

Ensemble 2.0

Master Thesis of Oliver Brunhart
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Topic C: 24/7 Metropolitan Hybrid Machine

The topic of this master thesis is a '24/7 Metropolitan Hybrid Machine'. The questions which immediately arise are:
What is the purpose of such a machine? Is an urban apartment building with a shop on the groundfloor already a 24/7 machine?

24/7 Machine

During the night, the Engros market is fully occupied. A whole network of global and regional players come together under the roof of the Engros market. The logistics and trading system is optimized and every part works in harmony with each other. This is a well-oiled working machine. The situation during the day is completely the opposite. No one is there and nothing happens. Due to security reasons, the whole site is fully fenced in in order to protect the abandoned building from vandalism. This unique situation gives the opportunity to place a new secondary function in the existing structure without interfering with the highly optimized night system. With only small interventions, the Engros building and its enormous parking space can become a 24/7 machine. The goal is to optimize the space for a second program and therefore creating innovation through utilization.

Going one step further, the project could lead to a critical questioning of our 'Bau-und Zonenordnung'. Is it still contemporary, to divide the land into different zones of functions? Or did the current Covid crises prove the opposite? During the day, a normal flat can also be used as an office. The Engros building can be seen as the initial attempt for designing a flexible building with more than one function on the same space within the same day. Functions should be analyzed from their occupation in their timeline during a day. So, it can be combined with other functions which occupy the space at a different time. Using the same space for more than one function would densify the building environment and would slow down the urban sprawl. It is another attempt to the solution for the problem of growing cities like Zurich. The manifesto for it can be found in the second paper.

System

All interventions on the site have a fixed and a flexible space. The fixed space can be seen as the storage. Because the flexible space is used by different users within 24 hours. The intervention in the Engros building is guided by these fixed and flexible spaces. The big market halls are divided. On the ground floor of the smaller rooms, vendors can have their storage for boxes, pallets and other packing items from the market. On top of the fixed part for the secondary use. In the bigger rooms, the permanent walls are replaced by a flexible system which can be divided into four rooms.

The interventions outside on the parking space and under the roof of the 'Verkaufemarkt' also have a fixed and flexible space. All fixed parts are constructed with the same system. It contains fixed frames and prefabricated modules, which are filled with reused cardboard boxes from the market as insulation. The building process is a collaboration of professionals and tenants. The frames of the fixed space are built together by carpenters and the modules are fixed by the tenants. Both the frames and the modules are made out of local silver fir, which is a tree that is more resistant than others to the climate change in Central Switzerland. With the system of the repetition of frames, tenants can design the length and filling (modules and windows) to its needs. However, all fixed spaces are dimensioned to the minimum, so the tenants should occupy the surrounding space under the flexible space. This flexible space is made out of boxes which interlock with each other. It is a similar system to a pull-out telescope. In order to protect the people underneath, old truck tarpaulin is reused, and their dimensions define the width of the boxes. By pulling the structure out, tenants can quadruple their space.

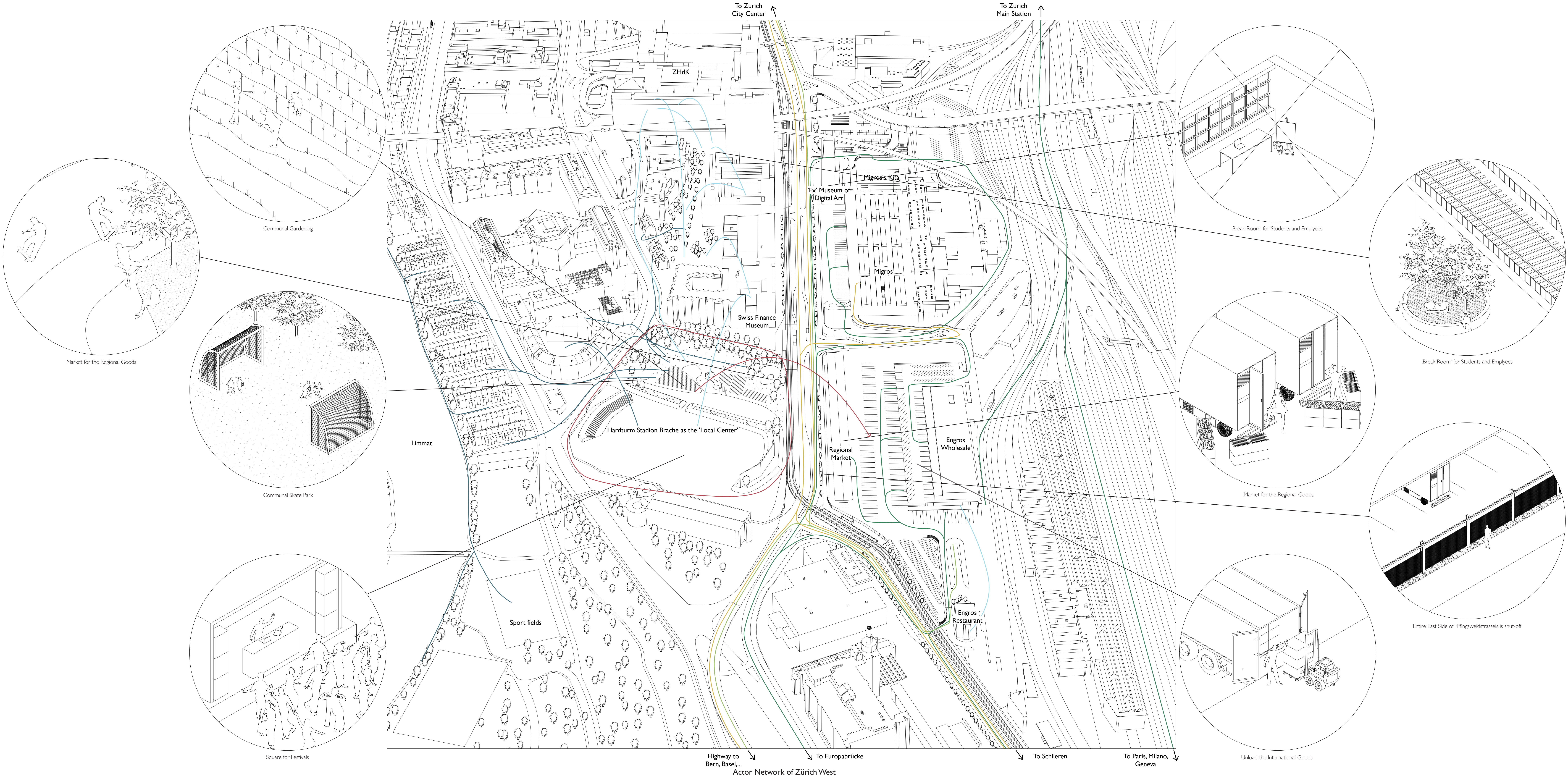
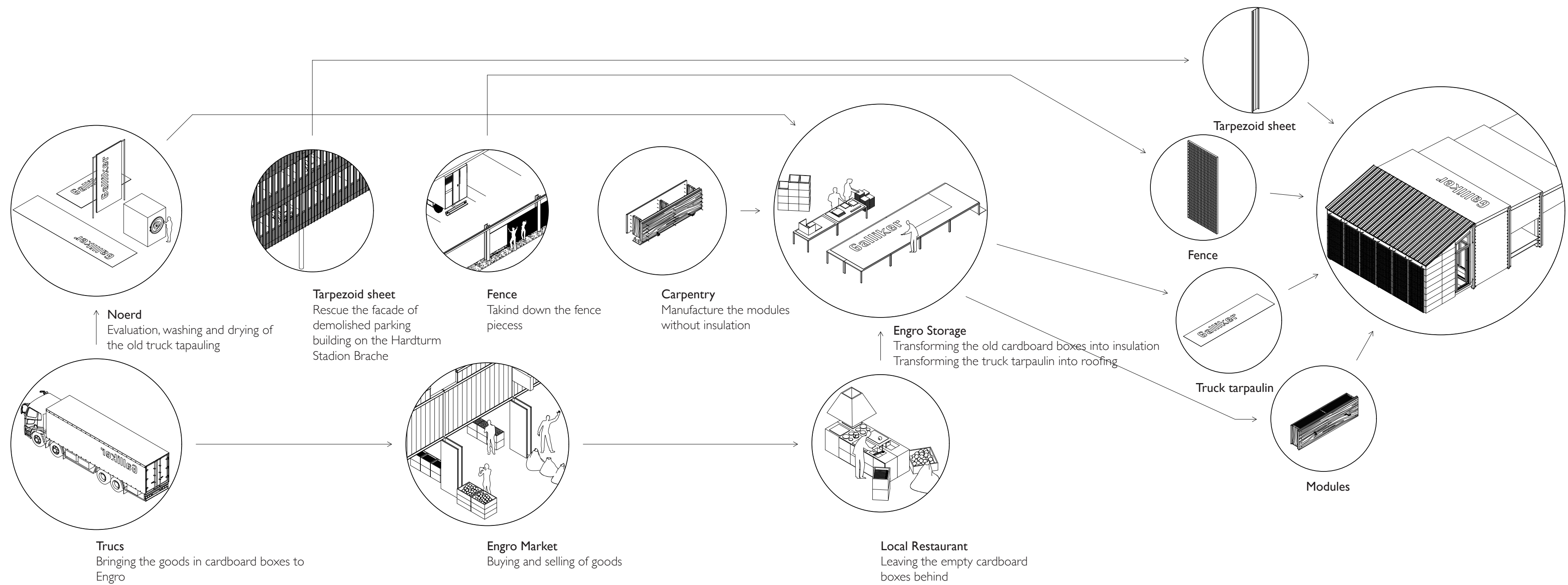
Program

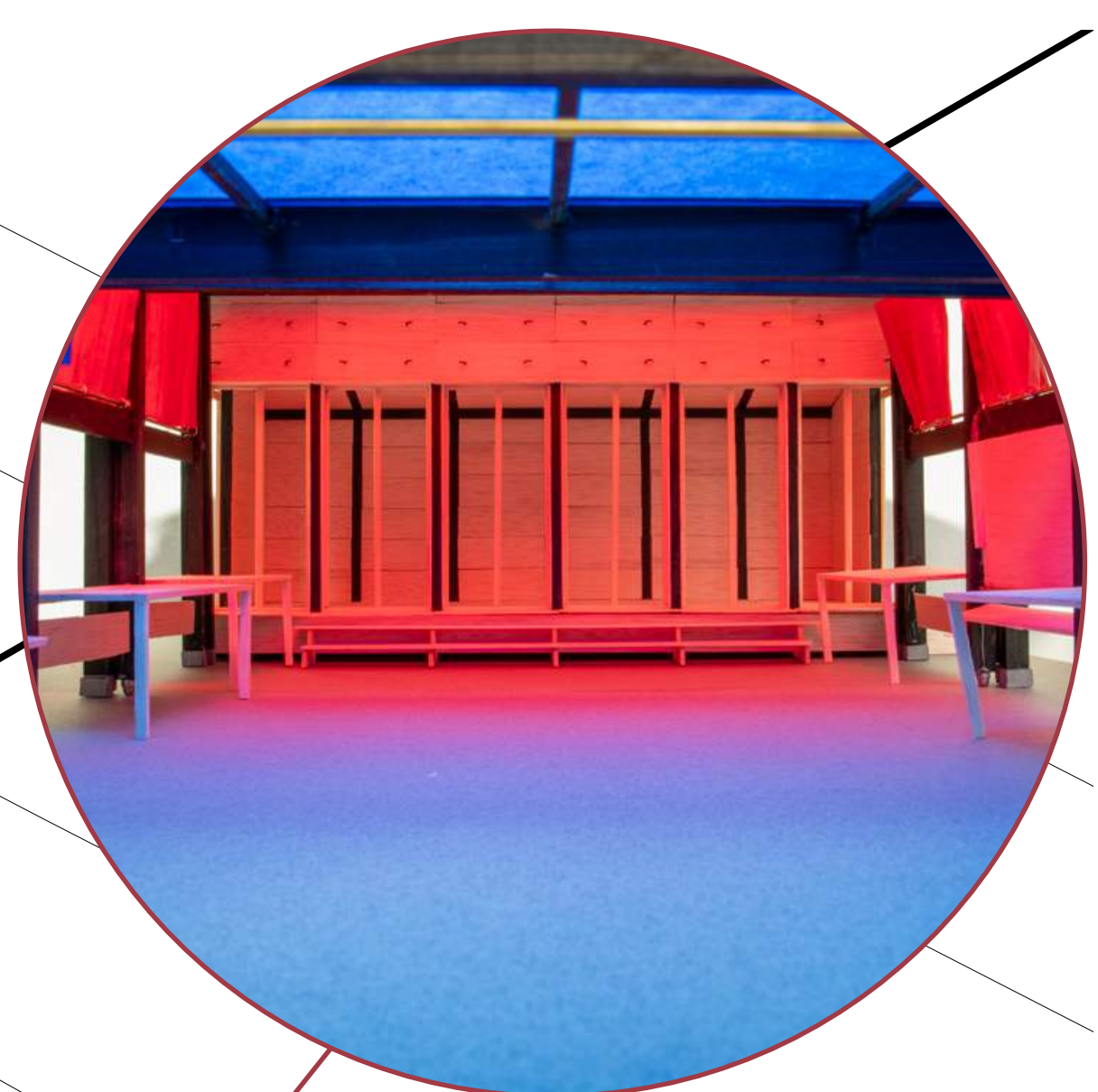
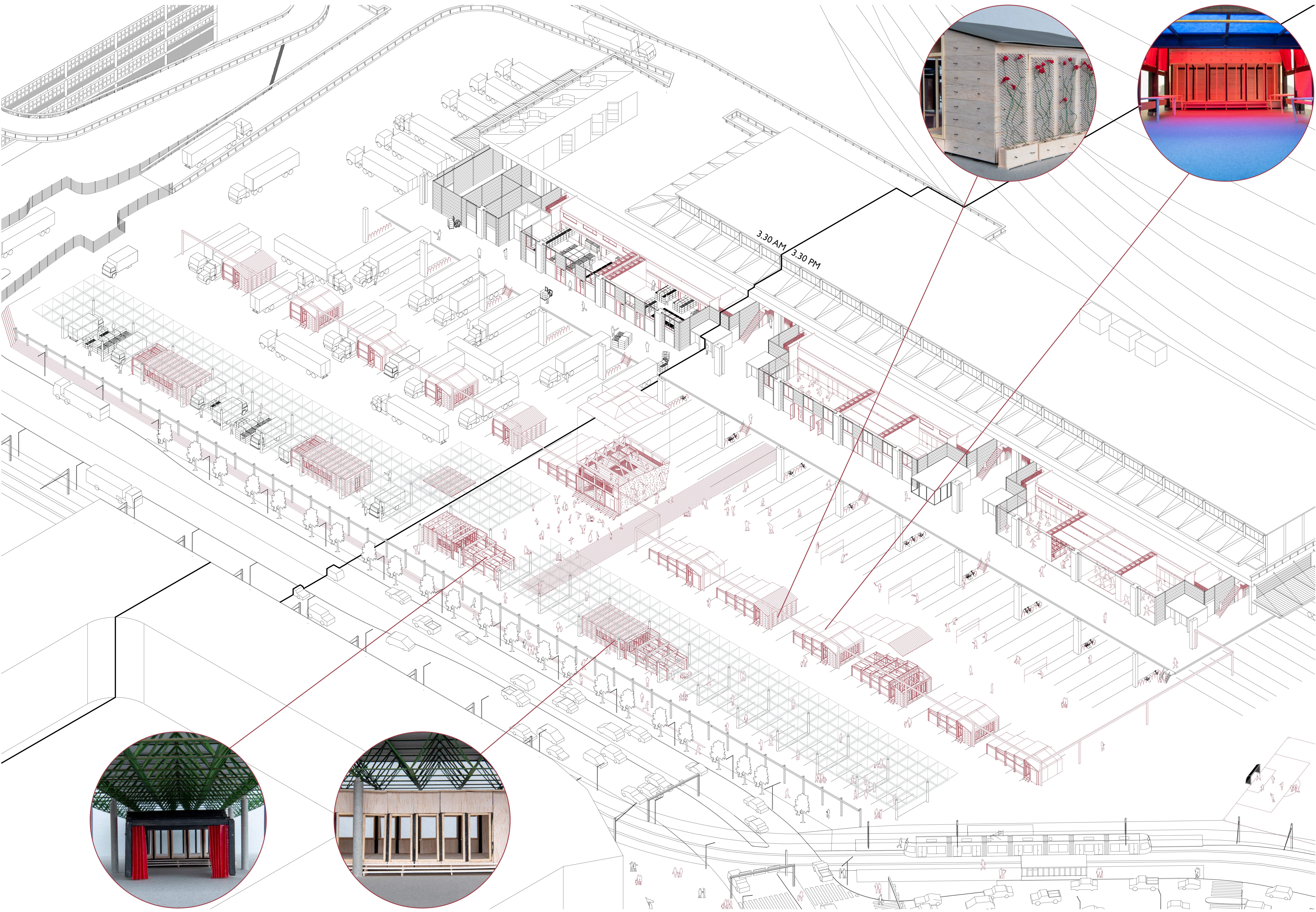
The dimension of the Engros site gives the chance to take action in different ways and within a variety of uses. The program can exist for themselves but also can profit from each other and use their infrastructure. The first intervention is on the parking space between the Engros building and the 'Verkaufemarkt'. The small 'urban barns' are placed in the parking slots. The barns should give space for the neighborhood for many different activities. The neighborhood had its space on the other side on the wasteland of the Hardturm stadium, but it will be pushed away due to the 'Ensemble'. The programs can vary from a tailor shop, atelier space to an automobile garage. The biggest barn is a local center and is located in the middle of the square.

The second intervention is an answer to the lack of youth centers in the western part of Zurich. Three different workshops (wood, metal and clay) and a restaurant/bar can use the protected space under the big roof along the street. The workshops are also open for the users in the urban barns and are also the spaces where the cardboard for the insulation can be cut. The boxes are dimensioned to the minimum. The flexible unfolding structure provides a space where the people can work protected from wind and weather. Before closing the workshop, the unfolding structure is pushed back in and the parking slots and are free for the market and the parked trucks during the night.

The third intervention is the sports facility in the Engros building. The big halls will be used during the day by the different sports groups and during the night the market can take place. The ASZV can find a replacement, when the main sports facilities at the Polyterrasse are being renovated. Also due to its location, many employees from the surrounding companies can use the facilities during their lunch breaks or in the evening.

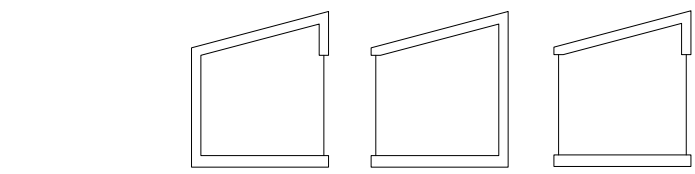
All interventions show the potential of multiple use of space during one full day. The implemented uses open up the site to the public and creates a new melting pot for the neighborhood. None of the secondary programs interfere with the existing highly organized system of the Engros market. The 'urban barn' system can be also implemented all over Zurich. Everywhere, where there is space needed for small shops, companies or groups.





Shopping Catalogue

Fixed Structure
Possible Combination of one section (comes with one fixed frame)



Closed on both sides
Closed on one side, open on other side
Both sides open



Trapezoidal sheet
Truck tarpaulin



Trapezoidal sheet
Truck tarpaulin on lower side
Truck tarpaulin on higher side
Flowerwall

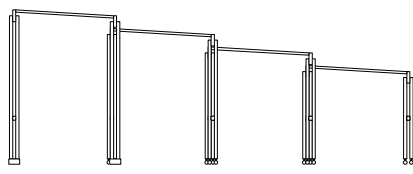
Endigs
Fixed door and wall modules
1 extra frame

4 Corner modules, 28 Normal modules
4 Corner modules, 22 Normal modules, 1 Window
4 Corner modules, 16 Normal modules, 2 Windows

4 Pieces per section
4.1 Meter per 2 sections

4 Pieces per section
2.8 Meter per section
3.6 Meter per section
1 fence piece, Module

Unfolding Structure (Maximal 4 Frames)



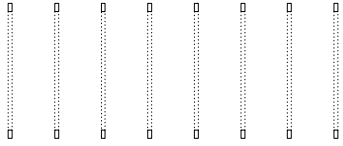
1st Frame
Pillar
Horizontal beam
Iron shoes
Wall truck tarpaulin

2nd Frame
Pillar
Horizontal beam
Wheels
Wall truck tarpaulin

3rd Frame
Pillar
Horizontal beam
Wheels
Wall truck tarpaulin

4th Frame
Pillar
Horizontal beam
Wheels
Wall truck tarpaulin

Length (Frame's top beams)



3 Sections
4 Sections
5 Sections
6 Sections
7 Sections
8 Sections

4x 3.9/0.08/0.2 Meter and 4x 3.75/ 0.08/ 0.2 Meter
2x 2.4/0.06/0.2 Meter and 7x 2.5/ 0.06/ 0.06 Meter
8x
2x 1.7 Meter

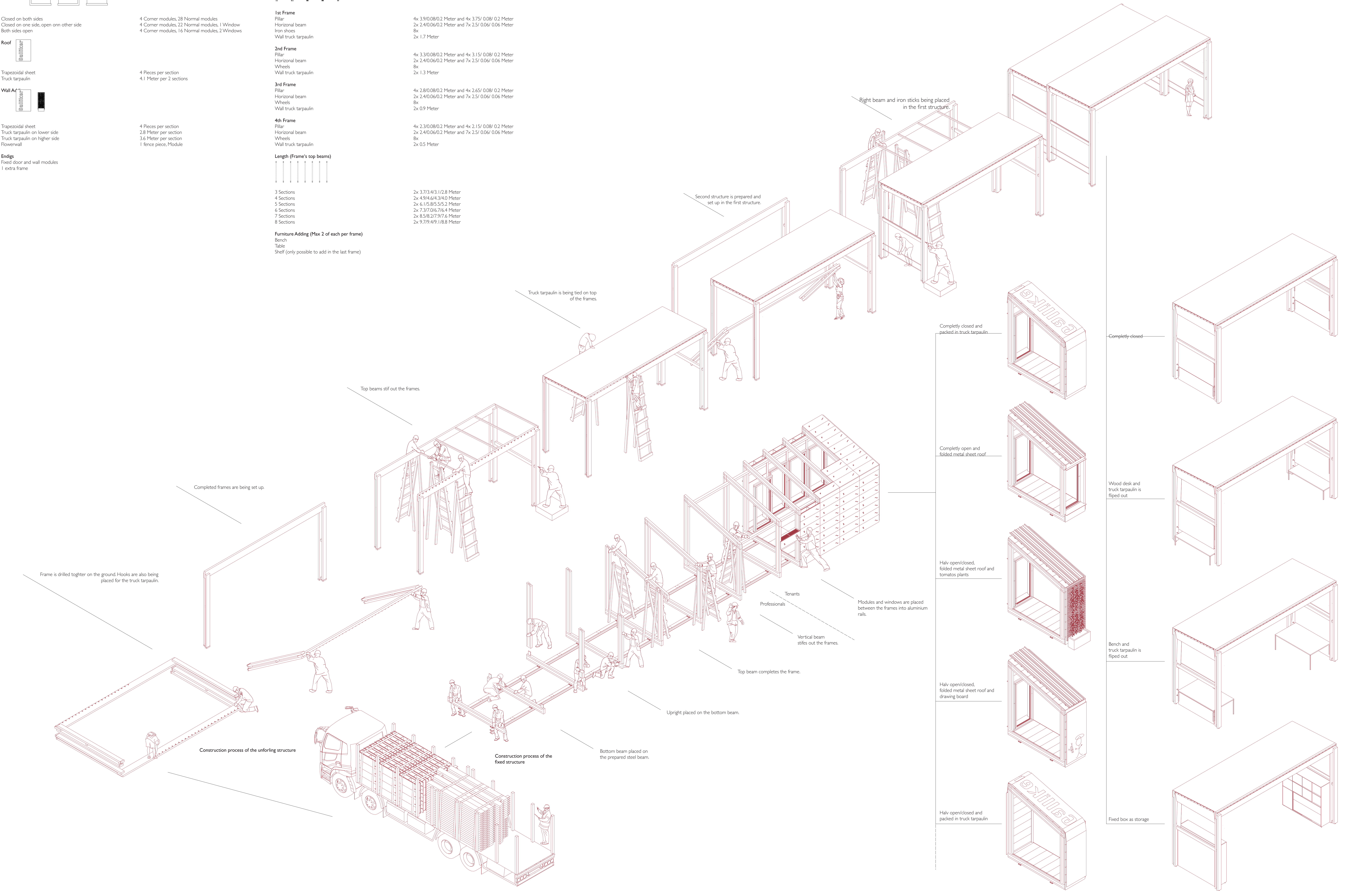
4x 3.3/0.08/0.2 Meter and 4x 3.15/ 0.08/ 0.2 Meter
2x 2.4/0.06/0.2 Meter and 7x 2.5/ 0.06/ 0.06 Meter
8x
2x 1.3 Meter

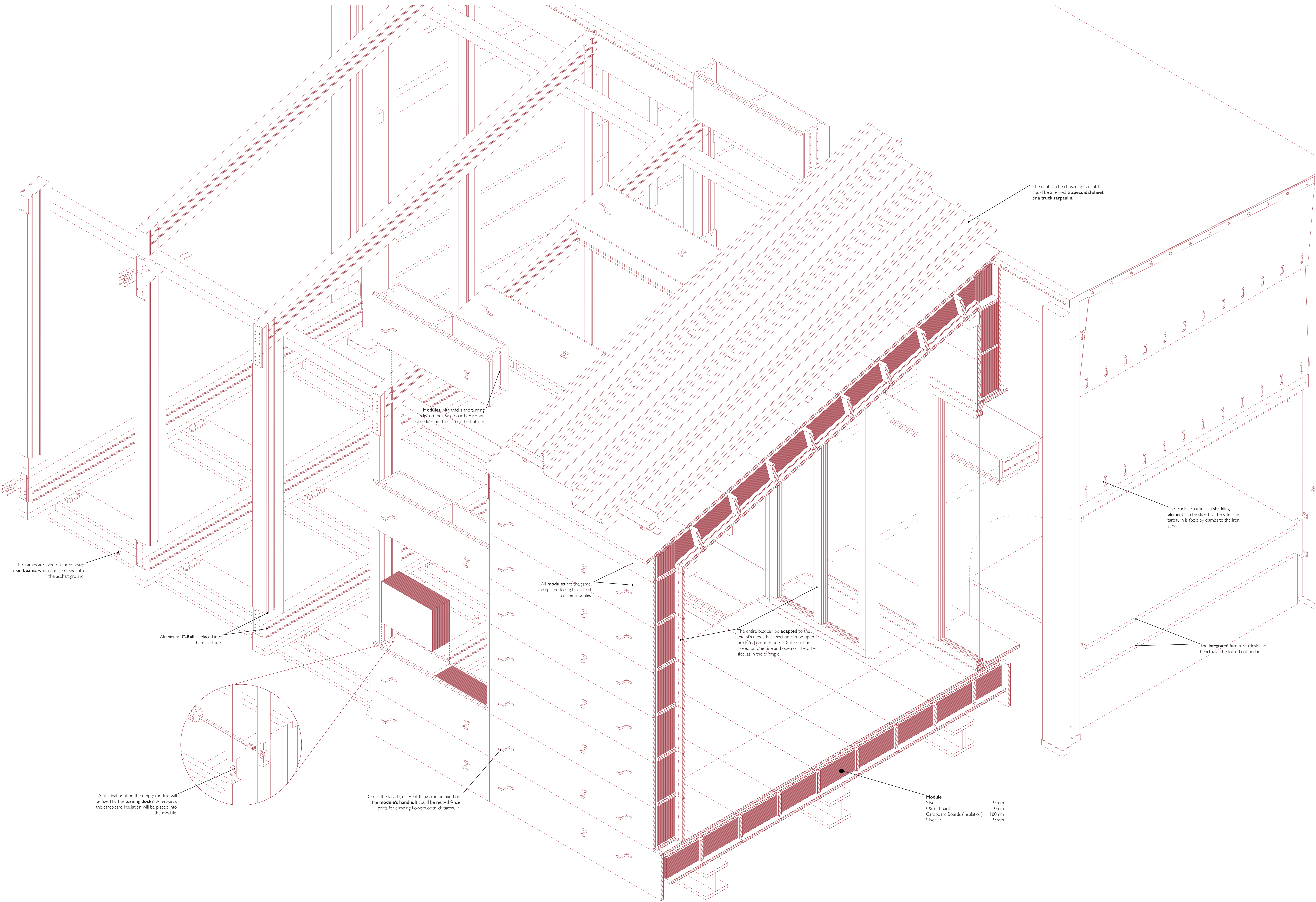
4x 2.8/0.08/0.2 Meter and 4x 2.65/ 0.08/ 0.2 Meter
2x 2.4/0.06/0.2 Meter and 7x 2.5/ 0.06/ 0.06 Meter
8x
2x 0.9 Meter

4x 2.3/0.08/0.2 Meter and 4x 2.15/ 0.08/ 0.2 Meter
2x 2.4/0.06/0.2 Meter and 7x 2.5/ 0.06/ 0.06 Meter
8x
2x 0.5 Meter

2x 3.7/3.4/3.1/2.8 Meter
2x 4.9/4.6/4.3/4.0 Meter
2x 6.1/5.8/5.5/5.2 Meter
2x 7.3/7.0/6.7/6.4 Meter
2x 8.5/8.2/7.9/7.6 Meter
2x 9.7/9.4/9.1/8.8 Meter

Furniture Adding (Max 2 of each per frame)
Bench
Table
Shelf (only possible to add in the last frame)





The frames are fixed on three heavy **iron beams**, which are also fixed into the asphalt ground.

Aluminum **'C-Rail'** is placed into the milled line.

At its final position the empty module will be fixed by the **turning locks**. Afterwards the cardboard insulation will be placed into the module.

Modules with tracks and turning locks on their side boards. Each will be slid from the top to the bottom.

All **modules** are the same, except the top right and left corner modules.

The entire box can be **adapted** to the tenant's needs. Each section can be open or closed on both sides. Or it could be closed on one side and open on the other side, as in the example.

The roof can be chosen by tenant. It could be a reused **trapezoidal sheet** or a **truck tarpaulin**.

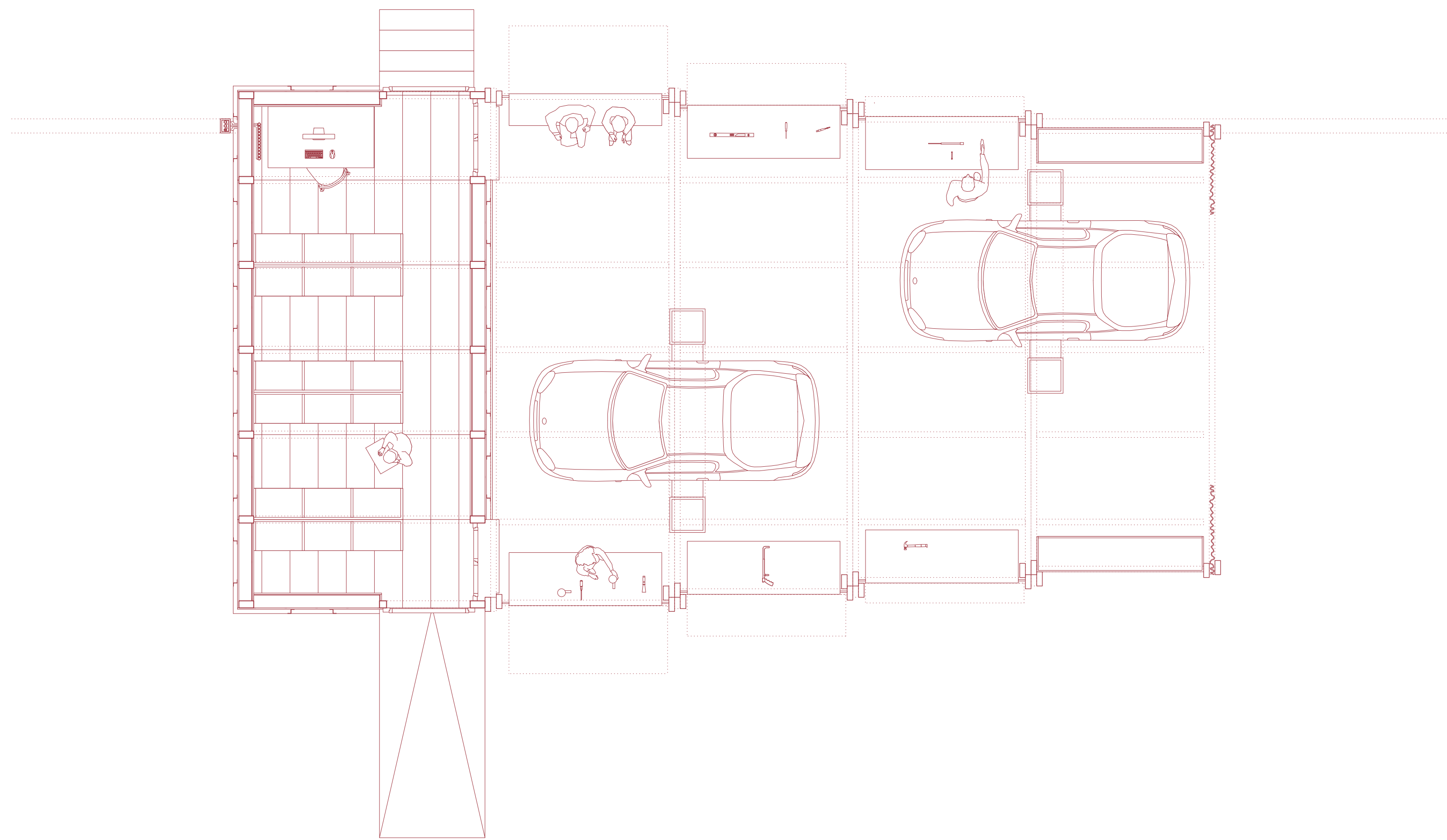
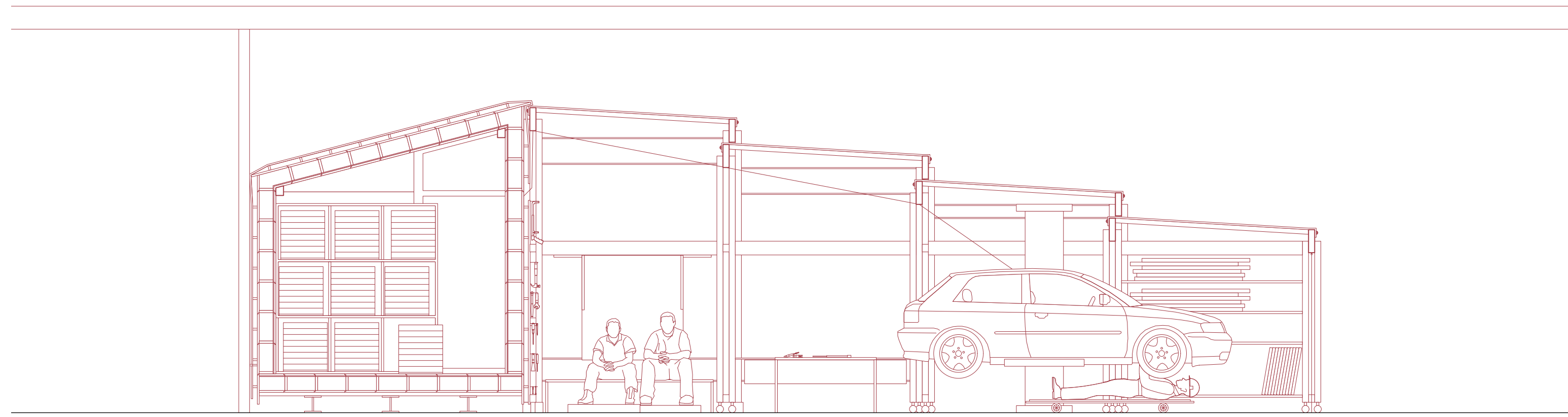
The truck tarpaulin as a **shading element** can be slid to the side. The tarpaulin is fixed by clamps to the iron stick.

The **integrated furniture** (desk and bench) can be folded out and in.

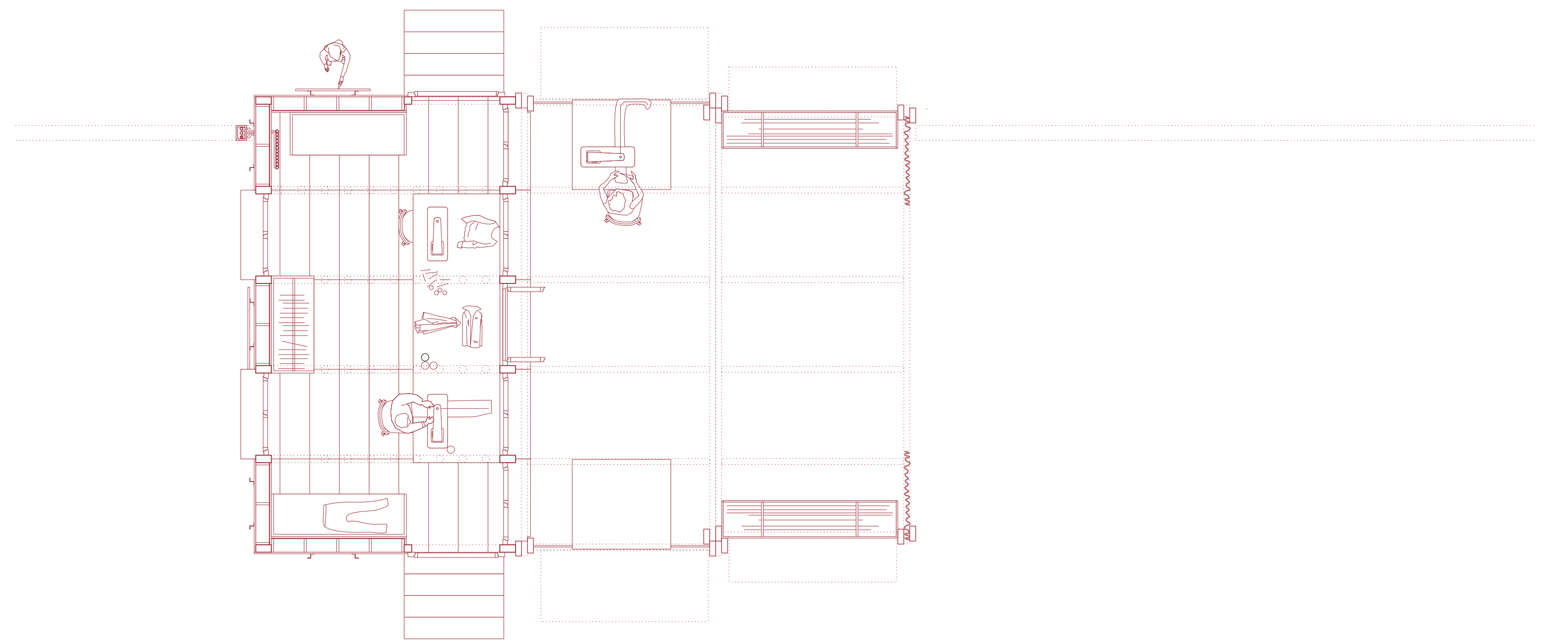
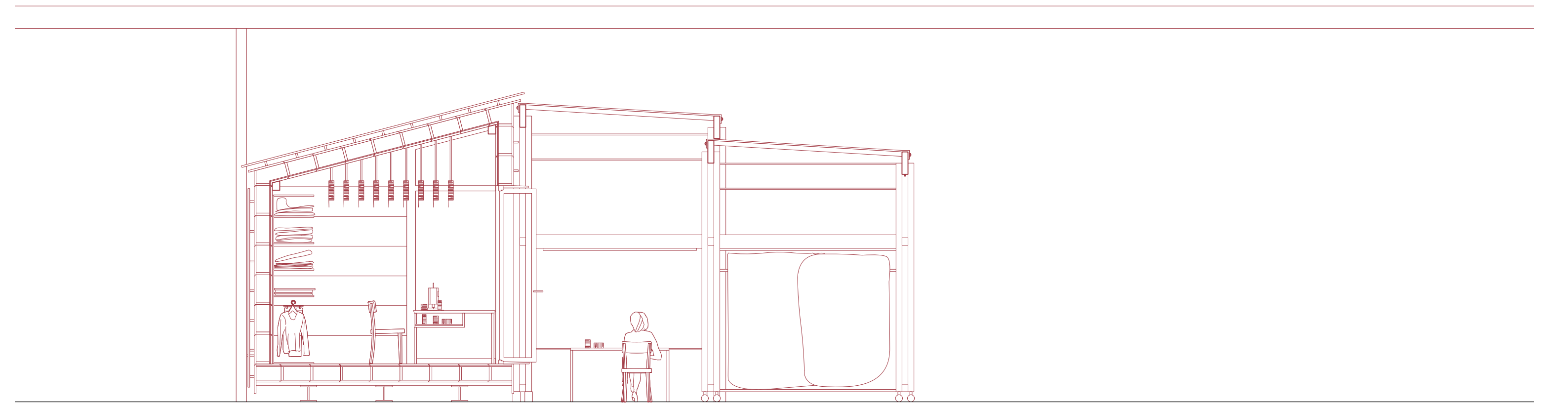
Module
Silver fir
OSB - Board
Cardboard Boards (Insulation)
Silver fir

25mm
10mm
180mm
25mm

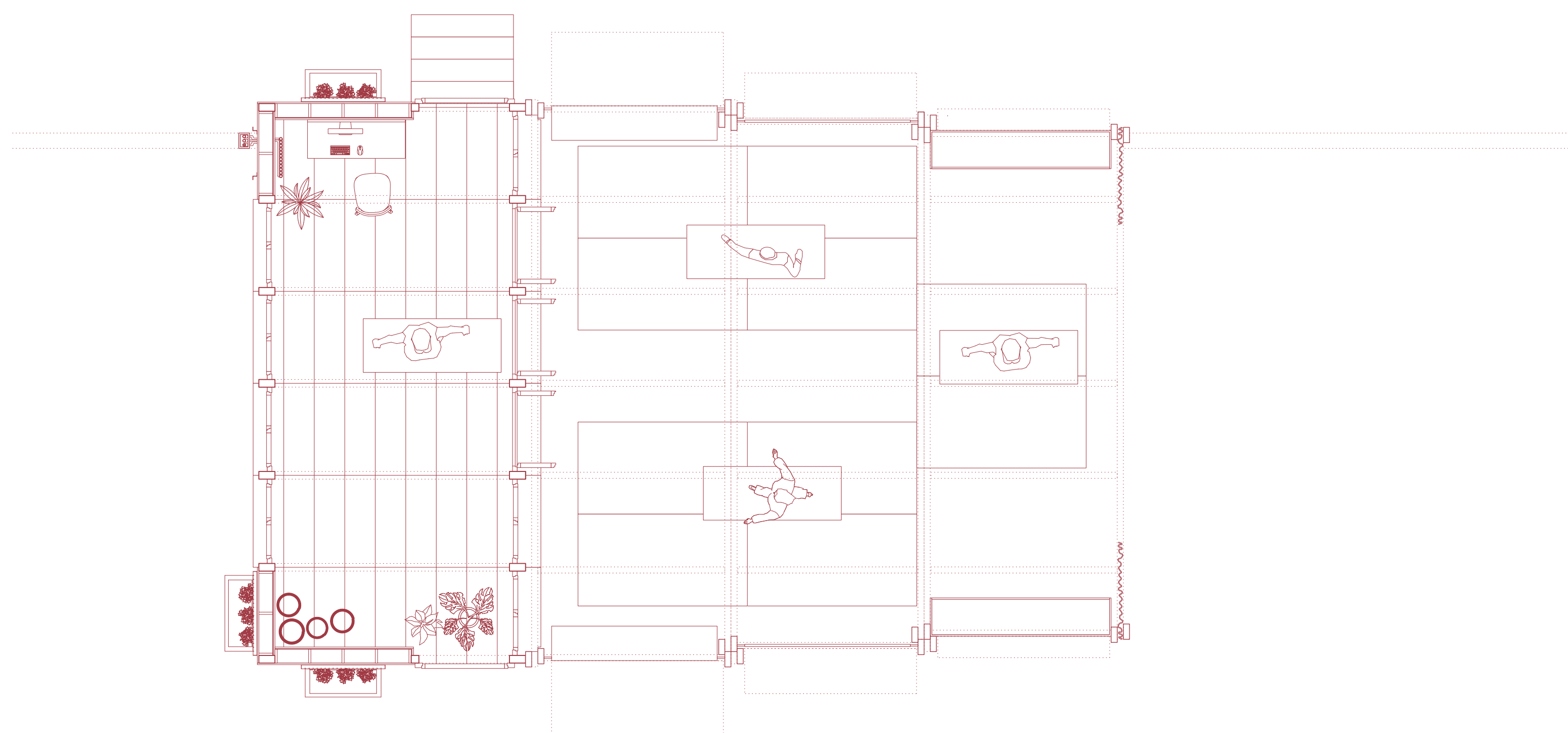
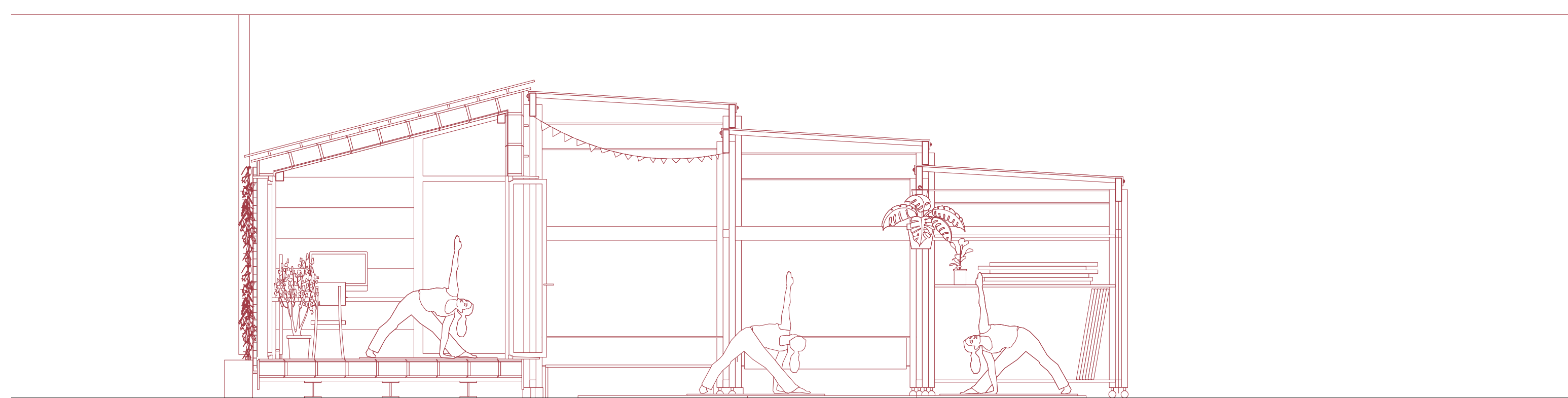
On to the facade, different things can be fixed on the **module's handle**. It could be reused fence parts for climbing flowers or truck tarpaulin.



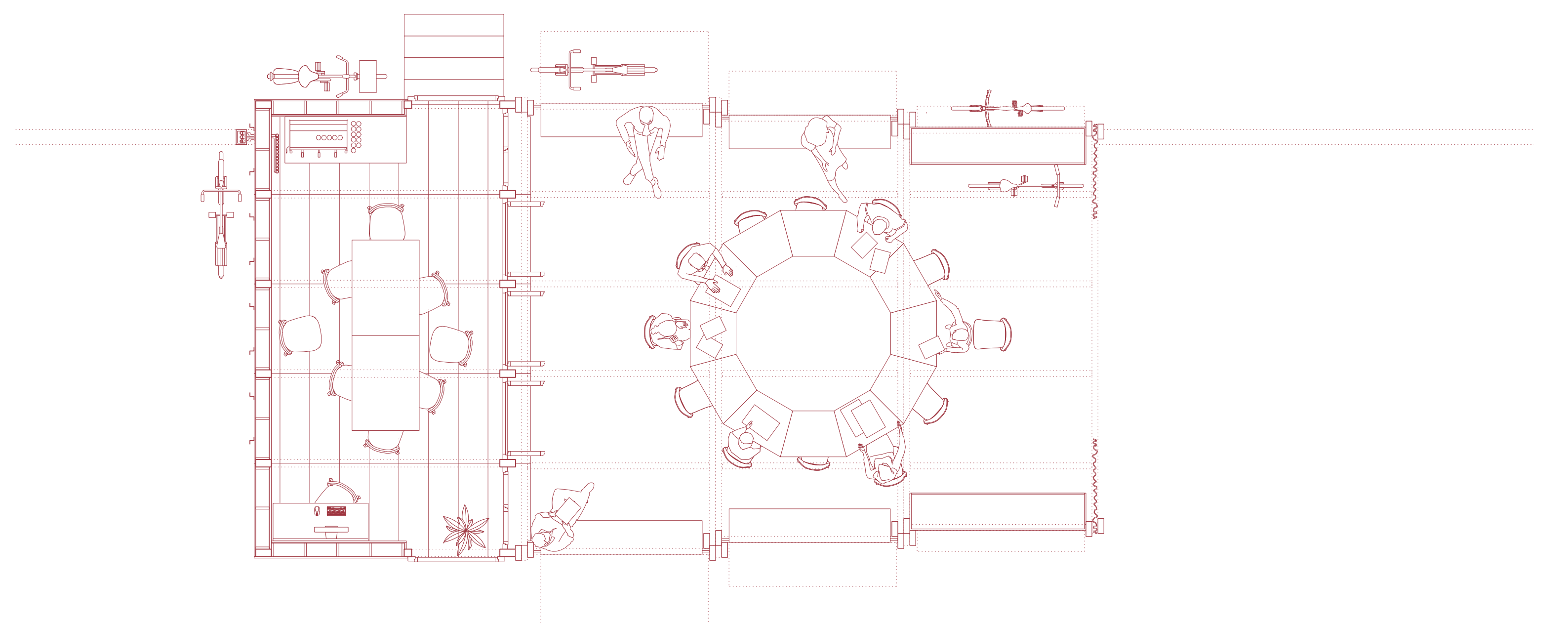
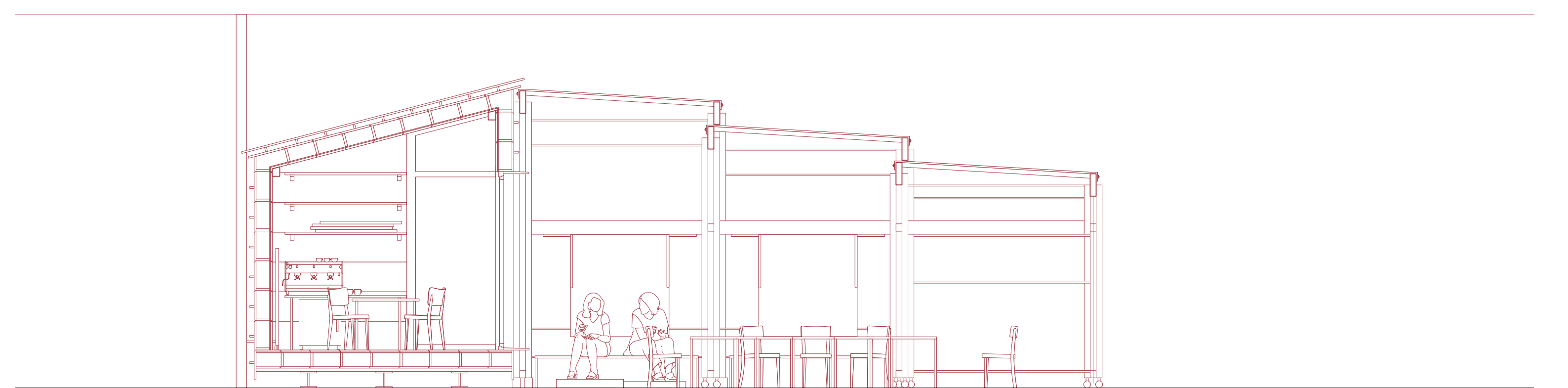
Roger's mechnic center



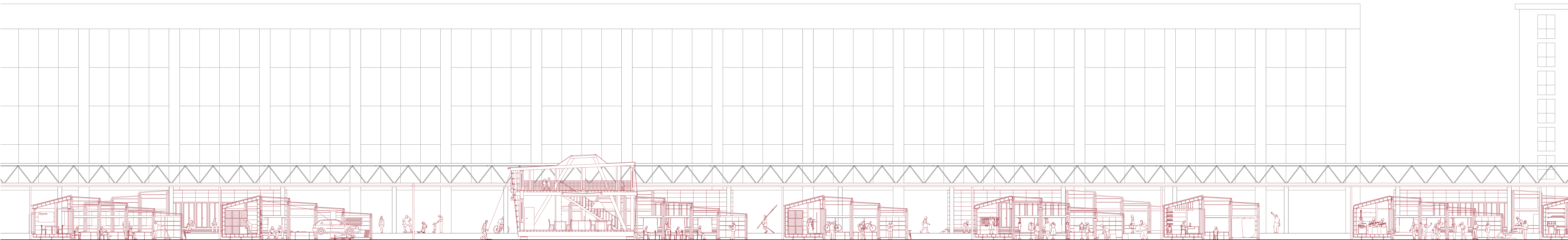
Greta's tailor shop



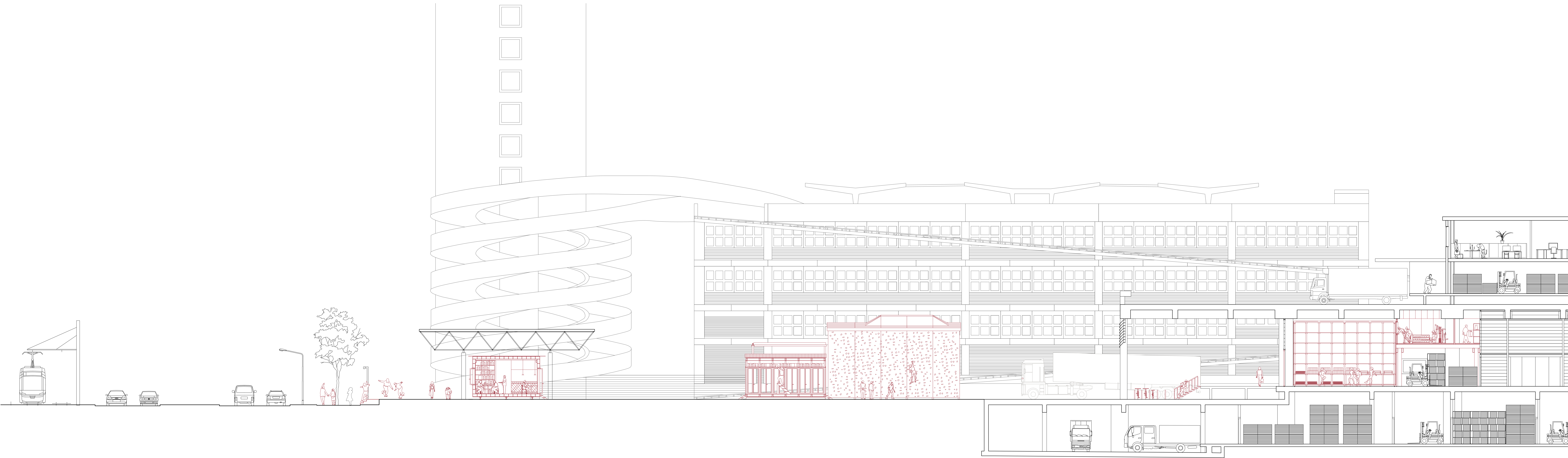
Melanie's yoga temple



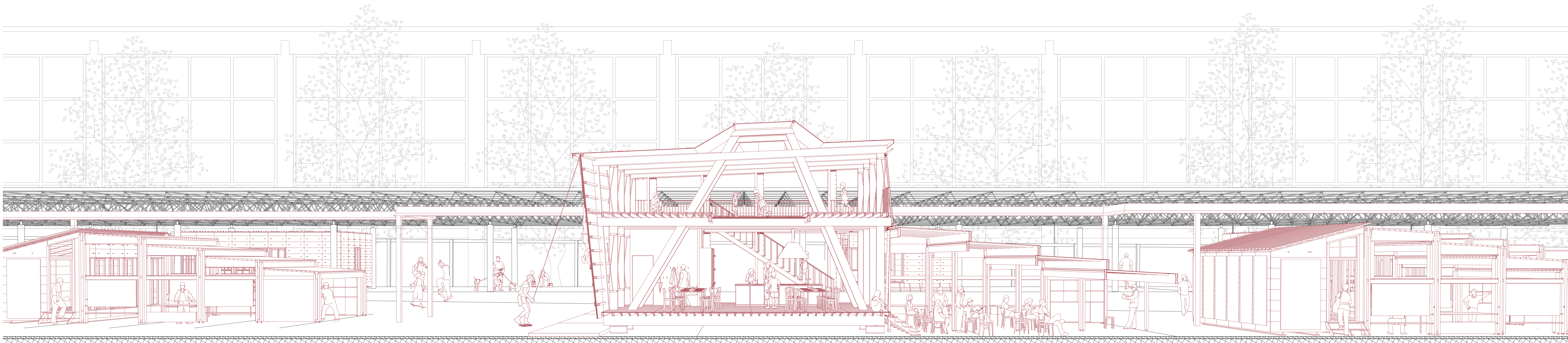
Basecamp of the legislative initiative 'Car-free Zurich'



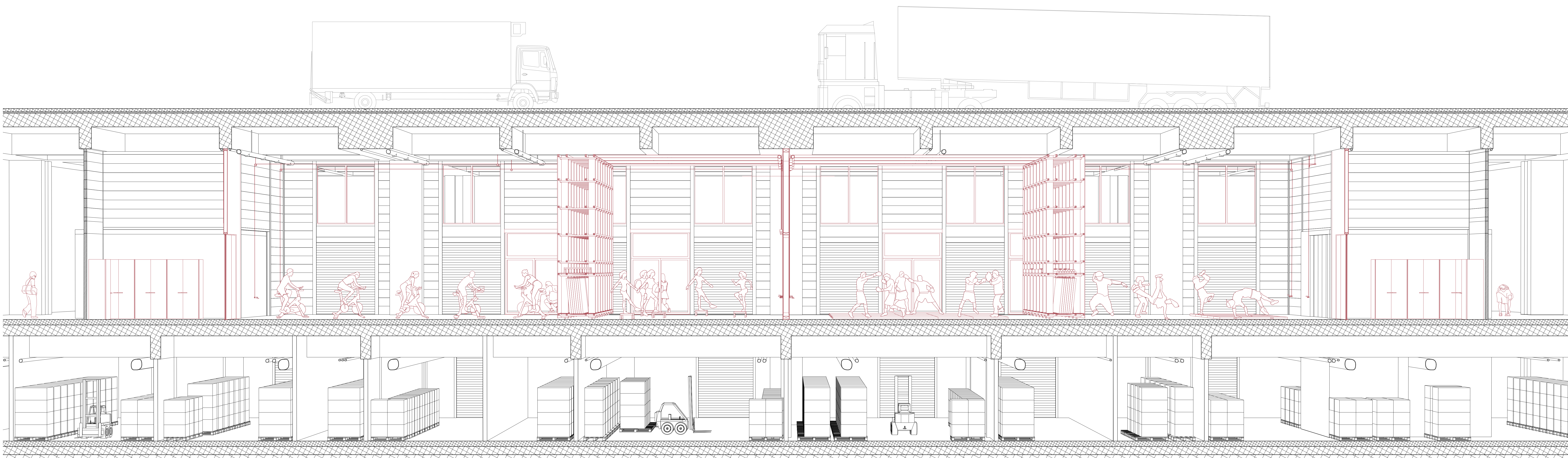
Length Section through the Urban Barns - 1:125



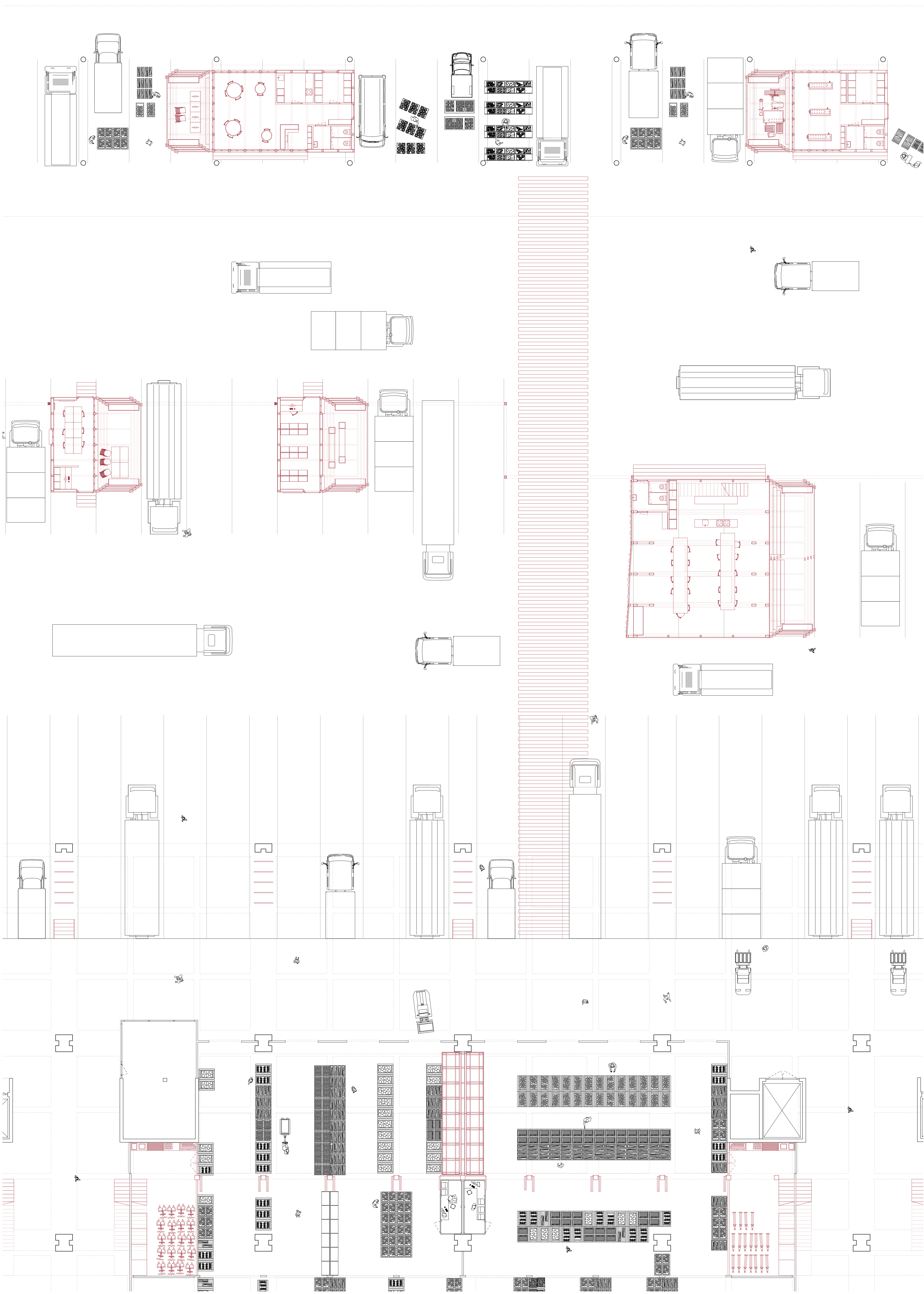
Cross Section through the Area - 1:125



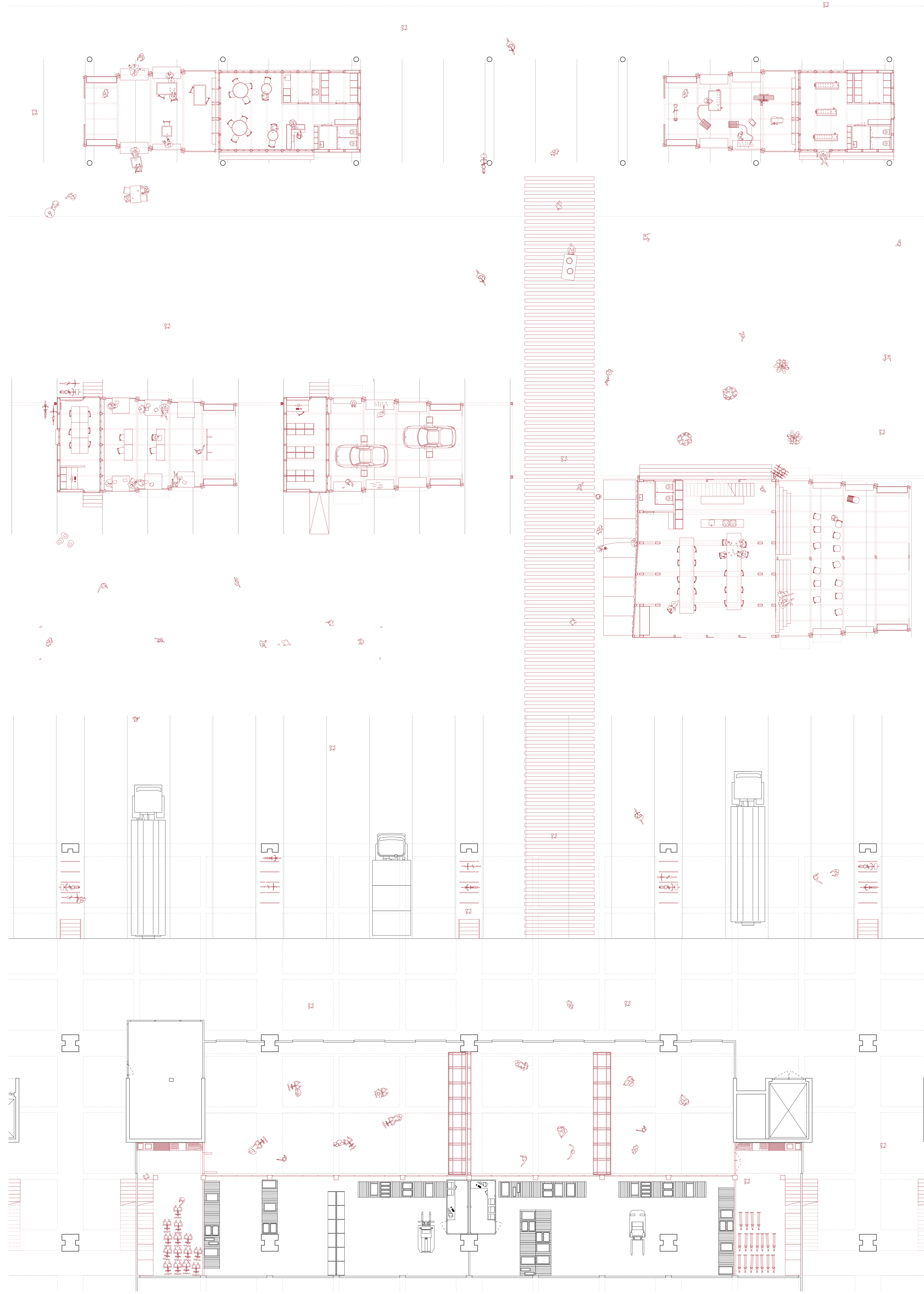
Local Center - 1:50



Sport Facilities in the Engros Hall - 1:50



3.30 AM - 1:125



3.30 PM - 1:125