STOCKHOLM TRÄMUSEUM

The new Gamla Stan's masterplan offers an opportunity to readdress balance between road vehicles, pedestrians and cyclists while enhancing the public realm.
A new civic district for all will make possible the connection between these new important public buildings, animated by new commercial services and cultural places.

The grid of the urban plan deliberately preserve the city's character and precious landscapes offered by the compact historical centre. A series of green areas and public spaces, an accessible quayside with sport facilities, pedestrian and cycle routes have been designed. The area is thought to encourage activities all day long, all year round for the people of Stockholm. The idea is to celebrate water and regenerate a historic city district of great value.

The aim of the project is the construction of a cultural building: a Craft Museum, with workshops and a refreshment area. The brick building is composed by two volumes only two floors high, in order to avoid hiding the historical façades in Kornhamnstorg.

Taking advantage of the slope of the square, on the North elevation only one floor will be visible, while on the Southern one we can see both of them. The roof follows the division of the historical façades, and it takes the cue from the narrow alley which connects Kornhamnstorg to the main street, Västerlånggatan, with a high staircase that will be winded up inside the Museum.

On the roof the presence of regular rectangular openings lets zenithal light enter to the exposition floor. Volumes are connected in the underground part and this allows the creation of a terrace which provides panoramic views over the newly liberated waterfront.

Another public square is placed in front of the workshop's area; it emphasizes and exploits the slope thanks to particular steps and it allows the entrance of light on the underground floor. The challenge at Gamla Stan is to transform it from an urban problem to a popular destination that stitches together two untapped parts of the city. The masterplan heals this urban 'wound' by establishing a clearly defined green frontage to give the island a new face.

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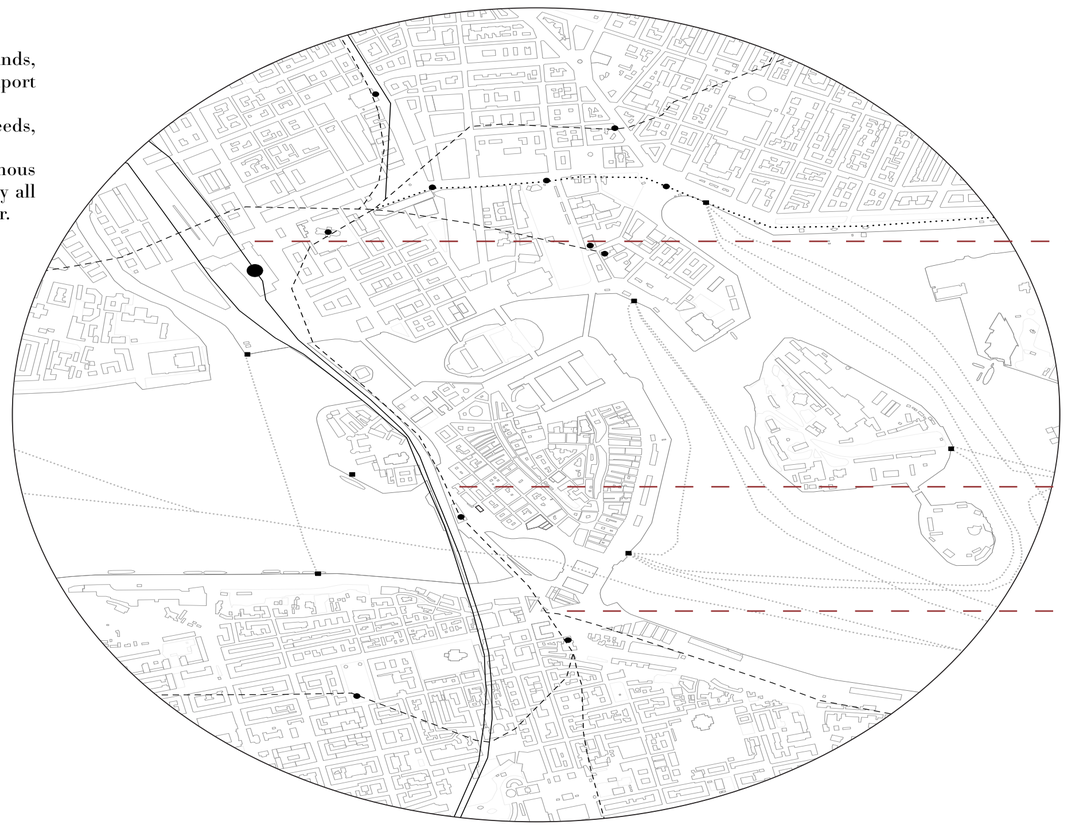
Architecture and Urban Design
A.A. 2018-2019

Matteo Asperti, Giorgia Zambon
Supervisor: Camillo Magni

INFRASTRUCTURE

Even if Stockholm is mainly organized on islands, there is a huge and organized public trasnport web.
Several decks work for public and private needs, linking all the islands through water ways.
Passing through Gamla Stan there is the famous underground line and the railway line. They all cross the western part of the historical center.

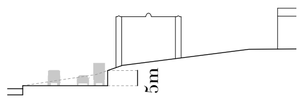
LEGEND
- Water ways
- Train line
- Tram line
- Underground line
- Underground line station
- Boat decks
- Train line station



The main train station of Stockholm, the 'Stockholms centralstation'.

This is the only one Gamla Stan underground line station.

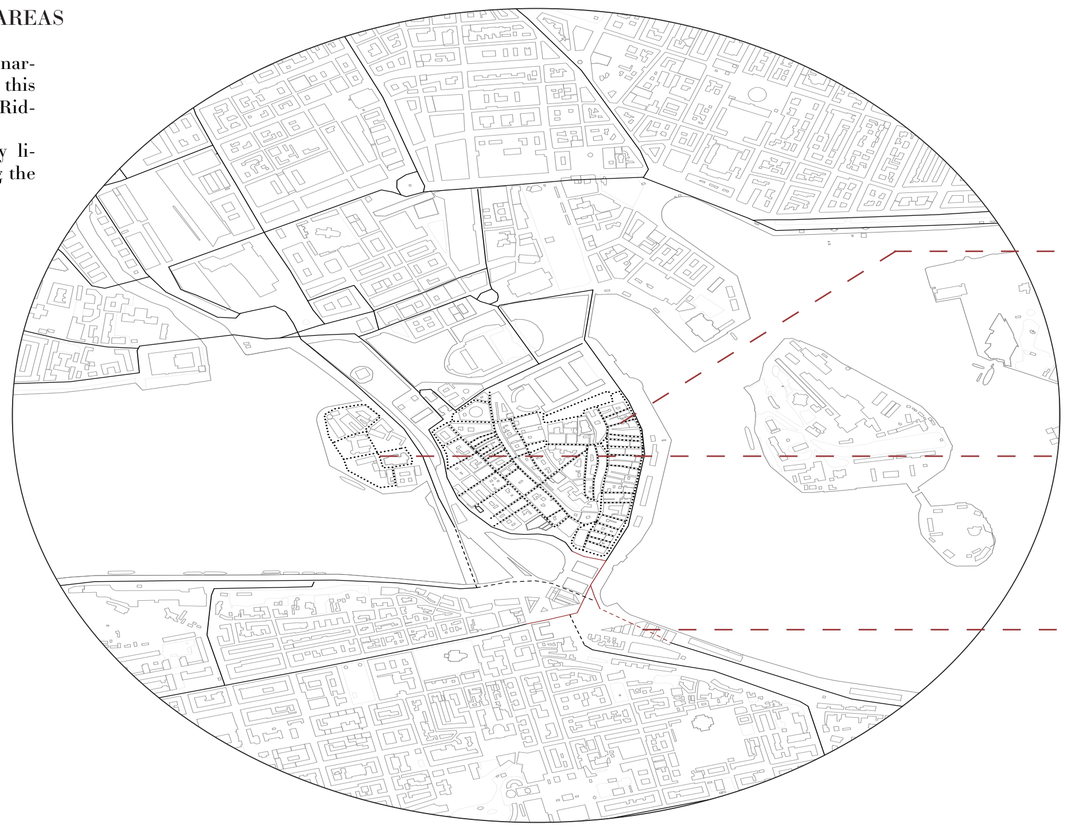
The new line will be almost underground or semi-undergroun, with the new urbanistic plan for the southern Stockholm.



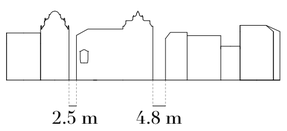
MAIN STREETS AND PEDESTRIAN AREAS

Gamla Stan in mainly pedestrian due to the narrow historical alleys. The main street to cross this island is the Centralbron, passing through Riddarholmen.
Several times the streets, just like railway lines, take advantage of the slopes, tunneling the ground.

LEGEND
- Pedestrian area
- New streets
- New underground streets
- Main streets
- Main underground streets



Due to the XIII century urbanistic system, streets are to narrow to use vehicles. This is why, walking through the city, it is possible to find yourself in the middle of high blocks.



The entire Riddarholmen is pedestrian, except for private vehicles.

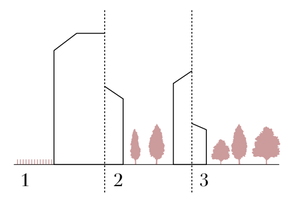
With the massive urbanistic plan of New Slussen all the infrastructural schemes have been re-thought.

OPEN AREAS

Paradoxically, even if we are in the greenest country of the entire world, its historical capital is incredibly dense.
Just few public squares break the thick lines of buildings. That's why the Stockholm municipality is trying to invert this process designing new open public spaces around the southern waterfront.

LEGEND
- Green areas
- Public squares
- New waterfront
- Old waterfront

It is possible to define three different types of green areas, according with the context and the thickness of vegetation and plants.



The most iconic historical square in Gamla Stan, Stortorget. Here it is clear how important is the main façade of a public area.

The new waterfront, in front of Ormsaltaren, will become an important public area.

HISTORICAL AND MODERN LANDSCAPES

Gamla Stan is mainly an historical area, but it's surrounded by modern buildings, designed by worldwide famous architects.
The capital is trying to modernize itself in order to supply the growing demand of new facilities, offices, commercial areas and cultural places.

LEGEND
- Religious places
- Historical places
- Museums
- Cultural places

The Norrmalm district, next to Stockholm centralstation, is the modern neighborhood of the capital. This area is continuosly growing, with skyscrapers and modern buildings.

The Moderna Museet has been designed by the Spanish architect Rafael Moneo, is located on the Skeppsholmen. It has been opened in 1958.

Here there is the biggest urbanistic plan of Sweden, the 'New Slusssen' project. Forster + Partner has won the competition in 2009.

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GAMLA STAN ANALYSIS

The shape of the *Gamla Stan*, the historical center of Stockholm, has been made in the XIII century, when walls of 7 metres high were built. The walls were made by stone and wood. At the end of the XIV century people started building outside the walls, enlarging them and in the XVIII century they decided to remove them all.

Historically the buildings were built with wood. Sweden had experienced over 30 devastating fires which had destroyed many cities and villages. The most dangerous was the Great Stockholm Fire in 1759. In 1759, a severe drought struck Stockholm. As both buildings and vegetation dried out, the fire hazard grew. In addition, the water supply was on the verge of running dry (except near Mälaren), which meant that any fire would be harder to fight.

The historical center of Stockholm has a clear diversity between the administrative/public buildings and the residential ones. The typology of the construction is different, as the materials and the courtyard. Residential buildings have more similar shapes and they develop on a regular grid. Now the historical center is almost completely populated by tourists.

KORNHAMNSTORG PLAN ANALYSIS

One of the few green spaces with trees in the historical center. The characteristic is that they are private.

The statue of a man drawing a bow on the square was inaugurated in 1916 as an homage to Engelbrekt Engelbrektsson, leader of the Engelbrekt rebellion (1434–1436) against the German-dominated government of Eric of Pomerania.

The square is named after the harbour *Kornhamn* where corn was delivered to the city by ships coming from the Lake Mälaren area which was embarked in the Middle Ages, the corn was then stored on an open space called *Korntorget* ("Grain Square").
The square probably was a product of the city plan created for the Western part of the old town in the 1620s.

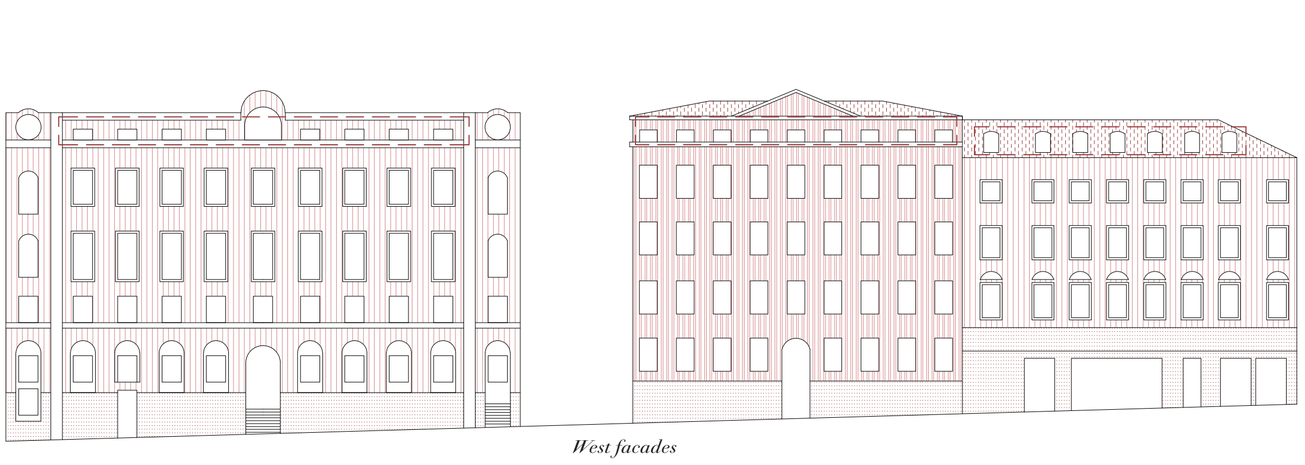
Mälaren means *Lake Malar* in English. It covers the West part of the island, it has been fundamental since the era of the Vikings for trade. On the East coast of Gamla Stan there is the Baltic Sea.

Both historically and in modern times the names *Kornhamn* and *Kornhamnstorg* have been used for the square, the port and the quay. Now the waterfront is just an abandoned place.

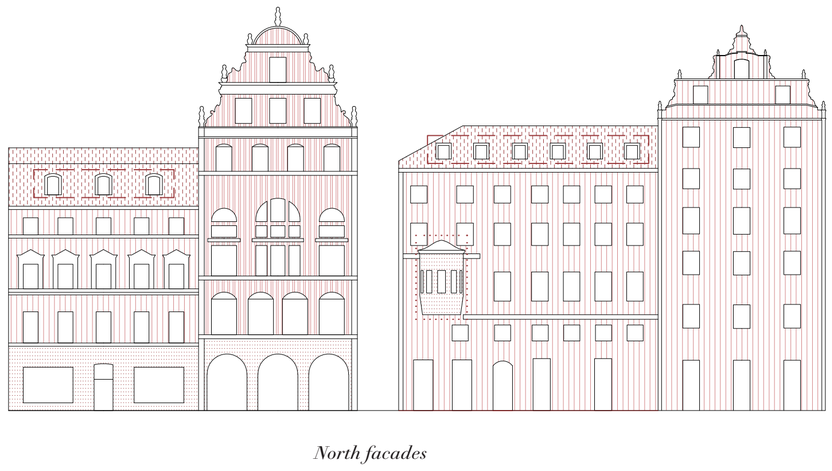
Södra Bankohuset, the oldest national bank building in the world. The architecture is inspired by Italian Renaissance. The portal is a direct quotation of Vignola's portal at Villa Farnese in Caprarola.

The former *Korntorget* ("Grain Square"). Later called *Järntorget* (Swedish for "The Iron Square") because of the presence of scales to weigh metals.

KORNHAMNSTORG FAÇADE ANALYSIS



West facades



North facades

COLORED PLASTER

The modernist logic of stripping away color never caught on in Stockholm: the most common color found on buildings is yellow, from the copper mines; mint and pink are inspired by the natural landscape of Sweden.

WHITE PLASTER

In some cases the plaster is white, but it has been changed during the years.

STONE BASE

Most of historical buildings have a sandstone base, typical of Sweden.

ROOF

The roof of historical buildings is often made of slate tiles, others have black sheets metal covers, while bell towers are made of iron and copper.

DORMERS

Thanks to the accentuated slope of the roofs, it is possible to use the attic as a living space. For this reason the constant presence of dormers to let light enter.

DETAILS

At Kornhamnstorg 51 there is a strange stock market language. This bay language is the only one that remains in Stockholm from the XVII century. It is a five-sided bay language built in limestone supported by four figures, two men and two women.

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URBAN STRATEGY

PROJECT AREA

Redevelopment of the southern part of Stockholm historical center (Gamla Stan)

MUSEUM+PIAZZA

Using Kornhamnstorg square, the biggest area, to design a museum, a restaurant and two public squares

GREEN AREA

Realization of green areas with lines of trees in order to develop the few nature present in the island

PUBLIC FACILITIES

Design of public facilities, as markets and a sport area, in order to settle all the waterfront

URBAN AXONOMETRY

The historical center of Stockholm is characterized by a high density of buildings, all very compact with each other. It is a residential island, which today, thanks to Airbnb, it's mainly exploited for tourism. The urban plan which modified it in this way dates back to the early XVII century. The buildings are tall and very close to each other (some alleys do not reach 1 metre in width). Now the area is mainly pedestrian. The idea of the project is to redevelop the southern belt of the sea front. A museum has been designed with an adjacent refreshment area, two buildings have designed two public spaces: a square that is 1 meter below the street level, which allows visitors to exit the museum's underground floor; and a panoramic terrace on the same level of the museum and the restaurant entrances. The presence of greenery on the island is scarce and it is located in private areas, so the project redesignes the waterfront with green areas alternating between seats and flower beds, which are connected by rows of trees. The southernmost quay is newly built, the purpose is to create a space that people could live daily thanks to sport facilities, playgrounds for children and areas for the market.

MASTERPLAN 1:1000

URBAN SECTION 1 1:500

URBAN SECTION 2 1:500

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Stockholm Trämuseum

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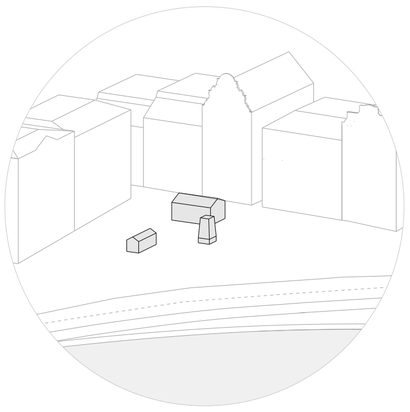
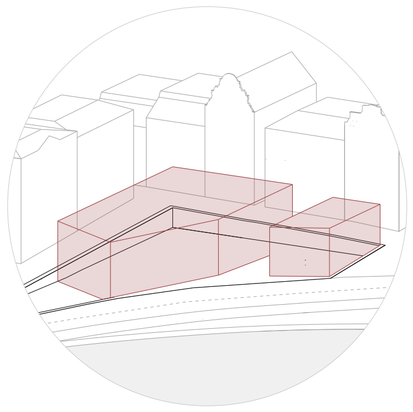
Supervisor: **Camillo Magni**

PROJECT STRATEGY



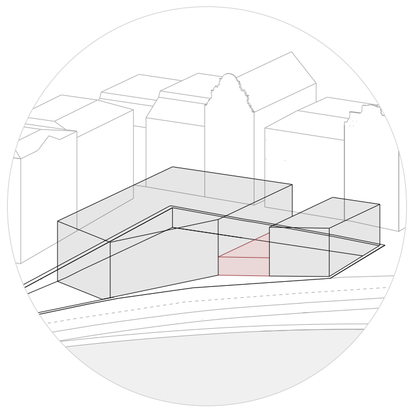
PROJECT AREA

Kornhamnstorg is a square on the South coast of Gamla Stan and it has been a harbour for decades



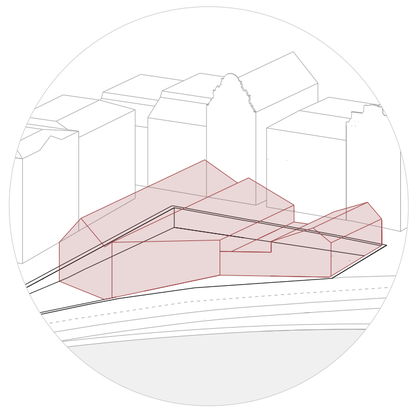
SHAPE

Thanks to the guide lines made by the existing buildings, two volumes have been created



CONNECTION

Two volumes are connected in the underground floor and this allows the creation of a public terrace, which is also the entrance



PITCHED ROOF

Due to the geographical position of the project, metal sheet pitched roofs have been provided

OPENINGS

On the museum floor there are roof openings for zenithal light, while in the workshop and in the reastaurant there are big windows

GROUND FLOOR PLAN 1:200

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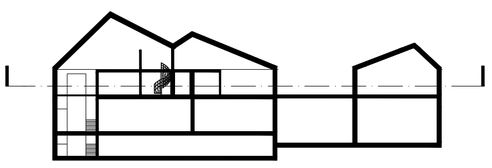
D_D'

E_E'

A_A'

C_C'

B_B'



GROUND FLOOR PLAN 1:100

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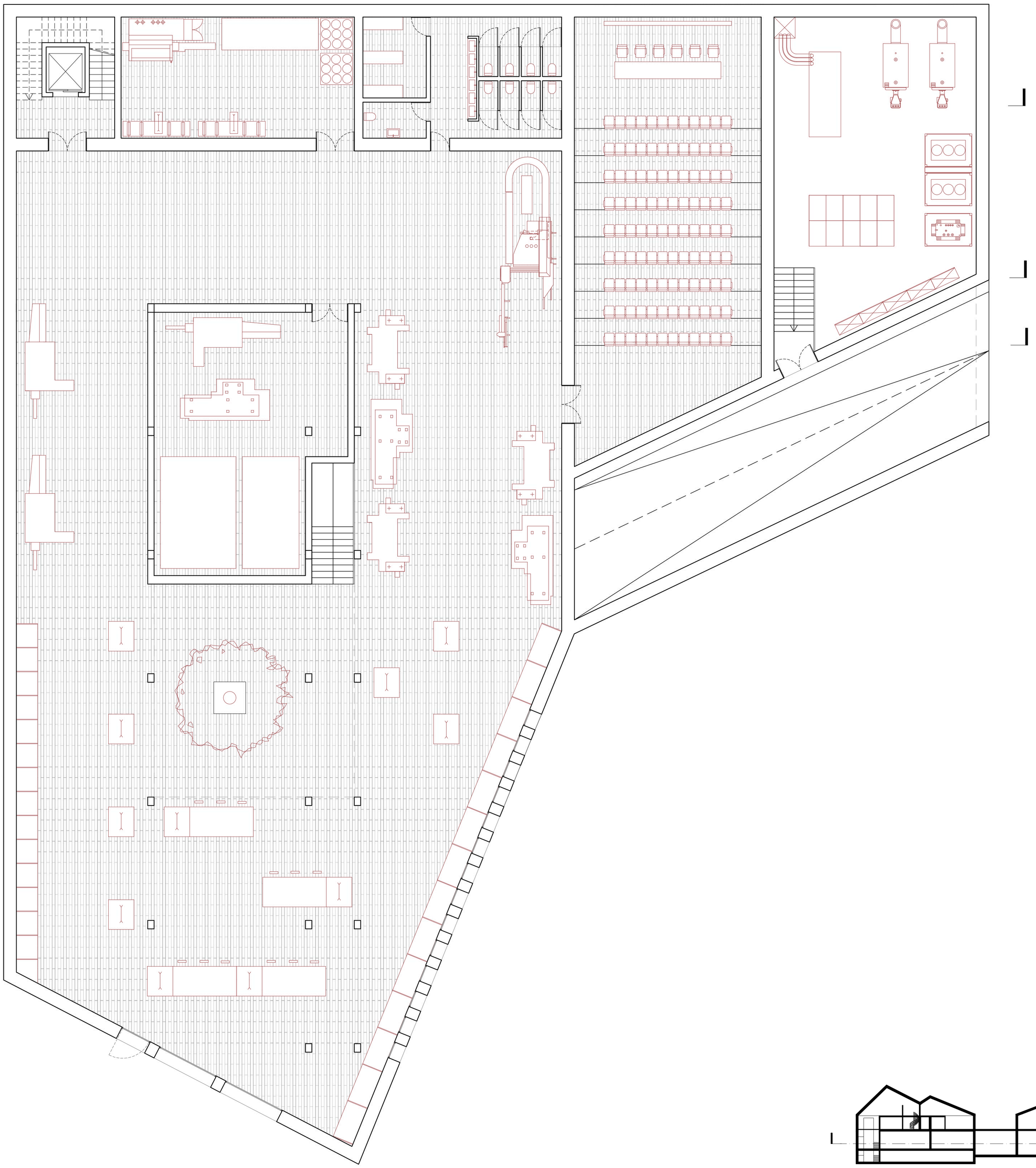
D_D’

E_E’

A_A’



C_C’

B_B’

UNDERGROUND FLOOR PLAN 1:100

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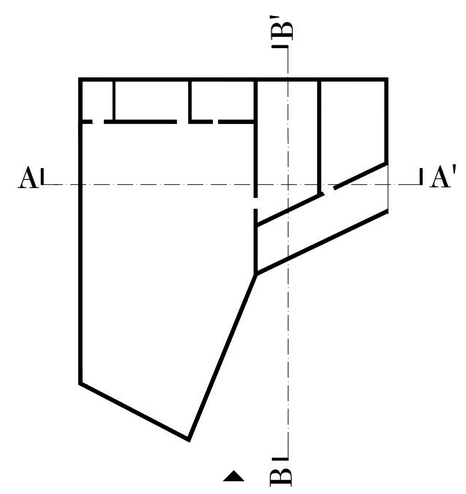

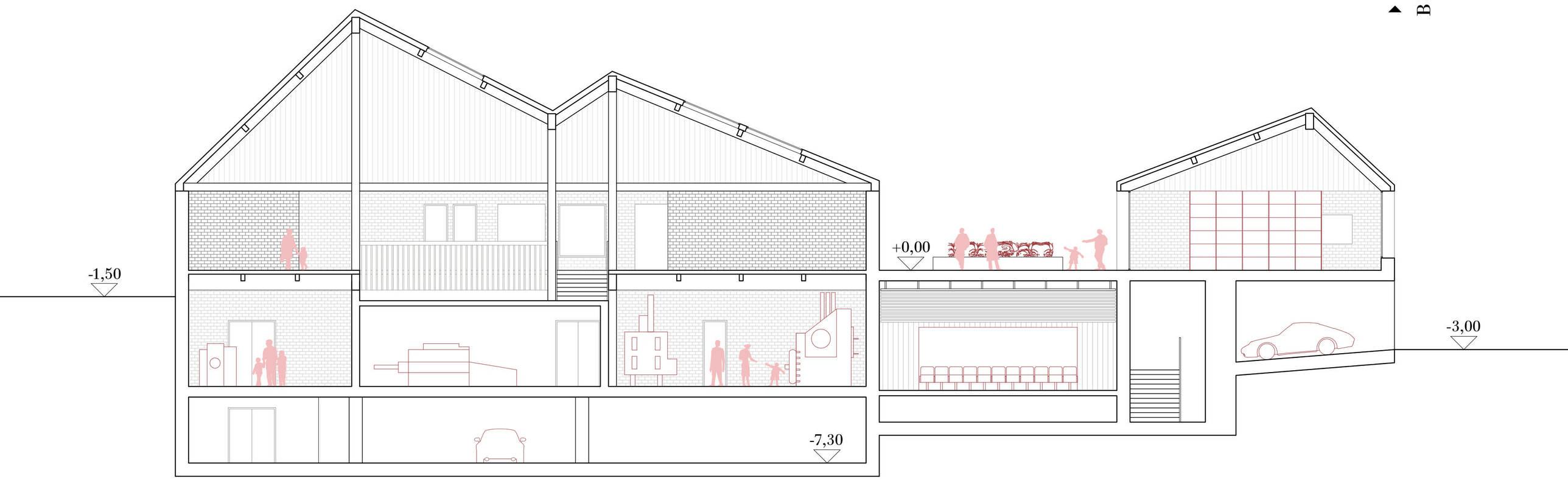

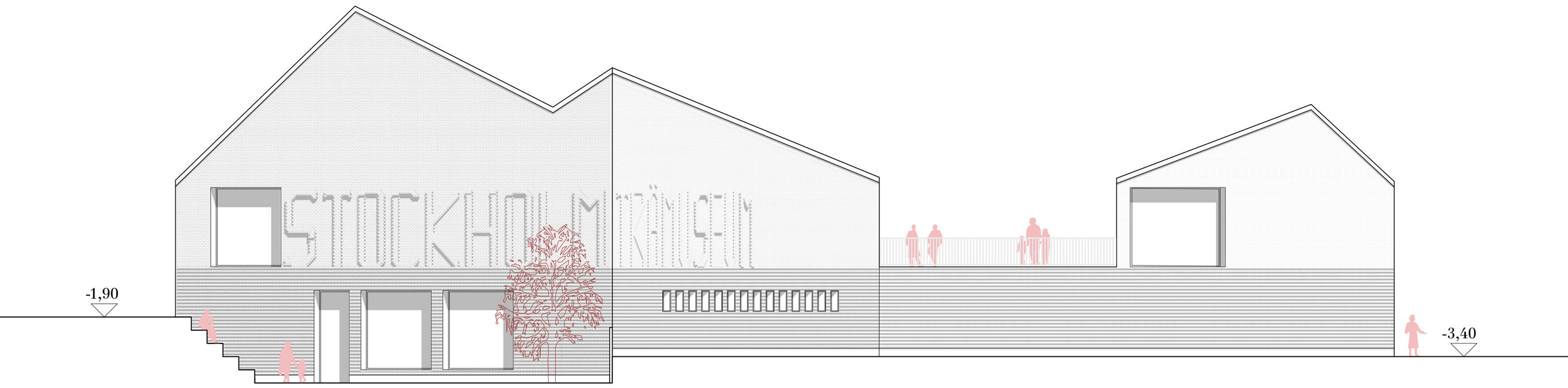

SECTION B_B' 1:100

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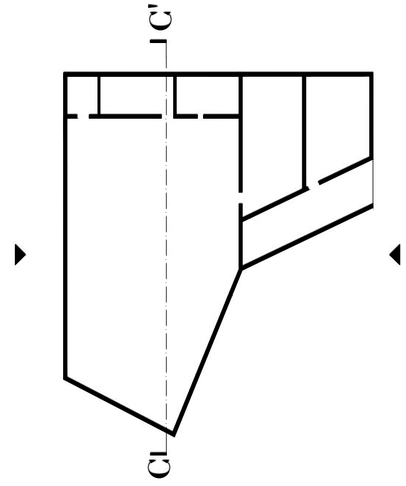
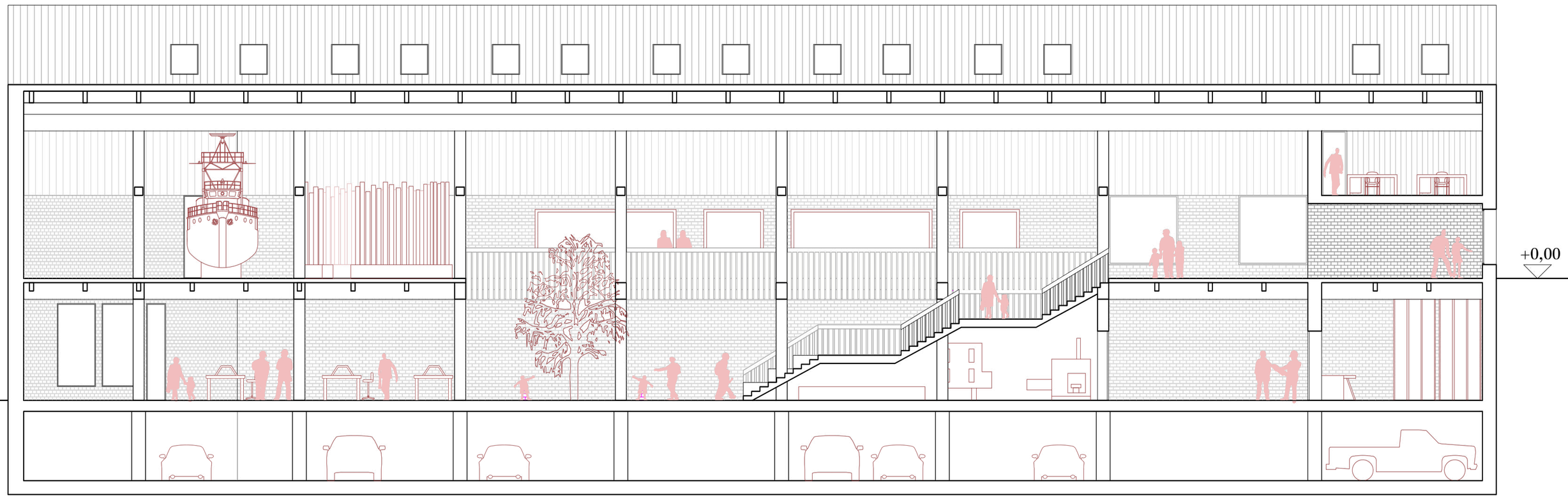
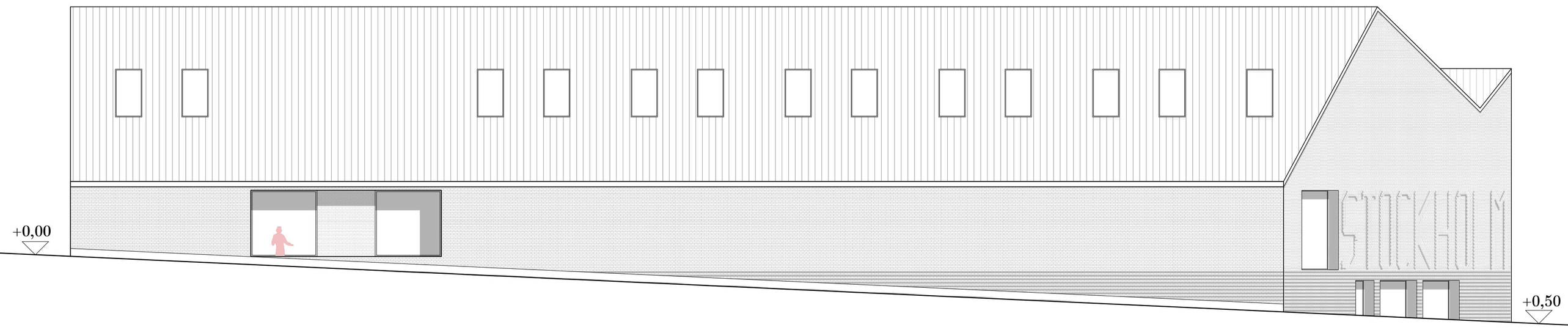




SECTION C_C' 1:100



WEST ELEVATION 1:100

EAST ELEVATION 1:100

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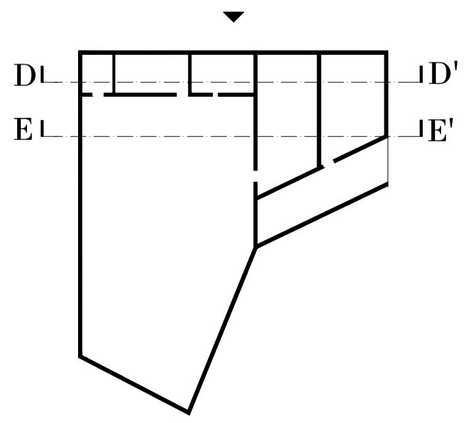
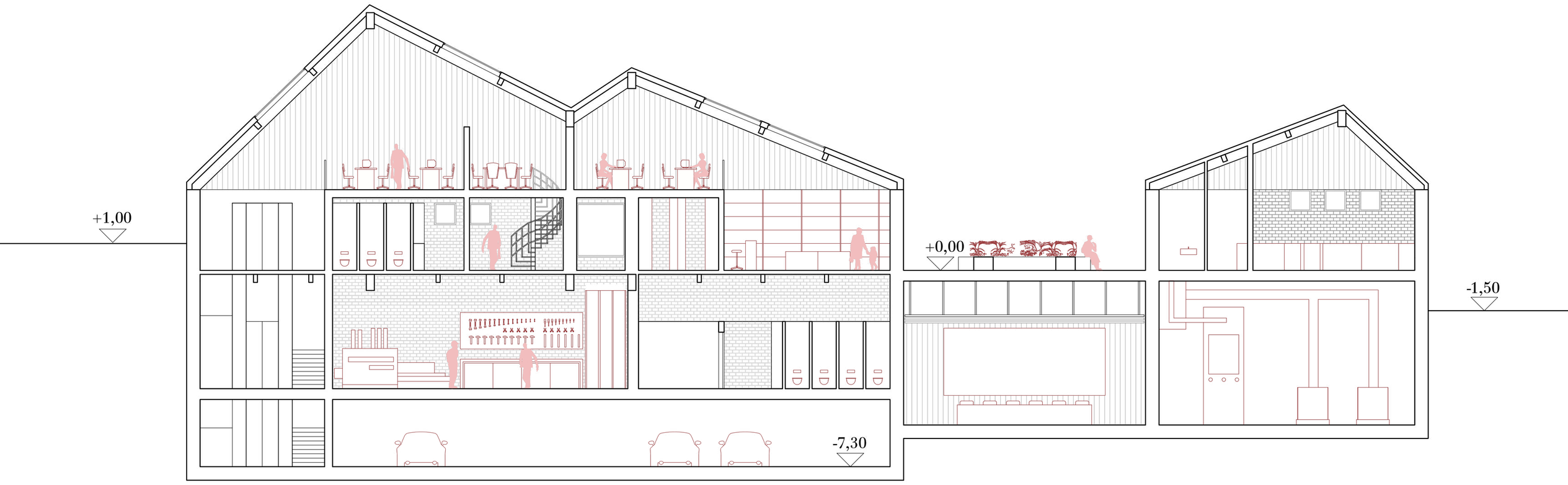
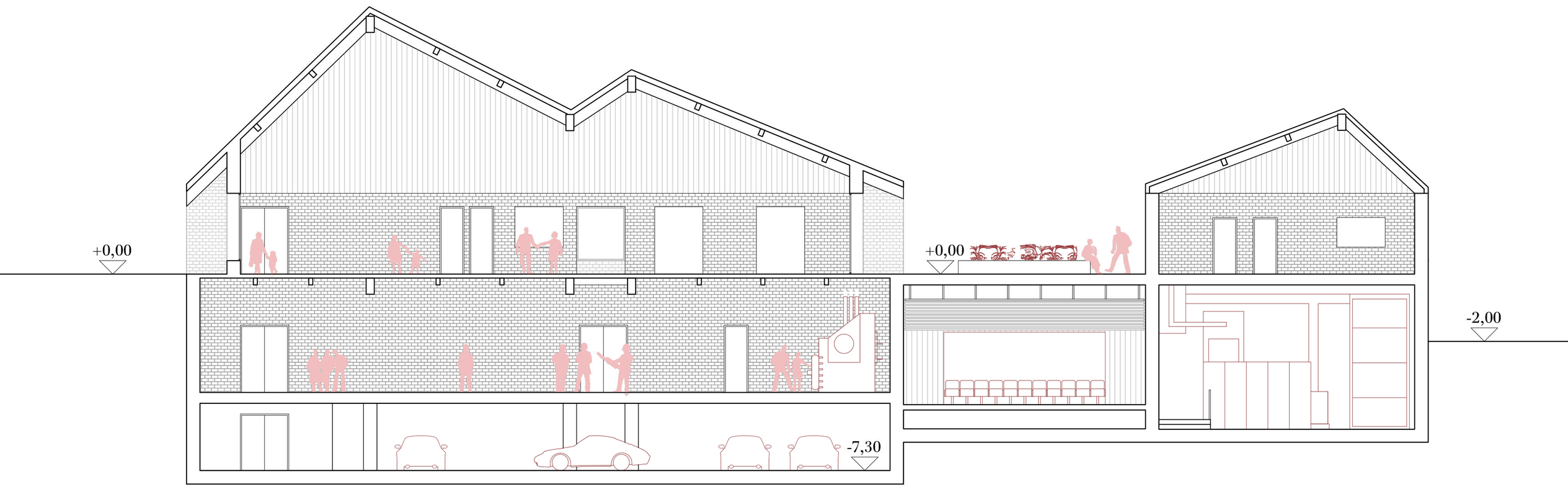
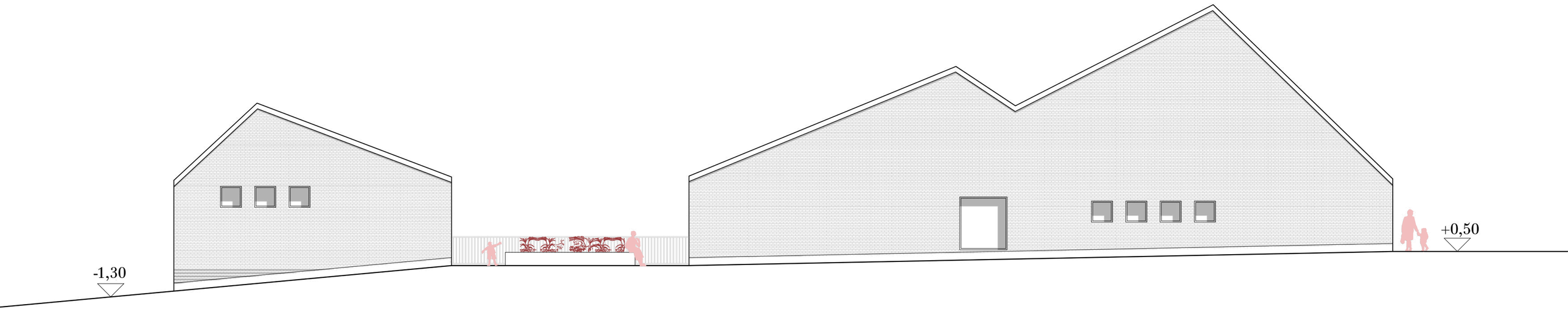




SECTION D_D' 1:100



SECTION E_E' 1:100



NORTH ELEVATION 1:100

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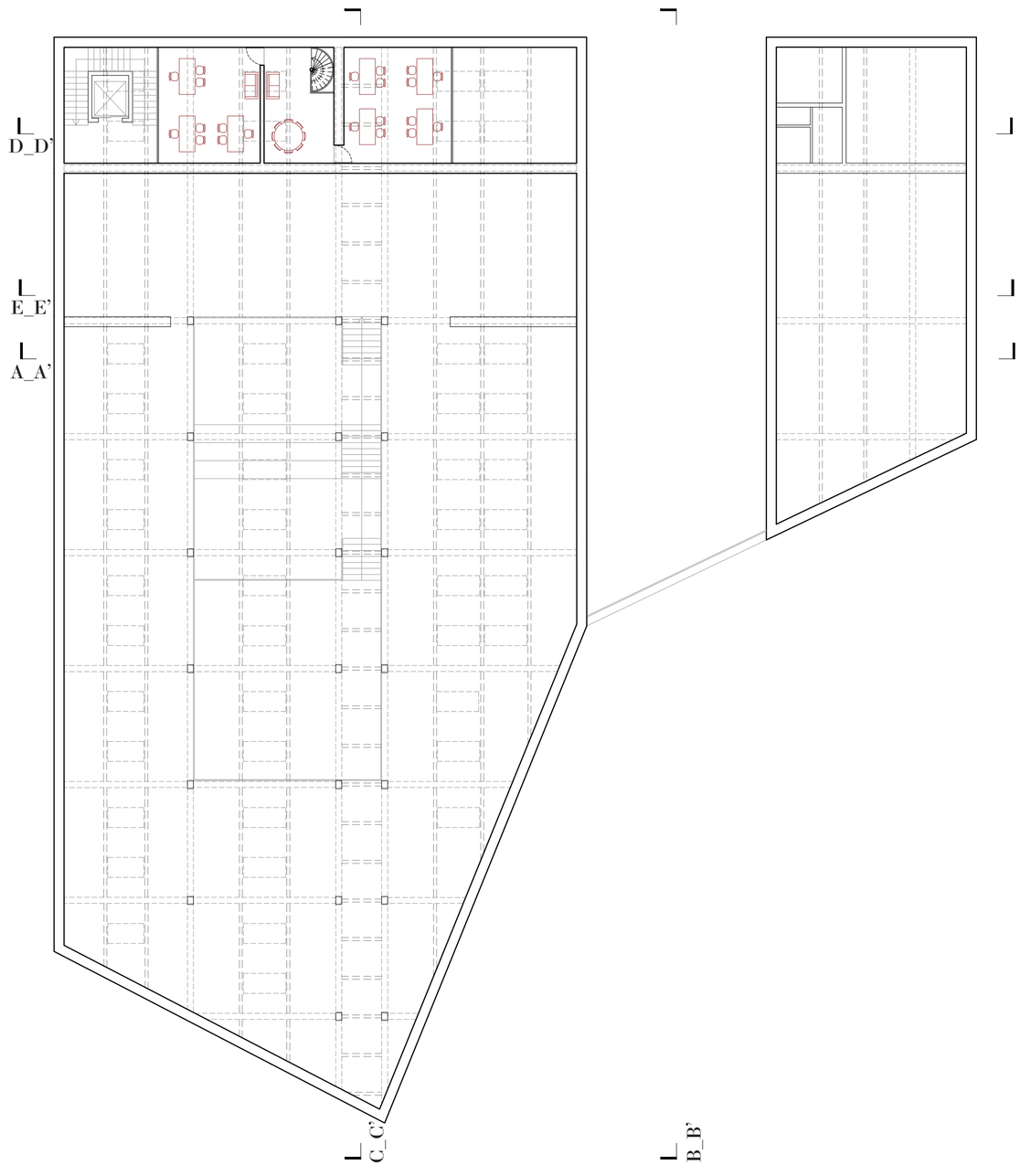
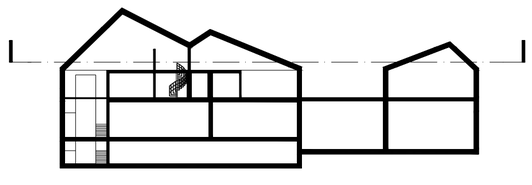
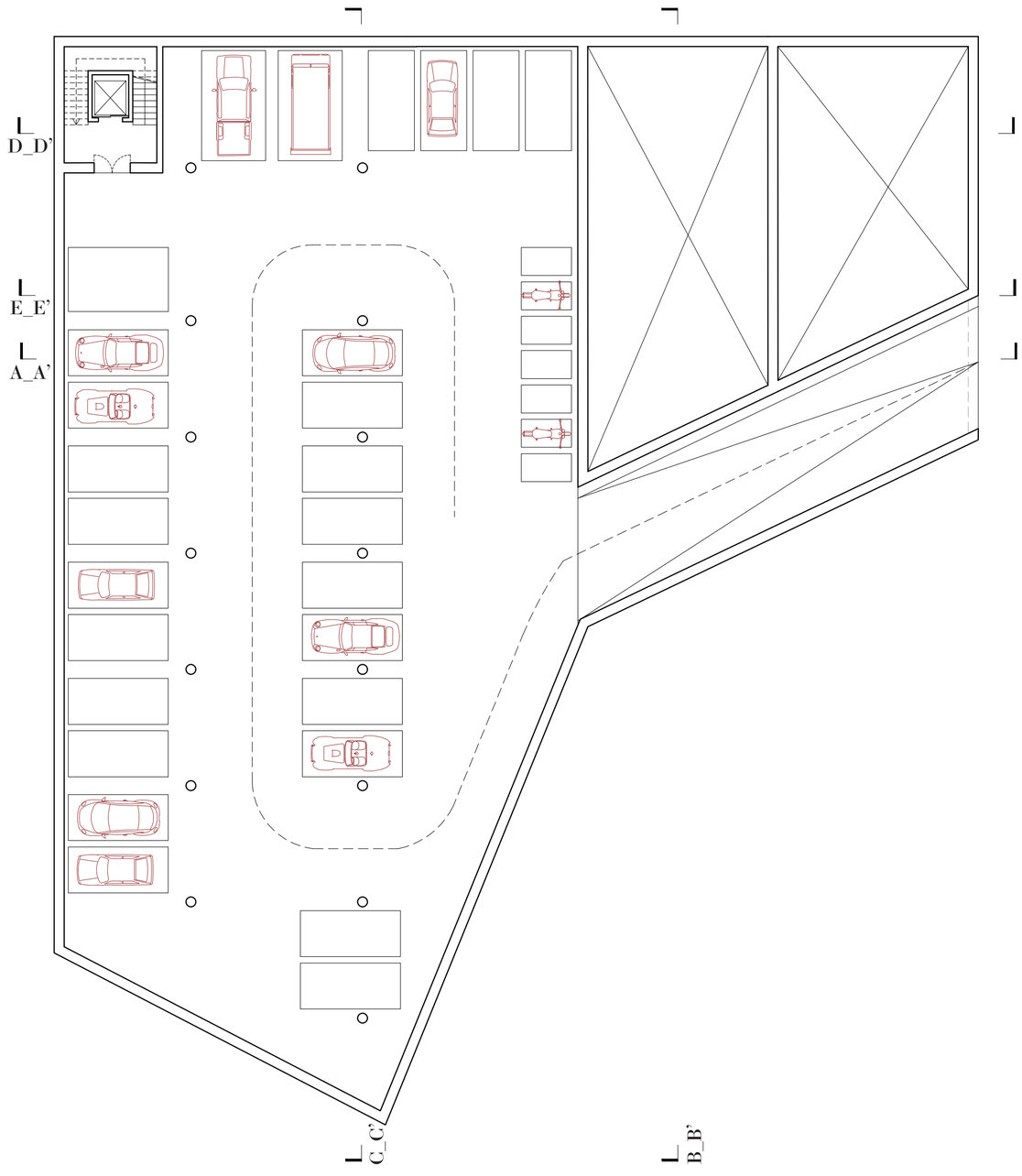
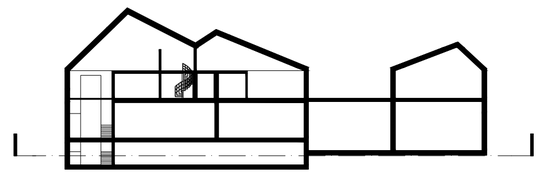




MEZZANINE FLOOR PLAN 1:200





PARKING FLOOR PLAN 1:200

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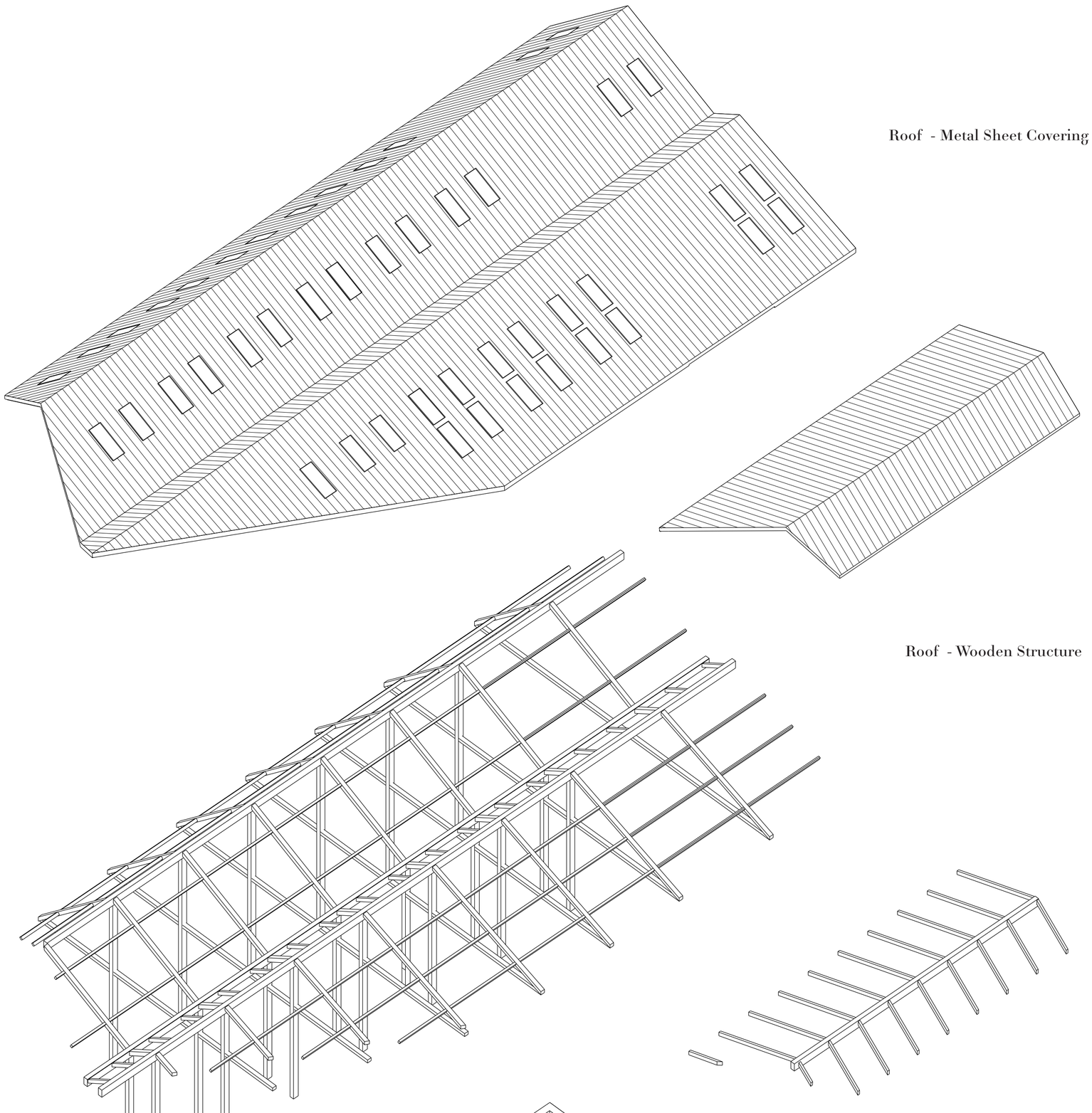

Roof - Metal Sheet Covering

Roof - Wooden Structure

Walls - Brick Structure

Underground Walls - Concrete Structure

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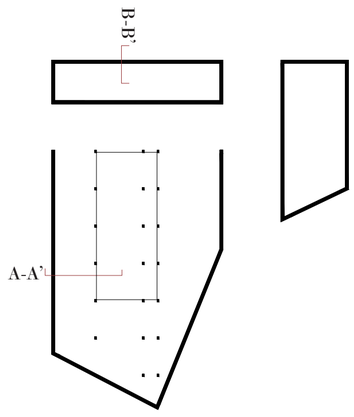

- Titanium zinc roof (2 cm)
- Wooden joist (5 cm)
- Wooden panels (2 cm)
- Waterproof membrane
- Vapour barrier (1 cm)
- Thermal and sound insulation (15 cm)
- Wooden panels, Scots pine (2 cm)

- Wooden panels, Scots pine (15x2x200 cm)
- Wooden secondary beam, Norway spruce(25x15 cm)

- Wooden primary beam, Norway spruce (40x30 cm)
- Wooden panels, Scots pine (15x2x200 cm)

- Wooden pillar, Norway spruce (40x30 cm)

- Wooden primary beam, Norway spruce (30x30 cm)

- Two-headed bricks (25 cm)
- Waterproof membrane (1 cm)
- Vapour barrier (1 cm)
- Insulation (15 cm)
- Single brick (8 cm)

- Parquet, Scots pine (2 cm)
- Screed (5 cm)
- Vapour barrier (1 cm)
- Sound insulation (8 cm)
- Wooden panels, Scots pine (2 cm)
- Secondary beam (30x15 cm)
- Primary beam (60x30 cm)

- Waterproof membrane (1 cm)
- Retaining concrete wall (40 cm)
- Vapour barrier (2 cm)
- Single brick (5,5 cm)

- Parquet, Scots pine (2 cm)
- Screed (5 cm)
- Vapour barrier (1 cm)
- Sound insulation (8 cm)
- Concrete slab (40 cm)

- Waterproof membrane (1 cm)
- Retaining concrete wall (40 cm)
- Vapour barrier (2 cm)
- Gypsum (5,5 cm)

- Screed (5 cm)
- Vapour barrier (1 cm)
- Concrete slab (40 cm)
- Waterproof membrane (1 cm)

SECTION A-A' DETAIL 1:25

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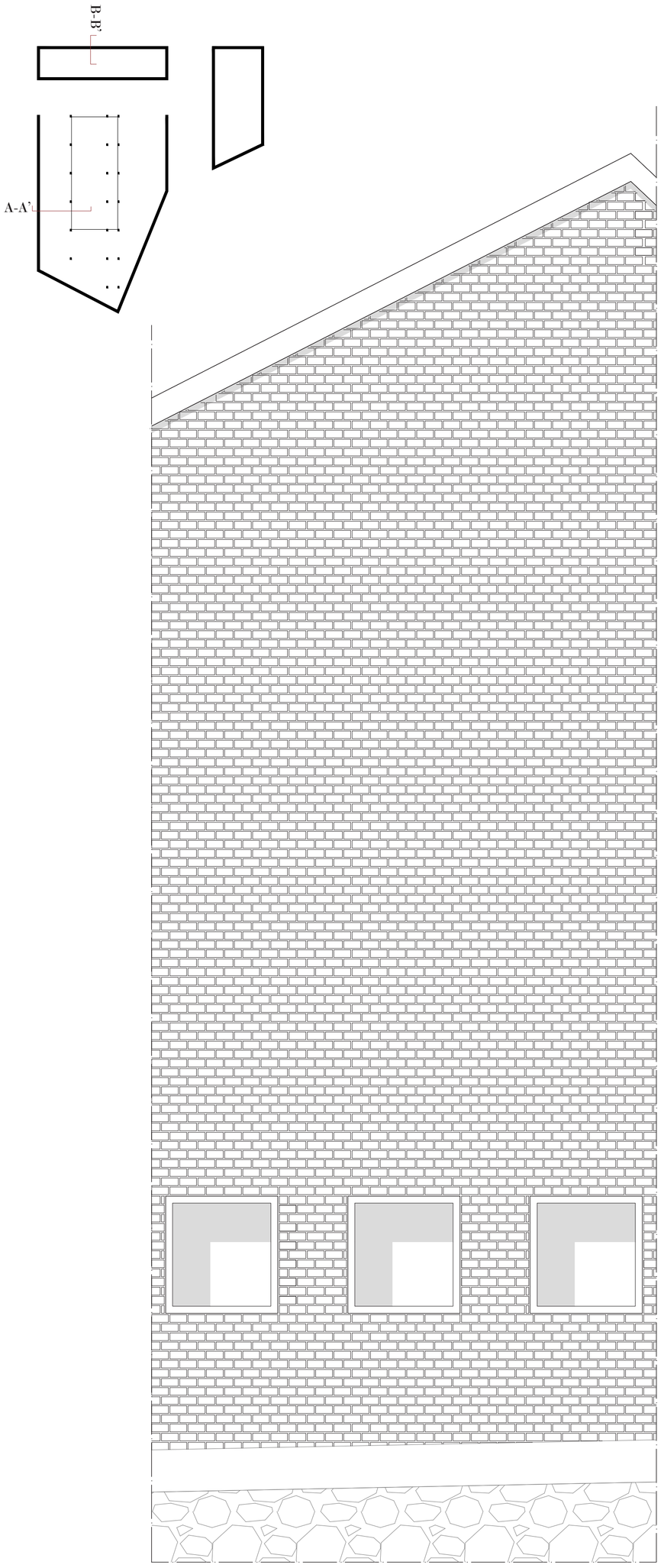
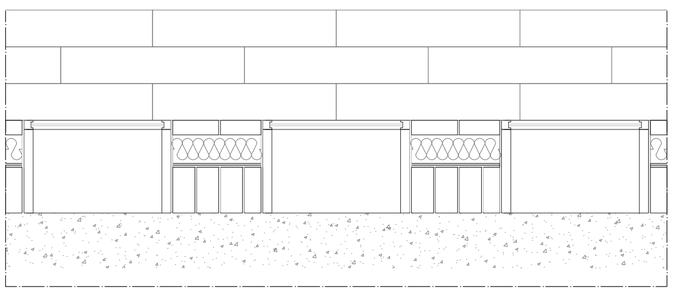




The volume is based on a structural brick wall along the perimeter, and a wooden point-shaped structure in the interior. The main purpose is to highlight those materials and their schemes: outside the heavyweight masonry and inside the lightness of the wood. When the masonry meets the ground, due to the weight of the soil, it becomes concrete, with a 40 cm structural thickness.
Two floors and the roof are based on a wooden system of beams and pillars, which allow the building to have interior spaces with a length of 10 meters.
The skeleton is based on primary beams along two different directions, and the secondary ones mainly follow the longitudinal axe.
Other spaces follow different rules, like the auditorium and the technical room: they have concrete slabs supported by concrete walls. The auditorium has a special ceiling in order to preserve the right acoustic comfort and the technical room does not need any particular ceiling based on a wooden structure. The parking, due to the long distance between the pillars and the weight of the other floors, needs a concrete structure. The main focus is to save much free area as possible, in order to have a higher number of parkings.

- Titanium zinc roof (2 cm)
- Wooden joist (5 cm)
- Wooden panels (2 cm)
- Waterproof membrane
- Vapour barrier (1 cm)
- Thermal and sound insulation (15 cm)
- Wooden panels, Scots pine (2 cm)

- Wooden panels, Scots pine (15x200 cm)
- Wooden secondary beam, Norway spruce(25x15 cm)

- Wooden primary beam, Norway spruce (60x30 cm)

- Two-headed bricks (25 cm)
- Waterproof membrane (1 cm)
- Vapour barrier (1 cm)
- Insulation (15 cm)
- Single brick (8 cm)
- Wood trim, Scots pine (2 cm)

- Wooden plank (2+2 cm)
- Wooden beam (0,15x0,1 cm)

- Wooden frame (5 cm)
- Glass (70x70 cm)

- Parquet, Scots pine (2 cm)
- Screed (5 cm)
- Vapour barrier (1 cm)
- Sound insulation (8 cm)
- Wooden panels, Scots pine (2 cm)
- Secondary beam, Norway spruce (30x15 cm)
- Primary beam, Norway spruce (60x30 cm)

- Waterproof membrane (1 cm)
- Retaining concrete wall (40 cm)
- Vapour barrier (2 cm)
- Single brick (8 cm)

- Parquet, Scots pine (2 cm)
- Screed (5 cm)
- Vapour barrier (1 cm)
- Sound insulation (8 cm)
- Concrete slab (40 cm)

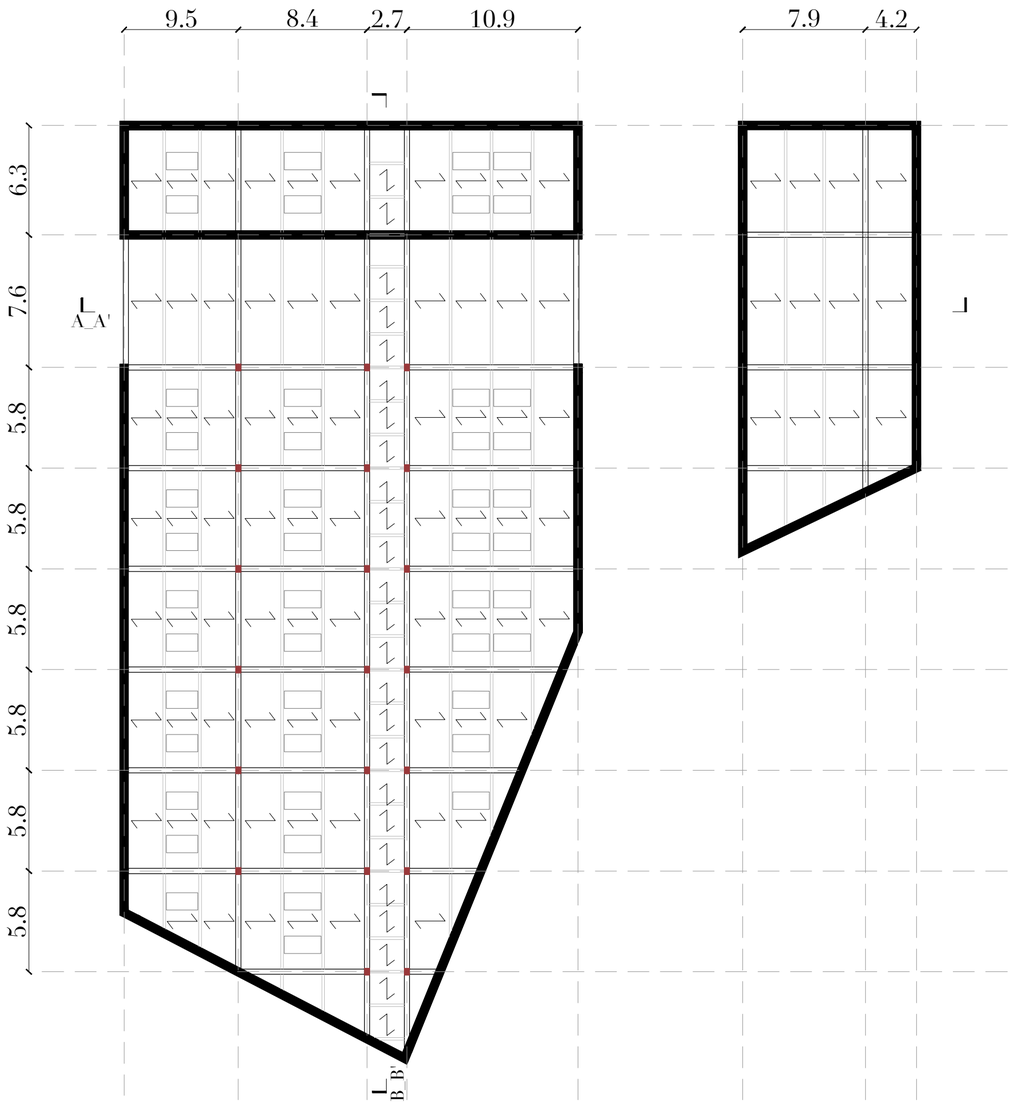
- Waterproof membrane (1 cm)
- Retaining concrete wall (40 cm)
- Vapour barrier (2 cm)
- Gypsum (5,5 cm)

- Screed (5 cm)
- Vapour barrier (1 cm)
- Concrete slab (40 cm)
- Waterproof membrane (1 cm)

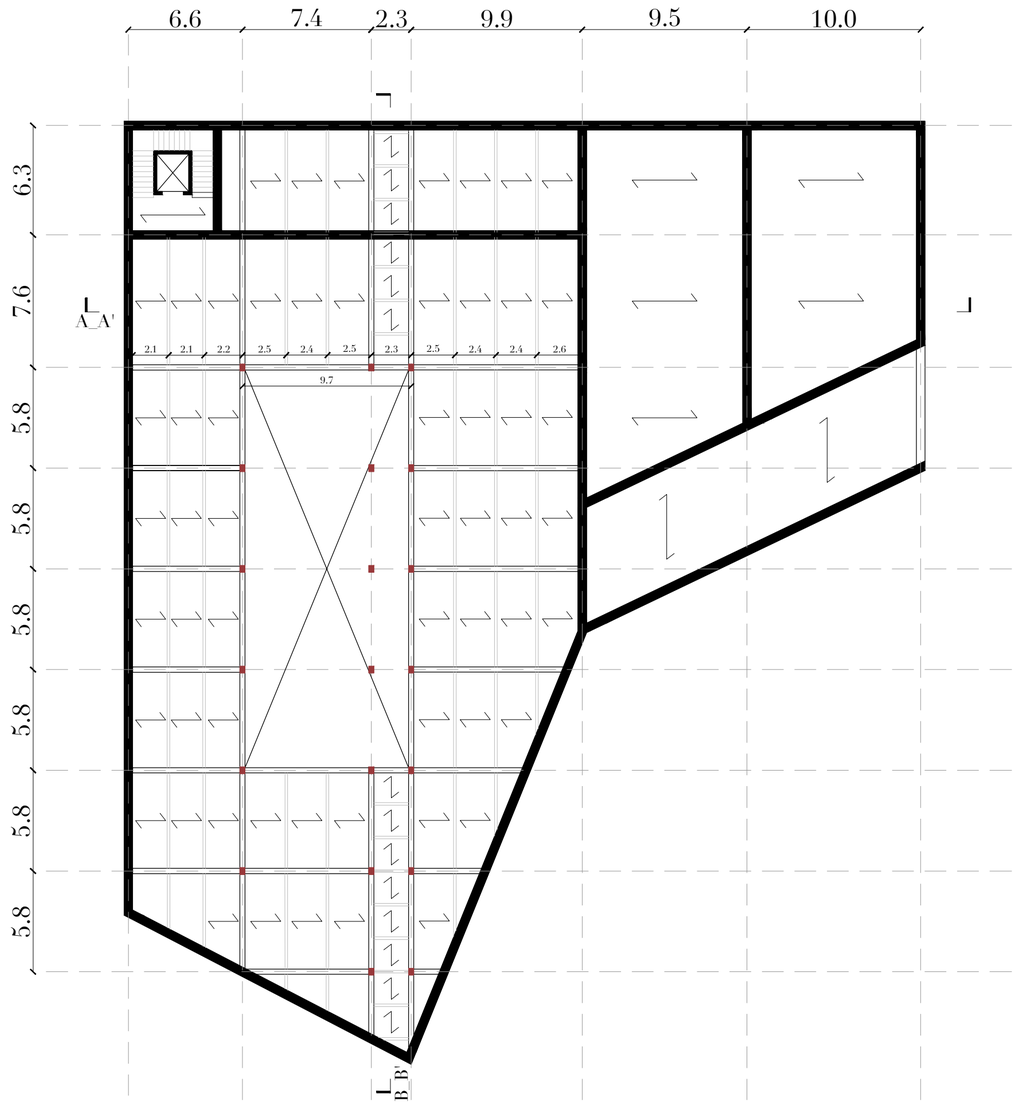
ELEVATION_PLAN_SECTION B-B' DETAIL 1:25

Politecnico di Milano
Architecture and Urban Design
A.A. 2018-2019

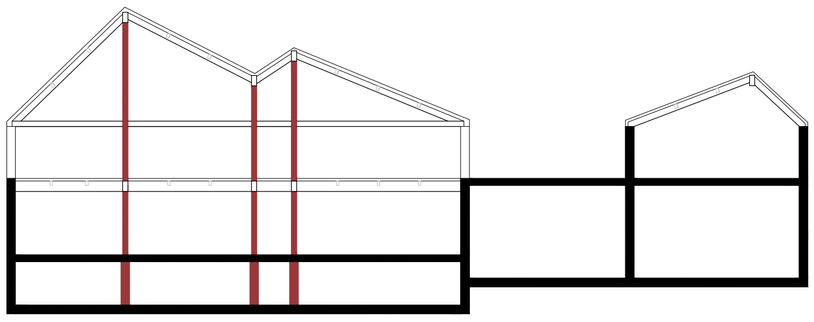
Students: **Matteo Asperti, Giorgia Zambon**
Supervisor: **Camillo Magni**



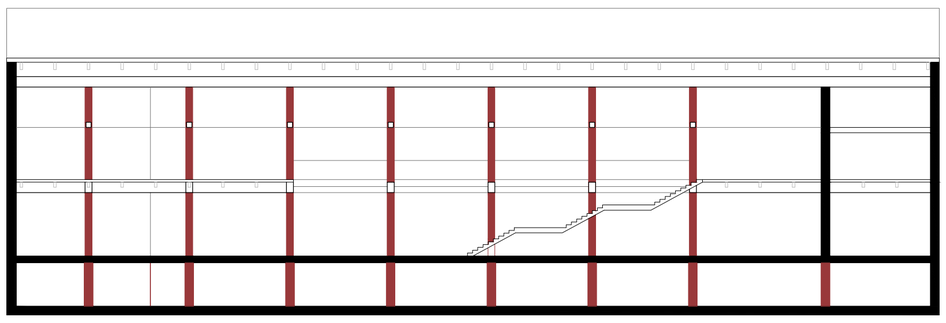
STRUCTURE - CEILING PLAN



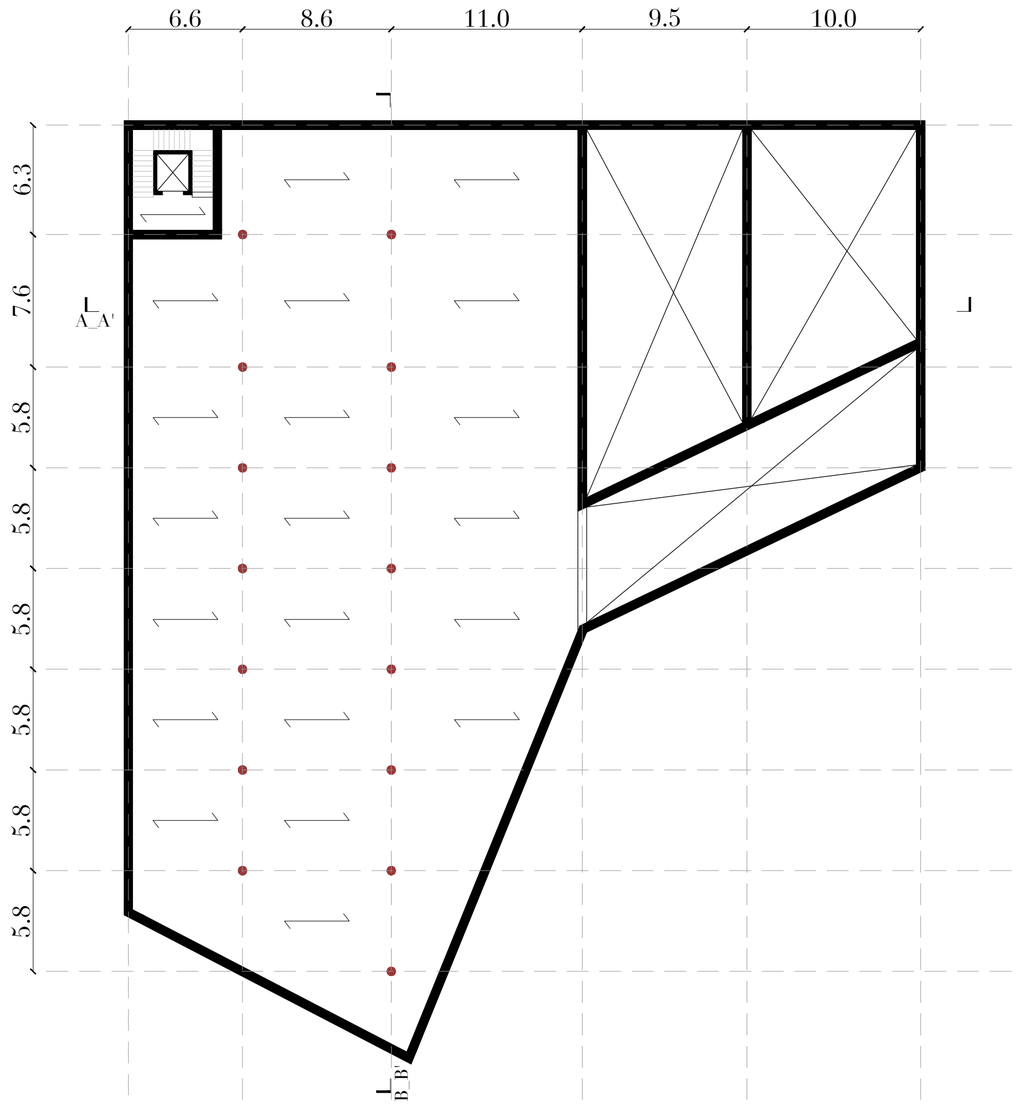
STRUCTURE - UNDERGROUND CEILING PLAN



STRUCTURE - SECTION A-A'



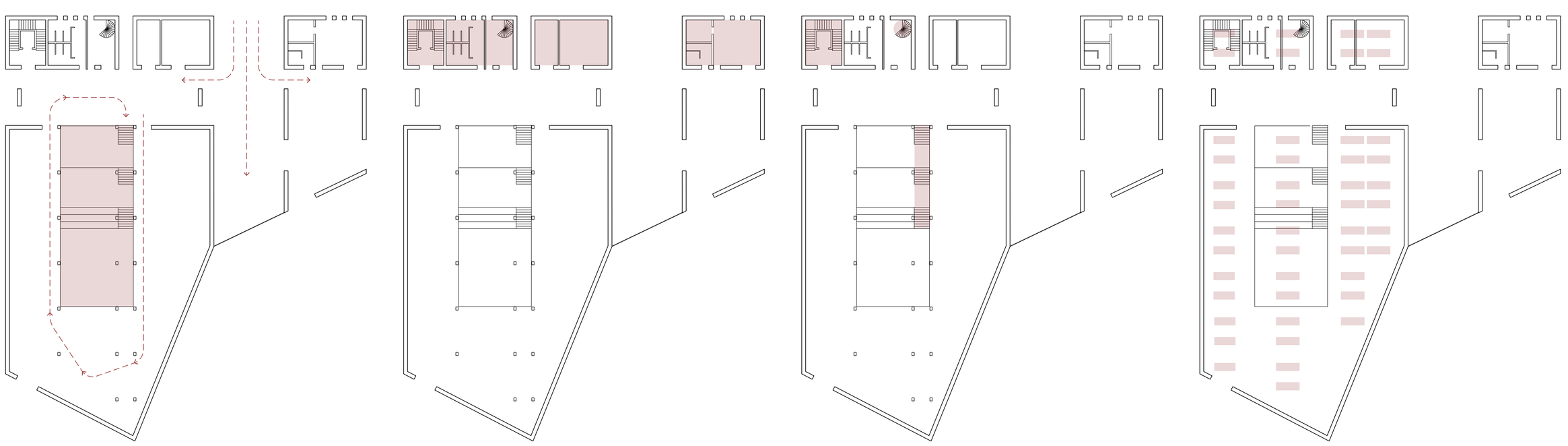
STRUCTURE - SECTION B-B'



STRUCTURE - PARKING CEILING PLAN

PERSPECTIVE SECTION

CONCEPT



PATIO

The underground floor of the building is a workshop, the patio allows the passage of light and it also draws the path

SERVICES

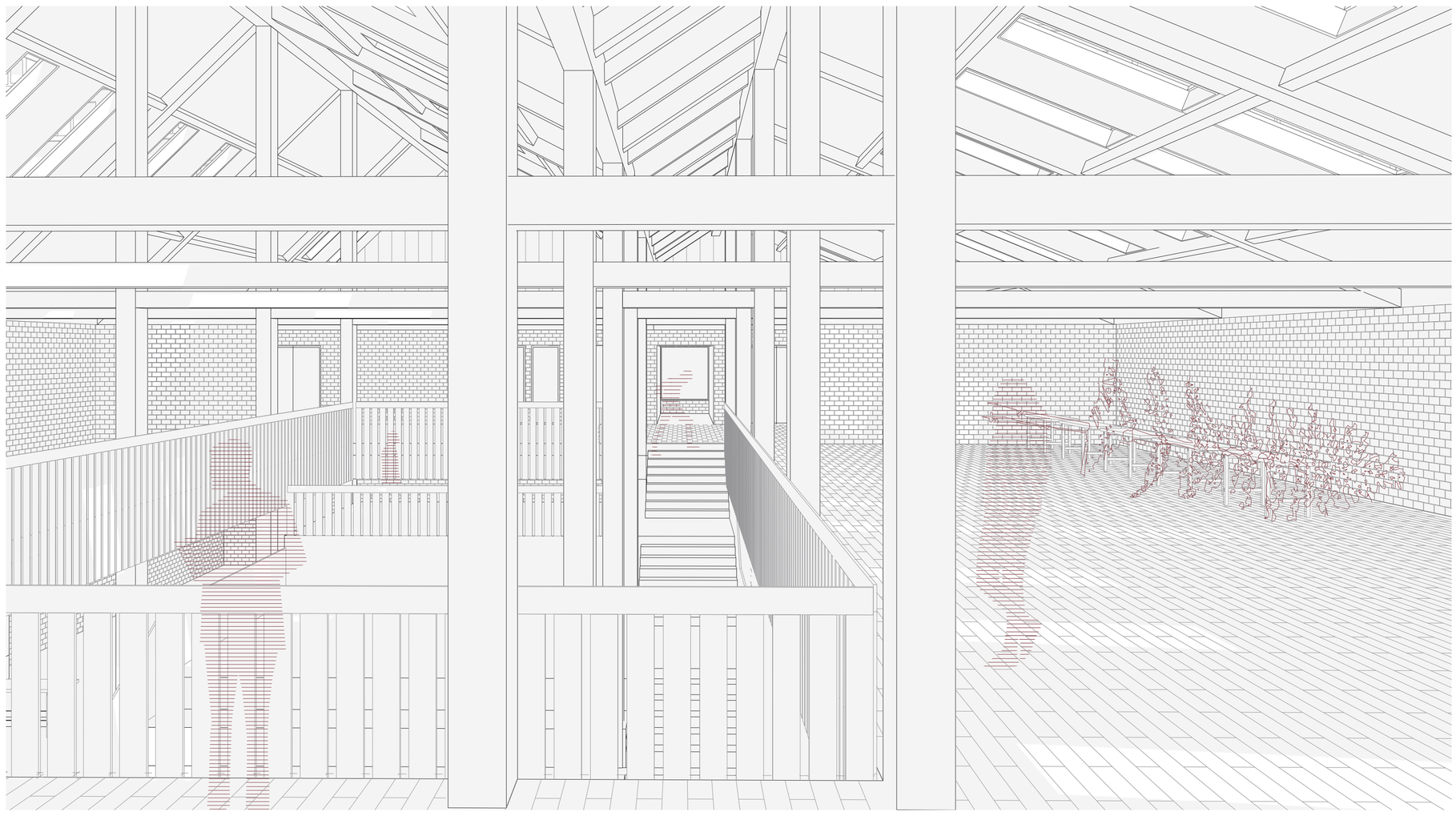
Both services of the museum and the restraurant have been placed along the North elevation

VERTICAL CONNECTION

Three floors of the building are connected by a service staircase, while the museum and the workshop have a main staircase

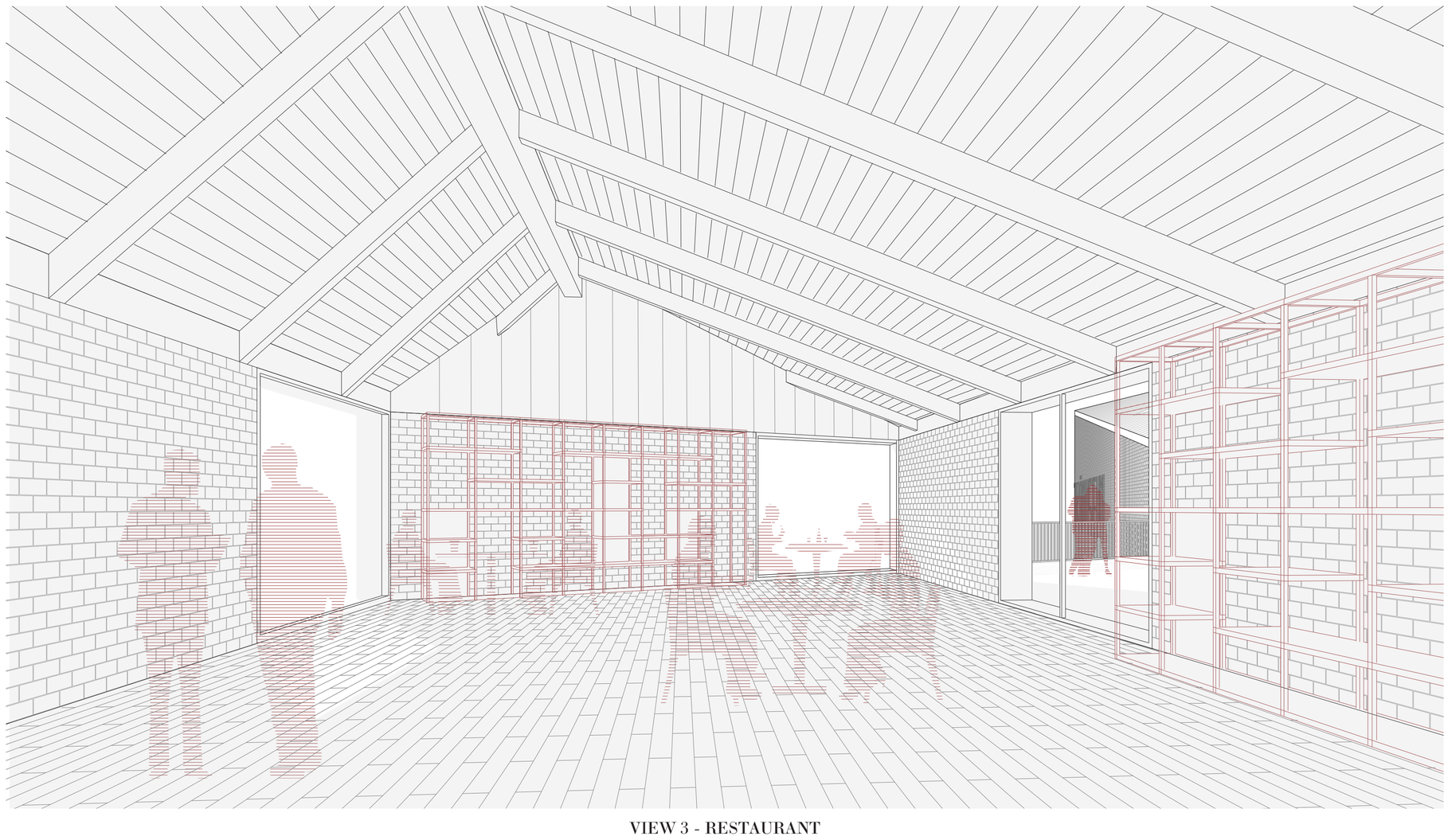
LIGHT

The ground floor of the building is a museum so light arrives mainly from the skylight

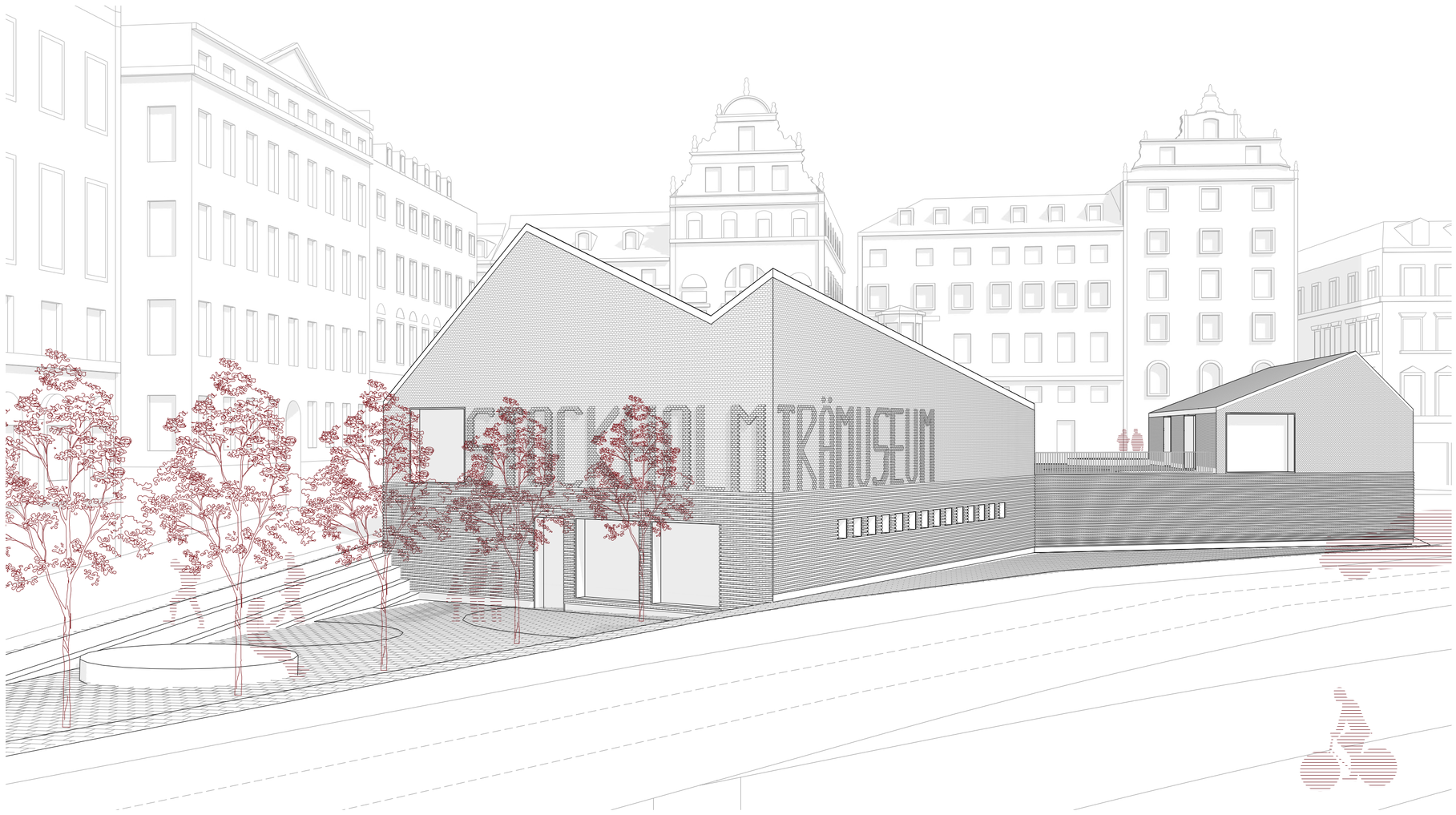


VIEW 1 - SKYLIGHTS

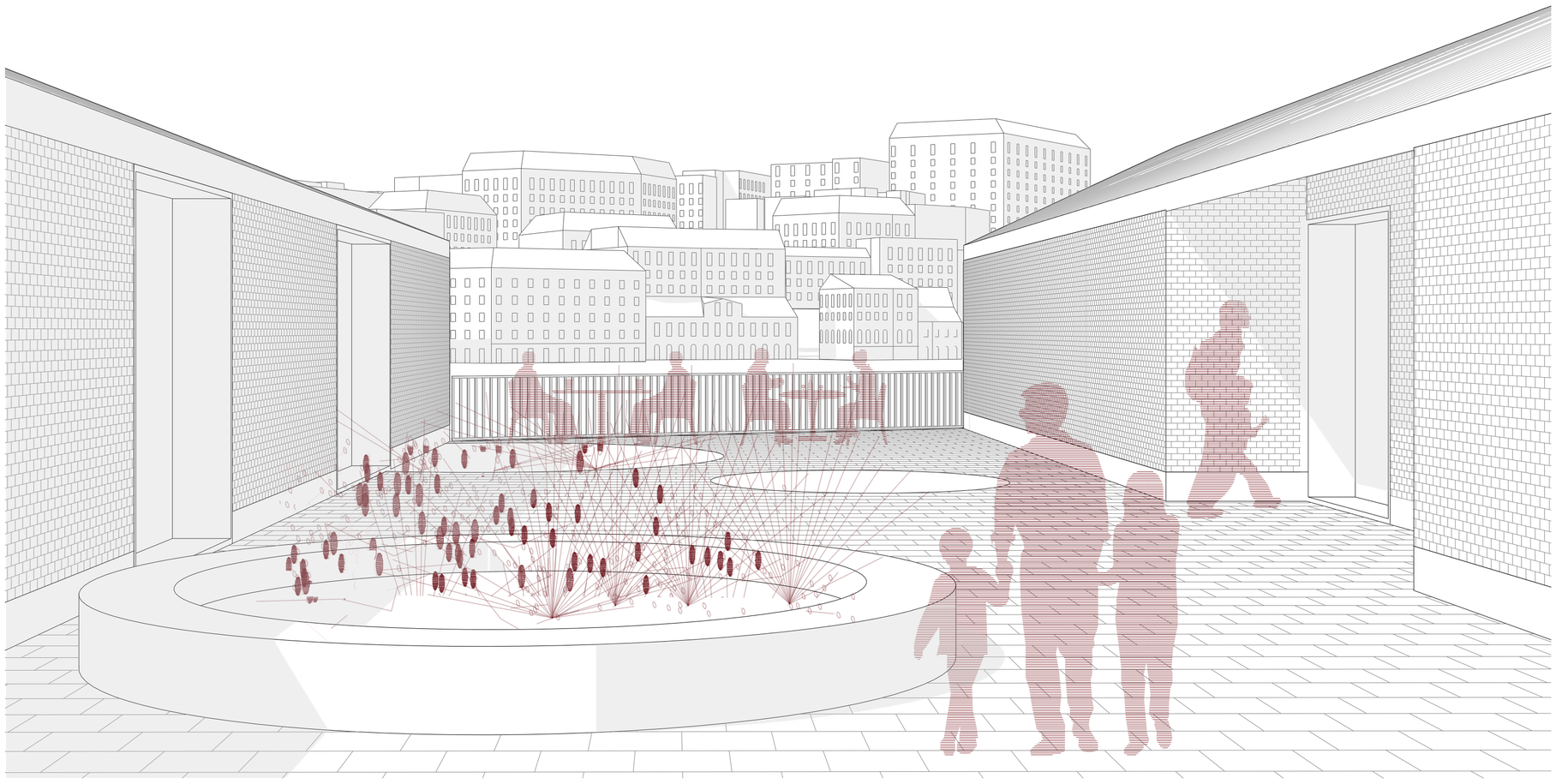
VIEW 2 - WOODEN STRUCTURE



VIEW 3 - RESTAURANT



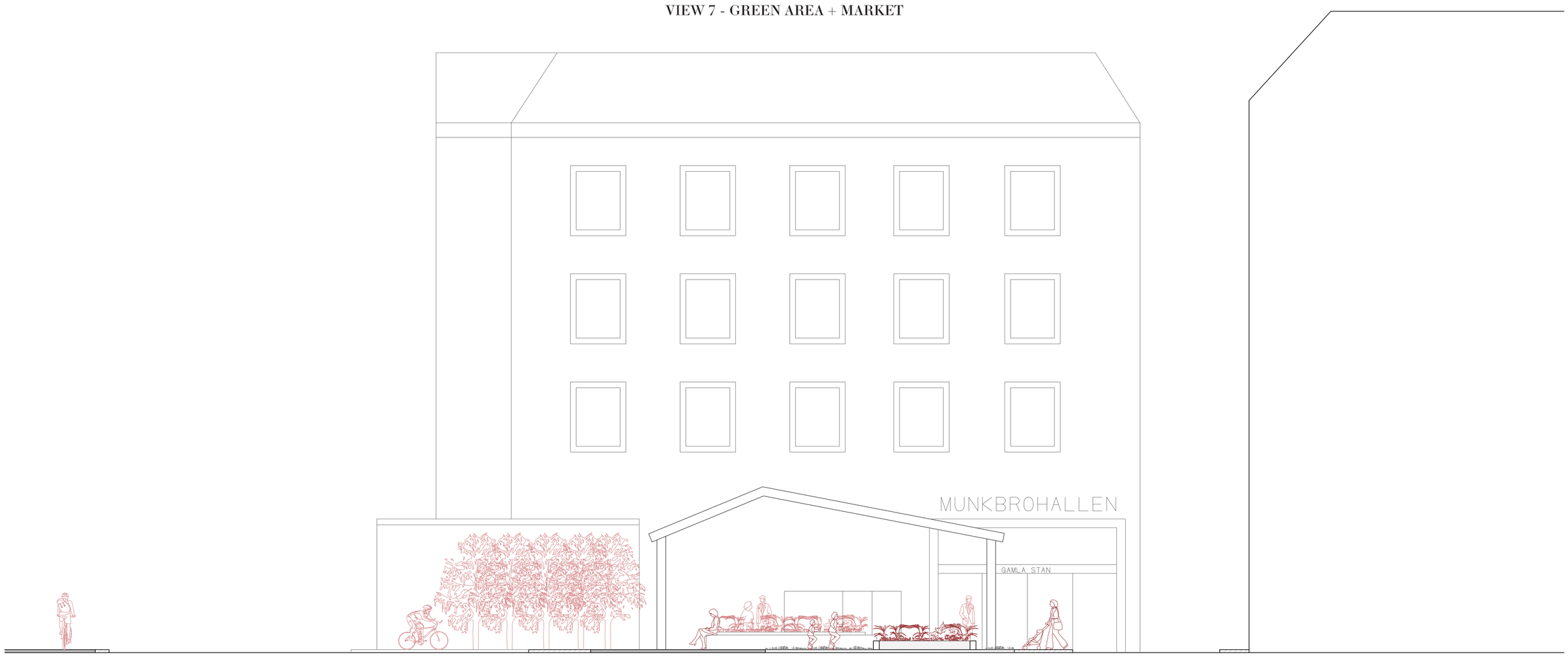
VIEW 4 - MUSEUM



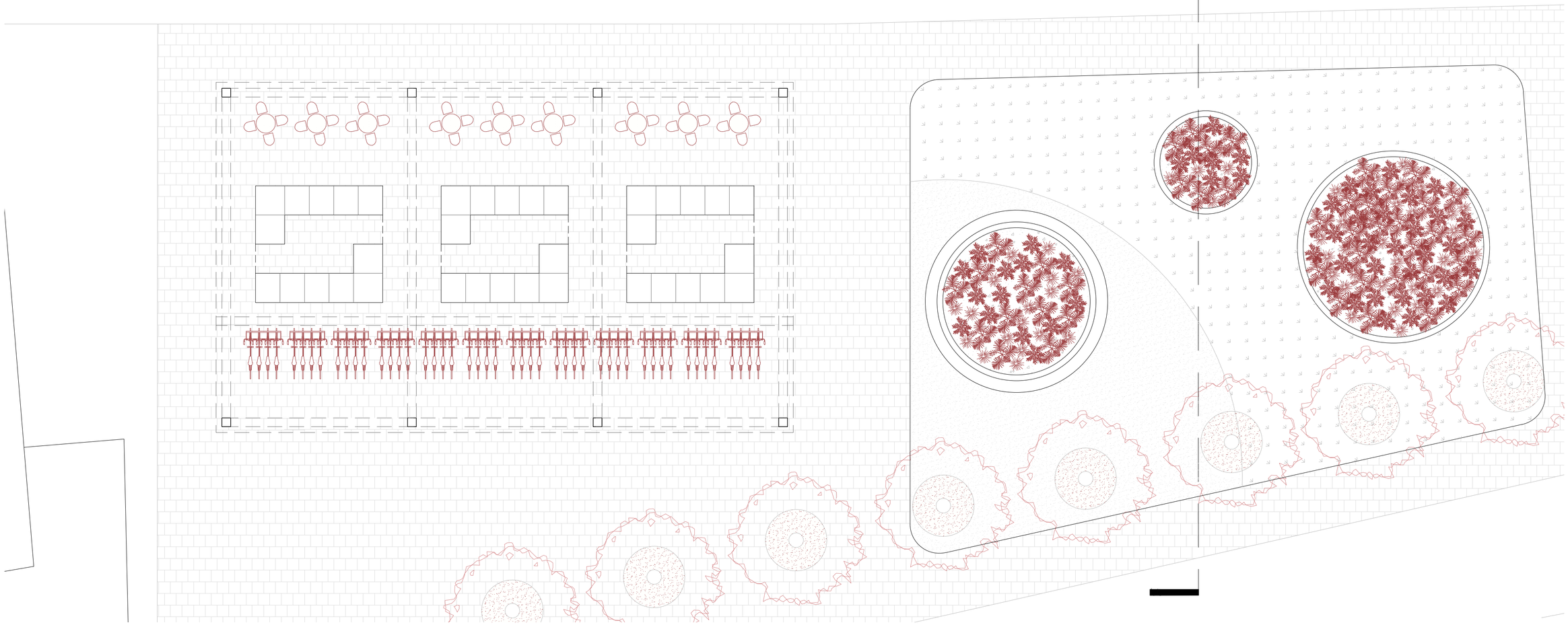
VIEW 5 - TERRACE

VIEW 6 - WATER FRONT

VIEW 7 - GREEN AREA + MARKET



MARKET URBAN SECTION 1:100



MARKET URBAN PLAN 1:100