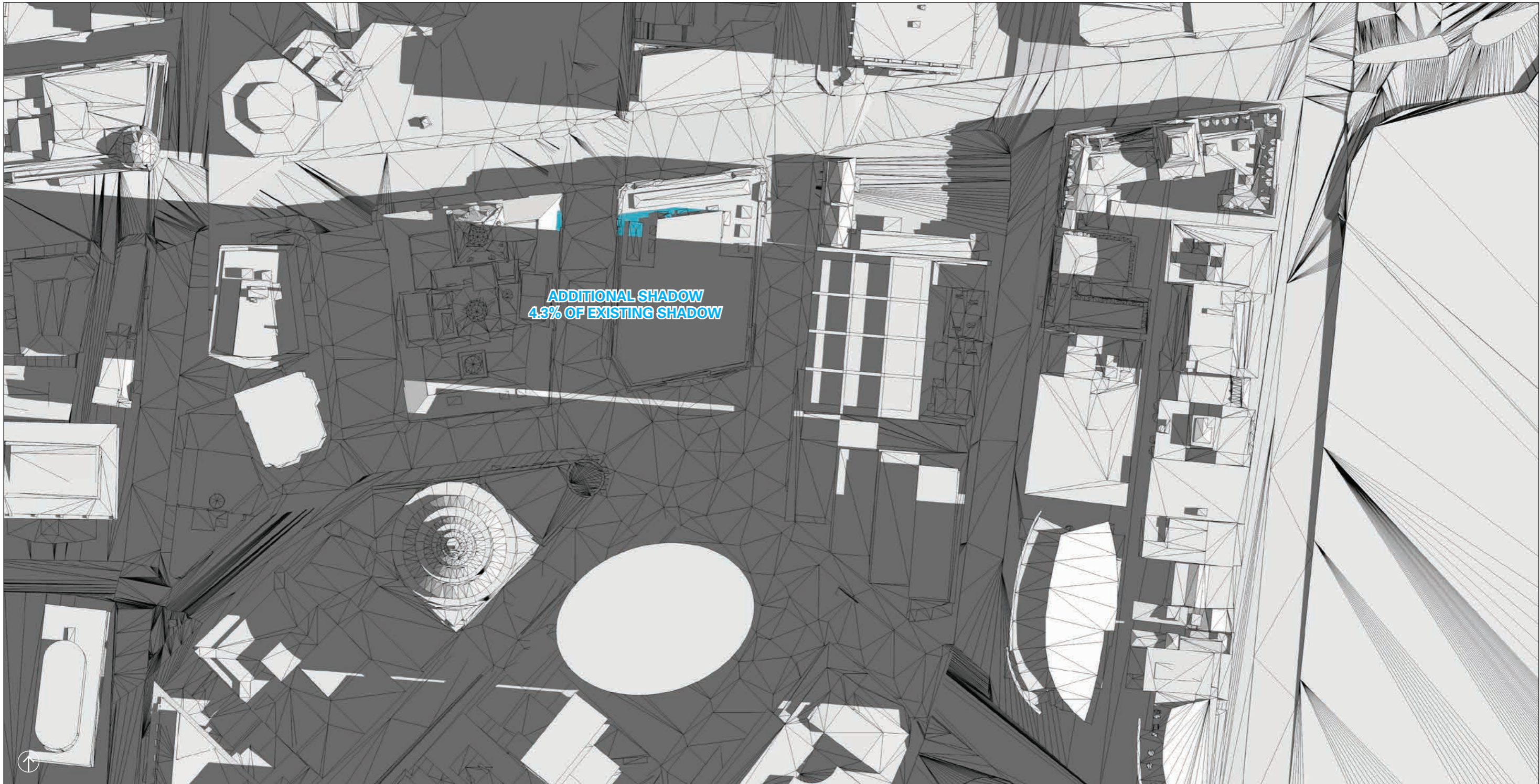
Summer Solstice, December 21, 9AM



Existing Shadows December 21, 9AM



Proposed Shadows December 21, 9AM

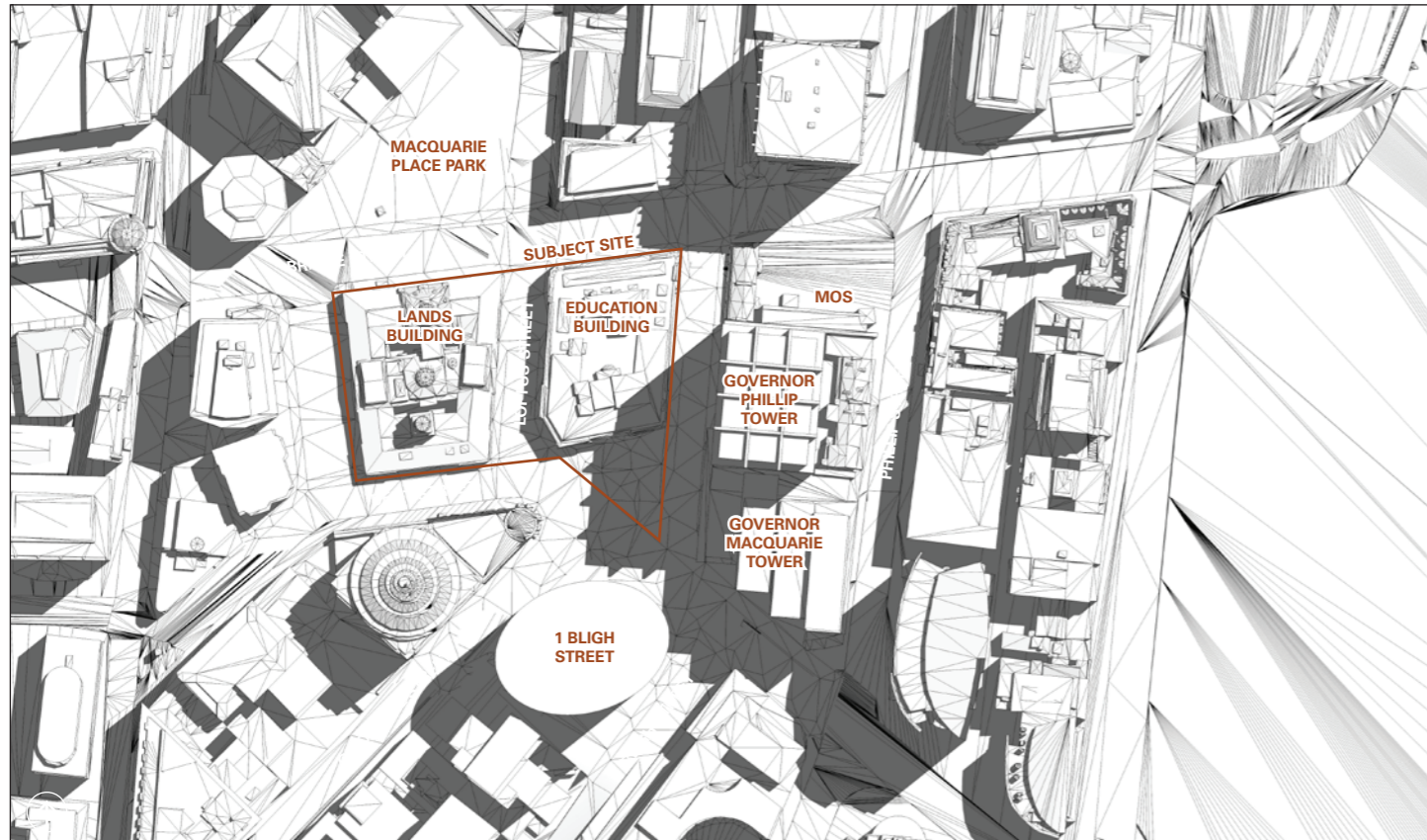


Blue indicates additional shadow

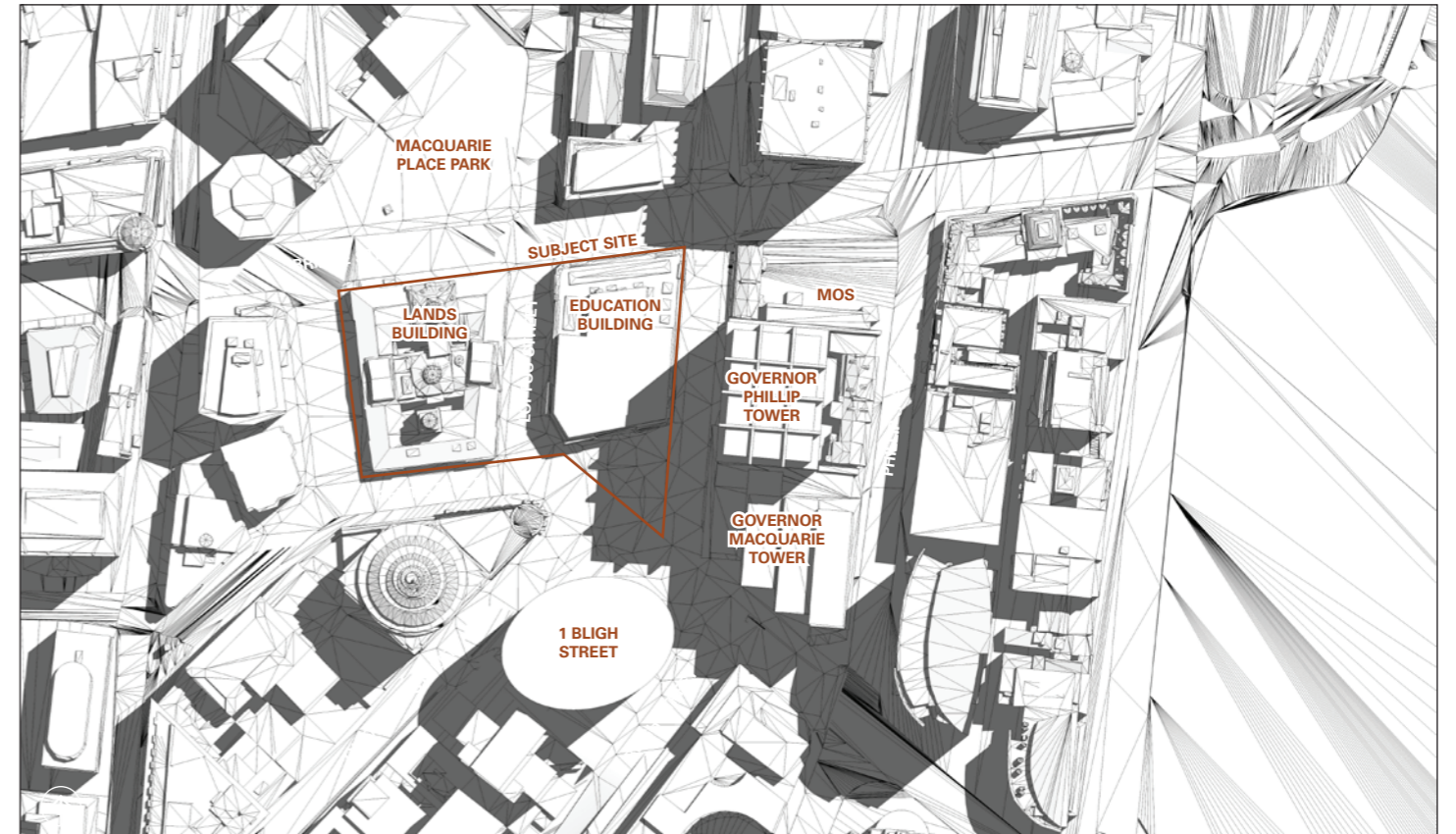
Shadow Comparison December 21, 9AM

Shadows

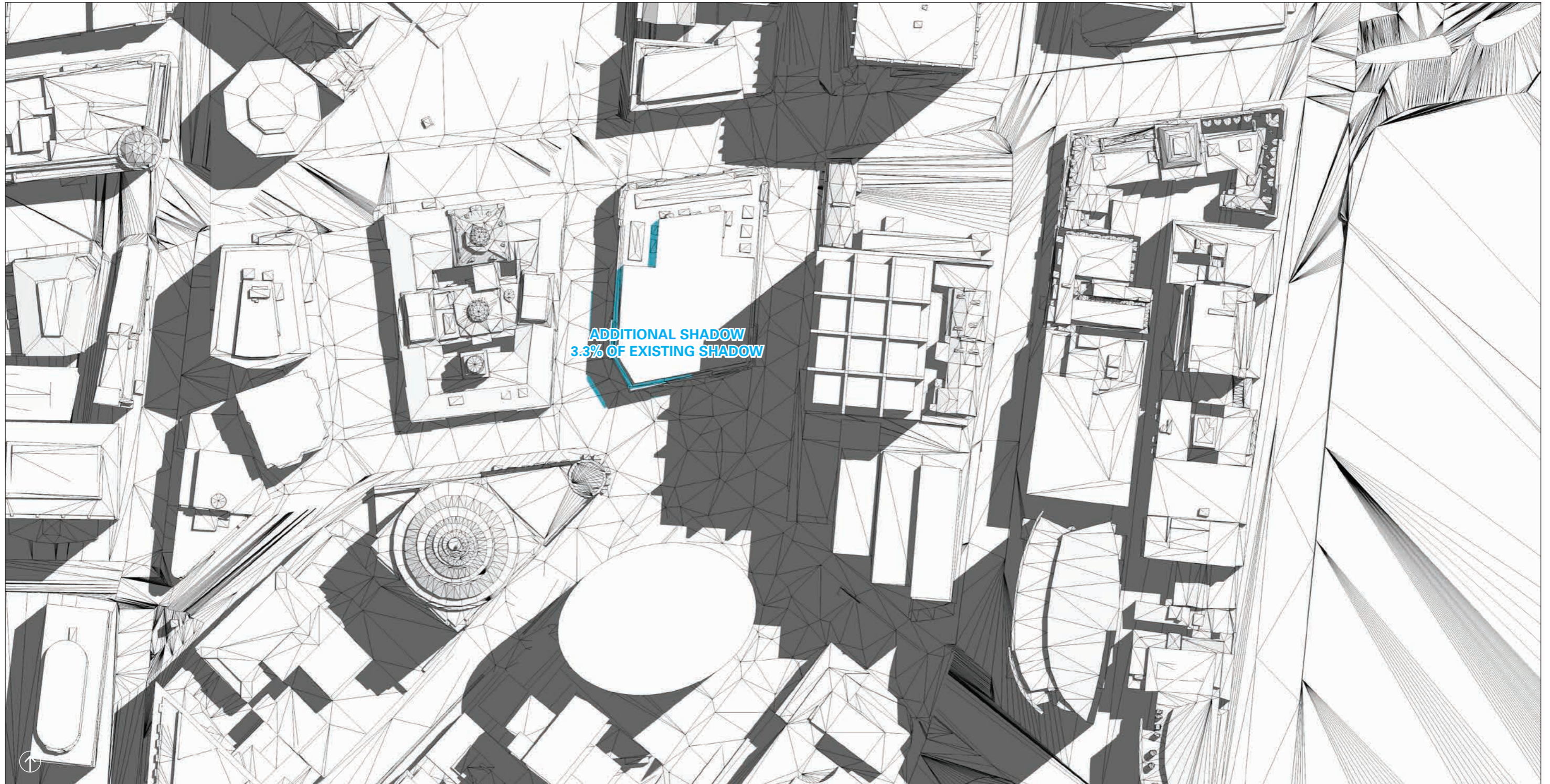
Summer Solstice, 12 Noon



Existing Shadows December 21, 12 Noon



Proposed Shadows December 21, 12 Noon

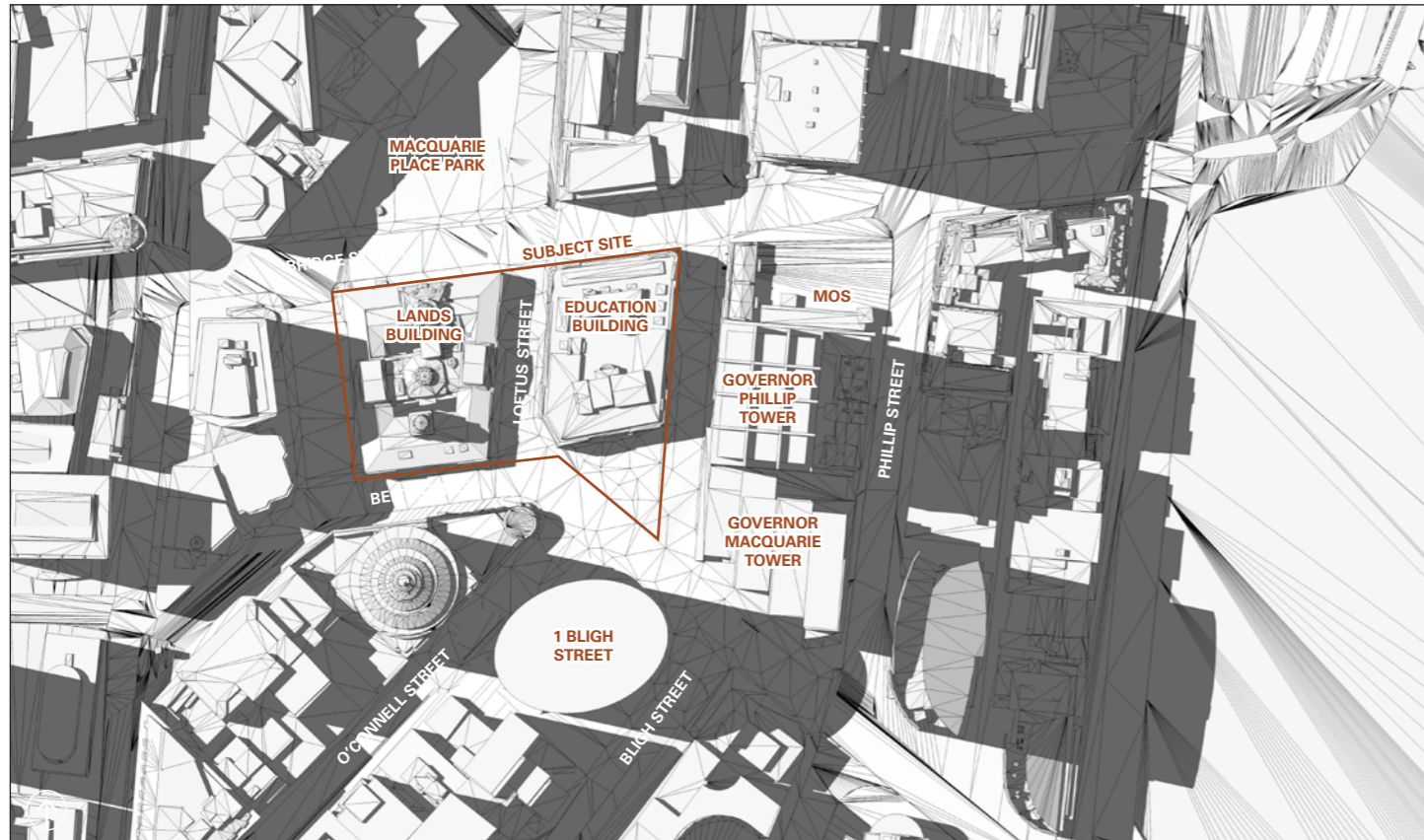


Blue indicates additional shadow

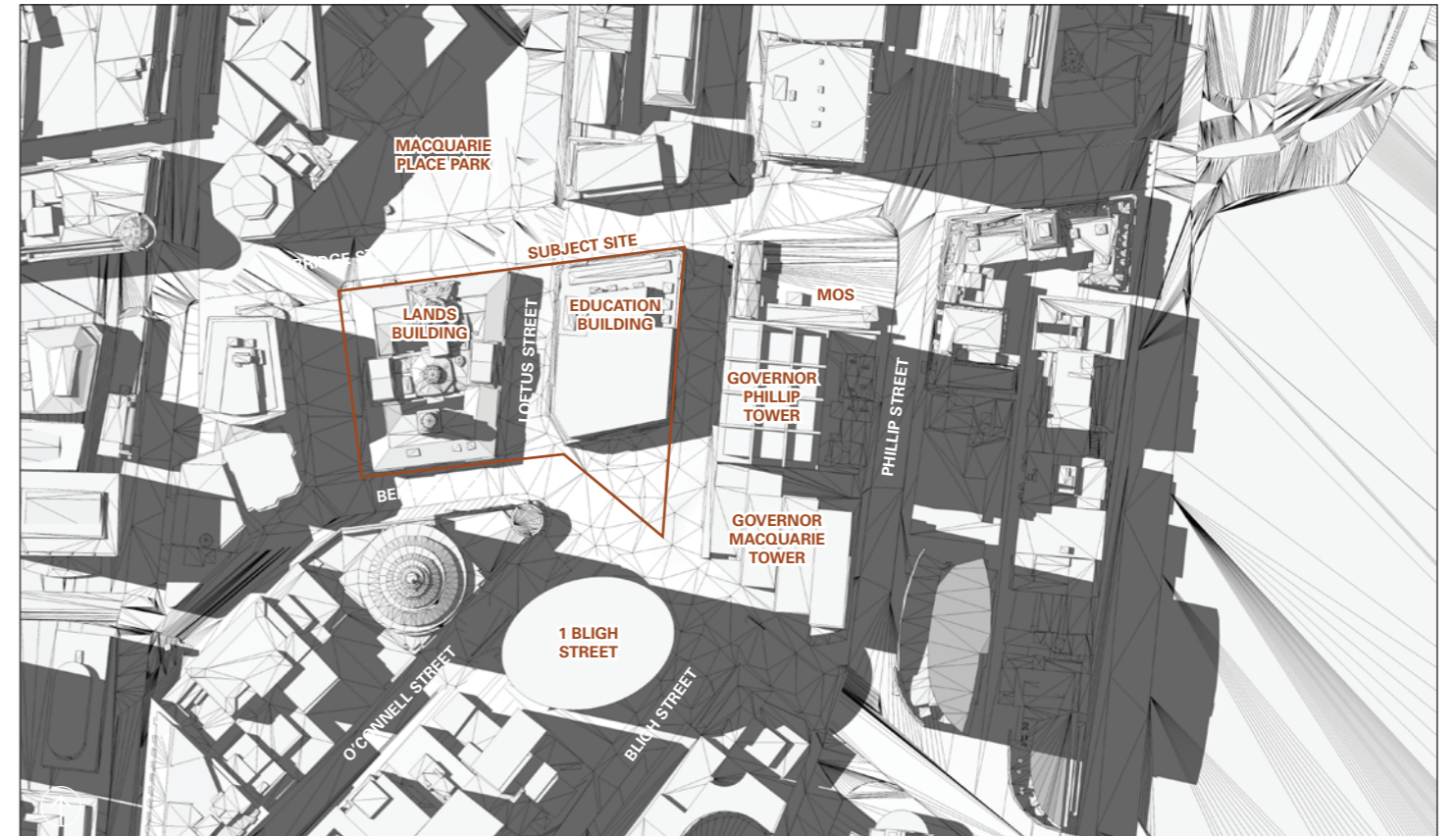
Shadow Comparison December 21, 12 Noon

Shadows

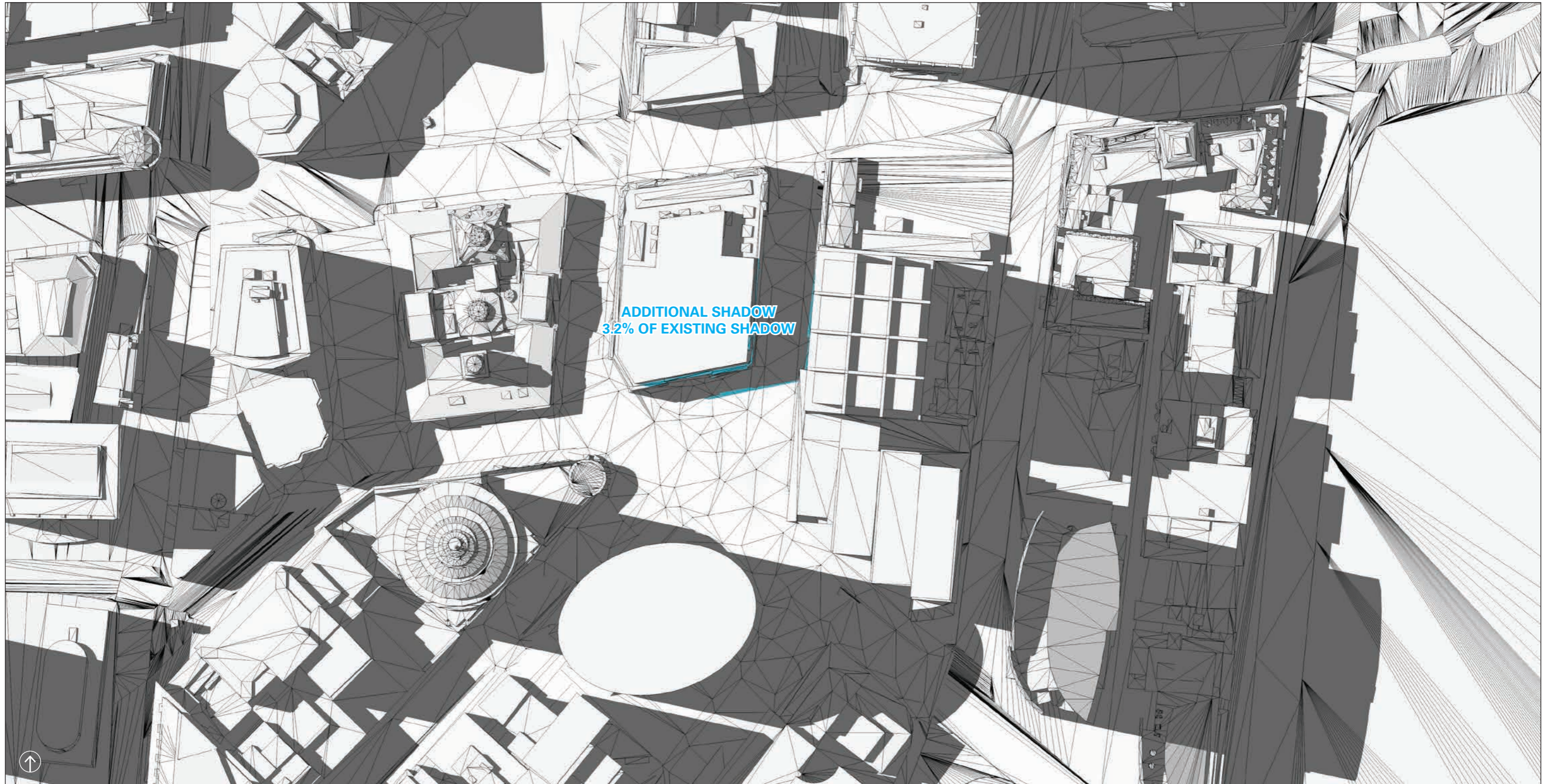
Summer Solstice, December 21, 3PM



Existing Shadows December 21, 3PM



Proposed Shadows December 21, 3PM



Blue indicates additional shadow

Shadow Comparison December 21, 3PM

Shadows

Comparative Assessment



Comparison Shadows March 21, 9AM

No additional shadowing at ground level.
5% additional shadow cast by proposed volume on Lands Building.



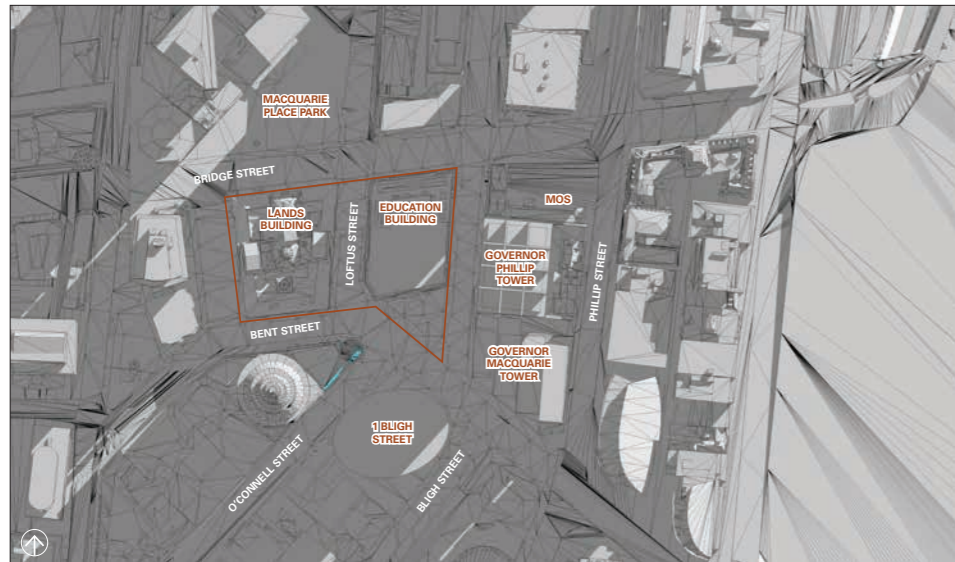
Comparison Shadows March 21, 12 Noon

Minor additional shadowing to roadway and pavement at corner of Bent and O'Connell Streets.
9% additional shadow cast by proposed volume.



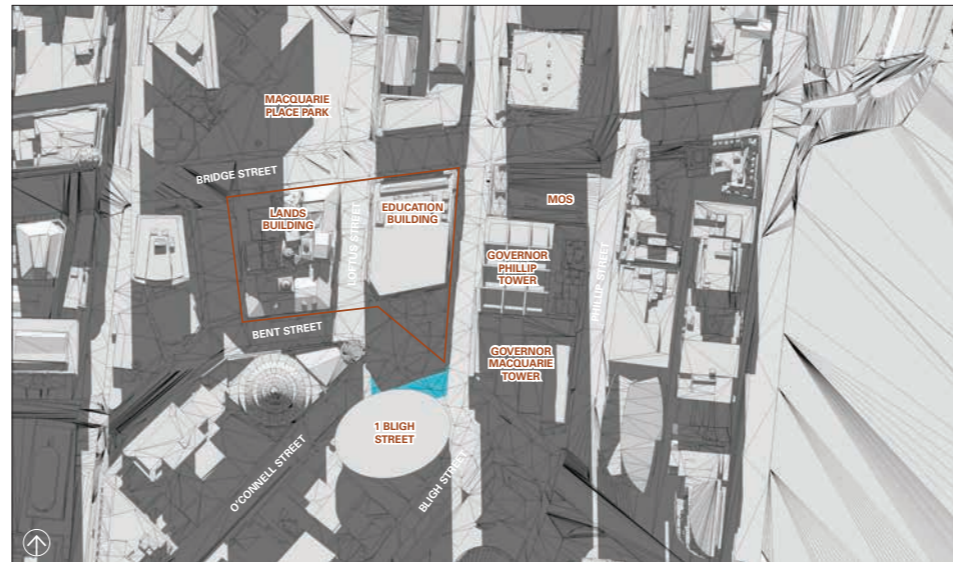
Comparison Shadows March 21, 3PM

Minor additional shadowing to Farrer Place.
11% additional shadow cast by proposed volume.



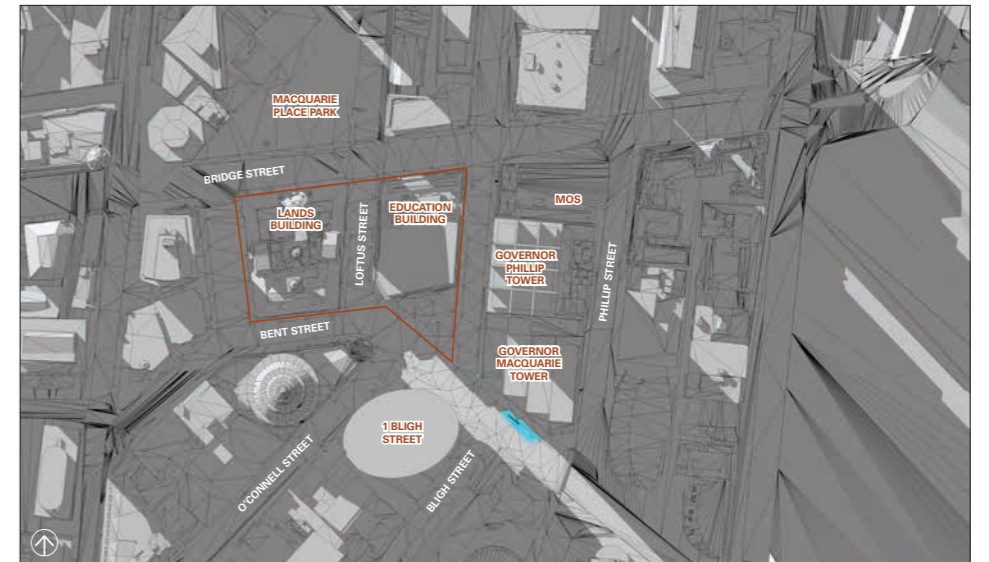
Comparison Shadows June 21, 9AM

No additional shadowing at ground level.
1.2% additional shadow cast by proposed volume.



Comparison Shadows June 21, 12 Noon

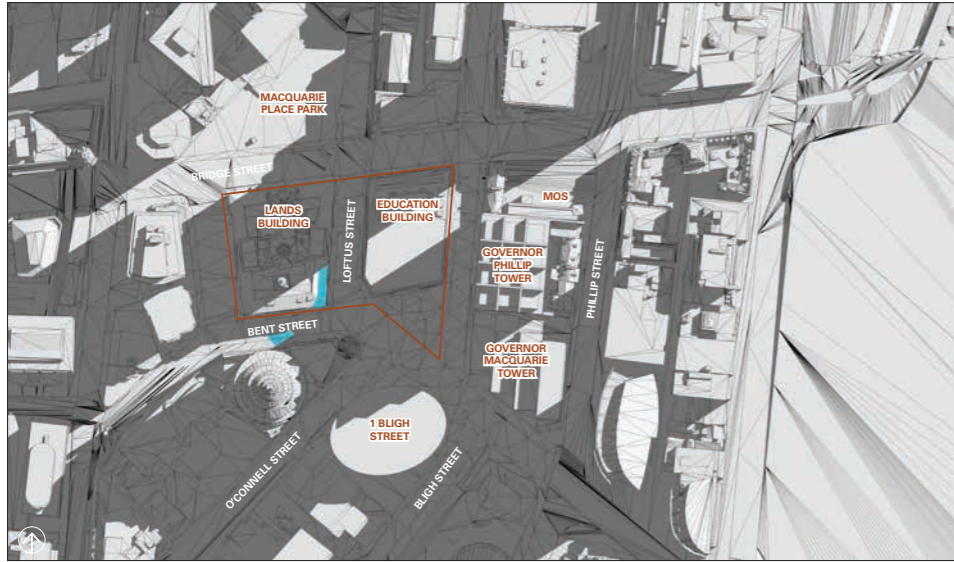
Some additional shadowing to roadway and pavement at corner of Bent and O'Connell Streets.
21% additional shadow cast by proposed volume.



Comparison Shadows June 21, 3PM

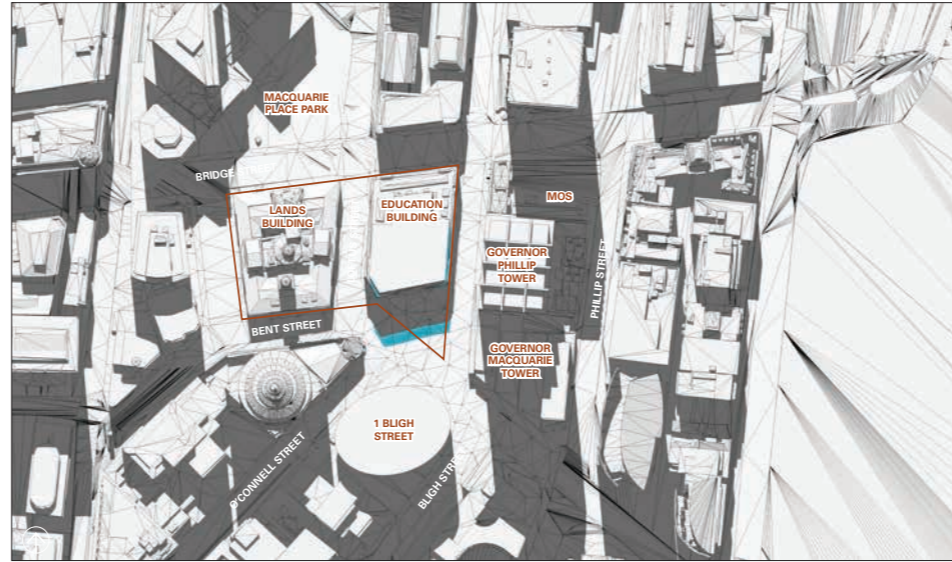
Minor additional shadowing to Bent Street roadway.
3.8% additional shadow cast by proposed volume.

Blue indicates additional shadow



Comparison Shadows September 21, 9AM

Minor additional shadowing to Bent Street roadway and pavement.
7.8% additional shadow cast by proposed volume.



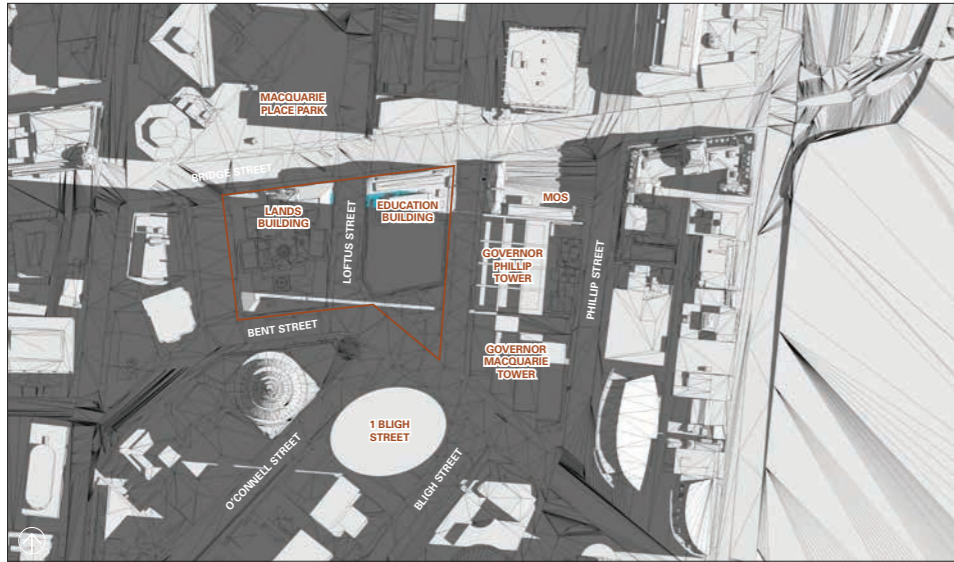
Comparison Shadows September 21, 12 Noon

Some additional shadowing to Bent Street roadway and Farrer Place.
19% additional shadow cast by proposed volume.



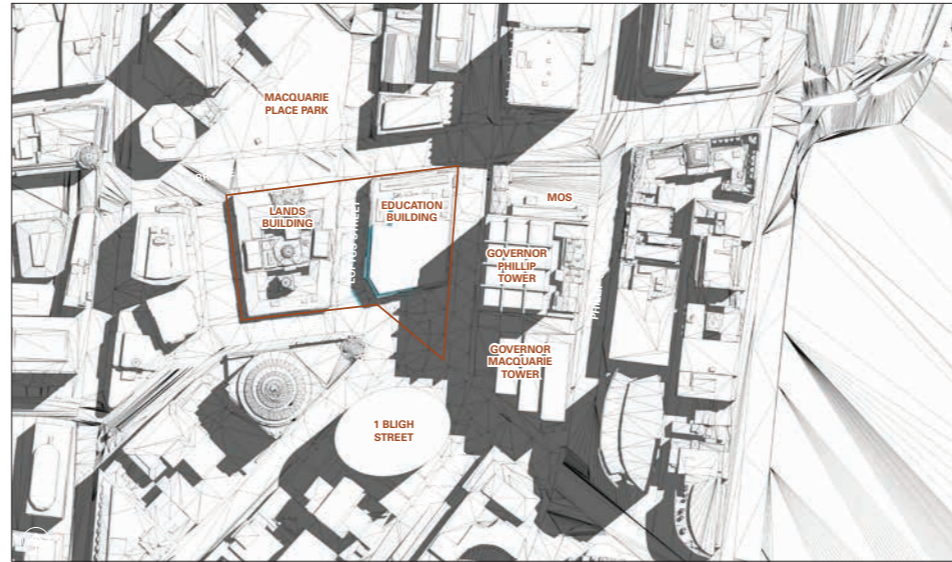
Comparison Shadows September 21, 3PM

Very minor additional shadowing to Farrer Place.
3.6% additional shadow cast by proposed volume.



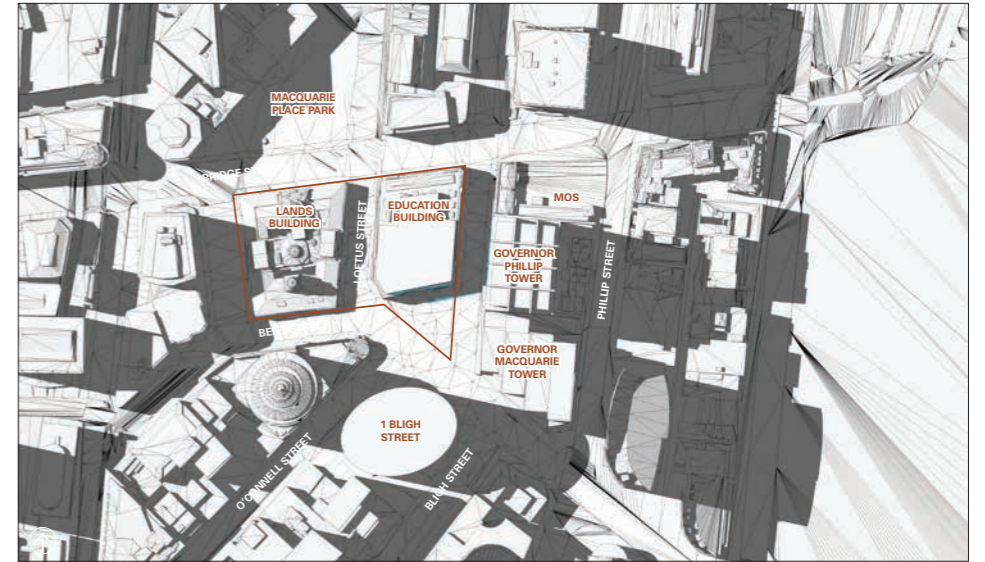
Comparison Shadows December 21, 9AM

No additional shadowing at ground level.
4.3% additional shadow cast by proposed volume.



Comparison Shadows December, 12 Noon

Minor additional shadowing to Loftus Street roadway.
3.3% additional shadow cast by proposed volume.

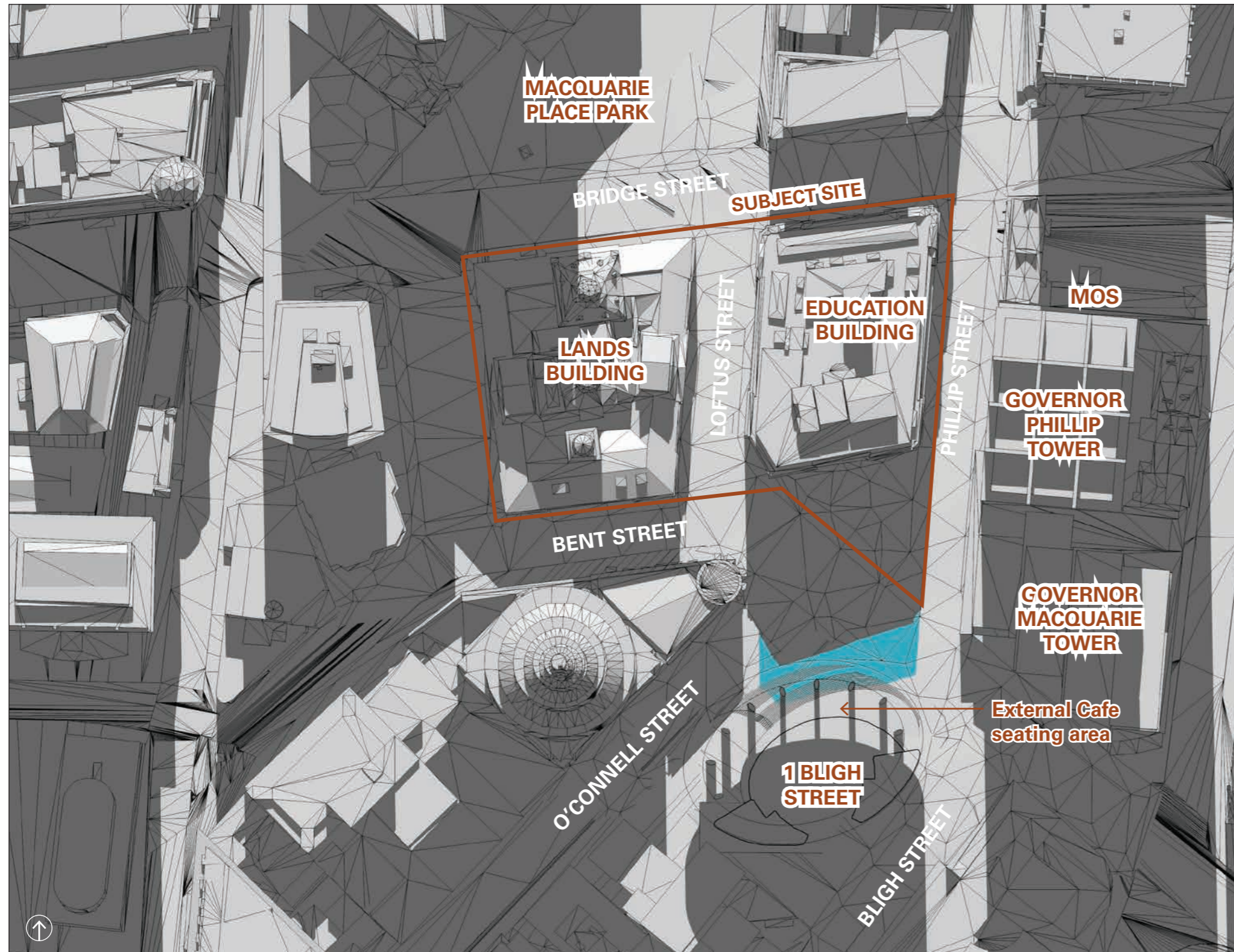


Comparison Shadows December 21, 3PM

Very minor additional shadowing to Farrer Place.
3.2% additional shadow cast by proposed volume.

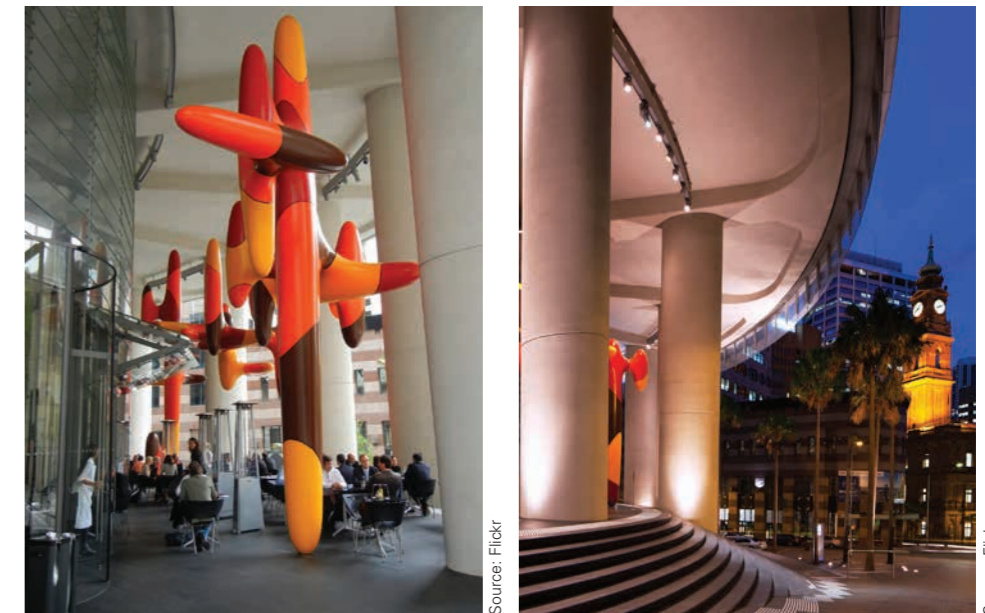
Blue indicates additional shadow

Shadow Comparison June 21 Noon
 1 Bligh Street Steps and Public Domain



Blue indicates additional shadow

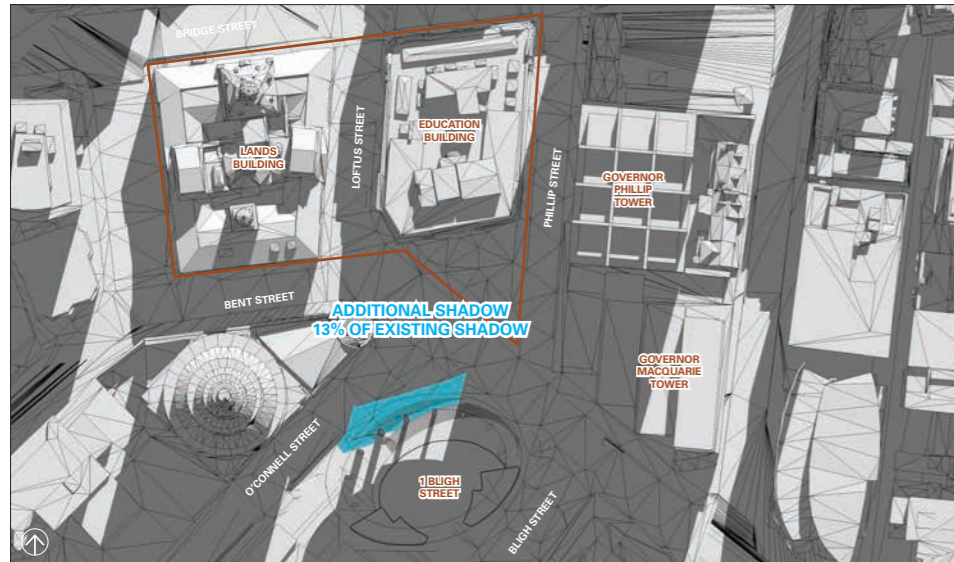
Shadow Comparison June 21, 12 Noon



1 Bligh Street: Steps, pavement and cafe

Summary of Shadow Study at Key 30 Minute Intervals

1 Bligh Street Steps and Public Domain



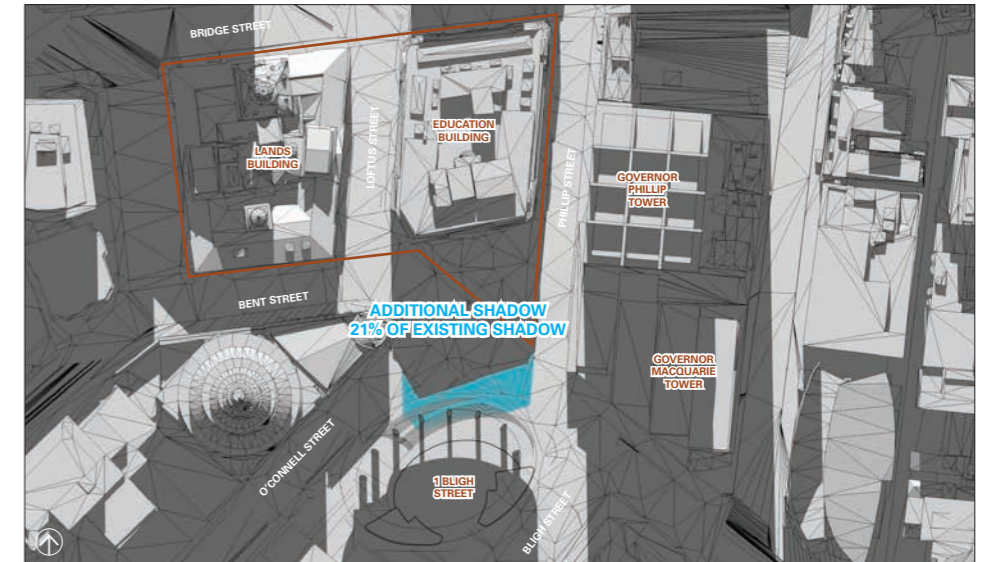
Comparison Shadows June 21, 11AM

Minor additional shadowing to lower steps, mid and top steps remain in full sun. Cafe sun access not affected.



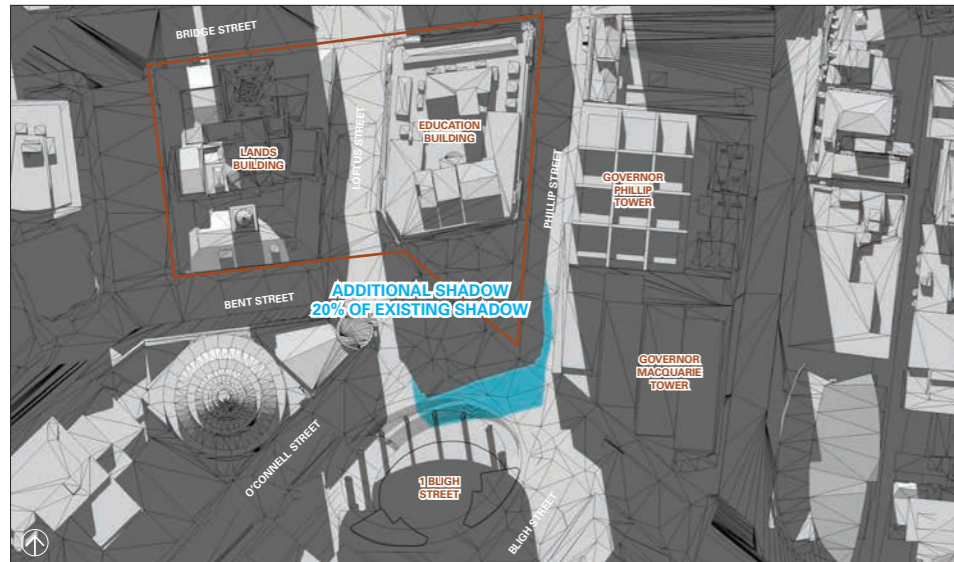
Comparison Shadows June 21, 11:30AM

Additional shadowing to lower and some middle steps, top steps remain in full sun. Cafe sun access not affected.



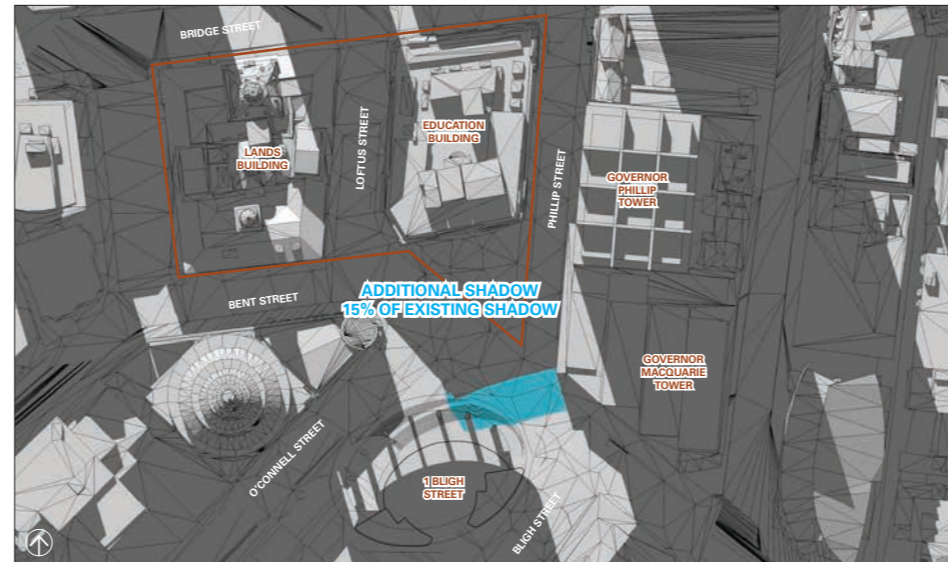
Comparison Shadows June 21, 12 Noon

Additional shadowing to eastern steps, no change to shadowing of steps at western end. Cafe sun access not affected.



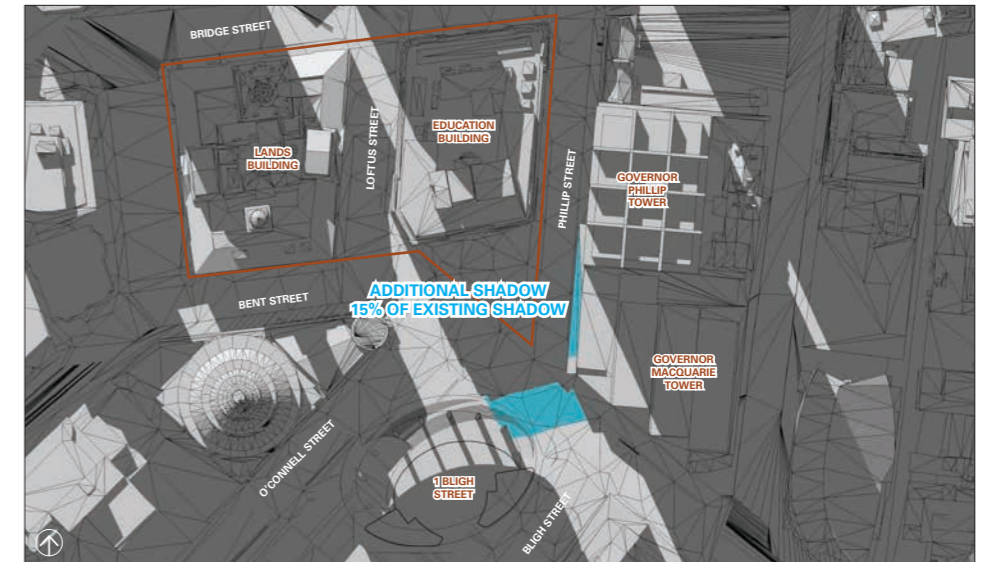
Comparison Shadows June 21, 12:30 PM

Additional shadowing to eastern steps, no change to shadowing of steps at western end. Cafe sun access not affected.



Comparison Shadows June, 1 PM

Minor additional shadowing to eastern steps, majority of steps retain existing sun access. Cafe sun access not affected.

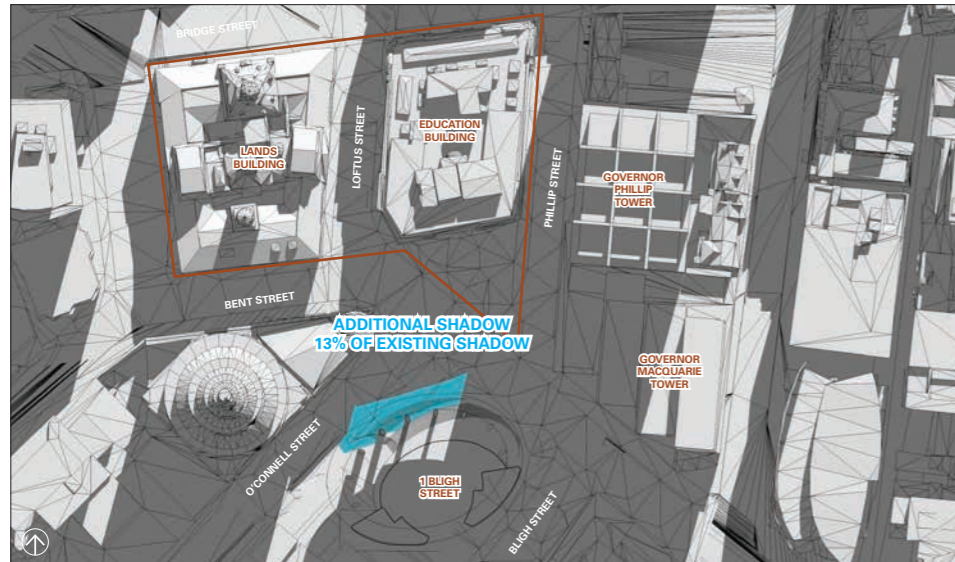


Comparison Shadows June 21, 1:30 PM

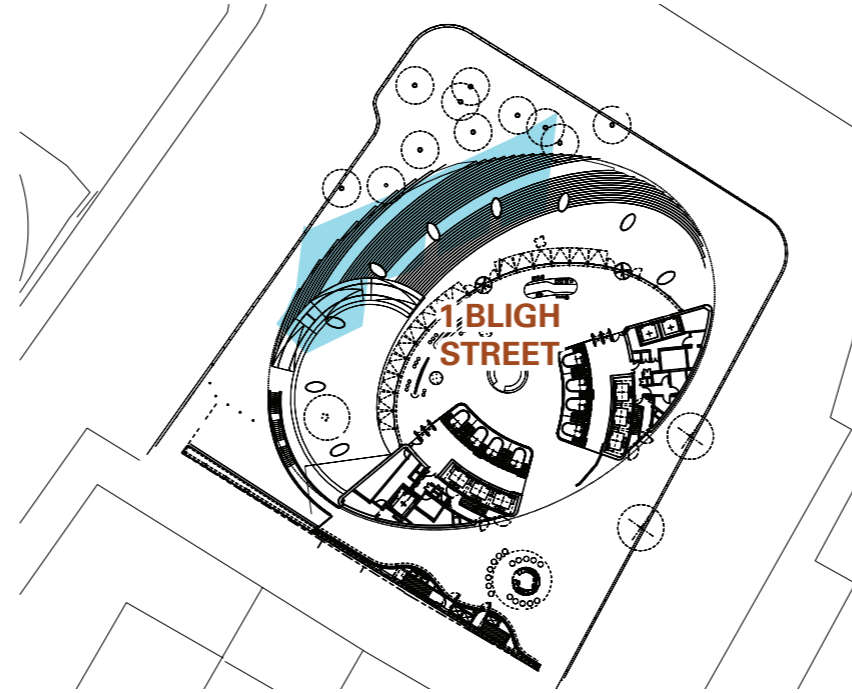
Very minor shadowing of far eastern steps. Cafe sun access not affected.

Blue indicates additional shadow

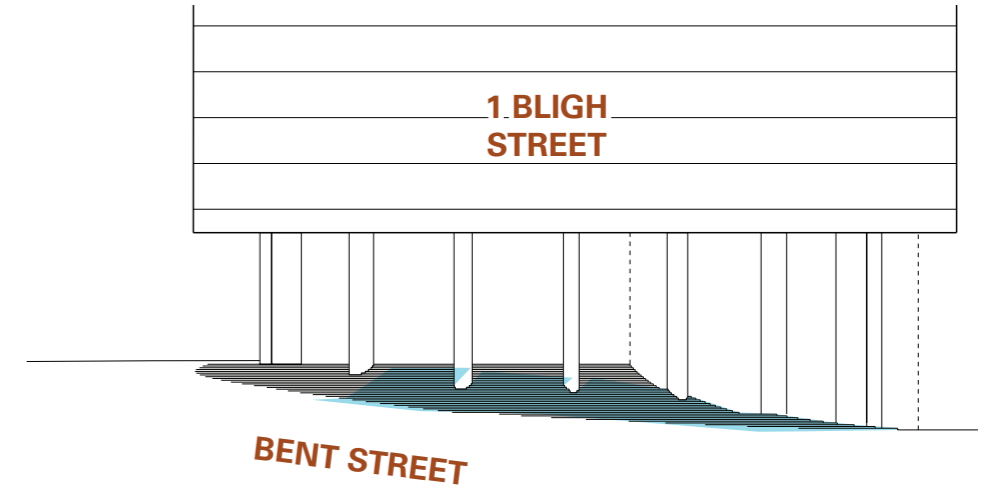
Shadow Study at Key 30 Minute Intervals
 1 Bligh Street Public Domain Shadow Analysis



Blue indicates additional shadow



Bligh Street Steps Additional Shadow Plan
 June 21, 11AM

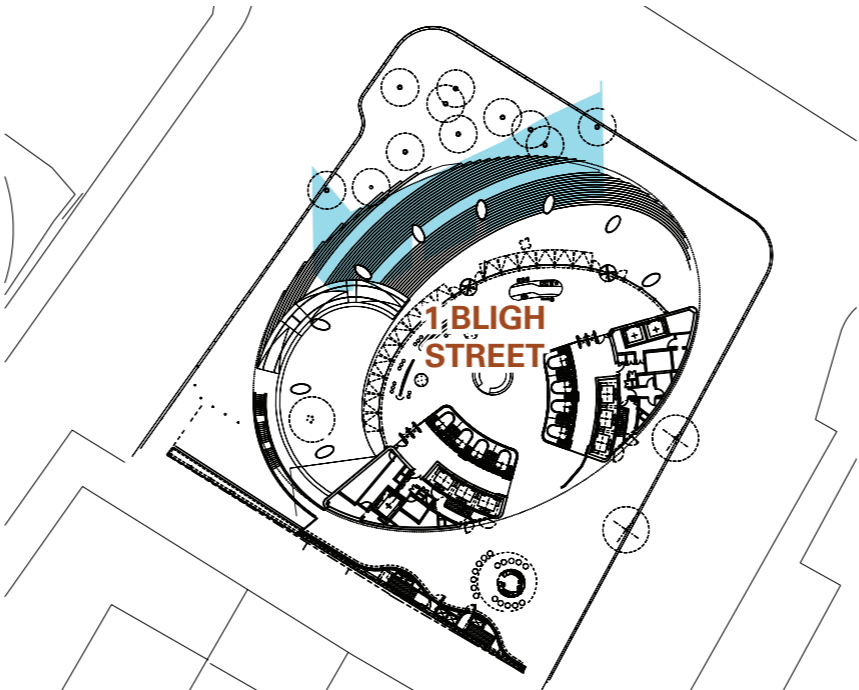
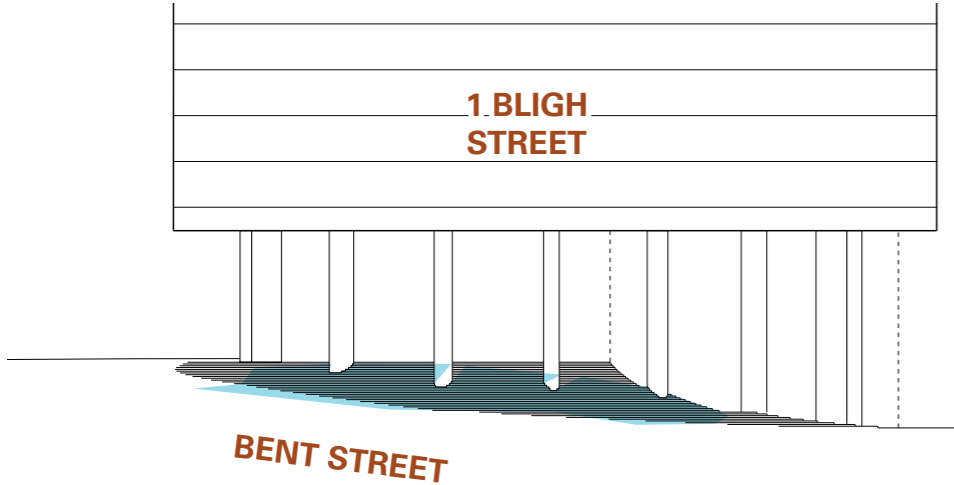


Bligh Street Steps Additional Shadow North Elevation
 June 21, 11AM

Comparison Shadows June 21, 11AM

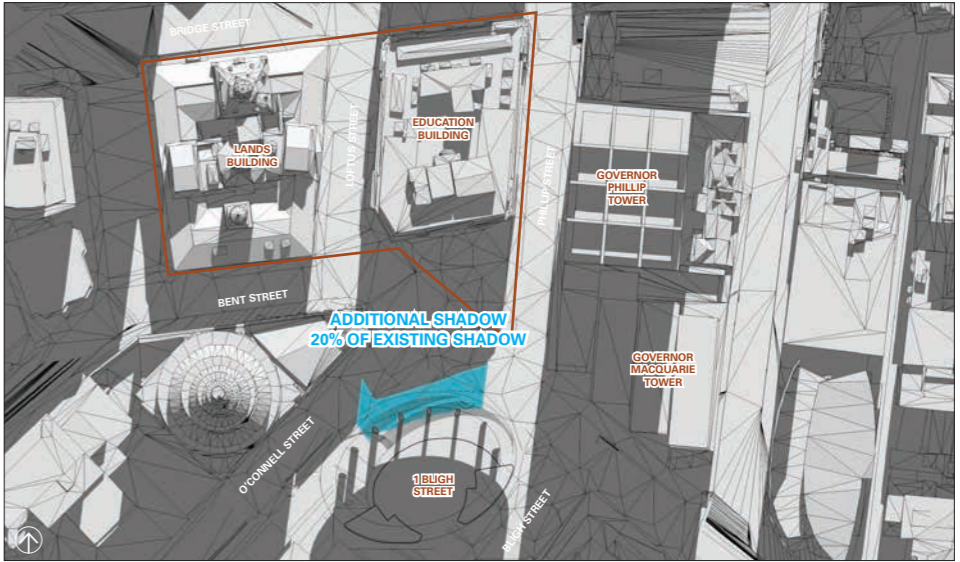
Minor additional shadowing to lower steps, mid and top steps remain in full sun. Cafe sun access not affected.

Sandstone Precinct
 1 Bligh Street Public Domain Shadow Analysis



Bligh Street Steps Additional Shadow North Elevation
 June 21, 11:30AM

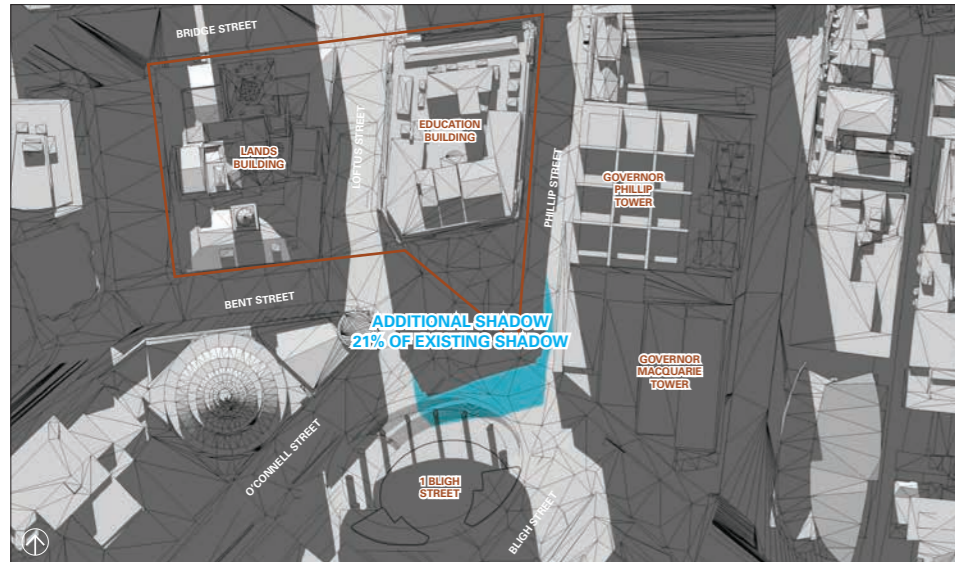
Bligh Street Steps Additional Shadow Plan
 June 21, 11:30AM



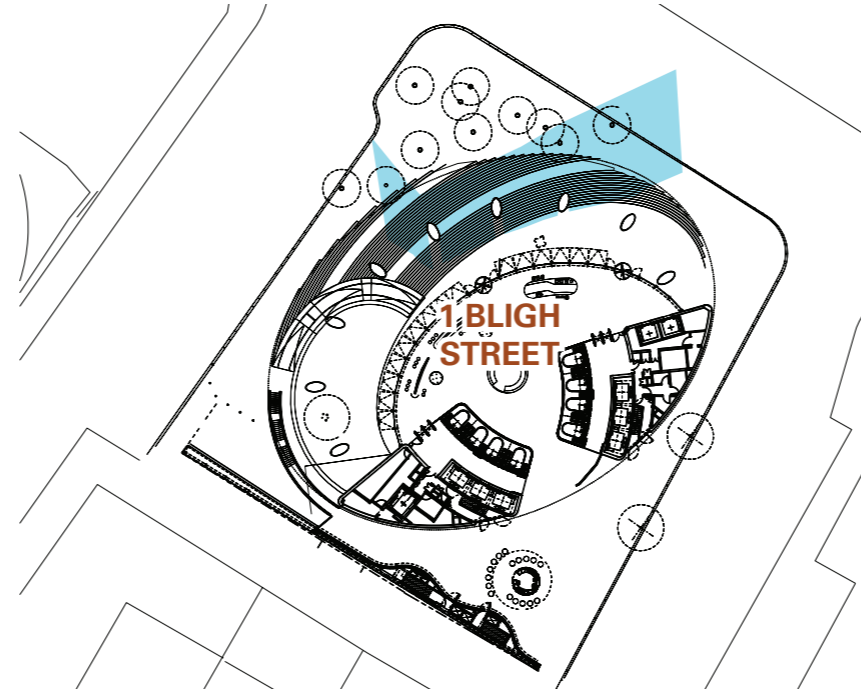
Blue indicates additional shadow

Comparison Shadows June 21, 11:30AM
 Additional shadowing to lower and some middle steps, top steps remain in full sun. Cafe sun access not affected.

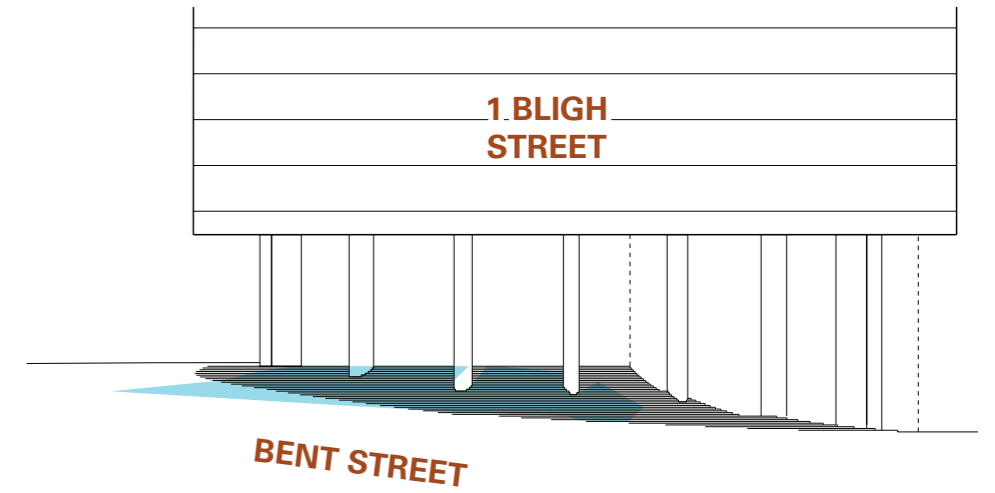
Shadow Study at Key 30 Minute Intervals
 1 Bligh Street Public Domain Shadow Analysis



Blue indicates additional shadow



Bligh Street Steps Additional Shadow Plan
 June 21, 12 NOON

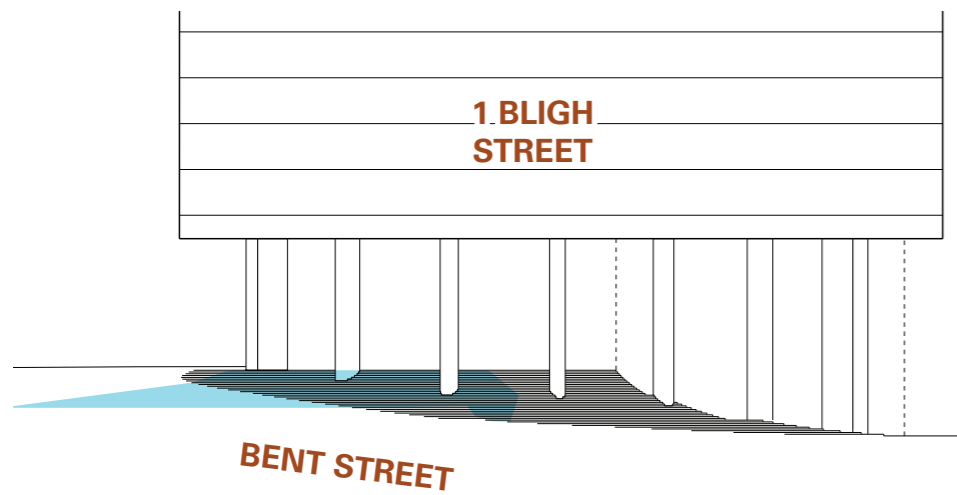


Bligh Street Steps Additional Shadow North Elevation
 June 21, 12 NOON

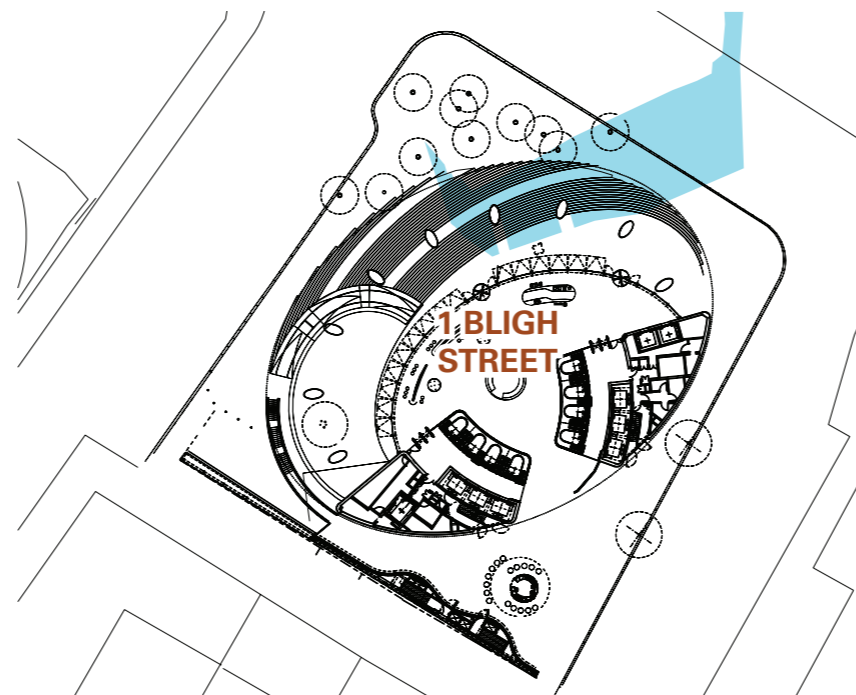
Comparison Shadows June 21, 12 NOON

Additional shadowing to eastern steps, no change to shadowing of steps at western end. Cafe sun access not affected.

Shadow Comparison June 21, 12 Noon



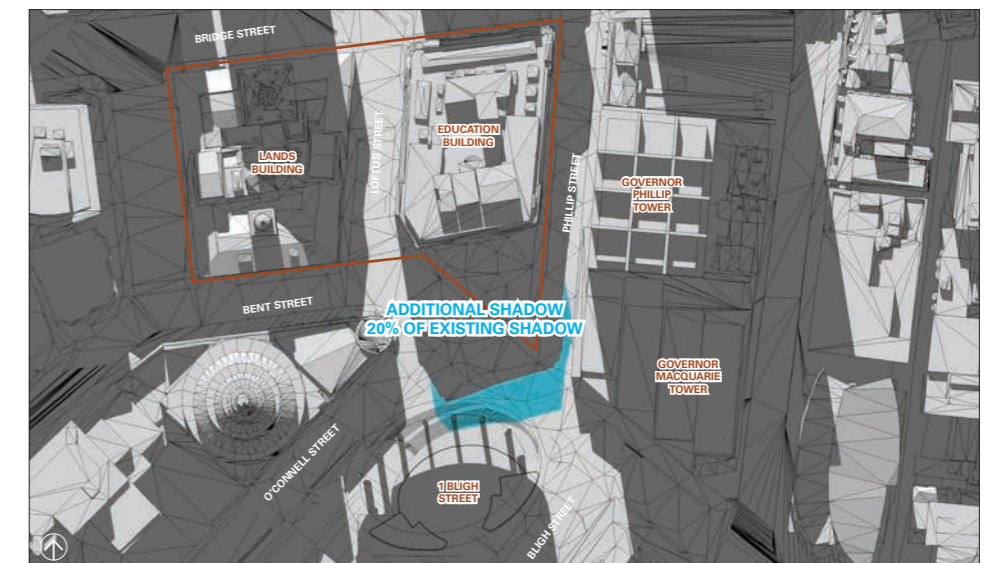
Bligh Street Steps Additional Shadow North Elevation
June 21, 12:30PM



Bligh Street Steps Additional Shadow Plan
June 21, 12:30PM

Sandstone Precinct

1 Bligh Street Public Domain Shadow Analysis

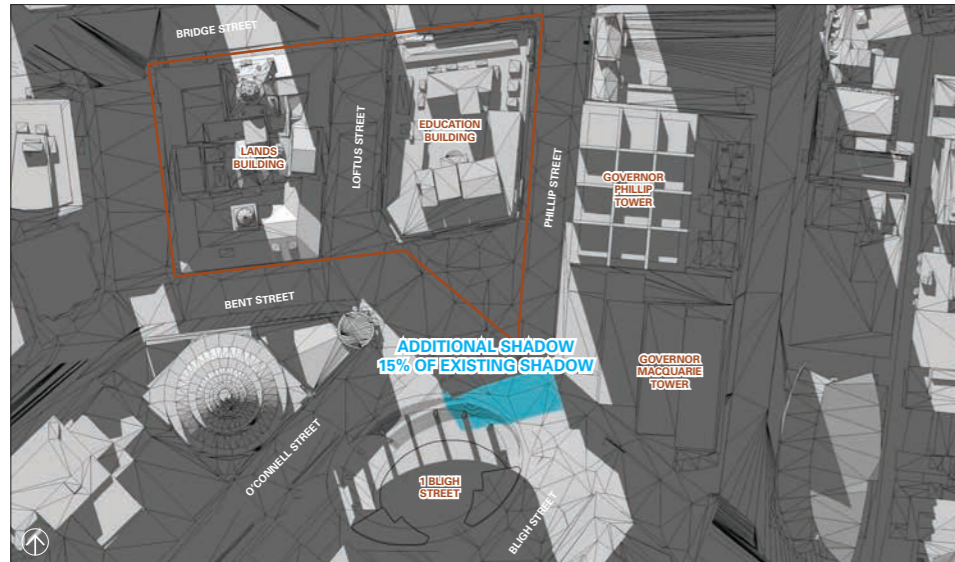


Blue indicates additional shadow

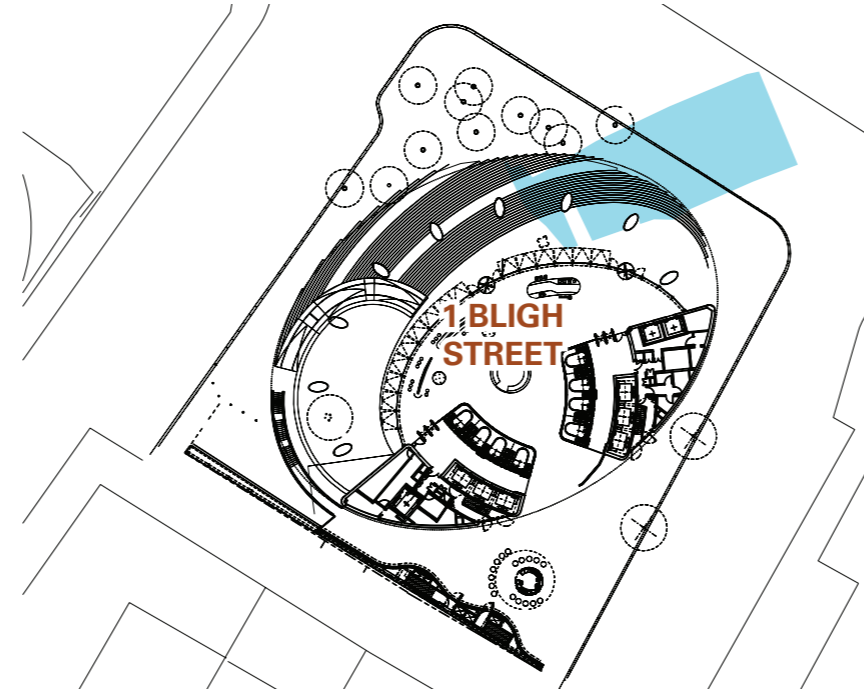
Comparison Shadows June 21, 12:30PM

Additional shadowing to eastern steps, no change to shadowing of steps at western end. Cafe sun access not affected.

Shadow Study at Key 30 Minute Intervals
 1 Bligh Street Public Domain Shadow Analysis



Blue indicates additional shadow



Bligh Street Steps Additional Shadow Plan
 June 21, 1PM

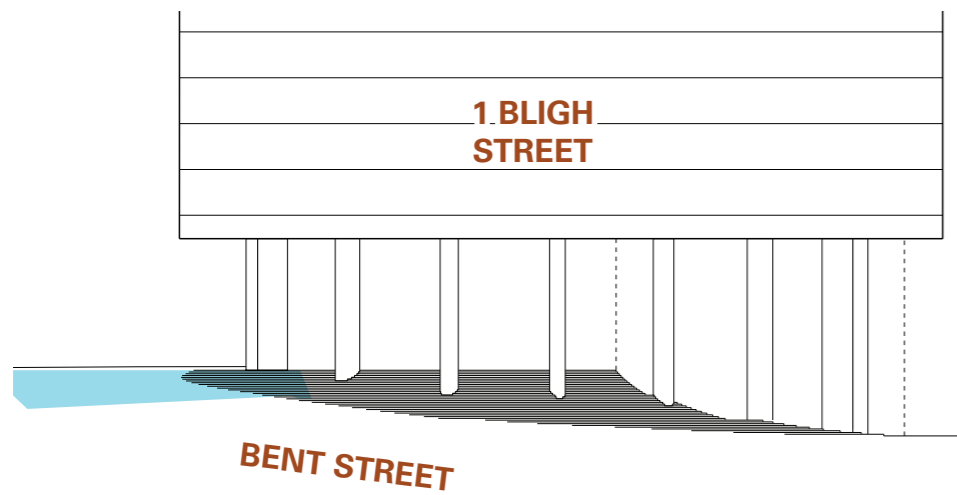


Bligh Street Steps Additional Shadow North Elevation
 June 21, 1PM

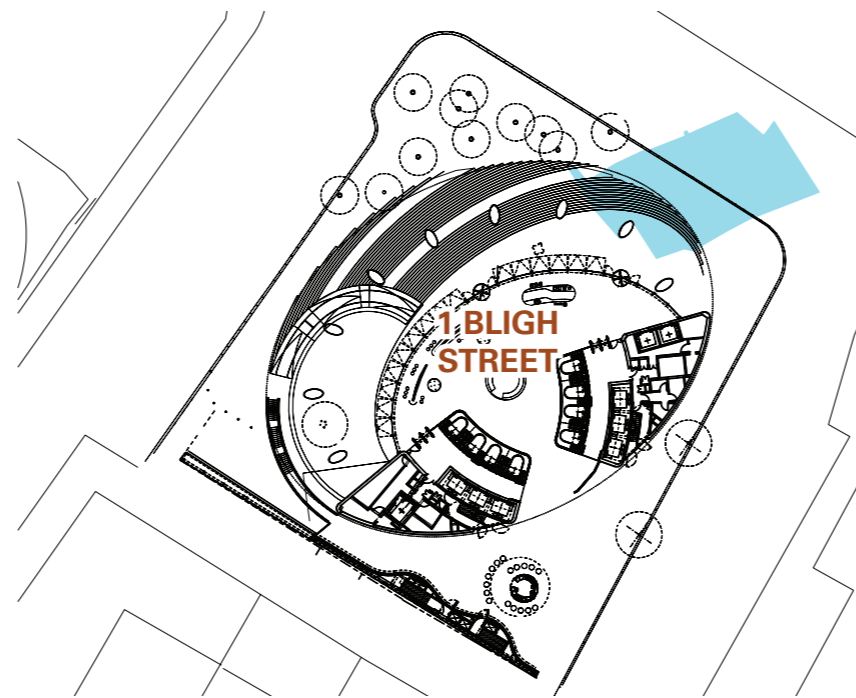
Comparison Shadows June 21, 1PM

Minor additional shadowing to eastern steps, majority of steps retain existing sun access. Cafe sun access not affected.

Shadow Comparison June 21, 1PM



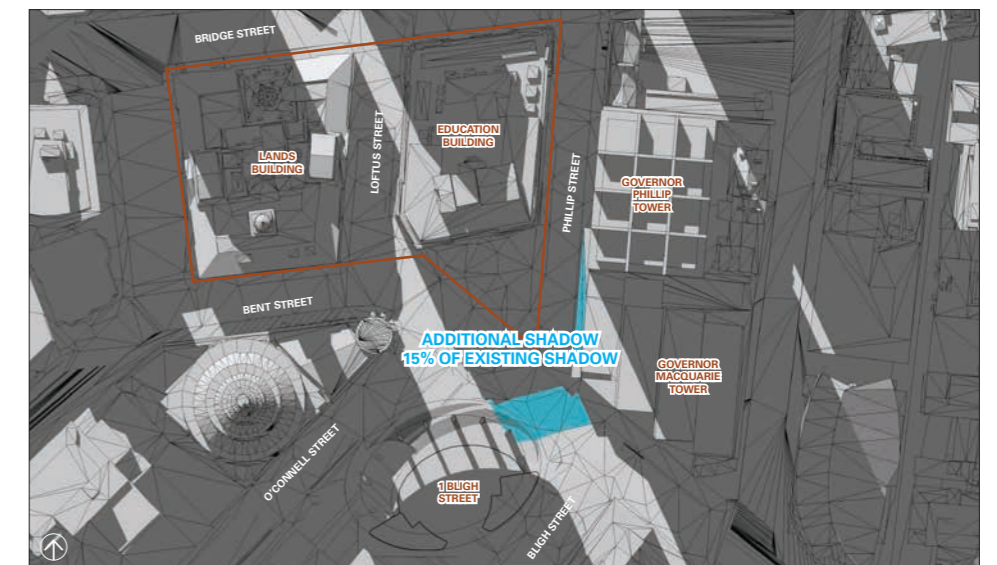
Bligh Street Steps Additional Shadow North Elevation
June 21, 1:30PM



Bligh Street Steps Additional Shadow Plan
June 21, 1:30PM

Sandstone Precinct

1 Bligh Street Public Domain Shadow Analysis



Blue indicates additional shadow

Comparison Shadows June 21, 1:30PM

Very minor shadowing of far eastern steps. Cafe sun access not affected.

Shadow Comparison June 21, 1:30PM

Blue indicates additional shadow

Sandstone Precinct Shadow Analysis

Appendices

Dwg. No.	Title	Scale
SK-A-000C	Cover Sheet	NA
SK-A-000	Site Plan Existing	1:2,000
PLANS		
SK-A-001	Level 08 Plan Existing Education Building	1:500
SK-A-002	Level 10 Roof Plan Existing Education Building	1:500
SK-A-003	Level 08 Plan Proposed Building Envelope for Education Building	1:500
SK-A-004	Level 10 Roof Plan Proposed Building Envelope for Education Building	1:500
ELEVATIONS		
SK-A-101	Bridge Street Elevation (North) Existing Education Building	1:500
SK-A-102	Loftus Street Elevation (West) Existing Education Building	1:500
SK-A-103	Young Street Elevation (East) Existing Education Building	1:500
SK-A-104	Street Elevation (North) Proposed Building Envelope for Education Building	1:500
SK-A-105	Loftus Street Elevation (West) Proposed Building Envelope for Education Building	1:500
SK-A-106	Young Street Elevation (East) Proposed Building Envelope for Education Building	1:500

Title **Sandstone Precinct Shadow Analysis**

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