

# Atlas of Details



## Steven Holl. MIT Simmons Hall 1999-2002

Author(s): Caterina Mattiolo

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URL: <https://www.detailsinsection.org/projects/mit-simmons-hall>

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Atlas of Details is a research project to demonstrate how insightful a section can be, in order to represent the complexity of the architectural artifact, since it allows the simultaneous perception of materiality and form, of building envelope and interior spaces. Atlas of Details is a project by The Formwork, an association established by professors and PhD candidates with diverse academic backgrounds (history, architectural design, technology, preservation) working at the IUAV University in Venice and at the Milan Politecnico. For more information about the Atlas of Details and The Formwork, please contact [info@theformwork.org](mailto:info@theformwork.org).

### The Formwork

Cultural association

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# Steven Holl

# MIT Simmons Hall

1999-2002

**Text**

Caterina Mattiolo  
IUAV Venezia

**Drawings**

Caterina Mattiolo  
IUAV Venezia

**Architect**

Steven Holl Architects, Perry Dean Rogers & Partners

**Name of the building**

*Simmons Hall*

**Site**

Massachussets Institute of Technology, Cambridge, MA (US)

**Client**

*Massachussets Institute of Technology*

**Contractors**

Daniel O'Connell's Sons

**Engineer**

Guy Nordenson and Associates (Christopher Diamond);  
Simpson Gumpertz & Heger (John Thompson);  
Ove Arup & Partners

**Other actors**

Yolles Partnership (structural engineering);  
Keen Engineering Co. (mechanical engineering);  
Carinci Burt Rogers Inc. (electrical work);  
Fisher Marantz Stone (lighting design)

**Building permit**

1999

**Start of construction works**

2000

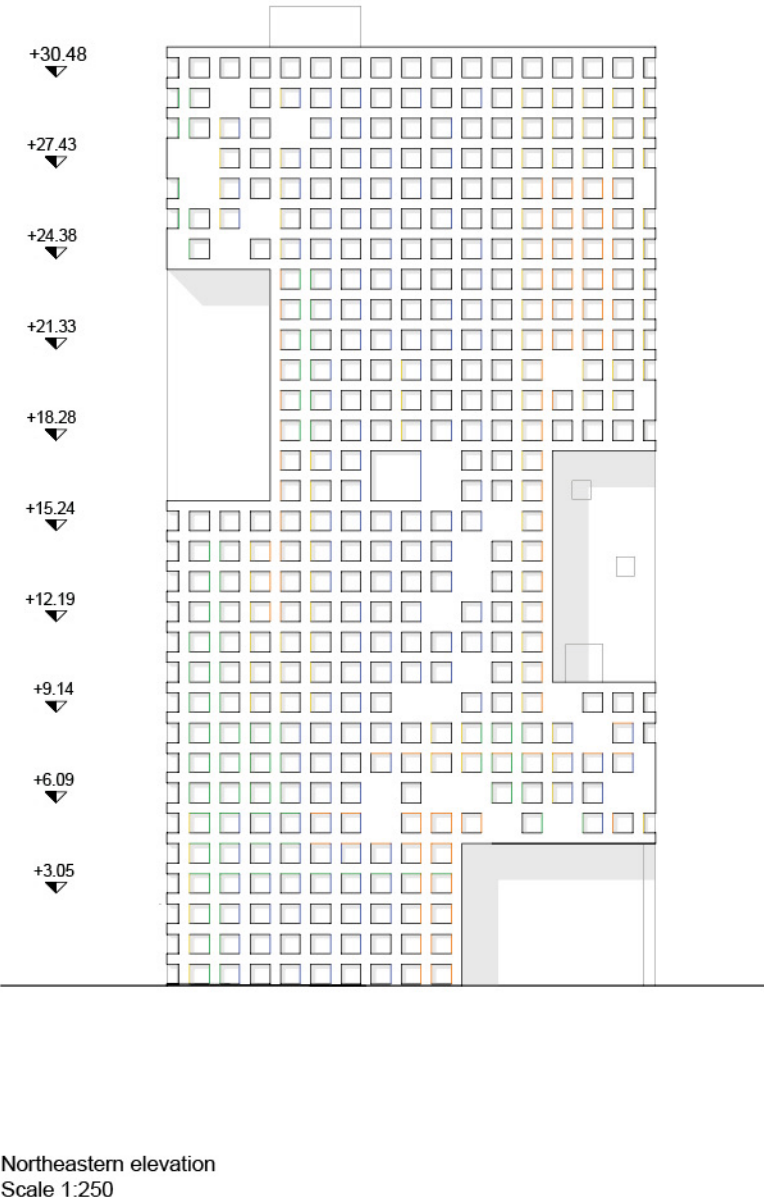
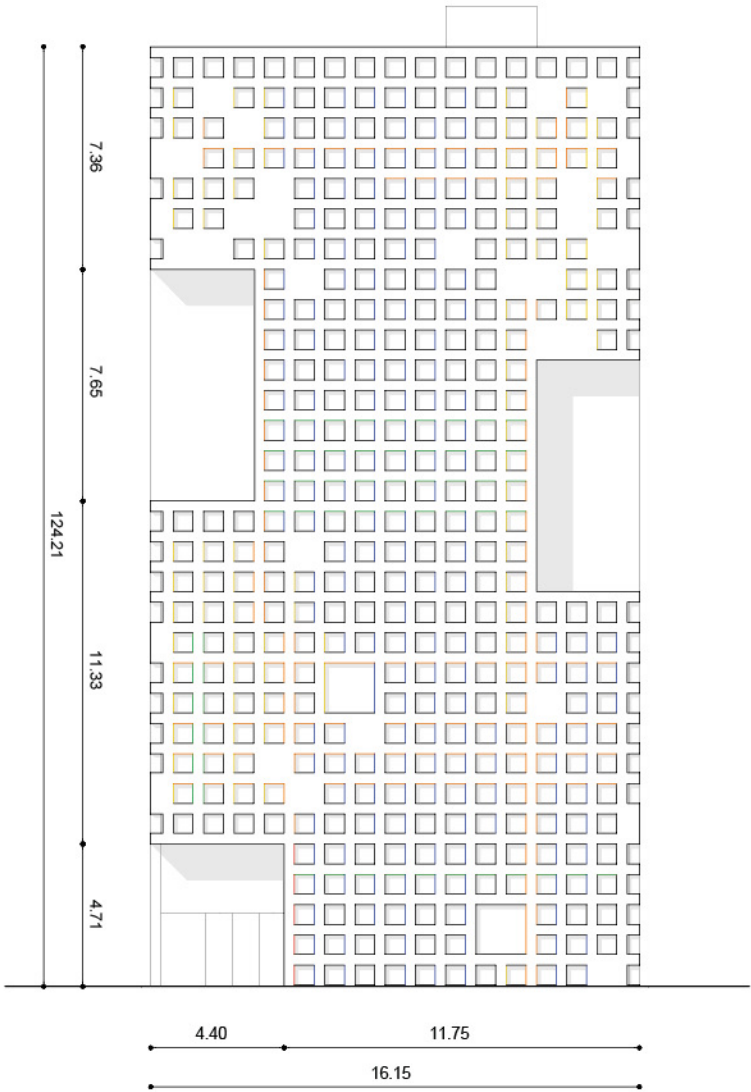
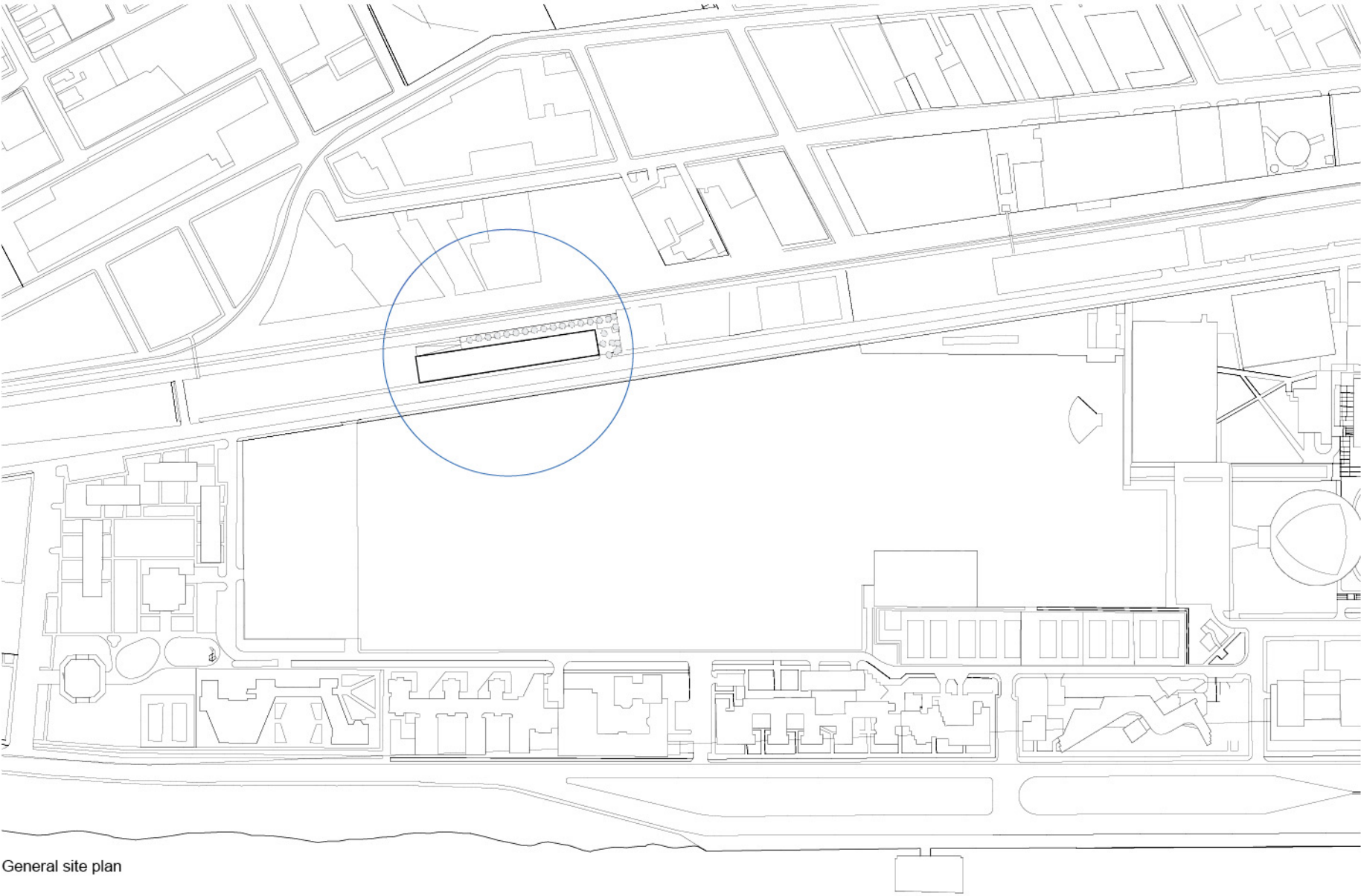
**End of construction works**

2002

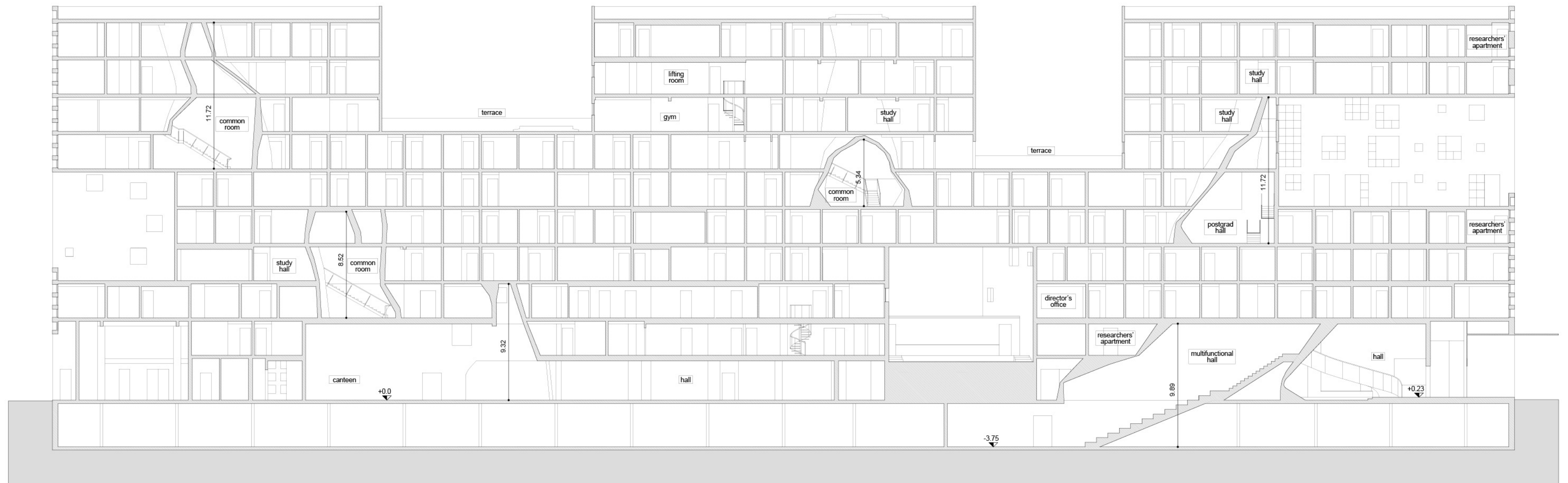
**Construction system**

Precast concrete elements: prefabricated panels functioning as rigid frames and Vierendeel trusses form an exoskeleton which allows great cantilevers and the transferring of the load-bearing structure to the outside of the building.

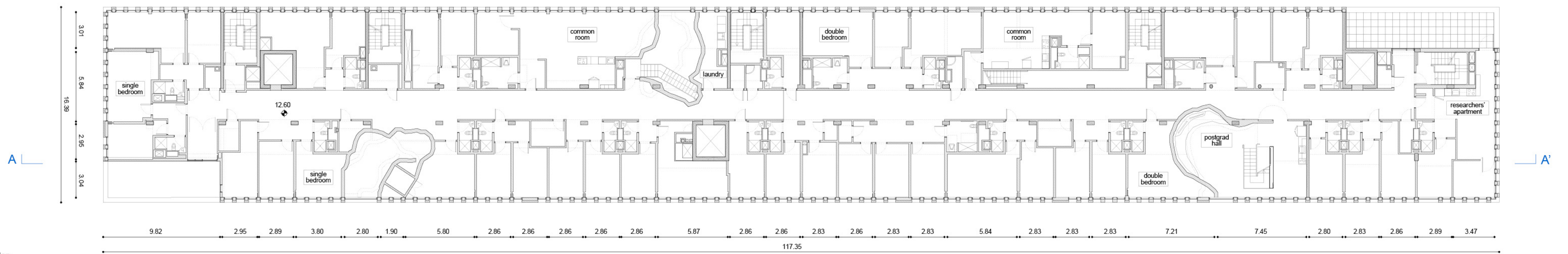




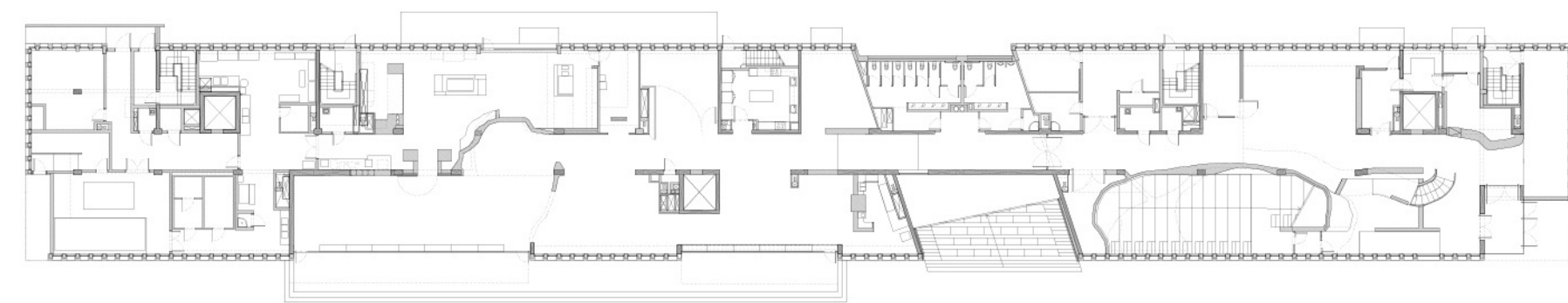




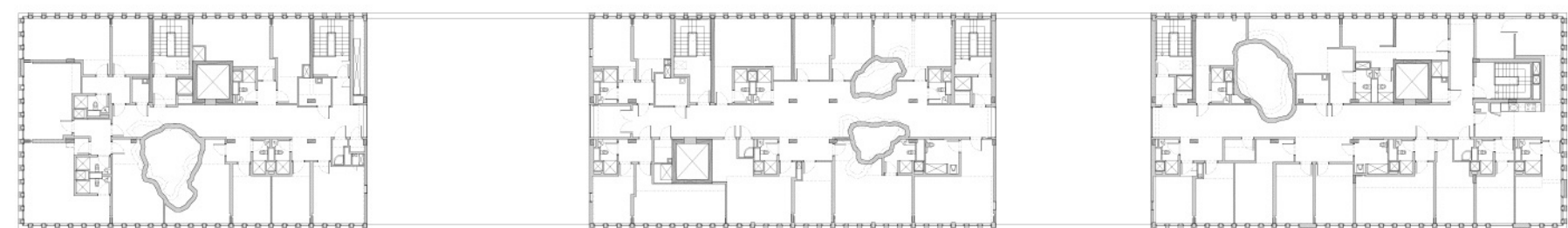
AA'. Longitudinal section  
Scale 1:250



Fifth level plan  
Scale 1:250

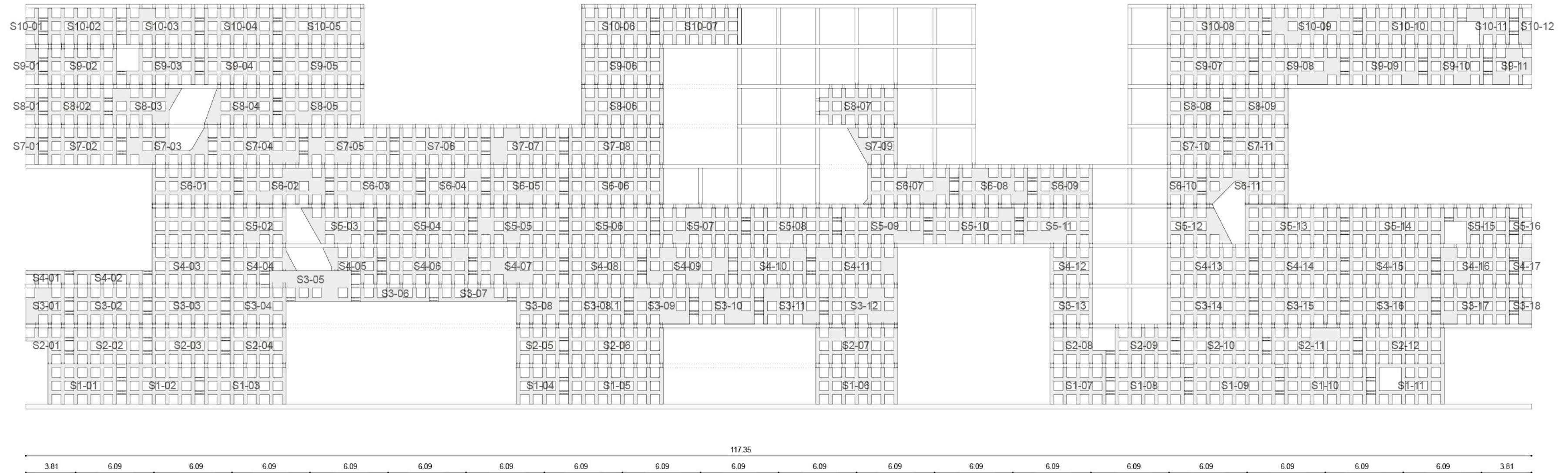


First level plan  
Scale 1:500



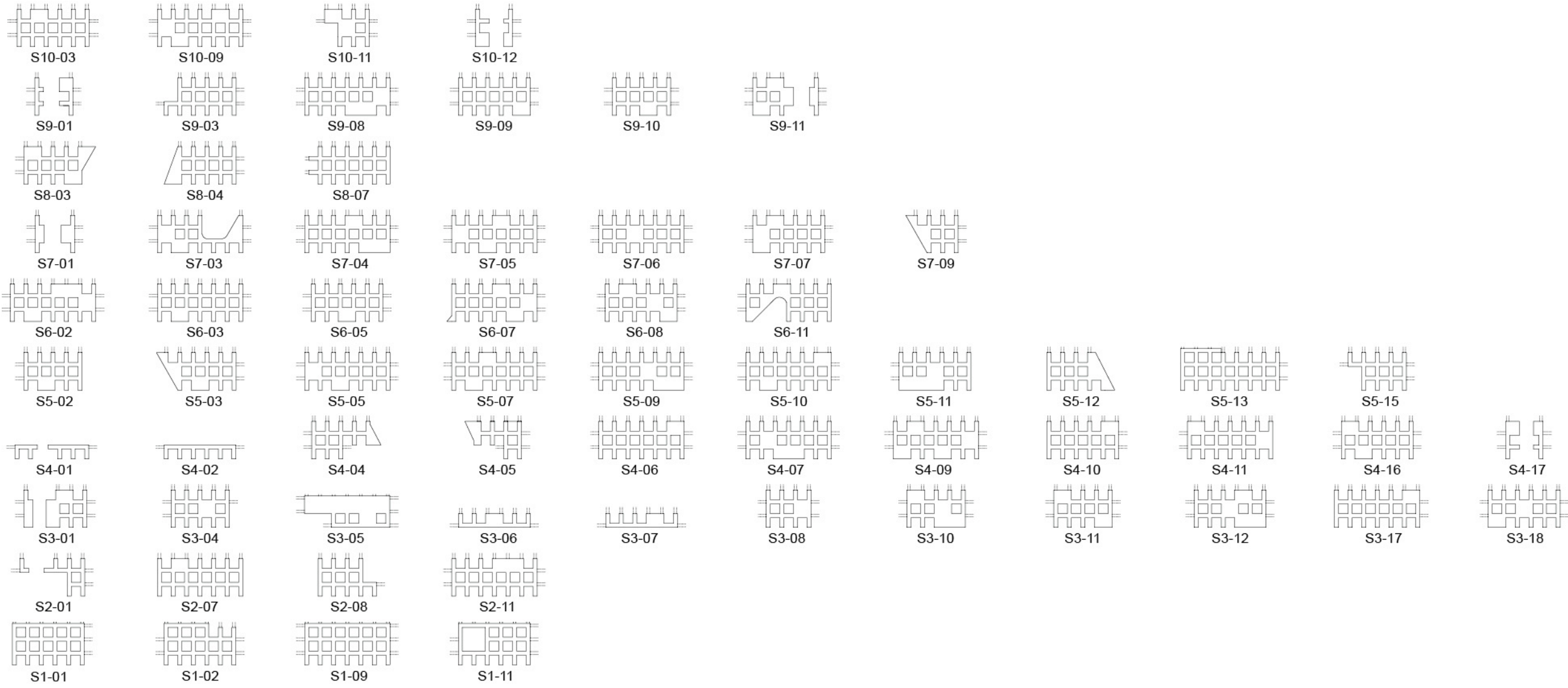
Tenth level plan  
Scale 1:500



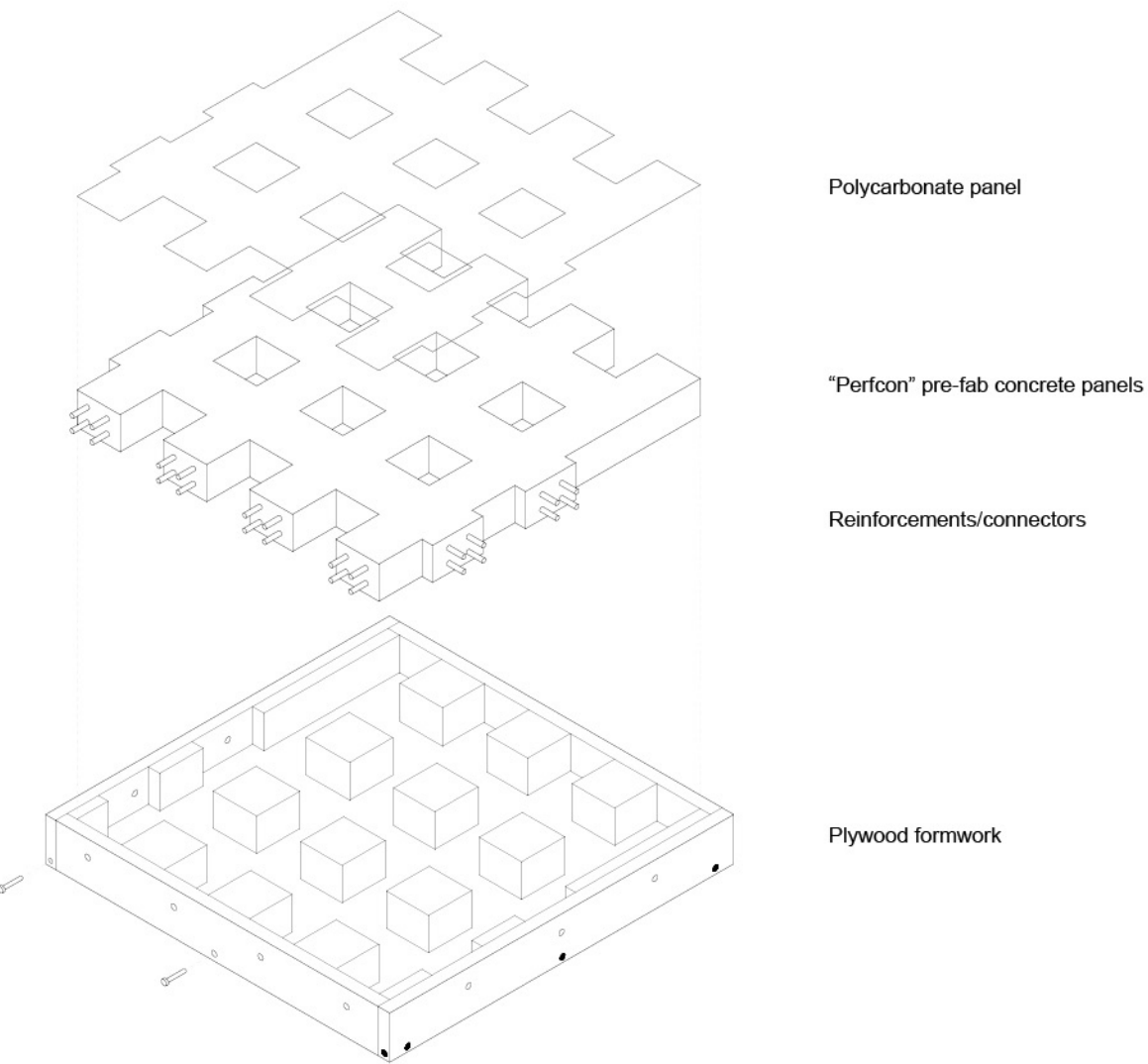


Southeastern elevation, structure  
Scale 1:250

The structural facade  
The PrefCon pre-fab panels, specifically designed for this building, function as rigid frames and Vierendeel trusses. They allow for great flexibility and constitute an exoskeleton which transfers the load-bearing structure to the outside of the building.



Abacus, facade structural panels



Isometric exploded view, formwork for the facade structural panels



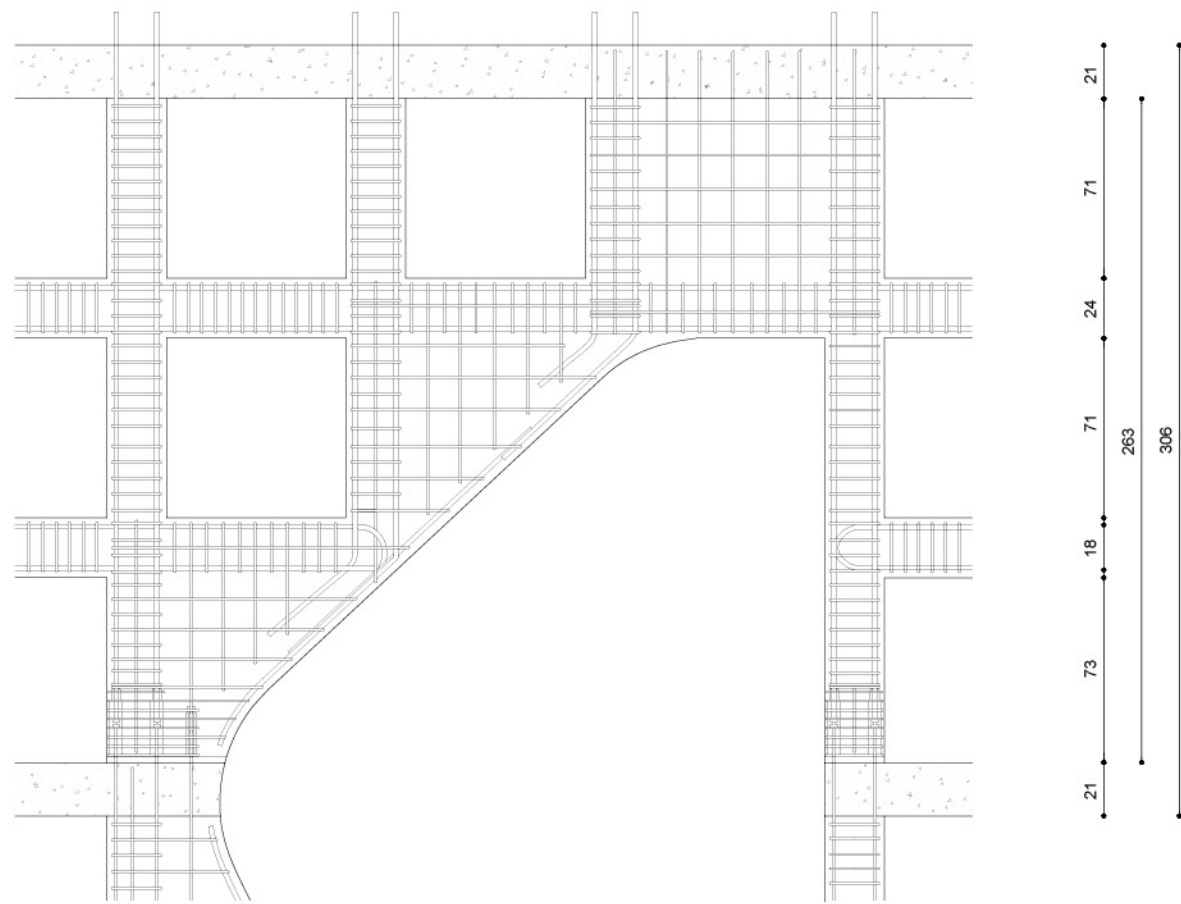


Southeastern elevation, structure  
Scale 1:250



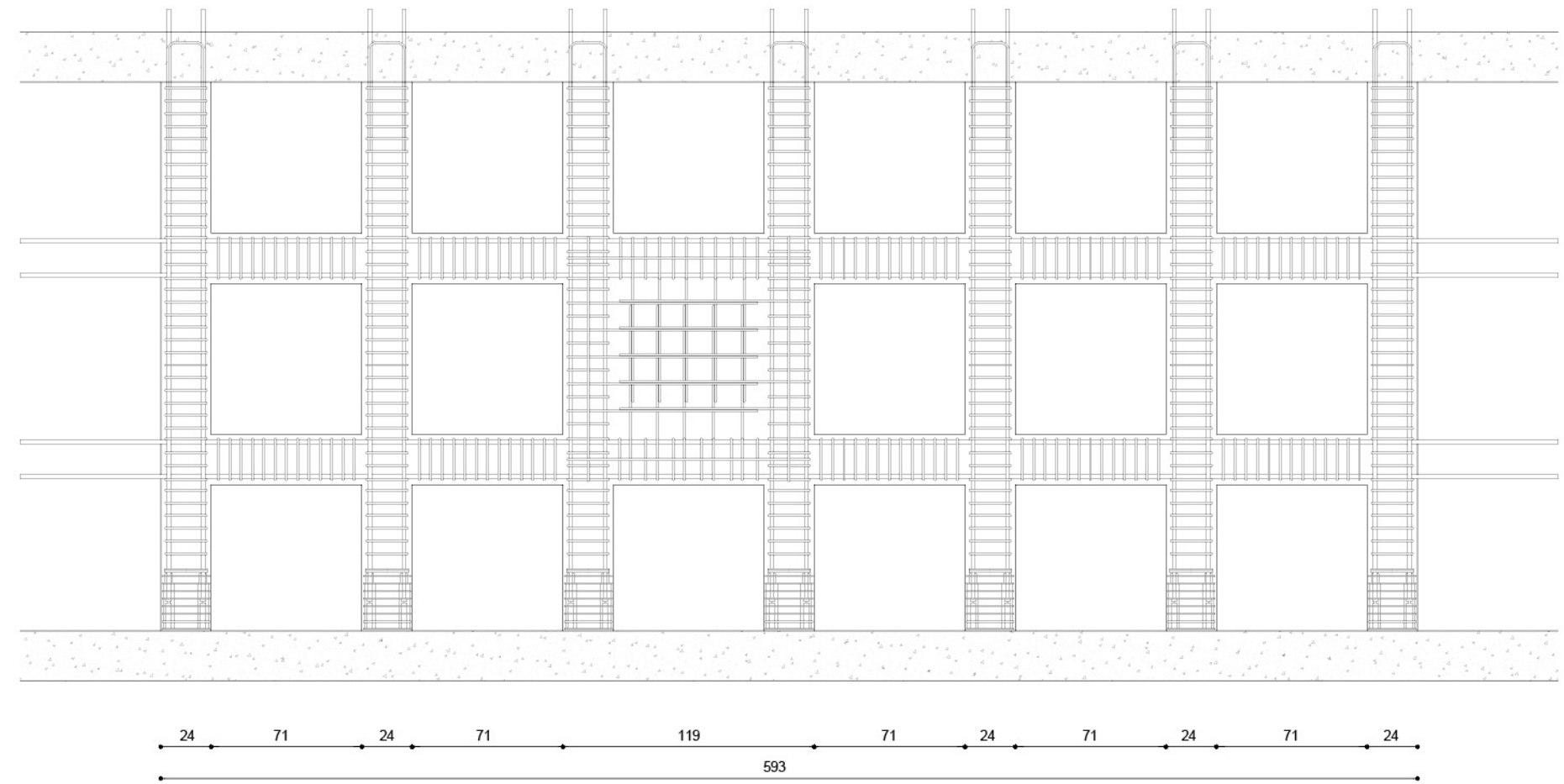
#### Structural stress

The coloured frames express the highest possible stress expected within the structural elements and reveal the size of the pre-fab concrete panel reinforcements: blue=#5, green=#6, yellow=#7, orange=#8, red=#9, #10. Unpainted areas are #5 or less.

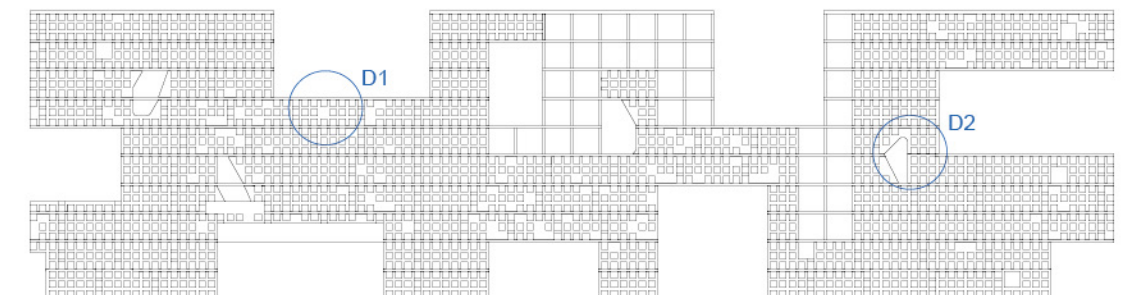


D1. S6-11 pre-fab concrete panel detail  
Scale 1:25

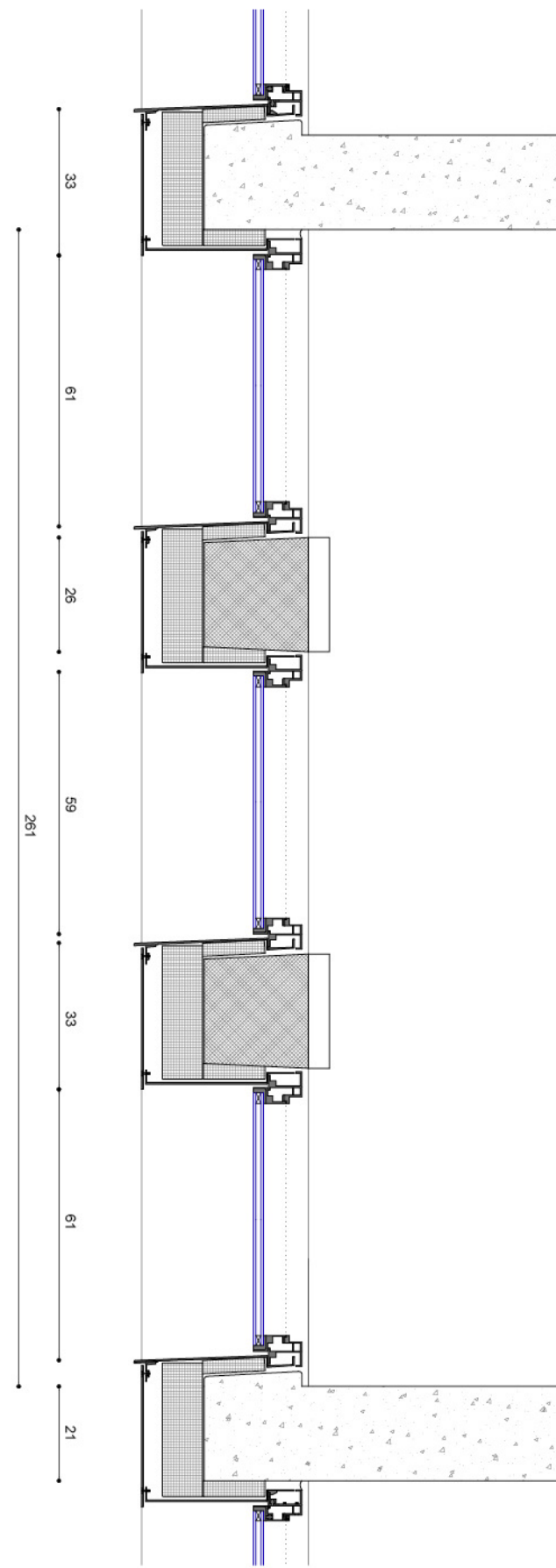
D1, D2. Pre-fab concrete panel details  
Scale 1:25



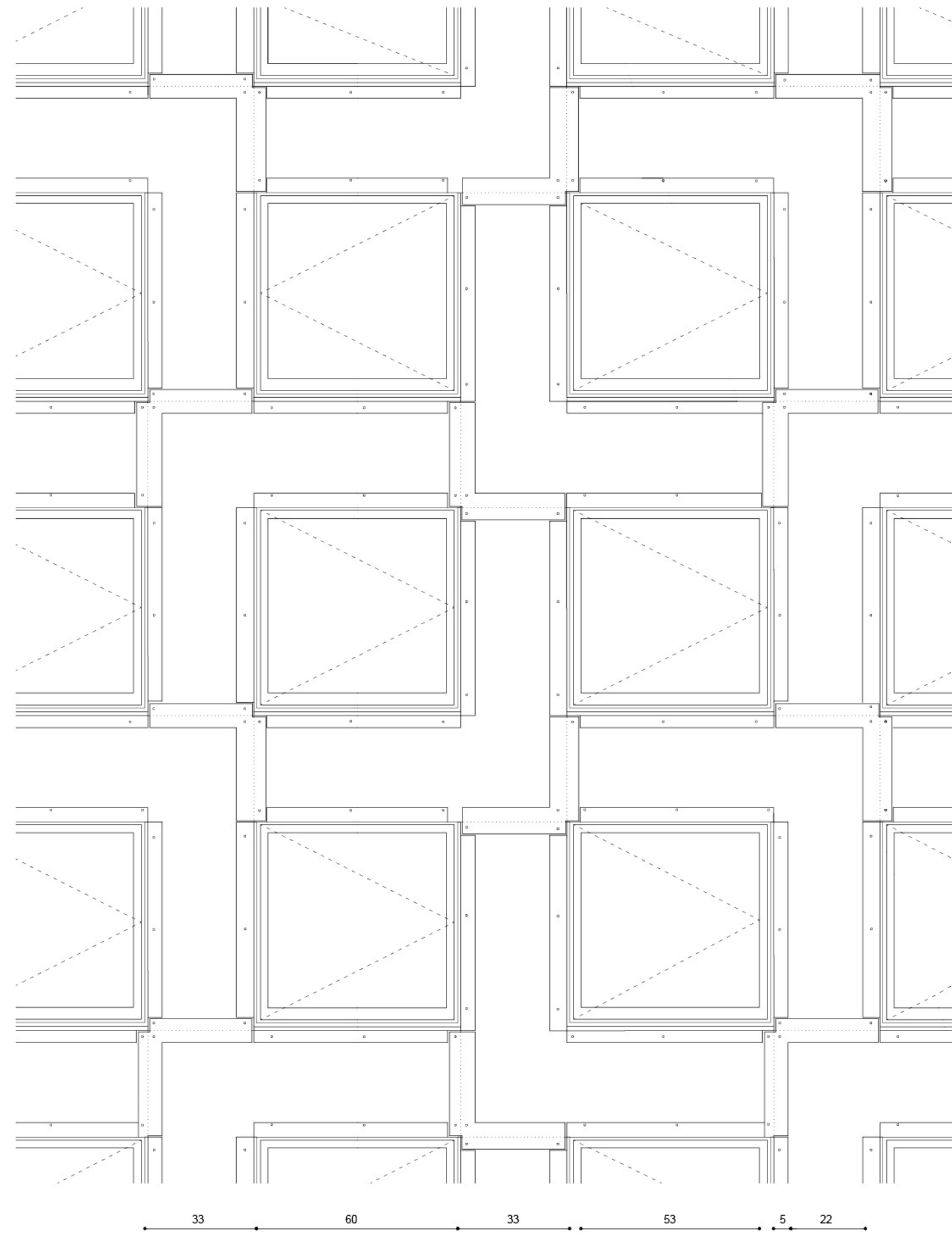
D2. S7-06 pre-fab concrete panel detail  
Scale 1:25



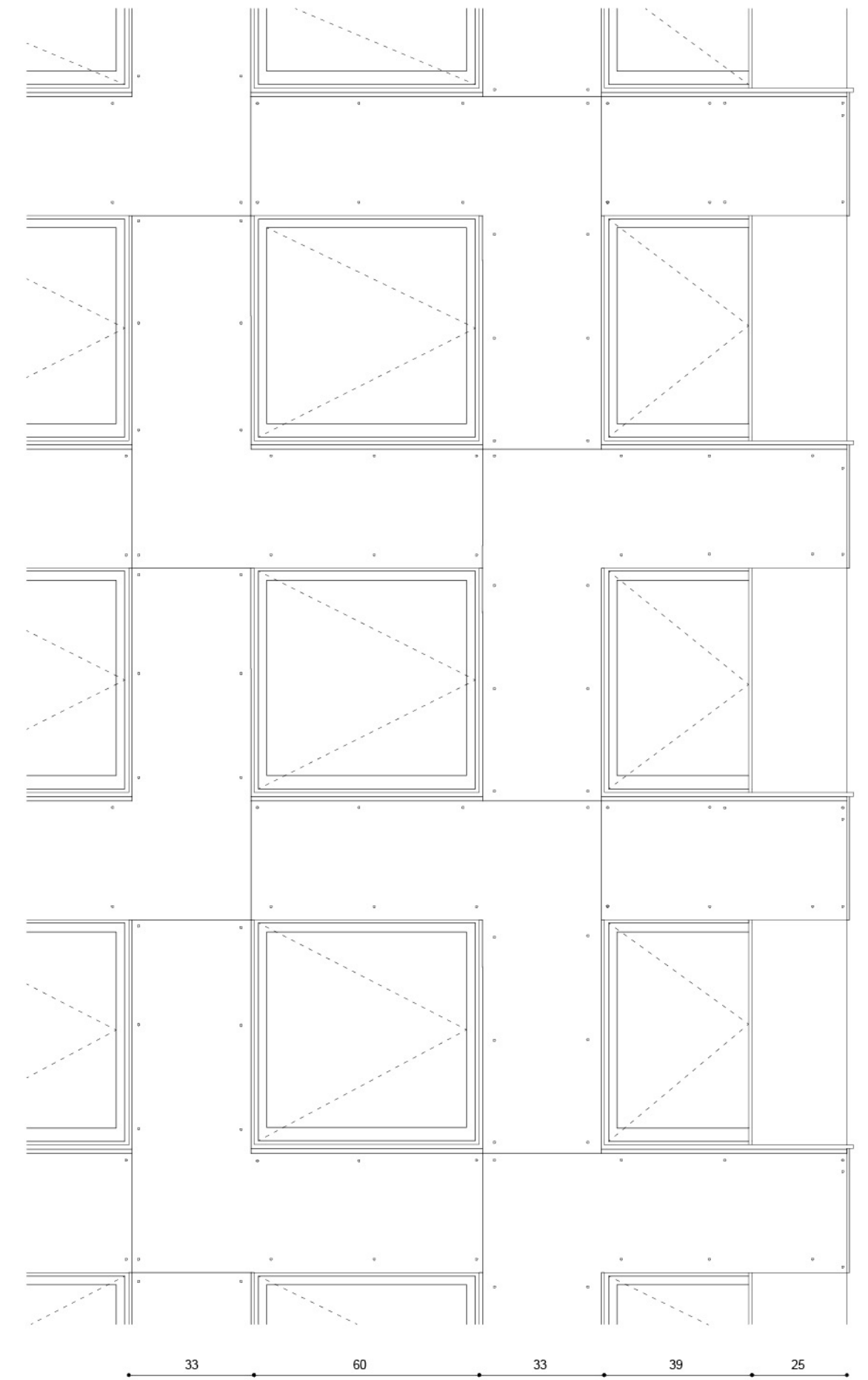




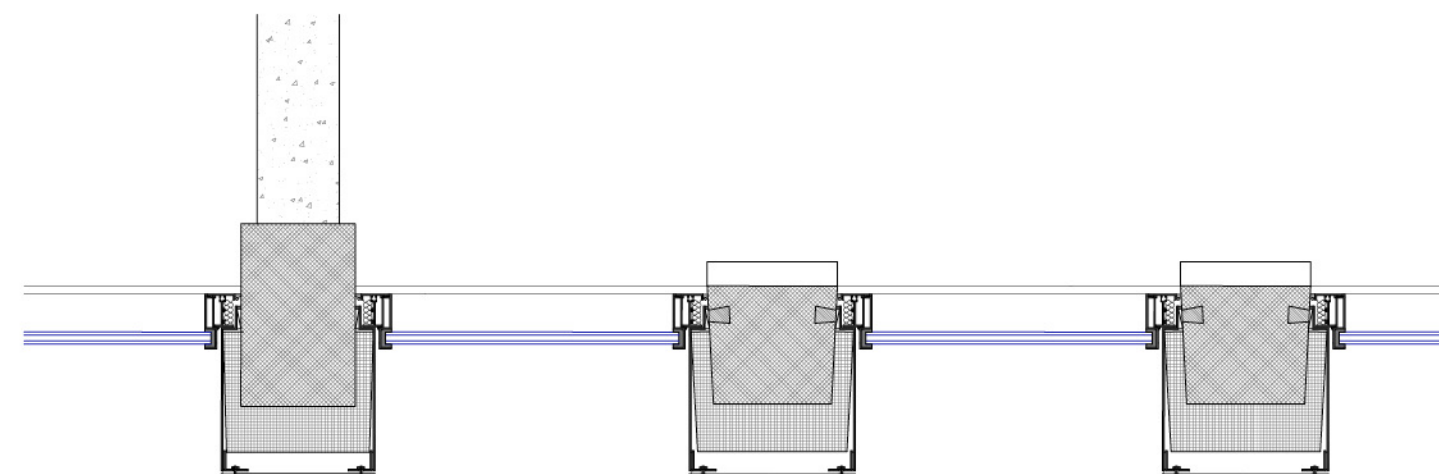
**Facade**  
Anodised aluminum cladding  
Rigid insulating layer  
Pre-fab concrete panel  
Anodised aluminum window



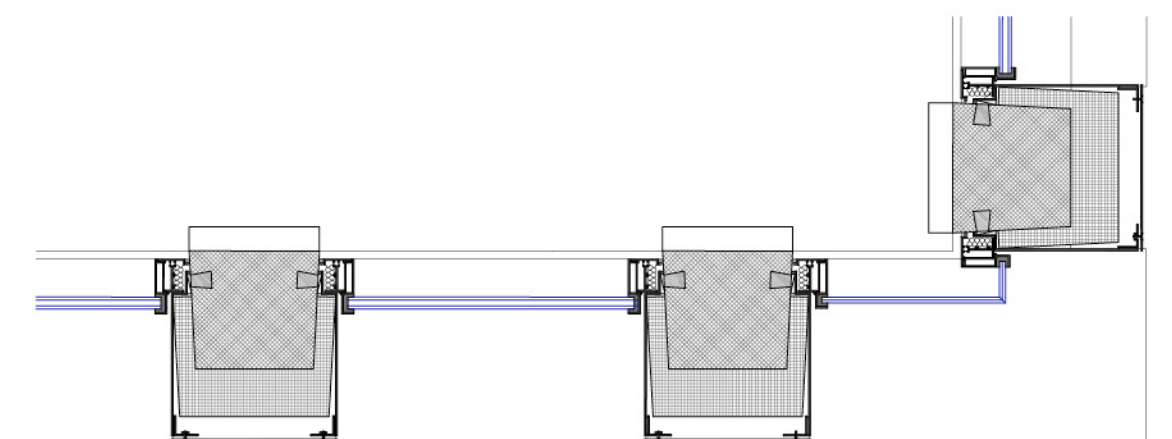
Elevation, without aluminum cladding



Elevation, external facade



**Horizontal section, facade**  
Internal wall  
Reinforced concrete pillar, poured *in situ*  
Rigid insulating layer  
Anodised aluminum cladding



[The facade](#)  
The facade is made of different typologies of precast concrete panels which are then clad with anodised aluminum. The pre-fab panels come in different shape and width but are all characterised by three windows and the same floor height. The facade is load-bearing and structurally functions as a *Vierendeel* truss.

Facade elevations and sections  
Scale 1:15

