HEGGIES

REPORT 10-8604-R1

Revision 0

Proposed Residential Development
14-18 Boondah St, Warriewood Stage 1
Daylighting Assessment

PREPARED FOR

Meriton Apartments Pty ltd
Level 11 528 Kent Street
SYDNEY NSW 2000

11 AUGUST 2010

HEGGIES PTY LTD
ABN 29 001 584 612

Proposed Residential Development
14-18 Boondah St, Warriewood Stage 1
Daylighting Assessment

PREPARED BY:

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DOCUMENT CONTROL

Reference	Status	Date	Prepared	Checked	Authorised
10-8604-R1	Revision 0	11 August 2010	Sophie Wong Kai In	Neihad Al-Khalidy	Neihad Al-Khalidy

EXECUTIVE SUMMARY

Heggies Pty Ltd (Heggies) has been commissioned by Meriton Apartments Pty Ltd (Meriton) to prepare a Daylighting Study for stage one of the proposed residential development at 14-18 Boondah Street, Warriewood. The following report is based on the revised drawings dated 6 August 2010.

The proposed Stage One development consists of 7 residential blocks:

Skylights are to be installed to the living area of the following units to achieve compliance with SEPP 65 solar access:

- Block A - Units: 203 & 204
- Block B - Units 210 & 211
- Block C - Units 217 & 218
- Block D - Units 424, 429 & 430
- Block E - Unit 437
- Block F - Units 345, 448, 449, 450, 453, 454, 458
- Block G - Units 464, 465, 469, 470

Solar access into residential buildings within the proposed development has been assessed using The State Environmental Planning Policy (SEPP 65) supported by the Residential Flat Design Code - Part 03 Building Design, The following regulation is relevant to the assessment of the daylight access into residential components of the proposed development.

- Living rooms and private open spaces for at least 70 % in a development should receive a minimum of three hours of direct sunlight between 9.00 am and 3.00 pm in mid winter. In dense urban areas a minimum of two hours may be acceptable.

This report also provides information on the solar access through the living areas windows and balconies of residential apartment of the proposed development during June 21 between the hours of 9.00 am and 3.00 pm.

On the basis of the current Solar Access Analysis of the development, Heggies has concluded the following:

- The proposed development was found to provide **70.1 %** of the residential development with 3 hrs or more sunlight on the Winter Solstice, between the hours of 9.00 am to 3.00 pm at a 'sampling rate' of 15 minute intervals.
- Compliance with SEPP 65 supported by the Residential Flat Design Code - Part 03 Building Design is achieved.

TABLE OF CONTENTS

1 INTRODUCTION

Heggies Pty Ltd (Heggies) has been commissioned by Meriton Apartments Pty Ltd (Meriton) to prepare a Daylighting Study for stage one of the proposed residential development at 14-18 Boondah Street, Warriewood. Ecotect software is utilised to produce daylight access diagrams used for this study.

The following report is based on the revised drawings dated 6 August 2010.

1.1 Site Description

The development site is bounded by Macpherson on the north, and Boondah Street on the east. Low-rise residential premises are located on the west of stage one and stage tow will be located between stage one and Boondah Street. The proposed building will comprise 3 to 5 storeys residential buildings. **Figure 1** shows the aerial view of the development site location.

Figure 1 Site Location

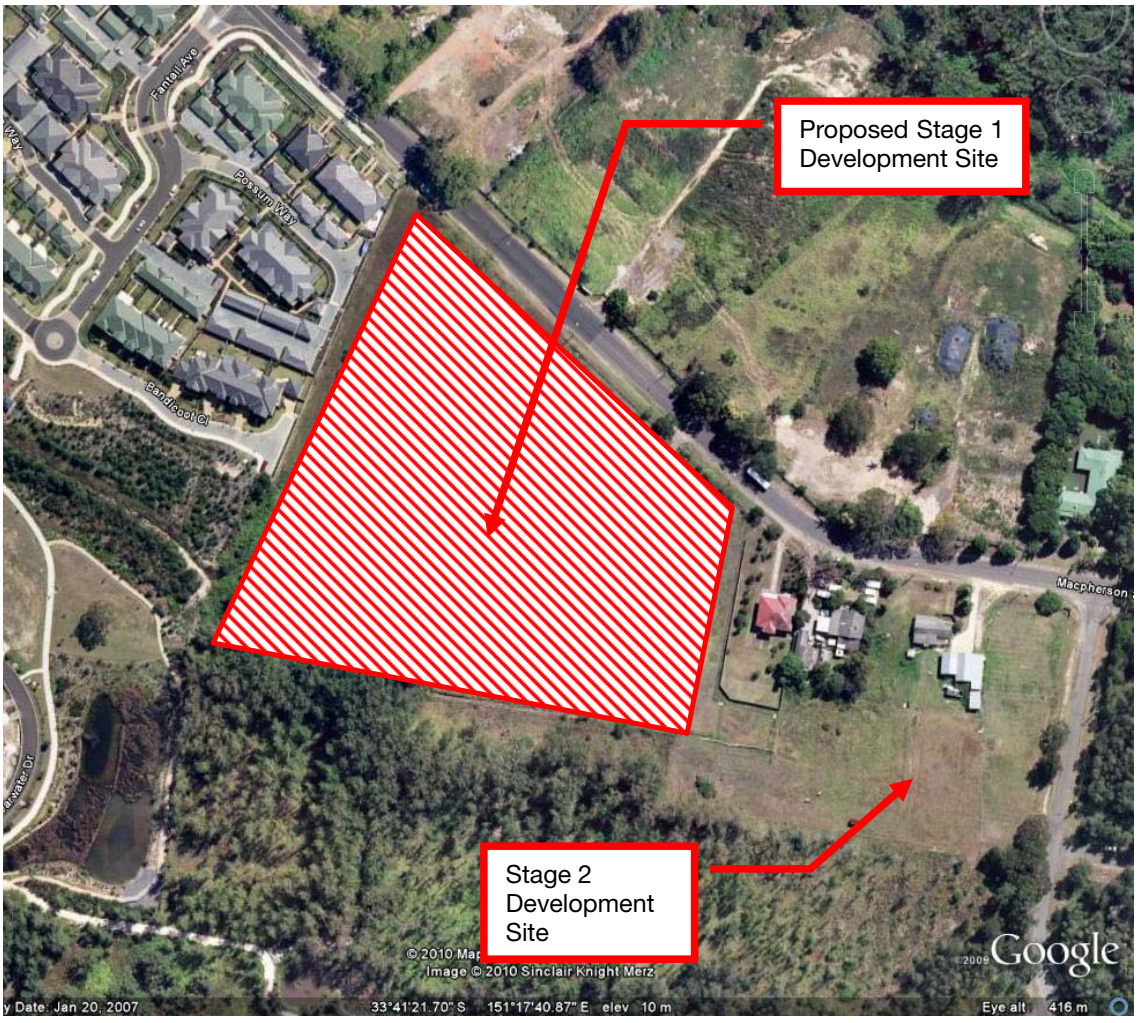

Image courtesy of Google Earth

1.2 Development Description

The proposed Stage One development consists of 7 residential blocks:

- Building A - 3 storeys
- Building B – 3 storeys
- Building C – 3 storeys
- Building D – 5 storeys
- Building E – 4 to 5 storeys
- Building F – 4 to 5 storeys
- Building G – 5 storeys

Skylights are to be installed to the living area of the following units to achieve compliance with SEPP 65 solar access:

- Block A - Units: 203 & 204
- Block B - Units 210 & 211
- Block C - Units 217 & 218
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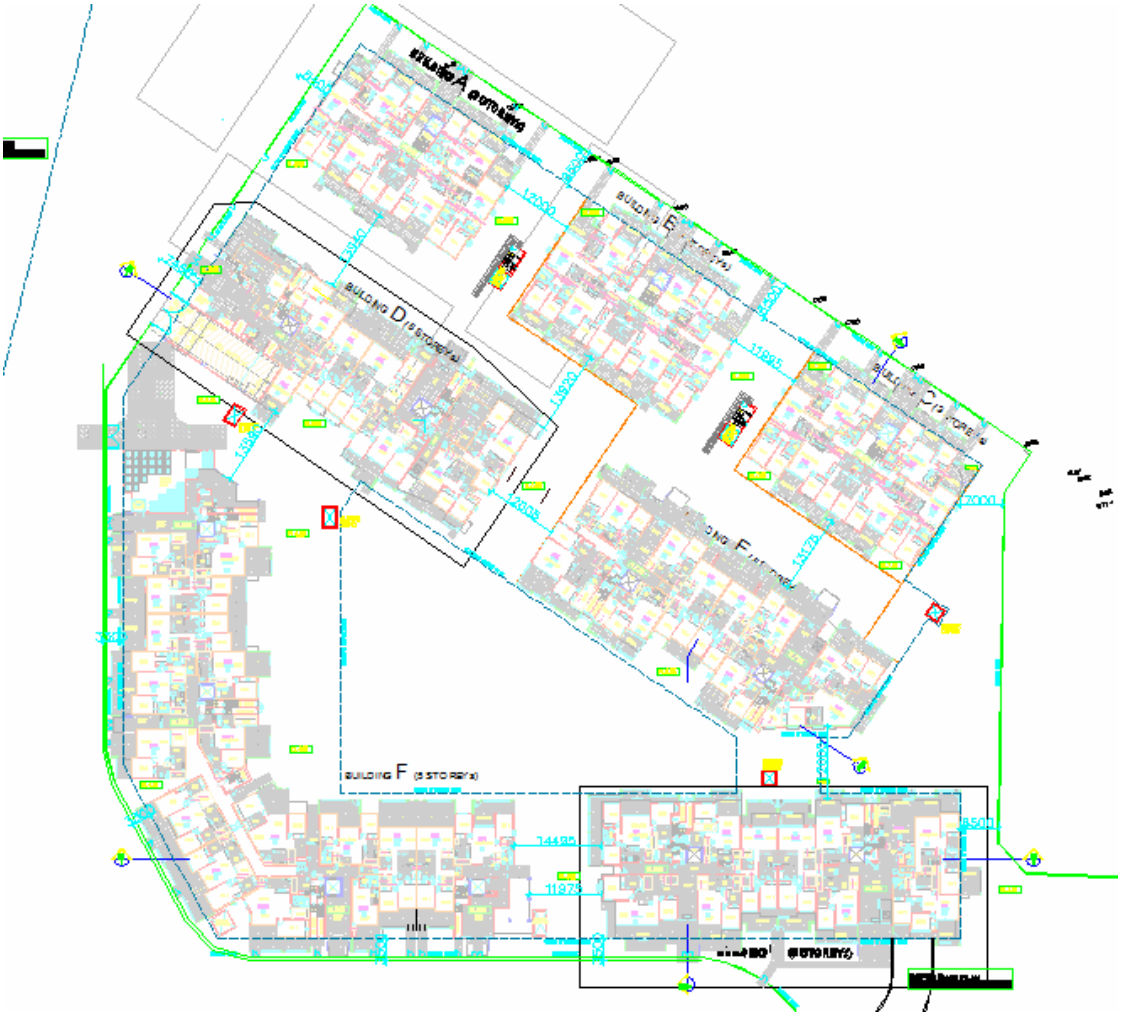
Figure 2 shows the proposed development podium level plan.

Figure 2 Proposed Development Roof Plan



2 SOLAR ACCESS TO RESIDENTIAL BUILDINGS

2.1 Daylighting Considerations

The State Environmental Planning Policy (SEPP) 65 supported by the Residential Flat Design Code - Part 03 Building Design, 'Rules of Thumb' is relevant to the assessment of the daylight access into residential components of the proposed development. The above regulation states that:

- Living rooms and private open spaces for at least 70 % in a development should receive a minimum of three hours of direct sunlight between 9.00 am and 3.00 pm in mid winter. In dense urban areas a minimum of two hours may be acceptable.

Specific interest therefore lies in the solar access through the living areas windows and balconies of residential apartment of the proposed development during the winter solstice, June 21 between the hours of 9.00 am and 3.00 pm.

2.2 Solar Access Analysis

2.2.1 9.00 am – 3.00 pm on the Winter Solstice 21 June

Using the floor plans and elevations (DWG files) provided by Meriton, downloaded from the FTP on 6 August 2010, a 3D model was developed for daylighting modelling. The developed model is shown in **Figure 3** with the living areas windows highlighted in blue. The surrounding buildings were modelled from Google earth pictures.

Sun's eye view diagrams were generated for each 15 minute interval between 9.00 am and 3.00 pm inclusive on the Winter Solstice (21 June) and the number of apartments with 3 or more hours of direct sunlight through the livings rooms and balconies were counted (see **Table 1**). Sun's Eye View diagrams prepared for each 15 minute interval between 9.00 am and 3.00 pm on the Winter Solstice (21 June) are shown in **Appendix A**

Figure 3 3D Ecotect Model of Proposed Development

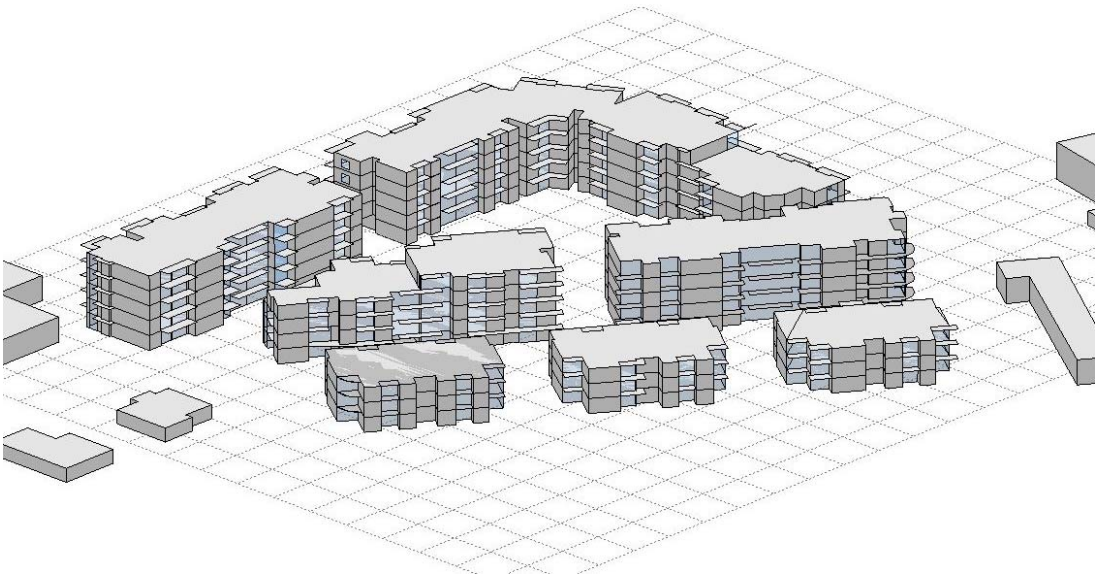


Table 1 Solar Access Summary for each Residential Building within the Development between 9.00 am and 3.00 pm on June 21

Building	Floor	Total number of Apartments	Apartments with > 3 hrs of sunlight
A	G	6	4
	1	6	4
	2	6	6
B	G	6	4
	1	6	4
	2	6	6
C	G	6	4
	1	6	4
	2	6	6
D	G	8	7
	1	11	8
	2	11	8
	3	11	8
	4	11	11
E	G	10	6
	1	10	6
	2	10	6
	3	9	8
	4	5	5
F	G	17	8
	1	19	9
	2	19	9
	3	19	11
	4	15	15
G	G	11	7
	1	11	7
	2	11	7
	3	11	7
	4	11	11
Total		**294**	**206**
Percentage			**70.07%**

On the basis of the current Solar Access Analysis of the proposed development Heggies has concluded the following:

- 70.1% of the residential development with 3 hrs sunlight on the Winter Solstice, between the hours of 9.00 am to 3.00 pm at a 'sampling rate' of 15 minute intervals.

3 CONCLUSION

Heggies Pty Ltd (Heggies) has been commissioned by Meriton Apartments Pty Ltd (Meriton) to prepare a Daylighting Study for stage one of the proposed residential development at 14-18 Boondah Street, Warriewood.

Solar access into residential buildings within the proposed development has been assessed using The State Environmental Planning Policy (SEPP 65) supported by the Residential Flat Design Code - Part 03 Building Design, The following regulation is relevant to the assessment of the daylight access into residential components of the proposed development.

- Living rooms and private open spaces for at least 70 % in a development should receive a minimum of three hours of direct sunlight between 9.00 am and 3.00 pm in mid winter. In dense urban areas a minimum of two hours may be acceptable.

This report also provides information on the solar access through the living areas windows and balconies of residential apartment of the proposed development during June 21 between the hours of 9.00 am and 3.00 pm.

On the basis of the current Solar Access Analysis of the development, Heggies has concluded the following:

- The proposed development was found to provide **70.1 %** of the residential development with 3 hrs or more sunlight on the Winter Solstice, between the hours of 9.00 am to 3.00 pm at a 'sampling rate' of 15 minute intervals.
- Compliance with SEPP 65 supported by the Residential Flat Design Code - Part 03 Building Design is achieved.

Figure 4 Development Sun's Eye View at 9.00 am on 21 June

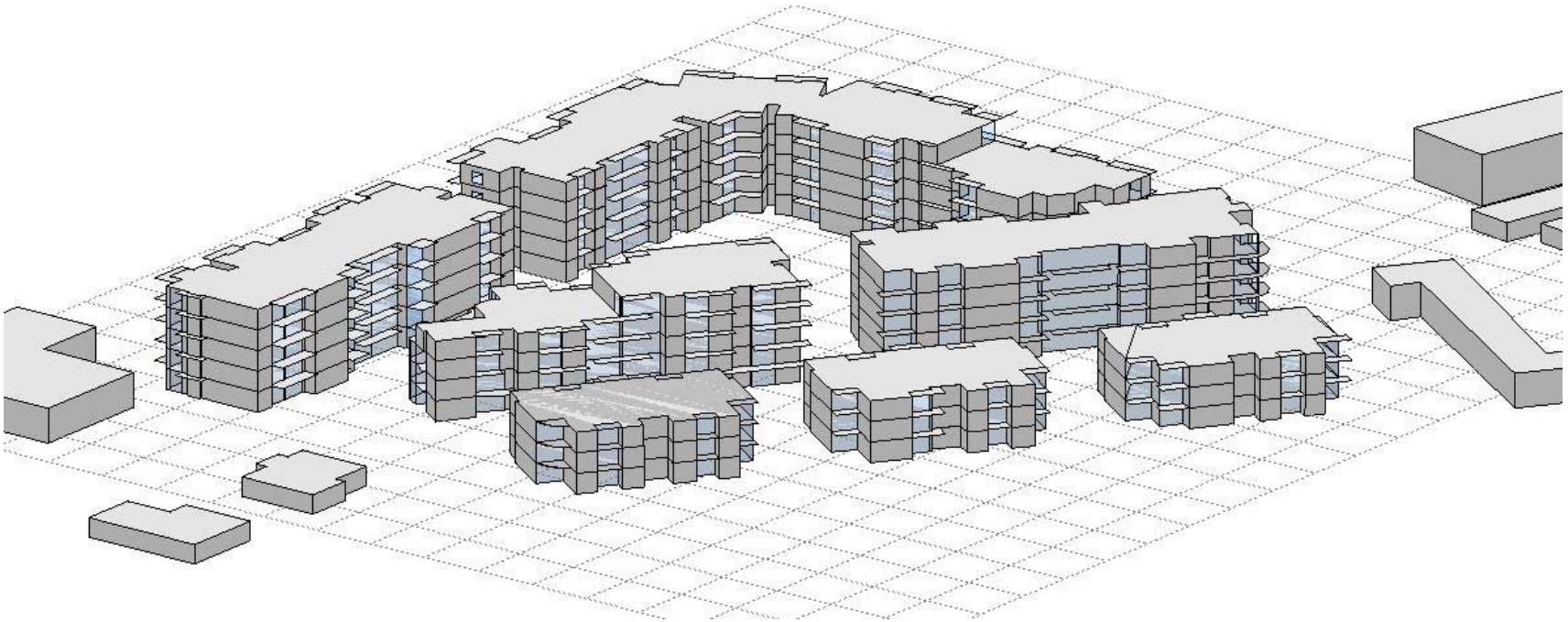


Figure 5 Development Sun's Eye View at 9.15 am on 21 June

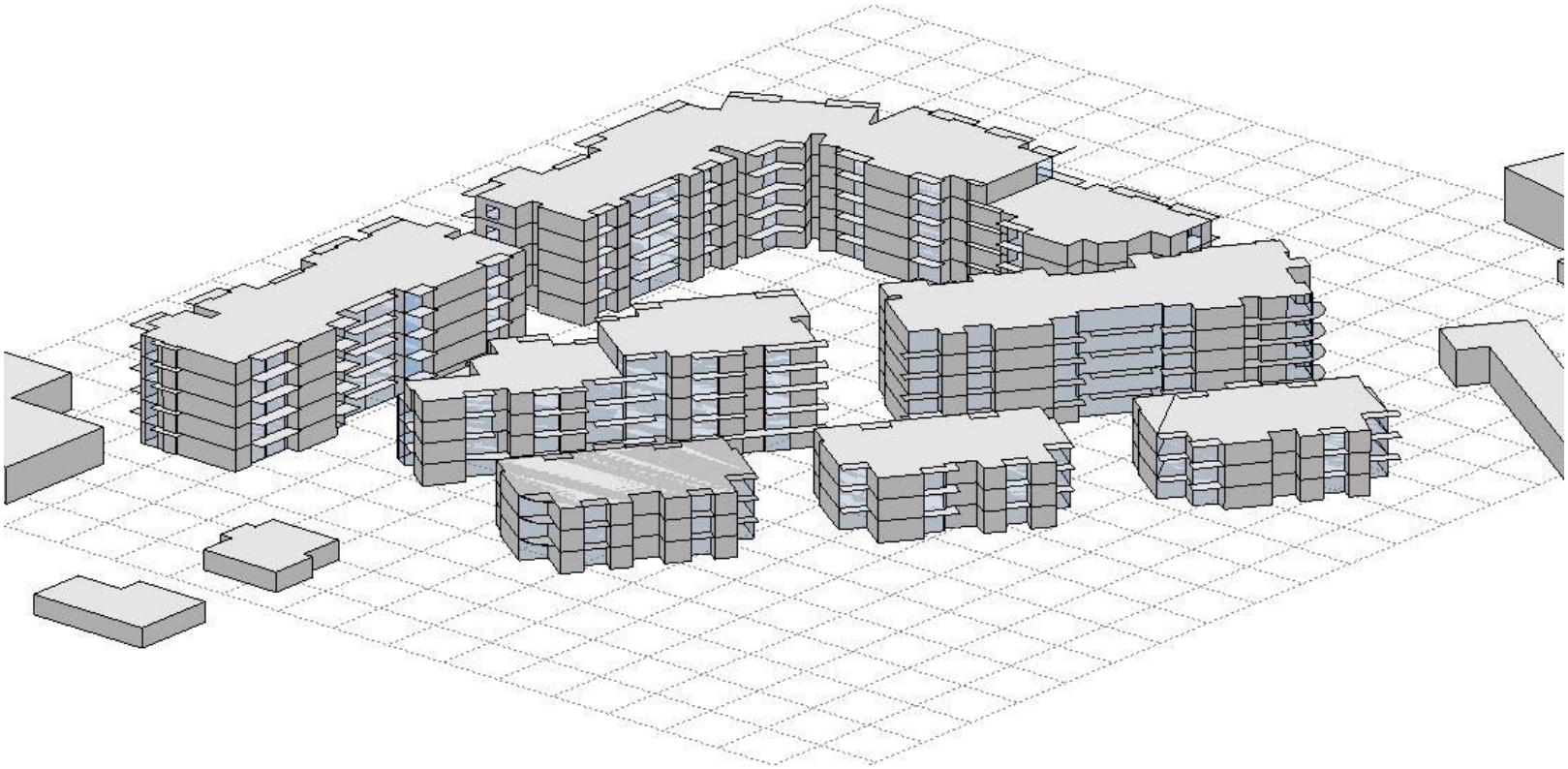


Figure 6 Development Sun's Eye View at 9.30 am on 21 June

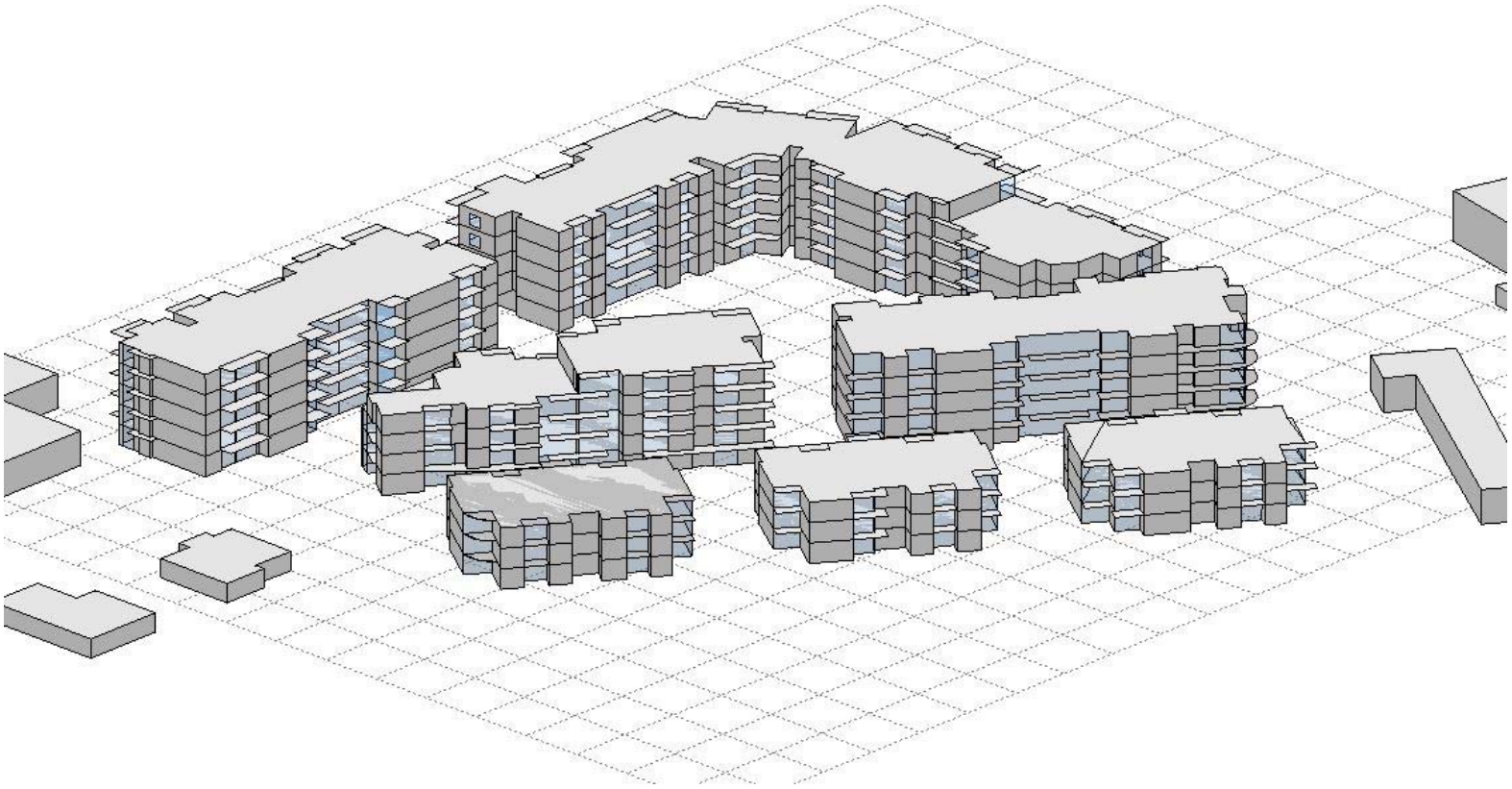


Figure 7 Development Sun's Eye View at 9.45 am on 21 June

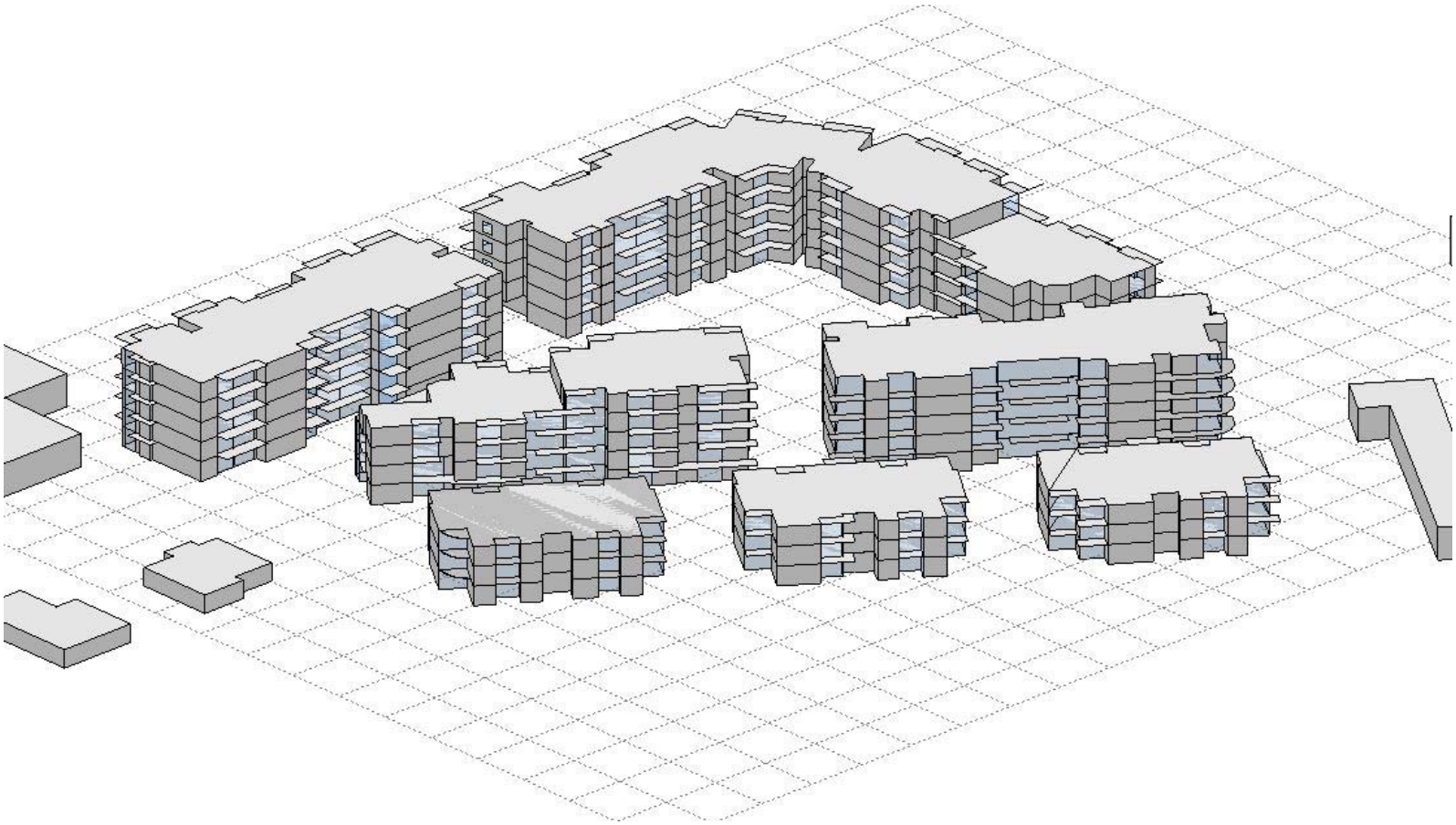


Figure 8 Development Sun's Eye View at 10.00 am on 21 June

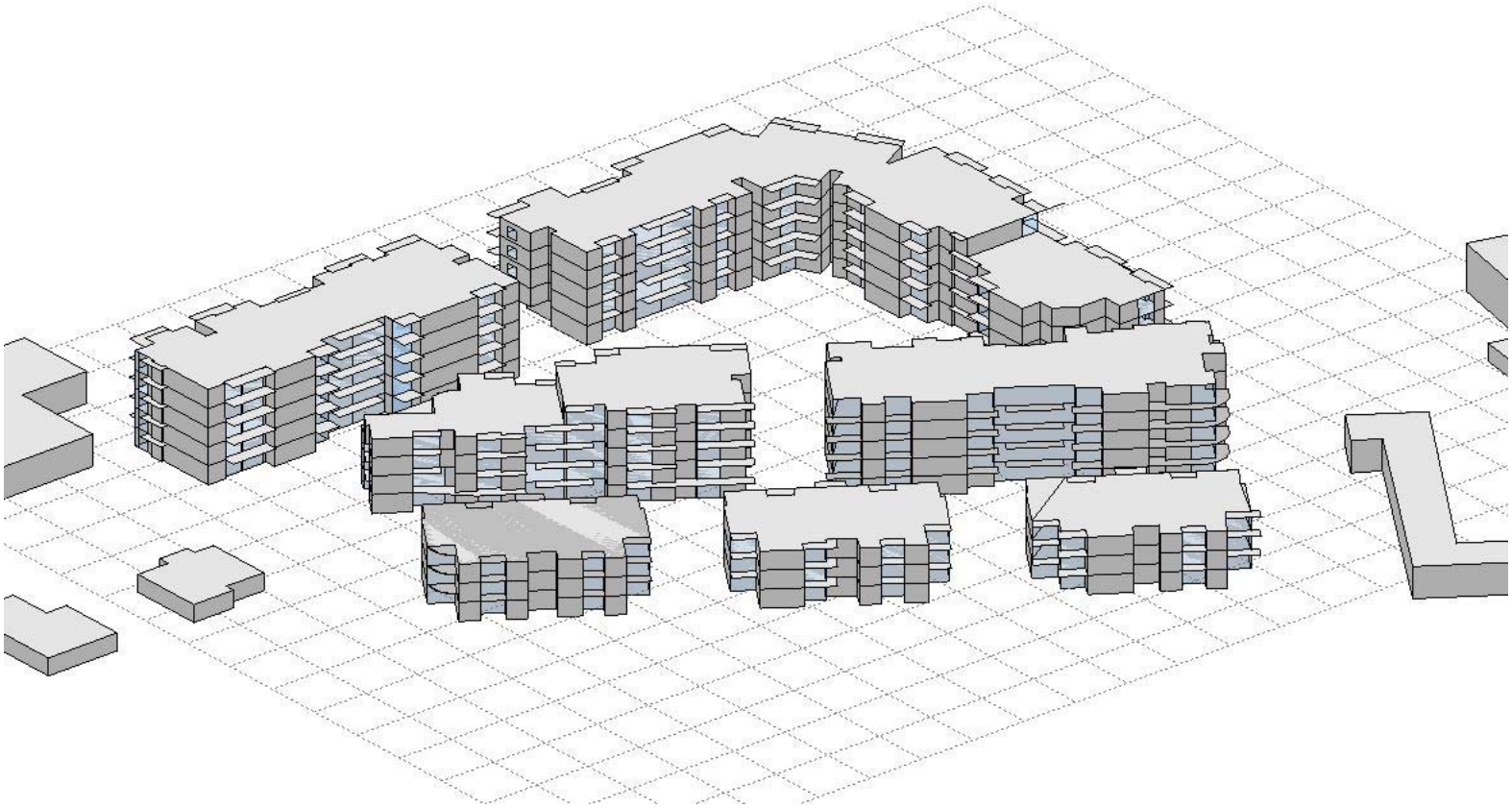


Figure 9 Development Sun's Eye View at 10.15 am on 21 June

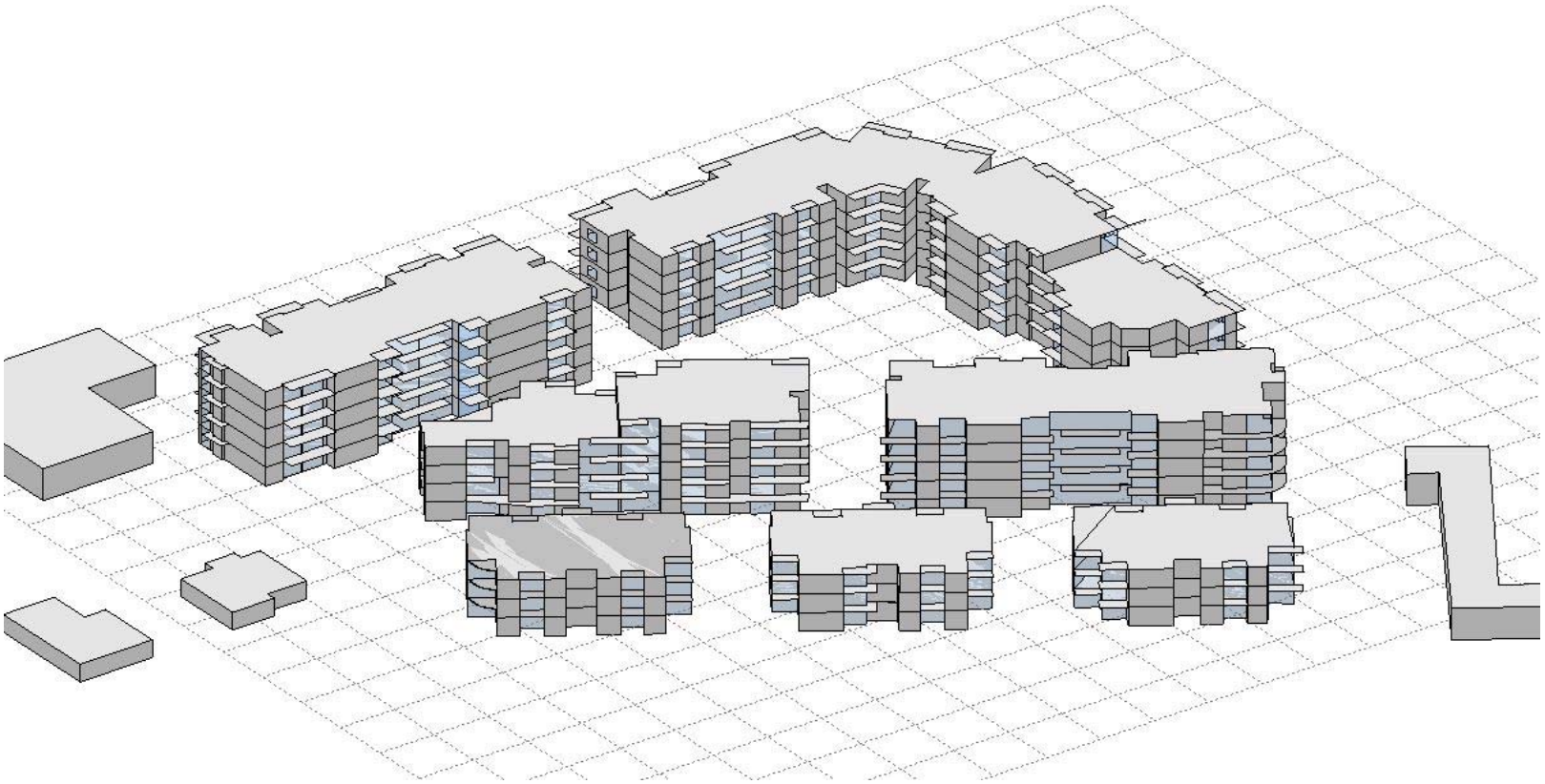


Figure 10 Development Sun's Eye View at 10.30 am on 21 June

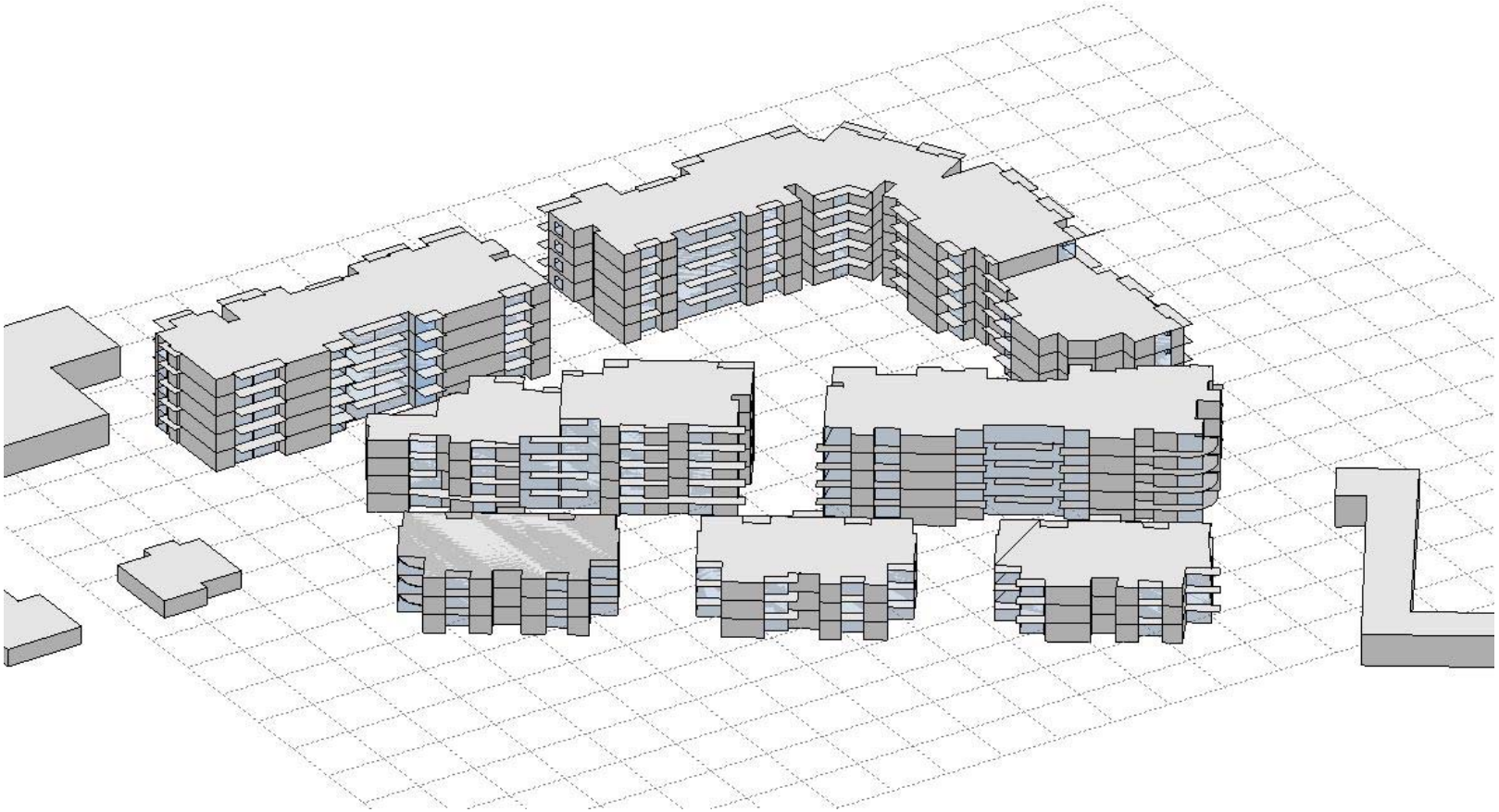


Figure 11 Development Sun's Eye View at 10.45 am on 21 June

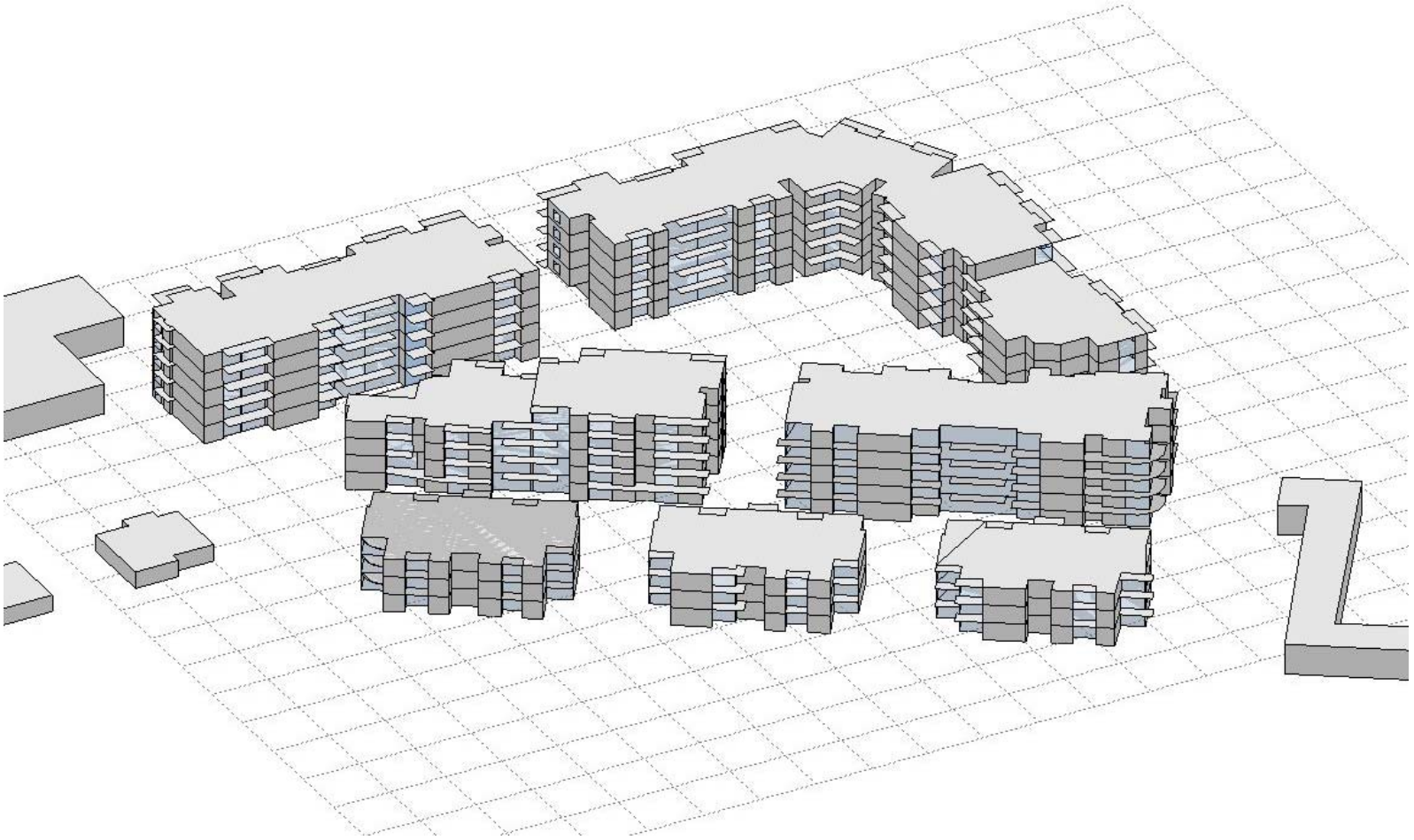


Figure 12 Development Sun's Eye View at 11.00 am on 21 June

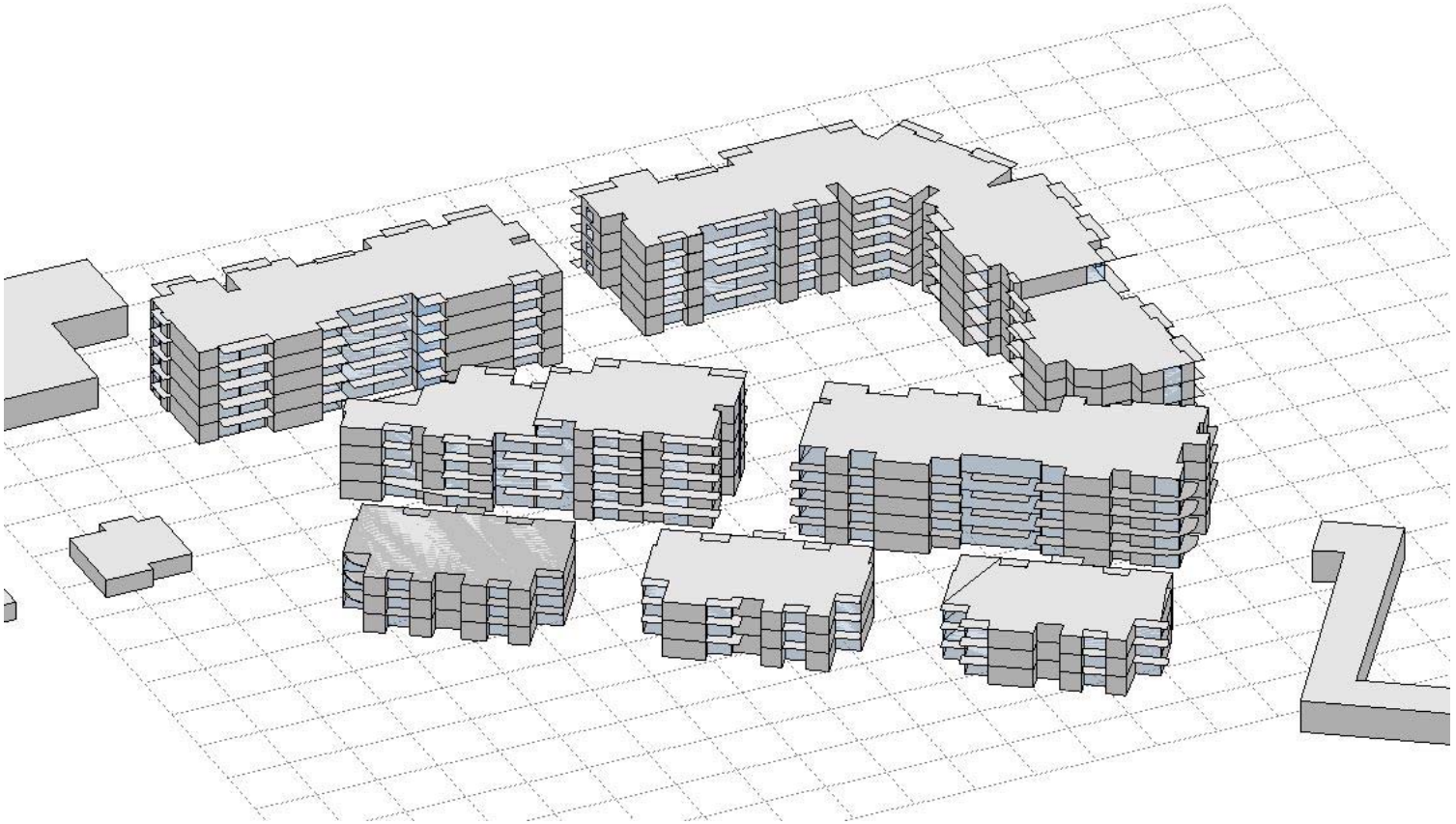


Figure 13 Development Sun's Eye View at 11.15 am on 21 June

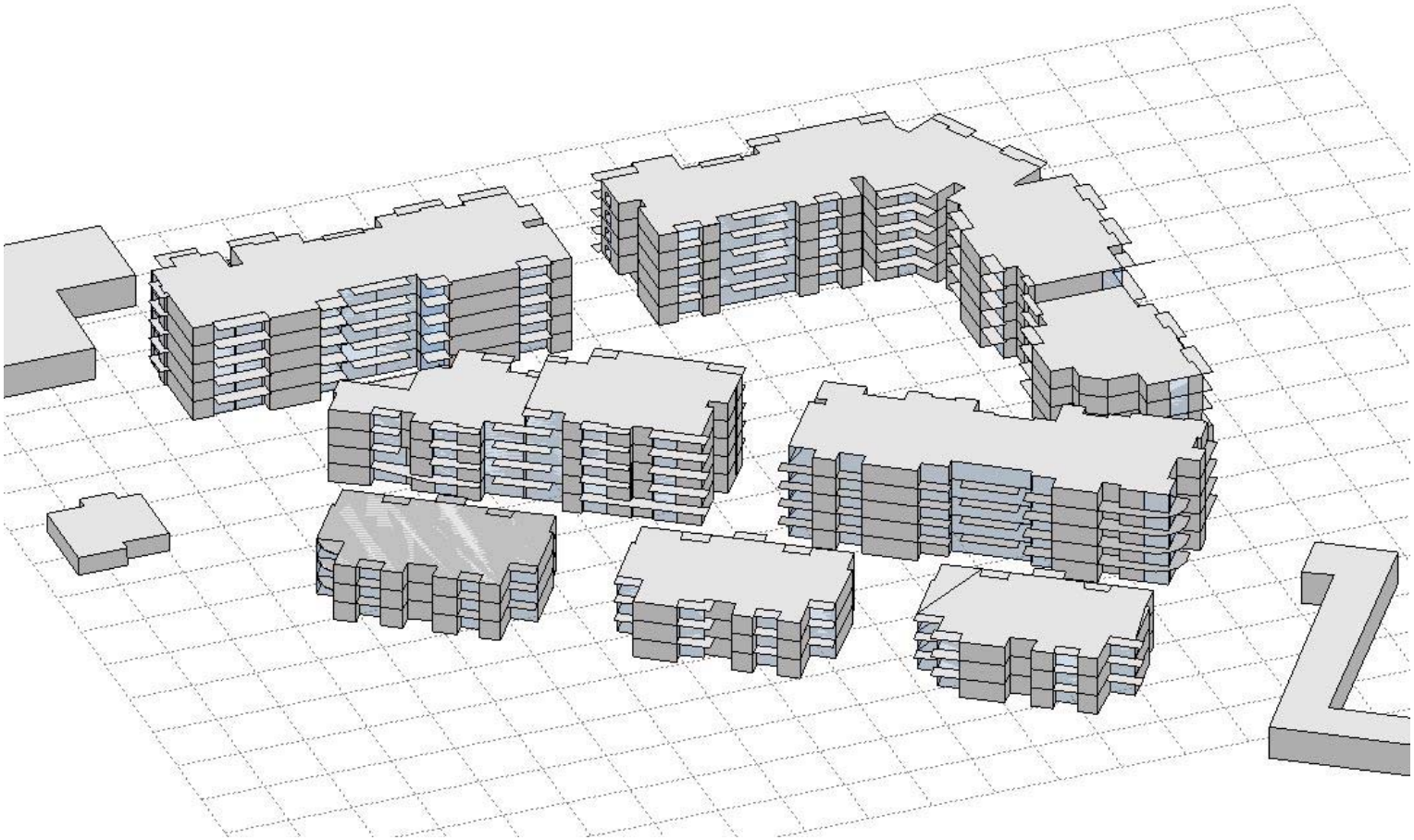


Figure 14 Development Sun's Eye View at 11.30 am on 21 June

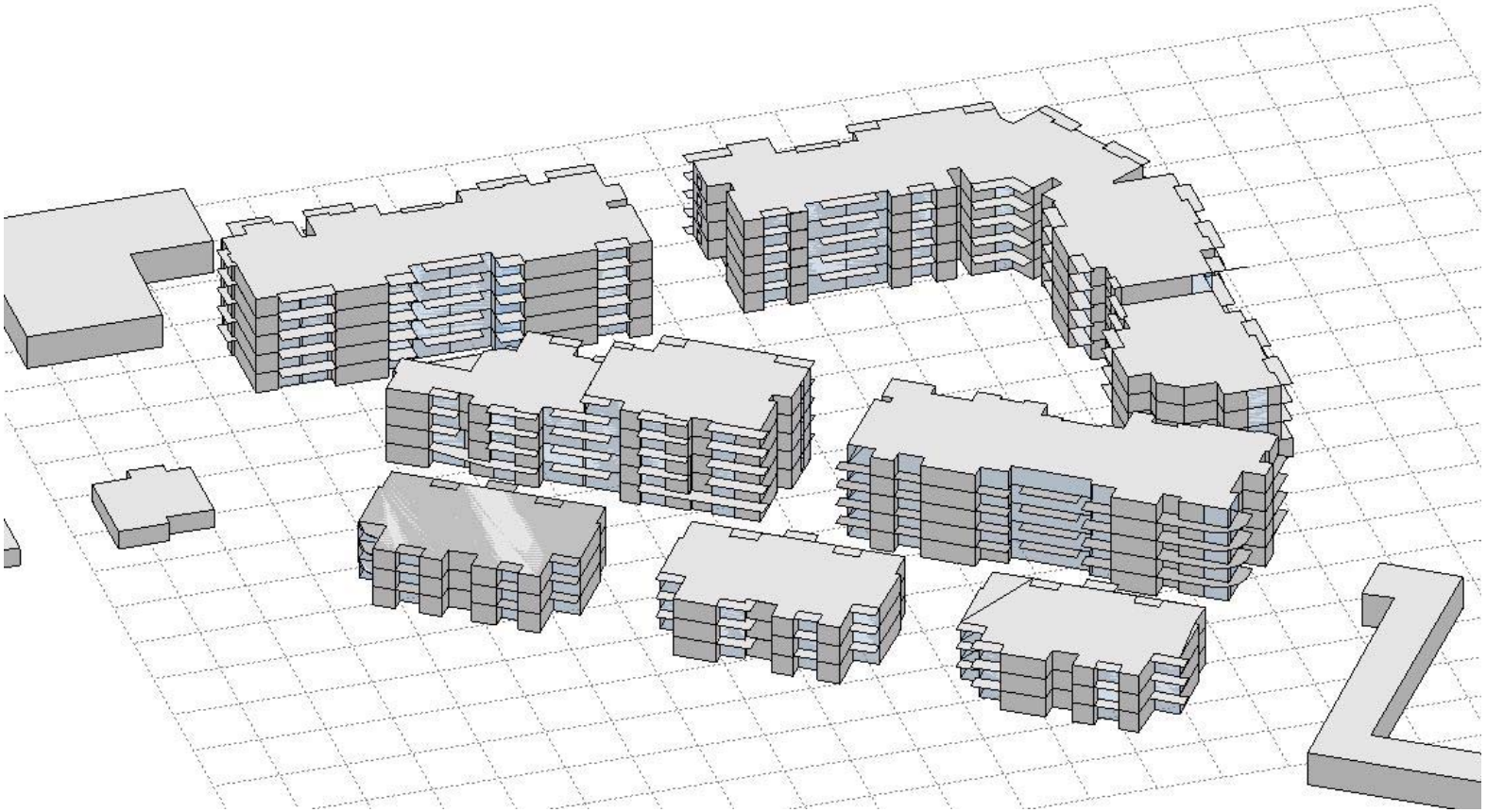


Figure 15 Development Sun's Eye View at 11.45 am on 21 June

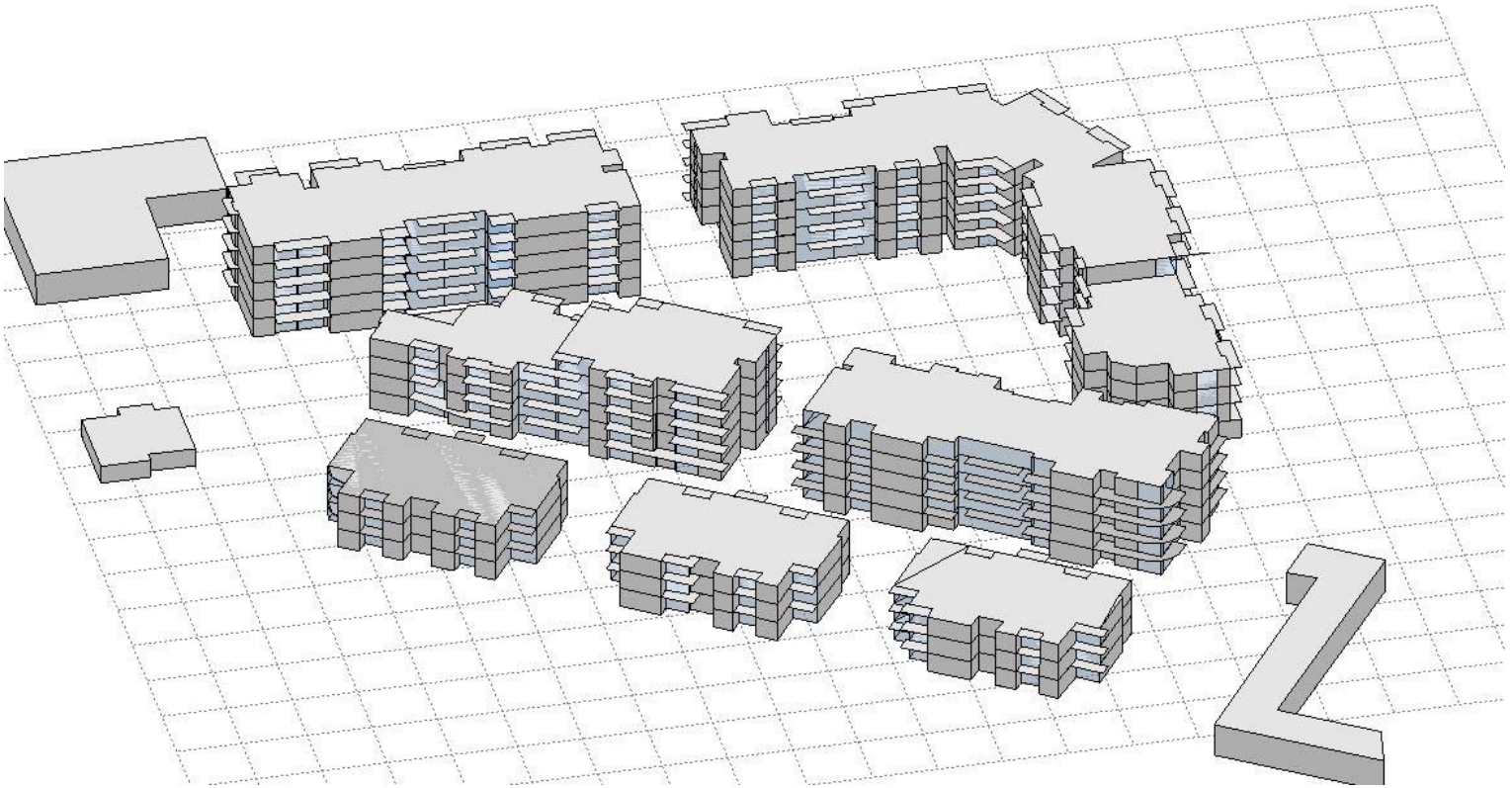


Figure 16 Development Sun's Eye View at 12.00 pm on 21 June

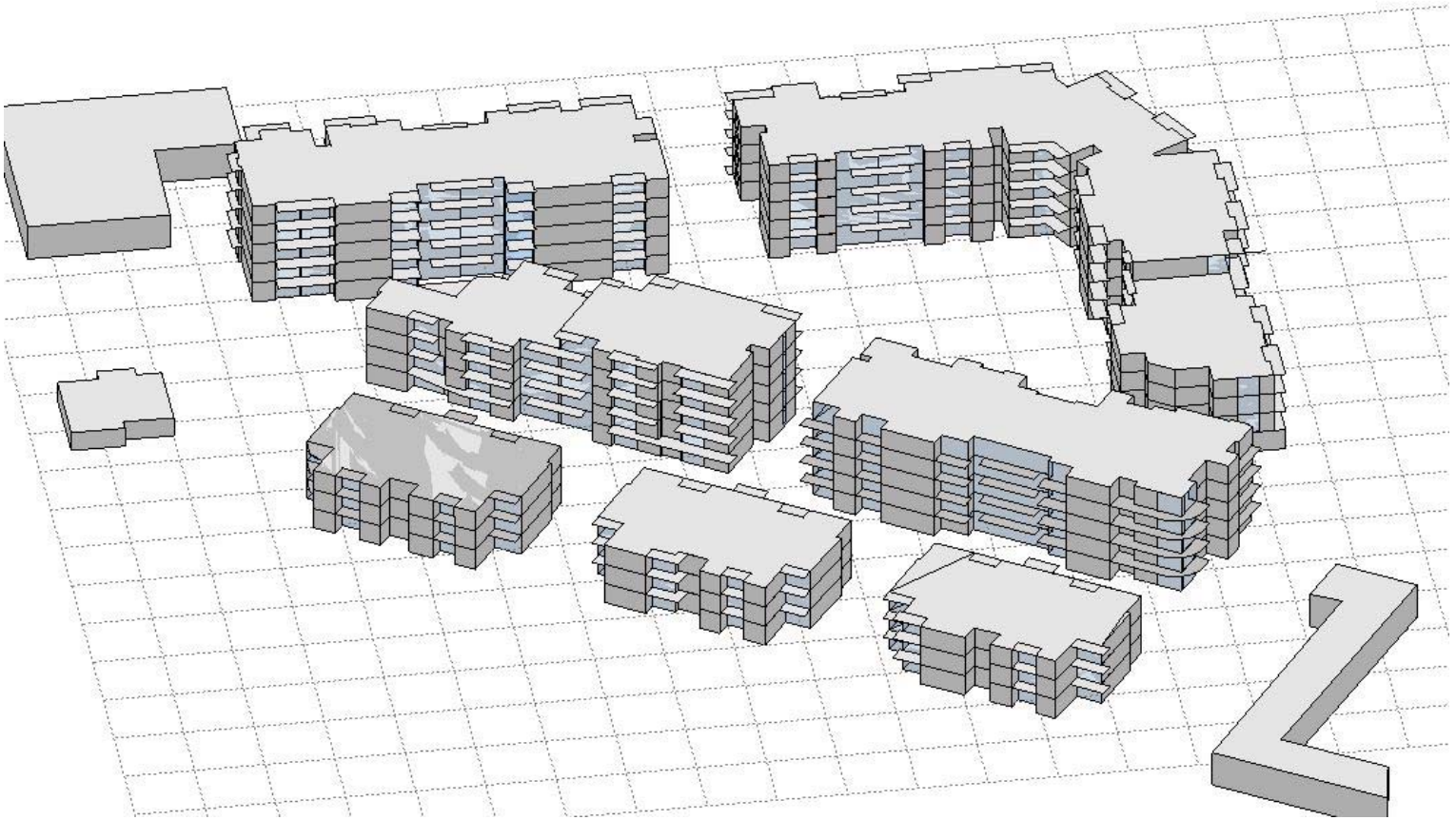


Figure 17 Development Sun's Eye View at 12.15 pm on 21 June

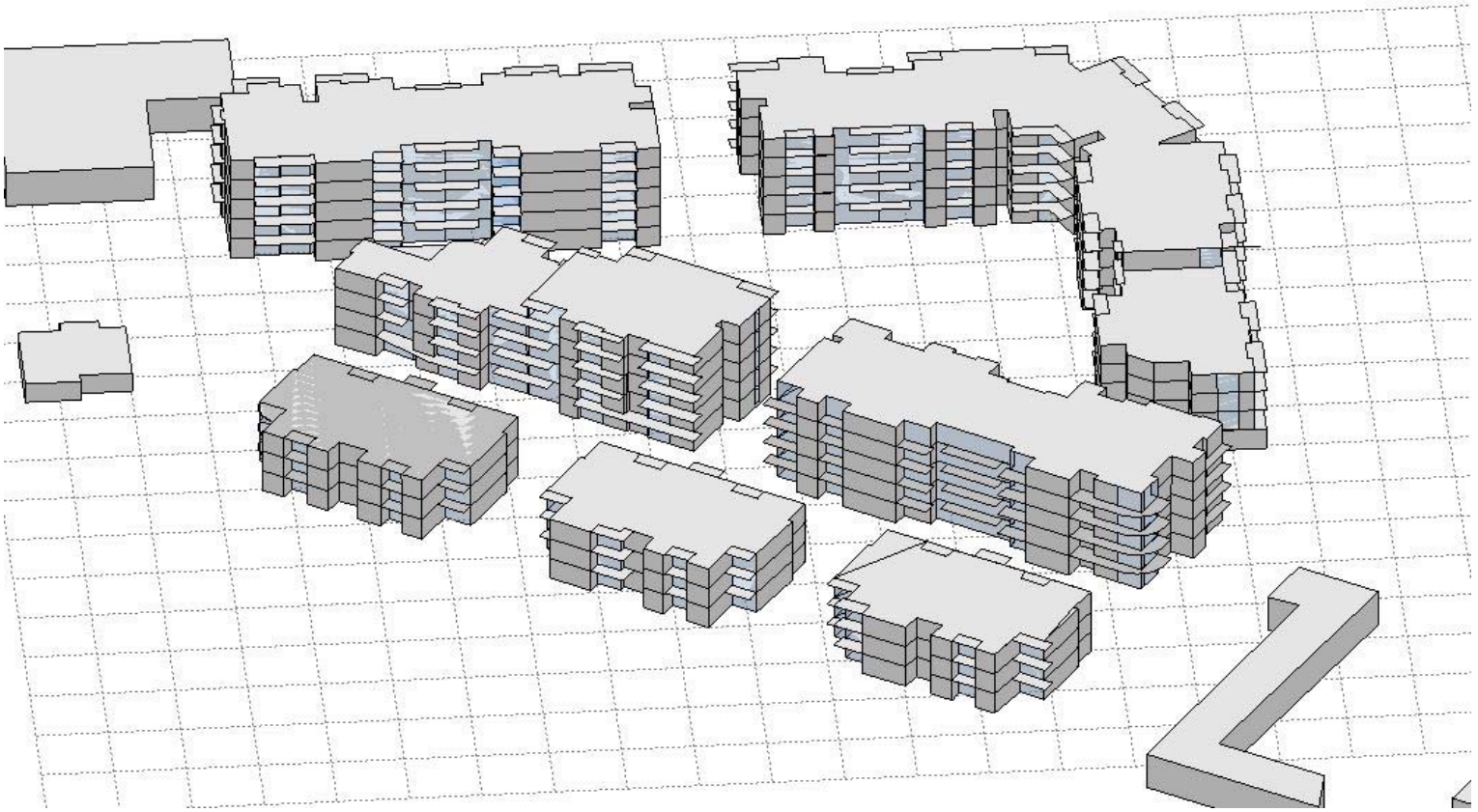


Figure 18 Development Sun's Eye View at 12.30 pm on 21 June

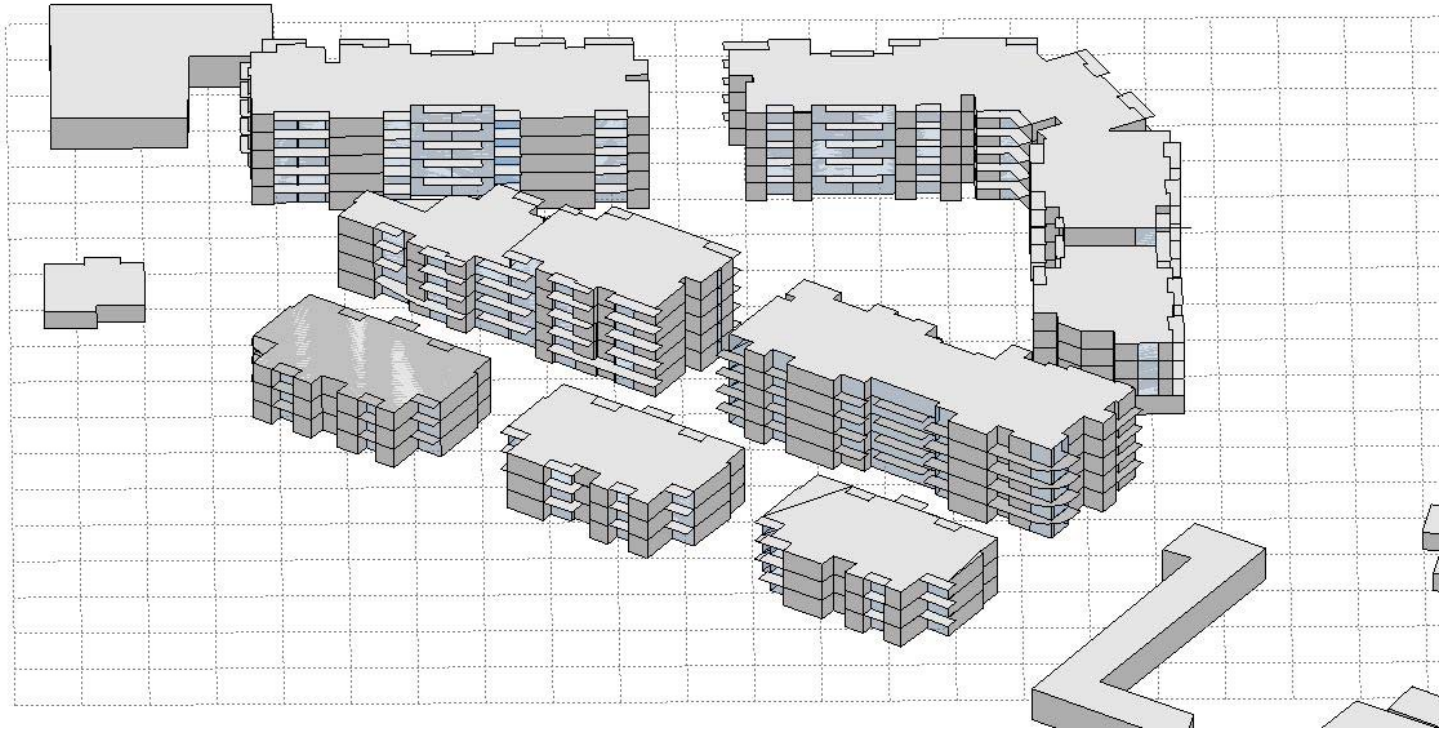


Figure 19 Development Sun's Eye View at 12.45 pm on 21 June

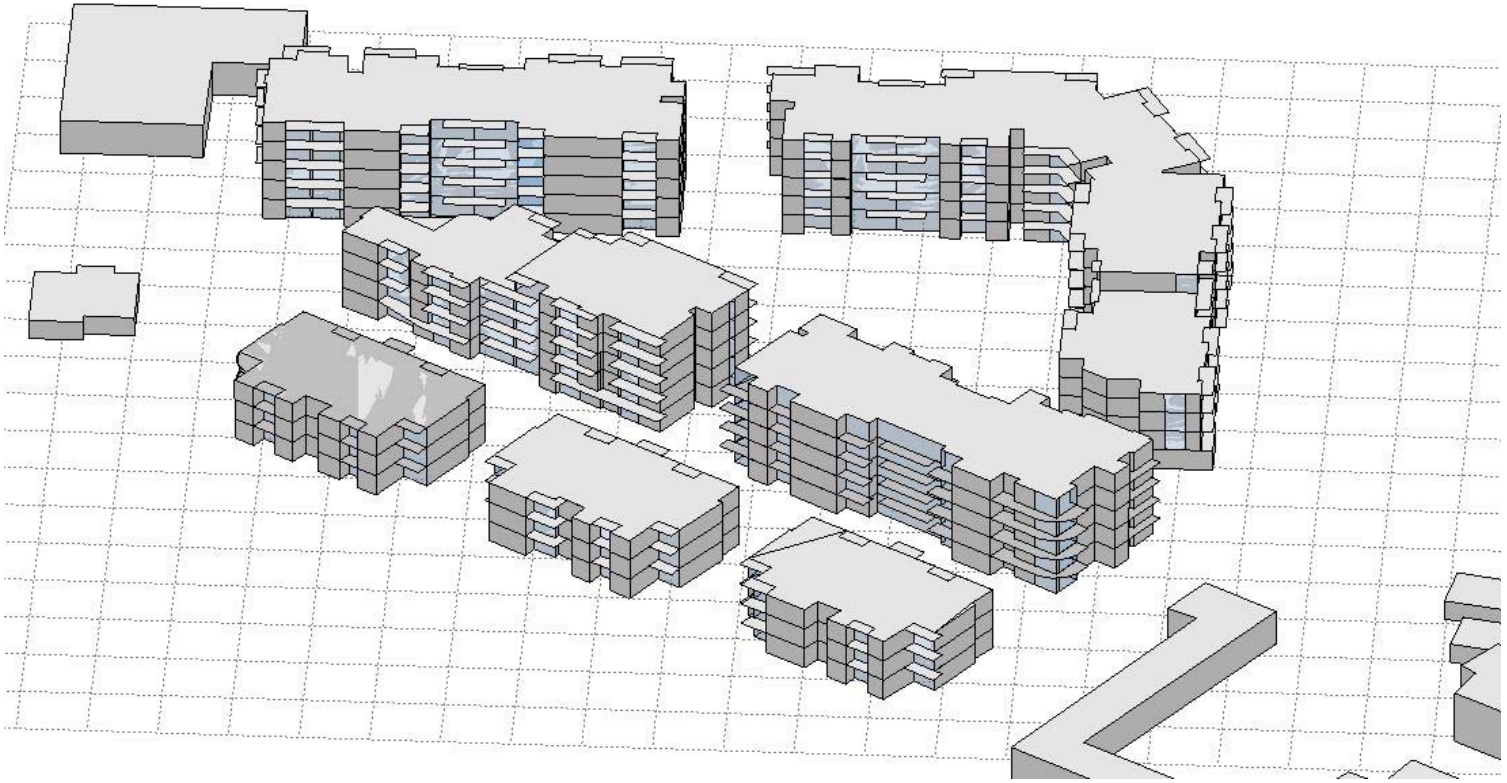


Figure 20 Development Sun's Eye View at 1.00 pm on 21 June

Figure 21 Development Sun's Eye View at 1.15 pm on 21 June

Figure 22 Development Sun's Eye View at 1.30 pm on 21 June

Figure 23 Development Sun's Eye View at 1.45 pm on 21 June

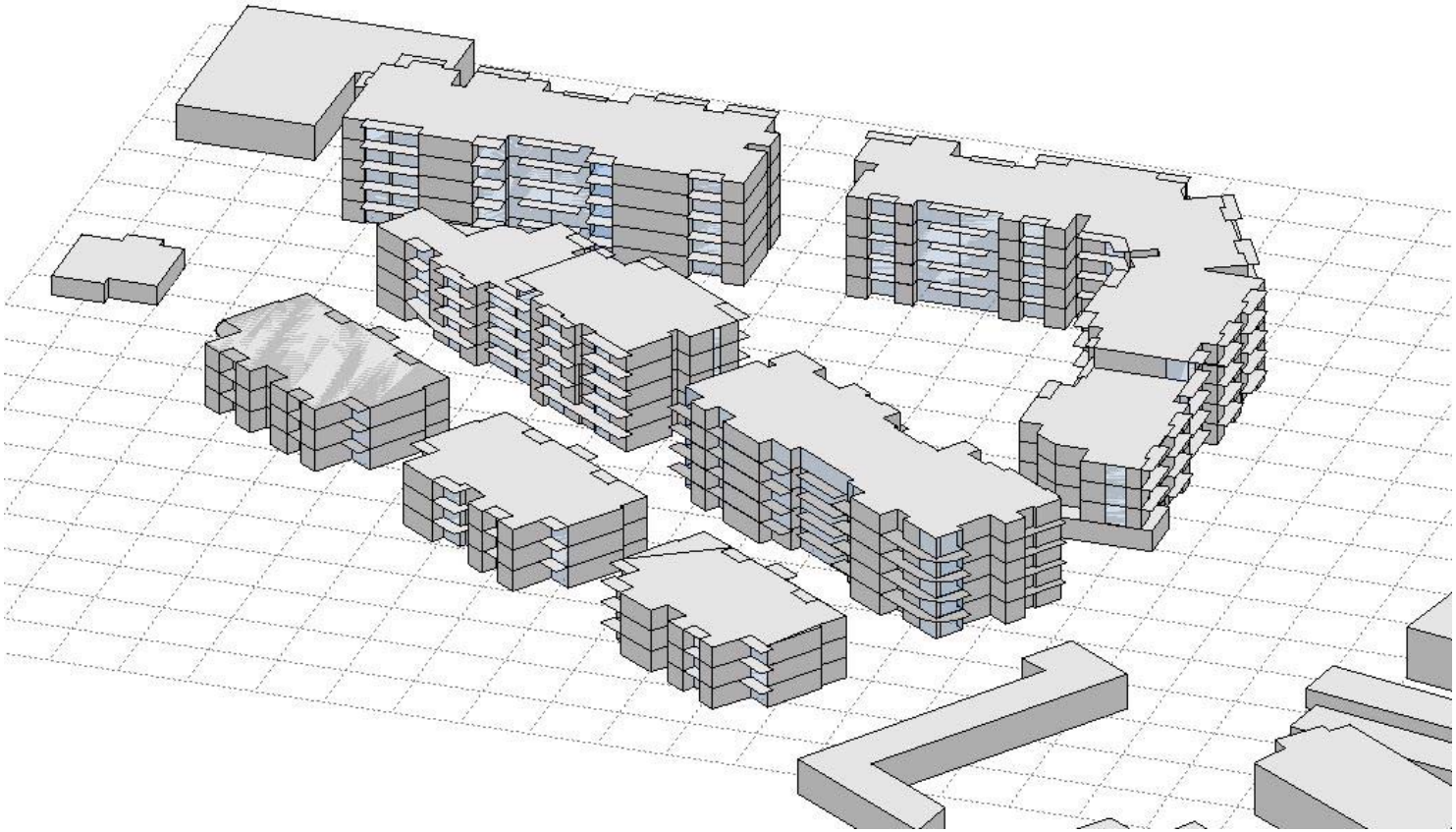


Figure 24 Development Sun's Eye View at 2.00 pm on 21 June

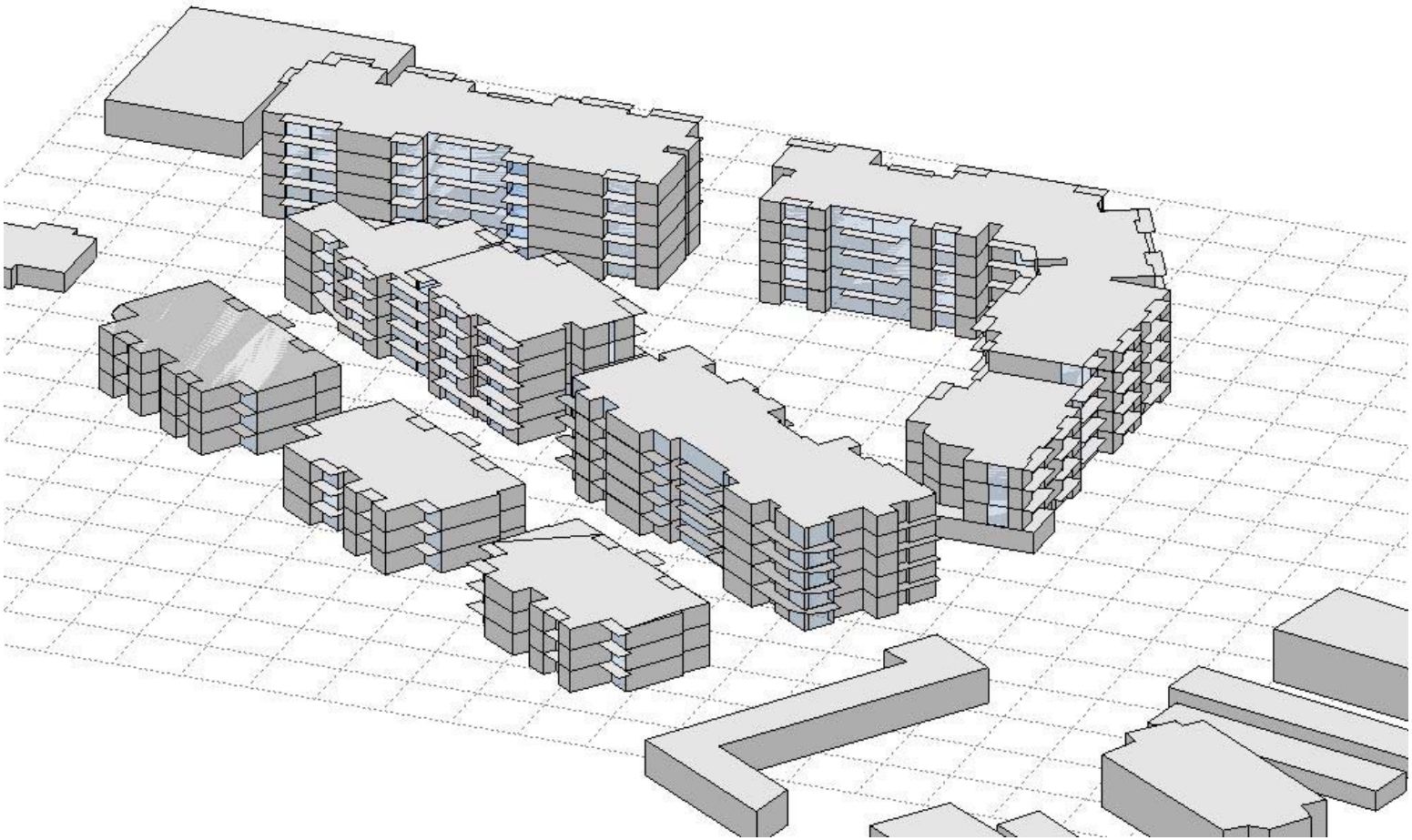


Figure 25 Development Sun's Eye View at 2.15 pm on 21 June

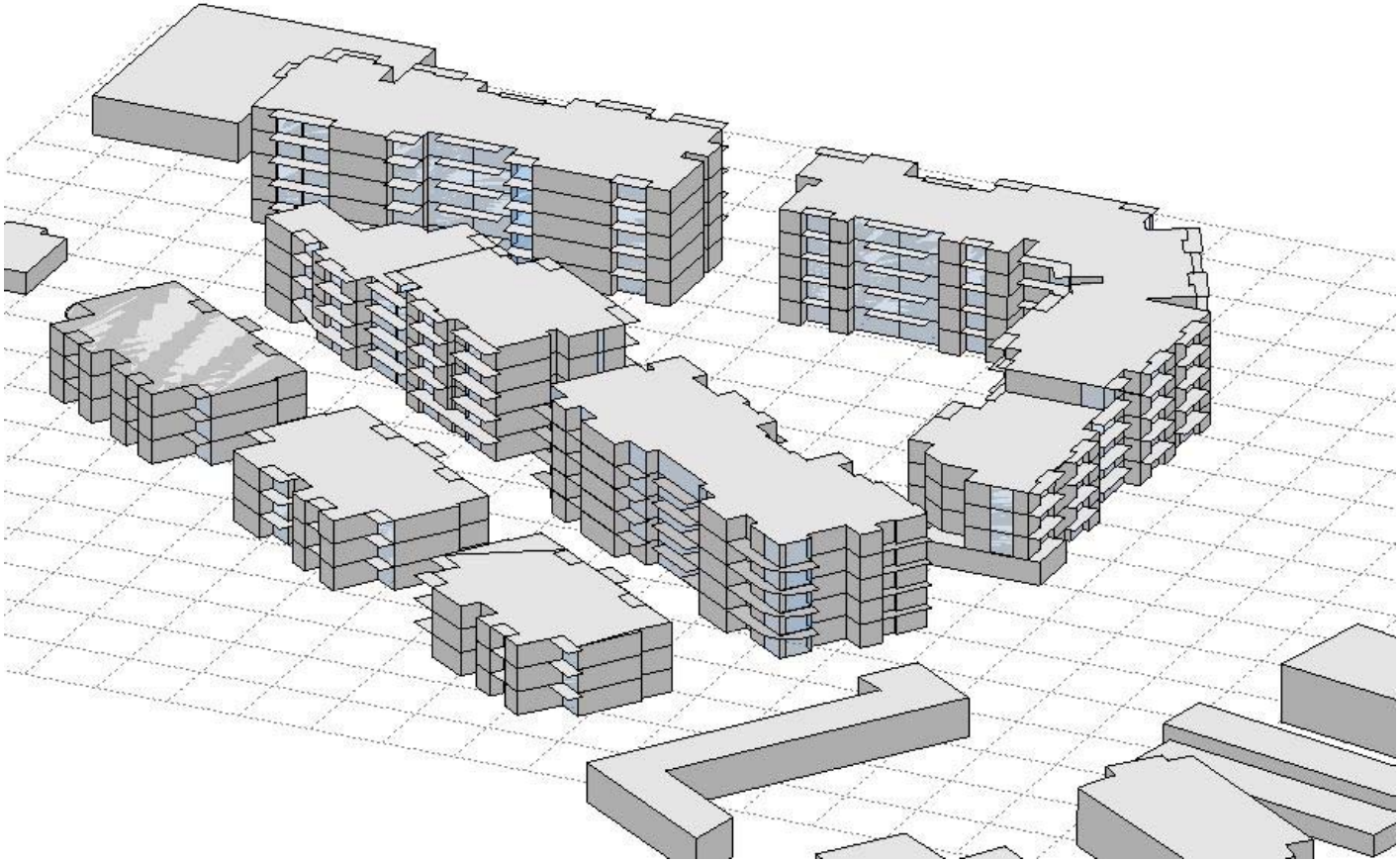


Figure 26 Development Sun's Eye View at 2.30 pm on 21 June

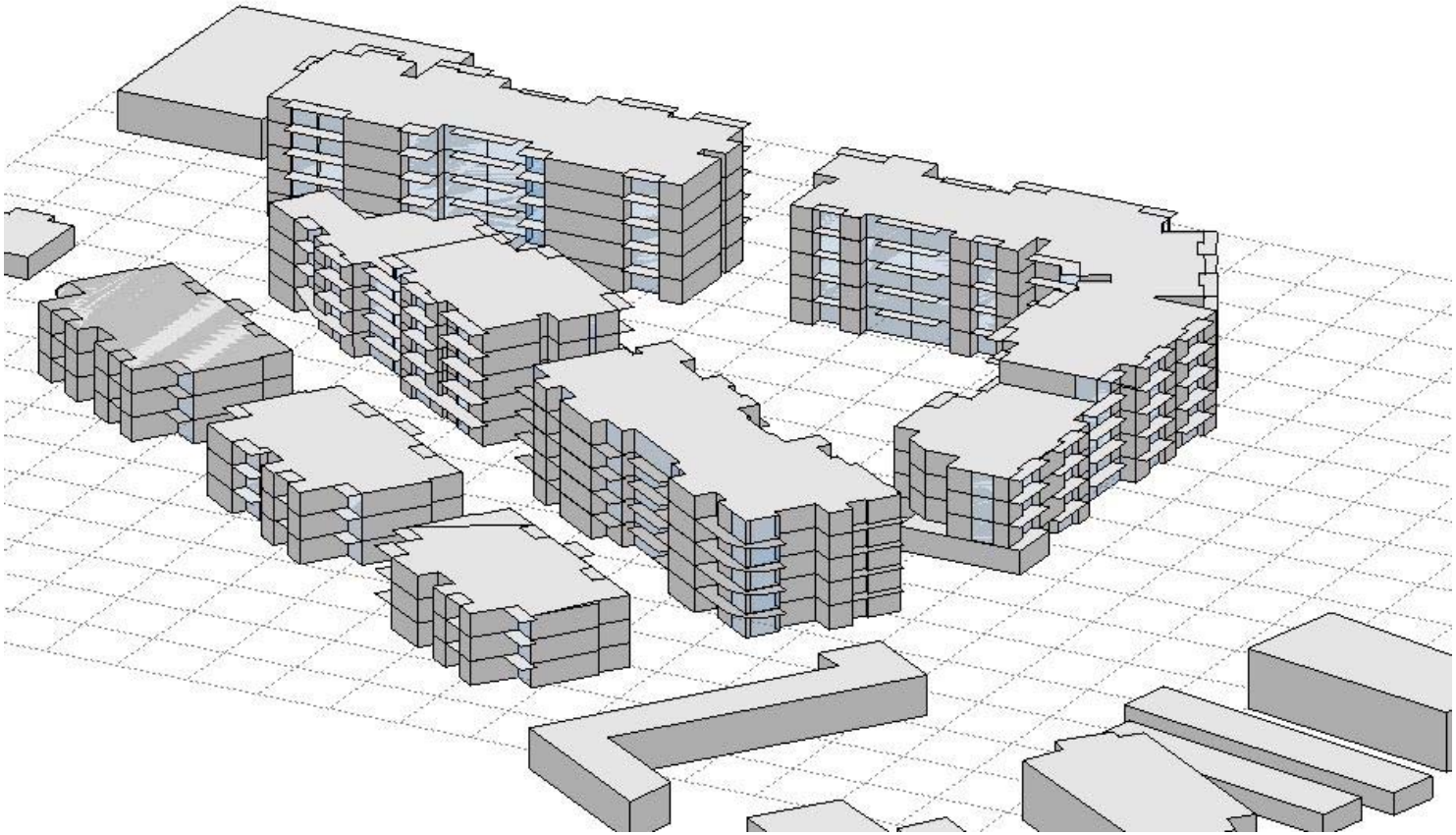


Figure 27 Development Sun's Eye View at 2.45 pm on 21 June

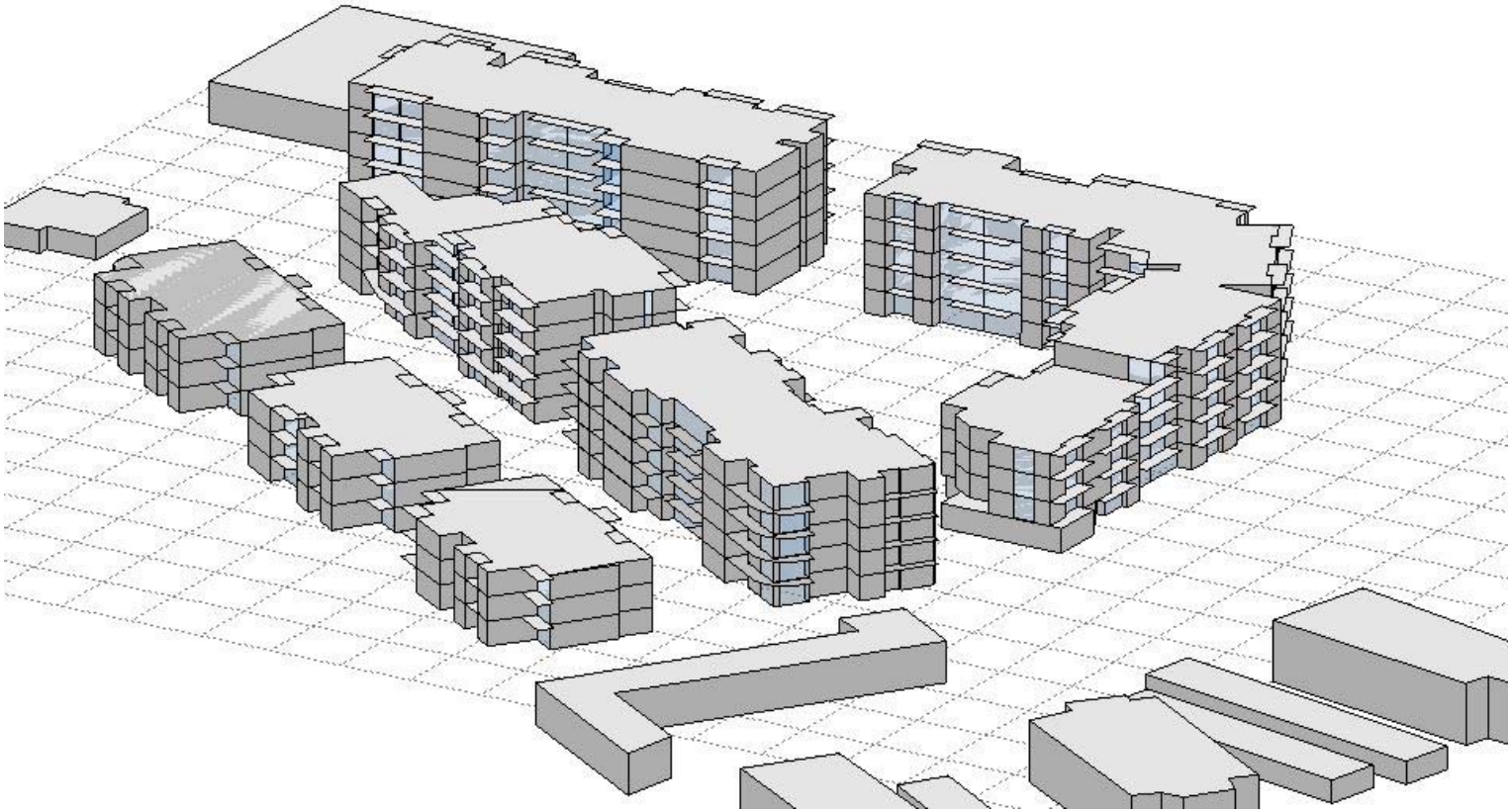


Figure 28 Development Sun's Eye View at 3.00 pm on 21 June