

Building Herbouwhuis from fixation to leftover reconfiguration

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STRUCTURE

1. **Context**
2. **Research**
3. **Masterplan**
4. **Personal Design**
 - ACT 1 The existing, opening up*
 - ACT 2 Building Herbouwhuis, a playful reconfiguration*
 - ACT 3 Herbouwhuis in operation, inspiring entanglements*



LOW TOWN DOWN TOWN





Images from Google Earth





Image from Google Earth



Photo by author



A protected stage of leftovers in Blikfabriek. Photo by author



P3 exhibition at Blikfabriek. Photo by Marianna



Ateliers and indoor street in Blikfabriek. Photo by author

Research Plan

“The collection, curation and reconfiguration of waste materials is what fascinates me...

...Reconfiguring materials, and therefore their stories, is a powerful act.”



Ateliers and indoor street in Blikfabriek. Photo by author

Research Plan

“The collection, curation and reconfiguration of waste materials is what fascinates me...”

...Reconfiguring materials, and therefore their stories, is a powerful act.”

Focus points

The origins of leftover materials

Reading leftover materials’ patina, integrity and potential

Reconfiguration of leftover materials

Research question

To what extent do the origins of reused material matter?

Main methods

Fieldwork

Constructing stories



P5 Presentation



Raf van Oosterhout



27 June 2025



Urban Architecture



Pavers



Wood



Mix



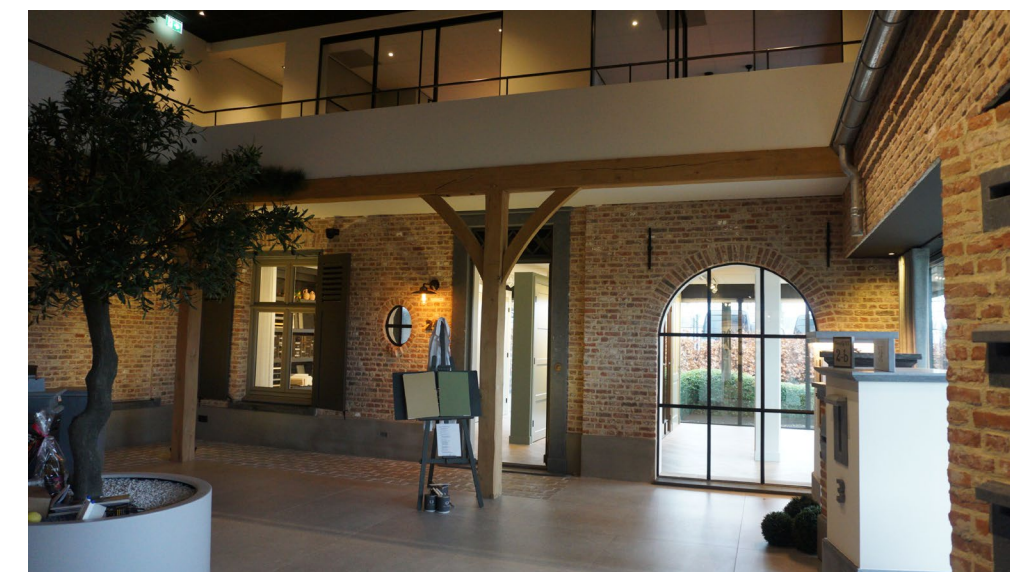
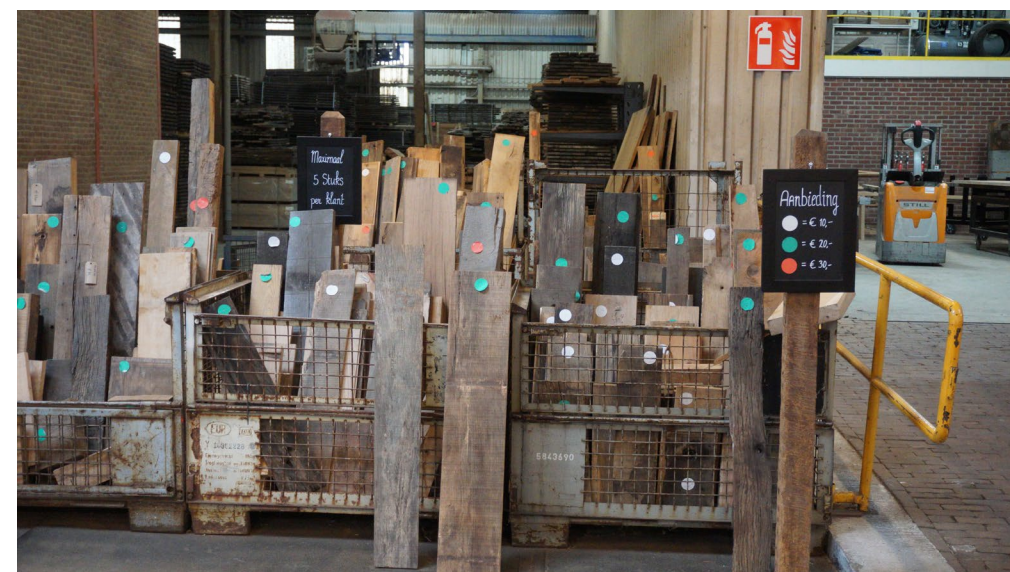
Carpet tiles



Bricks



Photos by author



Photos by author



Photo by author



Photo by Jeroen Musch



Photos by author





Photos by author



Focus points

The origins of leftover materials

Reading leftover materials' patina, integrity and potential

Reconfiguration of leftover materials

Conclusions

Value of origins and authenticity

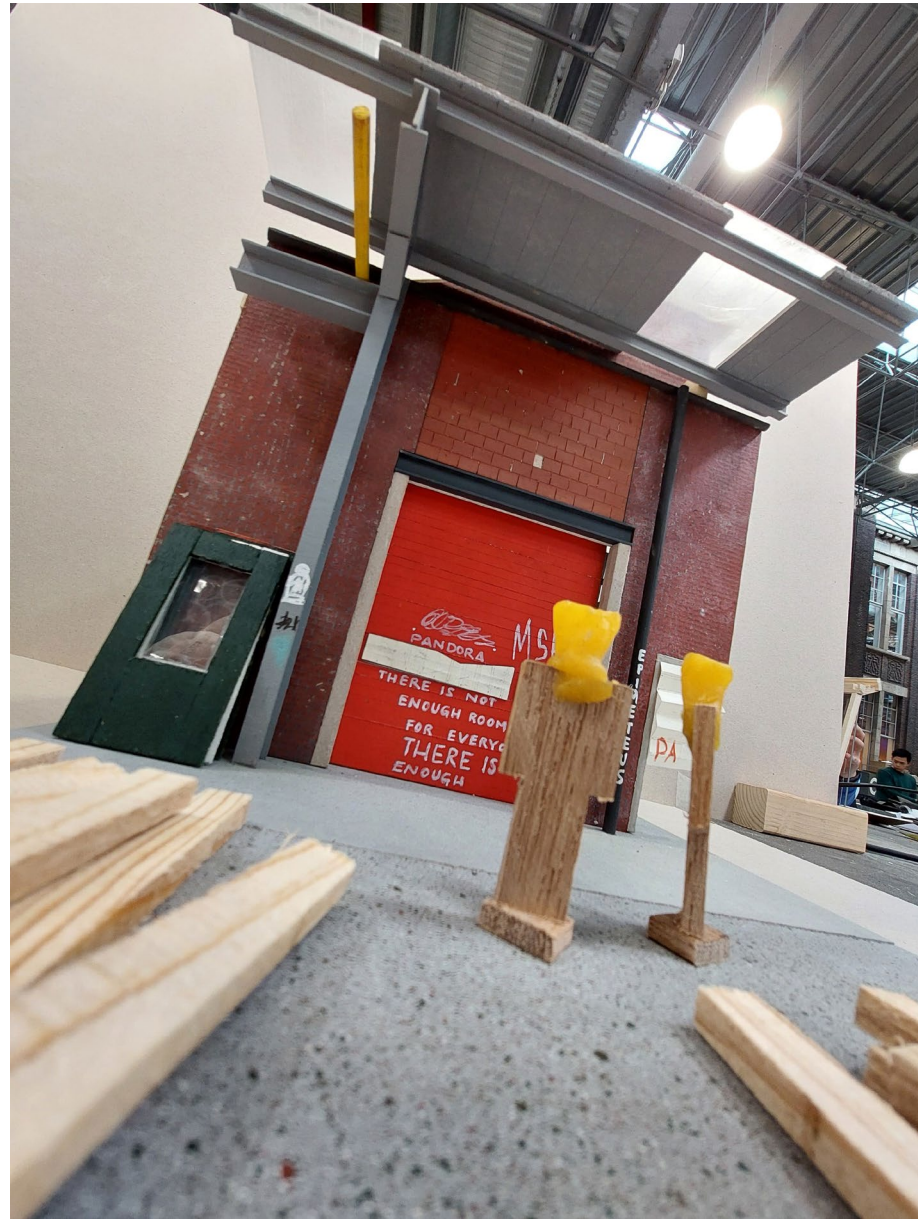
Patina alteration and material core

Story of the detail

Reuse craftsmanship

Architecture of the improvisation

Buildings as sponge and sponsor



Reconfiguration of leftover materials

*Reuse craftsmanship
Architecture of the improvisation
Buildings as sponge and sponsor*

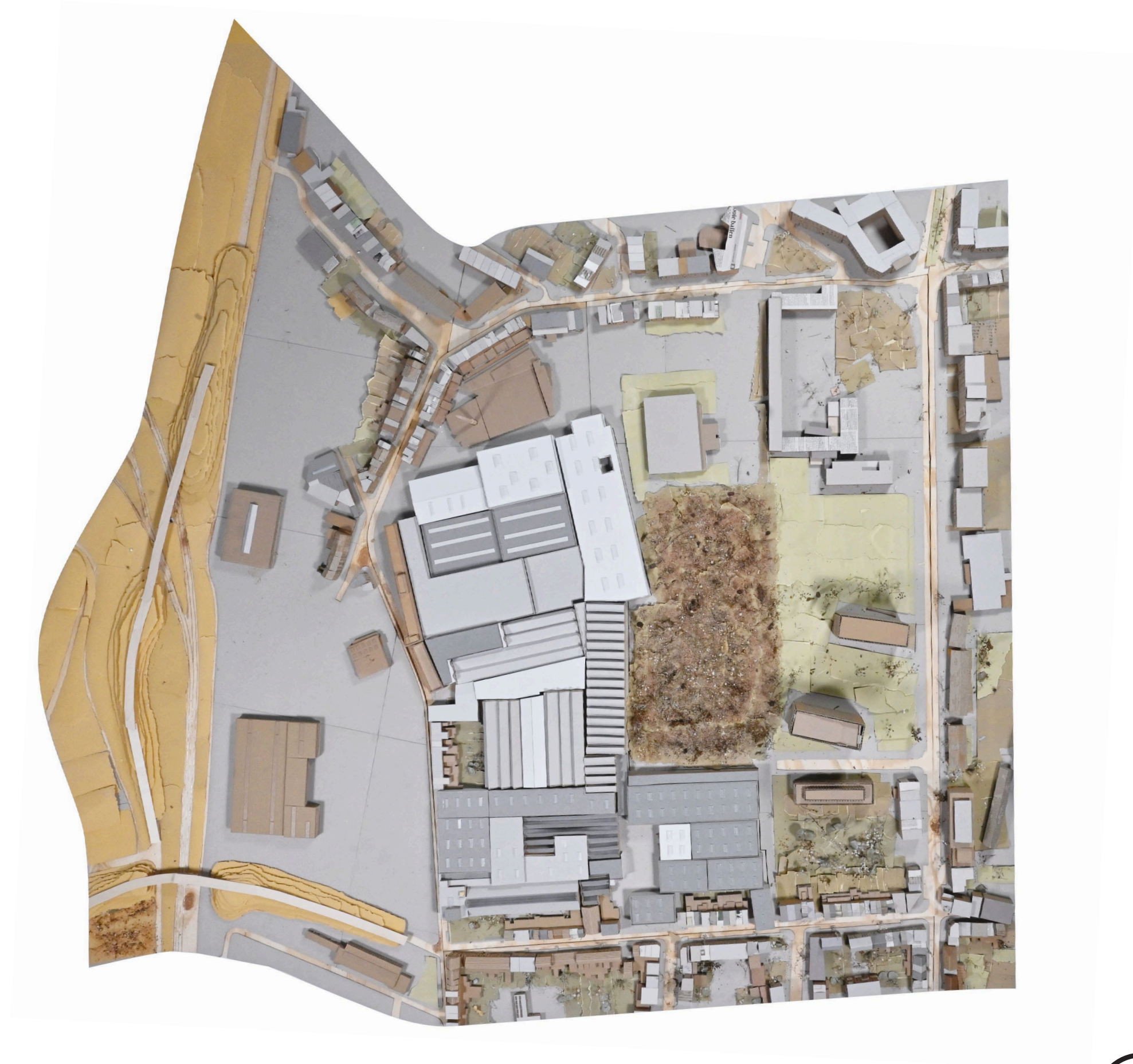
Lance

The site as a successive ecosystem with habitats and species



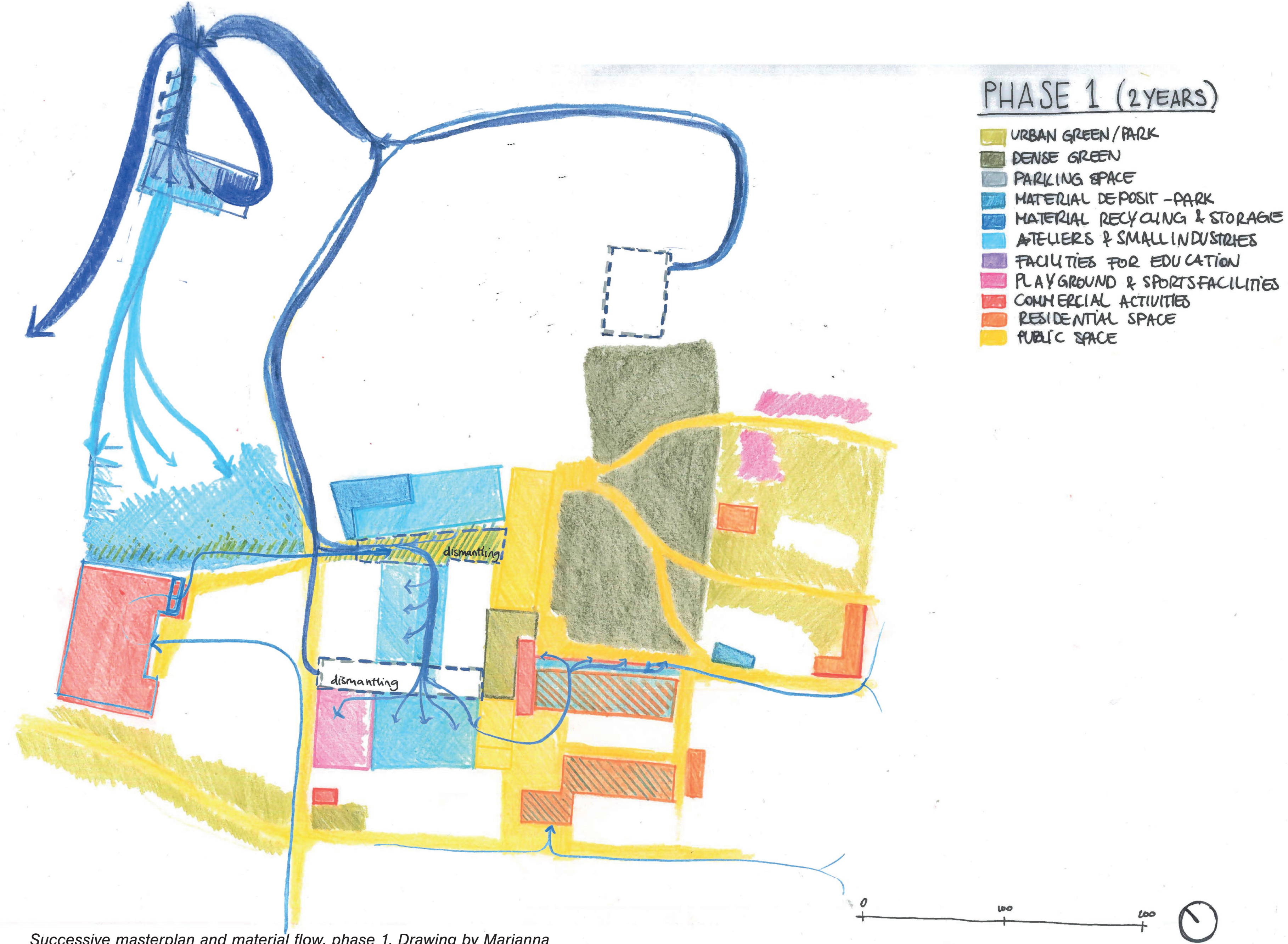
Marianna

Appropriation of the contours between private and public by domestic objects

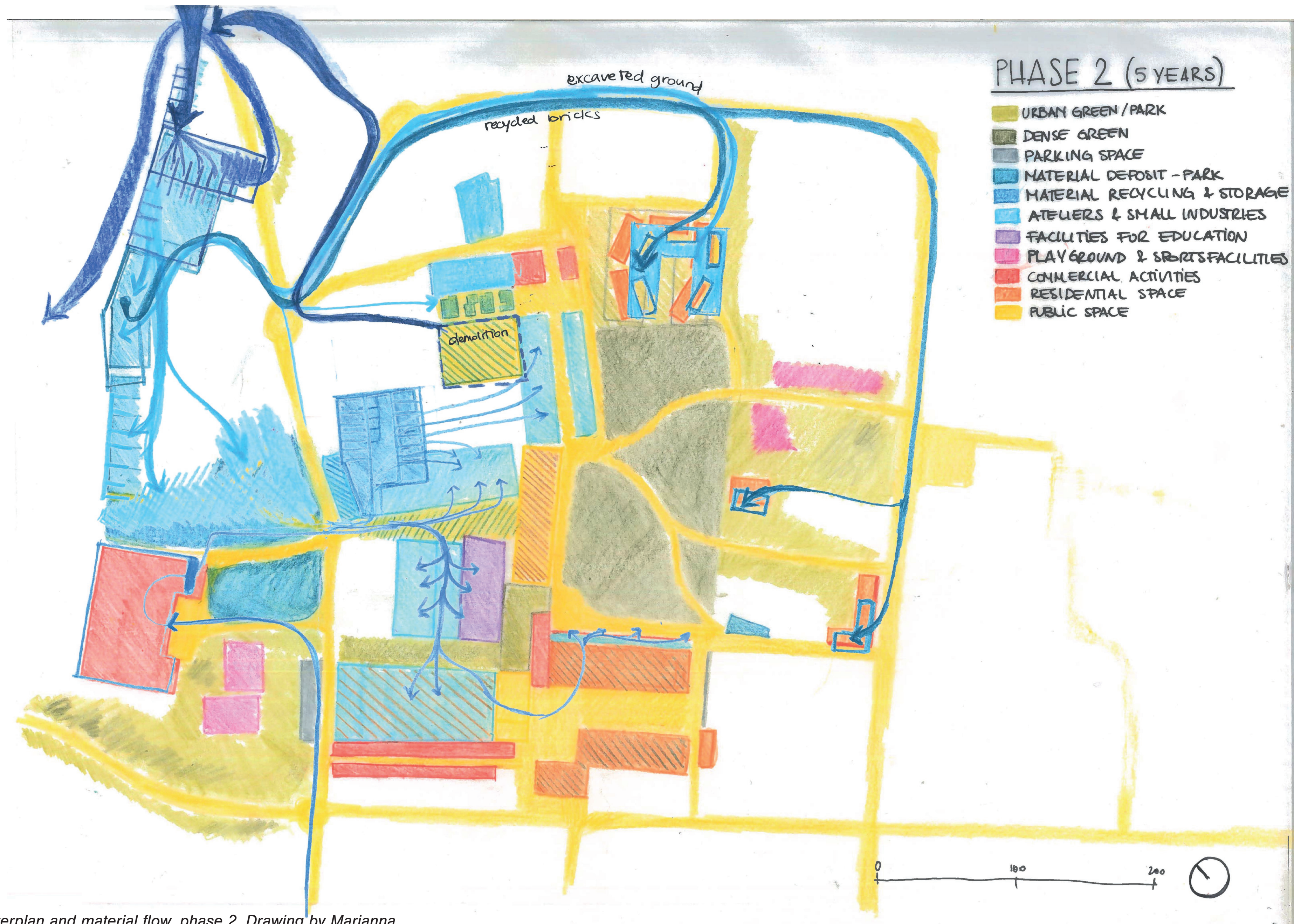


Model by Urban Architecture Graduation Studio

Model by Marianna, Lance and author



Successive masterplan and material flow, phase 1. Drawing by Marianna

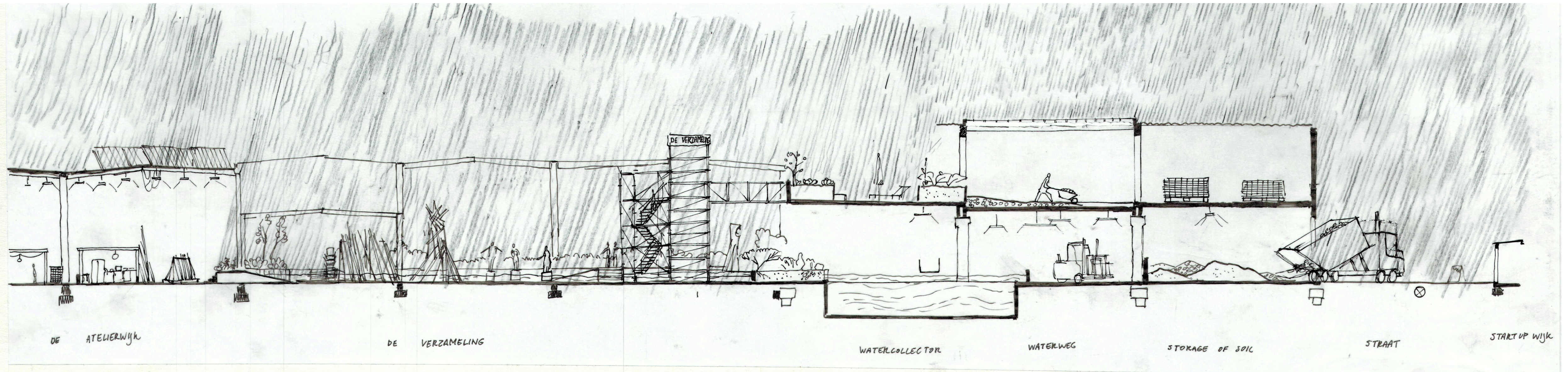


Successive masterplan and material flow, phase 2. Drawing by Marianna

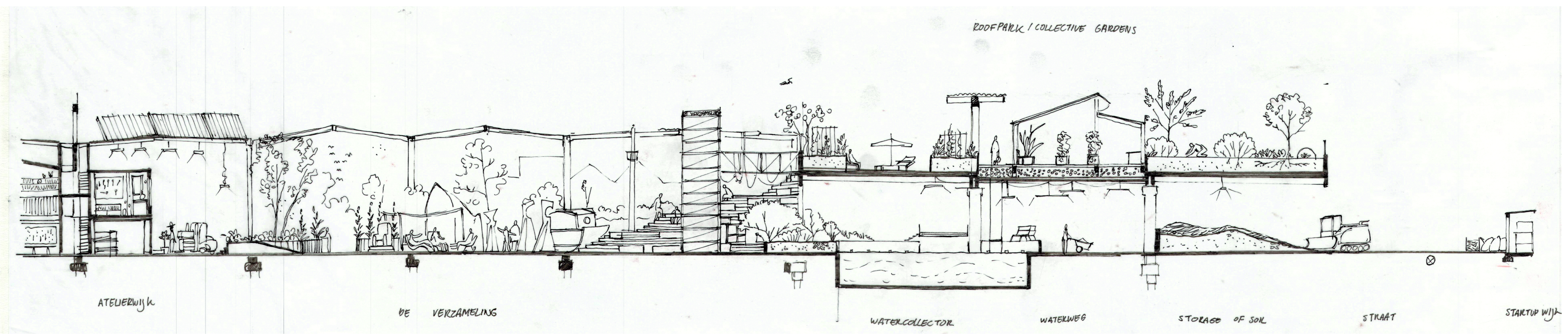
PHASE 3 (10 YEARS)



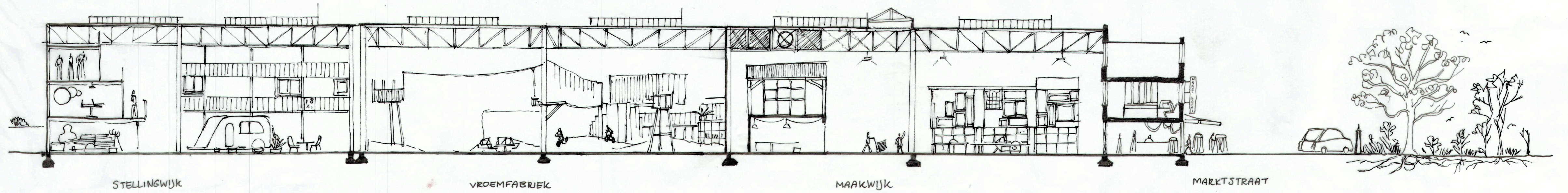
Successive masterplan and material flow, phase 3. Drawing by Marianna



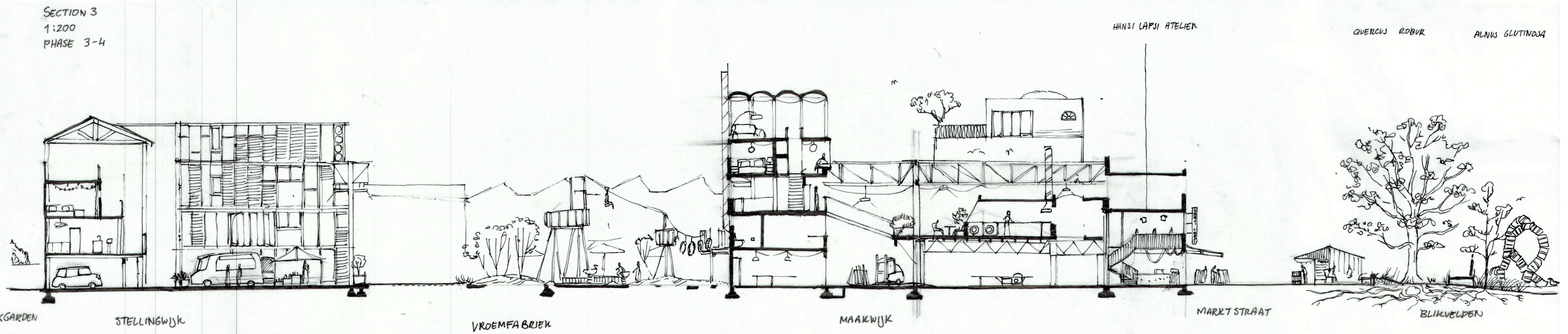
Section 2, phase 2, 1:200. Drawing by Lance



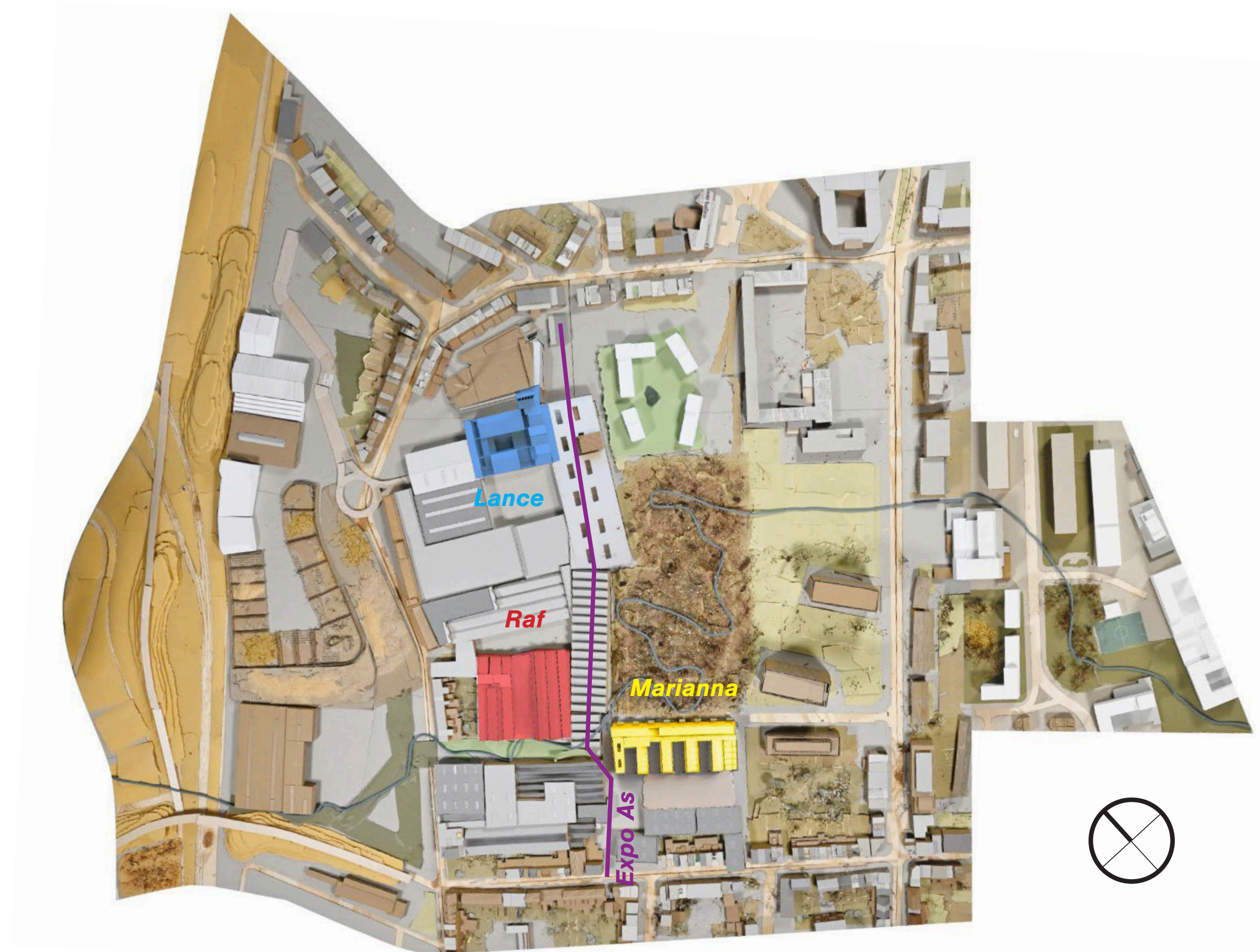
Section 2, phase 3, 1:200. Drawing by Lance



Section 3, phase 1-2, 1:200. Drawing by Lance



Section 3, phase 3-4, 1:200. Drawing by Lance



Model by Marianna, Lance and author







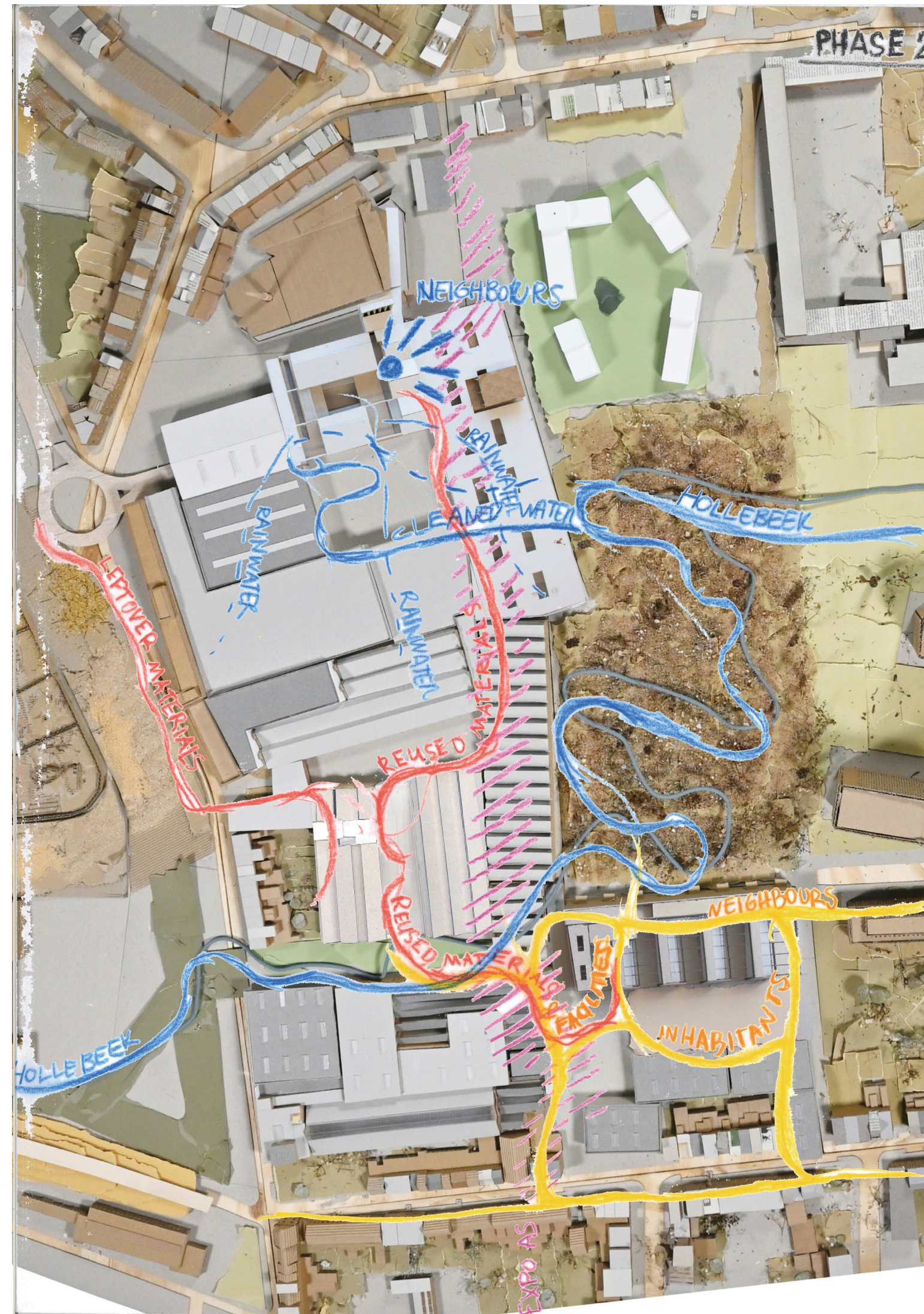
PHASE 1 *Open up*



PHASE 1 Open up



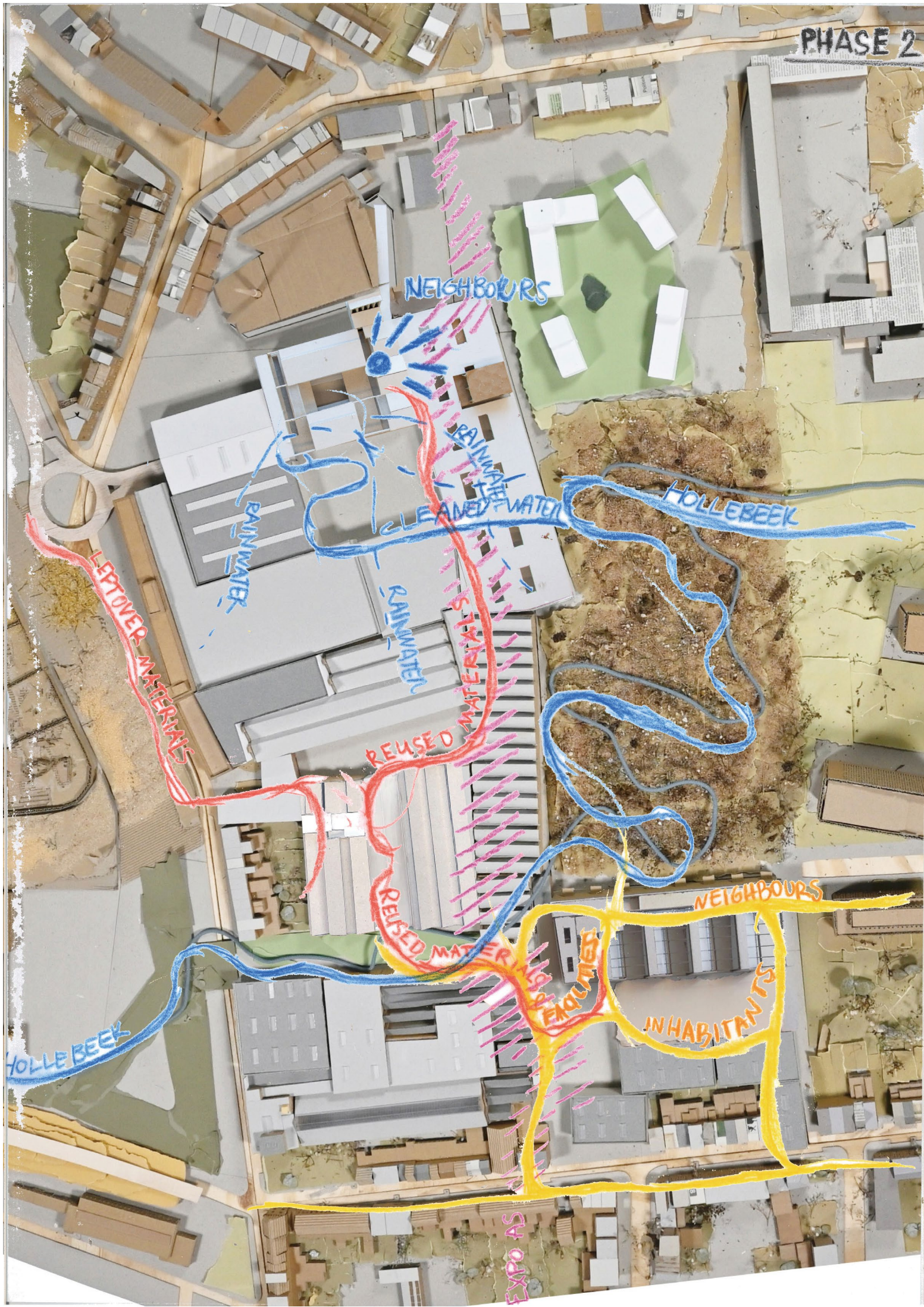
PHASE 2 Connect



PHASE 1 Open up



PHASE 2 Connect



PHASE 3 Substantiate



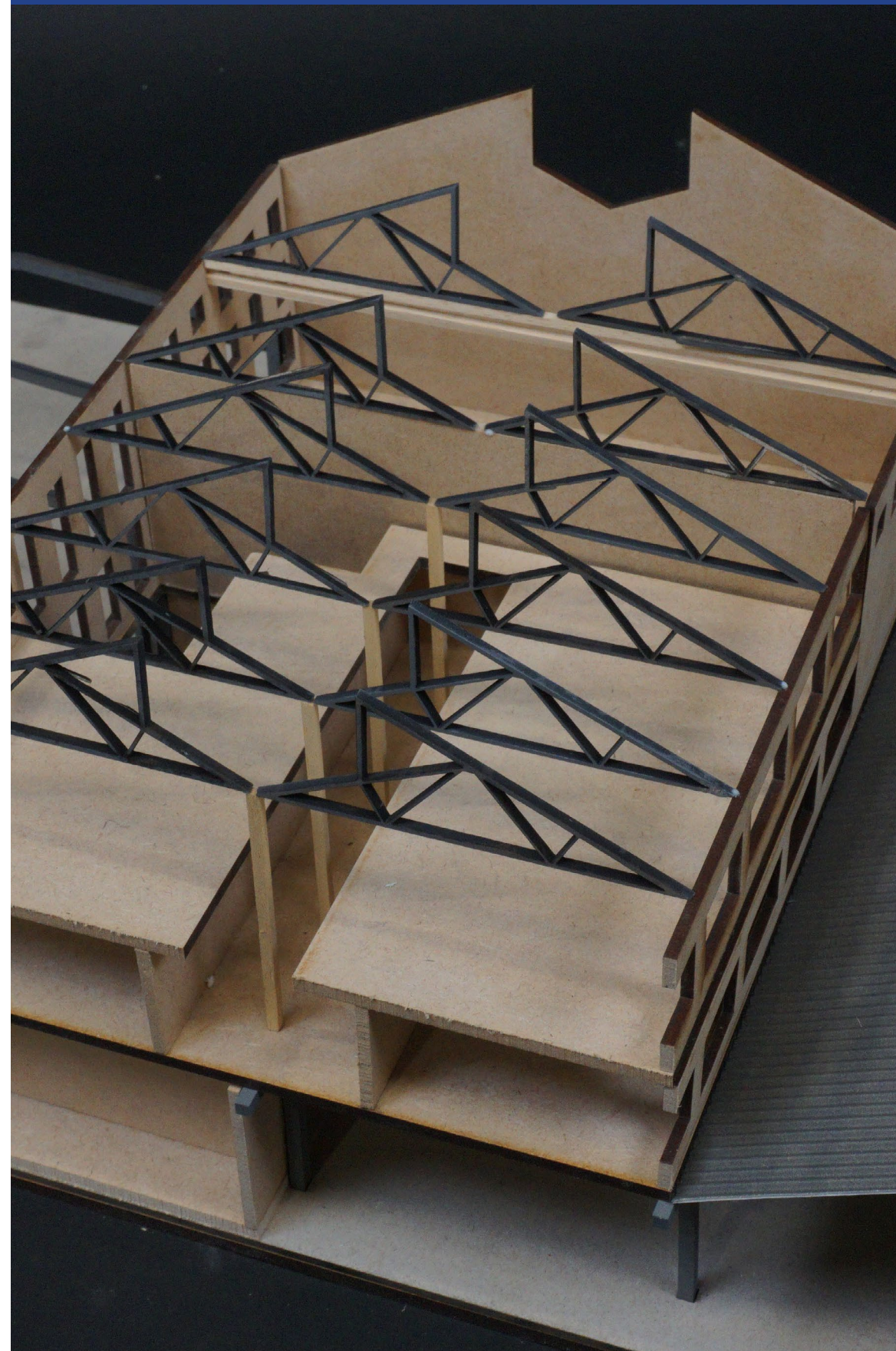
ACT 1

The existing
opening up



ACT 2

Building Herbouwhuis
a playful reconfiguration



ACT 3

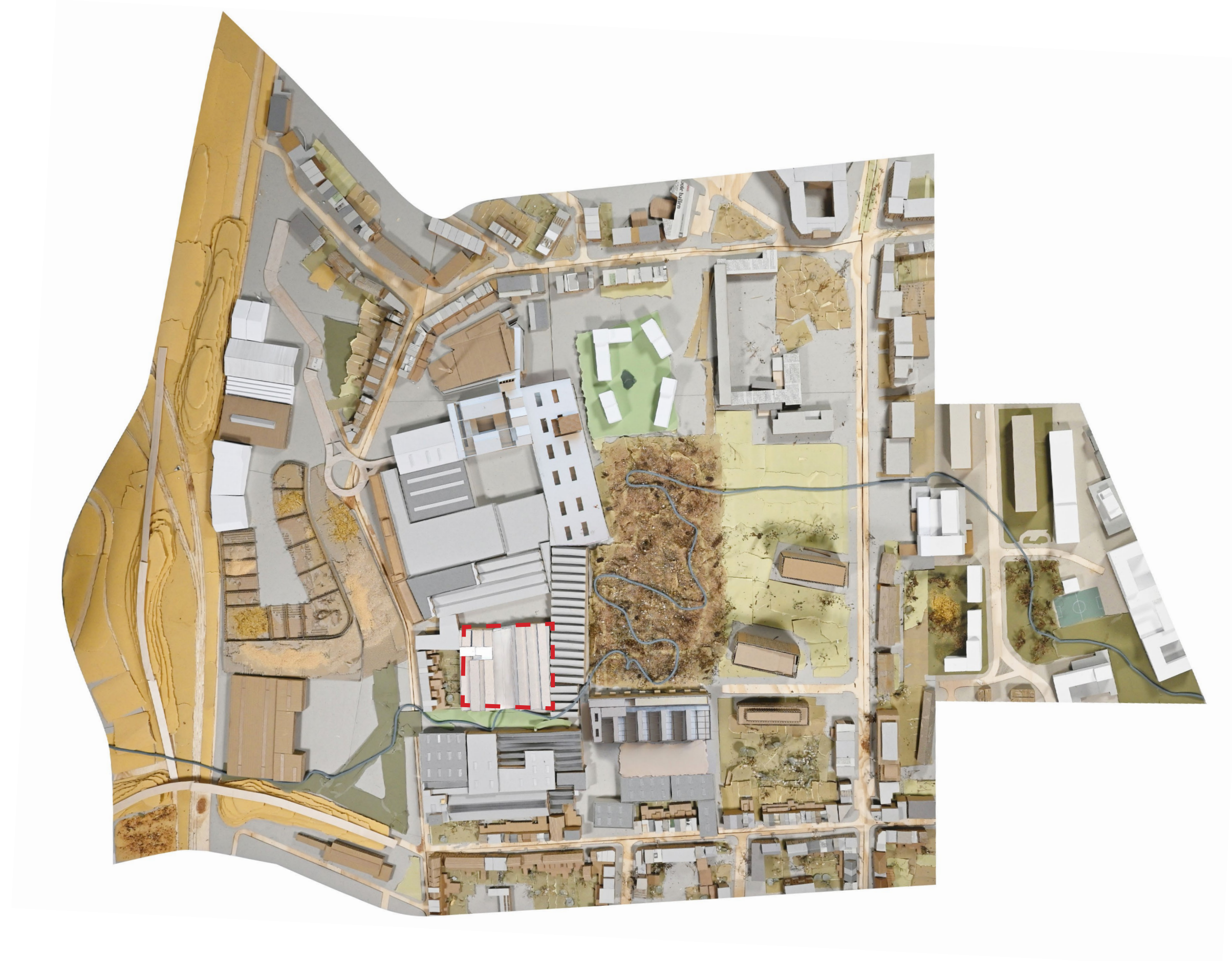
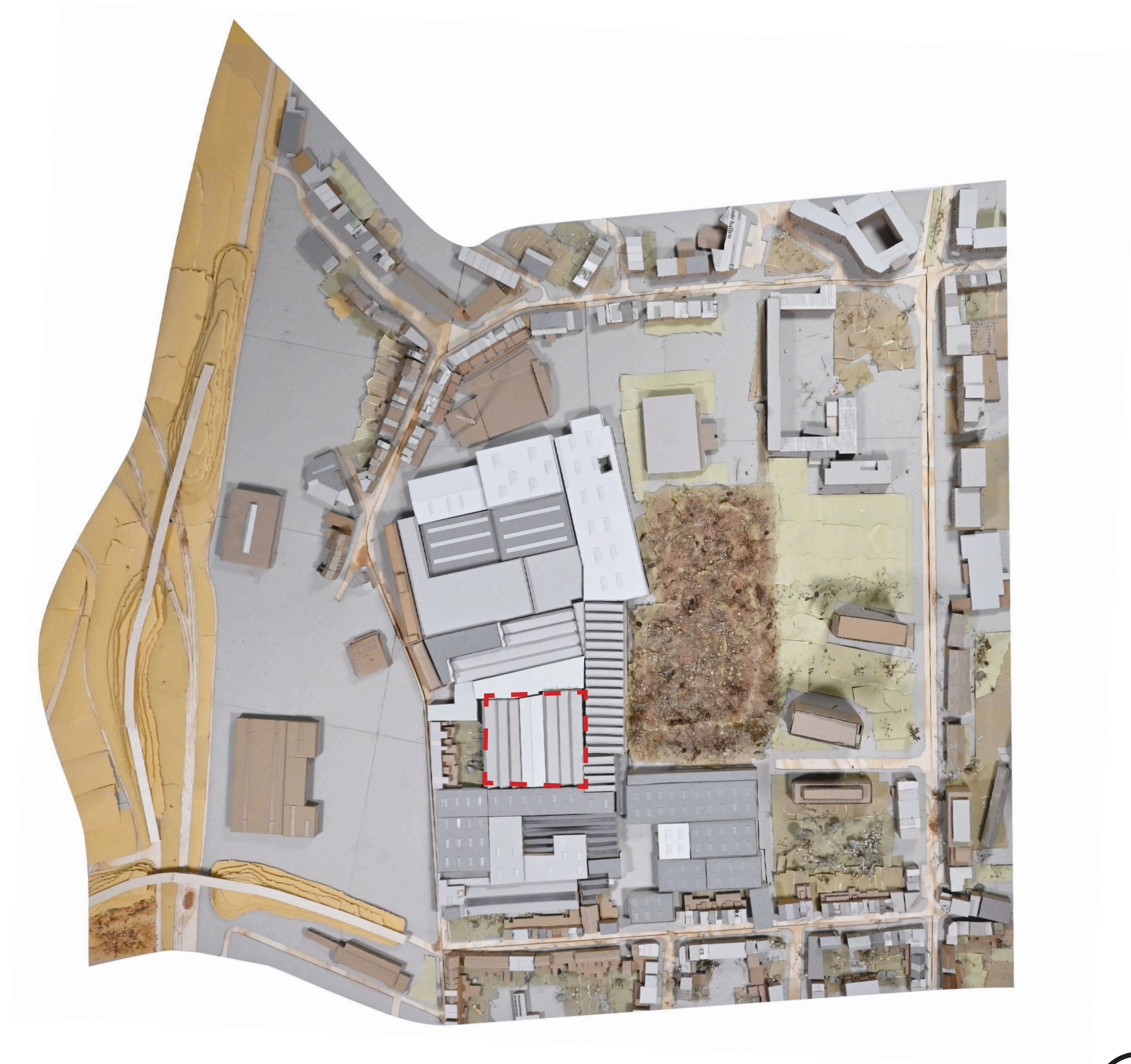
Herbouwhuis in operation
inspiring entanglements





ACT 1
The existing
opening up

starring
Barten Verschoor
Sacha Oberski
Joris Goorden
Elke Lemmens

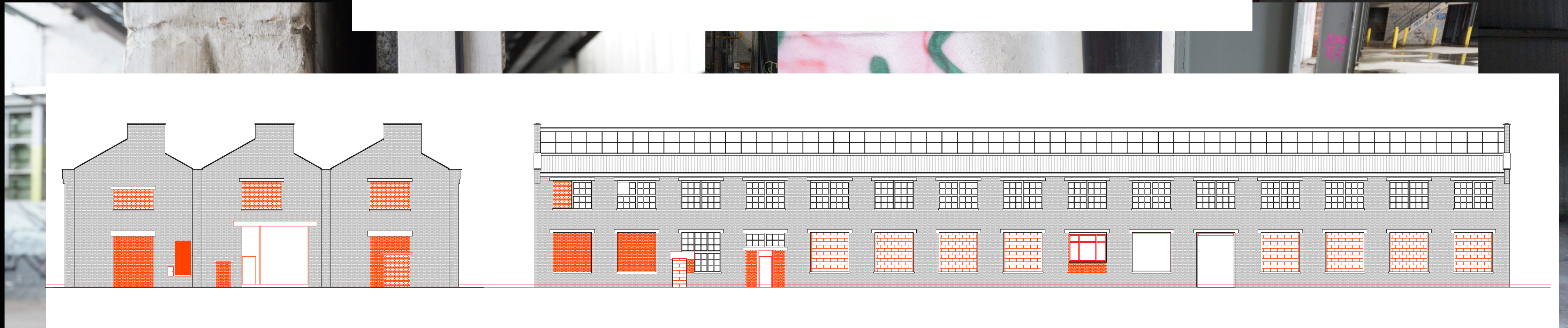
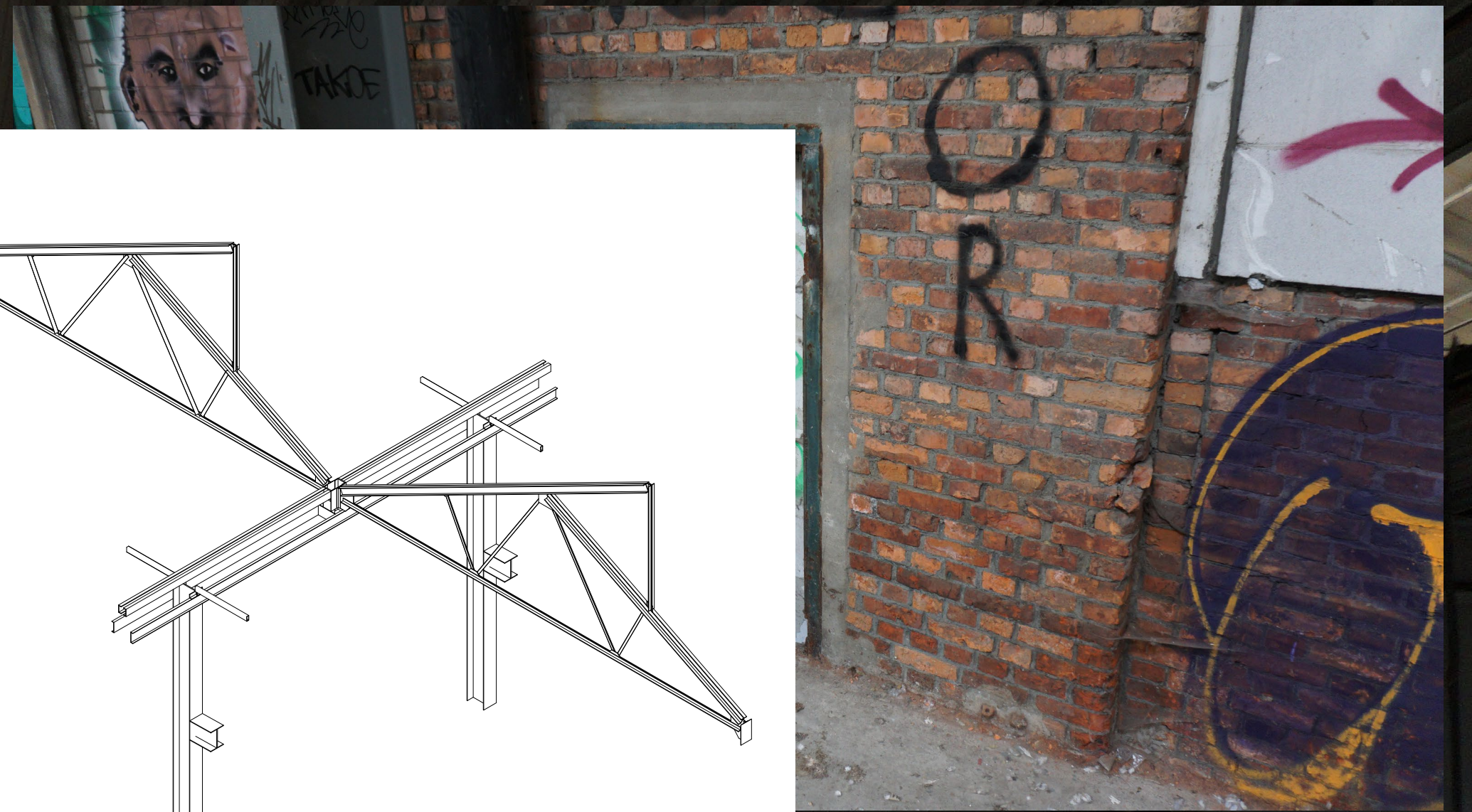
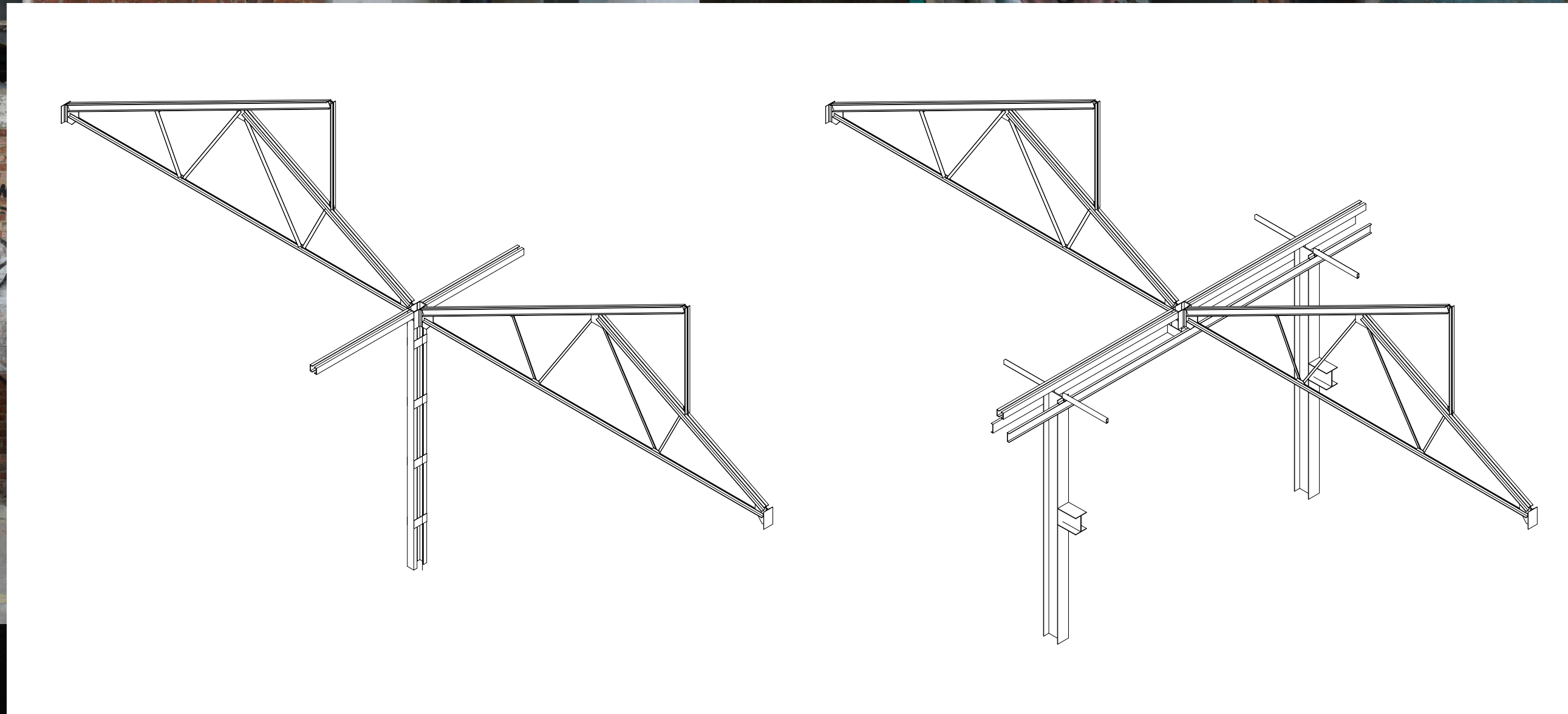


Existing. Model by Urban Architecture Graduation Studio

Design. Model by Marianna, Lance and author







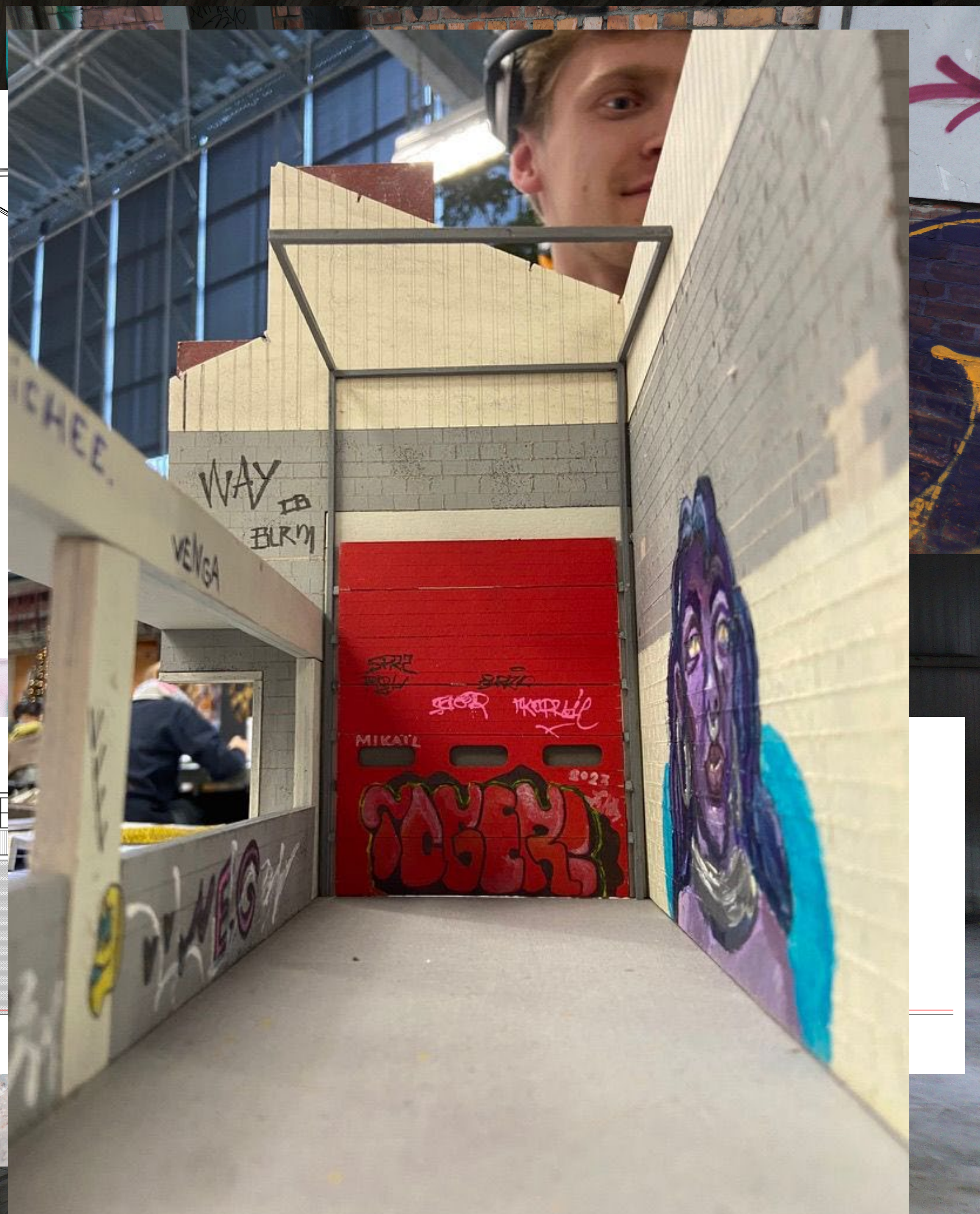






Photo by author



Photo by author



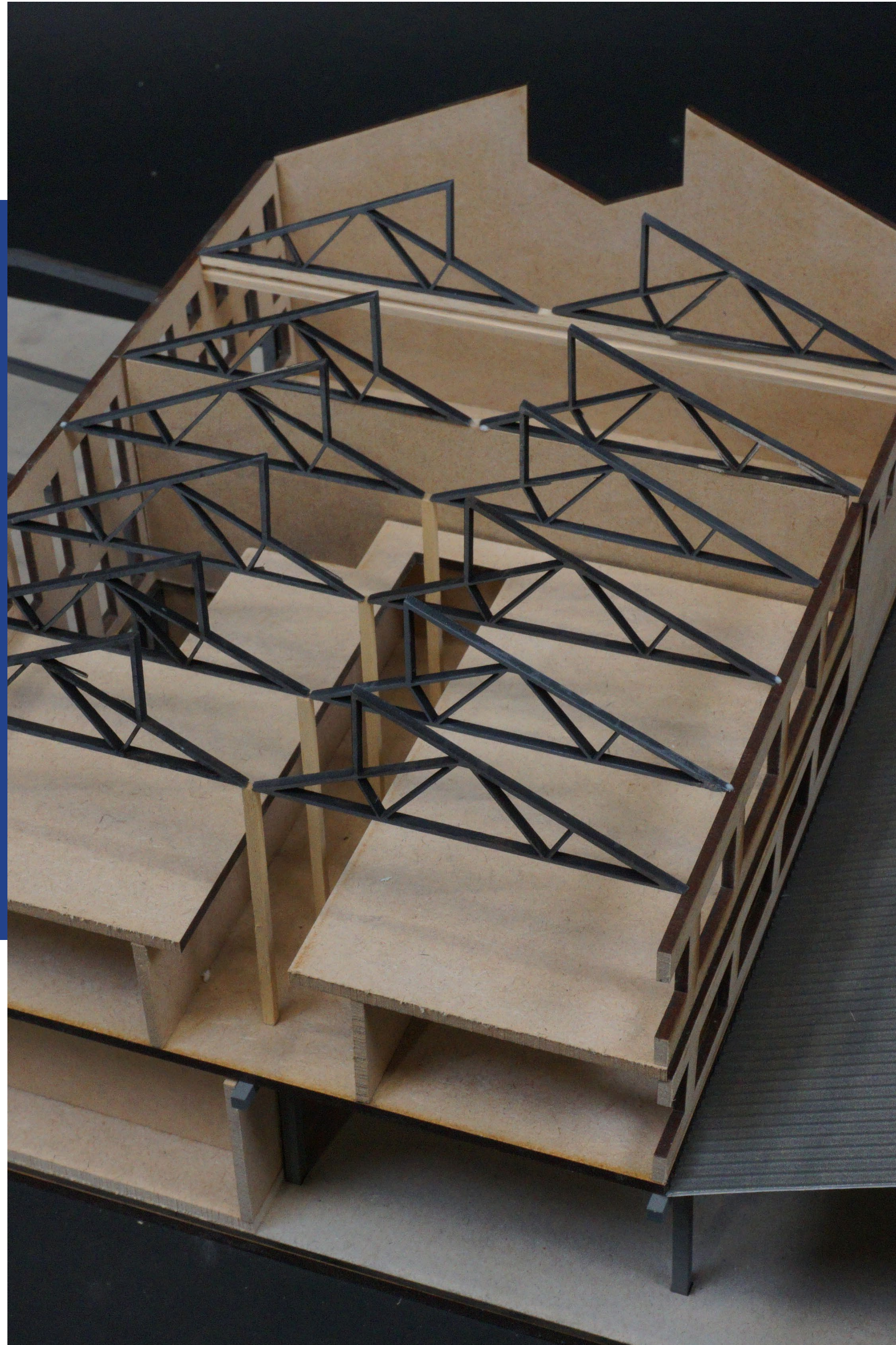
Photo by author





“Which principles will set the
rules for your improvisation?”

~ Sam Stalker ~



ACT 2
Building Herbouwhuis
a playful reconfiguration

starring
Thruss 1-12
Window frame 1-64
Concrete building block 1-36

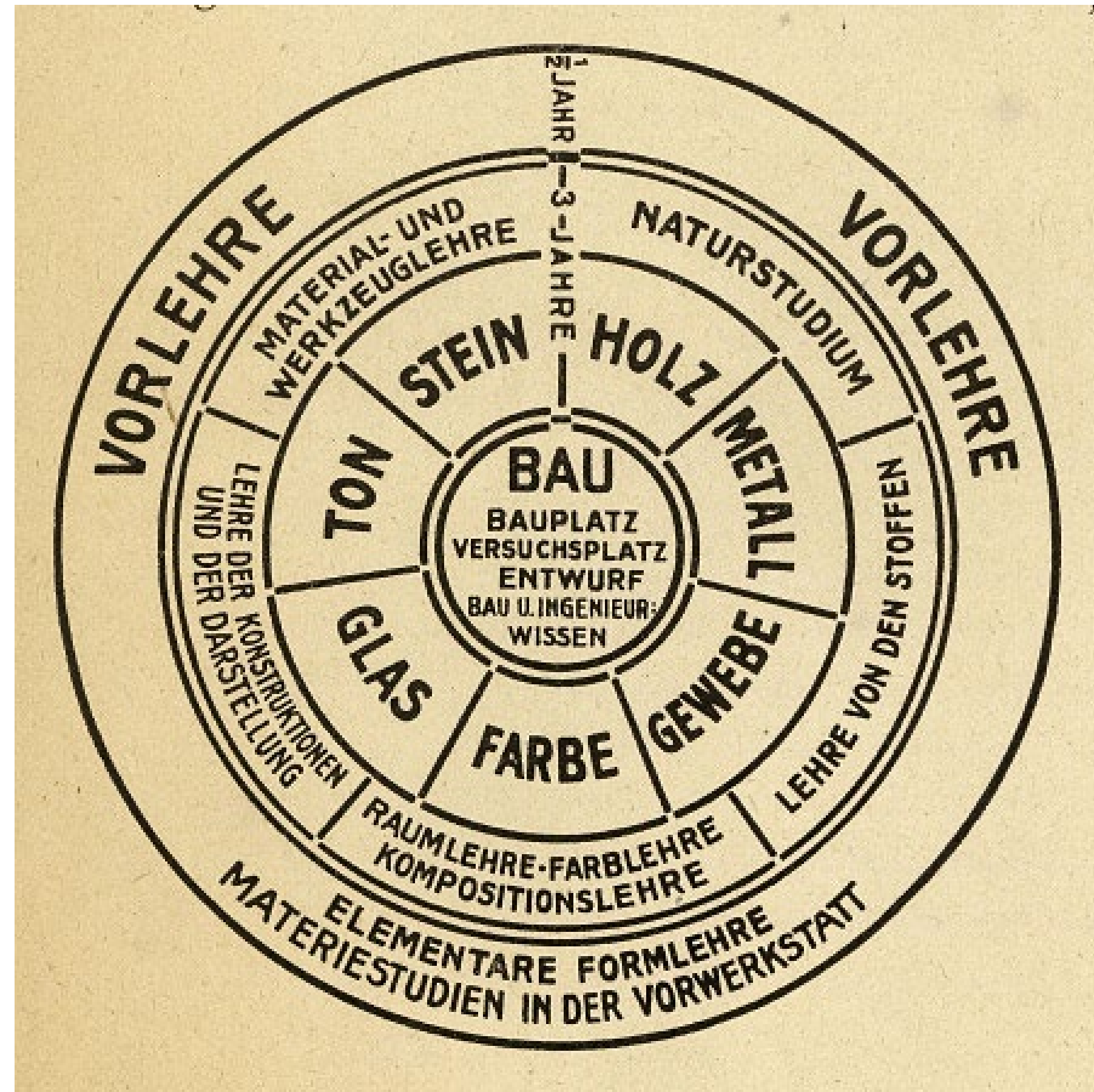


Image by Bauhaus



Woodcut by Lyonel Feininger

Transforming Bauhaus

In 1919 Walter Gropius wrote down his ambitions for the Bauhaus in a manifesto and a four-paged education programme.

By treating this text as a transformation process, Herbouwhuis designs its own manifesto and curriculum.

Reacting to the context of Gropius' Bauhaus it aims to:

- Keep relevant content

- Dismantle obsolete content

- Add missing content

- Reconfigure content that needs adjustments to fit the new curriculum



Screen print by Iza Musch and author

Reconfiguring Bauhaus

Using the colour coding technique of building transformation drawings. Taking the existing and leaving what's still adequate (black), **taking away what's outdated (yellow)** and **adding what's necessary (red)**. Developing this technique by adding **blue; reconfiguring what's present into something useful**. The existing 'theory' and 'practice' in this case are around hundred years old and circle around craftsmanship. The ambitions for Bauhaus of Walter Gropius from 1919 and the steel production halls in Hoboken of 1924.

Manifesto by Walter Gropius:

The ultimate aim of **all visual art is the complete building**. To embellish buildings was once the noblest function of the fine arts: **they were the indispensable components of great architecture**. Today **the arts exist in isolation**, from which they can be rescued only through the conscious, co-operative effort of all **artists, architects, painters and sculptors**. They must recognize anew and learn to grasp the **synoptic** character of a building **both as an entity and in its separate parts**. Only then will **their work be imbued with the architectonic spirit** which it has lost as **"salon art"**.

The old schools of art were unable to produce this unity, how could they, since **art cannot be taught**. They must be merged **once more** with the workshop. The mere drawing and **painting world of the pattern designer and the applied artist** must become a world that builds again. When young people who take joy in **artistic creation once more** begin their life's work by learning a trade, then the **artistic artists** will no longer be condemned to **isolated artists**, for their skill will now be preserved for **the crafts**, in which they will be able to achieve excellence.

Architects, **sculptors, painters**, we all must **return to the crafts**. For **art is not an profession**. There is no essential difference between **the artist and the craftsman**. **The artist is an exalted craftsman**. In rare moments of inspiration, transcending the consciousness of his will, **the grace of heaven may cause his work to blossom into art**. **But proficiency in a craft is essential to every artist**. Therein lies the prime source of creative imagination. Let us then create **a new guild of craftsmen** without the **class** distinctions that raise an **artificial** barrier between **craftsman and artist**. Together let us **desist, successive and create the new structure** of the future, which will embrace architecture and **sculpture and painting** in one unity and which will **one day rise toward heaven from the hands of a million workers like the crystal symbol of a new faith**.

Transformation:

The ultimate aim of **building is a qualitative reconfiguration of the existing urban landscape**. To reuse building elements was once **common practice in a low tech contextual building world**. **Human agents stood in closer connection to their building materials, knowing about their provenance, structural qualities and shortcomings**. Today **buildings and their materials exist in isolation**, from which they can be rescued only through the conscious, co-operative effort of all **human agents, architects, project managers, building contractors, demolition workers, users, urbanists and landscape architects**. Architects **project managers and building contractors** must recognize anew and learn to grasp the **entangled** character of a building **in its urban context**. Only then will **buildings fulfill their potential as both sponge and sponsor of building elements and values**.

Schools of architecture and urban planning around the world are unable to teach these exchange moments: how could they, since interdependency cannot be taught. They must be merged with the workshop **and the reality of urban dynamics and the reuse cycle**. The mere drawing and **rendering world of the architect and urbanist** must become a world that builds again. When young people who take a joy in **learning building** begin their life's work by learning about **reuse craftsmanship and urban ecologies**, then the **insensitive architect** will no longer be condemned to **babula rasa architecture**, for their skill will now be preserved for **reconfiguration**, in which they will be able to achieve excellence.

Architects, **project managers, building contractors**, we all must **specialize ourselves in reuse craftsmanship**. For **building is not mere creation**. There is no essential difference between a **demolition contractor and a building contractor**. **The demolition contractor turns into the building contractor when he harvested building materials in the urban landscape**. **Throughout the cyclic reuse process, building contractors must work closely together with project managers and architects**. **Reuse craftsmanship is essential to every architect, project manager and building contractor**. Therein lies the prime source of creative **reuse** imagination. Let us then create **a centre for reuse craftsmen** without the **procedural** distinctions that raise a barrier between **different disciplines in the building world**. Together let us **demount, store, construct and maintain the reuse structures** of the future, which will embrace **urban architecture, construction and management** in one unity and which will **continuously communicate the beauty of considerate and entangled reconfiguration**.

Programme (curriculum) by Walter Gropius:

The Staatliches Bauhaus resulted from the merger of the former Grand-Ducal Saxon Academy of Art with the former Grand-Ducal Saxon School of Arts and Crafts in conjunction with a newly affiliated department of architecture.

Aims of the Bauhaus

The Bauhaus strives to bring together all creative effort into one whole, to reunify all the disciplines of practical art - sculpture, painting, handicrafts, and the crafts - as inseparable components of a new architecture. The ultimate, if distant, aim of the Bauhaus is the united work of art - the great structure - in which there is no distinction between monumental and decorative art.

The Bauhaus wants to educate architects, painters, and sculptors of all levels according to their capabilities, to become competent craftsmen or independent creative artists and to form a working community of leading and future artist-craftsmen. These men, of kindred spirit, will know how to design buildings harmoniously in their entirety - structure, finishing, ornamentation, and furnishing.

Principles of the Bauhaus

Art rises above all methods; in itself it cannot be taught, but the crafts certainly can be. Architects, painters, and sculptors are craftsmen in the true sense of the word; hence, a thorough training in the crafts, acquired in workshops and on experimental and practical sites, is required of all students as the indispensable basis for all artistic production. Our own workshops are to be gradually built up, and apprenticeship agreements with outside workshops will be concluded.

The school is the servant of the workshop and will one day be absorbed in it. Therefore there will be no teachers or pupils in the Bauhaus but masters, journeymen, and apprentices.

The manner of teaching arises from the character of the workshop.

Organic forms developed from manual skills. Avoidance of all rigidity, priority of creativity, freedom of individuality, but strict study discipline. Master and journeyman examinations, according to the Guild Statutes, held before the Council of Masters of the Bauhaus or before outside masters. Collaboration by the students in the work of the masters. Securing of commissions, also for students.

Mutual planning of extensive, Utopian structural designs - public buildings and buildings for workshop - aimed at the future. Collaboration of all masters and students - architects, painters, sculptors - on these designs with the object of gradually achieving a harmony of all the component elements and parts that make up architecture. Constant contact with the leaders of the crafts and industries of the country.

Contact with public life with the people, through exhibitions and other activities. New research into the nature of the exhibitions, to solve the problem of displaying visual work and sculpture within the framework of architecture.

Encouragement of friendly relations between masters and students outside of work; therefore plays, lectures, poetry, music, fancy-dress parties. Establishment of a cheerful ceremonial at these gatherings.

Transformation:

Herbouvhuus resulted from a graduation project of an architecture student at TU Delft. The New European Bauhaus funded the development of this project, which ultimately led to the transformation of an old rim factory in Hoboken, Antwerp.

Aims of Herbouvhuus

Herbouvhuus strives to bring together skills and knowledge of various professional groups in the world of building, as inseparable components of a new reuse architecture. The ultimate, if distant, aim of Herbouvhuus is the full integration of architecture in the material reuse cycle, towards a situation in which there is no building waste.

Herbouvhuus wants to educate architects, project managers and building contractors of all levels, according to their capabilities, to become competent reuse craftsmen. These professionals, of kindred spirit, will know how to organise and design reuse cycle architecture in its entirety - demolition, storage, construction and maintenance.

Principles of Herbouvhuus

A thriving city rises above all designs; in itself it cannot be created, but the culture of care that supports it can be, over a long time. Architects, project managers and building contractors are city builders in the true sense of the word; hence, a thorough training in reuse craftsmanship, acquired in Herbouvhuus and on experimental and practical sites, is required of all students as the indispensable basis for all city building. Our own building is to be gradually constructed, and apprenticeship agreements with outside reuse actors will be concluded.

Herbouvhuuschool is an integral part of Herbouvhuus. Therefore there will be a constant exchange of reuse skills and knowledge between students, researchers, builders, residents from the neighbourhood and artists.

The manner of teaching arises from the character of Herbouvhuus.

Close relation between materials and agents by colliding flows of materials and human agents in the spacious structure of Herbouvhuus. Collaboration of all agents in Herbouvhuus. Collaboration between students from different years. Avoidance of dogma, freedom of individuality and specialisation, but mandatory corvee on the buildings of Herbouvhuus. Workshops by artists of Herbouvhuus. Internships for students at Bureau Herbouw and outside of the institute at like-minded studios and companies. Contact with public life, with the people, through exhibitions, intermediate presentations, the repair café, the restaurant/canteen, public lectures in the auditorium, public workshops and other activities. Research into the nature of the exhibitions, to solve the problem of communicating building processes and the reuse cycle. Sufficient workplaces where students can work autonomously in each other's vicinity, to inspire and get inspired.

Workshops on demolition and building sites, getting out of Herbouvhuus, learning from professionals, experiencing material gradients, studying the fragment, reading the details.

Range of instruction

Instruction at the Bauhaus includes all practical and scientific areas of creative work.

A. Architecture.
B. Painting.
C. Sculpture.

Including all branches of the crafts.

Students are trained in a craft (1) as well as in drawing and painting (2) and science and theory (3).

1. Craft training - either in our own, gradually enlarging workshops or in outside workshops to which the student is bound by apprenticeship agreement - includes:

(a) sculptors, stonemasons, stucco workers, woodcarvers, ceramic workers, plaster casters.
(b) blacksmiths, locksmiths, founders, metal turners.
(c) cabinetmakers.
(d) scene-painters, glass painters, mosaic workers, enamellers.
(e) etchers, wood engravers, lithographers, art printers, enshasers.
(f) weavers.

Craft training forms the basis of all teaching at the Bauhaus. Every student must learn a craft.

2. Training in drawing and painting includes:

(a) free-hand sketching from memory and imagination.
(b) drawing and painting of heads, live models, and animals.
(c) drawing and painting of landscapes, figures, plants, and still-lives.
(d) composition.
(e) execution of murals, panel pictures, and religious pictures.

(f) design of ornaments.
(g) lettering.
(h) construction and projection drawing.

(i) design of exteriors, gardens, and interiors.
(j) design of furniture and practical articles.

3. Training in science and theory includes:

(a) art history - not presented in the sense of a history of styles, but rather to further active understanding of historical working methods and techniques.
(b) science of materials.
(c) anatomy - from the living model.

(d) physical and chemical theory of colour;
(e) rational painting methods;
(f) basic concepts of bookkeeping, contract negotiations, personnel.

(g) individual lectures on subjects of general interest in all areas of art and science.

Range of instruction

Instruction at Herbouvhuus includes all practical and scientific areas of the building reuse cycle.

A. Architecture.
B. Project management.
C. Contractmanship.

Before the first year students choose one of the three directions, but all students are educated in reuse craftsmanship (1) as well as in circular networks (2), circular building theory and history (3) and scaled design and communication (4).

1. Reuse craftsmanship education in the workshops includes:

(a) wood working, sawing, sanding, removing screws, joinery, varnishing.
(b) metallurgy, sawing, welding, soldering, rolling, powder coating.
(c) stone working, masonry, chiseling, polishing.

2. Education in circular networks includes:

(a) understanding urban ecologies;
(b) excursions to companies that are part of the Opalis network.
(c) workshops at building sites near Herbouvhuus.
(d) workshops at Herbouvhuus by reuse professionals.

3. Education in circular building theory and history includes:

(a) architecture history - not presented in the sense of a history of styles, but rather to further active understanding of historical building methods and techniques.
(b) science of materials and reused materials.
(c) anatomy - of the living city.

(d) physical and chemical theory of colour
(e) rational painting methods;
(f) basic concepts of bookkeeping, contract negotiations, personnel;

(g) individual lectures on subjects of general interest in all areas of the building world.

4. Education in scaled design and communication includes:

(a) free-hand sketching of the urban landscape;
(b) technical architecture drawings;
(c) model making;
(d) democratize the process - explaining the building project to non professionals;
(e) audiovisual techniques - on how to make it move and sound.

Divisions of Instruction

The training is divided into three courses of instruction:

I. course for apprentices.
II. course for journeymen.
III. course for junior masters.

Divisions of Instruction

The education is divided into four years of instruction, building up in scale and complexity.

I. small scale project
II. medium scale project
III. large scale project
III. graduation project

Each year covers the full building reuse cycle, divided into four quarters:

Q1. demolition
Q2. storage
Q3. construction
Q4. maintenance

In the first three years, students are obliged to spend one day of each week doing corvee on Bauhaus buildings. Students from higher years have responsibilities over the lower year students. The first few years of Bouvhuus the corvee will be mainly focussed on demolition, storage and construction. After a few years, the balance will shift to maintenance and construction of developments in the vicinity.

For the graduation project, the student chooses a specialisation, such as heritage or dwelling. This year, corvee is not mandatory.

The instruction of the individual is left to the discretion of each master within the framework of the general programme and the work schedule, which is revised every semester. In order to give the students as versatile and comprehensive a technical and artistic training as possible the work schedule will be so arranged that every architect, painter, and sculptor-to-be is able to participate in part of the other courses.

Admission

Any person of good repute, without regard to age or sex, whose previous education is deemed adequate by the Council of Masters will be admitted, as far as space permits. The tuition fee is 1800 euros per year (it will gradually disappear entirely with increasing earnings of Herbouvhuus to become accessible for a bigger part of society). Address enquiries to Secretariat Herbouvhuus.

April 1919

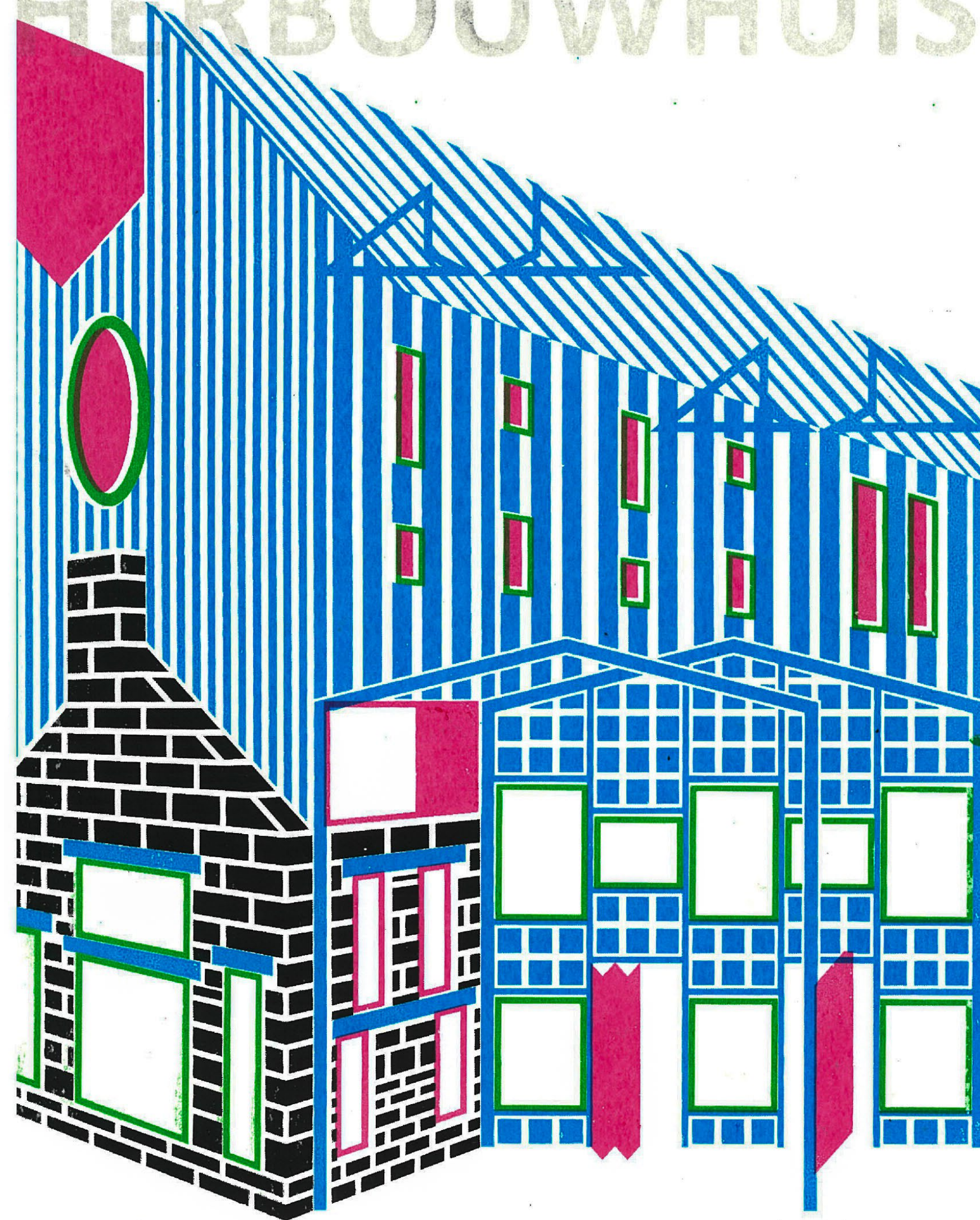
The Administration of the Staatliches Bauhaus in Weimar.
Walter Gropius.

April 2025

Administratie Herbouvhuus
Raf van Oosterhout

<p>Complexity</p> <p>Autonomy</p> <p>Freedom of choice</p>	Year 1 small scale	Q1 Demolition	Q2 Storage	Q3 Construction	Q4 Maintenance
	Theory	2 days per week			
	Practice	2 days per week			
	Corvee	1 day per week			
	Year 2 medium scale	Q1 Demolition	Q2 Storage	Q3 Construction	Q4 Maintenance
	Theory	2 days per week		1 day per week	
	Practice	2 days per week		3 days per week	
	Corvee	1 day per week			
	Year 3 large scale	Q1 Demolition	Q2 Storage	Q3 Construction	Q4 Maintenance
	Theo. and prac.	Electives (2 days per week)		Internship (3 days per week)	
	Practice	2 days per week		1 day per week	
	Corvee	1 day per week			
	Year 4 specialisation	Q1 Demolition	Q2 Storage	Q3 Construction	Q4 Maintenance
	Graduation	5 days per week			

HERBOUWHUIS



List of principles

Herbouwhuis increases the contact surface between **leftover materials** and **agents**.

Herbouwhuis doesn't just celebrate craftsmanship over industrialisation, but pleads for **reuse** over production.

Herbouwhuis strives for a world without **building waste**.

Herbouwhuis facilitates **reuse craftsmanship** development.

Herbouwhuis connects **students**, **residents** and **professionals**.

Herbouwhuis educates **architects**, **project managers** and **building contractors** to become **collaborating** reuse craftsmen.

Herbouwhuis offers **education on site**, moving through the urban landscape.

Herbouwhuis values buildings as **sponge** and **sponsor** of building elements and values.

Herbouwhuis reconfigures **playfully**, but respects all **time layers**.

Herbouwhuis stimulates **autonomy** within **cooperation**.

Herbouwhuis formulates guidelines, but leaves space for **improvisation**.

Herbouwhuis reflects the **transdisciplinary position** of architecture in between arts, crafts, ecology, technology and economics.

Herbouwhuis acts throughout the **full building cycle** from demolition to storage, construction and maintenance.

Herbouwhuis builds **entangled reconfigurations** that remain part of the urban landscape.

Herbouwhuis is an **ongoing project**.

Colour coding

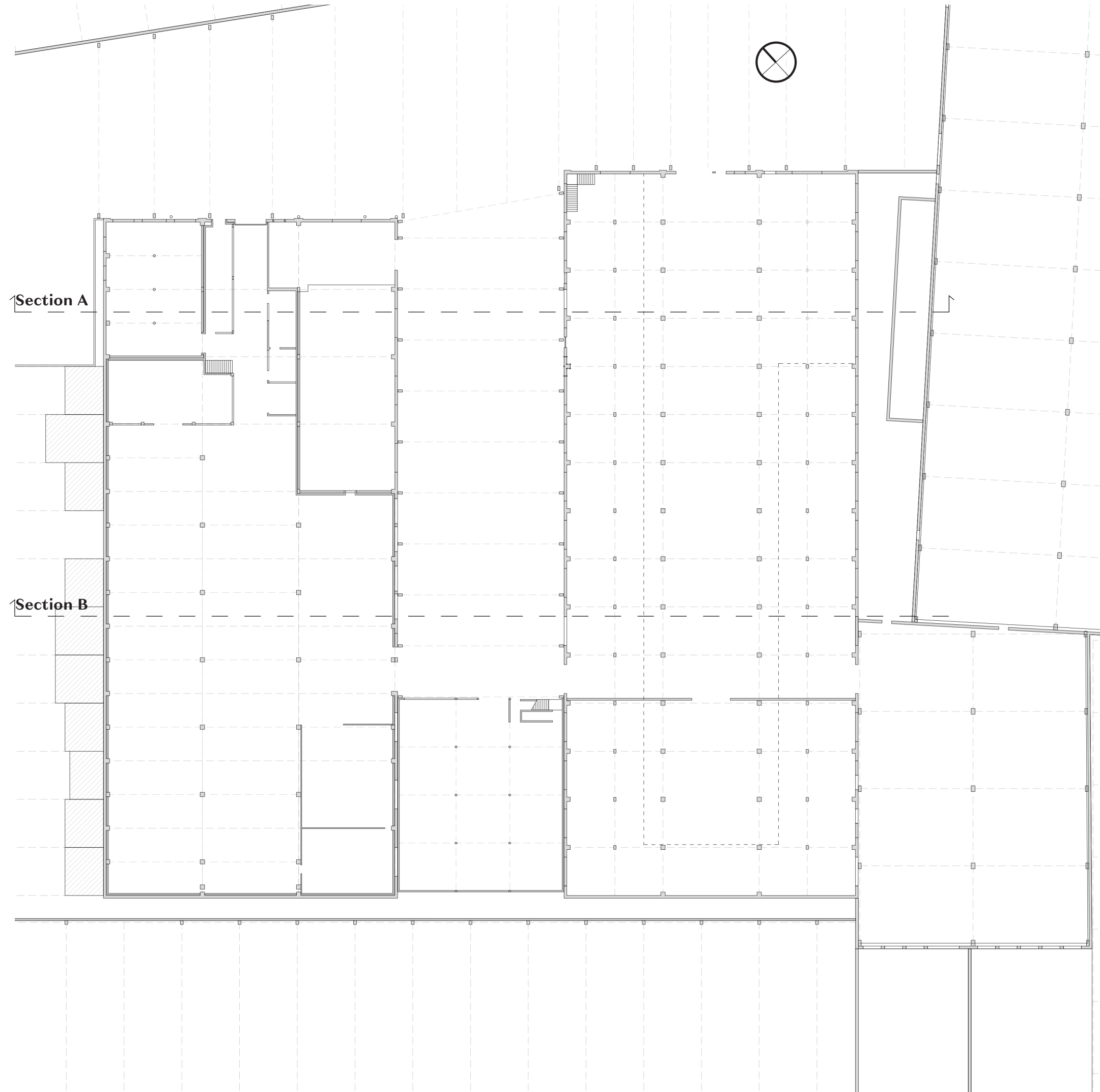
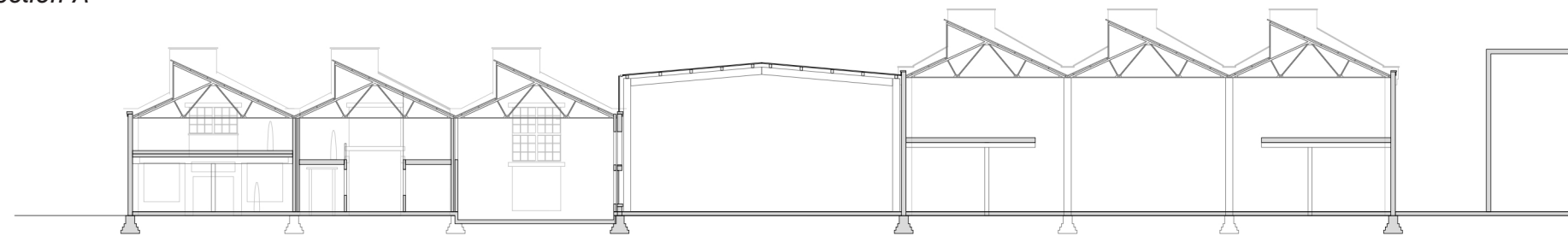
 *existing*

 *dismantled*

 *new addition*

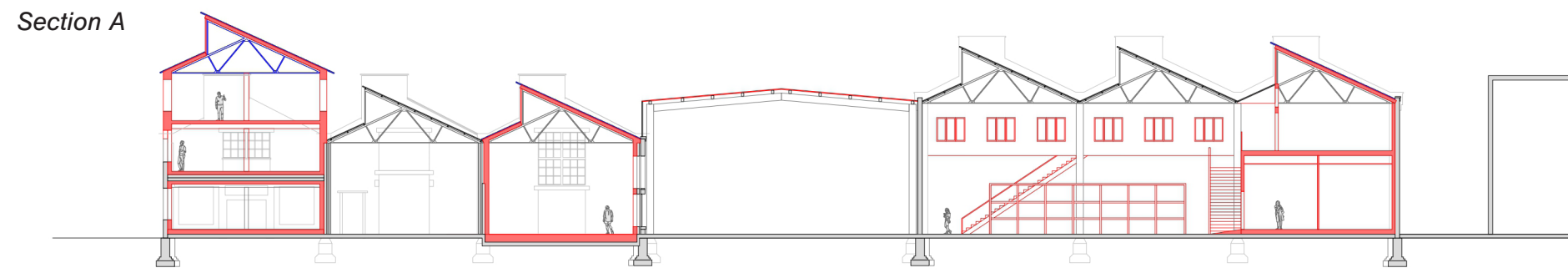
 *reconfigured on site*

Section A



PLAN GROUND FLOOR - existing

existing



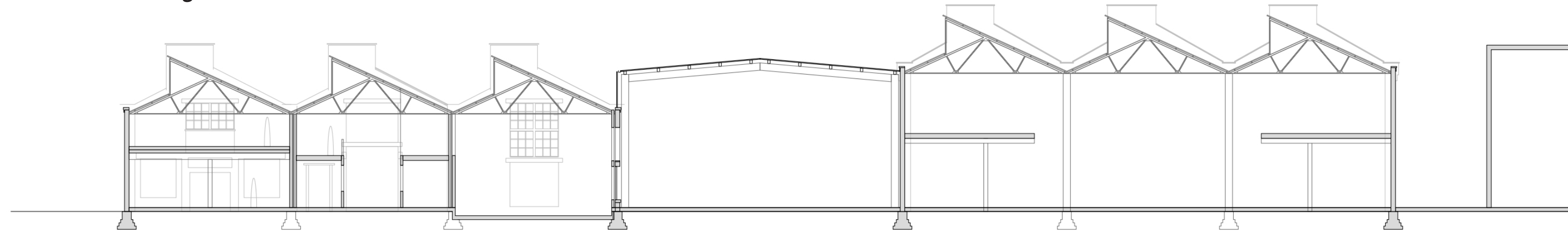
PLAN GROUND FLOOR

- existing
- new addition
- reconfigured on site

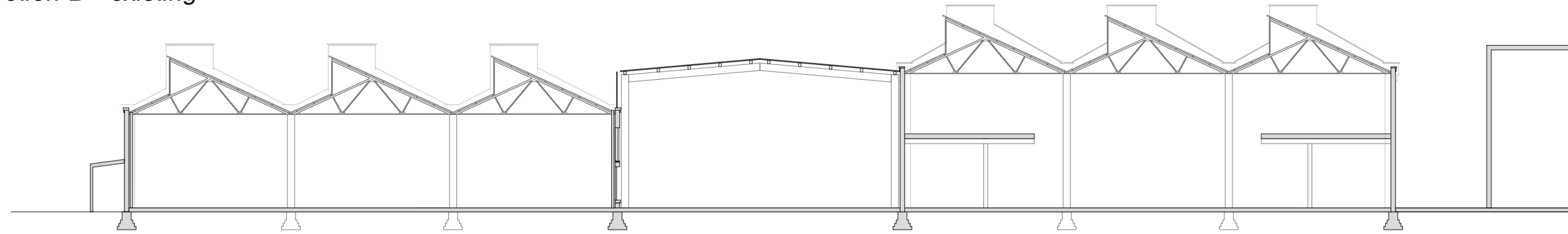
Legend

- | | |
|-------------------|-----------------------|
| 1 workshop | 10 restaurant/canteen |
| 2 storage | 11 kitchen |
| 3 atelier | 12 logistic point |
| 4 classroom | 13 shop |
| 5 office space | 14 repair café |
| 6 auditorium | 15 service point |
| 7 staircase | 16 dressing room |
| 8 toilets | 17 terrace |
| 9 technical space | 18 water theatre |

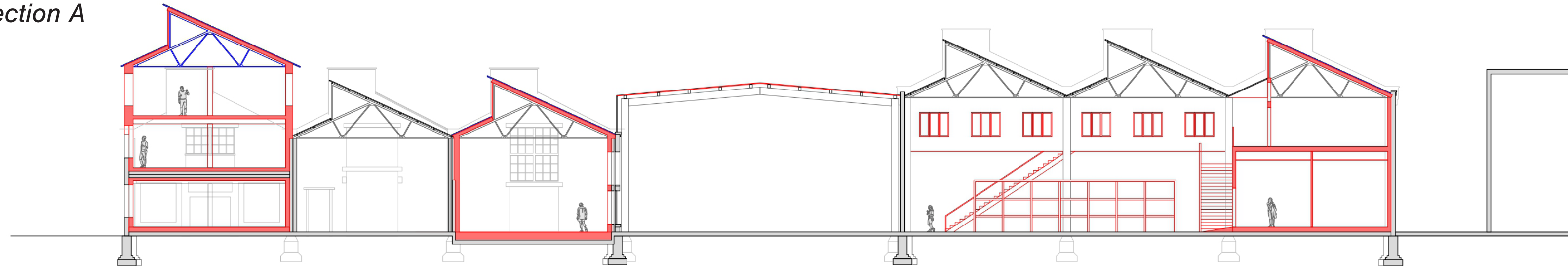
Section A - existing



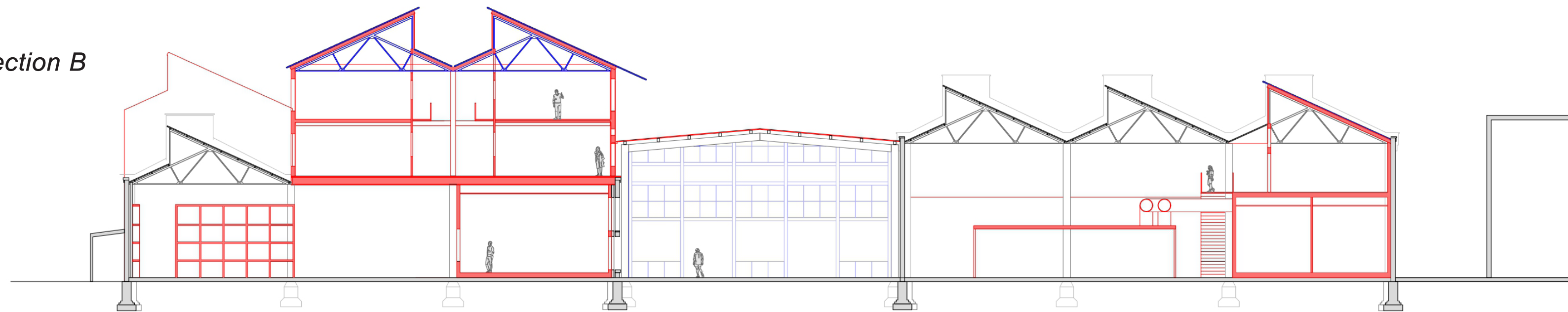
Section B - existing

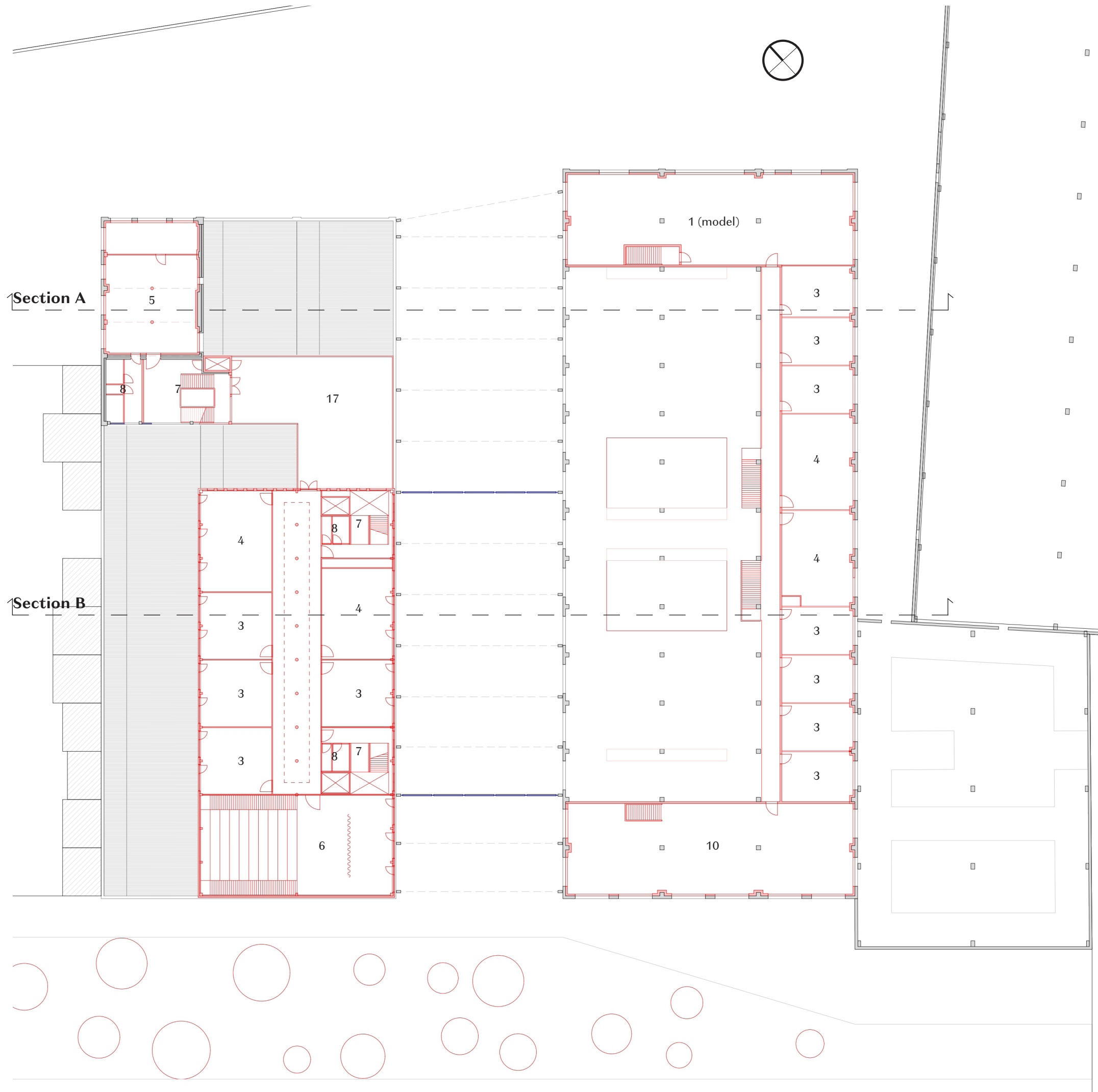
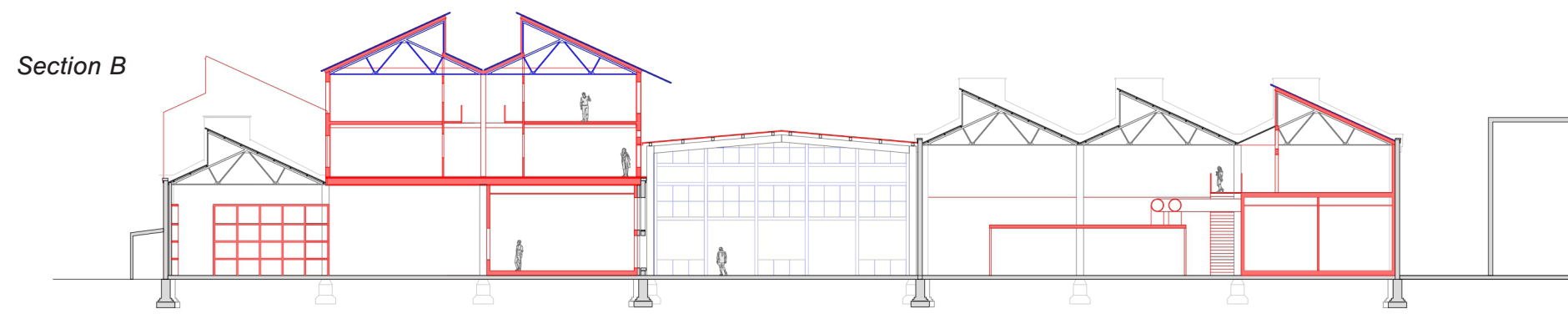


Section A



Section B





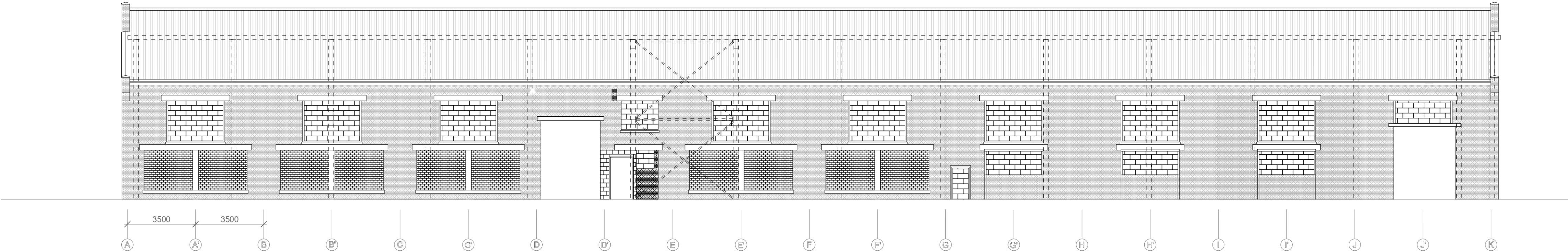
PLAN 1ST FLOOR

- existing
- new addition
- on site reconfigured

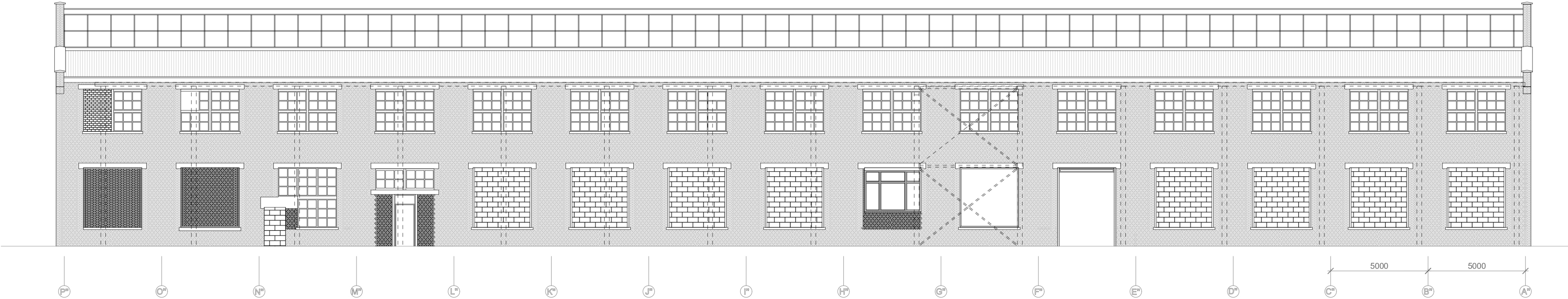
Legend

- | | |
|-------------------|-----------------------|
| 1 workshop | 10 restaurant/canteen |
| 2 storage | 11 kitchen |
| 3 atelier | 12 logistic point |
| 4 classroom | 13 shop |
| 5 office space | 14 repair café |
| 6 auditorium | 15 service point |
| 7 staircase | 16 dressing room |
| 8 toilets | 17 terrace |
| 9 technical space | 18 water theatre |

STORAGE HALL ELEVATION - existing



CONSTRUCTION HALL ELEVATION - existing



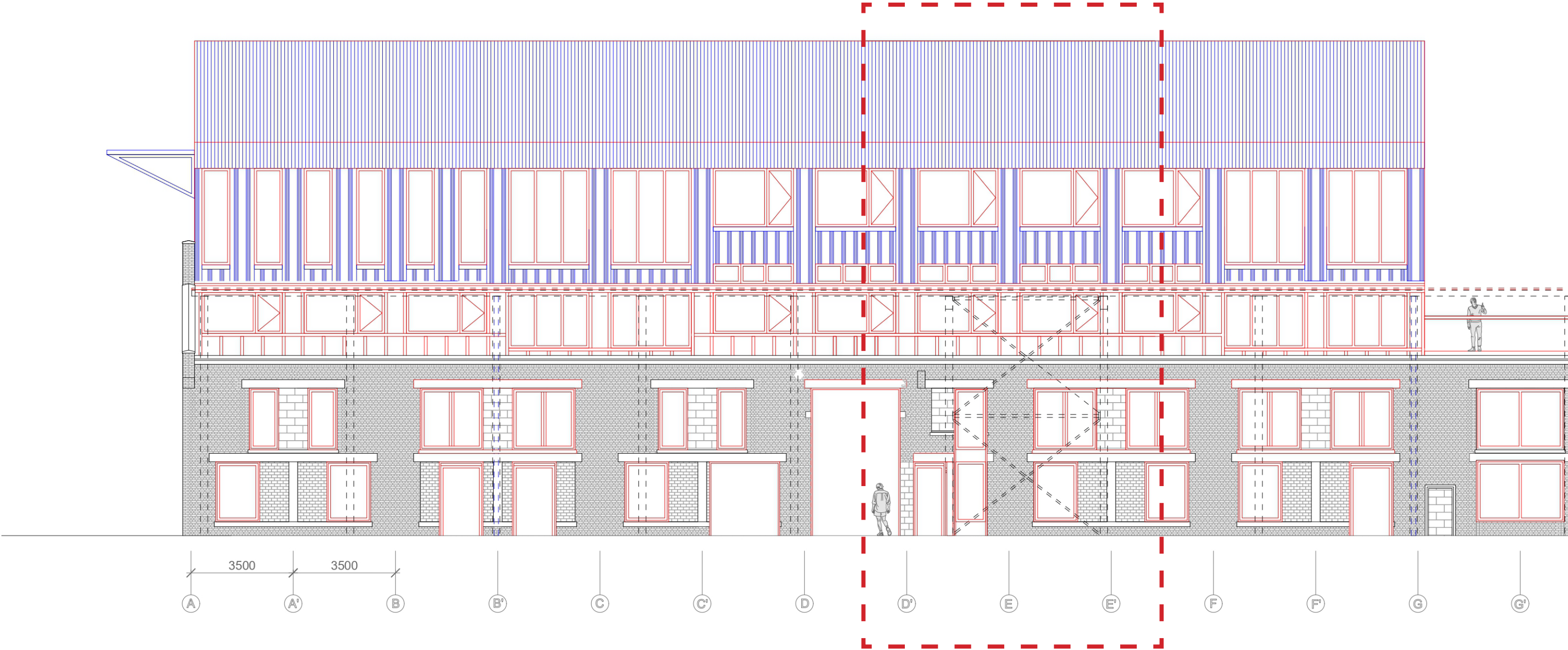
STORAGE HALL ELEVATION



CONSTRUCTION HALL ELEVATION



STORAGE HALL ELEVATION



CONSTRUCTION HALL ELEVATION





Colour coding

 *existing*

 *dismantled*

 *new addition*

 *reconfigured on site*

Colour coding

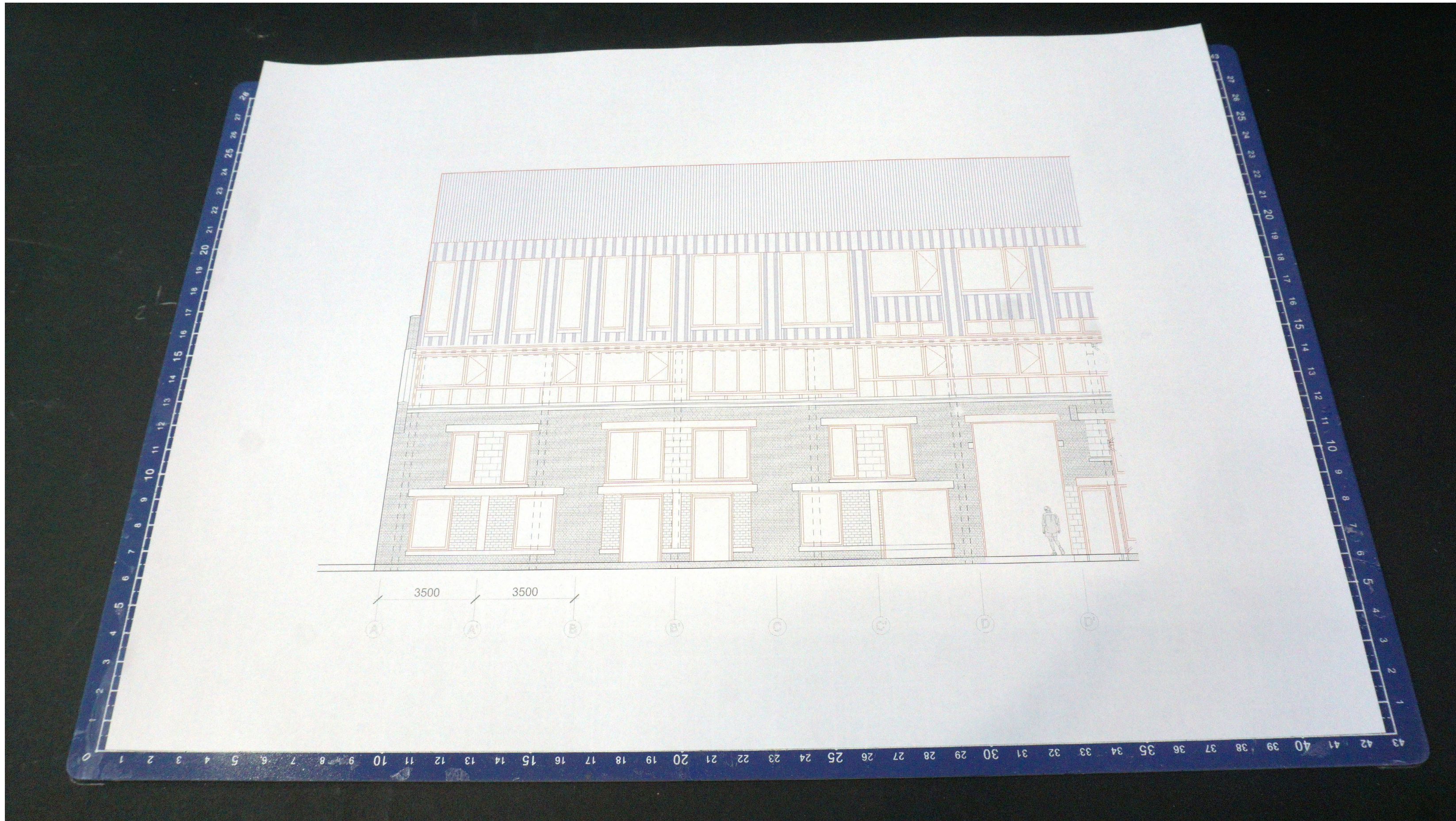
 *existing*

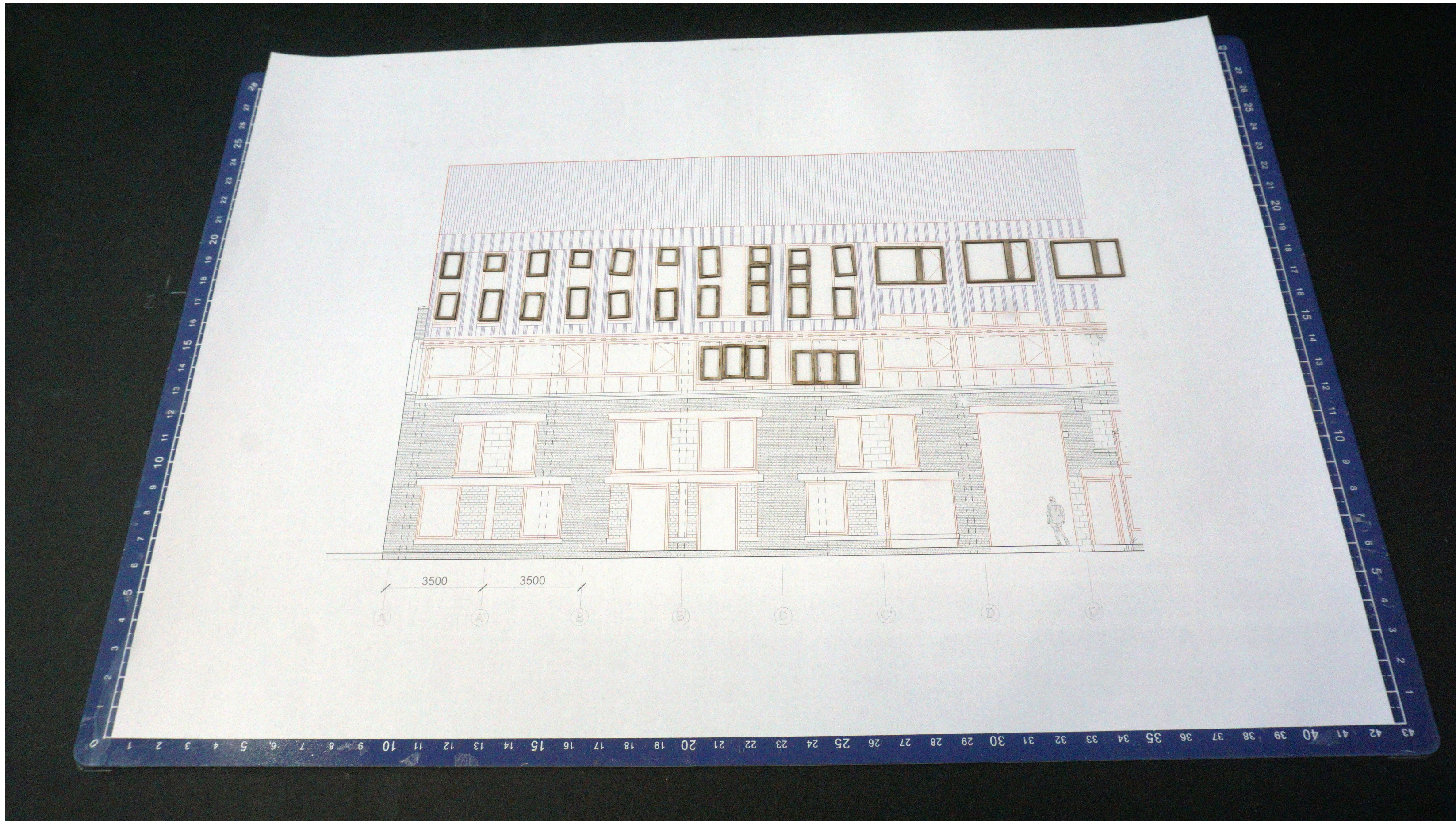
 *dismantled*

 *new addition*

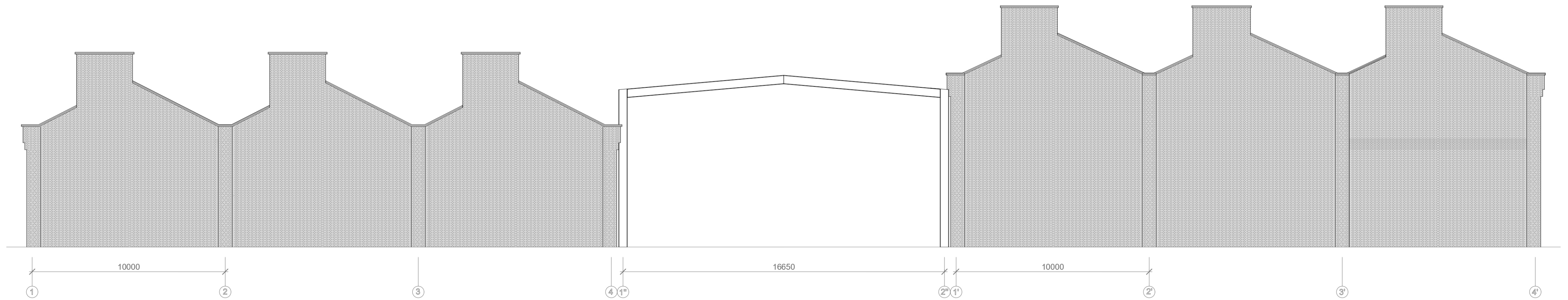
 *reconfigured on site*

 *reused from network*

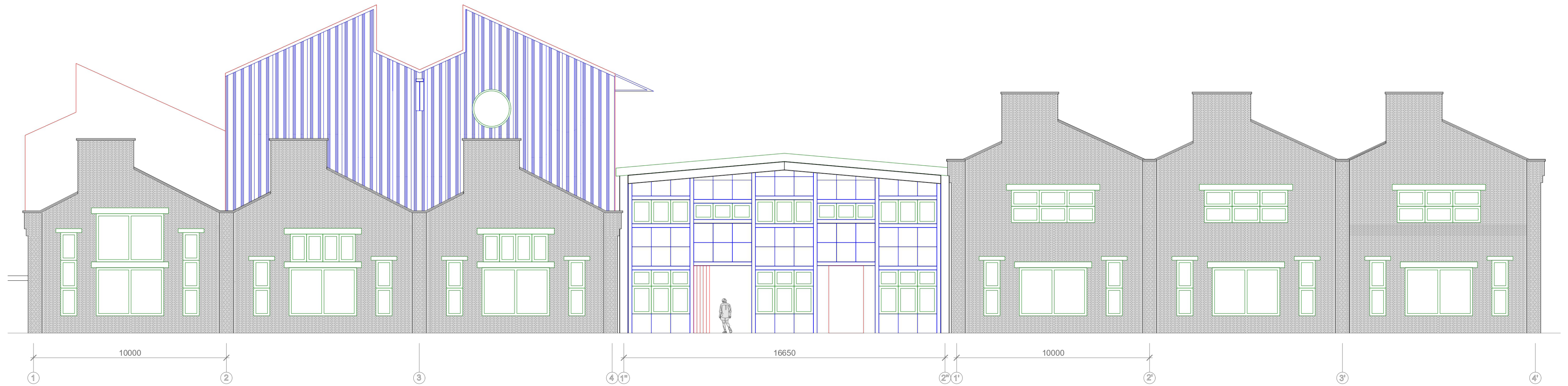




ELEVATION FROM HOLLEBEEKSTRAAT - existing



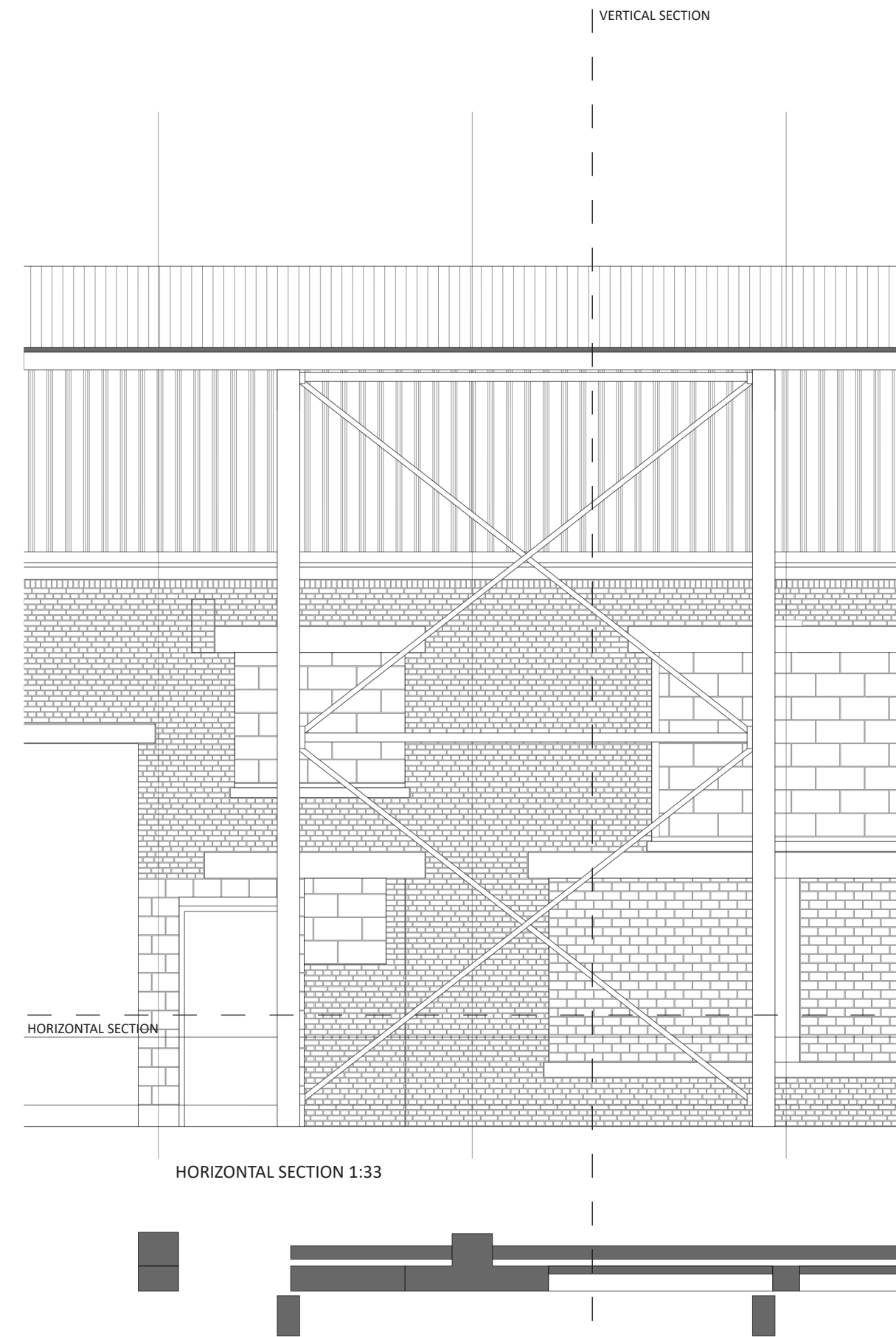
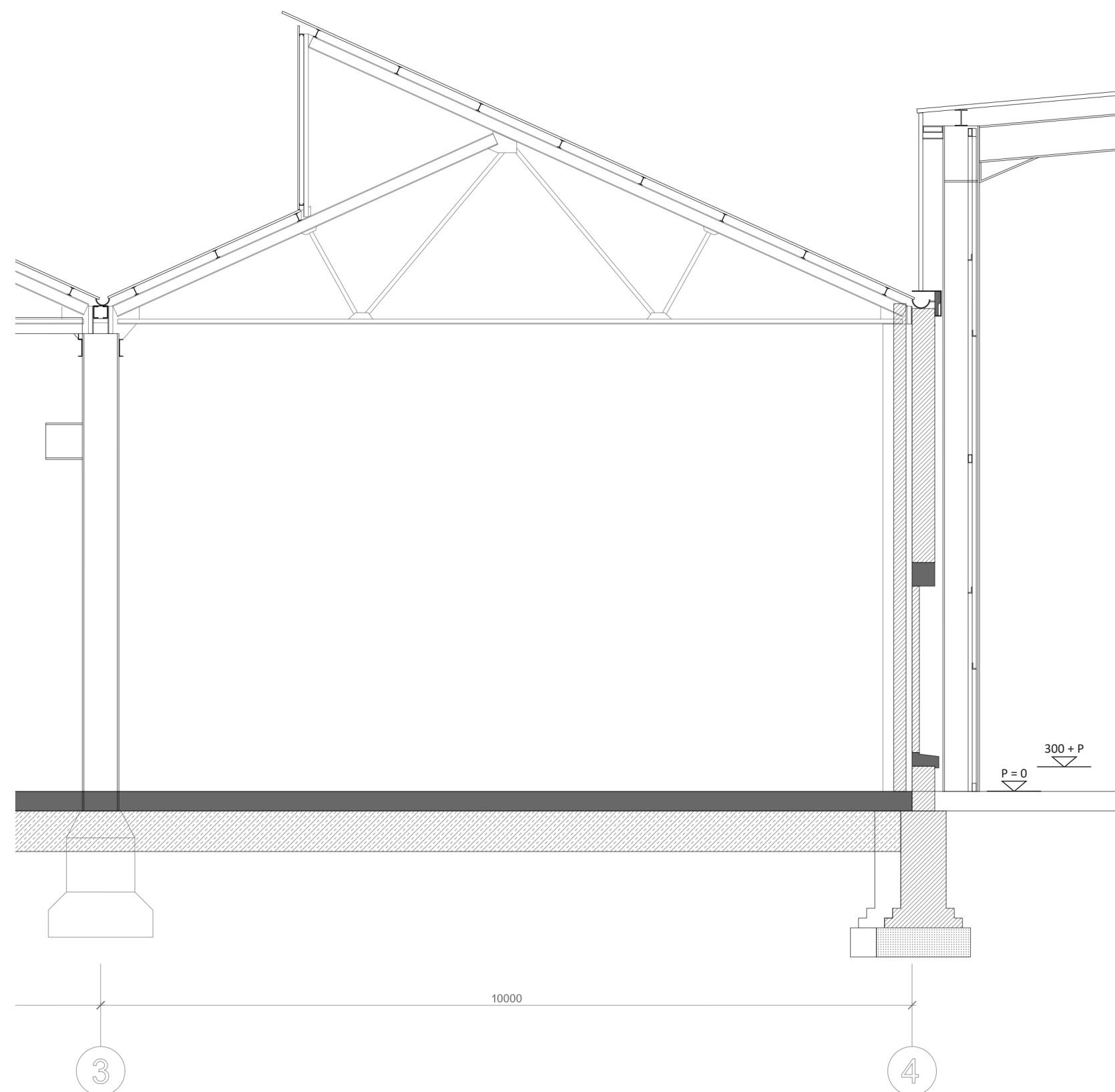
ELEVATION FROM HOLLEBEEKSTRAAT

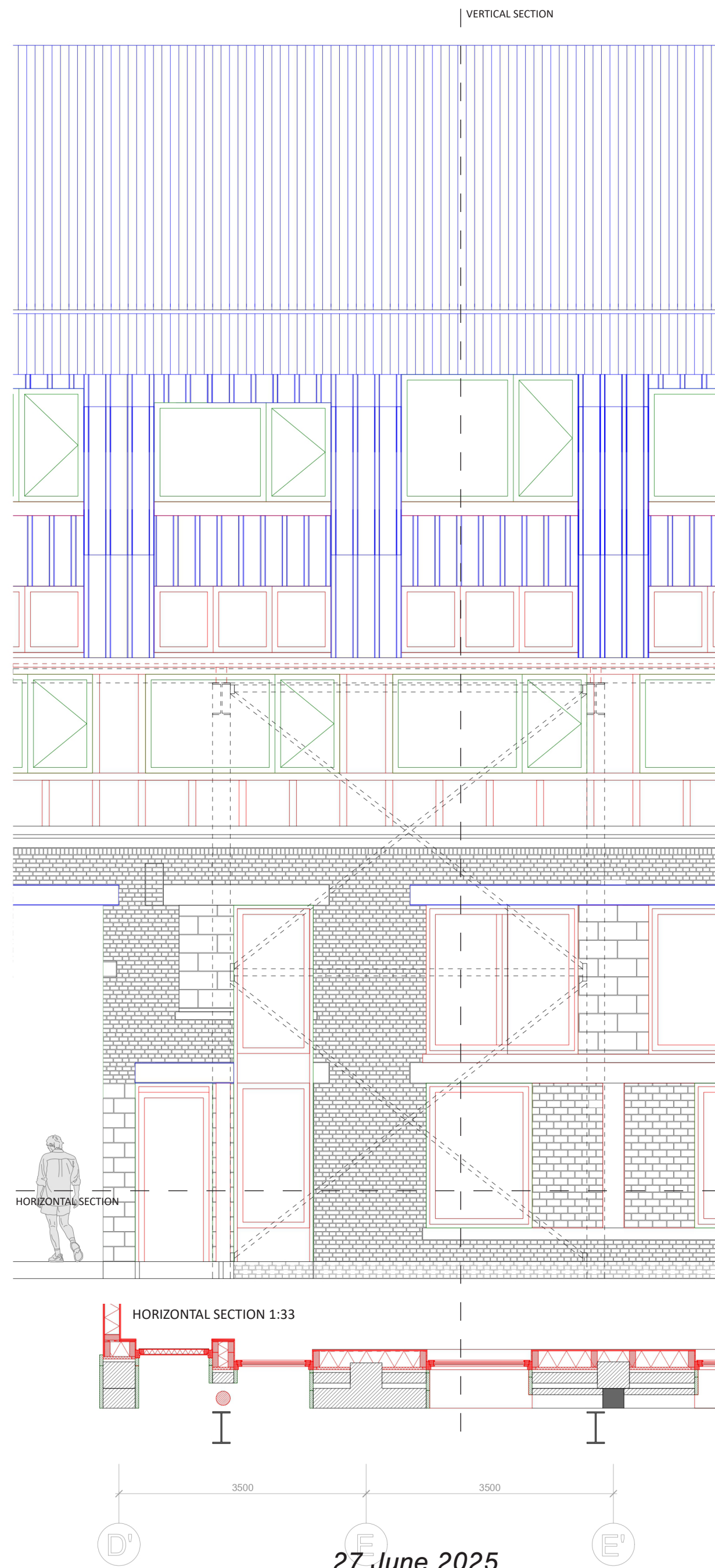
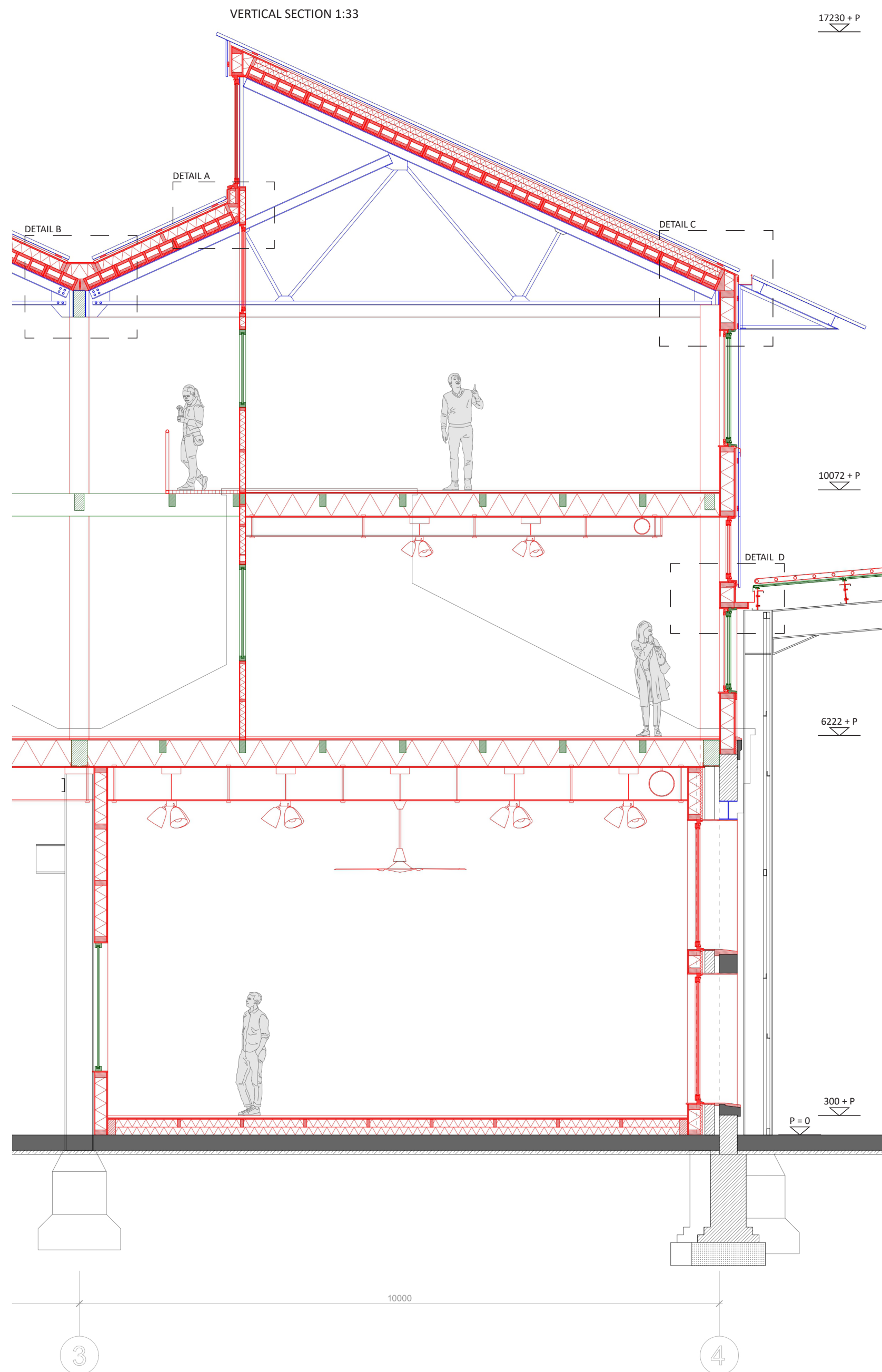


ELEVATION FROM HOLLEBEEKSTRAAT

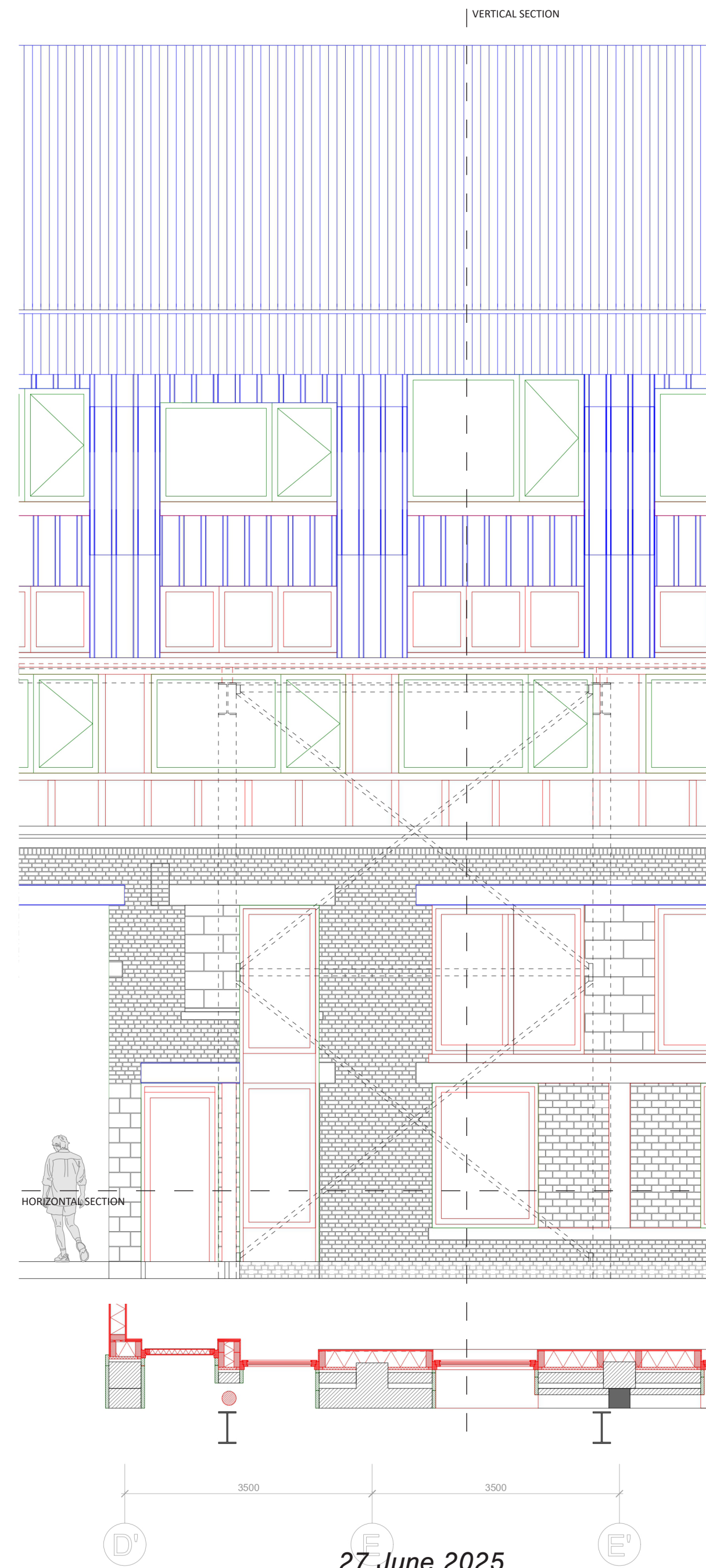




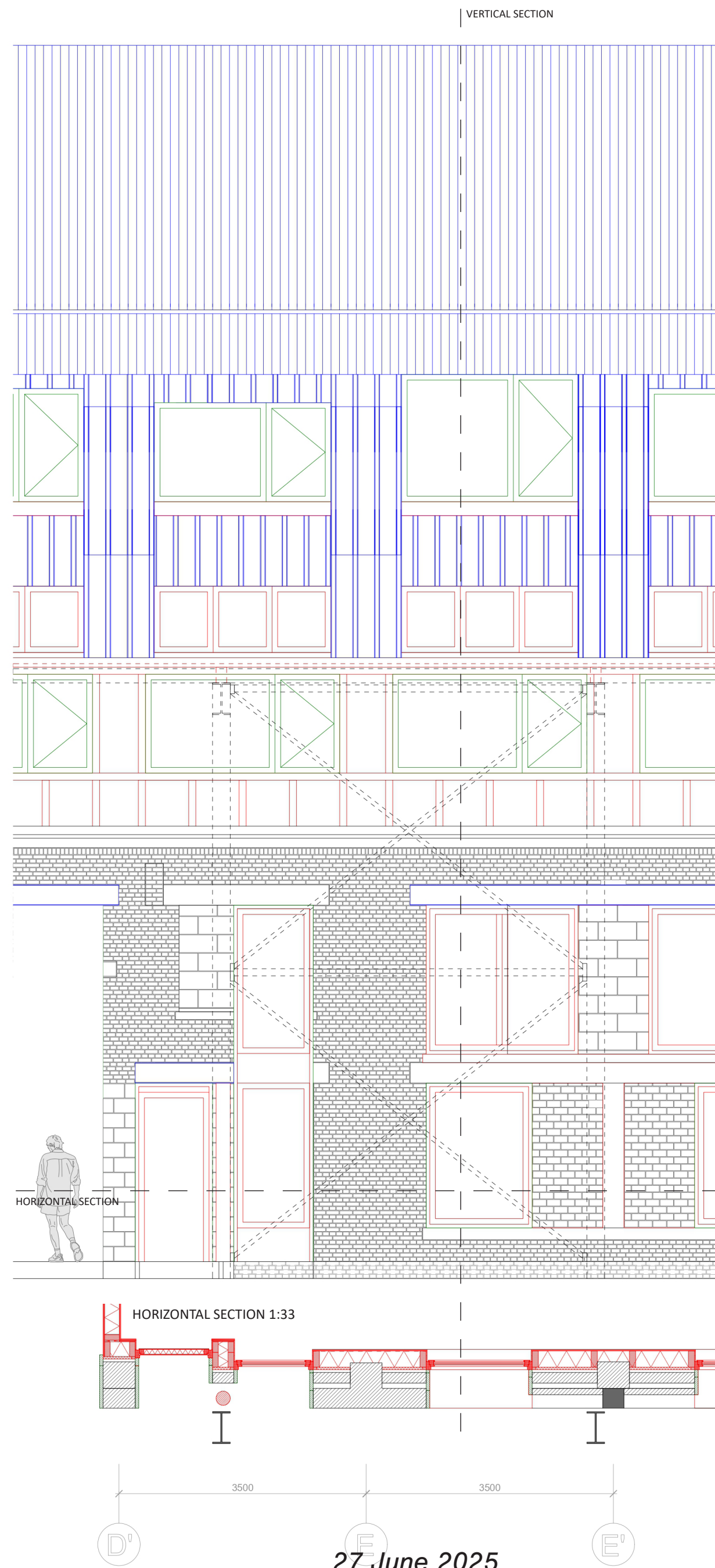
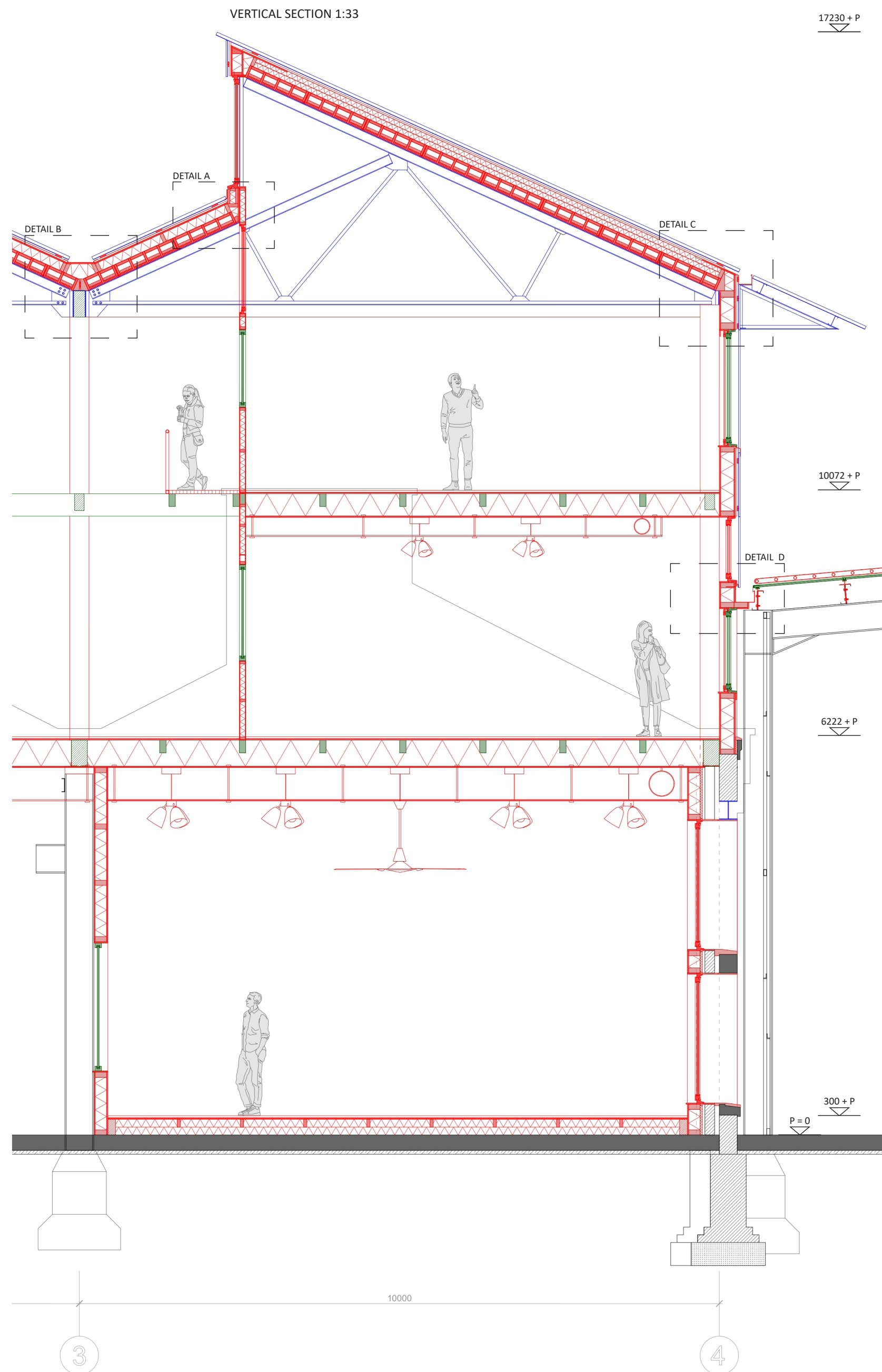




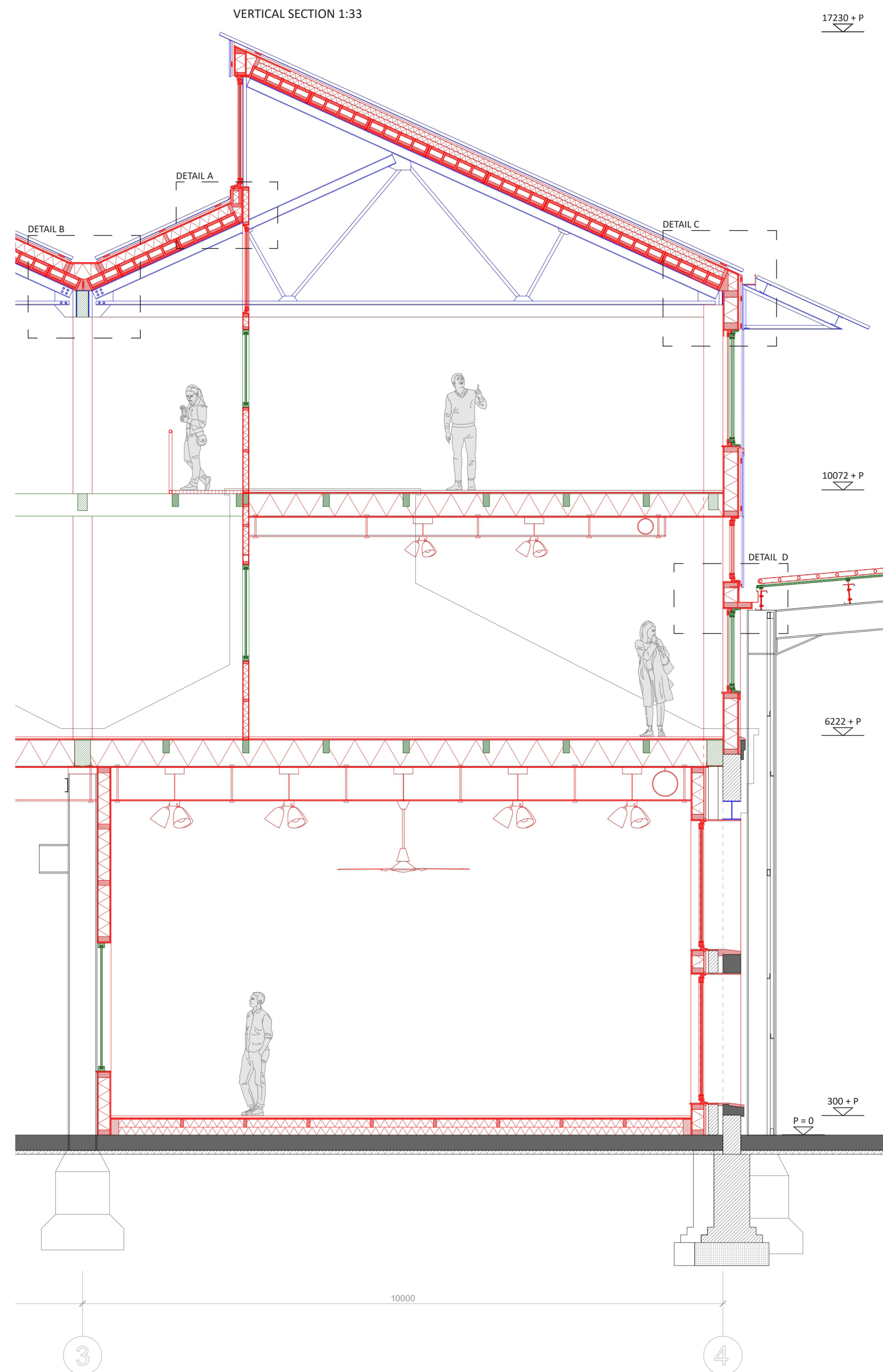
BT FRAGMENT



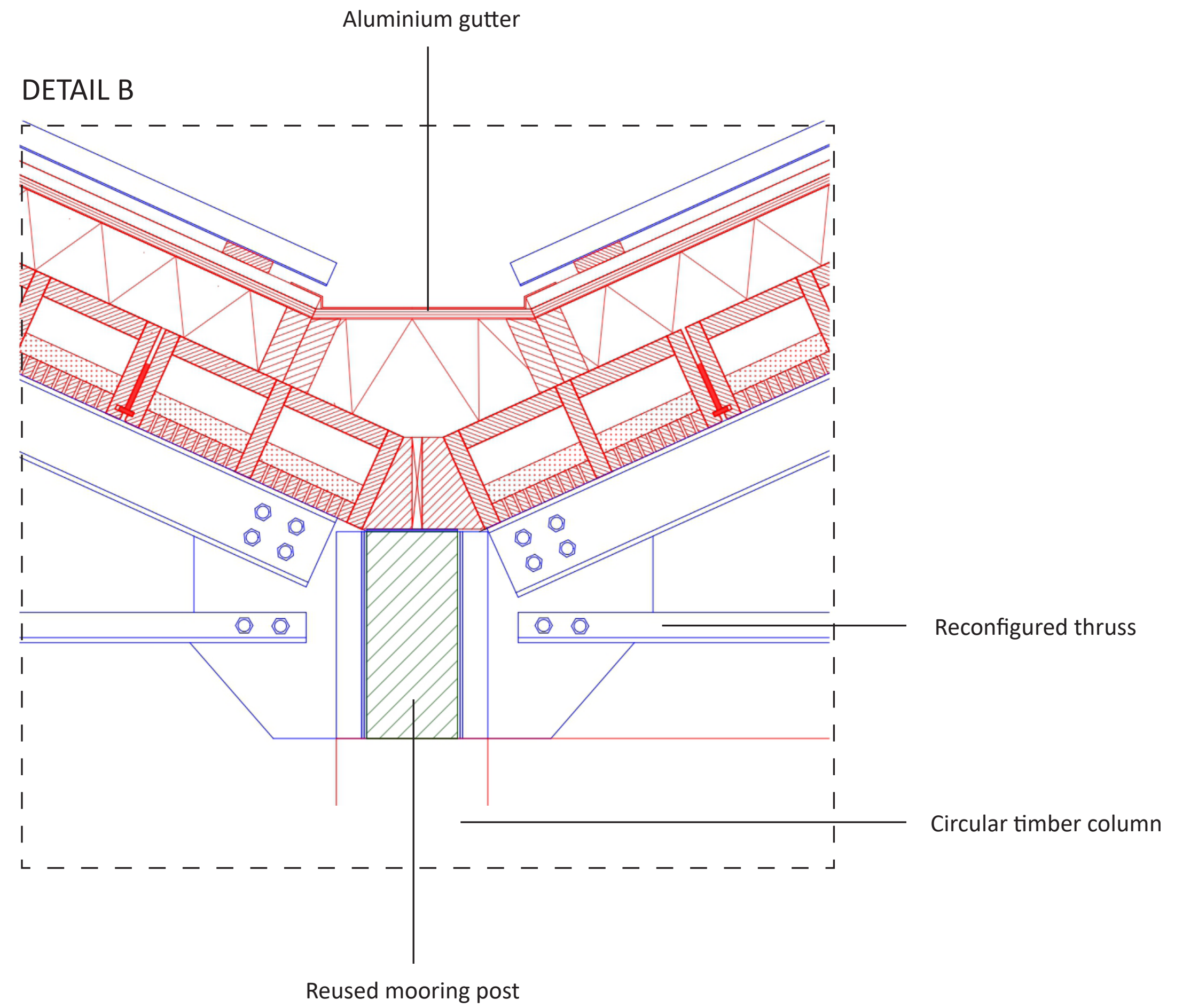
BT FRAGMENT

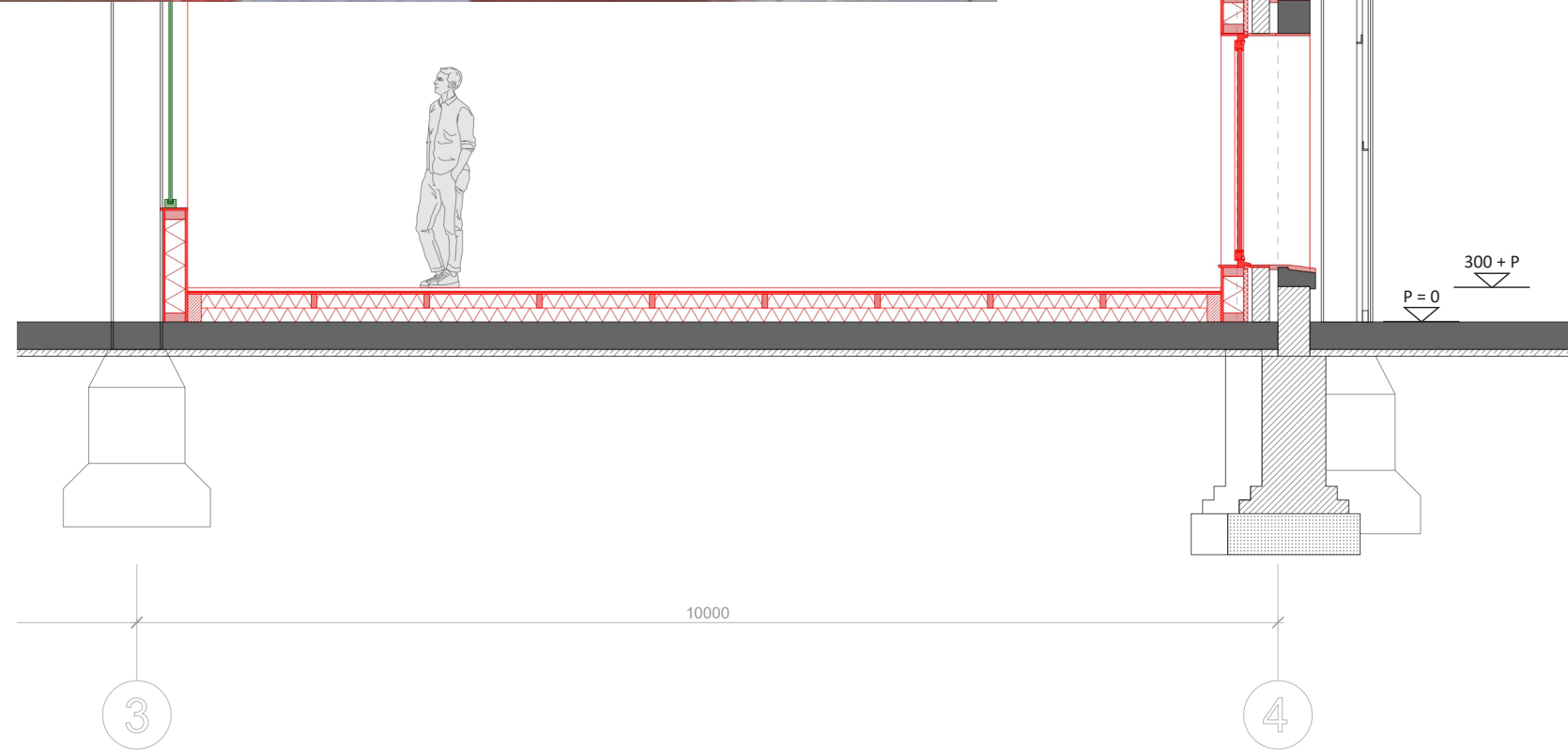


BT FRAGMENT



BT DETAIL





17230 + P

DETAIL C

10072 + P

DETAIL D

6222 + P

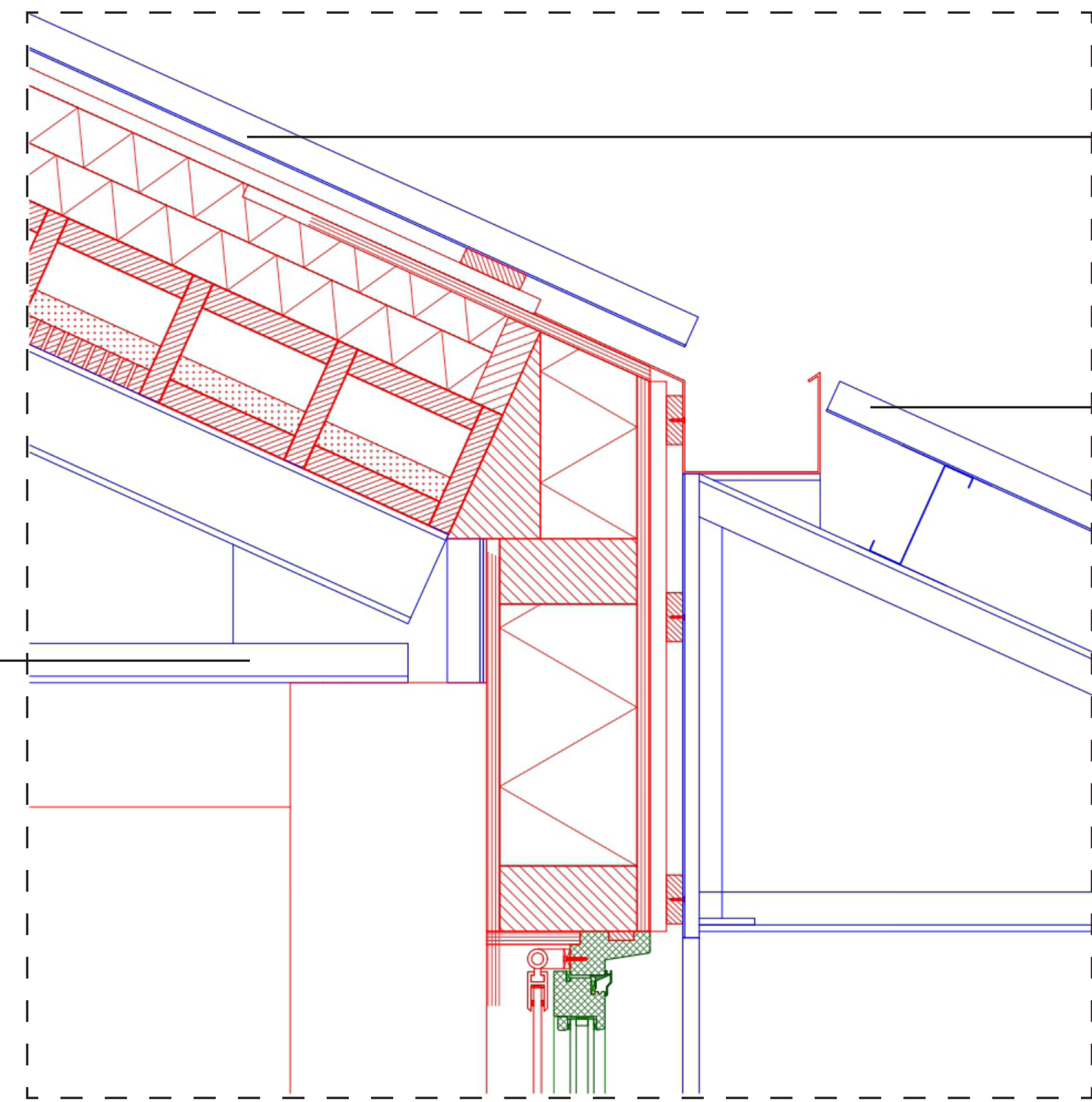
300 + P

P = 0

Reconfigured thuss

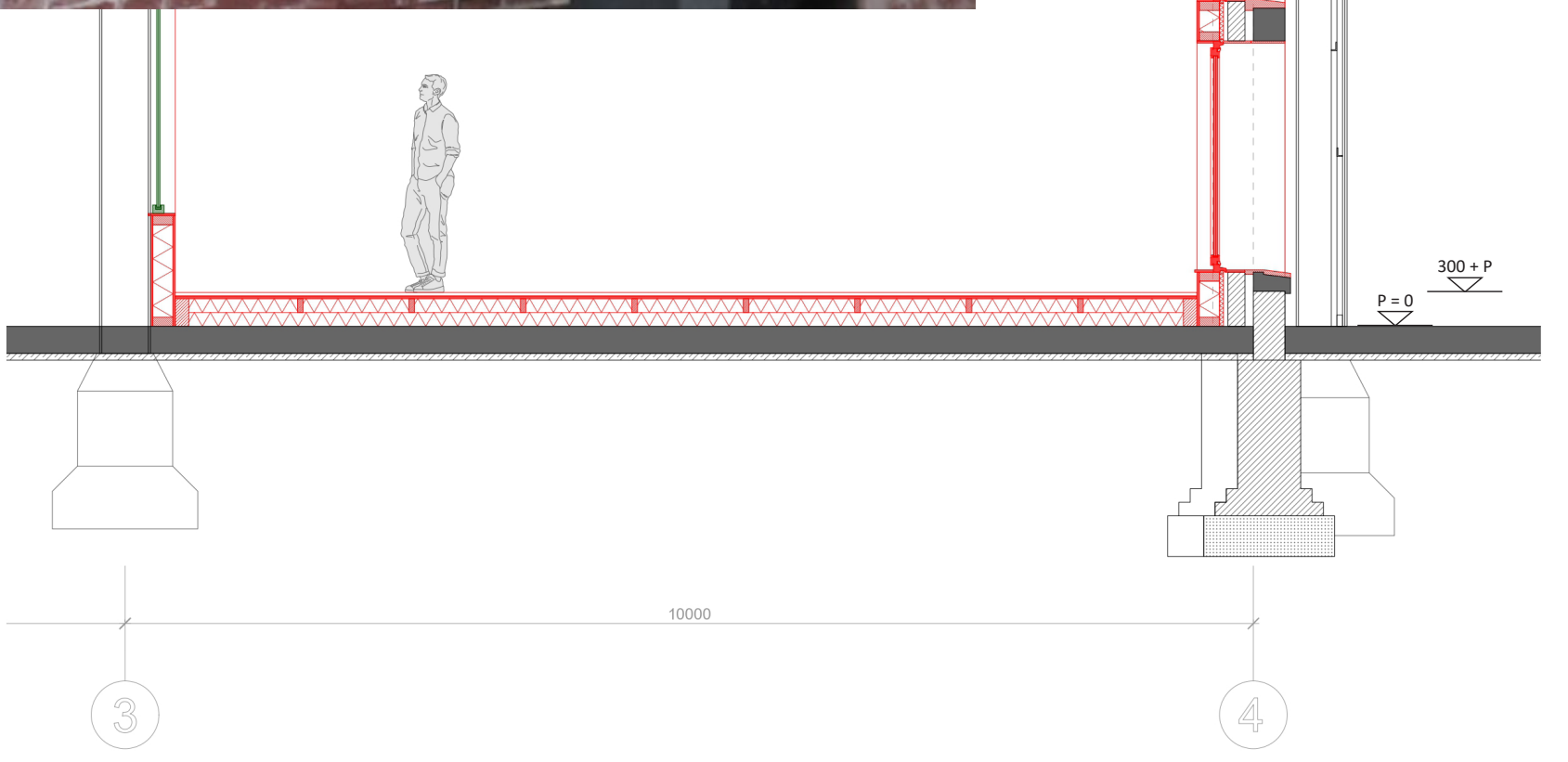
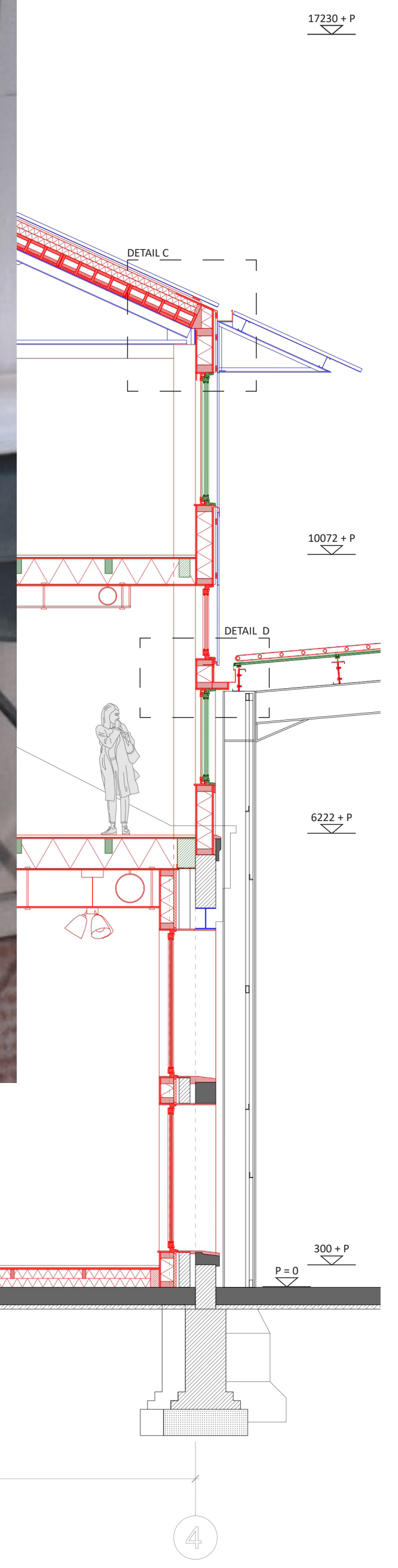
BT DETAIL

DETAIL C



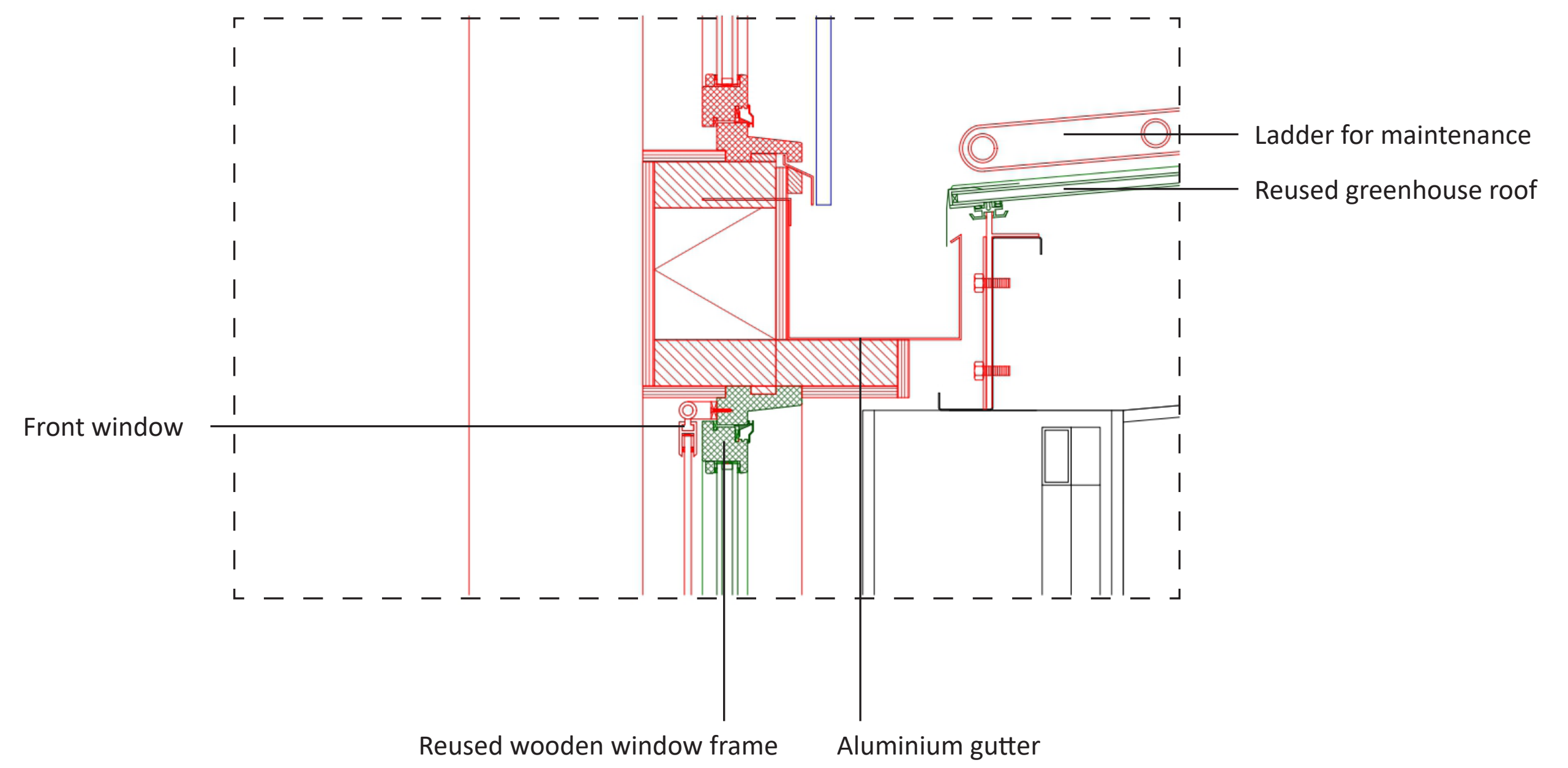
Reconfigured corrugated sheet

Fixed sun screening of reconfigured corrugated sheet



BT DETAIL

DETAIL D





ACT 3
Herbouwhuis in operation
inspiring entanglements

starring
Lance Schroten
Marianna Angelini
Raf van Oosterhout
Herbouwschool students
Hoboken residents

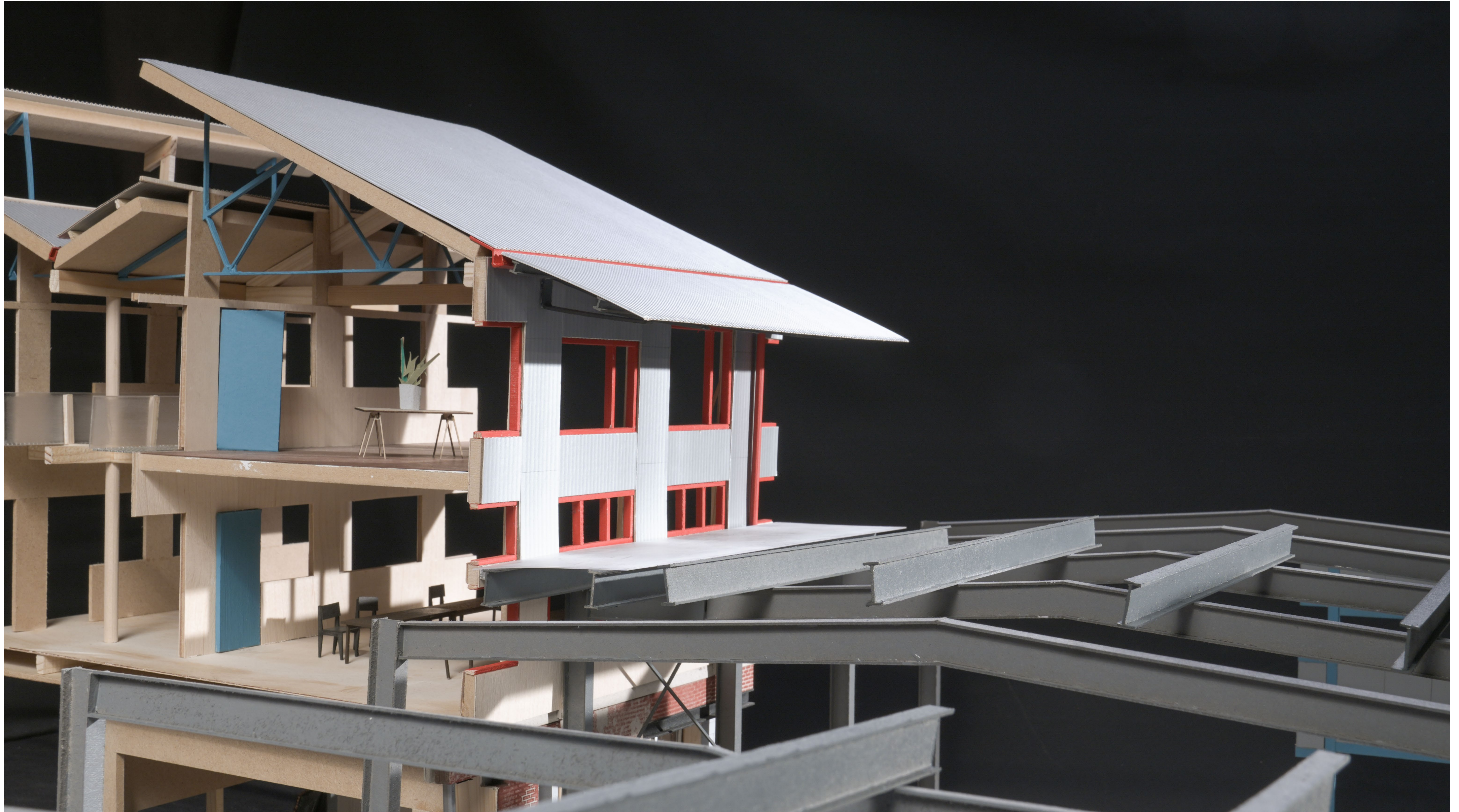










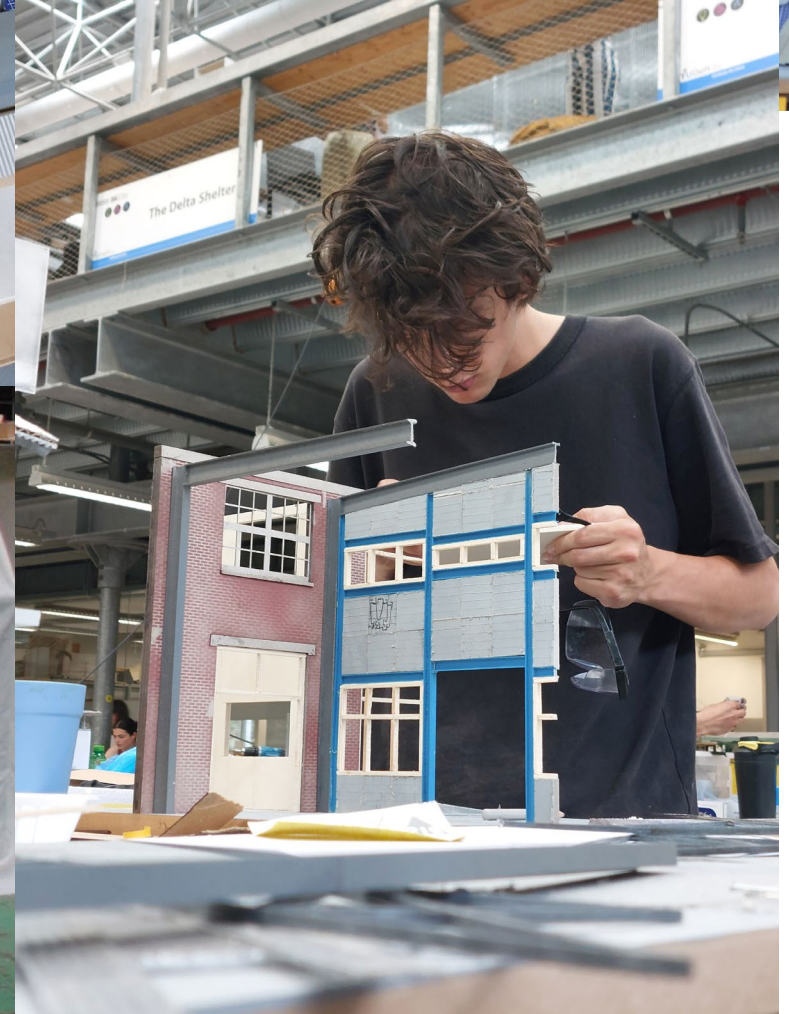


HERBOUWHUIS

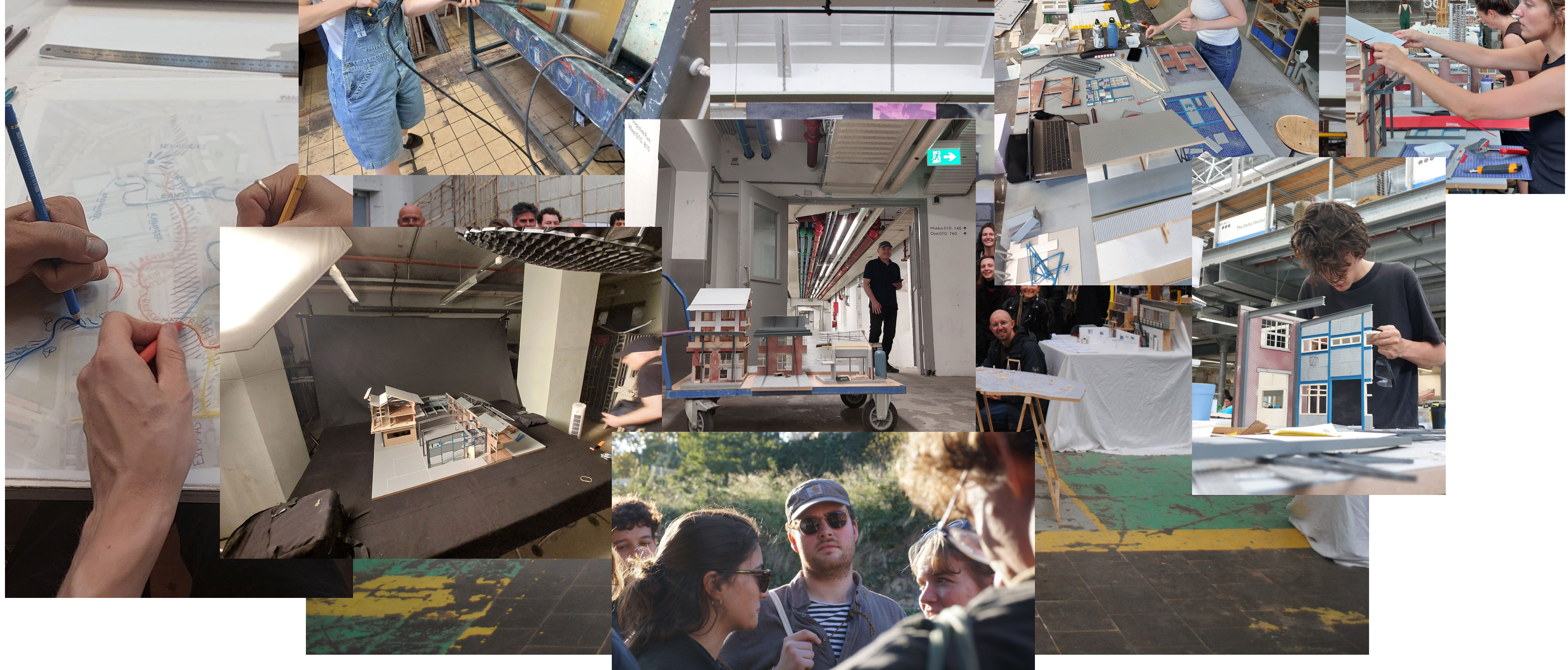


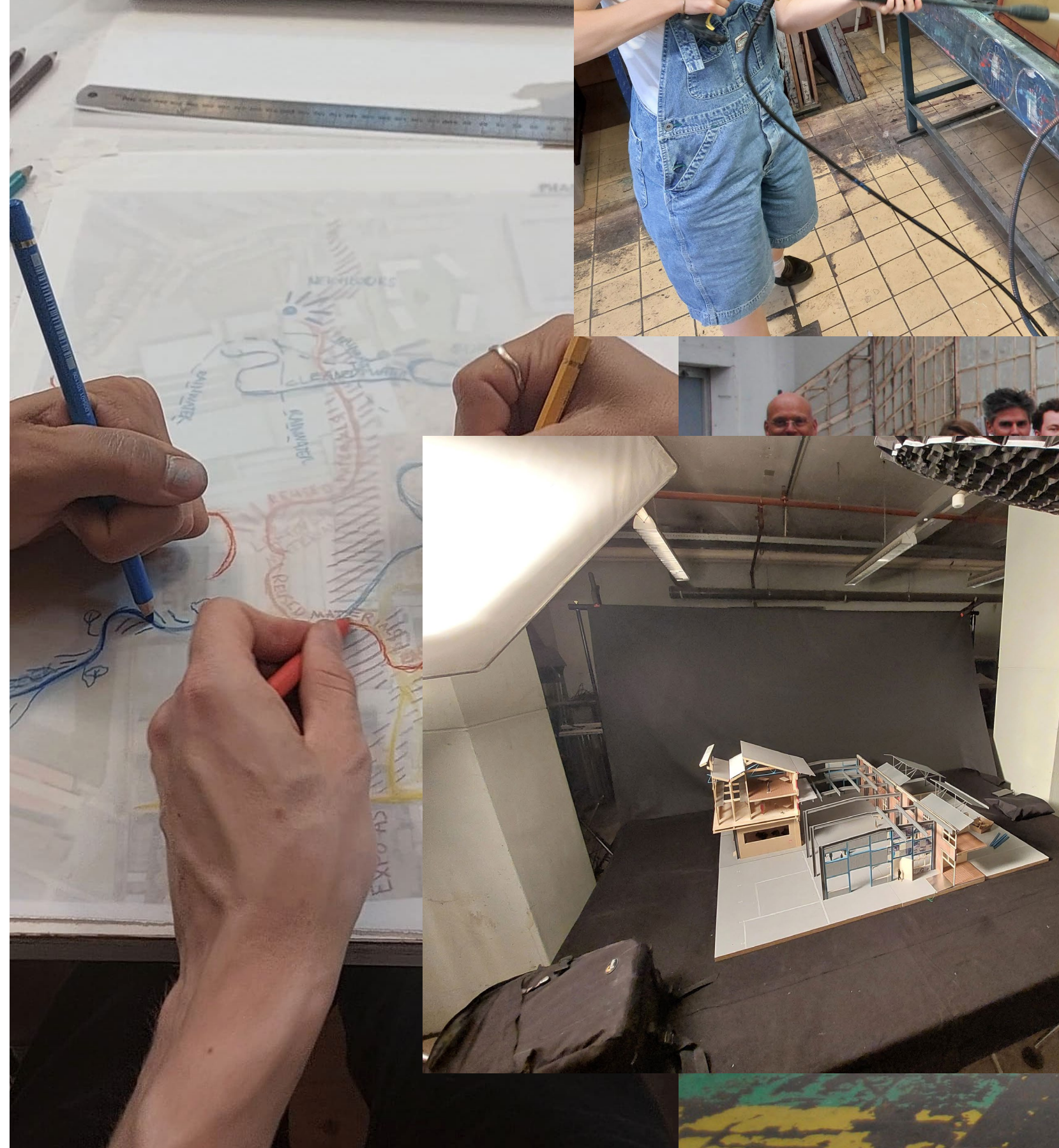








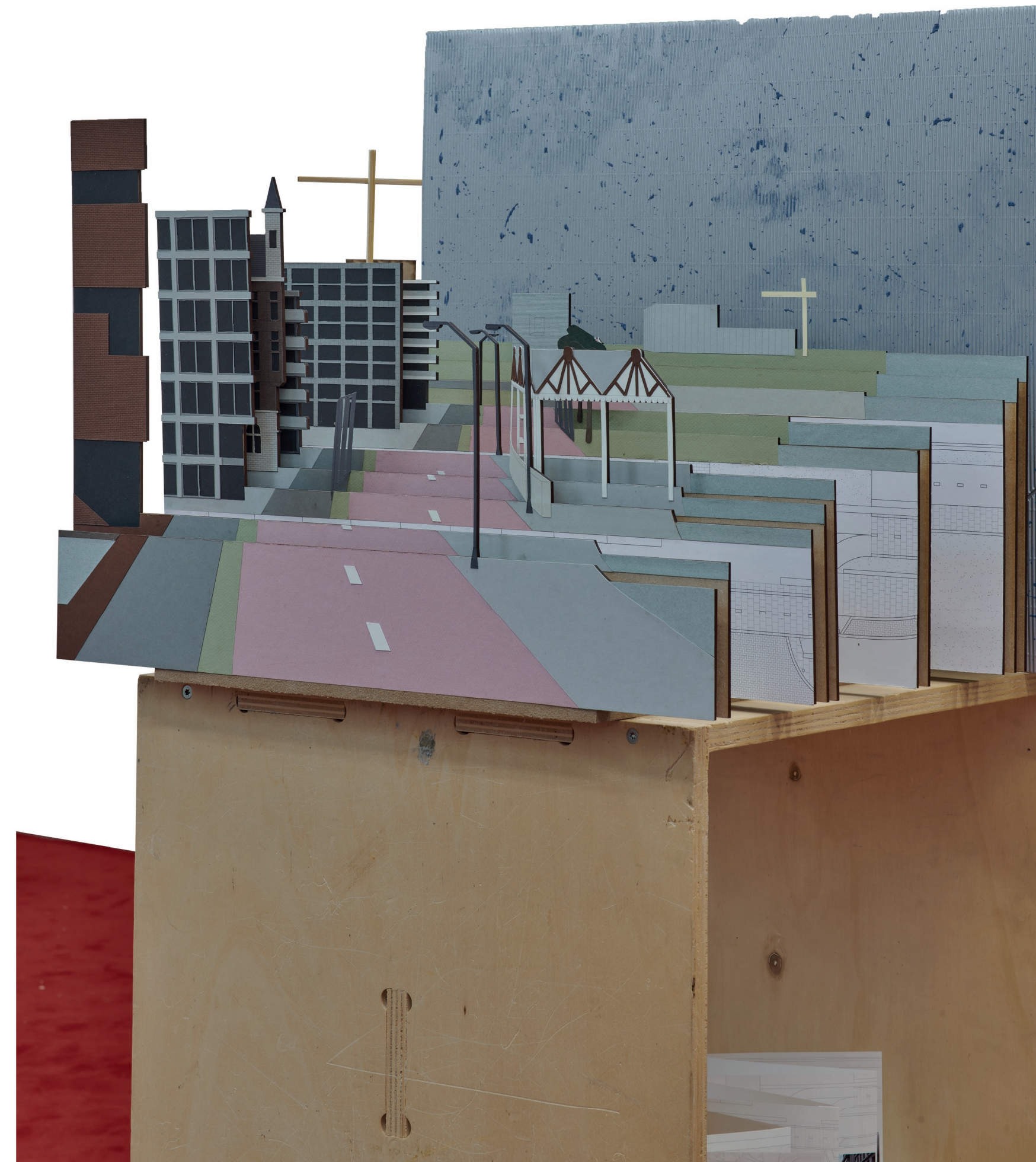






The end

Thank you!



The bike highway diorama from Eilandje to Blikfabriek. Photo by Max Hart Nibbrig



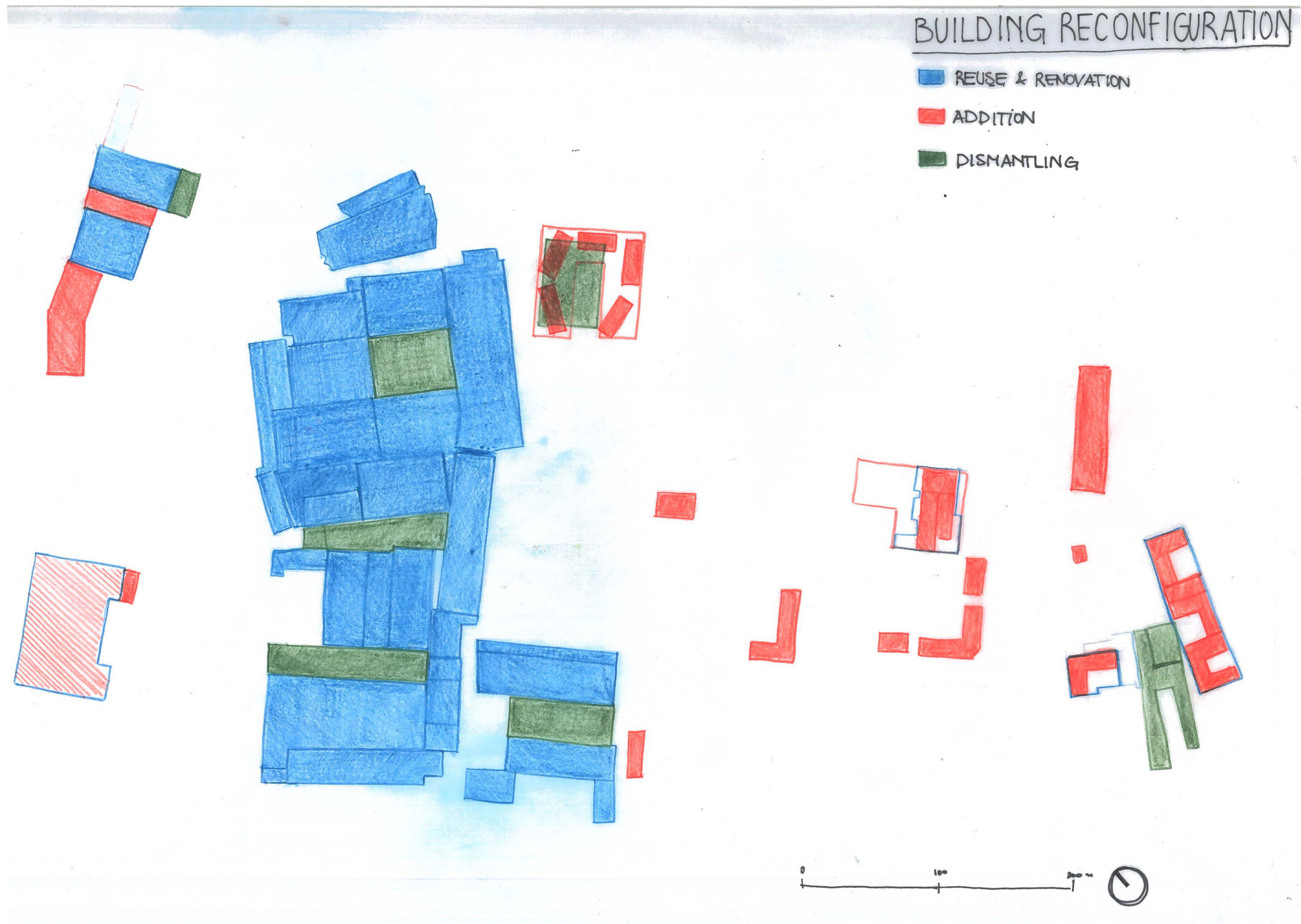
Photo by author



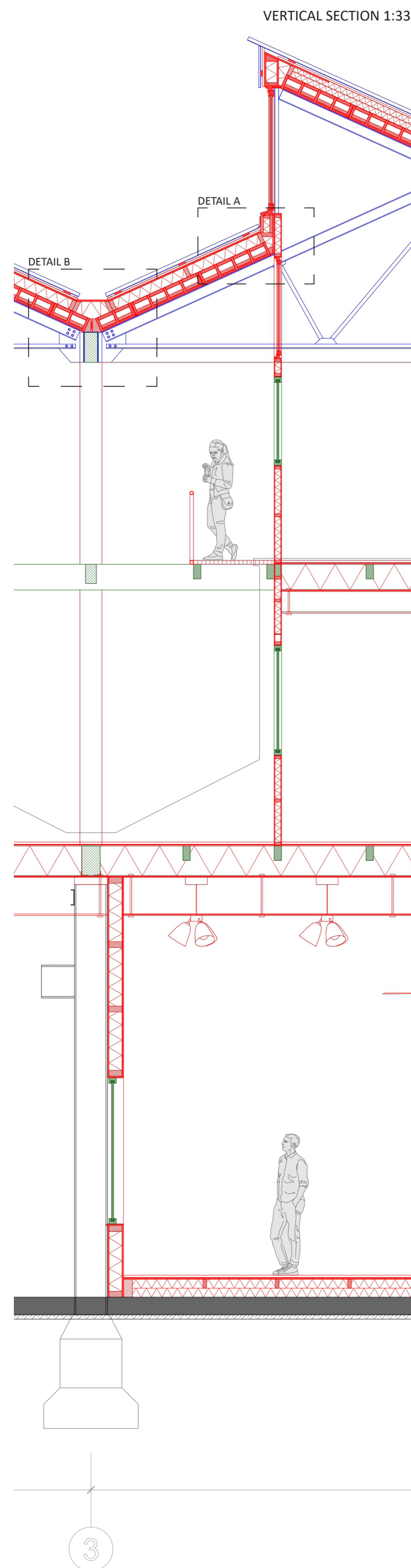
Photo by author



Photo by author

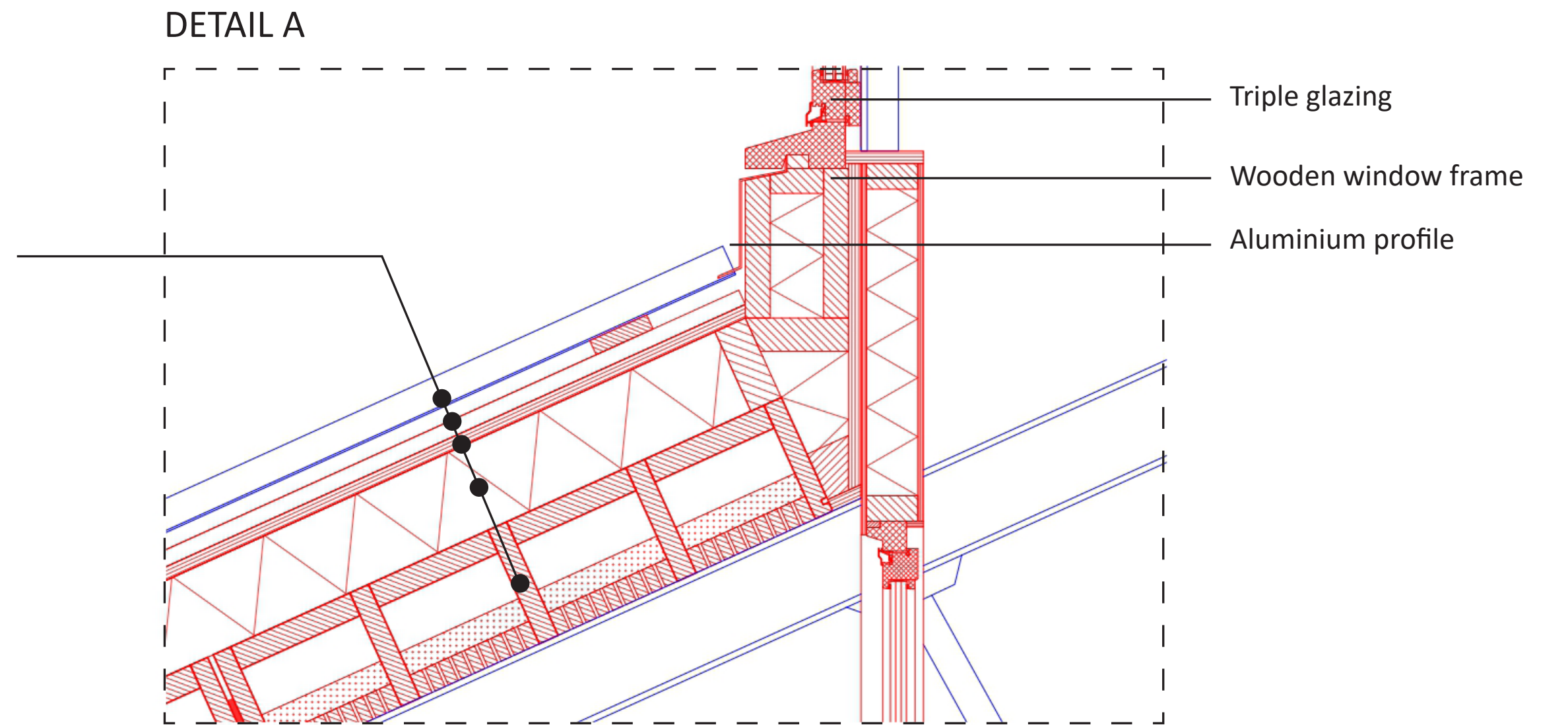


Building reconfiguration and masterplan's porosity. Drawings by Marianna

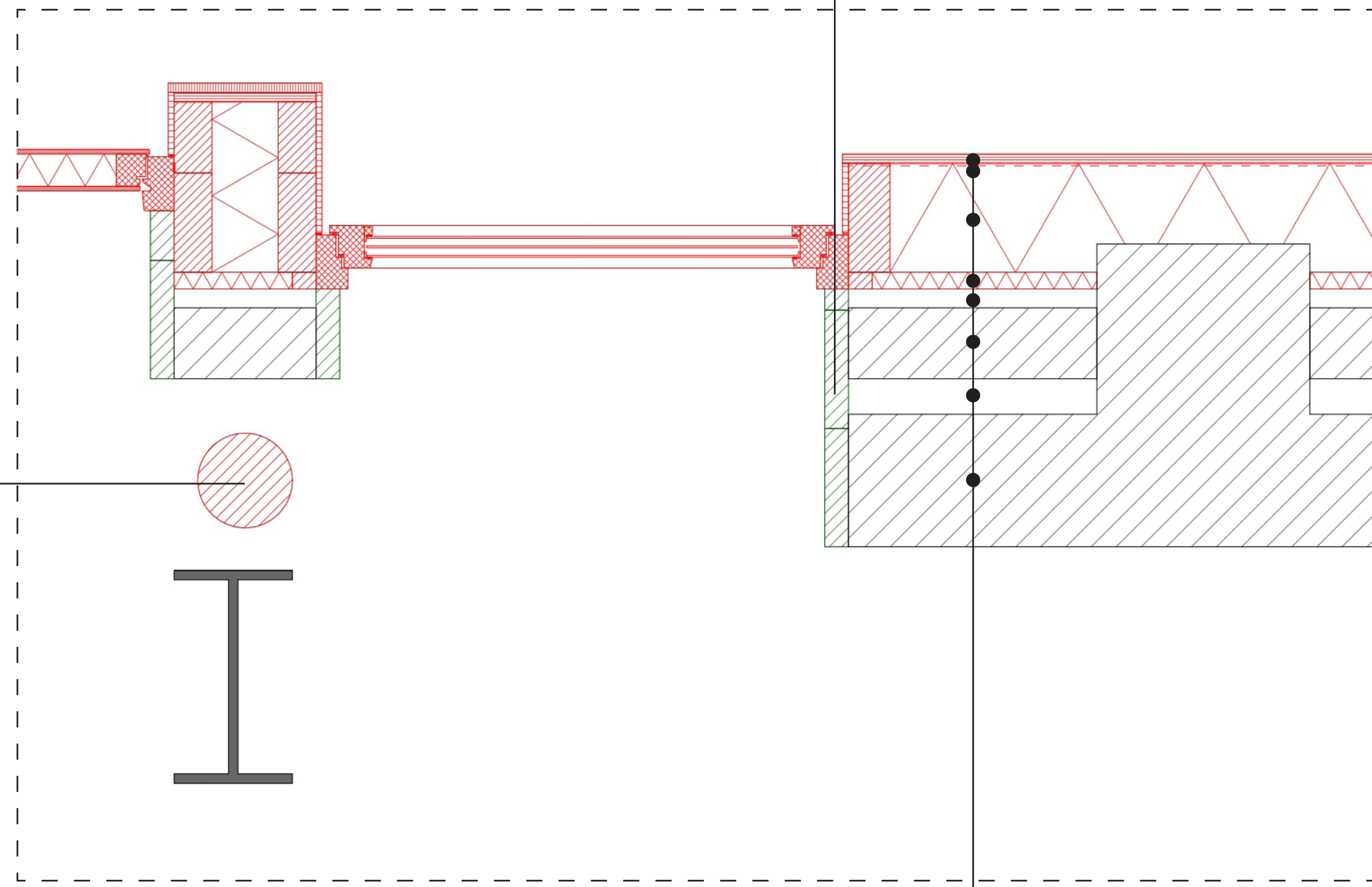


Roof construction from outside to inside
 Trapezoidal sheet 25 mm -
 Wooden framework 25 x 100 mm (2x) -
 Underlayment 20 mm -
 Isovlas insulation with wooden framework 140 mm -
 Lignatur roof element with wood fiber insulation and acoustic grooves 200 mm -

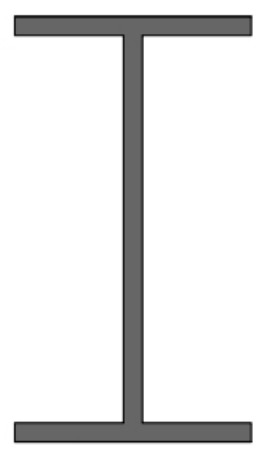
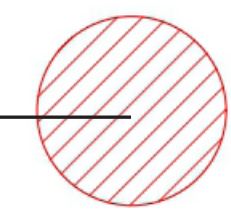
BT DETAIL



DETAIL E



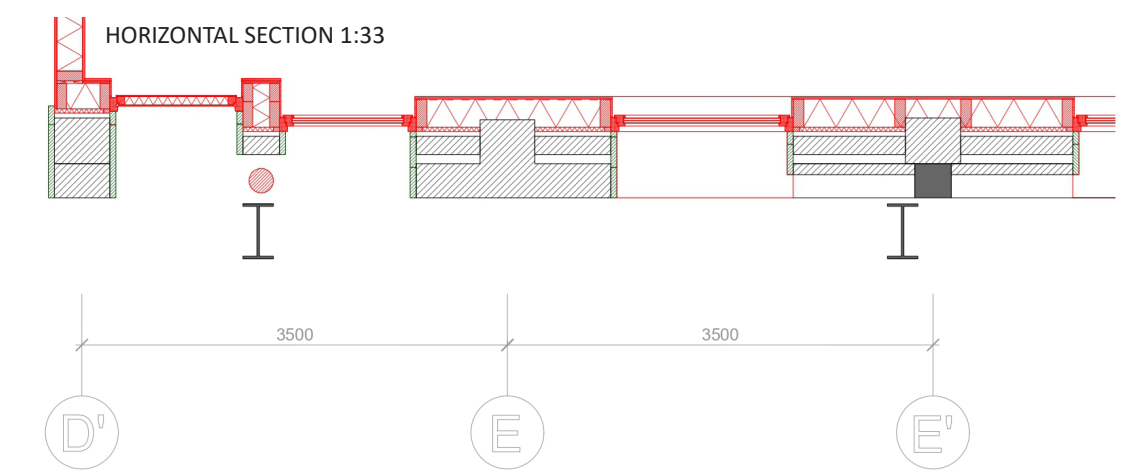
Circular timber column



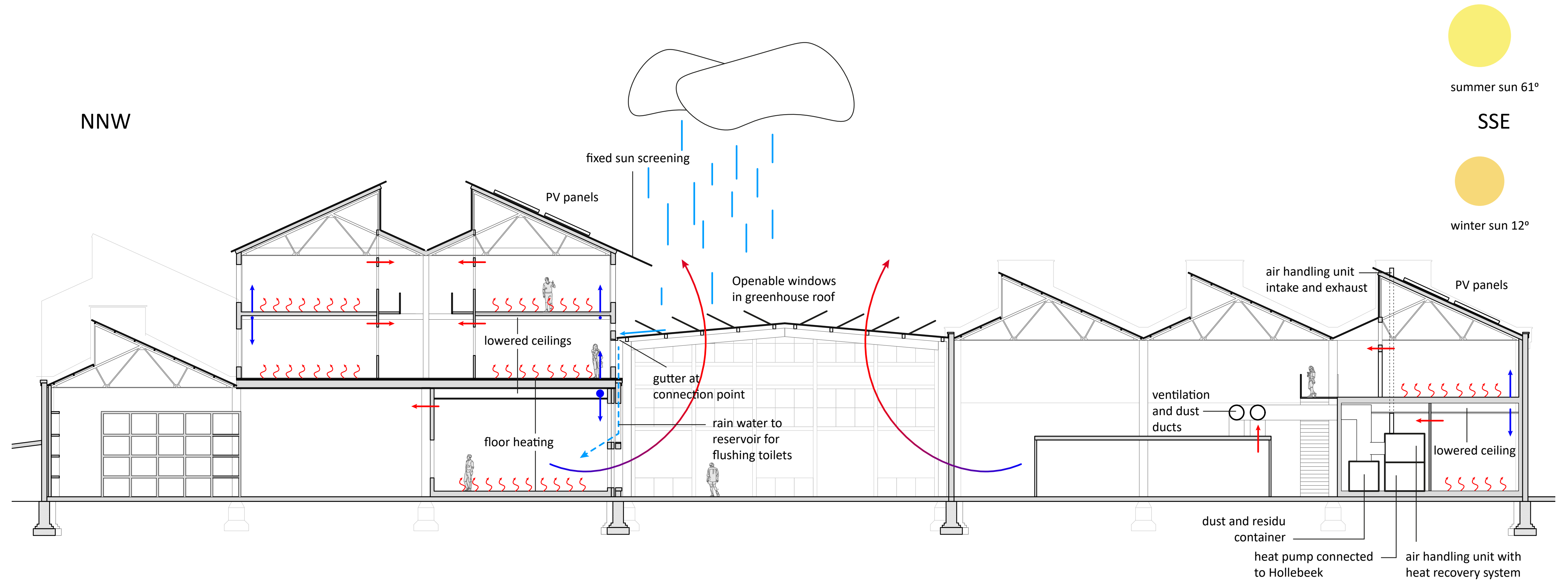
Reused wagon planks

- Facade construction from inside to outside
- Underlayment 20 mm -
 - Vapor barrier -
 - Isovlas insulation with wooden framework 230 mm -
 - Wood fiber insulation 35 mm -
 - Unventilated cavity 40 mm -
 - Concrete building blocks 150 mm -
 - Ventilated cavity 75 mm -
 - Masonry 280 mm -

BT DETAIL

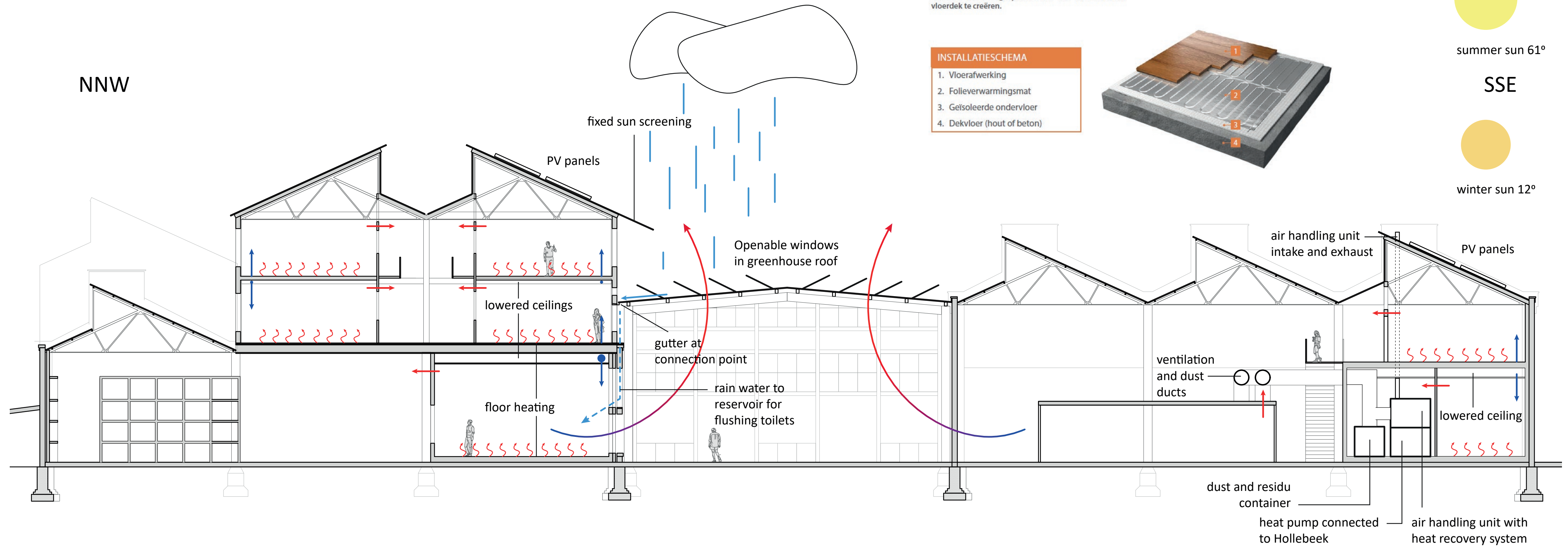


CLIMATE SECTION



CLIMATE SECTION

NNW



FOLIEVERWARMINGSMATTEN - WLFH

Overzicht

De Warmup folieverwarming is een elektrisch vloerverwarmingssysteem voor laminaat, hout en andere zwevende vloerafwerkingen.

Gelijmde parketvloeren, tapijten, vinyl en andere veerkrachtige vloerafwerkingen kunnen over de Warmup-folieverwarmer worden gelegd met ons Dubbele Bovenlaag systeem om een dun zwevend vloerdek te creëren.

De folieverwarming bestaat uit een vezelversterkte folie gewikkeld om een dunne meeraderige, tweevoudige verwarmingskabel die is geïsoleerd met een geavanceerd fluorpolymeer. De folie zorgt voor een continue aardlaag in de vloerconstructie en verspreidt de warmte weg van de verwarmingskabel.

- INSTALLATIESHEMA**
1. Vloerafwerking
 2. Folieverwarmingsmat
 3. Geïsoleerde ondervloer
 4. Dekvloer (hout of beton)

