PERMASTEELISA GROUP

The impact of early design decisions in façade design

Nordic Façade Forum
Helsinki, 9 June 2025

PERMASTEELISA GROUP

01

Introductions

Meet the speakers

LEAD CONCEPT DESIGN

Tim Debets

SCHELDEBOUW, EUROPE

SALES DIRECTOR

Imro van Leersum

SCHELDEBOUW, UK MARKET

SALES DIRECTOR

Jeroen Bergmans

SCHELDEBOUW, SCANDINAVIA AND BENELUX MARKETS

A quick point to note…

Please do not take photos of the presentation slides.

If you have any questions or would like more information, please don’t hesitate to get in touch with us!

The Shard, London, UK

Introducing Scheldebouw

- Part of the Permasteelisa Group
- Two locations in the Netherlands, with more than 300 staff
- Expertise in custom-unitized façades
- Large portfolio in Closed Cavity Façade (CCF)
- In-house design, production, installation and maintenance

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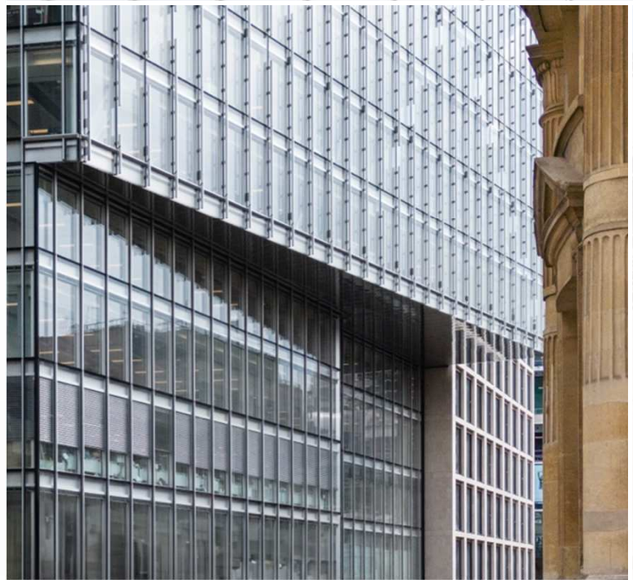
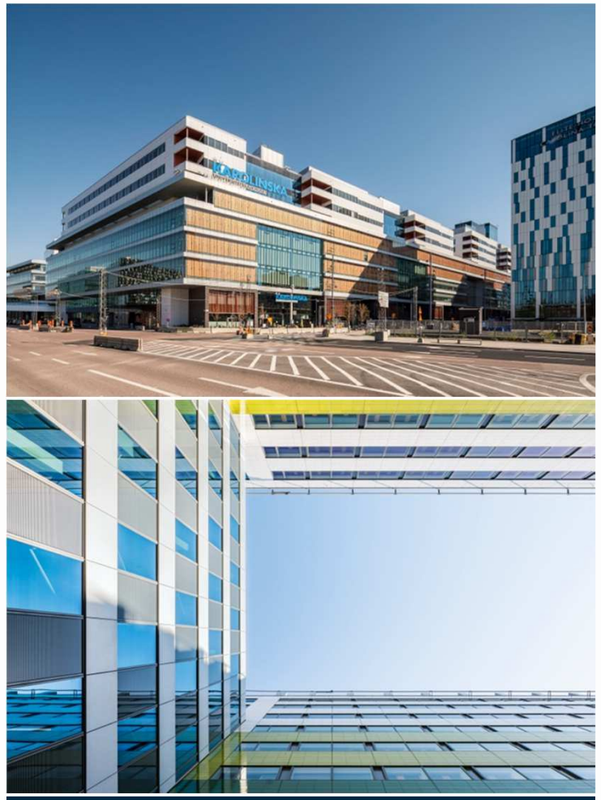
8 Bishopsgate, London, UK

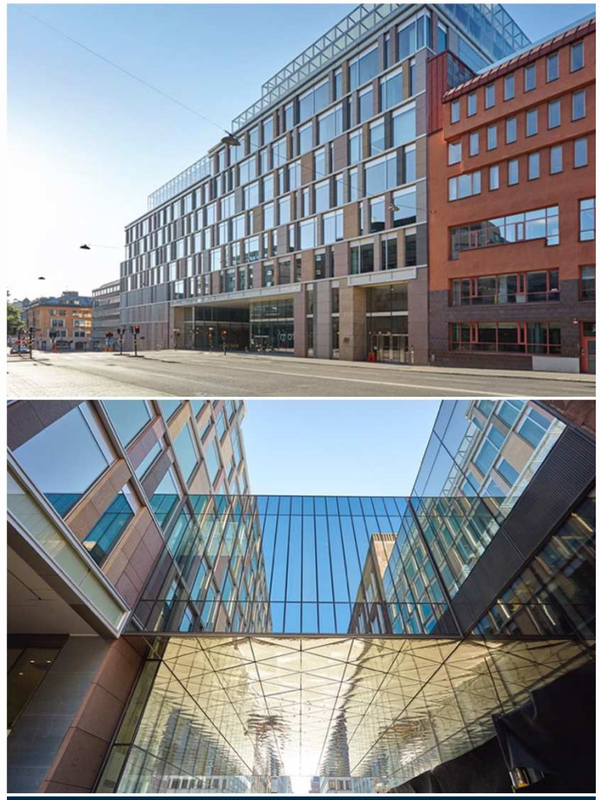


Experience in the Nordic region

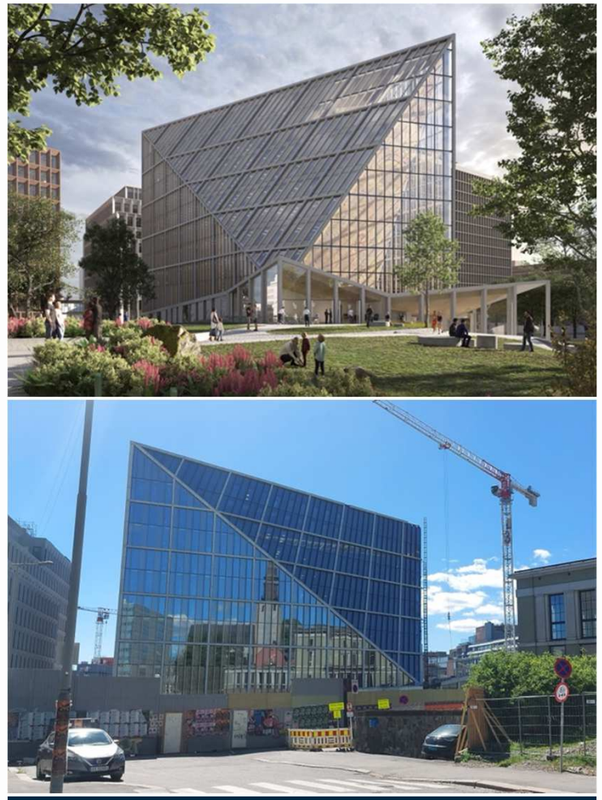


KAROLINSKA HOSPITAL, STOCKHOLM

NORDEA, COPENHAGEN



MÄSTERHUSET, STOCKHOLM



THE NEW GOVERNMENT QUARTER, OSLO

Current ongoing project

New Government Quarter

Oslo

CLIENT: Statsbygg

ARCHITECT: Nordic Office of Architecture & Haptic Architects

MAIN CONTRACTOR: Hent

FAÇADE AREA: 10,000 sqm

PROJECT USE: Office

COMPLETION DATE: 2026

KEY FEATURES:

- CCF (Closed Cavity Façade)
- Bomb blast rated façade
- BREEAM Excellent

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02

Early design decisions

Topics covered today

Large vertical façade span systems

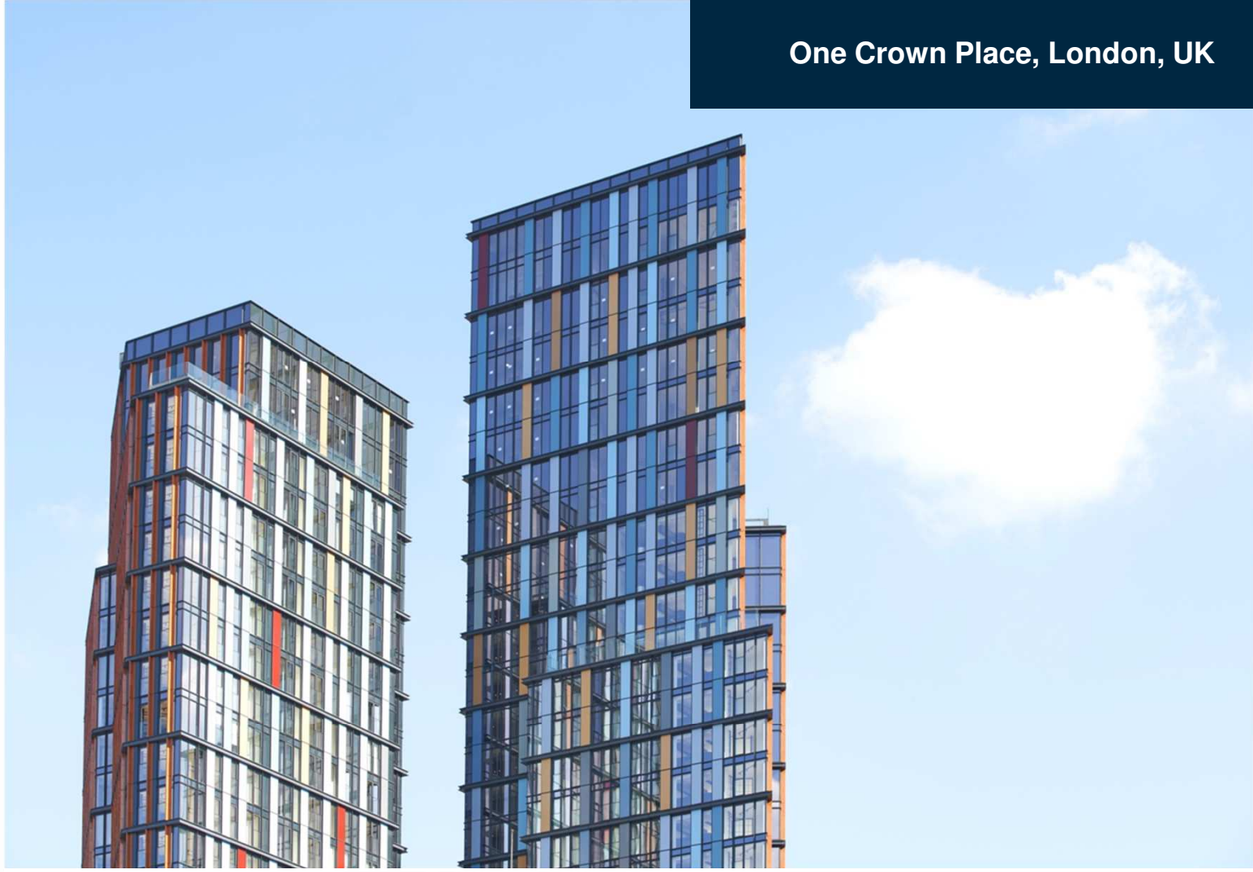
Large windscreen options and roof interfaces

MOL Campus, Budapest, Hungary

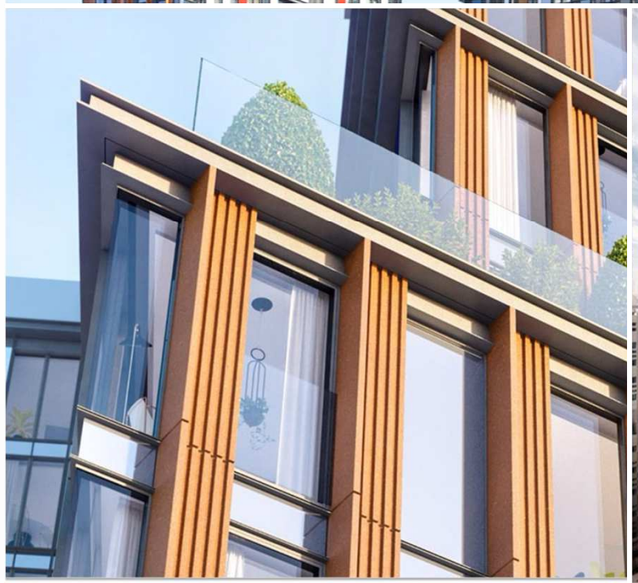
The impact of early design decisions in façade design

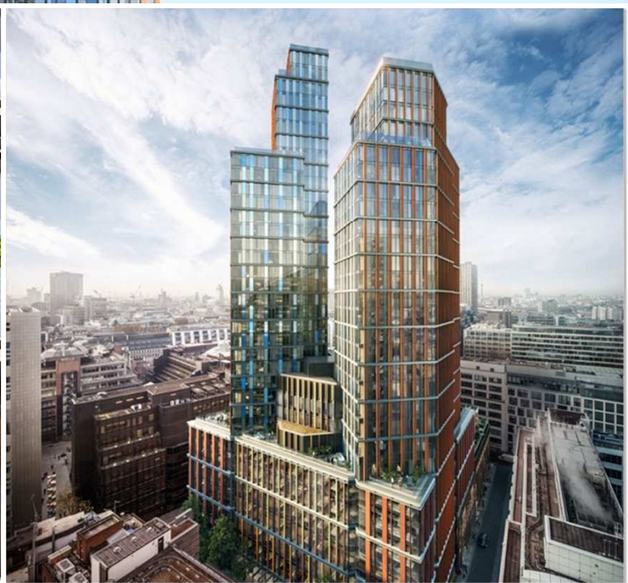
Early involvement and design assist to budget

Traditional tender vs. design assist to budget



One Crown Place, London, UK





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03

Large vertical façade span systems

Large vertical façade span systems

2 Aldermanbury Square

London, UK

CLIENT: Great Portland Estates

ARCHITECT: Allies and Morrison

MAIN CONTRACTOR: Lendlease

FAÇADE AREA: 16,350 sqm

PROJECT USE: Office

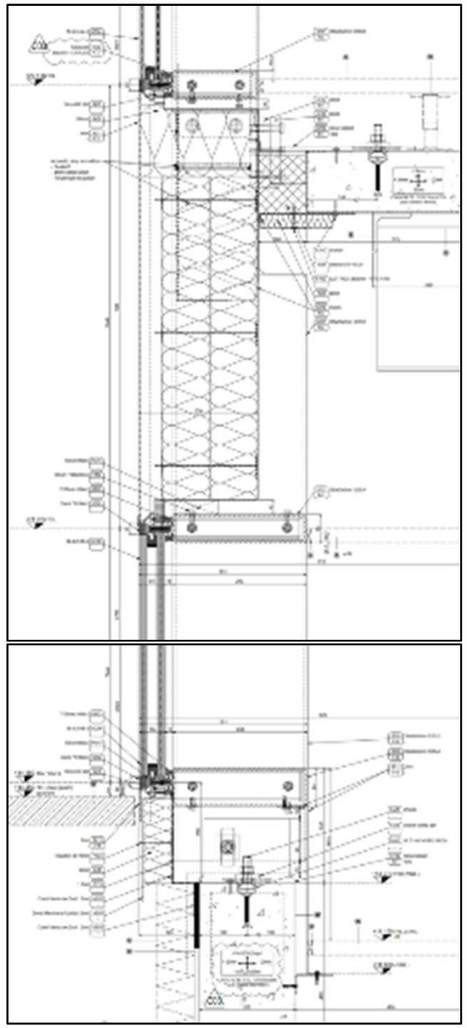
COMPLETION DATE: 2026

KEY FEATURES:

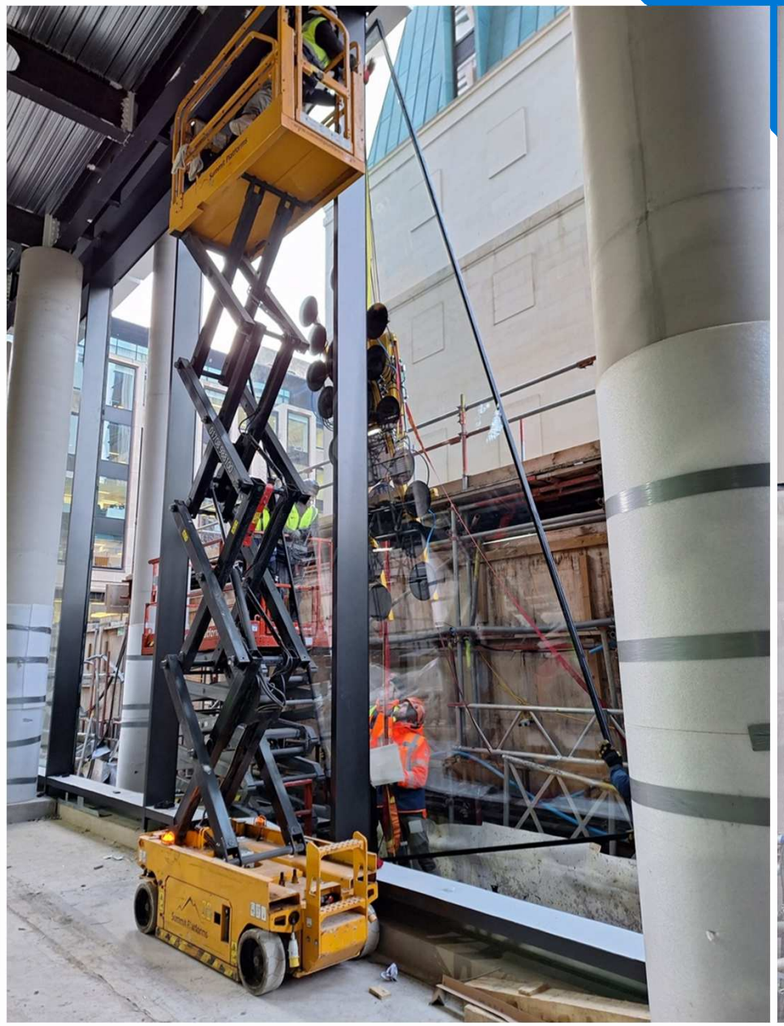
- Custom unitized façade
- Large span stick system
- BREEAM Outstanding
- Custom EPD

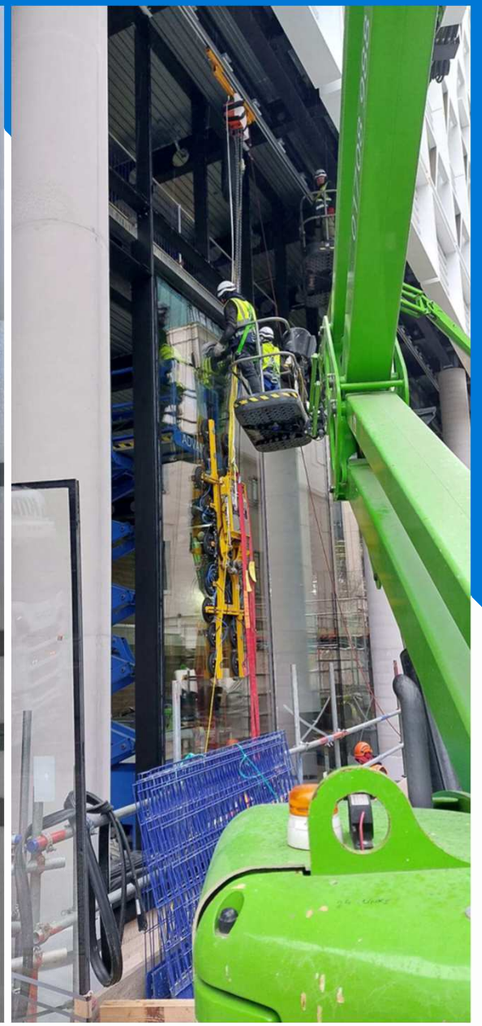
Large vertical façade span systems

2 ALDERMANBURY SQUARE, LONDON



7.5m span

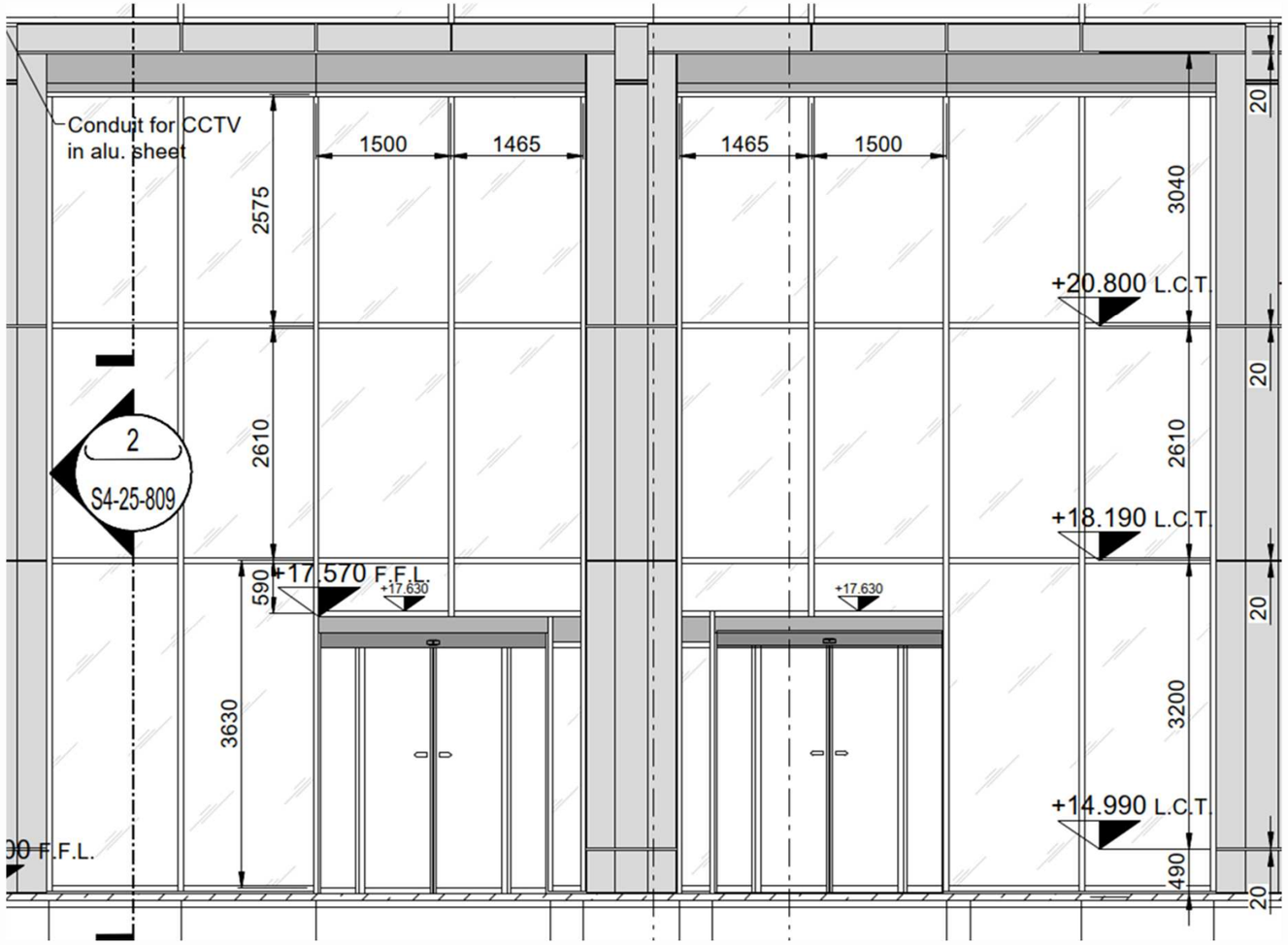




Large vertical façade span systems

INTERNATIONAL QUARTER S4, LONDON

6.2m free span / 8.8m total span



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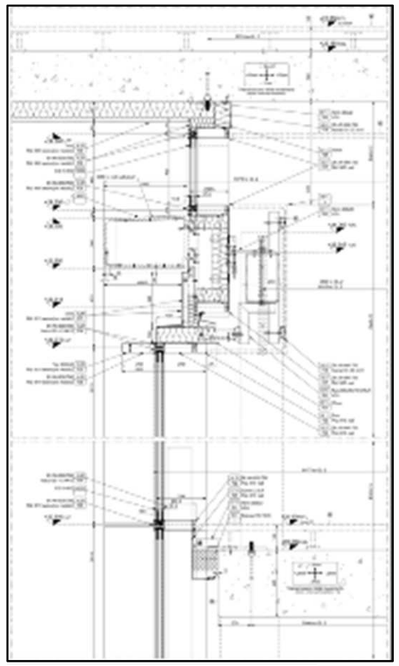
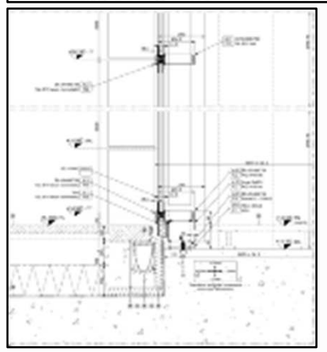
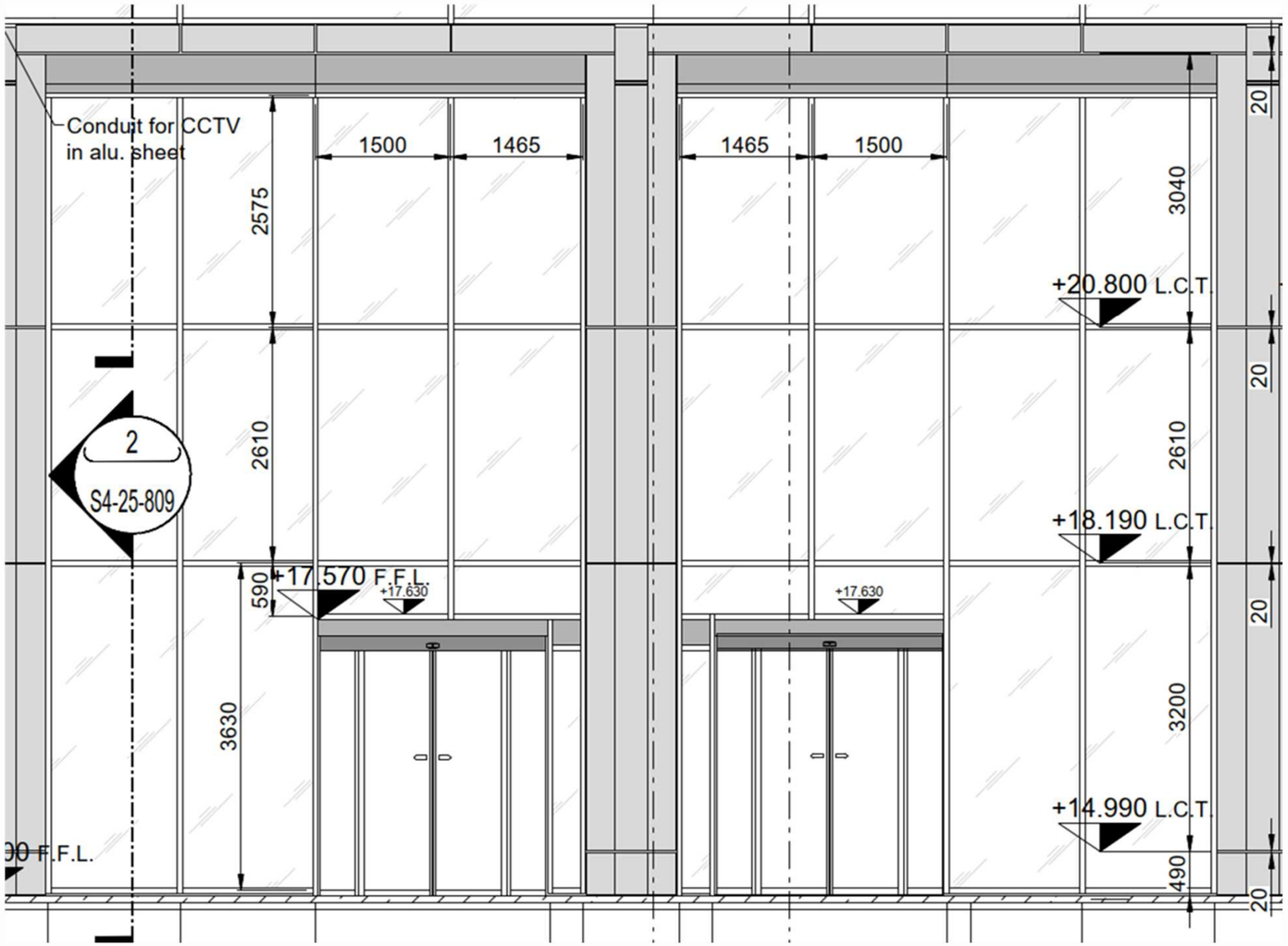
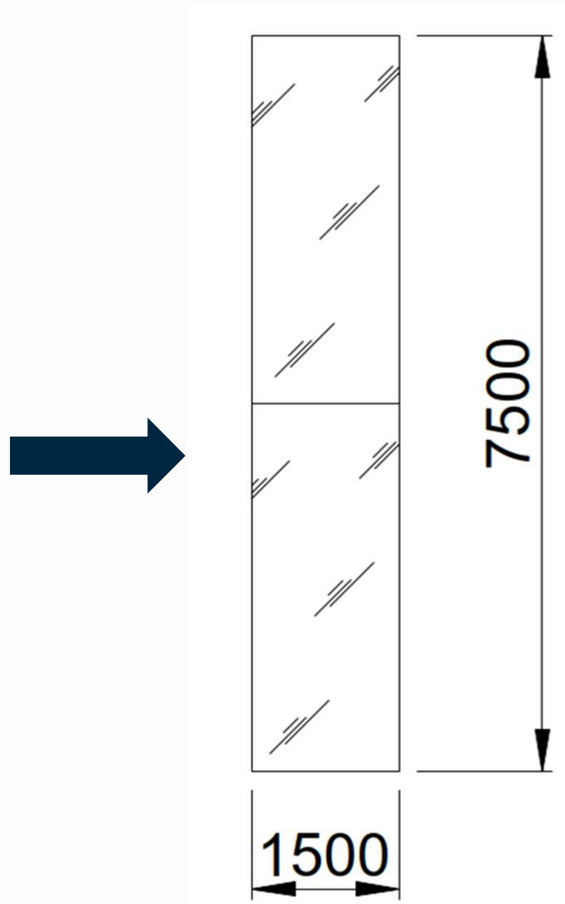
Large vertical façade span systems









windload q=2.0kN/m²

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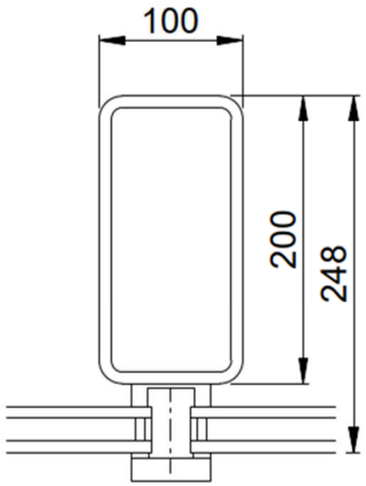
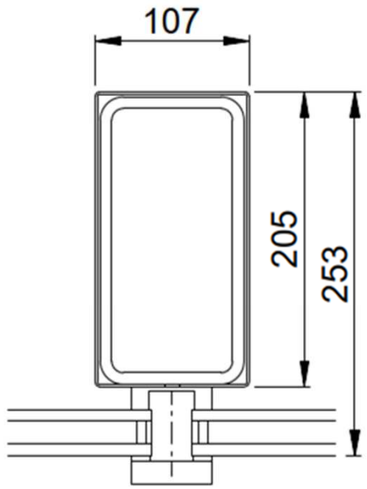
Large vertical façade span systems – options



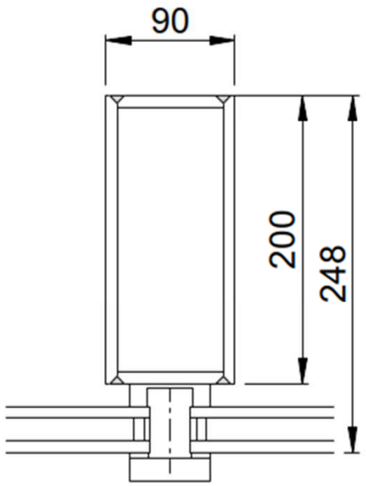
1) Standard steel profile

- On-site stick system
- Standard sizes
- Large corner radii
- Large tolerances
- Large steps in available sizes



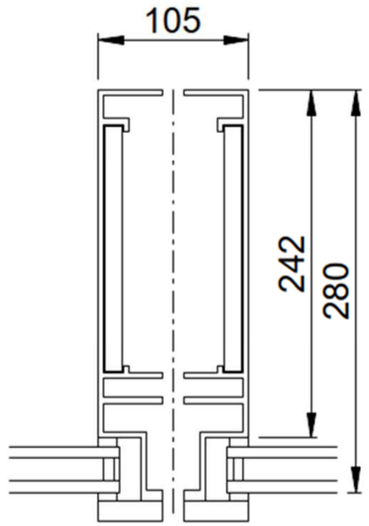
2) Standard steel profile 1mm alum. sheet overclad

- On-site stick system
- Sheet work install on site
- Sheet work follows steel tolerances
- Sheet work joints needed at 5-6m vertical



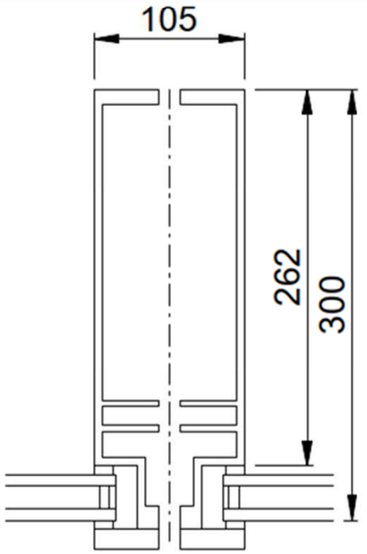
3) Custom steel sharp edges

- On-site stick system
- Optimizable shapes and sizes
- Slim profile possible
- Sharp transom connections



4) Unitized custom profile (steel reinforced)

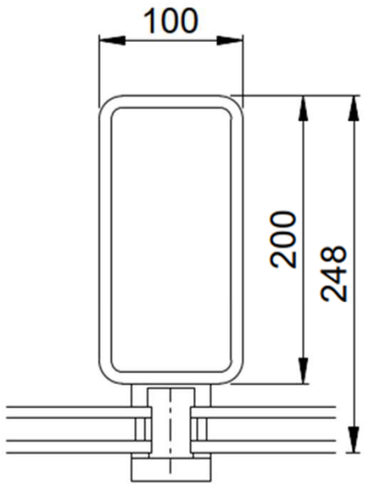
- Panelised installation
- Optimizable shapes and sizes
- Factory steel inserts
- Sharp transom connections
- Cut-outs at structural floors



5) Unitized custom profile (thick walls)

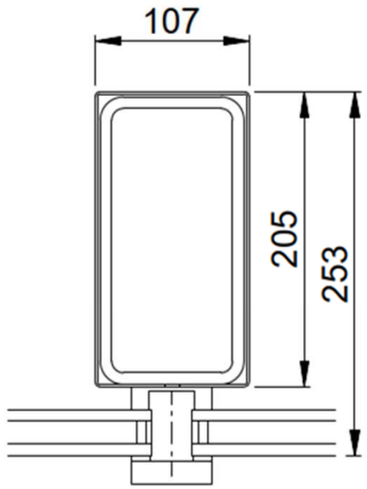
- Panelised installation
- Optimizable shapes and sizes
- Sharp transom connections
- Cut-outs at structural floors

Large vertical façade span systems – options



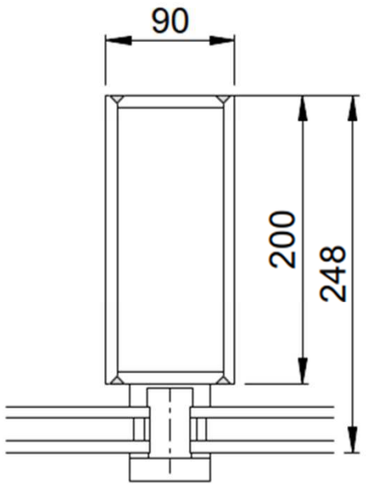
1) Standard steel profile

- On-site stick system
- Standard sizes
- Large corner radii
- Large tolerances
- Large steps in available sizes
- Most cost effective
- +/- Carbon: + 5 %



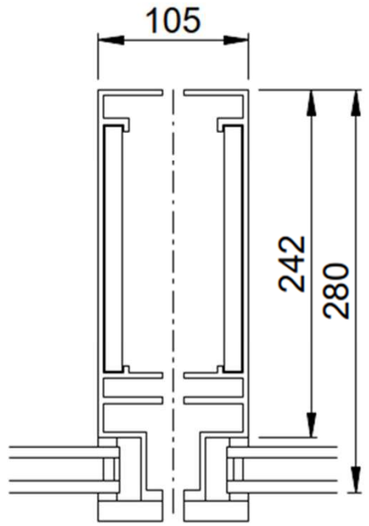
2) Standard steel profile 1mm alum. sheet overclad

- On-site stick system
- Sheet work install on site
- Sheet work follows steel tolerances
- Sheet work joints needed at 5-6m vertical
- +/- Cost: + 25 %
- +/- Carbon: + 20%



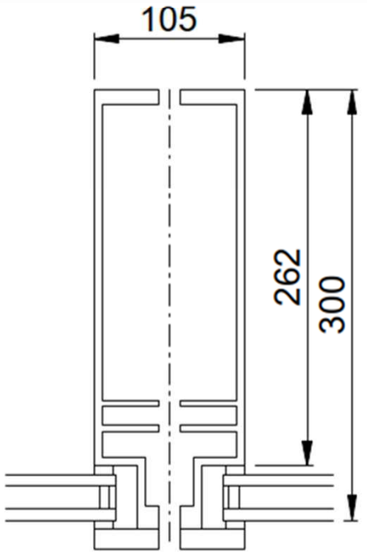
3) Custom steel sharp edges

- On-site stick system
- Optimizable shapes and sizes
- Slim profile possible
- Sharp transom connections
- +/- Cost: + 15 %
- +/- Carbon: + 5 %



4) Unitized custom profile (steel reinforced)

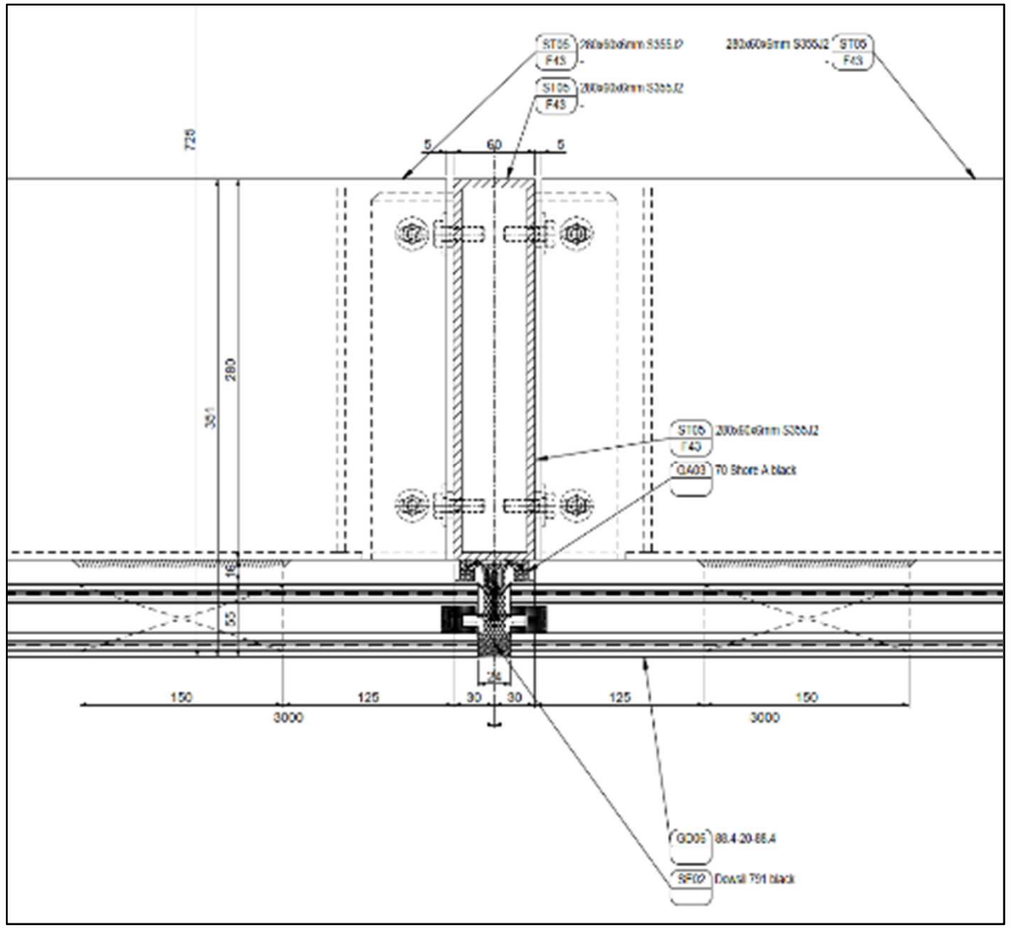
- Panelised installation
- Optimizable shapes and sizes
- Factory steel inserts
- Sharp transom connections
- Cut-outs at structural floors
- +/- Cost: + 25 %
- +/- Carbon: + 25%



5) Unitized custom profile (thick walls)

- Panelised installation
- Optimizable shapes and sizes
- Sharp transom connections
- Cut-outs at structural floors
- +/- Cost: + 15 %
- Most carbon effective

Large vertical façade span systems – transom to mullion connections

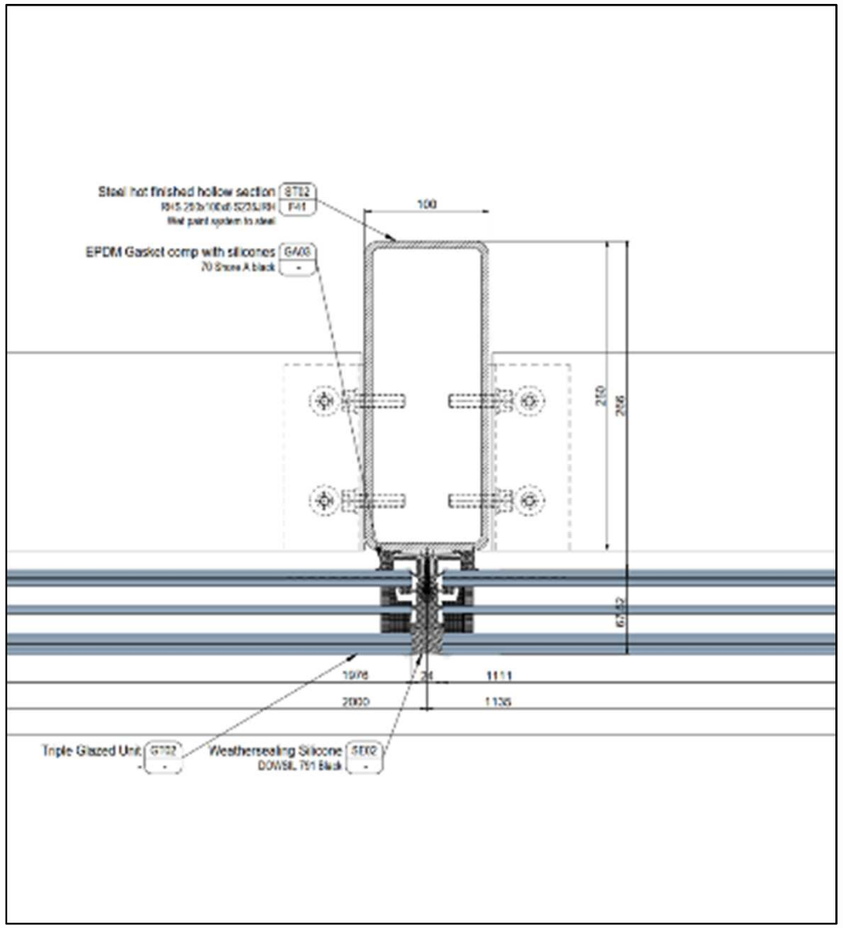


Custom steel laser welded

- Sharp corners
- Aligned transoms to mullions

Standard steel profiles

- Large corner radii
- Stepped transoms to mullions (to prevent gap on corner)



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04

Large windscreen options and roof interfaces

Large windscreen options and roof interfaces

Varso Tower

Warsaw, Poland

CLIENT: HB Reavis

ARCHITECT: Foster + Partners

MAIN CONTRACTOR: HB Reavis

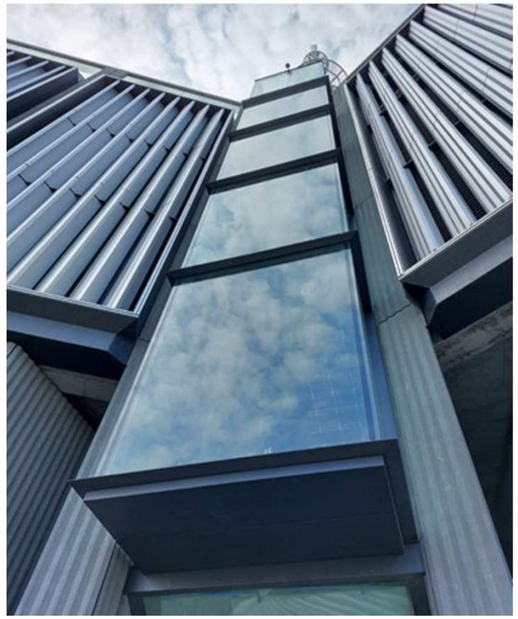
FAÇADE AREA: 49,400 sqm

PROJECT USE: Office and commercial

COMPLETION DATE: 2022

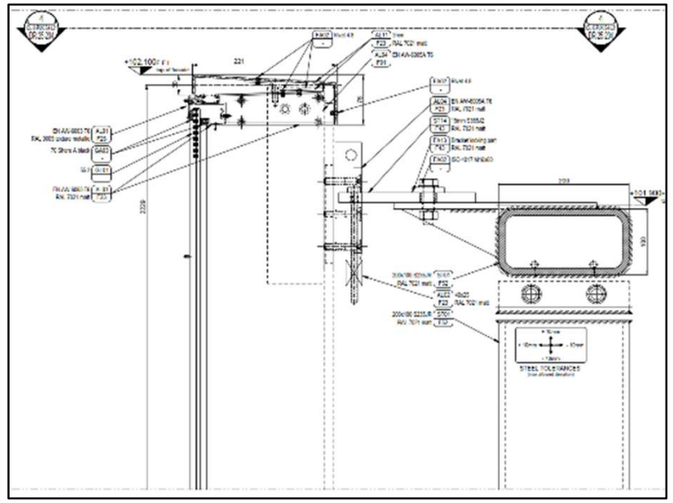
KEY FEATURES:

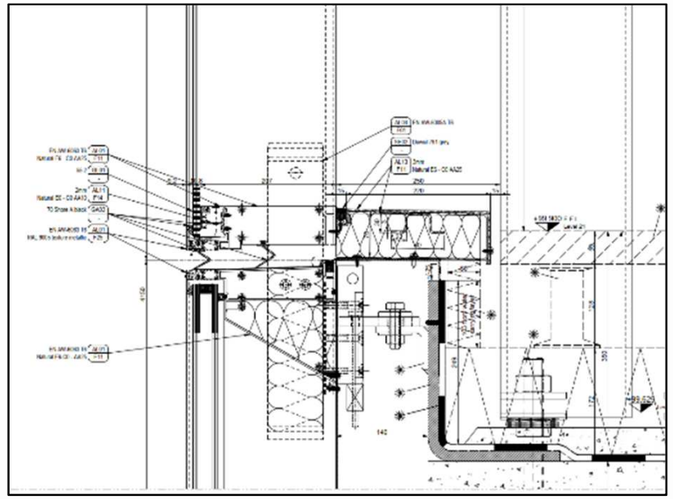
- Custom unitized façade
- Height – 310m
- Triple glazing
- BREEAM Outstanding / WELL Gold



Large windscreen options and roof interfaces

INTERNATIONAL QUARTER S4, LONDON

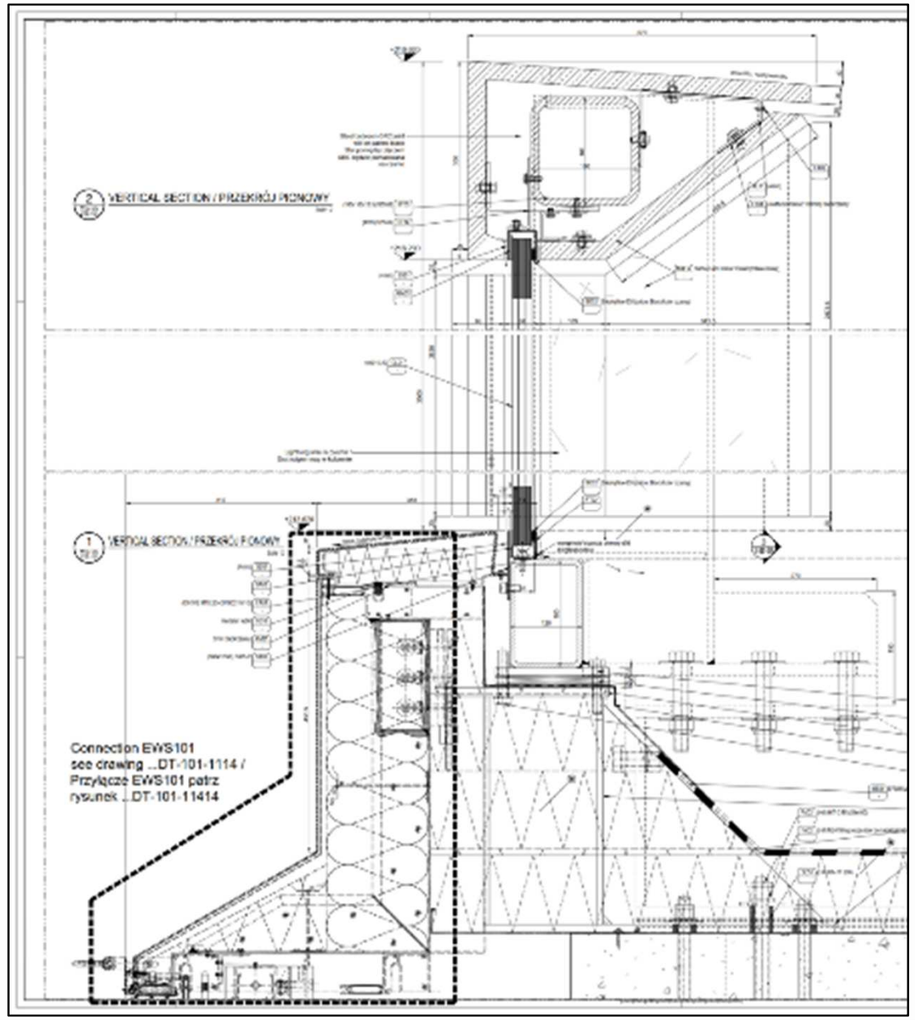




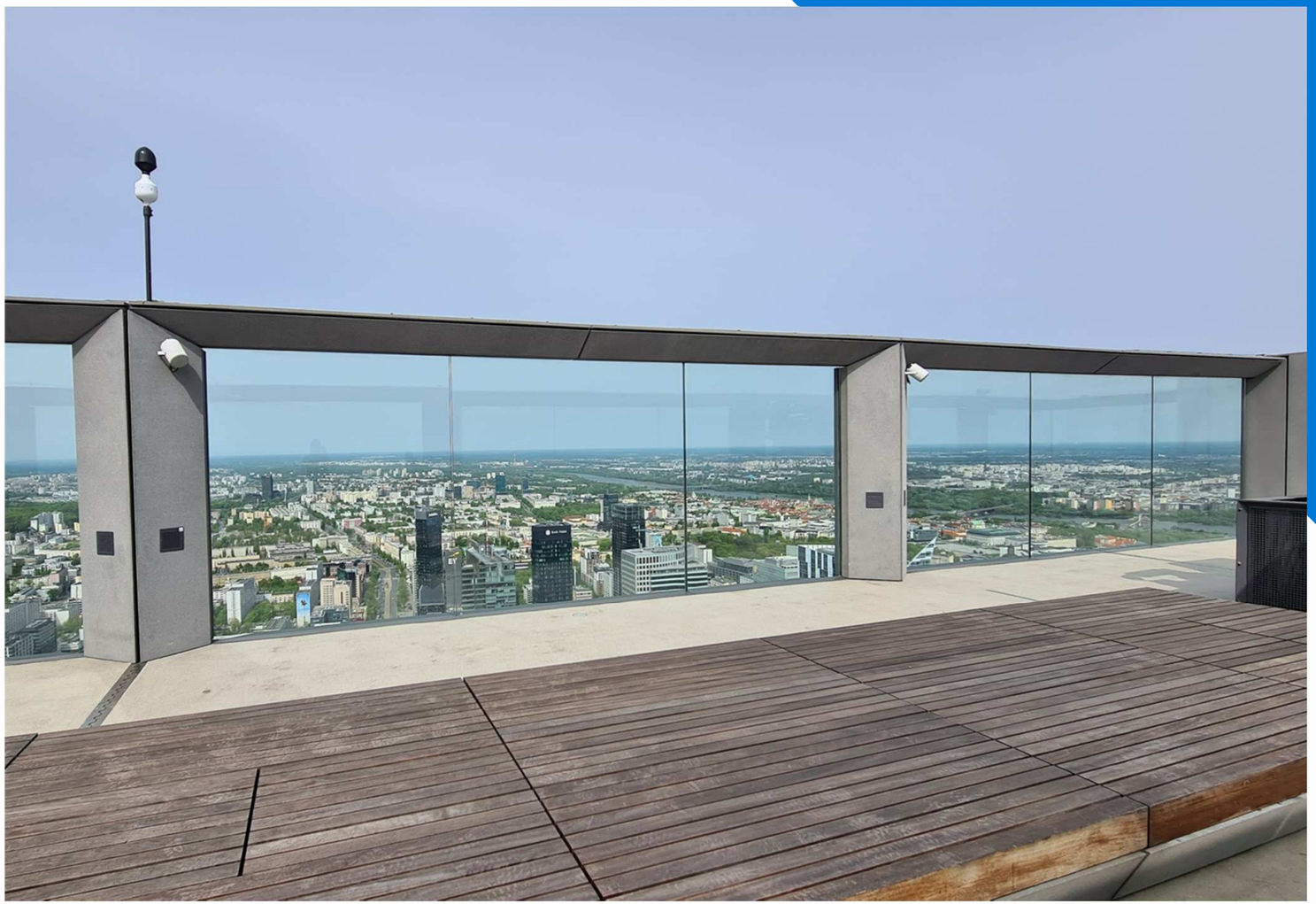
2.2m total screen height

Large windscreen options and roof interfaces

VARSO TOWER, WARSAW



3.0m total screen height



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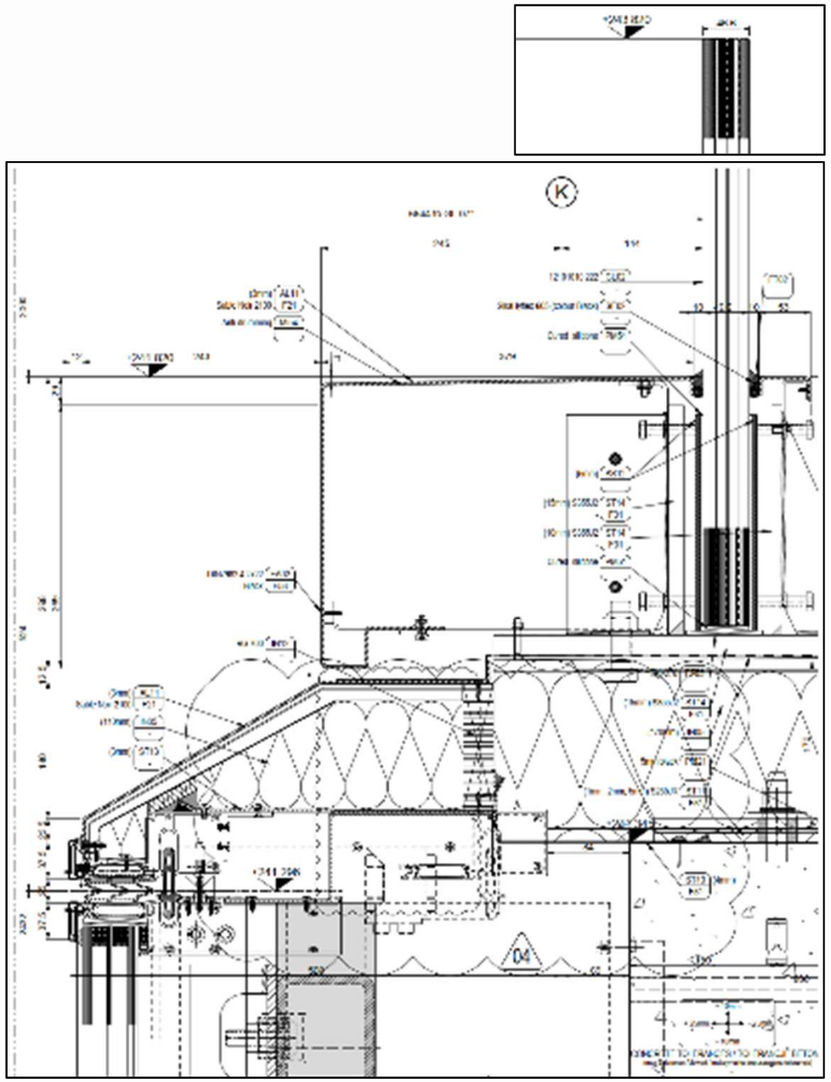
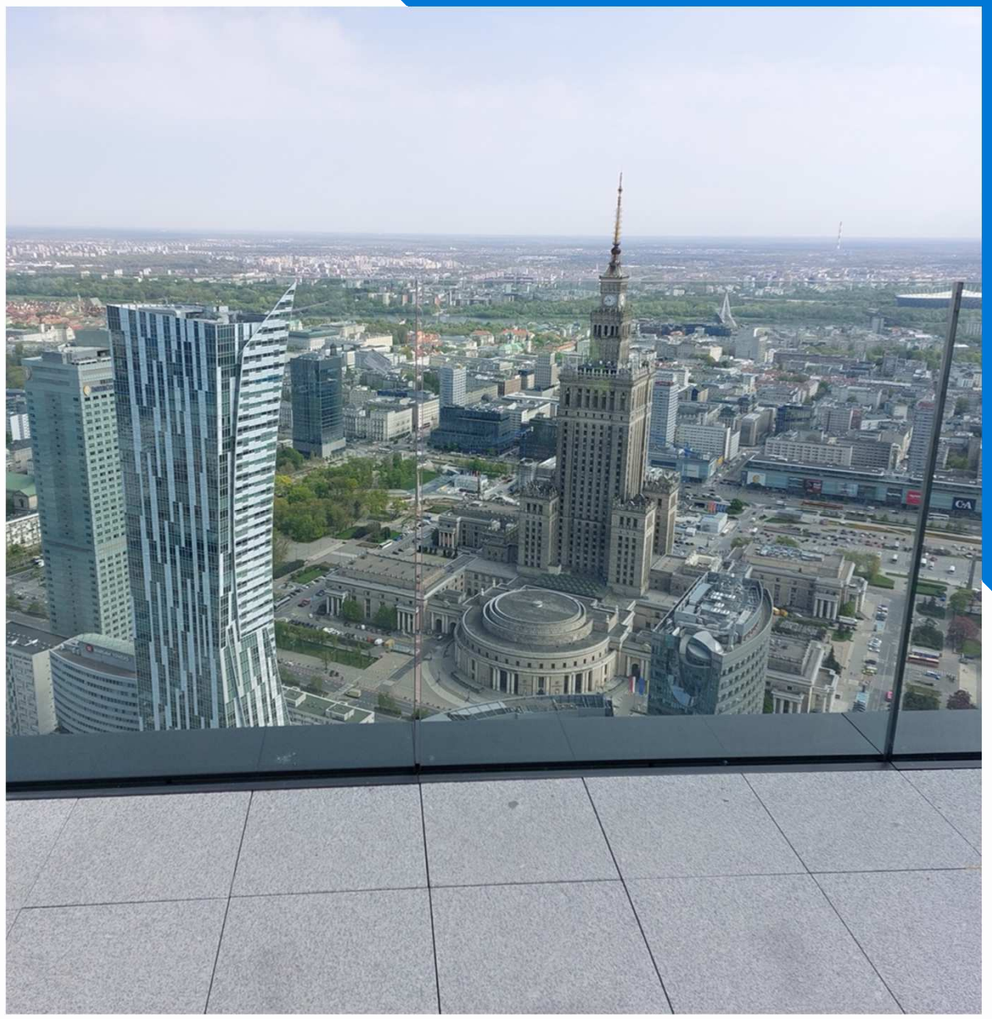
Large windscreen options and roof interfaces

VARSO TOWER, WARSAW



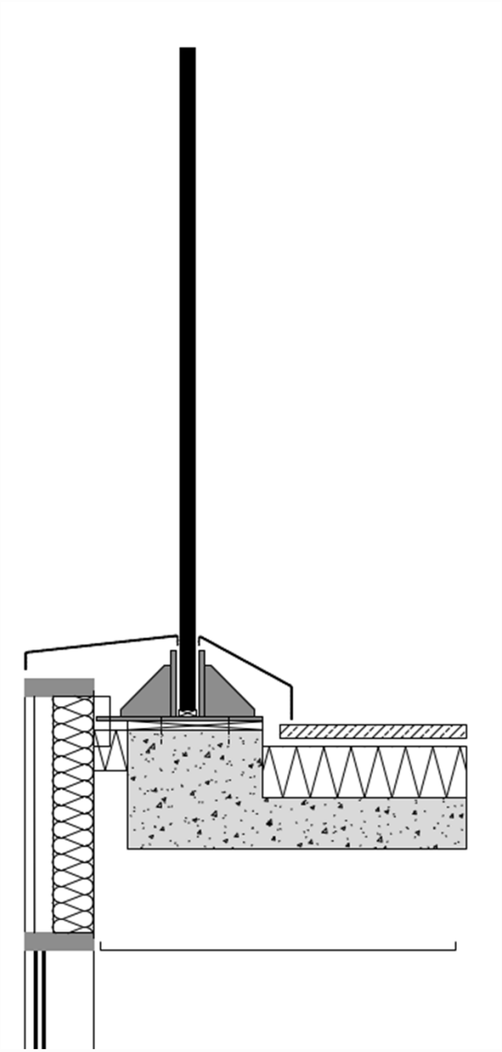
2.3m total screen height



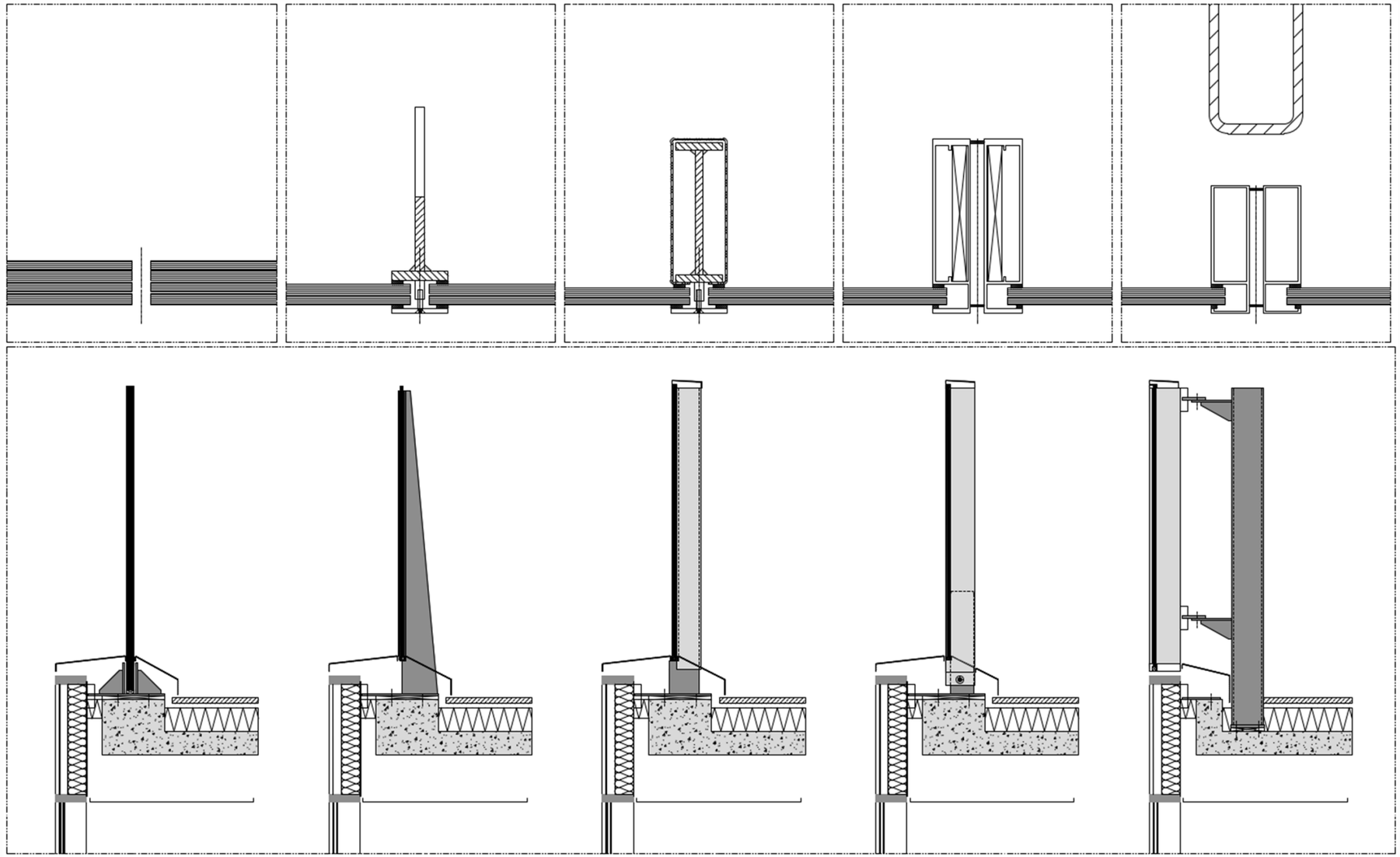
Large windscreen options and roof interfaces

BASIS FOR COMPARISON:

- 2500mm windscreen height
- 1500mm grid spacing
- 1.5kN/m lineload @ 1.1m
- Windload: 2.5 kPa

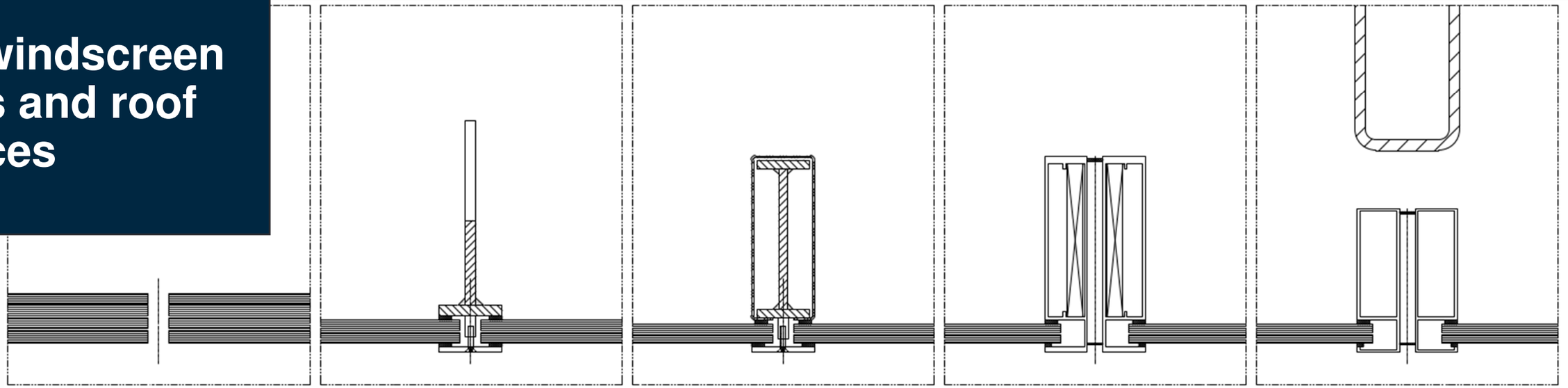


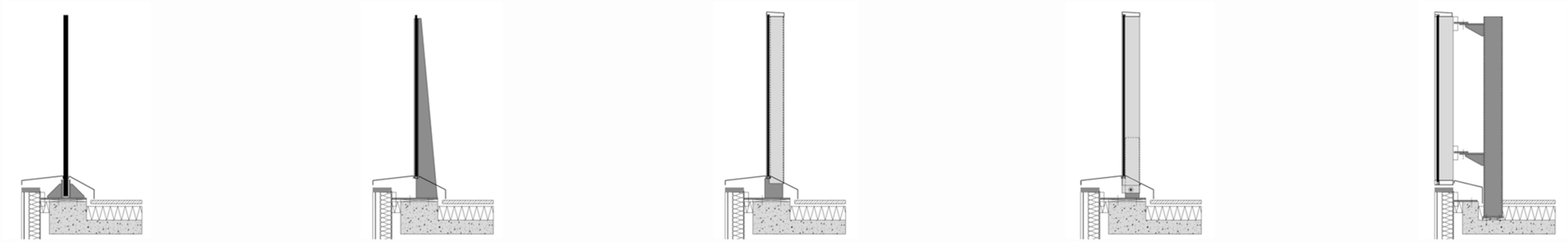
Large windscreen options and roof interfaces



5 possible options for windscreen solution

Large windscreen options and roof interfaces





1) Full glass
1-side clamped
- Site loose parts install
- No visual obstructions
- Large glass thickness

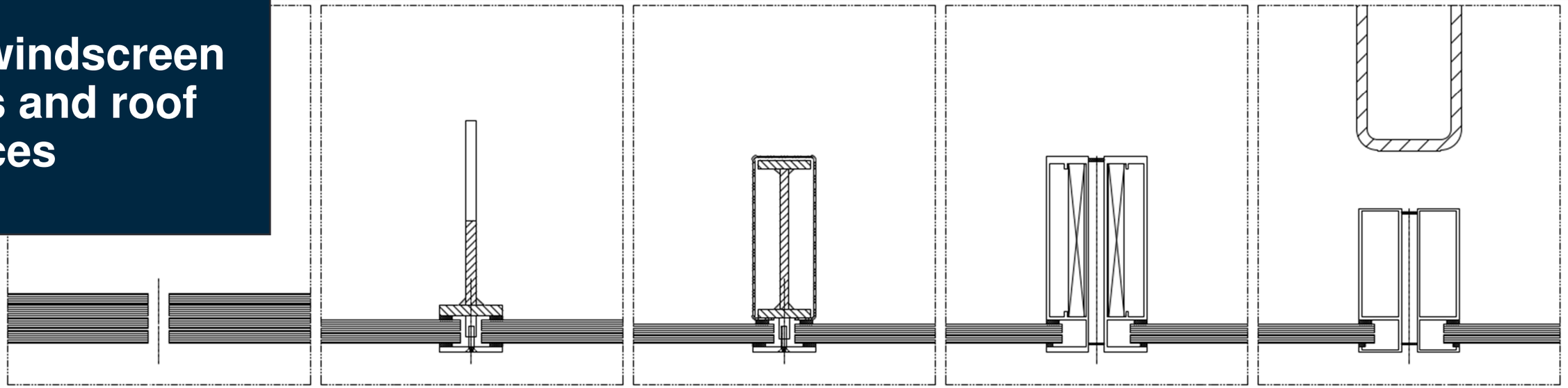
2) Visual steel post
3-side clamped
- Site loose parts install
- Steel finish, visual quality

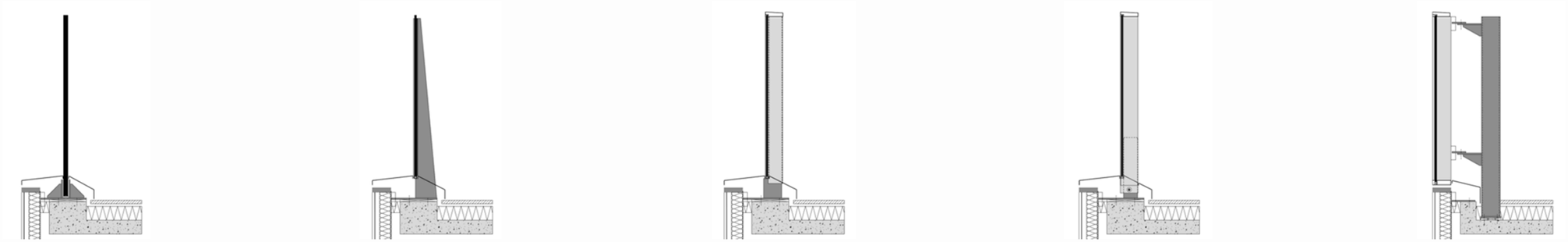
3) Steel overclad
4-side clamped
- Site loose parts install
- Standard steel section
- Many visual sheet work joints

4) Custom unitized alu
4-side clamped
- Panelised
- Fast installation
- Deep profiles

5) Custom unitized alu
4-side clamped + steel
- Panelised
- Fast installation
- Typical façade profiles (continuation of floors below)

Large windscreen options and roof interfaces





1) Full glass
1-side clamped
- Site loose parts install
- No visual obstructions
- Large glass thickness
- +/- Cost: + 45 %

2) Visual steel post
3-side clamped
- Site loose parts install
- Steel finish, visual quality
- +/- Cost: + 30 %

3) Steel overclad
4-side clamped
- Site loose parts install
- Standard steel section
- Many visual sheet work joints
- +/- Cost: + 35 %

4) Custom unitized alu
4-side clamped
- Panelised
- Fast installation
- Deep profiles
- +/- Cost: + 25 %

5) Custom unitized alu
4-side clamped + steel
- Panelised
- Fast installation
- Typical façade profiles (continuation of floors below)
- Most cost-effective (excl. steel)

Other key topics

Structural materials used as non-structural cladding

Stick systems vs. unitized systems for high-rise buildings

Customizing standard stick systems

Curved façades and glazing vs. facetted options

Façade module width and the use of large panel widths

If you are particularly interested in any of these, please come and talk to us!

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THANK YOU