

Metro Martin Place

Sydney Metro and Over Station Development Design Review Panels

DRP #06

7 August 2018



Sydney Metro DRP & Over Station Development DRP Agenda

Agenda Item	Details	Presenter	Run Time
00. Panel Preparation	<ul style="list-style-type: none"> Sydney Metro and OSD DRP Panels arrive and review agenda and previous DRP notes 	Peter Poulet, Government Architect	Prior to 9:00
1. Opening	<ul style="list-style-type: none"> Welcome and Introduction Current and Forward Agendas 	Peter Poulet, Government Architect Anthony Henry, Macquarie	9:00 – 9:15 (15 mins)
SYDNEY METRO DRP – RESPONSE TO DRP FEEDBACK			
2. Public Art and Heritage	<ul style="list-style-type: none"> Macquarie's Public Art Strategy – Overview Tom Bass sculpture Douglas Annand works Commemorative plaque 	Felicity Fenner, Macquarie Anthony Henry, Macquarie	9:15 – 9:30 (15 mins)
3. North Tower	<p><u>A. Hunter Street</u></p> <ul style="list-style-type: none"> Addressing and resolving level changes Hunter Street and Elizabeth Street corner Physical and visual connections from Phillip Street Extent of closure and glazing <p><u>B. Castlereagh Street and Elizabeth Street</u></p> <ul style="list-style-type: none"> Extent of retail activation and associated matters Opportunities for stair and lift access Façade detailing opportunities Weather protection / awnings 	Matthew Morel, JPW	9:30 – 10:00 (30 mins)
4. South Tower	<p><u>Metro Station</u></p> <ul style="list-style-type: none"> Customer experience, wayfinding and legibility to street level <p><u>Martin Place</u></p> <ul style="list-style-type: none"> Extent of retail activation and associated matters 	Alex Tzannes, Tzannes	10:00 – 10:15 (15 mins)

Sydney Metro DRP & Over Station Development DRP Agenda

Agenda Item	Details	Presenter	Run Time
MORNING TEA BREAK			10:15-10:30 (15 mins)
OSD DRP – RESPONSE TO DRP FEEDBACK			
5. North Tower	<u>A. Form and Mass</u> <ul style="list-style-type: none"> Narrower base Softened curves and reducing flat surfaces on east and west elevations <u>B. Architectural Expression</u> <ul style="list-style-type: none"> Extent of Level 10 terrace Shading elements on the southern façade Materiality <ul style="list-style-type: none"> Podium Tower 	Matthew Morel, JPW	10:30 – 11:00 (30 mins)
6. South Tower	<u>A. Architectural Expression</u> <ul style="list-style-type: none"> Intent of setbacks at south-east and south-west corners 	Alex Tzannes, Tzannes	11:00 – 11:15 (15 mins)
7. ESD	<ul style="list-style-type: none"> Macquarie's ESD targets Thermal comfort, façade and blinds 	Haico Schepers, Arup	11:15 – 11:30 (15 mins)
8. Shadowing analysis	<ul style="list-style-type: none"> Update on shadowing results 	Anthony Henry, Macquarie	11:30 – 11:45 (15 mins)
SYDNEY METRO AND OSD DRP DEBRIEF (Macquarie leaves the room)			11:45-12:00 (15 mins)



2

Sydney Metro DRP – Public Art and Heritage



3

Sydney Metro DRP – North Tower



4

Sydney Metro DRP – South Tower



5

OSD DRP – North Tower

North Tower Form and Mass

The OSD DRP has recommended reconsideration of the North Tower's form and mass, and particularly narrowing at the base.

JPW presentation, presented under separate cover, responds to the OSD DRP's advice and recommendations regarding the North Tower's form and mass, including:

- narrower base
- extent of flat surfaces on the eastern and western elevations
- tower geometry
- setbacks to 50 Martin Place

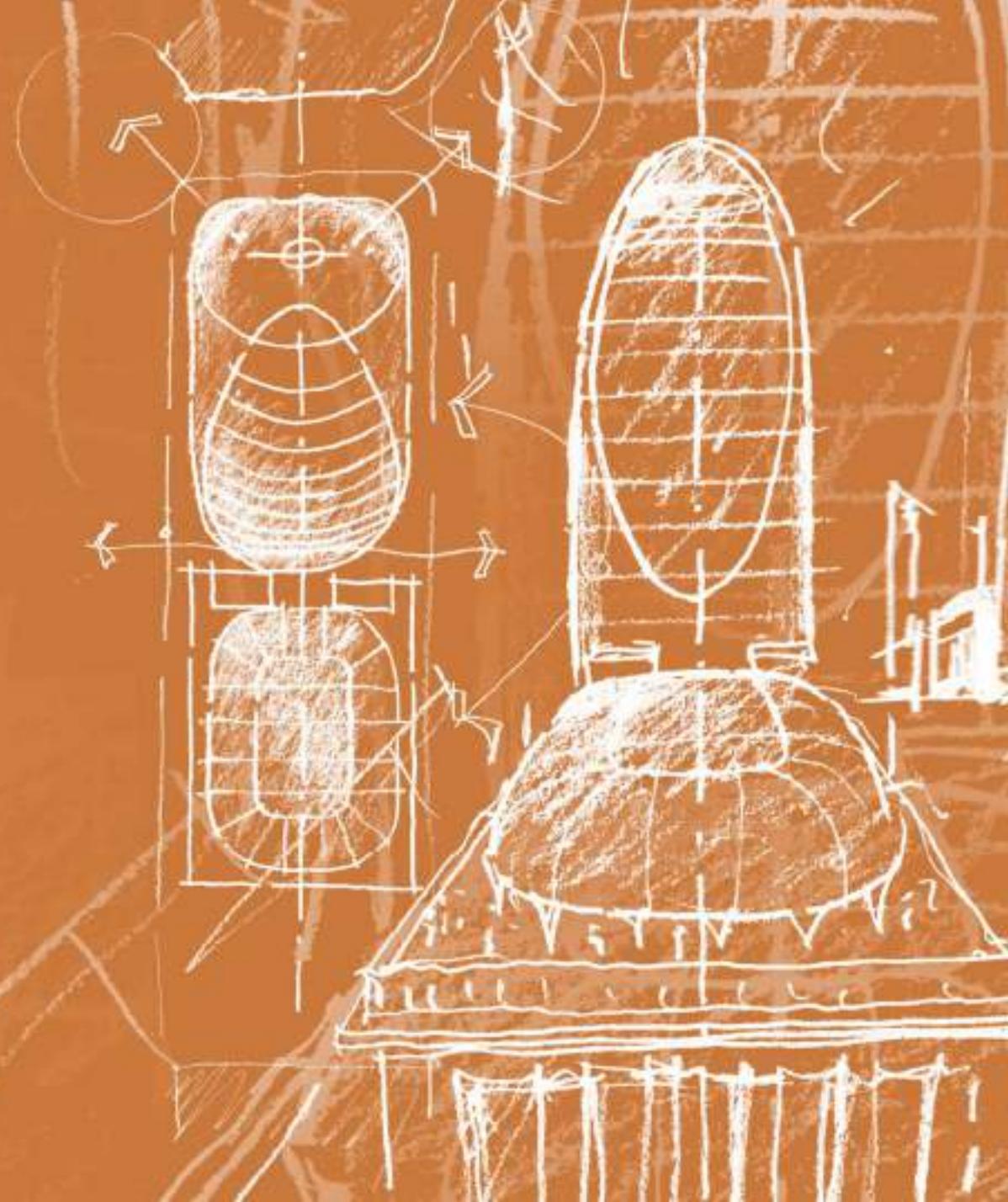
North Tower Architectural Expression

The OSD DRP has recommended reconsideration of the Level 10 terrace and requested more details on materials.

JPW presentation, presented under separate cover, responds to the OSD DRP's advice and recommendations regarding the North Tower's architectural expression, including:

- revised Level 10 terrace depth
- shading elements on tower and particularly southern façade
- proposed materials for each component of the tower

NORTH TOWER
07.08.18

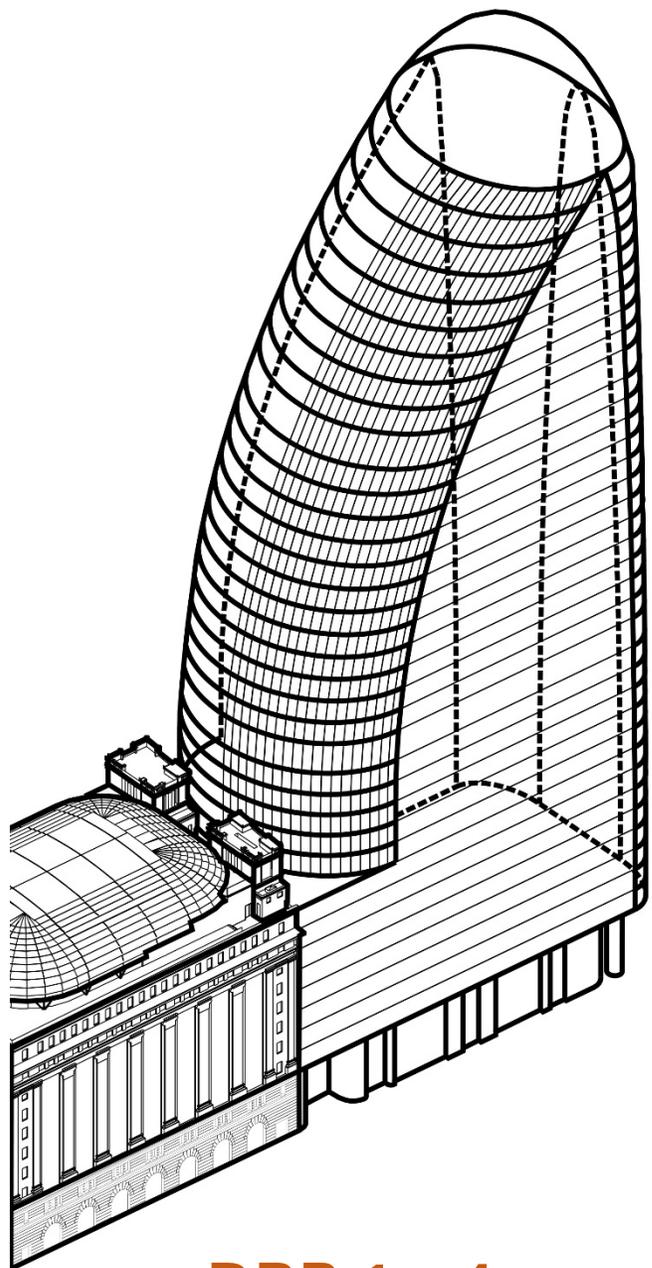


Softened curves and reducing flat surfaces on east and west elevations

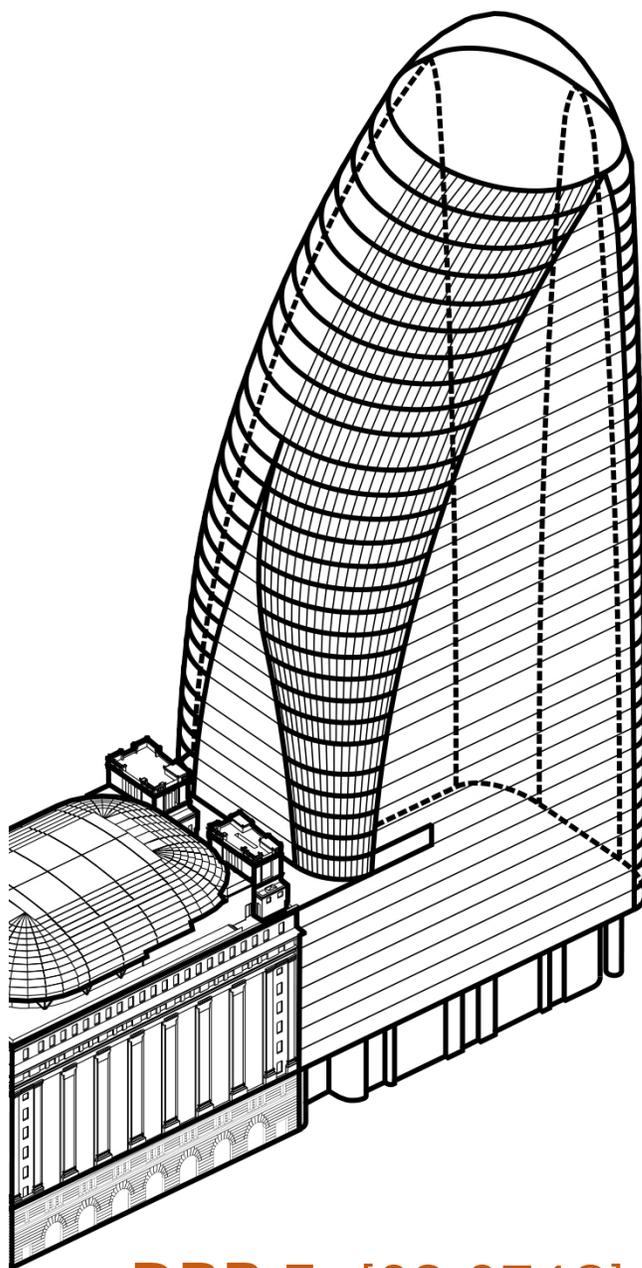
Narrower base



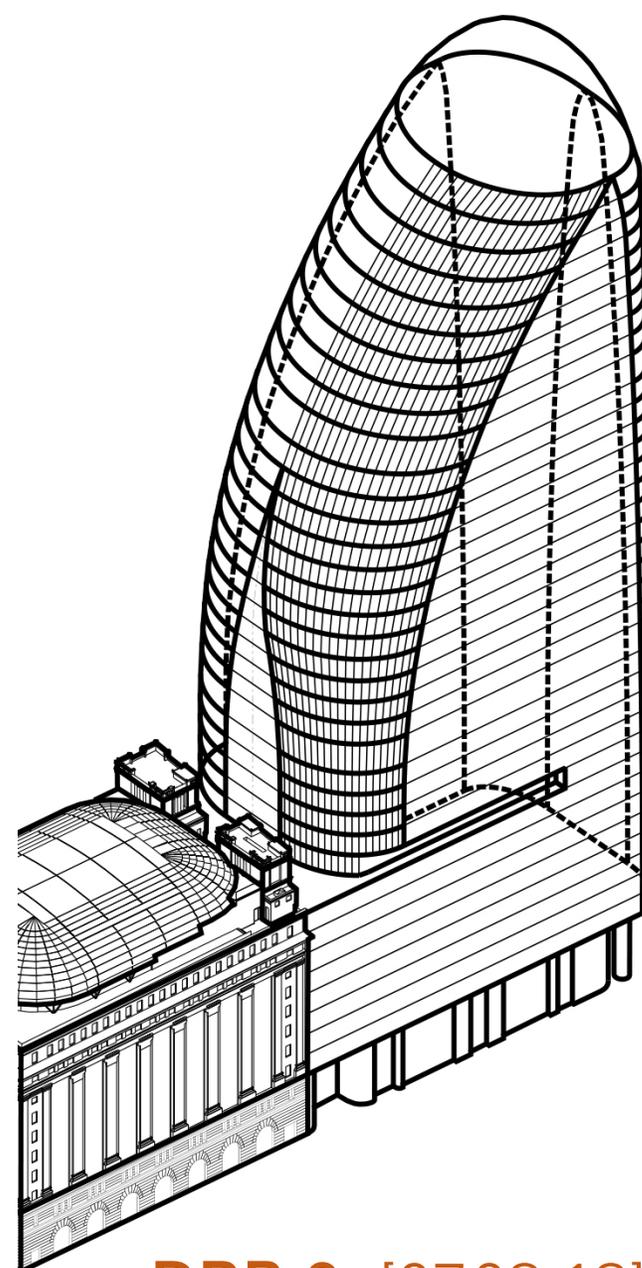
FORM AND MASS



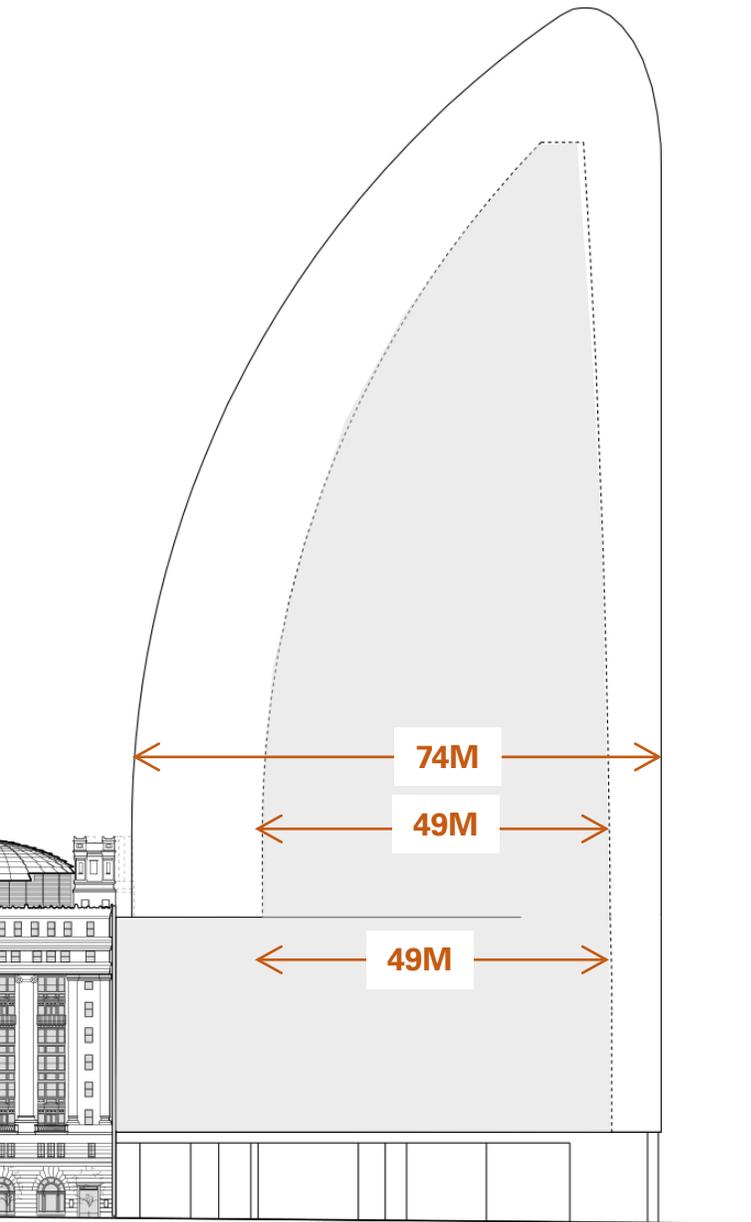
DRP 1 - 4



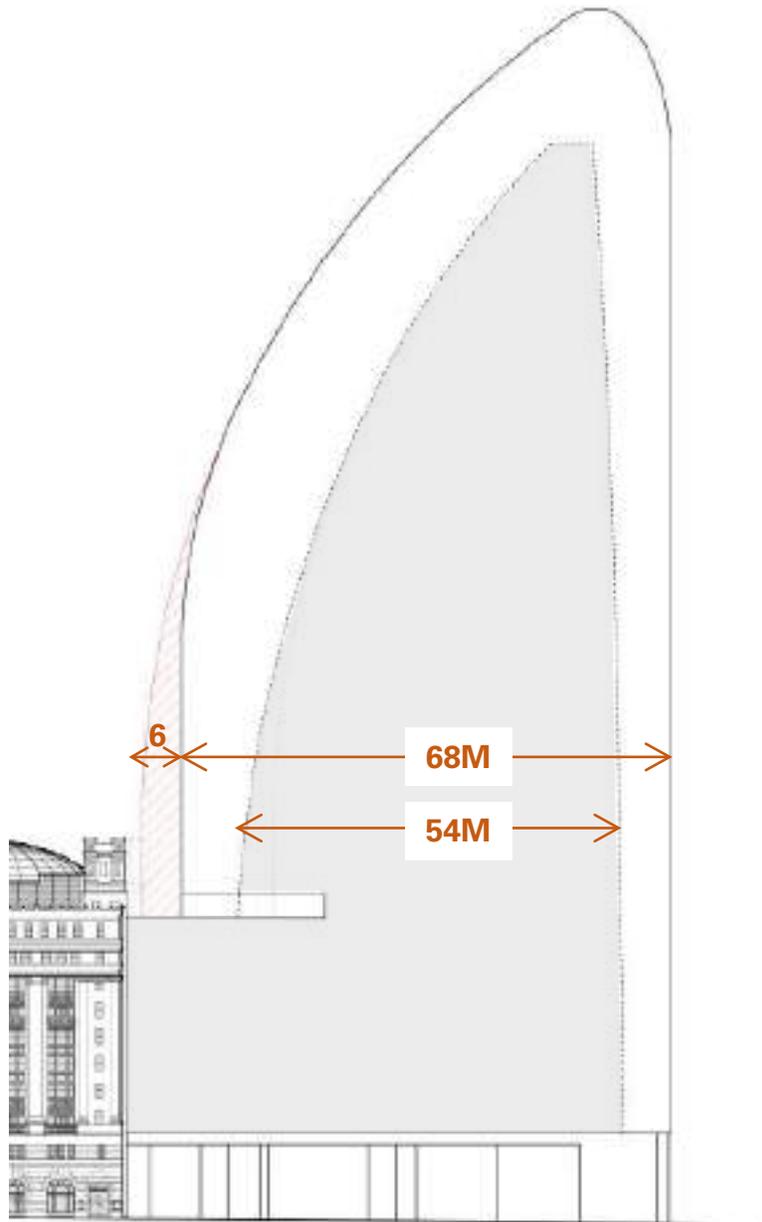
DRP 5 [03.07.18]



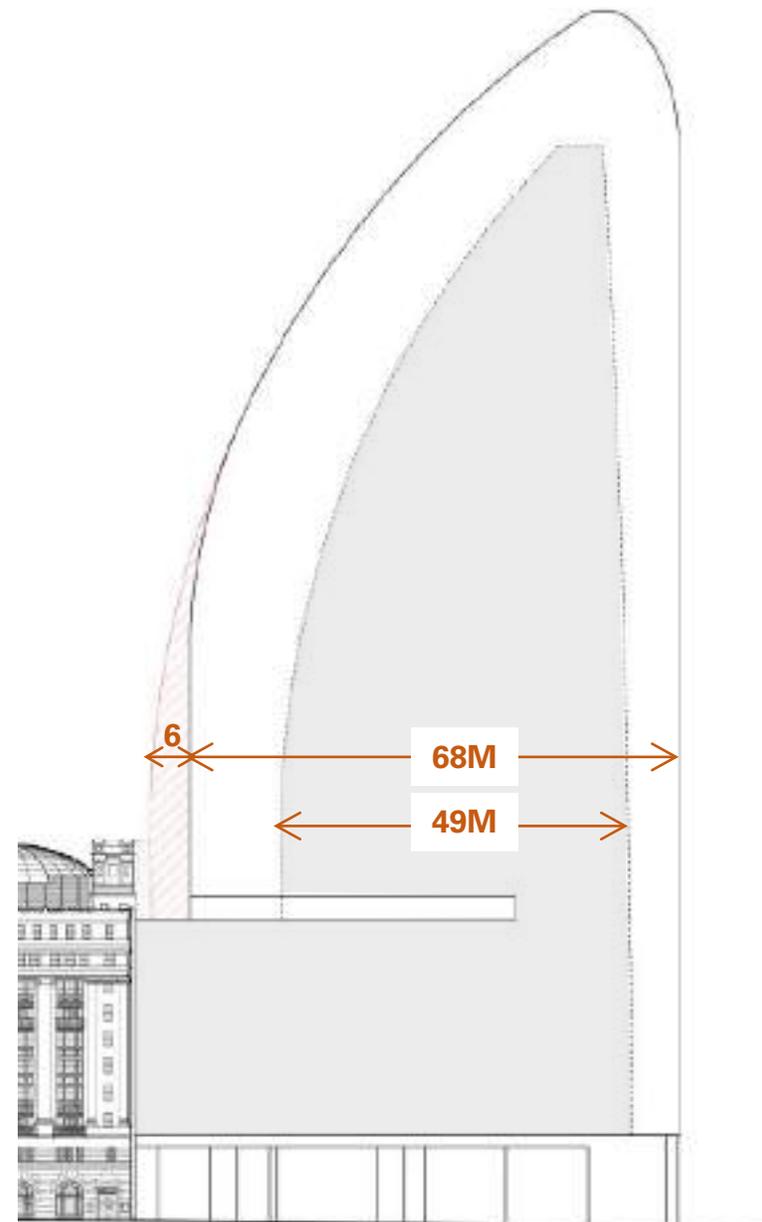
DRP 6 [07.08.18]



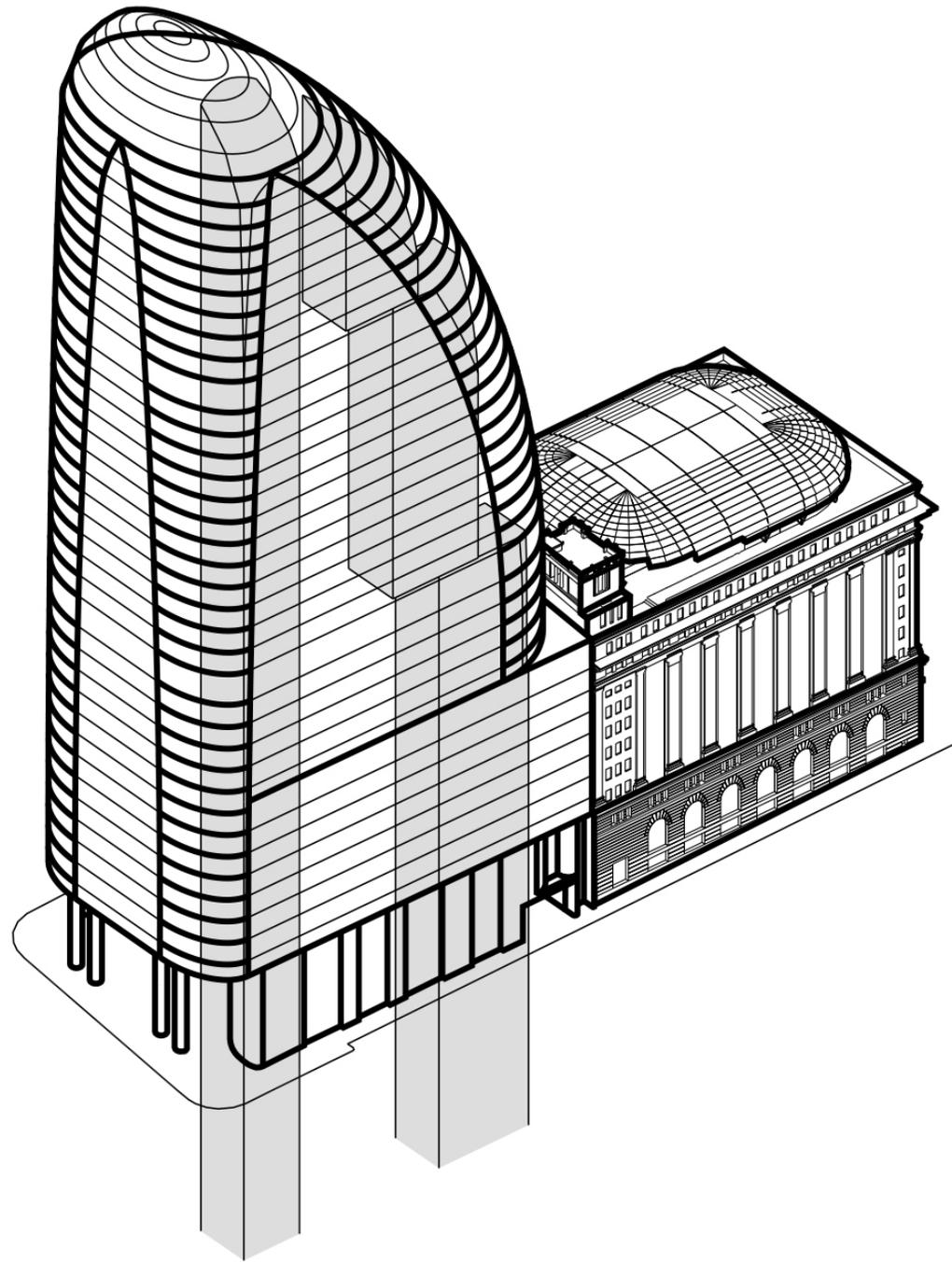
DRP 1 - 4



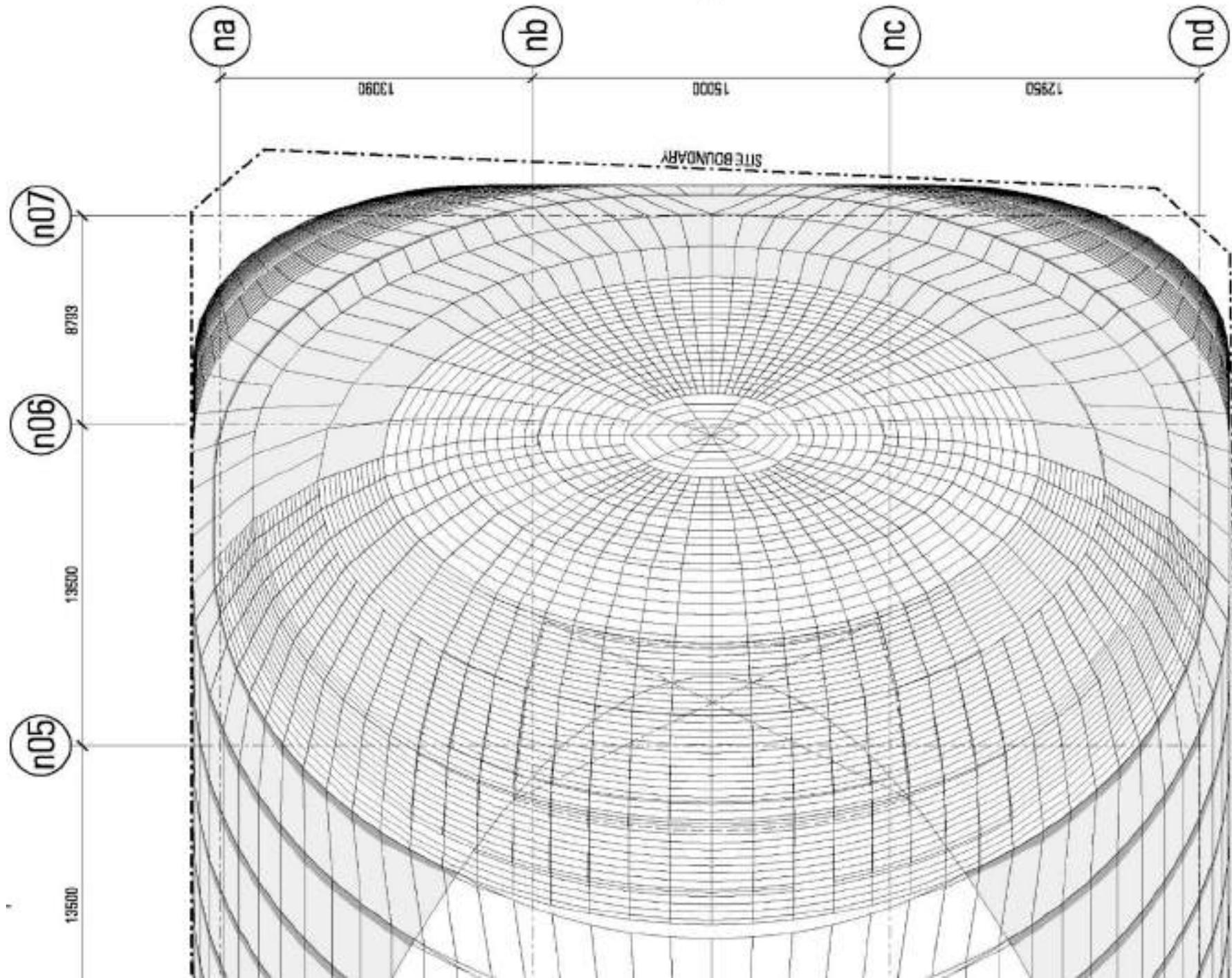
DRP 5 [03.07.18]



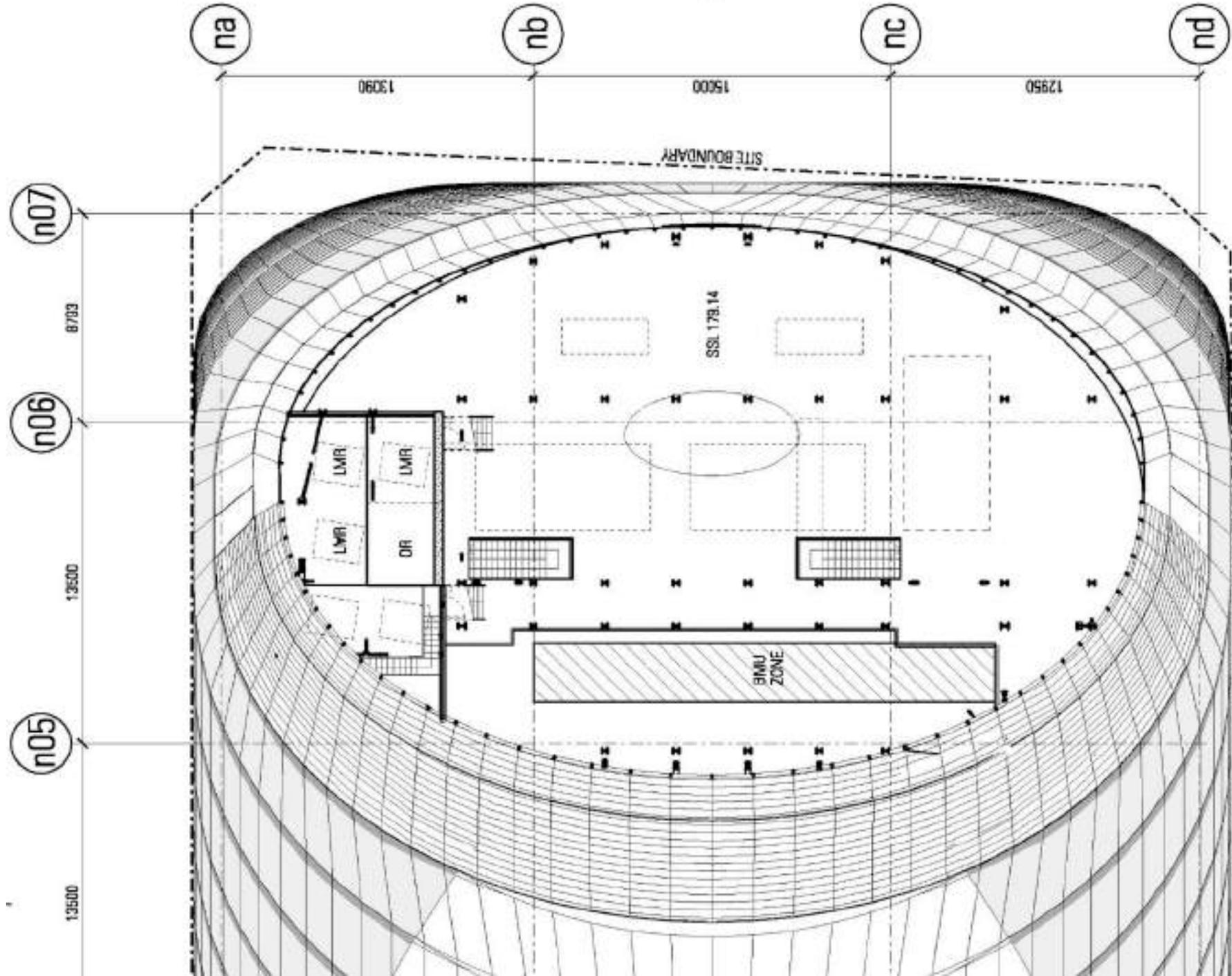
DRP 6 [07.08.18]

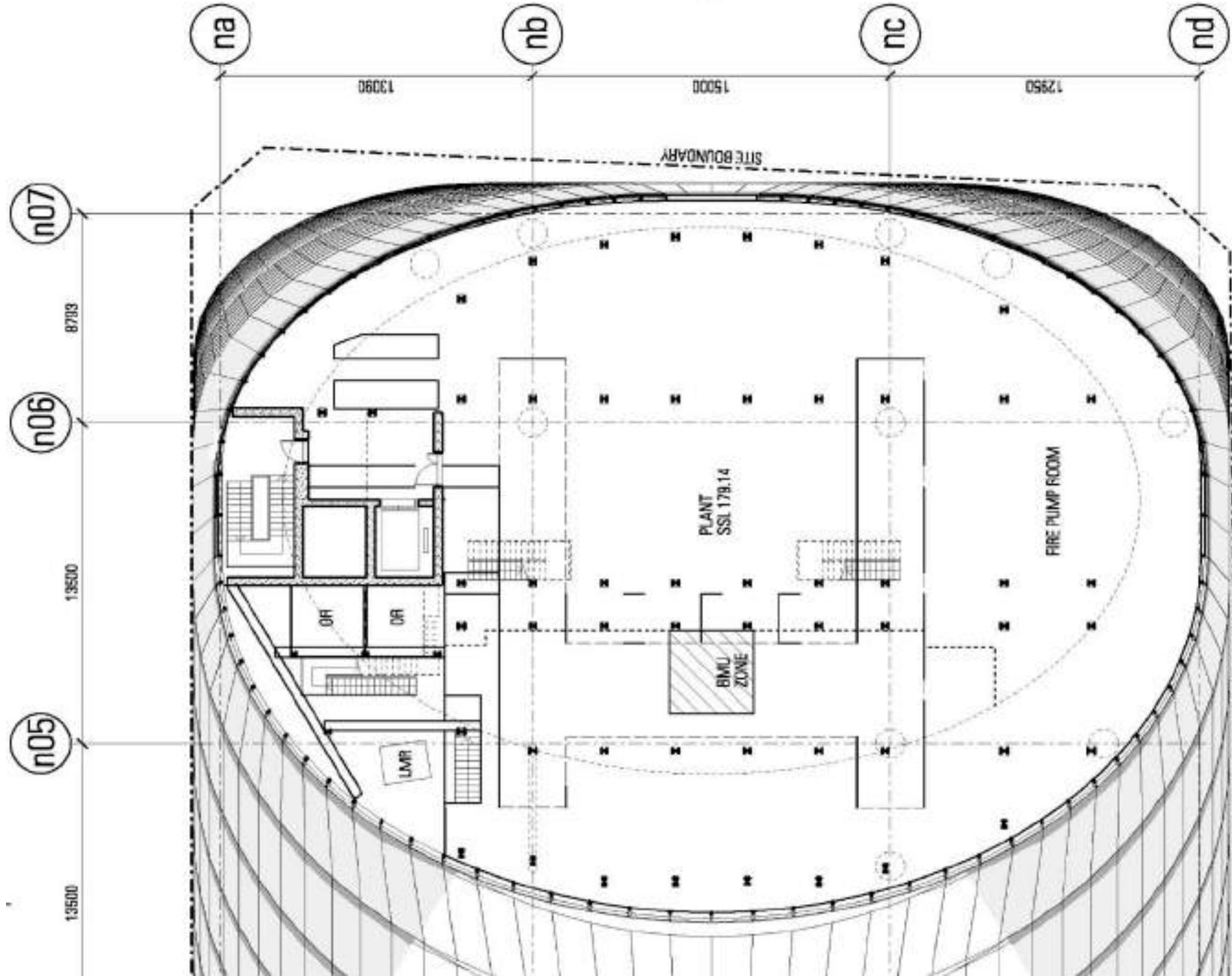


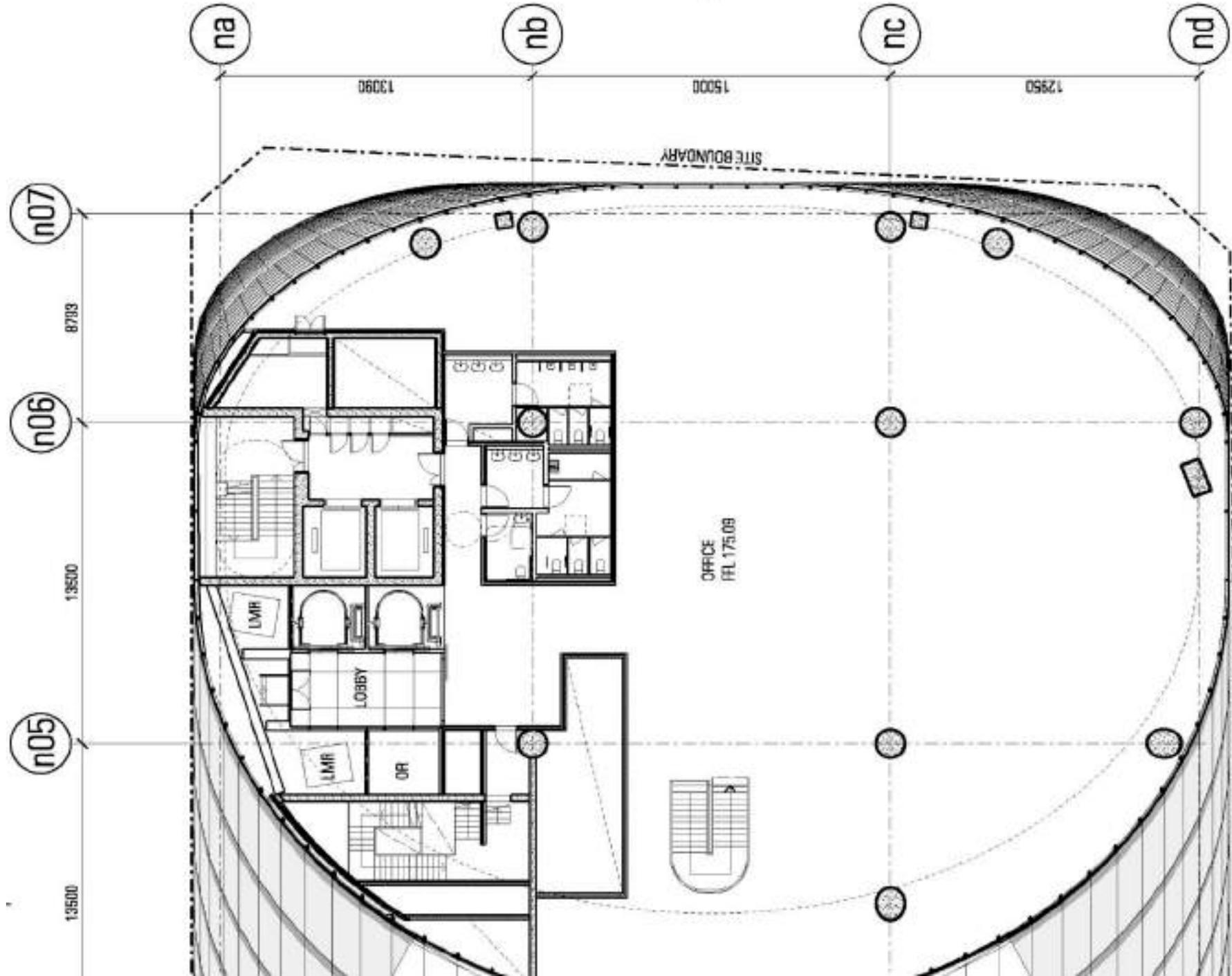
NORTHERN CORNERS

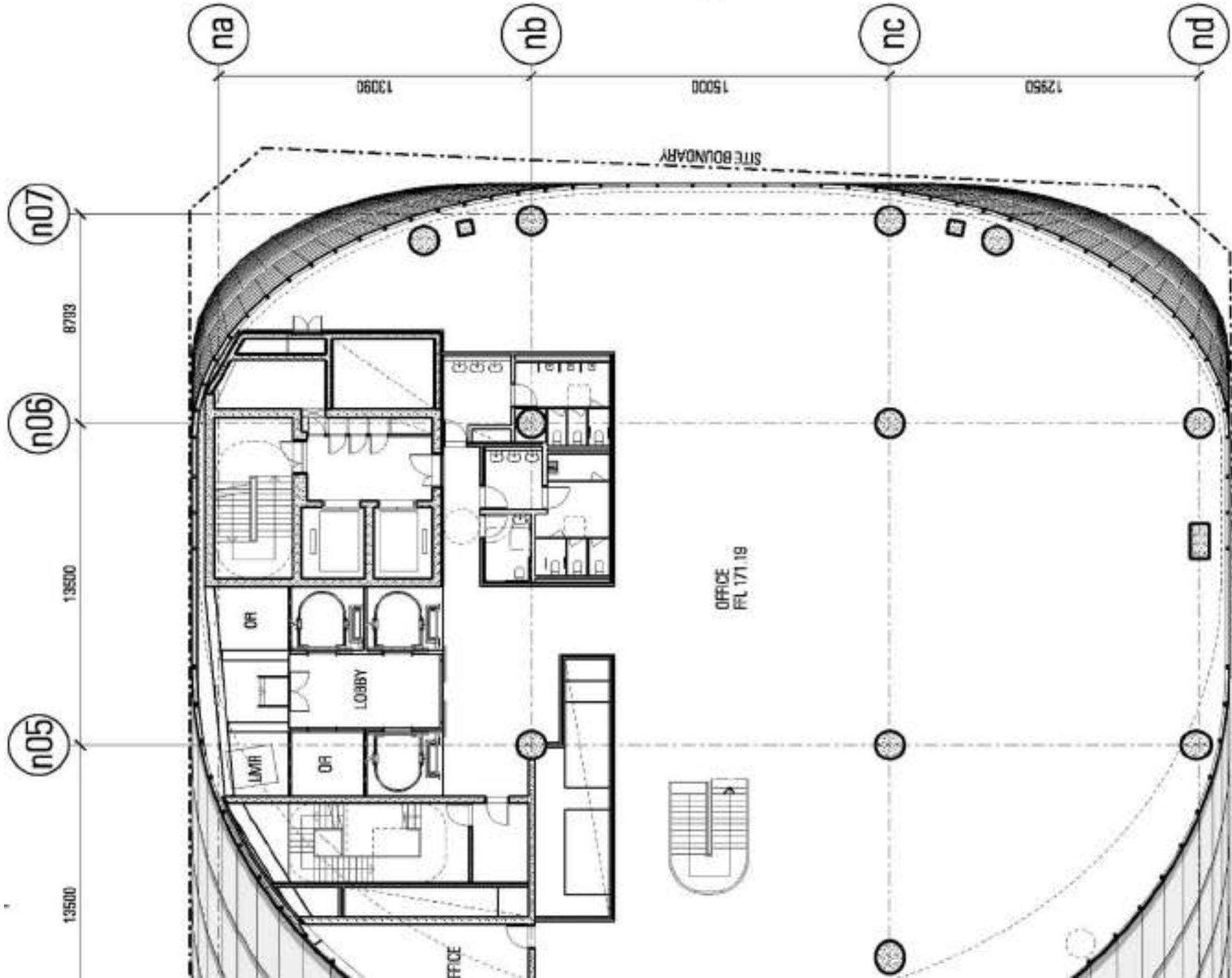


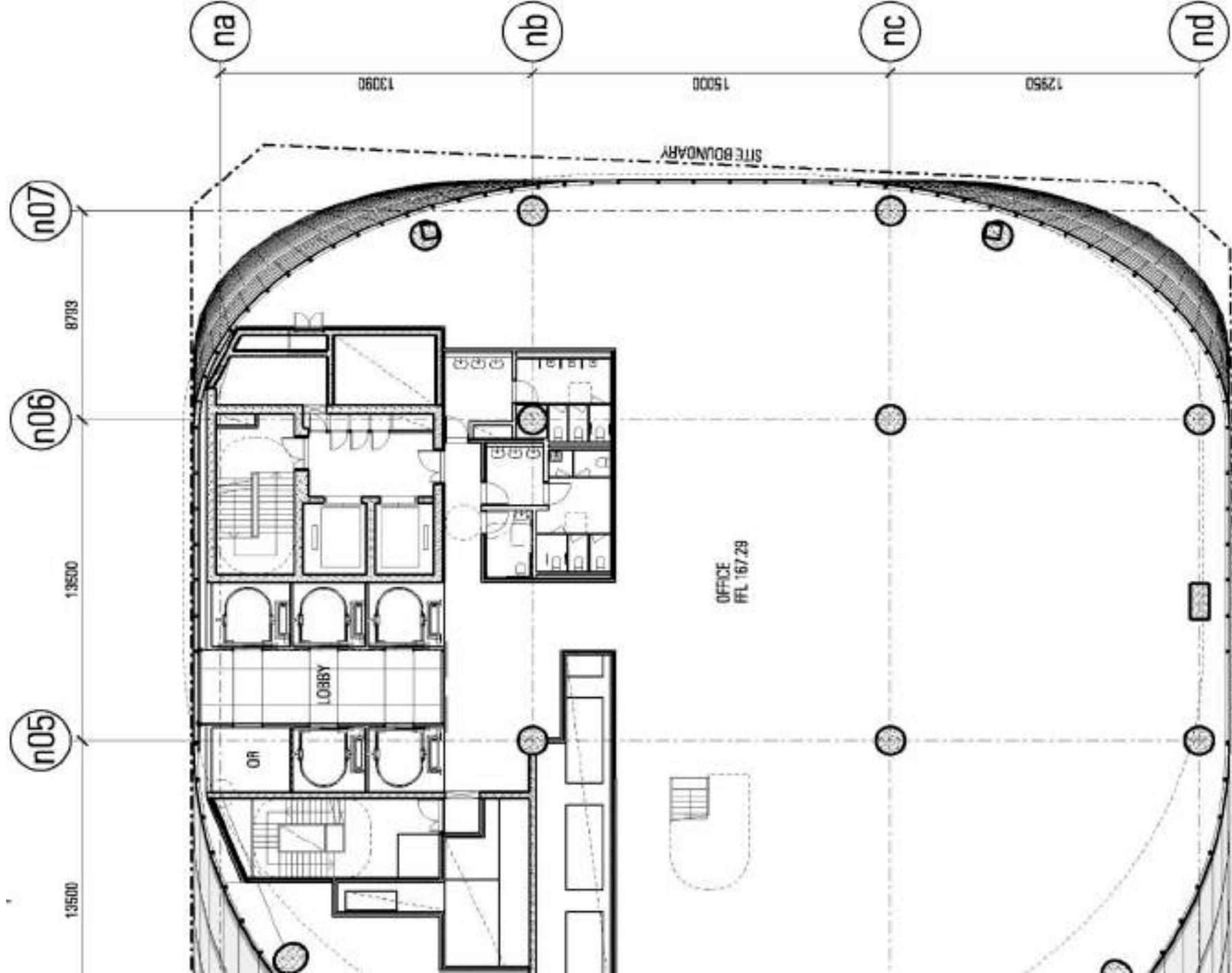
ROOF

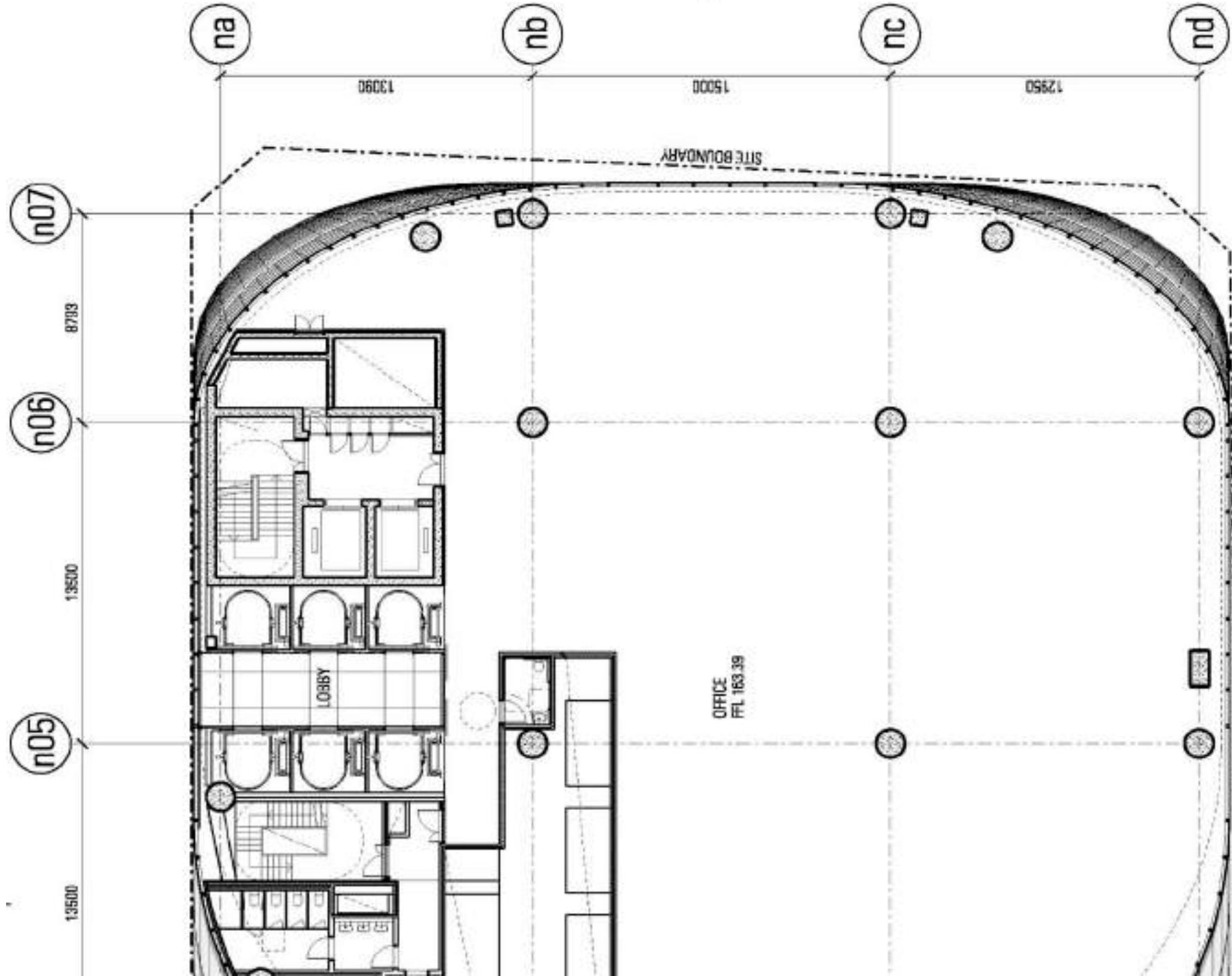


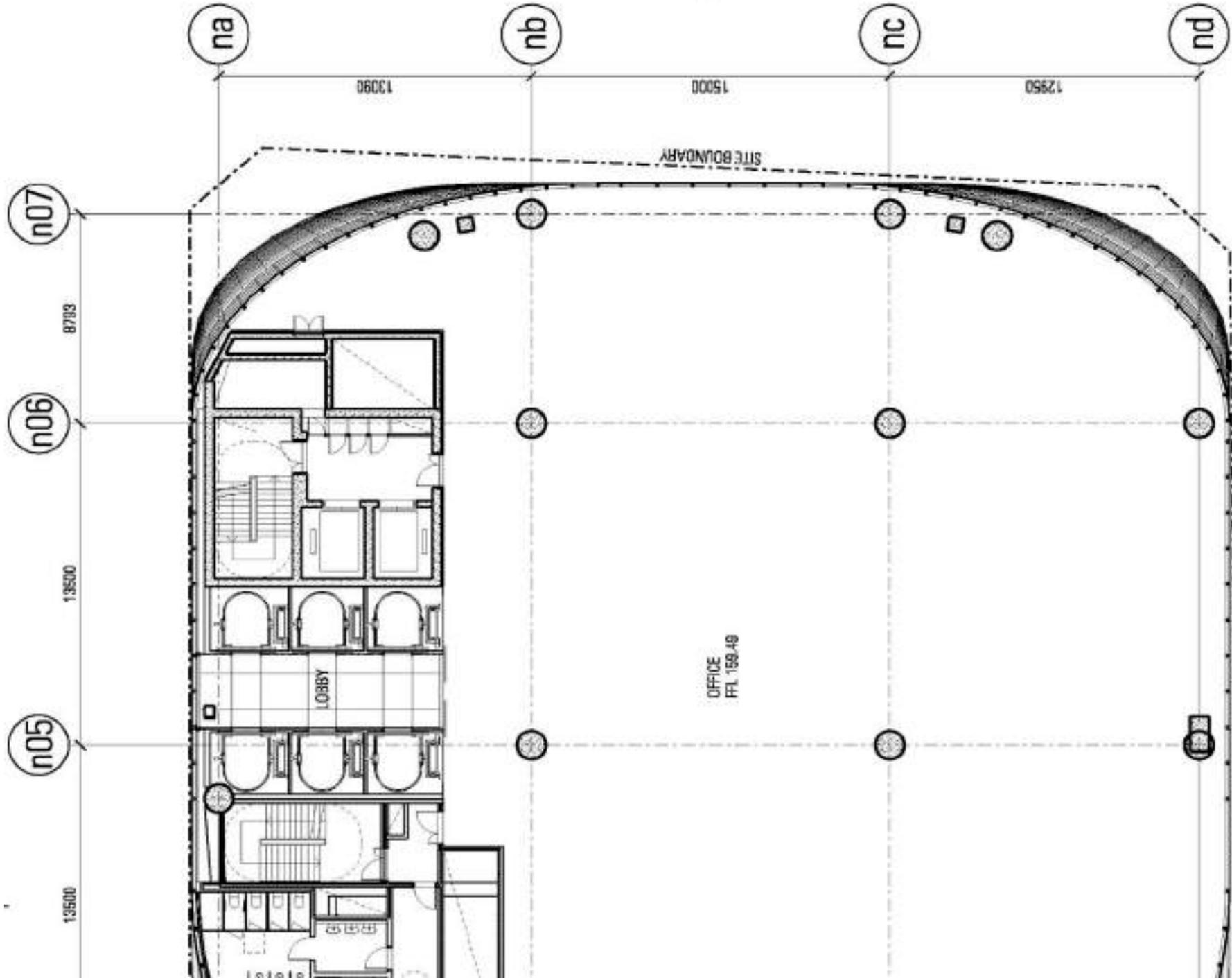


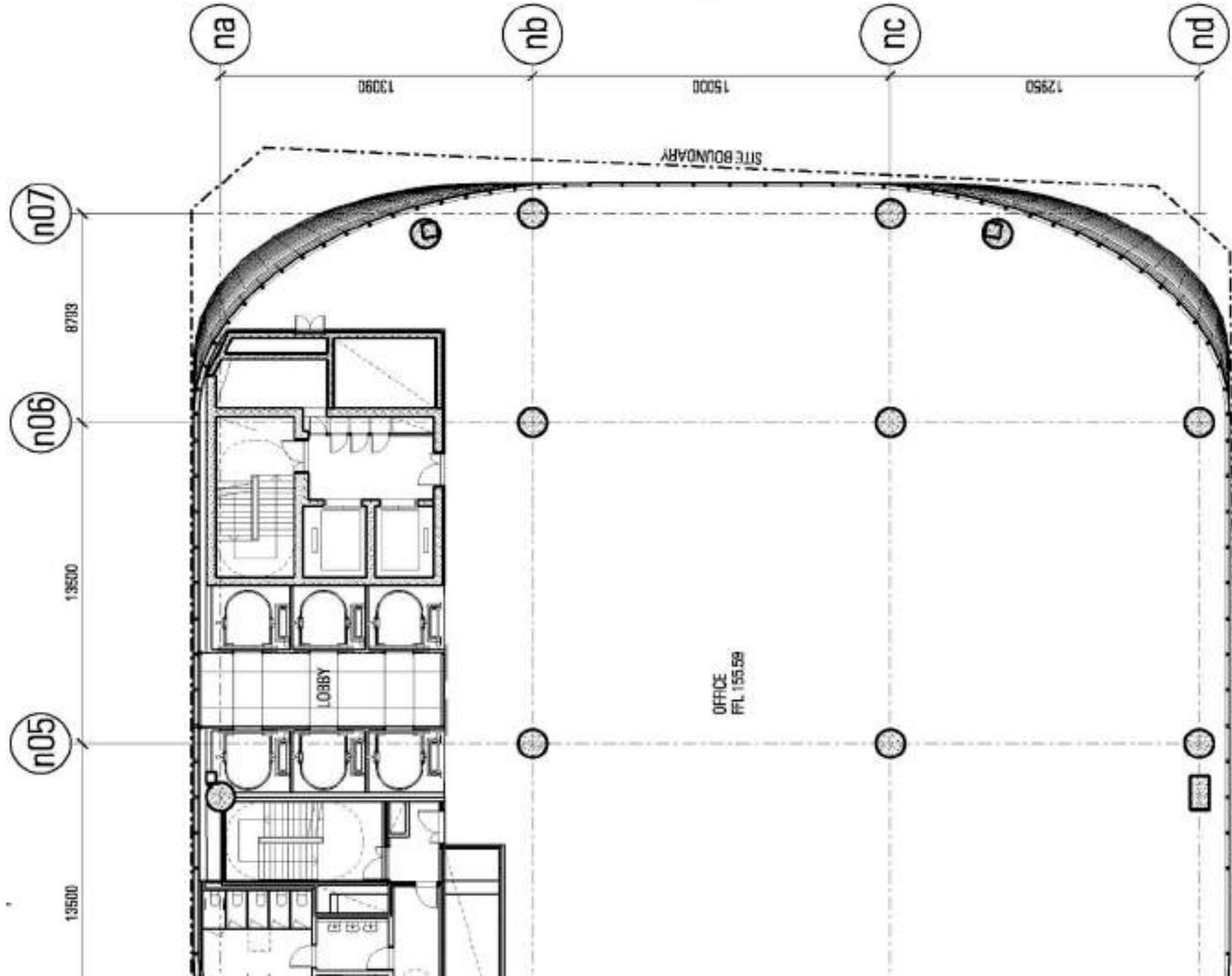


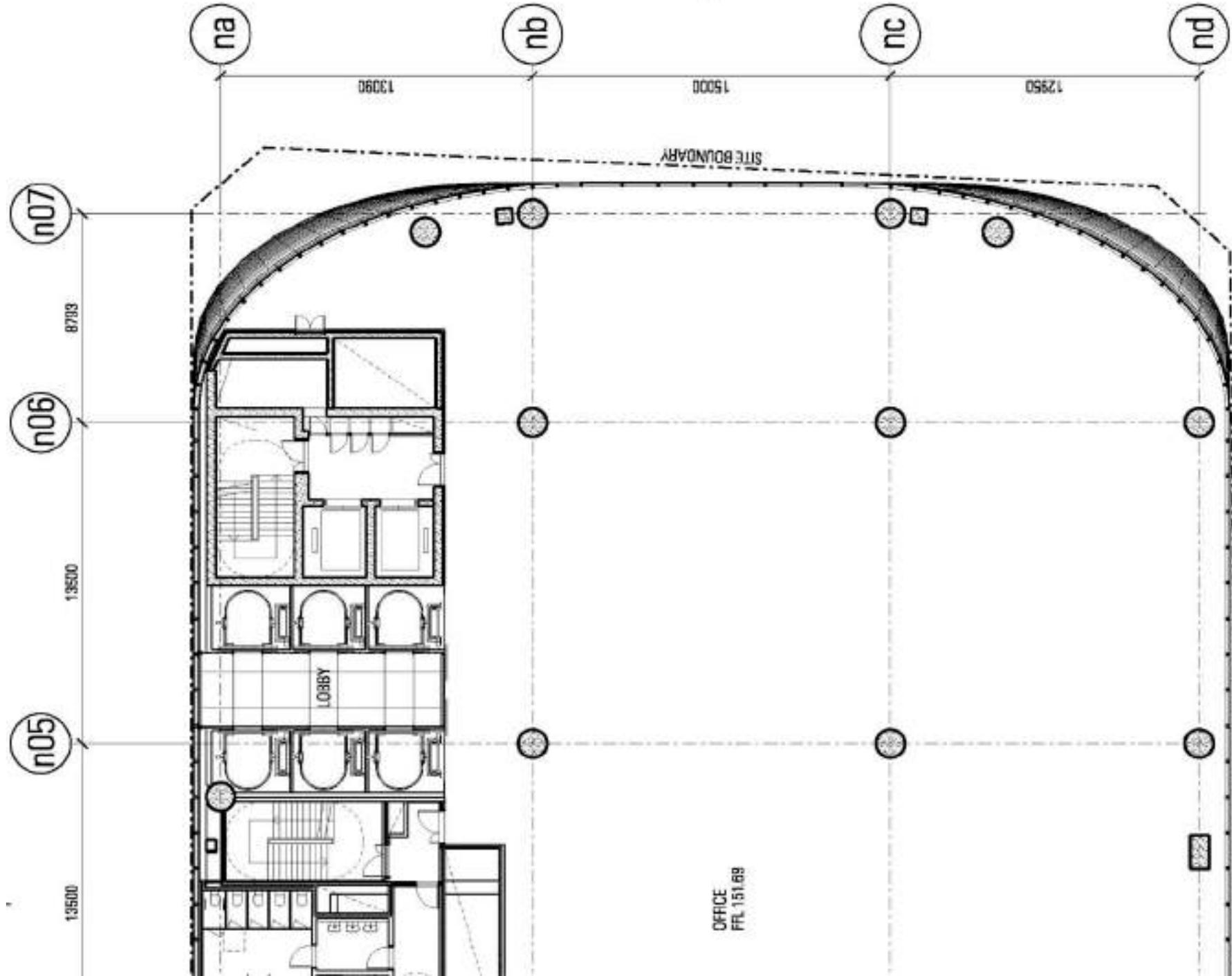




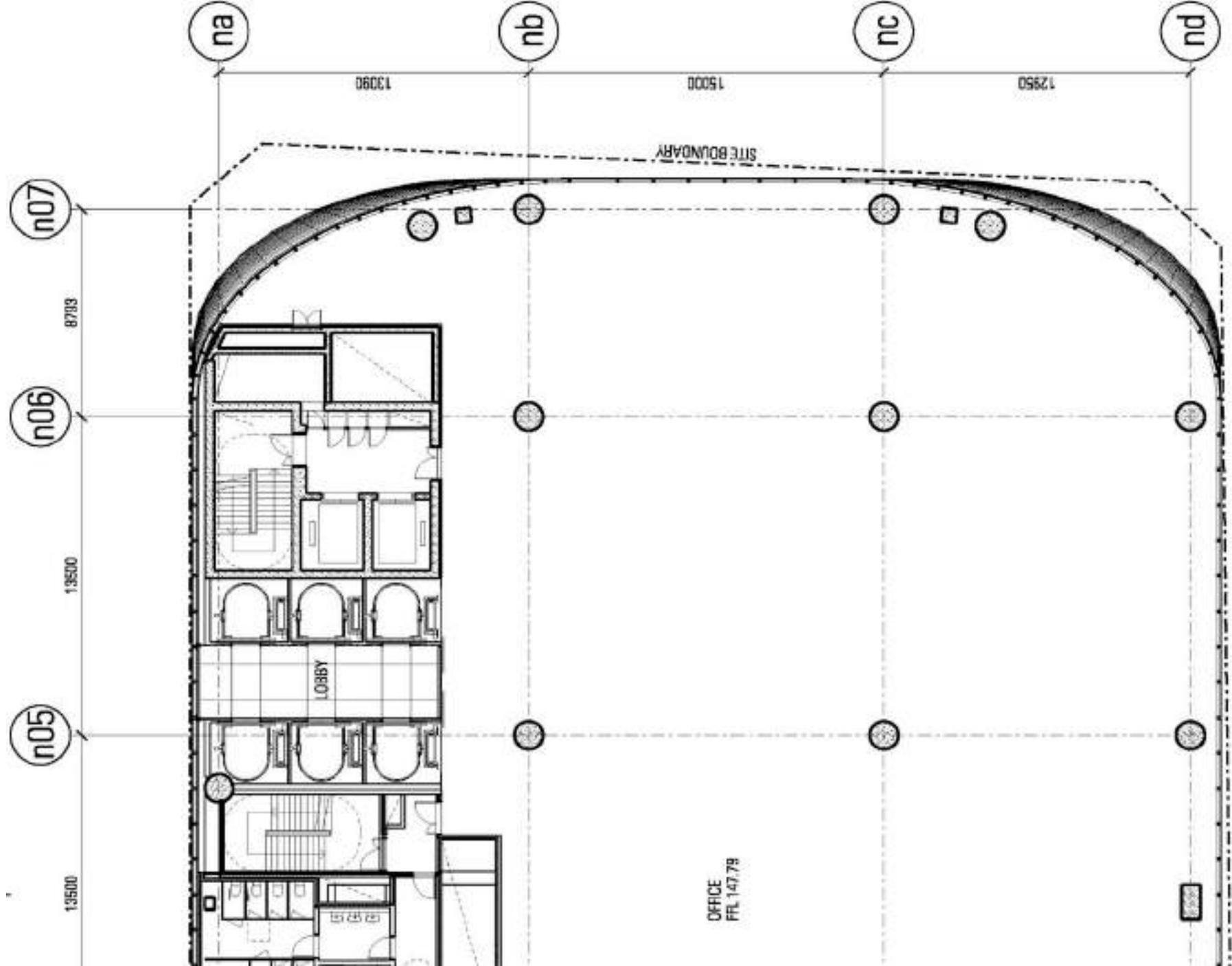


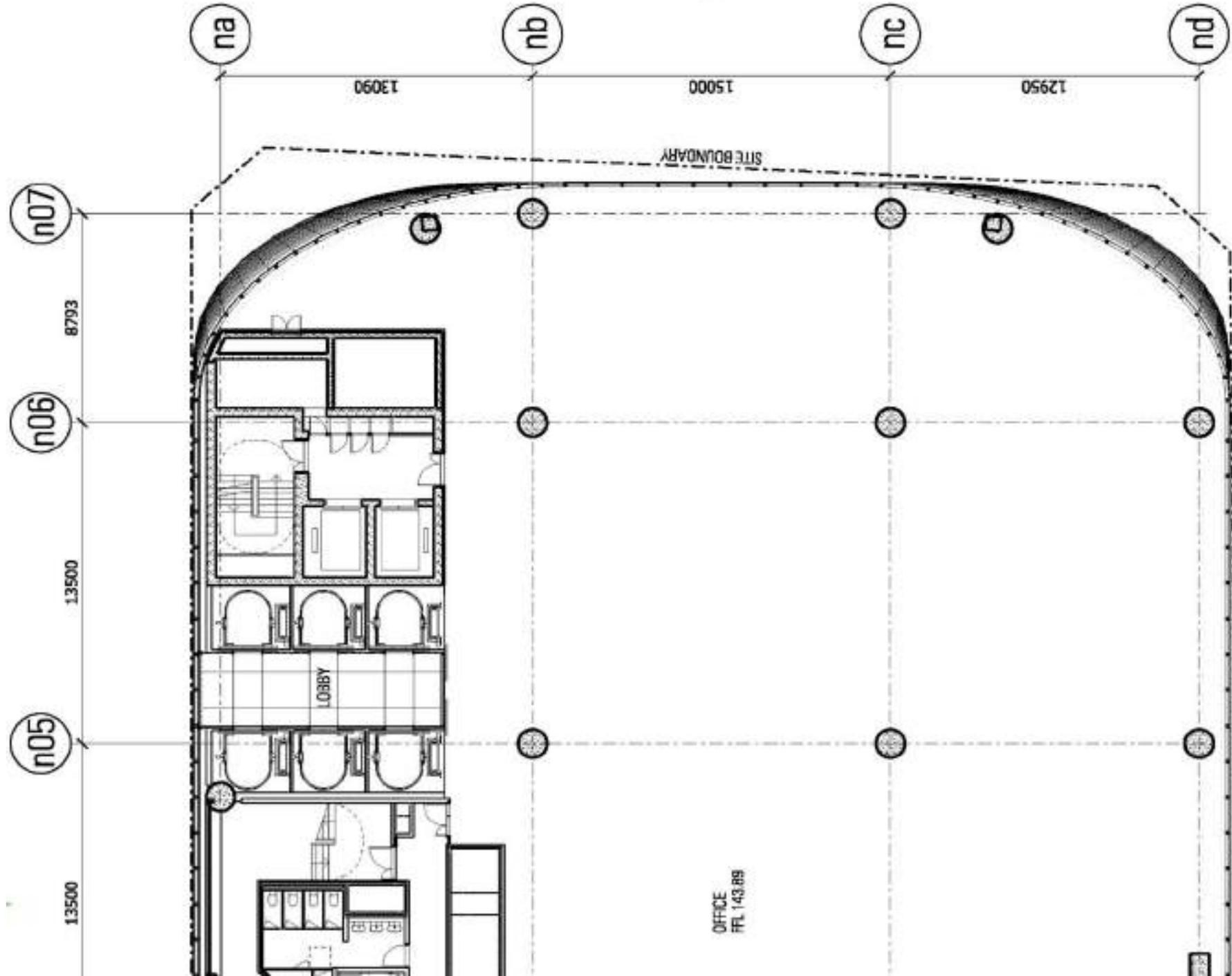






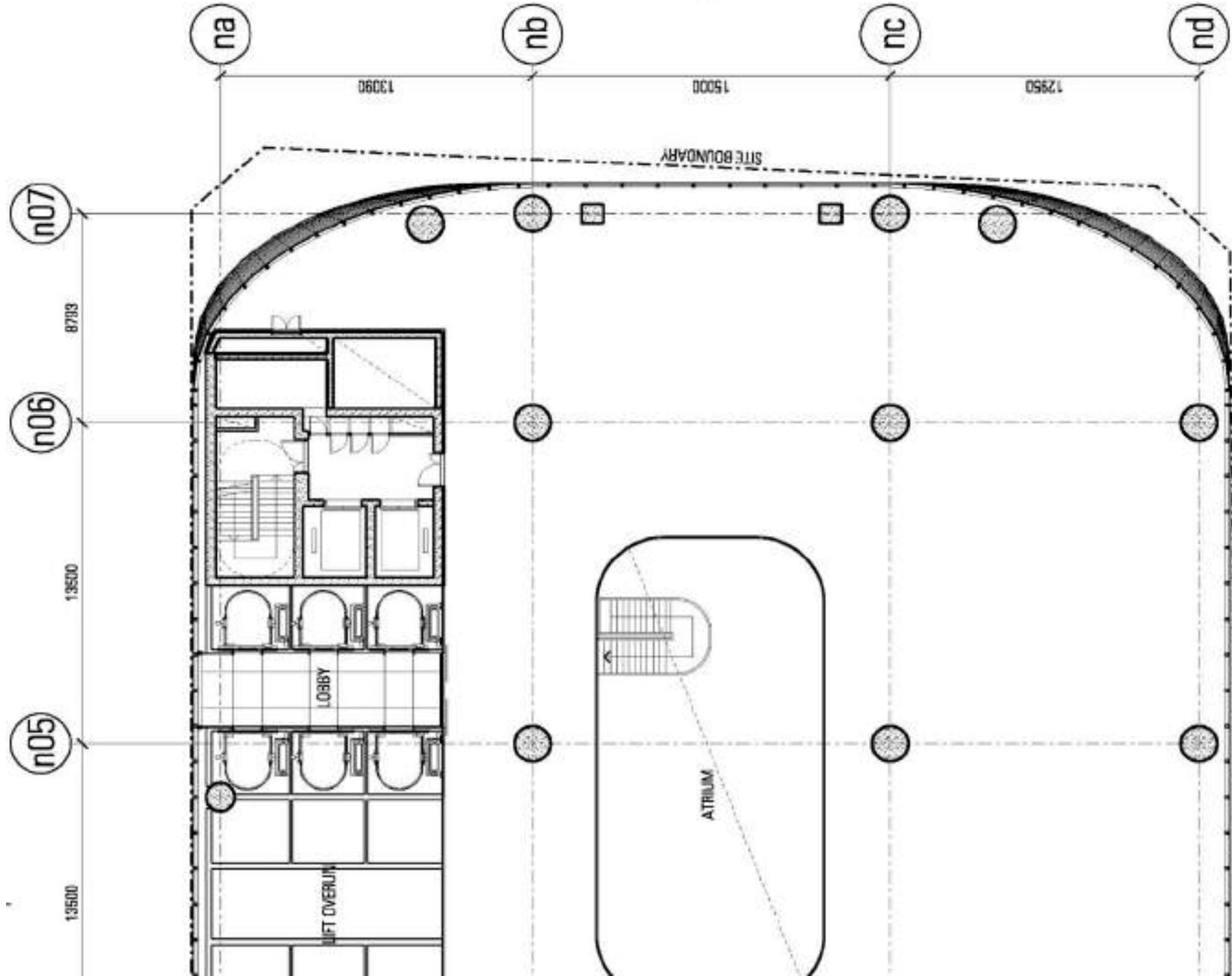
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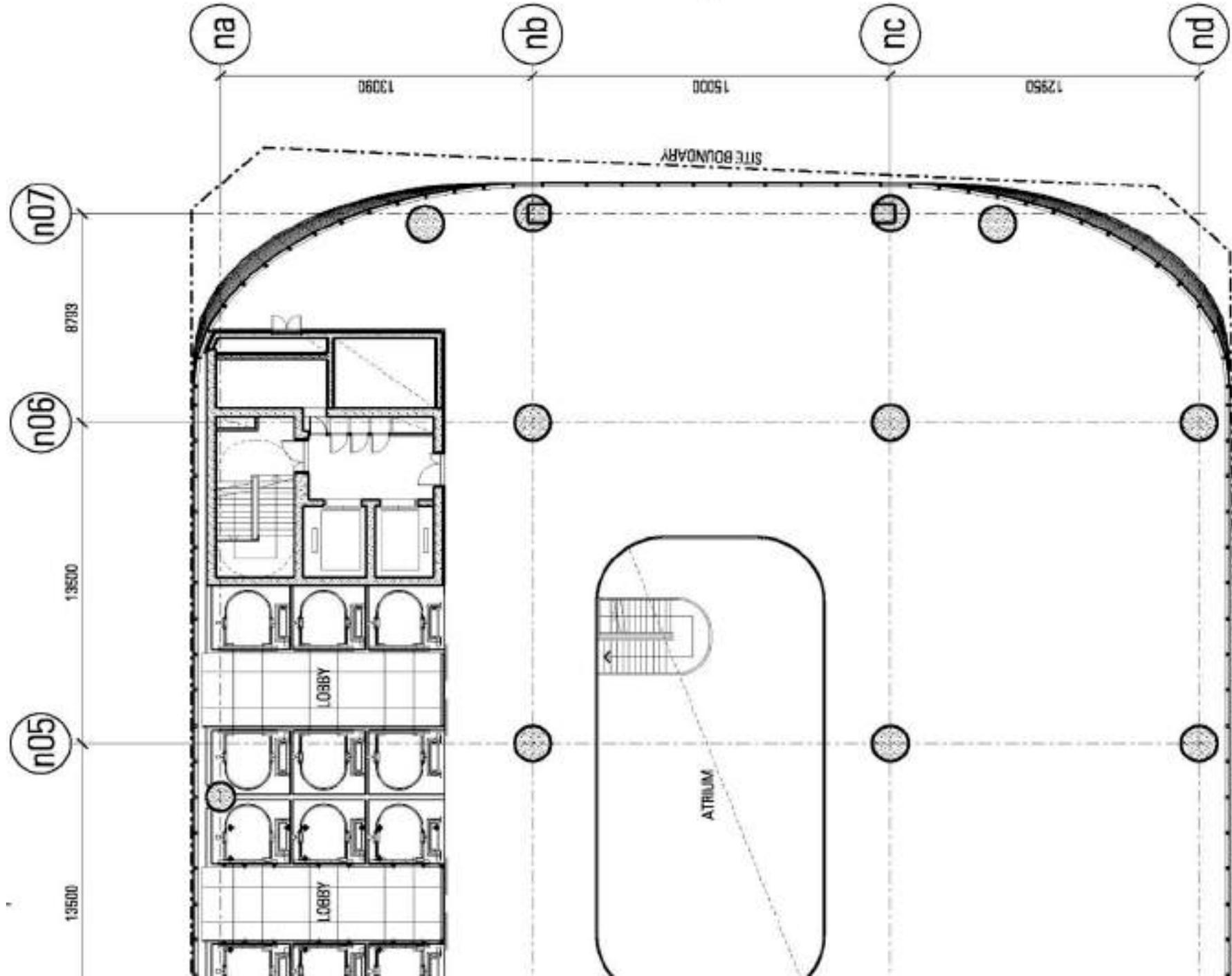


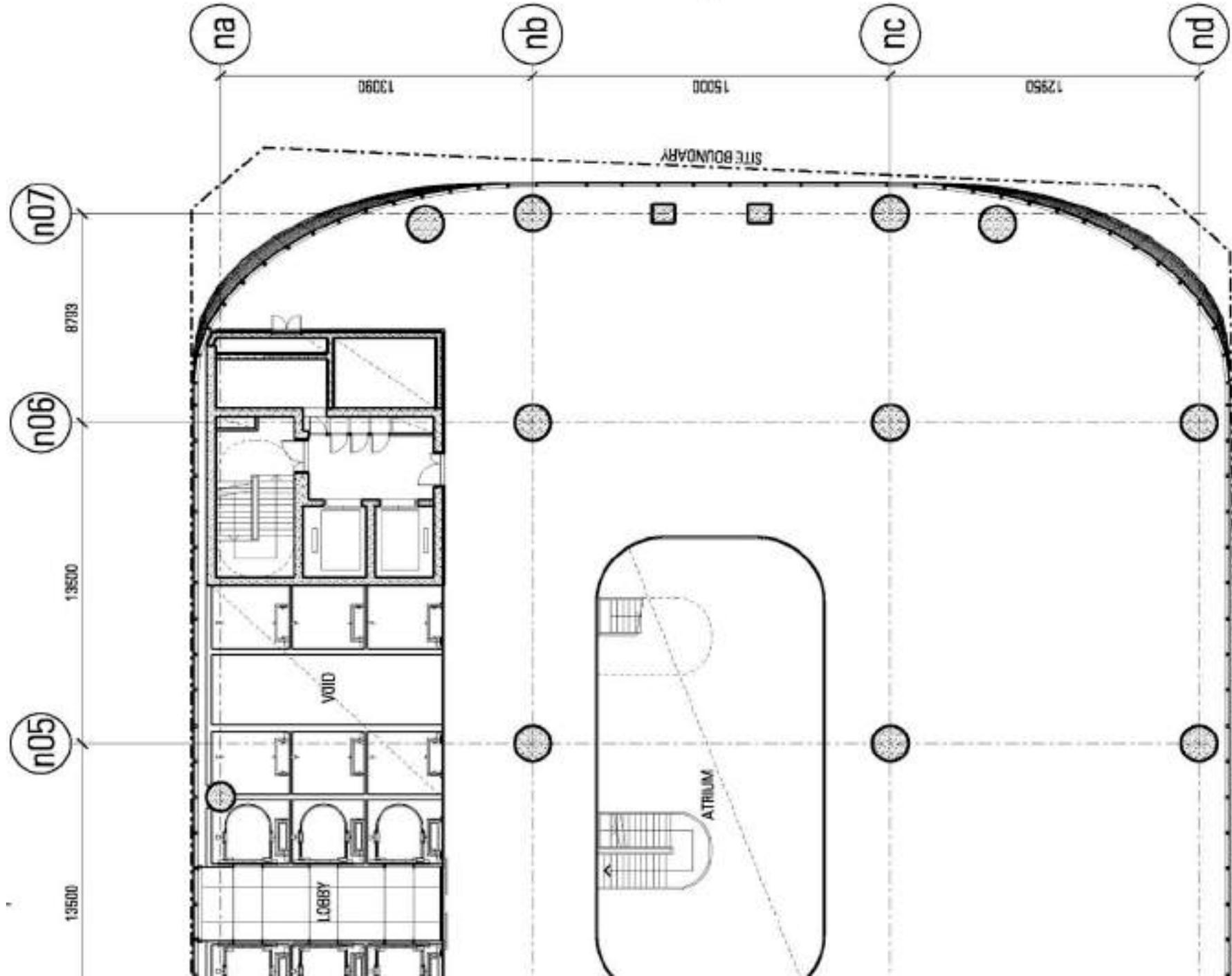


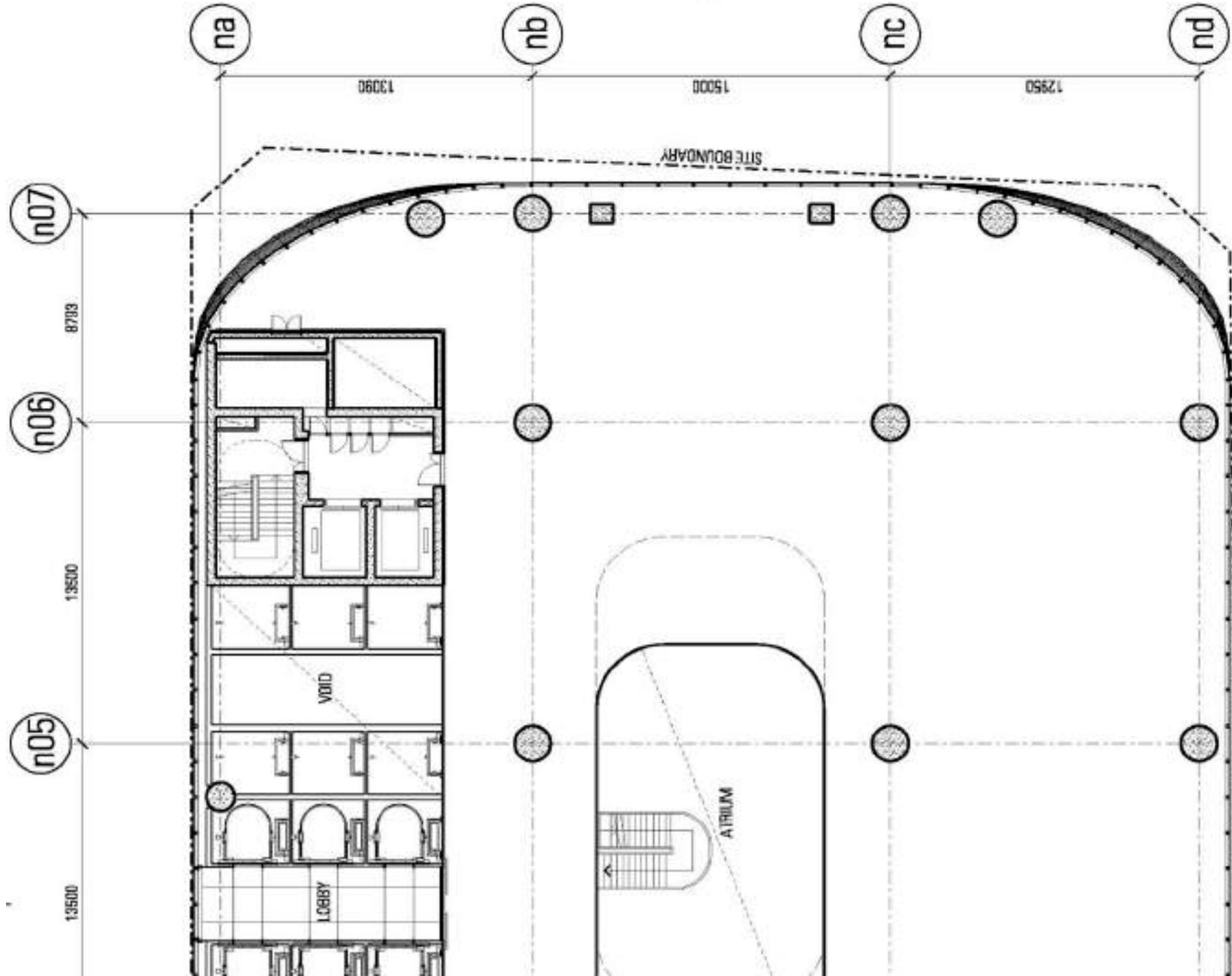
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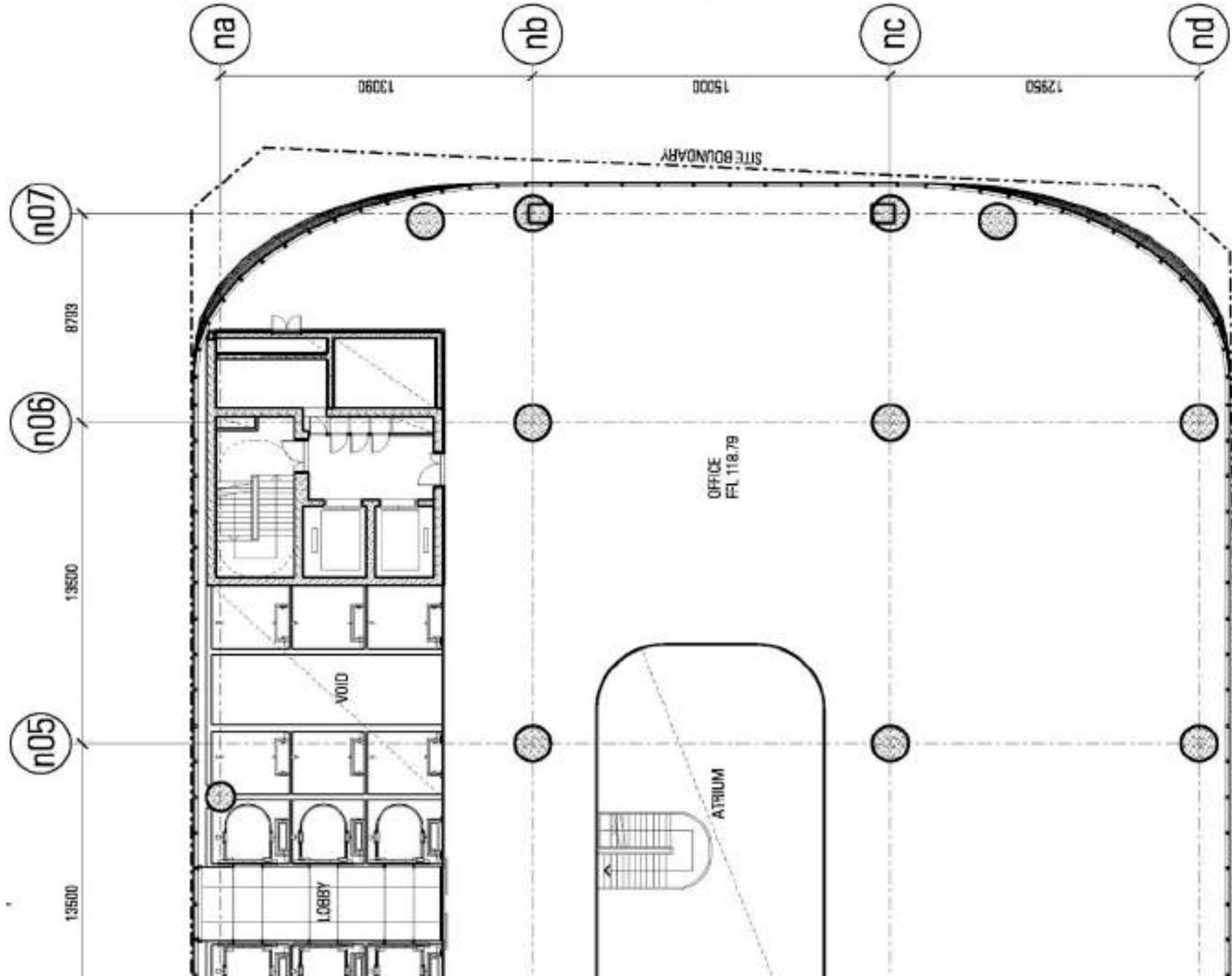


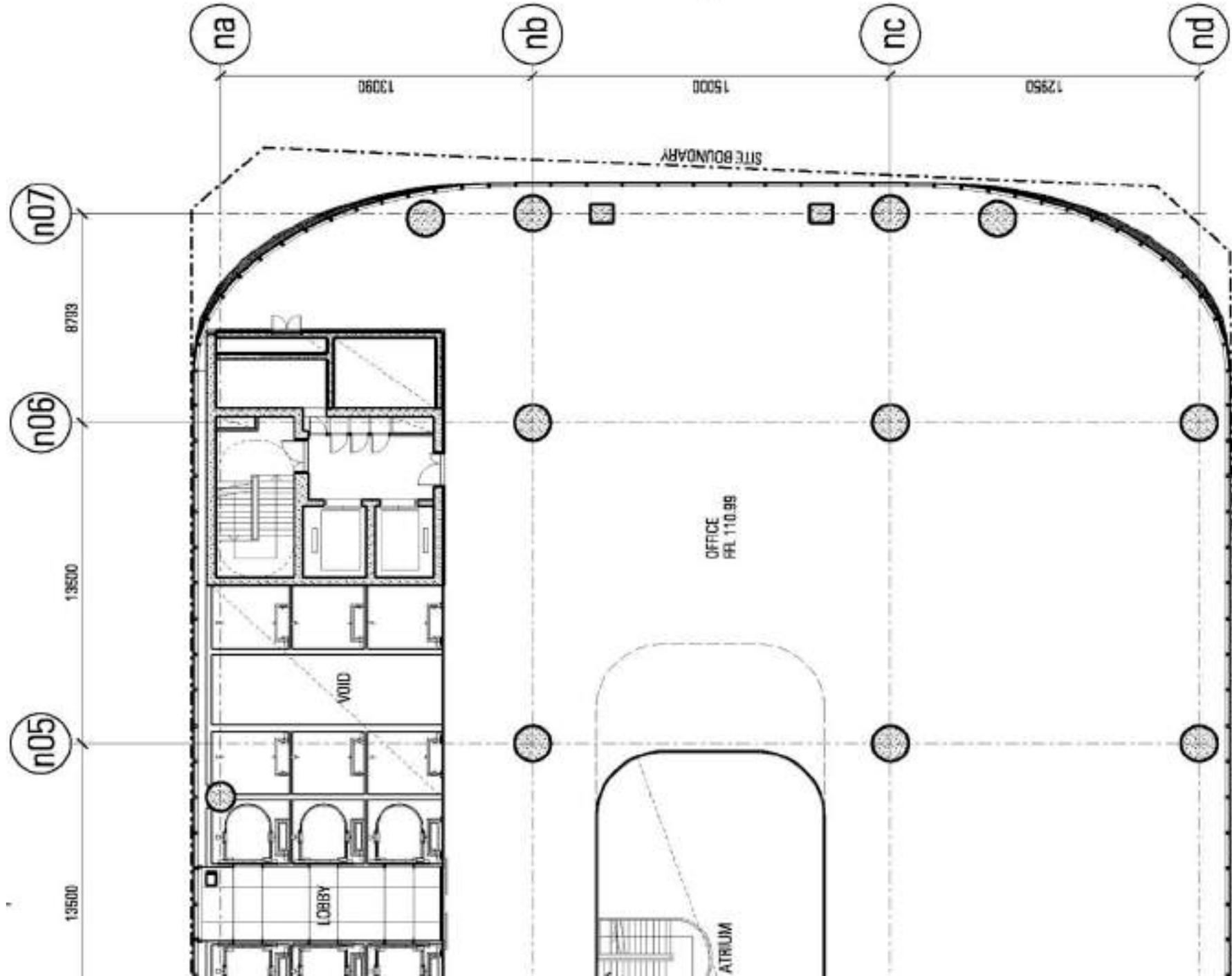


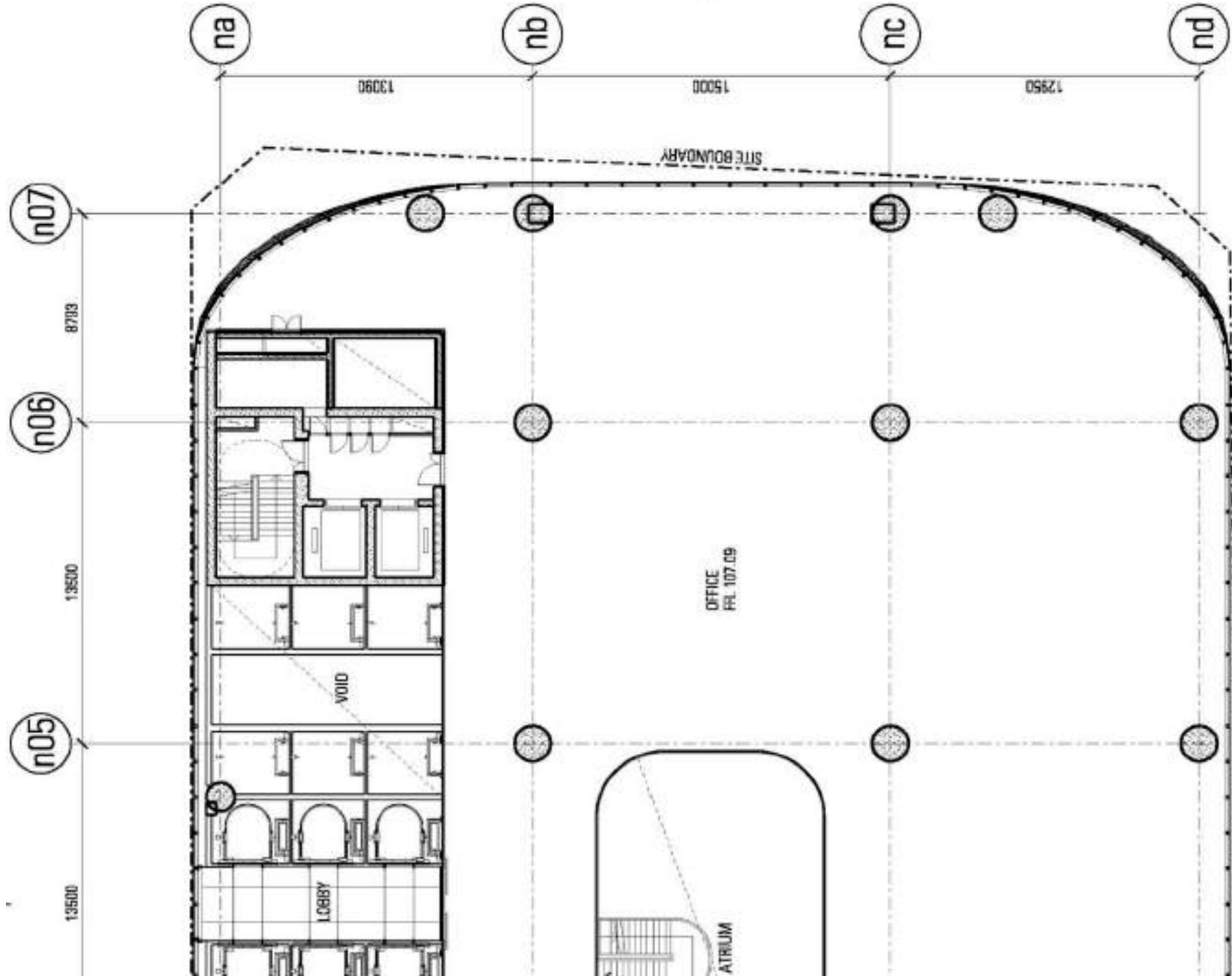


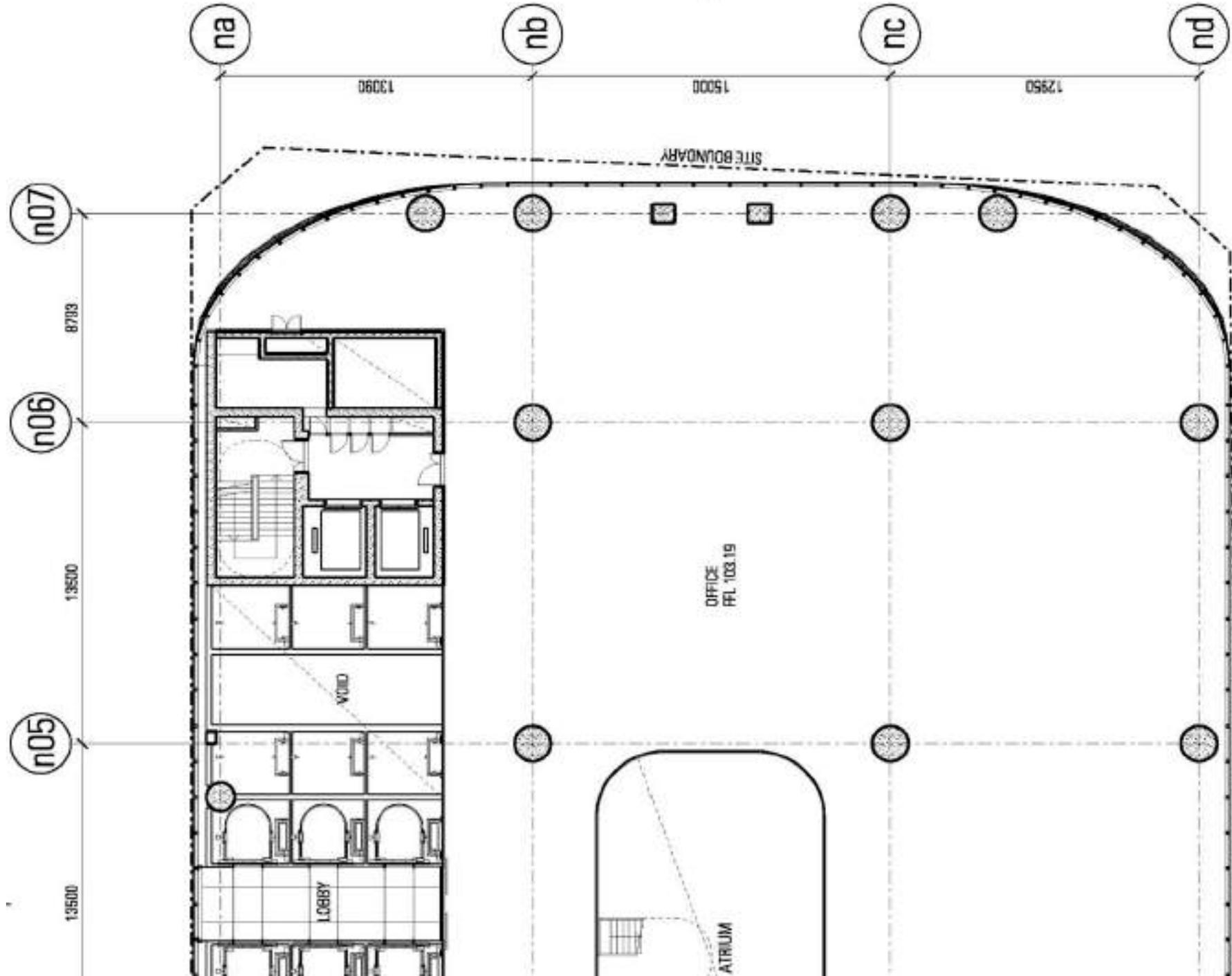


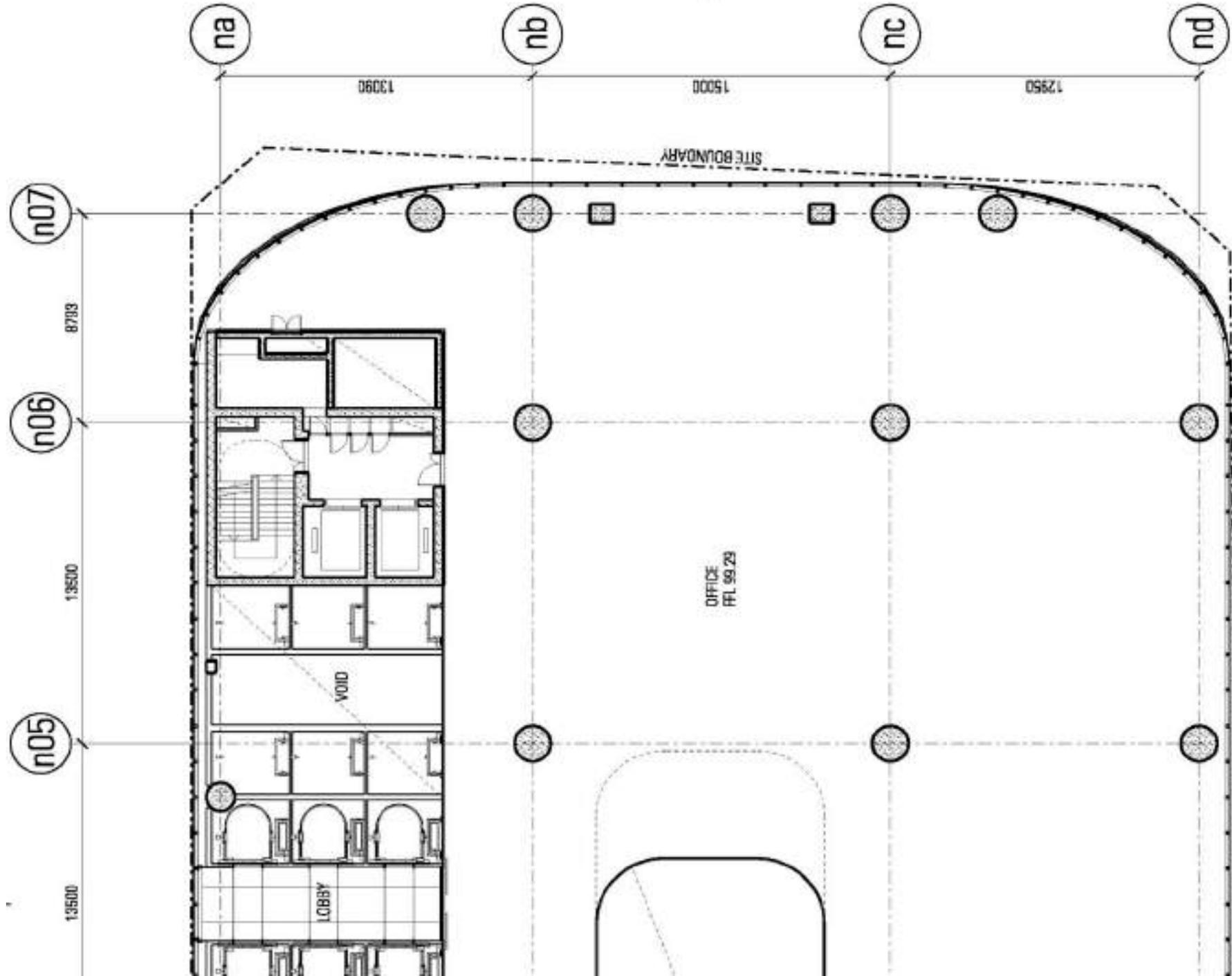


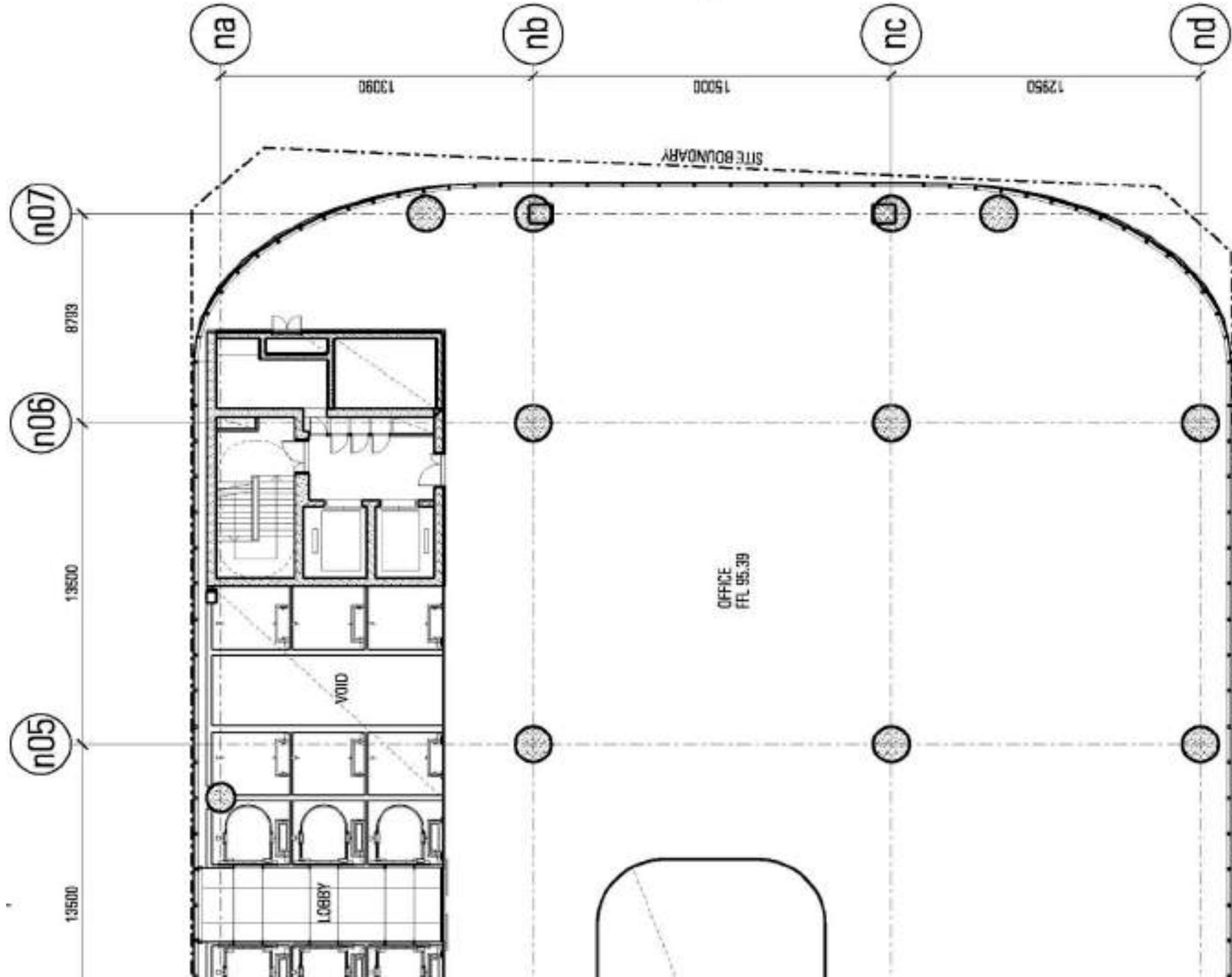


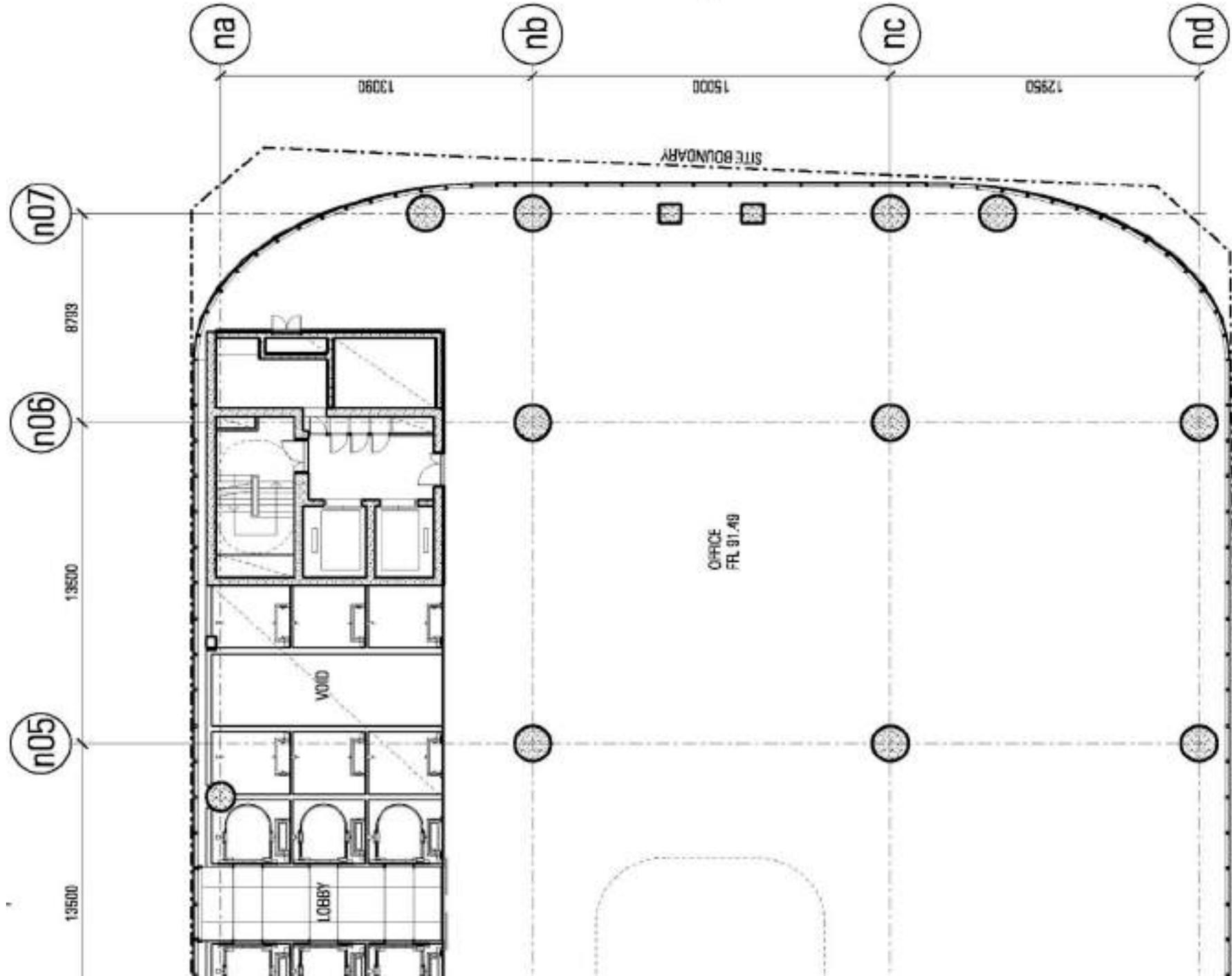


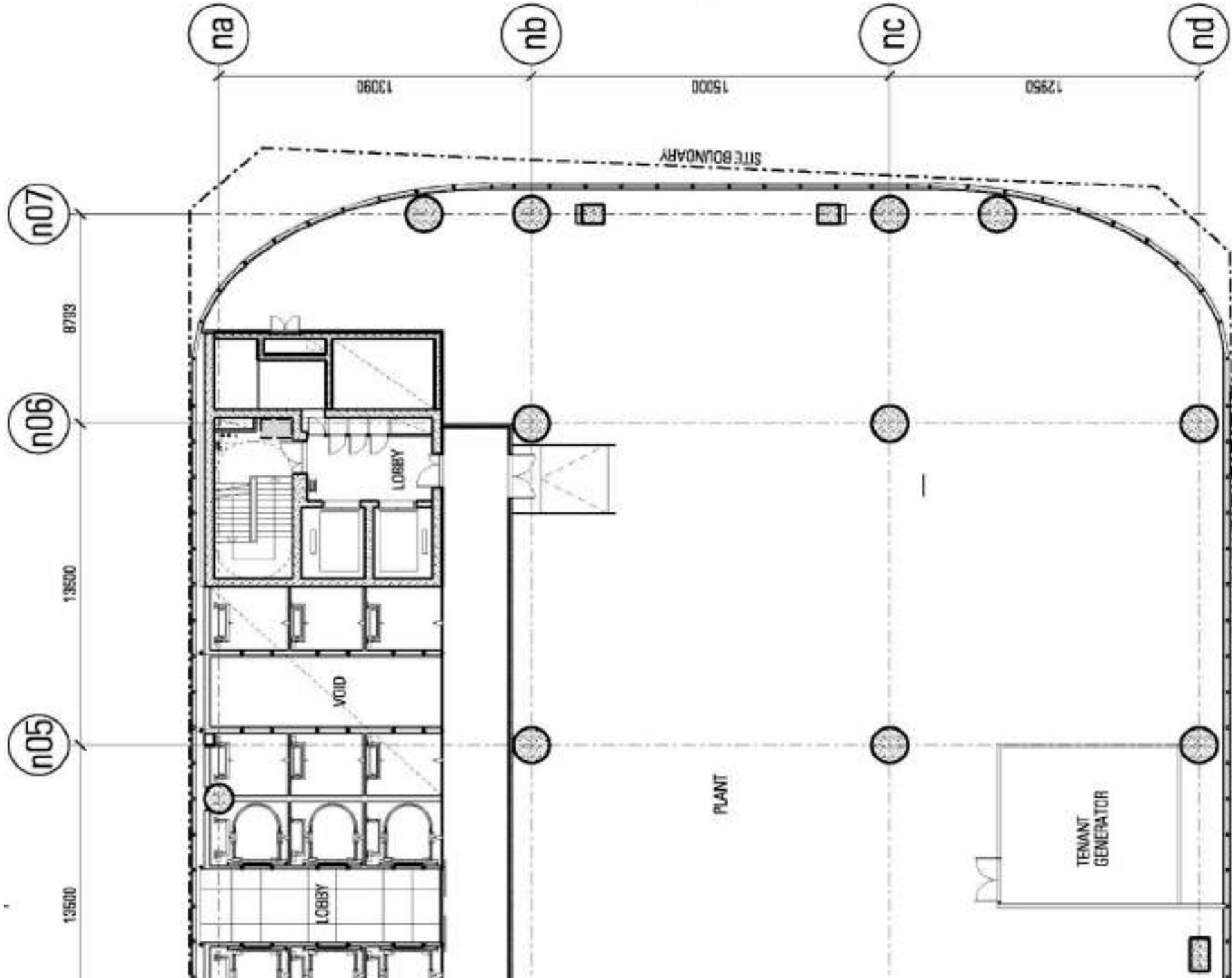


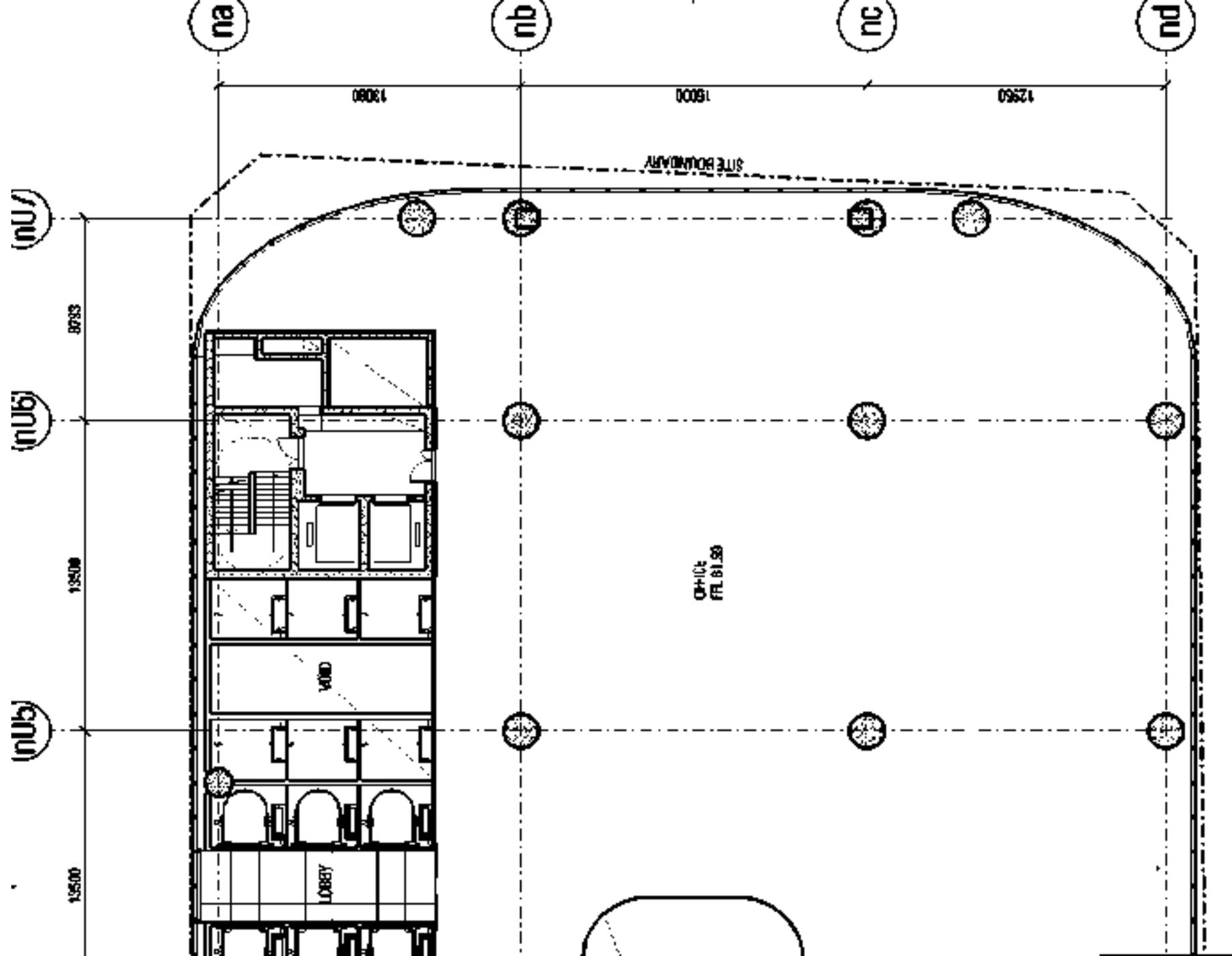


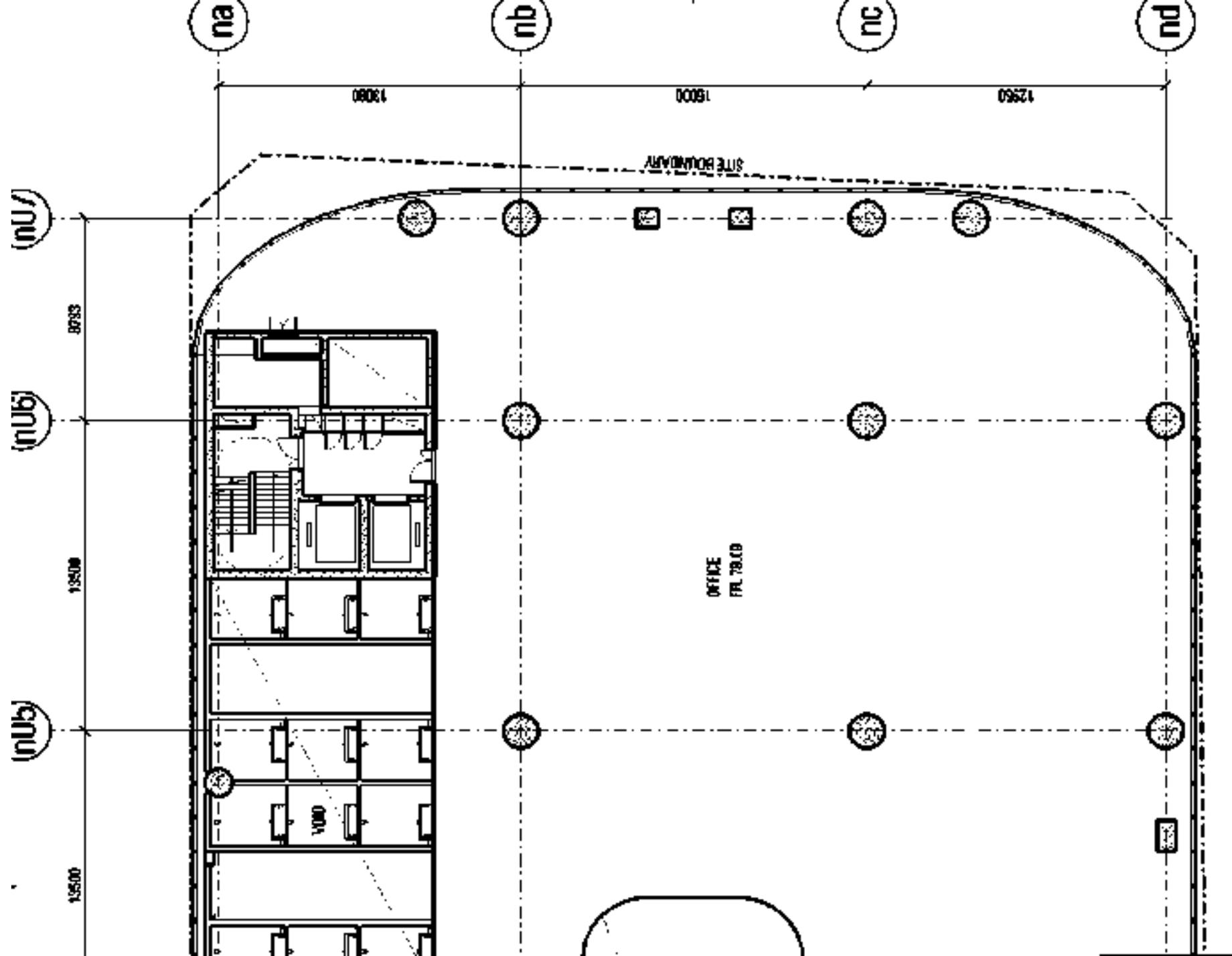


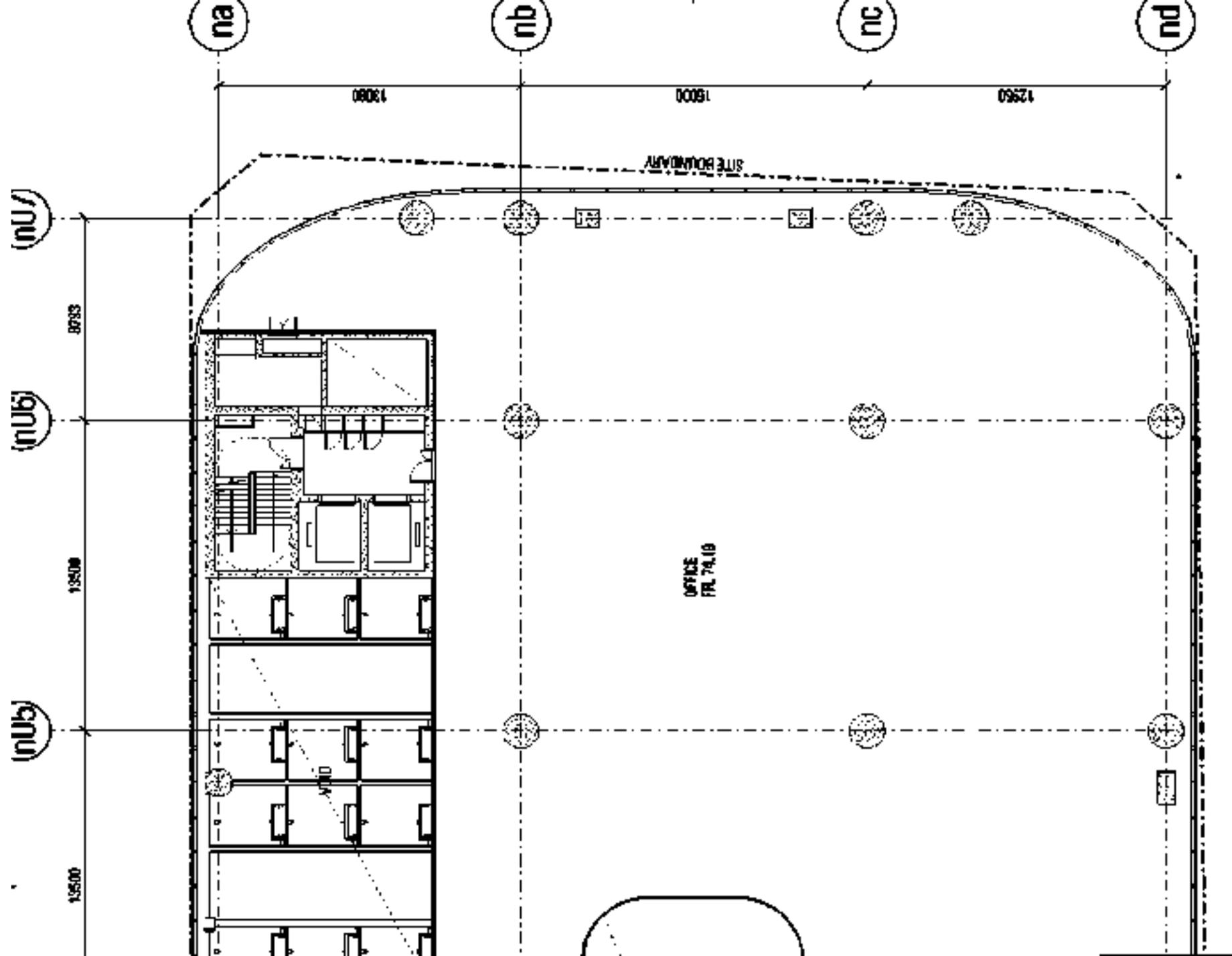


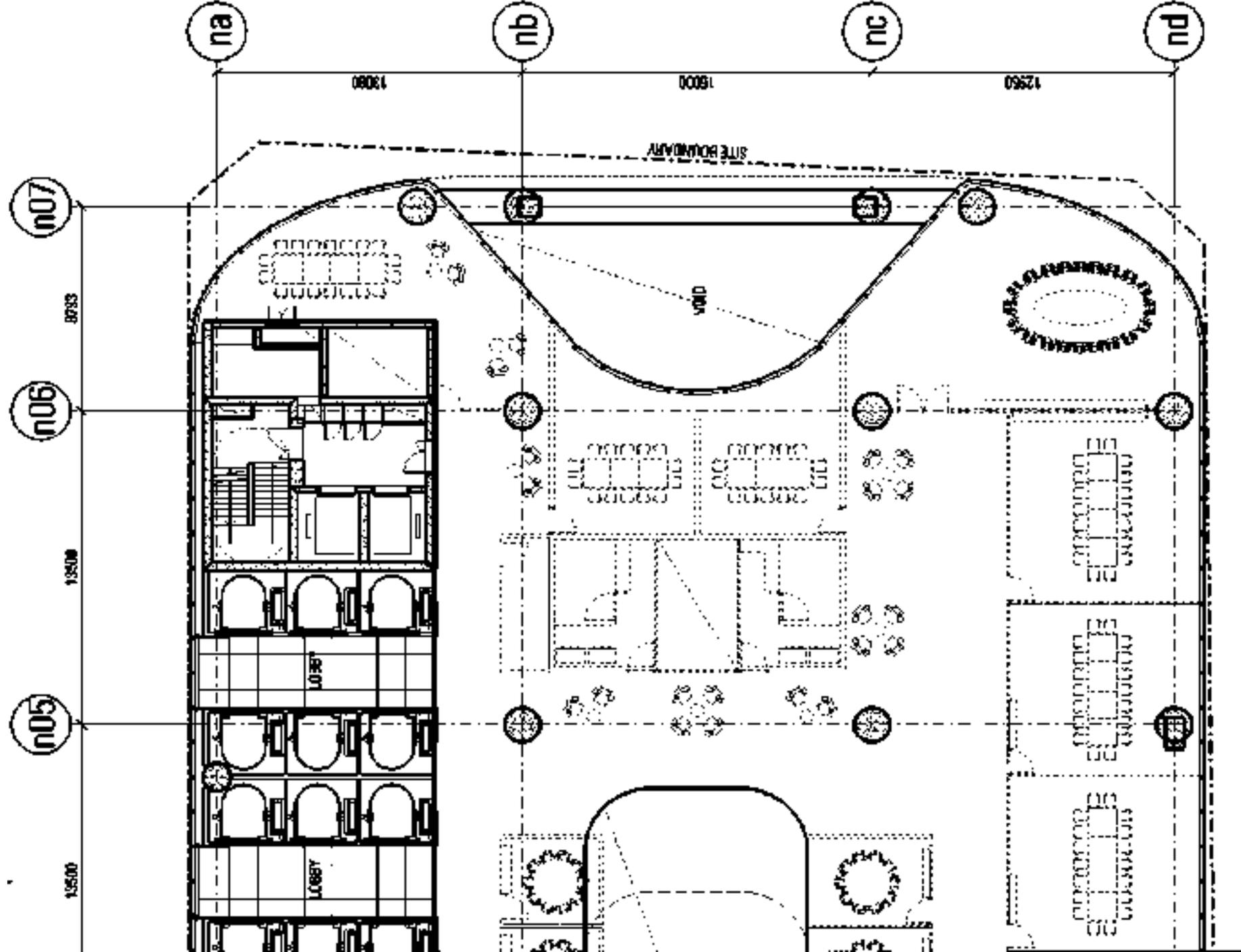








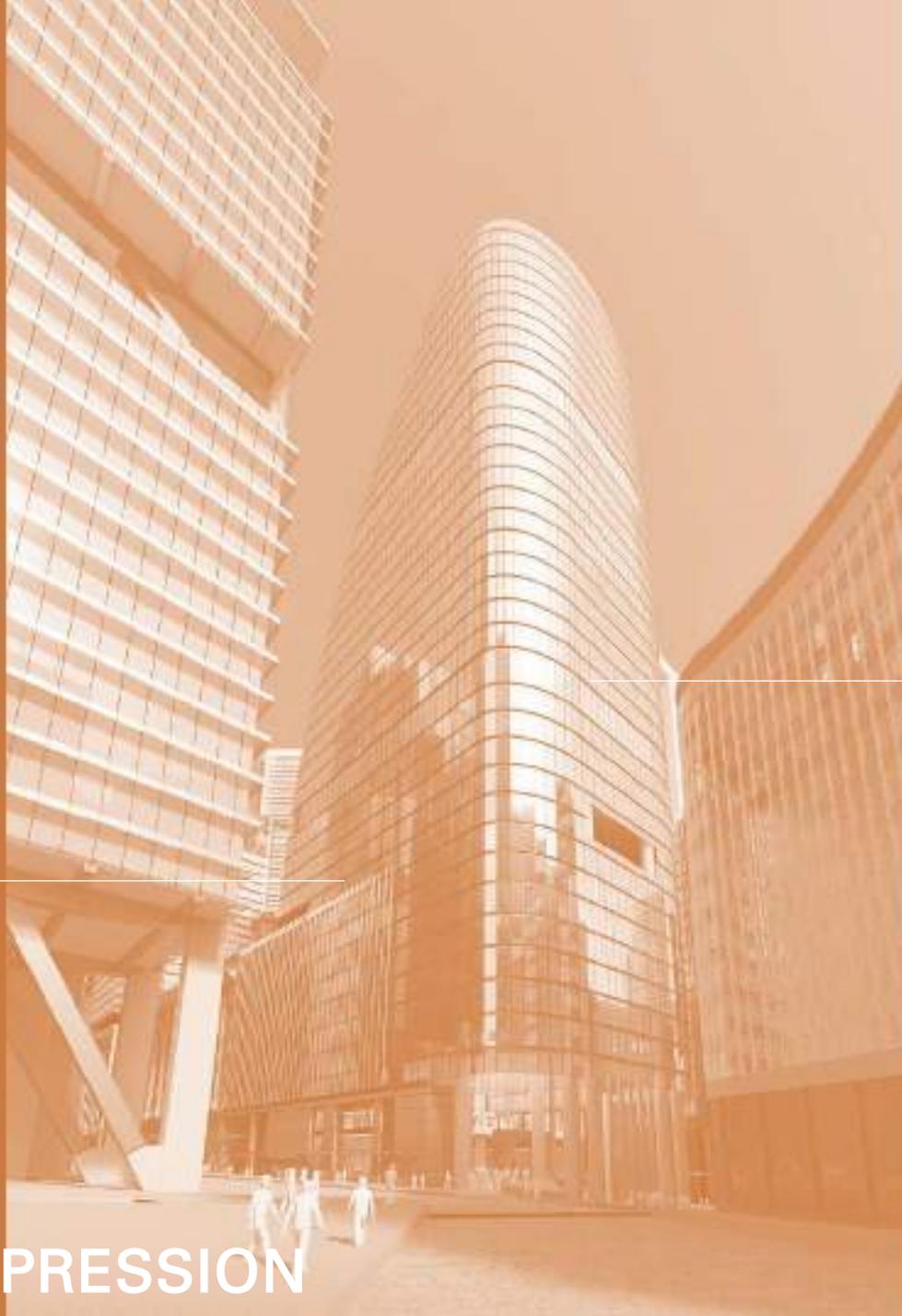


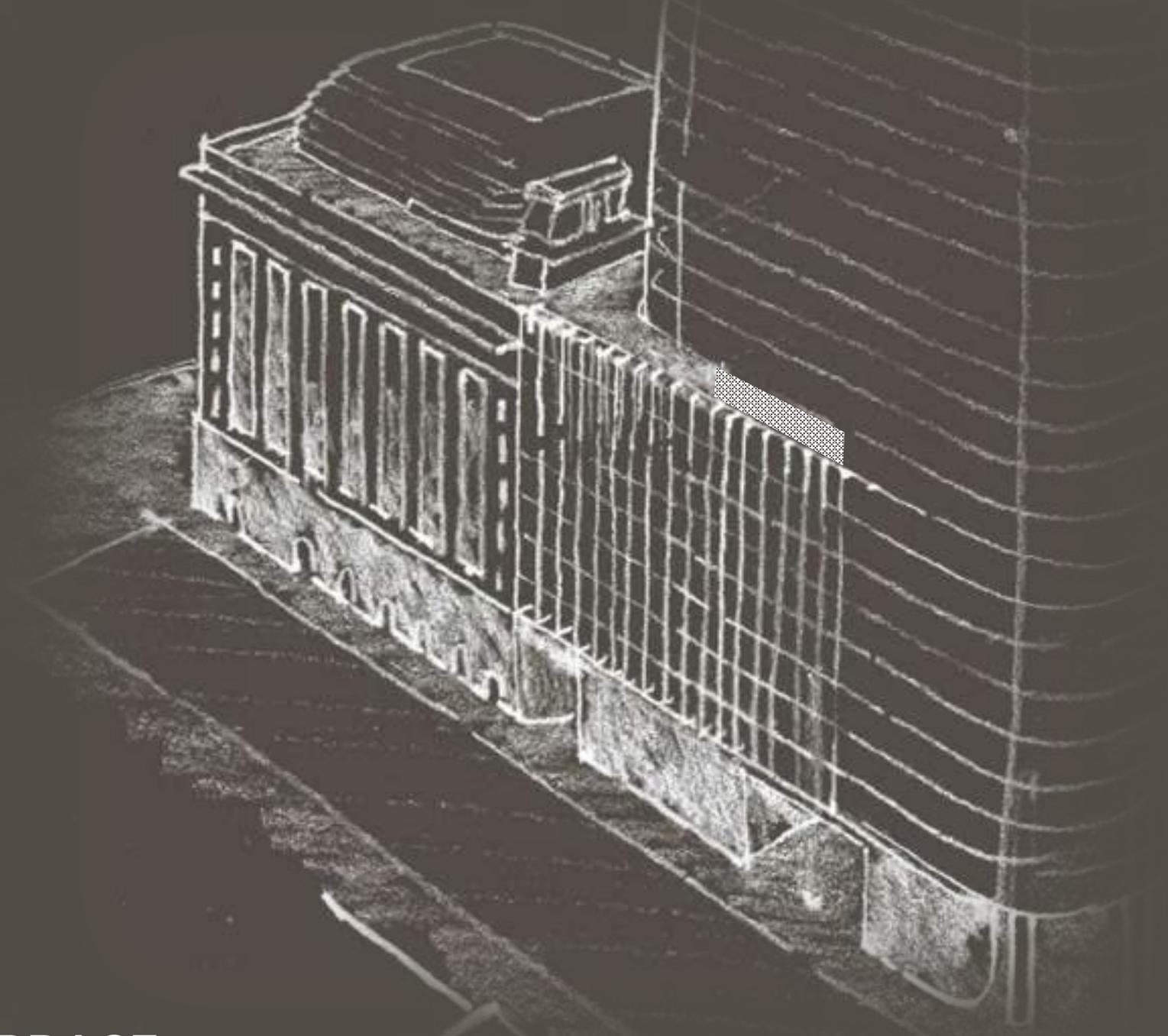


Extent of Level 10 terrace

Materiality
Podium
Tower

ARCHITECTURAL EXPRESSION

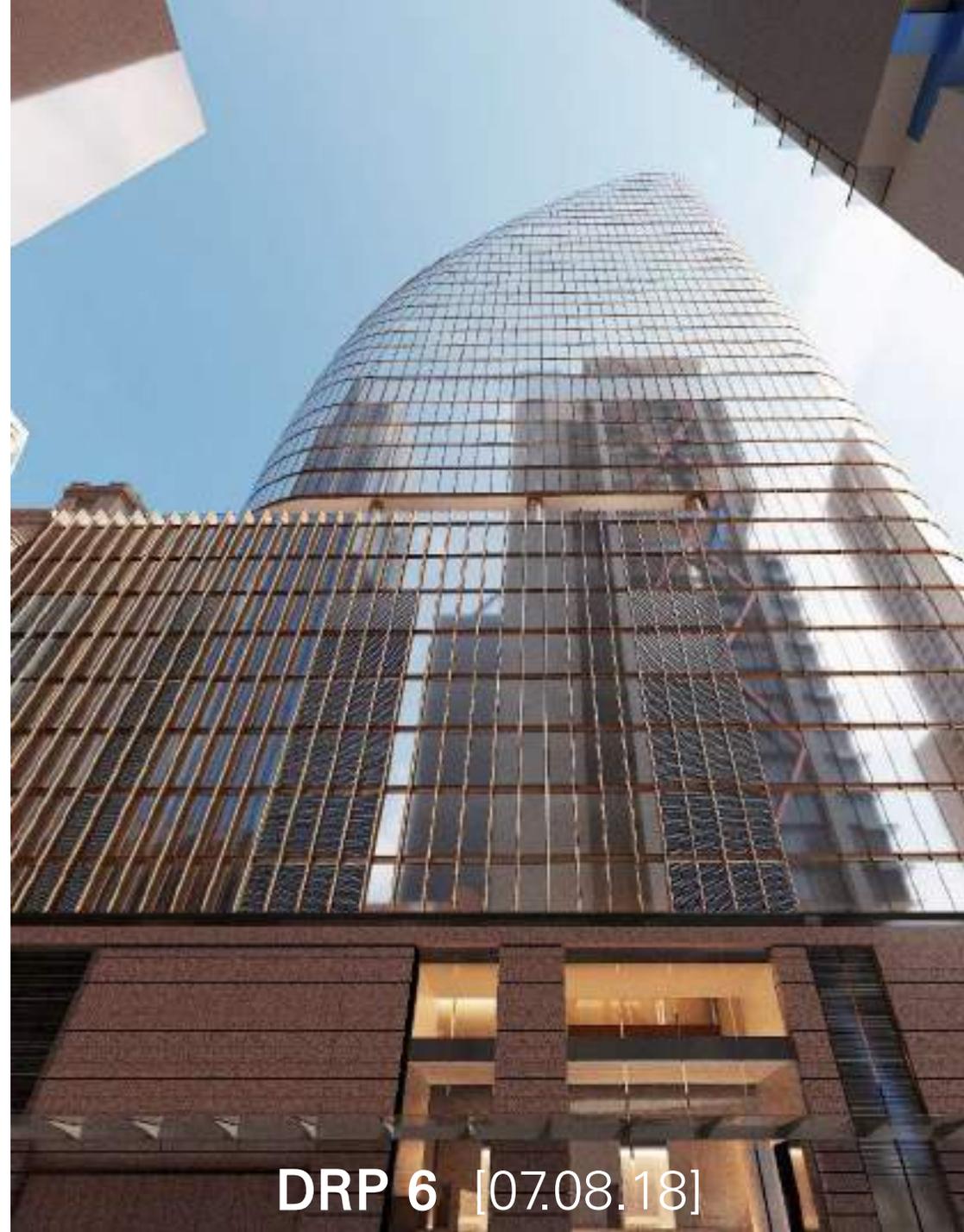




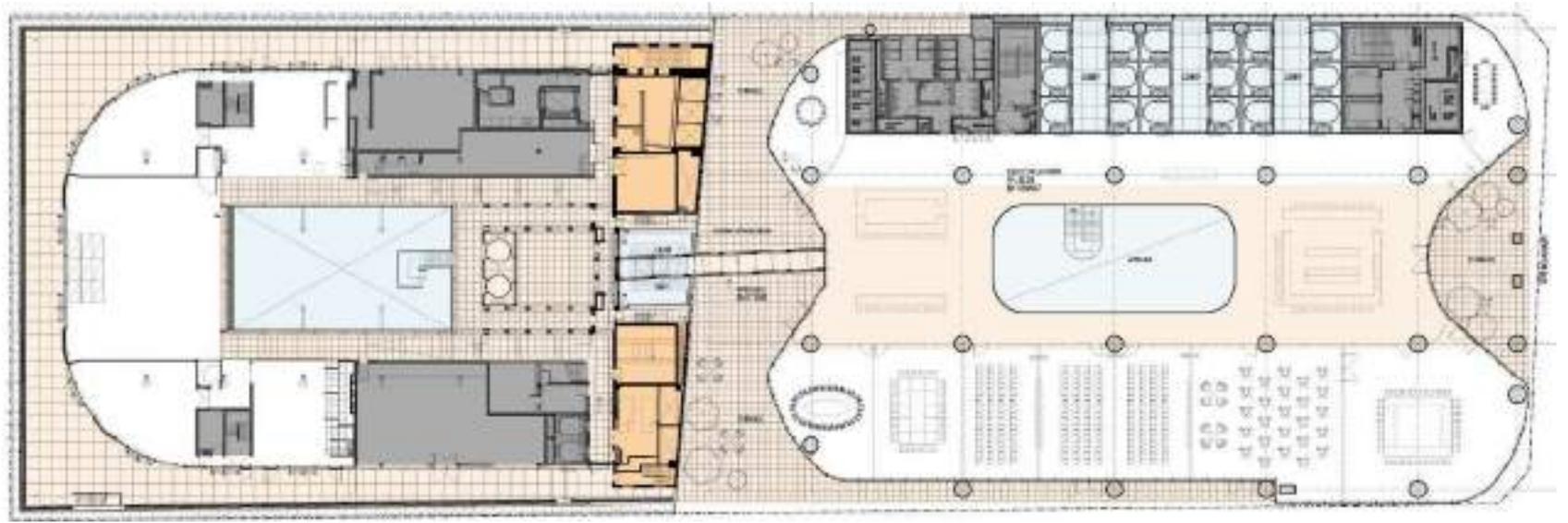
LEVEL 10 TERRACE



DRP 5 [03.07.18]



DRP 6 [07.08.18]





Street trees, furniture and other public domain elements within the precinct are indicative only and are subject to relevant approvals and detailed coordination with new and existing underground utilities and infrastructure



DRP 5 [03.07.18]

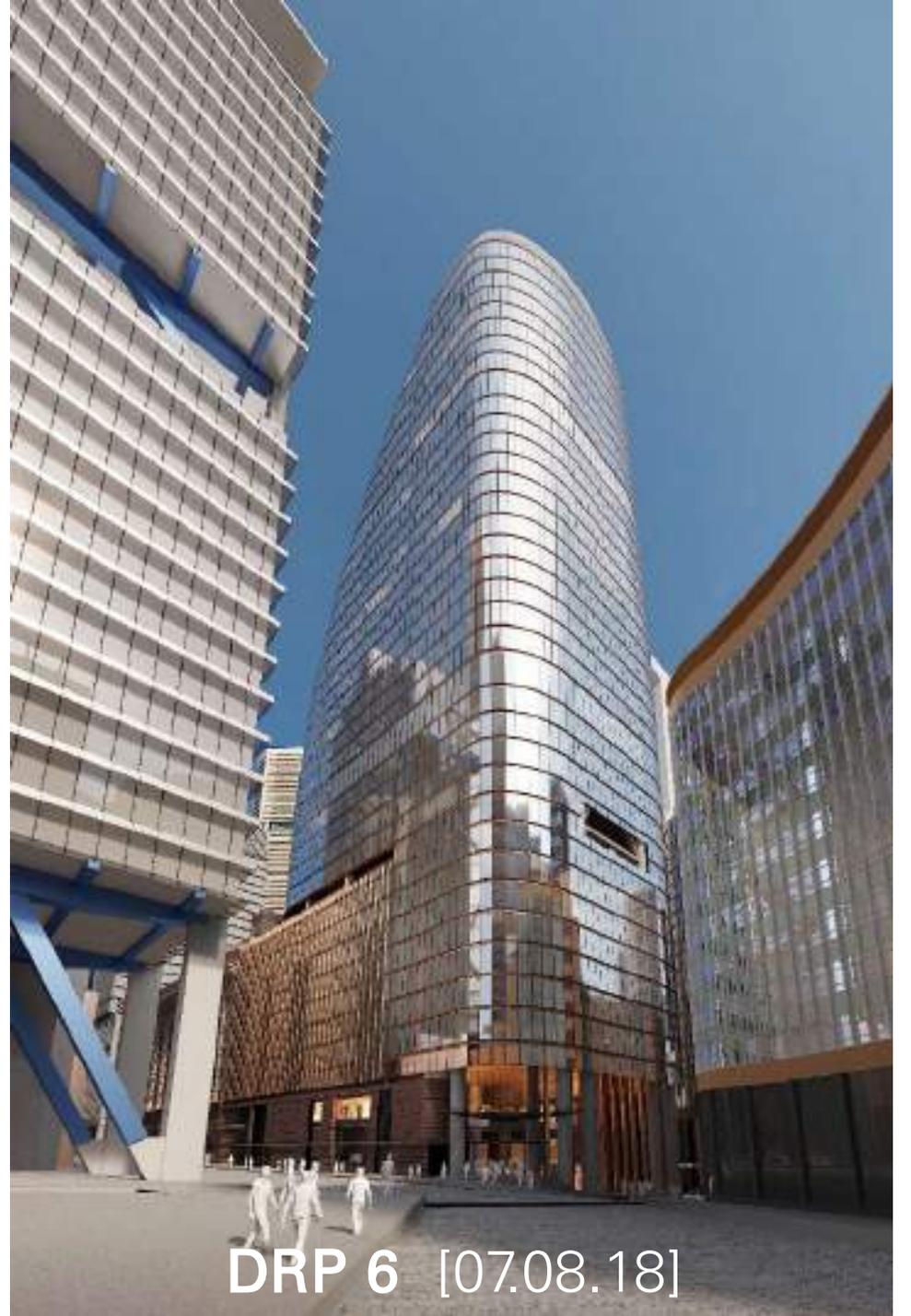


DRP 6 [07.08.18]

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DRP 5 [03.07.18]



DRP 6 [07.08.18]



RED GRANITE
LOWER GROUND TO
LEVEL 1



**ALUMINIUM
METALLIC FINISH**
PODIUM FINES
TOWER SPANDRELS



**HIGH TRANSPARENCY
LOW-E DGUs**
SOUTHERN "LENS"
CASTLEREAGH ST LIFT SHAFT



**REFLECTIVE GLASS [MAX 20%]
LOW-E DGUs**
TOWER GLAZING
LEVEL 2 TO ROOF

MATERIAL PRECEDENTS



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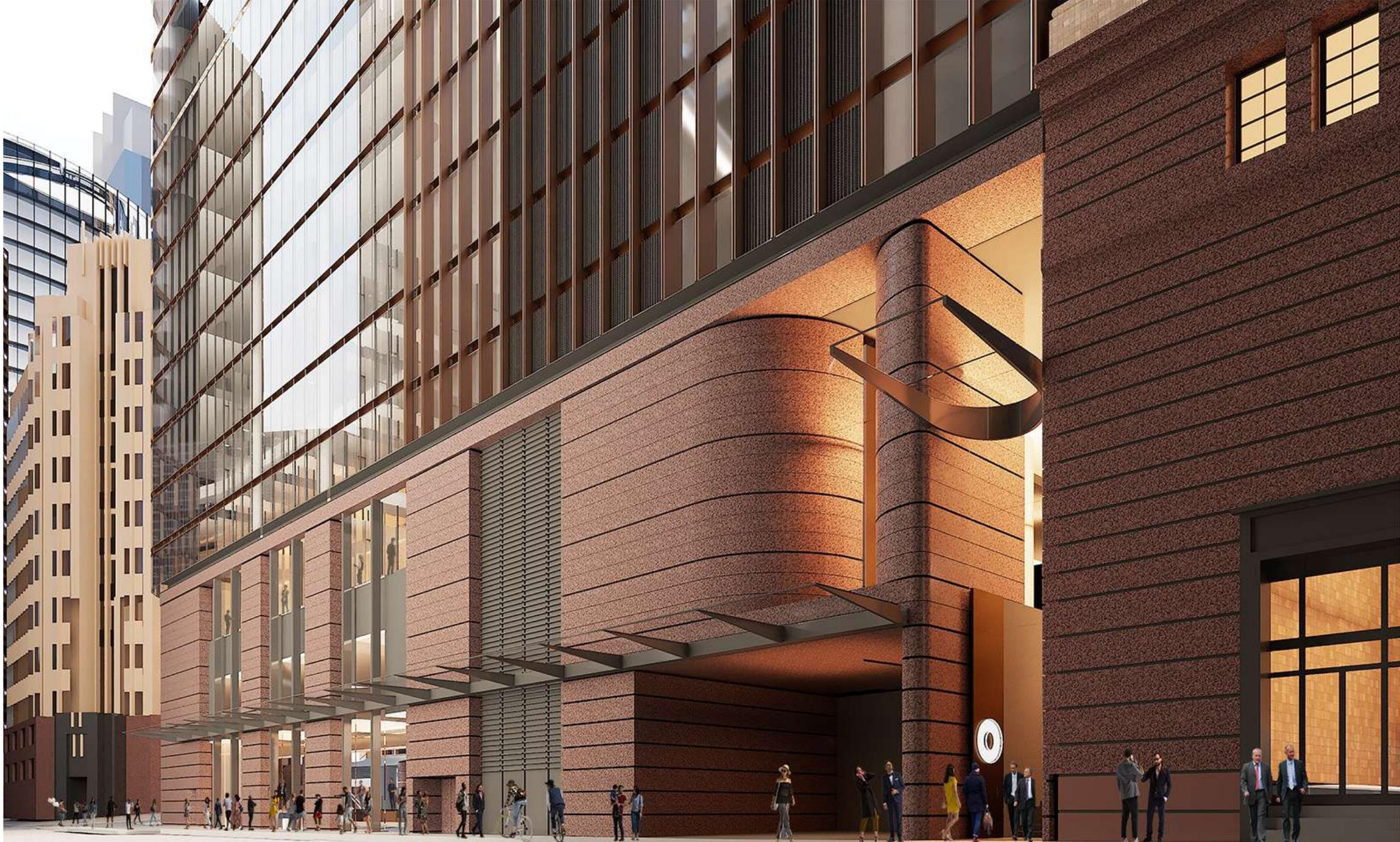
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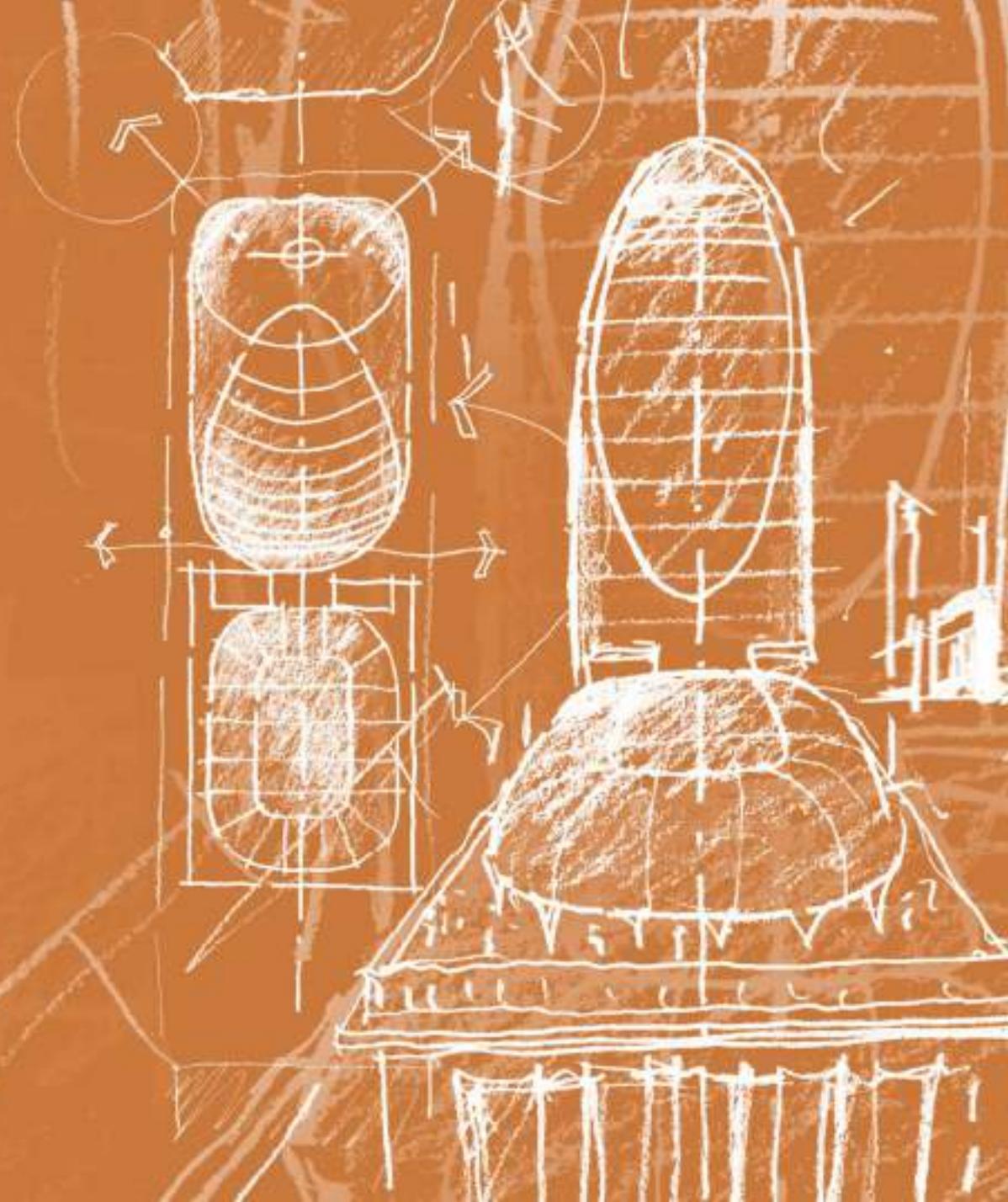


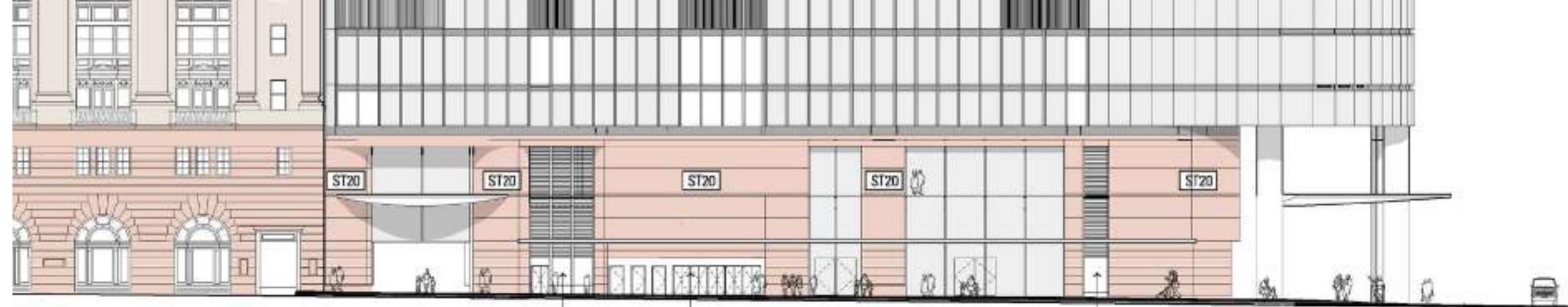
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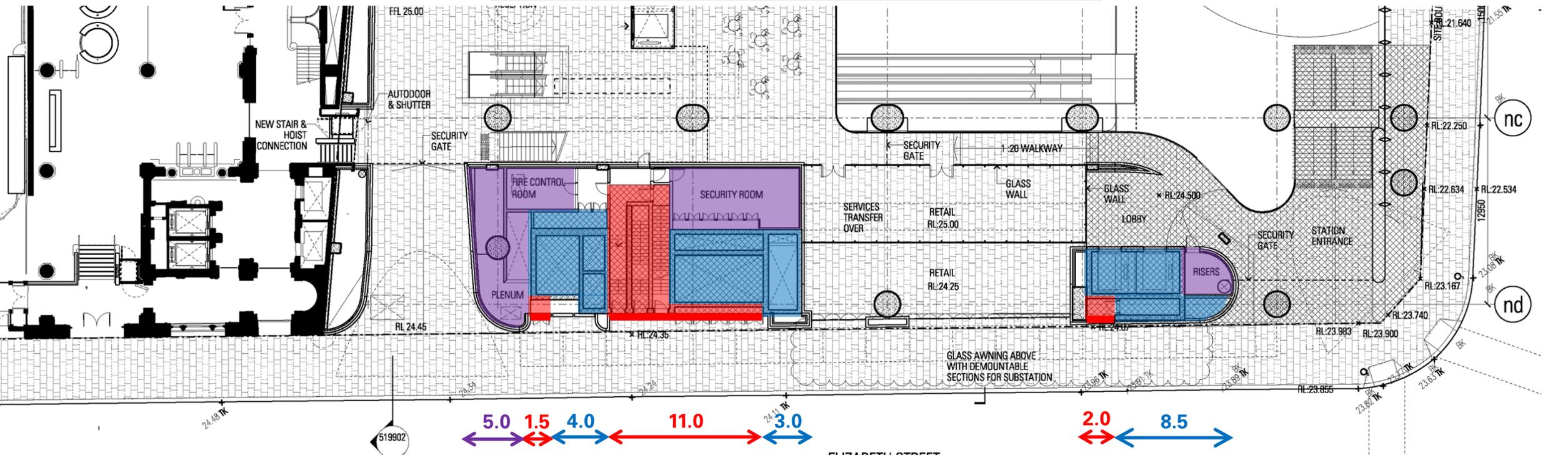
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NORTH TOWER
07.08.18



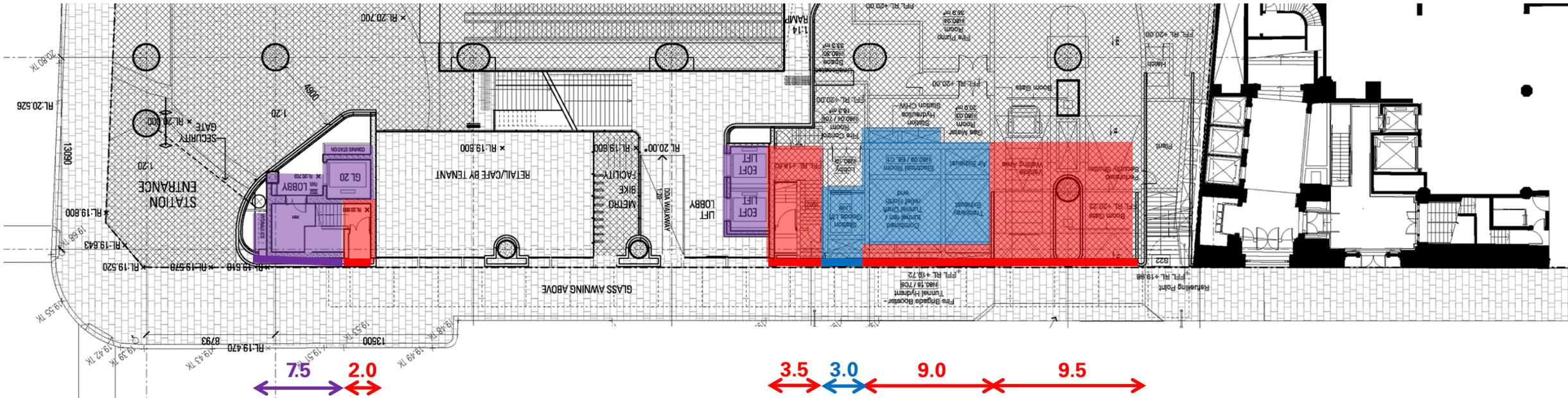


	Minimum interface with boundary
	Metro Standards/Atrium Concept
	Tower related





	Minimum interface with boundary
	Metro Standards/Atrium Concept
	Tower related





6

OSD DRP – South Tower

South Tower Architectural Expression

The OSD DRP has indicated the intent of the setbacks above the podium has not been met by the tower and has recommended increasing the setbacks at the south east and south west corners '*to improve architectural expression and urban design outcomes for the block*'.

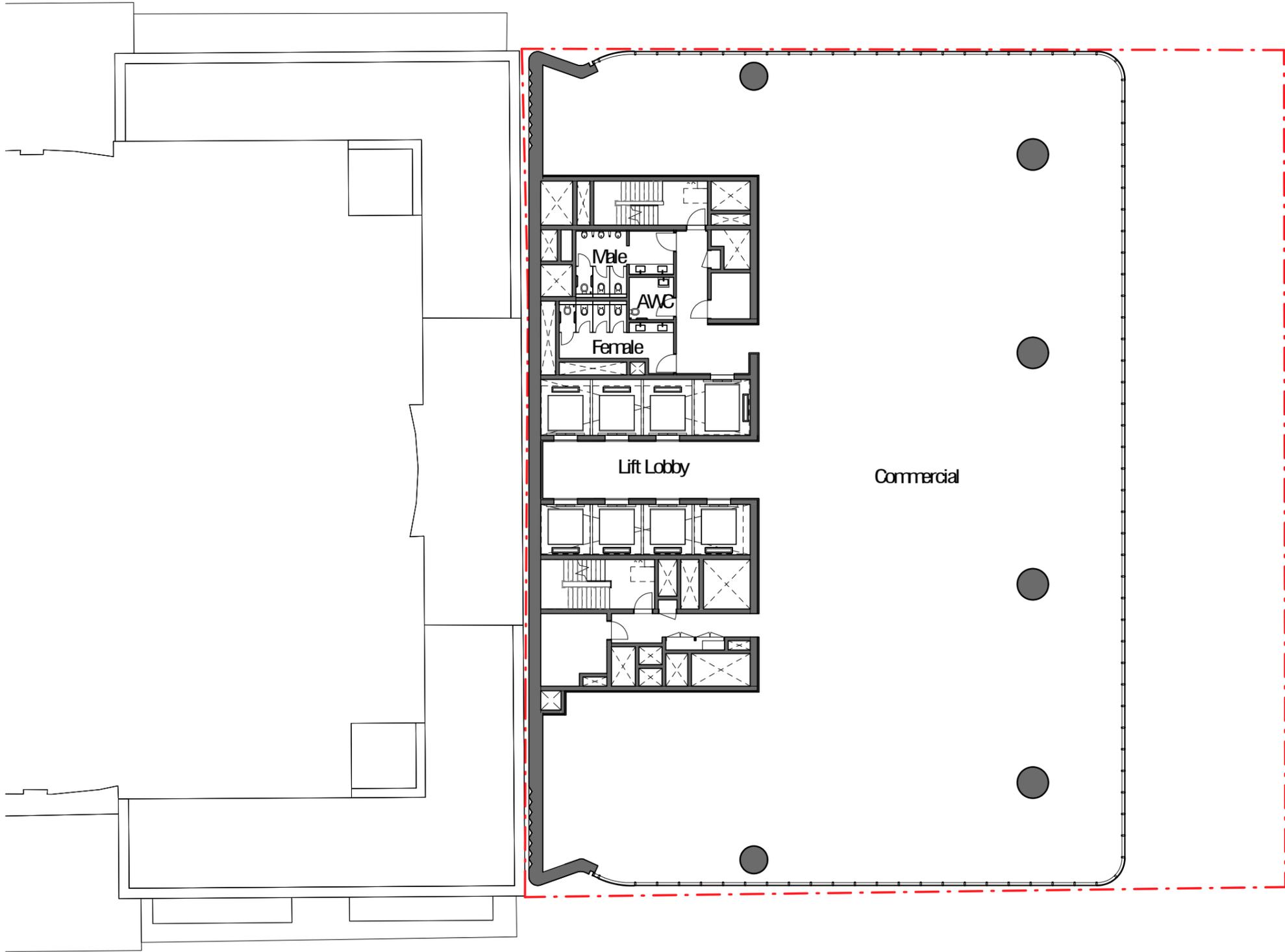
Tzannes presentation, provided under separate cover, responds to the OSD DRP's feedback.

ARCHITECTURAL EXPRESSION

'While the proposed decoration of the south facade has merit as a strategy to mitigate the blankness of the southern elevation , we do not support the current approach to this elevation. We strongly recommend strengthening the resolution of this in relation to the elevation as a whole, considering views from both Castlereagh and Elizabeth Streets.

New comments;

- the intent of the setback above the podium has not been met by the tower, which extends the full height and width of the approved envelope and is likely to result in a poor urban design outcome for the southern end of the street block and adjacent development
- we recommend increasing the setbacks at the south east and south west corners of the tower to improve architectural expression and urban design outcomes for the block.'

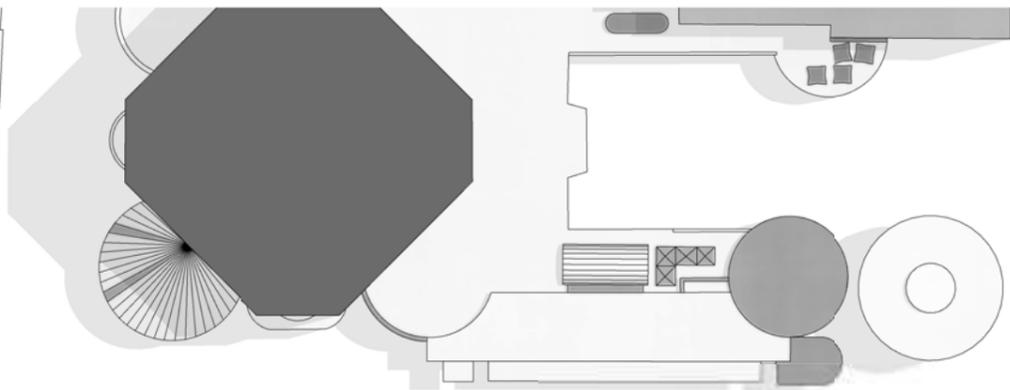


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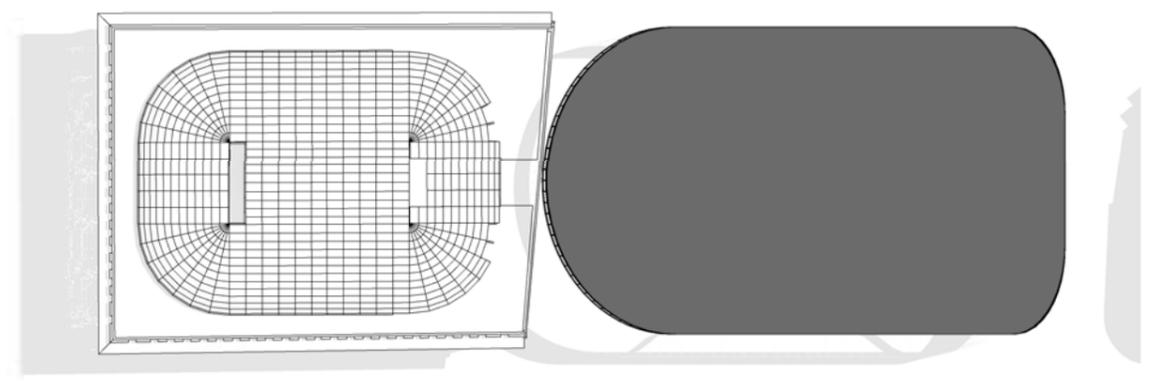
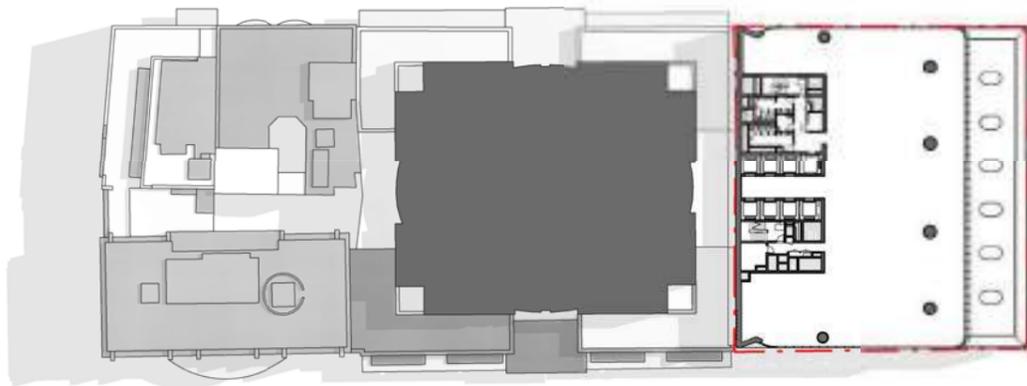
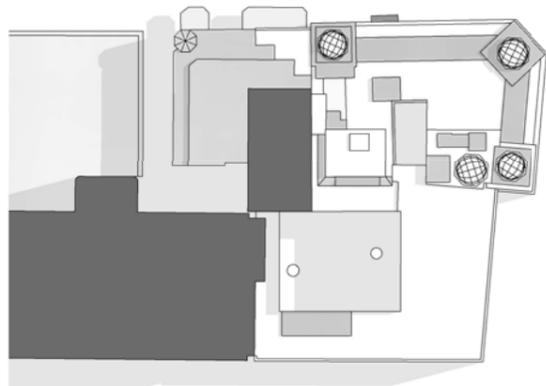


Street trees, furniture and other public domain elements within the Precinct are indicative only and are subject to relevant approvals and detailed coordination with new and existing underground utilities and infrastructure.

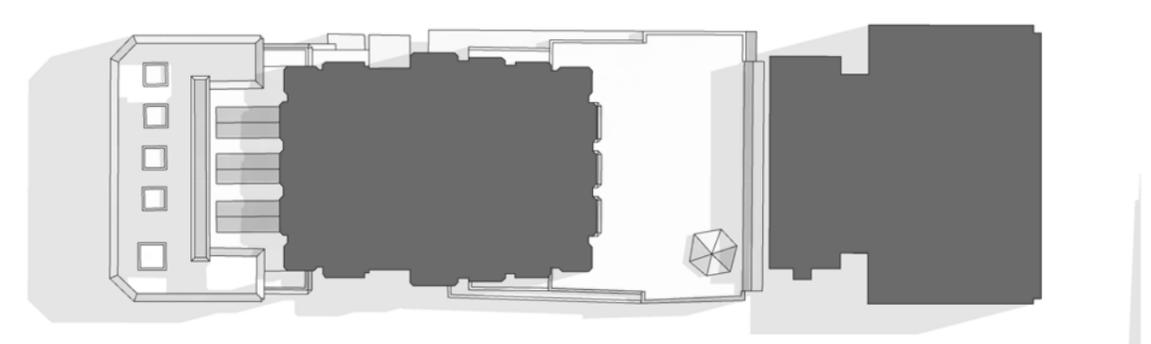
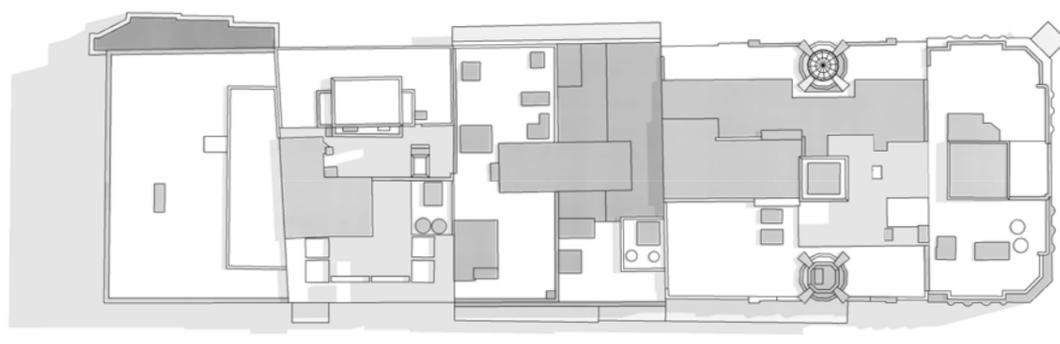
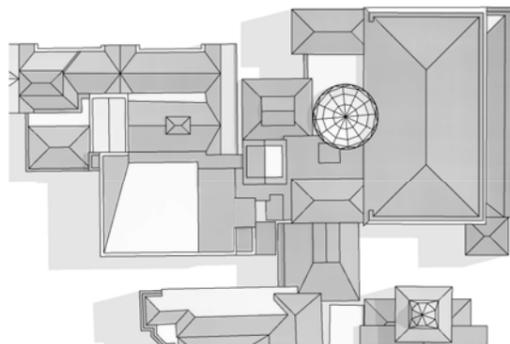




Castlereagh Street



Elizabeth Street



Scale
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C 10 20 30
m



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Streetview from south west - Castlereagh Street



Streetview from south east - Elizabeth Street

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07 August 2018
CURRENT EAST ELEVATION
METRO MARTIN PLACE | SOUTH TOWER DESIGN CONCEPT





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07 August 2018
SOUTHERN FACADE ARTICULATION - METRO PRECINCT
METRO MARTIN PLACE | SOUTH TOWER DESIGN CONCEPT





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07 August 2018
SOUTHERN FACADE ARTICULATION - INTEGRATED TOWER
METRO MARTIN PLACE | SOUTH TOWER DESIGN CONCEPT

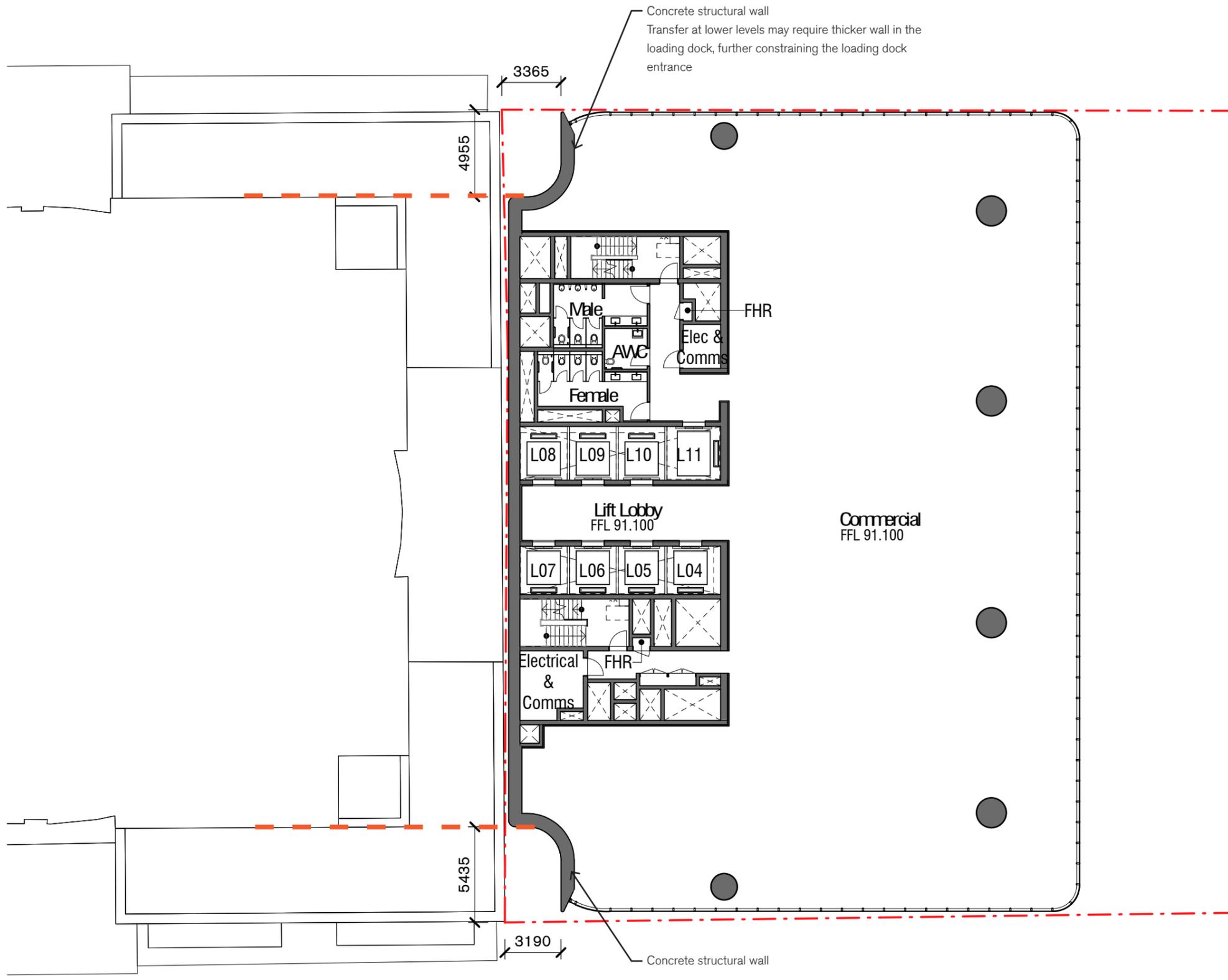




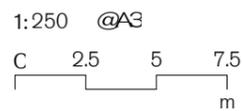
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07 August 2018
SOUTHERN FACADE ARTICULATION - SOUTHERN SITE
METRO MARTIN PLACE | SOUTH TOWER DESIGN CONCEPT





Scale

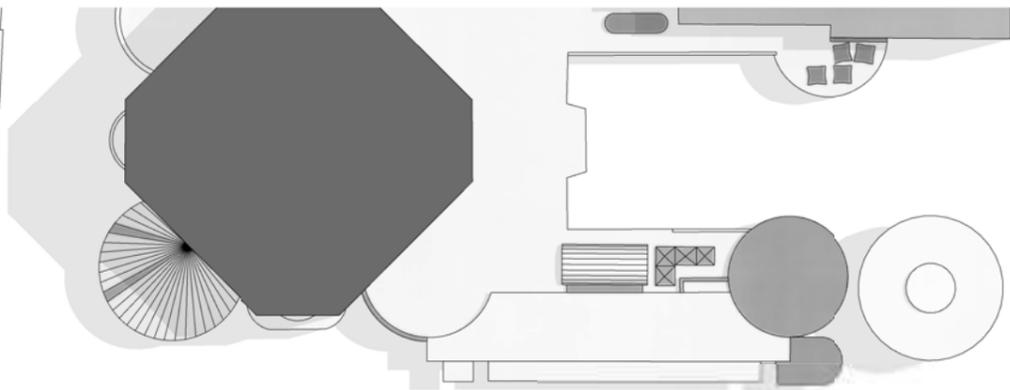


North

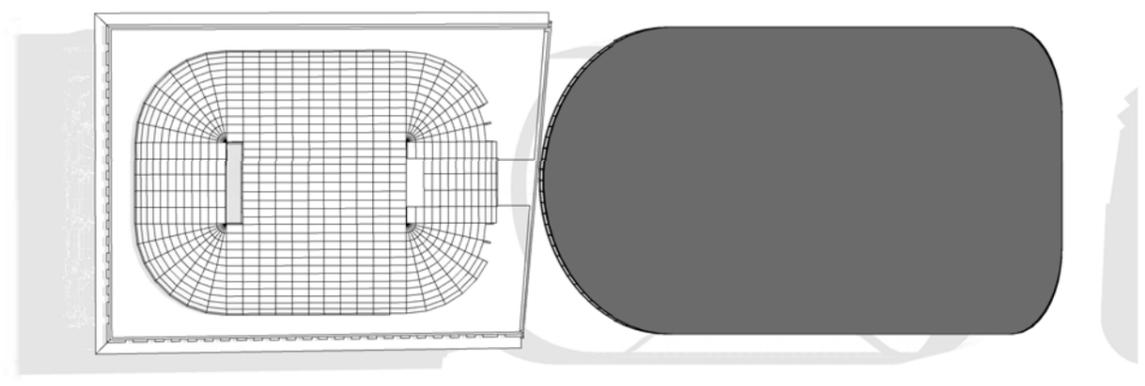
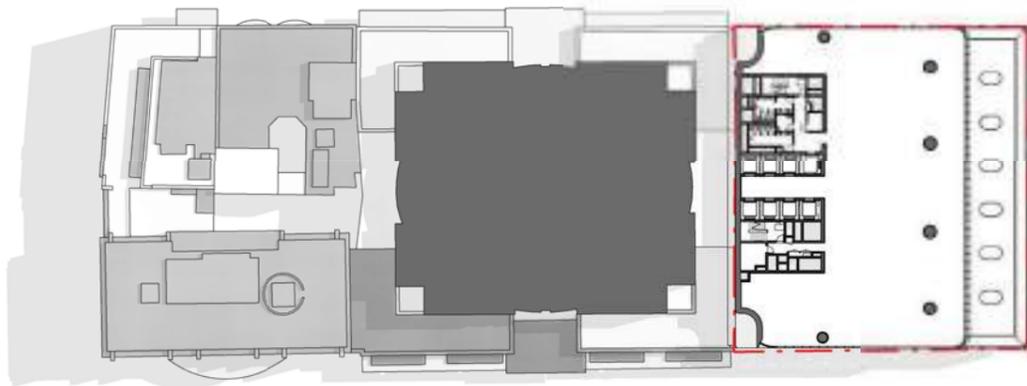
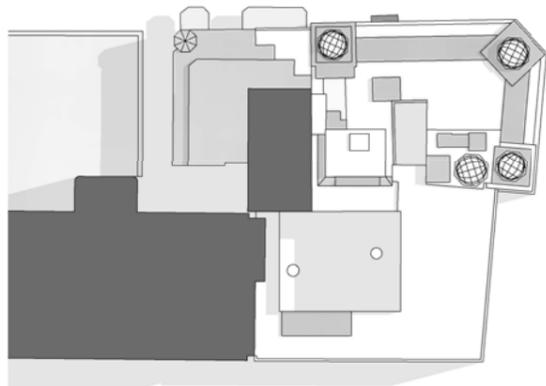


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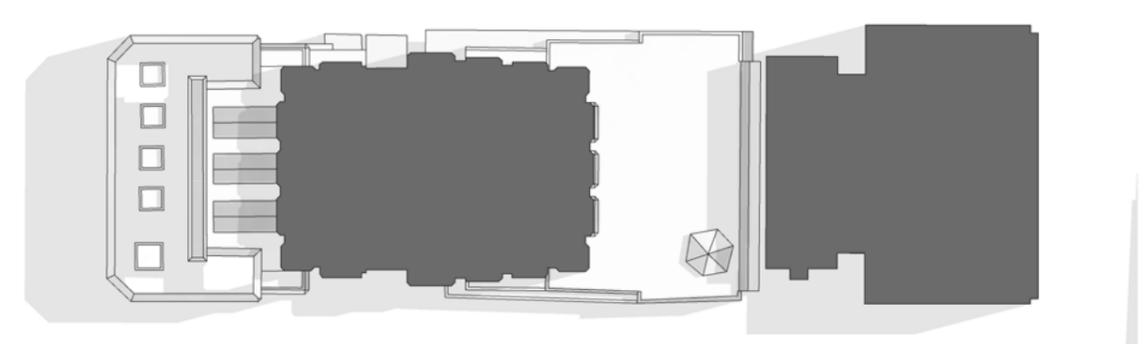
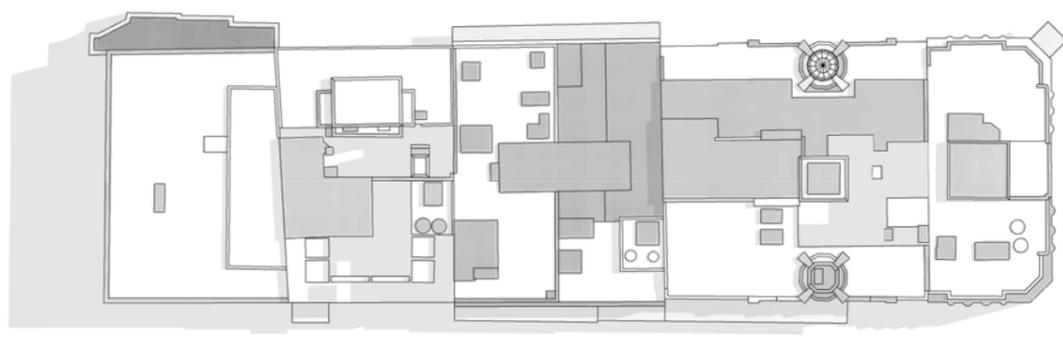
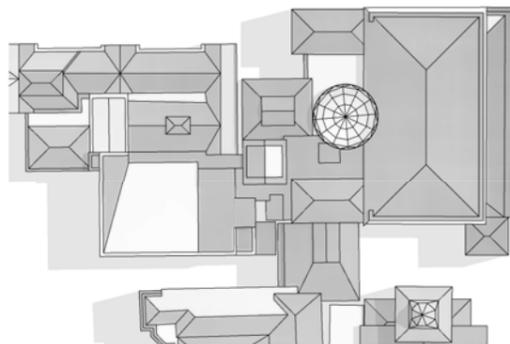




Castlereagh Street



Elizabeth Street

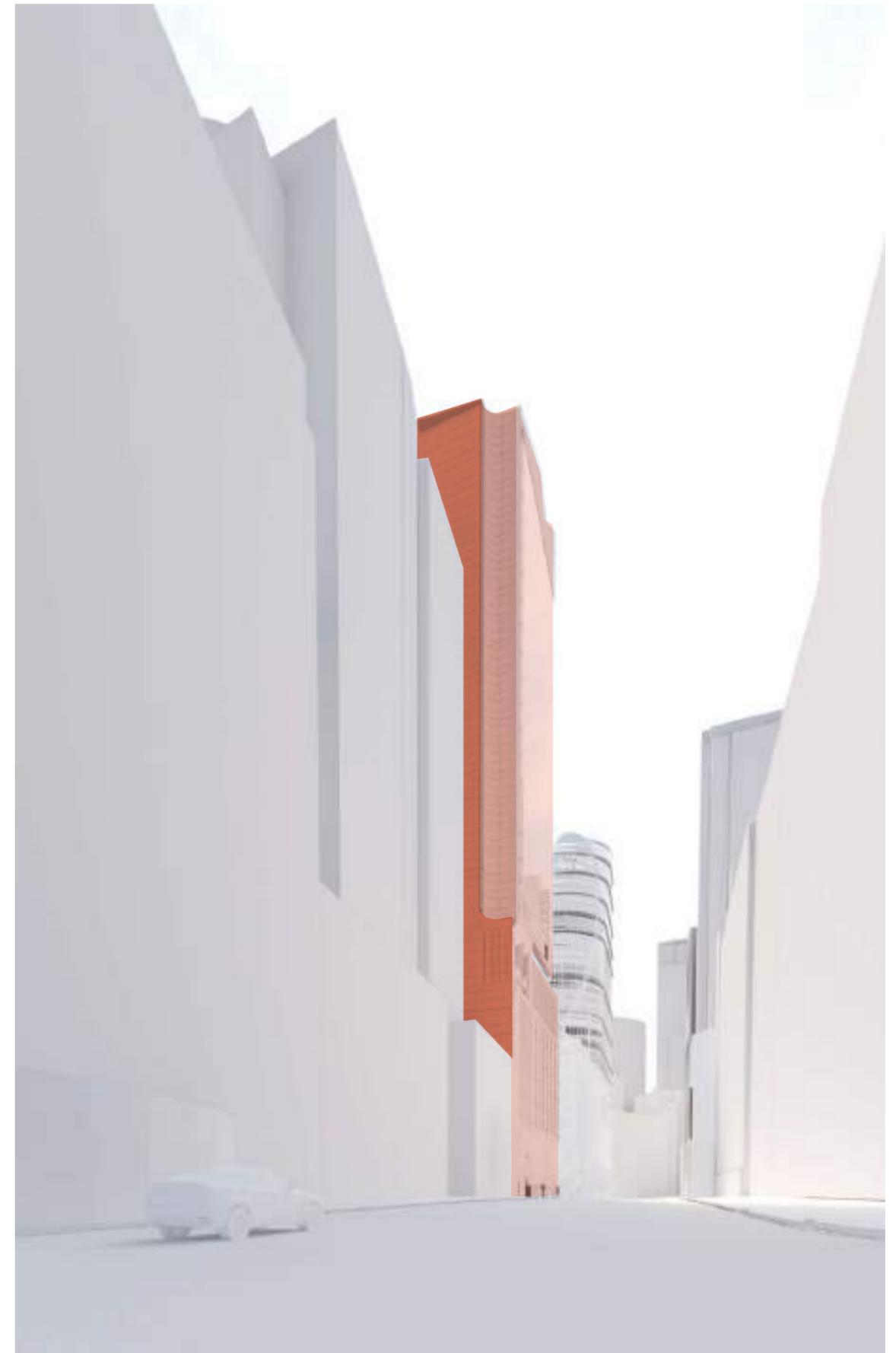


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m



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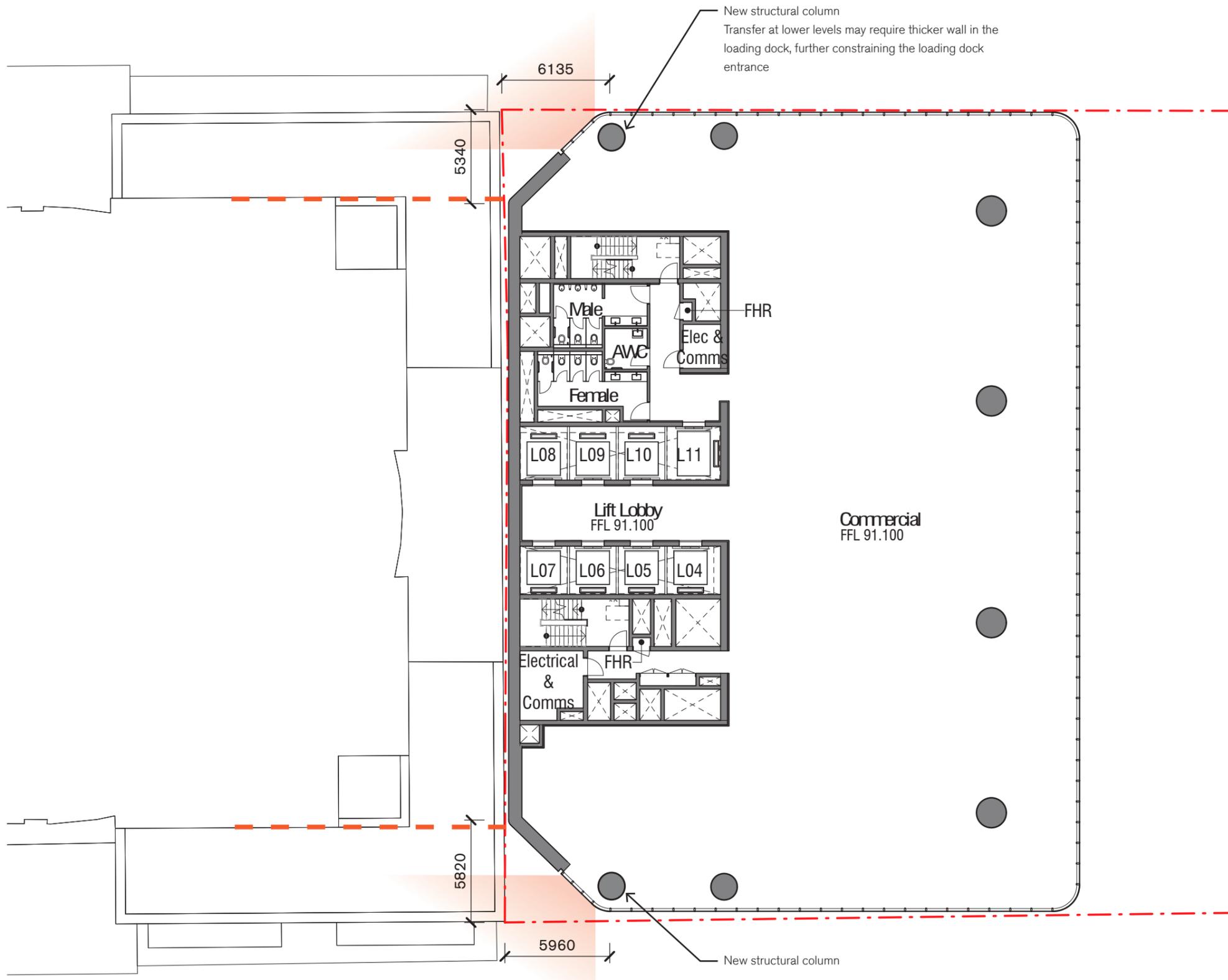
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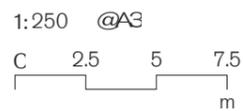


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Scale

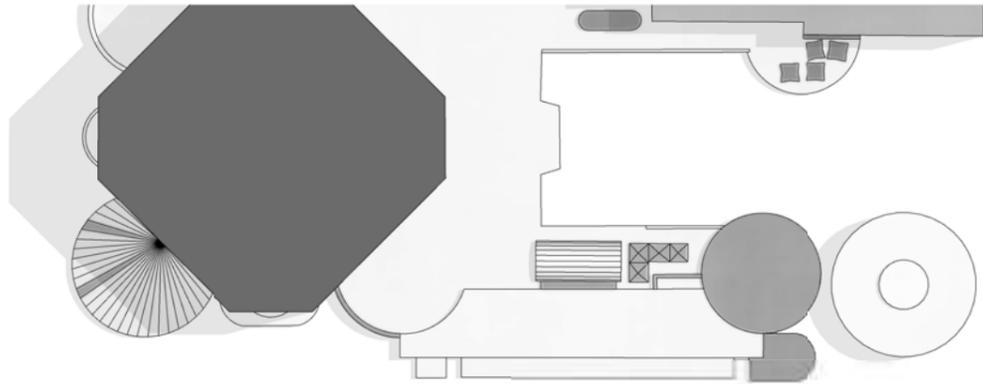


North

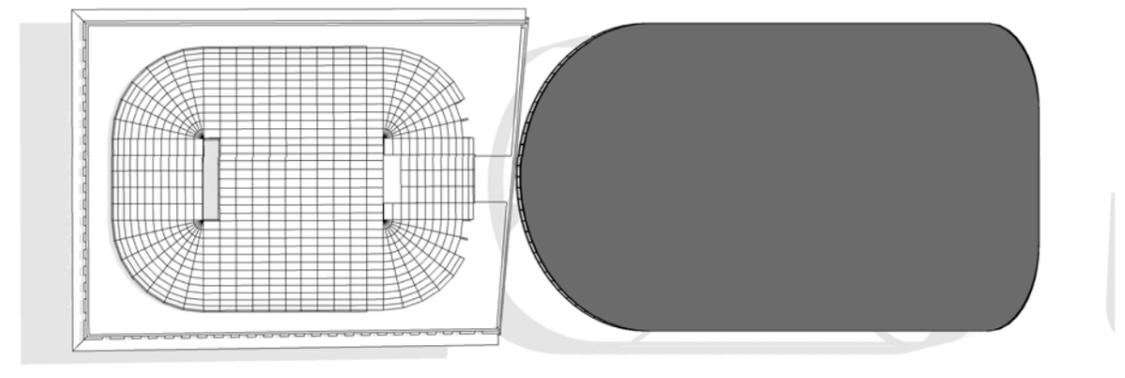
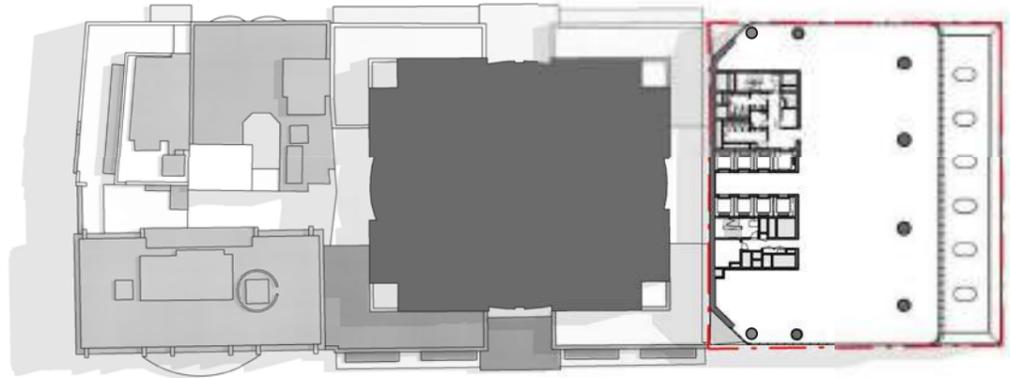
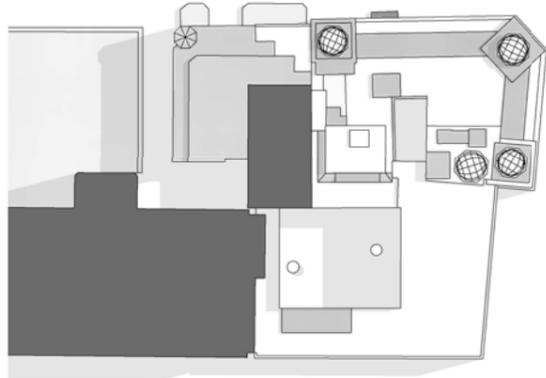


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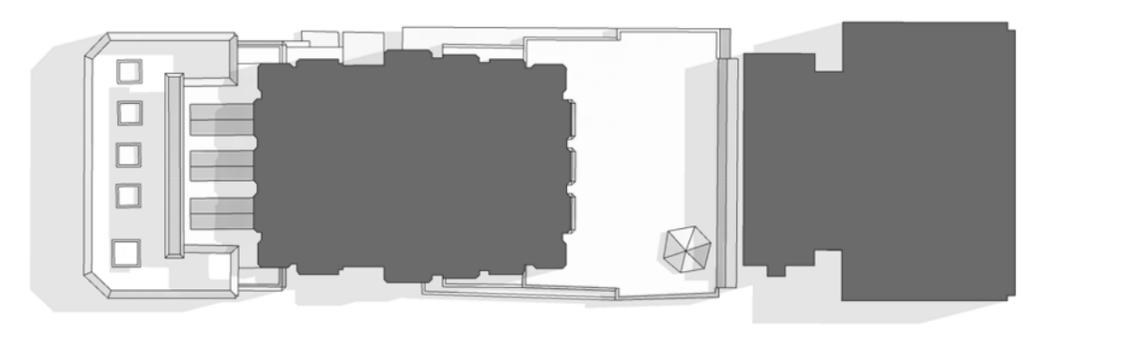
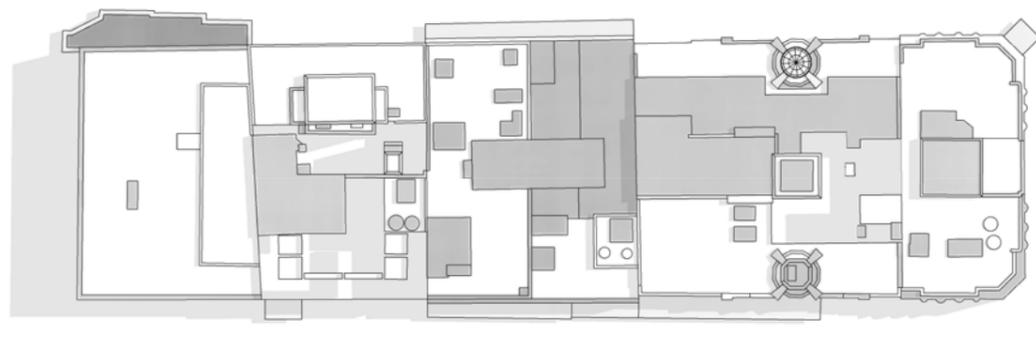
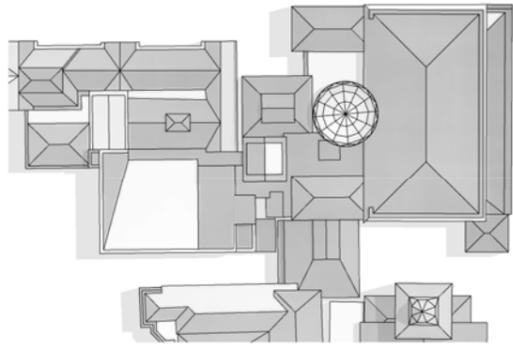




Castlereagh Street



Elizabeth Street



Scale
1:1000 @A3
C 10 20 30
m



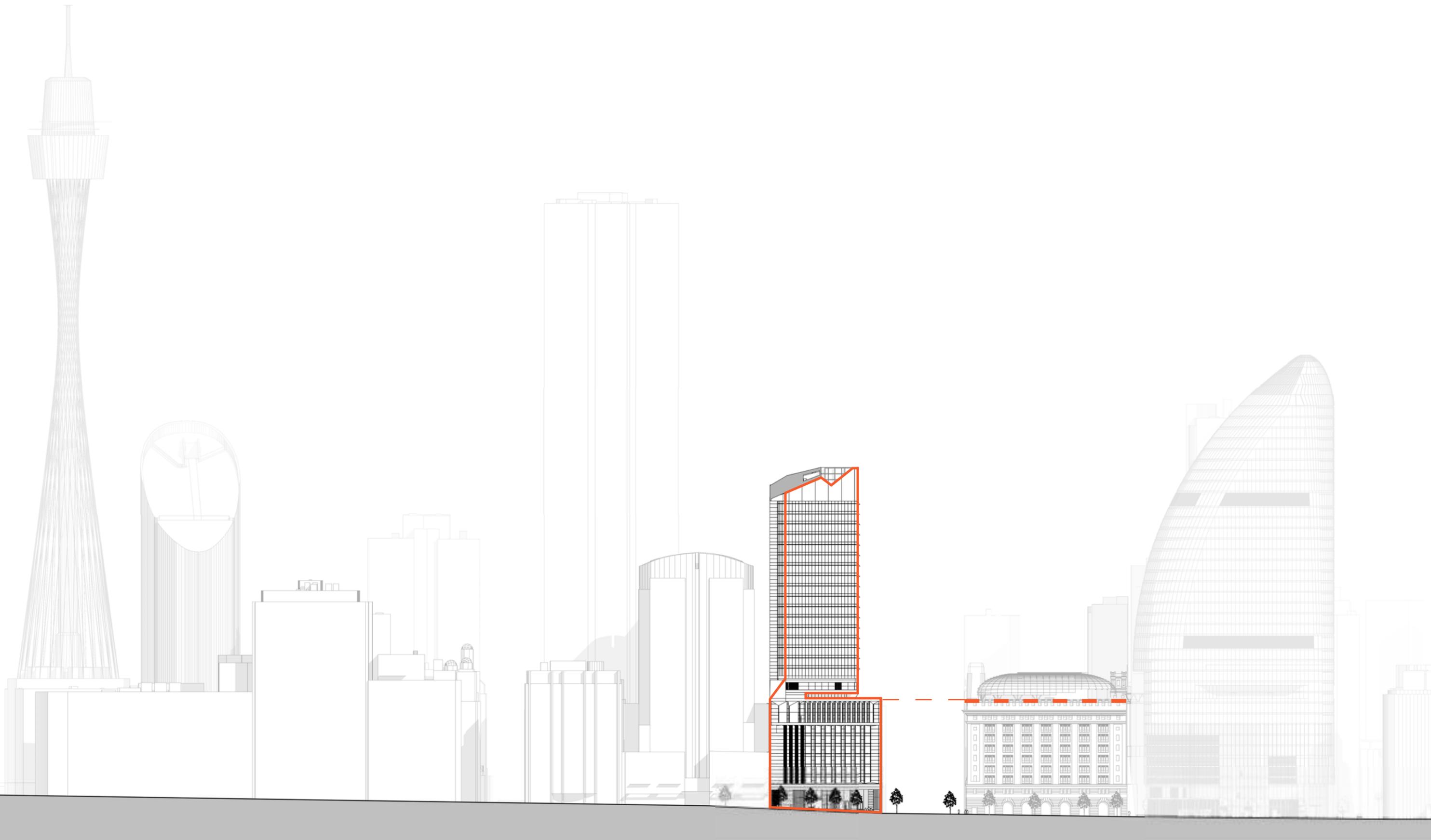
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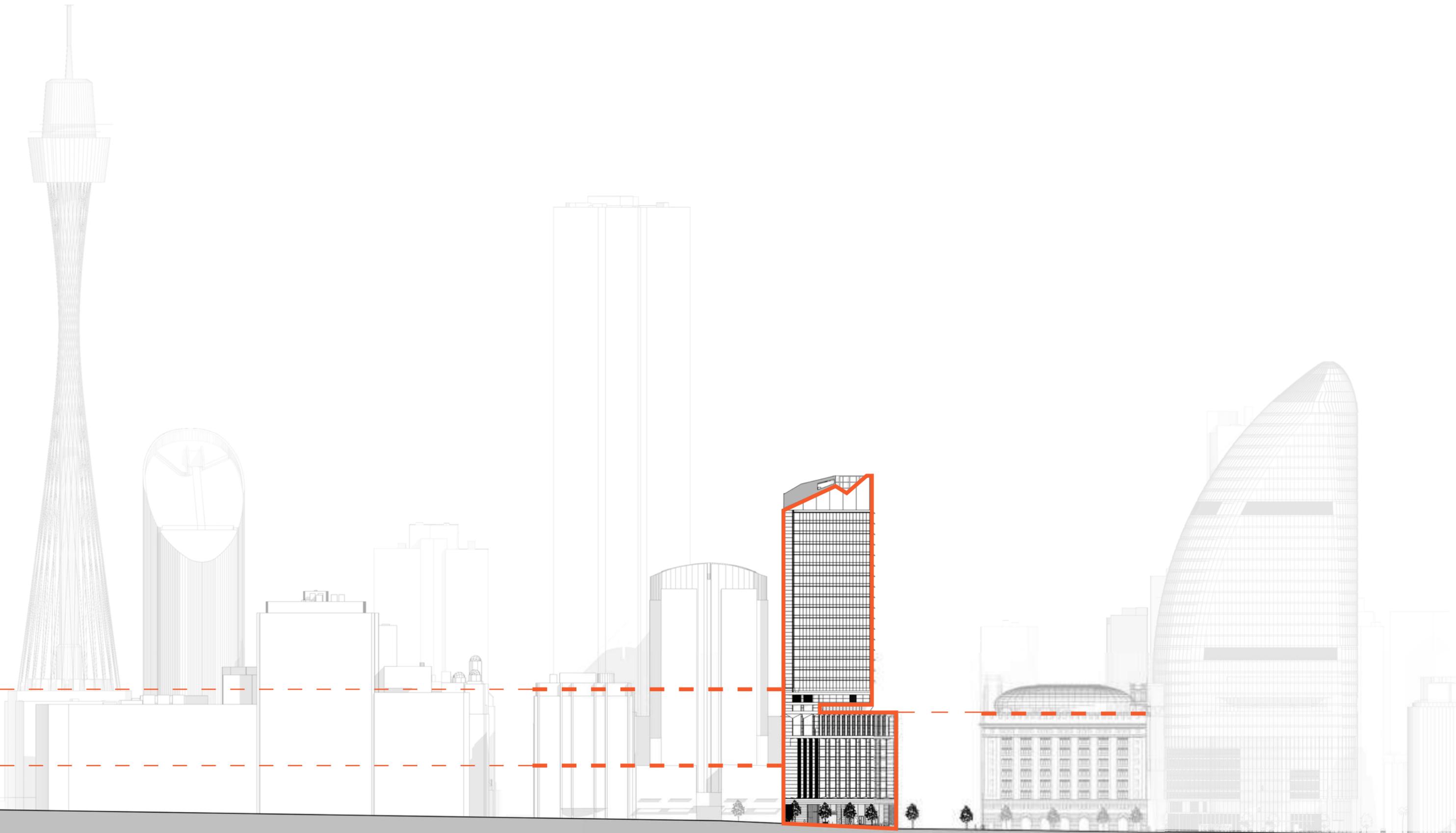




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07 August 2018
EAST ELEVATION - OPTION 2
METRO MARTIN PLACE | SOUTH TOWER DESIGN CONCEPT

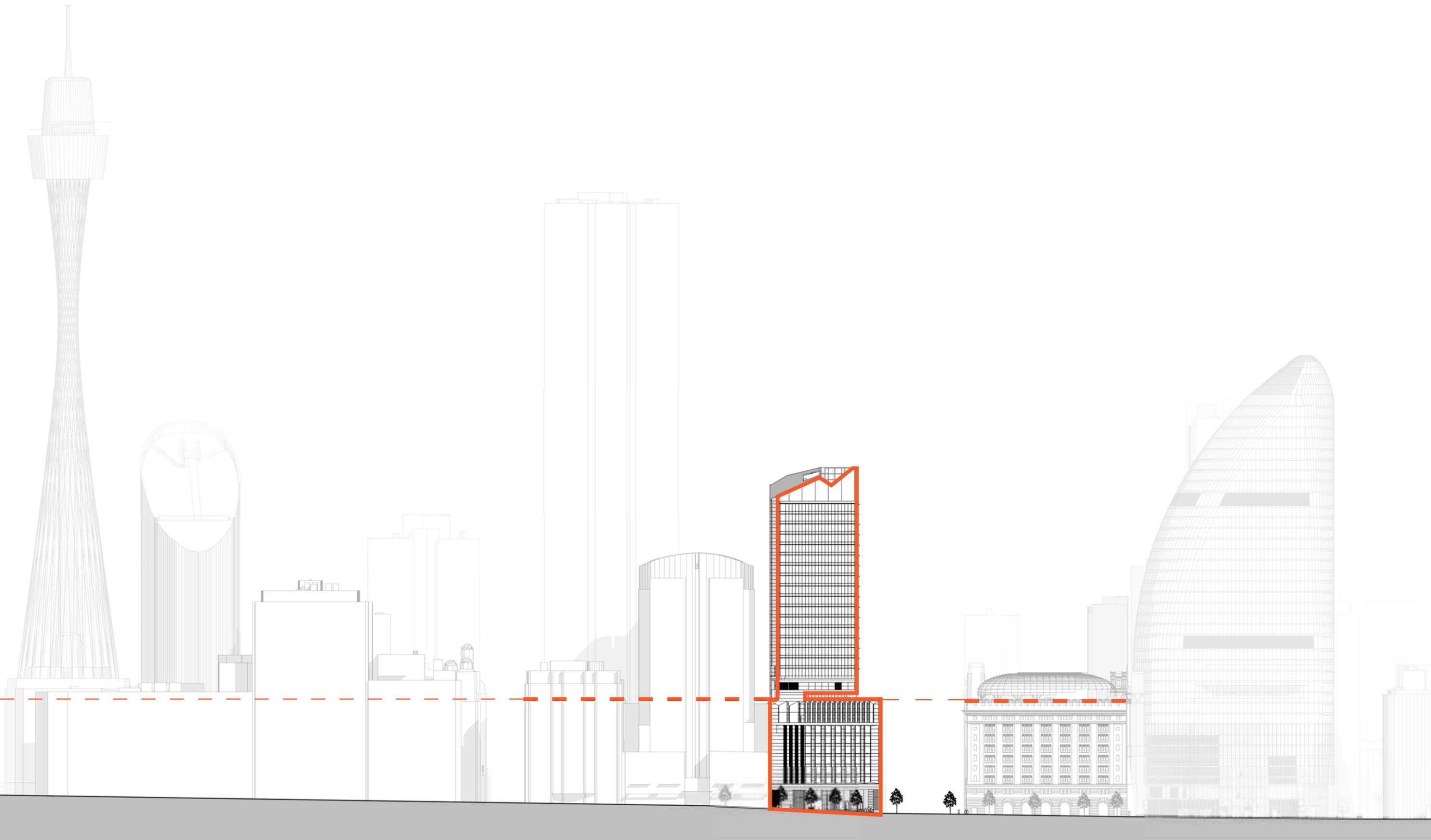




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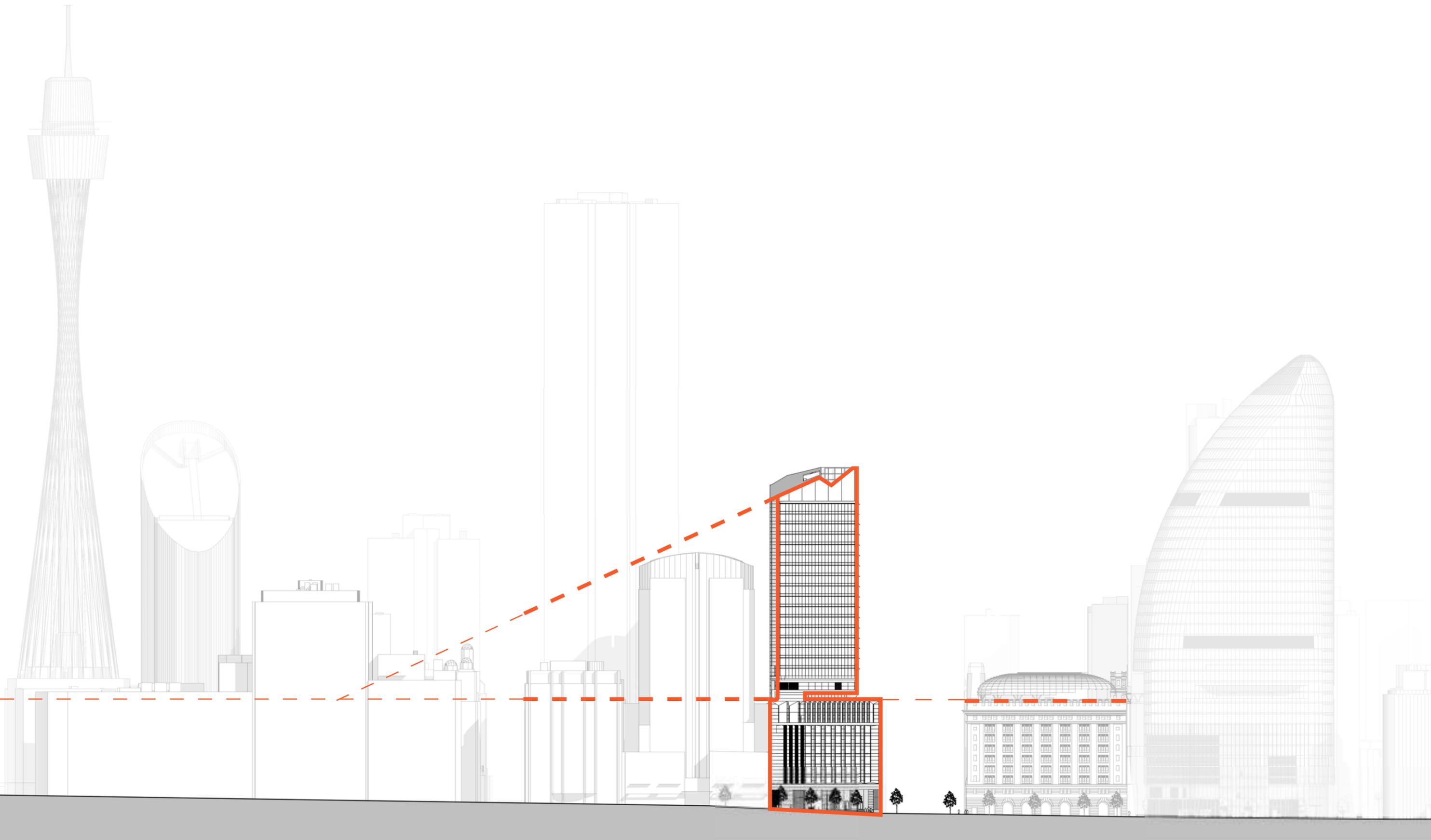
07 August 2018
ELIZABETH STREET ELEVATION
METRO MARTIN PLACE | SOUTH TOWER DESIGN CONCEPT





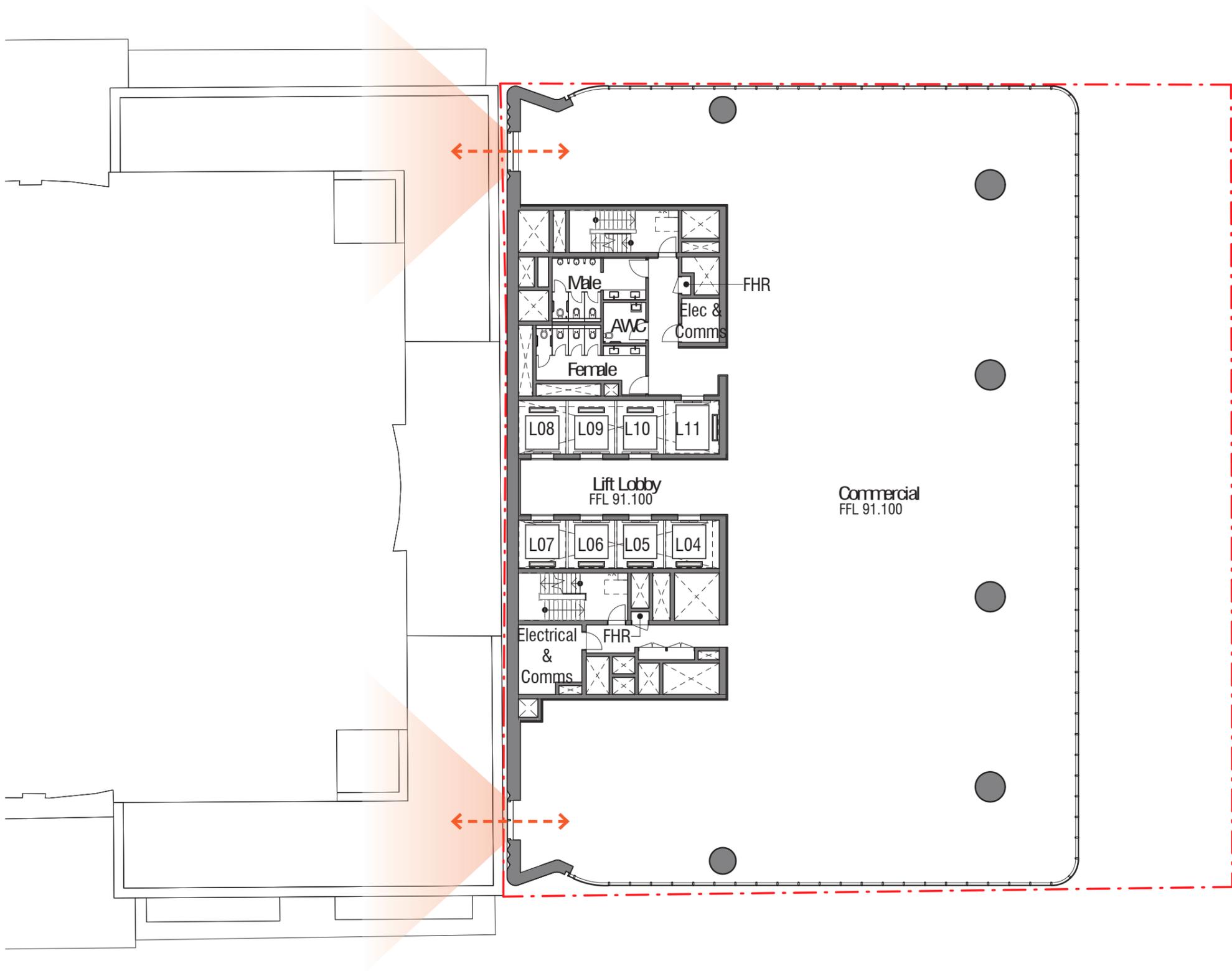
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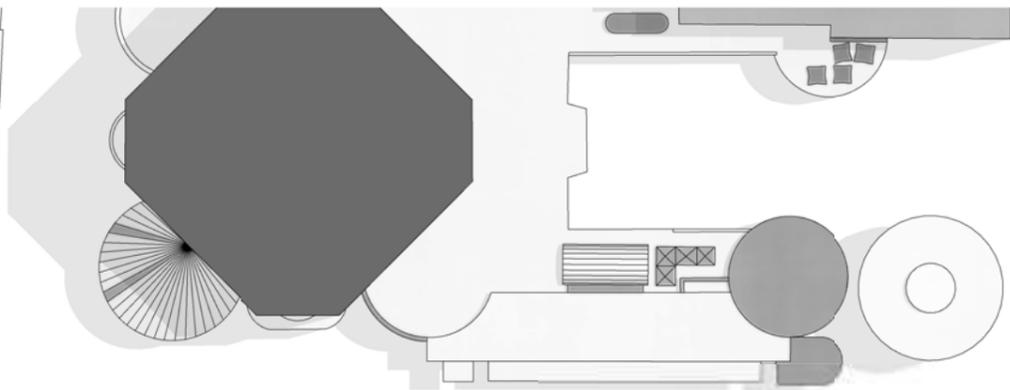


Scale
 1:250 @A3
 C 2.5 5 7.5
 m

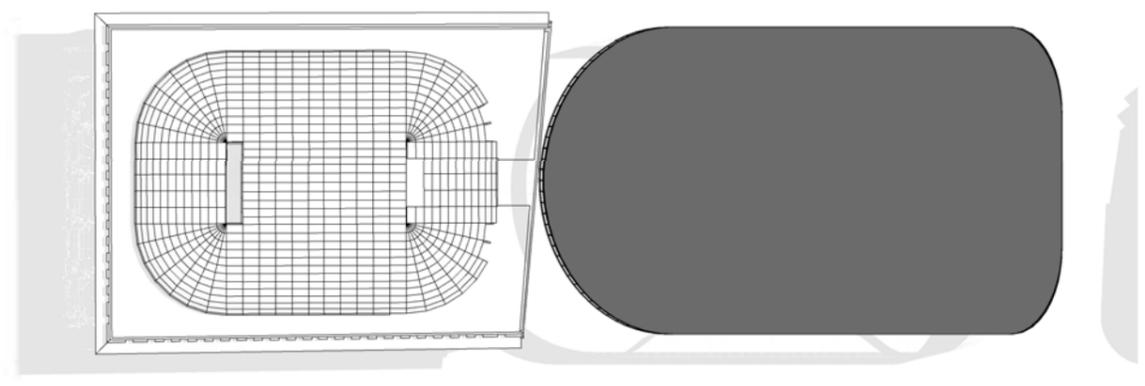
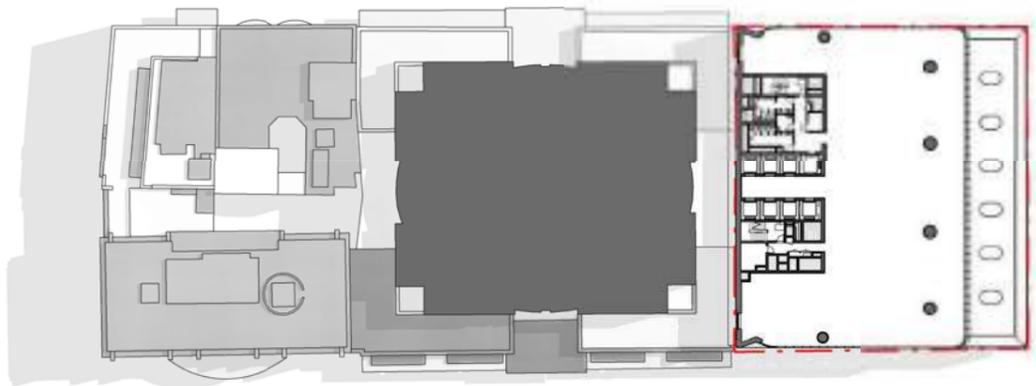
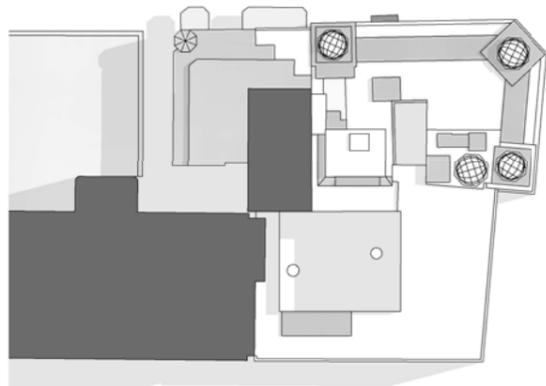


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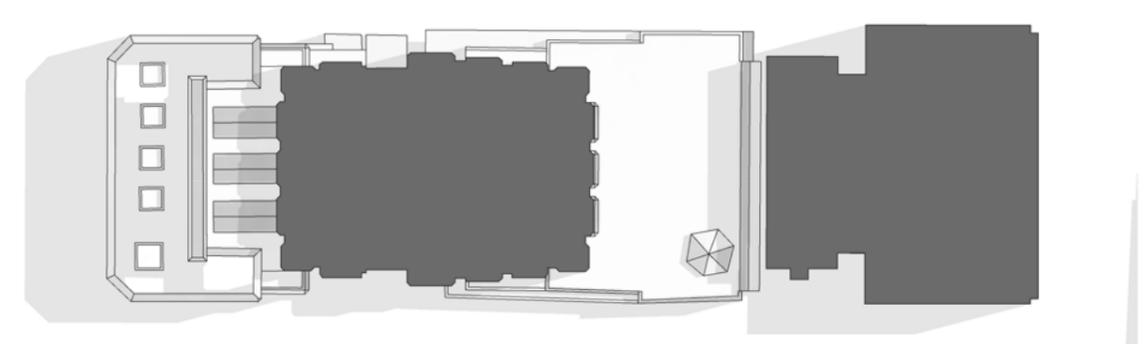
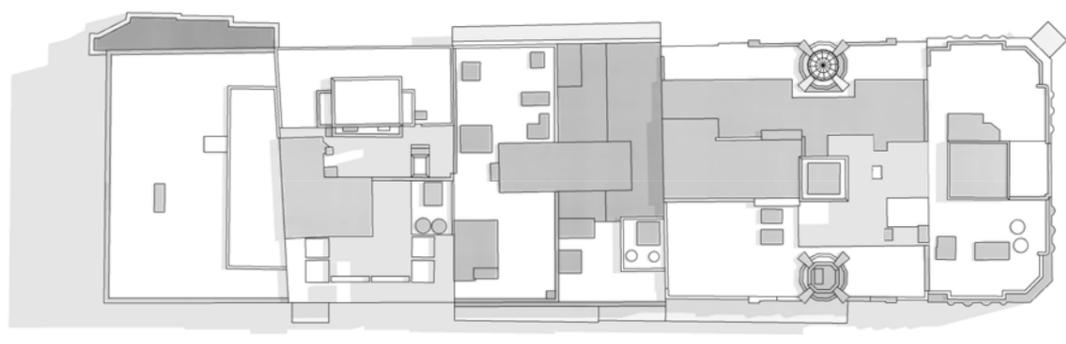
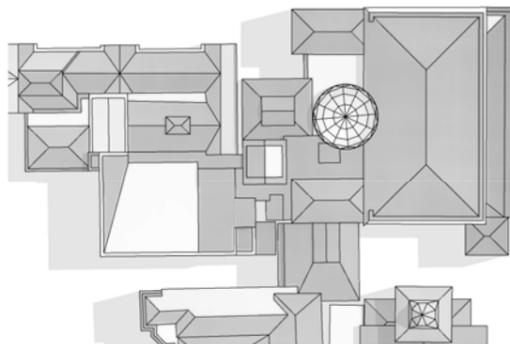




Castlereagh Street



Elizabeth Street



Scale
1:1000 @A3
C 10 20 30
m



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Streetview from south west - Castlereagh Street



Streetview from south east - Elizabeth Street

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07 August 2018
REVISED ELEVATION - OPTION 03
METRO MARTIN PLACE | SOUTH TOWER DESIGN CONCEPT





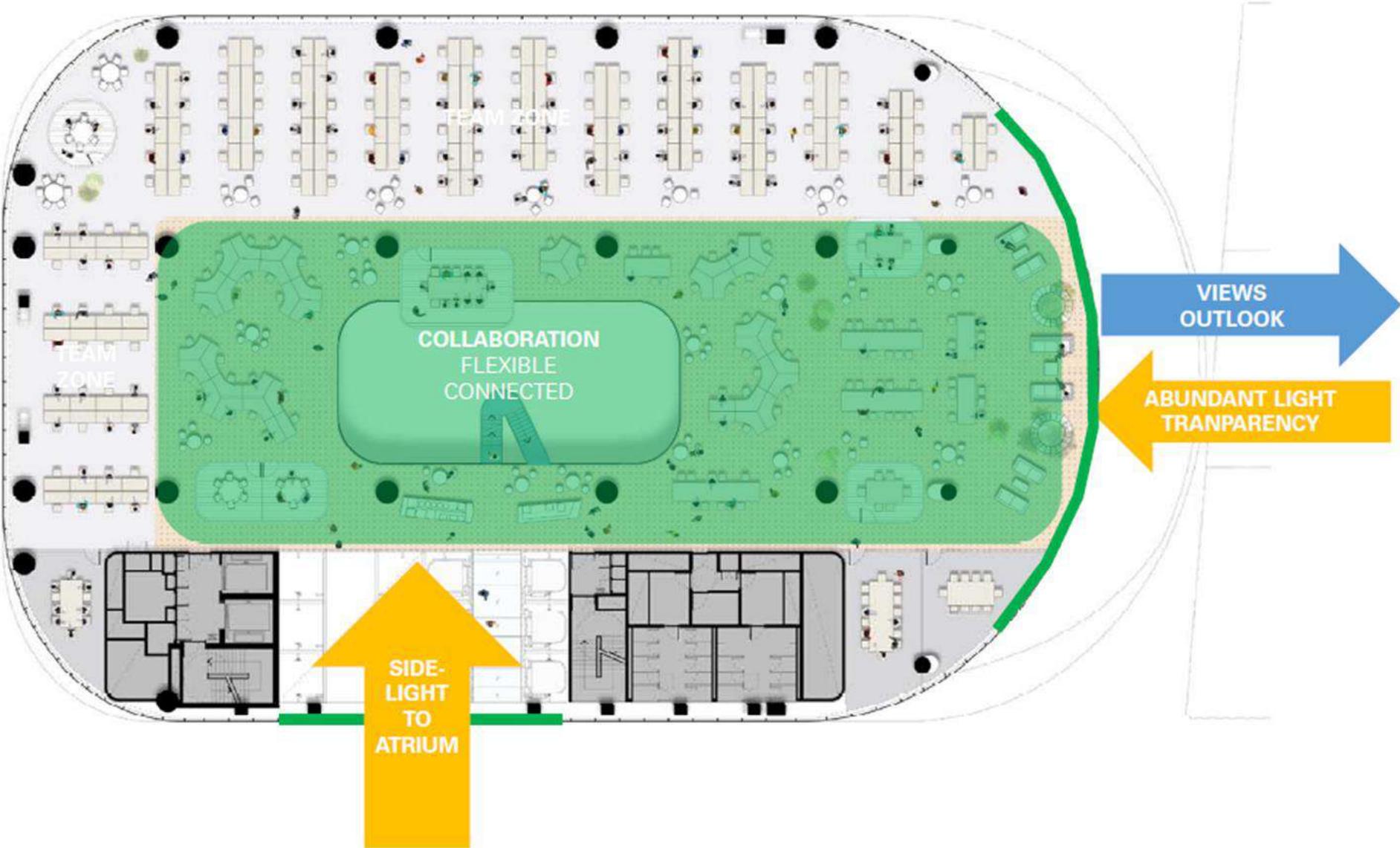
7

OSD DRP – ESD

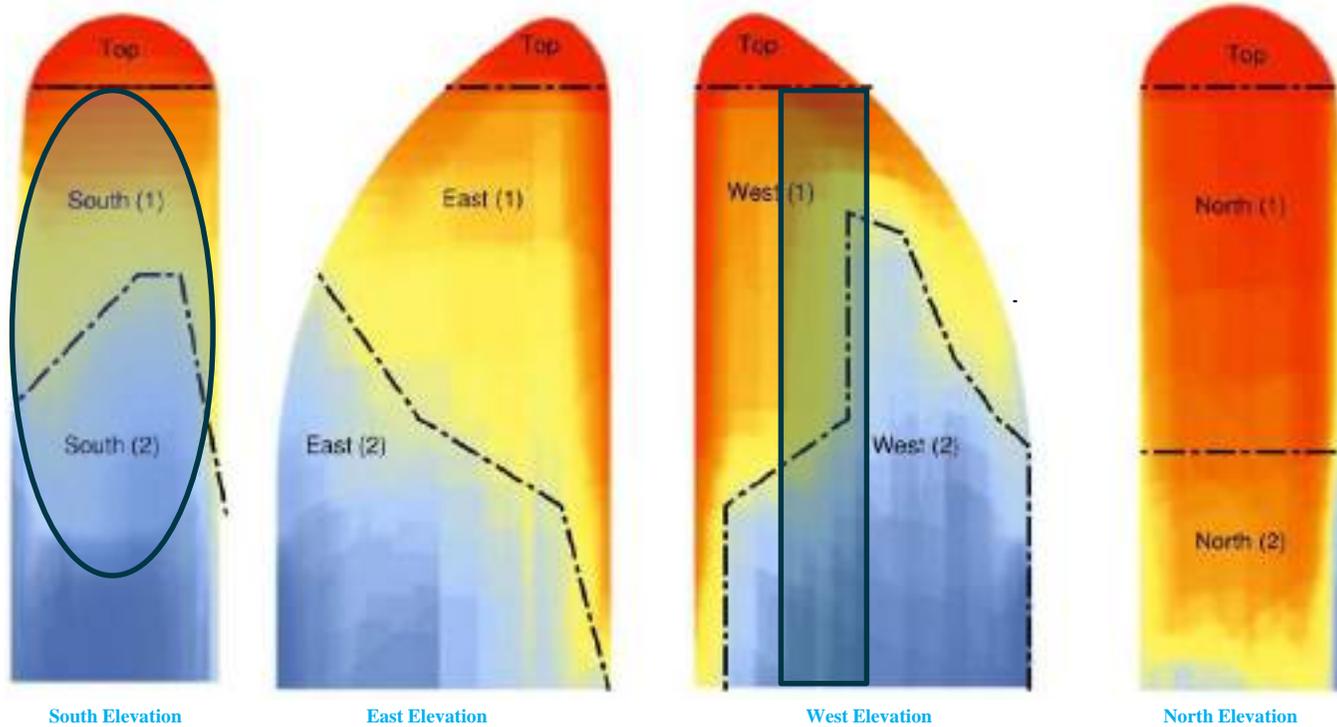
North Tower Comfort Levels

The OSD DRP has requested further details on Macquarie's Comfort Levels as it relates to the North Tower shading and transparent glazing to the western façade.

North Tower Conditions



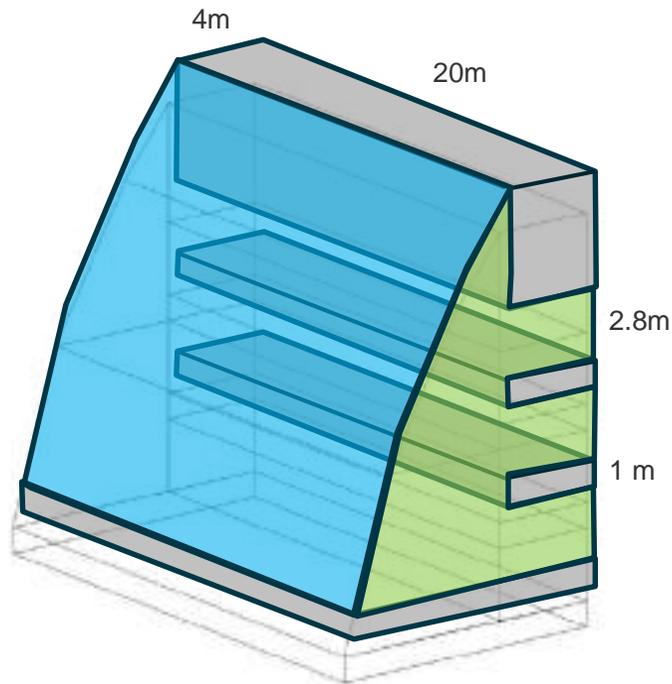
Peak solar load analysis



Area	SHGC required to achieve peak load < 75w/m2											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
West (1)	0.12	0.12	0.13	0.14	0.17	0.19	0.17	0.14	0.13	0.13	0.13	0.12
West (2)	0.24	0.26	0.21	0.19	0.19	0.20	0.19	0.19	0.20	0.26	0.34	0.26
South (1)	0.17	0.21	0.30	0.48	0.56	0.57	0.59	0.49	0.36	0.21	0.19	0.17
South (2)	0.37	0.47	0.53	0.78	0.88	0.90	0.92	0.80	0.56	0.50	0.33	0.36

Southern Lens

- Southern façade is a breakout space
- Breakout spaces allow greater variability of comfort
- Target comfort for breakout spaces is PMV +/- 1.5 (similar to retail breakout spaces)
- If using as office then Blinds deployed similar to Office façade PMV +/- 1.0



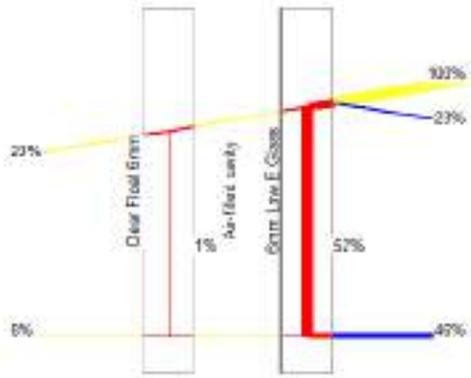
Martin Place Conditions:

- VLT >60%
- SHGC 0.30
- Pelmet with allowance for future blind

Southern Lens Performance

Without blinds – Breakout

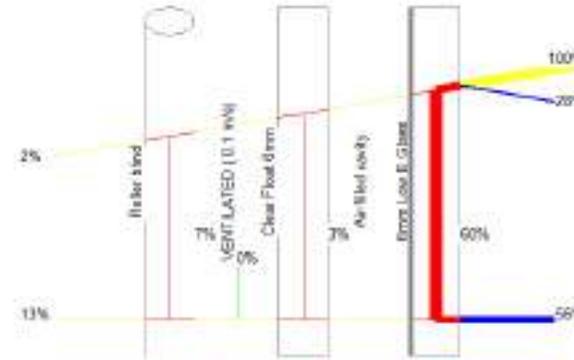
Glazing: Low E DGU-SH900.3 th2_64 Angle of incidence (°): 0



SHGC 0.3

With Blind – Office

Glazing: Low E DGU-SH900.3 UA2_33 + 64 Angle of incidence (°): 0



SHGC 0.15 < 0.17

January Option 5 - Atrium at A/C with fully mixed air supply to maintain 24 C

Time (hrs)	External Temperature (DB, °C)	Space temperature at occupied level		Upper Level
		Dry bulb (°C)	Average PMV	Dry bulb (°C)
1	25.2	24.4	0.4	24.4
2	25.0	24.3	0.3	24.3
3	25.2	24.3	0.3	24.3
4	25.6	24.4	0.3	24.4
5	26.3	24.5	0.4	24.5
6	27.3	24.0	0.4	24.0
7	28.3	24.0	0.7	24.0
8	29.5	24.0	0.8	24.0
9	30.7	24.0	1.0	24.0
10	31.8	24.0	1.1	24.0
11	32.7	24.0	1.2	24.0
12	33.4	24.0	1.3	24.0
13	33.9	24.0	1.3	24.0
14	34.0	24.0	1.3	24.0
15	33.9	24.0	1.2	24.0
16	33.4	24.0	1.1	24.0
17	32.7	24.0	0.9	24.0
18	31.8	24.0	0.8	24.0
19	30.7	24.0	0.6	24.0
20	29.5	24.0	0.4	24.0
21	28.3	24.0	0.4	24.0
22	27.3	24.9	0.5	24.9
23	26.3	24.9	0.5	24.9
24	25.6	24.6	0.4	24.6

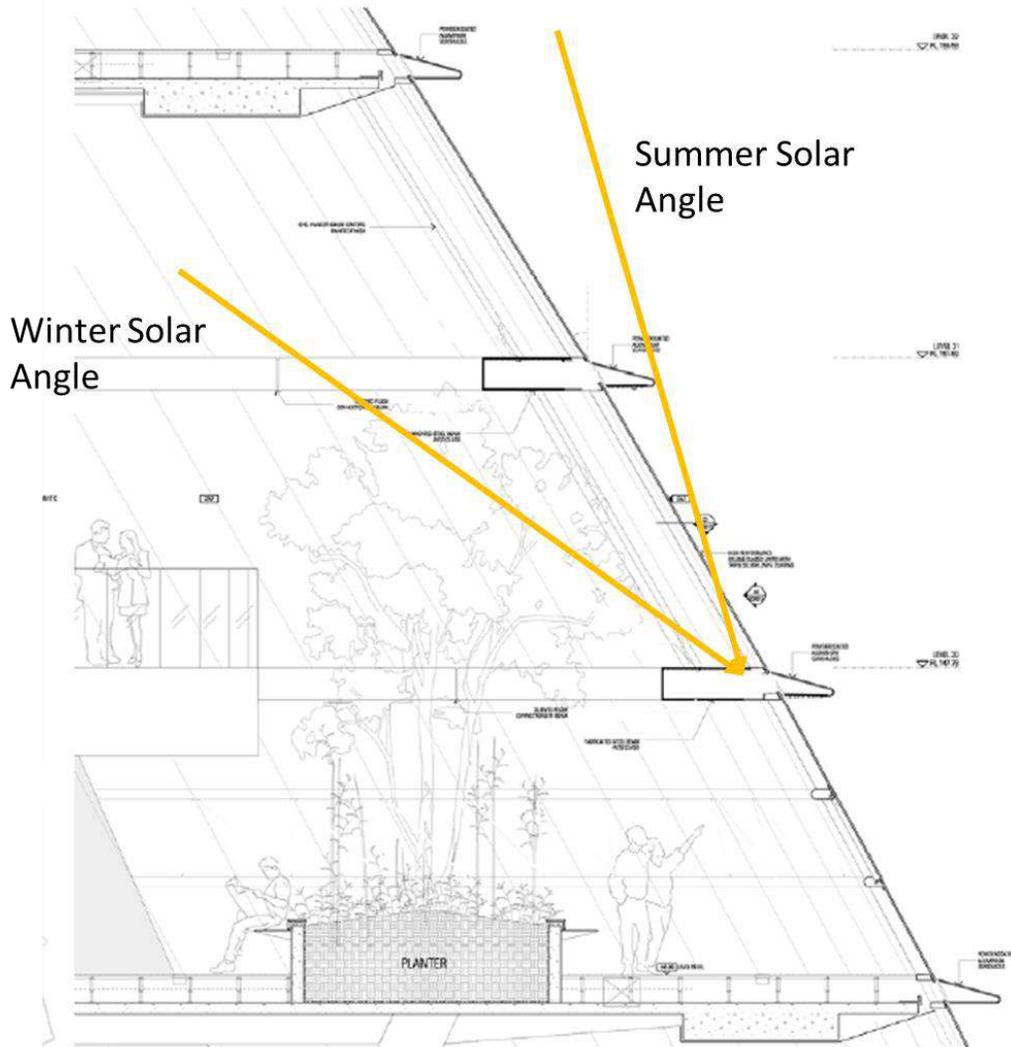
PMV < 1.5

January Option 5a - Atrium at A/C with fully mixed air supply to maintain 24 C

Time (hrs)	External Temperature (DB, °C)	Space temperature at occupied level		Upper Level
		Dry bulb (°C)	Average PMV	Dry bulb (°C)
1	25.2	24.3	0.3	24.3
2	25.0	24.2	0.3	24.2
3	25.2	24.2	0.3	24.2
4	25.6	24.2	0.3	24.2
5	26.3	24.4	0.3	24.4
6	27.3	24.0	0.4	24.0
7	28.3	24.0	0.5	24.0
8	29.5	24.0	0.5	24.0
9	30.7	24.0	0.5	24.0
10	31.8	24.0	0.5	24.0
11	32.7	24.0	0.5	24.0
12	33.4	24.0	0.6	24.0
13	33.9	24.0	0.6	24.0
14	34.0	24.0	0.6	24.0
15	33.9	24.0	0.6	24.0
16	33.4	24.0	0.6	24.0
17	32.7	24.0	0.5	24.0
18	31.8	24.0	0.5	24.0
19	30.7	24.0	0.4	24.0
20	29.5	24.0	0.3	24.0
21	28.3	24.0	0.3	24.0
22	27.3	24.7	0.4	24.7
23	26.3	24.7	0.4	24.7
24	25.6	24.5	0.3	24.5

PMV < 1.0

Shading Elements



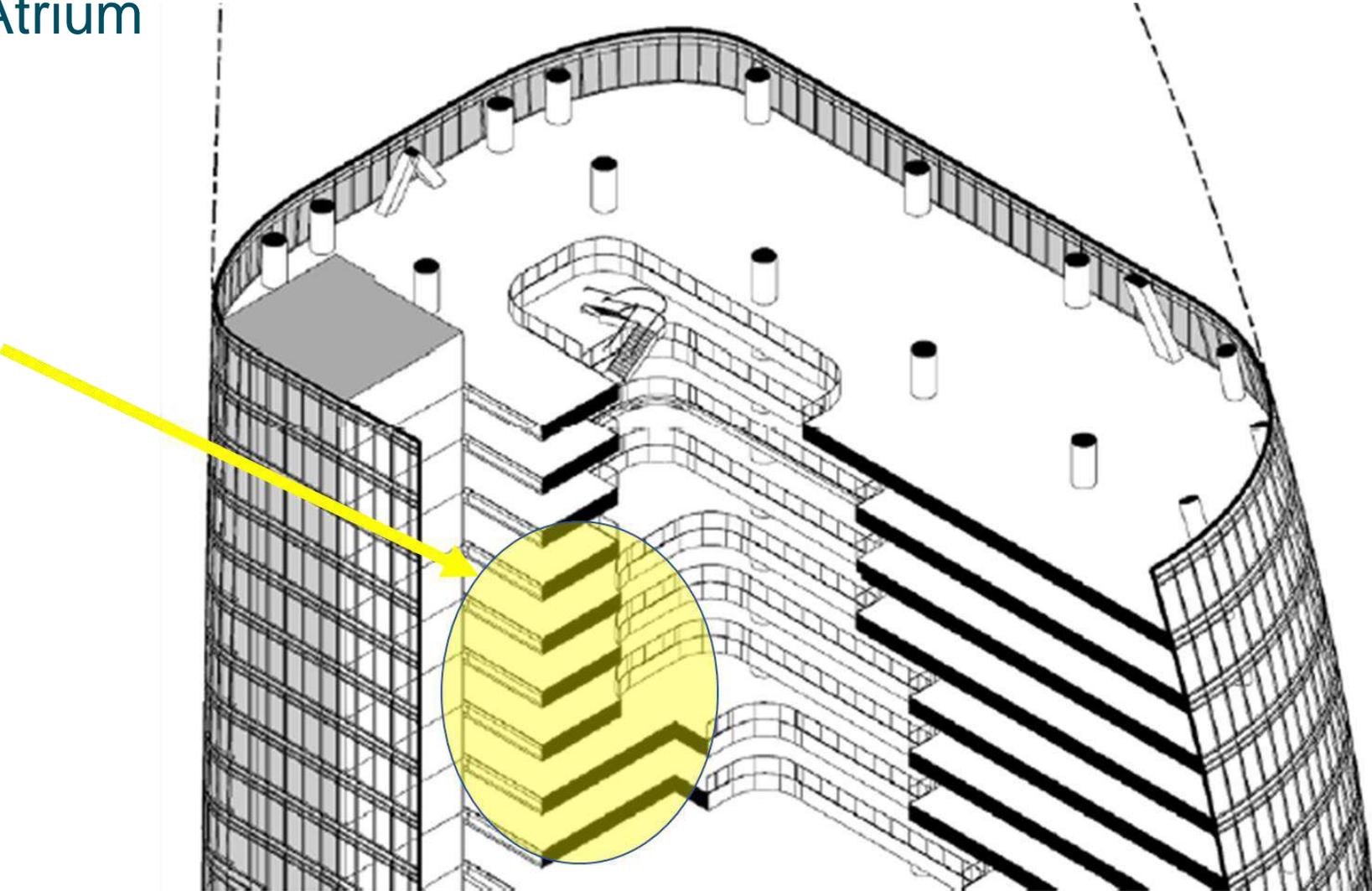
L29 Atrium

Max PMV with shade 1.0
Max PMV without Shade 1.3

L35 Atrium

Max PMV with shade 1.3
Max Shade without Shade 1.6

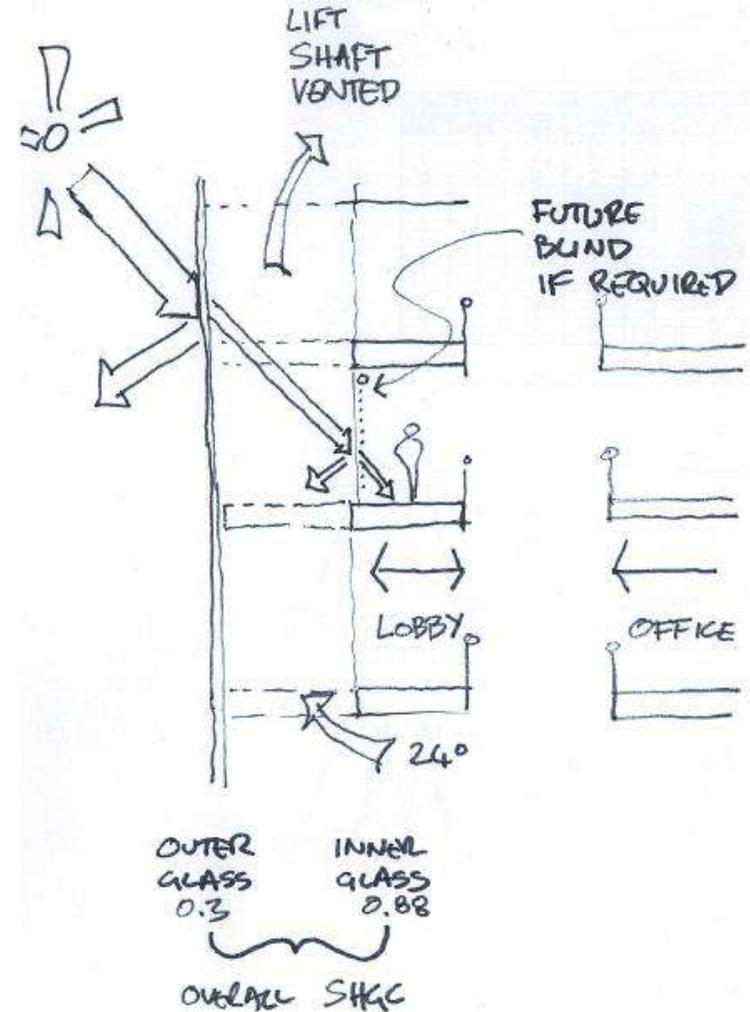
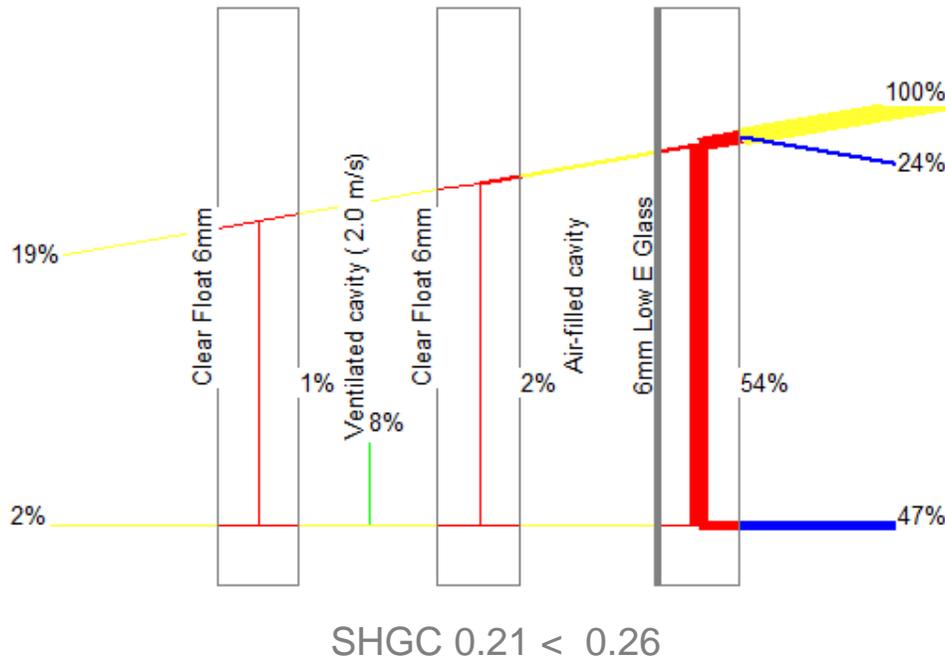
Side Lit Atrium



Lift and Lobby

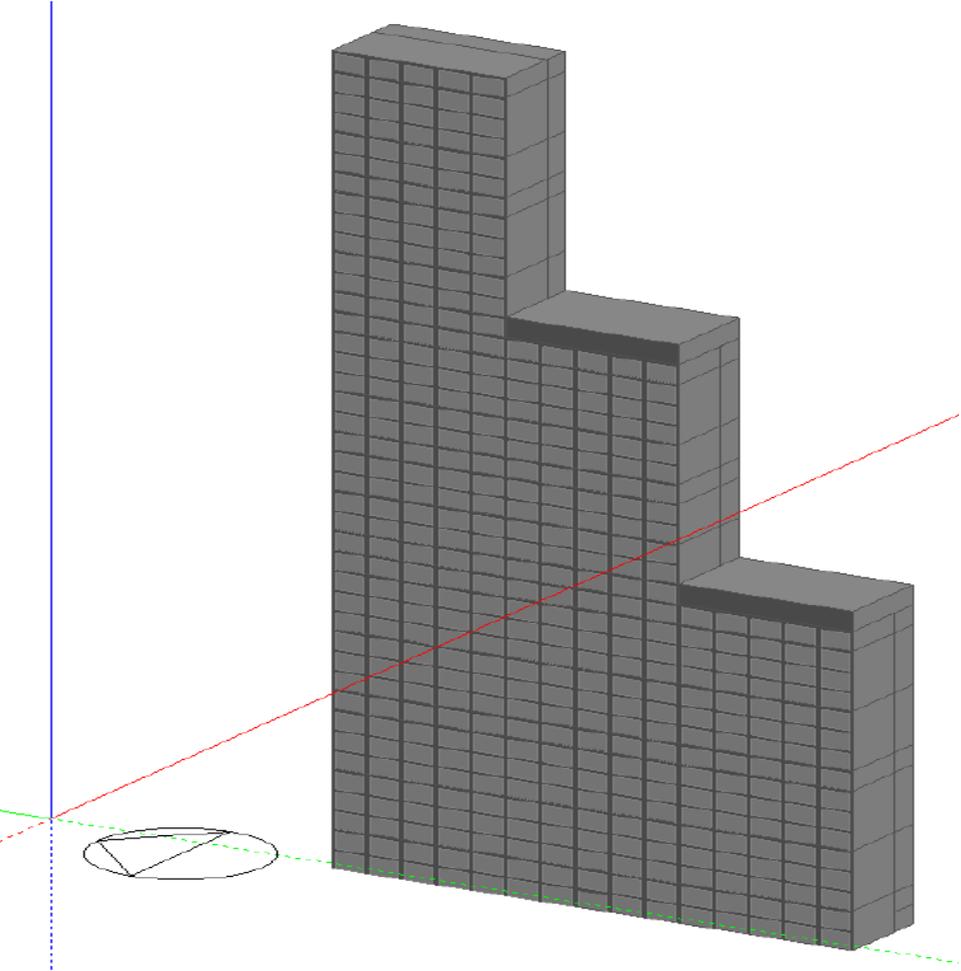
Vented shaft glass performance

Glazing: Low E DGU-SHGC0.3 Uv2_84 +clear Angle of incidence (°): 0



Thermal Comfort of Lift Lobby

Dynamic Thermal Modelling Study



January Lift car internal temperature and PMV during peak summer day

Time	Temperature inside lift shaft	Temperature inside lift car	PMV inside lift car
(hrs)	(DB, °C)	(DB, °C)	
1	40.0	24.0	0.3
2	40.0	24.0	0.2
3	40.0	24.0	0.2
4	40.0	24.0	0.2
5	40.0	24.0	0.2
6	40.0	24.0	0.2
7	40.0	24.0	0.3
8	40.0	24.0	0.3
9	40.0	24.0	0.3
10	40.0	24.0	0.4
11	40.0	24.0	0.4
12	40.0	24.0	0.4
13	40.0	24.0	0.4
14	40.0	24.0	0.6
15	40.0	24.0	0.7
16	40.0	24.0	0.9
17	40.0	24.0	1.0
18	40.0	24.0	0.9
19	40.0	24.0	0.7
20	40.0	24.0	0.5
21	40.0	24.0	0.4
22	40.0	24.0	0.4
23	40.0	24.0	0.3
24	40.0	24.0	0.3

PMV 1.0 < 1.5

Lift and Lobby

Stockland HQ, Sydney

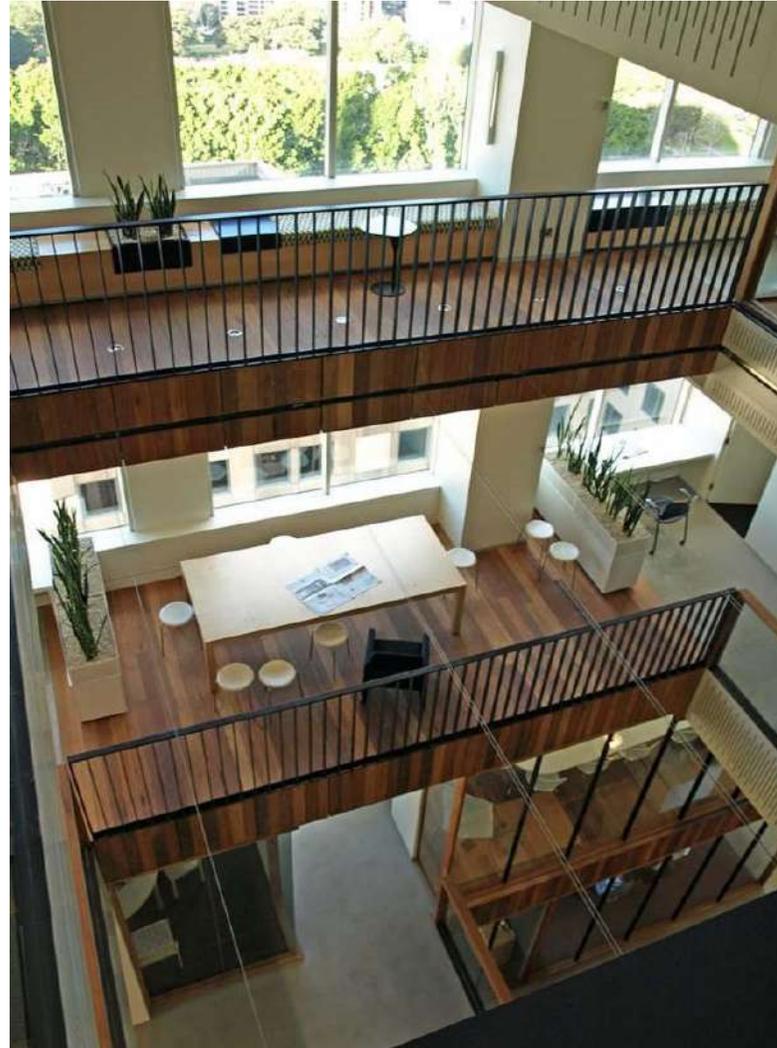
A good precedent of an effective side lit atrium space is the 8 storey atrium at Stockland HQ. This project is a good example of the nature of a side lit atrium and the feel and quality of daylight it creates.. When placing work zones next these spaces a glare strategy is required, similar to the blinds used on the roof of 50 Martin Place.

Case Study: Stockland Atrium

- VLT 70%
- SHGC 0.38
- No blinds

Proposed Martin Place:

- VLT >60%
- Eff SHGC 0.21
- SHGC 0.3 Vented Shaft, SHGC 0.88)
- Pelmet with allowance for future blind





8

OSD DRP – Shadowing Analysis

Shadowing Analysis

The Sydney Metro DRP and OSD DRP requested shadow analysis to demonstrate solar access to Martin Place. The requested analysis has been completed and distributed to both DRPs.



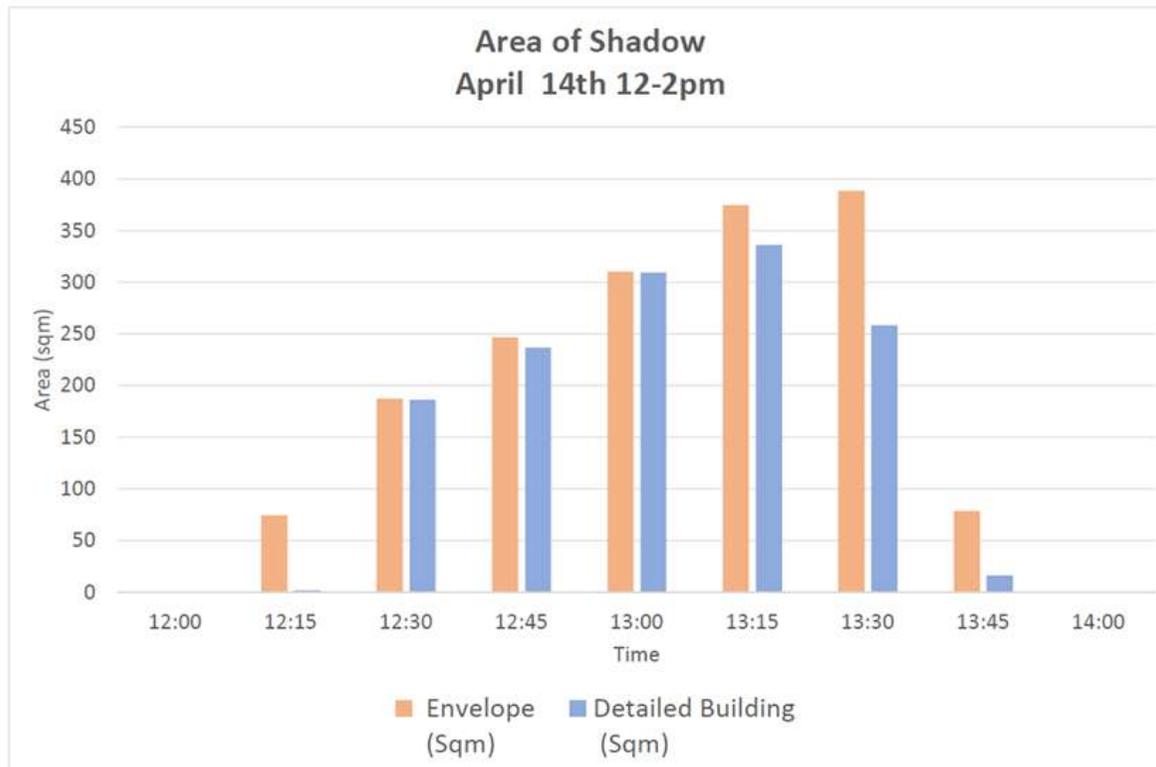
Sun Studies August 2018 Results

The Sydney Metro DRP and OSD DRP have requested shadow analysis of the North Tower. The Stage 1 SSSA Approval for the OSD includes the following overshadowing condition which the detailed building form is required to comply with for the Stage 2 SSSA submission.

Overshadowing

B2(b) Development of buildings pursuant to this consent shall:

identify opportunities to improve solar access to the ground plane of Martin Place (excluding the roadways and footpaths) between the hours of 12 and 2 pm (14 April), when compared to the shadow cast by the approved building envelope.



Reduction in area of shadow from approved envelope to detailed building form
14 April 12-2pm

316.8m² = 19.1%



Thank you