

OVERSHADOWING STUDY

2-32 JUNCTION STREET
FOREST LODGE
S11792

NOVEMBER 2015

PROJECT NUMBER

S11792

BATESSMART™

ARCHITECTURE
INTERIOR DESIGN
URBAN DESIGN
STRATEGY

MELBOURNE

1 Nicholson Street
Melbourne Victoria
3000 Australia
T +61 3 8664 6200
F +61 3 8664 6300

SYDNEY

43 Brisbane Street
Surry Hills New South Wales
2010 Australia
T +61 2 8354 5100
F +61 2 8354 5199

WWW.BATESSMART.COM

NOMINATED NSW REGISTERED ARCHITECTS

Philip Vivian Reg. No. 6696 / Simon Swaney Reg. No. 7305 / Guy Lake Reg. No. 7119

DISCLAIMER

The Scheme (drawings documents information and materials) contained within this brochure have been prepared by Bates Smart Architects Pty Ltd solely for the purpose of providing information about potential schemes.

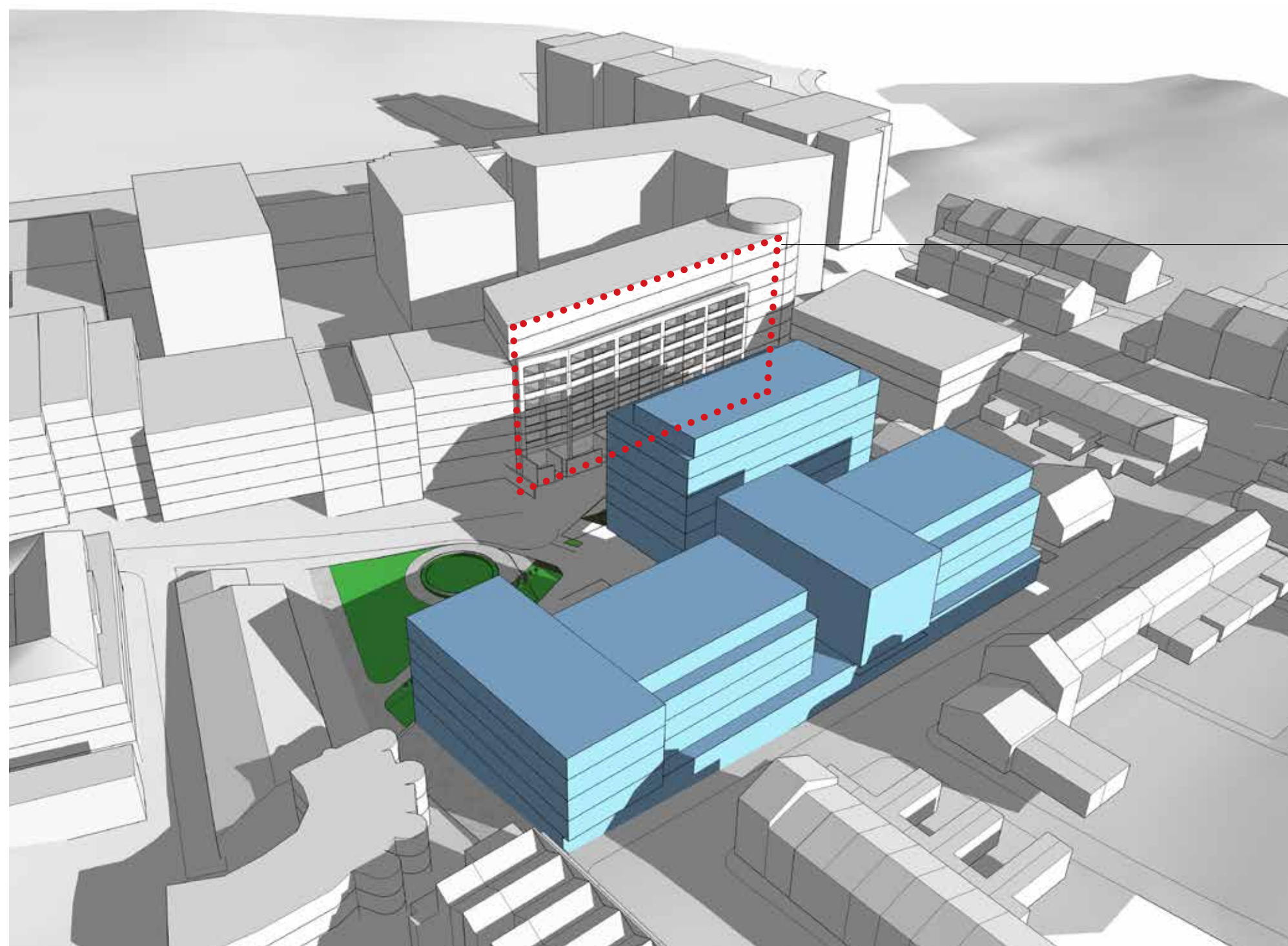
The materials should not be considered to be error free or to include all relevant information.

Nothing in this brochure in any way constitutes advice or a representation by Bates Smart nor does the transmission or sending of these materials create any contractual relationship.

Neither Bates Smart nor any of its officers, employees, agents or contractors, will be liable for any direct or indirect loss or damage you may suffer or incur arising directly or indirectly from the use of any materials from this brochure.

Bates Smart retains copyright and all present and future moral rights in all intellectual property in all the materials authored by it and in any works executed from these drawings and documents.

Note: All area calculations are advisory only and all figures should be checked and verified by a licensed surveyor.

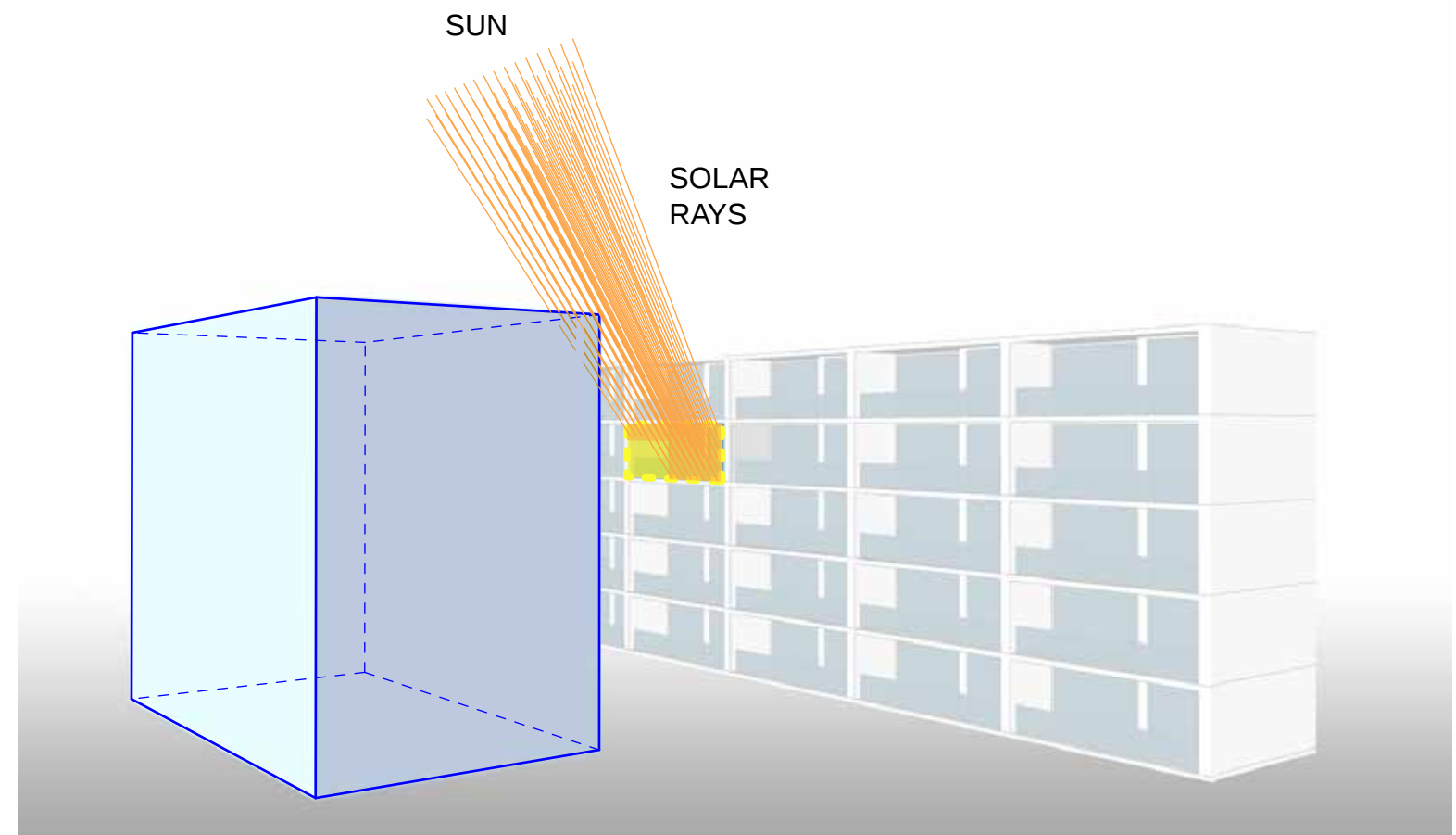
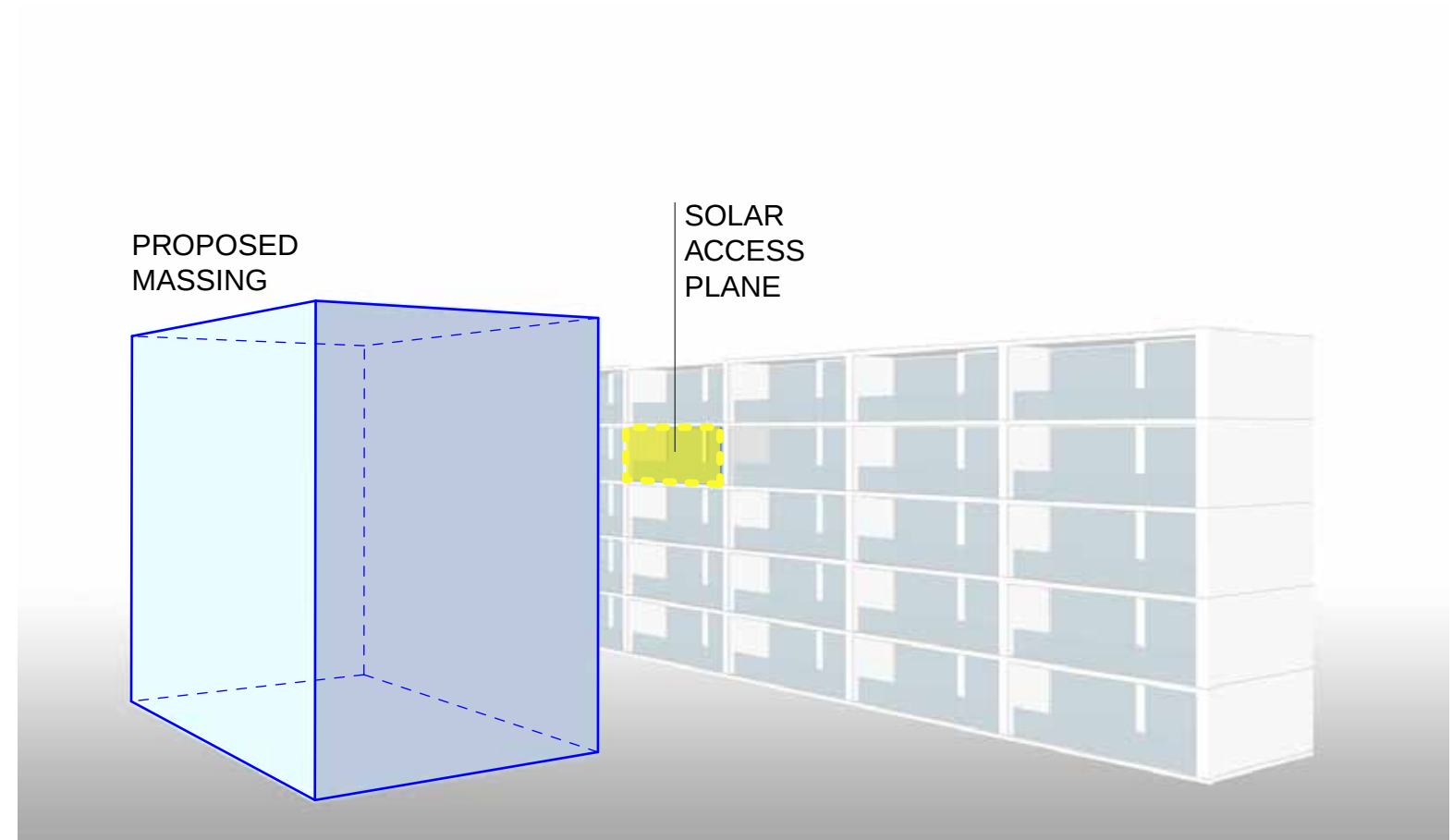


Solar overshadowing study of apartments
at 1-3 Larkin Street, Forest Lodge
at the winter solstice (21 June)

METHODOLOGY

The SEPP-65 solar access compliance criteria are tested with parametric software (Rhino/Grasshopper). The technique is ray-tracing, where a grid of solar rays is projected back from the solar access plane to the sun direction. Each ray is then analysed to determine whether it intersects with any geometry, either the target building at 1-3 Larkin Street, or the proposed massing. In this way, the method includes the effects of self-shadowing and new shadowing from the proposed massing.

All calculations in this document are taken at the winter solstice (21st June).



DESIGN CRITERION 1A:

Objective 4A-1

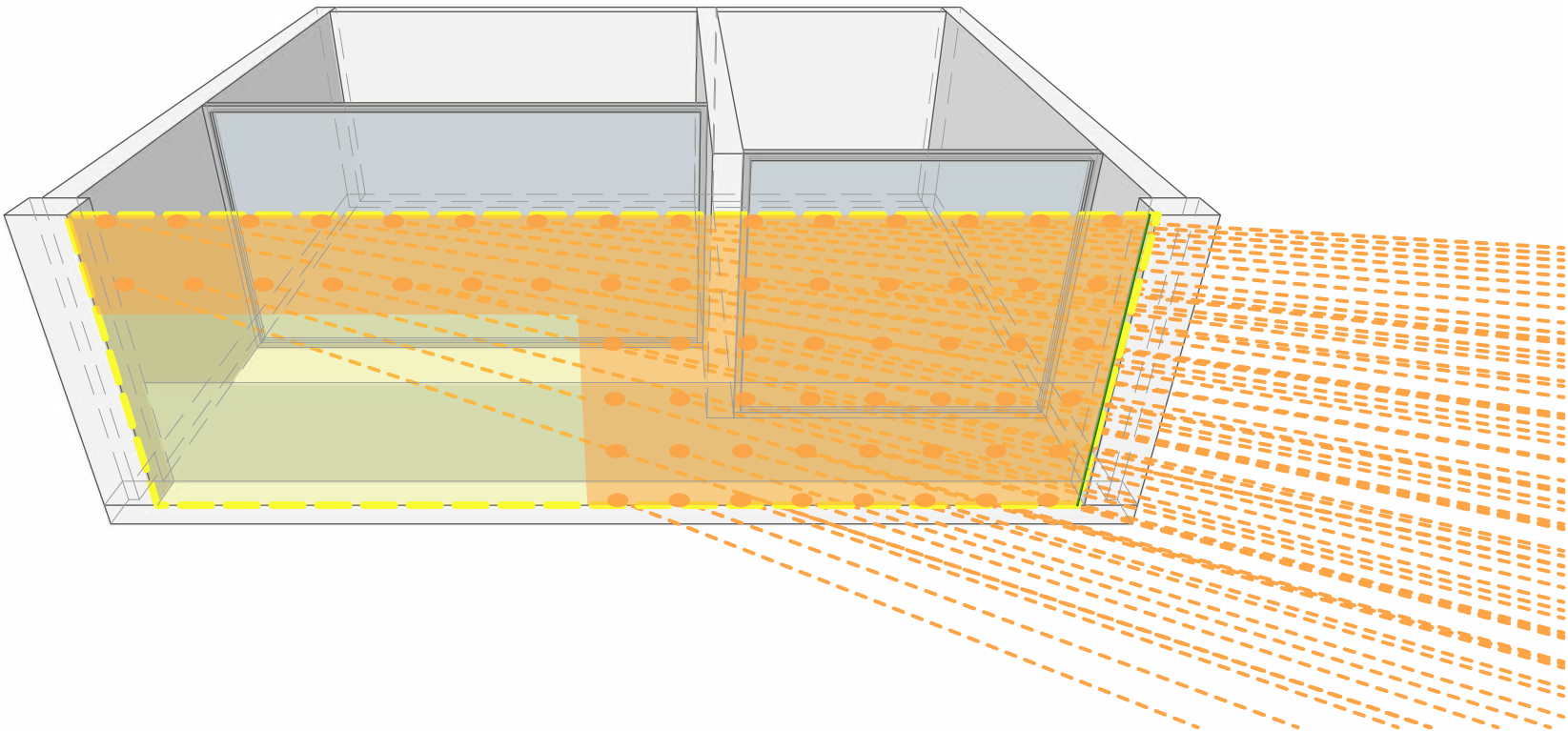
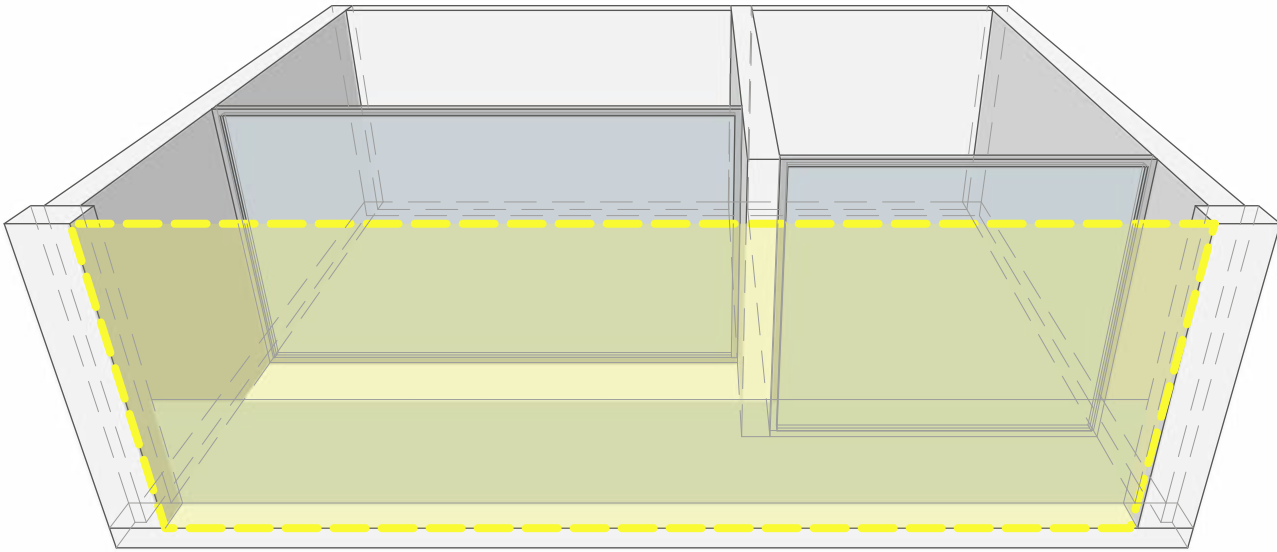
To optimise the number of apartments receiving sunlight to habitable rooms, primary windows and private open space

Design criteria

1. Living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 2 hours direct sunlight between 9 am and 3 pm at mid winter in the Sydney Metropolitan Area and in the Newcastle and Wollongong local government areas

Private open spaces receive a minimum of 2 hours direct sunlight between 9am and 3pm.

Solar Access Plane is on the balcony line.



DESIGN CRITERION 1B:

Objective 4A-1

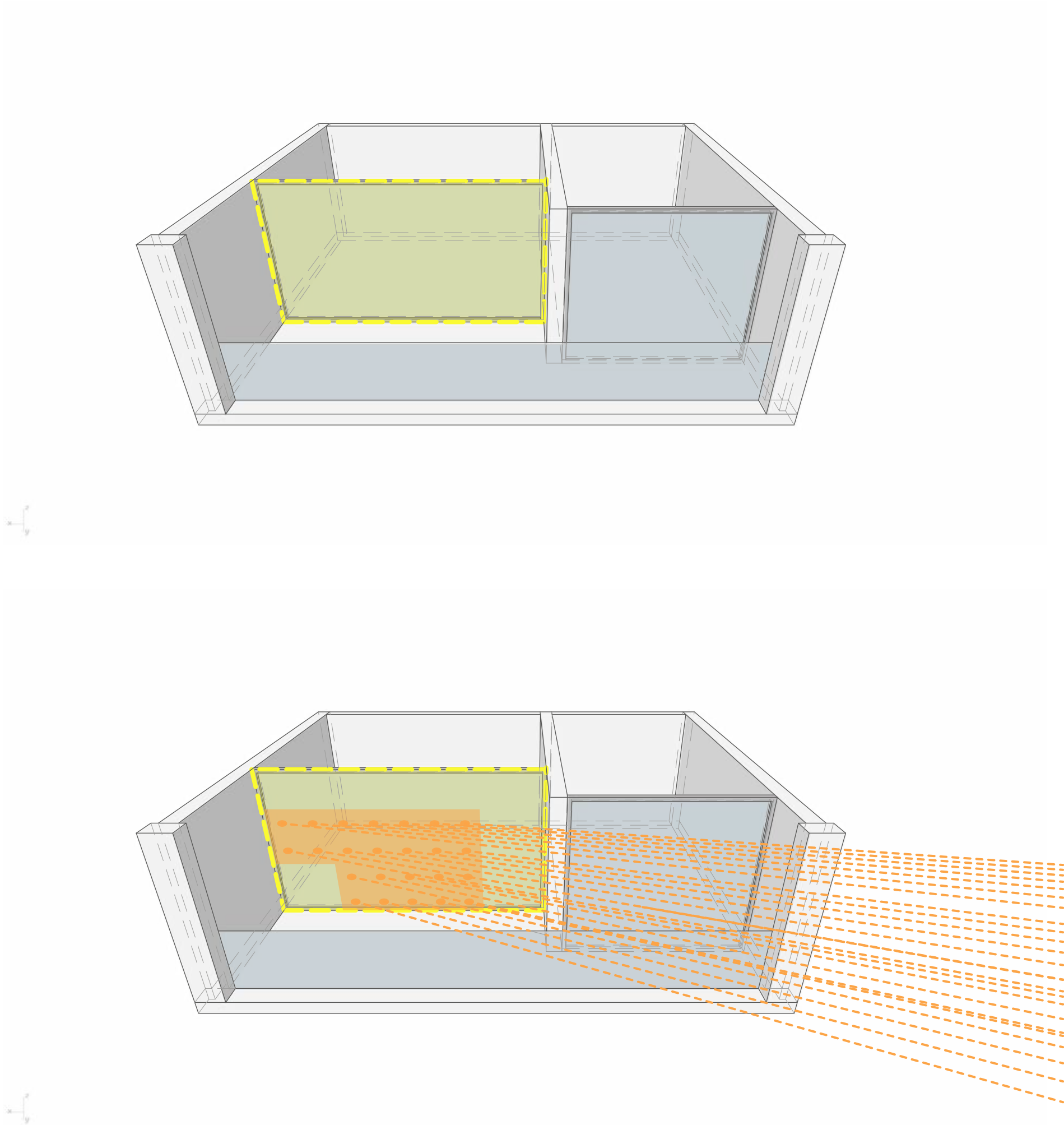
To optimise the number of apartments receiving sunlight to habitable rooms, primary windows and private open space

Design criteria

1. Living rooms and private open spaces of at least 70% of apartments in a building receive a minimum of 2 hours direct sunlight between 9 am and 3 pm at mid winter in the Sydney Metropolitan Area and in the Newcastle and Wollongong local government areas

Living rooms receive a minimum of 2 hours direct sunlight between 9am and 3pm.

Solar Access Plane is on the glazing line.



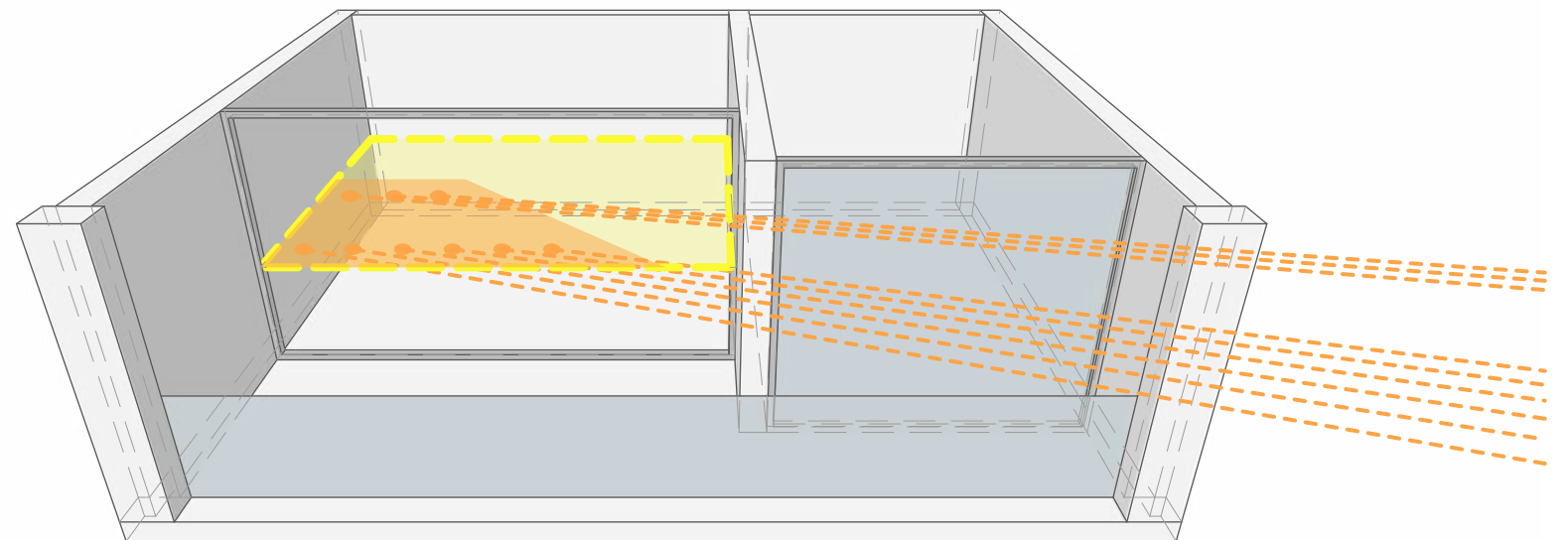
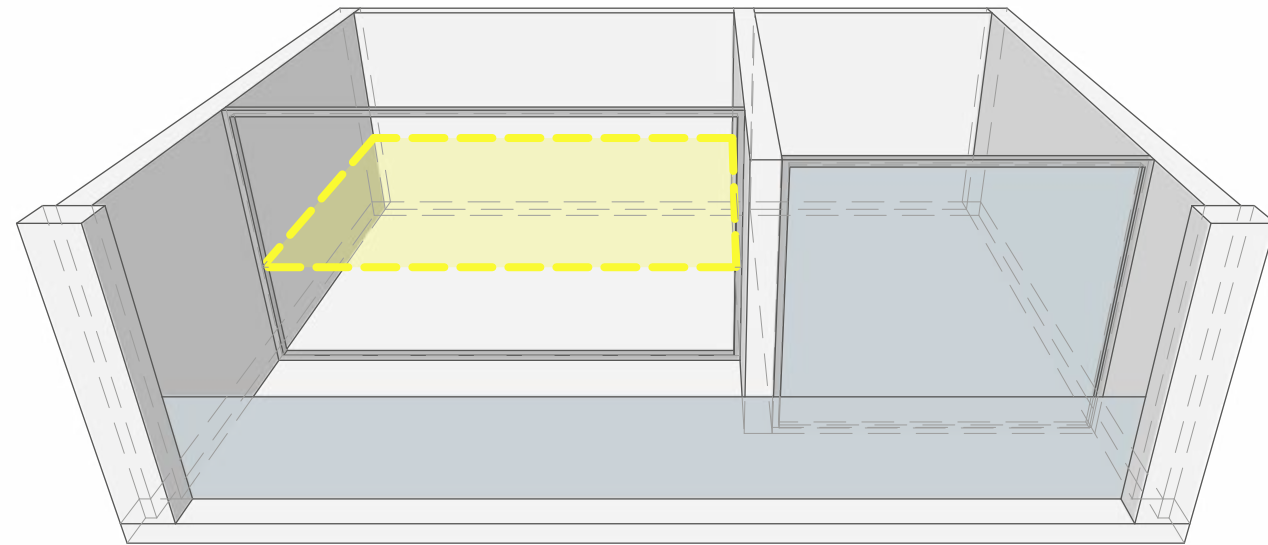
DESIGN GUIDELINE:

To maximise the benefit to residents of direct sunlight within living rooms and private open spaces, a minimum of 1m² of direct sunlight, measured at 1m above floor level, is achieved for at least 15 minutes

The Solar Access Plane is measured 1m above the floor level in the living room.

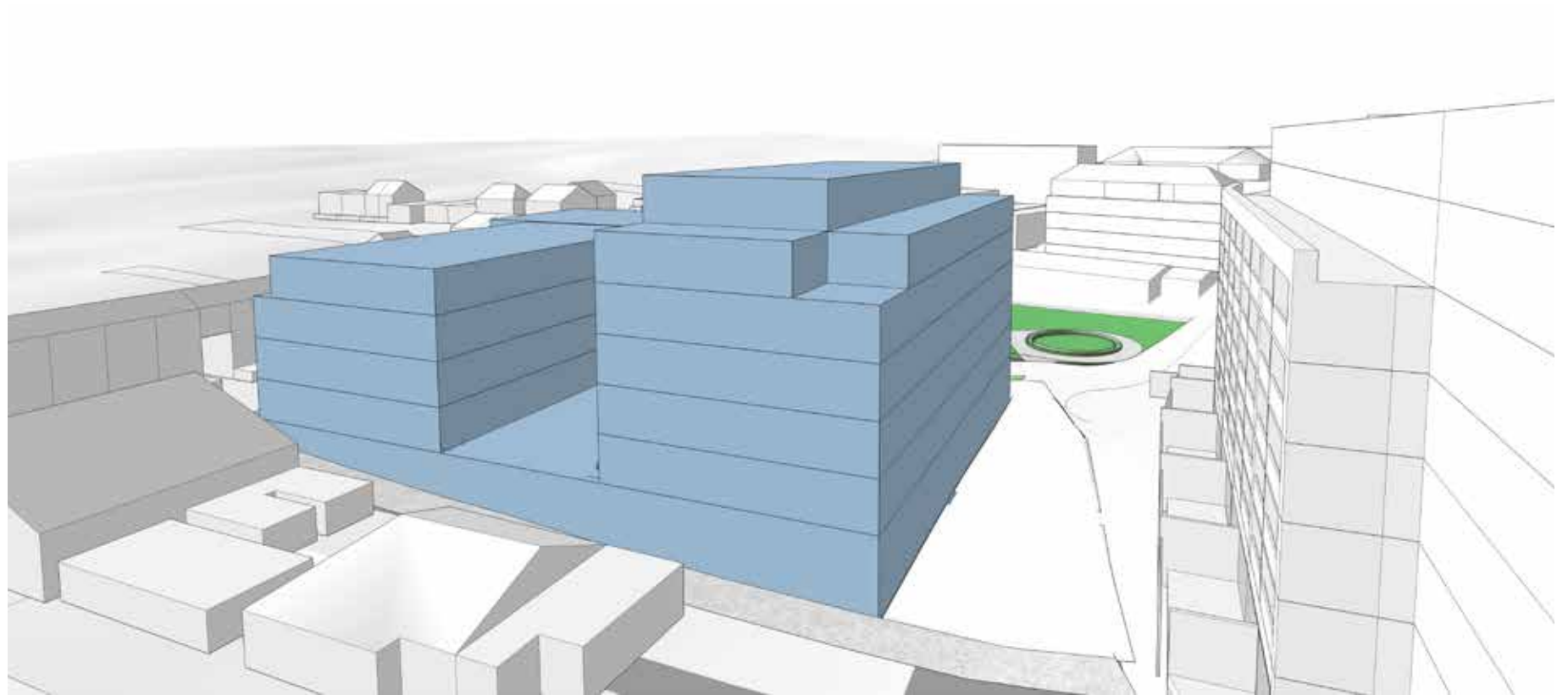
A minimum of 1 square metre of direct sunlight on this plane is required for 15 minutes.

Note that this is more stringent than the design criteria and is required for a shorter interval (15 minutes rather than 2 hours).



PROPOSED MASSING:

A setback on the western edge of the upper level and articulation of the building form on the north west corner provide solar access to Larkin street apartments



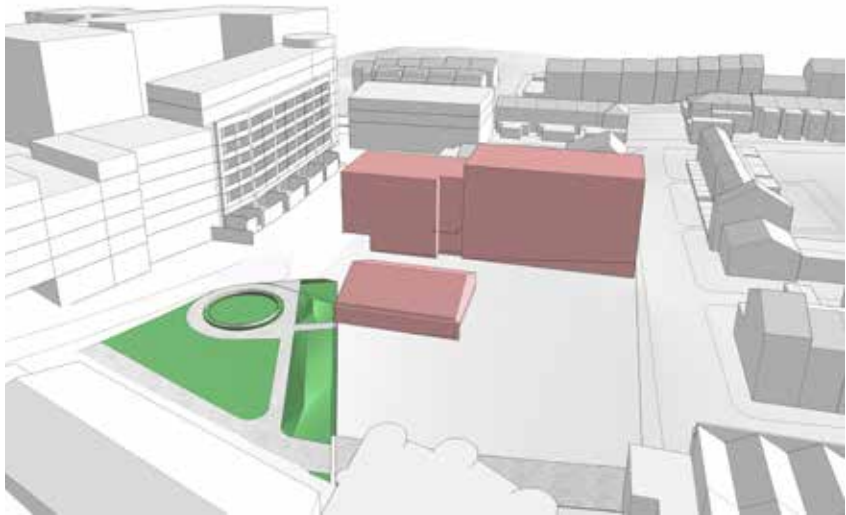
SEPP-65 COMPLIANCE (1B) (EXISTING CONDITION):

Total number of units: **102**

Number of non-compliant units: **28**
(which do not satisfy both Design Criteria 1 and 2)

Living rooms and private open spaces of 72.5%
of apartments receive a minimum of 2 hours direct sunlight
between 9 am and 3 pm at mid-winter.

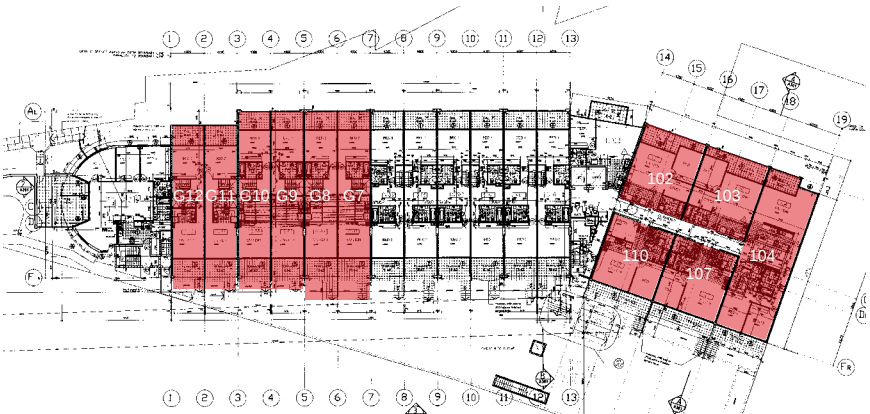
 Non-compliant apartments



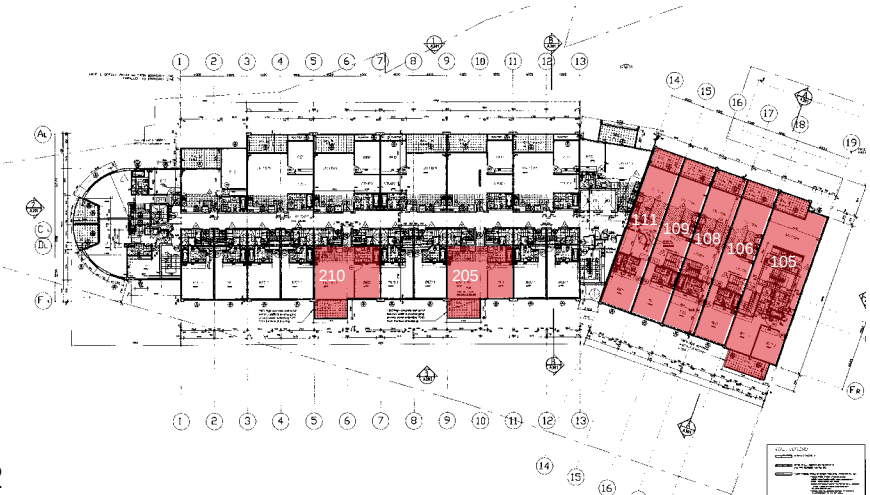
Ground



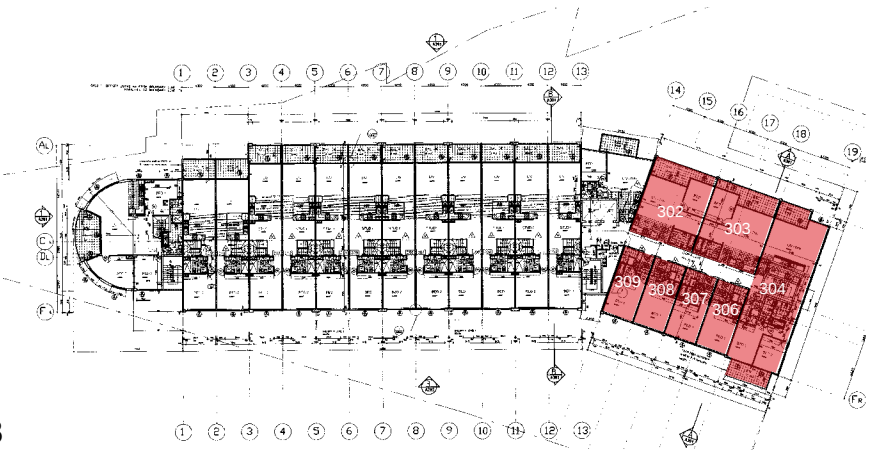
L1



L2



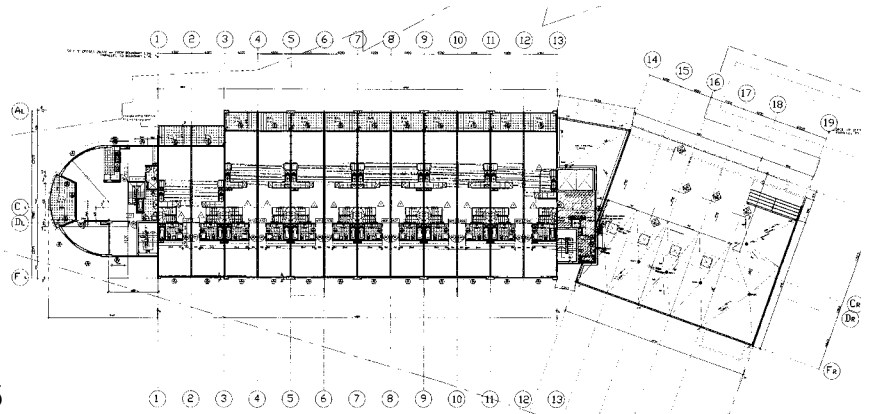
L3



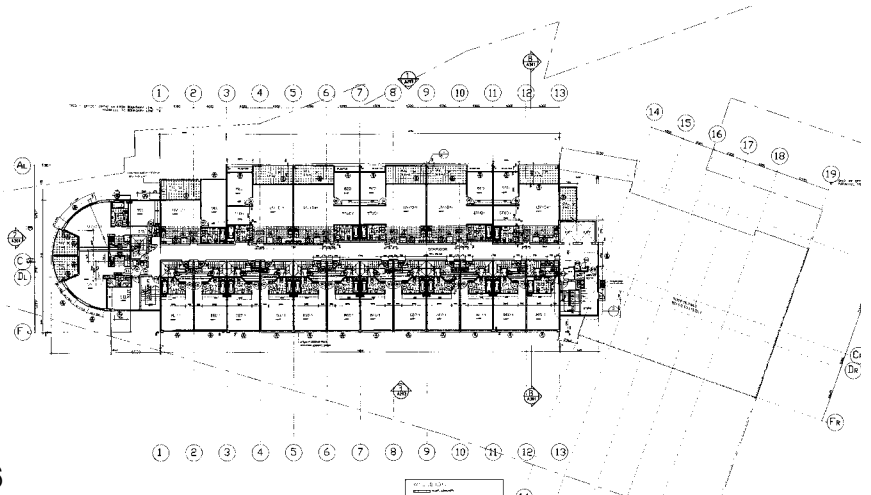
L4



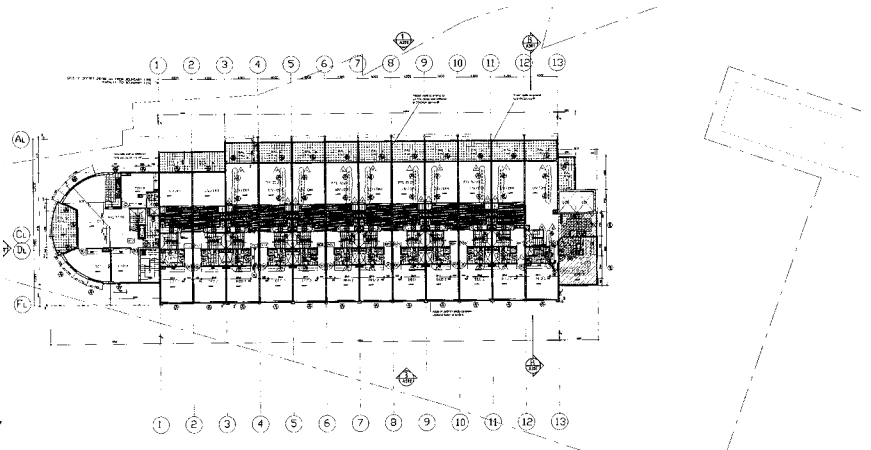
L5



L6



L7



Design criterion 1B - Existing Condition



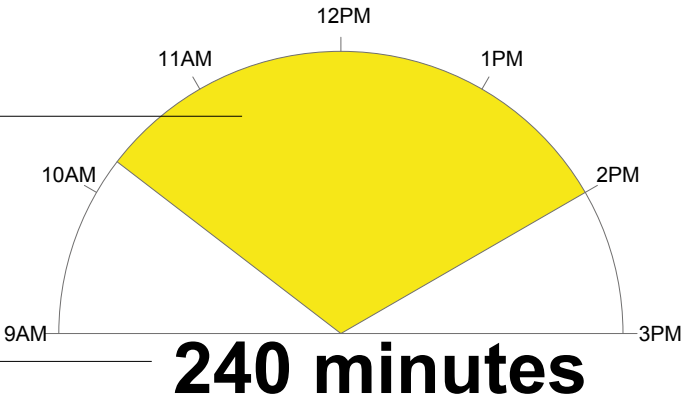
Ground

East Elevation

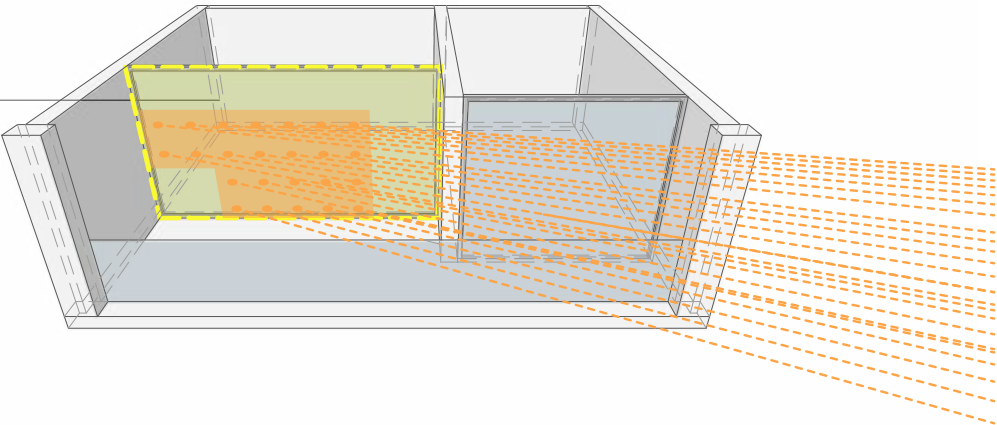
KEY:

YELLOW denotes time of day in which each apartment receives direct sunlight

Sunlight duration
(number of minutes of direct sunlight)



Solar Access Plane
on glazing line



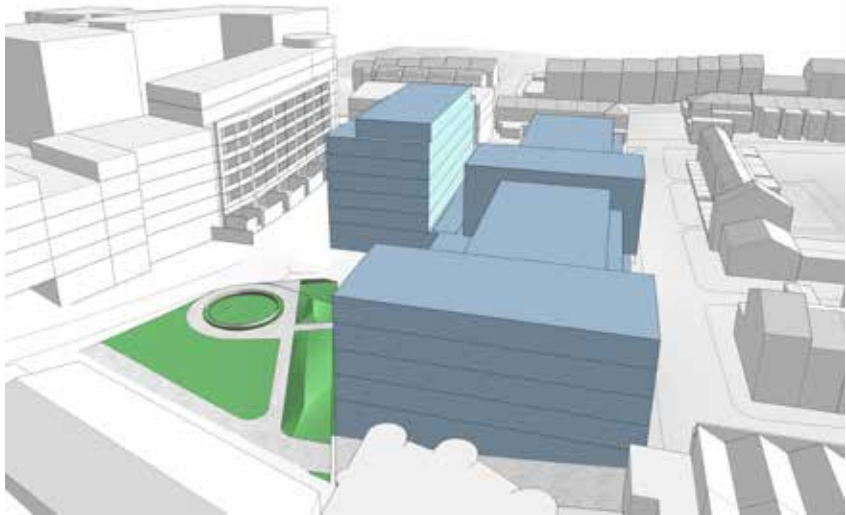
SEPP-65 COMPLIANCE (1B) (PROPOSED MASSING):

Total number of units: **102**

Number of non-compliant units: **31**
(which do not satisfy both Design Criteria 1 and 2)

Living rooms and private open spaces of 70%
of apartments receive a minimum of 2 hours direct sunlight
between 9 am and 3 pm at mid-winter.

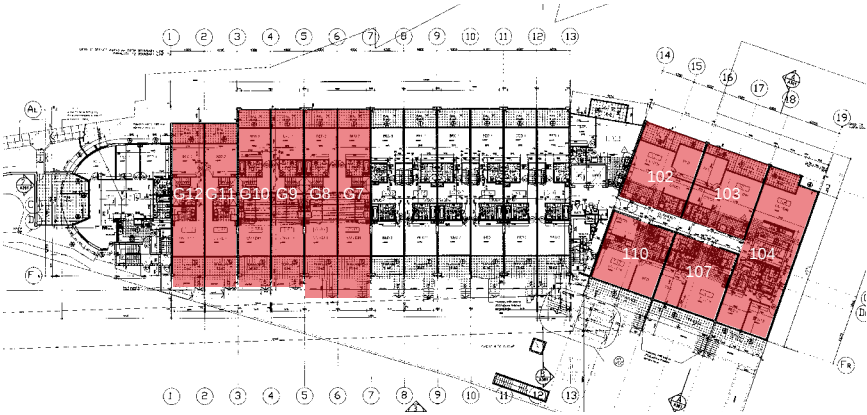
 Non-compliant apartments



Ground



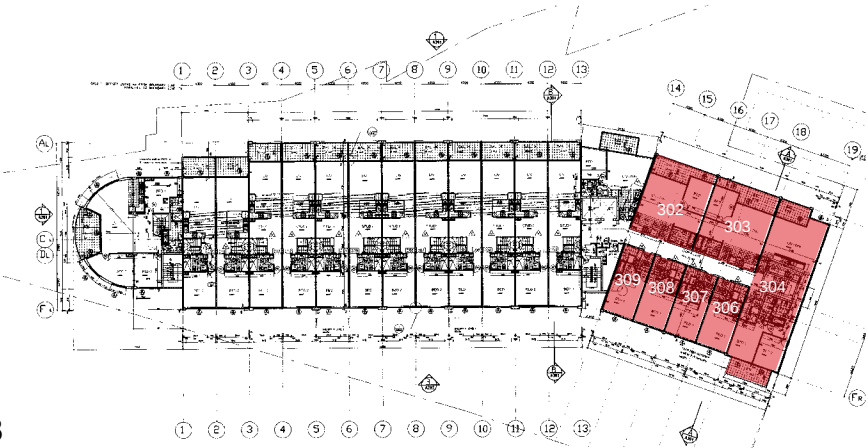
L1



L2



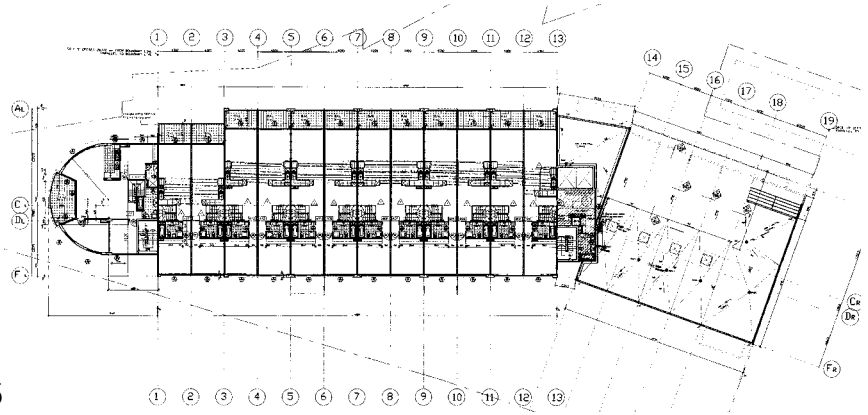
L3



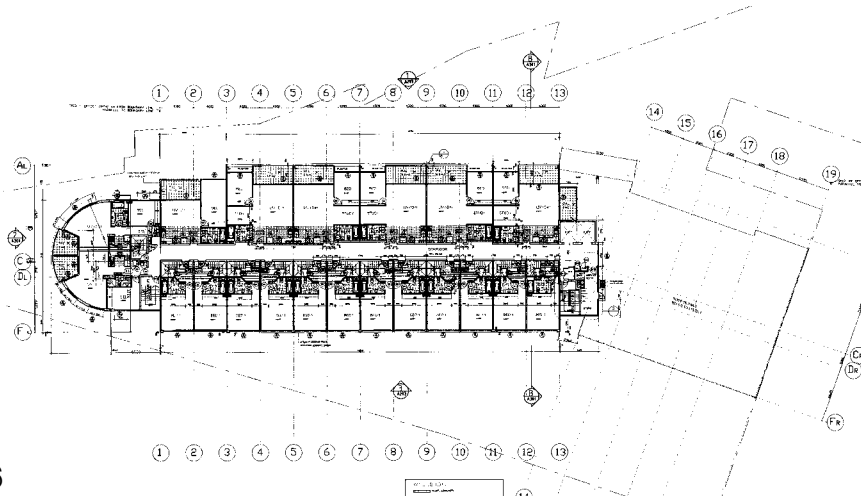
L4



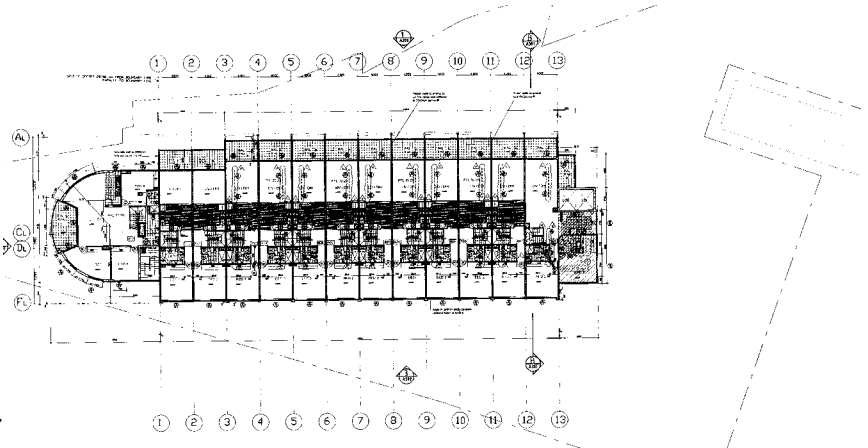
L5



L6



L7



Design criterion 1B - Proposed Massing



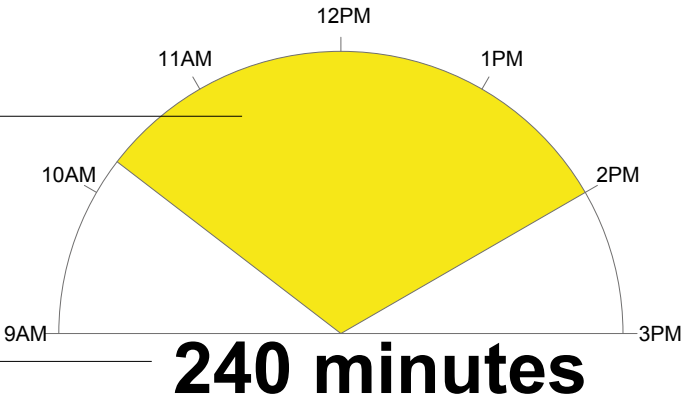
Ground

East Elevation

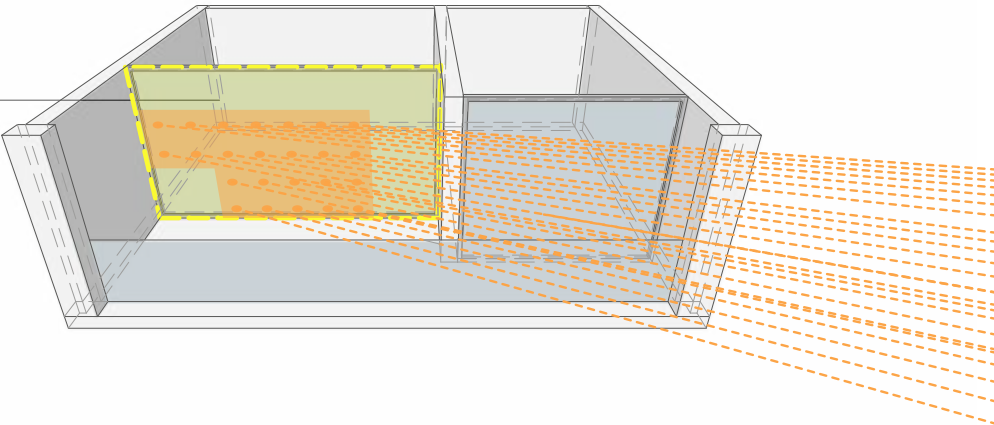
KEY:

YELLOW denotes time of day in which each apartment receives direct sunlight
RED denotes interval less than 120 mins

Sunlight duration
(number of minutes of direct sunlight)



Solar Access Plane
on glazing line



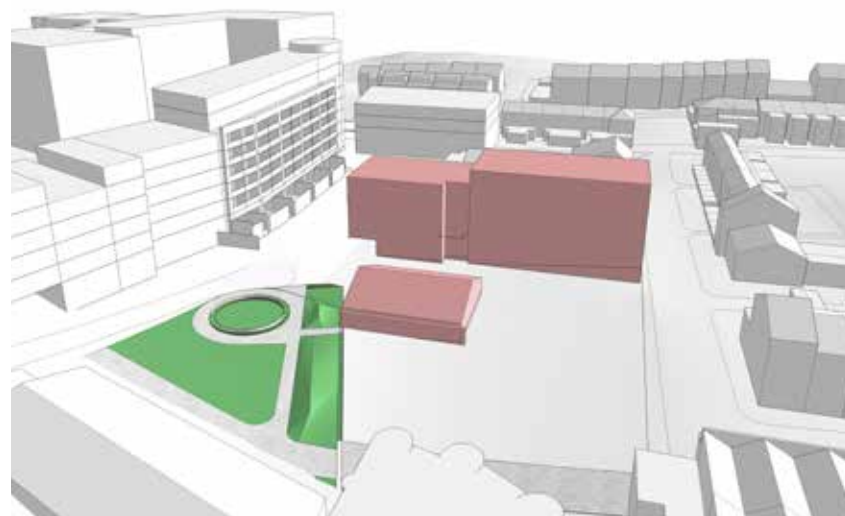
DESIGN GUIDELINE (EXISTING CONDITION):

Total number of units: **102**

Number of non-compliant units: **28**
(which do not satisfy the Design Guideline)

72.5% of apartments receive a minimum of 15 minutes direct sunlight (measured 1m above the living room floor level) between 9 am and 3 pm at mid-winter.

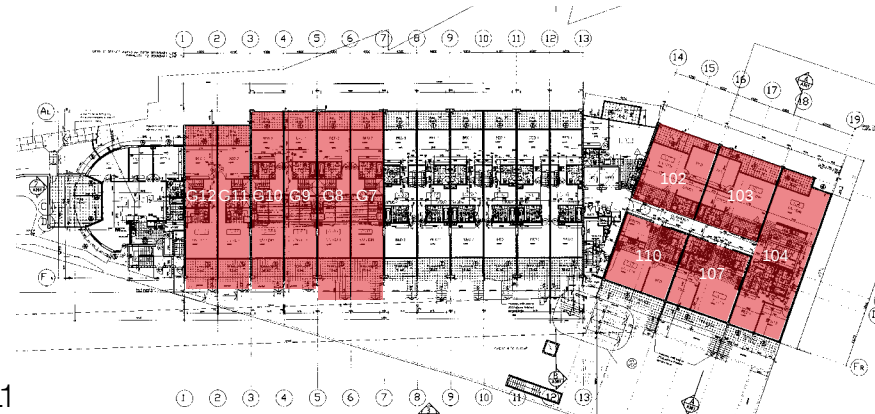
 Non-compliant apartments



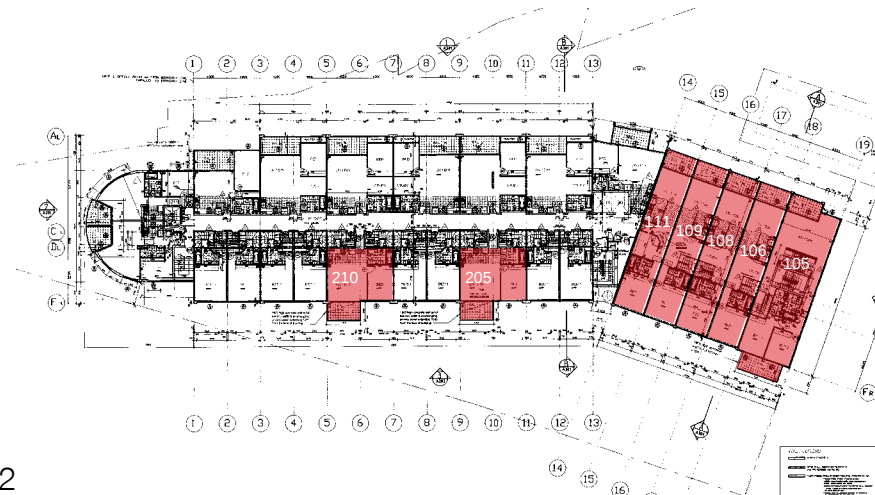
Ground



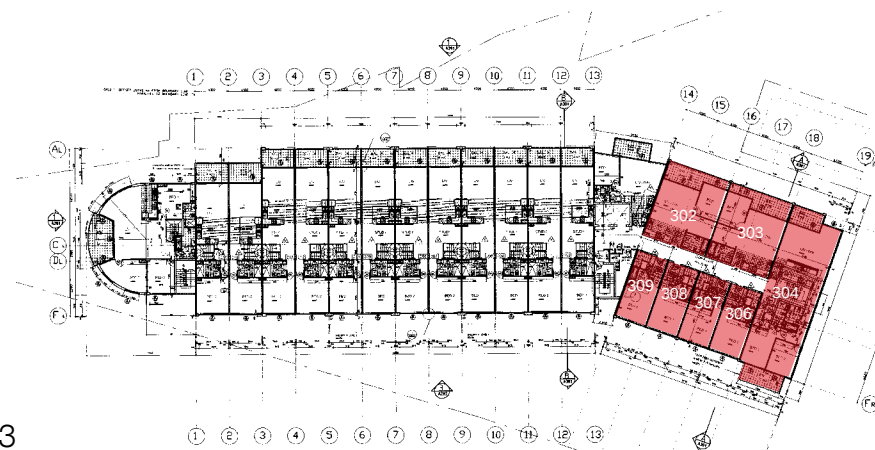
L1



L2



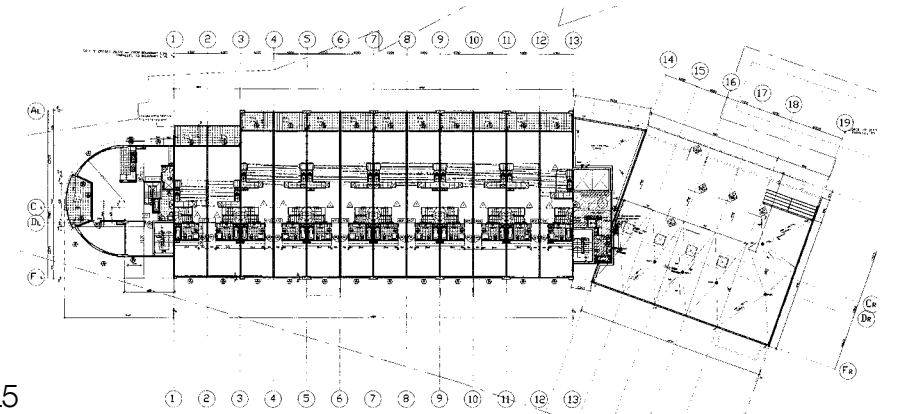
L3



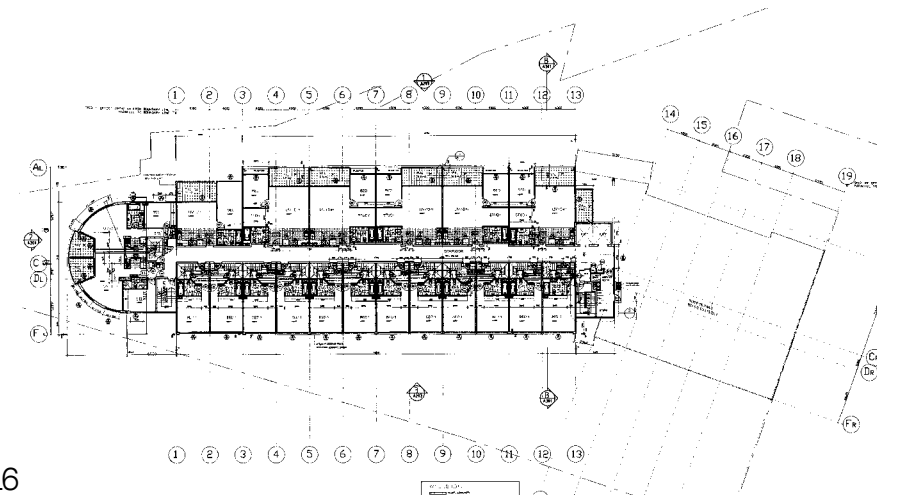
L4



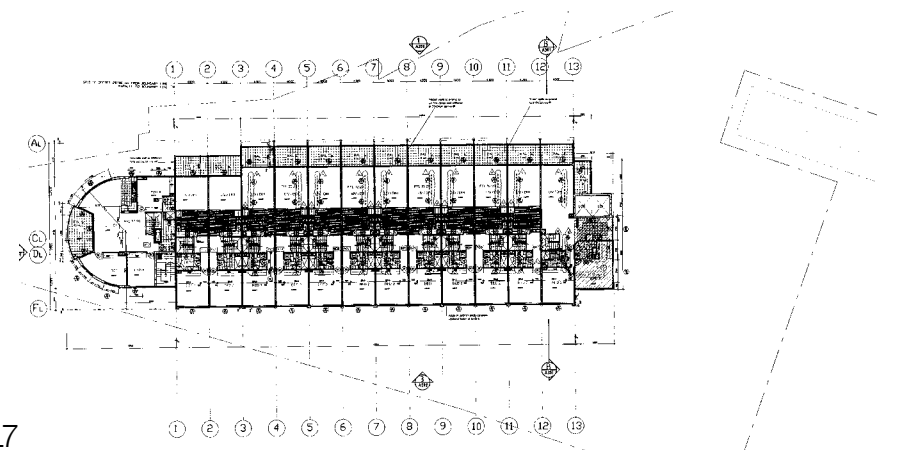
L5



L6



L7



Design Guideline - Existing Condition



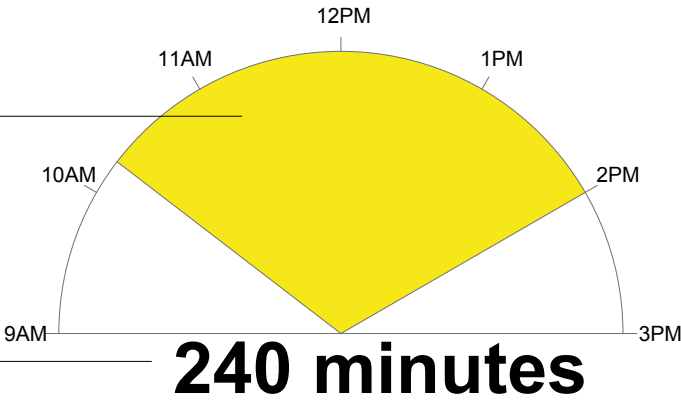
Ground

East Elevation

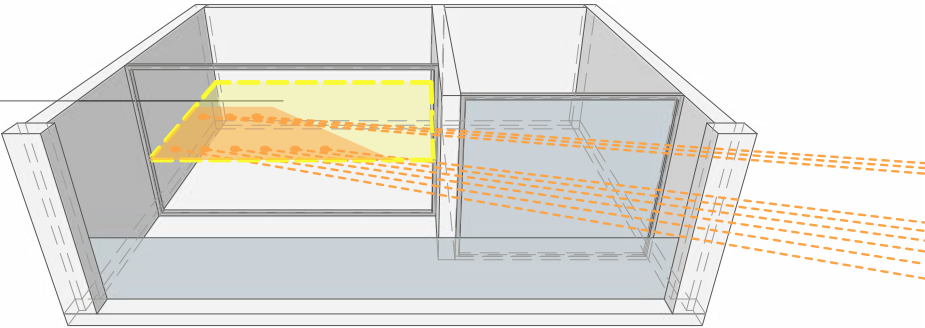
KEY:

YELLOW denotes time of day in which each apartment receives direct sunlight
RED denotes interval less than 15 mins

Sunlight duration (number of minutes of direct sunlight)



Solar Access Plane
1m above living room
floor level



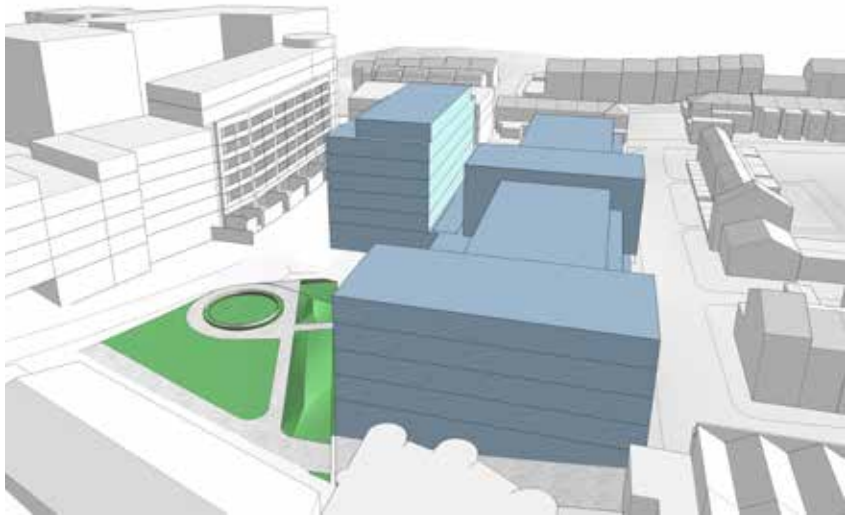
DESIGN GUIDELINE (PROPOSED MASSING):

Total number of units: **102**

Number of non-compliant units: **31**
(which do not satisfy the Design Guideline)

70% of apartments receive a minimum of 15 minutes direct sunlight (measured 1m above the living room floor level) between 9 am and 3 pm at mid-winter.

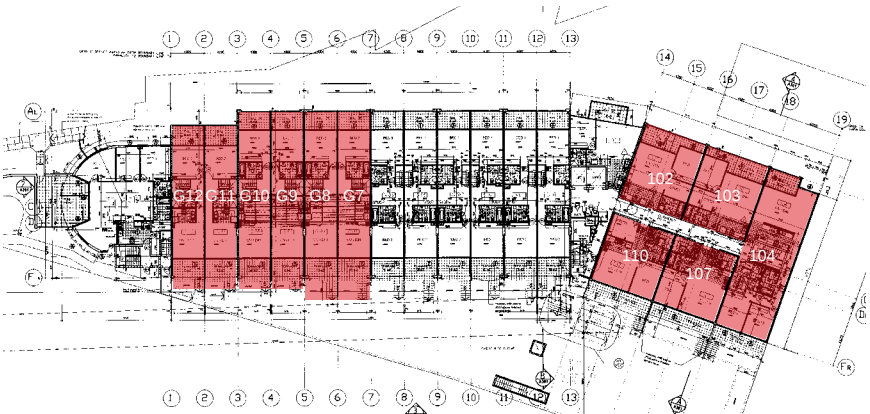
 Non-compliant apartments



Ground



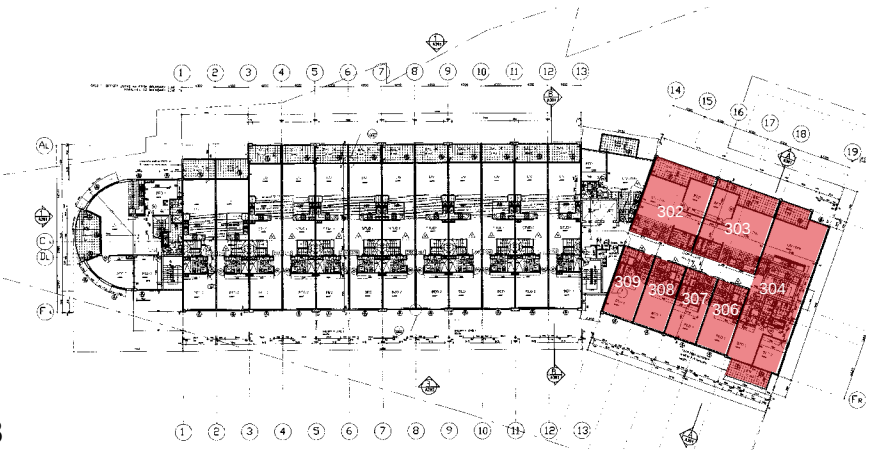
L1



L2



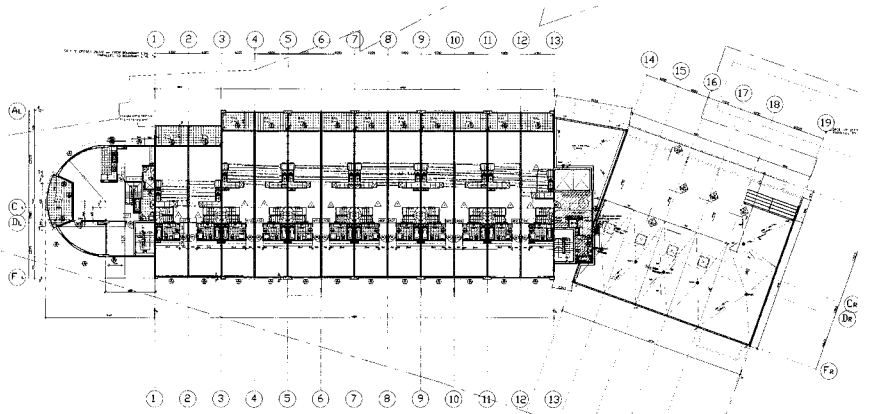
L3



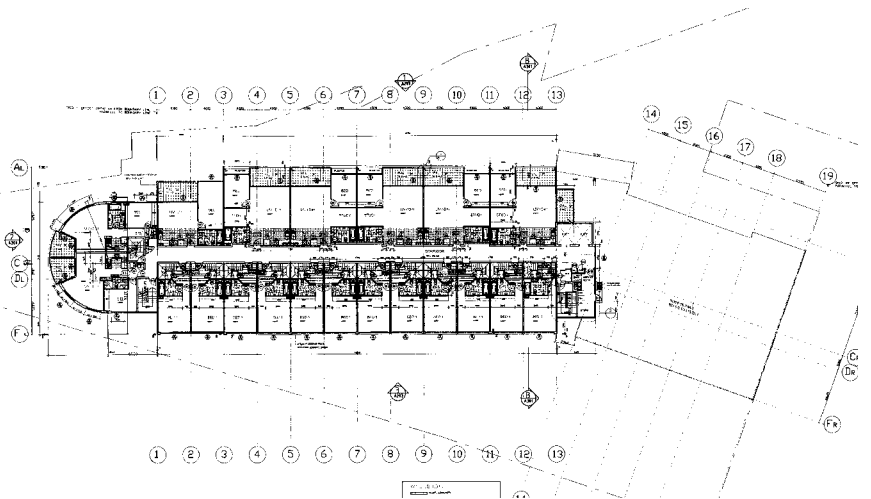
L4



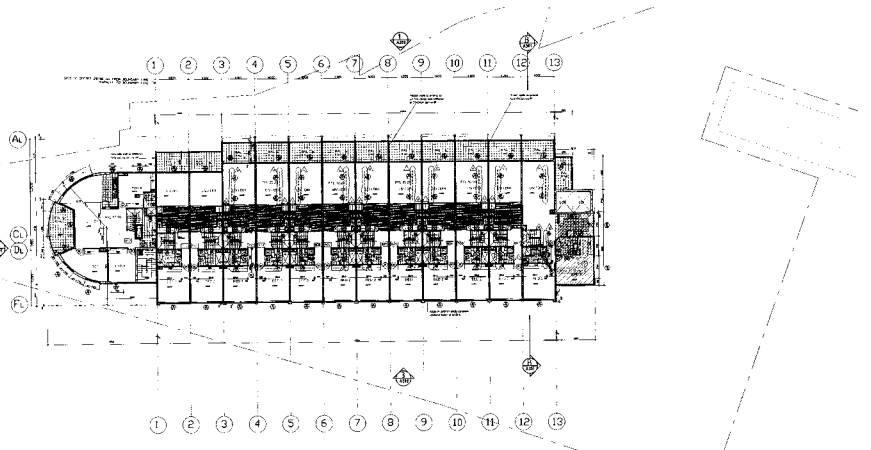
L5



L6



L7



Design Guideline - Proposed Massing



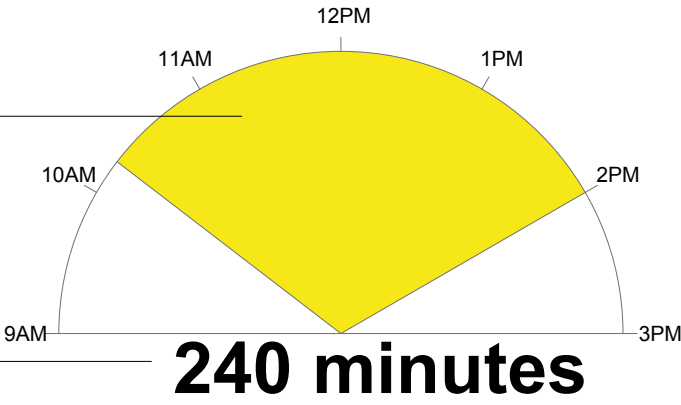
Ground

East Elevation

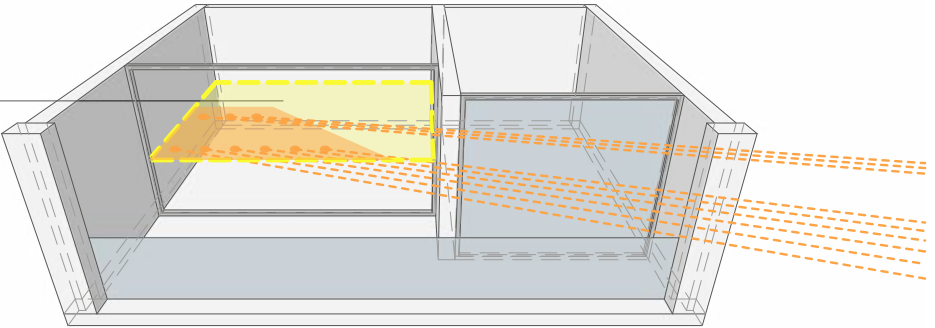
KEY:

YELLOW denotes time of day in which each apartment receives direct sunlight
RED denotes interval less than 15 mins

Sunlight duration
(number of minutes of direct sunlight)



Solar Access Plane
1m above living room
floor level

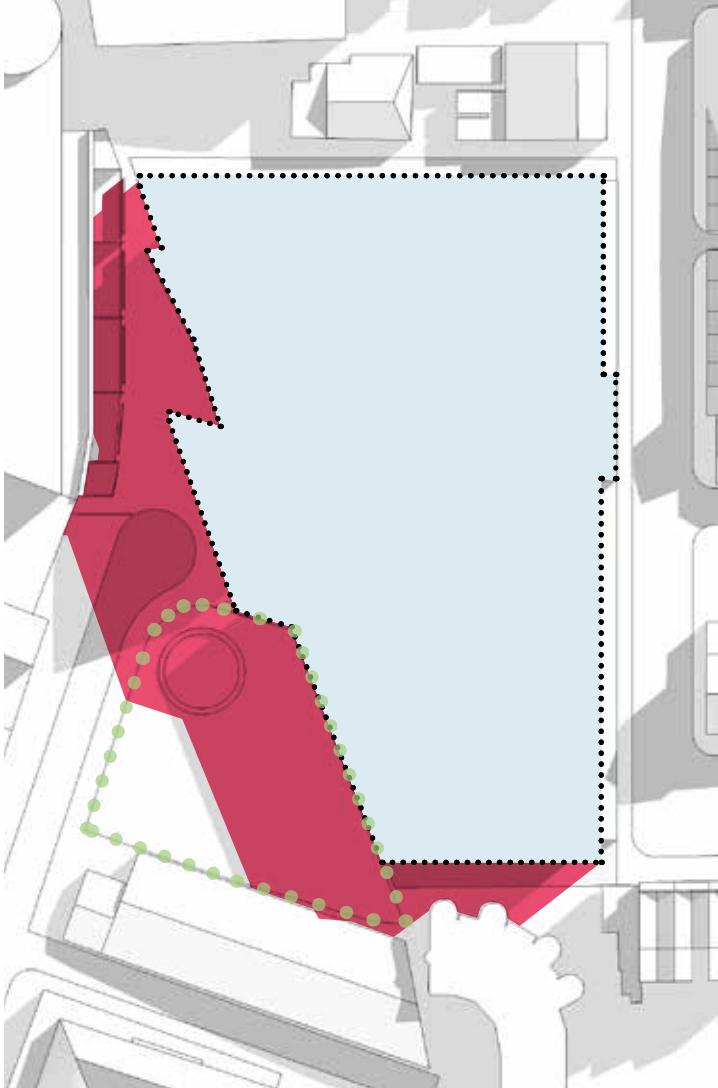


OVERSHADOWING OF NEIGHBOURING PARK



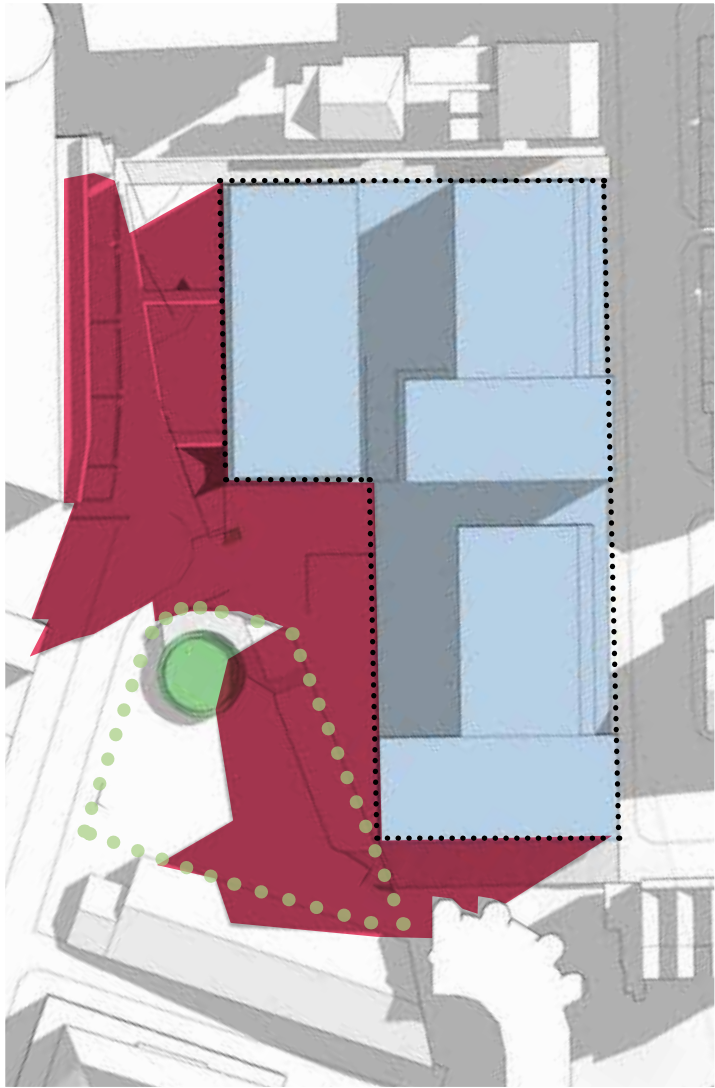
10am

- Existing park extent
- Extended park extent



10am

- Permissible (LEP) building footprint
- Shadows cast by permissible building footprint 12m above ground



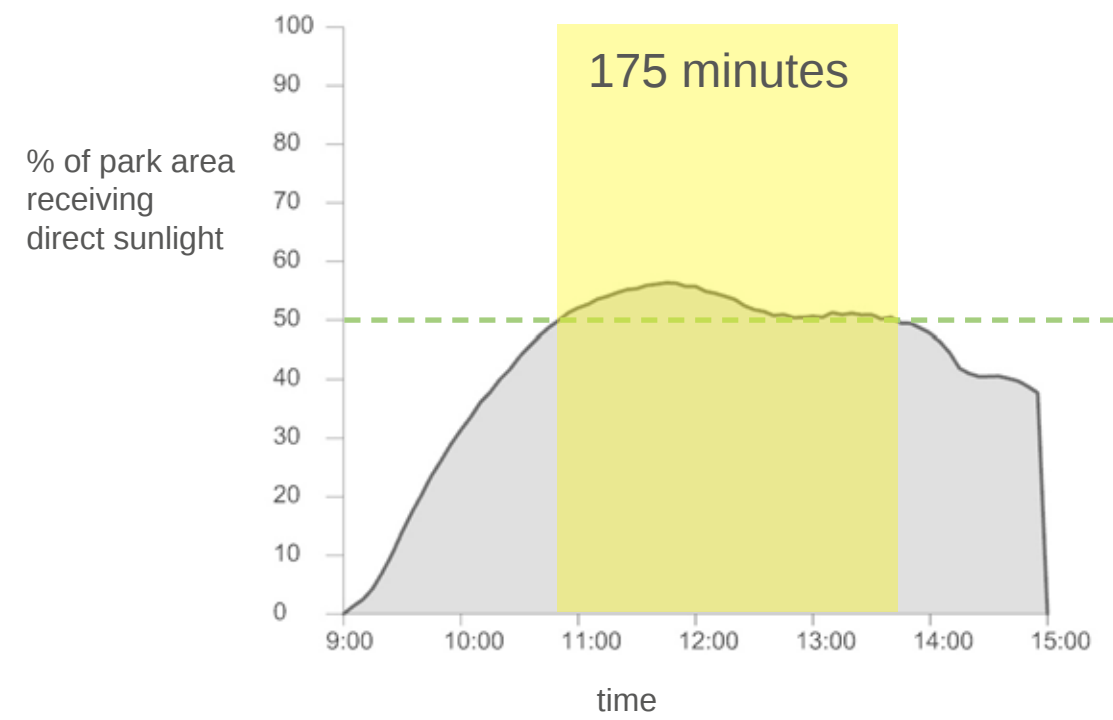
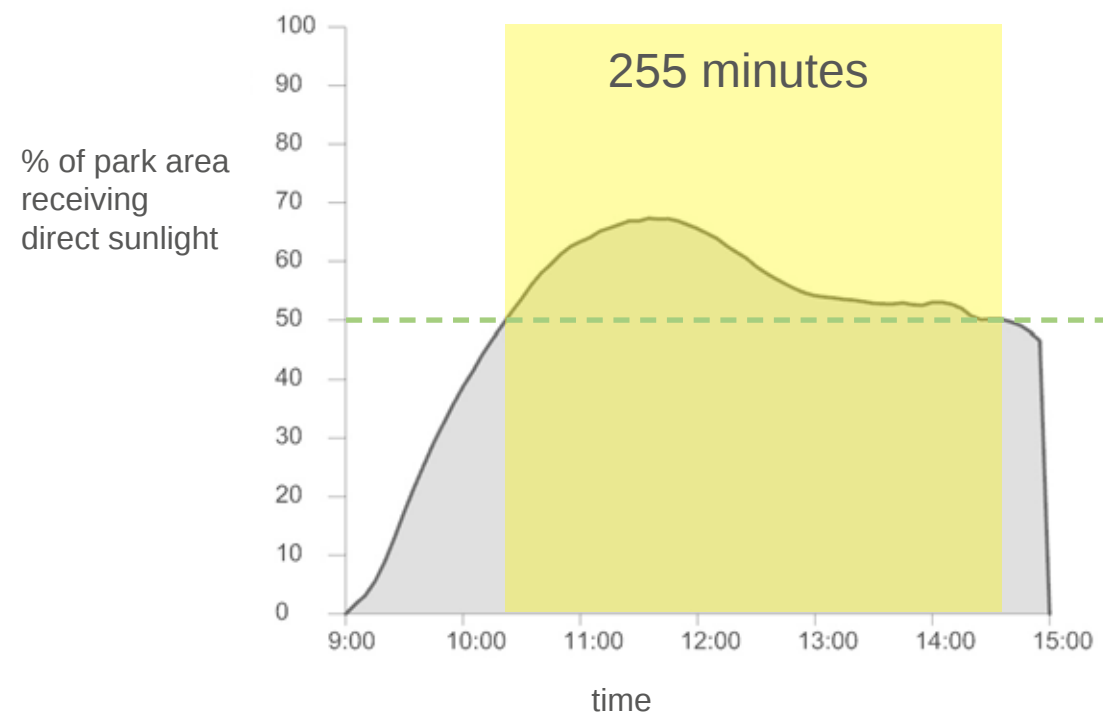
10am

- Proposed massing
- Shadows cast by proposed massing

Existing park extent



Extended park extent



Target = 240 minutes