A bold & refined vision

NXQ Manchester.

June 2025

Simon Smith – Manchester Studio Lead
Simone Miriana – Façade Director

Design team.

SOLLER Client: **Soller Group**

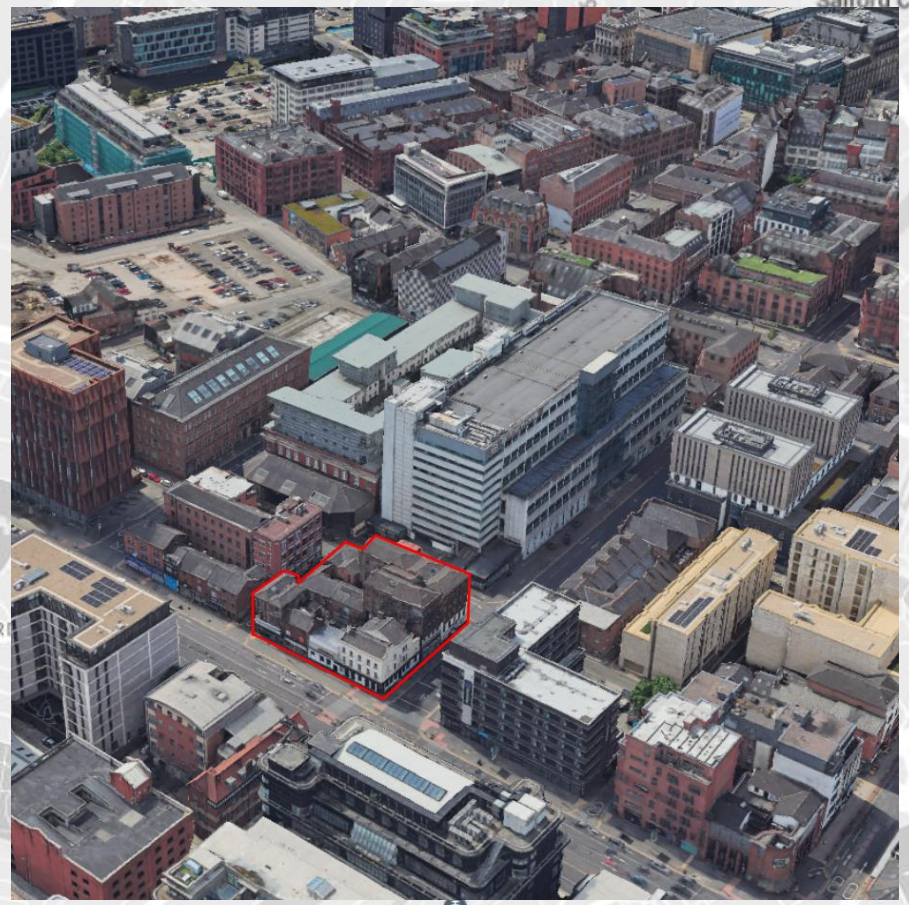
akt II Structural & Façade Engineer: AKT II

Architect: **Howells**

ten MEP & Sustainability: Atelier Ten

Project Manager: Turner & Townsend

Site location.



Strategic position

- Sits on eastern edge of NQ, Manchester creating gateway between creative district and Ancoats

Heritage integration

- Retains the existing restaurant and historic façade's into design preserving architectural character of area

Local landmarks

- Takes design inspiration from the Grade II listed Daily Express building opposite

Cultural context

- Transform a neglected but prominent site into a characterful and healthy employment hub

Architectural design.

- Next-gen workplaces designed for wellbeing, sustainability, and low energy use
- Ground floor includes restaurants, cafés, and a public courtyard, with the Tech Hub also supporting active travel and wellbeing
- Enhanced amenities create an open, inclusive, and engaging environment for businesses
- Intelligent façade provides solar shading, natural ventilation, and fresh air circulation
- Cantilevered floors maximize site use and form a bold silhouette, referencing the Daily Express Building

Building stats.

- 18 storey tall + 2 storey basement
- 3m cantilever @ L07 and L13
- L03-06 Typical NIA: 5,750sq ft
- L07-12 Typical NIA: 6.825sq ft
- L13-17 Typical NIA: 7,925sq ft
- Overall NIA: 121,700sq ft
- Typical floor-to-floor: 4m
- Overall building height: 76.65m
- 1 retained heritage building
- 2 retained heritage façades

Design Evolution.

Maximum Façade Retention

83% façade retention
0% original footprint retained

Part Retention

65% façade retention
24% original footprint retained

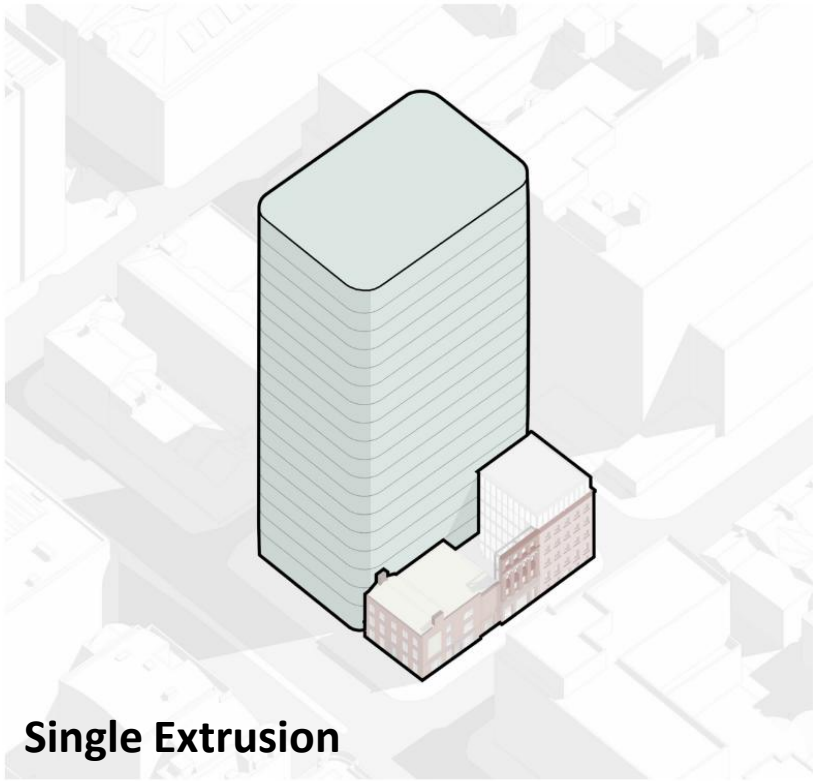
Preferred – Heritage Led Approach

Lever Street Retention

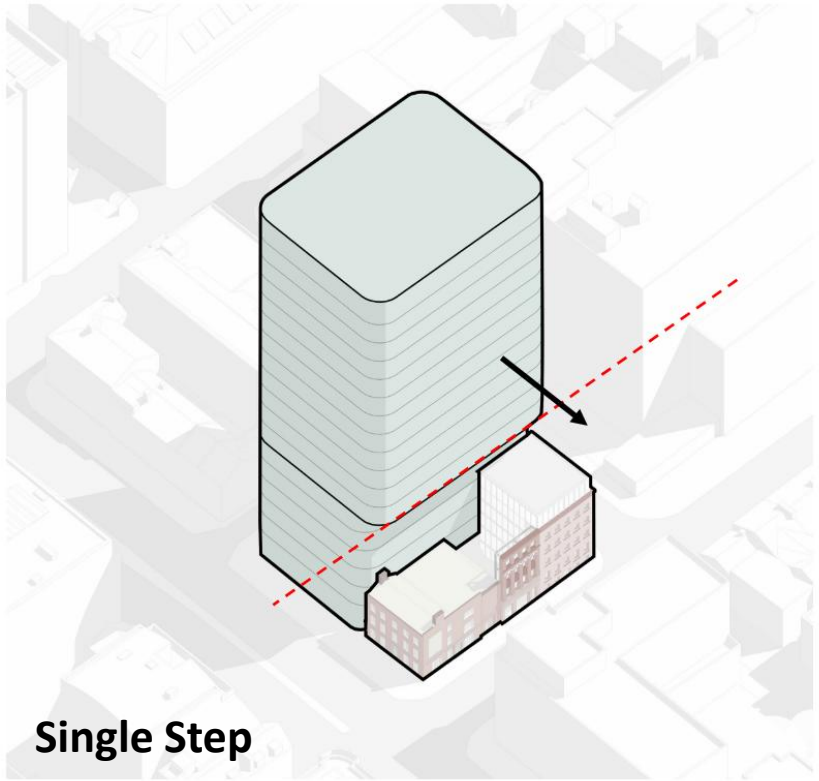
40% façade retention
21% original footprint retained

Concept development

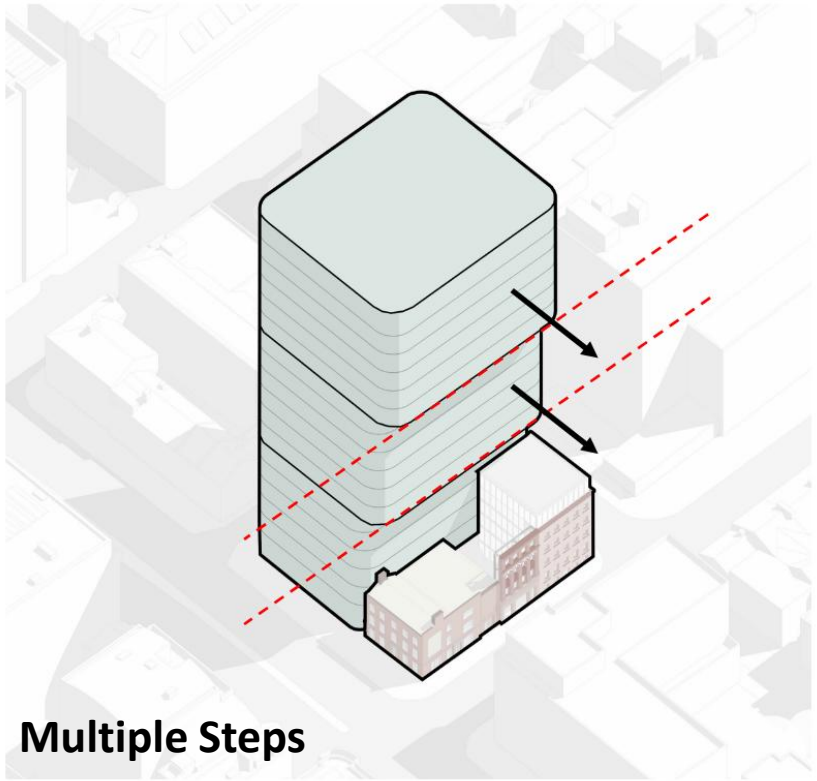
A key question posed was: How can we make this a bolder and more ambitious proposition for Manchester and future occupiers of the building?



Single Extrusion



Single Step



Multiple Steps

Concept development

Demolition & Retention

Fig. 65 Great Ancoats Street Demolition Diagram

nolition Diagram

eet Demolition Diagram

Concept development

1:200 Scale Model

Façade Retention Strategy

Façade Retention Strategy

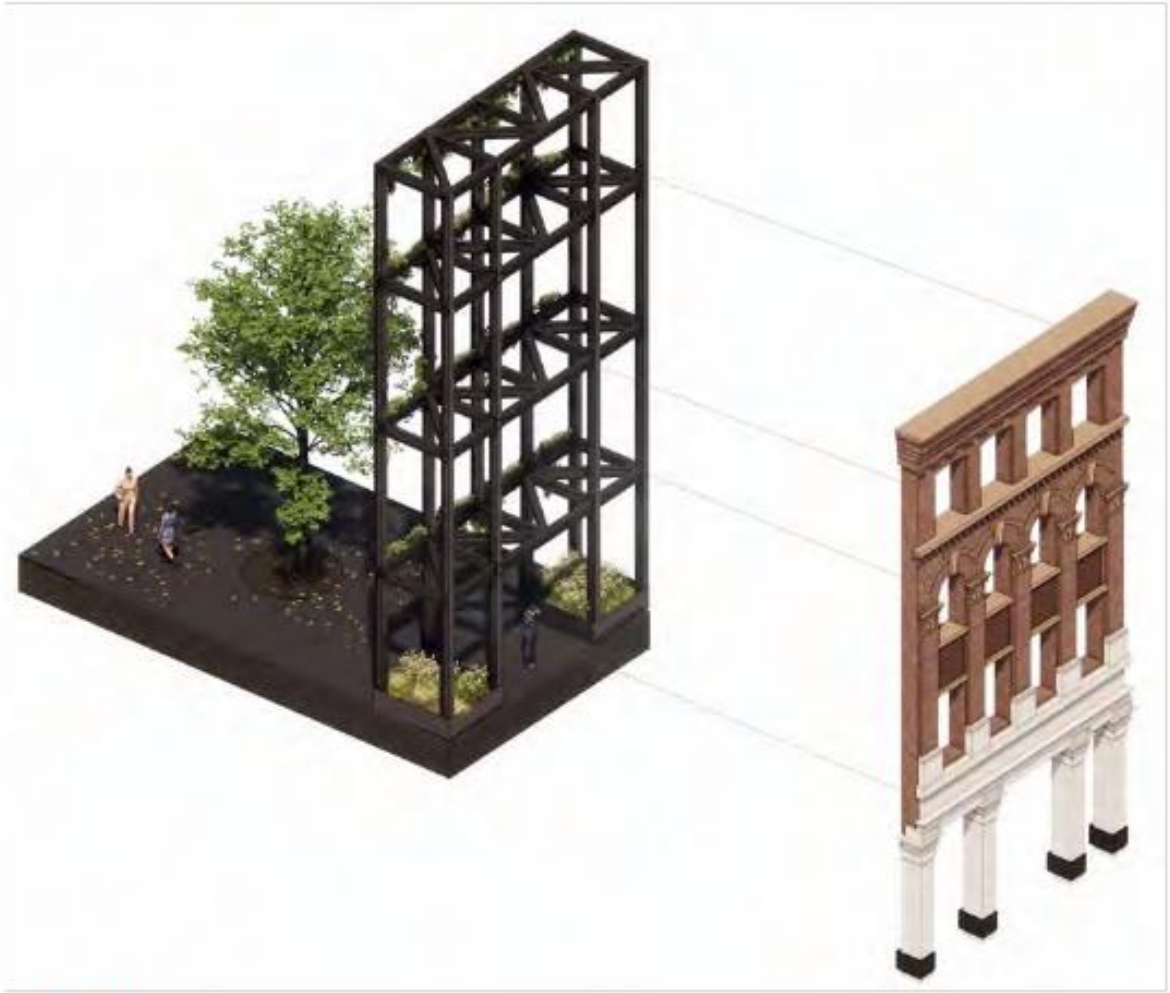


Fig. 134 Retained Facade Strategy - Courtyard

Fig. 135 Retained Facade Strategy - Creative Hub

Façade Retention Strategy

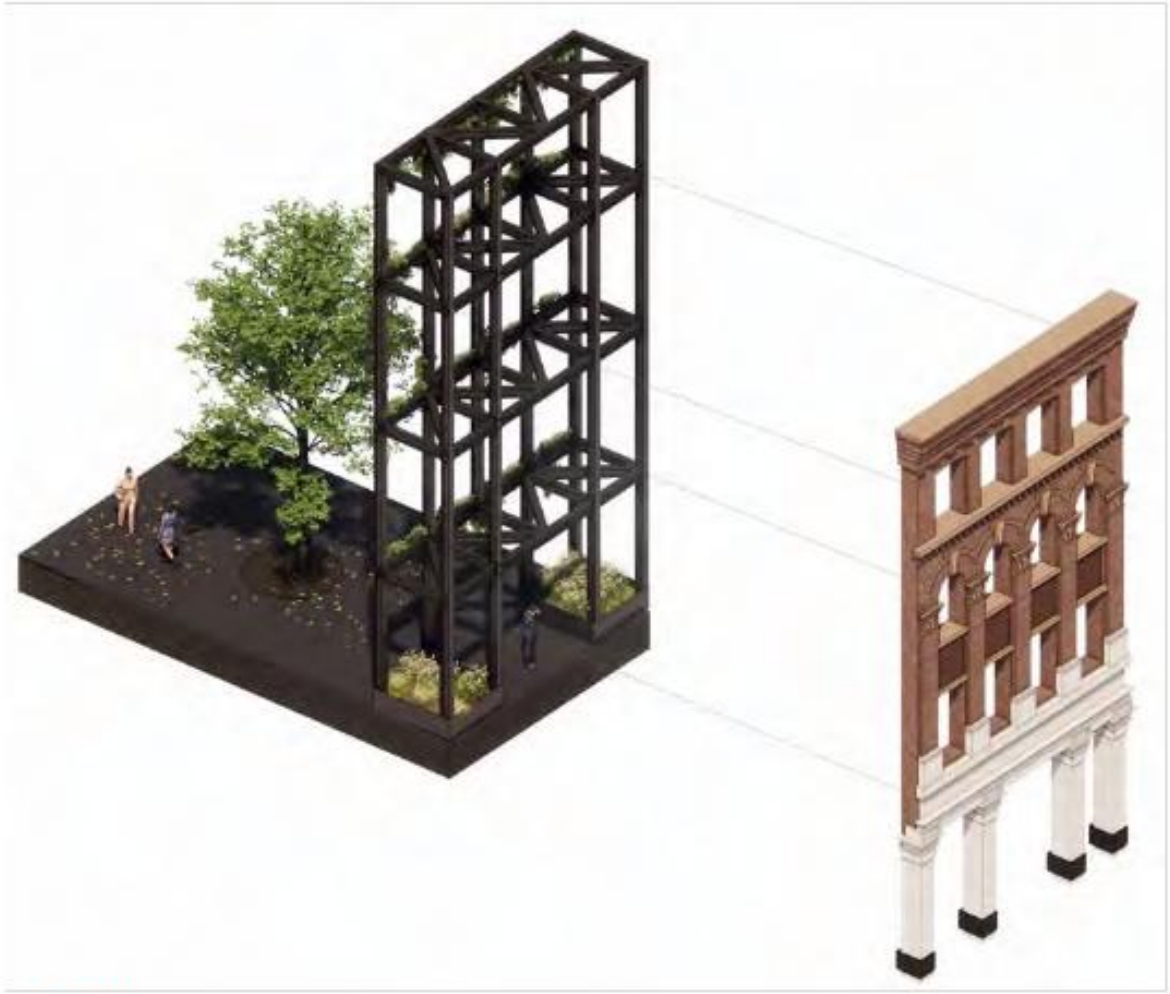
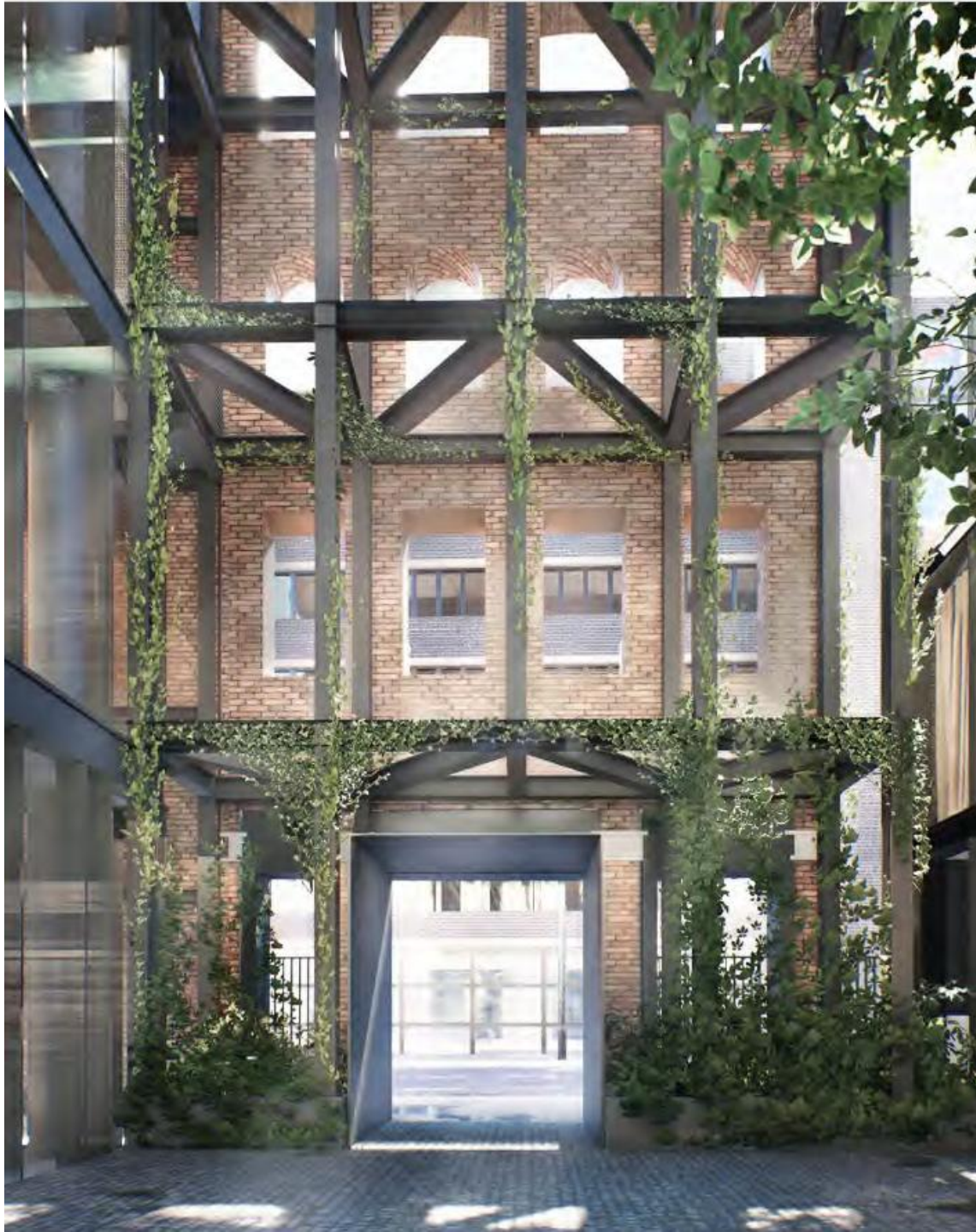


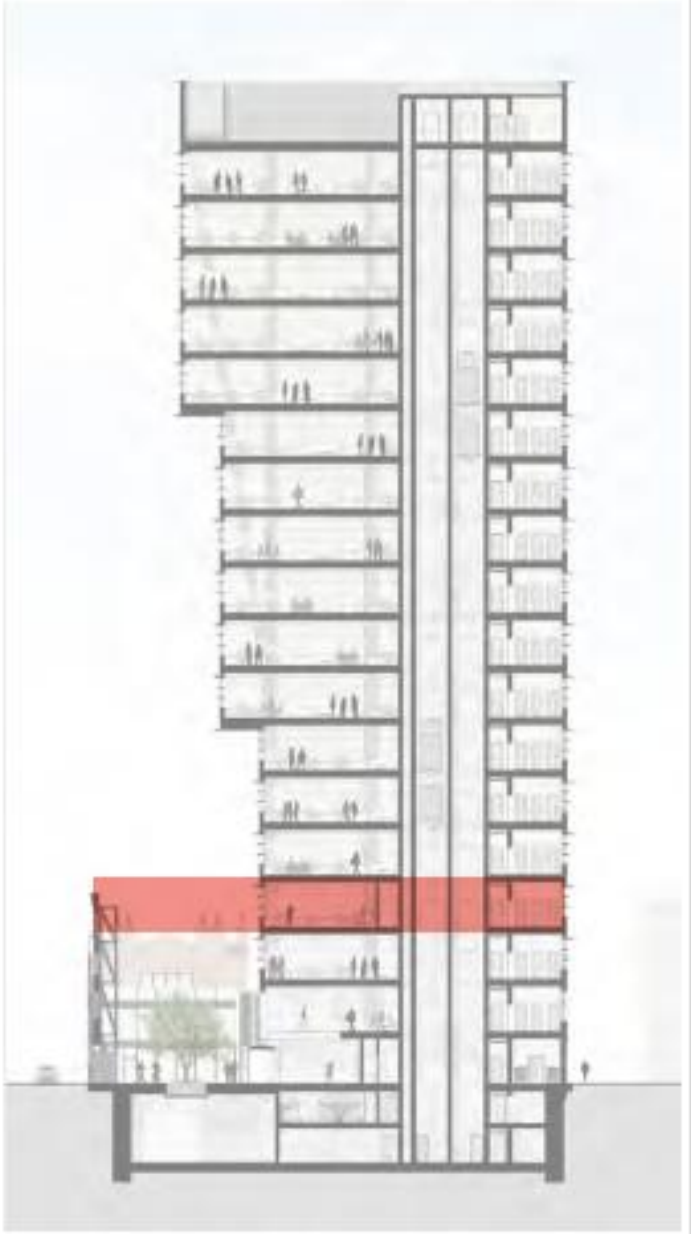
Fig. 134 Retained Facade Strategy - Courtyard



Ground Floor - GA

Level 01 - GA

Level 03 - GA

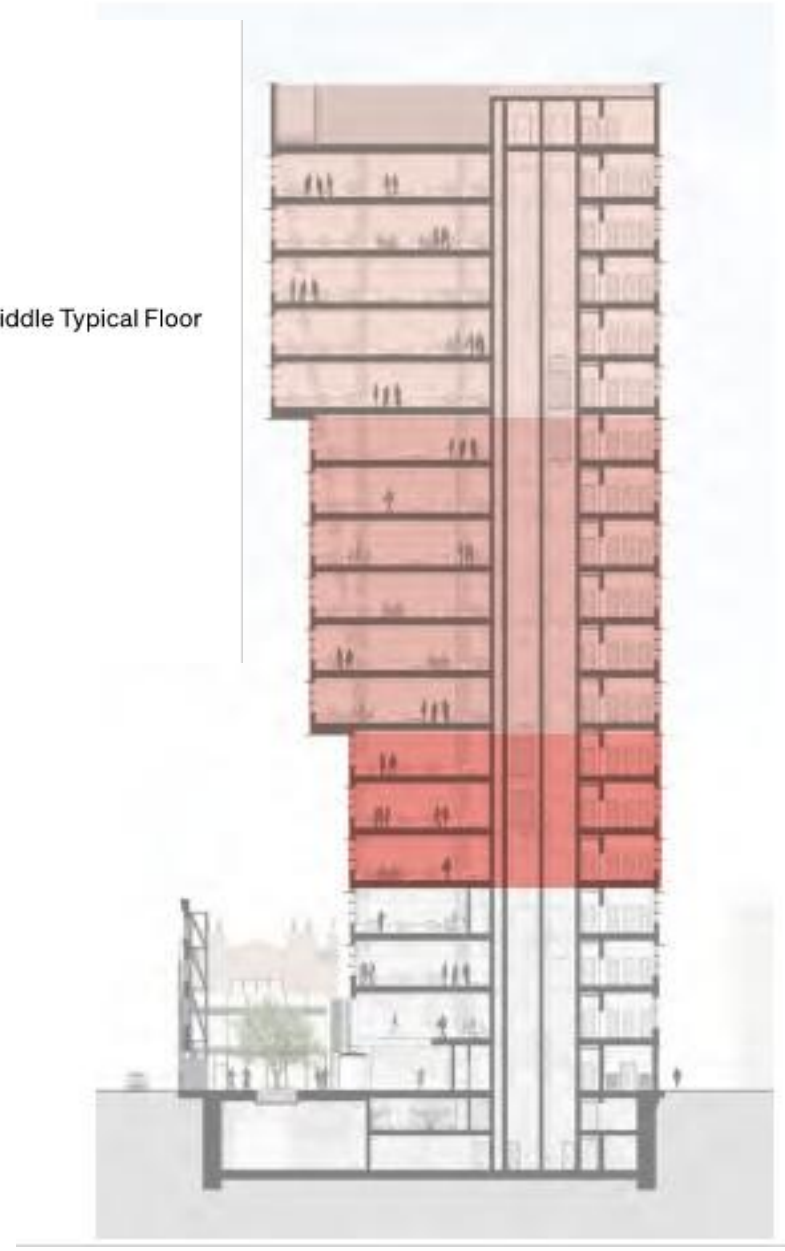


Typical Floors - GA

Lower Typical Floor

Middle Typical Floor

Upper Typical Floor

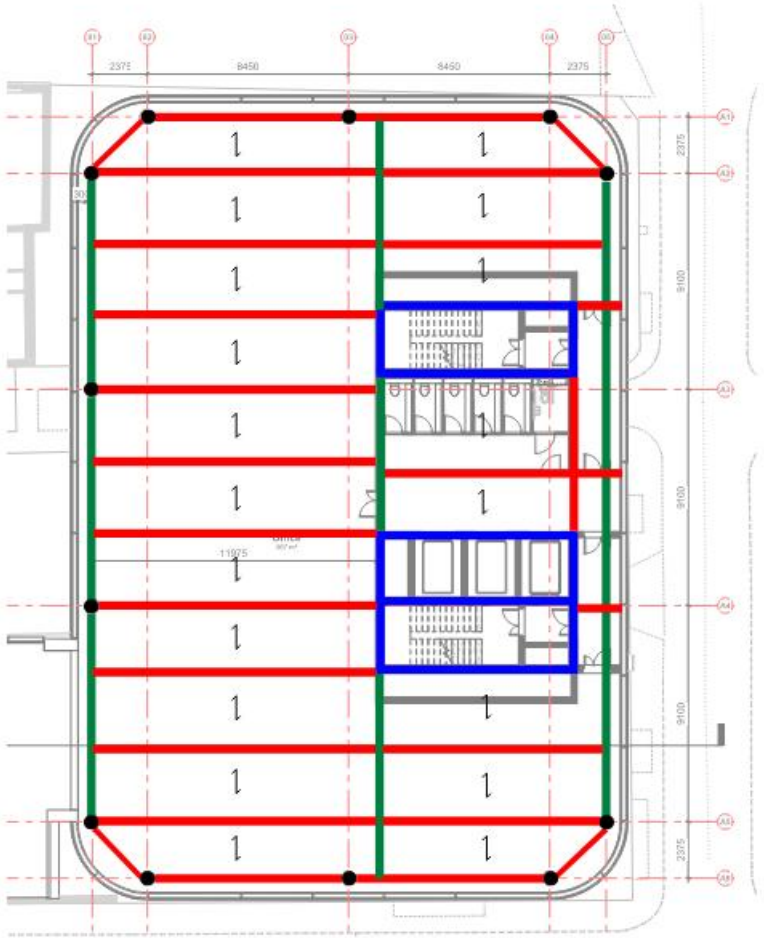


Structural Design.

Structural design.

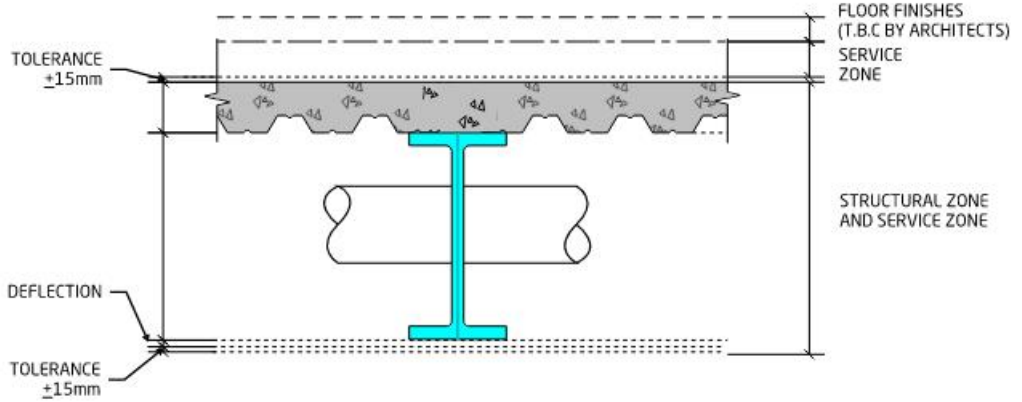
FLOOR OPTIONS
9m x 12m GRID

WESTOK BEAMS WITH COMPOSITE SLAB



	DEPTH/HEIGHT
COMPOSITE SLAB	150 mm
356 UKC SECONDARY (287 kg/m)	596 mm*
356 UKC PRIMARY (287 kg/m)	596 mm*

* Allow for 10mm of precamber



Note: 1/3 of the deflection due to the SW of the beam and the slab can be removed by precambering the beam

STRUCTURAL ZONE (mm)

SLAB	= 150
BEAM	= 596
TOLERANCE	= 30
DEFLECTION *	= 40
TOTAL	**= 816**

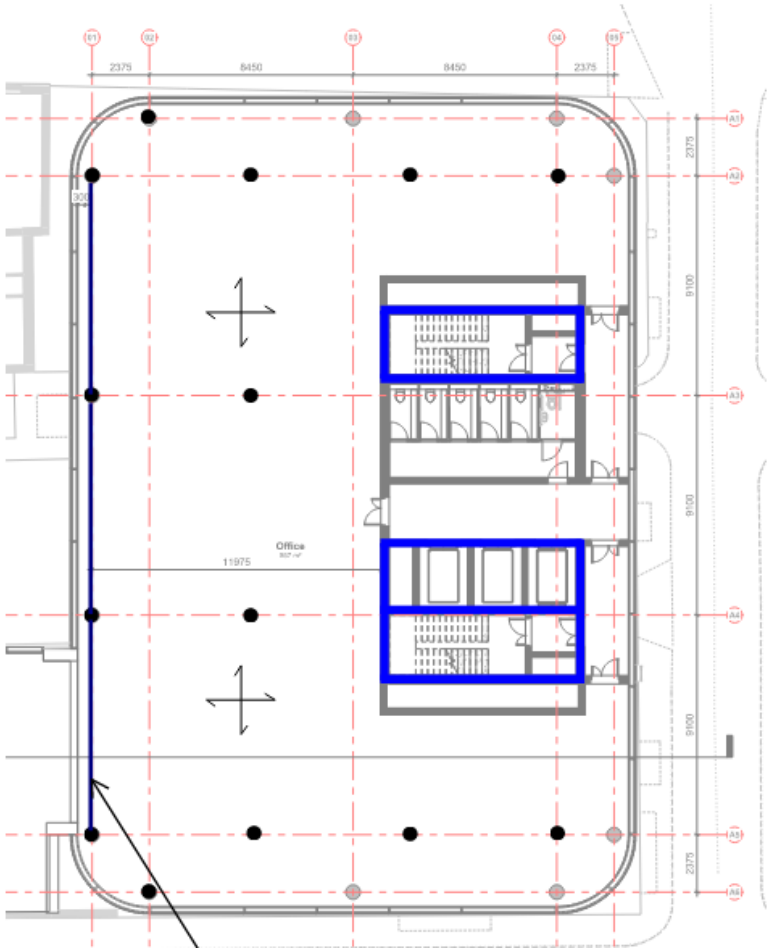
* The value of deflection does not include the deflection considered for transfer beams/slabs

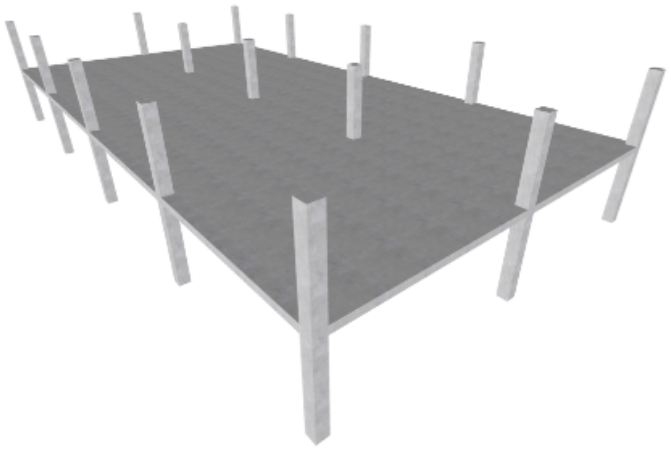
Note: the value shown for structural zone is for typical slab

Structural design.

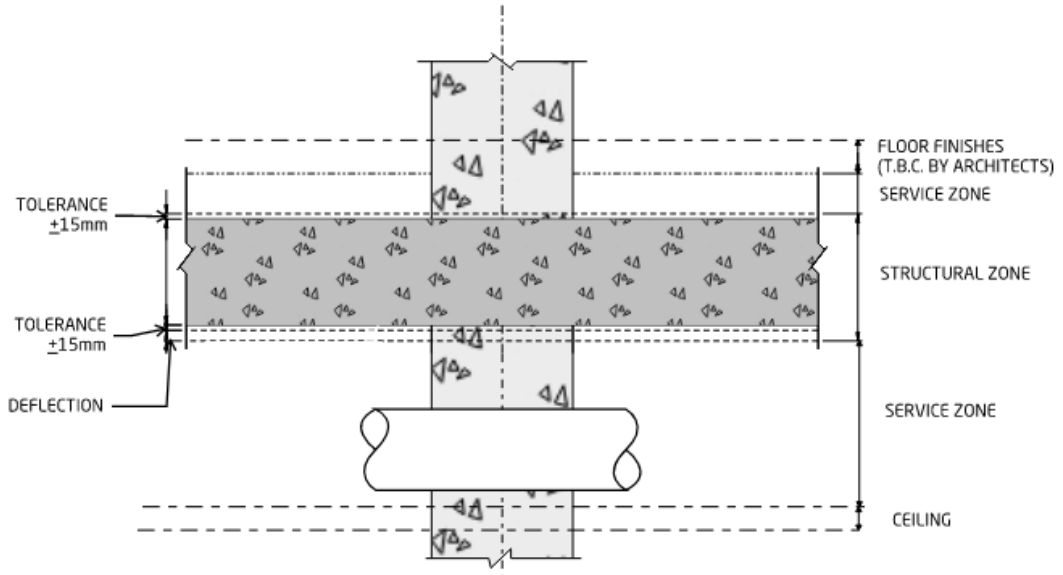
FLOOR OPTIONS
9m x 6m GRID

PT IN-SITU FLAT SLAB





	THICKNESS
PT FLAT SLAB	250 mm



STRUCTURAL ZONE (mm)

SLAB	= 250
TOLERANCE	= 30
DEFLECTION *	= 25
TOTAL	**= 305**

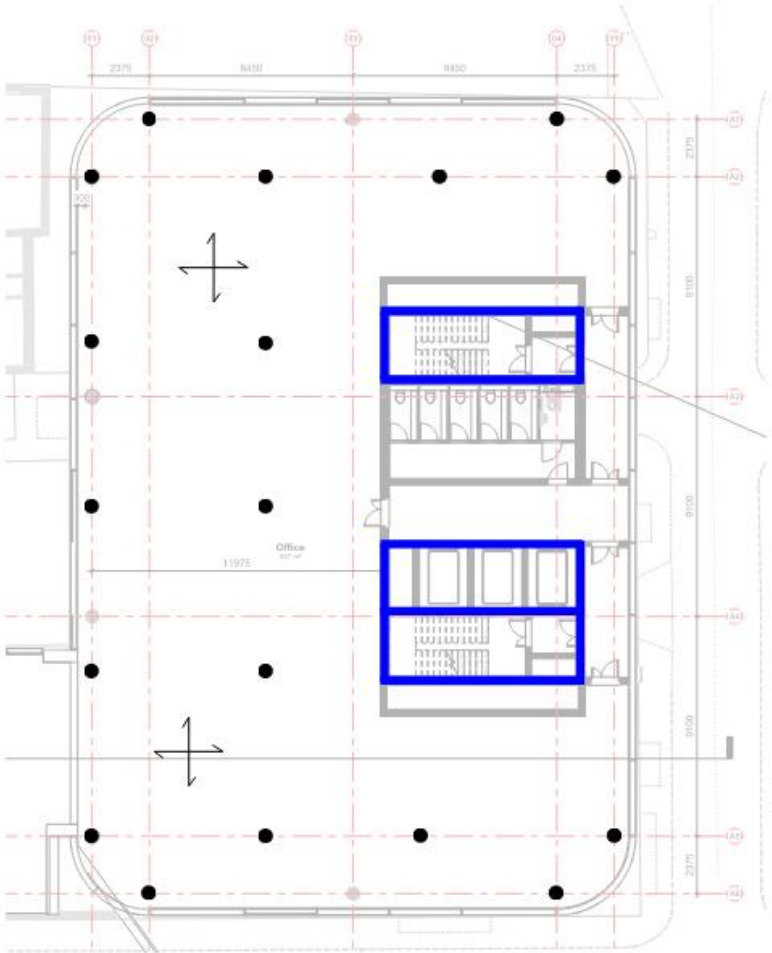
* The value of deflection does not include the deflection considered for transfer beams/slabs

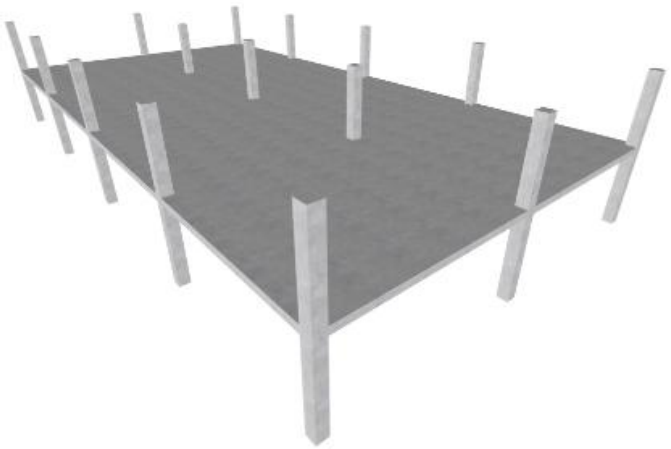
Note: the value shown for structural zone is for typical slab

Structural design.

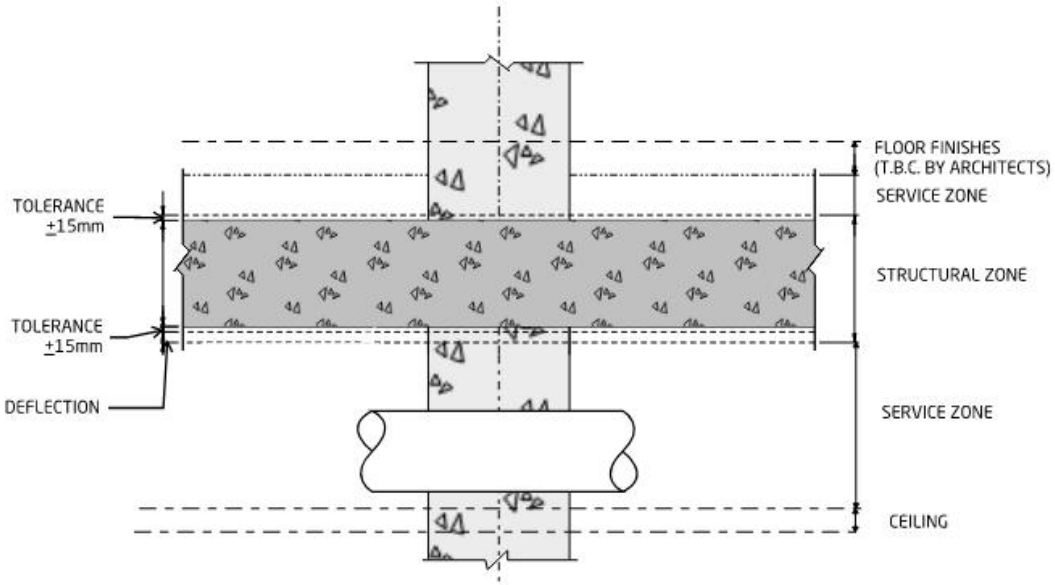
FLOOR OPTIONS
7.5m x 7.5m GRID

RC IN-SITU FLAT SLAB





	THICKNESS
RC FLAT SLAB	275 mm



STRUCTURAL ZONE (mm)

SLAB	= 275
TOLERANCE	= 30
DEFLECTION *	= 25
TOTAL	**= 330**

* The value of deflection does not include the deflection considered for transfer beams/slabs

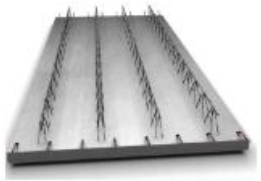
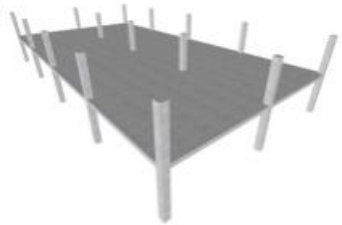
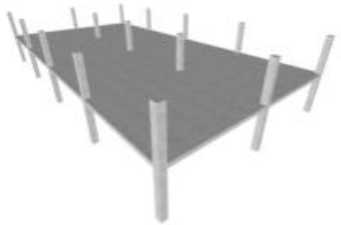
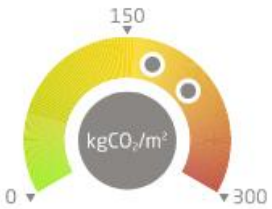
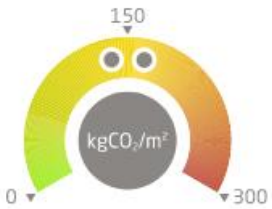
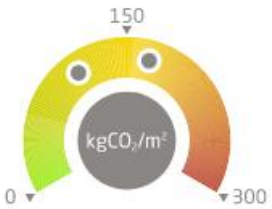
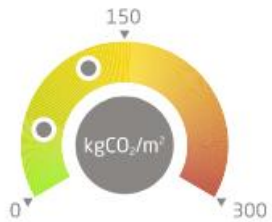
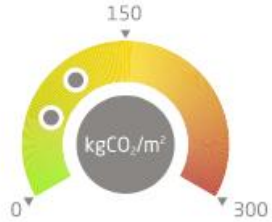
Note: the value shown for structural zone is for typical slab

Structural design.

FLOOR OPTIONS
CARBON COMPARISON

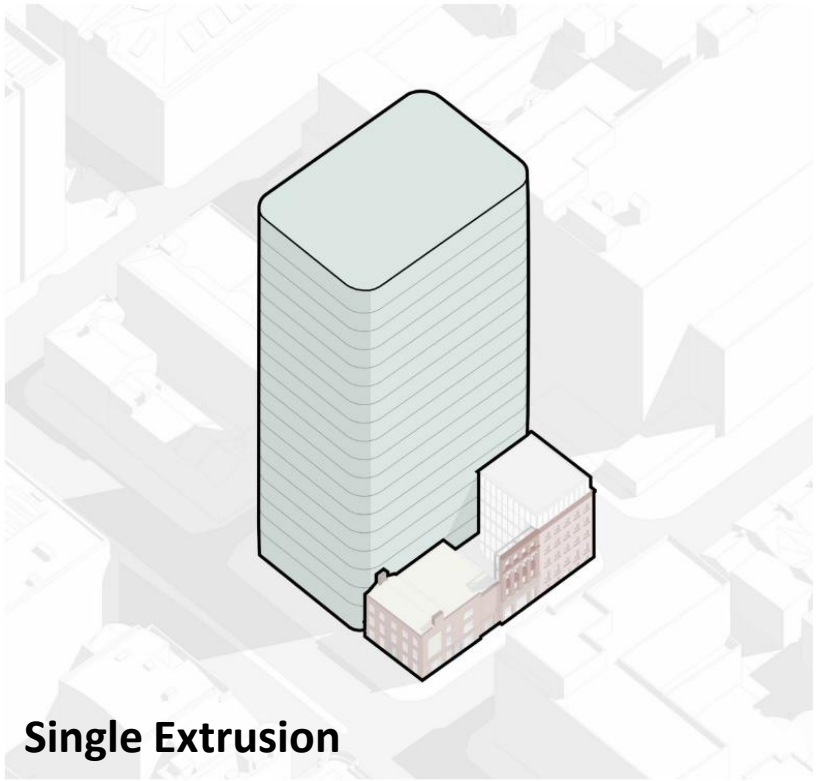
FIGURES QUOTED ARE FOR TYPICAL FLOOR AND COLUMN FRAMING ONLY FOR COMPARISON PURPOSES

FLOOR OPTIONS

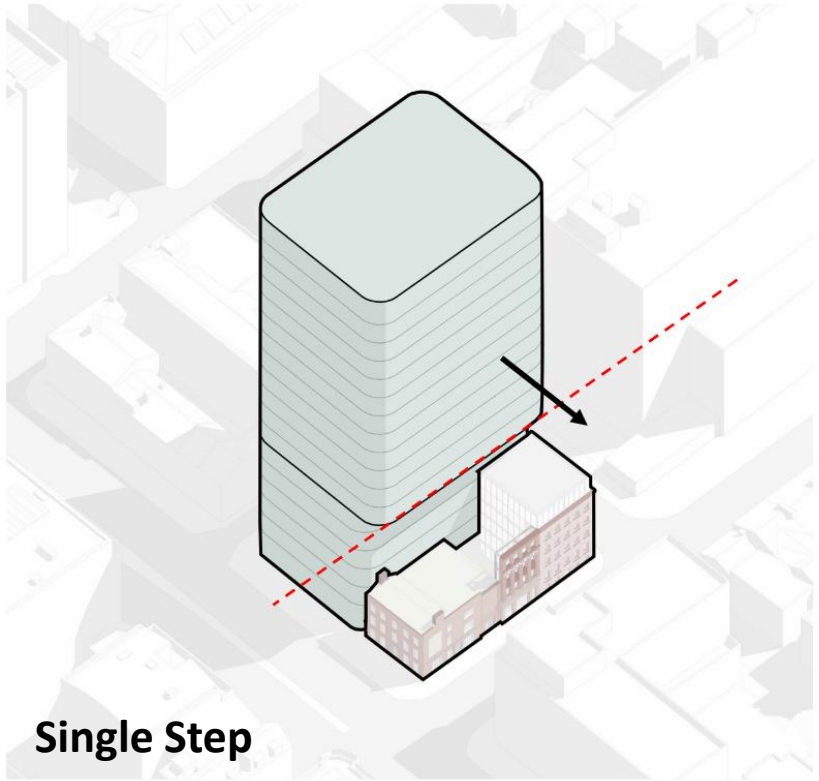
STEEL BEAMS WITH COMPOSITE SLAB	STEEL BEAMS WITH 70mm PRECAST OMNIA PLANKS	WESTOK BEAMS WITH COMPOSITE SLAB	PT IN-SITU FLAT SLAB	RC IN-SITU FLAT SLAB
				
				
Steel + Composite Metal Deck 175-185kgCO_2e/m²	**Steel + Omnia Precast Planks** 145-155kgCO_2e/m²	**Westok + Composite Metal Deck** 135-155kgCO_2e/m²	**PT Slab** 75 - 125 kgCO_2e/m²	**RC Slab** 85 - 105 kgCO_2e/m²

Structural design.

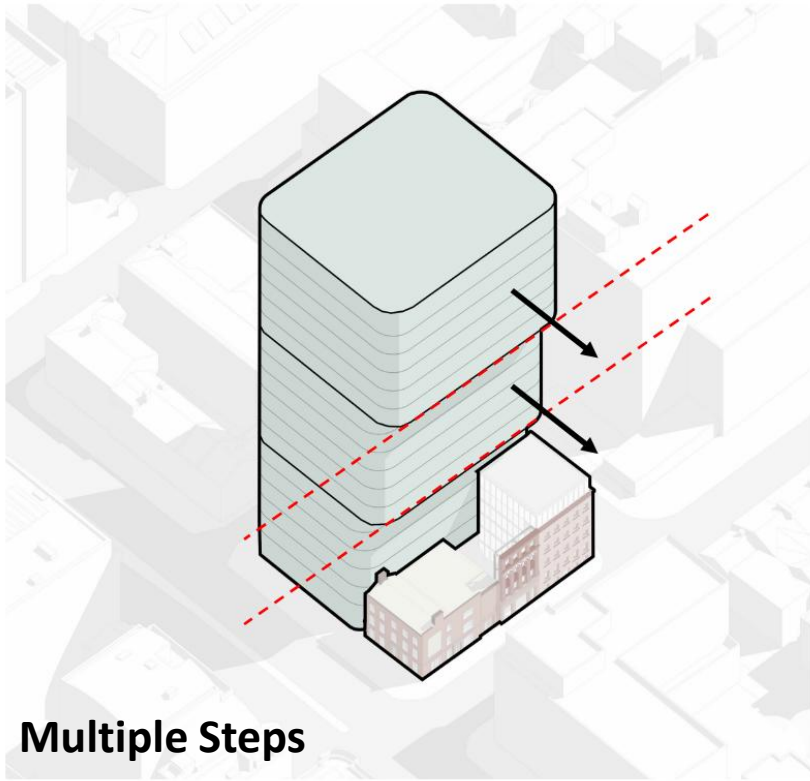
- Several massing studies undertaken during early stages
- Studies looked at '*How we can make this a bolder and more ambitious proposition'*?
- Stepping the façade to create a more dramatic form & increase the office floor plate area



Single Extrusion



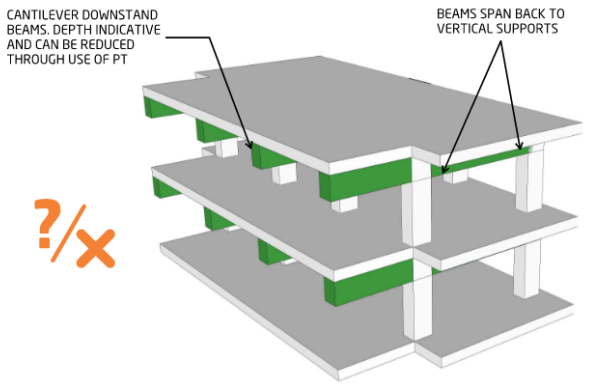
Single Step



Multiple Steps

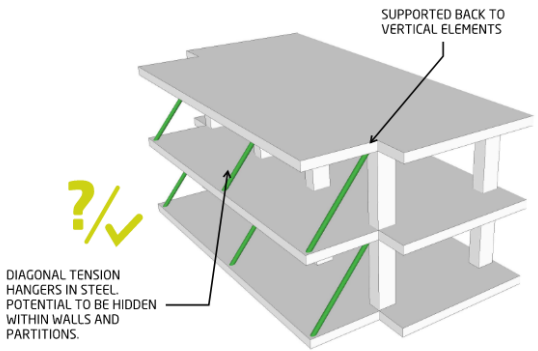
Structural design.

- How do we form these steps in the structure efficiently?
- Several options were developed and assessed
  - Cantilevered downstand beams
  - Hangers
  - Cantilevered slab
  - Truss at roof level



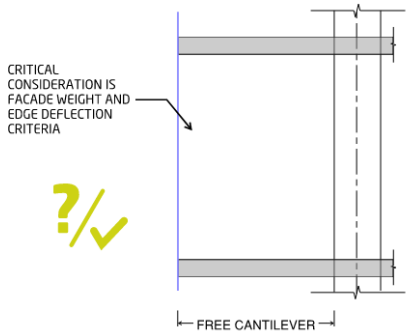
OPTION 1 - CANTILEVER DOWNSTAND BEAMS

- IMPACT ON ROUTING OF SERVICES. ?/✓
- POTENTIAL IMPACT ON FACADE ELEVATIONS. ?
- POTENTIAL TO BE HIDDEN IN PARTITION WALLS ?/✓



OPTION 2 - TENSION HANGERS

- NO IMPACT ON ROUTING OF SERVICES. ✓
- POTENTIAL IMPACT ON FACADE ELEVATIONS (EAST & WEST ONLY). ?/✓
- POTENTIAL TO BE HIDDEN IN PARTITION WALLS ✓



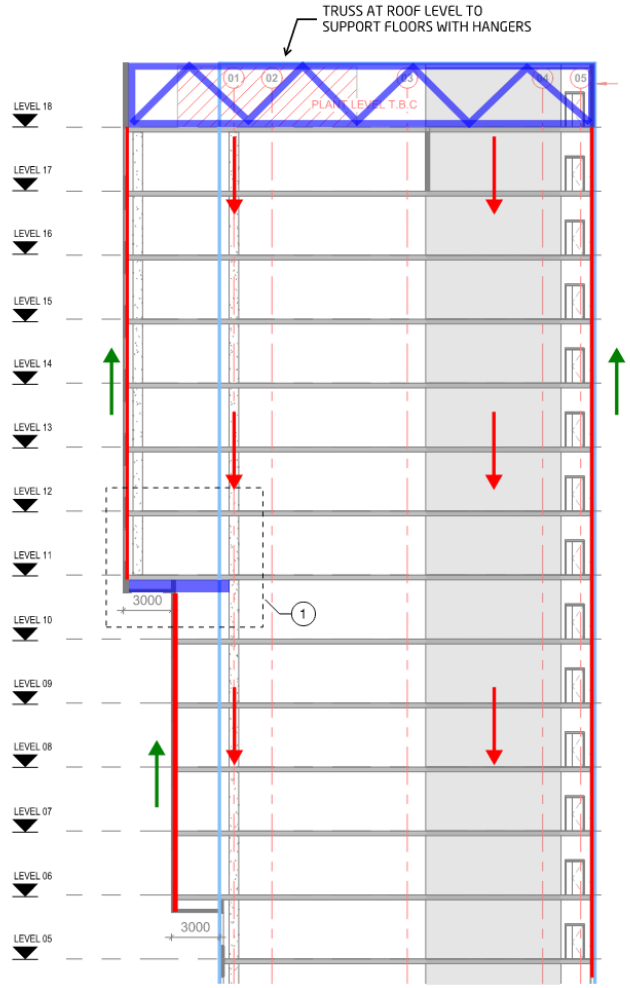
OPTION 3 - FREE CANTILEVER RC/PT FLAT SLAB SOLUTION

- CANTILEVER LIMITED BY INHERENT SPAN OF SLAB ADOPTED FOR GRID:

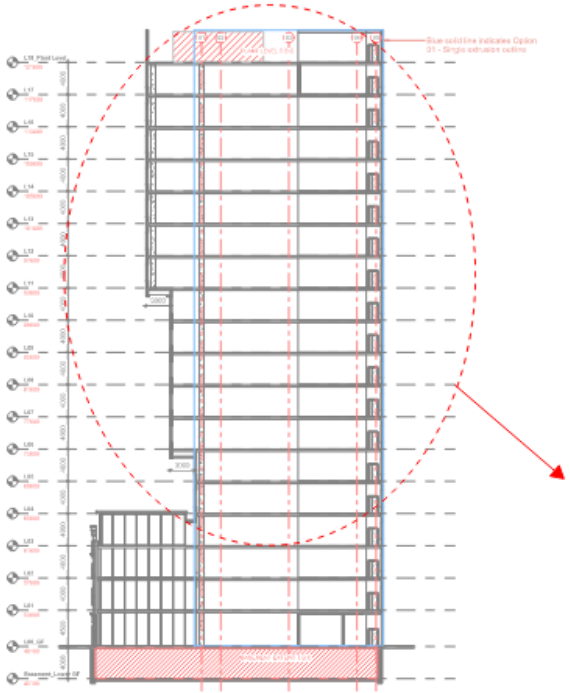
RC INSITU
325-350mm SLAB ~3.0m CANTILEVER
275-300mm SLAB ~2.5m CANTILEVER ?/✓

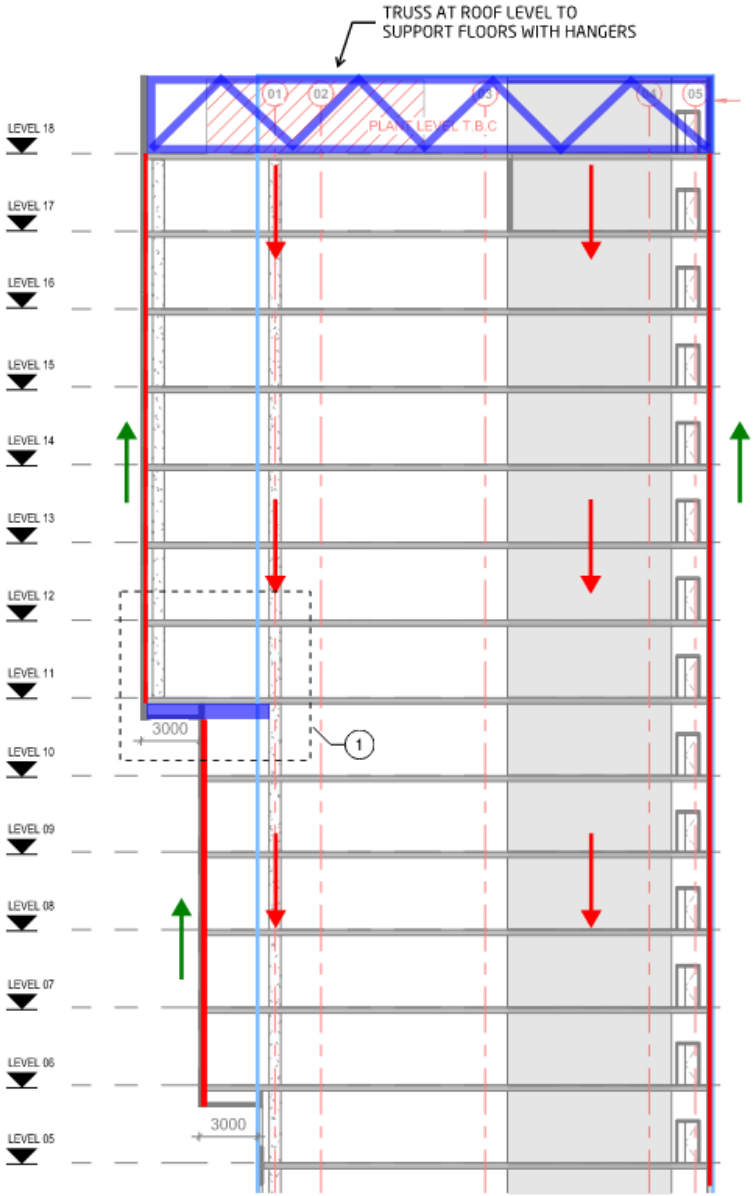
PT SLAB
250-275mm SLAB ~2.0-2.5m CANTILEVER ?/✓

- NO ADDITIONAL STRUCTURE REQUIRED TO SUPPORT CANTILEVER ✓
- LIMITED ON CANTILEVER SPAN ?

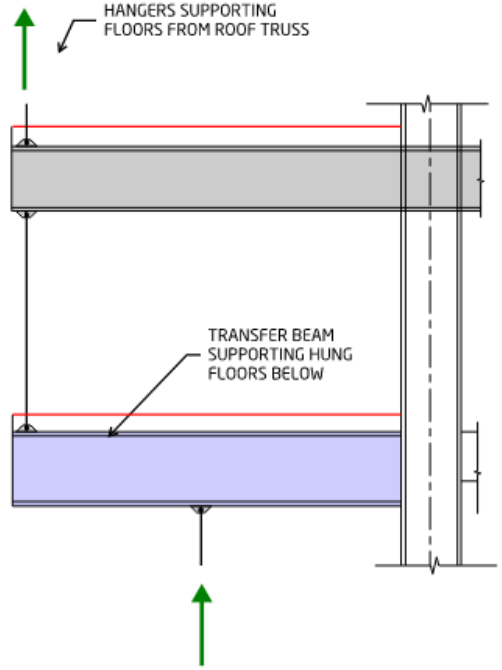


Structural design.





SECTION 1 - HANGER SYSTEM

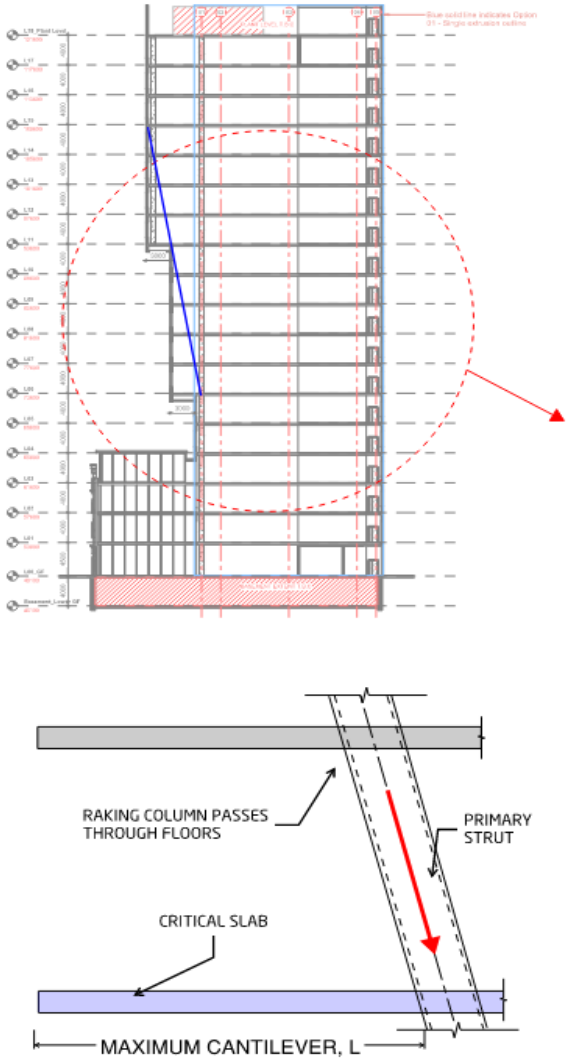


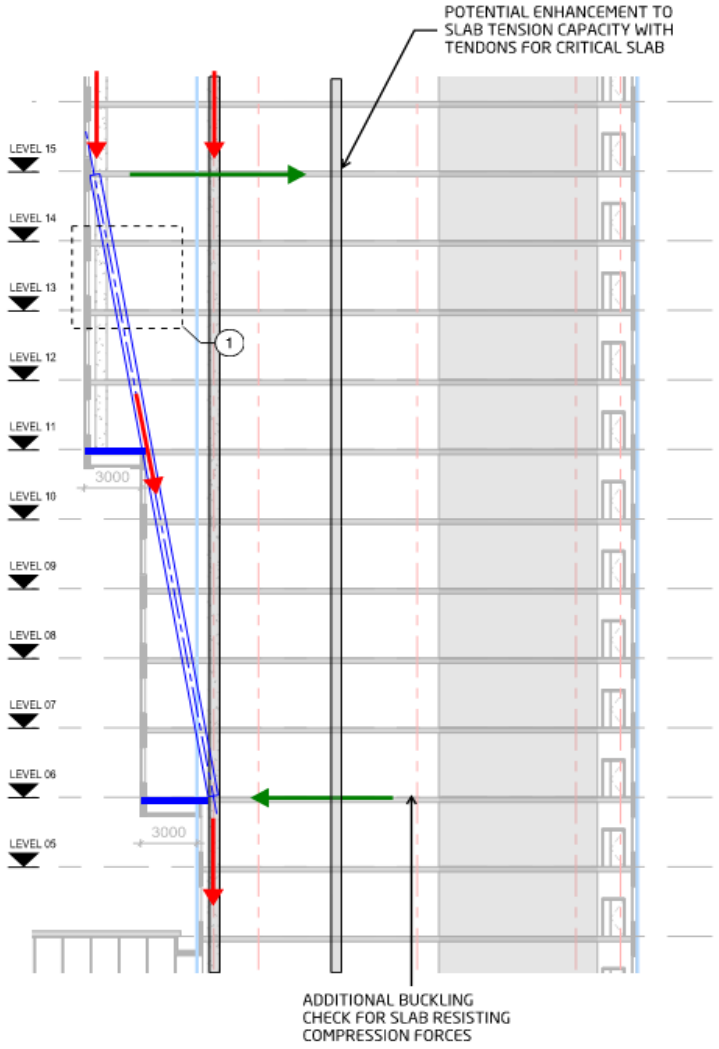
DETAIL 1 - TRANSFER AT LEVEL 11

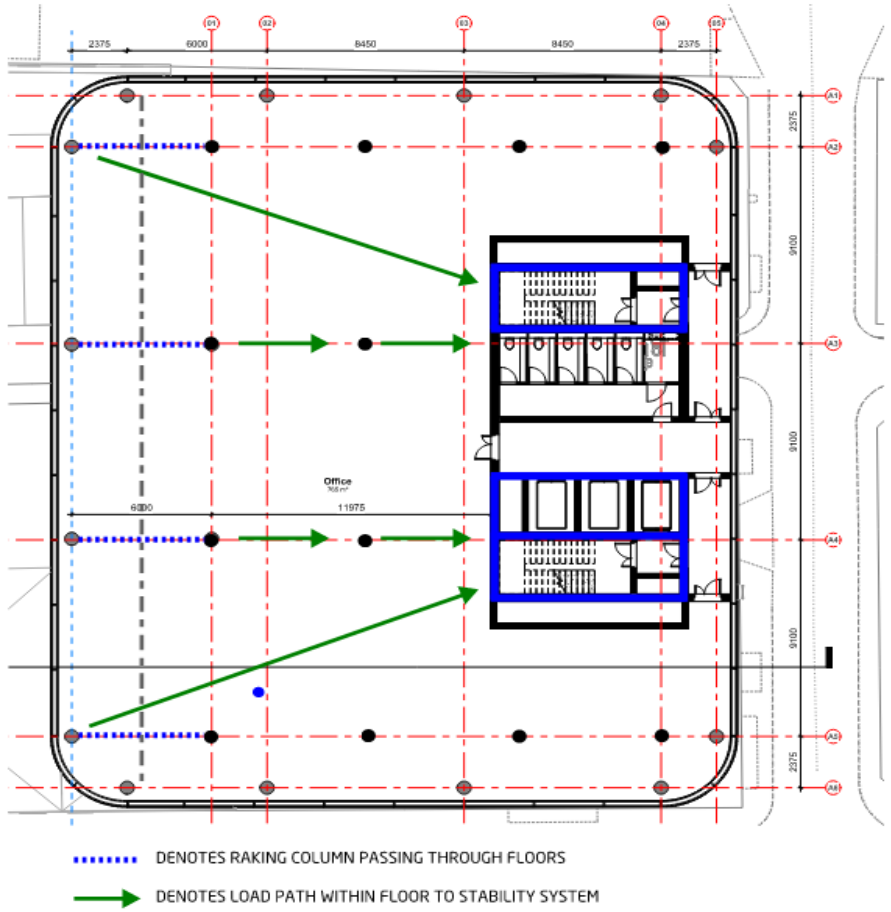
ROOF TRUSS OPTION

- OPPORTUNITY FOR LARGE CANTILEVER ✓
- OPEN FLOOR PLATE ✓
- LIMITED TO STEEL SOLUTION ONLY ?/×
- SIGNIFICANT IMPACT ON PROGRAMME (PROPPING SEQUENCE) ×
- COST IMPLICATION ?/×
- CARBON INEFFICIENT ?/×

Structural design.

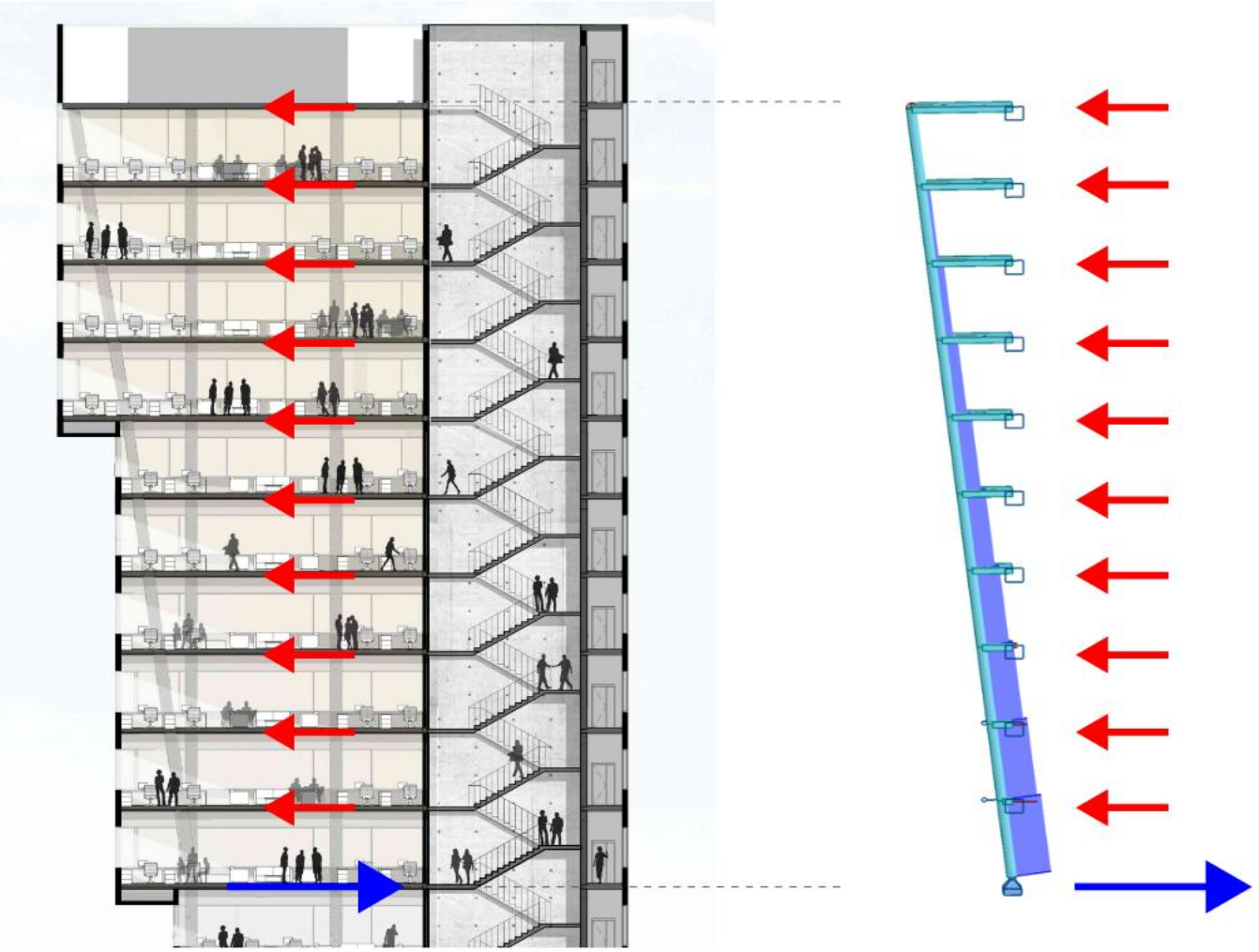






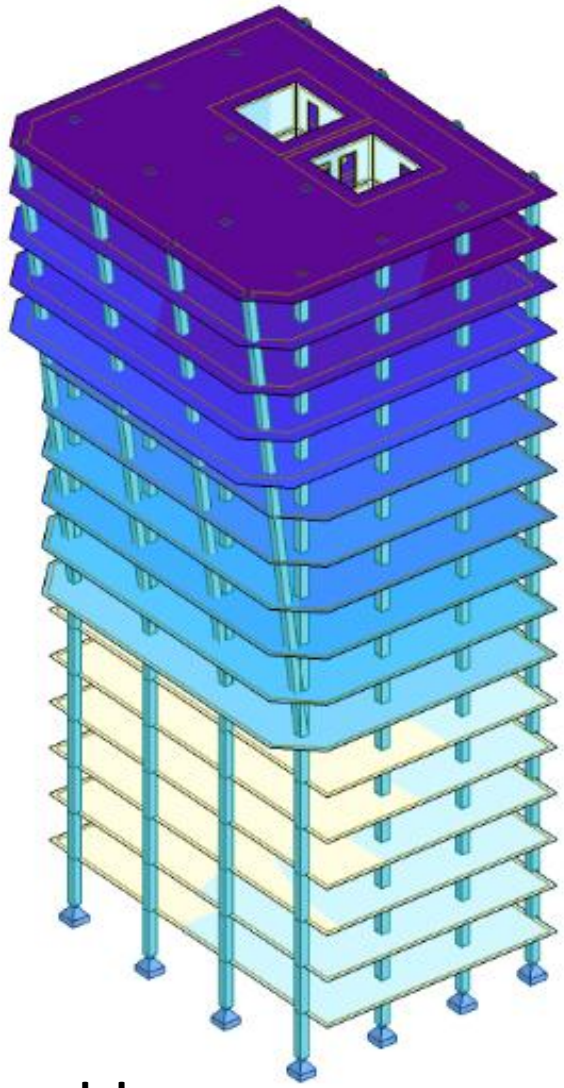
Structural design.

What do we do next?

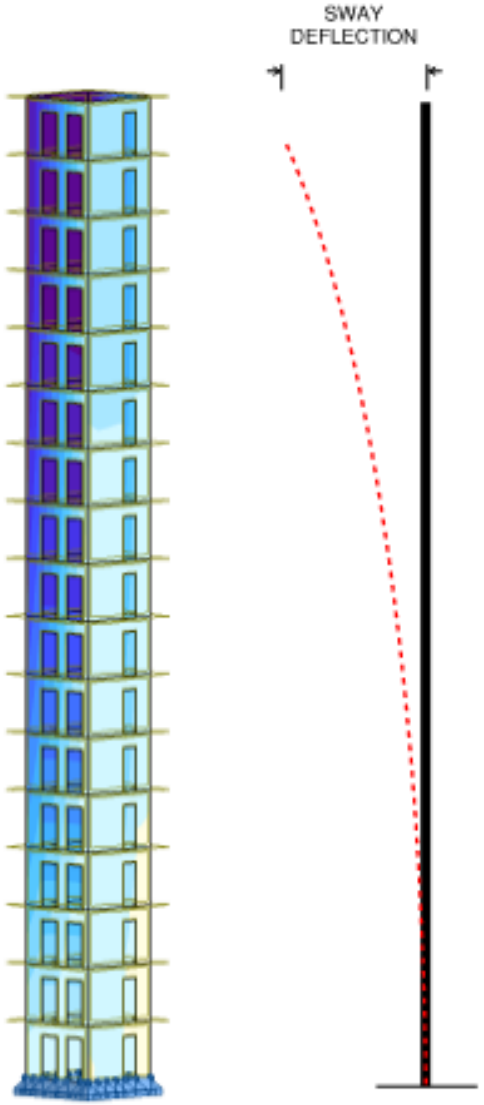


Build an approximate model to understand behaviour.

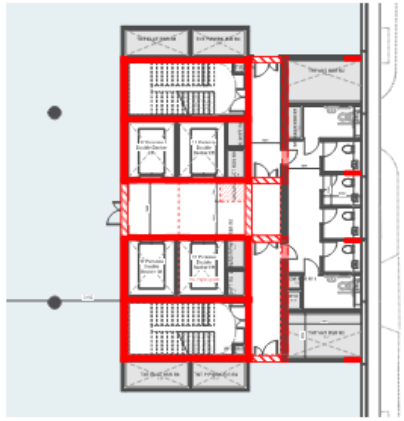
Structural design.



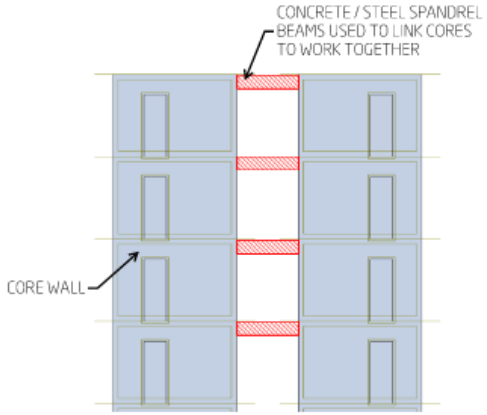
FE model



Core deflection

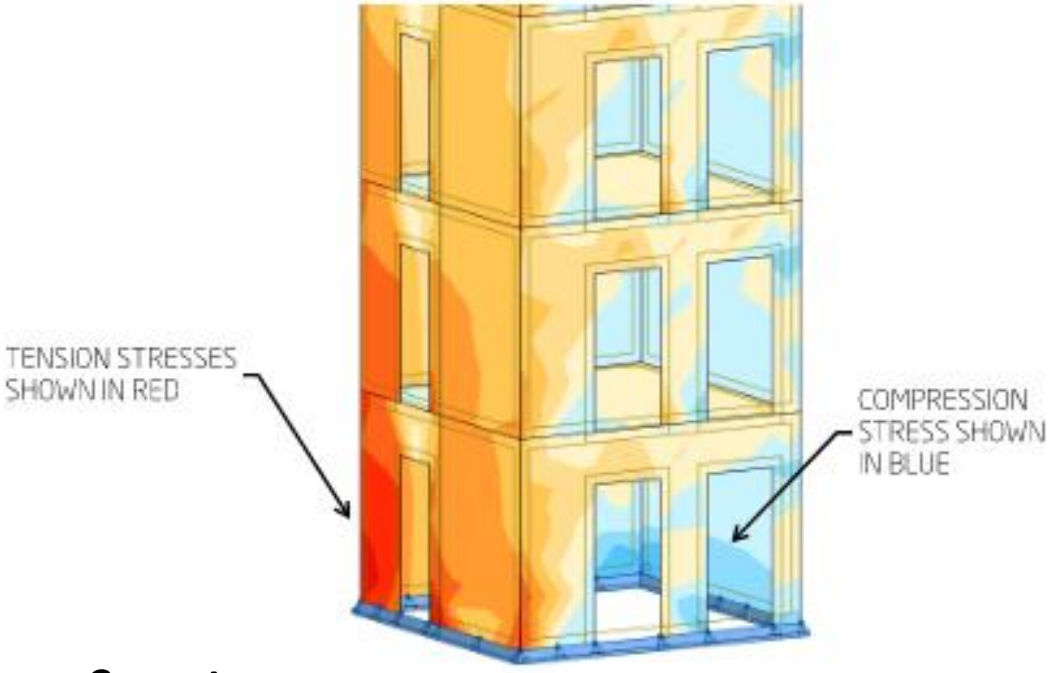


CORE PLAN



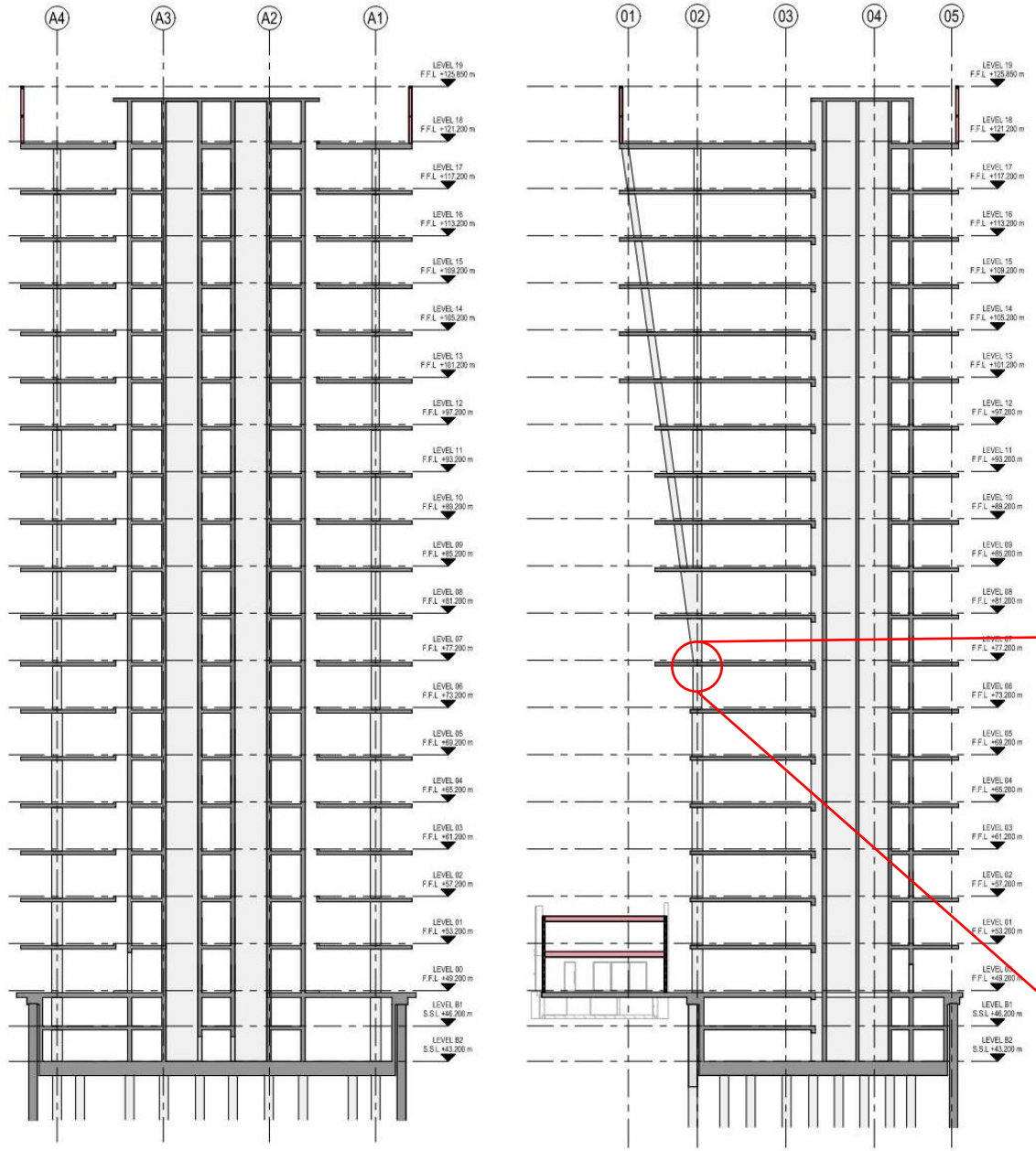
CORE SECTION

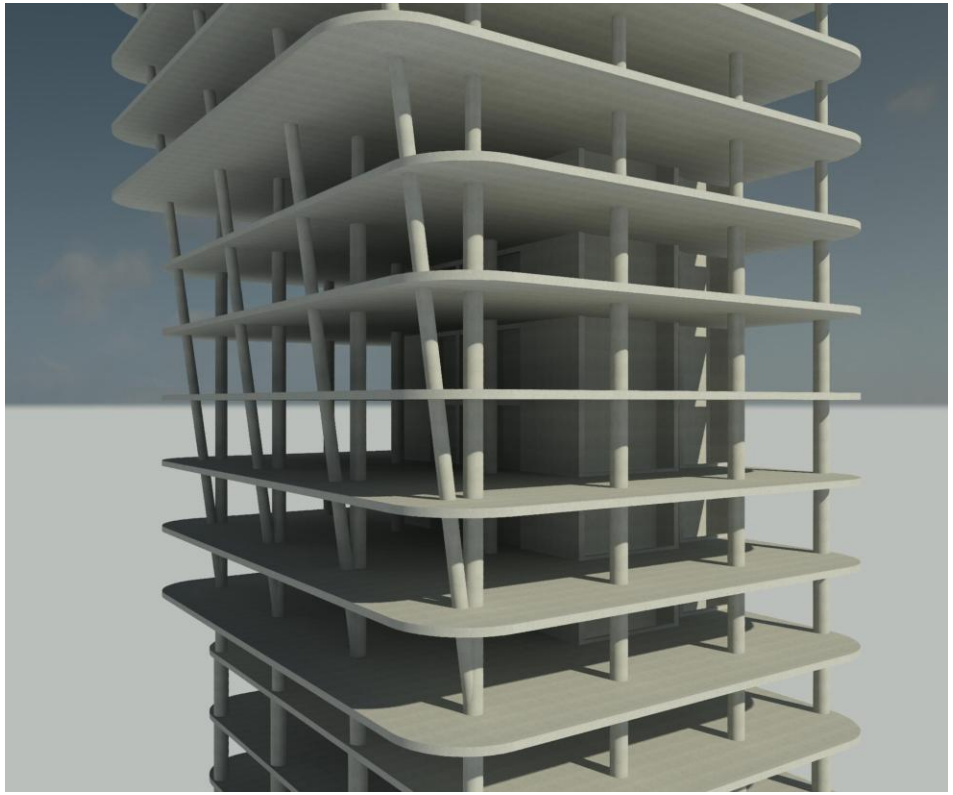
Core arrangement

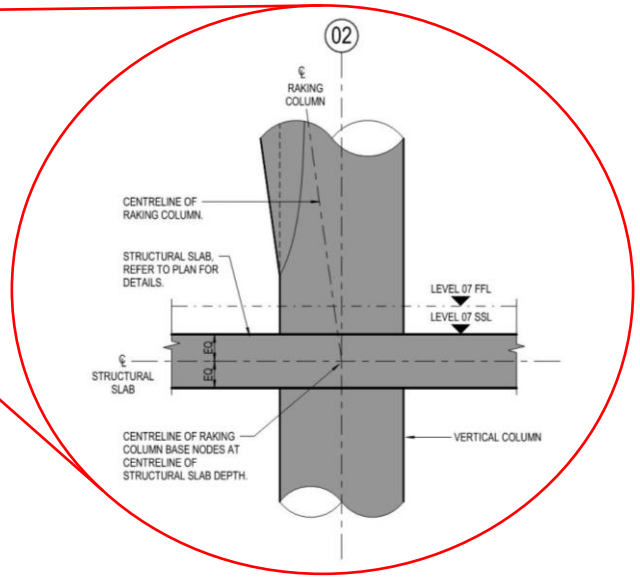


Core stresses

Structural design.

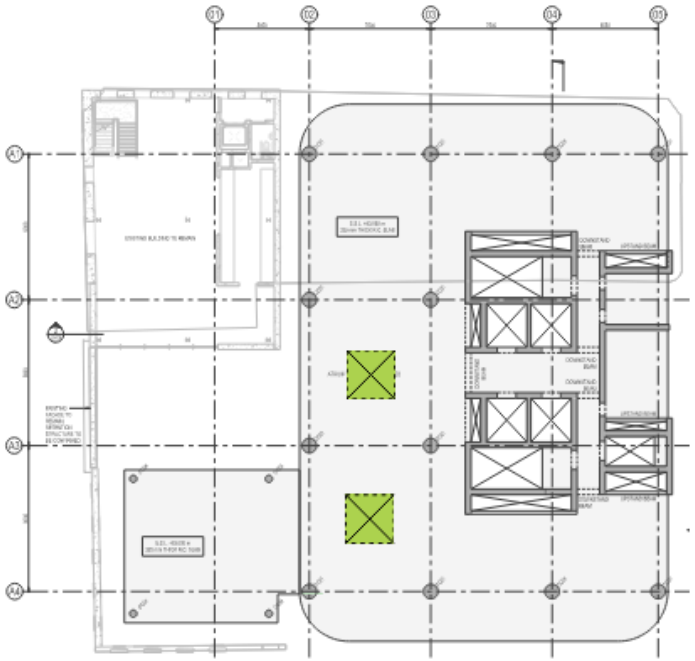




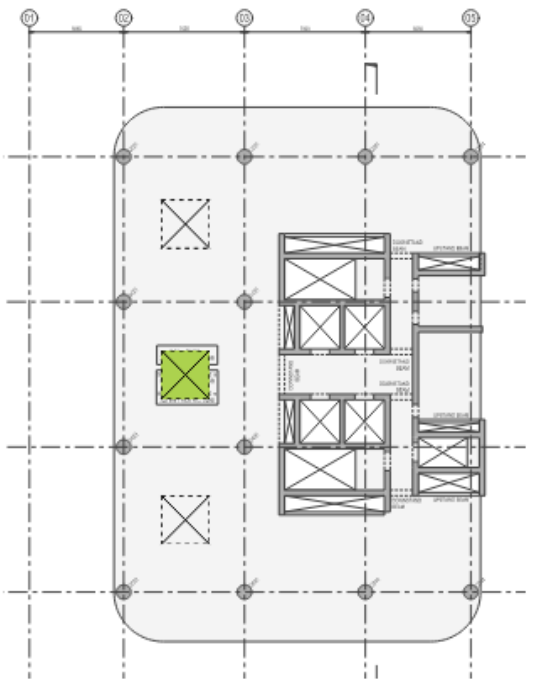


Structural design.

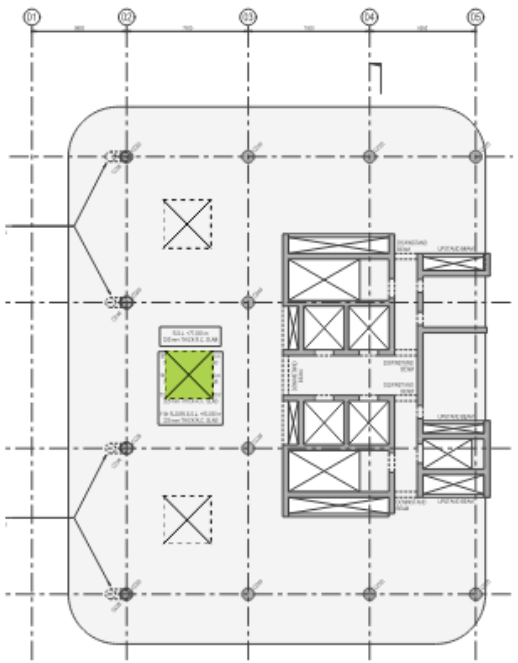
How to improve connectivity between floors?



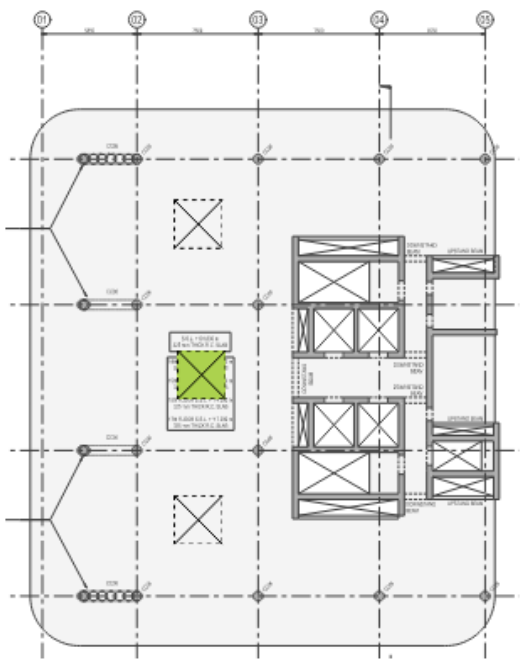
LEVEL 01 - 04



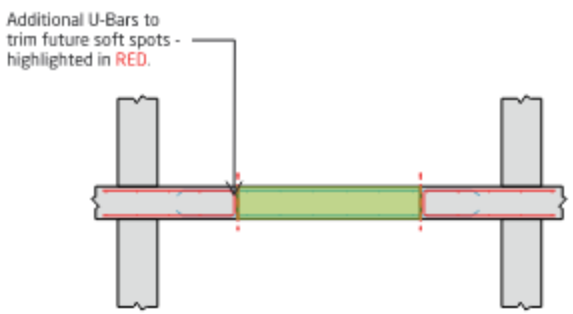
LEVEL 04+



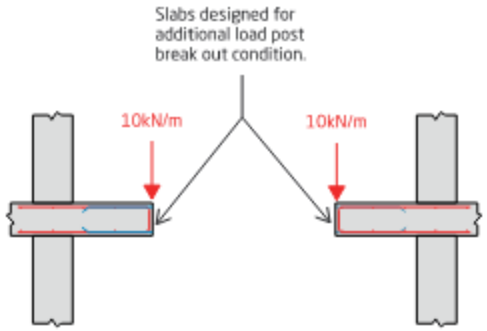
LEVEL 07+



LEVEL 13+



Pre-Break Out



Post Break Out

Façade design.

Façade types.

EWS Type 01 - Typical cladding to all elevations

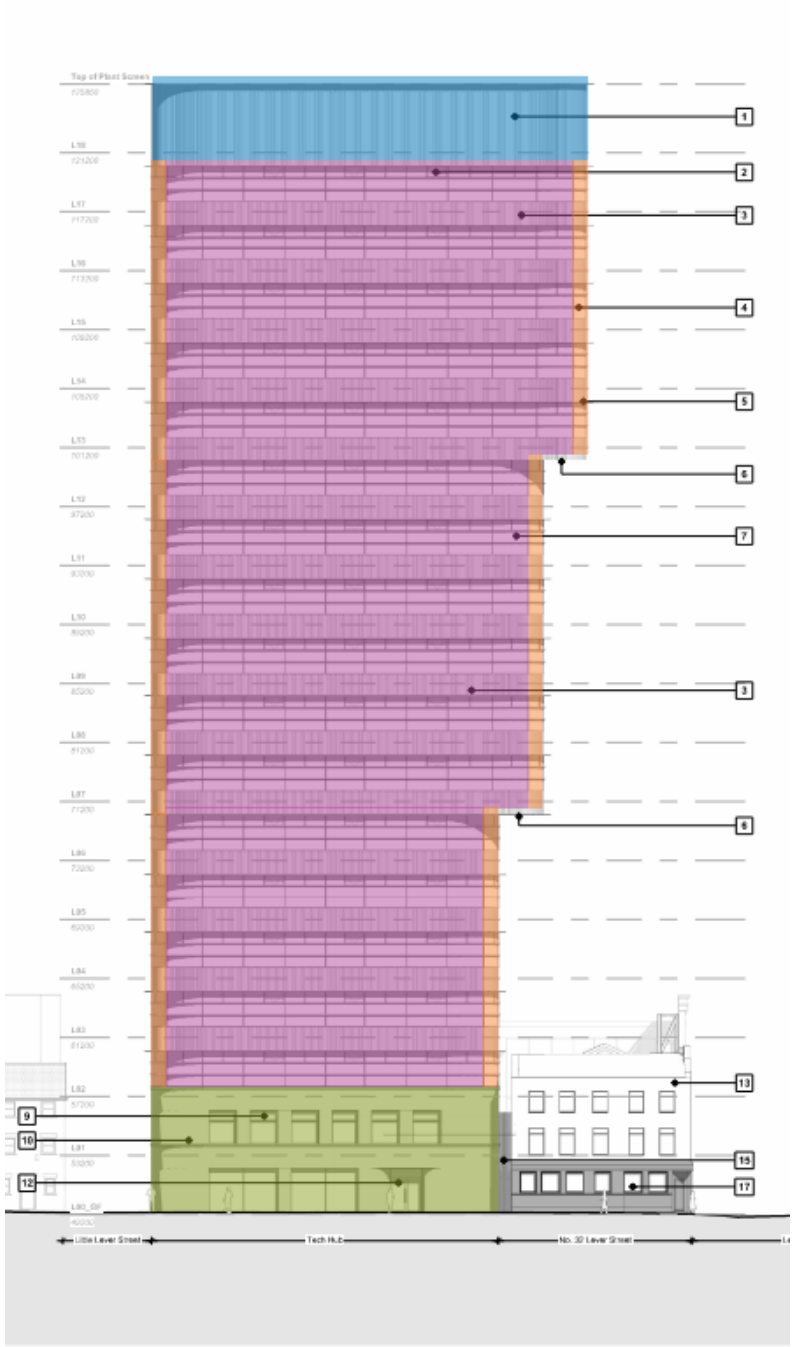
EWS Type 02 - Typical cladding to corners

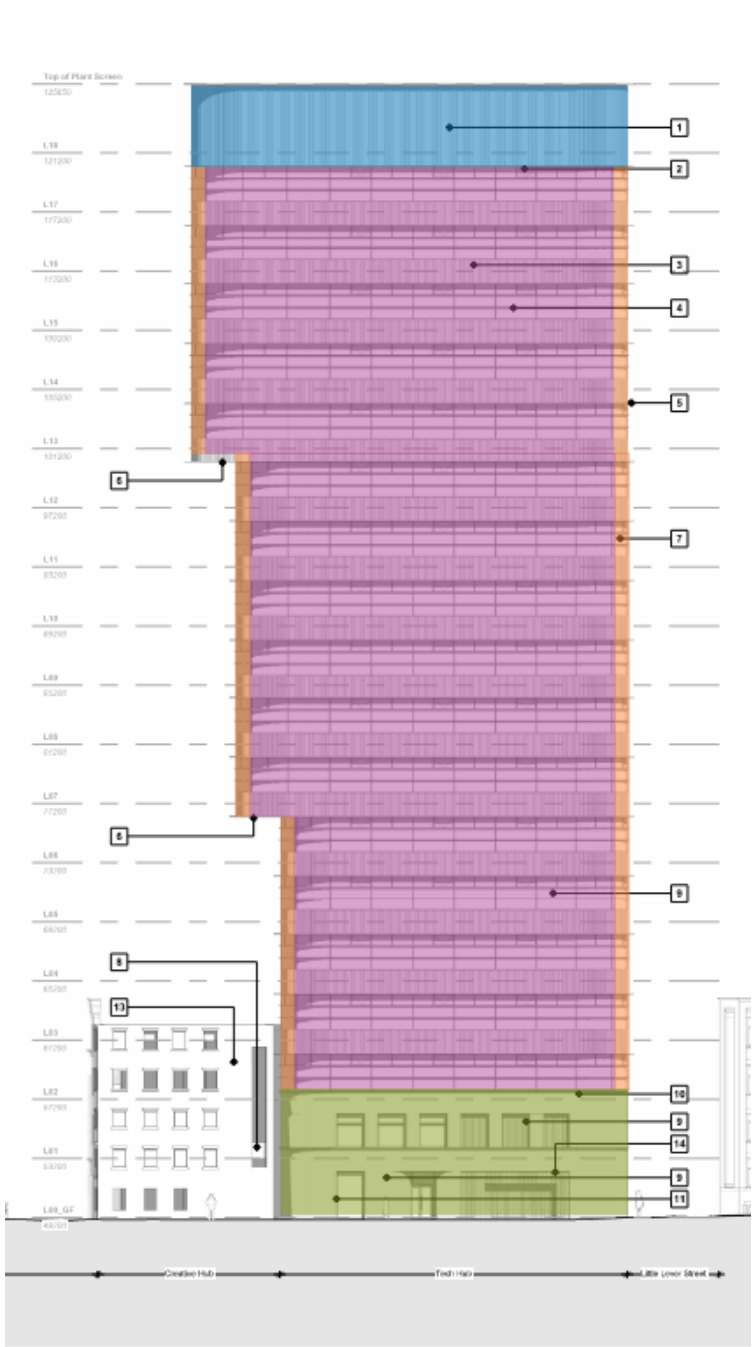
EWS Type 03 - Plant room cladding

EWS Type 04 - GF and FF cladding

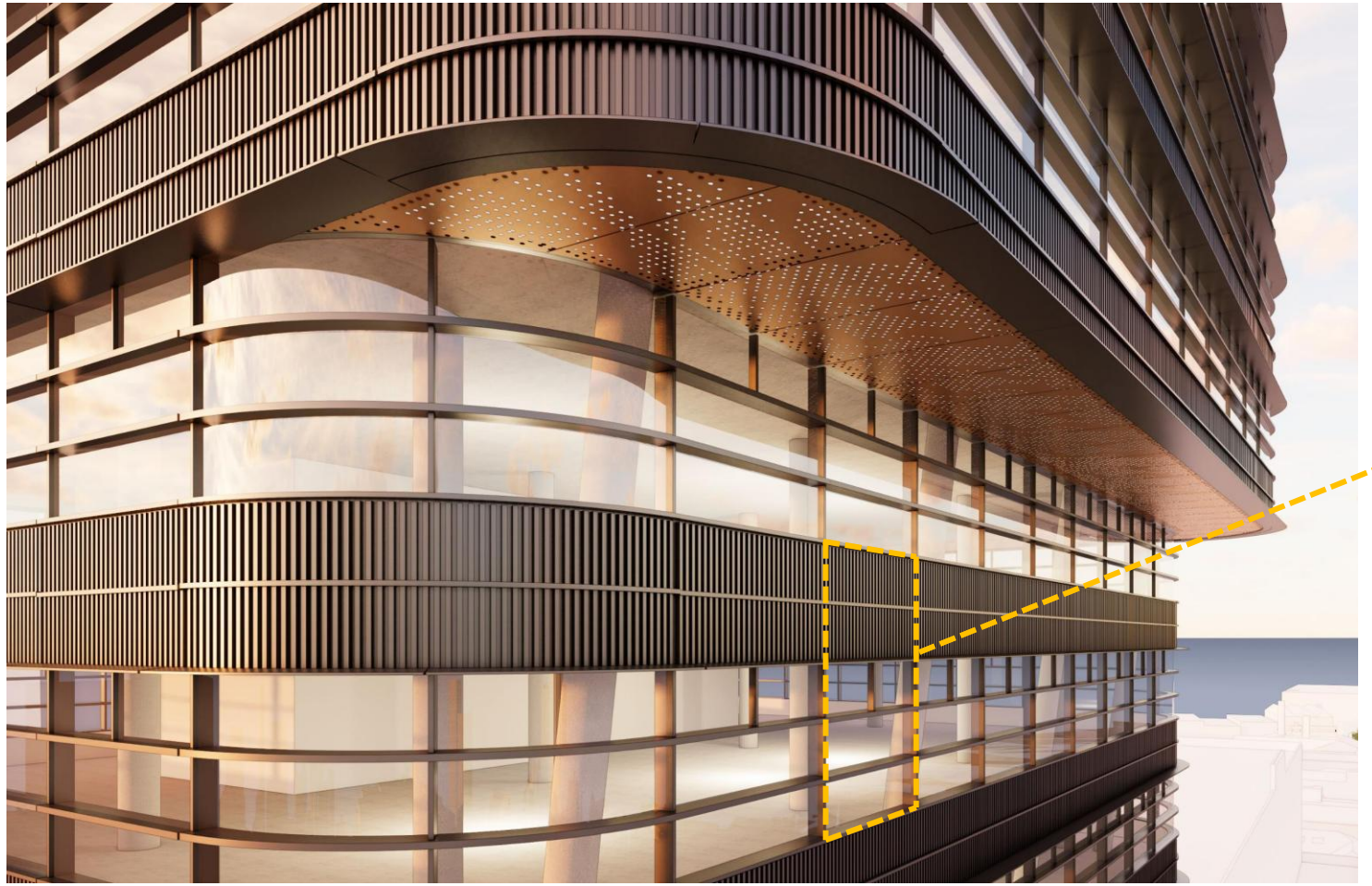
EWS Type 05 -Creative Hub cladding

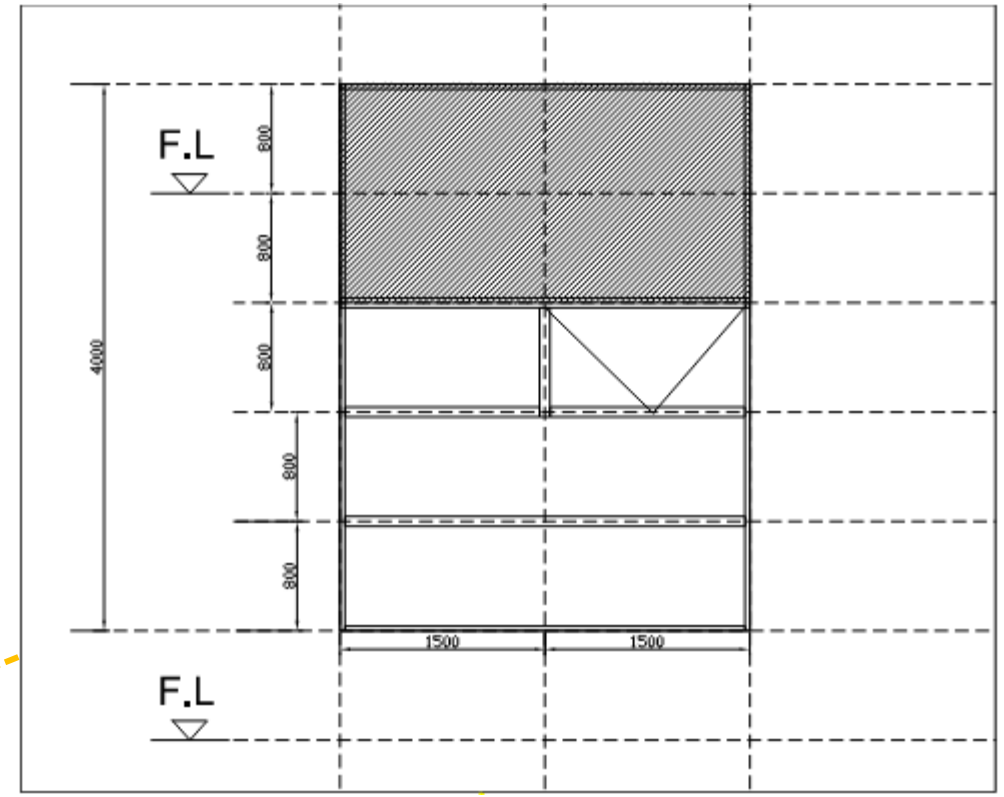
EWS Type 01
EWS Type 02
EWS Type 03
EWS Type 04
EWS Type 05



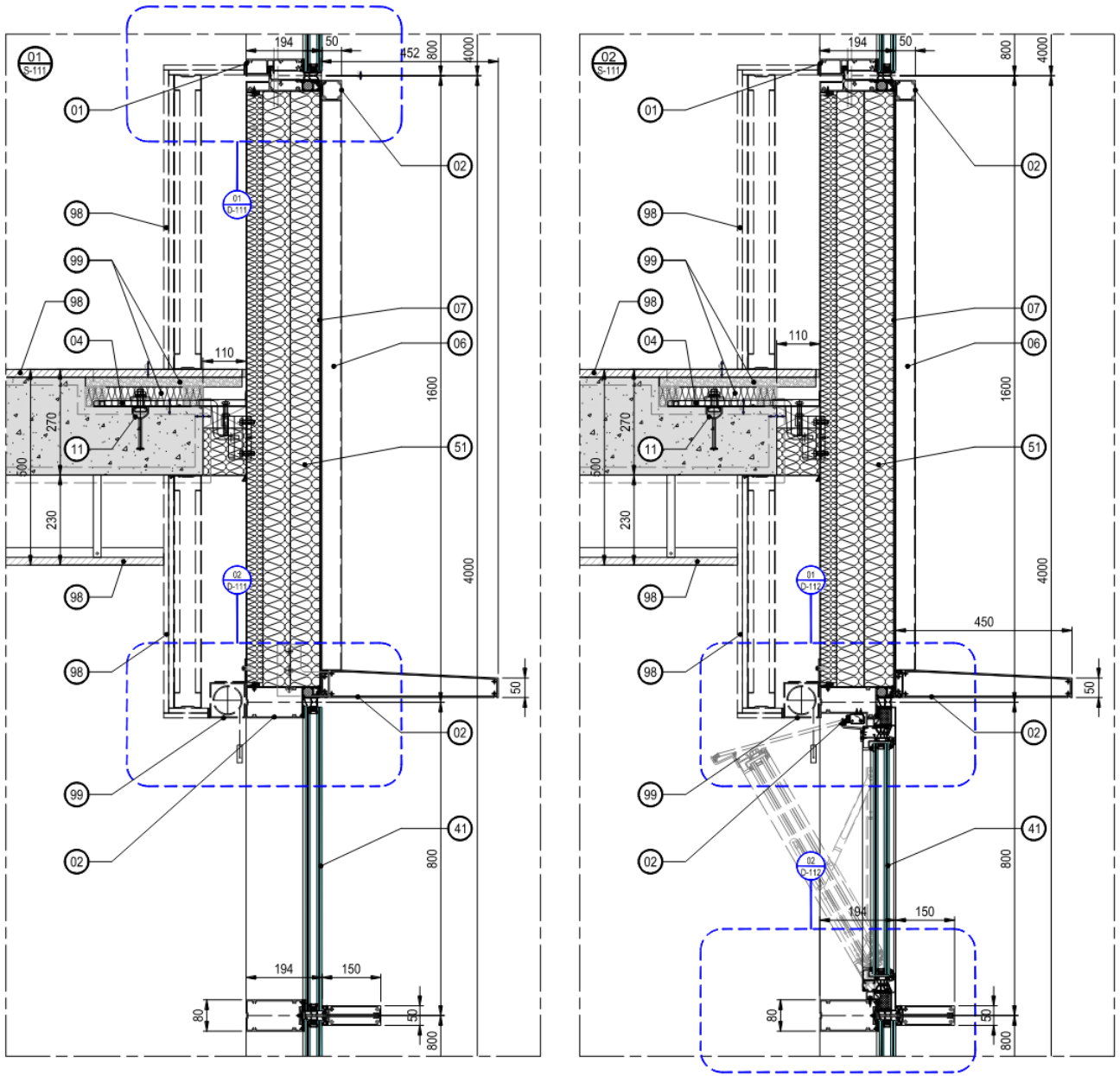


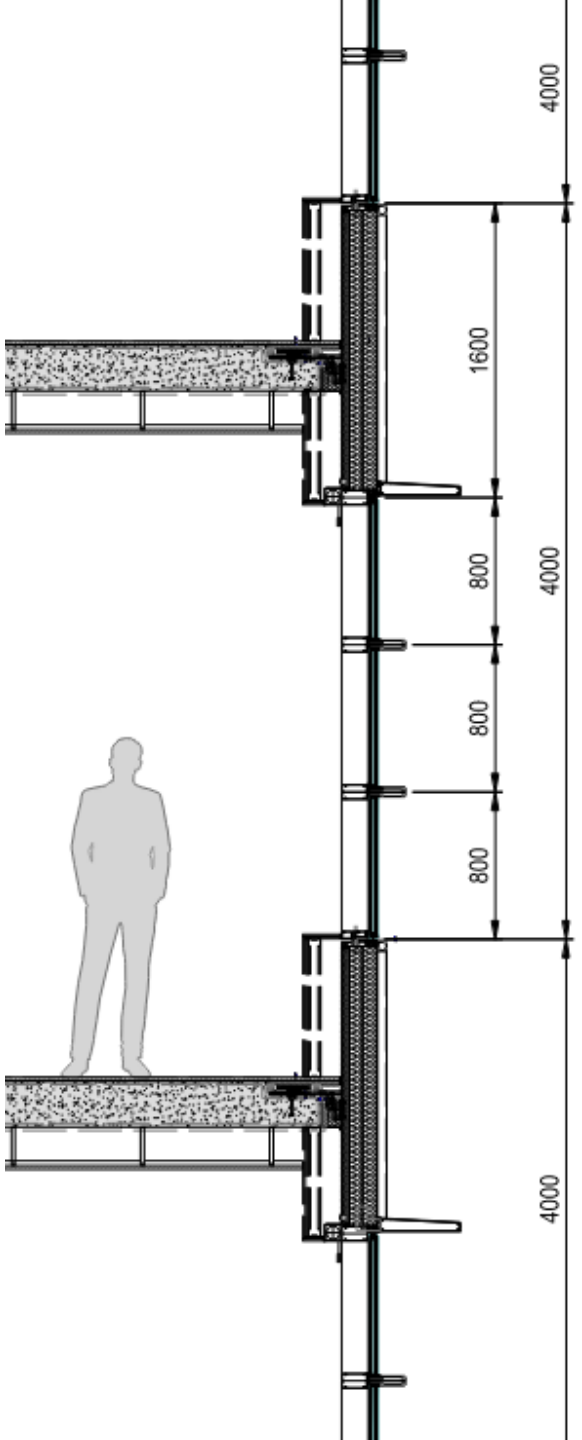
Typical bay.



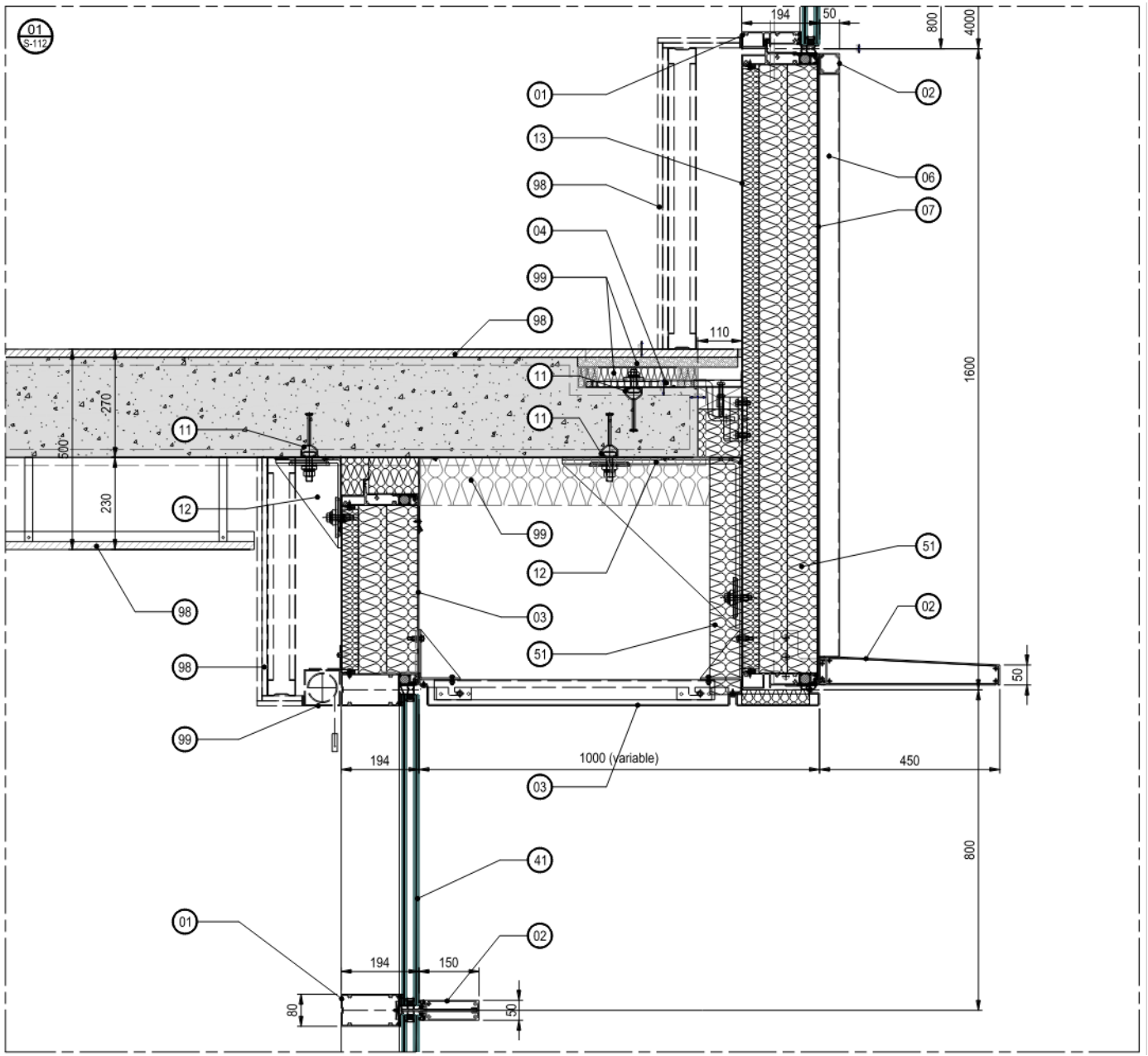


Typical bay.

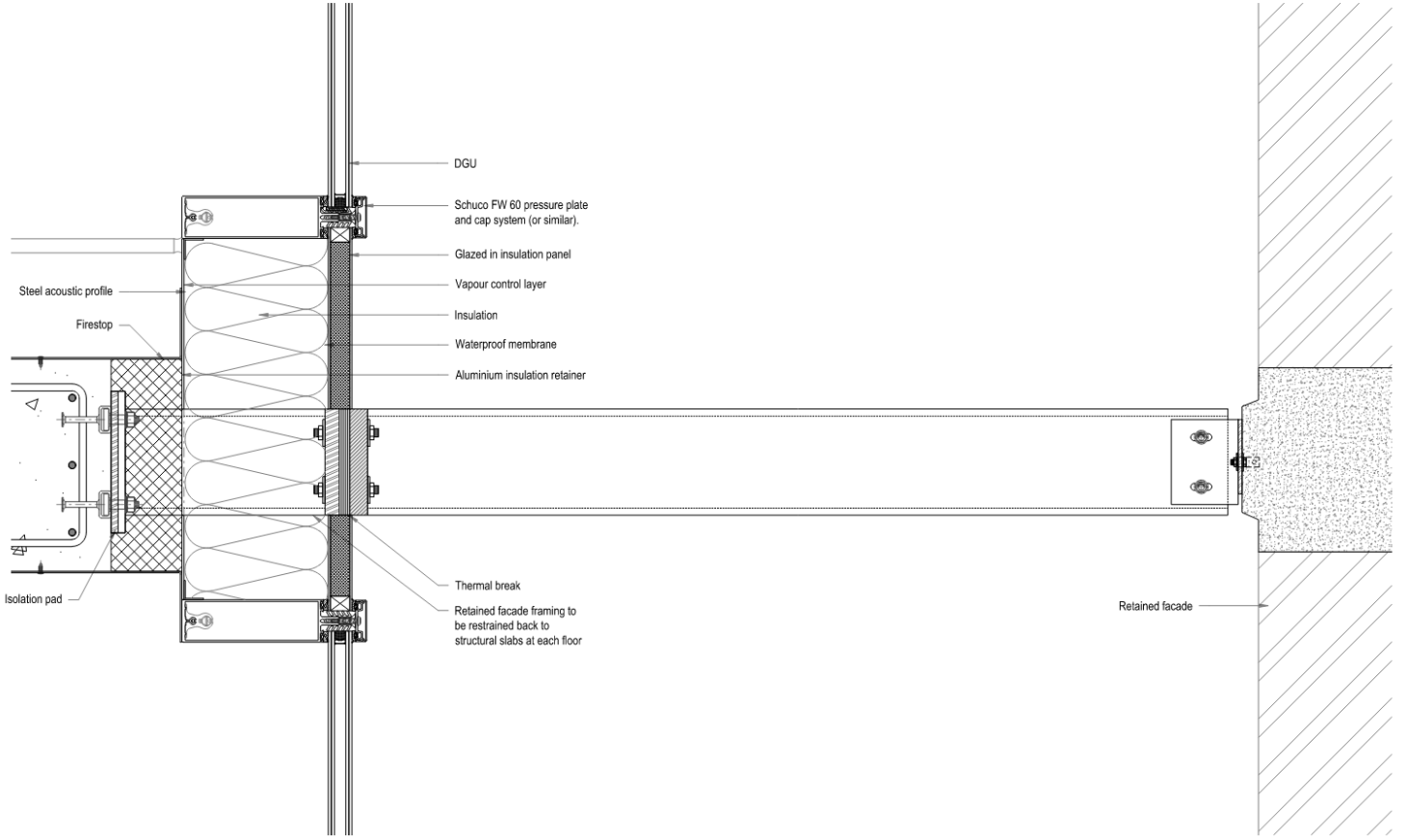

01
S-111
194
50
452
800
4000
110
270
500
230
1600
4000
50
194
150
80
800
02
S-111
450
41
01
D-111
02
D-111
01
D-112
02
D-112


4000
1600
800
4000
800
800
4000

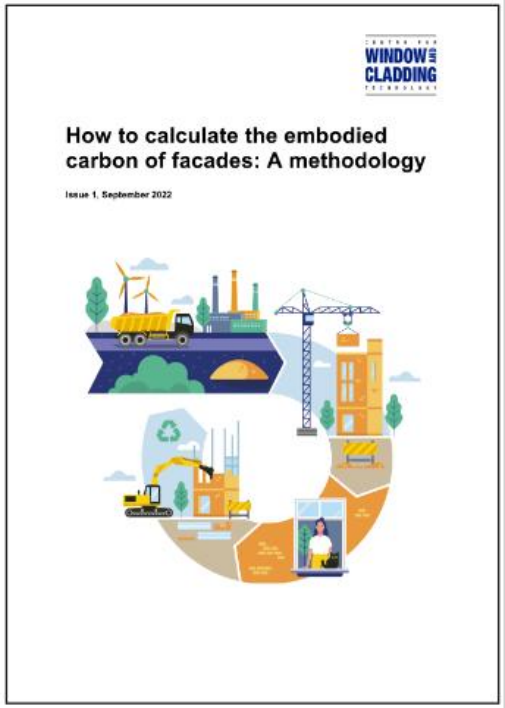
Façade Step.


01
S-112
194
50
800
4000
01
02
13
06
98
07
04
99
98
110
1600
11
11
270
500
11
230
12
99
51
12
98
03
02
98
51
50
99
194
1000 (variable)
450
03
41
800
01
02
194
150
80
50

Retained Façade - Ground floor.

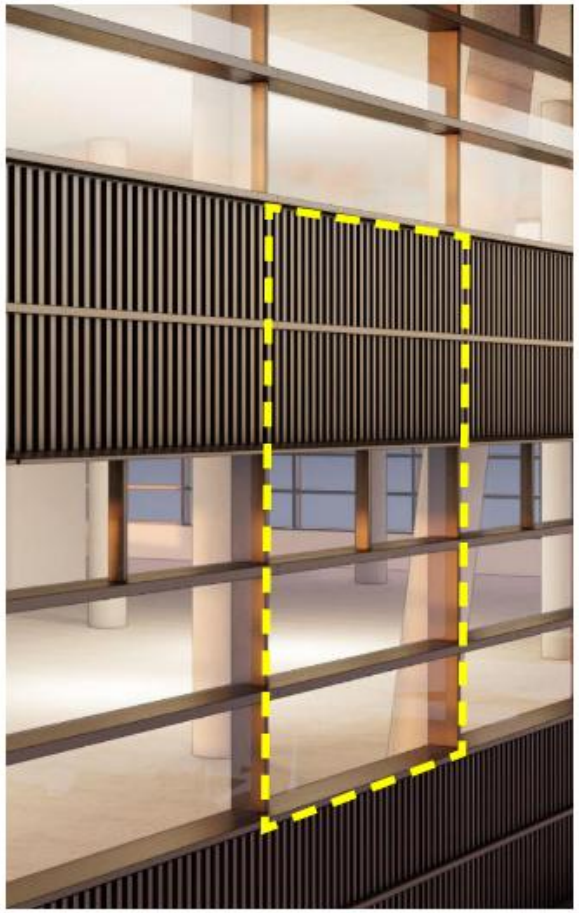


Embodied Carbon

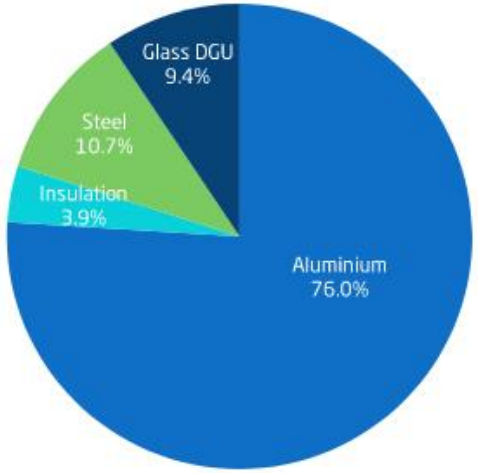


Life cycle phase	Production			Construction		Use					End of life			Recy
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	C1	C2	C3	C4
Module description	Raw material extraction and supply	Transport to manufacturing plant	Manufacturing and fabrication	Transport to project site	Construction and installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Deconstruction	Transport to disposal facility	Waste processing for reuse, recovery or recycling	Disposal	Reuse Recovery Recycling	
						B6 Operational energy use										
						B7 Operational water use										
Design actions	Embodied carbon calculations			Improve DfMA		Design in "layers"					Circular design				Design for reuse	
Design targets	LETI targets															
	RIBA targets															
Analysis scope	Cradle to gate															
	Cradle to practical completion															
	Cradle to grave															
	Cradle to grave including benefits and loads beyond the system boundary															

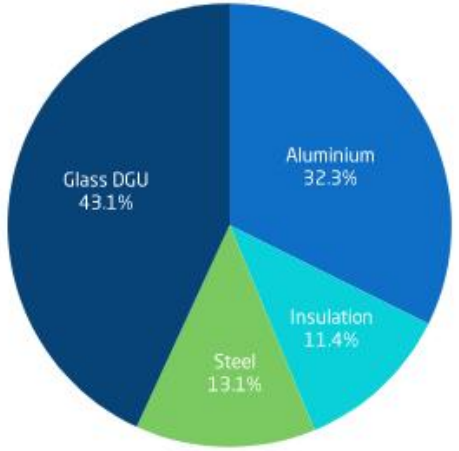
Embodied Carbon – Typical Bay.



Facade materials and components				Properties			Embodied Carbon
Component	**Material**	**Quantity**	**Service Life [years]**	**Density [kg/m³]**	**Embodied carbon per unit material [kg CO_2e / kg]**	**# of replacements over 60-year the building life**	**As built (A1-A3) [kg CO_2e/m^2]**
Aluminium	Aluminium extruded profile, European Mix, Inc Imports	0.100 m³	60	2750	8.75	0	198.1
Insulation (mineral wool)	Mineral wool	0.960 m³	30	100	1.28	1	10.2
Steel	Steel, electrogalvanised steel	0.014 m³	30	7850	48.77	1	27.9
DGU	DGU 12mm glass, ex cavity and ex frame	6.04 m²	60	2500	81.28	0	24.5
Facade unit area	12.0 m²					**Total**	**260.8**



Embodied carbon A1-A3: Aluminium is the main contributor of embodied carbon for a typical facade bay



Weight of components in a typical facade: glass DGU is the heaviest component


OFFICE
TO LET
1800 sq ft
Tel:
07957 368 522
Lucania
ONE STAGE
THE COMEDY CLUB
20


THE CHARTIST
NXQ

akt II

akt-uk.com