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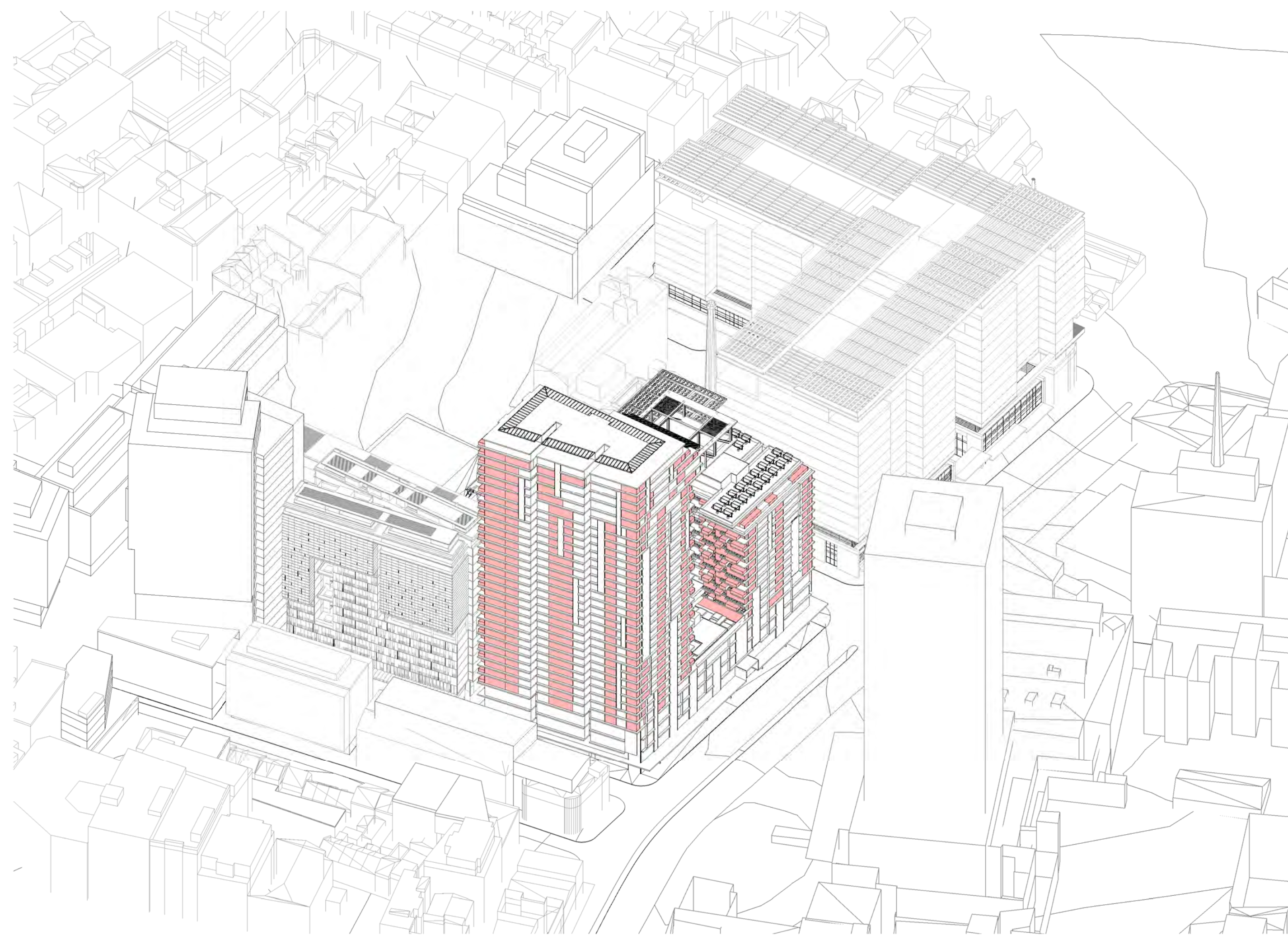
CENTRAL PARK BLOCK 2 & 2A **DAYLIGHT ACCESS REPORT**

OCTOBER 2010

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Sun's Eye Perspective 21 March 10-30am

ILLUSTRATING BY COLOUR THE LIVING ROOMS AND PRIVATE OPEN SPACES.

Introduction

This report demonstrates the current status of units achieving 2 hours daylight access for block 2 and 2A, and is intended to support the SEPP 65 Design Verification Statements accompanying the Amended Block 2 Planning Application.

Background

The target for daylight access is defined in the Approved Concept plan for the Frasers Broadway site. It is expected, that 70% of units across the site are to achieve 2 hours direct daylight access using the "Cox Tzannes method". Individual blocks may achieve less or more than 70%, but all blocks are expected to achieve a minimum 60%.

Compliance with this commitment was demonstrated in detail in the report "Frasers Broadway Site Daylighting Report - Rev 4" dated 2/10/08 prepared by Heggies. This report investigates the compliance of the PA proposals for Block 2 & 2A in relation to the percentages reported in the Heggies report.

The original Daylight Access report for the Planning Application were submitted on October 2009.

Methodology

To enable clear comparison between the PA designs for Block 2 and the Heggies report, this report also uses the Cox/Tzannes method, which looks at "effective sunlight" between 7:30am and 4:30pm, rather than sunlight limited only to the 9am and 3pm range as suggested by the SEPP 65 Residential Flat Design Code. Effective sunlight is described as having a horizontal angle of incidence greater than 22 degree to the living room window or balcony edge and altitude greater than 5 degree (which roughly corresponds to a sun later than 7:30am and earlier than 4:30pm on June 21).

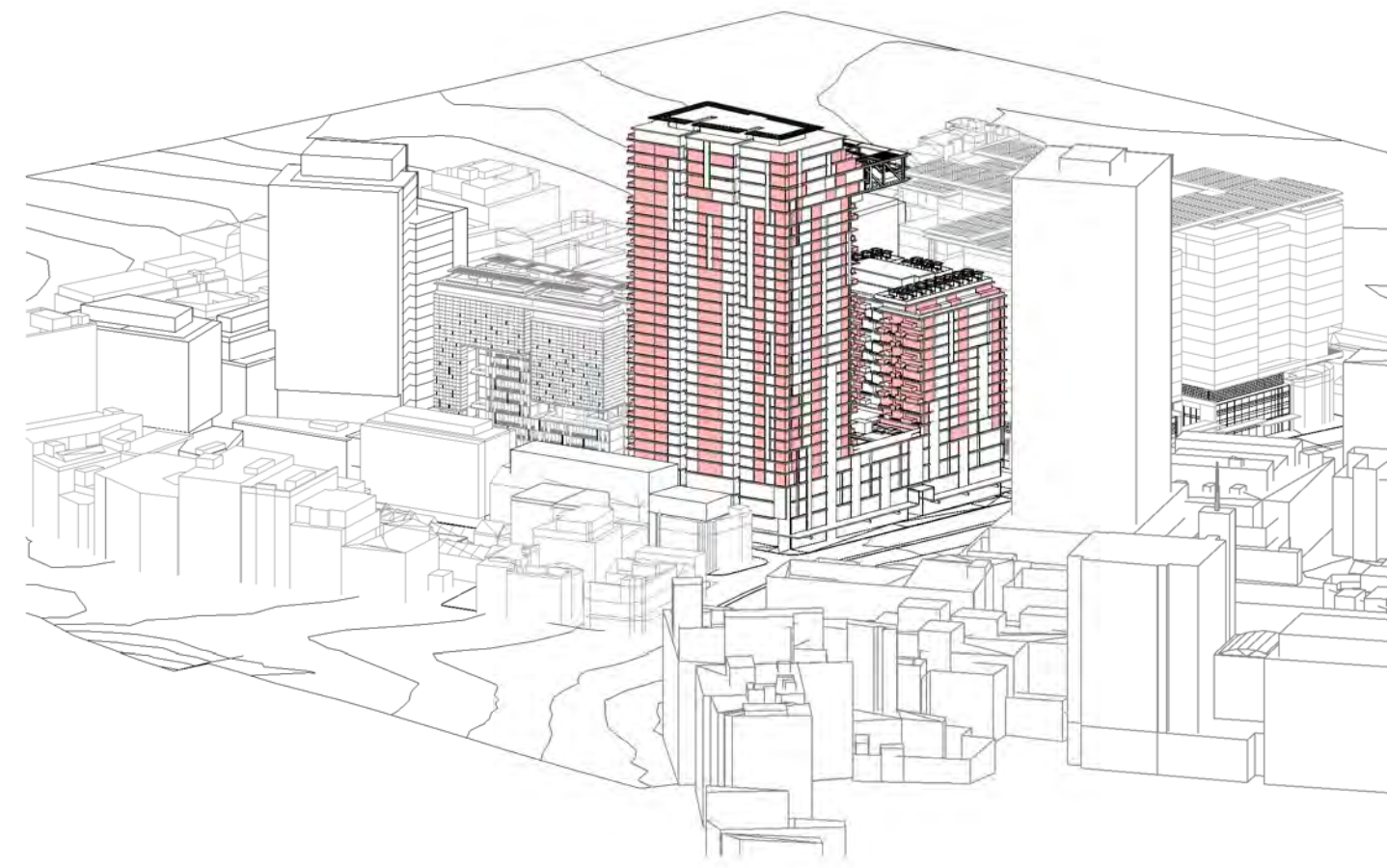
The Concept Plan and the Heggies report only considered daylight access for June 21 to enable comparison with the Residential Flat Design Code guidelines. This report also presents the results for March 21, to enable comparison to the City of Sydney standard, which looks at daylight access in March.

Assumptions

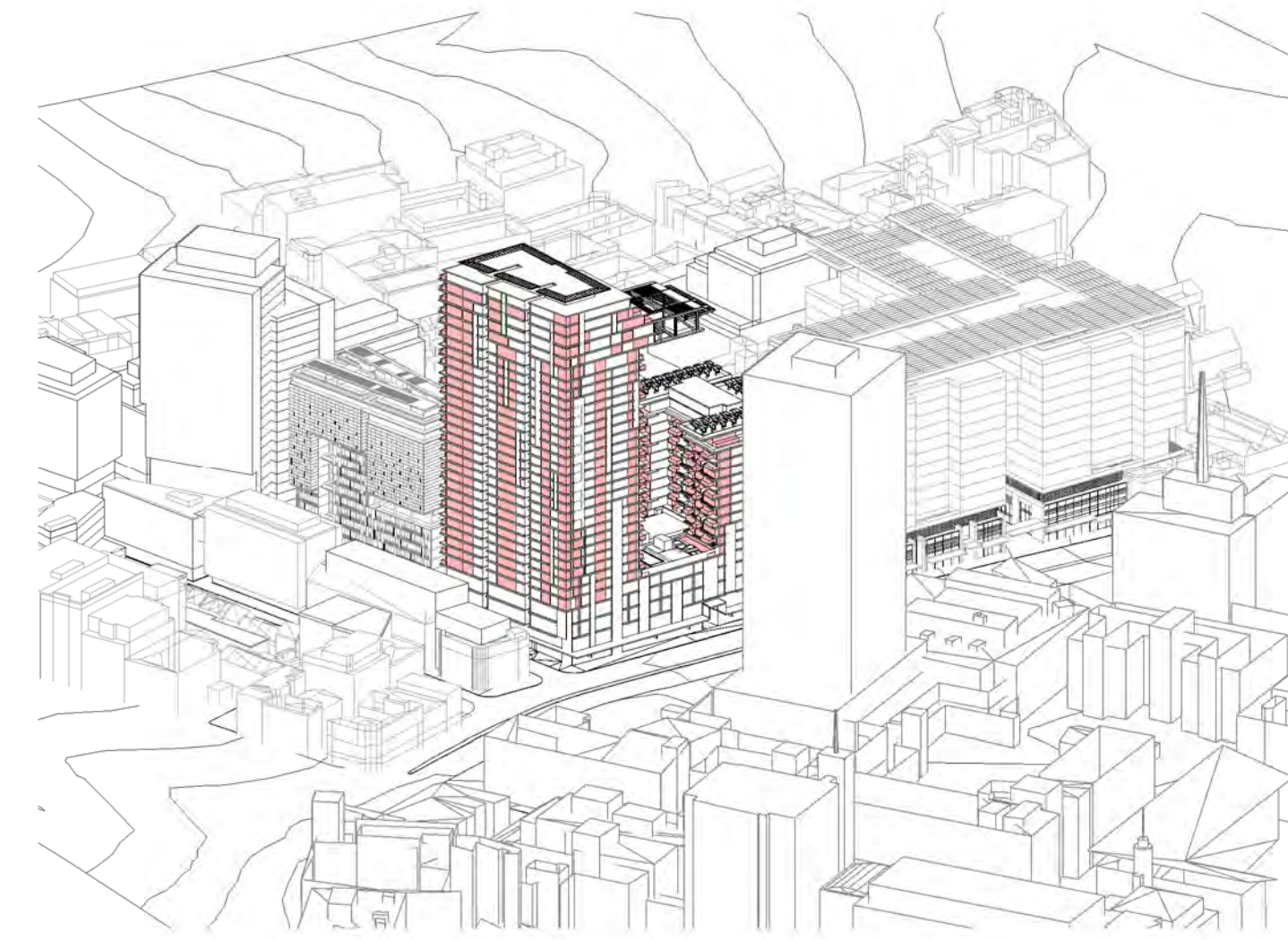
- the Block 1 & 4 roof features will be detailed in later design stages to allow sufficient direct daylight access through to not affect compliance of the units in its "shadow"
- Daylight savings is assumed for March 21 results
- Analysis is based on the following 3D models:
 - Block 2 amended PA model 8/10/2010
 - Block 1 & 4 PA model is provided by F + P 21/7/2009
 - Block 5 models by JPW dated 2/02/2010
 - Block 9 model by JPW dated 2/02/2010
 - All other blocks within Frasers Site are of the Concept Plan envelopes as provided by F + P October 2008.
 - All surrounding context and Ground Plan models provided by F + P October 2008.



21 June 07-30



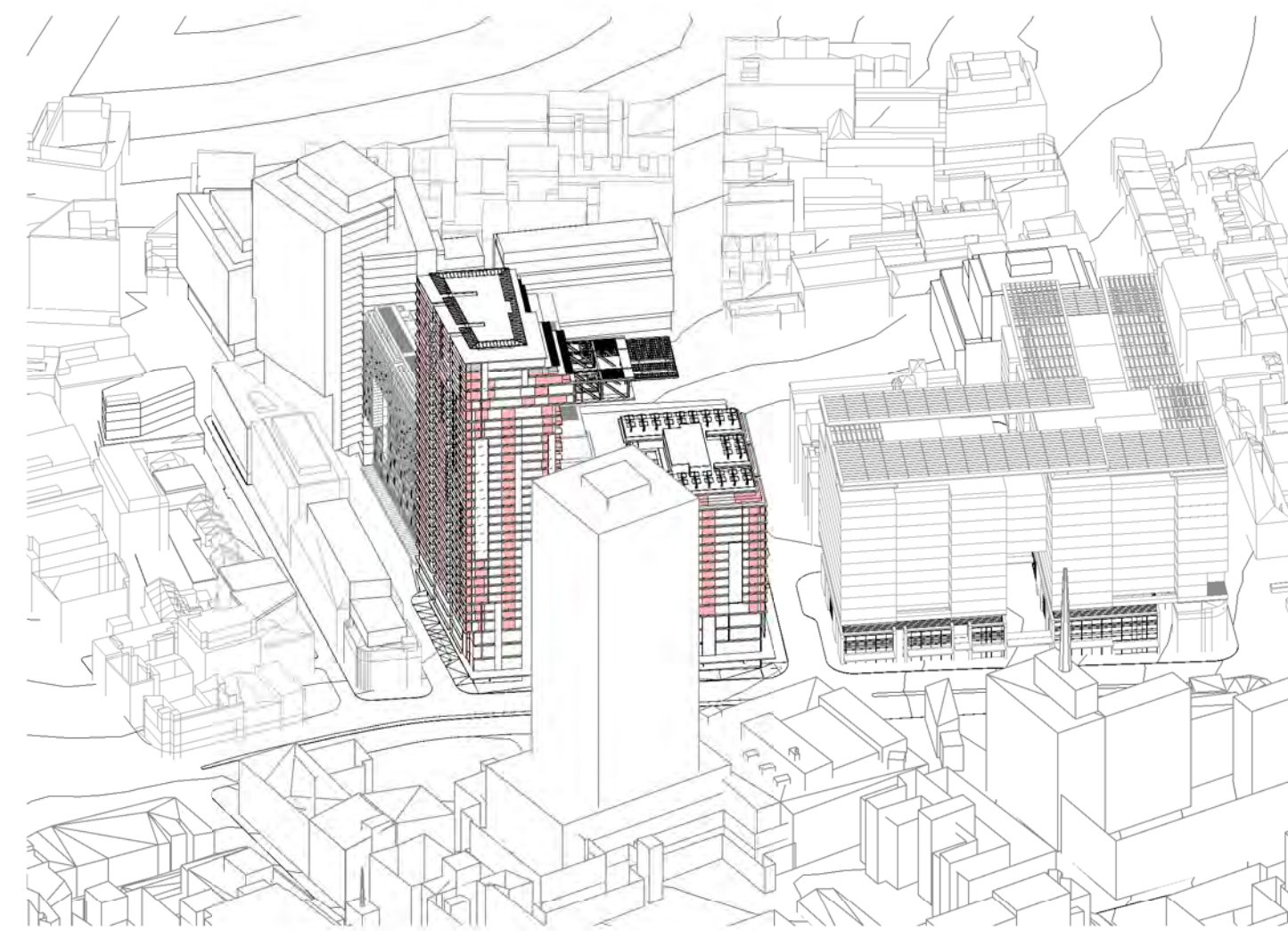
21 June 08-30



21 June 09-30



21 June 10-30



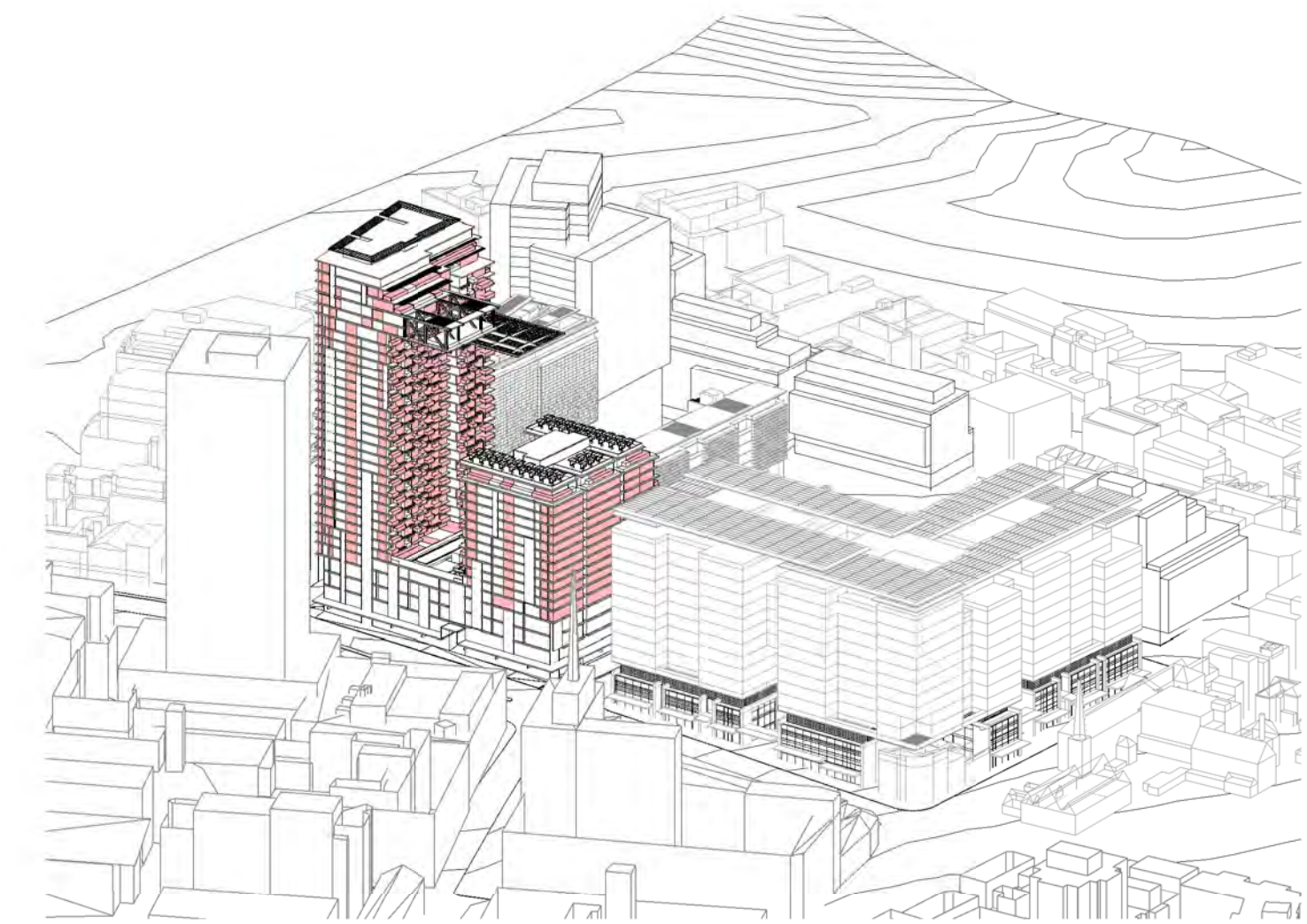
21 June 11-30



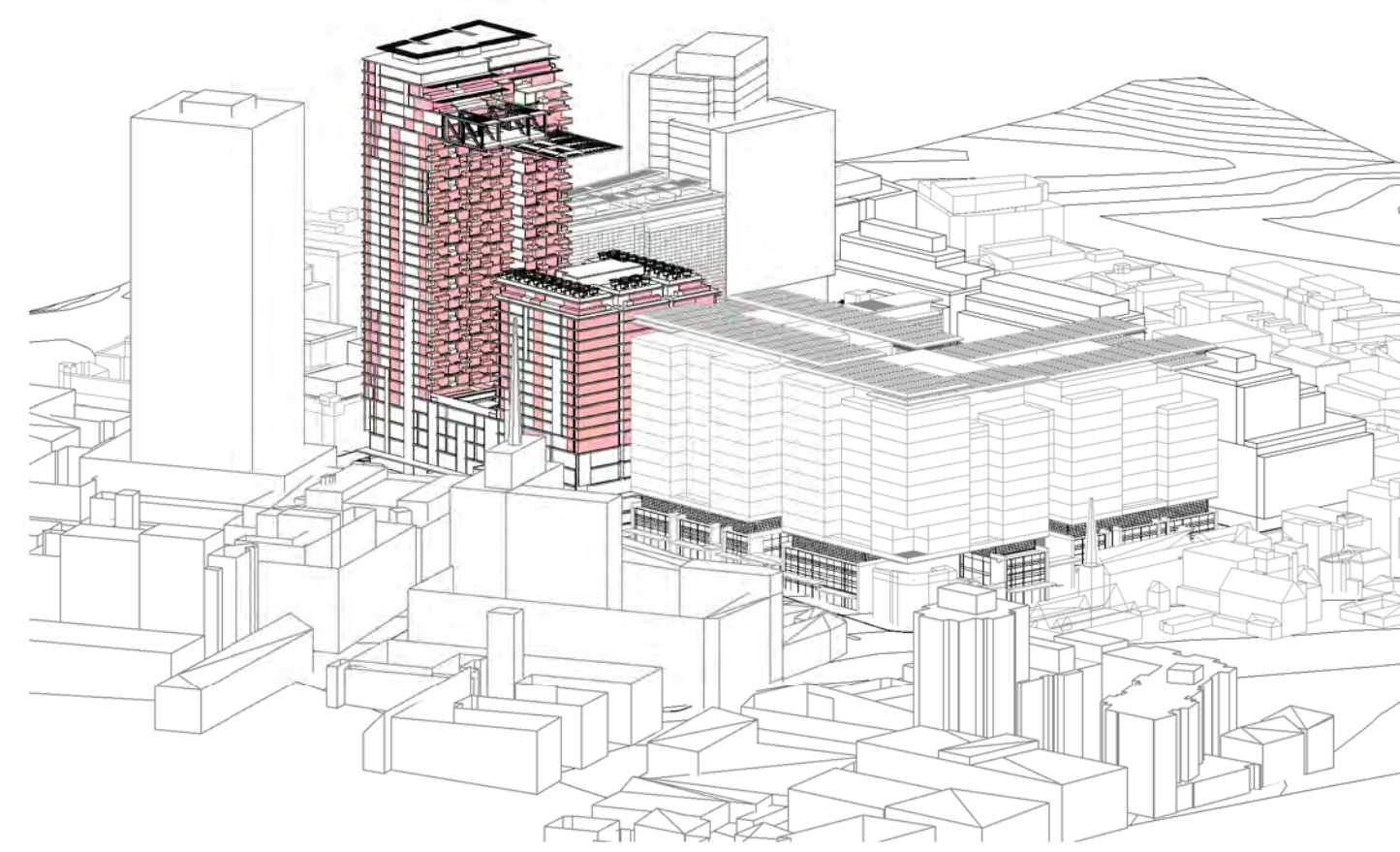
21 June 12-30



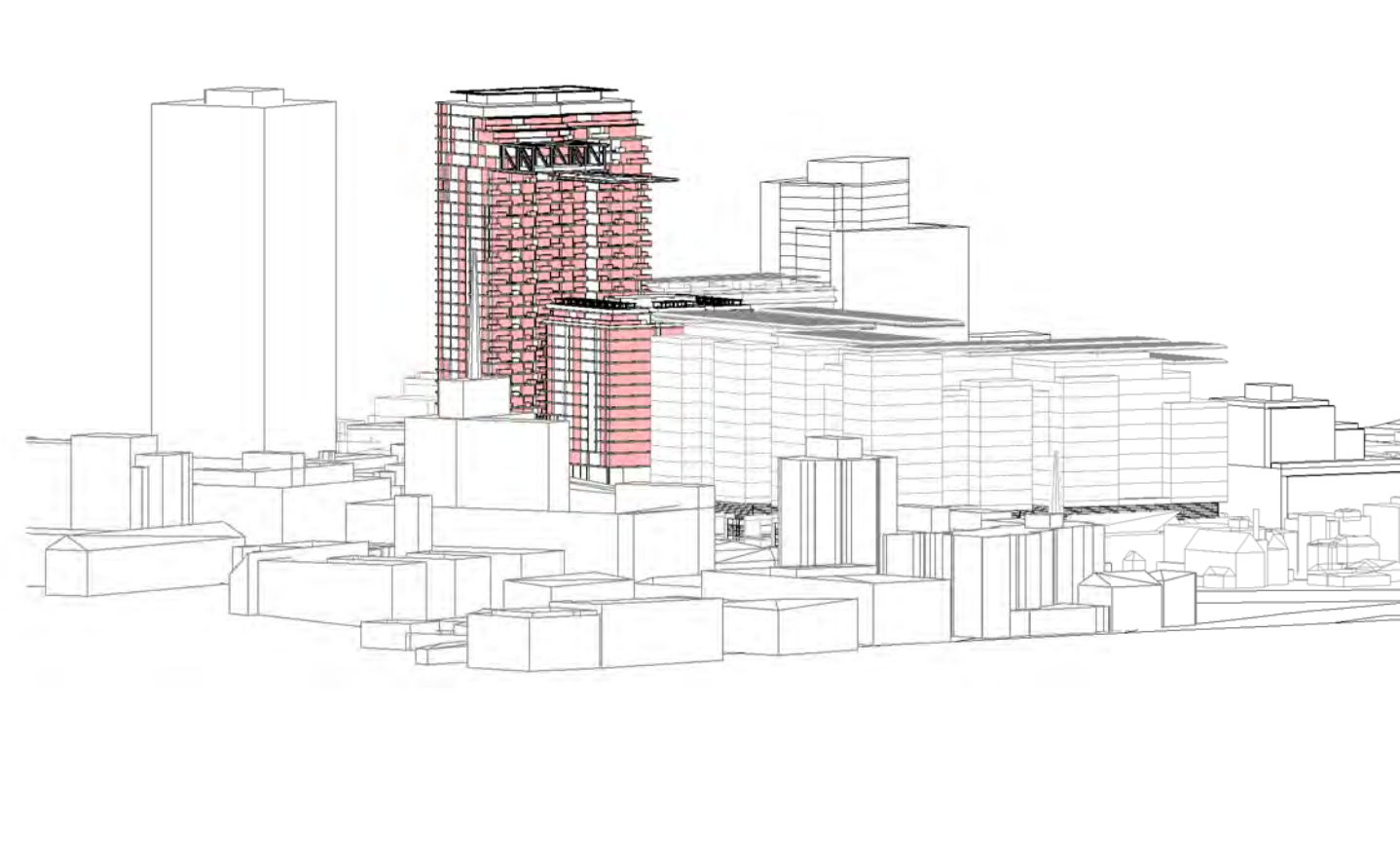
21 June 13-30



21 June 14-30

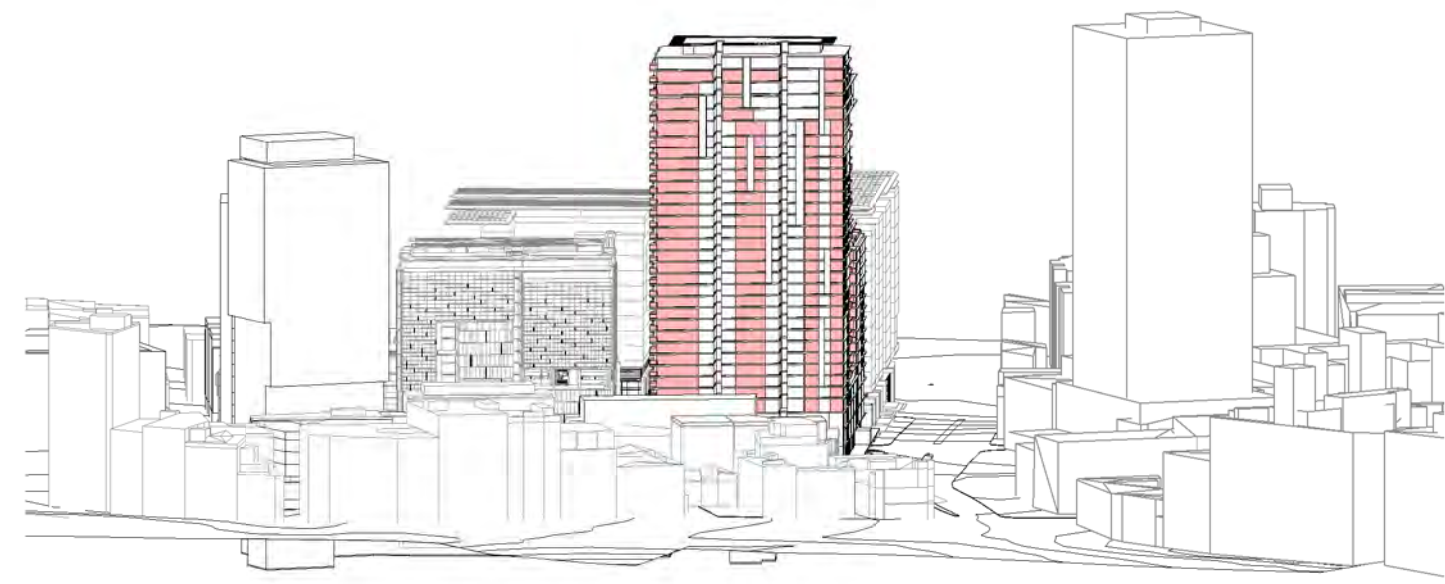


21 June 15-30

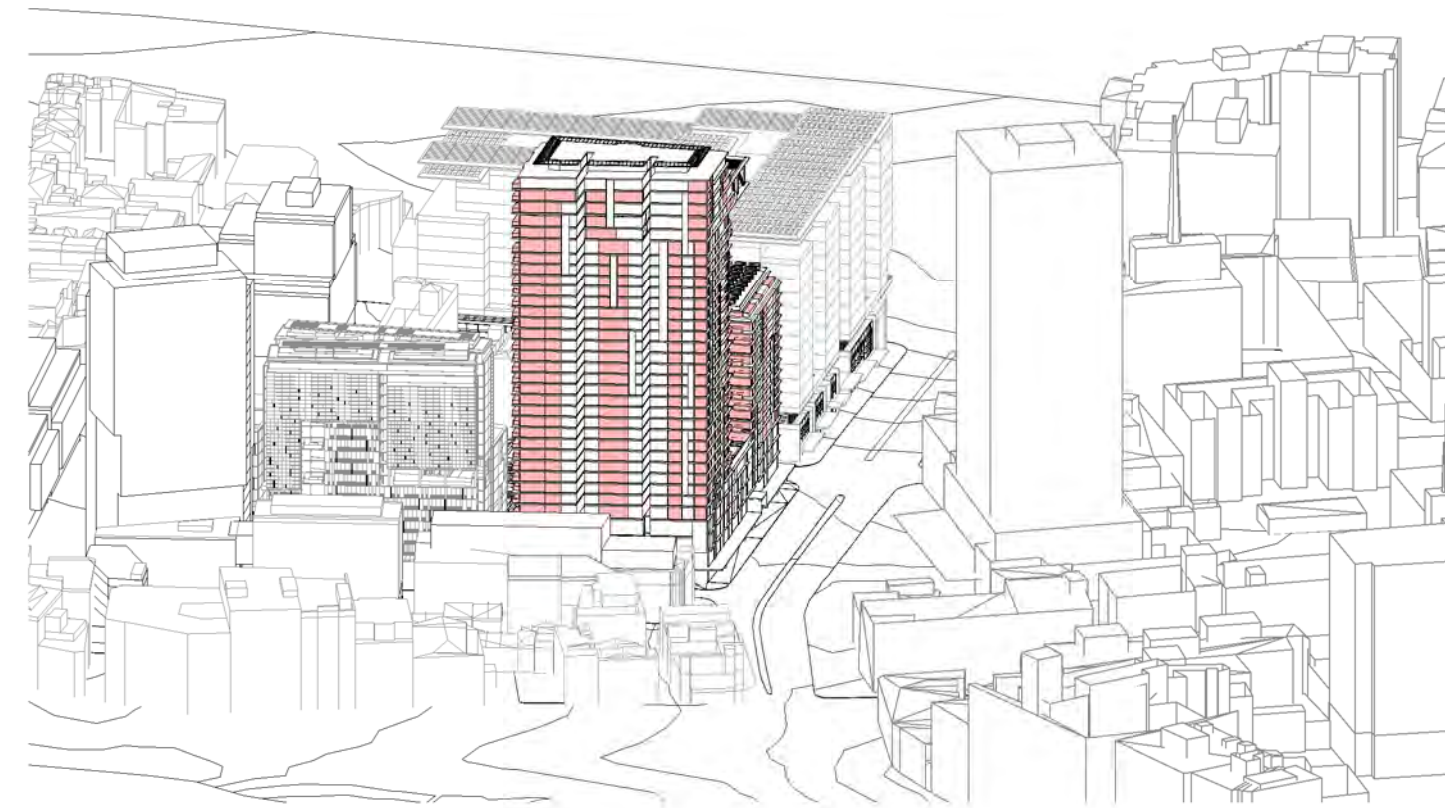


21 June 16-30

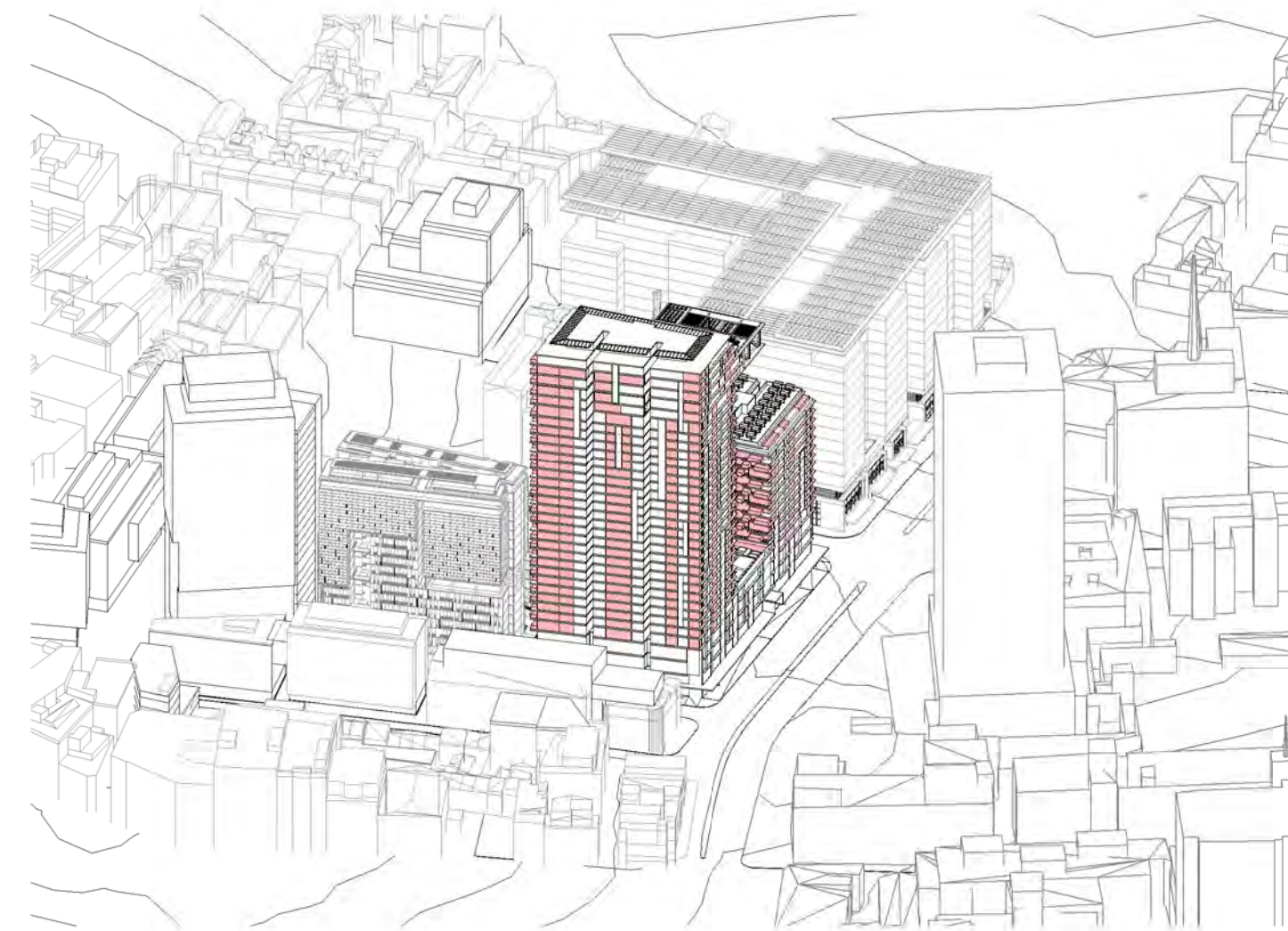
Sun's eye perspectives illustrating by colour the living room & private open spaces.



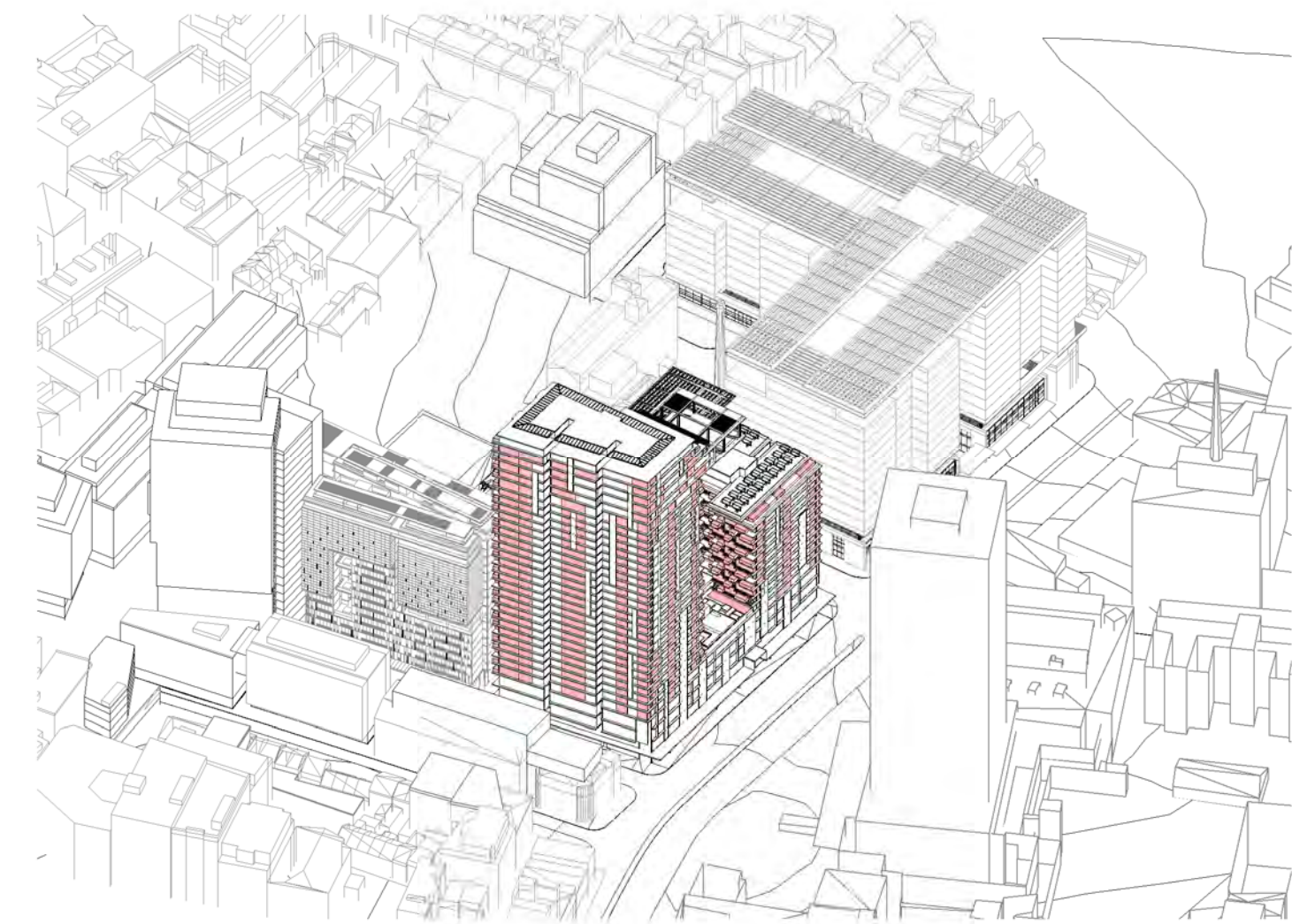
21 March 07-30



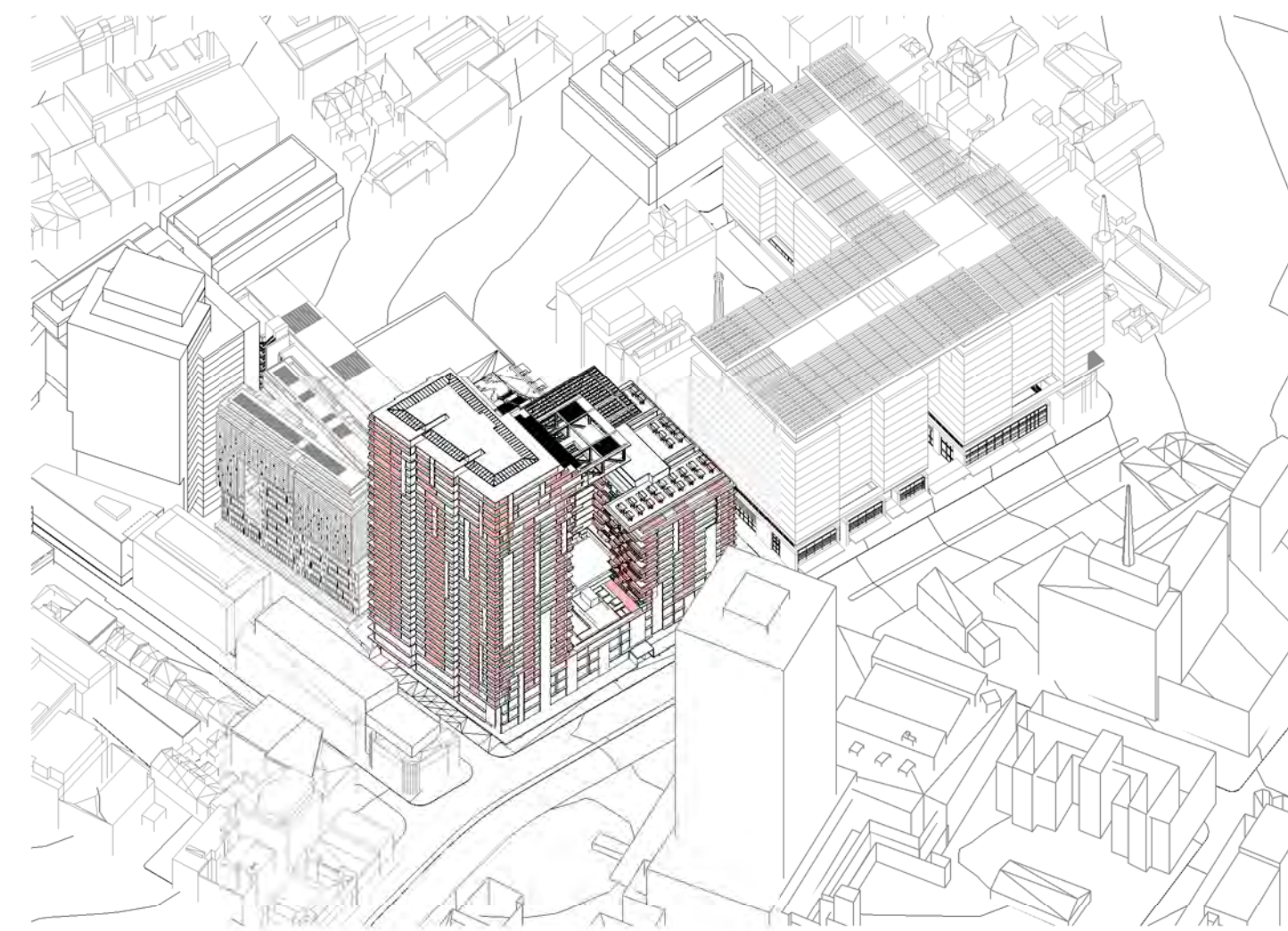
21 March 08-30



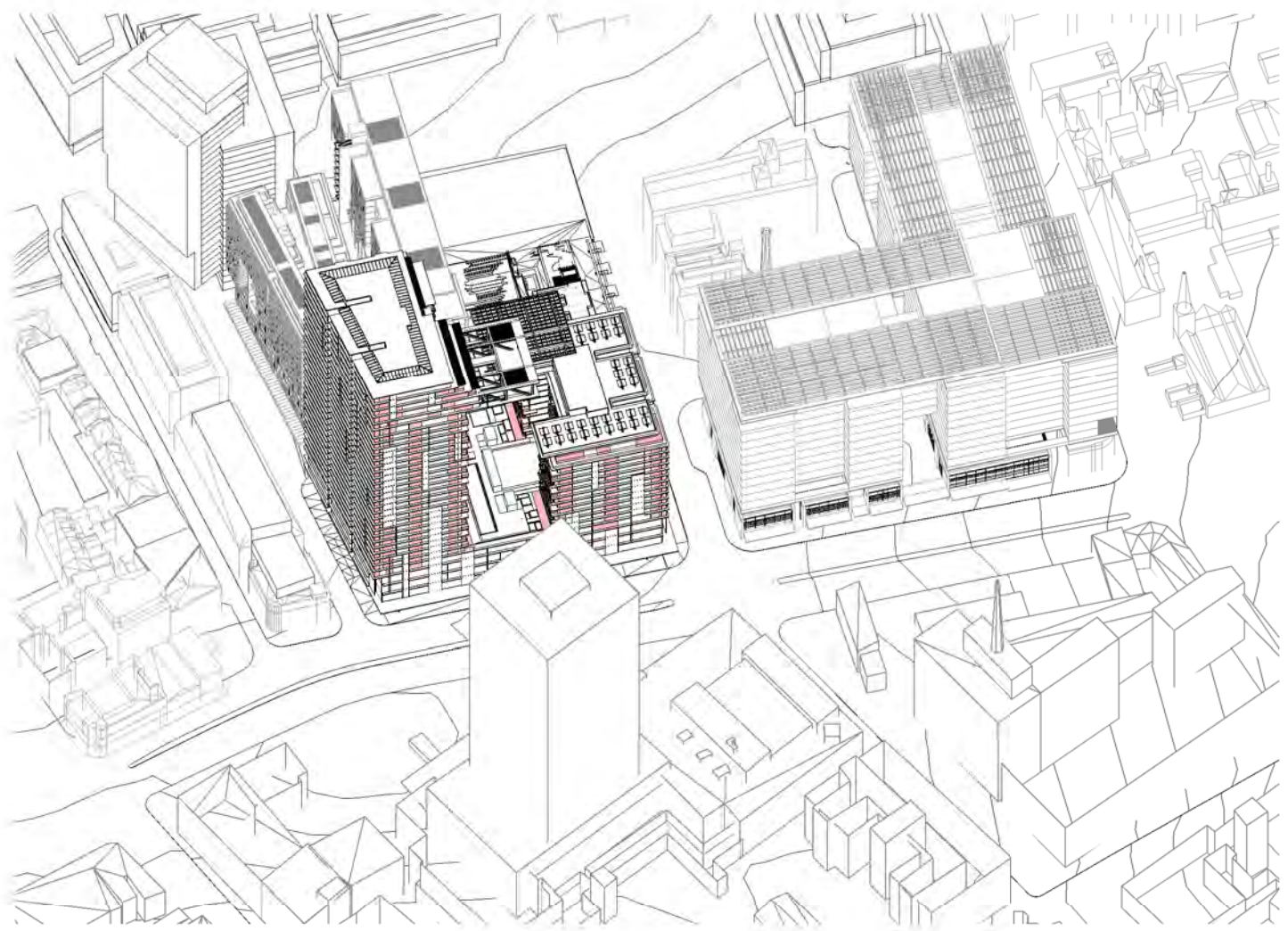
21 March 09-30



21 March 10-30



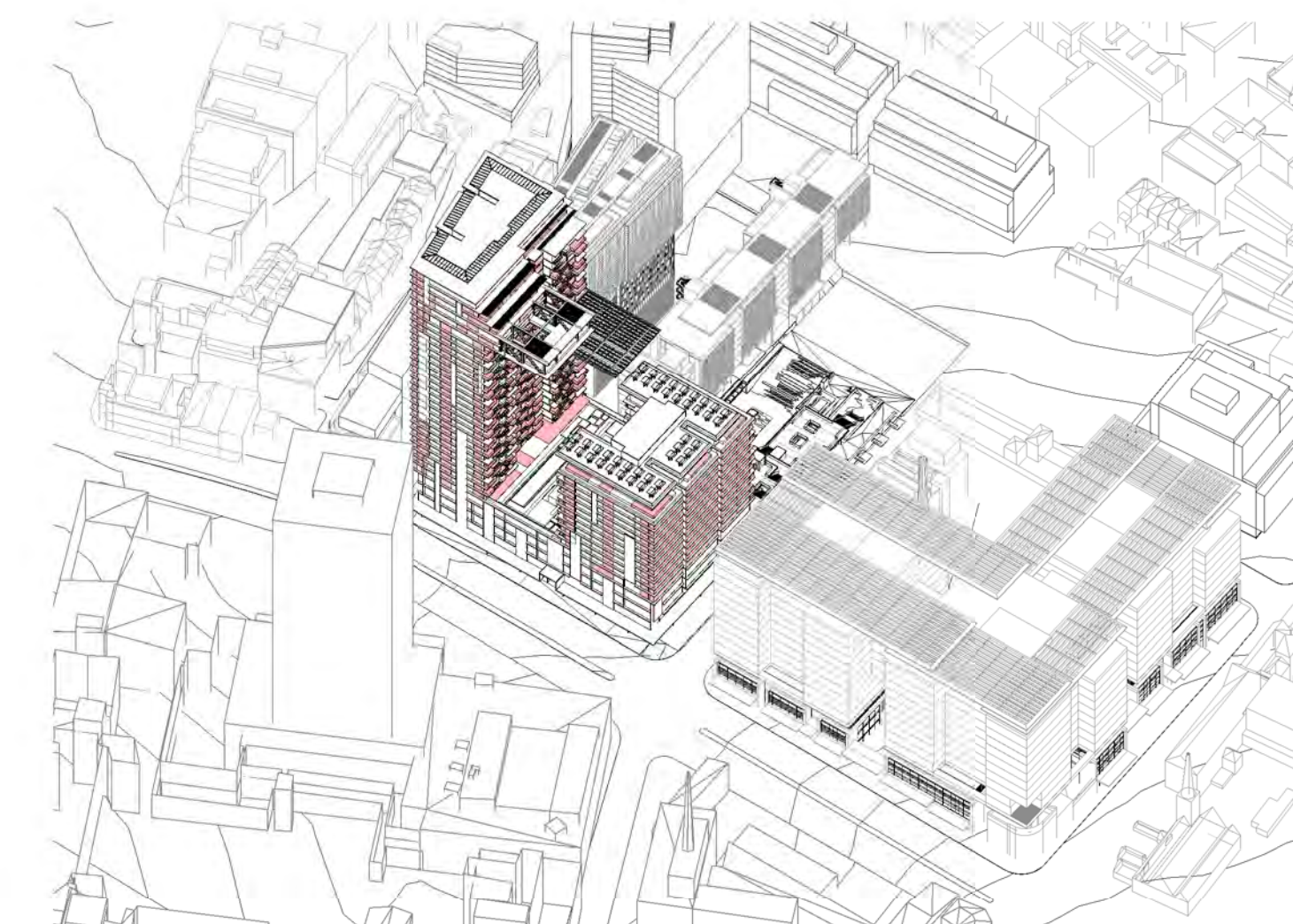
21 March 11-30



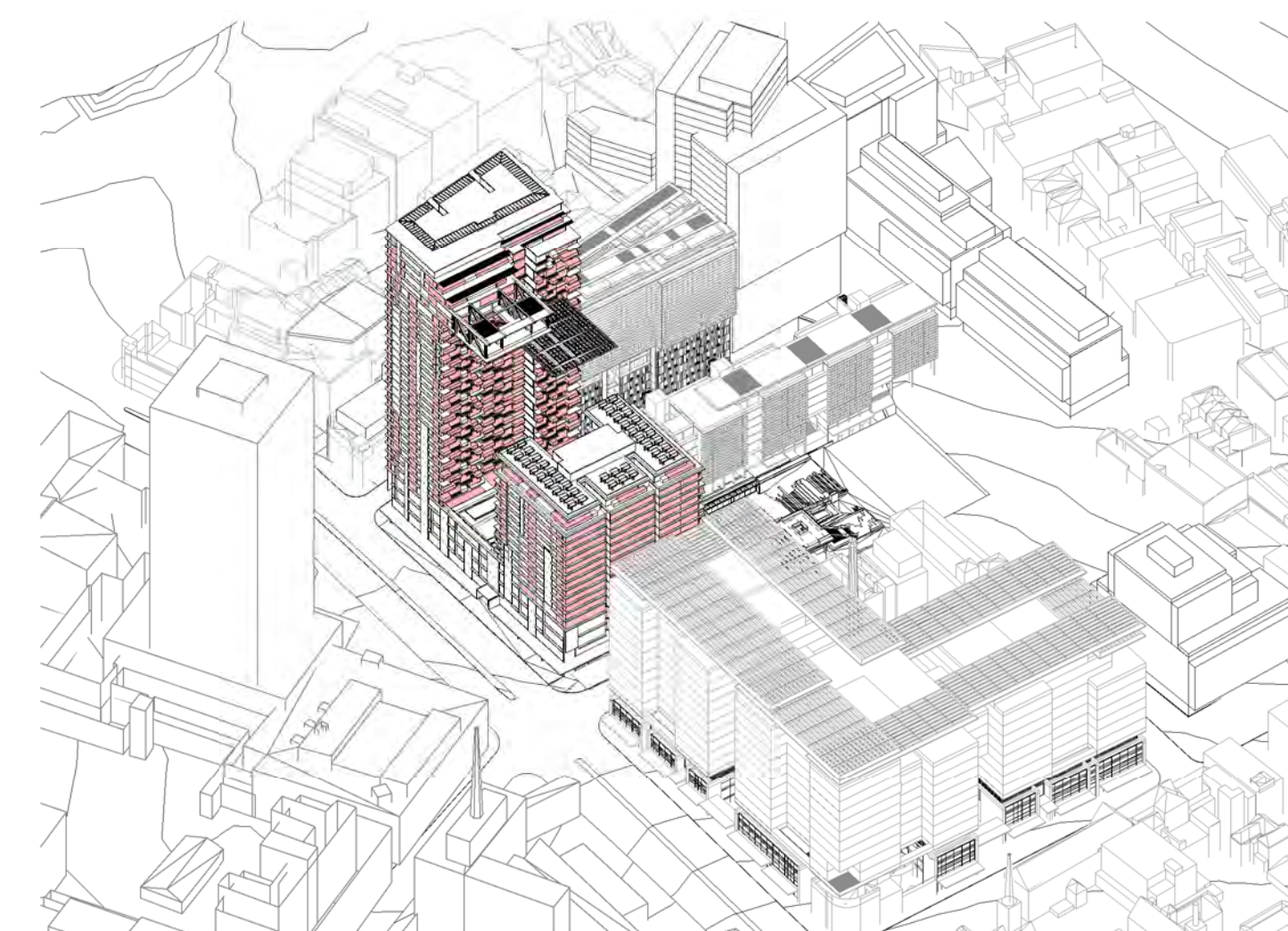
21 March 12-30



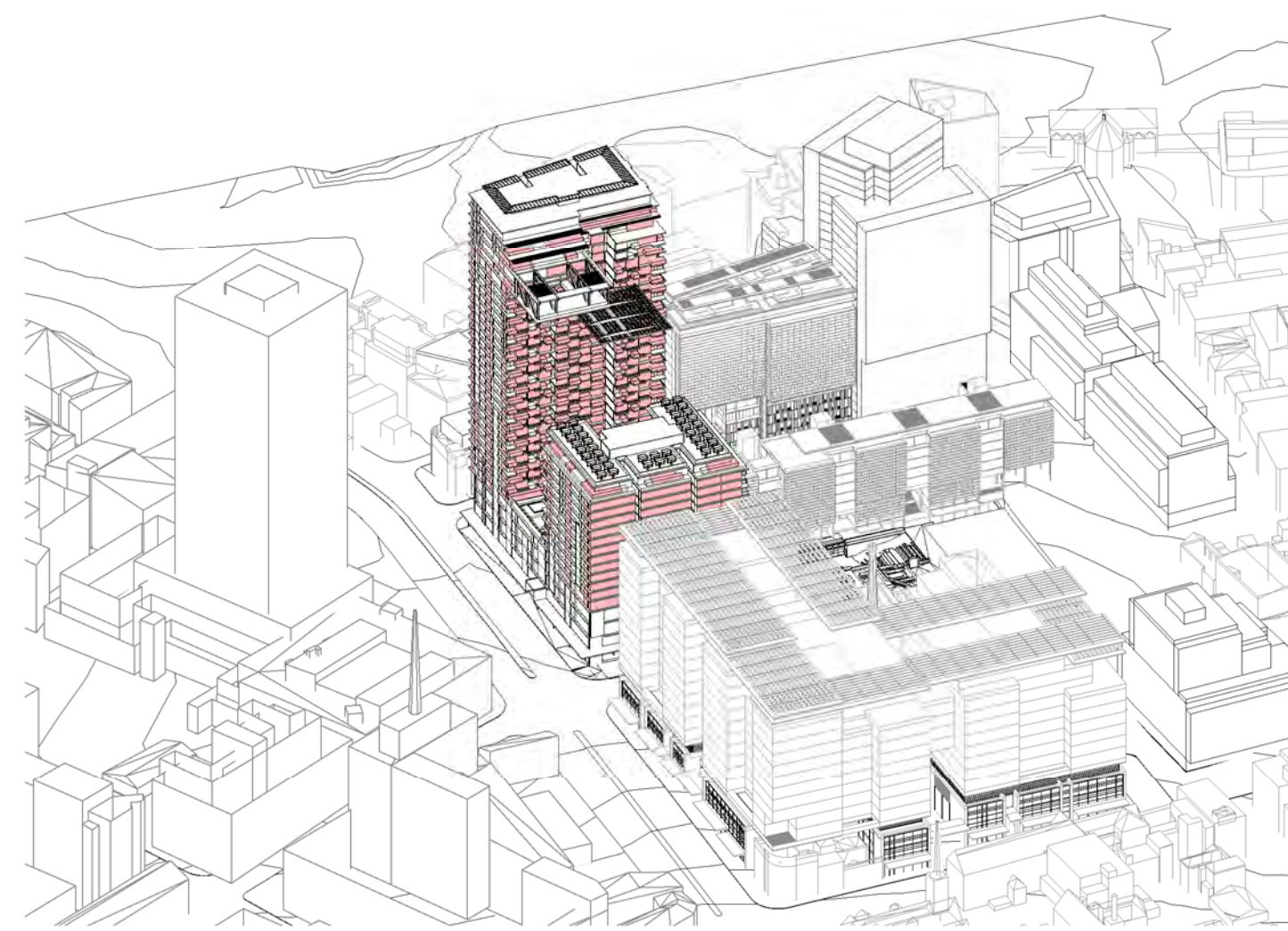
21 March 13-30



21 March 14-30



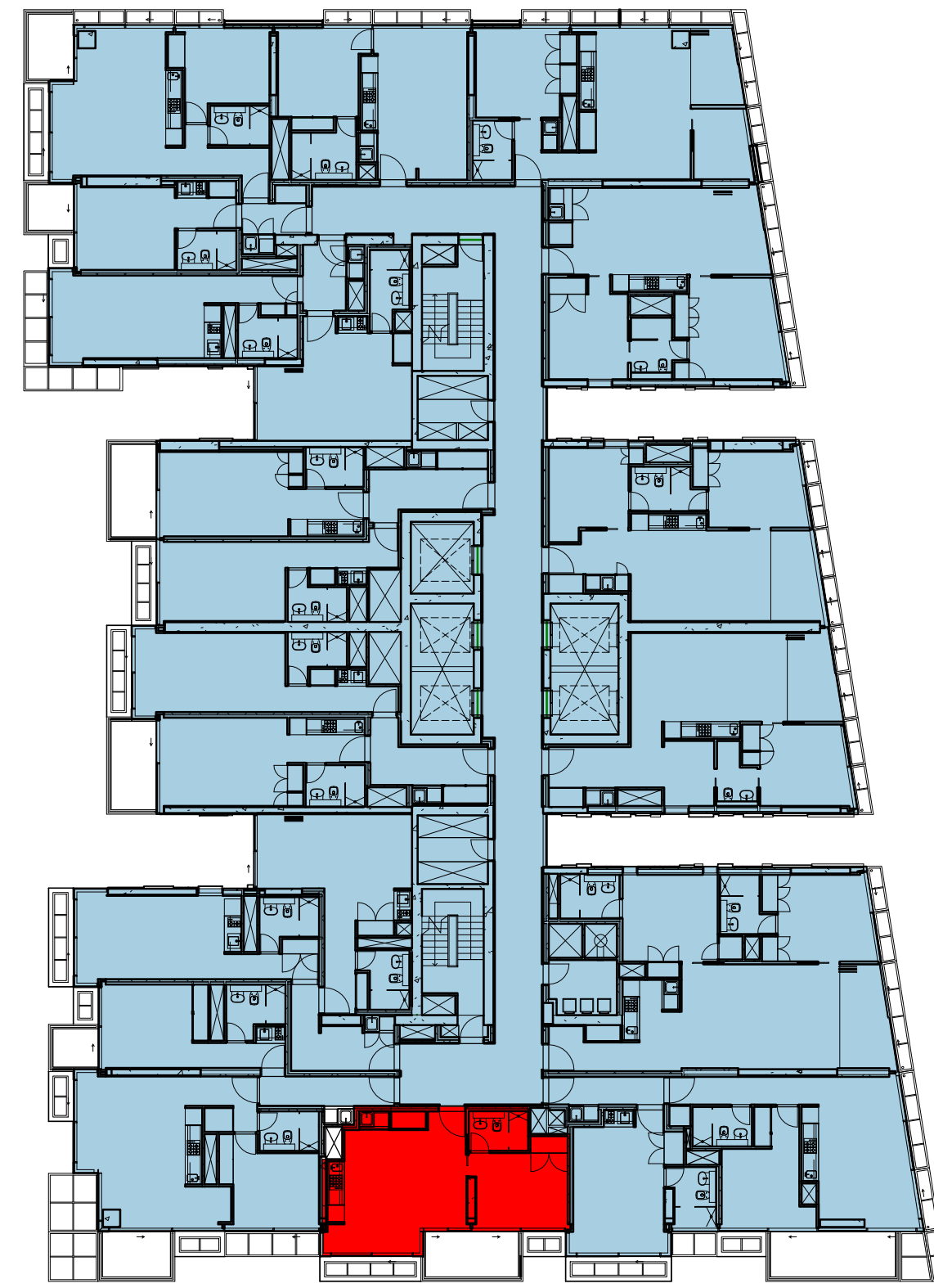
21 March 15-30



21 March 16-30



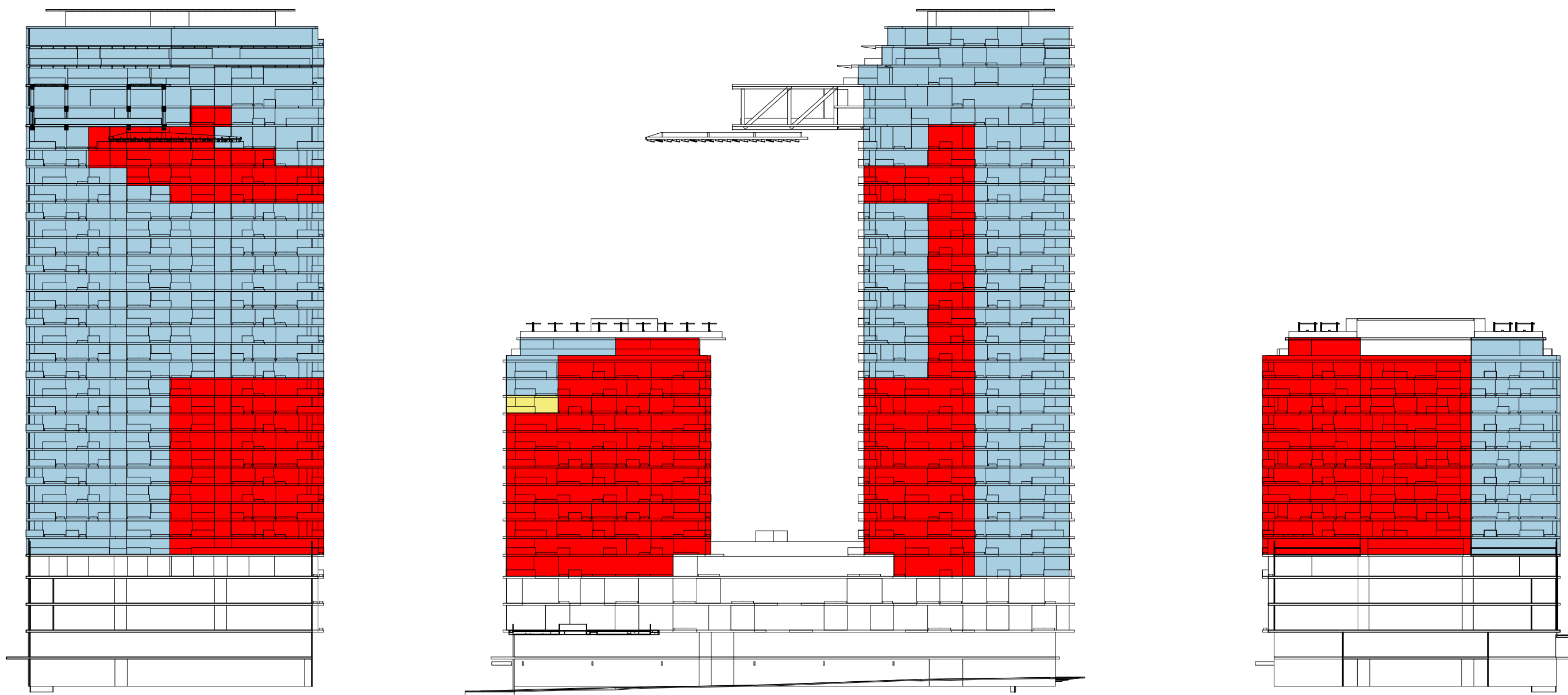
TYPICAL PLAN WEST TOWER (Level 6)



TYPICAL PLAN EAST TOWER (Level 15)

- Units achieving less than 2 hours sun using Cox / Tzannes method.
- Units achieving at least 2 hours sun using Cox / Tzannes method.
- Units relying on Block 1 & 4 roof feature to be transparent.

Summary of Complying Units June 21

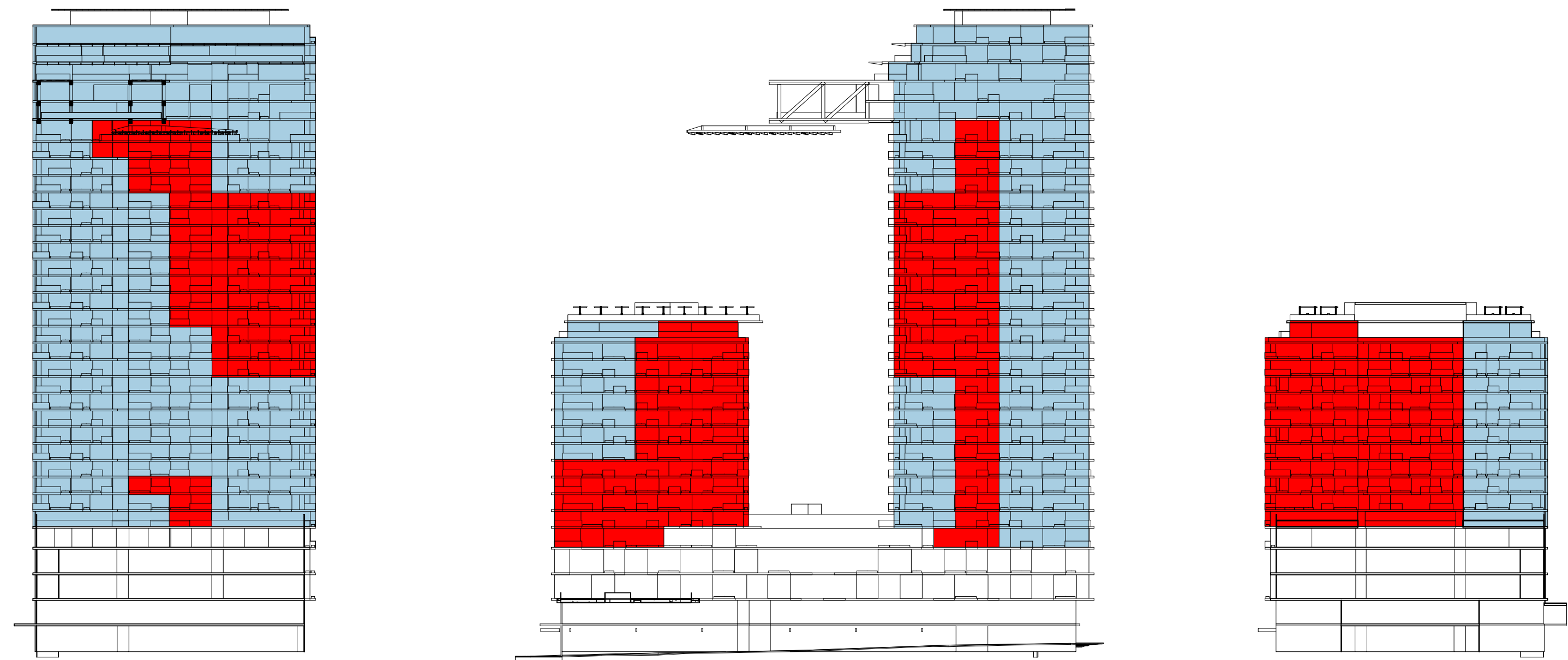


East Tower - West Elevation (June)

South Elevation (June)

West Tower - East Elevation (June)

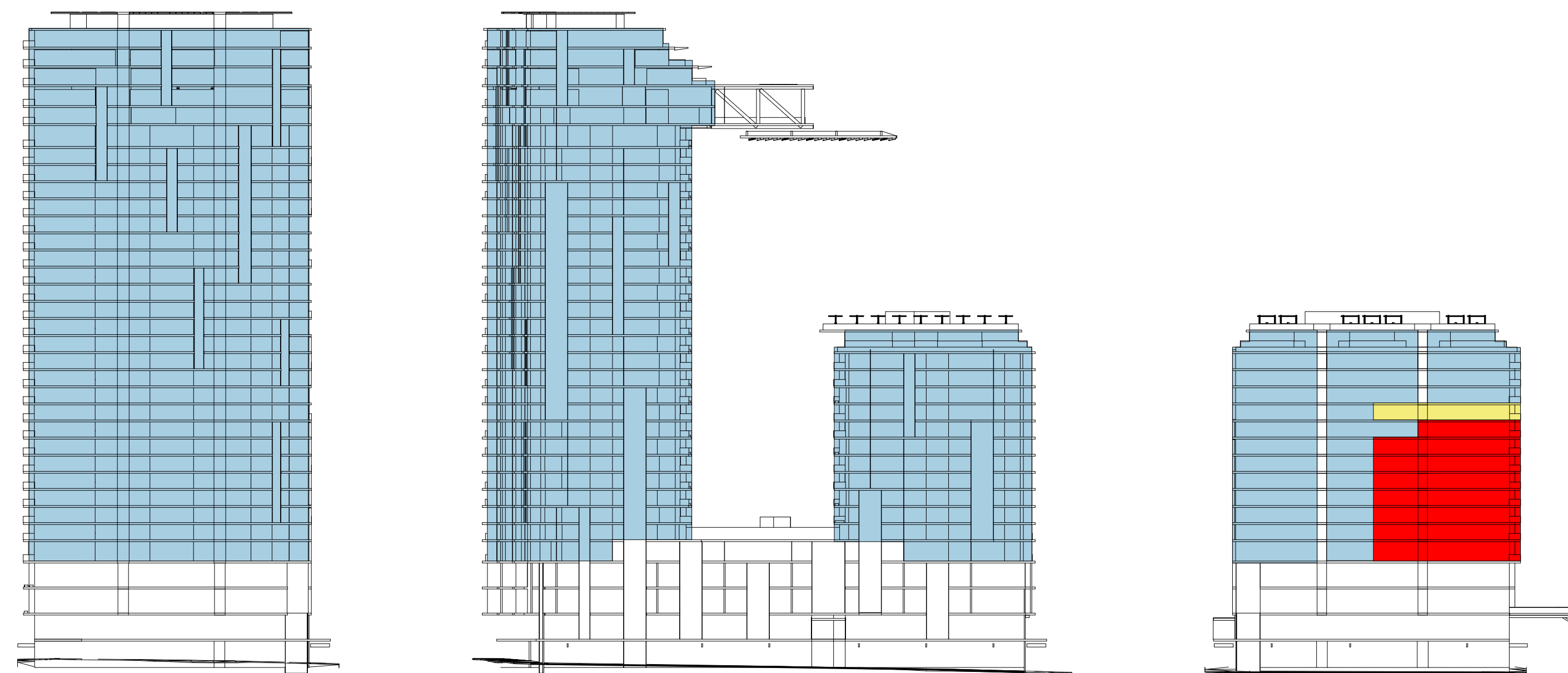
Summary of Complying Units March 21



East Tower - West Elevation (March)

South Elevation (March)

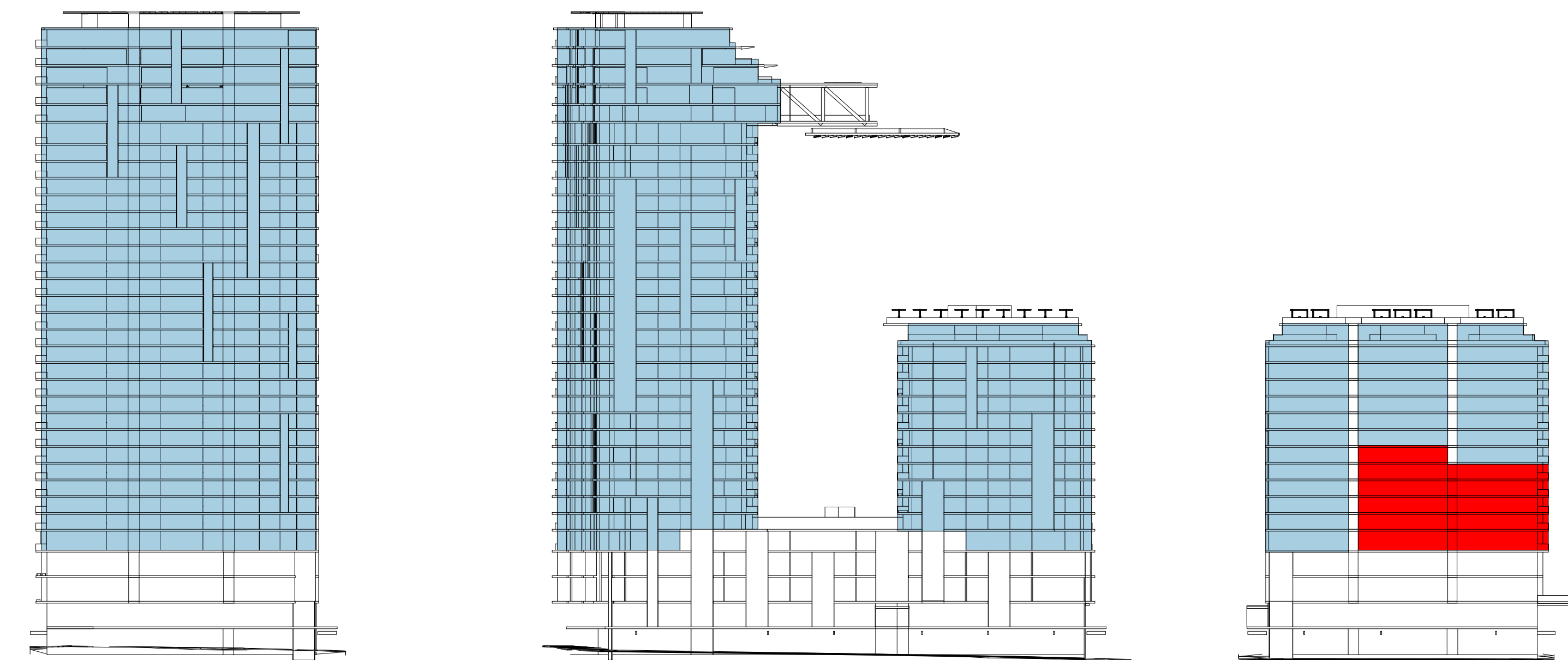
West Tower - East Elevation (March)



East Tower - East Elevation (June)

North Elevation (June)

West Tower - West Elevation (June)



East Tower - East Elevation (March)

North Elevation (March)

West Tower - West Elevation (March)

(EAST TOWER SCHEDULE)			
Level	No. Unit	Complying	
		March	June
TE Level 33	0	0	0
TE Level 32	12	12	12
TE Level 31	8	8	8
TE Level 30	9	9	9
TE Level 29	9	9	8
TE Level 28	14	10	10
TE Level 27	14	10	9
TE Level 26	14	11	9
TE Level 25	14	11	10
TE Level 24	14	10	13
TE Level 23	14	10	13
TE Level 22	14	10	13
TE Level 21	14	10	13
TE Level 20	14	10	13
TE Level 19	14	10	13
TE Level 18	14	10	13
TE Level 17	14	10	13
TE Level 16	14	11	13
TE Level 15	14	11	13
TE Level 14	14	11	10
TE Level 13	14	13	10
TE Level 12	14	13	10
TE Level 11	14	13	10
TE Level 10	14	13	10
TE Level 09	14	13	10
TE Level 08	14	13	10
TE Level 07	14	11	10
TE Level 06	14	12	10
TE Level 05	14	12	10
TE Level 04	8	6	6
	382	312	311
		82%	81%

Block 2 Summary	March	June
	622	440
	72%	71%

On June 21, Block 2 achieves 81% for the East tower and 54% for the West tower. Overall, Block 2 achieves 71%.

In March the results are slightly higher as the higher sun altitude minimize the West tower's shadow cast on East tower.

(WEST TOWER SCHEDULE)			
Level	No. Unit	Complying	
		March	June
TW Level 16	8	6	6
TW Level 15	20	14	14
TW Level 14	20	14	14
TW Level 13	20	14	14
TW Level 12	20	14	9
TW Level 11	20	14	11
TW Level 10	20	14	9
TW Level 09	20	10	9
TW Level 08	20	7	9
TW Level 07	20	7	9
TW Level 06	20	7	9
TW Level 05	18	7	9
TW Level 04	14	5	7
	240	133	129
		55%	54%

Conclusions

Generally the Amended PA design for Block 2 is achieving daylight access consistent with the expectations of the Heggies Report and the Approved Concept Plan.

PA Design (2009):

The Block 2 east tower exceeds the results expected in Heggies report. The West tower is partially overshadowed by the taller East tower and the adjacent Block 1 & 4. The West tower (previously commercial use) was not considered in the Heggies report, so no comparison with the concept plan is possible. The inclusion of the West tower as residential use reduces the overall performance of Block 2 to 69%. While this is short of the 81% anticipated in the Heggies report, it none-the-less complies with the 60% minimum required in Concept plan for individual blocks.

Amended PA Design (Current):

The Block 2 East tower amended Design is consistent with the results expected in Heggies report, but less than the PA Design (2009). However, the West tower is dramatically exceeds the result of the previous PA Design (2009).

In terms of the overall, the current number of complying units of the Amended PA are higher than the previous PA Design (2009).

The Block 2 Amended PA designs comply with the Concept Plan daylight access provisions.

	Concept Plan	PA Design (2009)			Amended PA Design (current)		
		No. units	Complying	Percent	No. units	Complying	Percent
Block 2 East	81.4%	368	304	83%	382	331	81%
Block 2 West	na	225	108	48%	240	129	54%
Block 2 Overall	na	593	412	69%	622	440	71%