



**HEGGIES**

REPORT 10-8878-R1

{DOCPROPERTY "RHAReportStatus" \}\* MERGEFORMAT Revision 0

**Proposed Residential Development  
132-138 Killeaton St, St Ives  
Daylighting Assessment**

PREPARED FOR

**Meriton Apartments Pty Ltd  
Level 11, 528 Kent St  
SYDNEY NSW 2000**

6 JULY 2010

**HEGGIES PTY LTD**  
ABN 29 001 584 612



# Proposed Residential Development

## 132-138 Killeaton St, St Ives

### Daylighting Assessment

PREPARED BY:

Heggies Pty Ltd  
 2 Lincoln Street Lane Cove NSW 2066 Australia  
 (PO Box 176 Lane Cove NSW 1595 Australia)  
 Telephone 61 2 9427 8100 Facsimile 61 2 9427 8200  
 Email sydney@heggies.com Web www.heggies.com

**DISCLAIMER**

Reports produced by Heggies Pty Ltd are prepared for a particular Client's objective and are based on a specific scope, conditions and limitations, as agreed between Heggies and the Client. Information and/or report(s) prepared by Heggies may not be suitable for uses other than the original intended objective. No parties other than the Client should use any information and/or report(s) without first conferring with Heggies.

The information and/or report(s) prepared by Heggies should not be reproduced, presented or reviewed except in full. Before passing on to a third party any information and/or report(s) prepared by Heggies, the Client is to fully inform the third party of the objective and scope and any limitations and conditions, including any other relevant information which applies to the material prepared by Heggies. It is the responsibility of any third party to confirm whether information and/or report(s) prepared for others by Heggies are suitable for their specific objectives.



Heggies Pty Ltd is a Member Firm of the Association of Consulting Engineers Australia.



Heggies Pty Ltd operates under a Quality System which has been certified by SAI Global Pty Limited to comply with all the requirements of ISO 9001:2008 "Quality management systems - Requirements" (Licence No 3236).

This document has been prepared in accordance with the requirements of that System.

DOCUMENT CONTROL

Reference	Status	Date	Prepared	Checked	Authorised
10-8878-R1	Revision 0	6 July 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 the Residential Development on 132-138 Killeaton Street, St Ives. 3D AutoCAD software is utilised to produce daylight access diagrams used for this study. The proposed development site is bounded by Killeaton St on the north. The proposed development site is surrounded by low-rise residential premises and Masada College to the west.

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.

Using the latest 3D AutoCAD drawings package, sun's eye view diagrams were generated for each 15 minute interval between 9.00 am and 3.00 pm on the Winter Solstice (21 June). The overshadowing impact of surrounding buildings on the proposed development was modelled based on information provided by Meriton and Google earth pictures.

The subject site is zoned High Density Residential under the Ku-ring-gai Town Centres LEP 2010. Accordingly, it is considered appropriate to measure solar access in accordance with the high density provisions of the SEPP 65 Residential Flat Design Code – 2 hours between 9am and 3pm at mid-winter.

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

- The proposed development was found to provide **81.5 %** of the residential development with 2 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	5
1.1	Site Description	5
1.2	Proposed Development Description	5
2	SOLAR ACCESS TO RESIDENTIAL BUILDINGS	7
2.1	Daylighting Considerations	7
2.2	Solar Access Analysis	7
2.2.1	9.00 am – 3.00 pm on the Winter Solstice 21 June	7
3	CONCLUSION	9
Table 1	Solar Access Summary for each Residential Building within the Development between 9.00 am and 3.00 pm on June 21	8
Figure 1	Site Location	5
Figure 2	3D model of Proposed and Surrounding Developments	6

Appendix A Sun Eye View



# 1 INTRODUCTION

Heggies Pty Ltd (Heggies) has been commissioned by Meriton Apartments Pty Ltd (Meriton) to prepare a Daylighting Study for the Residential Development on 132-138 Killeaton Street, St Ives. 3D AutoCAD software is utilised to produce daylight access diagrams used for this study.

## 1.1 Site Description

The proposed development site is bounded by Killeaton St on the north. The proposed development site is surrounded by low-rise residential premises and Masada College to the west. **Figure 1** shows the aerial view of the development site location.

**Figure 1 Site Location**

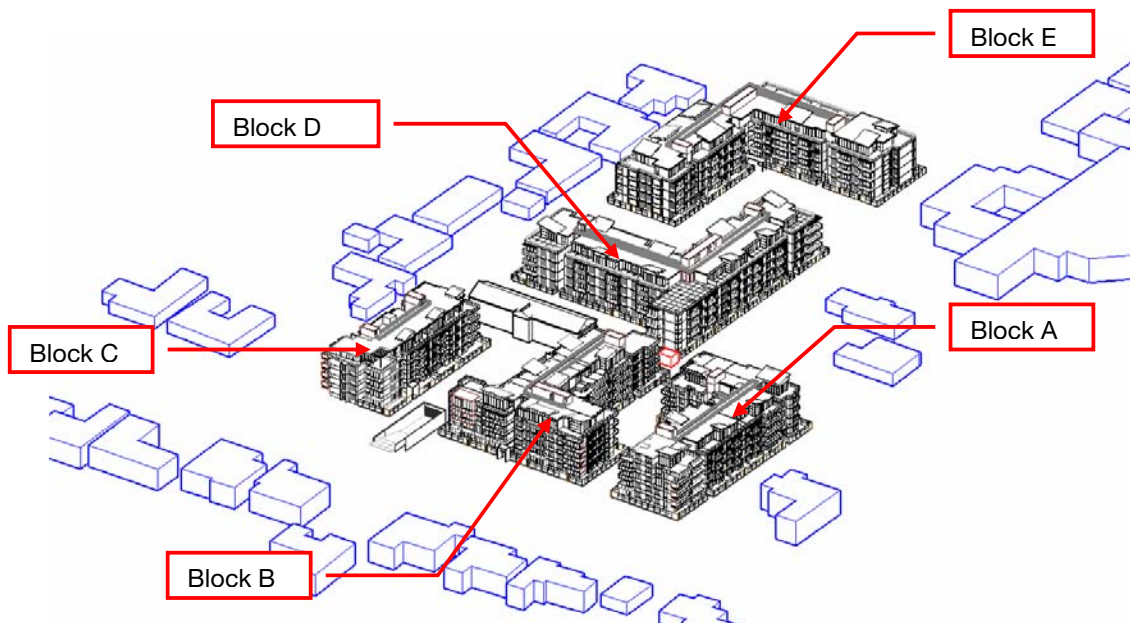


## 1.2 Proposed Development Description

The proposed development comprises of 5 apartment blocks. Each building consists of 5 storeys. **Figure 2** shows the northwest view of the 3D AutoCAD model of the proposed development at Killeaton Street (in black) and surrounding buildings having impact on the daylighting assessment (in blue).



Figure 2 3D model of Proposed and Surrounding Developments





## 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.

The subject site is zoned High Density Residential under the Ku-ring-gai Town Centres LEP 2010. Accordingly, it is considered appropriate to measure solar access in accordance with the high density provisions of the SEPP 65 Residential Flat Design Code – 2 hours between 9am and 3pm at mid-winter.

### 2.2 Solar Access Analysis

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

Using the latest 3D AutoCAD drawings package, sun's eye view diagrams were generated for each 15 minute interval between 9.00 am and 3.00 pm on the Winter Solstice (21 June). The overshadowing impact of surrounding buildings on the proposed development was modelled based on information provided by Meriton and Google earth pictures. 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**.

The following conclusions have been reached based on results of daylight modelling (see **Table 1** for more details):

- **81.5 %** of the residential development with 2 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.
- **62.4 %** 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 1 Solar Access Summary for each Residential Building within the Development between 9.00 am and 3.00 pm on June 21**

Level	Number of Apt	Num of Apt with >2hrs sunlight	Num of Apt with >3hrs sunlight	% of Apt with >2hrs sunlight	% of Apt with >3hrs sunlight
<b>BLOCK A</b>					
Ground	13	11	8	84.6%	61.5%
Level 1	13	10	8	76.9%	61.5%
Level 2	13	10	8	76.9%	61.5%
Level 3	13	10	8	76.9%	61.5%
Level 4	6	6	6	100.0%	100.0%
<b>Total</b>	<b>58</b>	<b>47</b>	<b>38</b>	<b>81.0%</b>	<b>65.5%</b>
<b>BLOCK B</b>					
Ground	13	10	7	76.9%	53.8%
Level 1	13	10	5	76.9%	38.5%
Level 2	13	11	7	84.6%	53.8%
Level 3	13	11	7	84.6%	53.8%
Level 4	7	7	7	100.0%	100.0%
<b>Total</b>	<b>59</b>	<b>49</b>	<b>33</b>	<b>83.1%</b>	<b>55.9%</b>
<b>BLOCK C</b>					
Ground	8	8	5	100.0%	62.5%
Level 1	8	8	5	100.0%	62.5%
Level 2	8	8	5	100.0%	62.5%
Level 3	8	8	5	100.0%	62.5%
Level 4	4	4	4	100.0%	100.0%
<b>Total</b>	<b>36</b>	<b>36</b>	<b>24</b>	<b>100.0%</b>	<b>66.7%</b>
<b>BLOCK D</b>					
Ground	17	12	10	70.6%	58.8%
Level 1	17	13	10	76.5%	58.8%
Level 2	17	13	10	76.5%	58.8%
Level 3	17	14	10	82.4%	58.8%
Level 4	9	7	7	77.8%	77.8%
<b>Total</b>	<b>77</b>	<b>59</b>	<b>47</b>	<b>76.6%</b>	<b>61.0%</b>
<b>BLOCK E</b>					
Ground	15	11	9	73.3%	60.0%
Level 1	15	11	9	73.3%	60.0%
Level 2	15	11	9	73.3%	60.0%
Level 3	15	11	9	73.3%	60.0%
Level 4	8	8	8	100.0%	100.0%
<b>Total</b>	<b>68</b>	<b>52</b>	<b>44</b>	<b>76.5%</b>	<b>64.7%</b>
<b>Whole Development</b>					
<b>Total</b>	<b>298</b>	<b>243</b>	<b>186</b>	<b>81.5%</b>	<b>62.4%</b>



### 3 CONCLUSION

Heggies Pty Ltd (Heggies) has been commissioned by Meriton Apartments Pty Ltd (Meriton) to prepare a Daylighting Study for the Residential Development on 132-138 Killeaton Street, St Ives. 3D AutoCAD software is utilised to produce daylight access diagrams used for this study. The proposed development site is bounded by Killeaton St on the north. The proposed development site is surrounded by low-rise residential premises and Masada College to the west.

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.

The subject site is zoned High Density Residential under the Ku-ring-gai Town Centres LEP 2010. Accordingly, it is considered appropriate to measure solar access in accordance with the high density provisions of the SEPP 65 Residential Flat Design Code – 2 hours between 9am and 3pm at mid-winter.

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

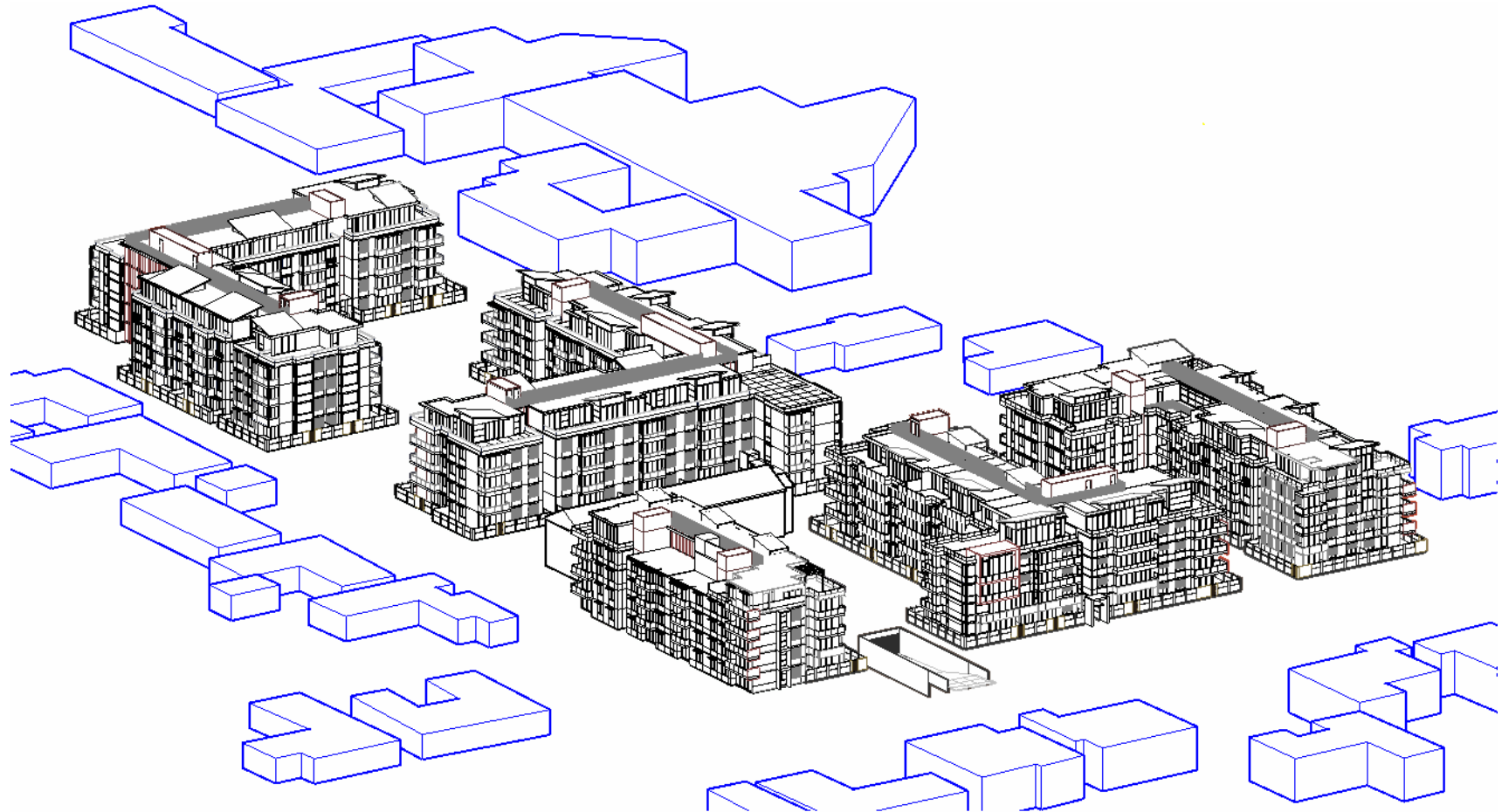
- The proposed development was found to provide **81.5 %** of the residential development with 2 hrs or more sunlight on the Winter Solstice, between the hours of 9.00 am to 3.00 pm at a 'sampling rate' of 15 minute intervals.
- Compliance with SEPP 65 supported by the Residential Flat Design Code - Part 03 Building Design is achieved.

# Appendix A

Report 10-8878-R1  
Page 1 of 1

SUN EYE VIEW

Figure 3 Development Sun's Eye View at 9.00 am on 21 June

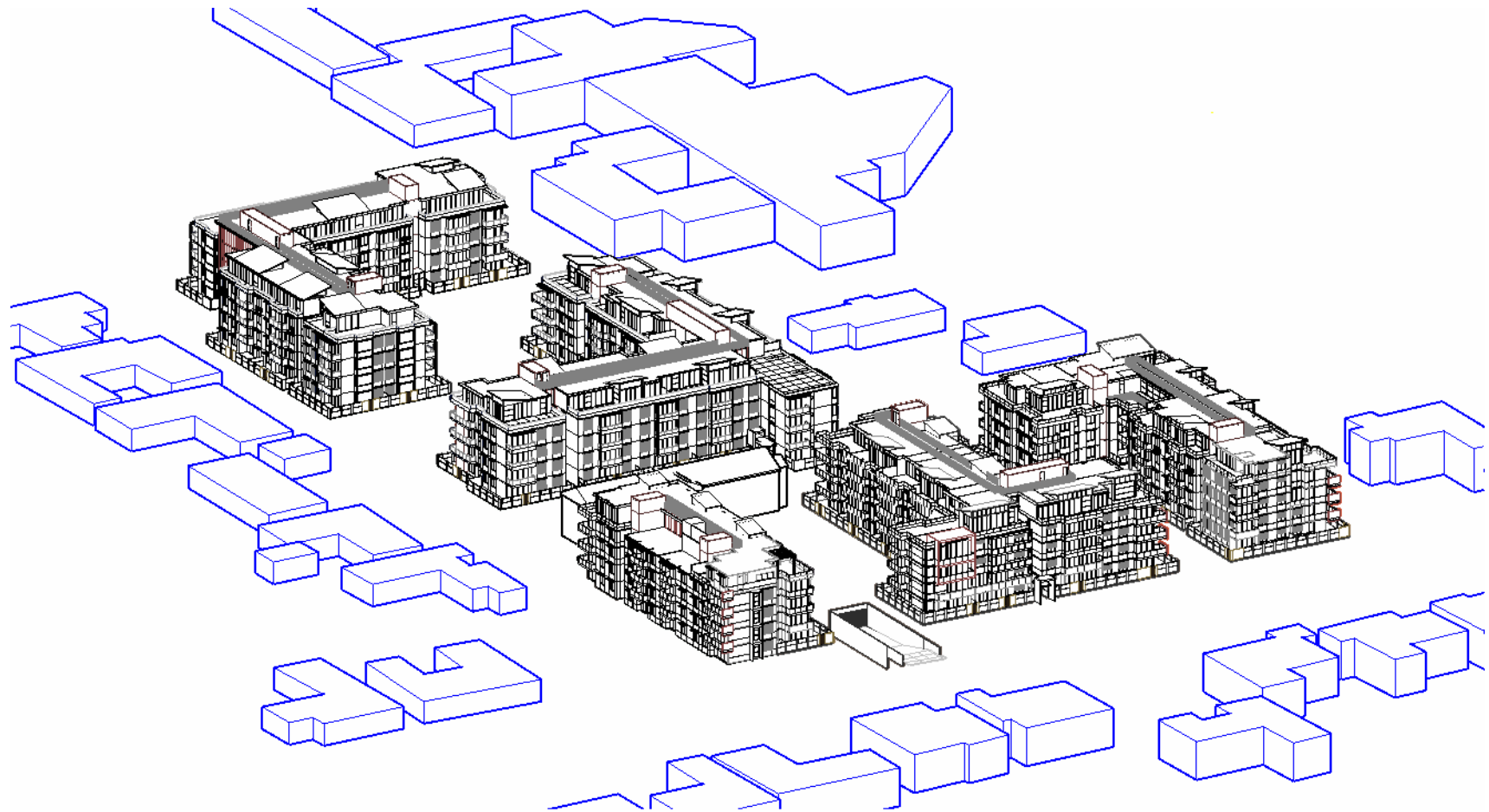


# Appendix A

Report 10-8878-R1  
Page 2 of 2

SUN EYE VIEW

Figure 4 Development Sun's Eye View at 9.15 am on 21 June

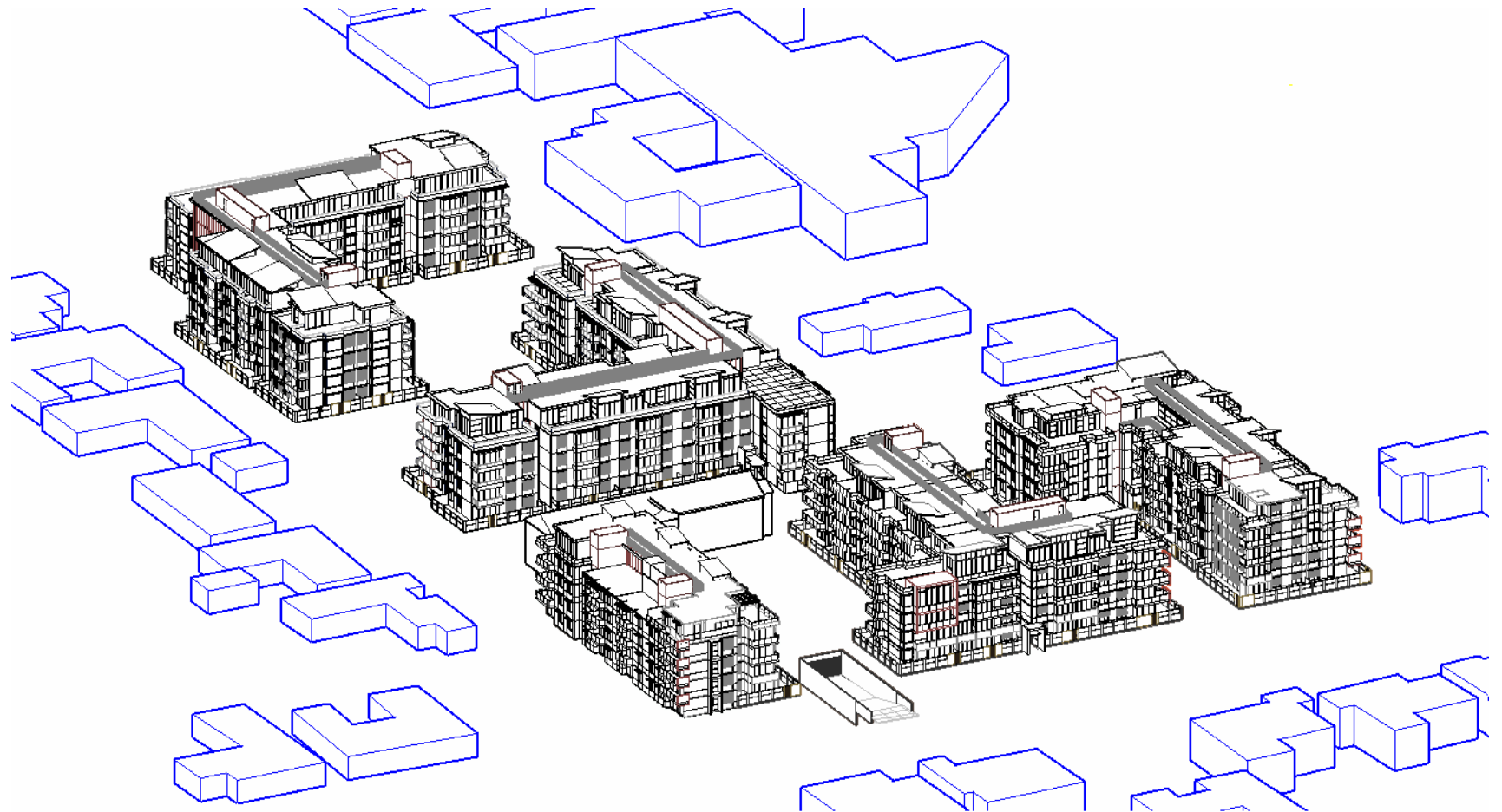


# Appendix A

Report 10-8878-R1  
Page 3 of 3

SUN EYE VIEW

Figure 5 Development Sun's Eye View at 9.30 am on 21 June

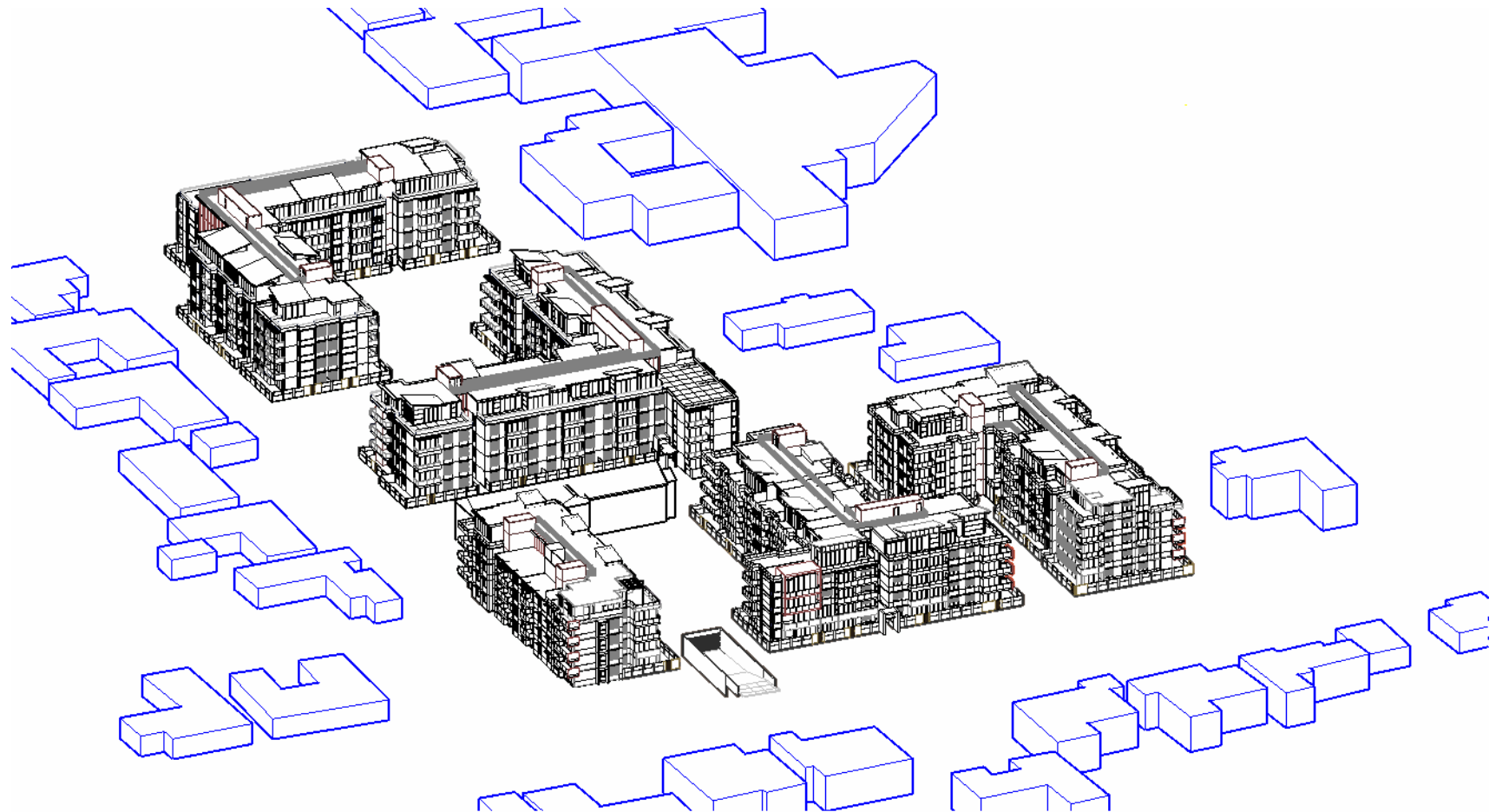


# Appendix A

Report 10-8878-R1  
Page 4 of 4

SUN EYE VIEW

Figure 6 Development Sun's Eye View at 9.45 am on 21 June

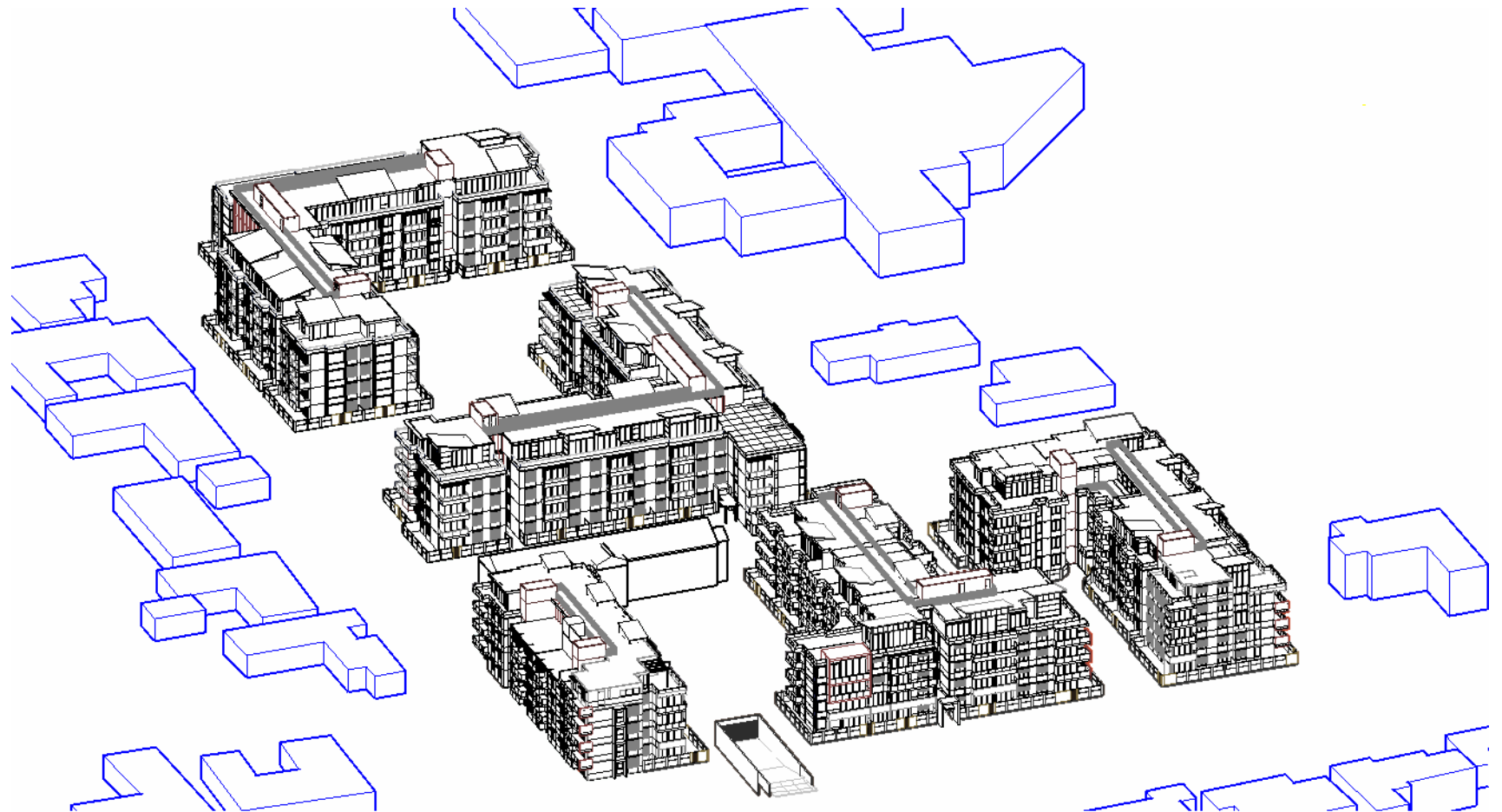


# Appendix A

Report 10-8878-R1  
Page 5 of 5

SUN EYE VIEW

Figure 7 Development Sun's Eye View at 10.00 am on 21 June

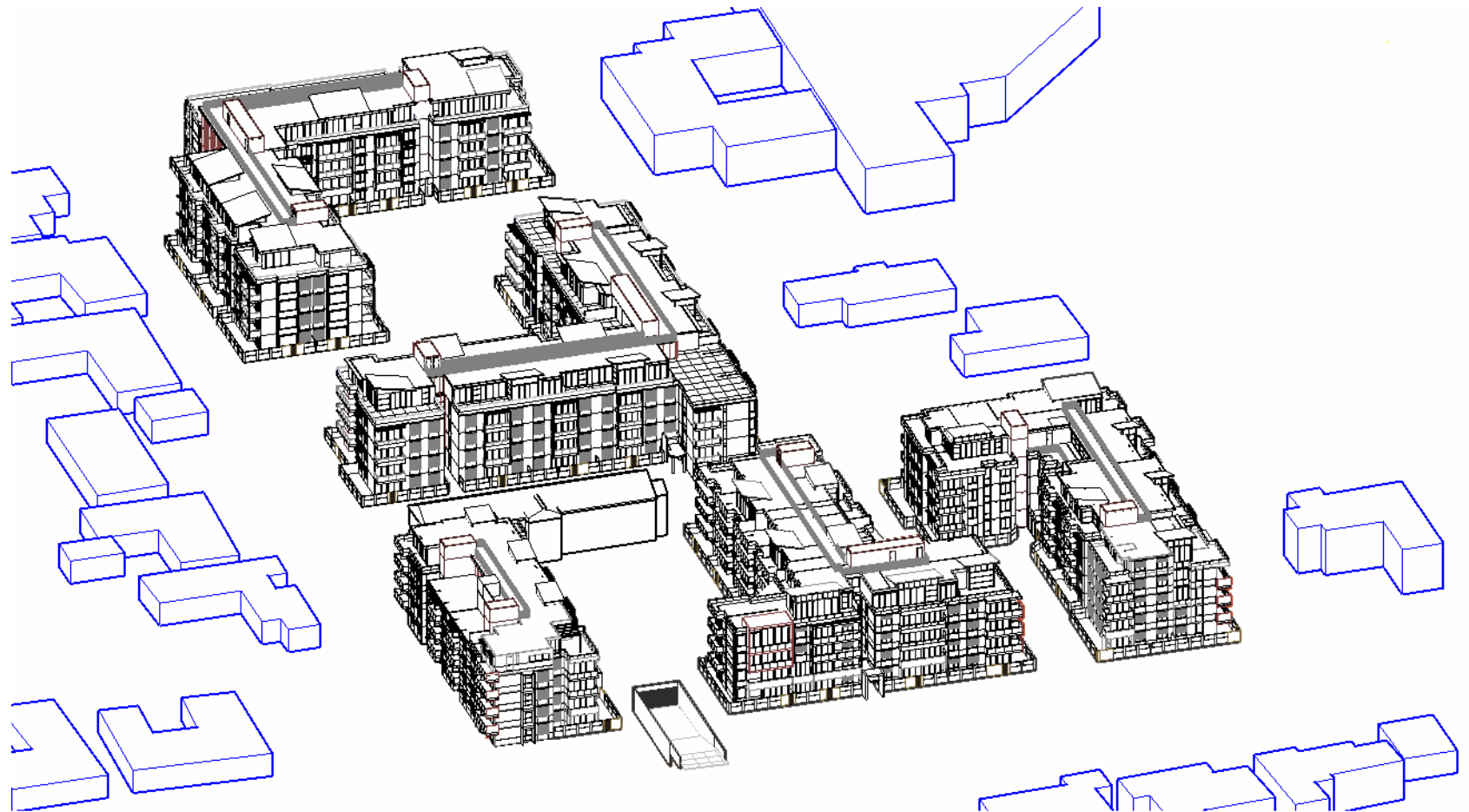


# Appendix A

Report 10-8878-R1  
Page 6 of 6

SUN EYE VIEW

Figure 8 Development Sun's Eye View at 10.15 am on 21 June

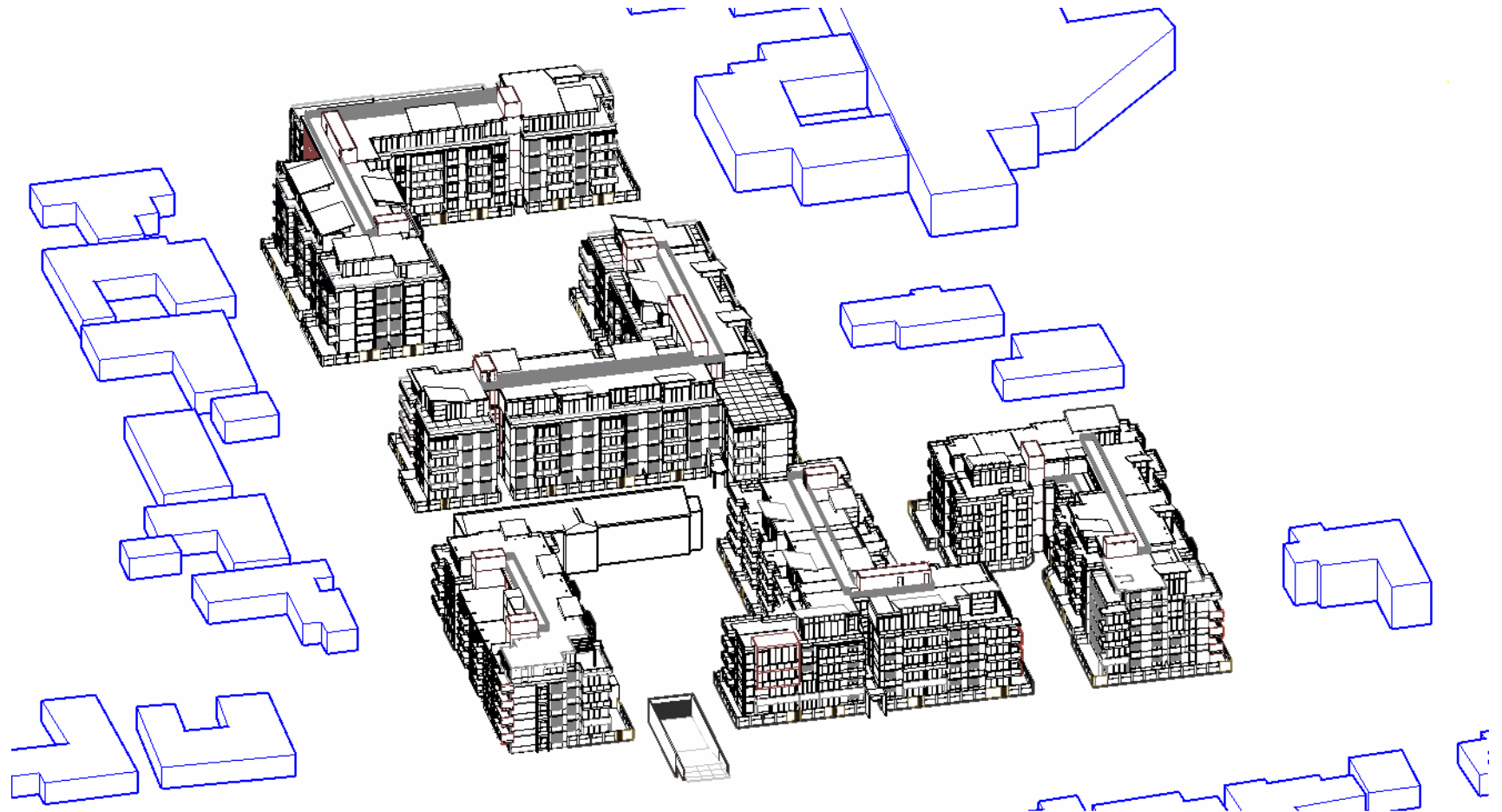


# Appendix A

Report 10-8878-R1  
Page 7 of 7

SUN EYE VIEW

Figure 9 Development Sun's Eye View at 10.30 am on 21 June



# Appendix A

Report 10-8878-R1  
Page 8 of 8

SUN EYE VIEW

Figure 10 Development Sun's Eye View at 10.45 am on 21 June

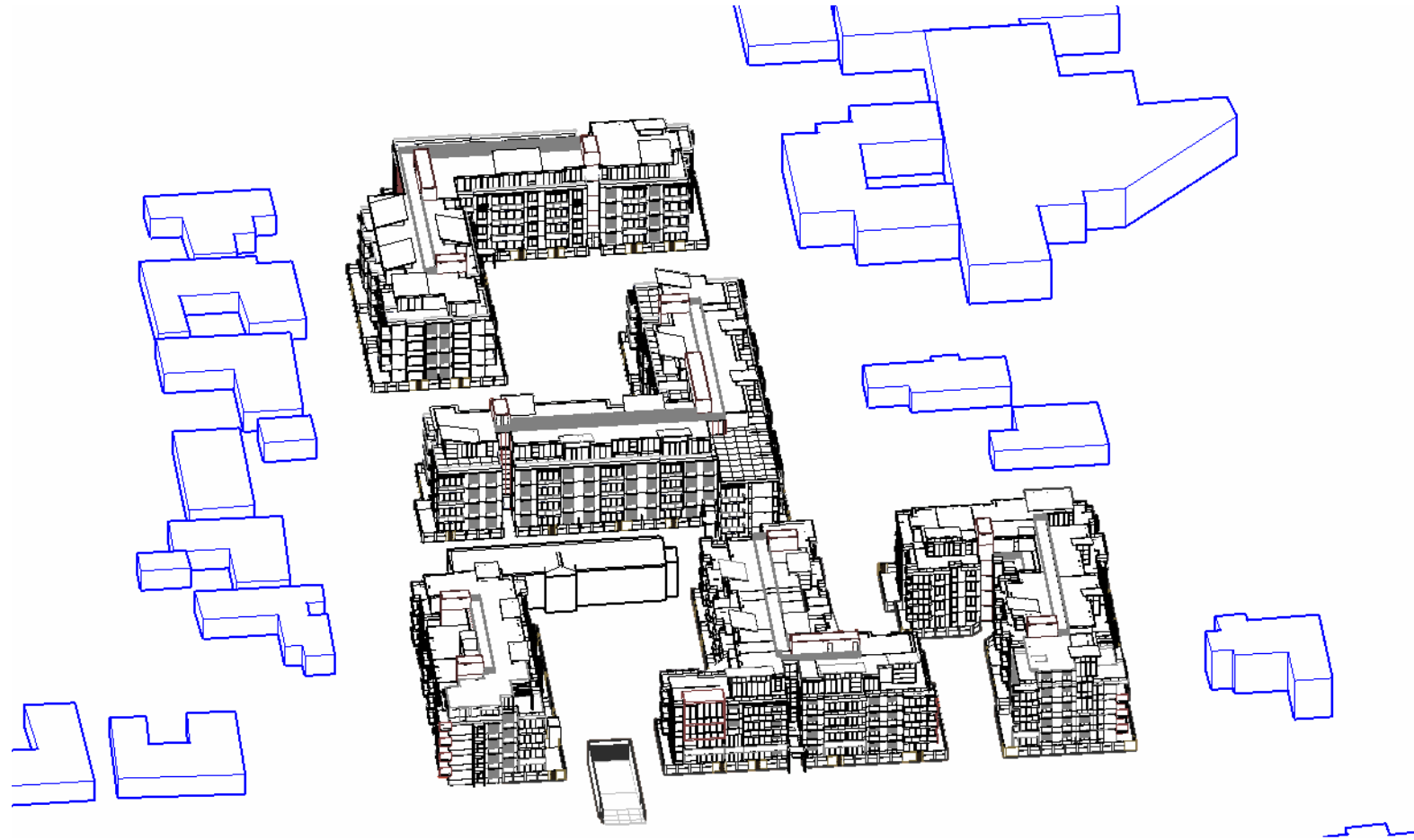


# Appendix A

Report 10-8878-R1  
Page 9 of 9

SUN EYE VIEW

Figure 11 Development Sun's Eye View at 11.00 am on 21 June



# Appendix A

Report 10-8878-R1

Page 10 of 10

SUN EYE VIEW

Figure 12 Development Sun's Eye View at 11.15 am on 21 June



# Appendix A

Report 10-8878-R1  
Page 11 of 11

SUN EYE VIEW

Figure 13 Development Sun's Eye View at 11.30 am on 21 June



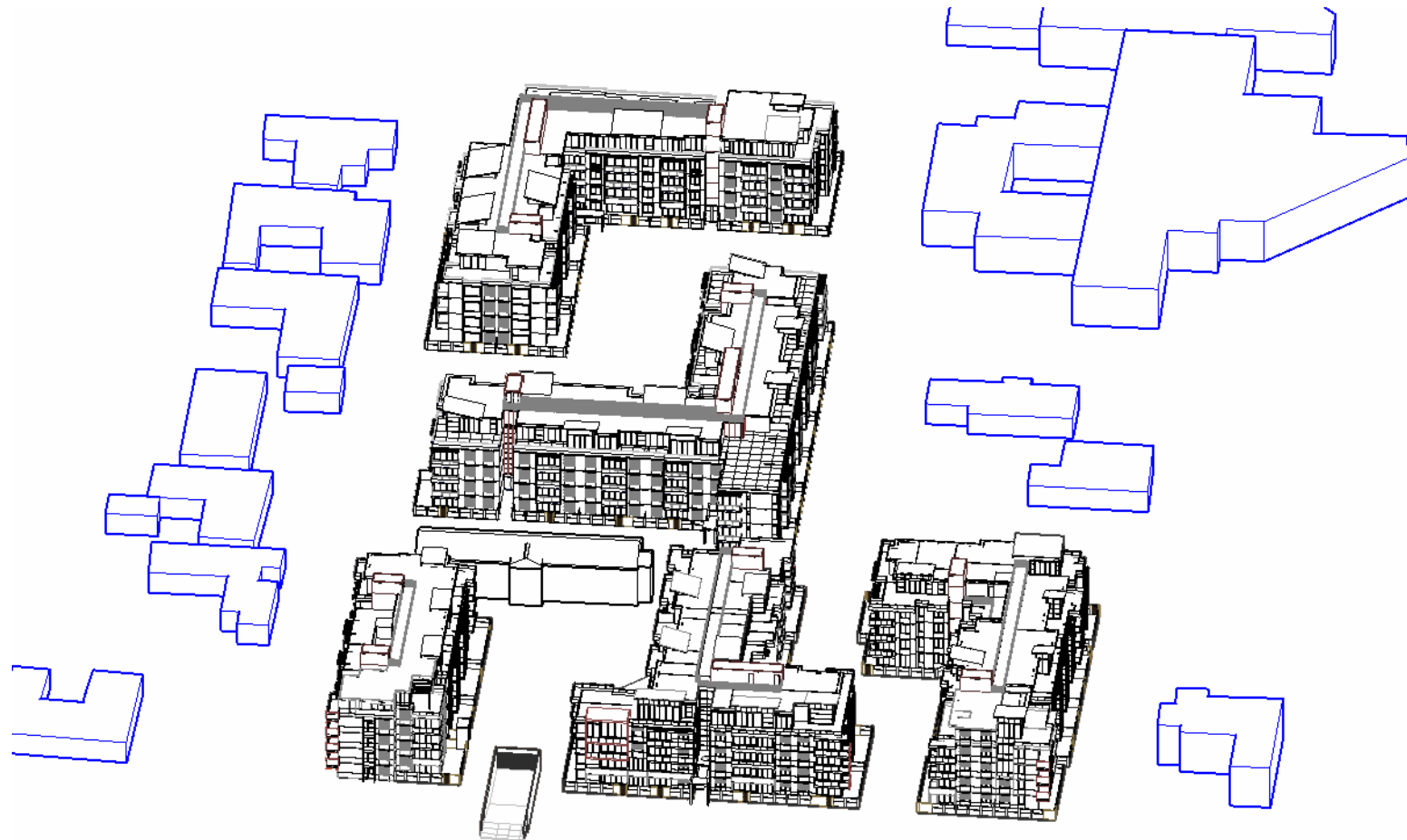
# Appendix A

Report 10-8878-R1

Page 12 of 12

SUN EYE VIEW

Figure 14 Development Sun's Eye View at 11.45 am on 21 June



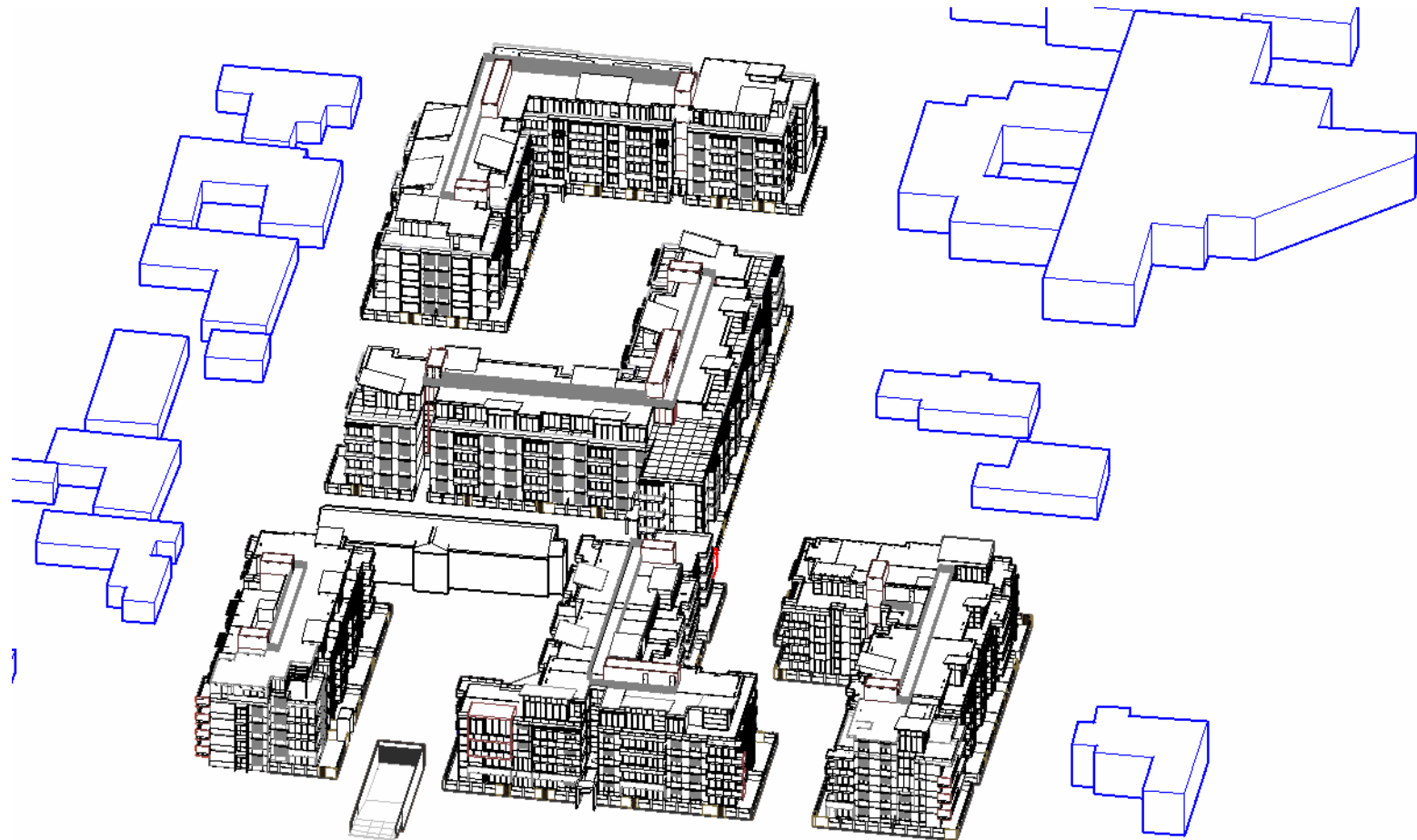
# Appendix A

Report 10-8878-R1

Page 13 of 13

SUN EYE VIEW

Figure 15 Development Sun's Eye View at 12.00 pm on 21 June

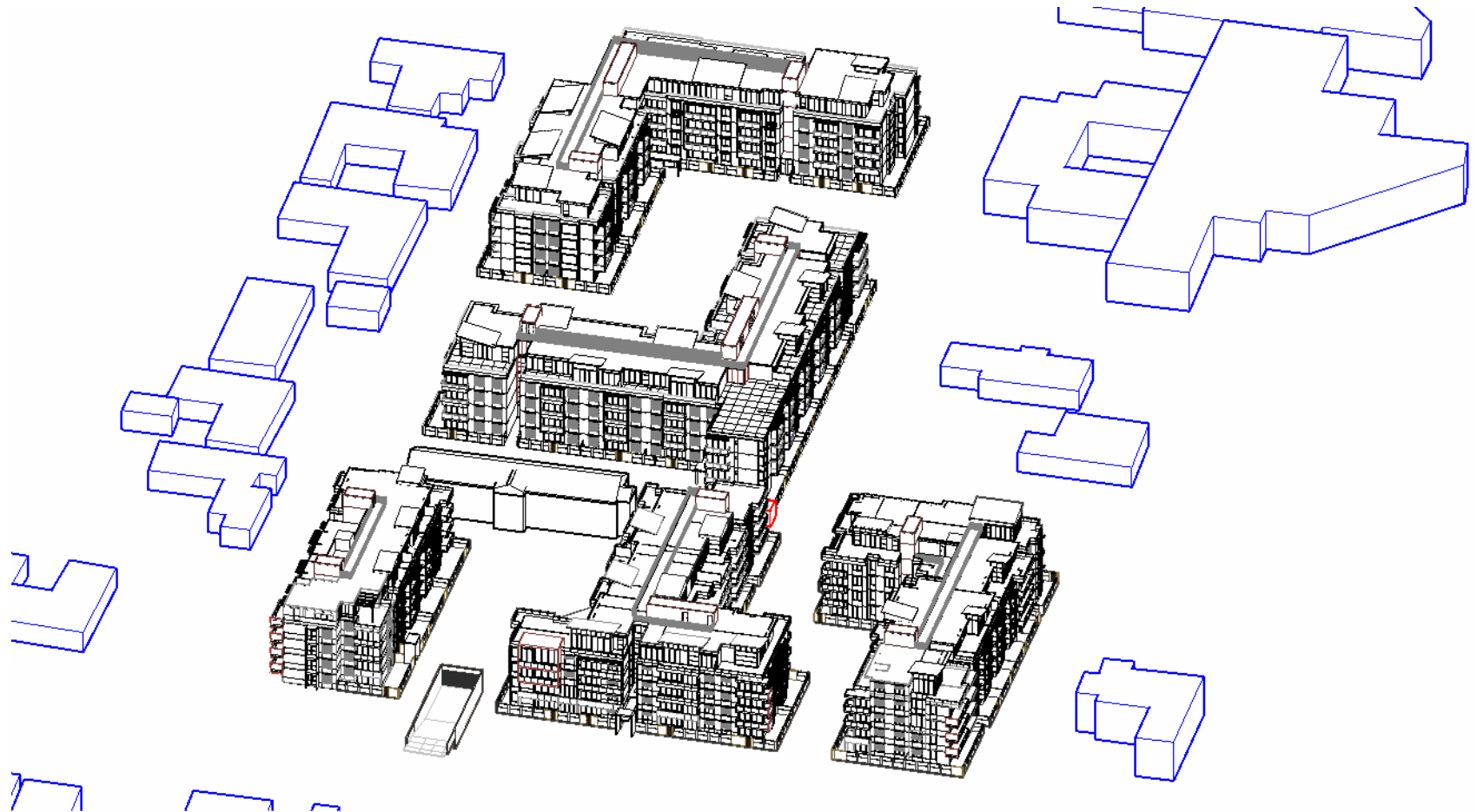


# Appendix A

Report 10-8878-R1  
Page 14 of 14

SUN EYE VIEW

Figure 16 Development Sun's Eye View at 12.15 pm on 21 June

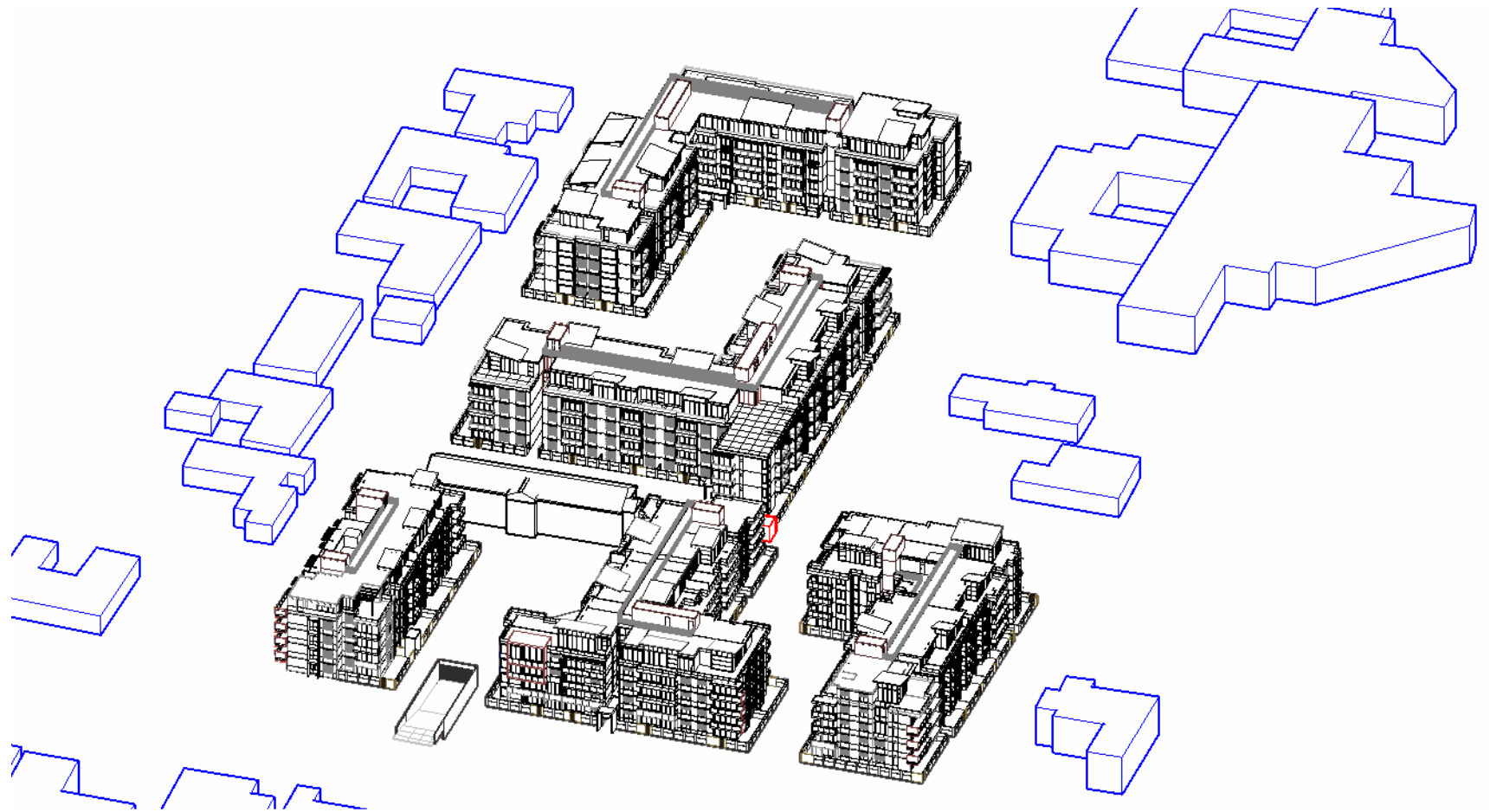


# Appendix A

Report 10-8878-R1  
Page 15 of 15

SUN EYE VIEW

Figure 17 Development Sun's Eye View at 12.30 pm on 21 June

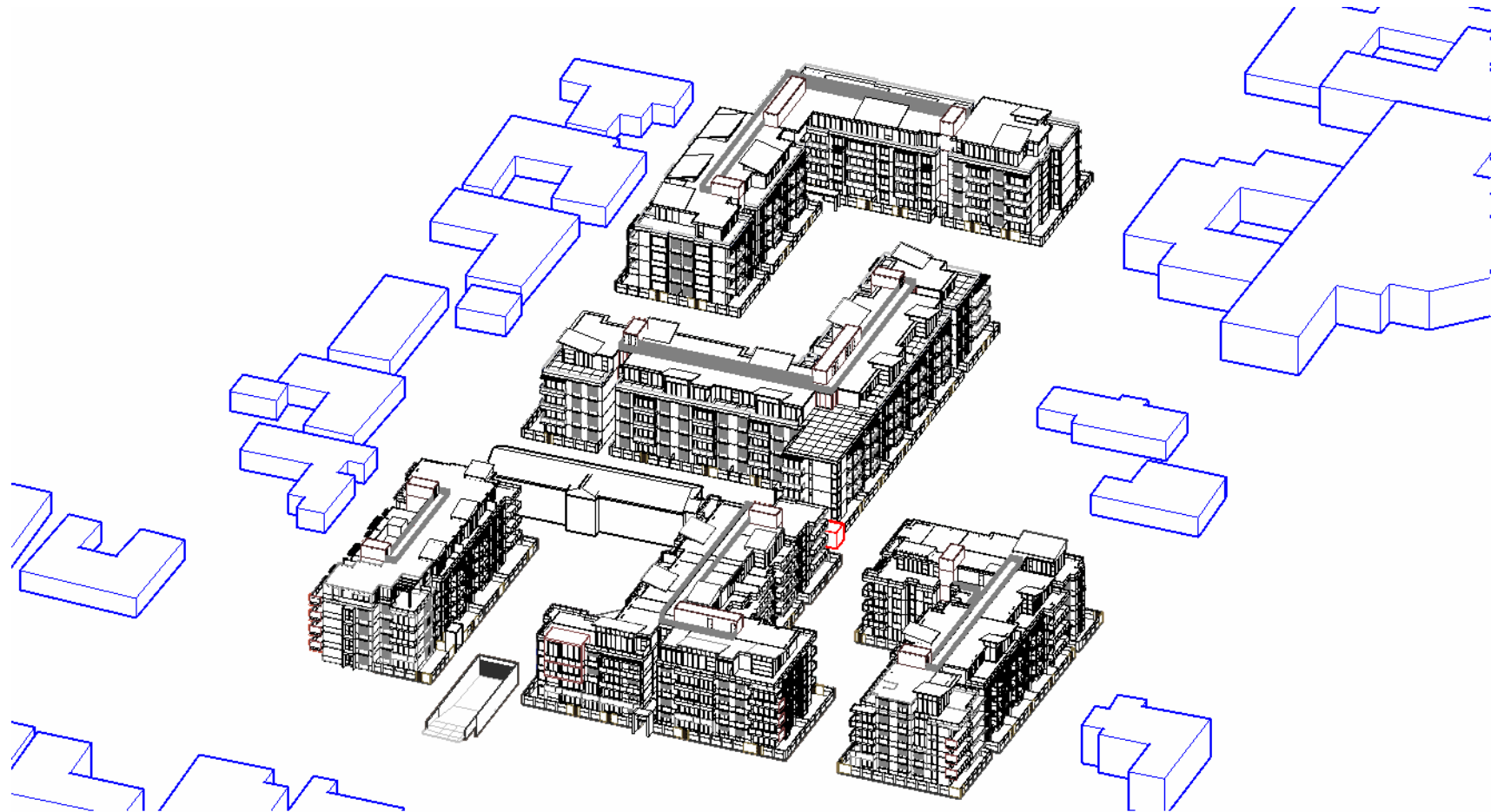


# Appendix A

Report 10-8878-R1  
Page 16 of 16

SUN EYE VIEW

Figure 18 Development Sun's Eye View at 12.45 pm on 21 June

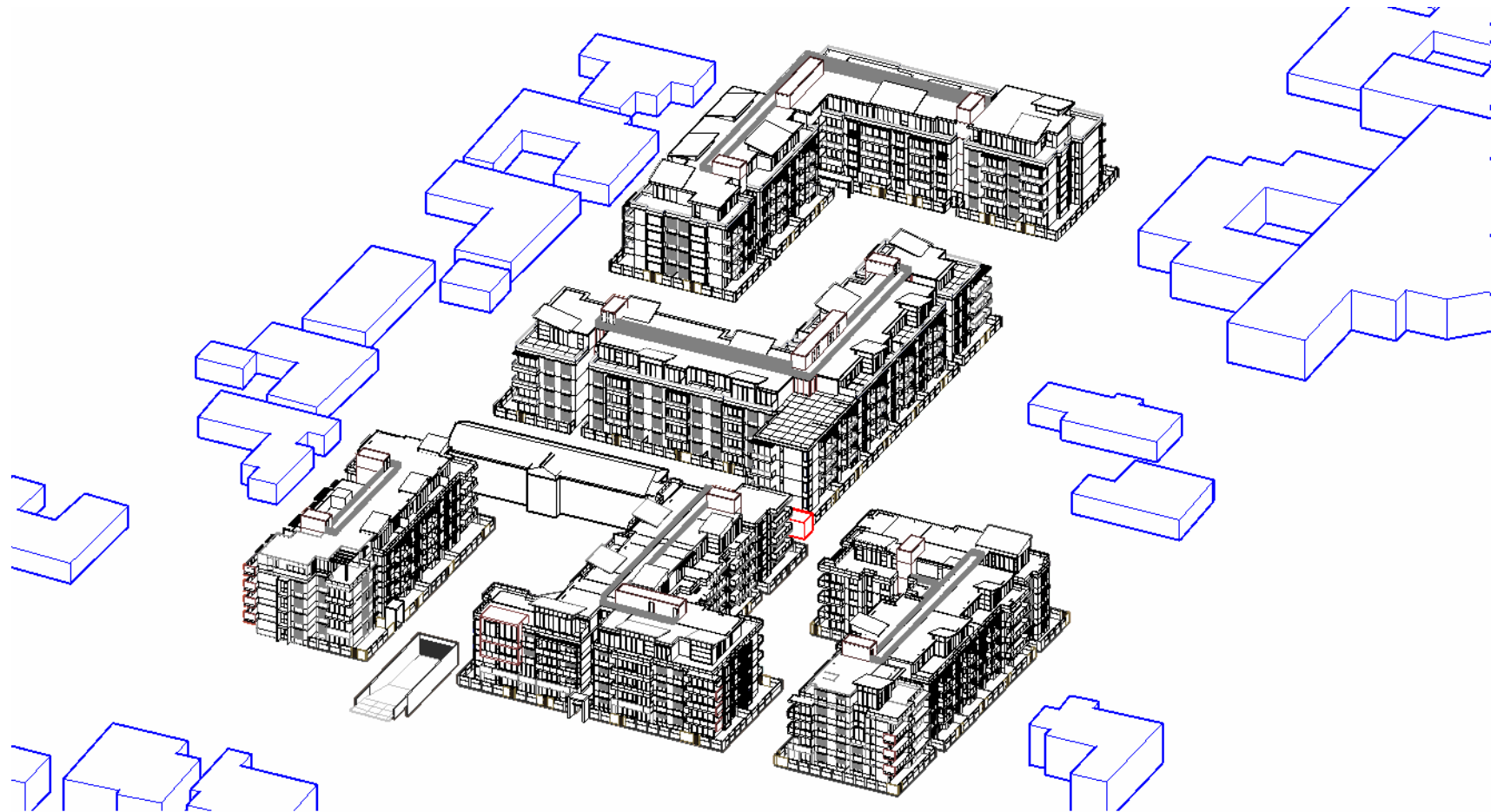


# Appendix A

Report 10-8878-R1  
Page 17 of 17

SUN EYE VIEW

Figure 19 Development Sun's Eye View at 13.00 pm on 21 June

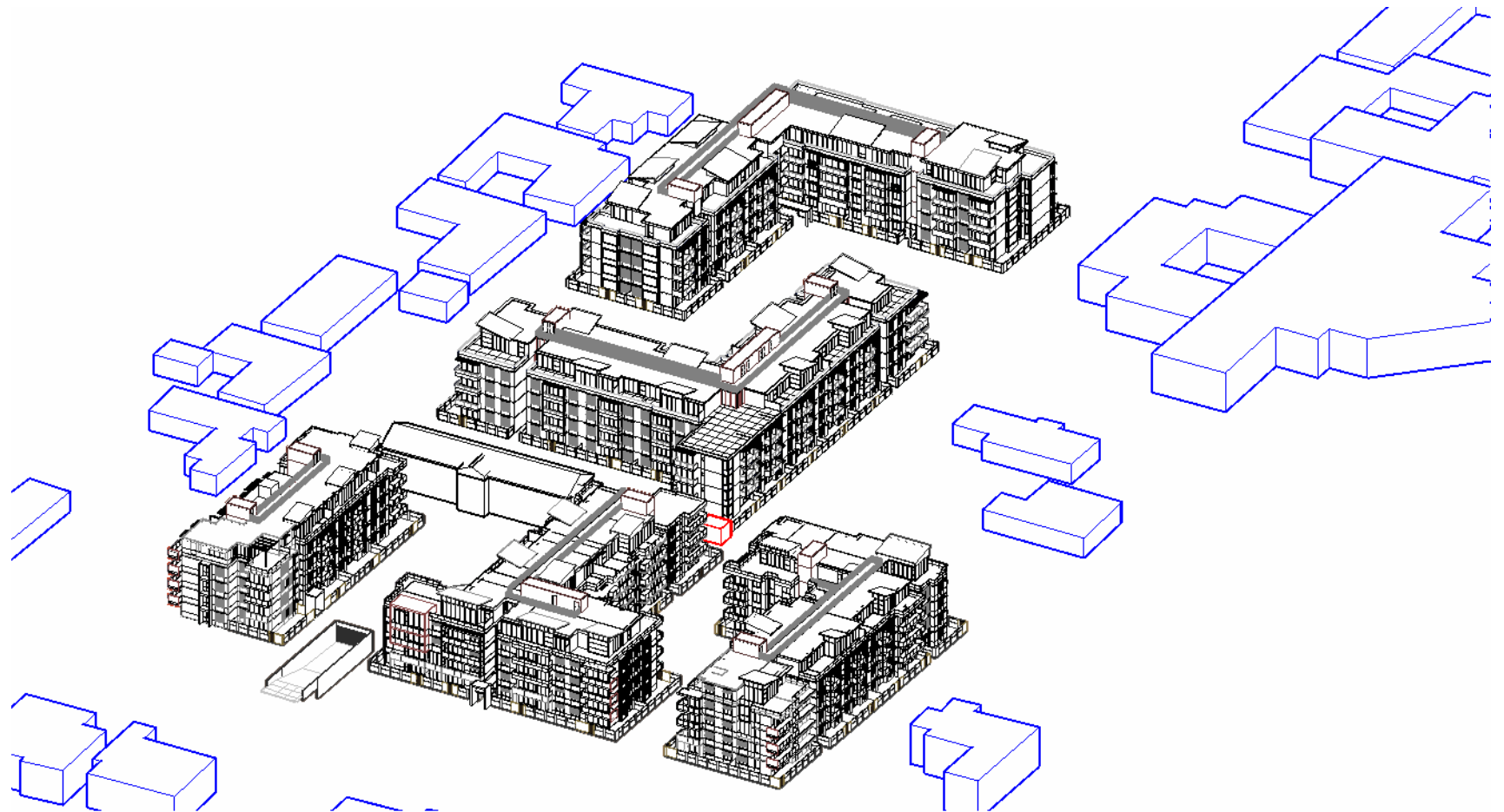


# Appendix A

Report 10-8878-R1  
Page 18 of 18

SUN EYE VIEW

Figure 20 Development Sun's Eye View at 13.15 pm on 21 June

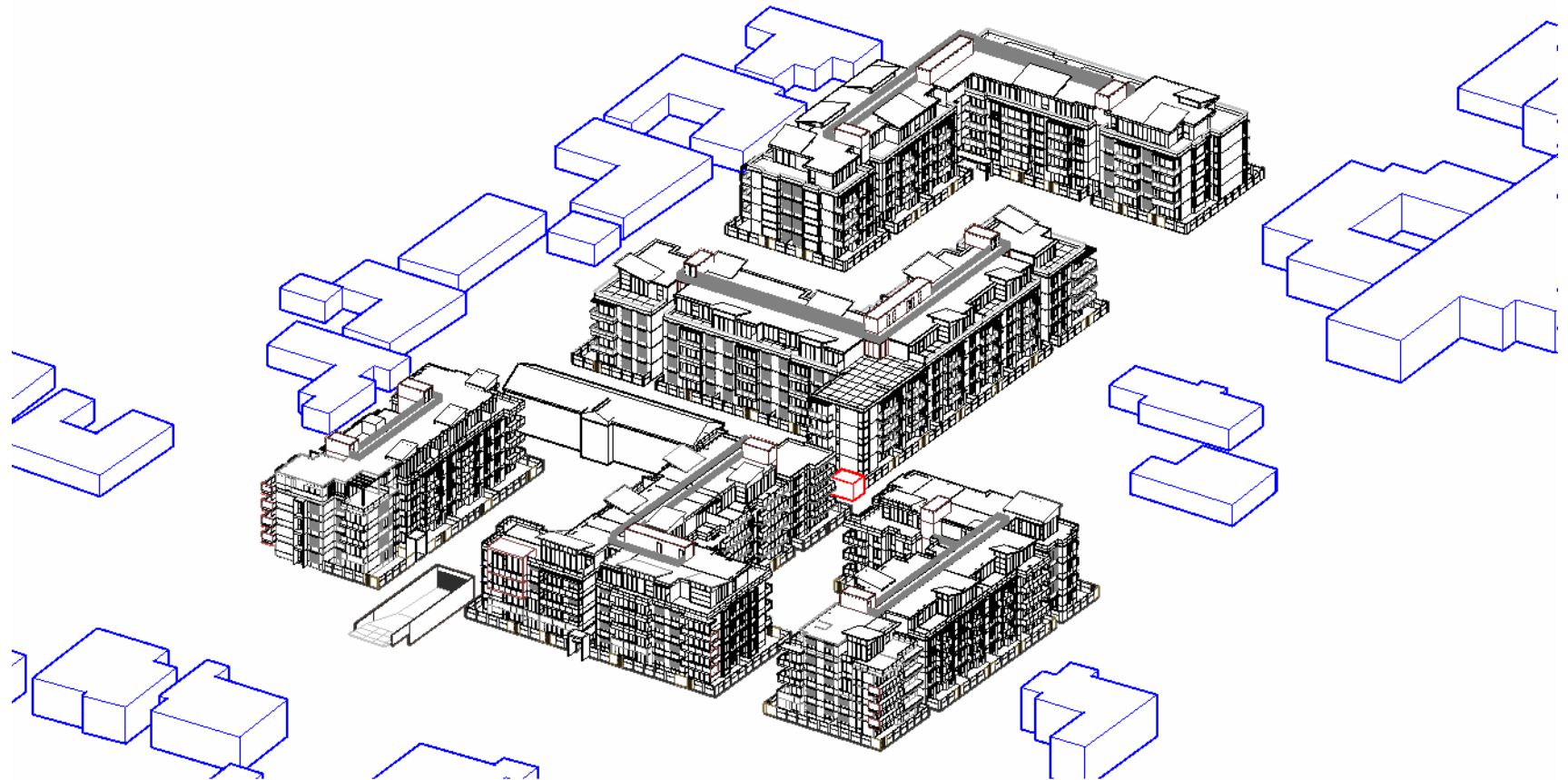


# Appendix A

Report 10-8878-R1  
Page 19 of 19

SUN EYE VIEW

Figure 21 Development Sun's Eye View at 13.30 pm on 21 June

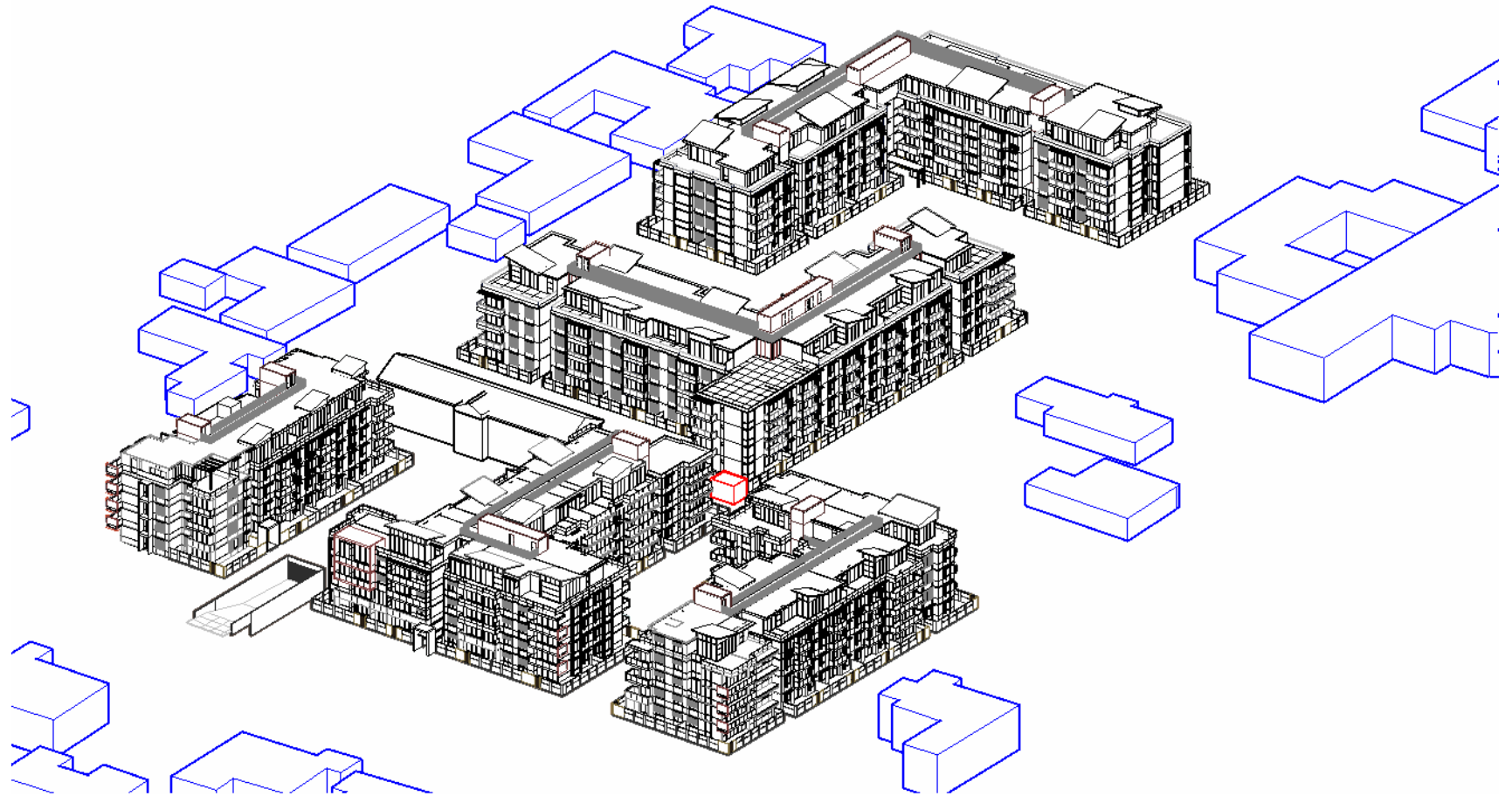


# Appendix A

Report 10-8878-R1  
Page 20 of 20

SUN EYE VIEW

Figure 22 Development Sun's Eye View at 13.45 pm on 21 June

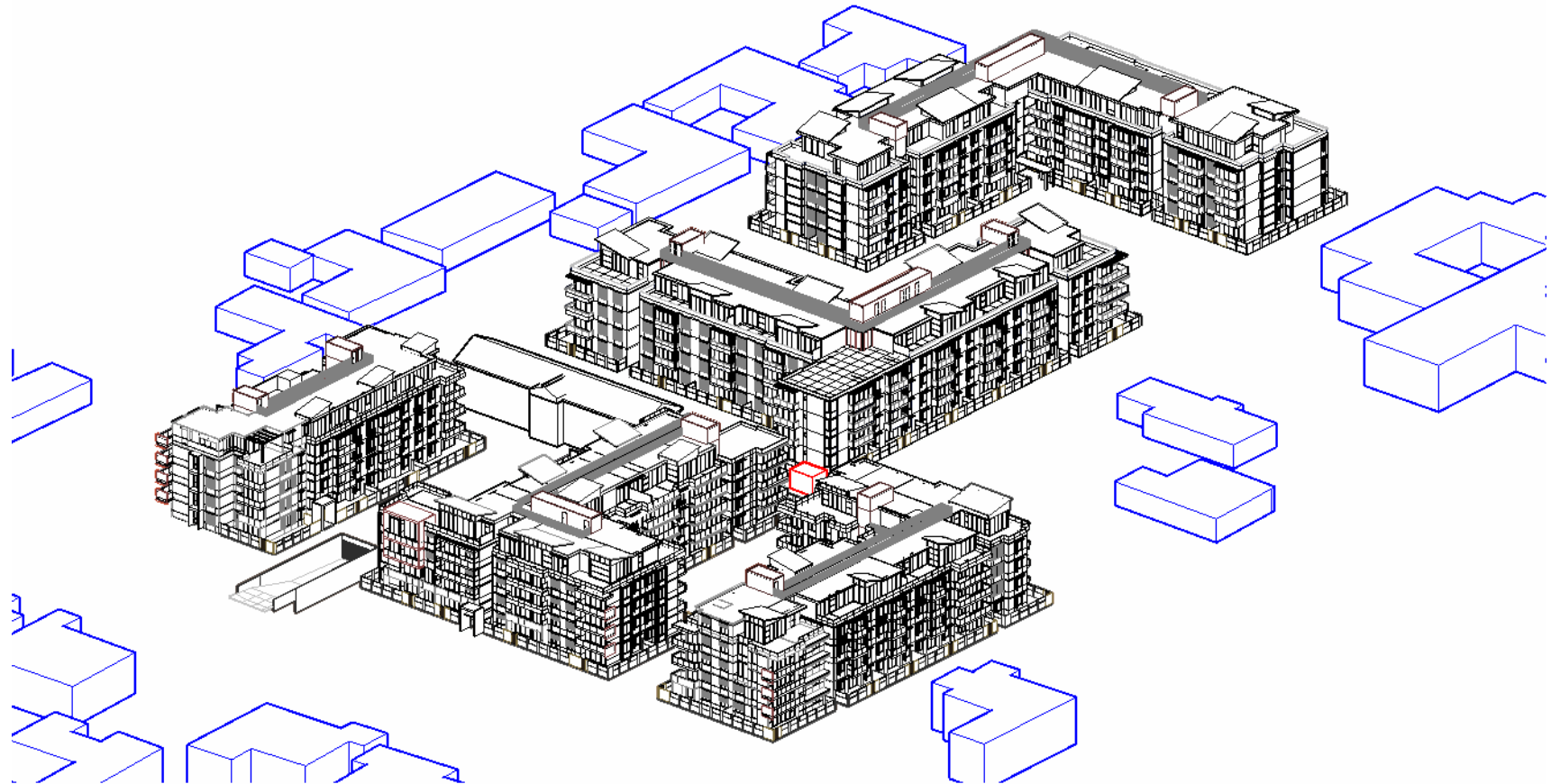


# Appendix A

Report 10-8878-R1  
Page 21 of 21

SUN EYE VIEW

Figure 23 Development Sun's Eye View at 14.00 pm on 21 June

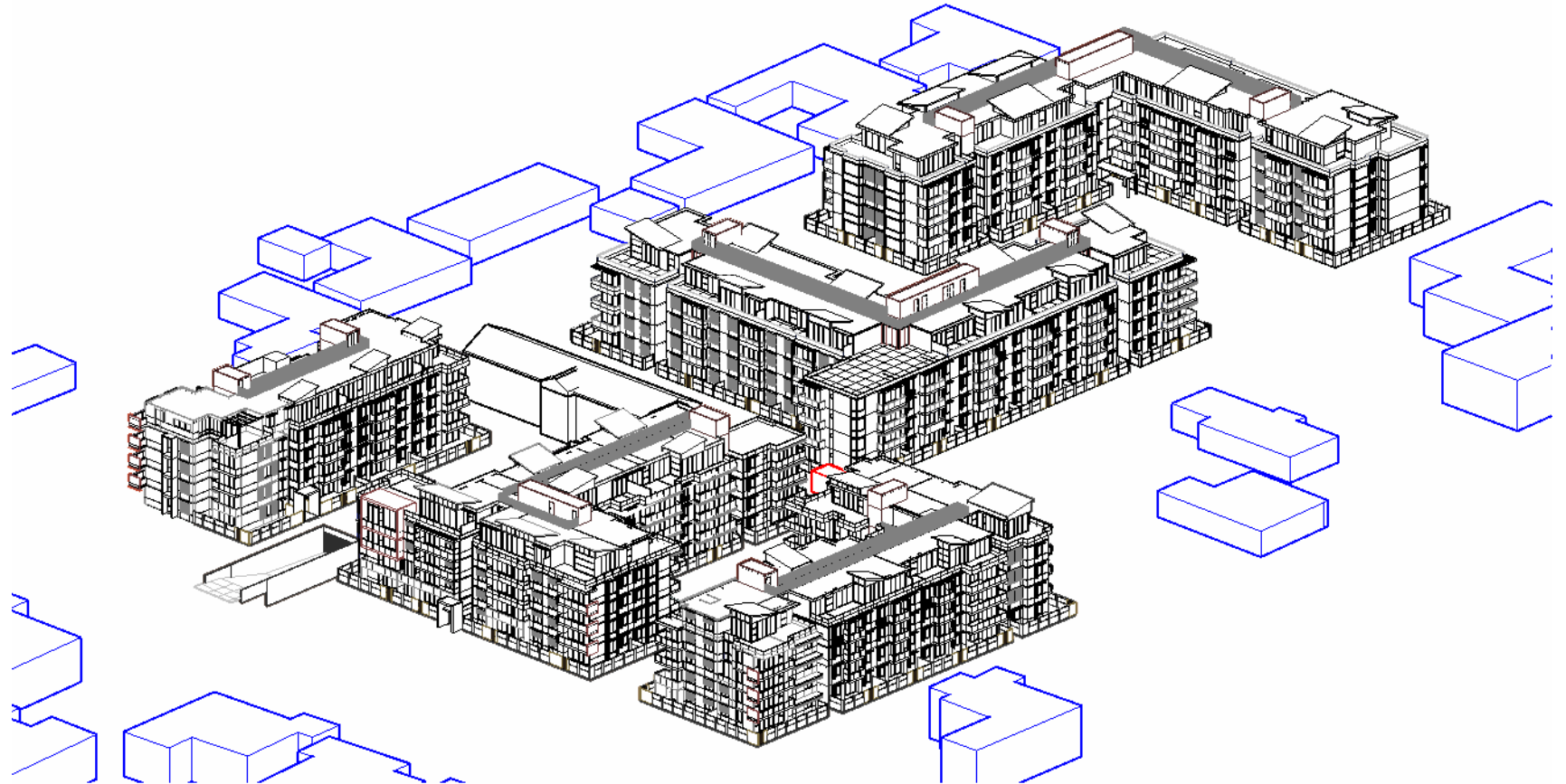


# Appendix A

Report 10-8878-R1  
Page 22 of 22

SUN EYE VIEW

Figure 24 Development Sun's Eye View at 14.15 pm on 21 June

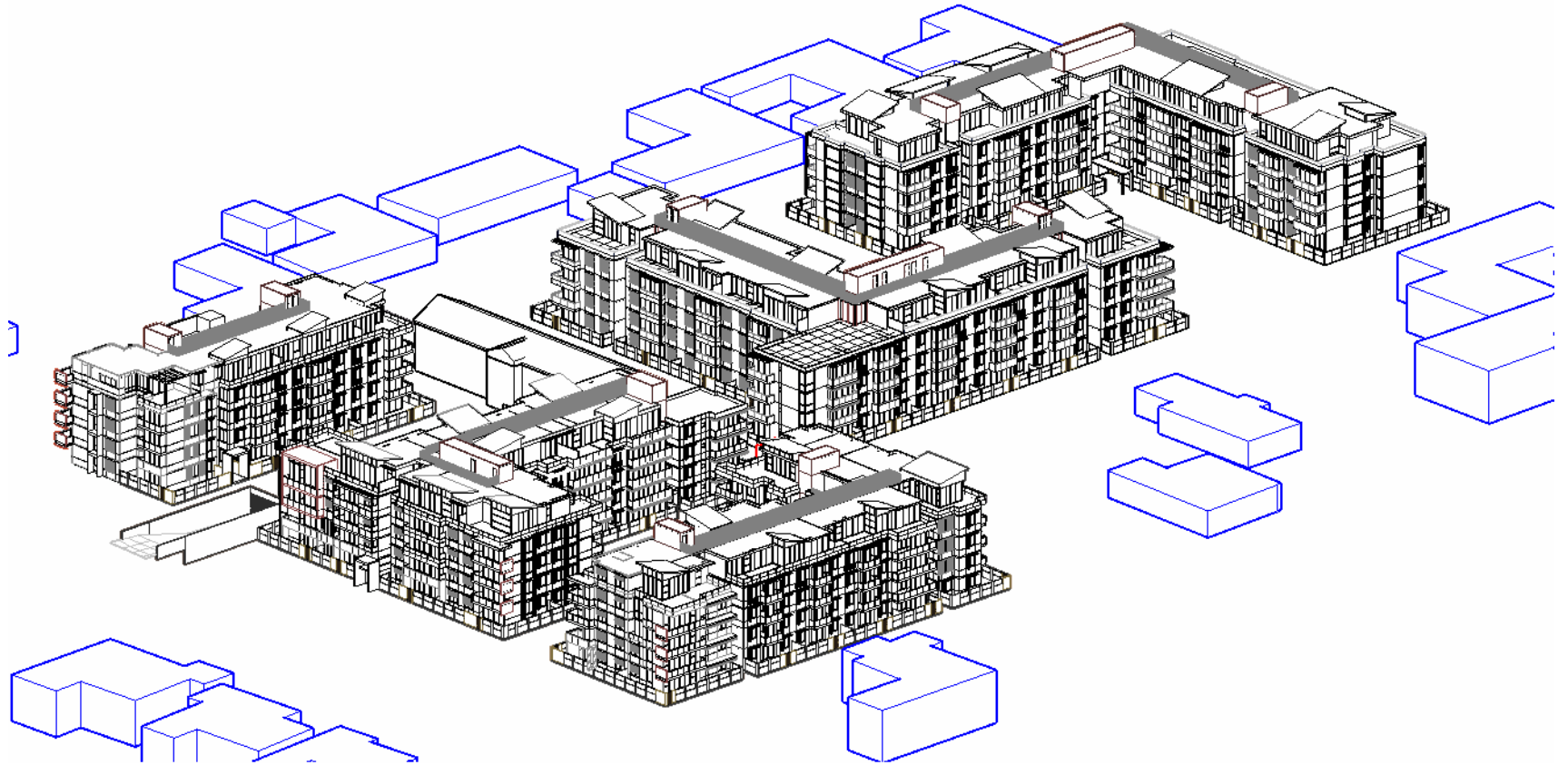


# Appendix A

Report 10-8878-R1  
Page 23 of 23

SUN EYE VIEW

Figure 25 Development Sun's Eye View at 14.30 pm on 21 June

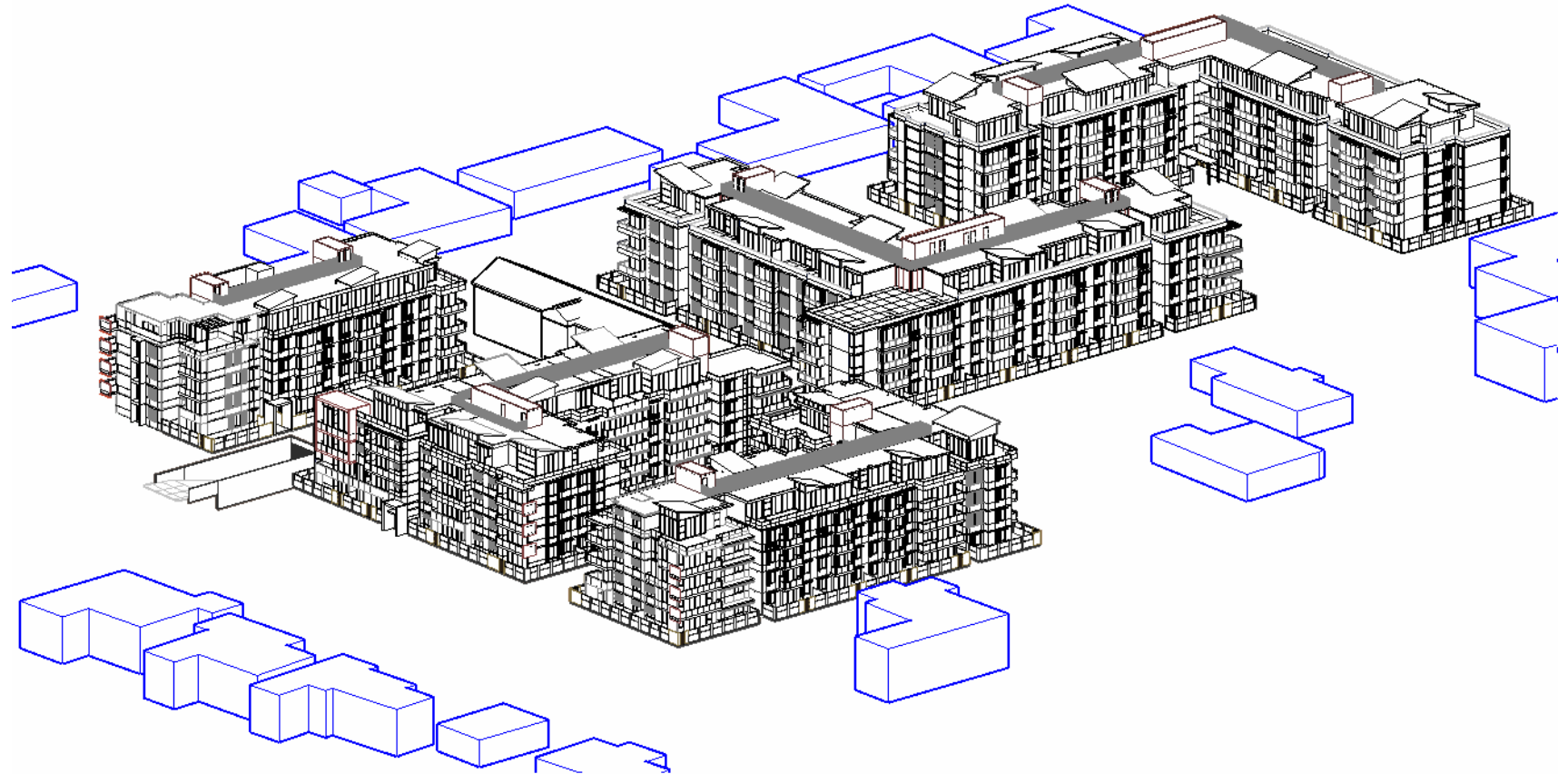


# Appendix A

Report 10-8878-R1  
Page 24 of 24

SUN EYE VIEW

Figure 26 Development Sun's Eye View at 14.45 pm on 21 June



# Appendix A

Report 10-8878-R1  
Page 25 of 25

SUN EYE VIEW

Figure 27 Development Sun's Eye View at 15.00 pm on 21 June

