Albert Bridge House.

A Case Study.

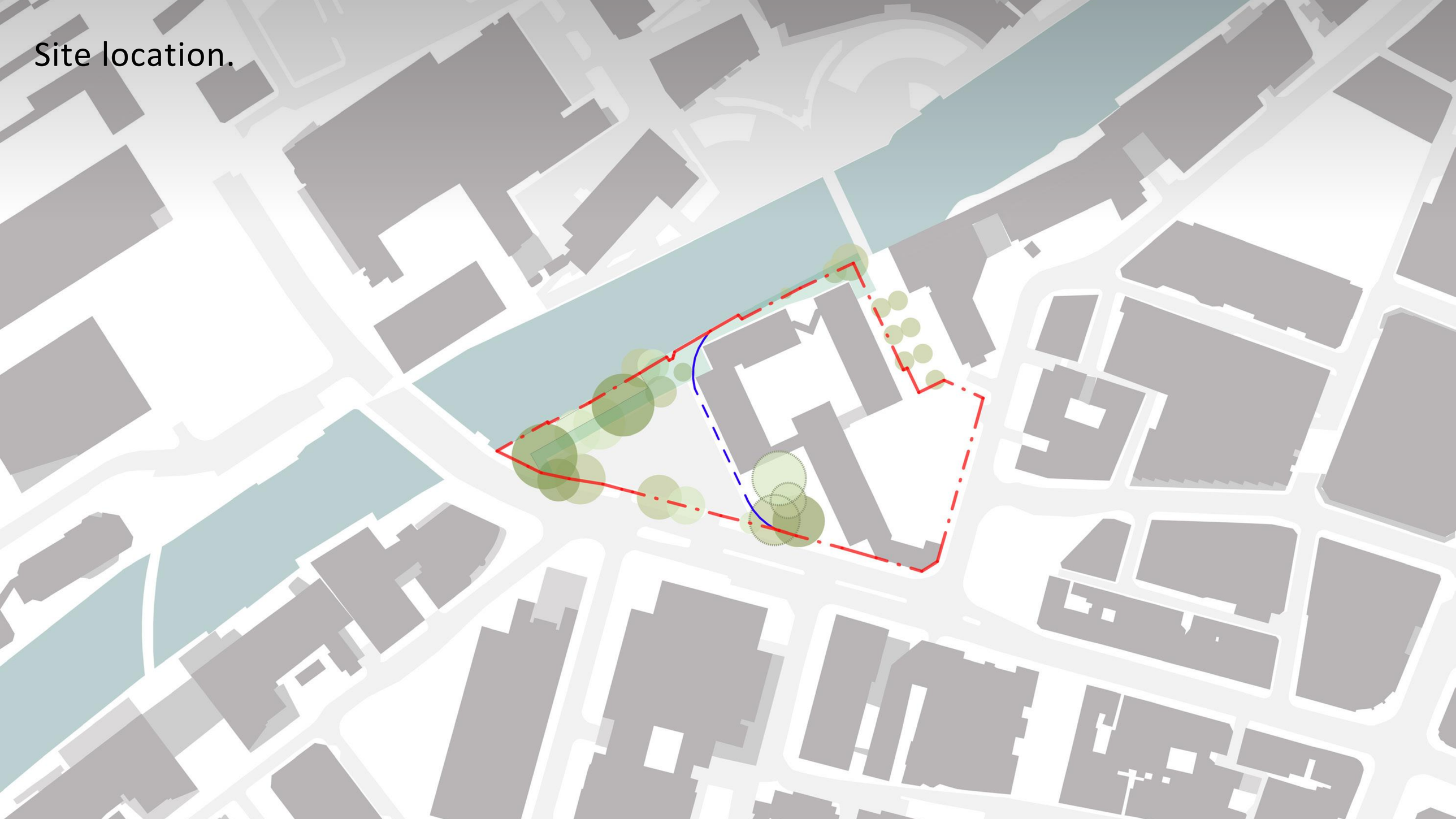
March 2026

Simon Smith – Manchester Studio Lead
Simone Miriana – Head of Façade Engineering

akt II

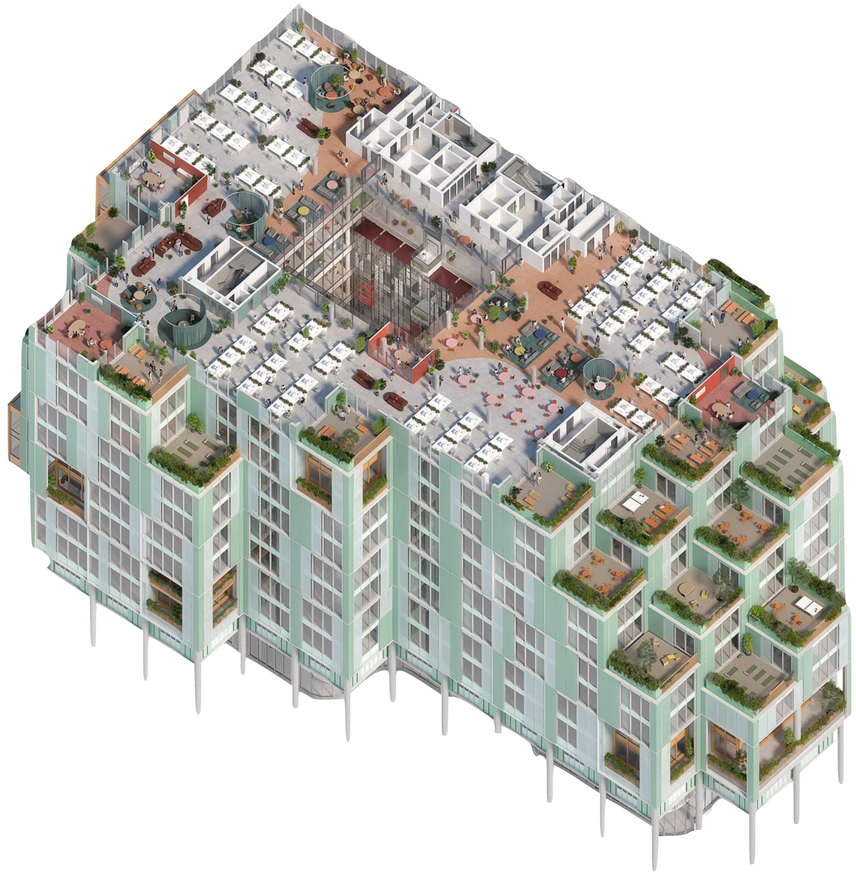
The project team.

Site location.

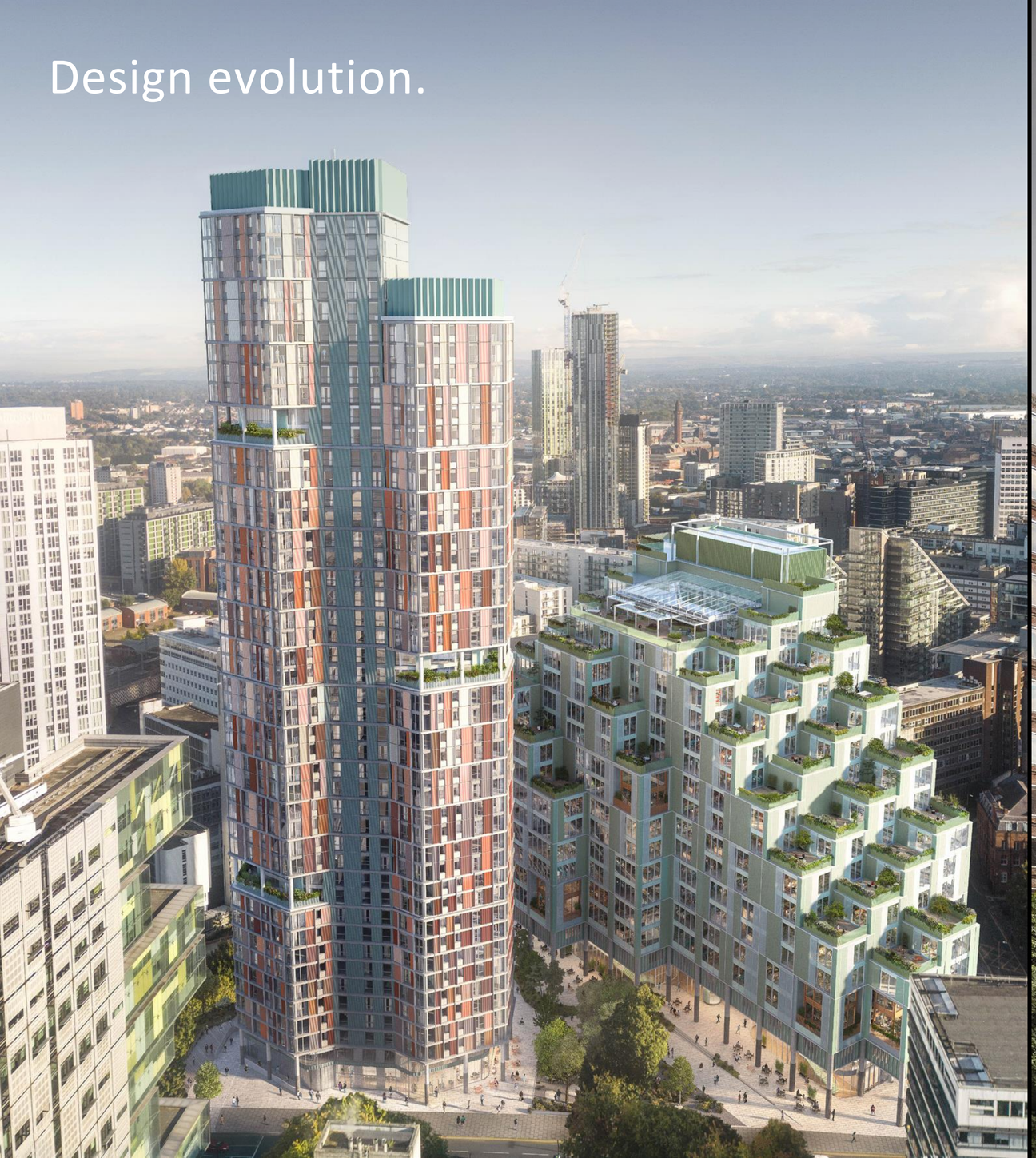


Design Evolution.

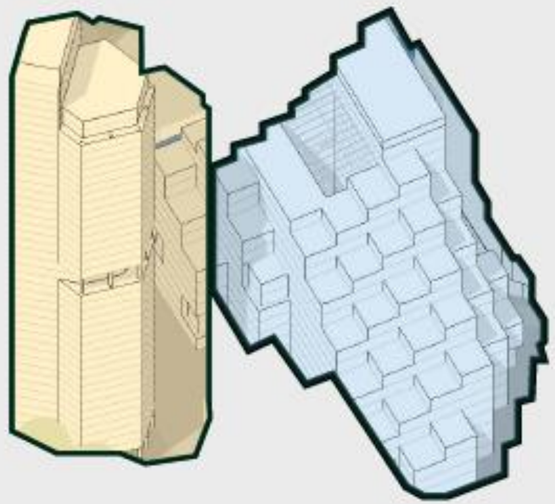
2023 consented scheme.



Design evolution.



Pre Application Meeting 01.



2023

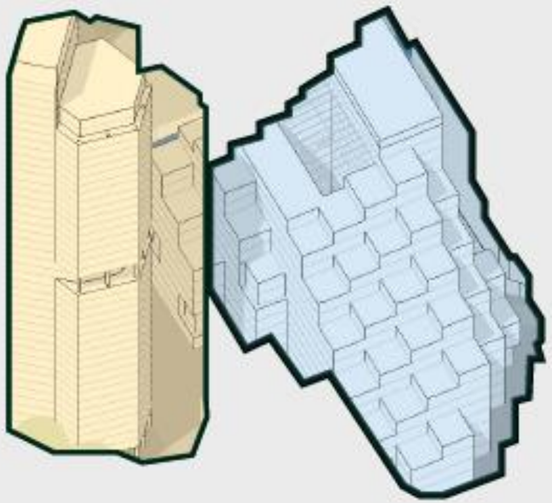
370
Homes (BTR)

370 000 sq.ft
Office NIA

3800 sq.m
Public space

1600 sq.m Green
space

Pre Application Meeting 01.



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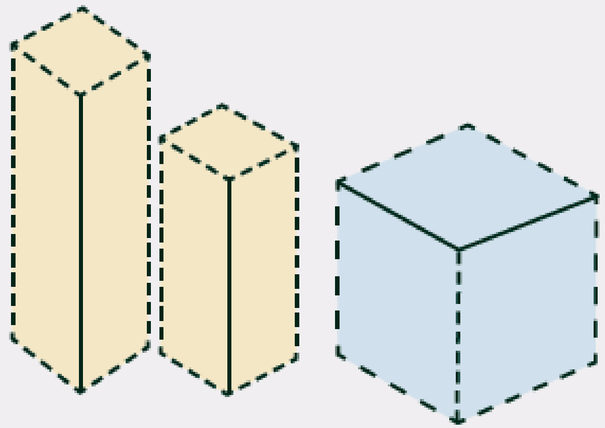


2024

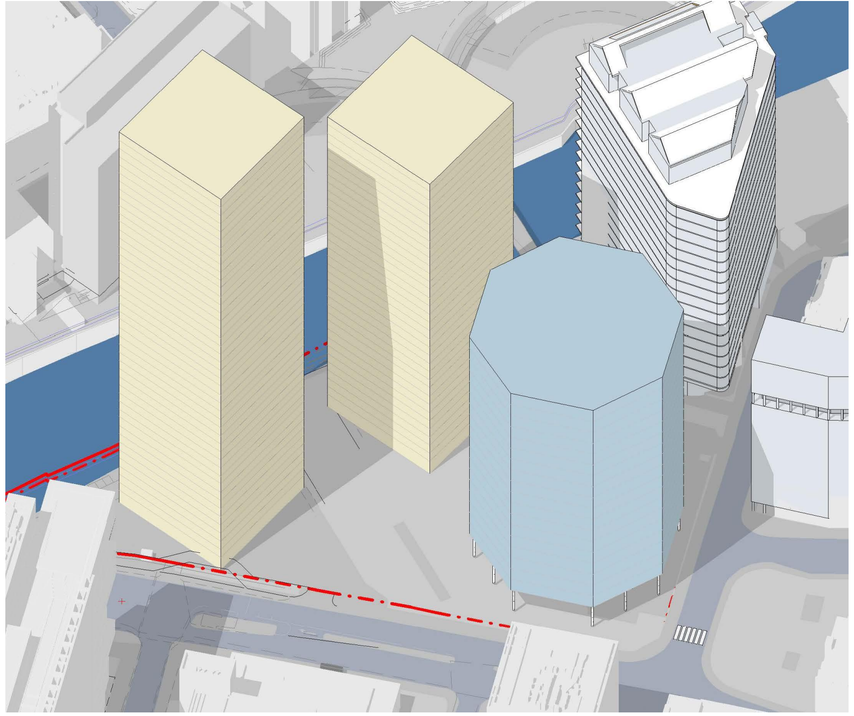
700 - 800
Homes (BTR)

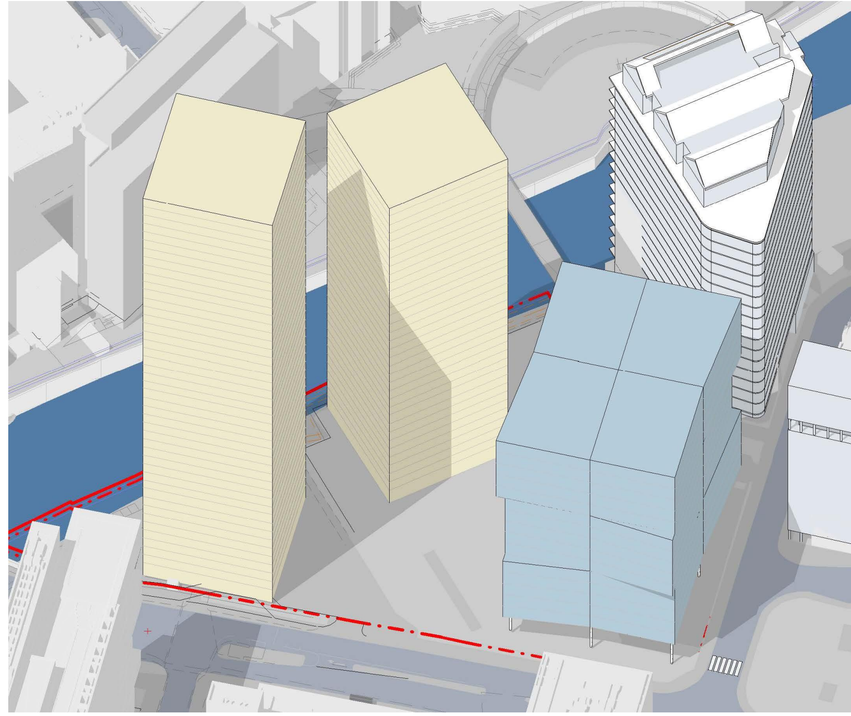
250 000
sq.ft Office NIA

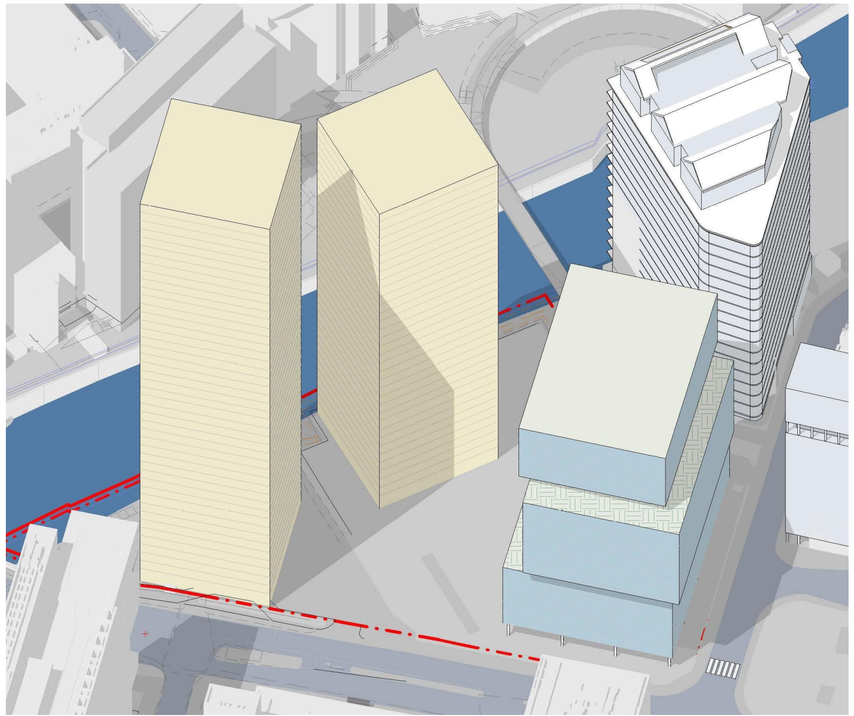
4500 sq.m Public
space

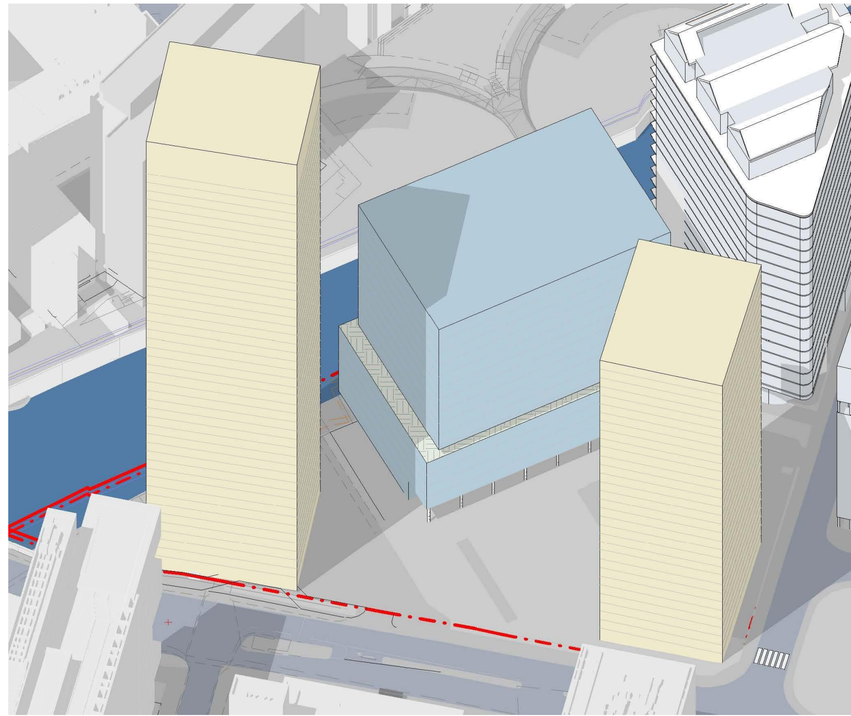
1800 sq.m Green
space

Engagement Meeting with Manchester City Council.



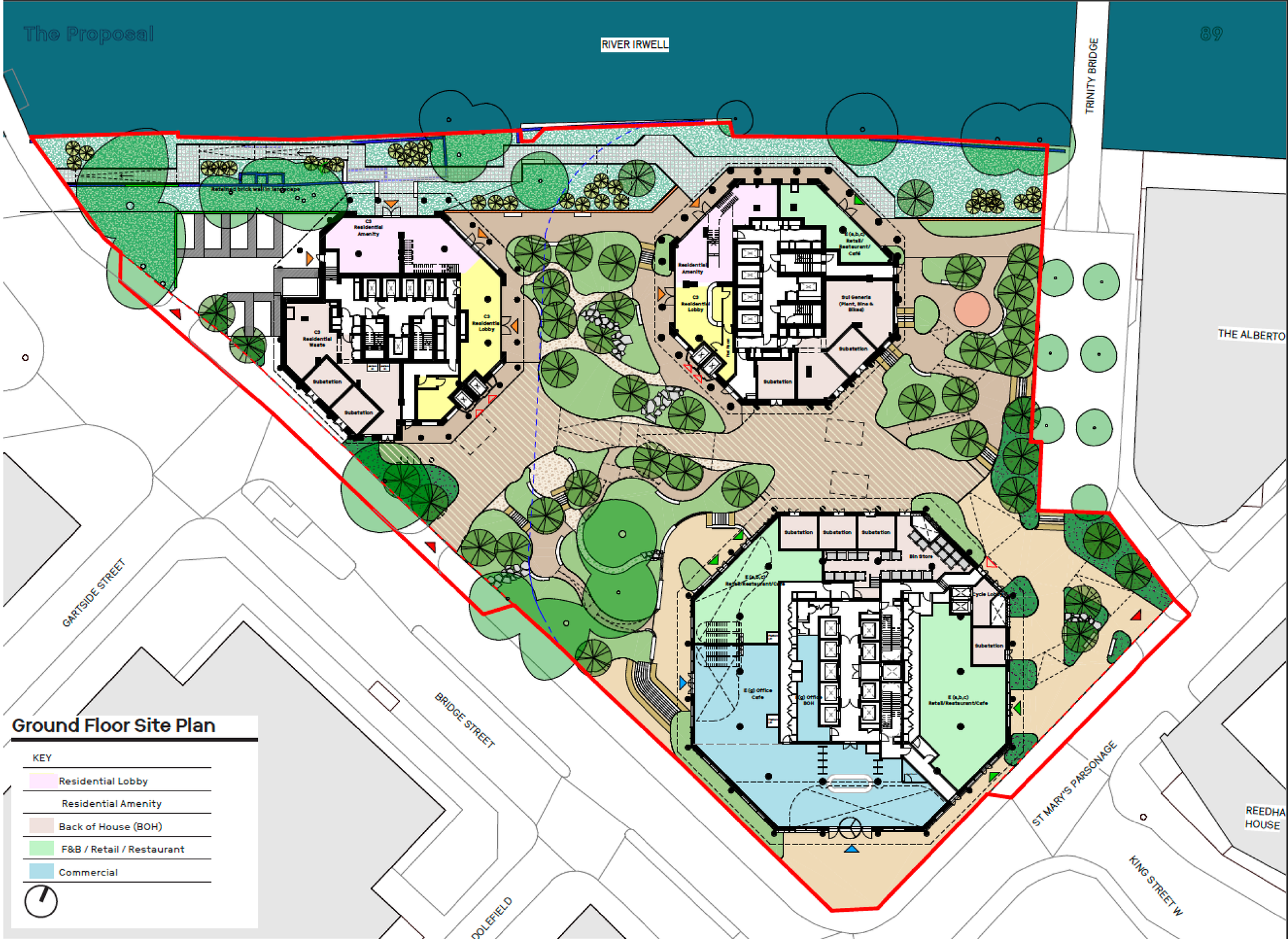




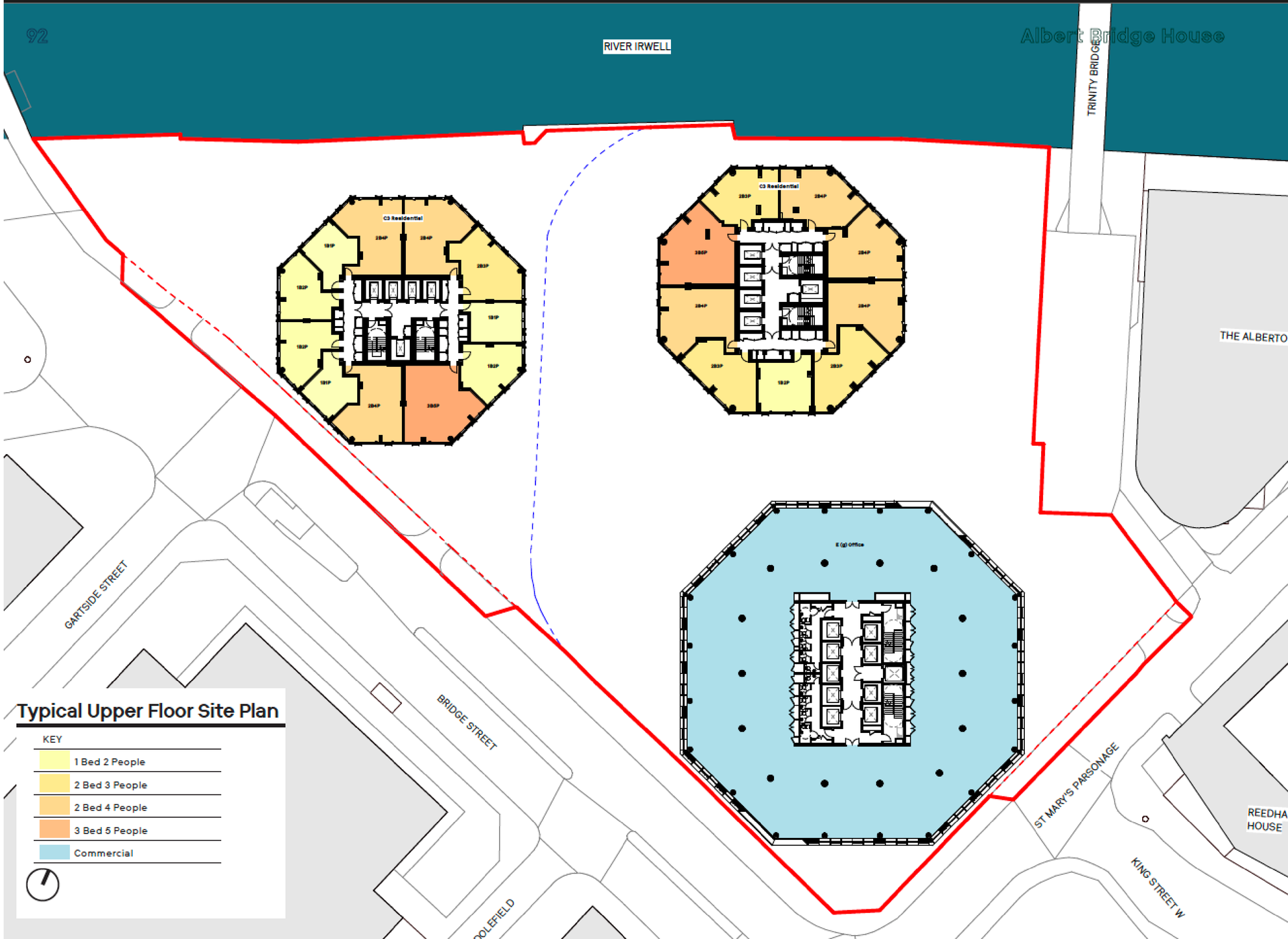


Development summary.

The proposal.



The proposal.

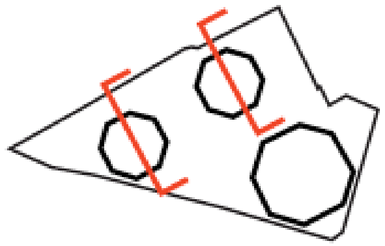


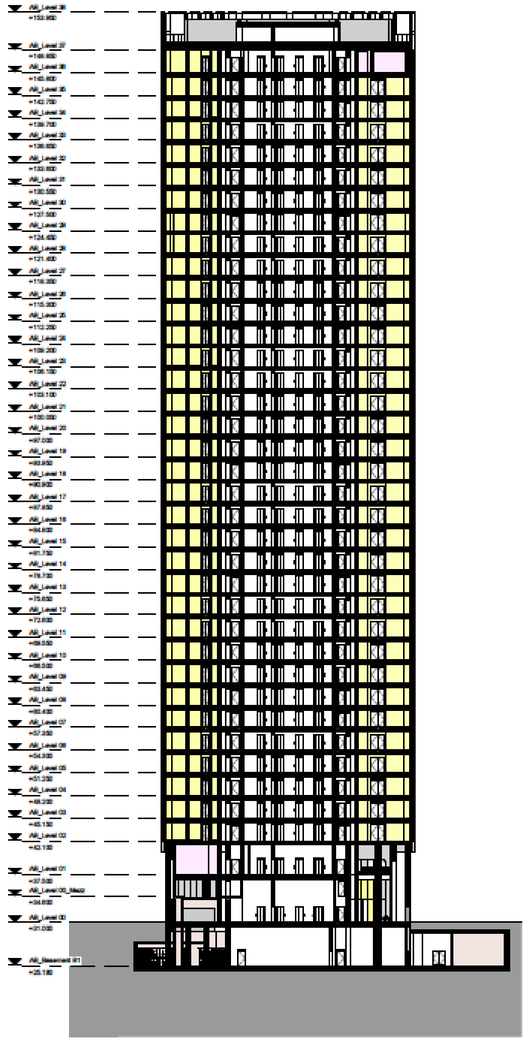
Building sections.

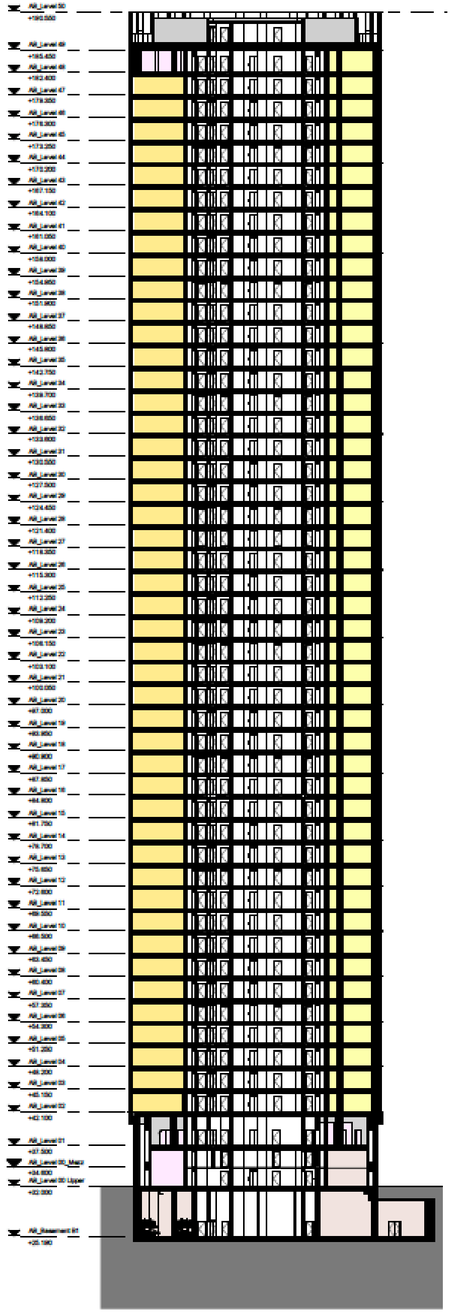
- Block A - 37 storey
- Block B - 49 storey
- Block C - 20 storey

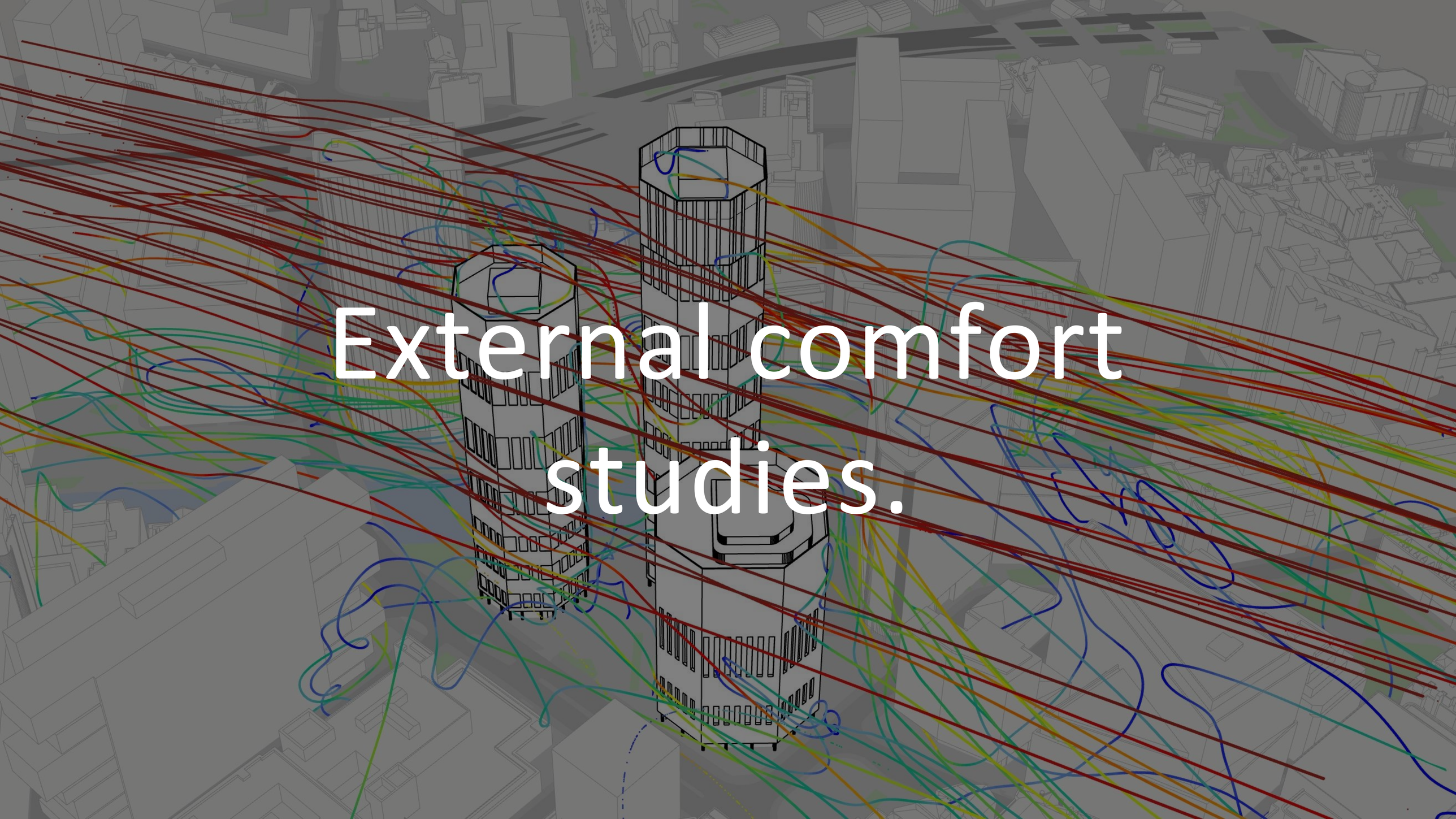
KEY

- Residential Lobby
- Residential Amenity
- Back of House (BOH)
- F&B / Retail / Restaurant
- Commercial









External comfort studies.

Interpreting comfort results.

1 External Terraces + Balconies **and**

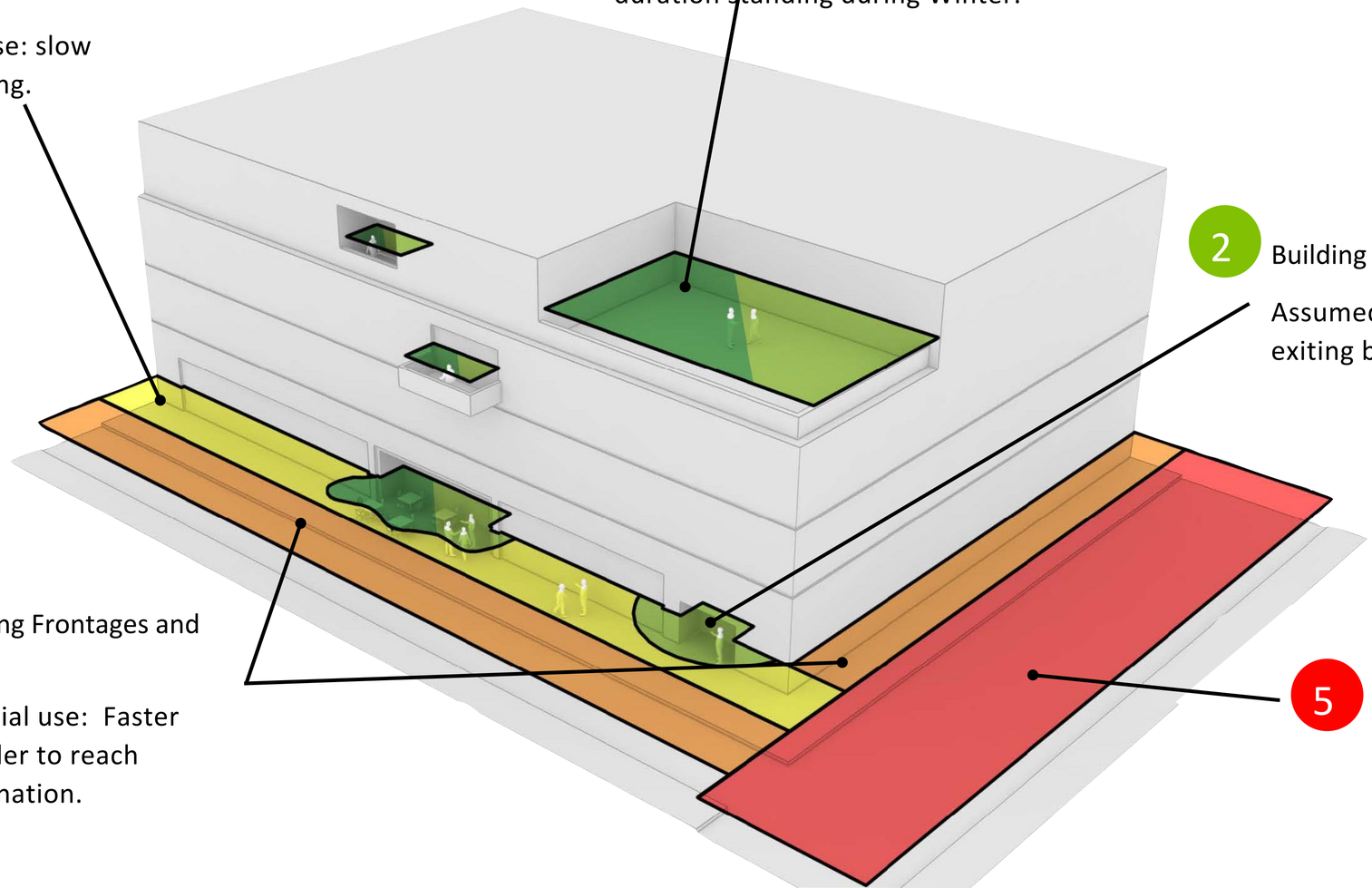
Ground-level seating - such as restaurants and plazas

2

Assumed spatial use: Longer duration sitting during Summer, and shorter duration standing during Winter.

3 Active Building Frontages and Plazas and Parks

Assumed spatial use: slow walking and strolling.



2 Building Entrances

Assumed spatial use: Entering and exiting buildings.

4 Inactive Building Frontages and Streets

Assumed spatial use: Faster walking in order to reach another destination.

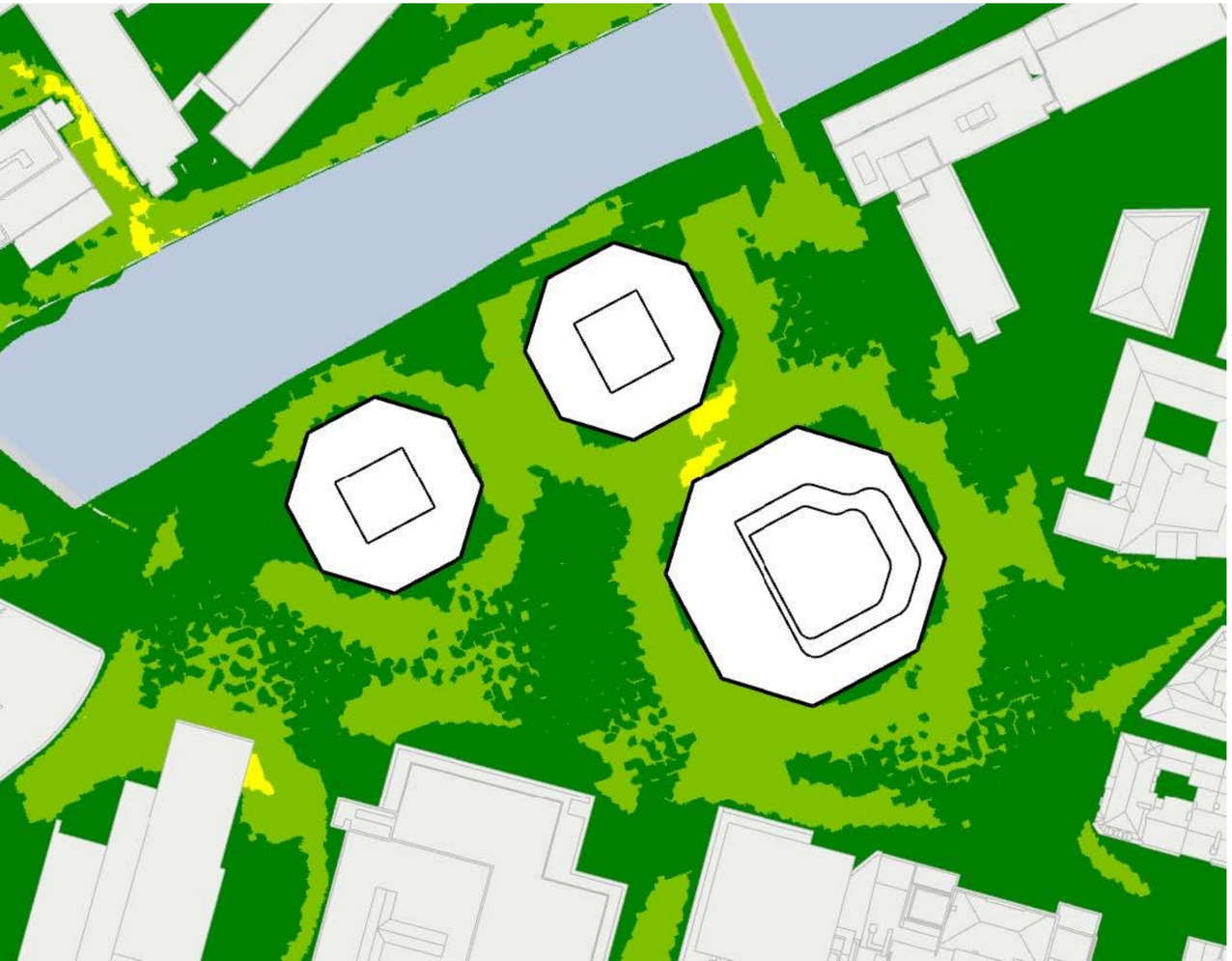
5 Main Roads

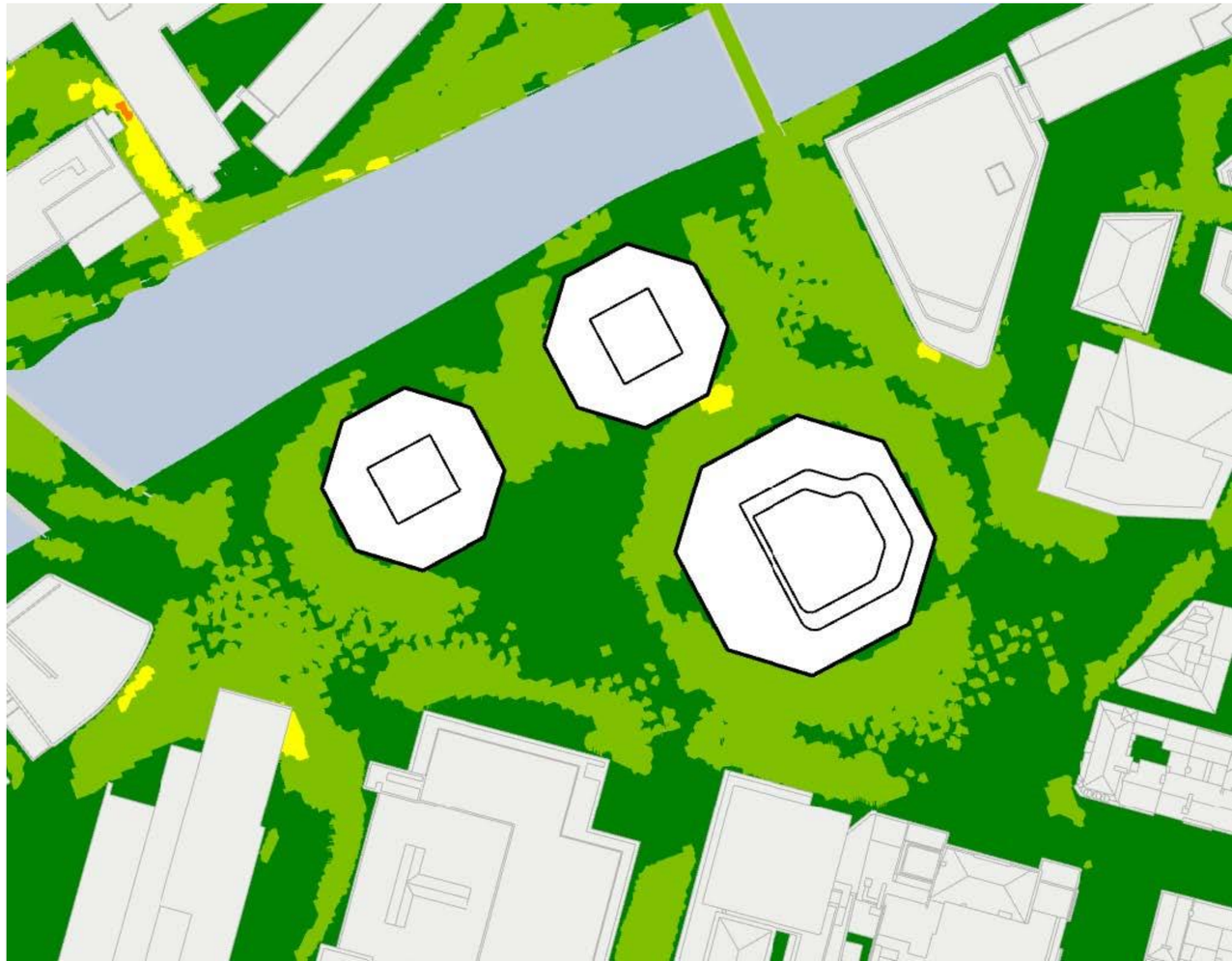
Assumed spatial use: Busier roads and other exposed spaces unsuitable for most activities.

Ground-level comfort.

Winter season.

Sitting
Standing
Strolling
Business Walking
Uncomfortable and/or Unsafe





Ground-level comfort.

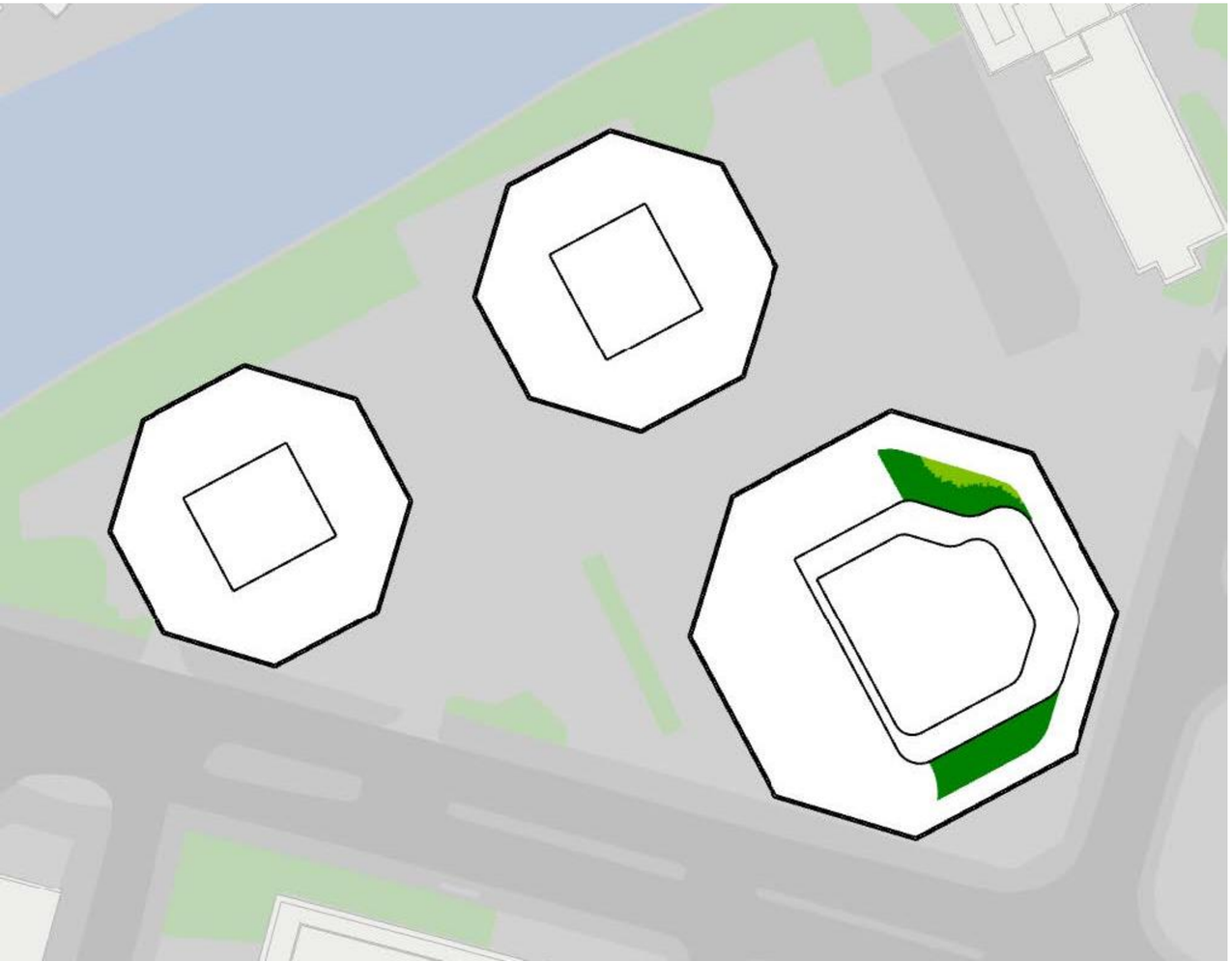
Summer season.

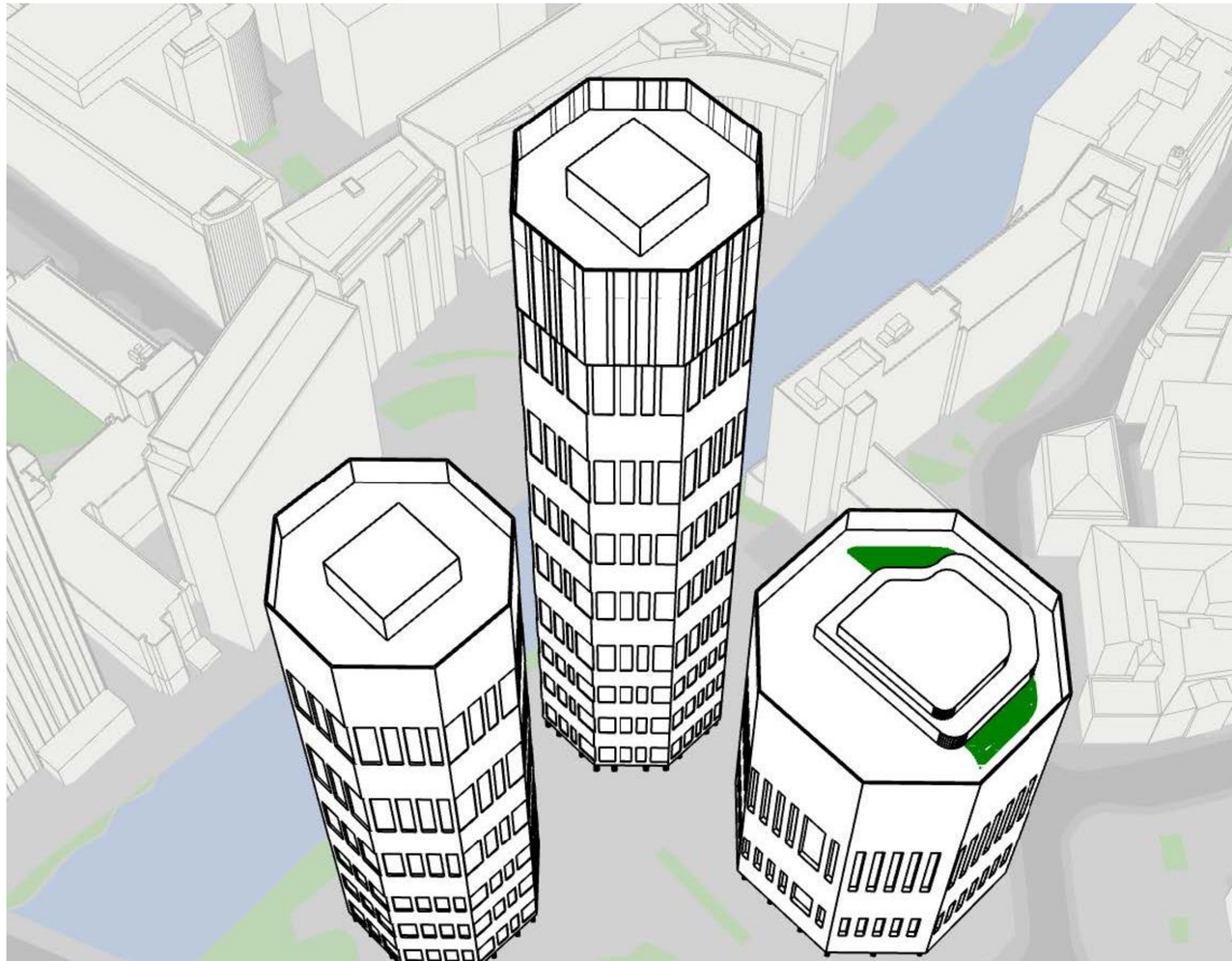
Sitting
Standing
Strolling
Business Walking
Uncomfortable and/or Unsafe

Terraces and balconies.

Unacceptable
Acceptable

Sitting
Standing
Strolling
Business Walking
Uncomfortable and/or Unsafe



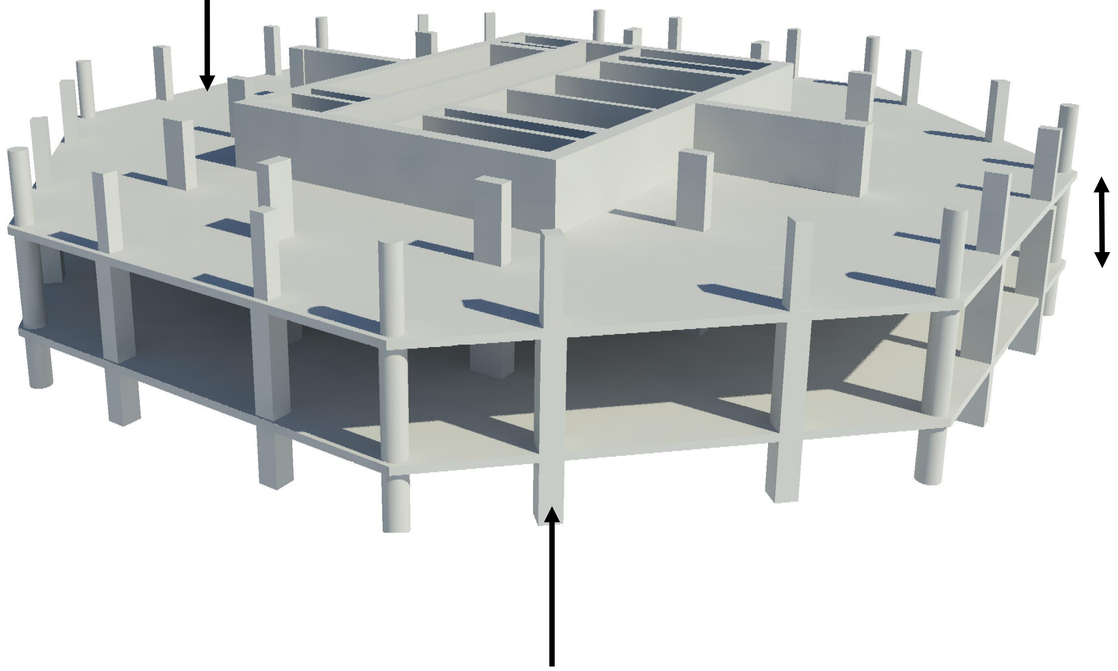


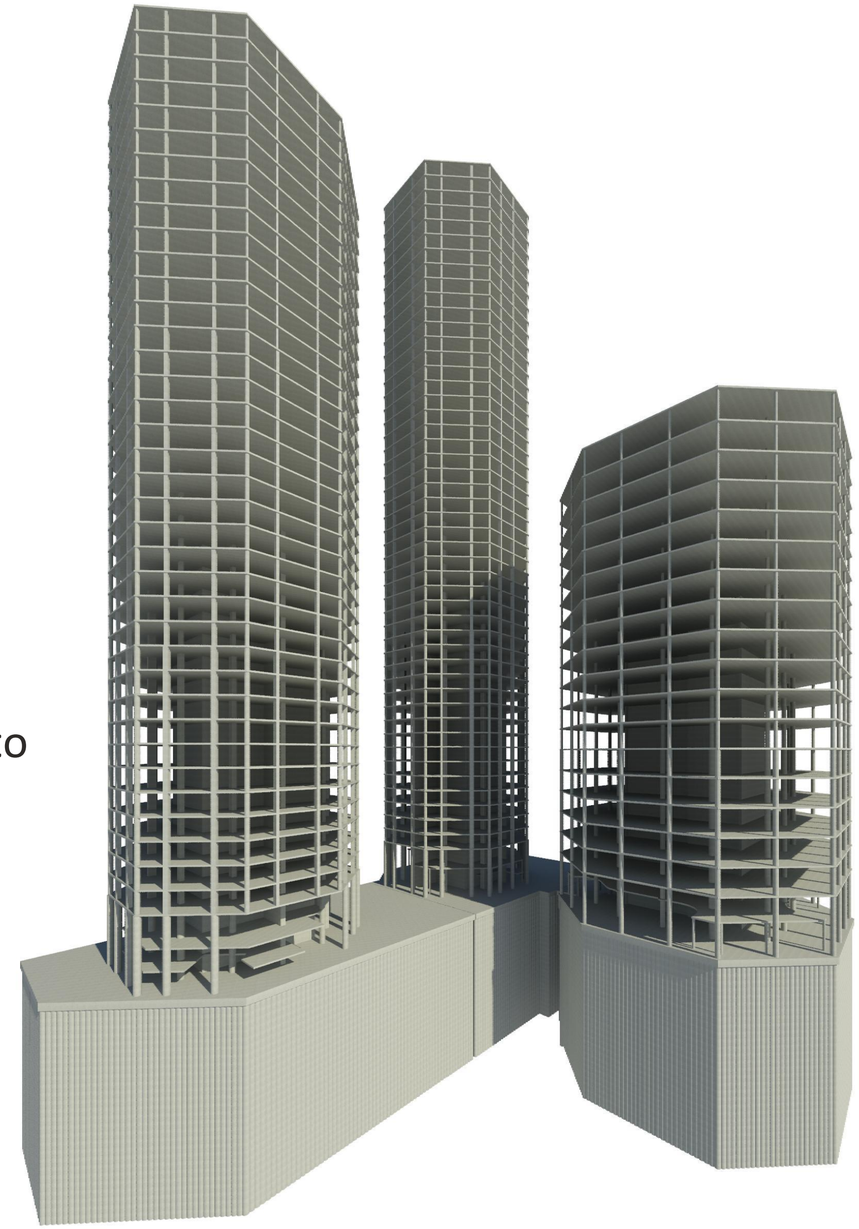
Structural design.

How do we add value?

Structural design.

We all know the answers…even the developer!



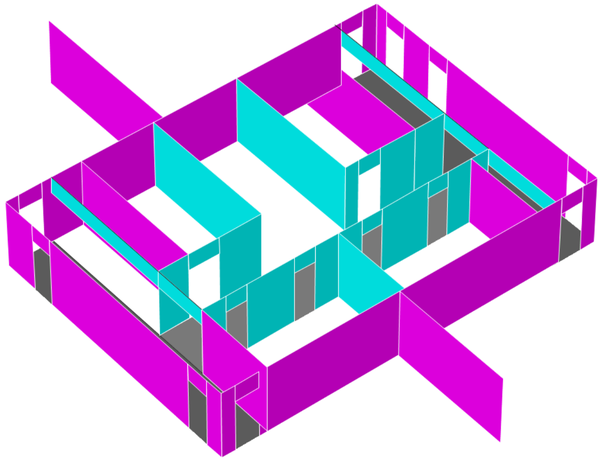


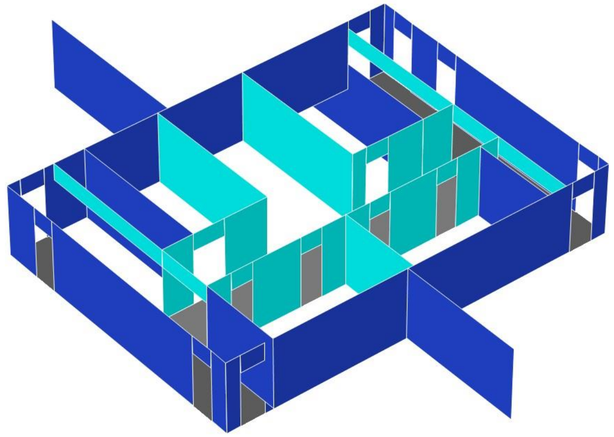
Structural design.

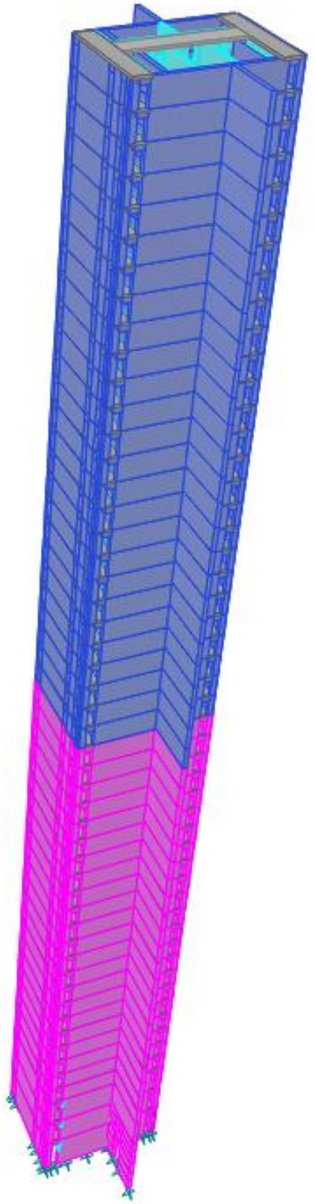
So, where do we add value… ?

Defining the building stability philosophy as early as possible

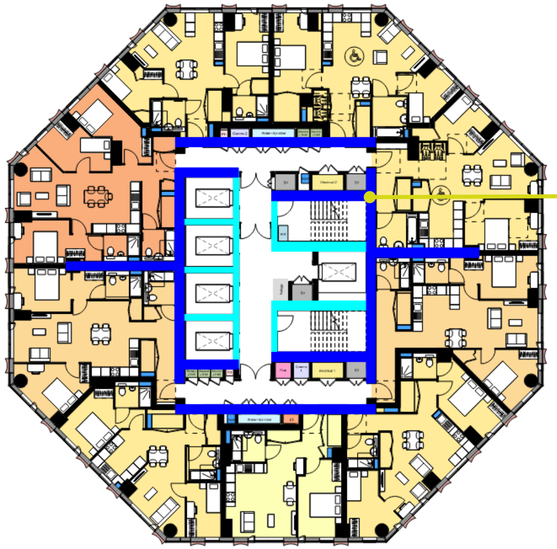
- Core layouts and wall thicknesses
- Shear walls
- Outrigger walls





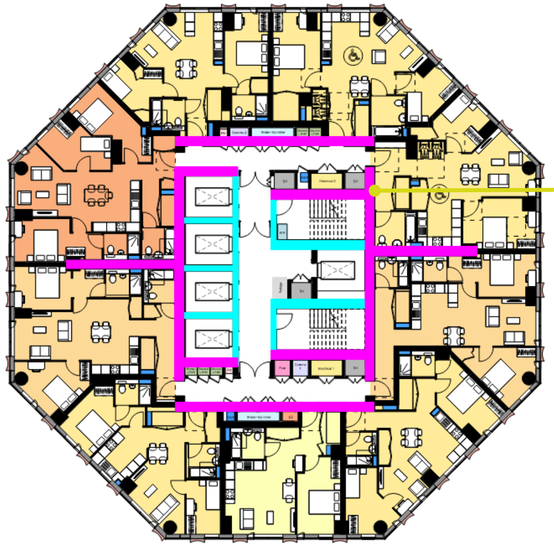


Structural design. Core stability assessments.



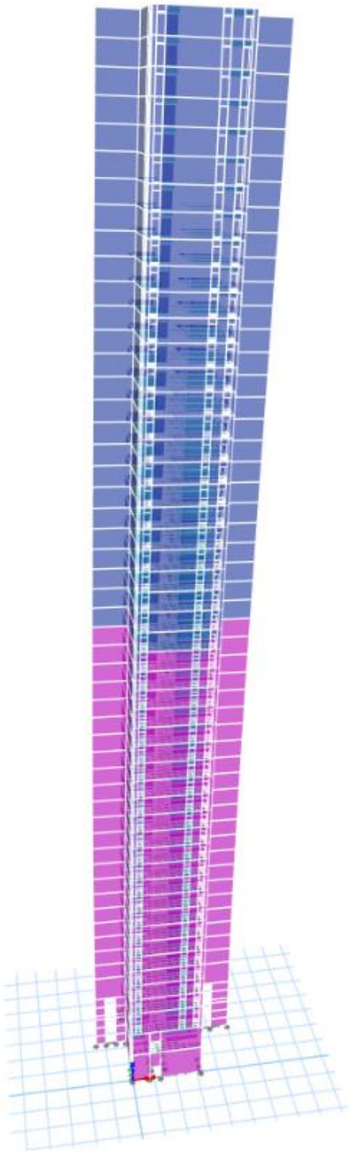
475mm perimeter core walls

250mm internal core walls



600mm perimeter core walls

250mm internal core walls



25 storeys

24 storeys

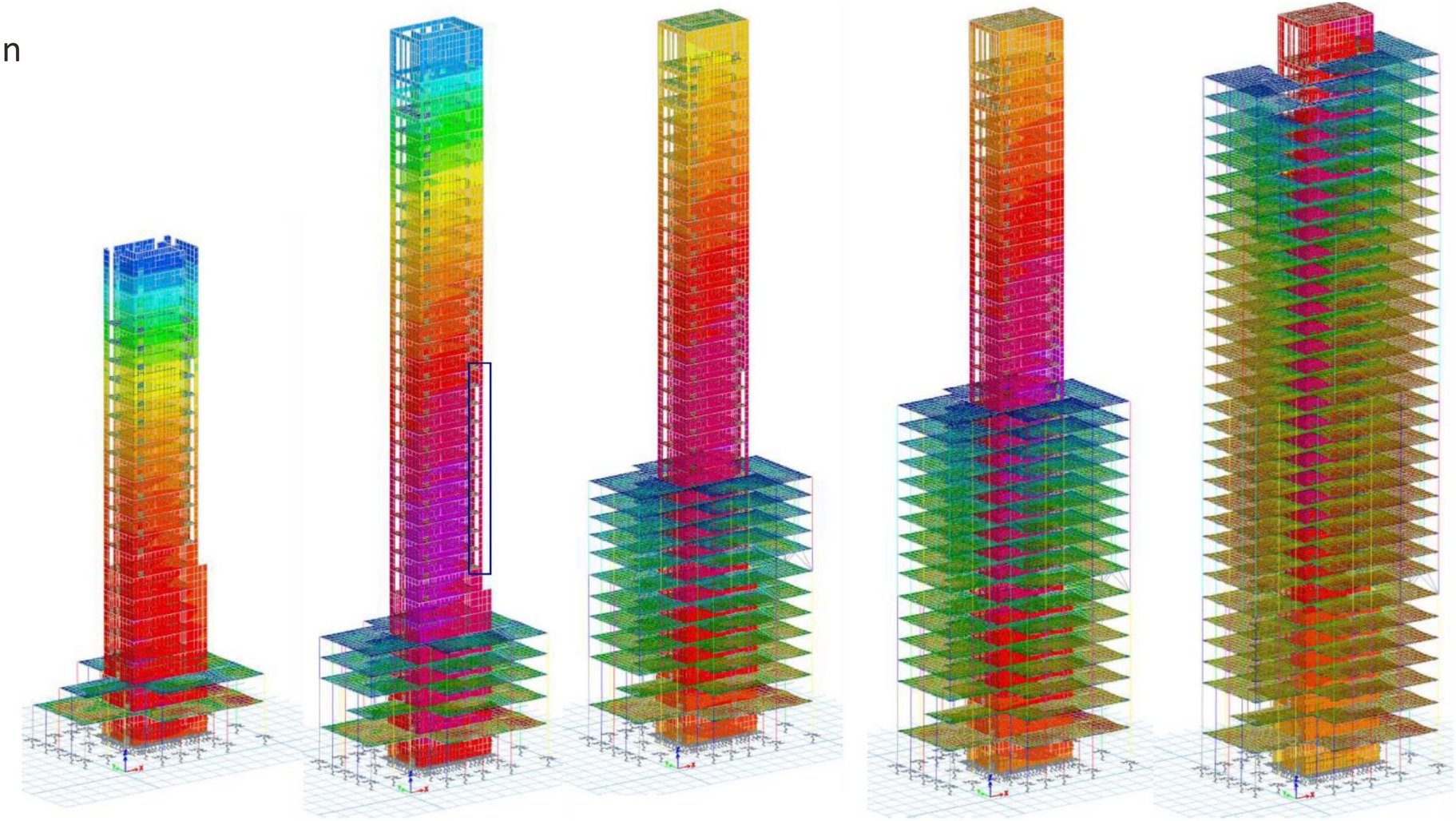
Deflection of Primary Core Walls	
Overall Structure Deflection Limit	215 mm
Overall Structure Deflection	210 mm
Inter-Storey Drift Limit:	6.7 mm
Inter-Storey Drift:	6 mm

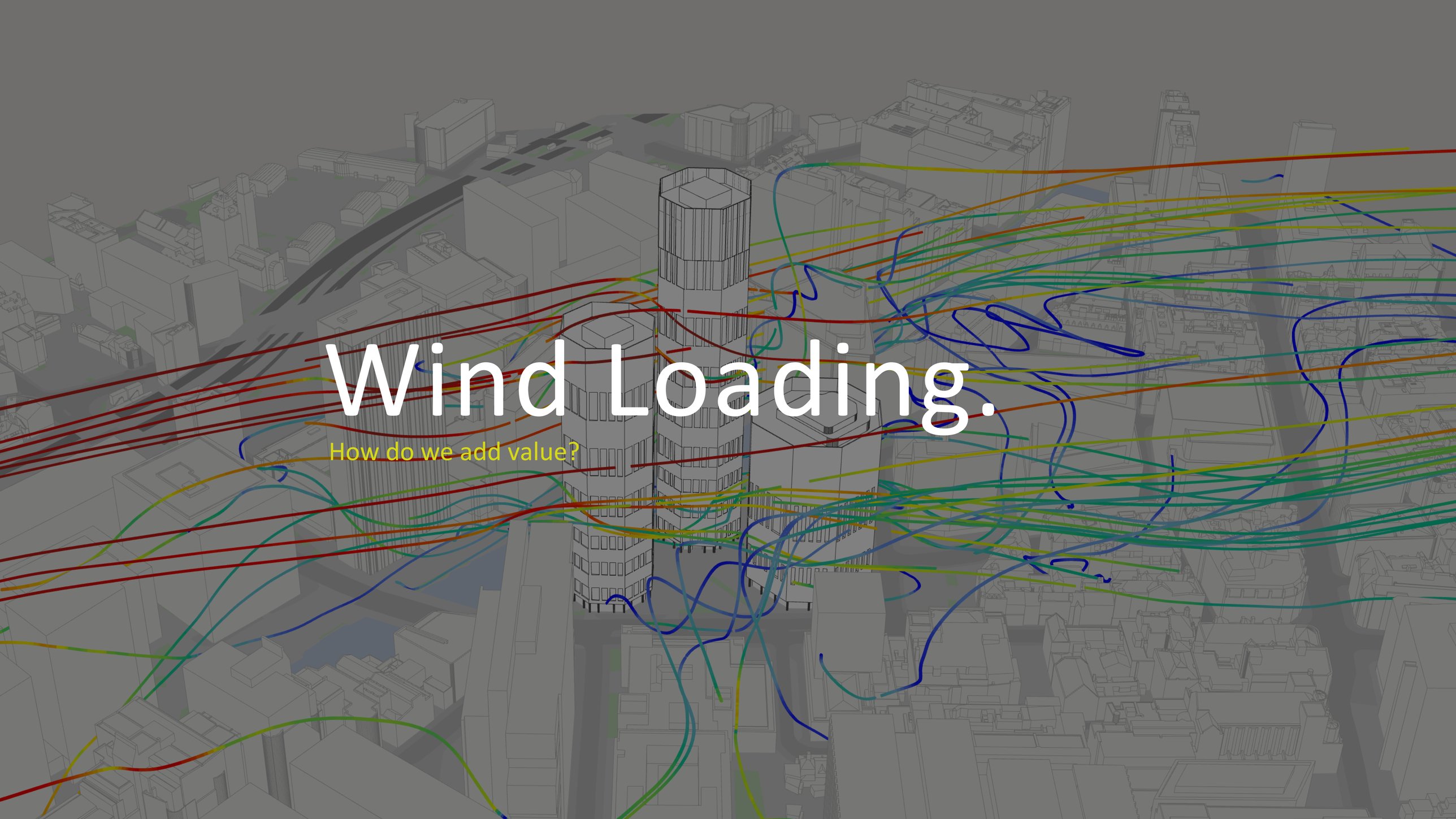
Structural design. How do we refine this?

Refine wind loading.

Construction sequence modellin

Time history analysis.



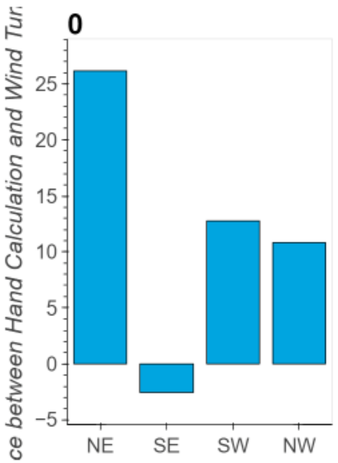


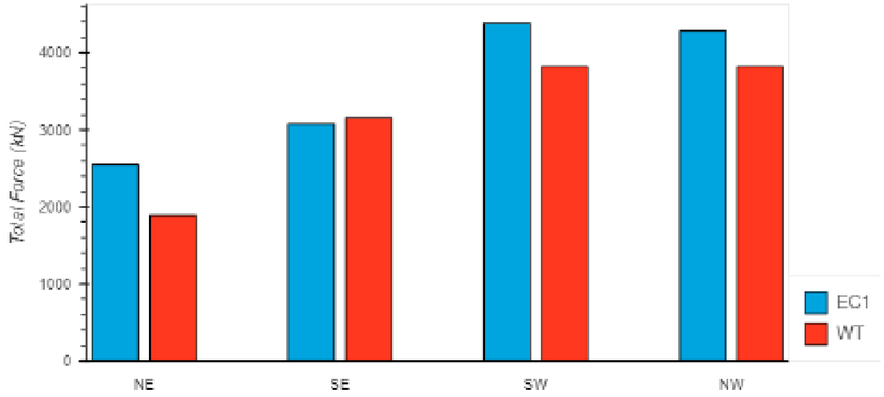
Wind Loading.

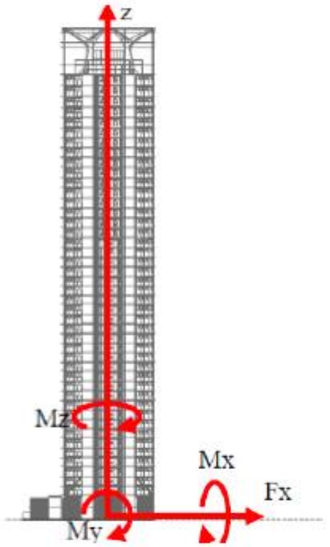
How do we add value?

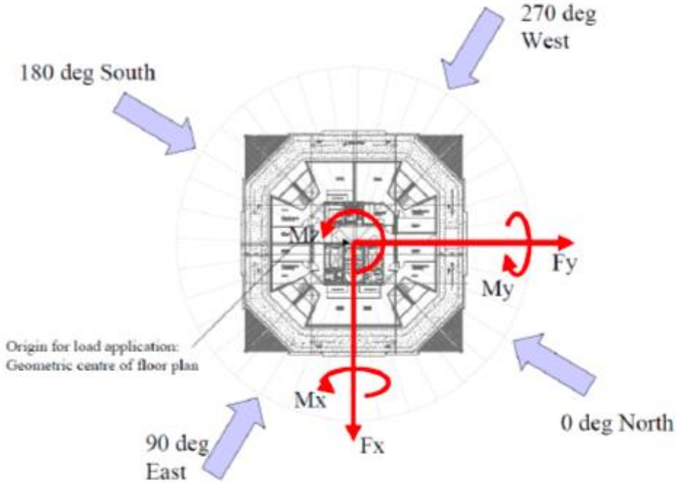
Wind load comparison. Highpoint.

Storeys: 44
Height: 140.8m
Width x Depth: 26m x 26m



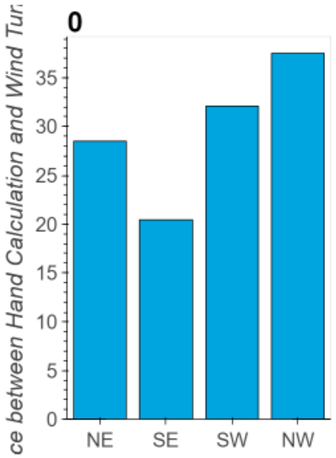


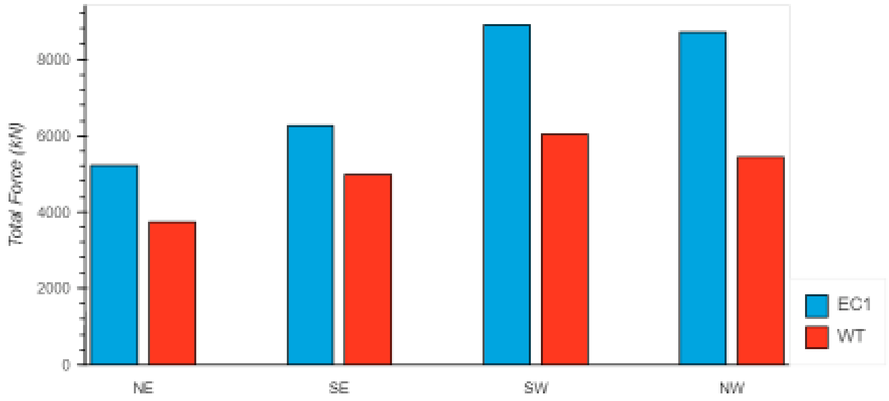


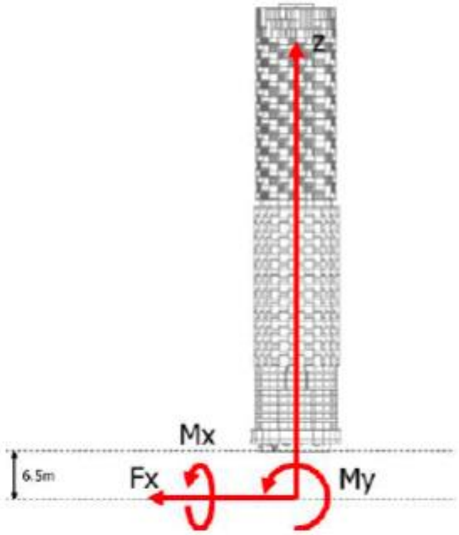


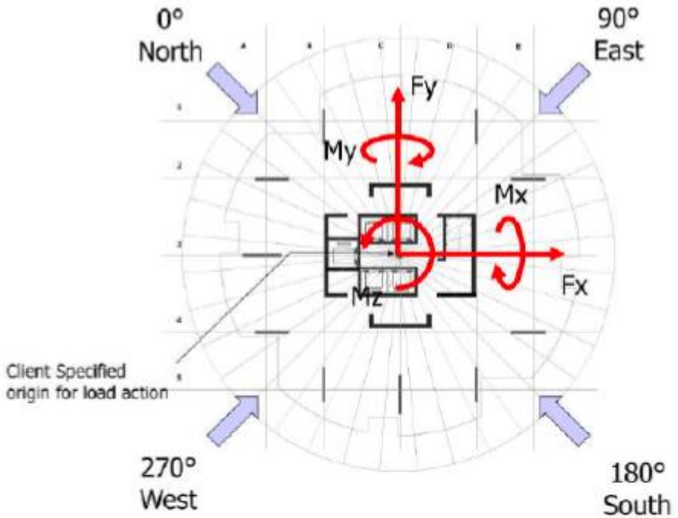
Wind load comparison. One Park Drive.

Storeys: 58
Height: 189m
Width x Depth: 37m x 37m



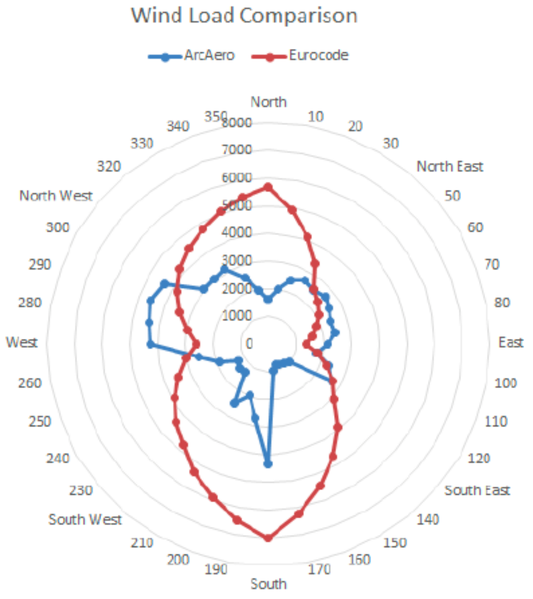


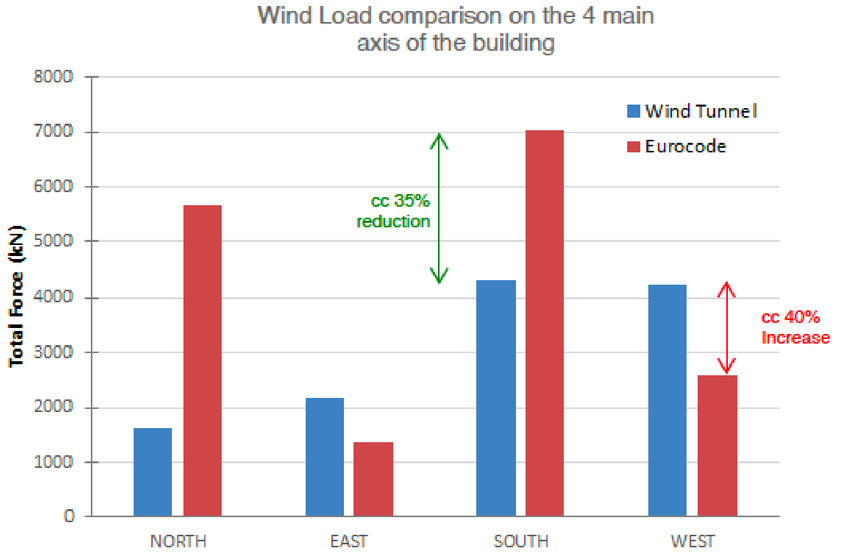


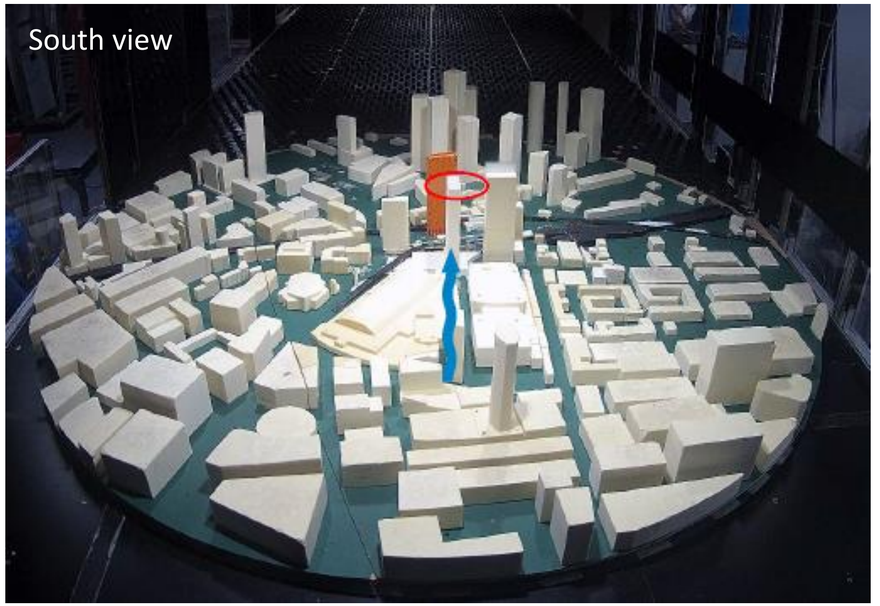


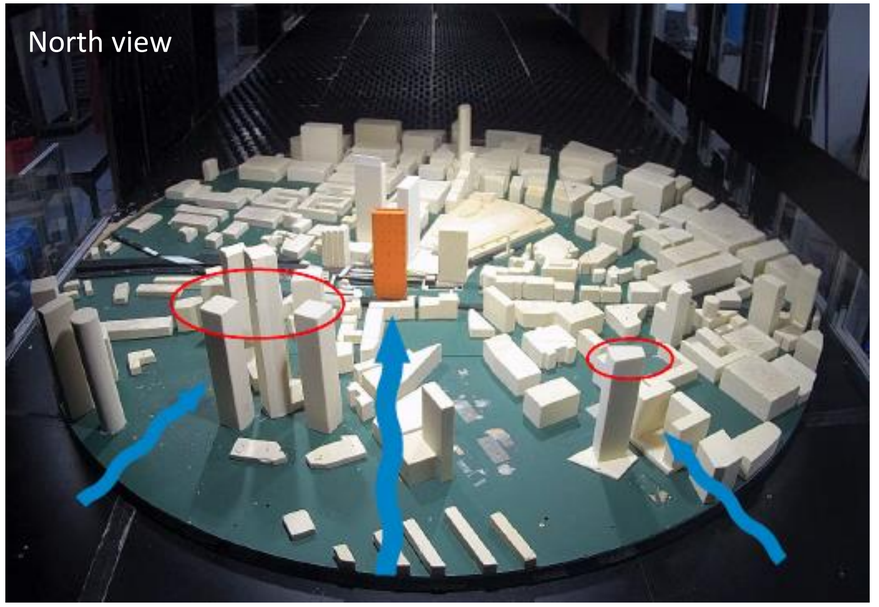
Local experience shows similar reductions.

We anticipate there may be a similar sheltering effect from the adjacent Spinningfields development and from the Affinity Living development to the north









Time scale…

as early as possible in the design programme, ideally wind tunnel testing data available at the start of RIBA Stage 3.

Benefits…

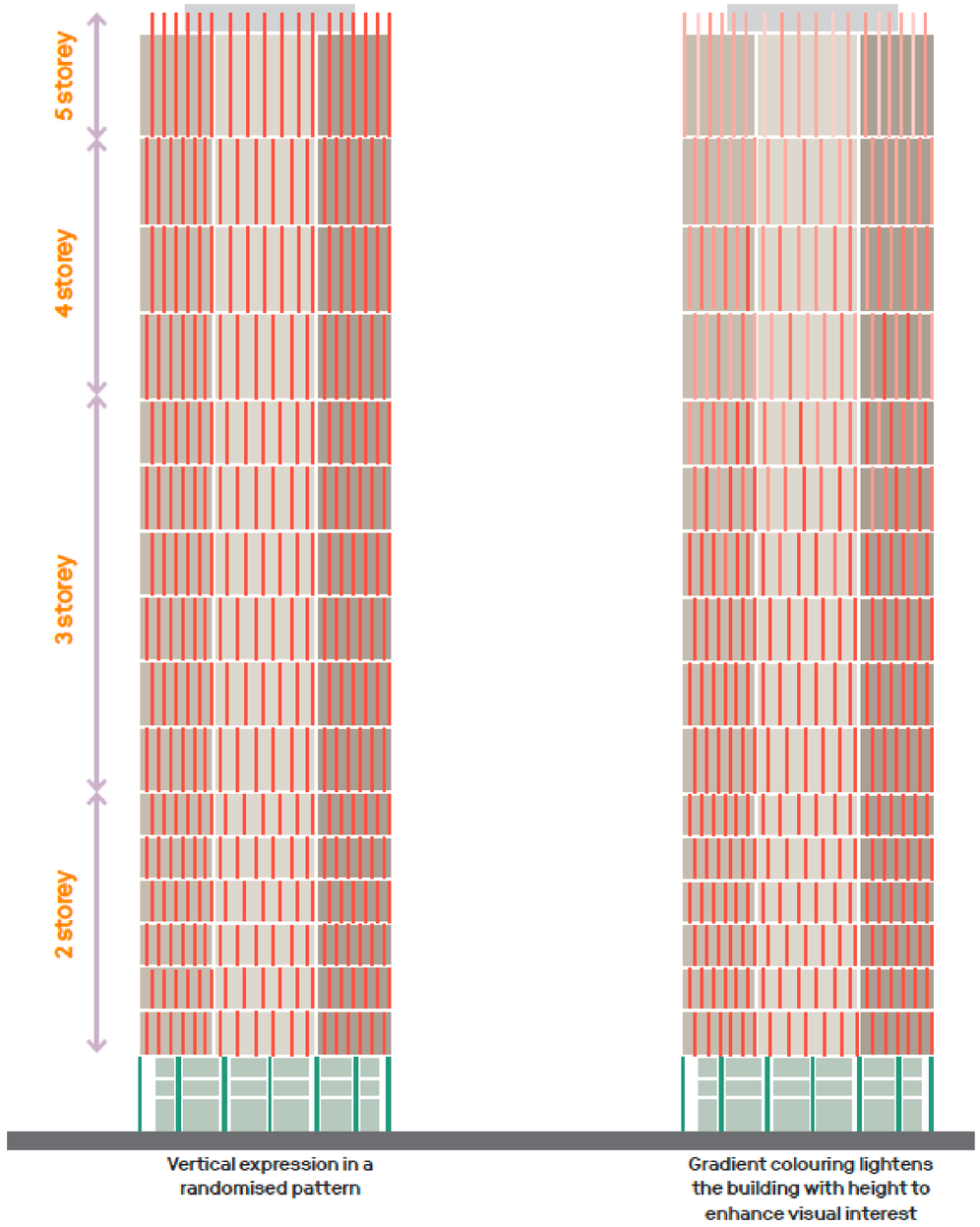
more efficient design / less material / can feed into envelopes design / building accelerations and resonance effects / occupant comfort & peak accelerations

Facade design.

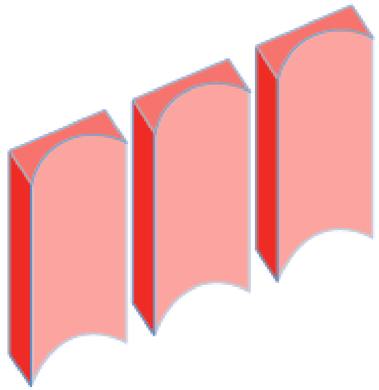
How do we add value?

Facade design.

Residential building principles.



Residential buildings.



Fixed glazed full height panel for living/ dining area

Scalloped feature panel

Glazed bedroom window with openable panel and 1100mm sill height

Metal mesh panel + glazed ventilation panel openable from the inside

Accent horizontal metal banding every 2, 3, 4 and 5 storeys

Fixed intercolor glazed spandrel panel

Bay studies.

Fig 354 Typical Bay Study Elevation

Façade design.

Commercial building principles.

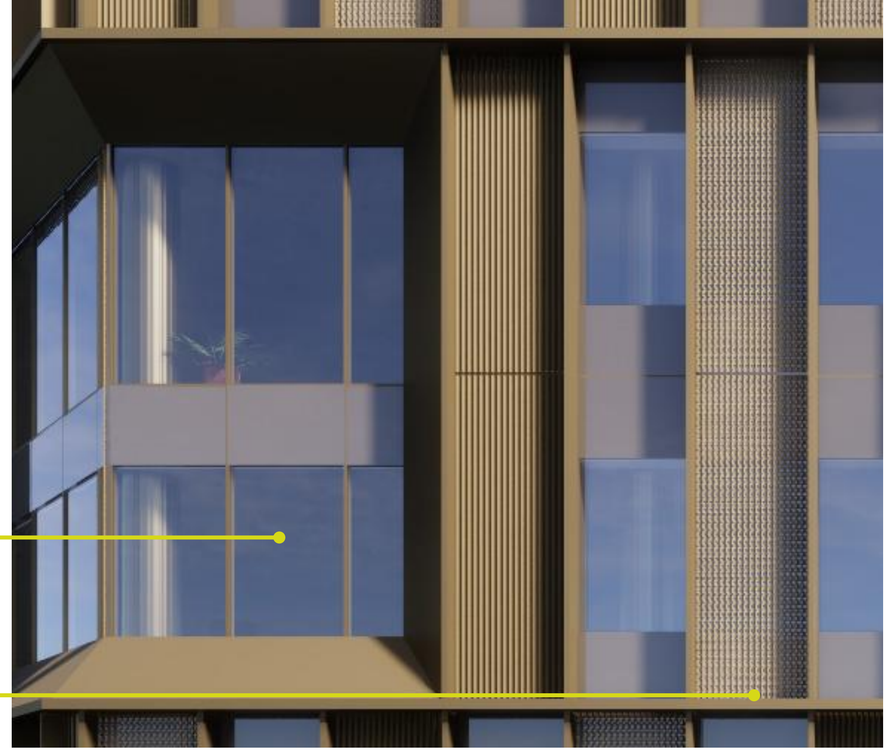
Facade language.

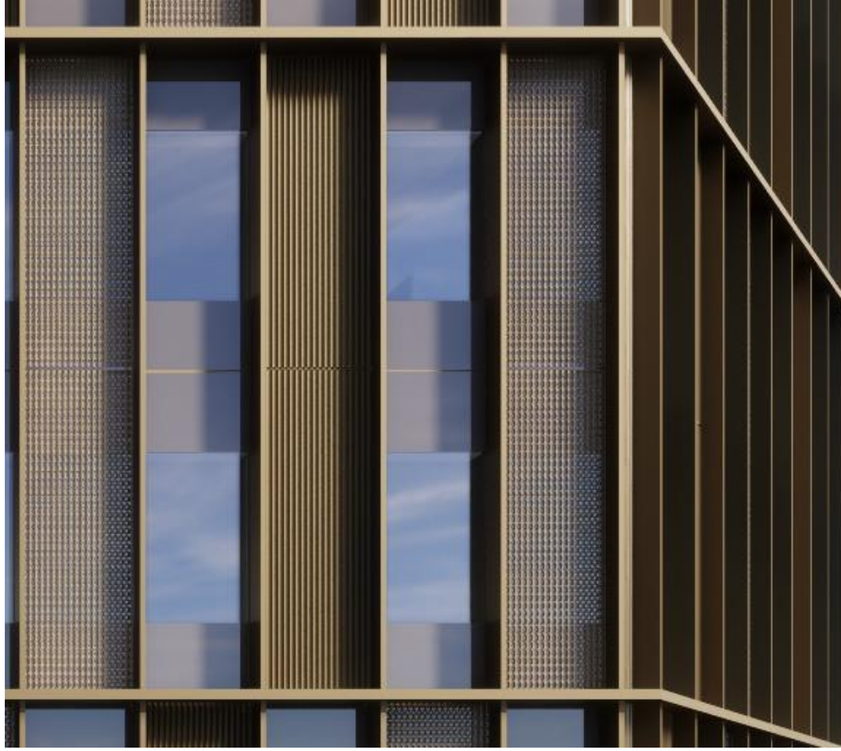
Double-Height Picture Windows

Shifting Vertical Elements

Deep Horizontal Profiles

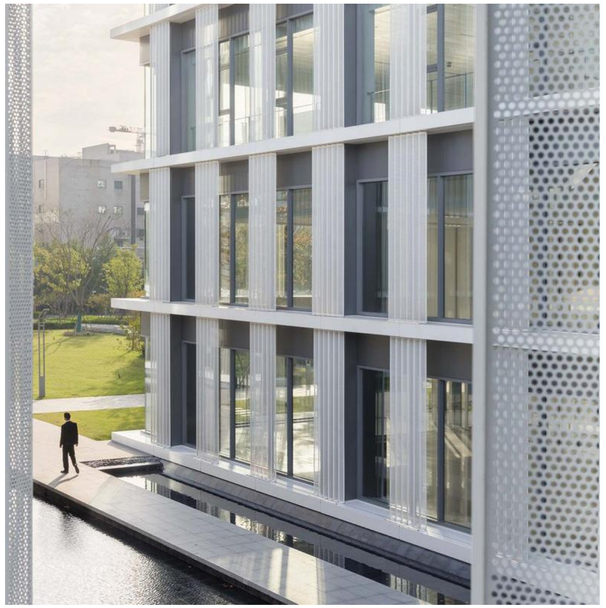
Intermediate Fins
(Level 13 and Above)

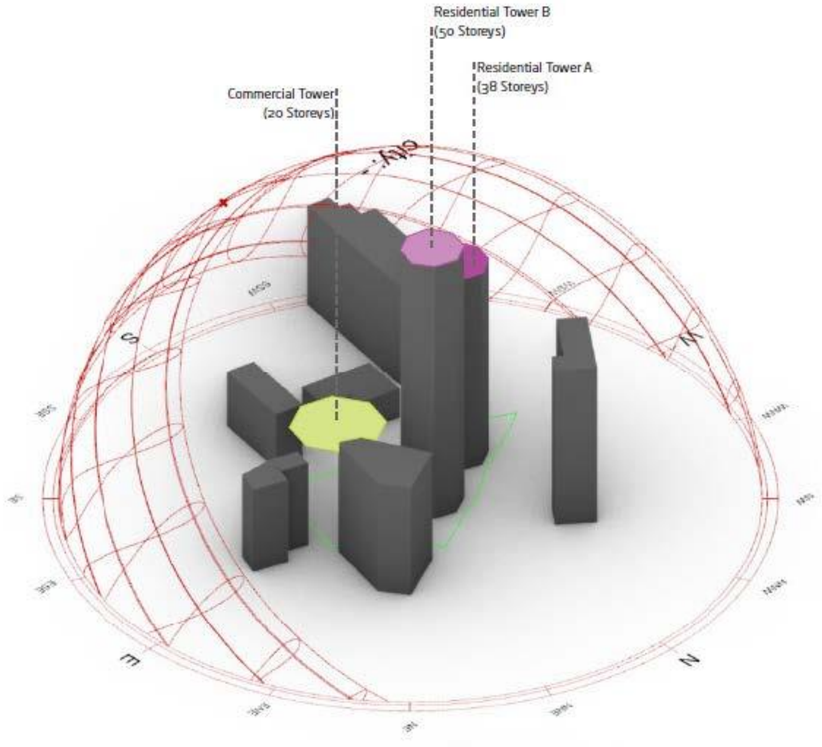


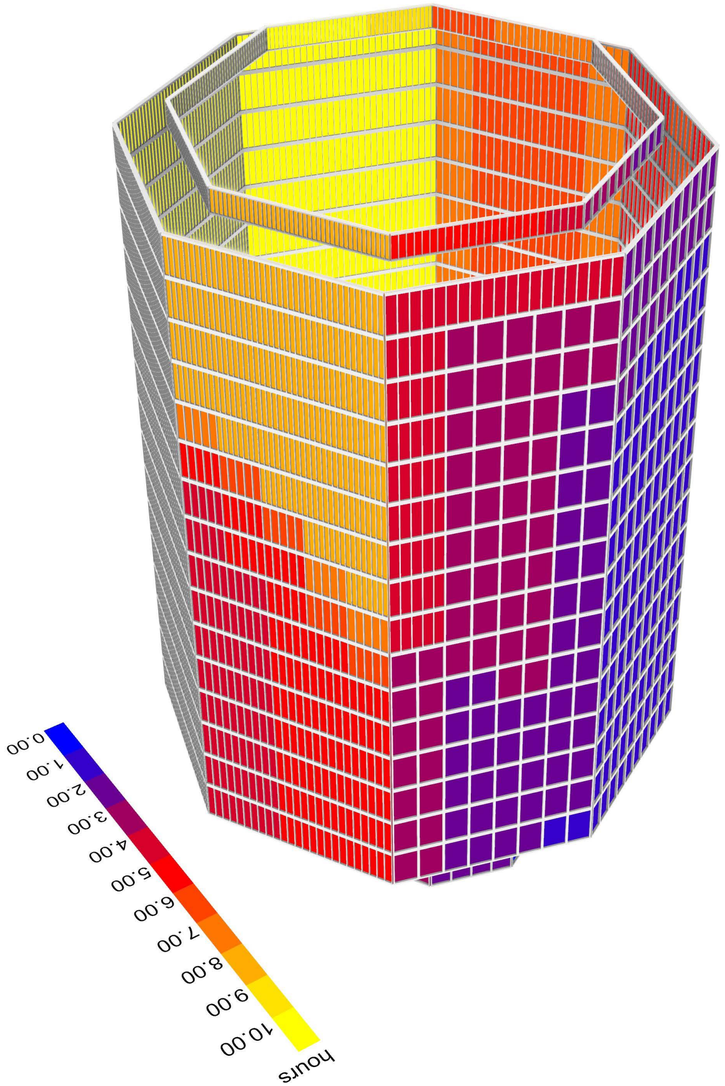


Base articulation.

Responsive facade design



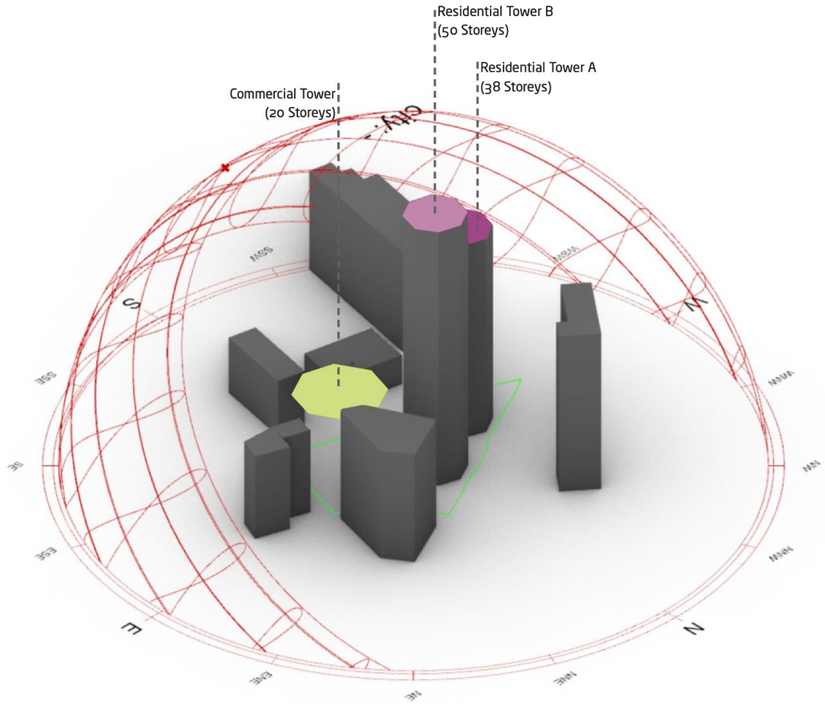




"Best in class" aspiration. Achieving latest BCO guidance on solar gains.

British Council for Offices
Briefing Note
February 2023

BCO GUIDE TO SPECIFICATION KEY DESIGN CRITERIA
UPDATE 2023

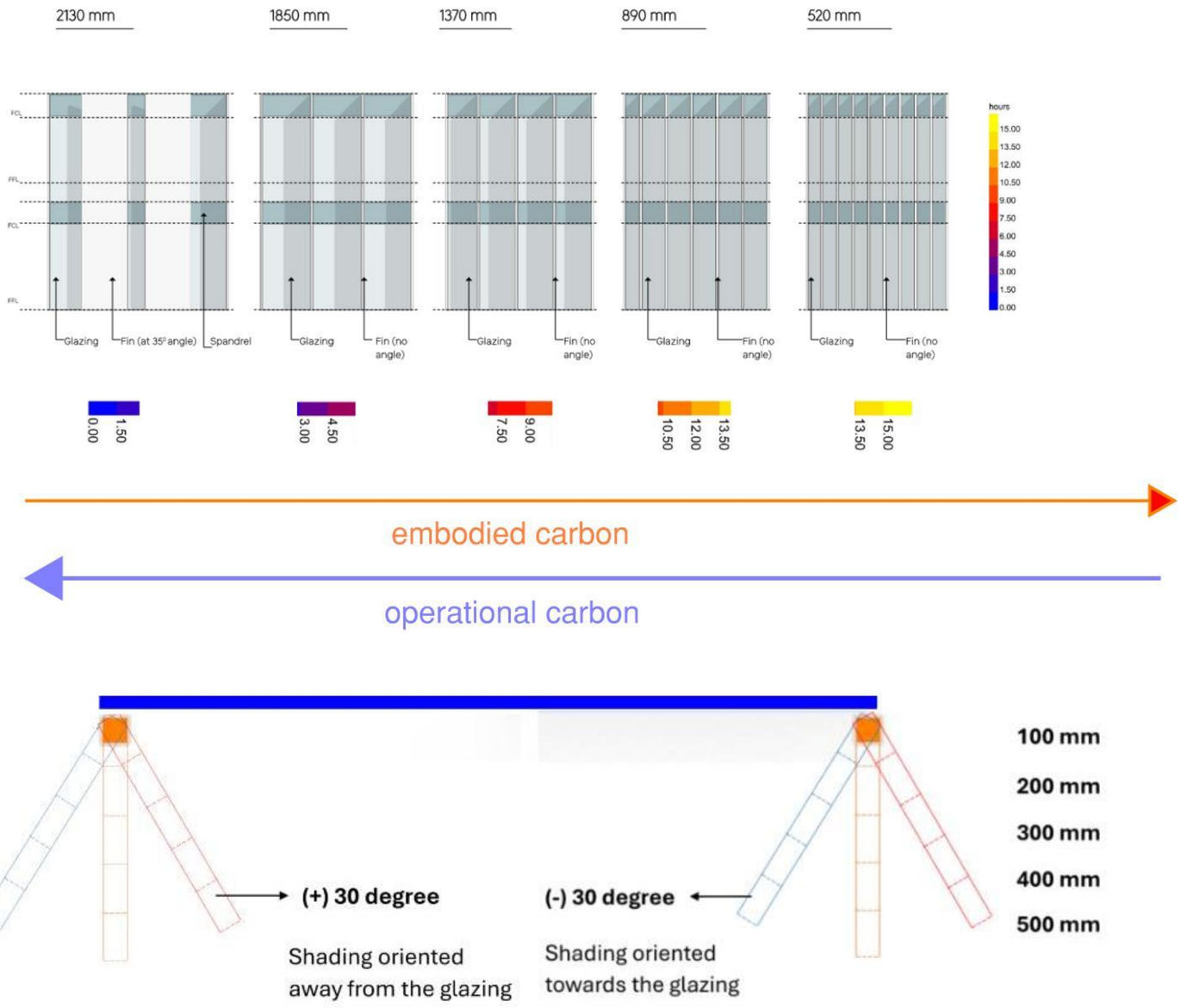


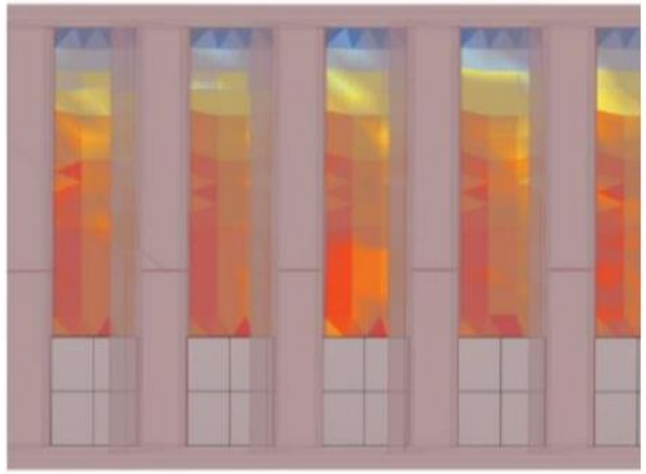
	2019	2023	
Cooling Loads.			
Solar loads – target for perimeter zone.	50-65 W/m2, averaged over the 4.5 m deep perimeter zone for each façade.	40-50 W/m2, averaged over the 4.5 m deep perimeter zone.	Stricter limits are recommended to pursue the 2030 NZC operational targets. Needs to be balanced with embodied carbon impact, especially when considering major refurbishment of existing buildings.

Original design intent.

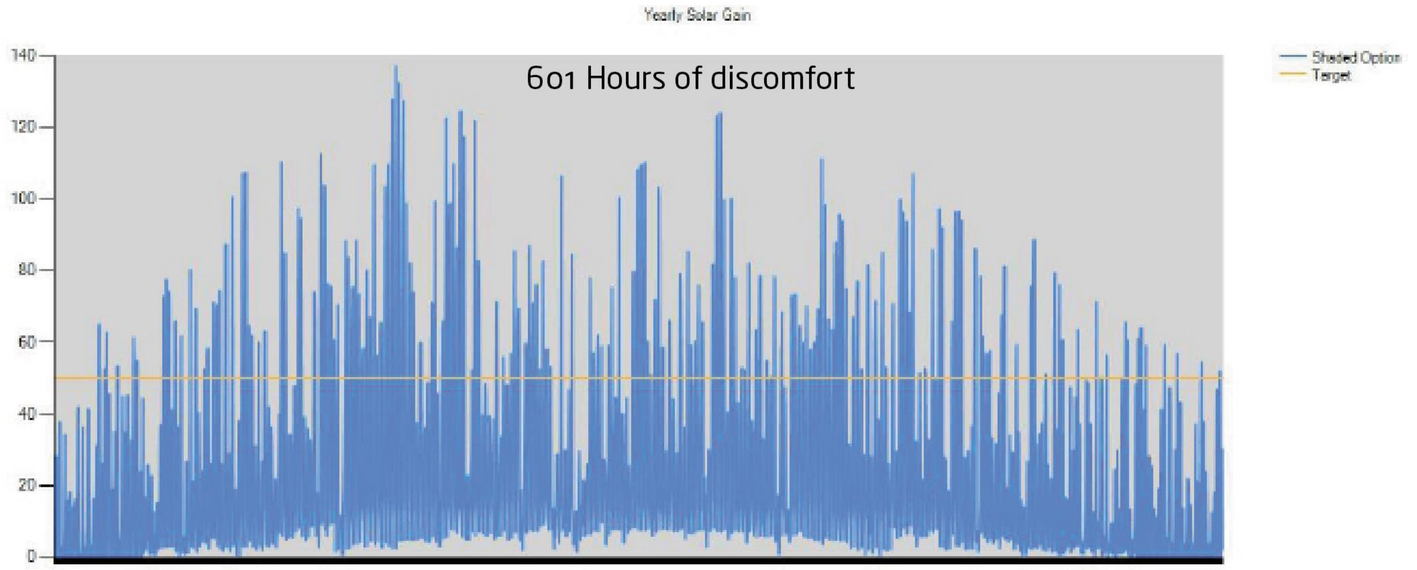
- 100% Glazed
- Varying density shallow offset vertical fins
- Hierarchy/ grouping of floors

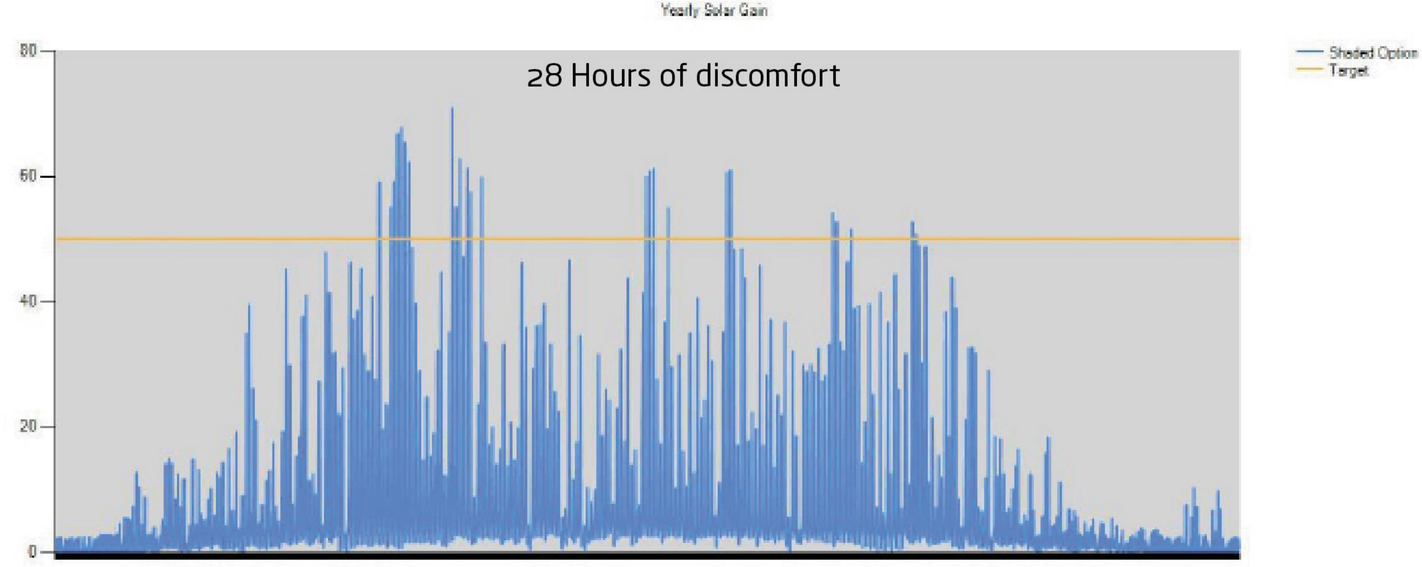
Vertical fins. Varying density, depth and angle.



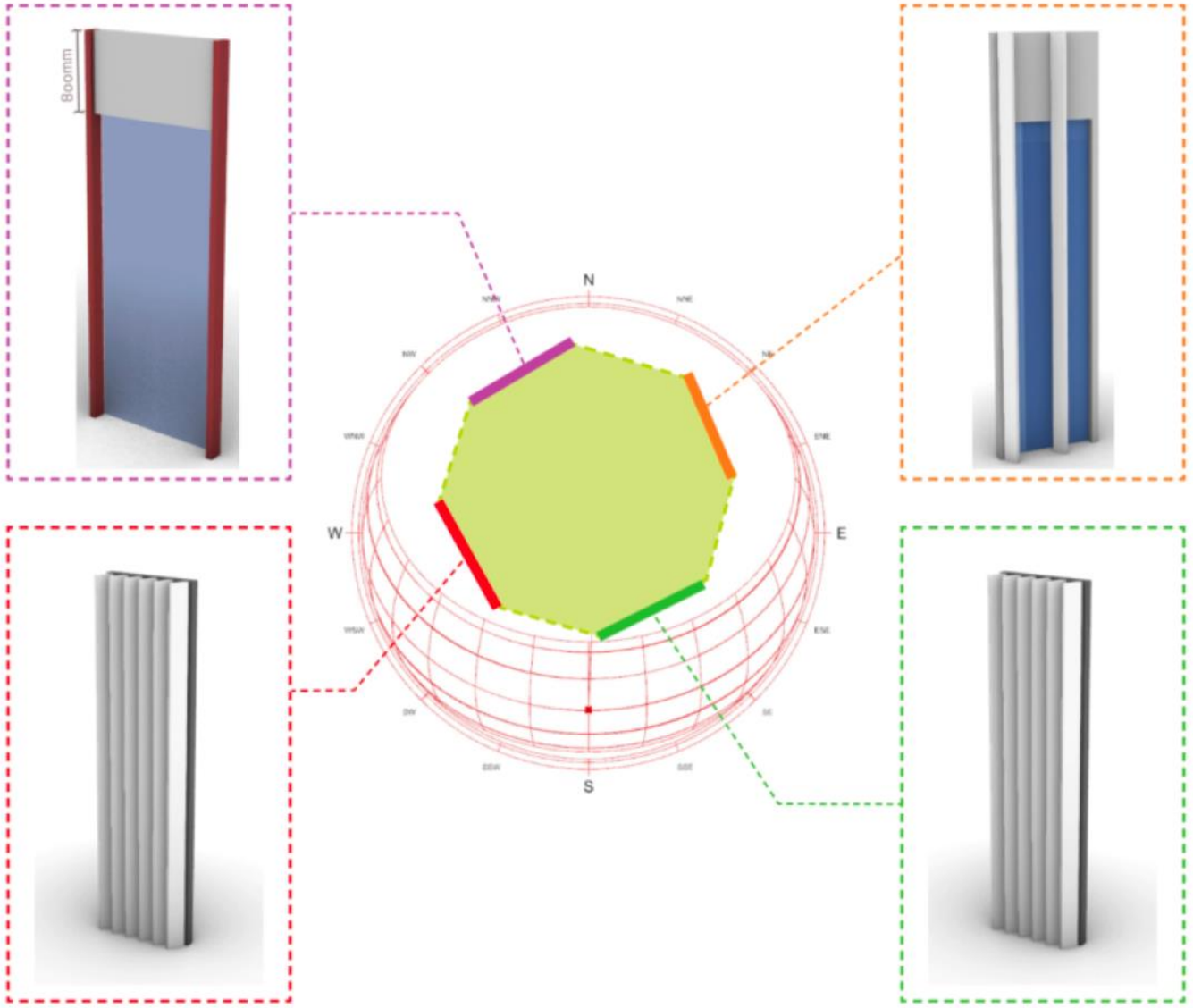


Southwest (worst case).



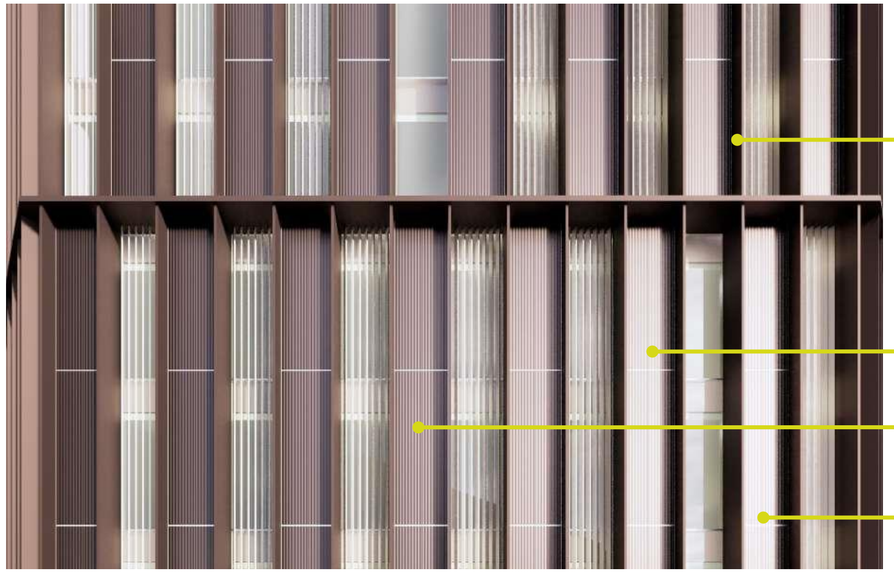


Overall shading strategy to (nearly) meet BCO.



Emerging design intent.

Southwest elevation (40% glazing)



Type 01 Vertical louvres (externally supported fixed back to structure) Provides shading to South west.

Light grey/silver aluminium to read in contrast to the bronze

Profiled Aluminium - Bronze

Back Painted

Vertical Mullion

Northwest Elevation (55% Glazing)

Type 02 Bronze aluminium louvres ((externally supported fixed back to structure - deeper profile TBC) Provides privacy for adjacent residential tower whist still allowing for solar Gain.
The colour density retains the look and feel of the solid panels

Horizontal Mullion

Materials - Anodised Aluminium

Vertical Louvres

External shading, embodied carbon and the “carbon payback period”.

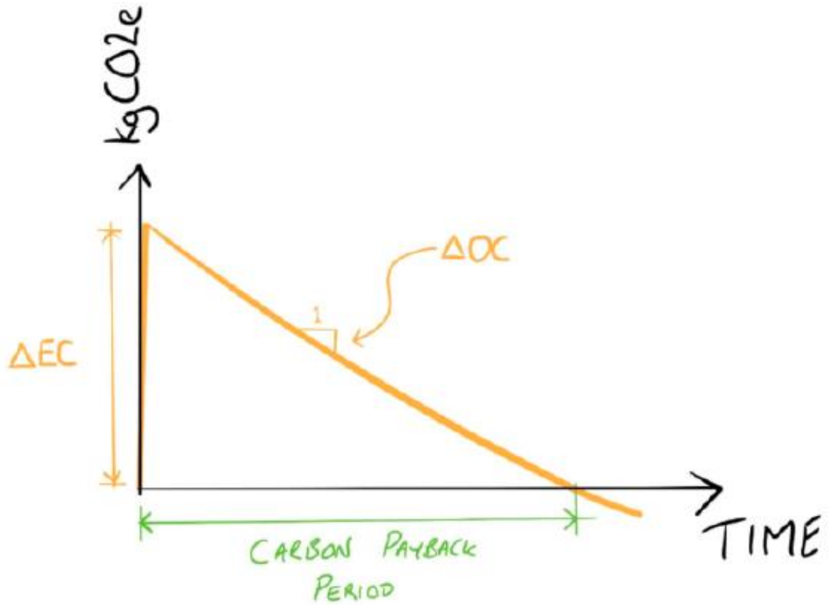


Figure 2: Figurative illustration of the CPP

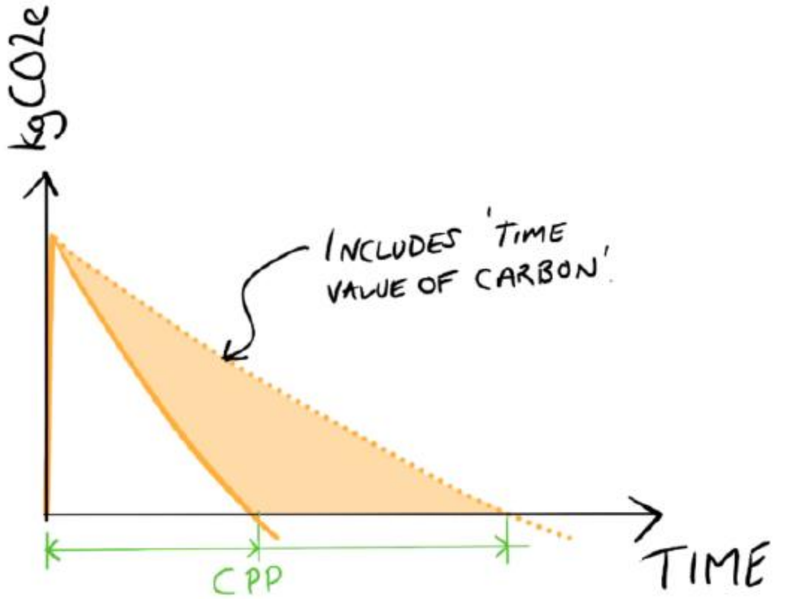
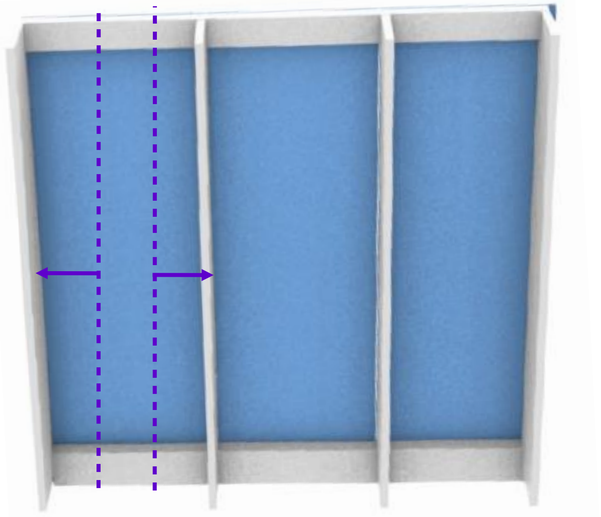


Figure 6: Sketch showing the indicative effect of accounting for the time value of carbon on the CPP

Cooling Loads.			
Solar loads – target for perimeter zone.	50-65 W/m2, averaged over the 4.5 m deep perimeter zone for each façade.	40-50 W/m2, averaged over the 4.5 m deep perimeter zone.	Stricter limits are recommended to pursue the 2030 NZC operational targets. Needs to be balanced with embodied carbon impact, especially when considering major refurbishment of existing buildings.

Reduce density of fin. Optimise glass ratio and position for daylight.

1. Fully glazed with wider spaced fins.

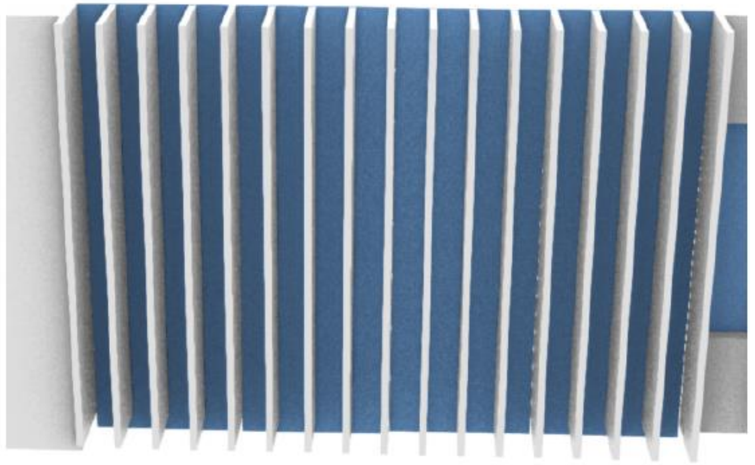


solar gain ✗

embodied carbon ✓

daylighting ✓

2. fully glazed with vertical fins

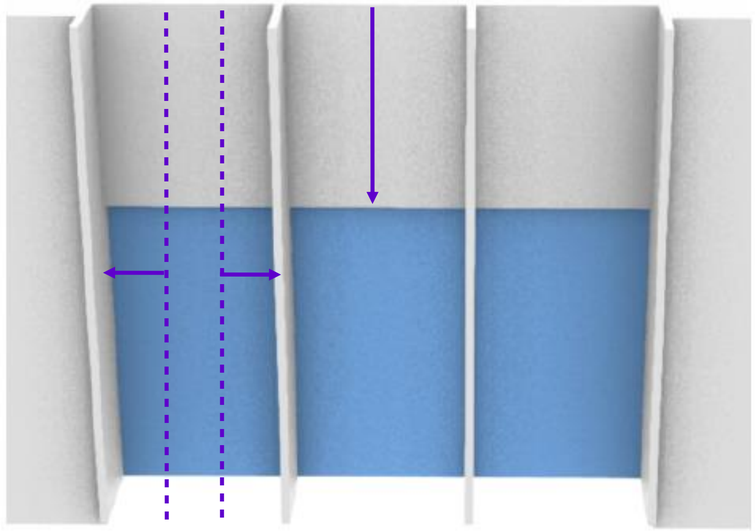


solar gain ✓

embodied carbon ✗

daylighting ✗

3. Fully glazed with wider spaced fins

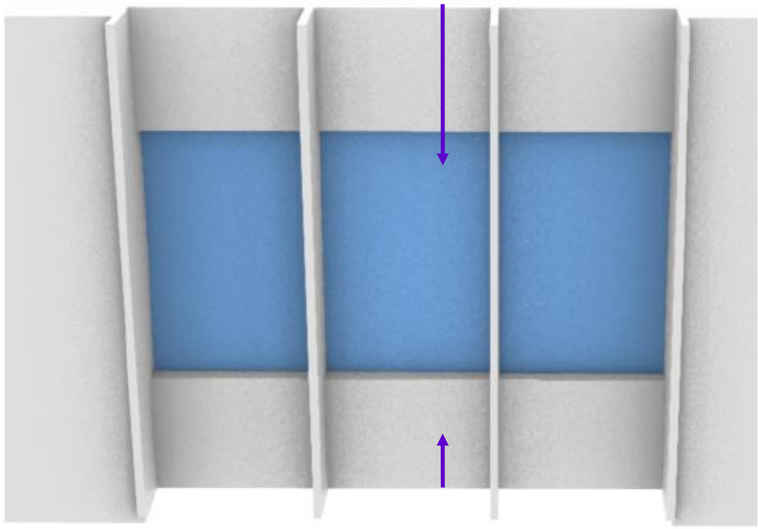


solar gain ✓

embodied carbon ✓

daylighting ✗

4. Glazing ratio, position and shading optimised for solar gain, daylighting and embodied carbon

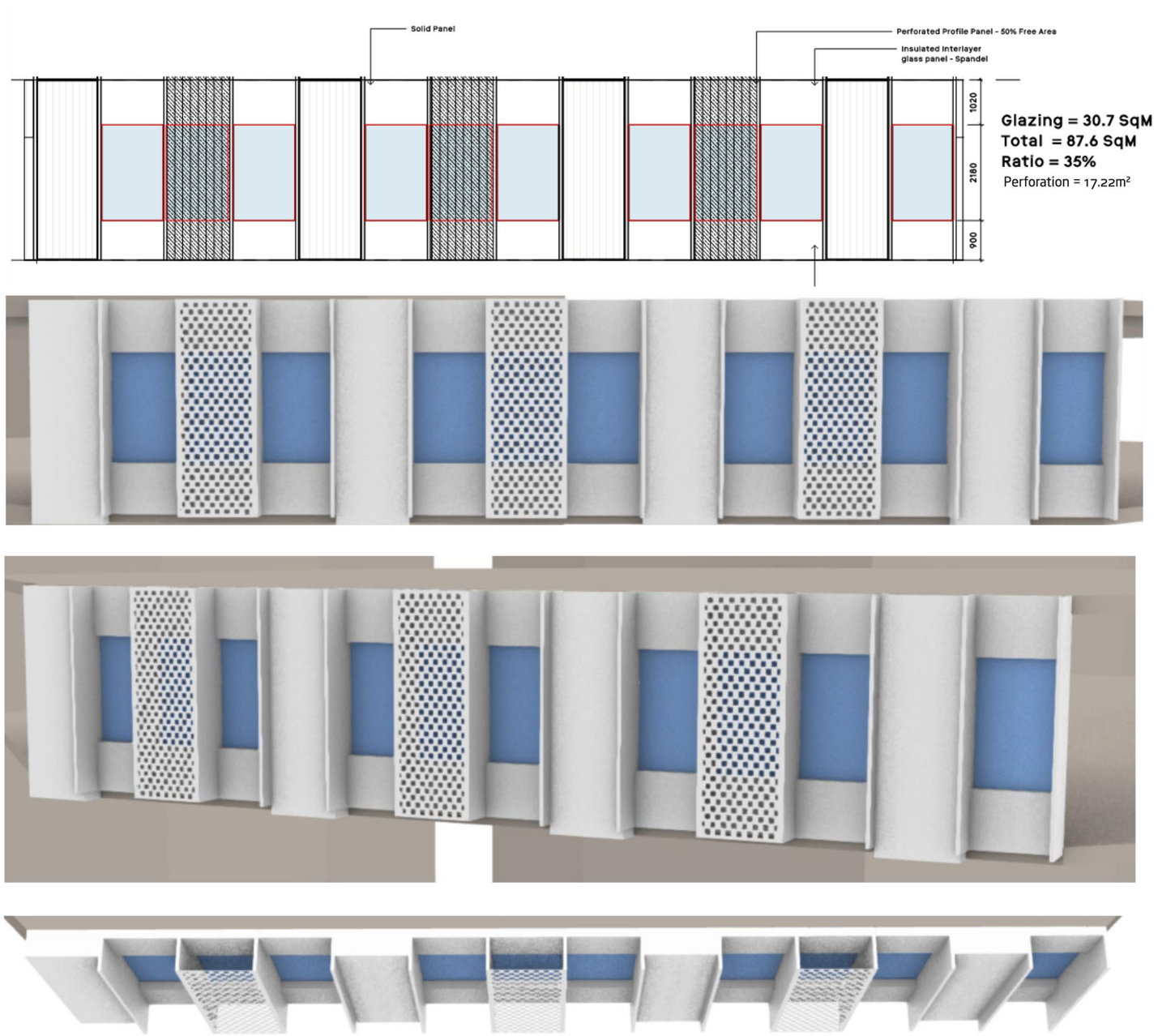


solar gain ✓

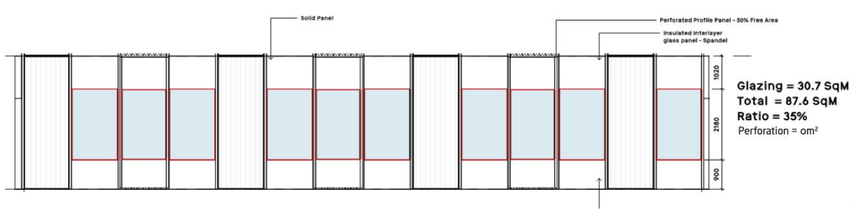
embodied carbon ✓

daylighting ✓

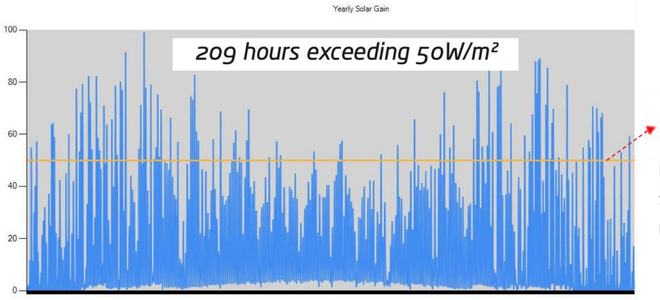
Typical bay for analysis.



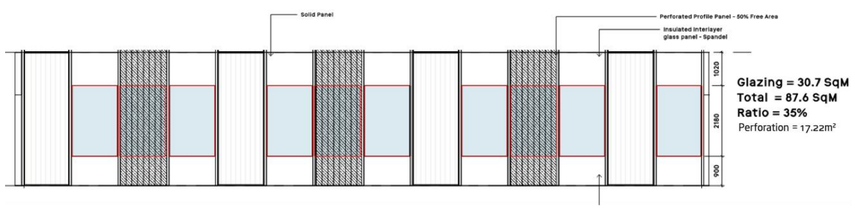
Updated design iterations. South west design.



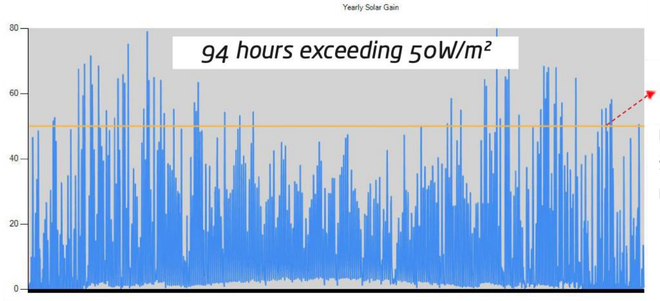
Glazing = 30.7 SqM
Total = 87.6 SqM
Ratio = 35%
Perforation = 0m²



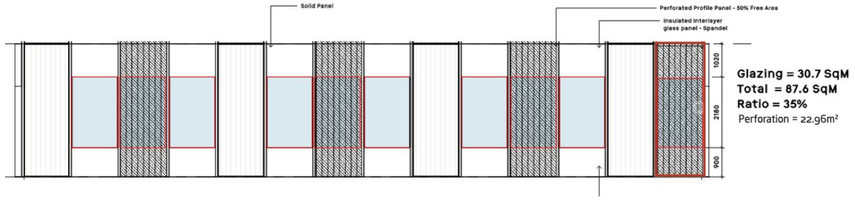
Peak time: 19 March, 10:30
Solar Gains: 99 W/m²
Peak Irradiance: 809.49 W/m²



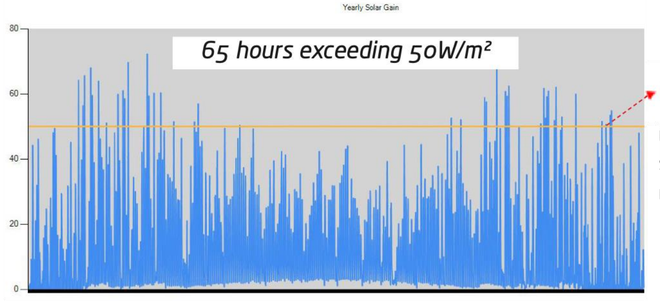
Glazing = 30.7 SqM
Total = 87.6 SqM
Ratio = 35%
Perforation = 17.22m²



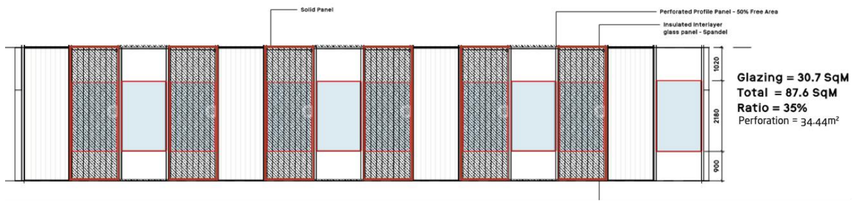
Peak time: 22 September, 10:30
Solar Gains: 80 W/m²
Peak Irradiance: 652.33 W/m²



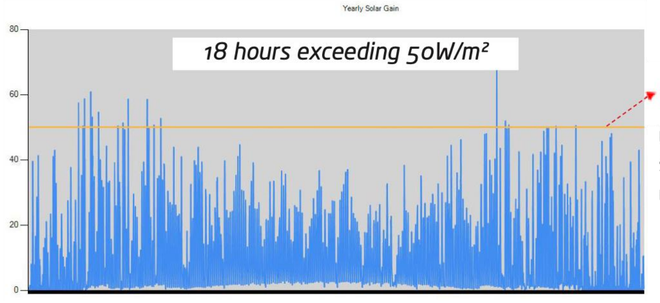
Glazing = 30.7 SqM
Total = 87.6 SqM
Ratio = 35%
Perforation = 22.96m²



Peak time: 22 September, 10:30
Solar Gains: 76 W/m²
Peak Irradiance: 619.71 W/m²

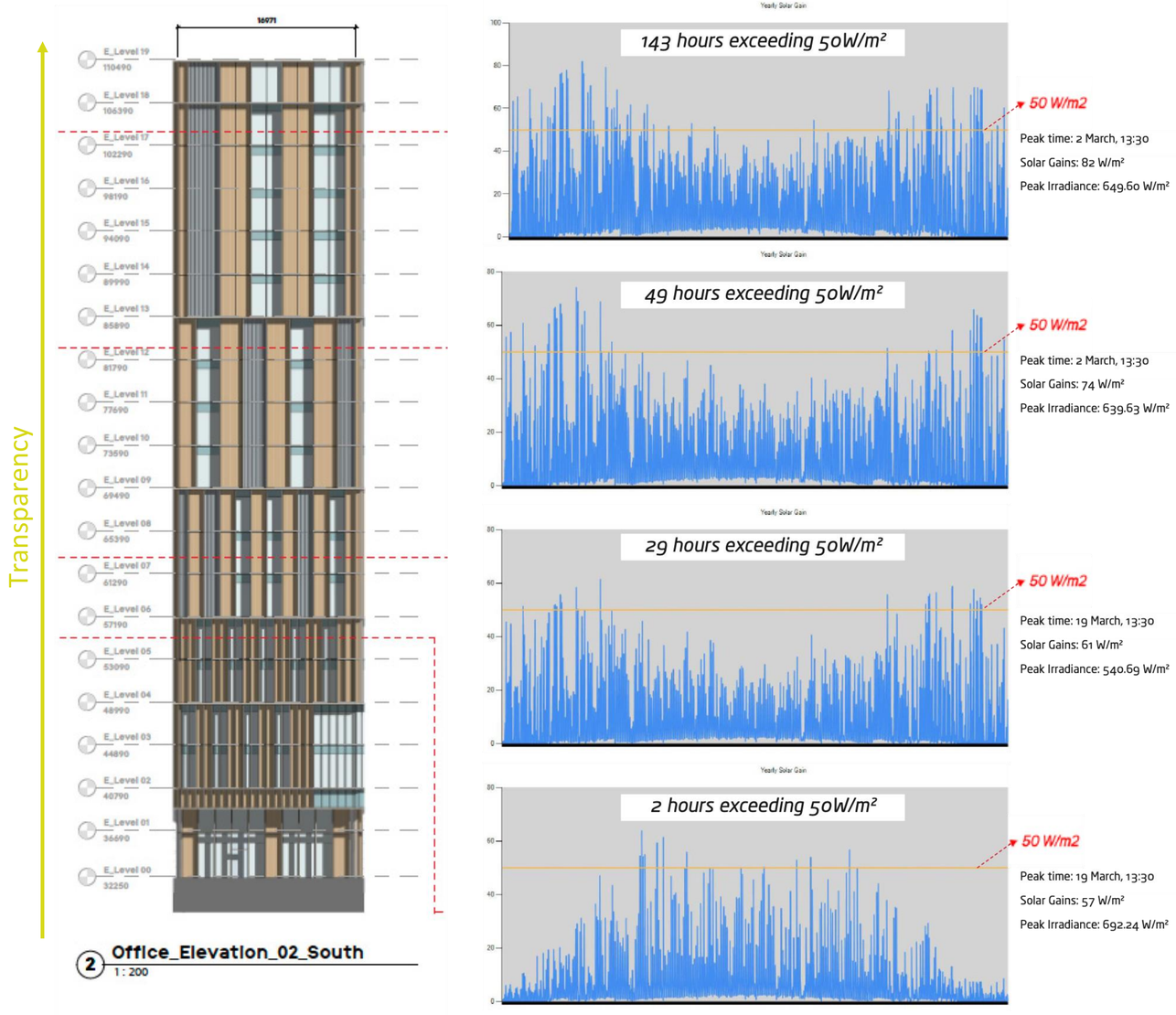


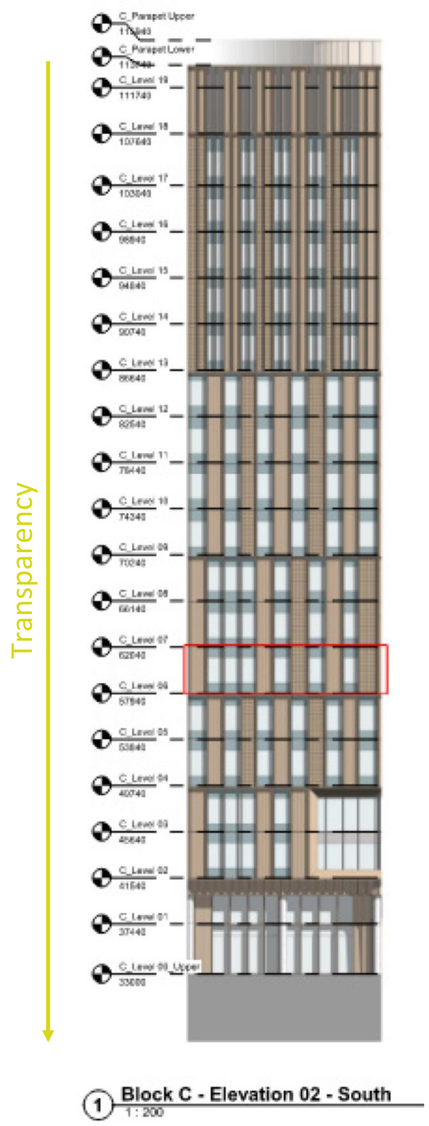
Glazing = 30.7 SqM
Total = 87.6 SqM
Ratio = 35%
Perforation = 34.44m²

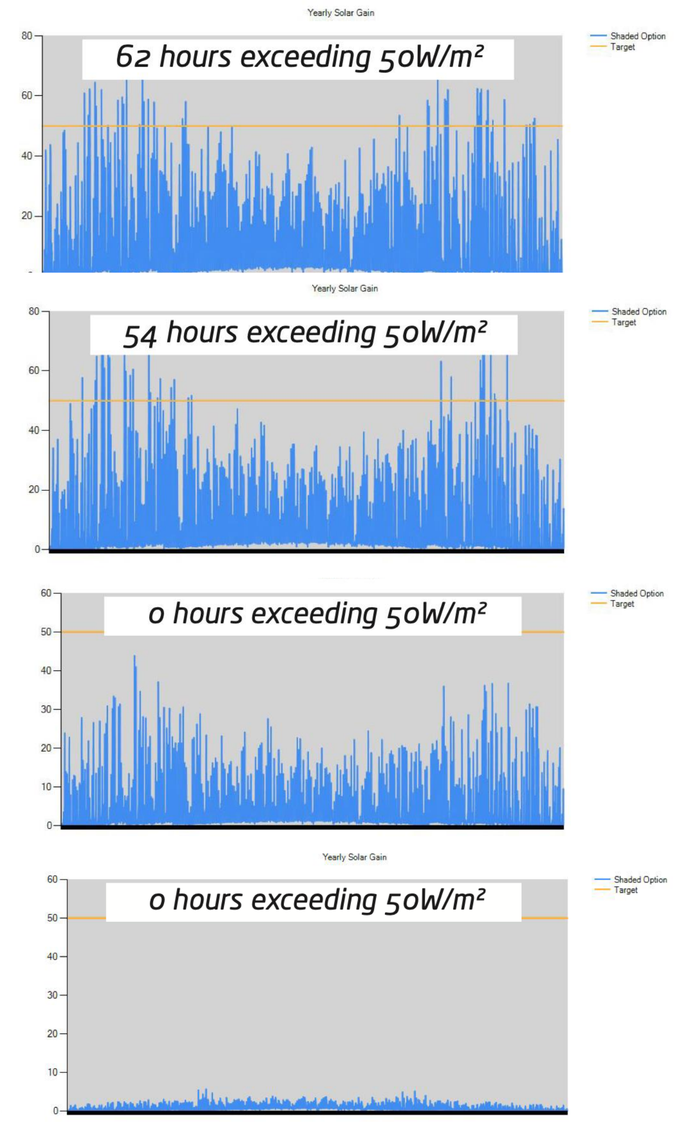


Peak time: 22 September, 10:30
Solar Gains: 68 W/m²
Peak Irradiance: 554.39 W/m²

Refining perforations and glazing ratios.







Thank you.

Simon Smith – Manchester Studio Lead
Simone Miriana – Head of Façade Engineering

akt II

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