



HEGGIES

REPORT 10-8705-R1

Revision 0

**Proposed Residential Development
Lot 101 & 102, 52 Walker St, Rhodes
Daylighting Assessment
{ DOCPROPERTY RHATitleLine4**

PREPARED FOR

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

27 MAY 2010

HEGGIES PTY LTD
ABN 29 001 584 612



Proposed Residential Development

Lot 101 & 102, 52 Walker St, Rhodes

Daylighting Assessment

PREPARED BY:

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DOCUMENT CONTROL

Reference	Status	Date	Prepared	Checked	Authorised
10-8705-R1	Revision 0	27 May 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 52 Walker Street, Rhodes. 3D AutoCAD software is utilised to produce daylight access diagrams used for this study.

The development site is bounded by the Inner West railway line on the east. The site is surrounded by mid-rise residential developments including:

- 6-10 storey existing Peninsula development to the north
- 4-5 storey DA Approved development to the northwest
- 4-7 storey under construction development to the west; and
- 3-6 storey DA Approved development to the west.

The proposed development comprises of:

- 3 levels of basement car parking
- 26 storey Block A with:
 - carparking on the ground floor
 - Indoor pool and gym on level 1
 - Commercial area on Level 1
 - Residential apartments on levels 2 to 25
- 7-storey residential apartments Block B
- 25- storey Block C with residential apartments and pool and gym on the ground floor
- 6-storey residential apartments Block D

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. Due to the dense population of commercial and residential mid to high rise buildings in Rhodes, the locality area of Rhodes is considered as a dense urban area. Therefore the proposed development is required to comply with the minimum of two hours of direct sunlight to at least 70% of the Living rooms and private open spaces in the development.

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

9.00 am - 3.00 pm on the Winter Solstice 21 June

- % Apartments with 2 hrs of sunlight = **70.3%**



EXECUTIVE SUMMARY

- Compliance with SEPP 65 supported by the Residential Flat Design Code - Part 03 Building Design is achieved.



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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 52 Walker Street, Rhodes. 3D AutoCAD software is utilised to produce daylight access diagrams used for this study.

With Meriton's agreement, Heggies rotated Block A by 5 degrees west (anticlockwise) and implemented skylights to all top floor units not achieving the 2 hours of direct sun light, in order to comply with SEPP 65 daylight assessment.

1.1 Site Description

The development site is bounded by the Inner West railway line on the east. The site is surrounded by mid-rise residential developments including:

- 6-10 storey existing Peninsula development to the north
- 4-5 storey DA Approved development to the northwest
- 4-7 storey under construction development to the west; and
- 3-6 storey DA Approved development 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:

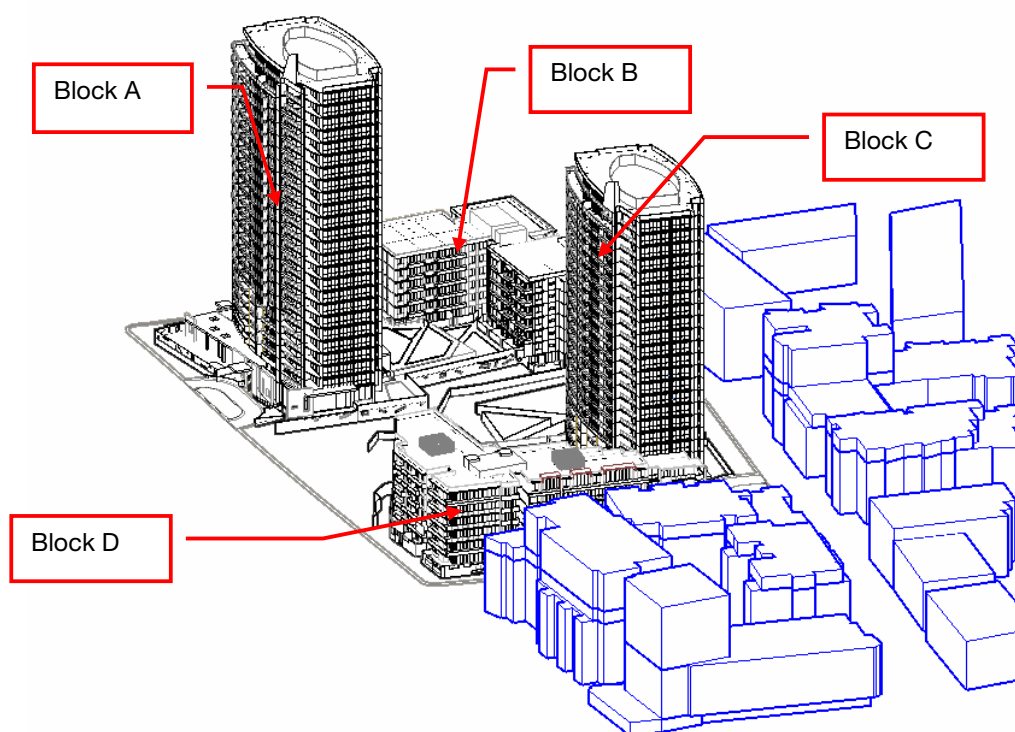
- 3 levels of basement car parking



- 26- storey Block A (main axis is 15.9° west to the true north) with:
 - carparking on the ground floor
 - Indoor pool and gym on level 1
 - Commercial area on Level 1
 - Residential apartments on levels 2 to 25
- 7-storey residential apartments Block B
- 25-storey Block C (main axis is 20.9° west to the true north) with residential apartments on ground to level 24 and pool and gym on the ground floor
- 6-storey residential apartments Block D.

Figure 2 shows the 3D AutoCAD model of the proposed development at Walker Street (in black) and surrounding buildings having impact on the daylighting assessment (in blue).

Figure 2 3D model of Proposed Development





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. Due to the dense population of commercial and residential mid to high rise buildings in Rhodes, the locality area of Rhodes is considered as a dense urban area. Therefore the proposed development is required to comply with the minimum of two hours of direct sunlight to at least 70% of the Living rooms and private open spaces in the development.

2.2 Approved Recommendations

From Heggies daylight assessment of preliminary plans, compliance with SEPP 65 daylighting was not achieved and the following recommendations were agreed by Meriton in order to ensure compliance with the SEPP 65 daylighting:

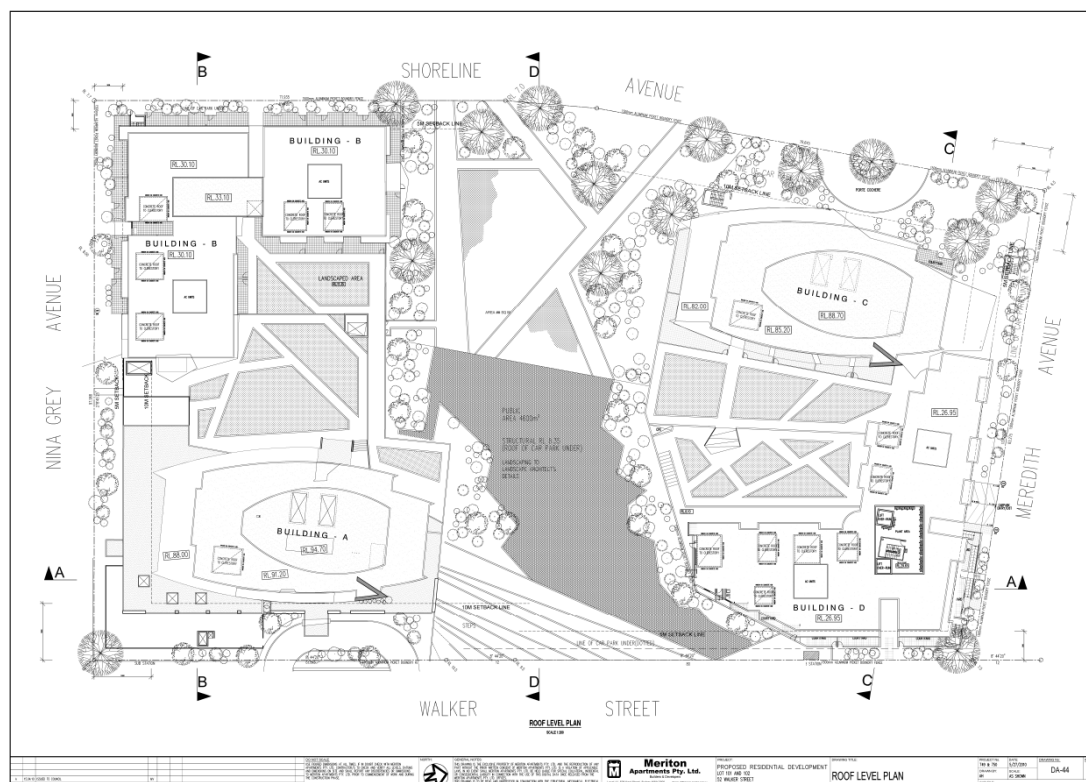
- Add skylight/clerestory windows to all top floor units not reaching the 2 hrs sunlight; and
- Rotate Block A by 5° anticlockwise to the west.

With the combination of adding skylights to top floor units and rotating Block A by 5° anticlockwise, compliance with the SEPP 65 daylight assessment is therefore achieved as described in **Section 2.3**.

Figure 3 shows the updated roof plan (Drawing No. DA 44 dated 27.5.2010) of the proposed development with clerestory windows and Block A main axis is orientated 15° west to the north.



Figure 3 Proposed Roof Plan



2.3 Solar Access Analysis

2.3.1 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. Future already approved developments and developments under construction were also included in the modelled as these buildings will have future impact on the proposed development. 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):

- **70.3 %** 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 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	Apartments with ≥ 2 hr and < 3 hr of sunlight	Apartments with ≥ 3 hrs of sunlight	% with 2 hrs or more of sunlight	% with 3 hrs or more of sunlight
BLOCK A					
Level 1	0	0	0		
Level 2	11	5	2	63.6%	18.2%
Level 3	11	5	2	63.6%	18.2%
Level 4	11	6	2	72.7%	18.2%
Level 5	11	6	2	72.7%	18.2%
Level 6	8	6	1	87.5%	12.5%
Level 7	8	4	4	100.0%	50.0%
Level 8	8	3	4	87.5%	50.0%
Level 9	8	3	4	87.5%	50.0%
Level 10	8	3	4	87.5%	50.0%
Level 11	8	3	4	87.5%	50.0%
Level 12	8	3	4	87.5%	50.0%
Level 13	8	3	4	87.5%	50.0%
Level 14	8	3	4	87.5%	50.0%
Level 15	8	3	4	87.5%	50.0%
Level 16	8	3	4	87.5%	50.0%
Level 17	8	3	4	87.5%	50.0%
Level 18	8	3	4	87.5%	50.0%
Level 19	8	3	4	87.5%	50.0%
Level 20	8	3	4	87.5%	50.0%
Level 21	8	3	4	87.5%	50.0%
Level 22	8	3	4	87.5%	50.0%
Level 23	8	3	4	87.5%	50.0%
Level 24	5	3	3	120.0%	60.0%
Level 25	5	1	4	100.0%	80.0%
TOTAL	198	84	84	84.8%	42.4%
BLOCK B					
Ground	9	0	2	22.2%	22.2%
Level 1	13	5	3	61.5%	23.1%
Level 2	15	5	3	53.3%	20.0%
Level 3	15	2	7	60.0%	46.7%
Level 4	15	2	7	60.0%	46.7%
Level 5	13	1	7	61.5%	53.8%
Level 6	13	0	8	61.5%	61.5%
TOTAL	93	15	37	55.9%	39.8%



Level	Number of Apt	Apartments with ≥2hr and <3hr of sunlight	Apartments with ≥3hrs of sunlight	% with 2 hrs or more of sunlight	% with 3 hrs or more of sunlight
BLOCK C					
Ground	4	2	2	100.0%	50.0%
Level 1	12	4	2	50.0%	16.7%
Level 2	12	1	5	50.0%	41.7%
Level 3	12	1	5	50.0%	41.7%
Level 4	12	1	5	50.0%	41.7%
Level 5	10	2	5	70.0%	50.0%
Level 6	8	2	4	75.0%	50.0%
Level 7	8	2	4	75.0%	50.0%
Level 8	8	2	4	75.0%	50.0%
Level 9	8	2	4	75.0%	50.0%
Level 10	8	2	4	75.0%	50.0%
Level 11	8	2	4	75.0%	50.0%
Level 12	8	2	4	75.0%	50.0%
Level 13	8	2	4	75.0%	50.0%
Level 14	8	2	4	75.0%	50.0%
Level 15	8	2	4	75.0%	50.0%
Level 16	8	2	4	75.0%	50.0%
Level 17	8	2	4	75.0%	50.0%
Level 18	8	2	4	75.0%	50.0%
Level 19	8	2	4	75.0%	50.0%
Level 20	8	2	4	75.0%	50.0%
Level 21	8	2	4	75.0%	50.0%
Level 22	8	2	4	75.0%	50.0%
Level 23	5	1	3	80.0%	60.0%
Level 24	5	1	4	100.0%	80.0%
TOTAL	208	47	99	70.2%	47.6%
BLOCK D					
Ground	12	3	0	25.0%	0.0%
Level 1	14	3	0	21.4%	0.0%
Level 2	15	2	2	26.7%	13.3%
Level 3	15	2	6	53.3%	40.0%
Level 4	14	2	5	50.0%	35.7%
Level 5	14	2	5	50.0%	35.7%
TOTAL	84	14	18	38.1%	21.4%
Whole Development					
TOTAL	583	160	250	70.3%	42.9%



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 52 Walker Street, Rhodes. 3D AutoCAD software is utilised to produce daylight access diagrams used for this study. The development site is bounded by the Inner West railway line on the east. The site is surrounded by mid-rise residential developments.

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:

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

9.00 am - 3.00 pm on the Winter Solstice 21 June

- % Apartments with 2 hrs of sunlight = **70.3%**
- Compliance with SEPP 65 supported by the Residential Flat Design Code - Part 03 Building Design is achieved.

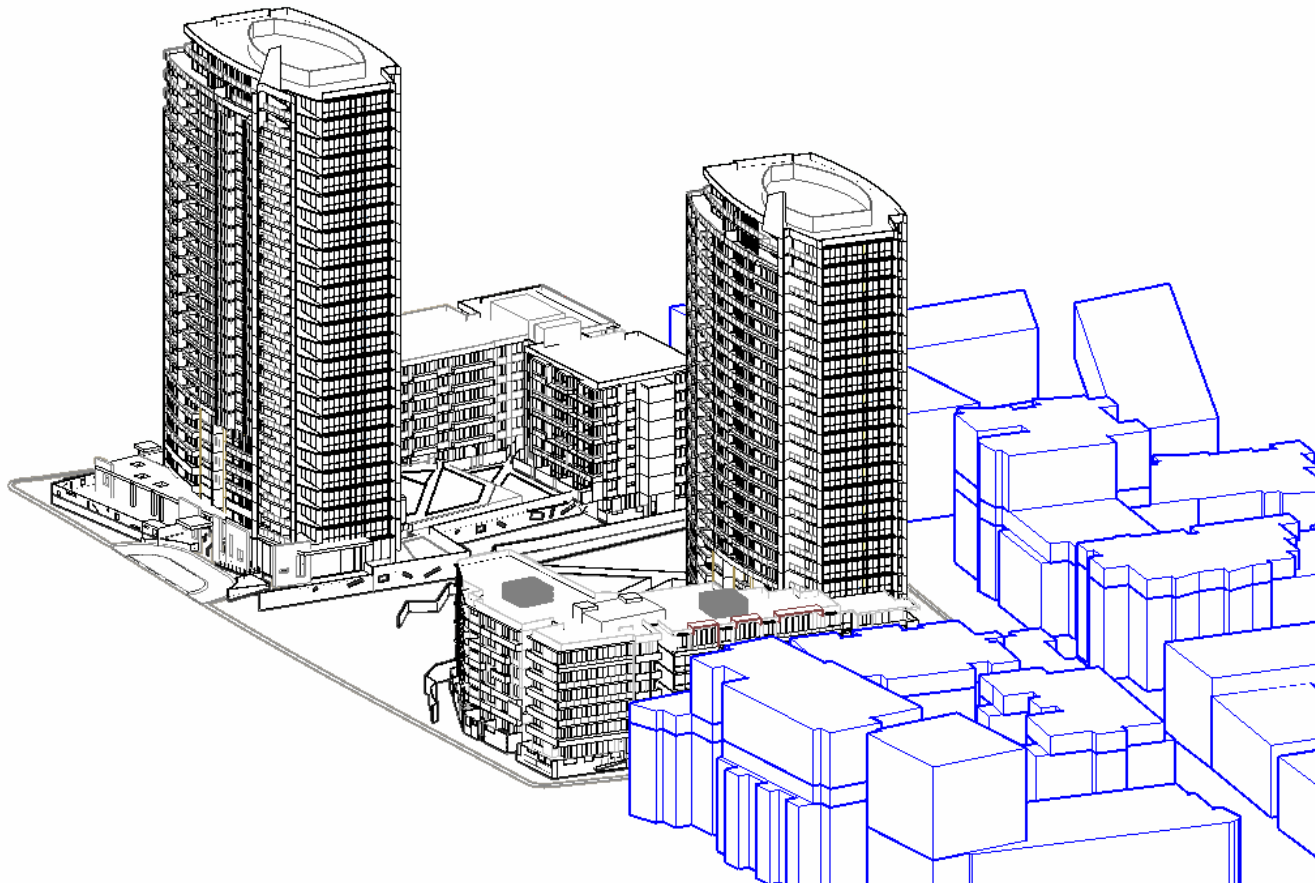
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SUN EYE VIEWS

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

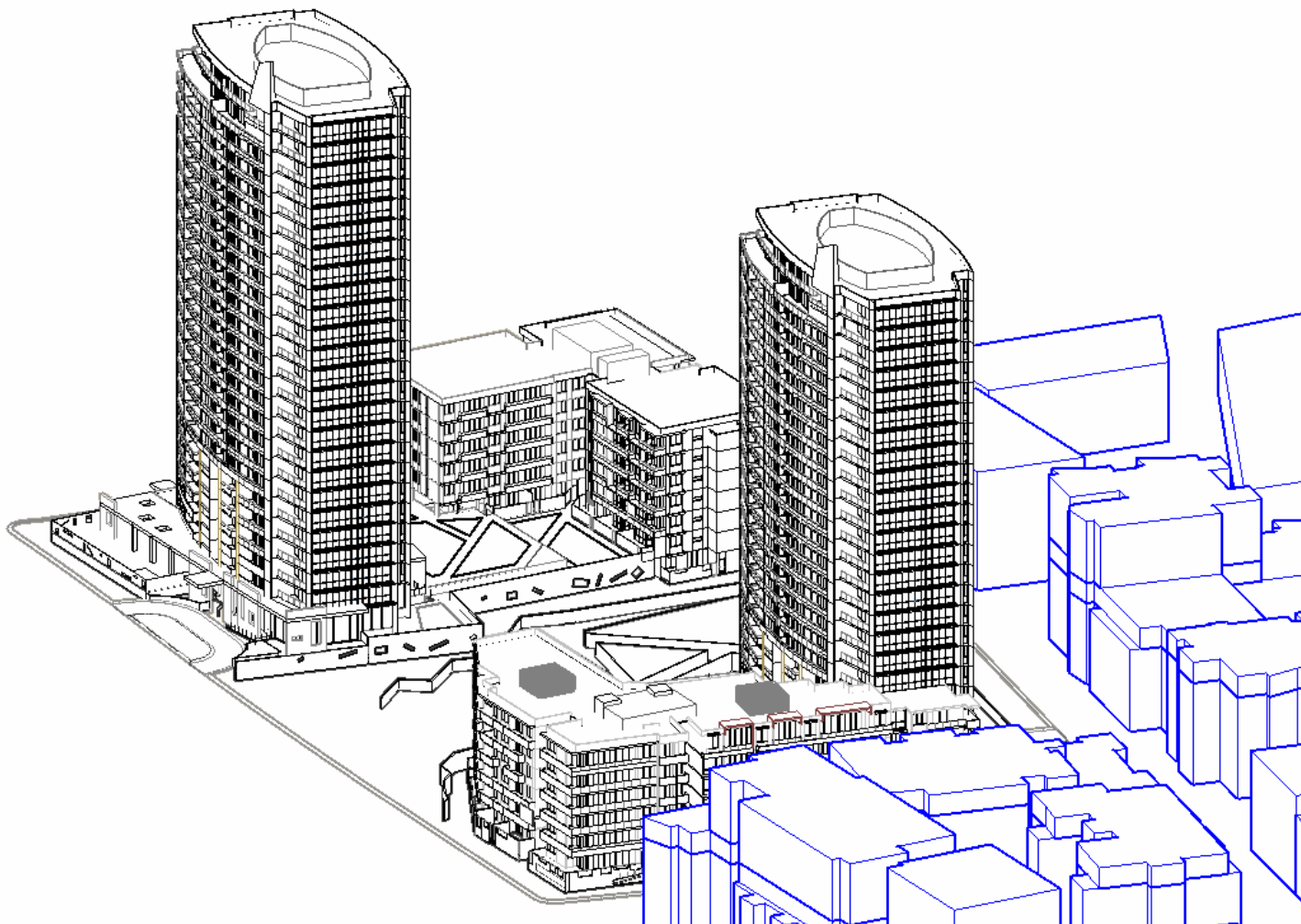


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Figure 5 Development Sun's Eye View at 9.15 am on 21 June

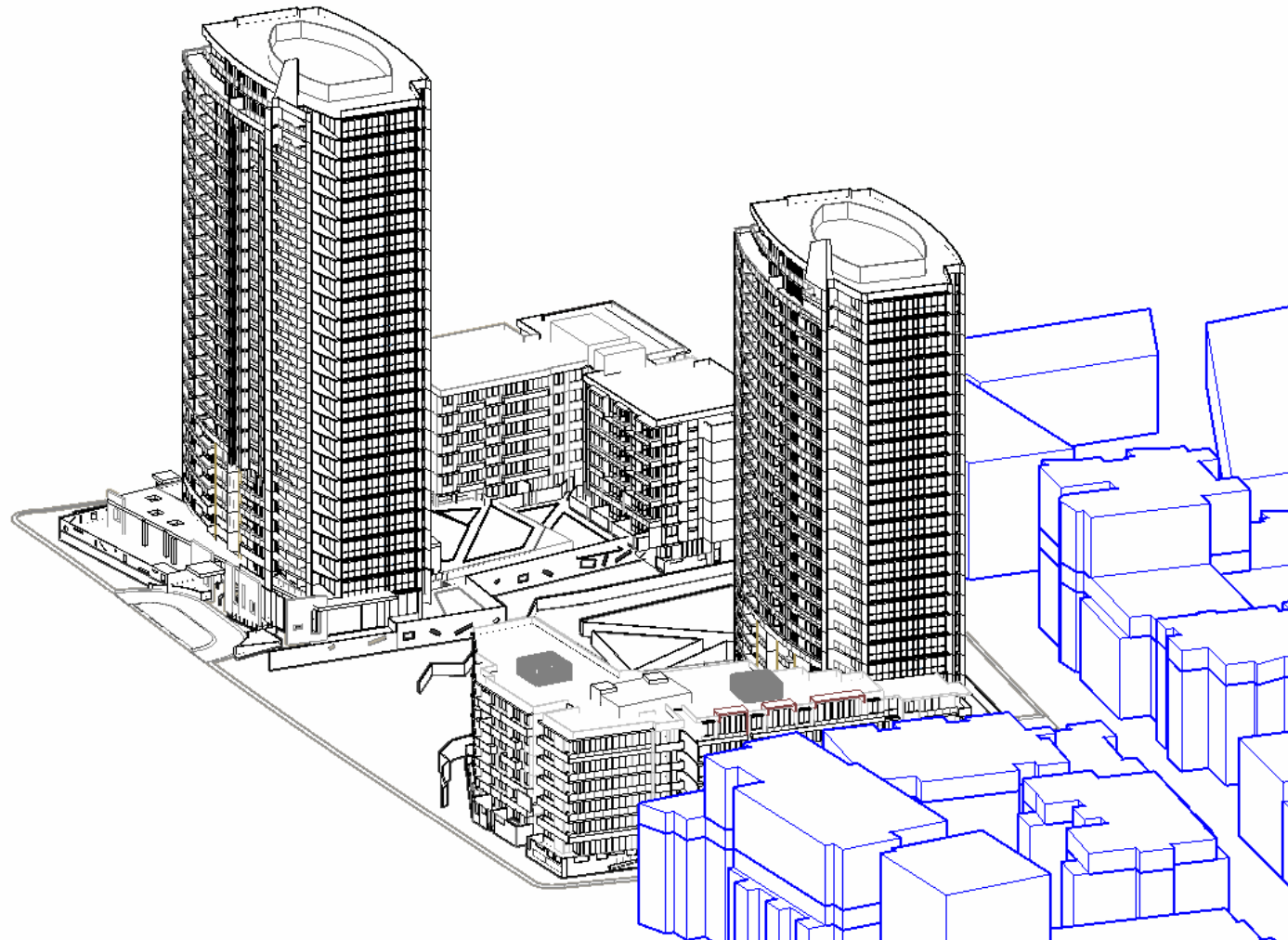


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Figure 6 Development Sun's Eye View at 9.30 am on 21 June

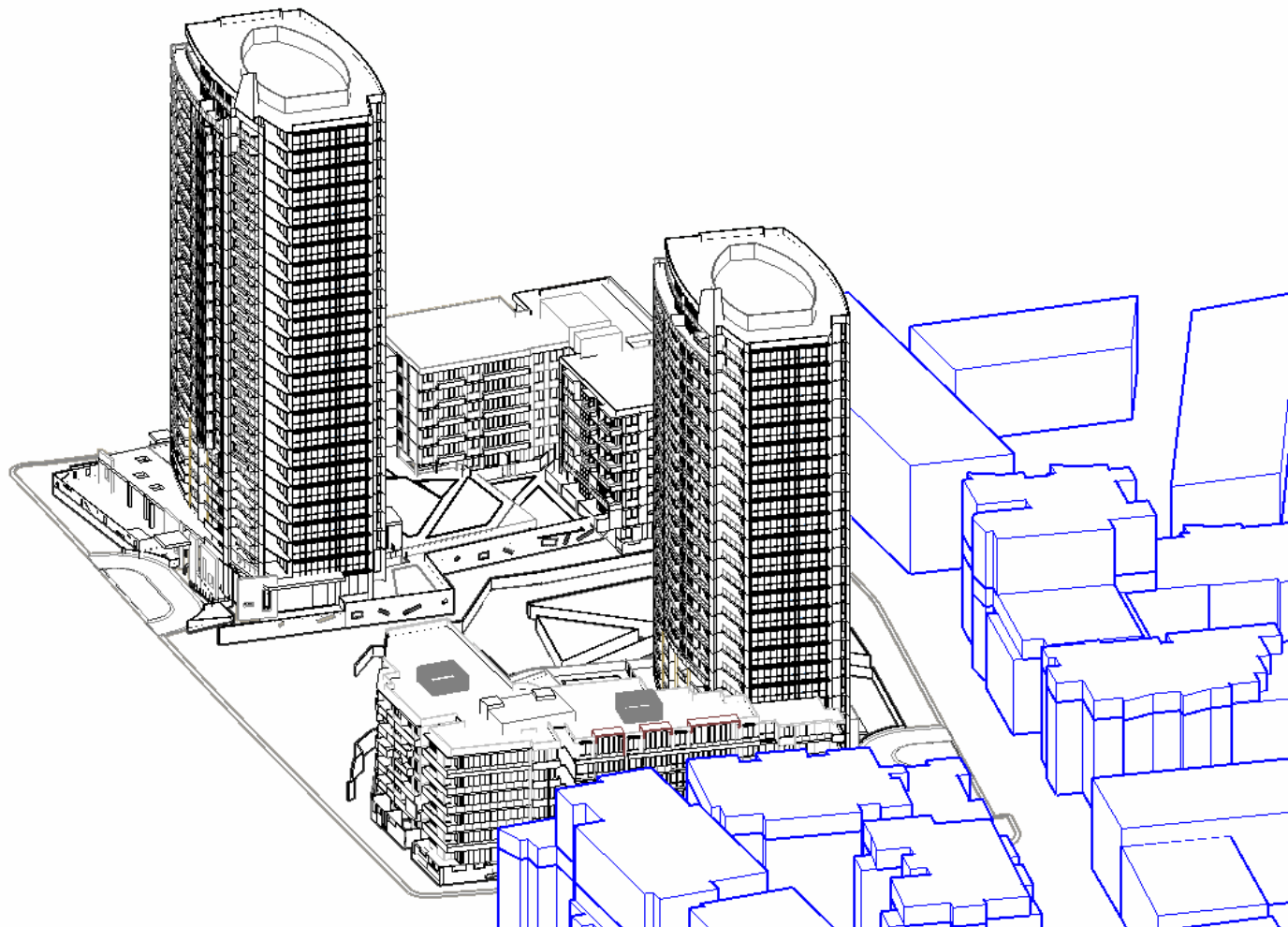


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Figure 7 Development Sun's Eye View at 9.45 am on 21 June

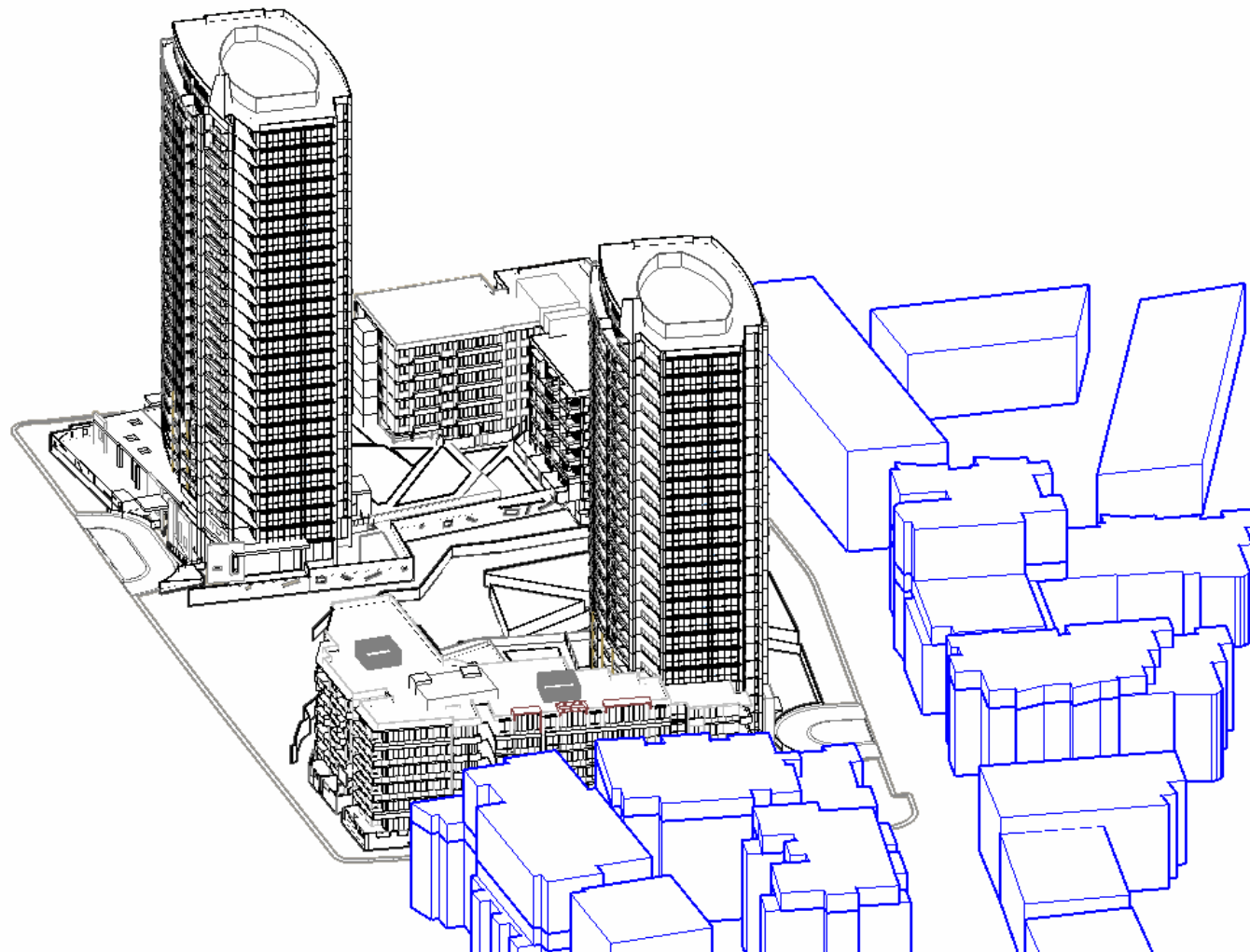


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Figure 8 Development Sun's Eye View at 10.00 am on 21 June

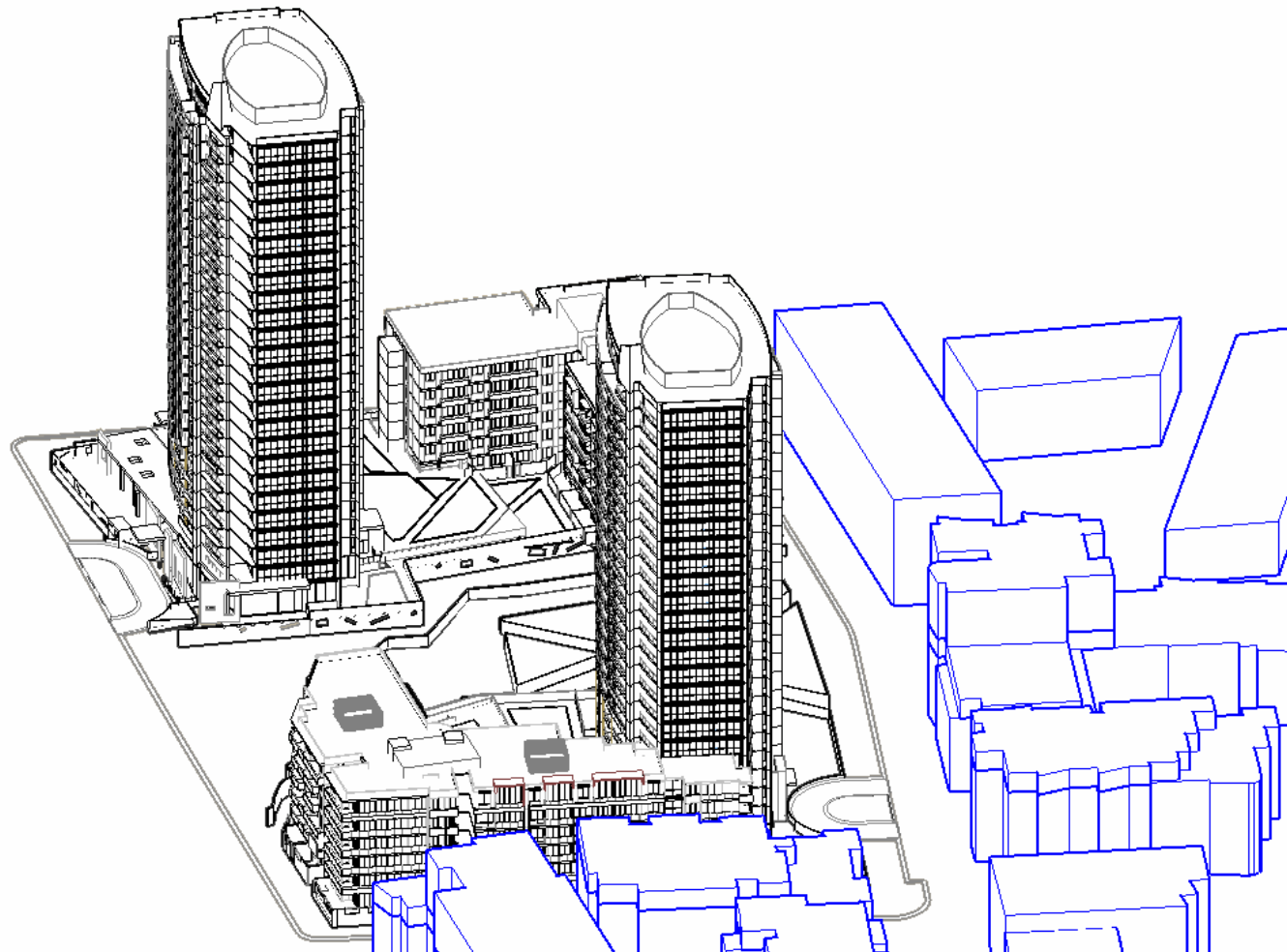


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Figure 9 Development Sun's Eye View at 10.15 am on 21 June



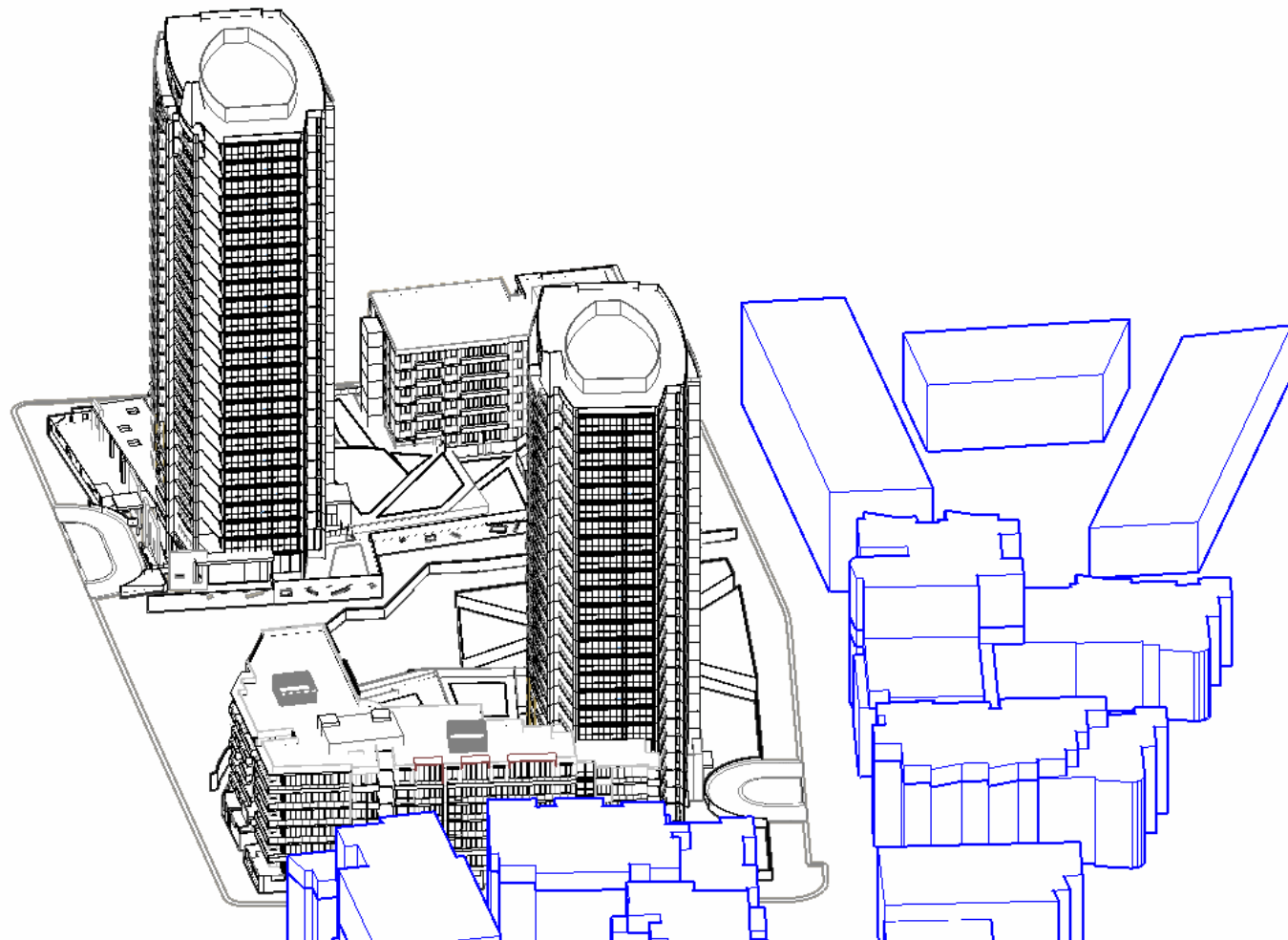
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Figure 10 Development Sun's Eye View at 10.30 am on 21 June

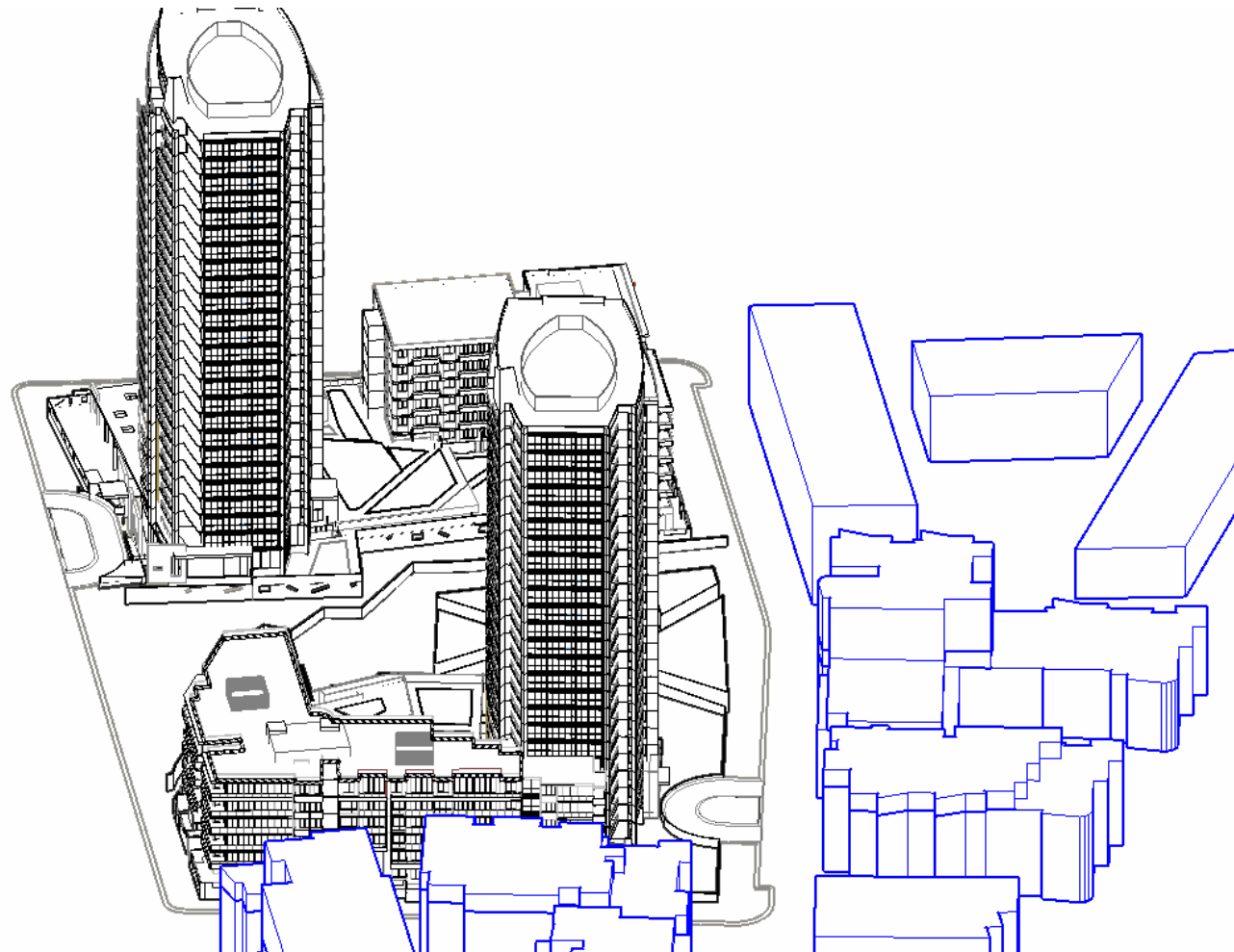


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Figure 11 Development Sun's Eye View at 10.45 am on 21 June



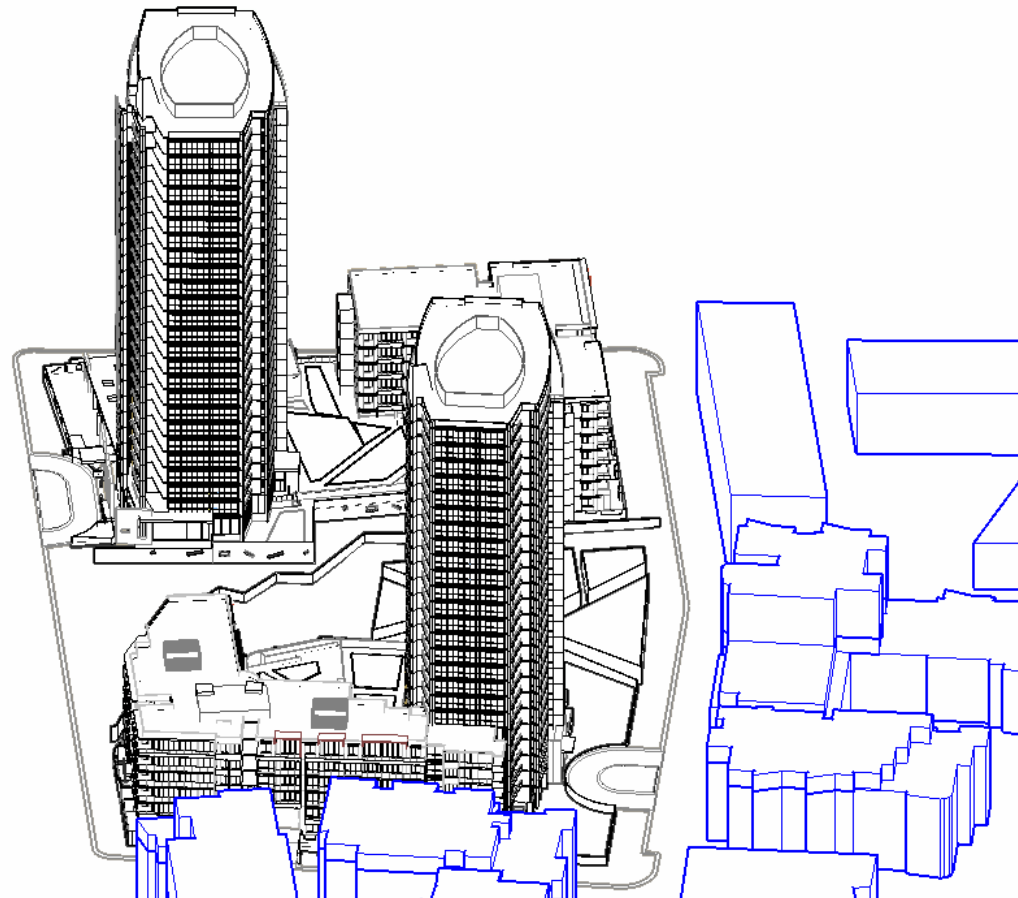
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Figure 12 Development Sun's Eye View at 11.00 am on 21 June

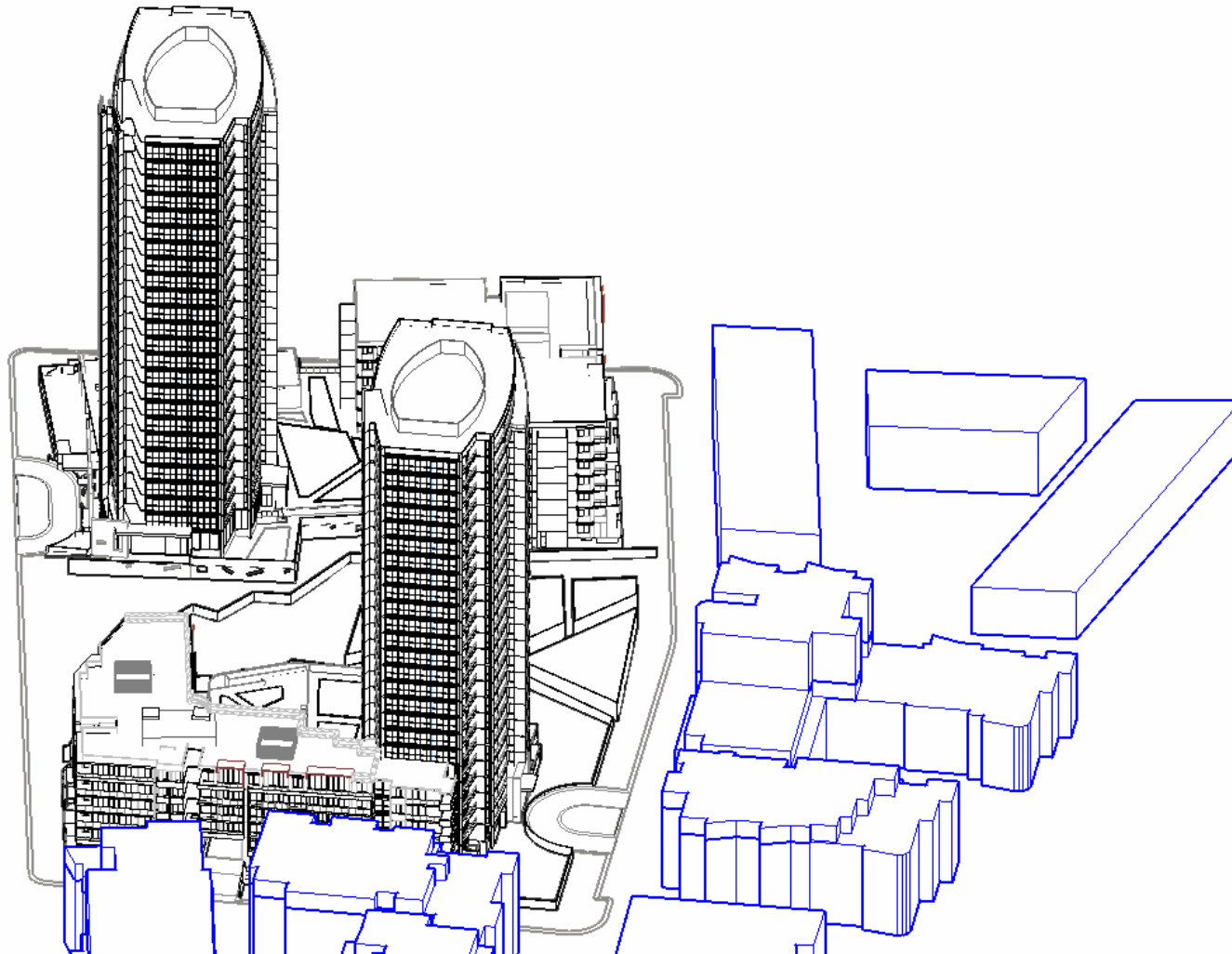


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Figure 13 Development Sun's Eye View at 11.15 am on 21 June



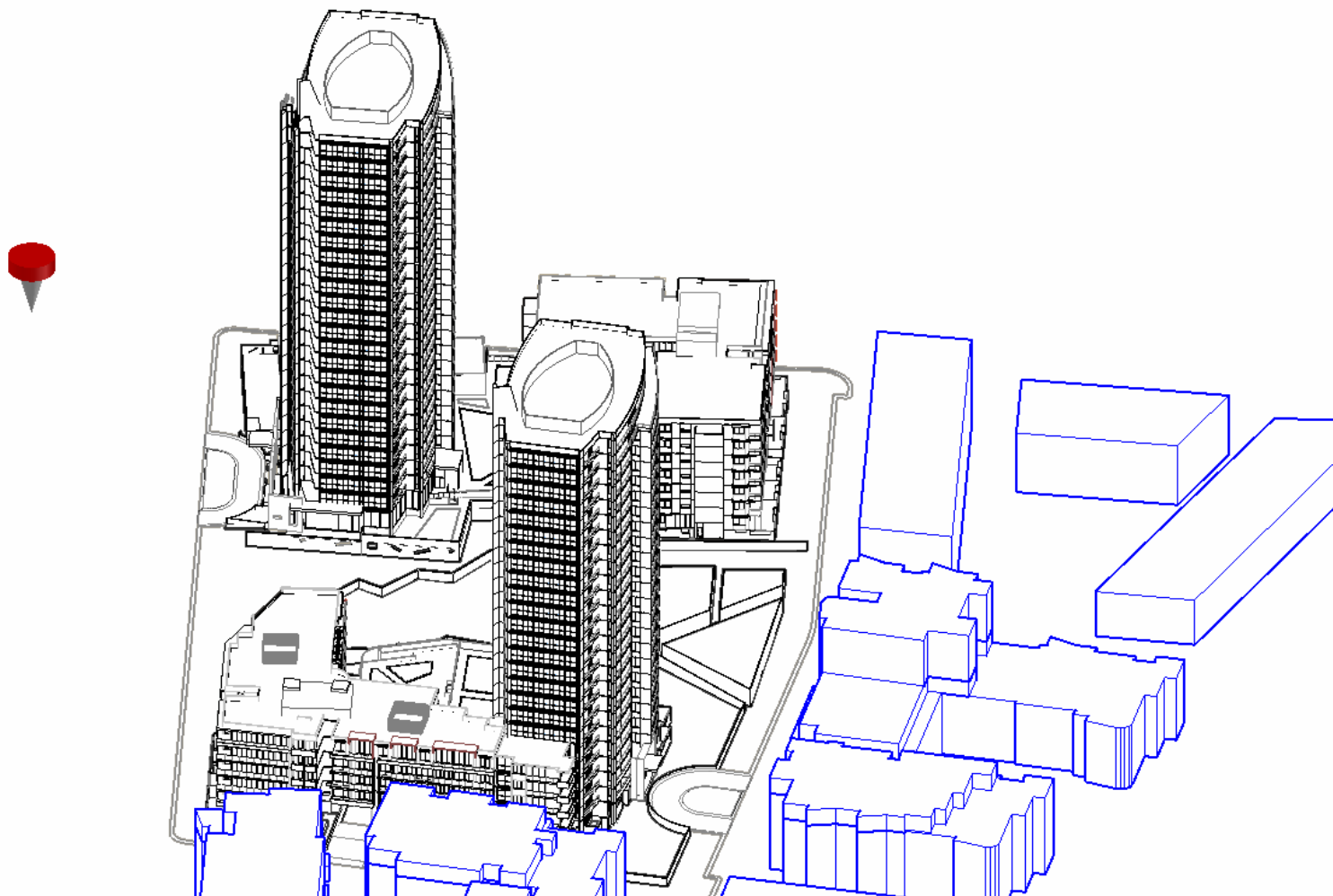
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Figure 14 Development Sun's Eye View at 11.30 am on 21 June

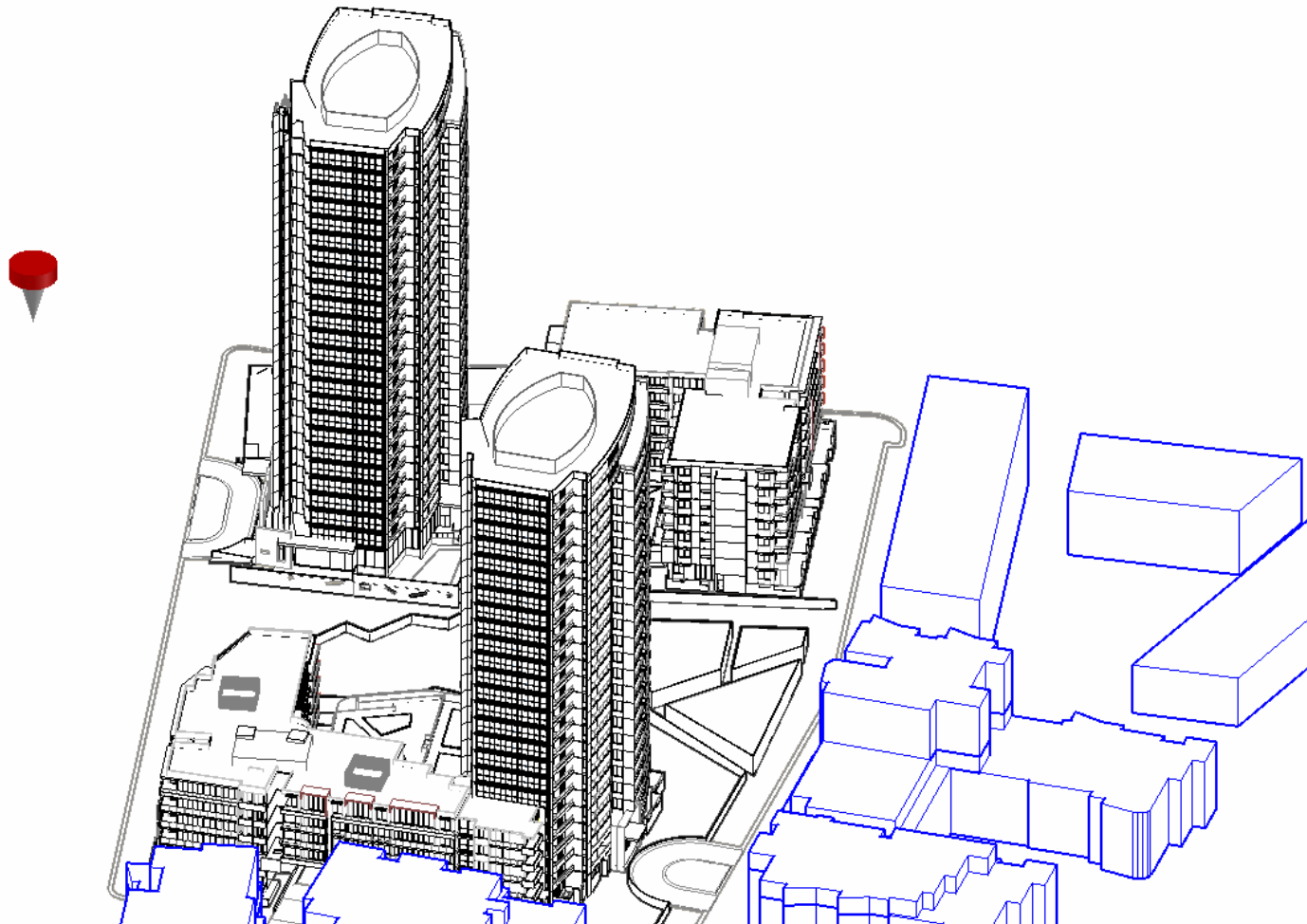


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Figure 15 Development Sun's Eye View at 11.45 am on 21 June

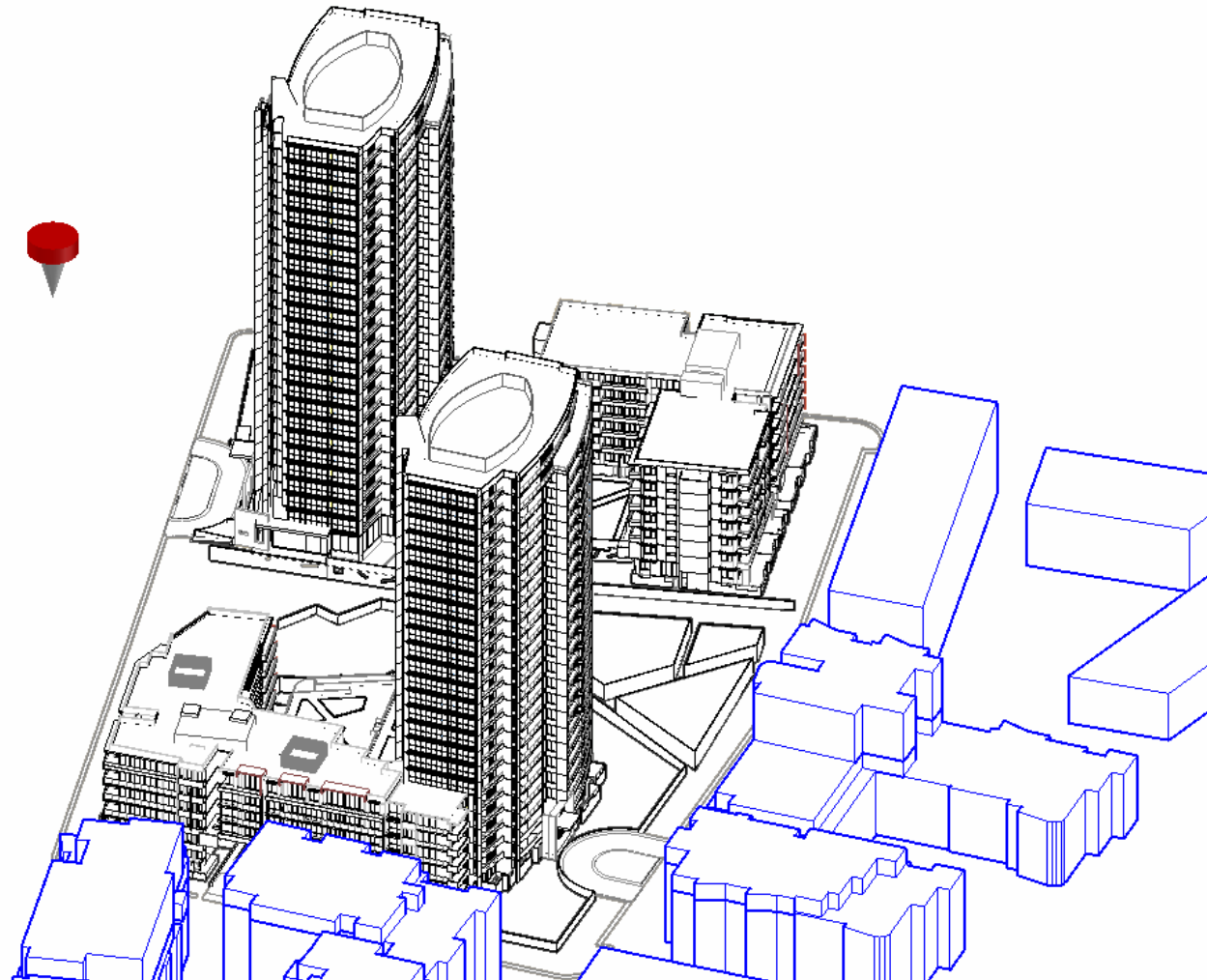


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Figure 16 Development Sun's Eye View at 12.00 pm on 21 June

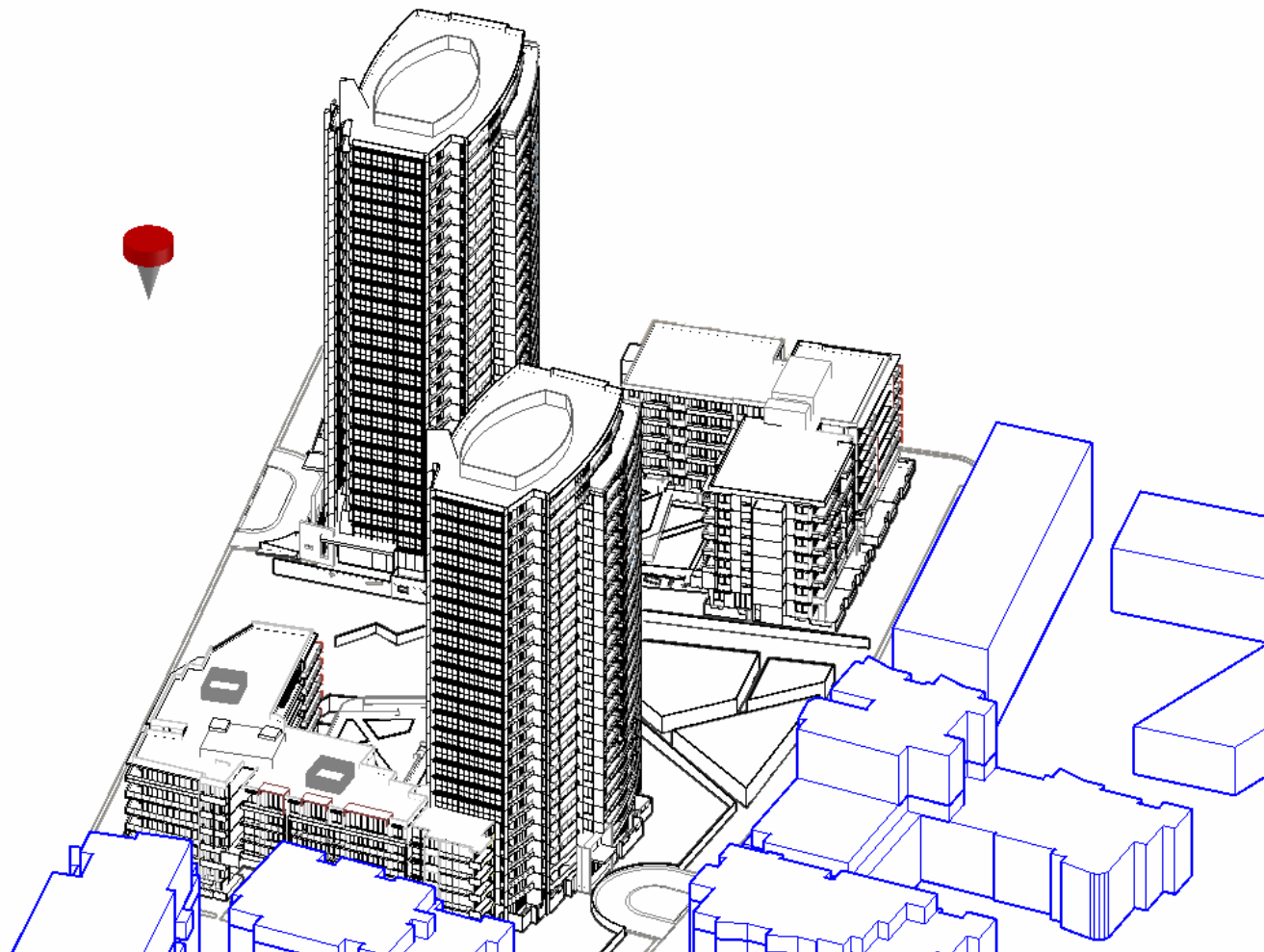


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Figure 17 Development Sun's Eye View at 12.15 pm on 21 June

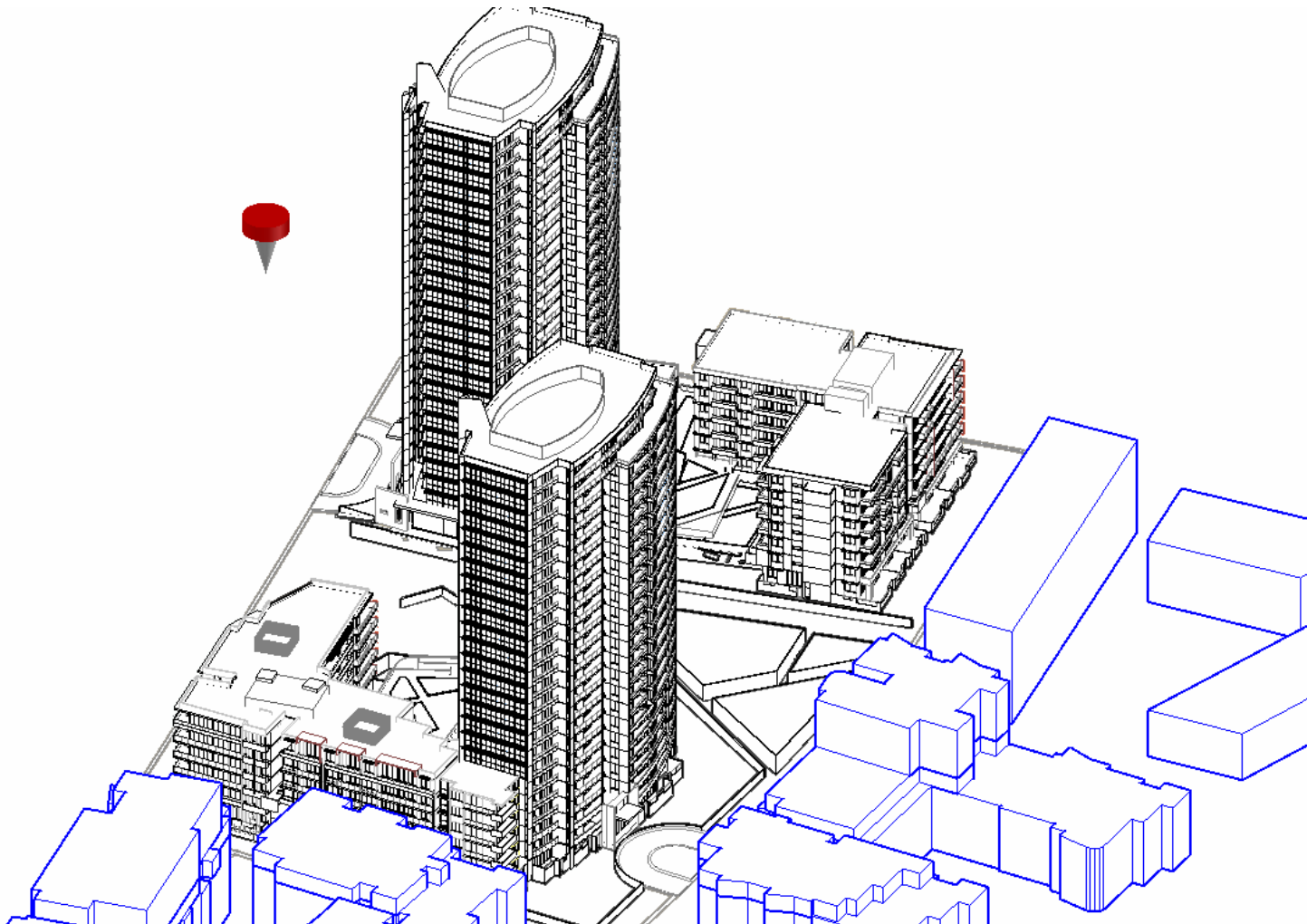


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Figure 18 Development Sun's Eye View at 12.30 pm on 21 June

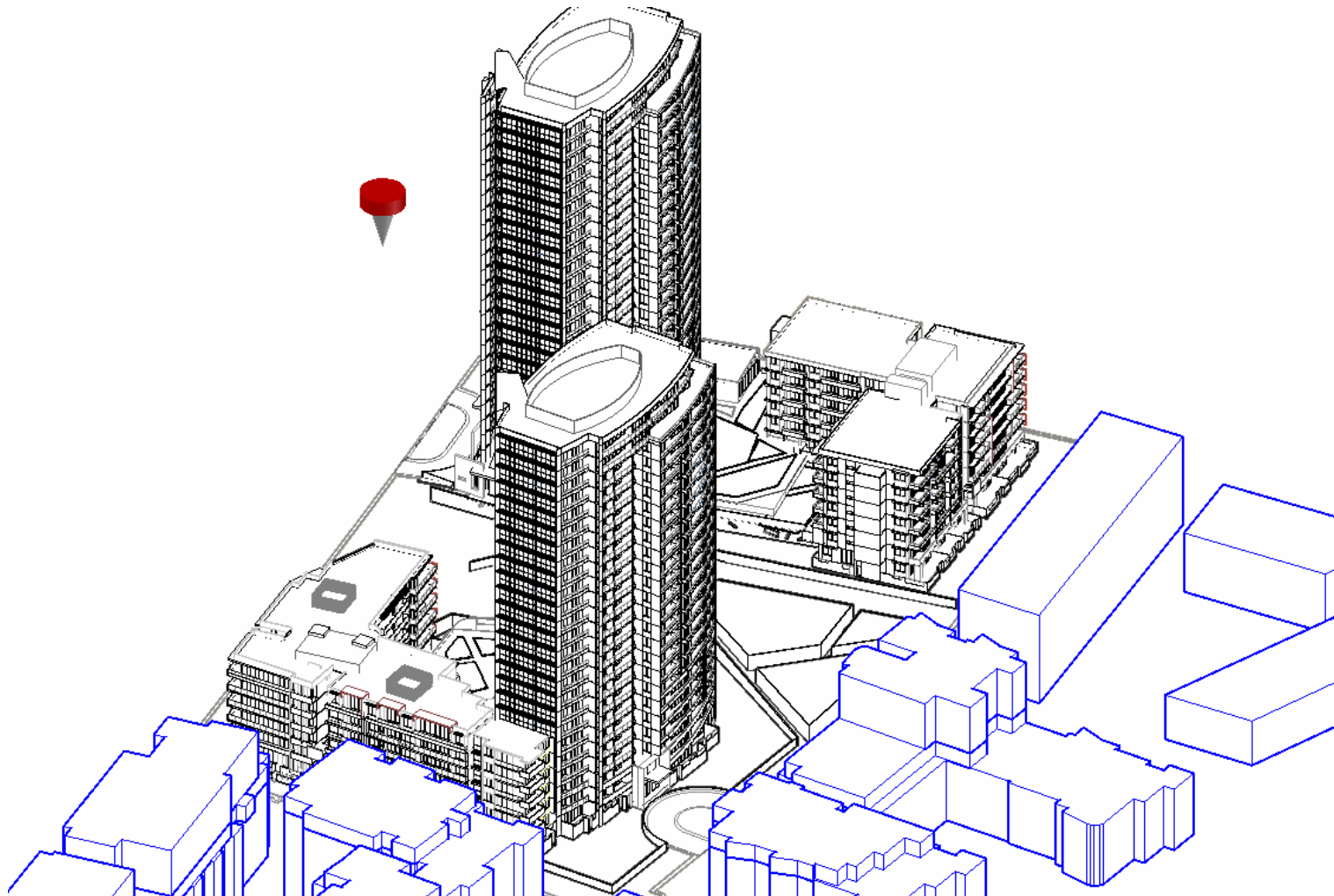


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Figure 19 Development Sun's Eye View at 12.45 pm on 21 June

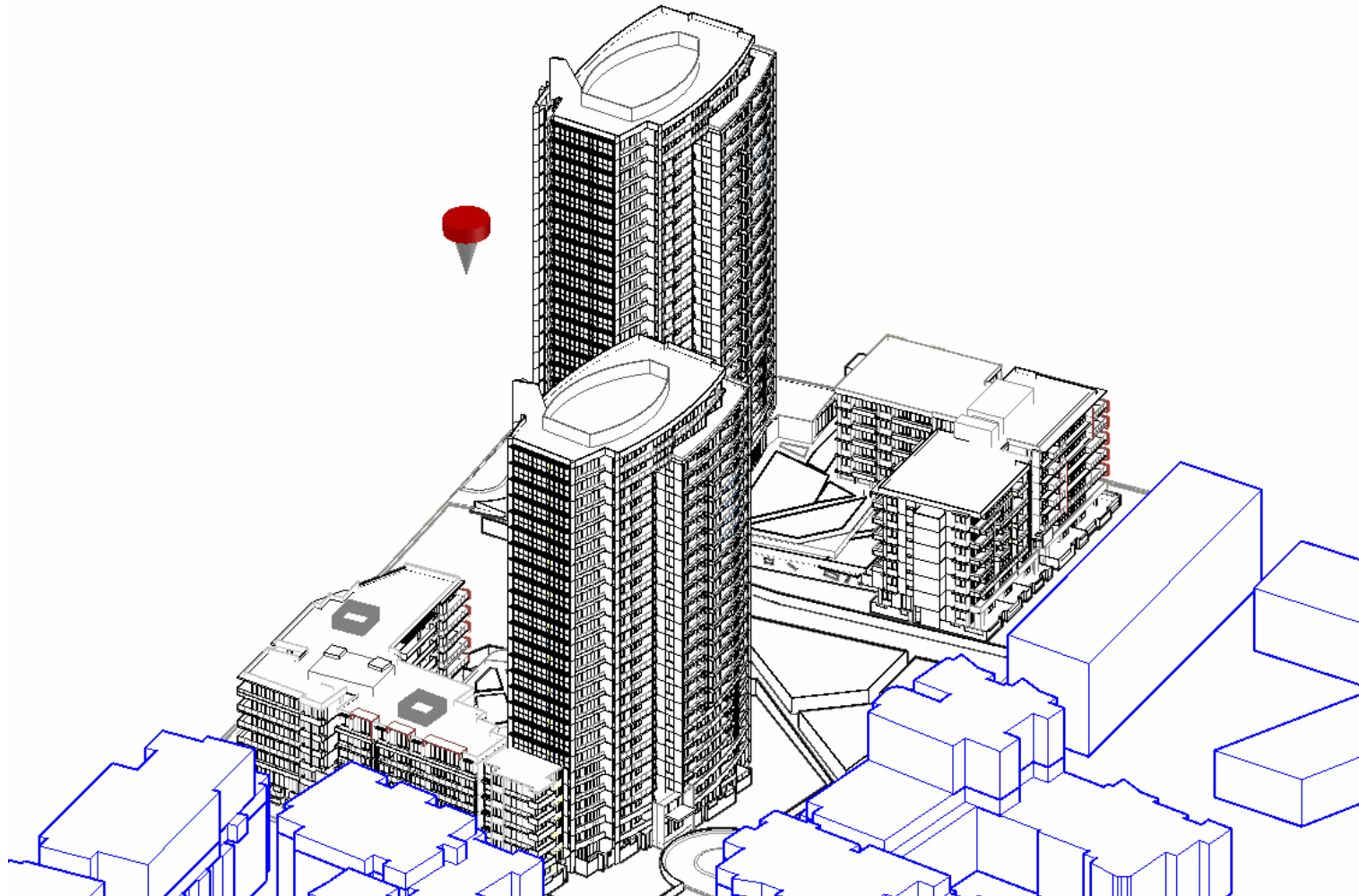


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Figure 20 Development Sun's Eye View at 13.00 pm on 21 June

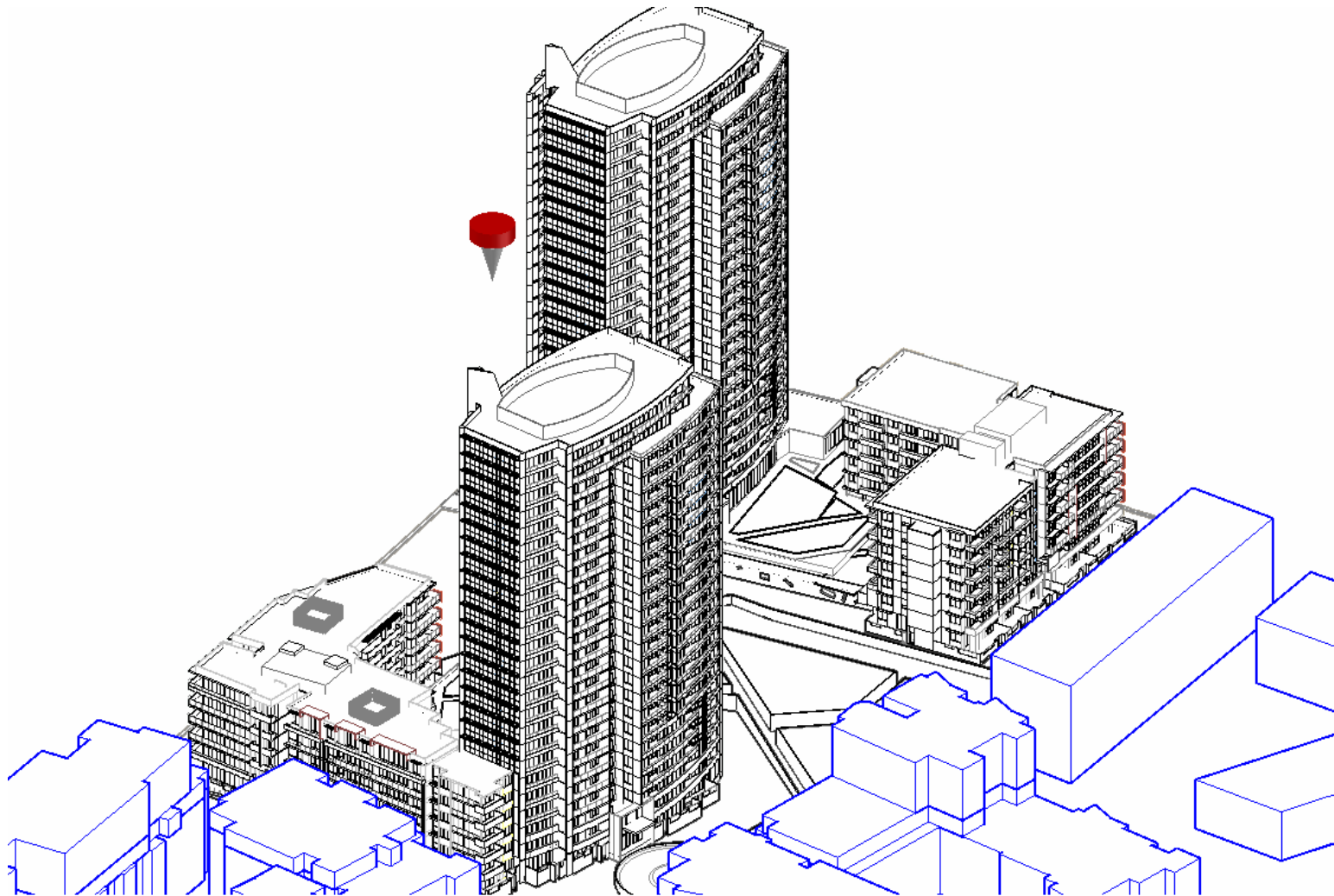


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Figure 21 Development Sun's Eye View at 13.15 pm on 21 June

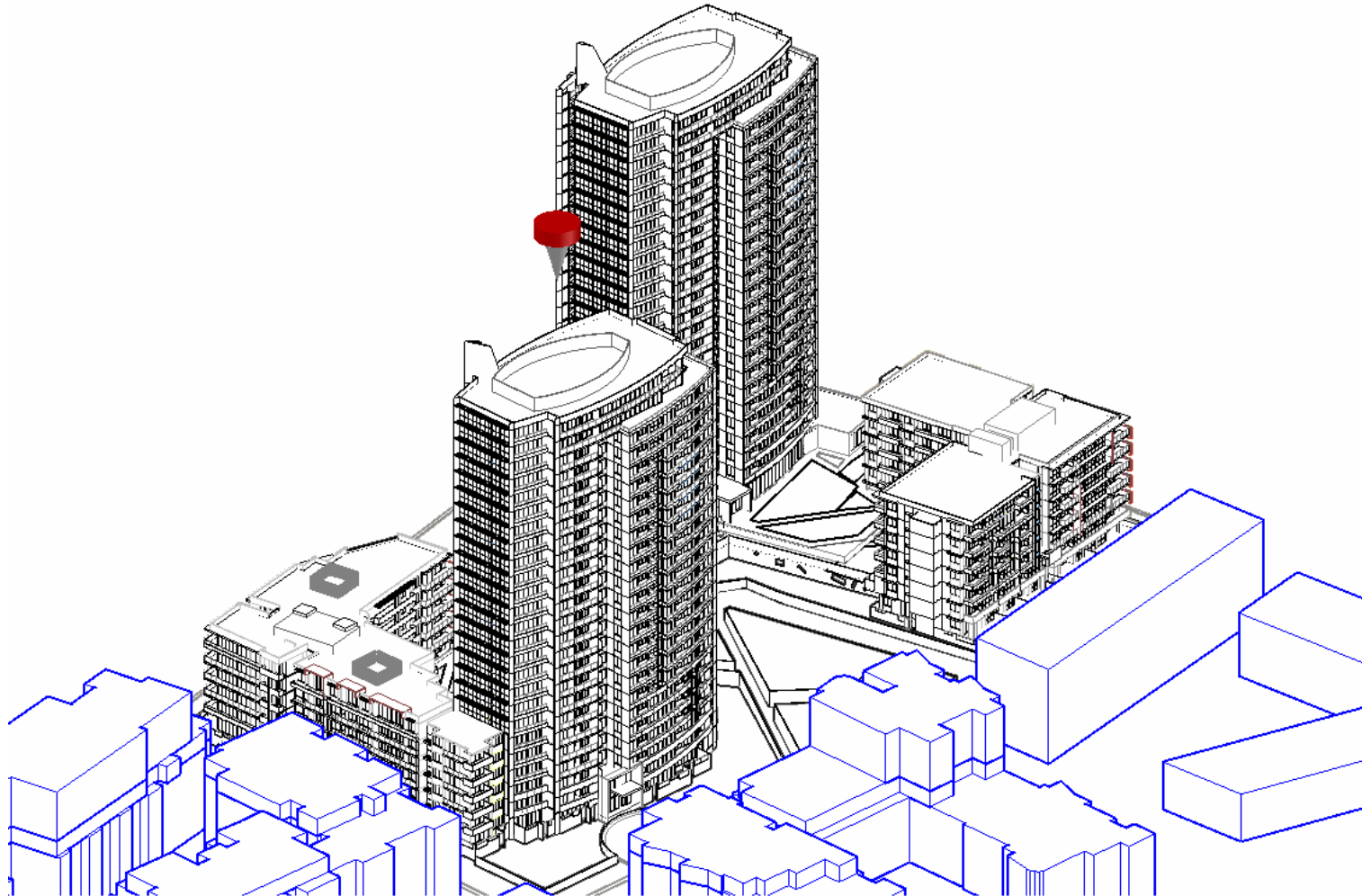


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Figure 22 Development Sun's Eye View at 13.30 pm on 21 June

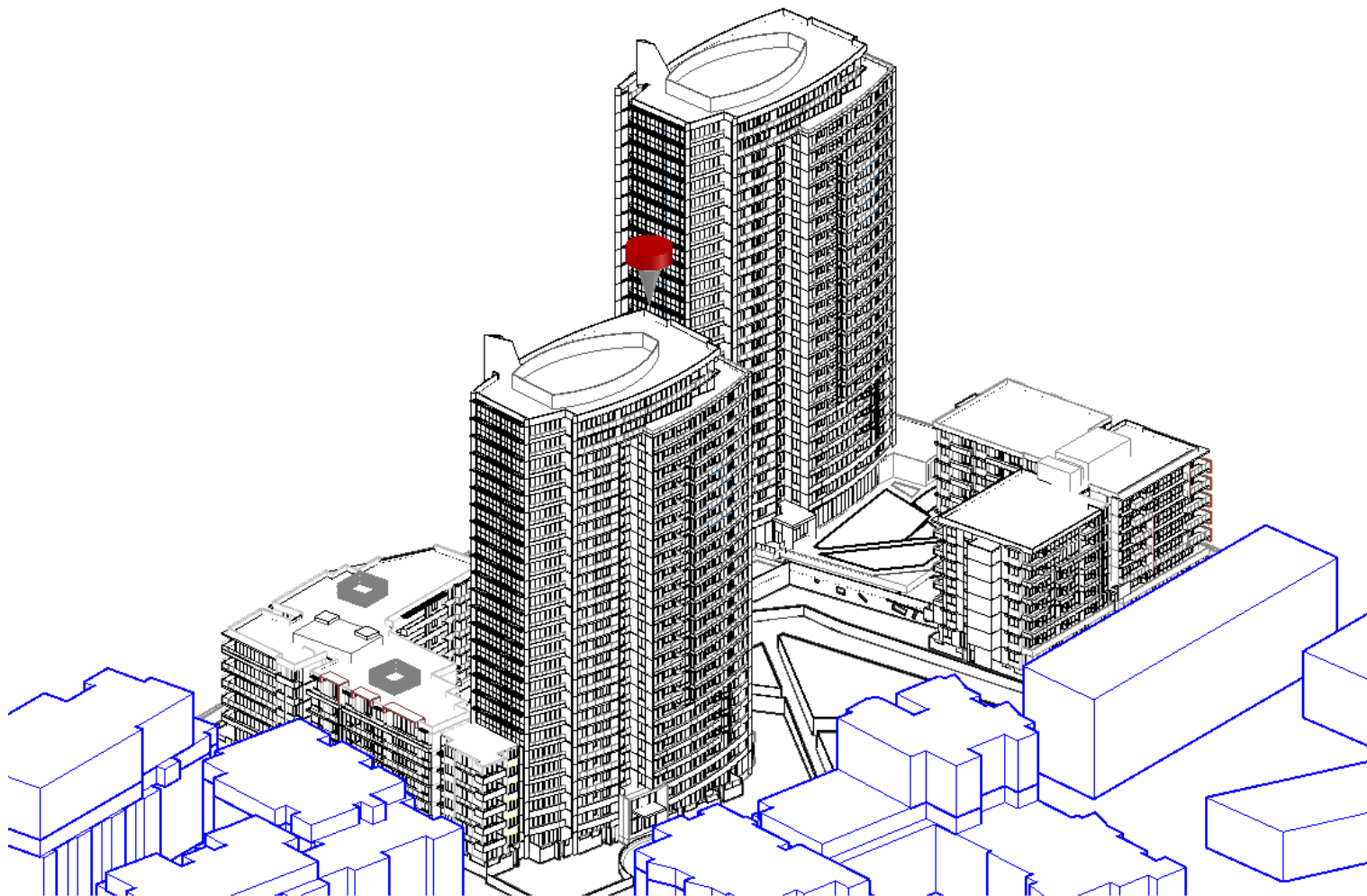


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Figure 23 Development Sun's Eye View at 13.45 pm on 21 June

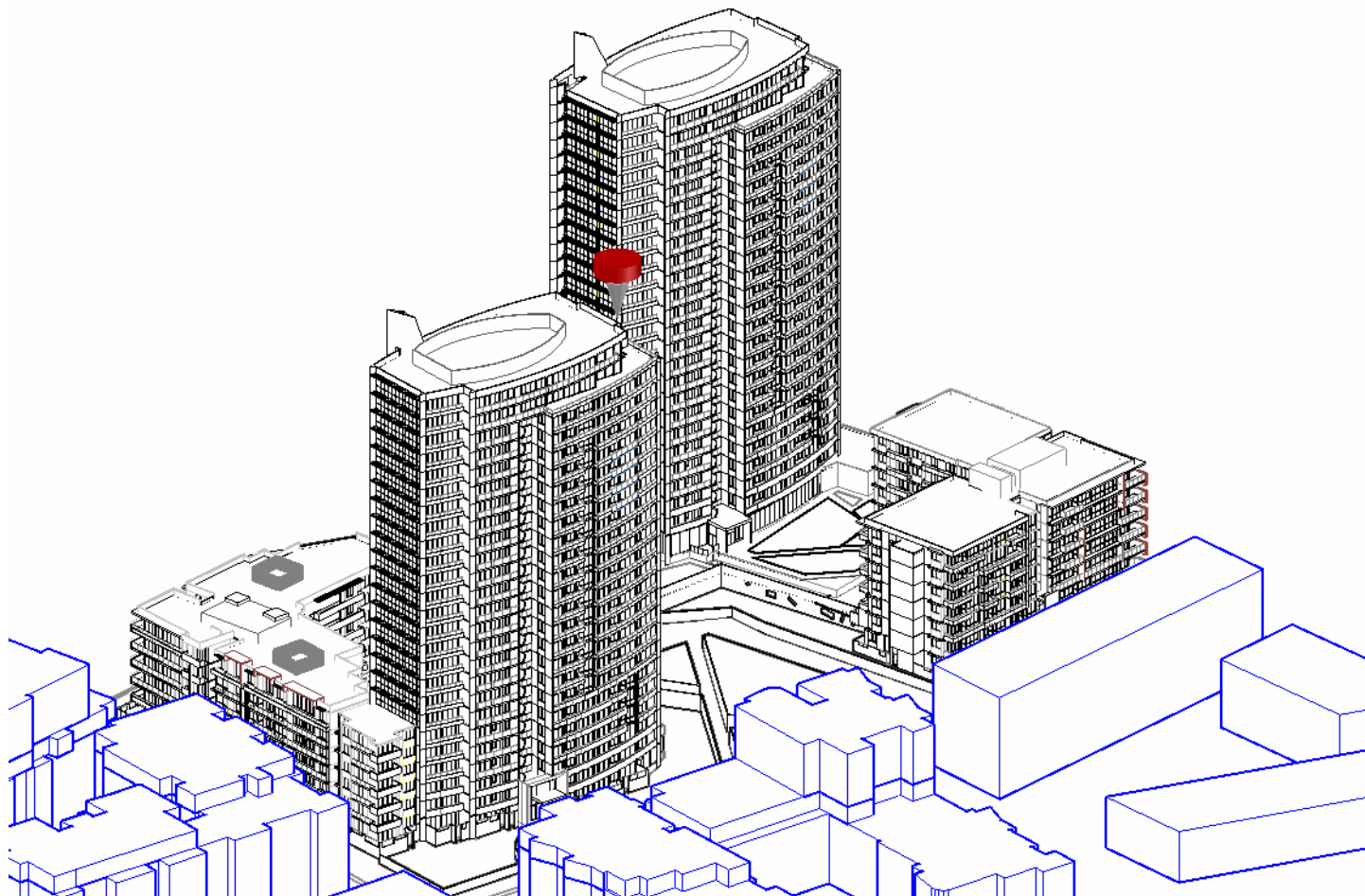


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Figure 24 Development Sun's Eye View at 14.00 pm on 21 June

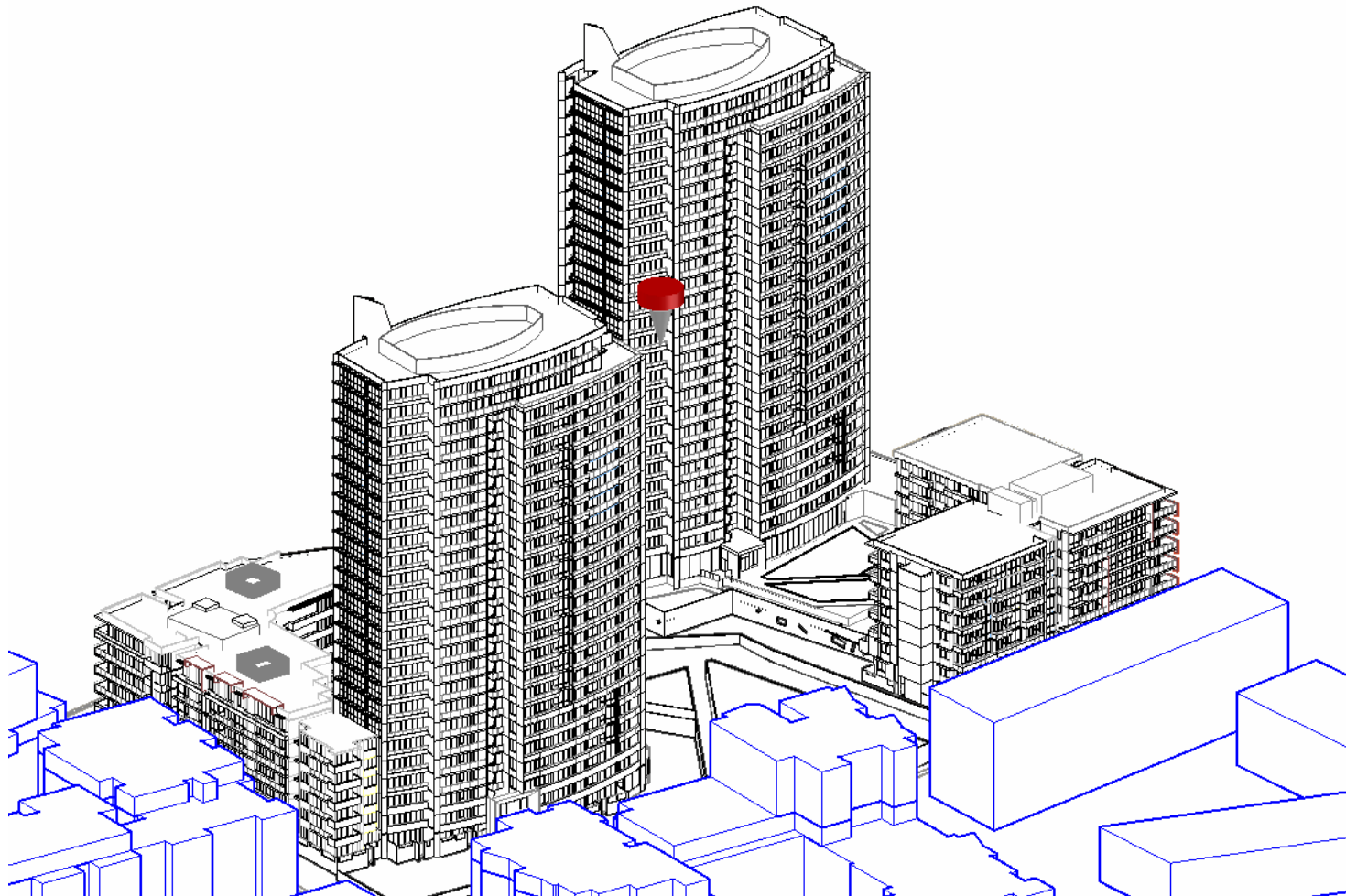


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Figure 25 Development Sun's Eye View at 14.15 pm on 21 June

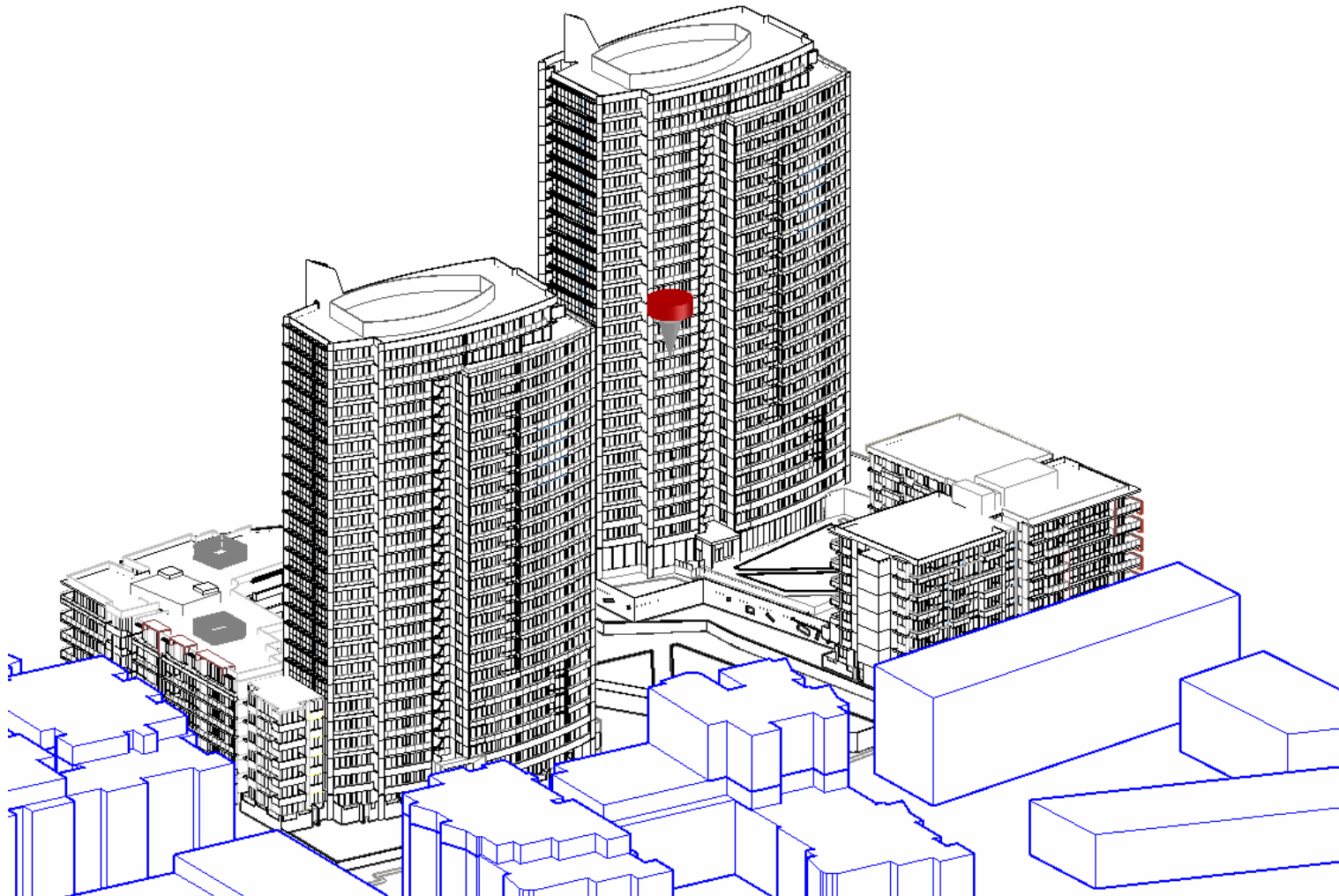


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Figure 26 Development Sun's Eye View at 14.30 pm on 21 June

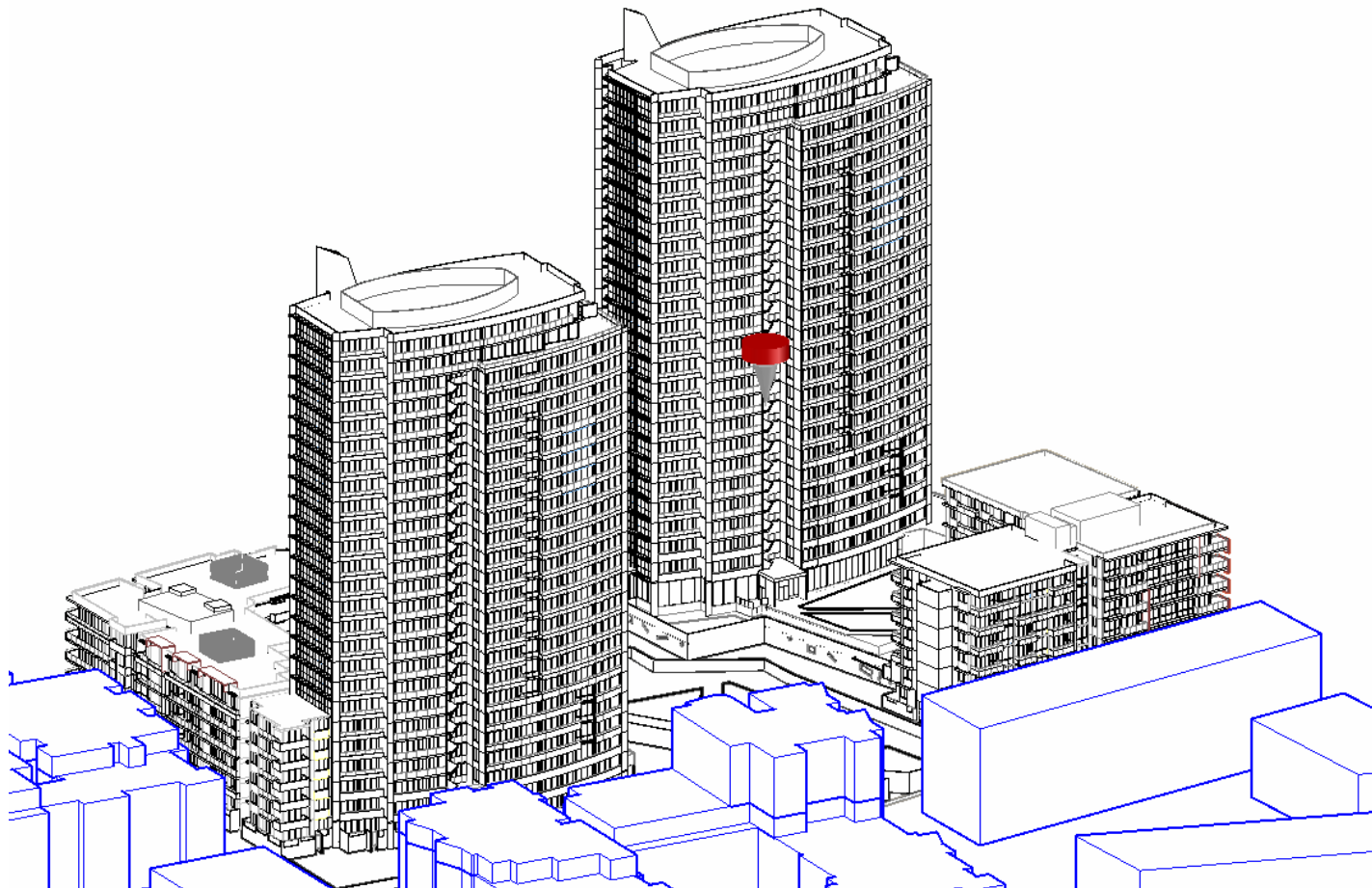


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Figure 27 Development Sun's Eye View at 14.45 pm on 21 June



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Figure 28 Development Sun's Eye View at 15.00 pm on 21 June

