

the independent group  
msc 3 - 4

# *a walled garden in Brussels*

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# a walled garden in Brussels

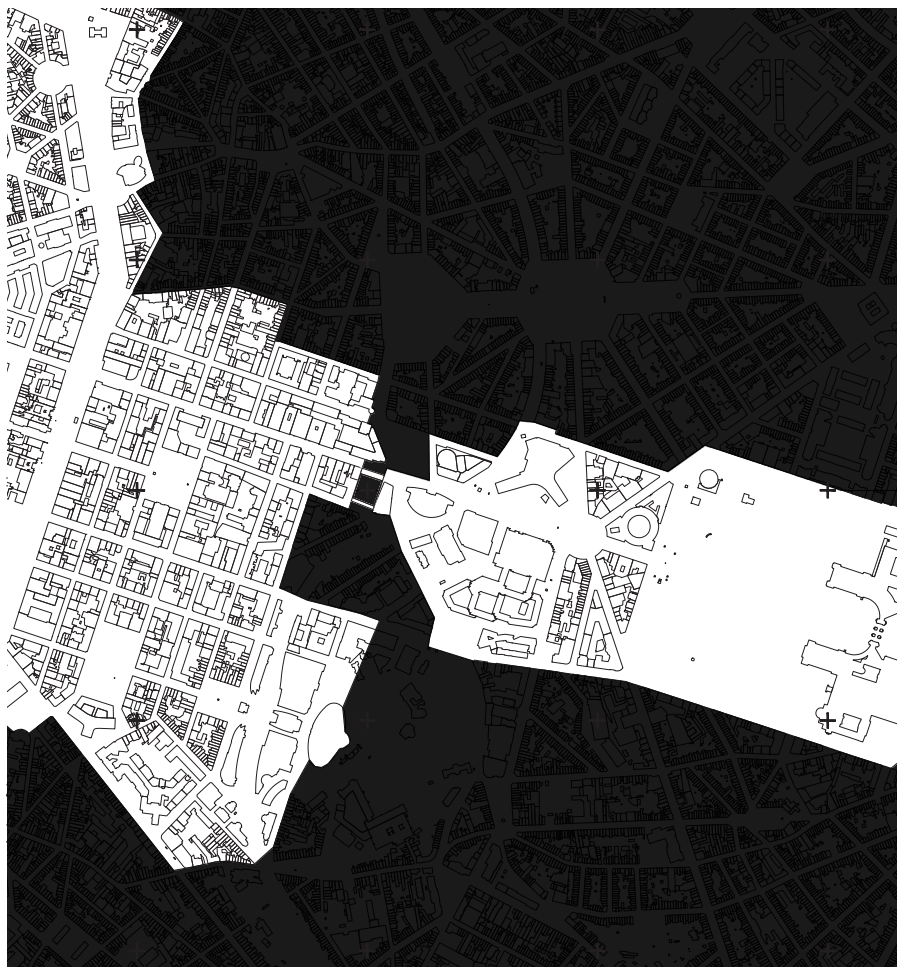






“Brussels was never destroyed by the wars, but rather by its own people”; these words of Victor Bourgeois show the destructive vision of cultural and social spaces in the city. Brussels’ vision of the urban development is based on top-down politics, fed by the desire to be modern, seen in the urge for bigness. This affection leads to the non-identification and displacement of citizens in the city. The tendency for the tabula rasa leads to the production of scars within the urban when the tabula rasa cannot be evoked, terrain vague start to exist.

Terrain vague is defined by its ambiguous character. It shows events of the past and gives space to those who require it. The project, which establishes the terrain vague as a walled garden, formalizes and defines the space within a public character. Here, the wounds of the city are celebrated and behave as a common territory where both the global, seen in the bodies of the European Commission, and the local, those who make use of the residential infrastructure, can coexist.



***Instead of a dead end, a new central point***

The walled garden forms a bridge between the two domestic neighborhoods. The character of the structure of one that is monumental and strong but executed simply and commonly. The former dead end transforms into a new central point that connects both the EU axis and the residential axis.

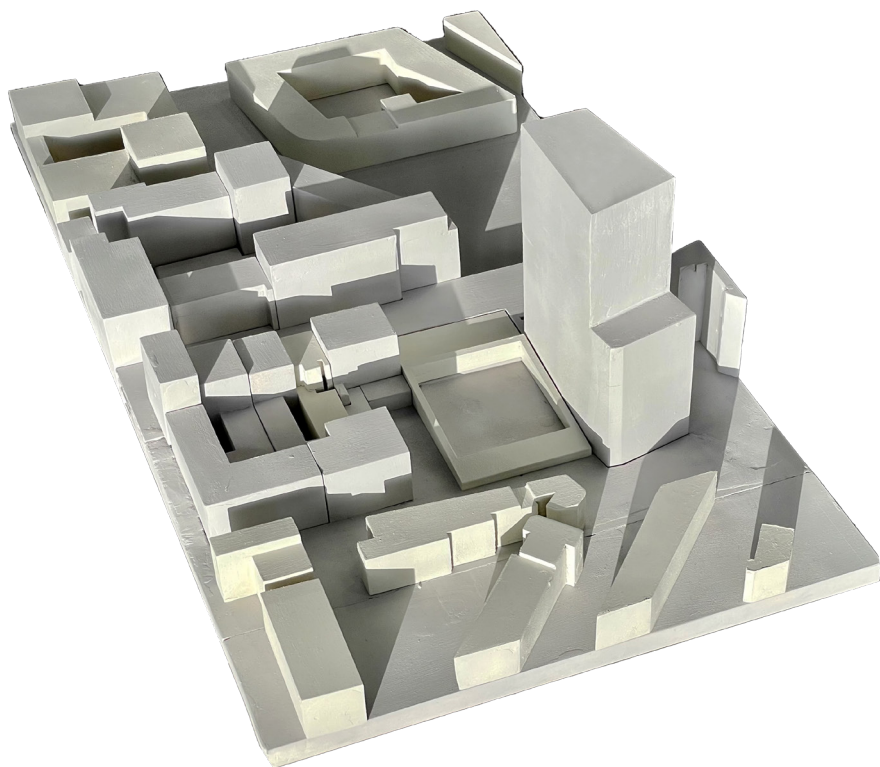
*a walled garden*



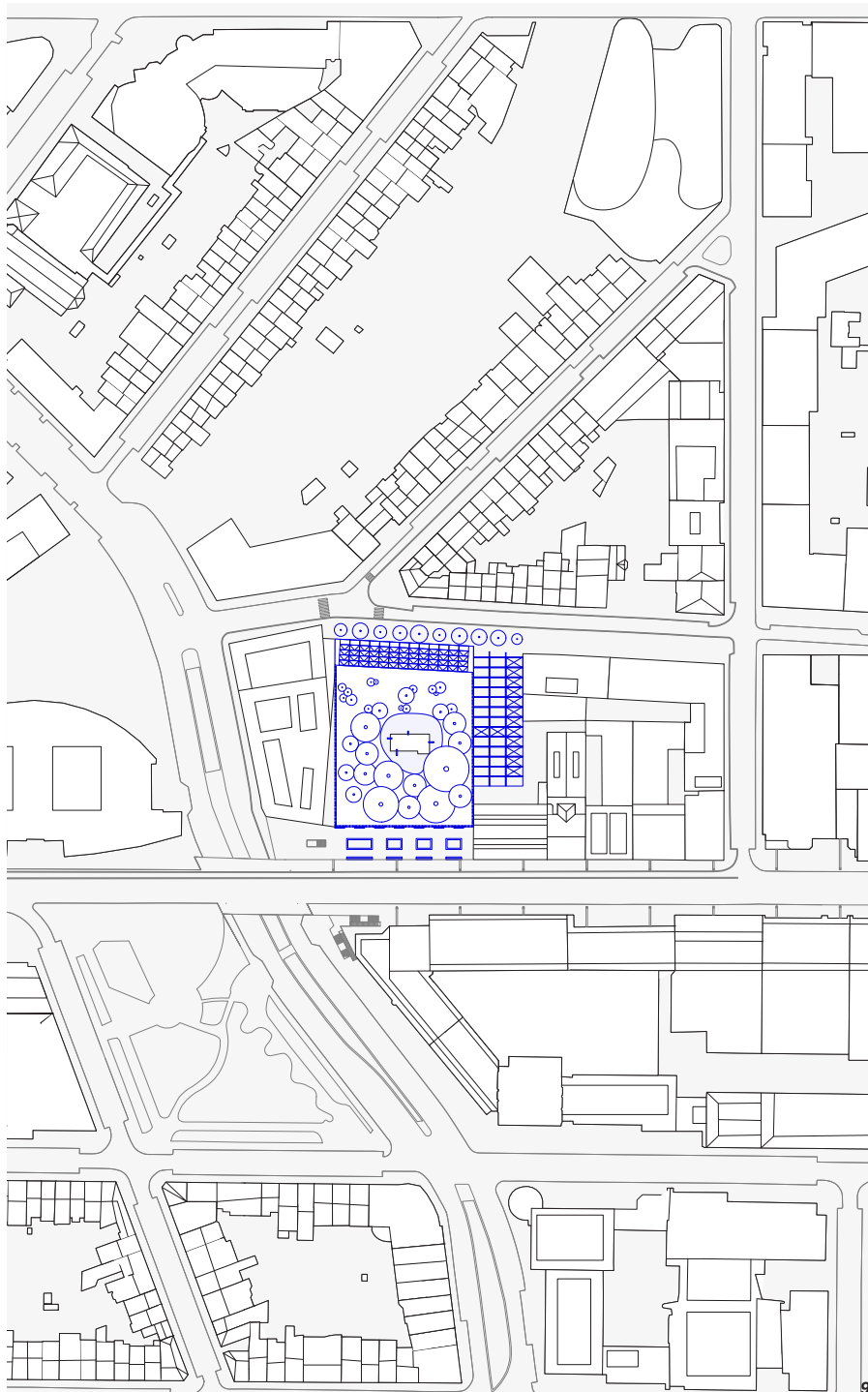
*A walled garden*

An infrastructure that keeps the chaos (EU) out, and creates a protection in.

*a walled garden*



*Scale model 1.500*



## *the plan*

The wall defines the project. The on-site made element protects the soil and show an alternative future for the European Quarter in Brussels. The wall is a place-specific element; the molding and the materials are found on the site. The construction methode, concrete pre-fab, is a method that is seen in the European Quarter.

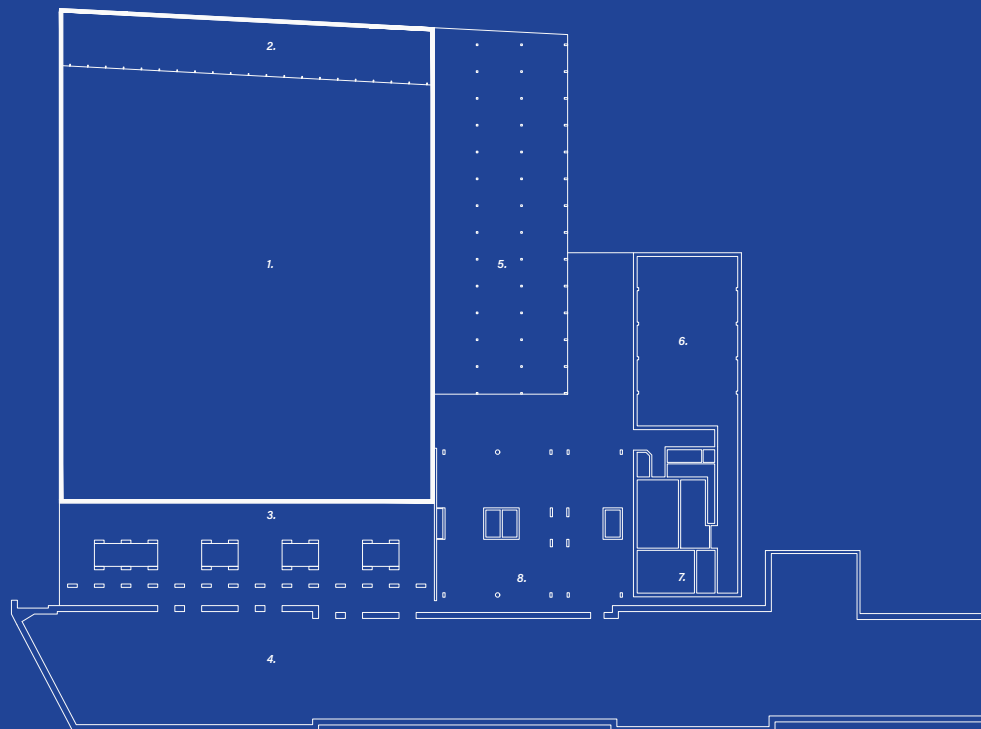
The secondary elements are lightweight structures, seen in the glasshouse and the pergola construction. They are both made from standardized materials and show the contrast between the rough wall and the refined aluminum materials. The Community center is connecting the parking garage to the garden and is offering an urban square on its roof. The glasshouse and the community center refer to a domestic atmosphere by using warm materials, such as wooden window frames, brick flooring, and beige-toned stone walls.

Next to the terrain, three vacant buildings are seen: Wetstraat 91, which is a monumental villa, and Wetstraat 93-95, which are both offices from the '60s. The existing buildings became part of the project. By excavating the ground around their basements, a new facade is seen.

Another infrastructure is found on the site: a vacant parking garage which is placed directly under the Wetstraat. The tunnel offers two floors of parking and a metro tube. The project is reframing the parking garage as a public infrastructure.

The project is focussing on the former terrain vague: an area that was unproductive to the city. The wall is transforming the terrain into a defined walled garden. The shaped place is forming a new center in the residential axis of Brussels, and can give space for those in need of it.



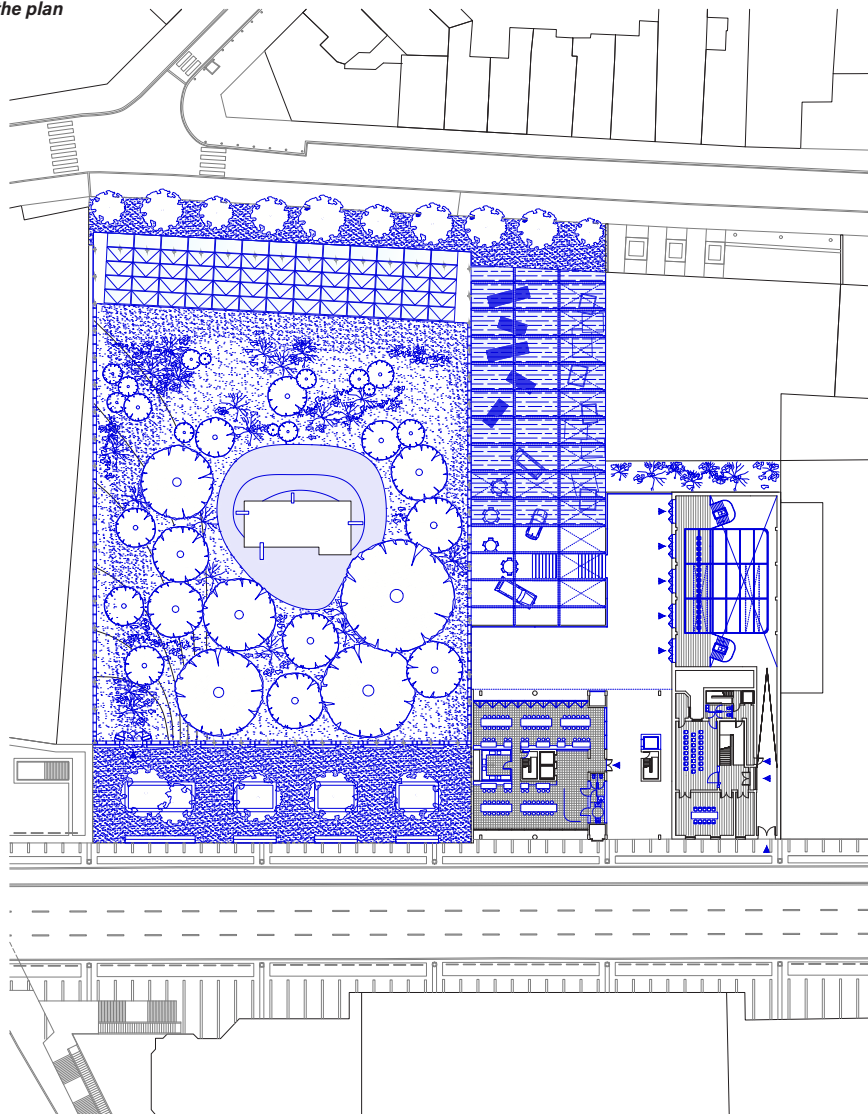


***A walled garden***

1. public garden
2. glasshouse
3. community center
4. open structure/ ex-parking garage
5. pergula square
6. shed theater

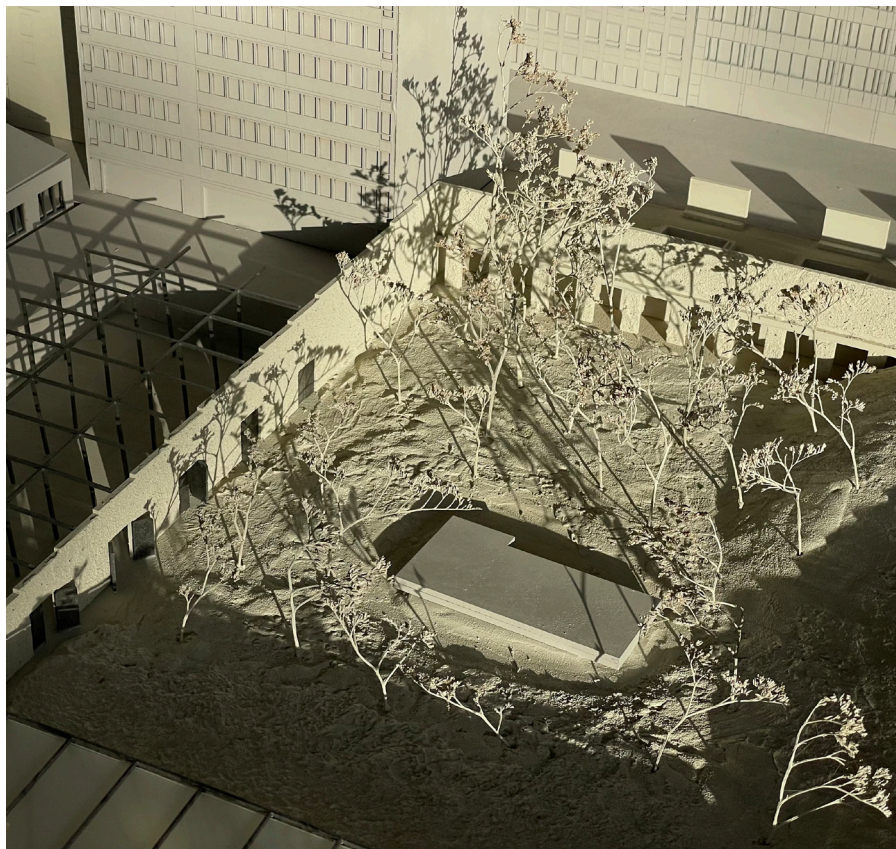
**7. villa community center**

8. office bar/ restuarant



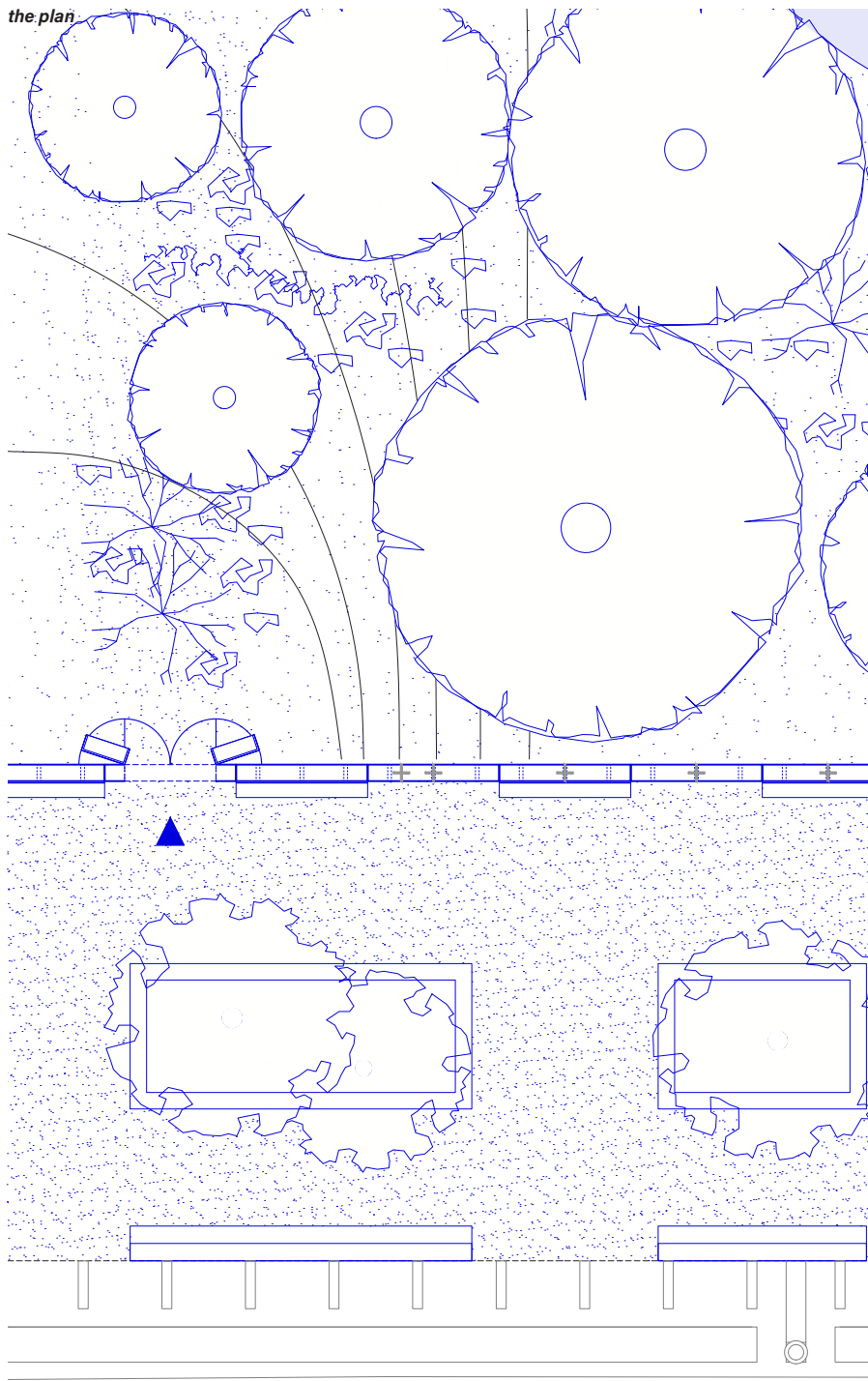
### Floorplan Wetstraat level

The ground floor shows the wall, closing off the public garden inside. The two entrances at the Wetstraat are small and hidden; one entrance at the new public square, and the original drive-through of the office building.



*Scale model 1:100*

the plan



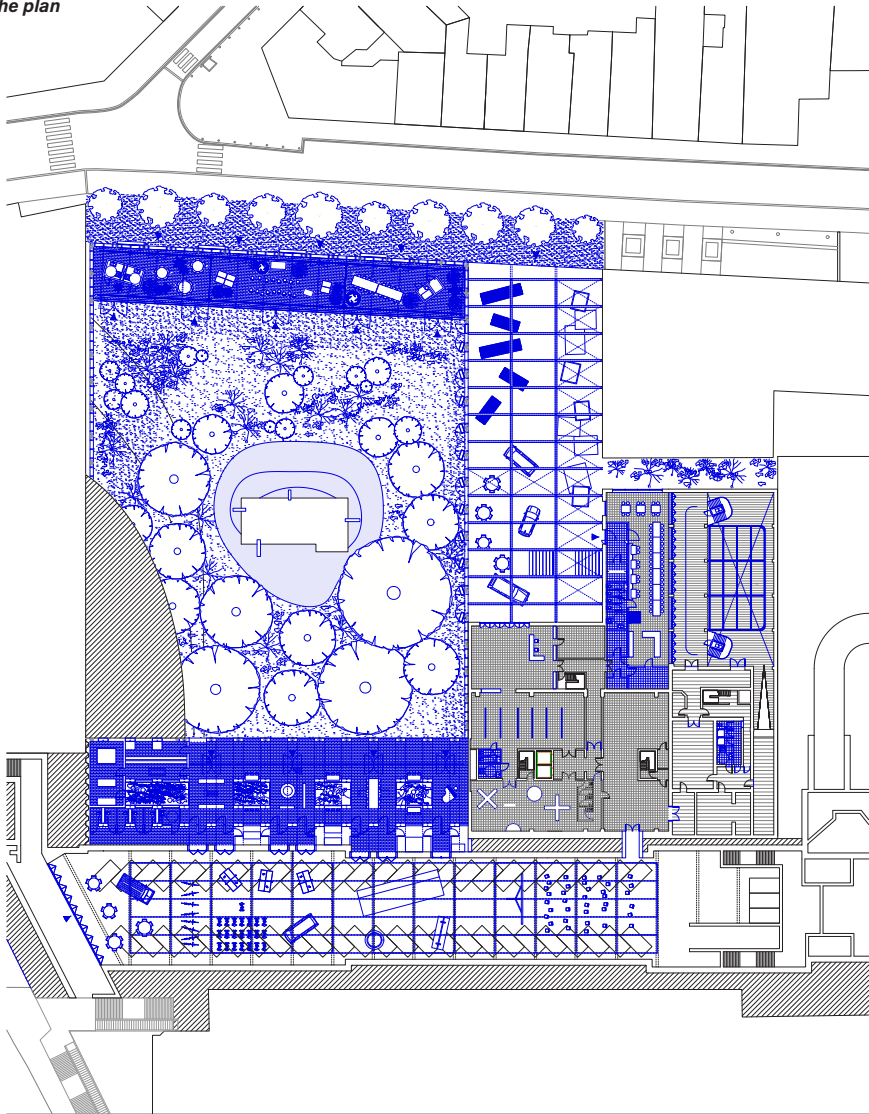


***A protection from chaos***

The small holes in the wall offer visitors a peek inside the garden, which enhances the ambiguous character of the wall. The gravel that is found in the park continues into the garden.

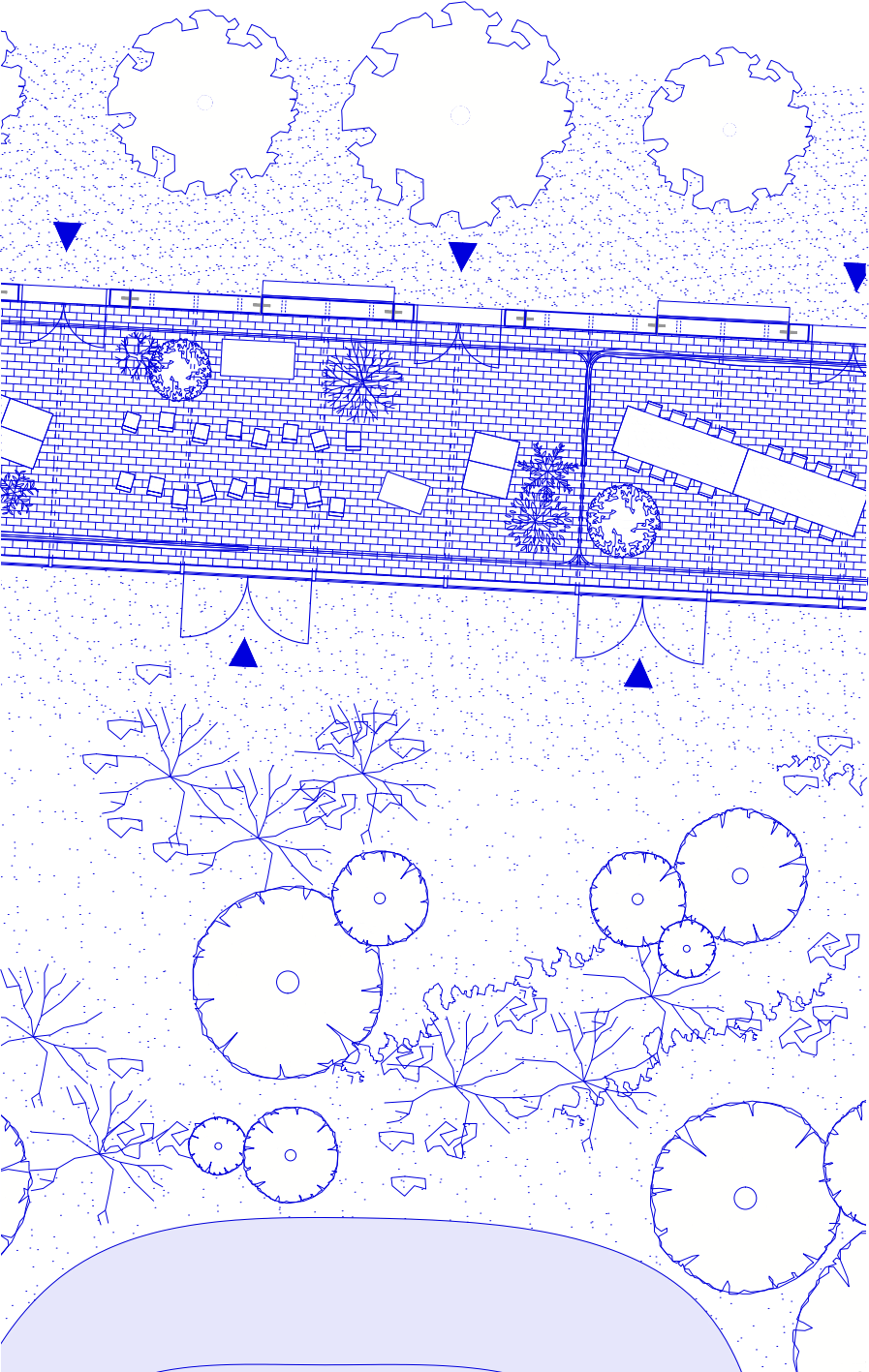






### ***Floorplan Jacques de Lalaingstraat level***

The garden offers space for many actors, human and non-human. Larger trees are seen in the back of the garden because of daylight. The parking garage is opened up and connects to the community center. The pergola construction at the Jacques de Lalaingstraat offers a generous entrance to the garden and its facilities. The basement of the existing buildings is opened up and filled with a public program. The shed is transformed into a performance space.



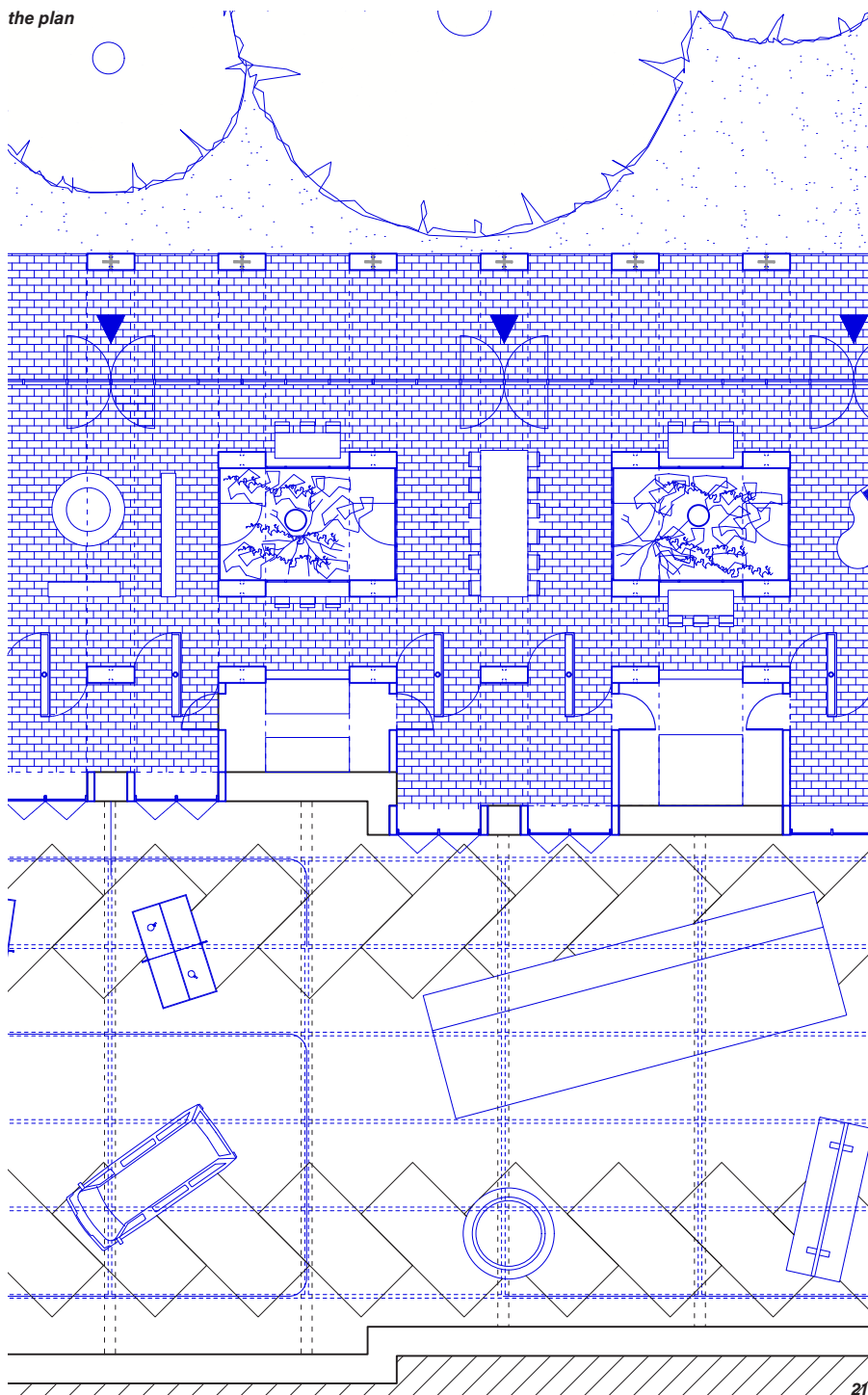




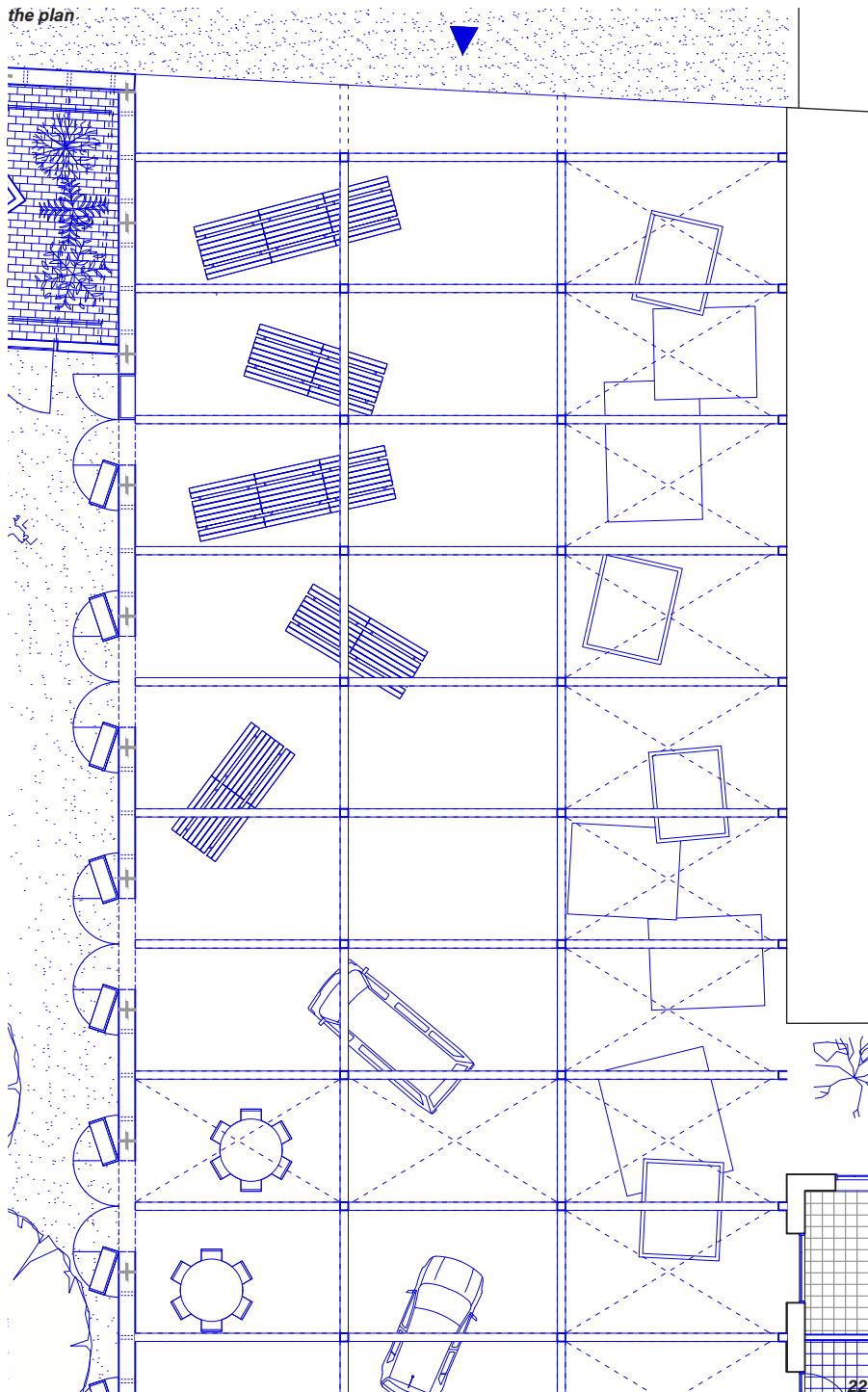
***Entrance Jacques de Lalaingstraat***

The new square at the Jacques de Lalaingstraat offers a quiet space. The heavy walls are in contrast with the lightweight roof construction.











***A space for everything***

The pergola construction is used to define the large open square. The square is paved with the same gravel seen around the project. The space is available for improvisation. The trees that are seen are grown out of the glasshouse and are now placed in the square to define the space.



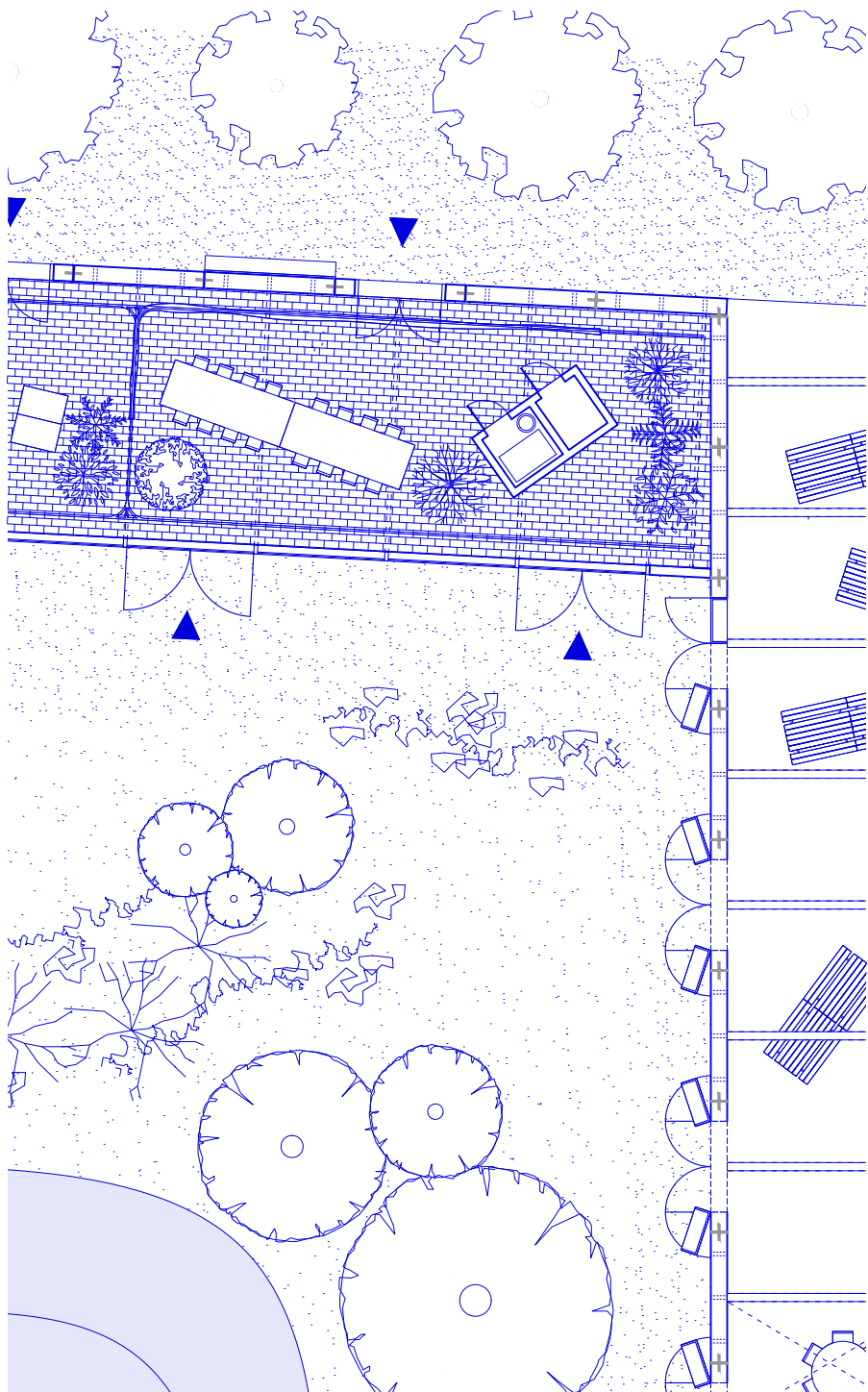




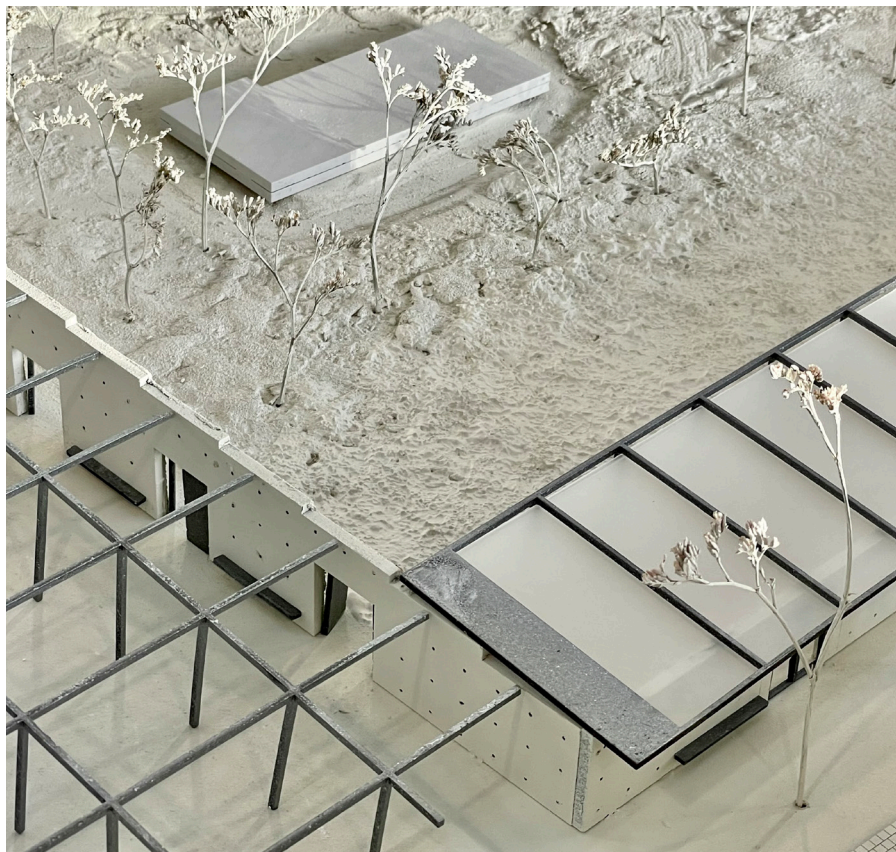
***A neighborhood barbecue***

The pergola square is open 24/7 and is a gesture to the area's inhabitants. They are able to organize events like neighborhood dinners, as seen in the image. Other events like flea markets, food truck festivals, and small concerts can take place on the square.



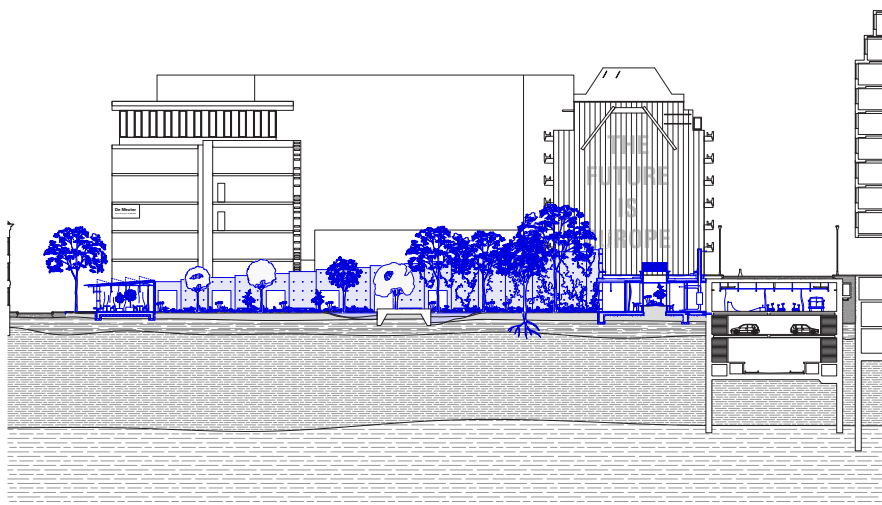






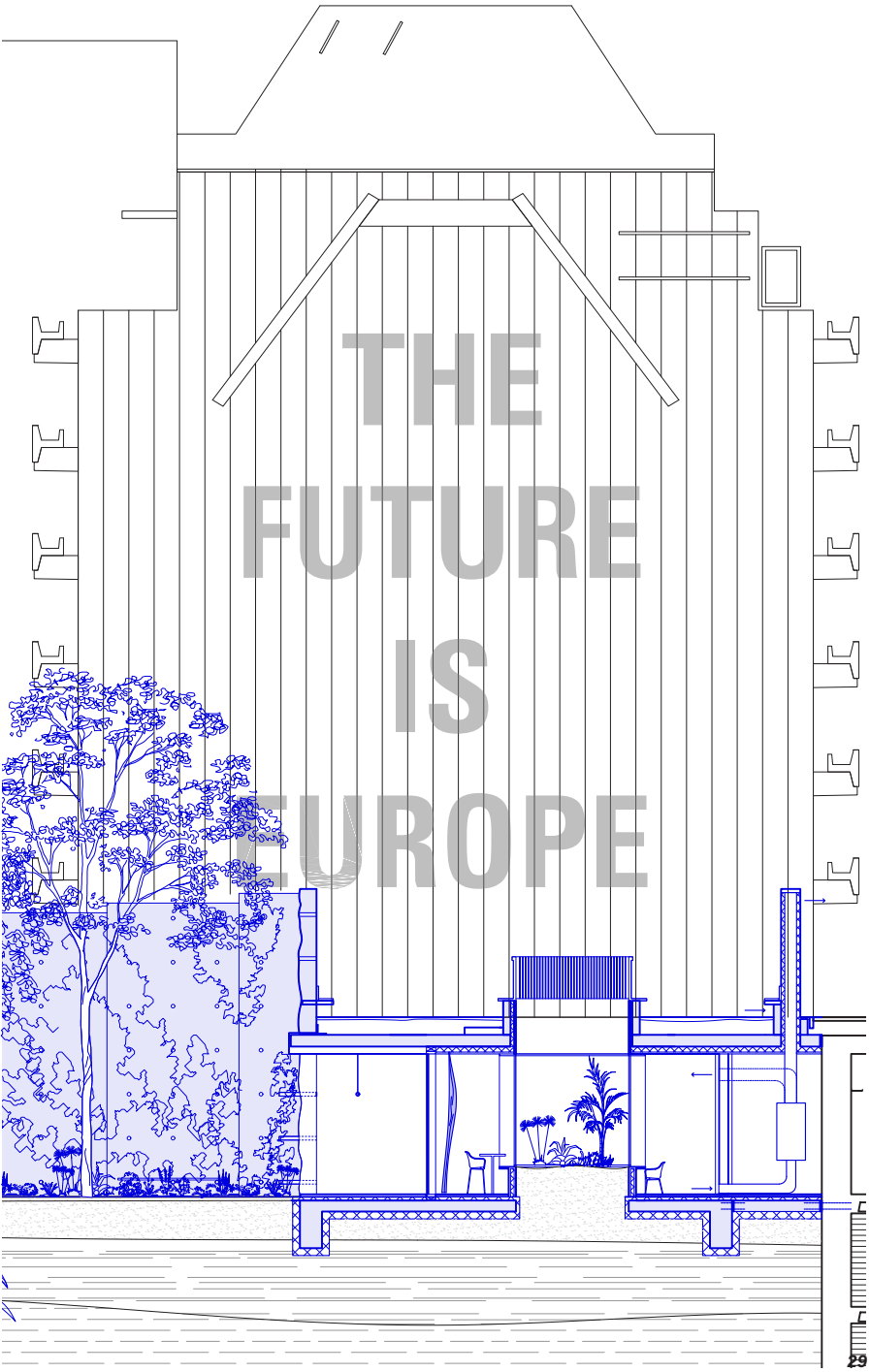
***Scale model 1.100***

The model shows the contrast between the formal outside and the improvised inside of the wall. The textures that are seen on the floor are also seen on the sides of the walls. The lightweight constructions are in contrast with the wall.



**Section Jacques de Lalaingstraat - Wetstraat**

The section shows the height difference between the EU Wetstraat and the residential Jacques de Lalaingstraat. The heights of the buildings and the wall refer to the measurements of the residential buildings.



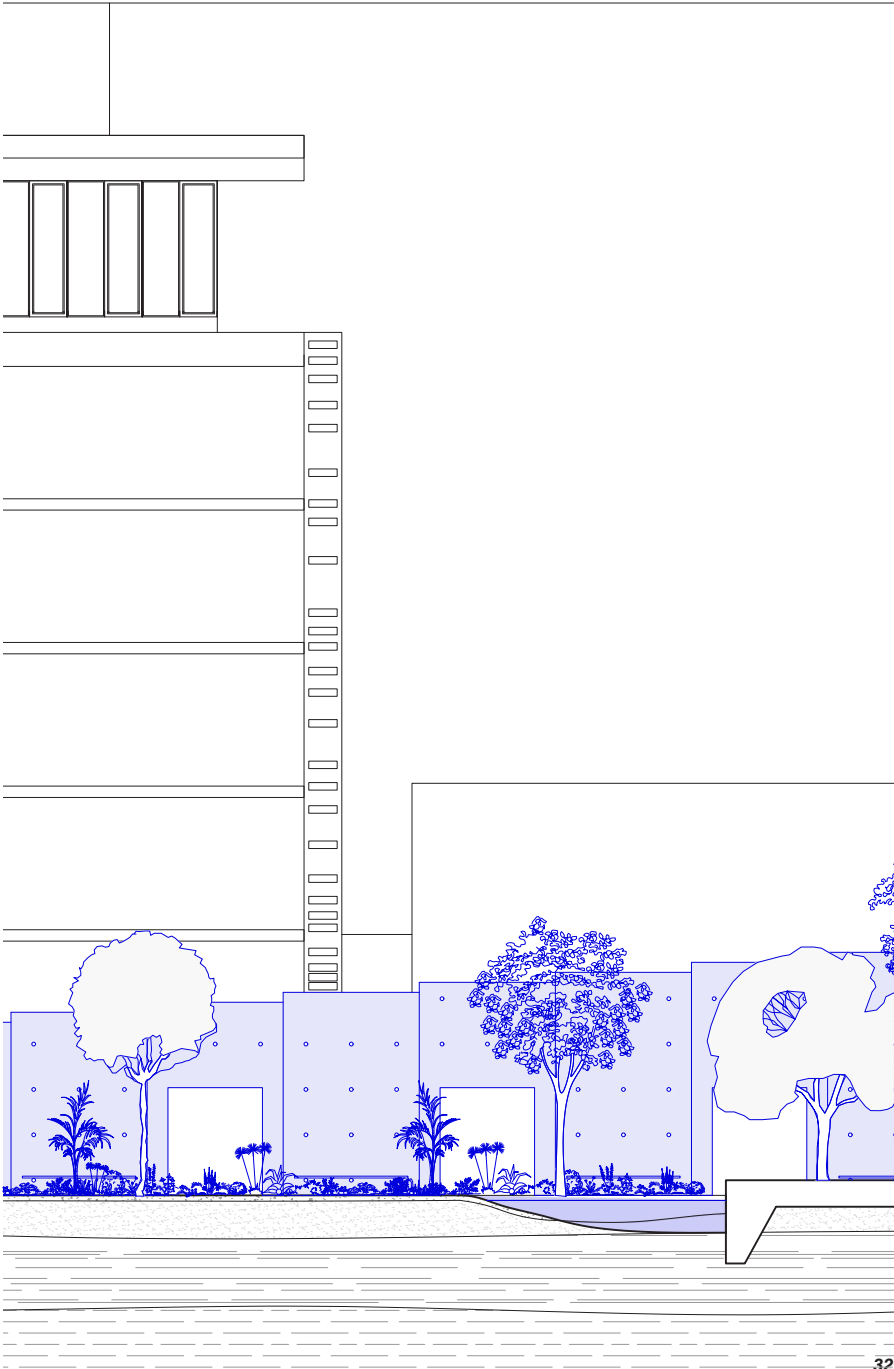


### **Square Wetstraat**

The square at the Wetstraat is accessible to everyone, and the patios show a peek inside the community center. The space is a threshold between the busy Wetstraat and the public garden, enclosed by the walls.





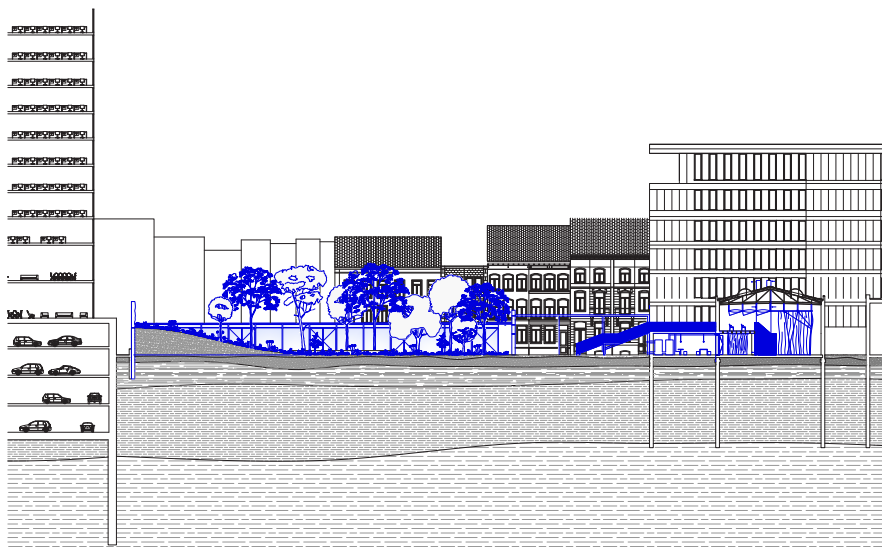




***Entrance garden***

The garden can be entered through the large aluminum doors. The image shows a look through the garden to the theater shed.

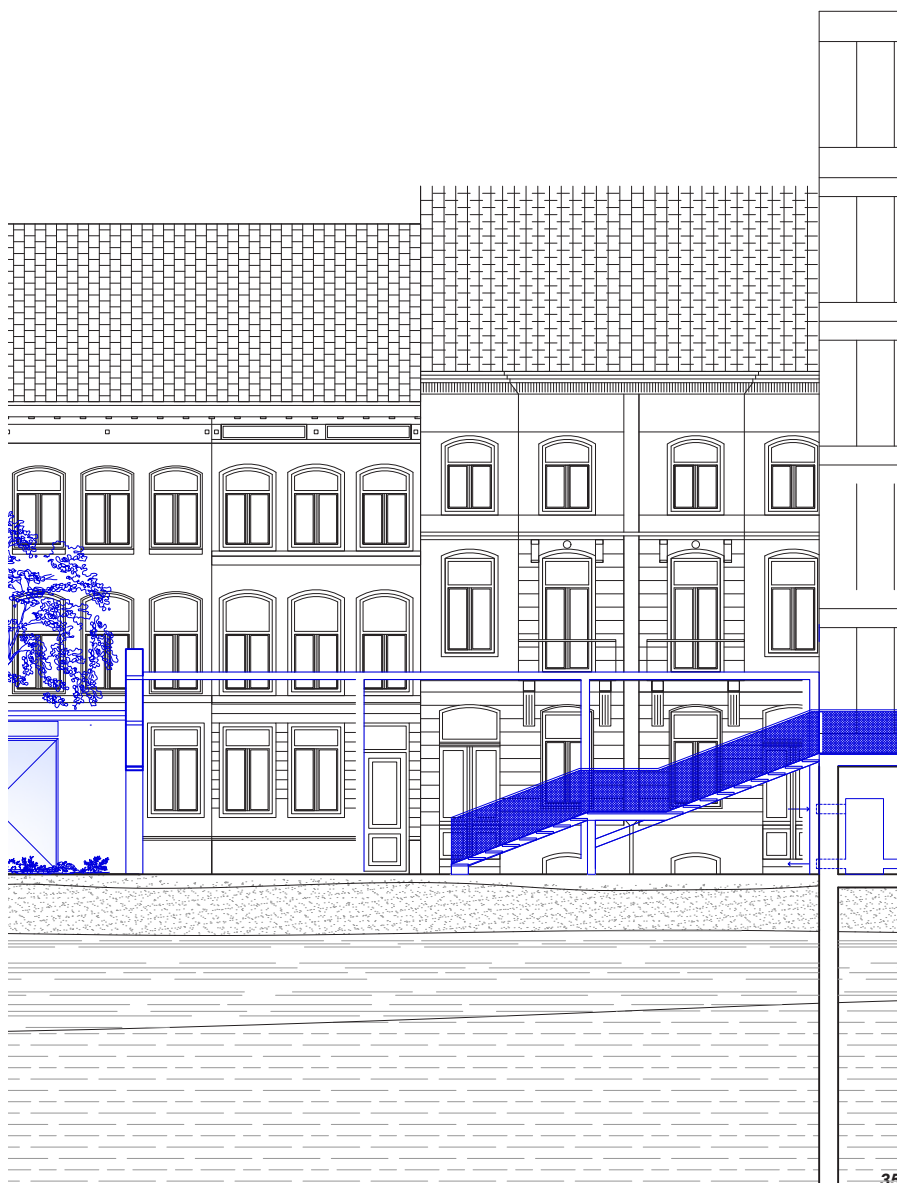




**Section East - West**

The added lightweight construction is seen in the section. The glasshouse offers an informal space for many events, whereas the pergola square is a space that is open 24/7.







***Metal doors***

The large aluminum doors protect the garden. During the birds' breeding seasons, the garden can be closed off.





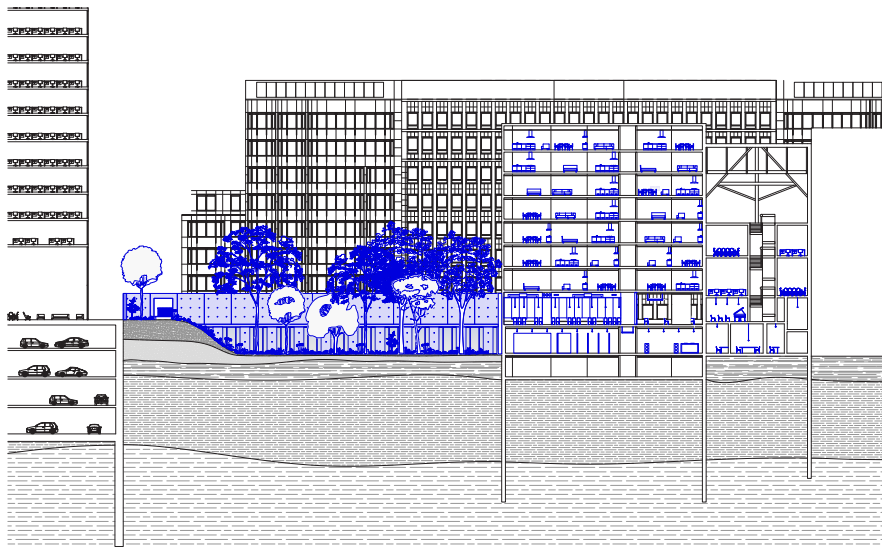






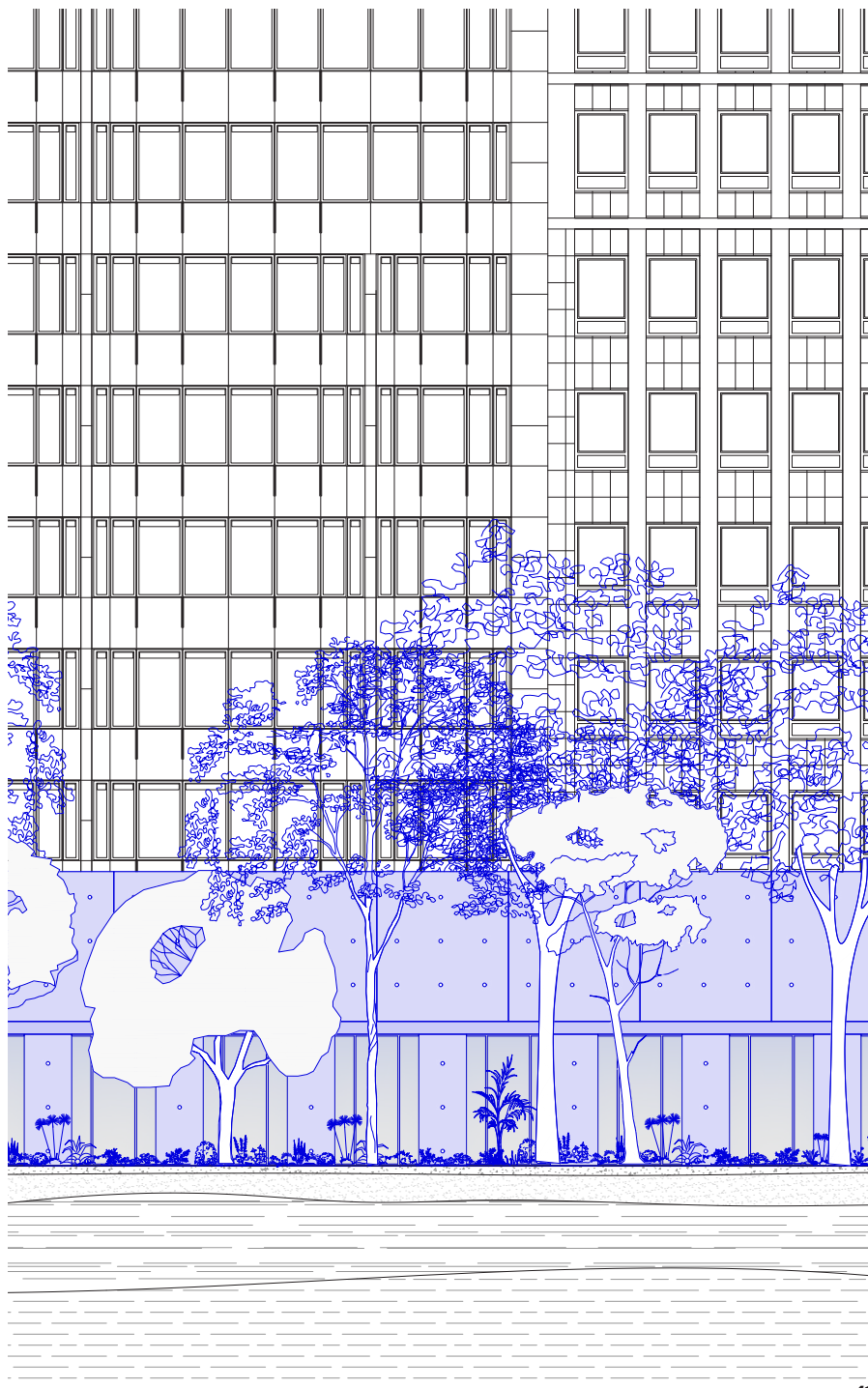
*Scale model 1:100*





***Section existing buildings - wall***

The community center is placed under the wall. The wall shows the small entrances at the Wetstraat: the small hole in the wall and the access via the office building.





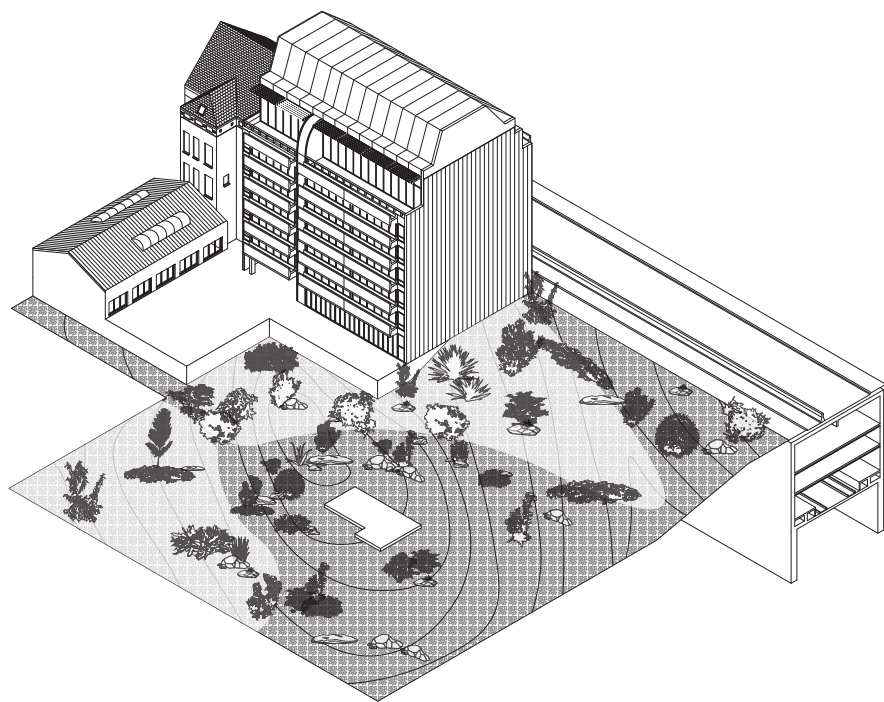
*View on community center*

The view shows the large-scale office buildings behind the wall. It shows the contrast between the formal and the informal.

## ***a wall***

The wall is the primary gesture of the project. It defines the terrain vague by seeing it as a walled garden. The walls are made on the side: the rocks that are found on the side, in combination with the sand, are both used in the cement. Instead of making the element in a factory, the molds will be placed on the terrain, wherefore they form according to the soil texture. The rough, textured side will then be faced to the garden, which refers to the soil condition. The flat, polished side will be faced to the city. Herefore, the wall will have an informal side to the garden, and a formal one that refers to the built environment.

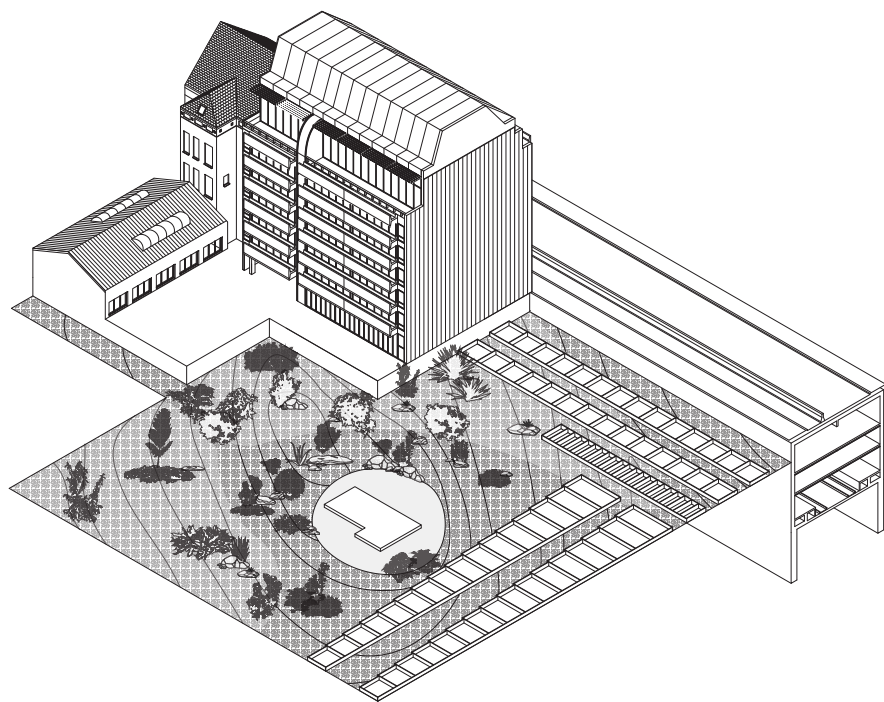
The wall is forming an infrastructure for the city. The holes are used to connect secondary elements, seen in buildings elements, but also in benches and light fixtures.



***Current condition***

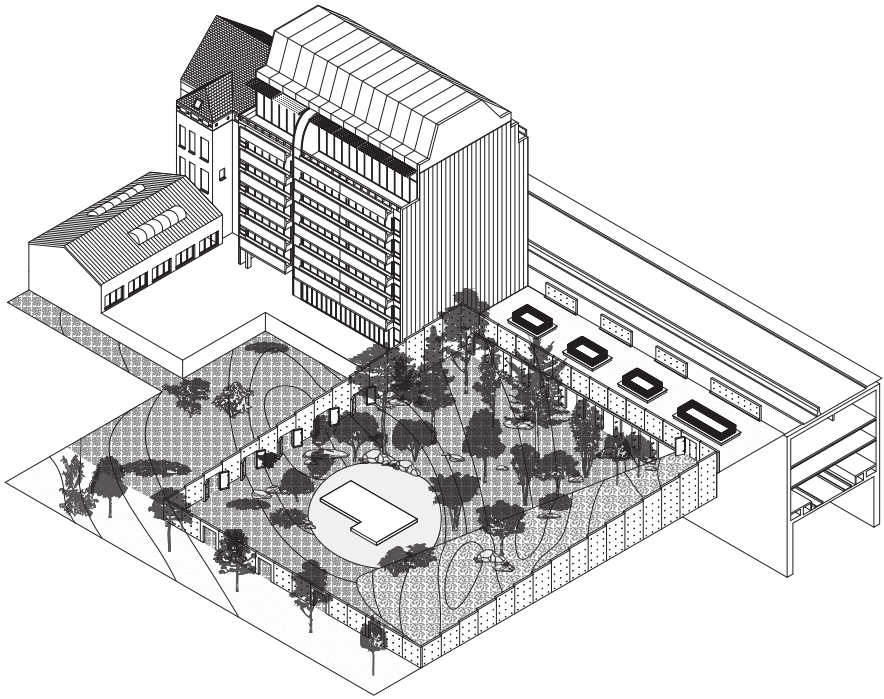
The ground is currently fenced off and not accessible to humans. Therefore, nature has a free ground. Trees and shrubs are growing freely on the soil, without any interference from humans.





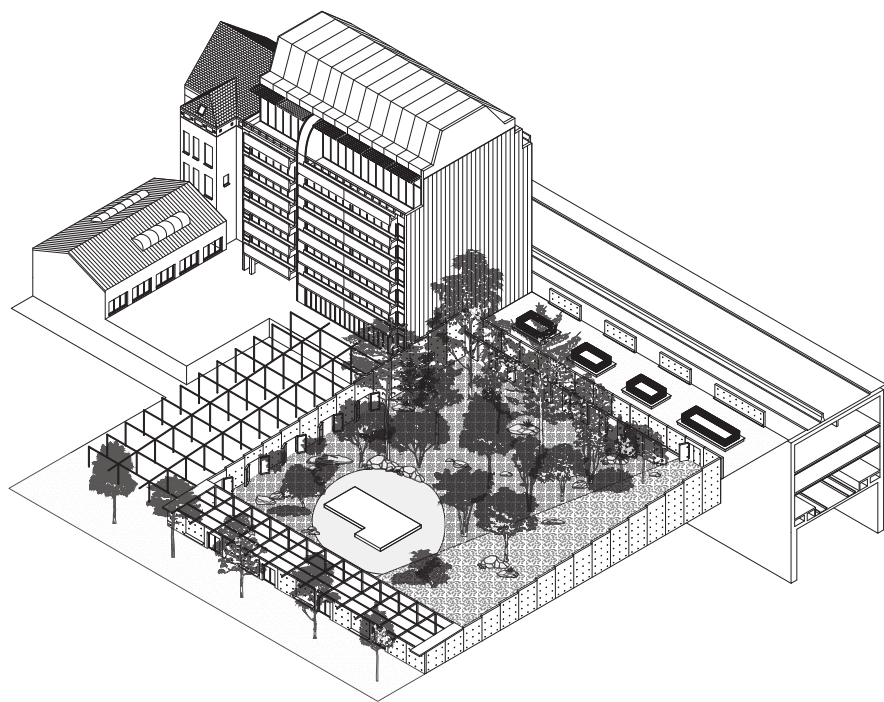
***Removal of ground and placement of casting elements***

The site will function as a factory for the production of the concrete wall elements. Casting elements are placed on the site. In these squares, the steel elements are laid with the in-situ concrete.



***When the walls are standing***

The walls are lifted and placed in the right spot. The community center under the public square is made, and the soil condition is protected.



***Secondary elements in place***

The wall is the primary gesture in the projects. New secondary buildings are added on both sides of the wall: a glass house and the community center are located around the public garden. The community center is connected to the vacant parking garage. A roofed space is added, seen in the pergola square, connecting the two existing buildings.

concrete:

1 m3 (2285 kg)

sand: 660 kg

gravel: 1300 kg

cement: 325 kg

1 m3 sand: 1500 kg

1 m3 gravel: 1900 kg

1 m3 cement: 1250 kg

1 element:  $3.5 \times 3.6 \times 0.4 = 5.04 \text{ m}^3$

sand: 3326.4 kg

gravel: 6552 kg

cement: 1638 kg

65 elements needed: 327.6 m3 concrete/ 748 566 kg

in need: 216 216 kg sand - 425 880 kg gravel - 106 470 kg cement

sand:  $400 \text{ m}^3 (\text{hill}) + 100 \text{ m}^3 \text{ pont} = 500 \text{ m}^3 \times 1500 \text{ kg} / \text{m}^3 = 750\,000 \text{ kg}$

gravel:  $200 \text{ m}^3 \text{ elements} + 800 \text{ m}^3 \text{ hill} = 1000 \text{ m}^3 \times 1900 \text{ kg} / \text{m}^3 = 1\,900\,000 \text{ kg}$

cement:  $250 \text{ m}^3 \times 1250 \text{ kg} / \text{m}^3 = 312\,500 \text{ kg}$

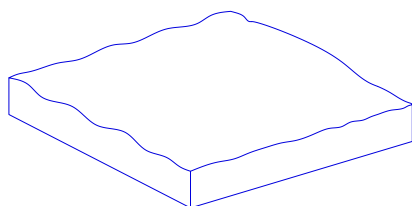
total weight: 2 962 000 kg

total mass concrete: 1296.5 m3

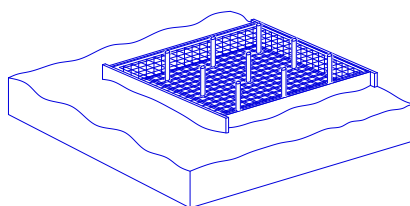
$1296.5 / 5.04 = 257,2$  concrete elements



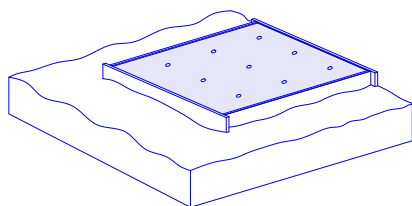
***a wall***



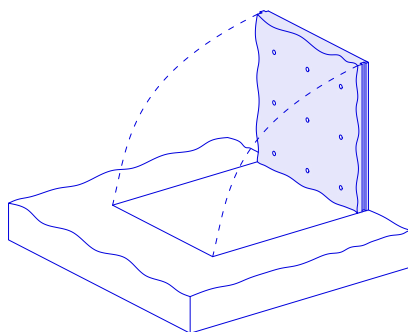
***1. soil in winter condition***



***2. addition of construction steel and mold***

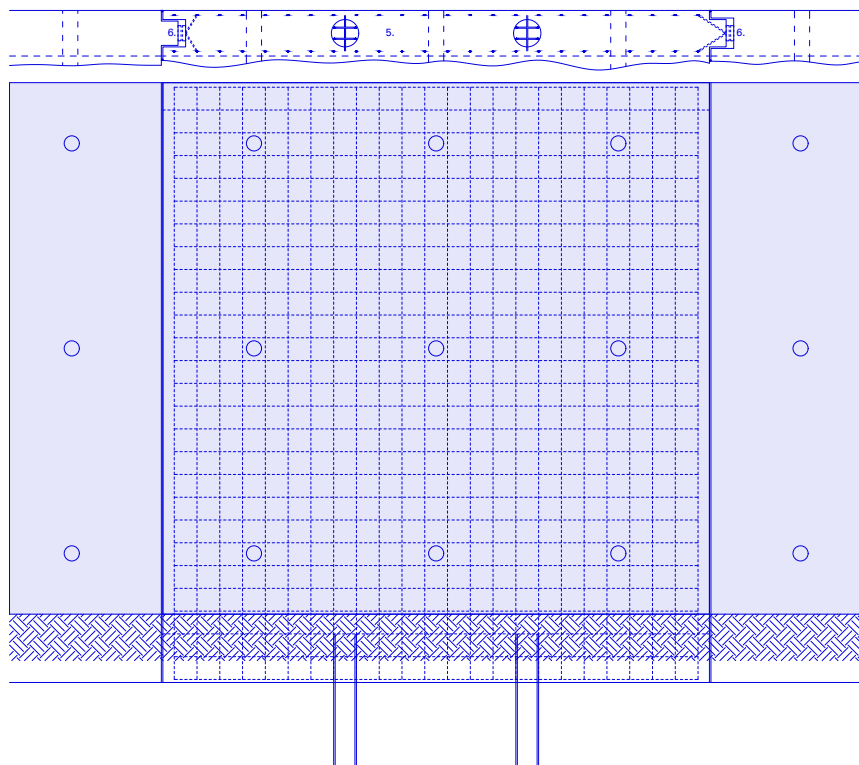


***3. on-site made concrete added to the mold***



***4. element is lifted from the ground and released from the mold elements***

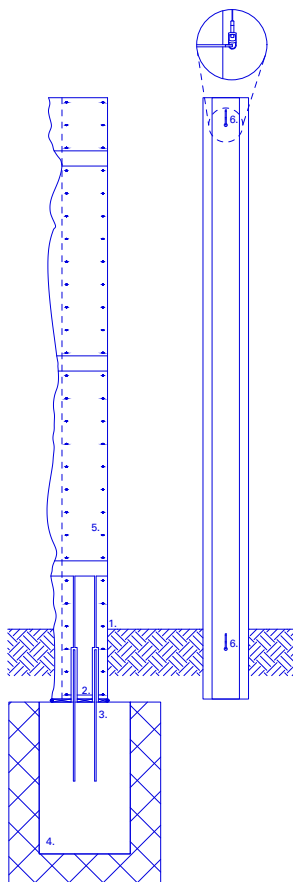
**a wall**



**Fragment drawing 1.10**

1. gain
2. mortar
3. cutting
4. shallow foundation beam
5. reinforcement mesh 150 mm/ 7 mm
6. lift anchors

*a wall*



**Fragment drawing 1.10**

- 1. gain
- 2. mortar
- 3. cutting
- 4. shallow foundation beam
- 5. reinforcement mesh 150 mm/ 7 mm
- 6. lift anchors

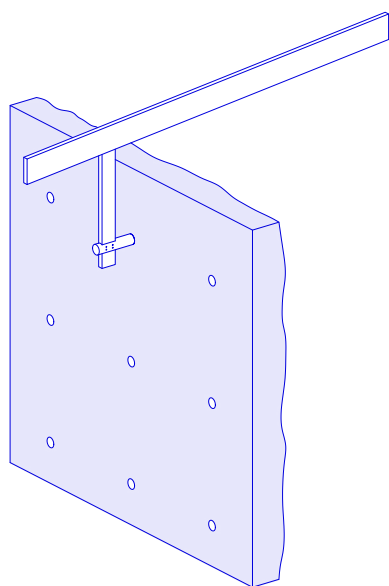


*a wall*

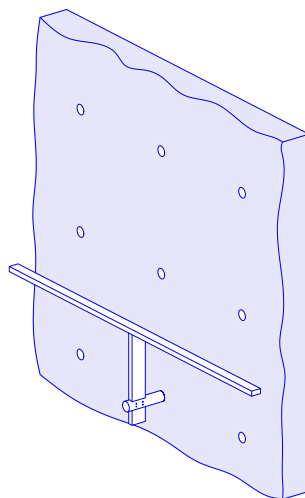


*Mock-up model scale 1:10*

***a wall***

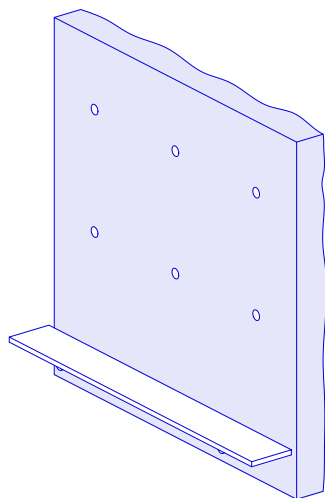


***Wall as construction element***

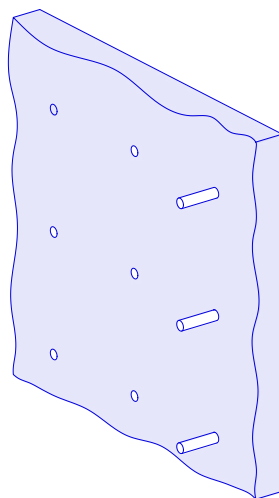


***Wall as balustrade***

*a wall*



*Wall as seating element*



*Wall as planting element*



*Scale model 1.25*



*a wall*



*Scale model 1.25*

## ***a soil condition***

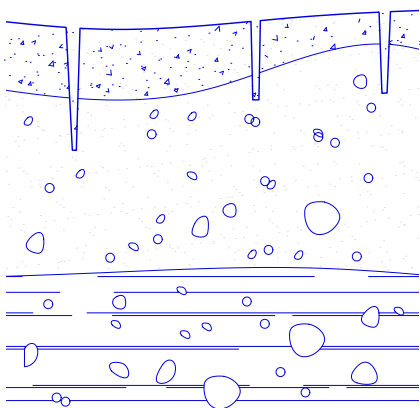
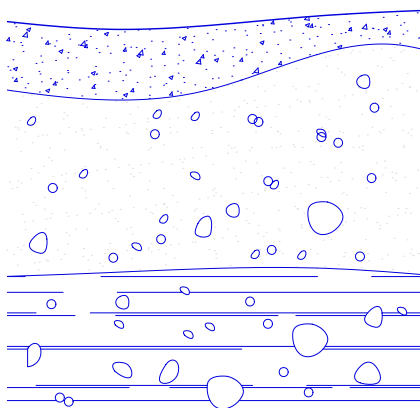
The terrain is currently cut off for humans; therefore, non-humans are thriving on the soil. Seeds that come with wind and are able to grow freely. The plants that are growing on the terrain are made through natural selection. The method of natural selection is also used within the creation of the micro forest, which will define the former terrain vague.

There are three steps within the creation of a micro forest; seedlings are planted in a high density in the soil (3/ m<sup>2</sup>) here, the ones that are most willing to grow are coming out. With this method, most trees will be mature within 20 years. Then, the ecosystem works as optimal.

The garden offers space for many actors, both human and non-human. The four non-human actors are insects, soil fauna, birds, and mammals. The concrete walls offer sheltering for birds. The spontaneous vegetation offers a space for insects and other animals to hide in, and the island provides a non-accessible place for humankind.

Larger trees will grow at the back of the garden (Wetstraat); therefore, the entire garden will get enough daylight. The two added buildings, the glasshouse, and the community center, are connected to the garden.

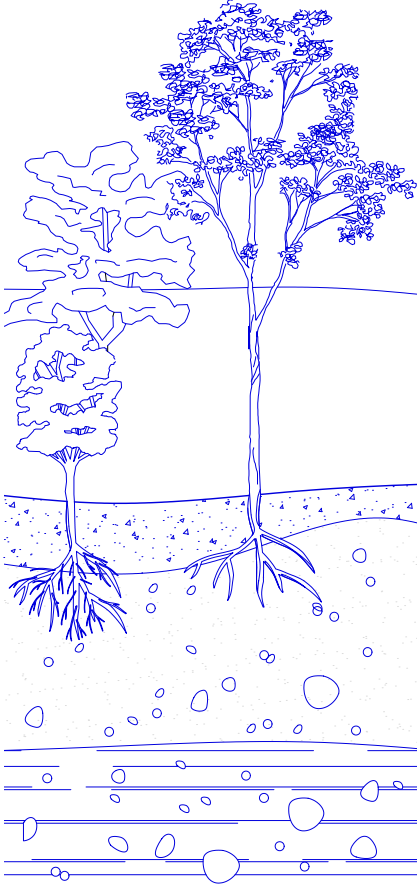
**a soil condition**



**0. current vegetation**

**1. planting tree seedlings (3/ m2) in a random pattern**

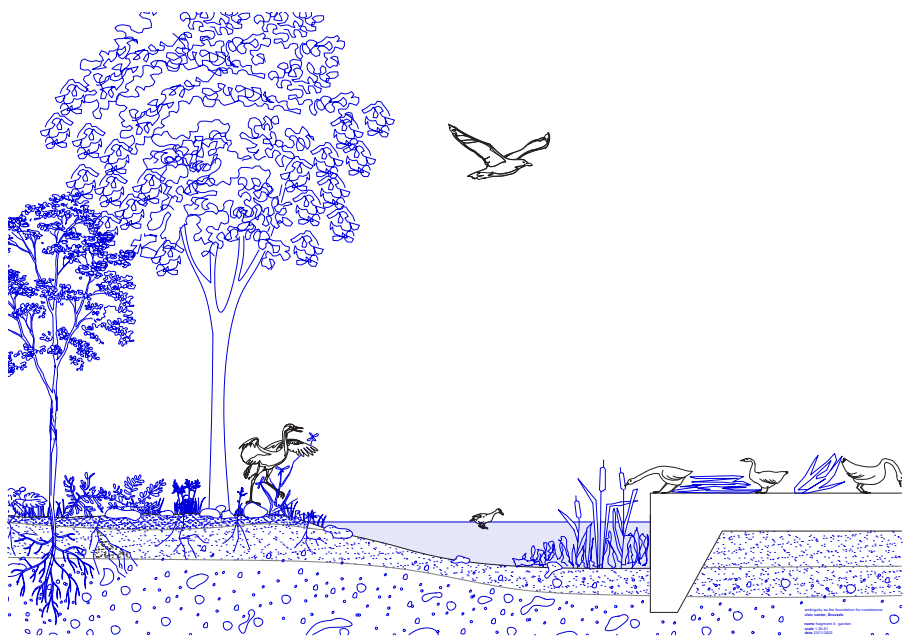
**a soil condition**



**2. natural selection among the seedlings allows the most adapted ones to develop the quickest**



**3. after 20 years, most trees are mature and the ecosystem works optimally**



*A landscape for non-humans*



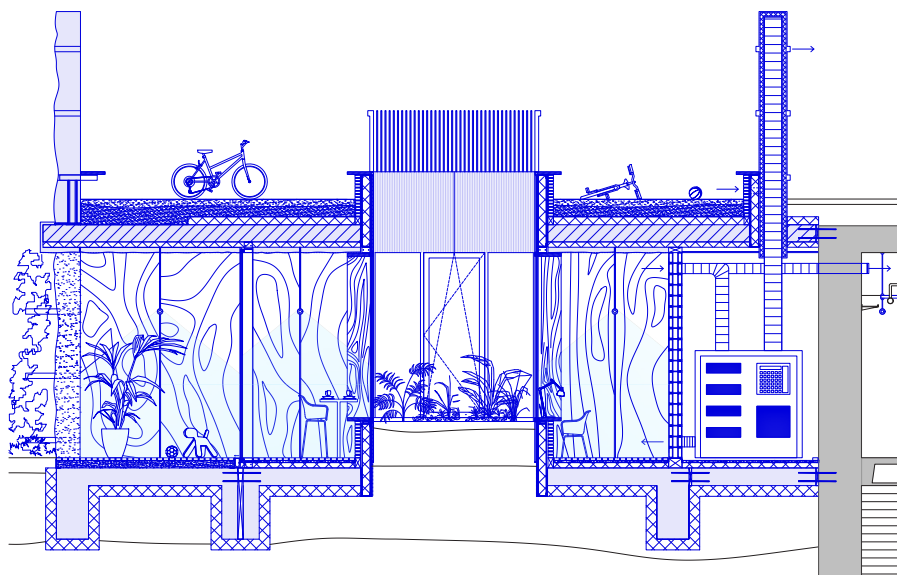
## ***the community center***

The community center is defined by its direct connection to the garden with its glass facade, and to the city with the patios inside. The center is therefore forming the threshold between the city and the public garden. The community center connects the parking garage to the garden, creating an array of various spaces. On top of the community center, a new public square is made. The square is made inbetween the concrete wall and the other walls of the square. With these, the square becomes a filter between the busy Wetstraat, and the quiet garden.

The layout of the community center is made of two long corridors on both the garden side and the parking garage side. Along the corridors, living rooms are made that are defined by the patios. These rooms have different functions: a kitchen, a reading room, a music room, and a place to study. The rooms form the connection between the garden and the parking garage.

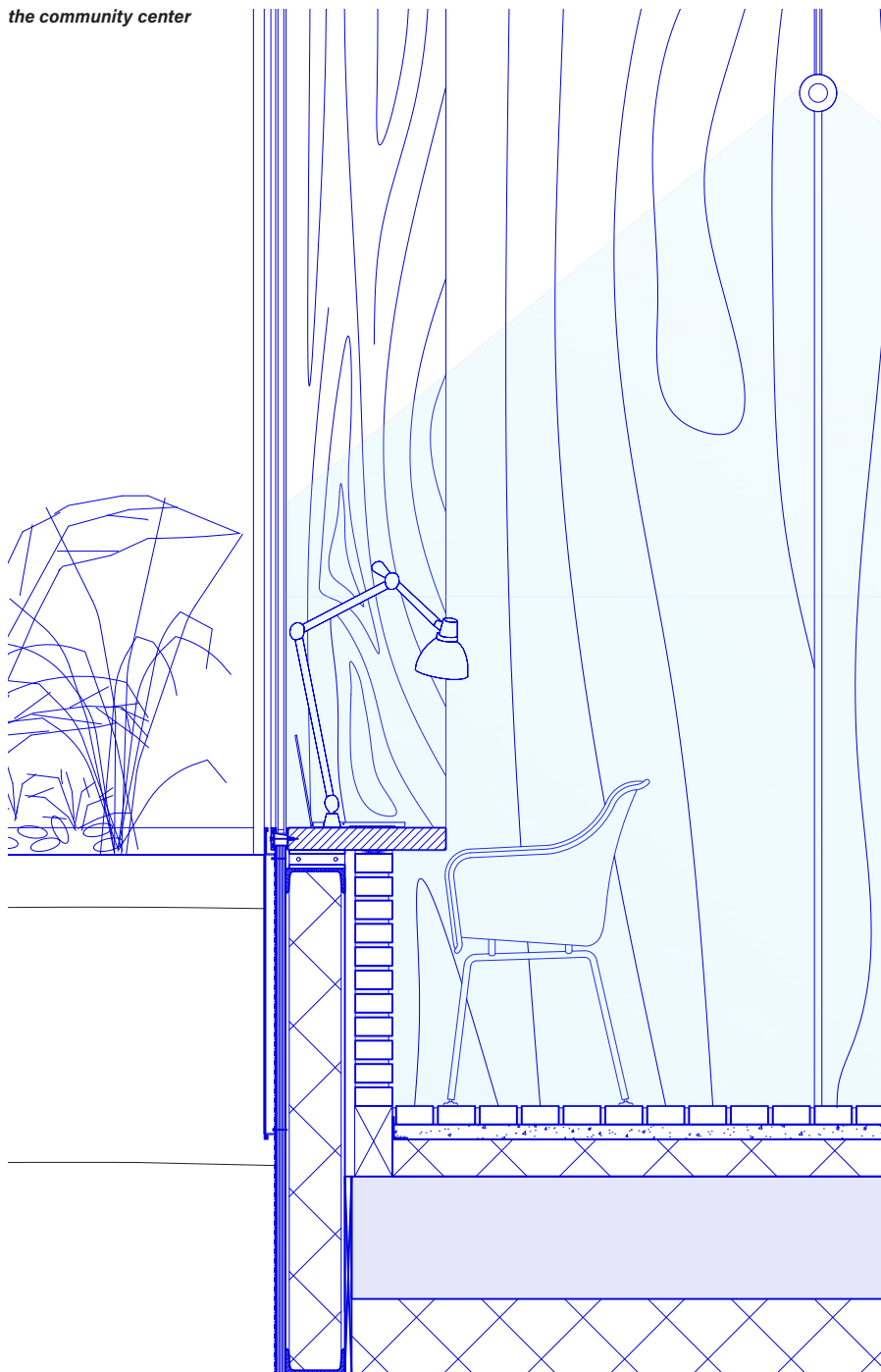
The technical space is placed inbetween the community center and the parking garage; therefore, the installations can be used for both spaces. The community center offers an active climate system, where both the supply and exhaust of air are mechanically regulated.

The patios give a peek inside the community center from the public square. The square is paved with the same gravel that is used around the project.



**Section 1.20, community center**

The community center is forming a connection between the garden and the public parking garage. The threshold between the garden and the community center is the roofed space. The patios create a link to the garden. Inbetween the parking garage and the community center, an extensive technical space is made for both climatizing the parking garage and the community center.





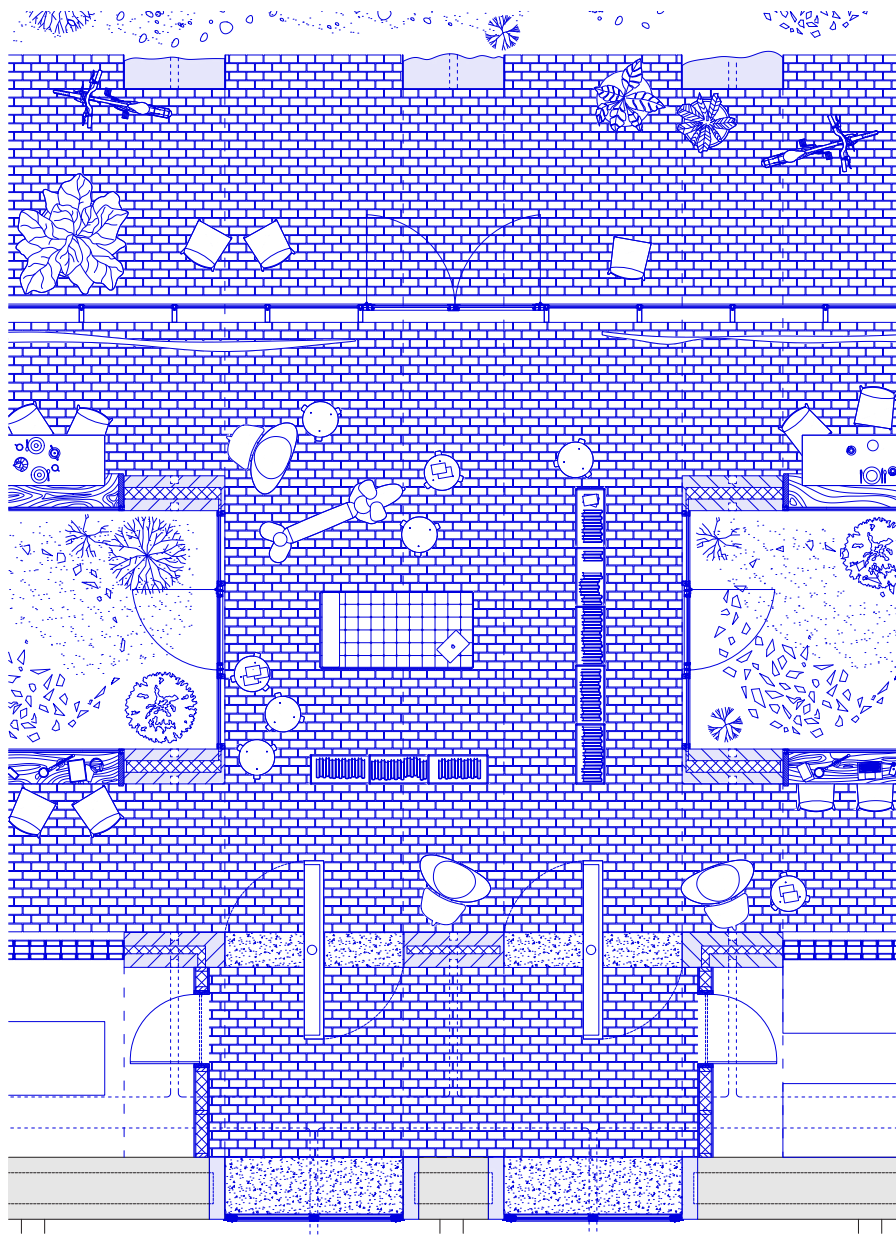
***An array of living rooms***

The patios form a division in the spaces. In between the patios, living rooms are made. The long corridor is seen both inside and outside.



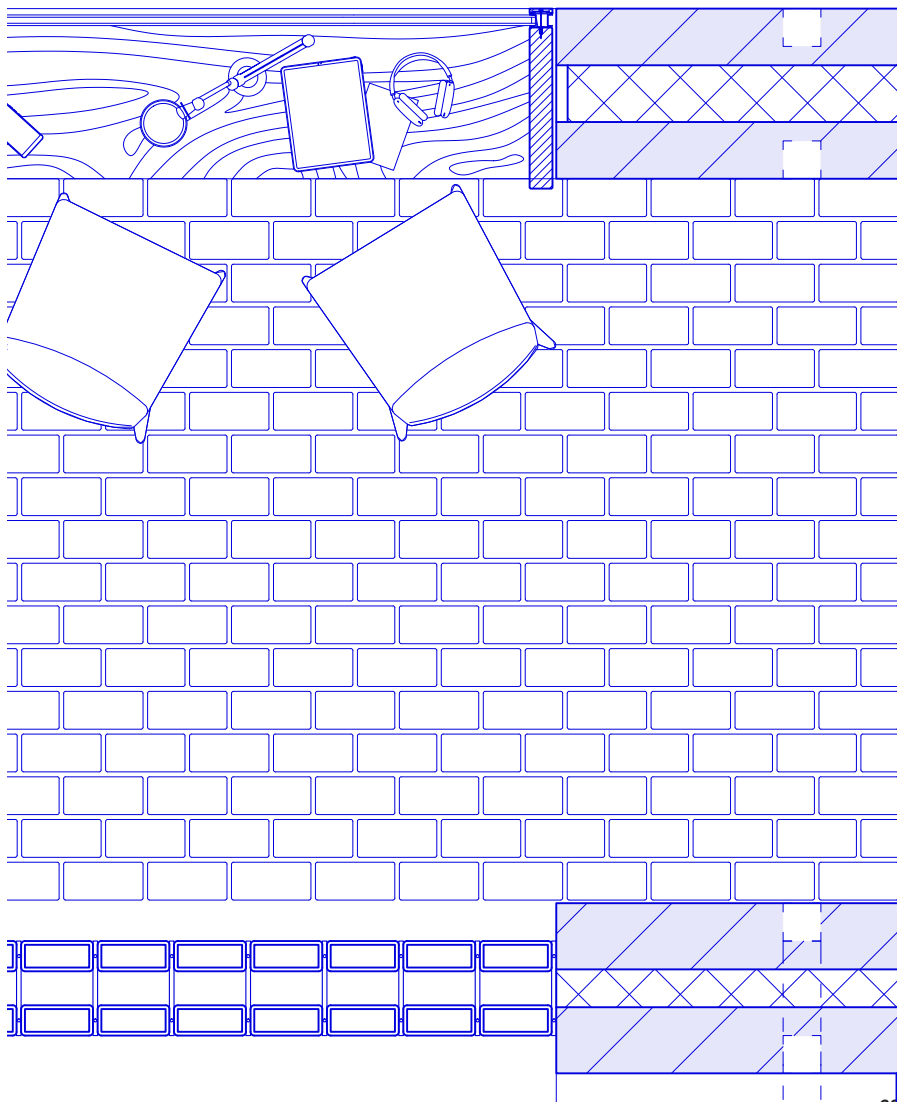
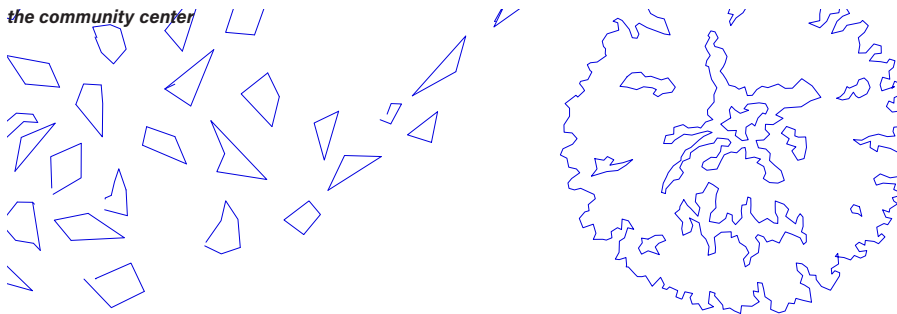






**Floorplan 1.20**

The floorplan shows the reading room inbetween two patios. The space is connected to the garden and the parking garage, which can be accessed by the two large pivoting doors.



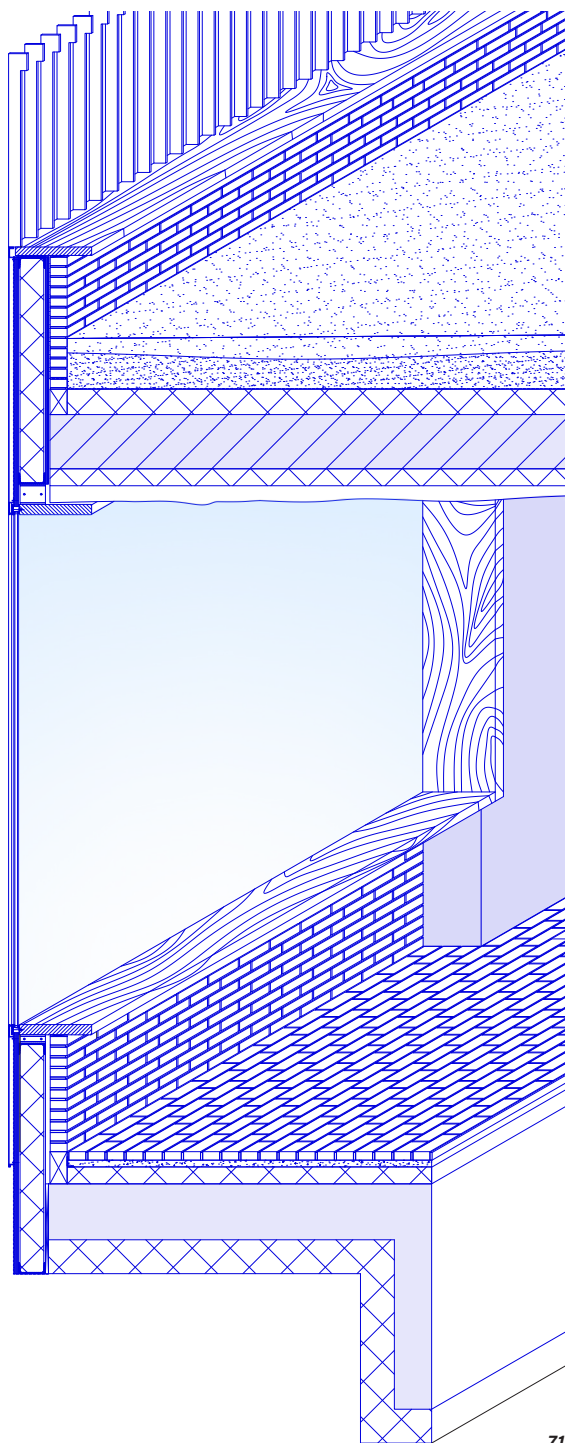


*View on reading space*

In the back of the reading room, two aluminum pivoting doors are seen. These doors connect to the parking garage.







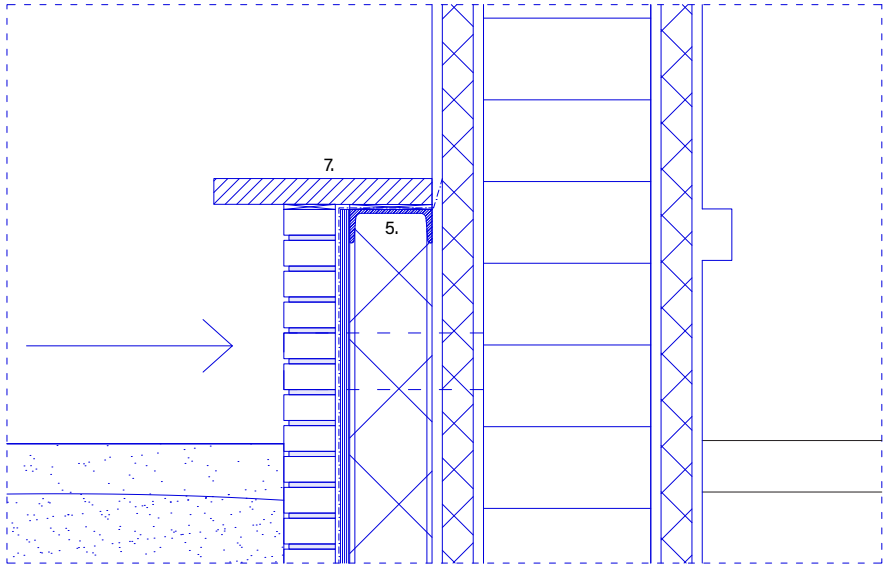




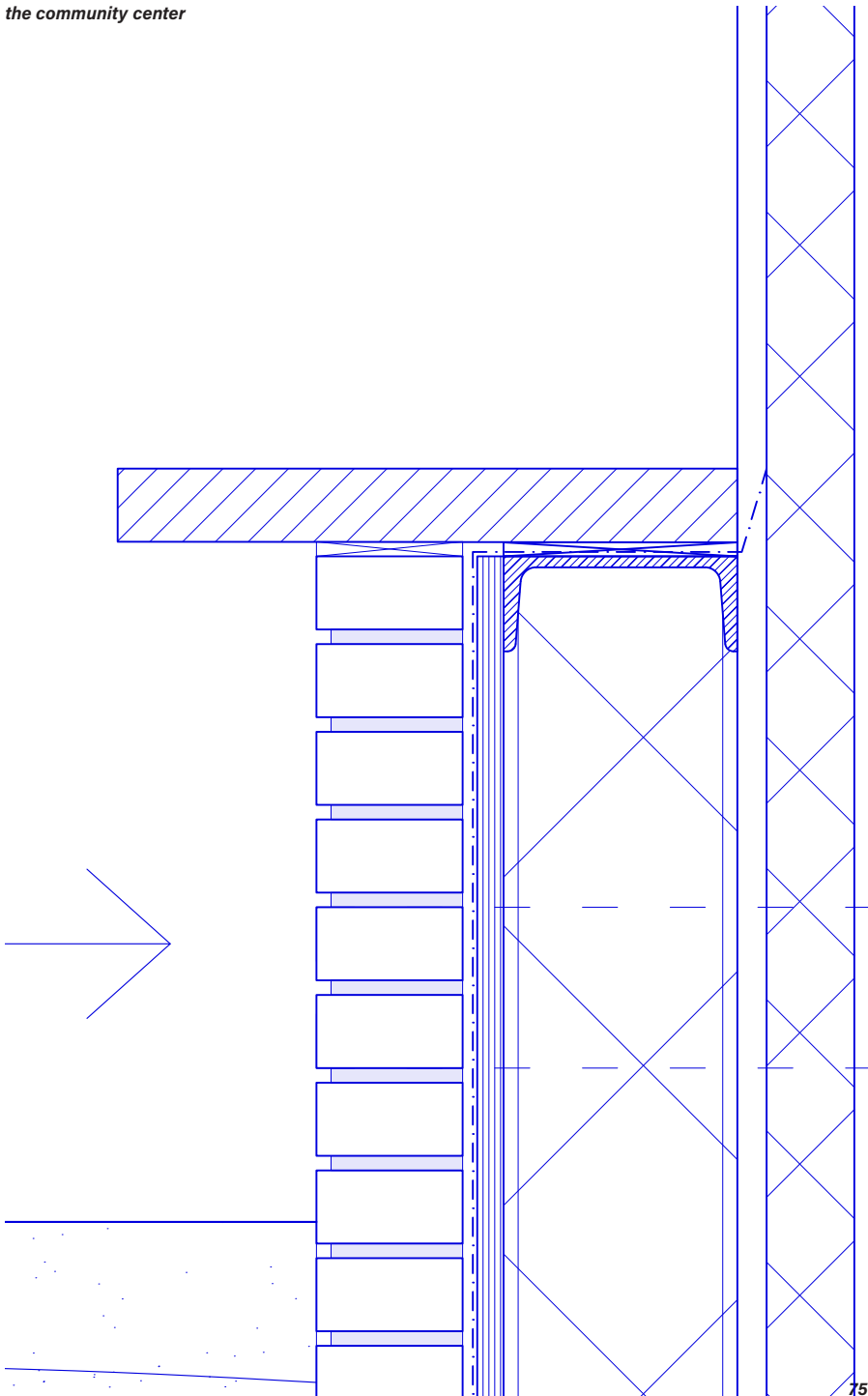
***A quiet study space***

The windows on both sides of the patios form a bench or a desk.

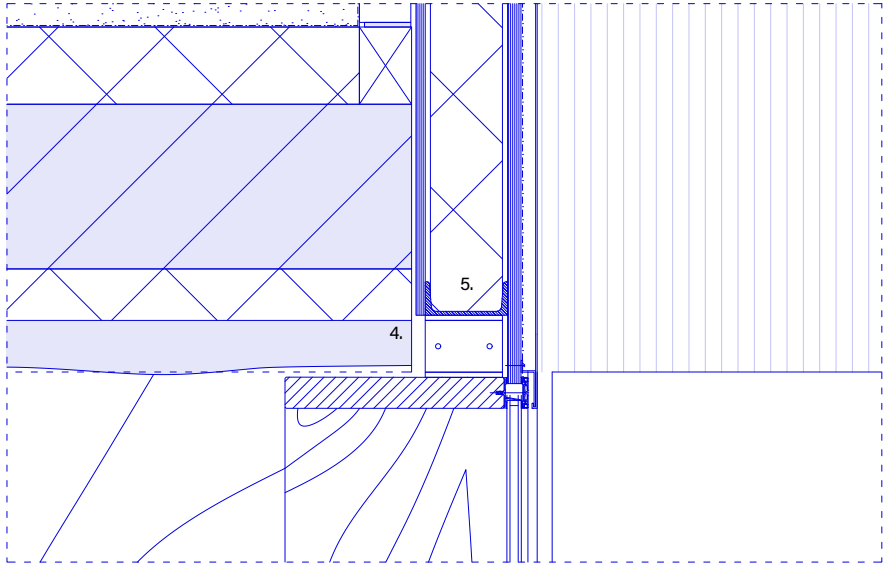




1. prefab wall construction: structural steel of prefab floor attached to prefab wall element, closed off with concrete.
2. storey floor: watertight membrane, 320 prefab floor elements, 100 mm isolation inside (200 mm outside, 1000 mm over thermal shell), waterproof membrane, gypsum ceiling made from imprints of wall elements.
3. aluminum curtain wall system: attached to main construction, horizontal elements hidden in ceiling and floor.
4. wooden curtain wall system: extra deep mullions (430 mm), used as a seating element or desk element.
5. steel element: UMP 160 steel isolated frame, attached to main construction elements, finished with bricks on the interiors and aluminum cladding on the exterior.
6. flooring: flat foundation, in-situ made (200 mm isolation), outside 140 mm cement - 50 mm bricks, inside 100 mm isolation, leveler (30 mm), bricks (50mm). (flooring outside equipped with gutter at entrance)
7. outside seating element: wooden seating panel and steel balustrade attached on UMP 160 steel frame.
8. construction attachment: connecting structural steel element between (existing) concrete structure and added element, chemical anchored.



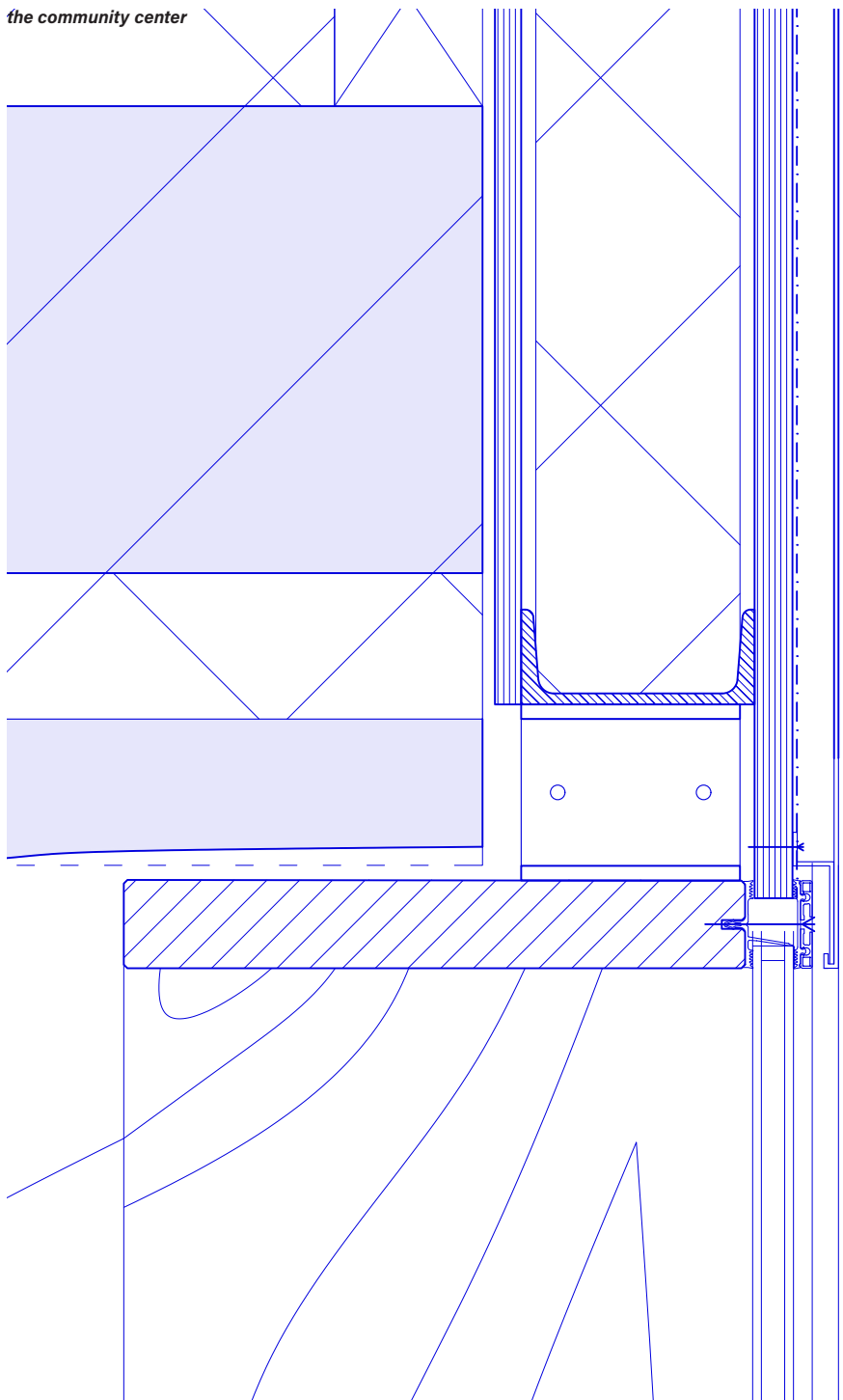


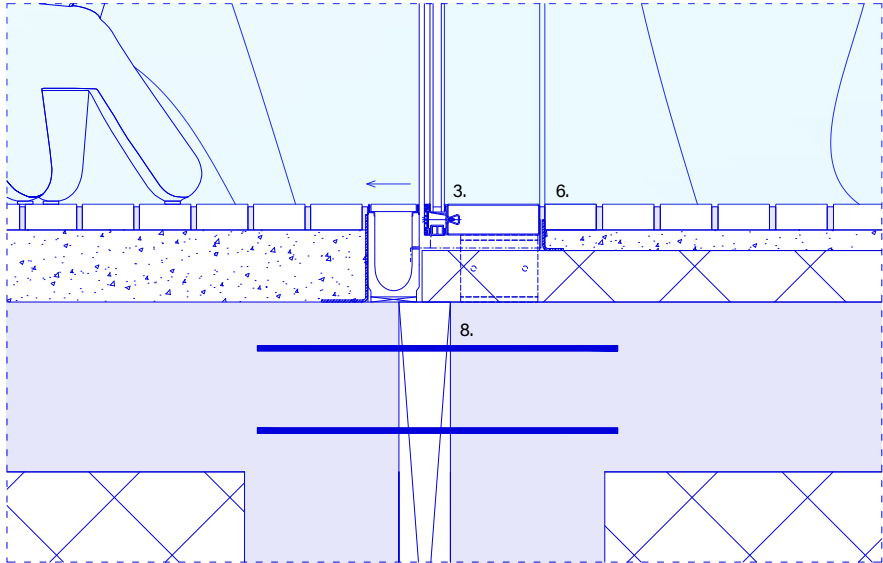


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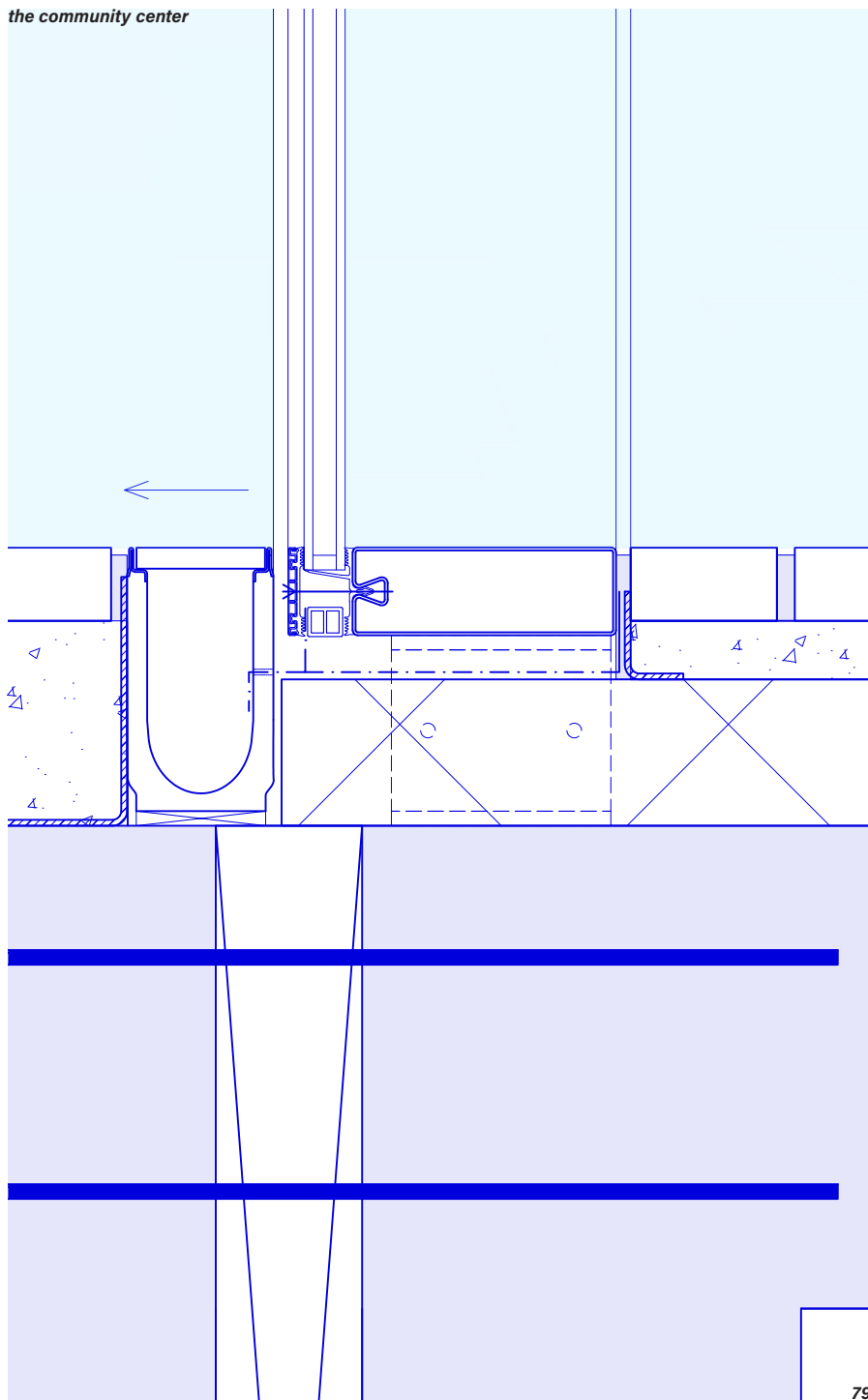


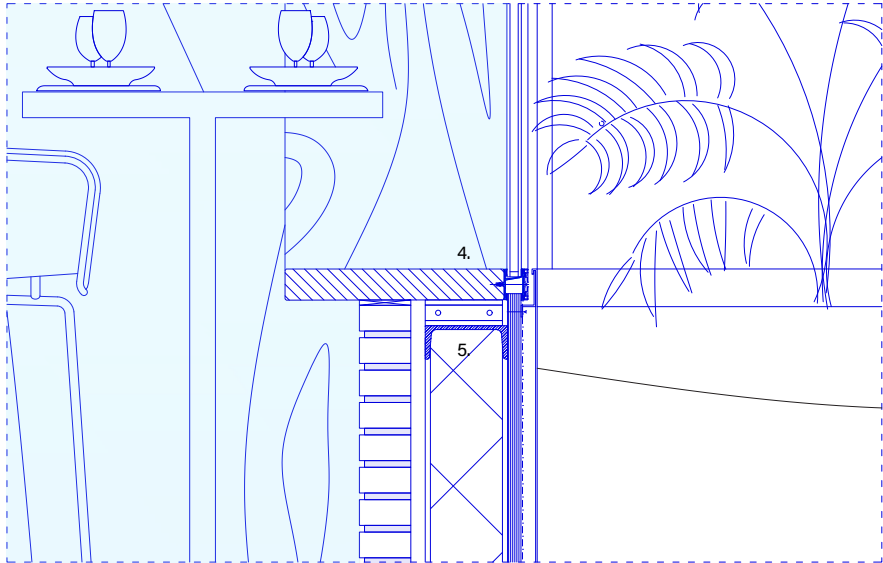
*the community center*



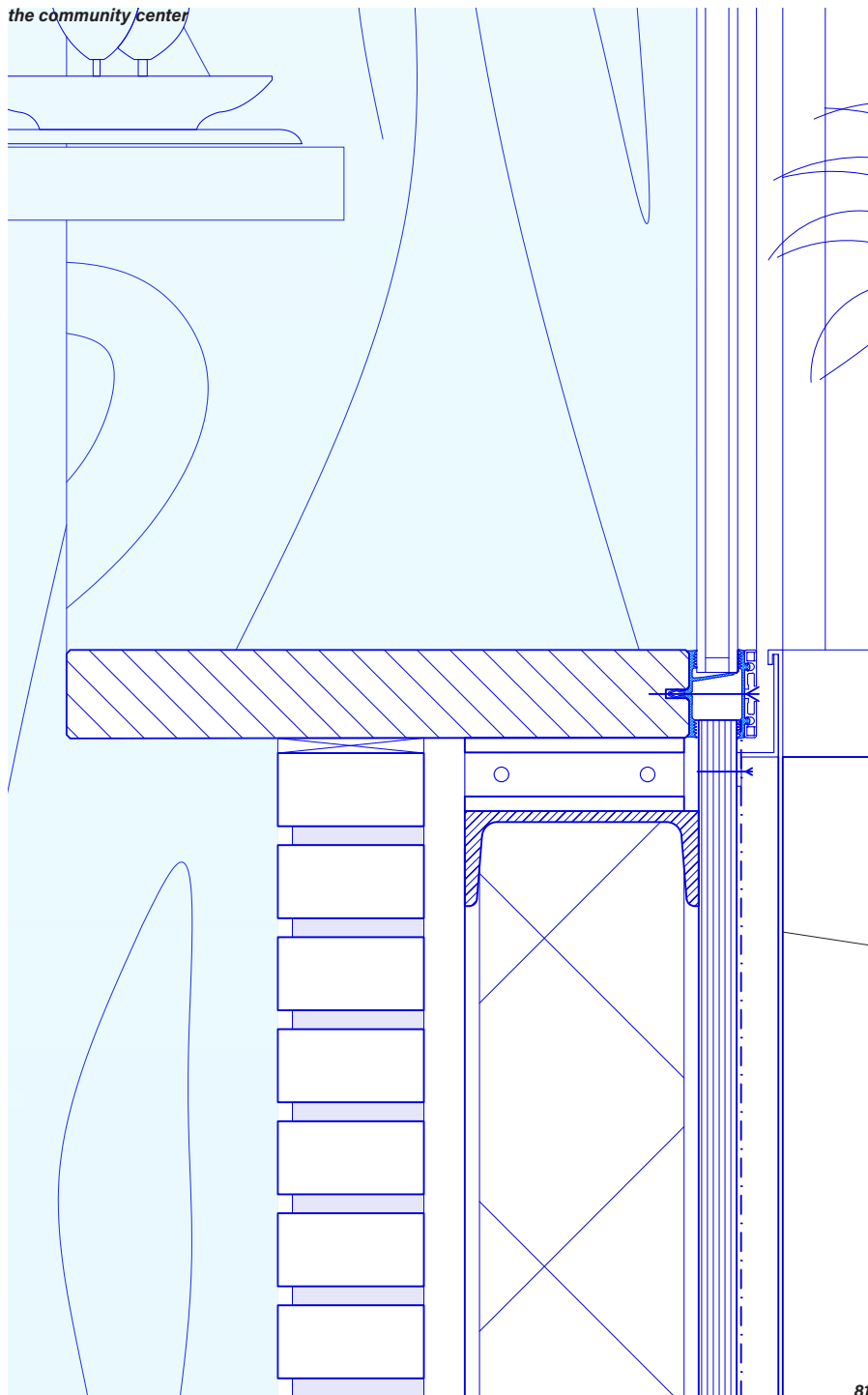


1. prefab wall construction: structural steel of prefab floor attached to prefab wall element, closed off with concrete.
2. storey floor: watertight membrane, 320 prefab floor elements, 100 mm isolation inside (200 mm outside, 1000 mm over thermal shell), waterproof membrane, gypsum ceiling made from imprints of wall elements.
3. aluminum curtain wall system: attached to main construction, horizontal elements hidden in ceiling and floor.
4. wooden curtain wall system: extra deep mullions (430 mm), used as a seating element or desk element.
5. steel element: UMP 160 steel isolated frame, attached to main construction elements, finished with bricks on the interiors and aluminum cladding on the exterior.
6. flooring: flat foundation, in-situ made (200 mm isolation), outside 140 mm cement - 50 mm bricks, inside 100 mm isolation, leveler (30 mm), bricks (50mm). (flooring outside equipped with gutter at entrance)
7. outside seating element: wooden seating panel and steel balustrade attached on UNP 160 steel frame.
8. construction attachment: connecting structural steel element between (existing) concrete structure and added element, chemical anchored.

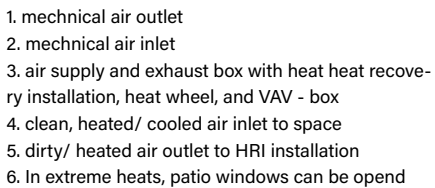




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- 82

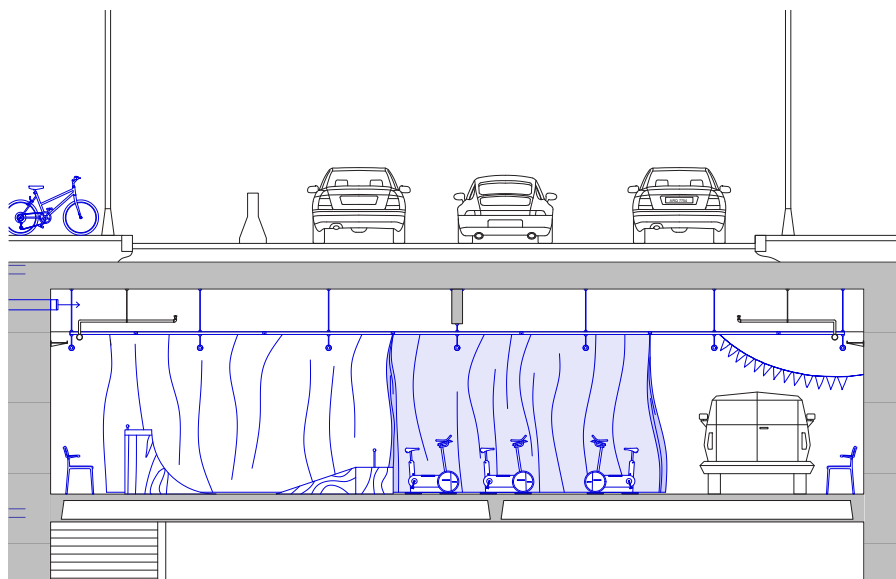
## ***the parking garage***

The parking garage is seen as a free space that came with the plot. The garage was abandoned seven years after its construction. Since the parking garage did not have a facade nor a good entrance, the space was impossible to use as a public infrastructure. Due to the direct connection that is made between the garage and the community center, a public character is created.

The parking garage is touched as little as possible, the holes in the concrete wall, combined with the technical ceiling, are the only additions. The holes in the walls are refined and are seen as a technical challenge—the difference in materiality and detailing in showing the contrast between the existing and the newly made. The technical ceiling offers a sense of privacy in the place. Large, insulating curtains can be used to create an intimate space.

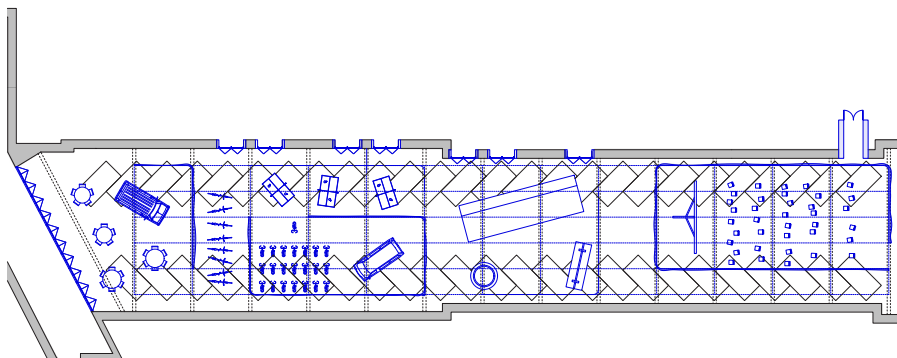
The parking garage is open to the public and can be used for different events, both temporal and permanent. The floorplan shows the space in use as a skating park or as a place where once every week, a sports class can be given. Since the space is cut off from the rest of the urban fabric, challenges like noise reduction are not playing a role here, which means that the garage can also be used as a place for loud events. The parking functions of the garage also remain intact, which means that when there is a need for parking space, the garage can be used for this function again.

The existing dynamic pressure installation that is placed in the parking garage is still in use. The community center offers large spaces for the climate installations, which are functioning in the community center itself and the parking garage.



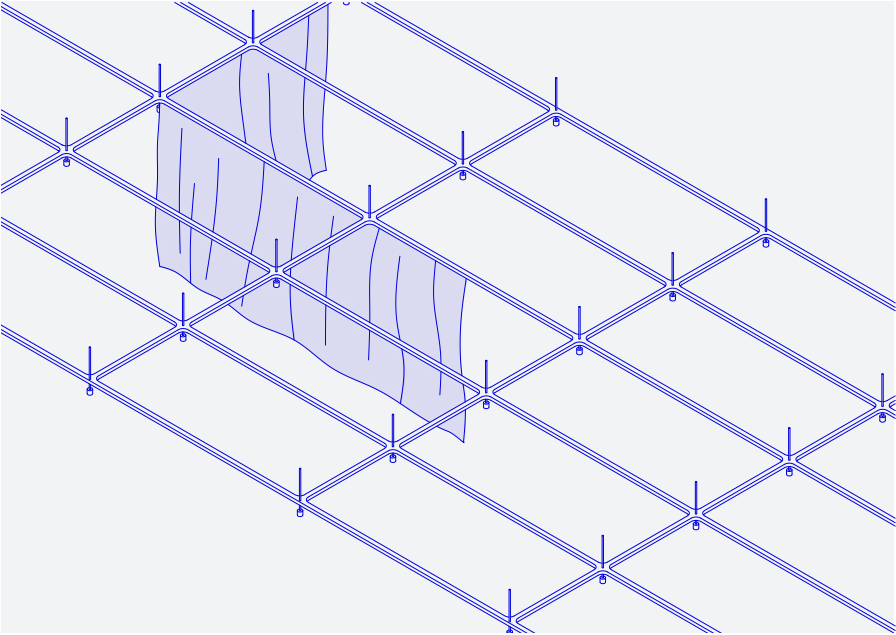
**Section 1.20, a public infrastructure**

The parking garage was abandoned for many years. With the addition of simple means, the space is given back to those who are in need of it. The curtains form walls between different rooms.



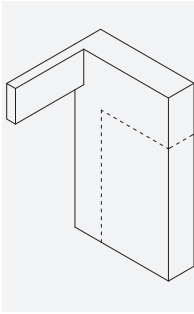
***Floorplan 1.100, the addition of the minimum***

Nothing is taken out of the space, only holes are made and the technical ceiling is added. The ceiling consists of a railing for insulation curtains, and a light fixture system.

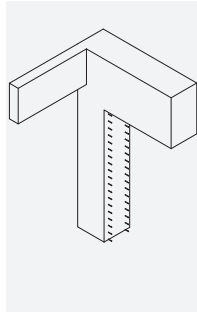


*The ceiling structure*

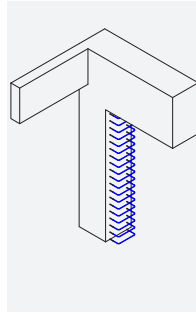




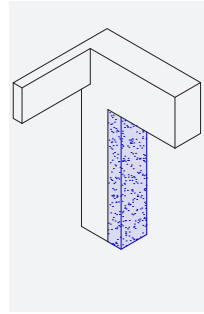
**1. projecting hole in the wall**



**2. cutting through steel and exposing steel structure**



**3. connecting existing steel elements**



**4. reinforce with concrete**

***How to make a hole in a concrete wall***

Connections are made between the parking garage and the community center. The parking garage is constructed as a heavy infrastructure, wherefore cutting holes in these walls needs to be done carefully.



***A space for improvisation***

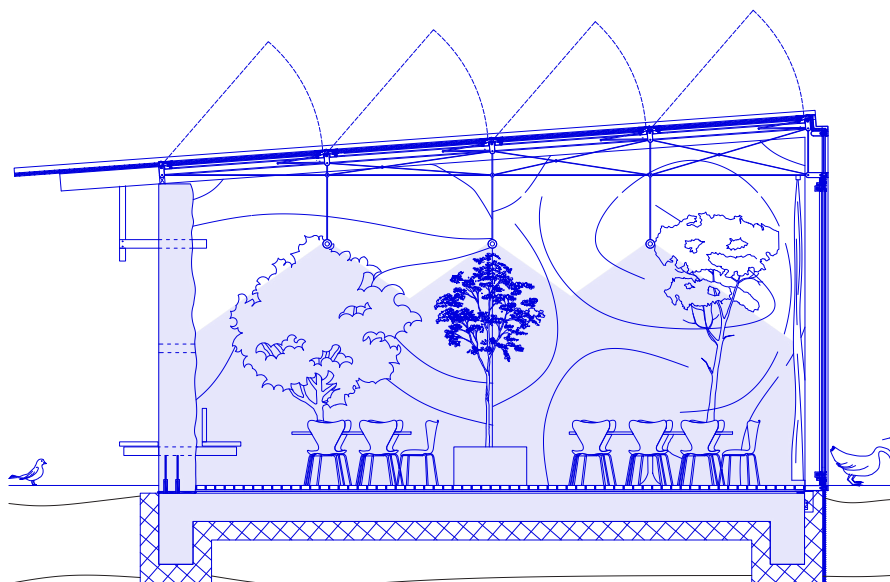
The view shows how the parking garage can be used for simple events, like painting classes.

## ***the glasshouse***

The lightweight structure, in combination with the refined technical detailing, is in contrast with the rough concrete wall. The glasshouse shows a contrast between the refined materials that are used and the roughness that defines the space. The brick flooring and the direct connection to the garden give the space a domestic and informal character. The height of the glasshouse refers to the residential buildings on the other side of the Jacques de Lalaingstraat. The glasshouse itself is also seen as a threshold between the city and the garden. The small, public square in front of the glasshouse is defined by large trees and the gravel pavement.

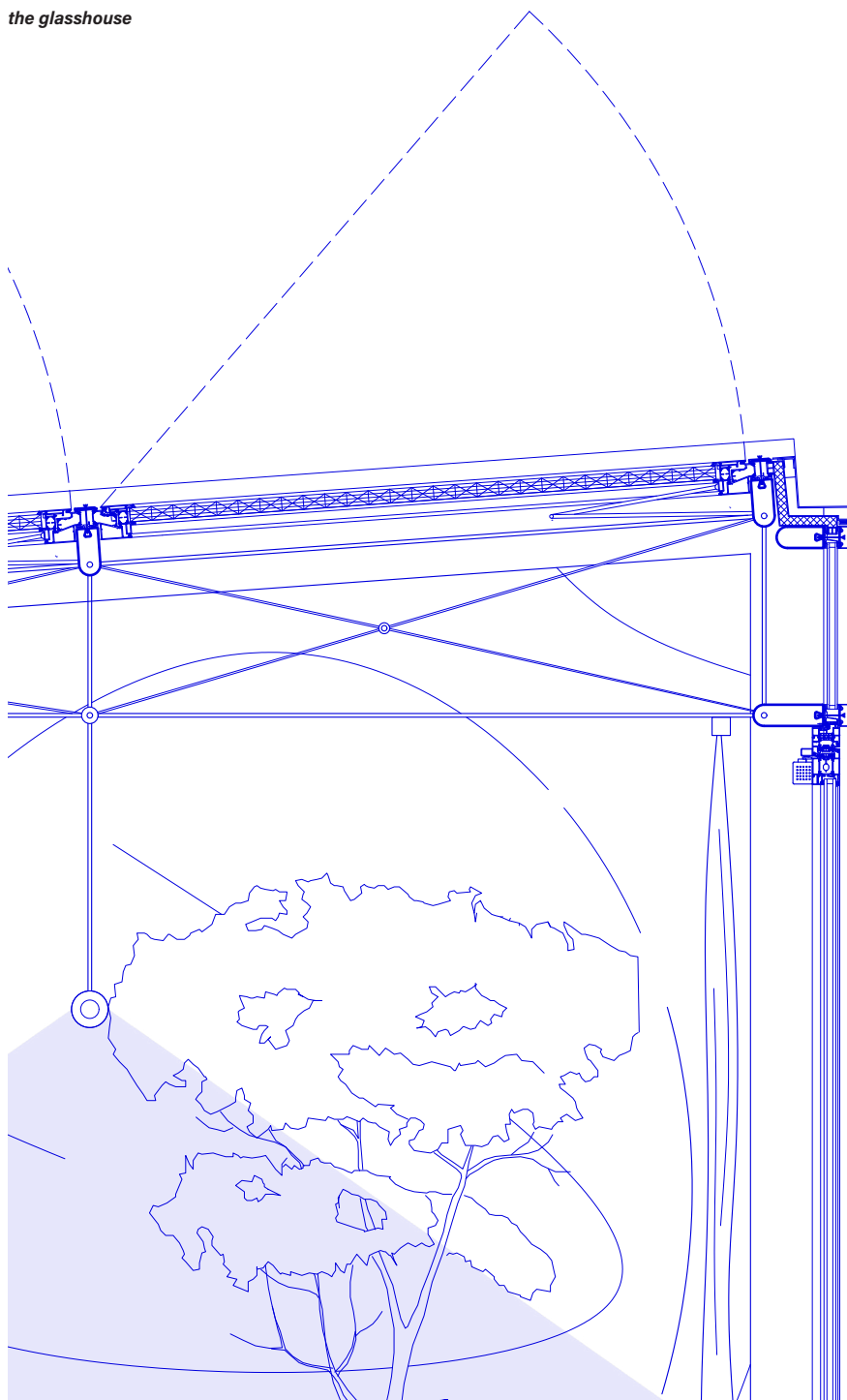
The standardized detailing is seen in the curtain wall elements and the hinge systems that are used for the opening of the roof. Instead of glass, polycarbonate is used for the roofing of the building because of its lightweight benefits. The glasshouse has a passive climate system based on heating from the sun and cooling through the windows. Insulated curtains are used for extra comfort.

Since the space is inbetween the city and the garden, it can be used differently. The focus is on growing plants. However, the open space offers multiple other options. The glasshouse can be used as an education center for children or as a small discussion place.



**Section 1.20**

The glasshouse is a simple construction. The wall is functioning as a prominent part of the construction. Aluminum portals are placed and connected to the wall. The roof is made from lightweight polycarbonate channel plates. The large glass facade ensures the view into the garden.



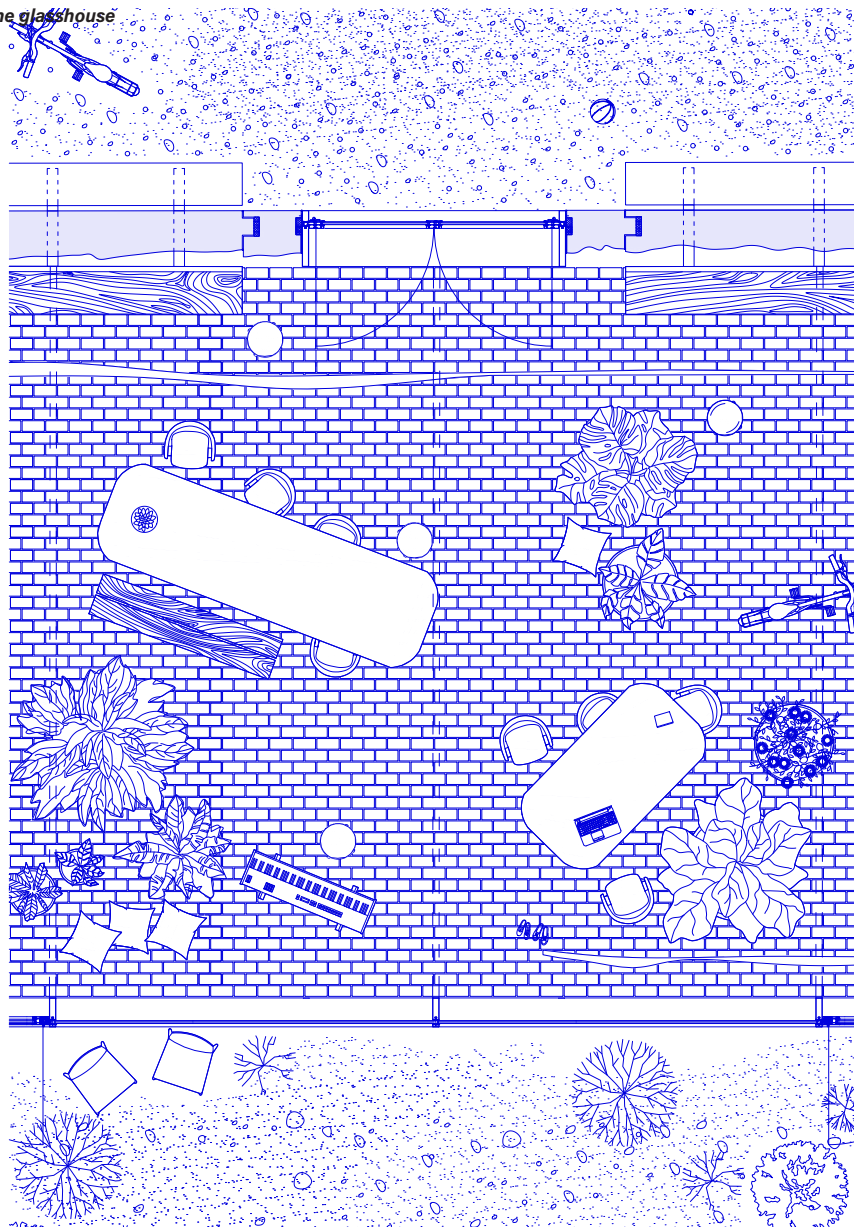




***An informal space***

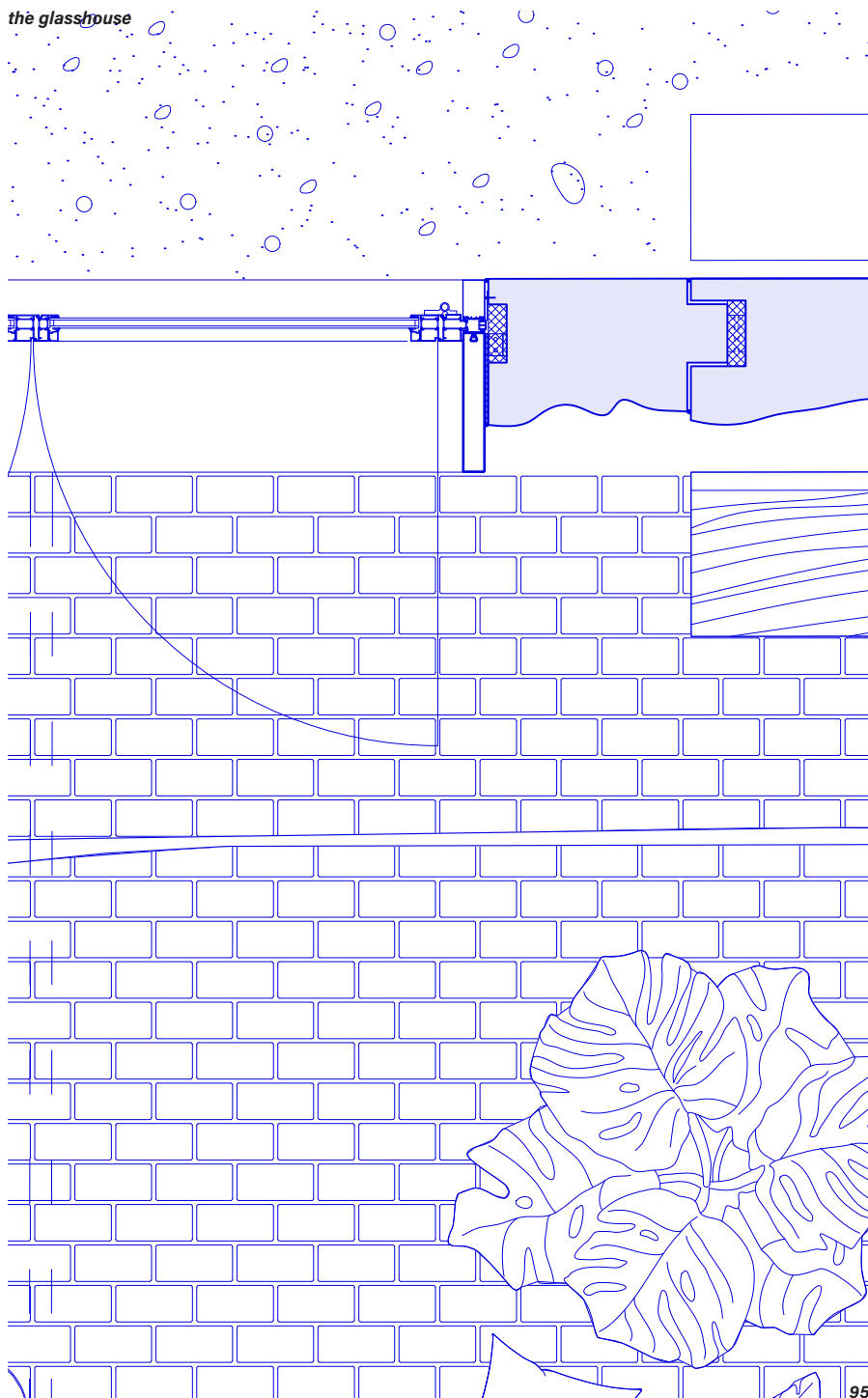
The glasshouse is made from simple, standardized materials. It offers a roofed space that can be used for informal meetings. The view shows how the space can be used as a potting day in the neighborhood.



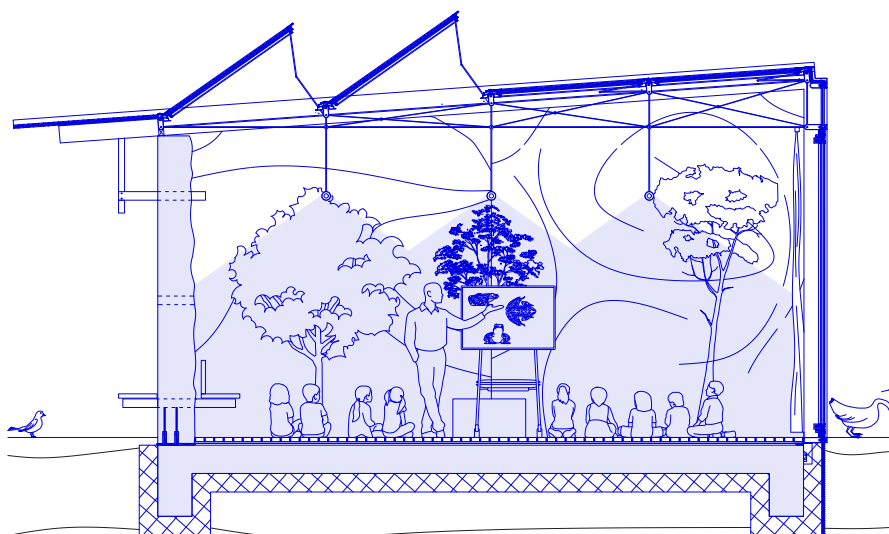


**Floorplan 1.20**

The glasshouse is filled with plants. When they grow too big, they can be moved to the garden or to the pergola square. The floorplan shows the contrast between the heavy wall and the lightweight curtain wall facade.

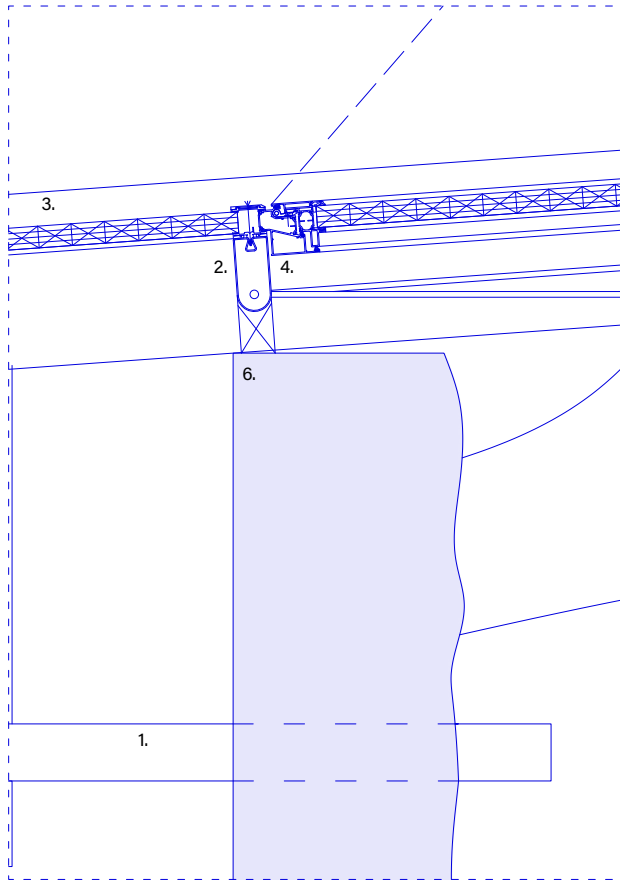






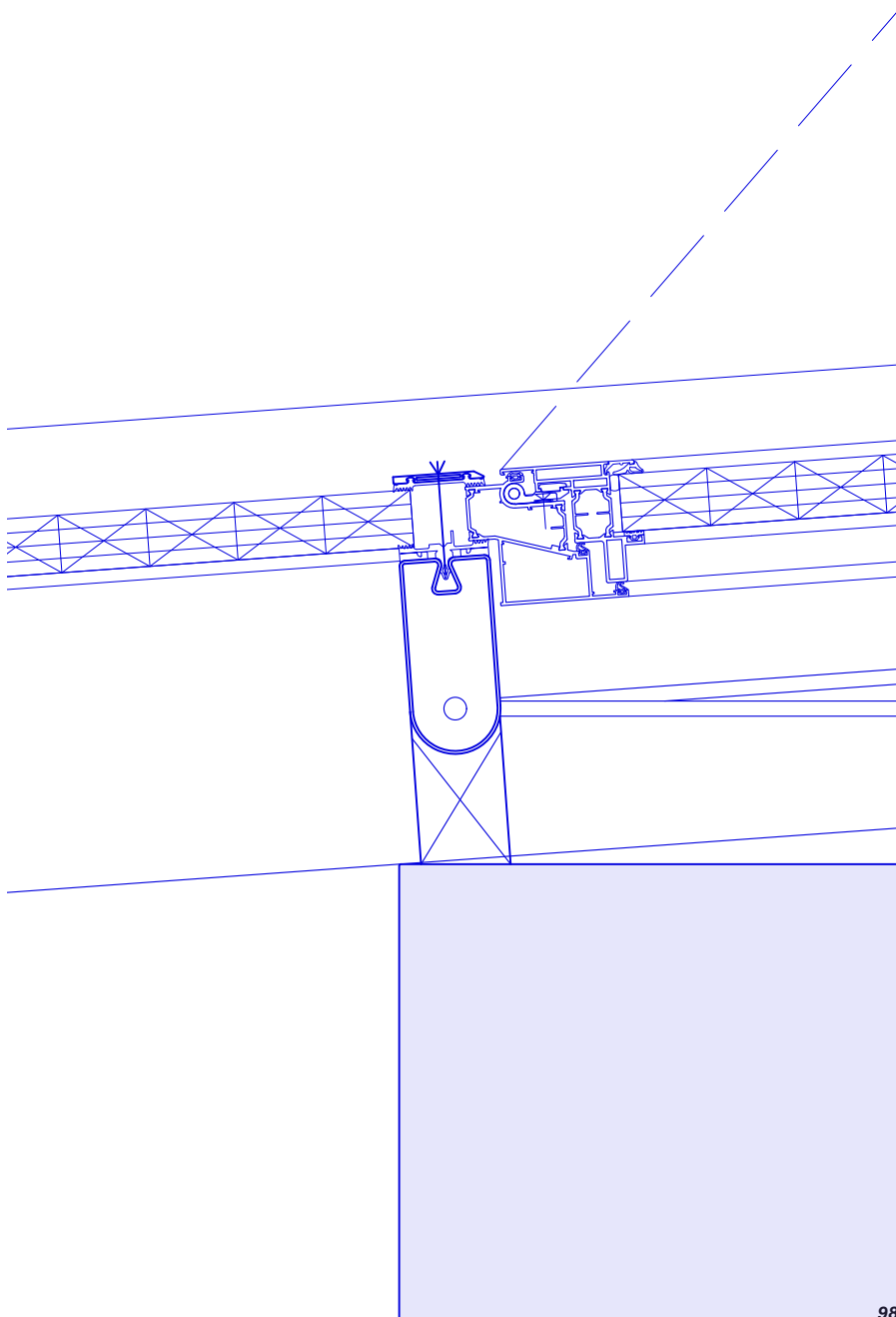
***Section 1.20, an education center for children***

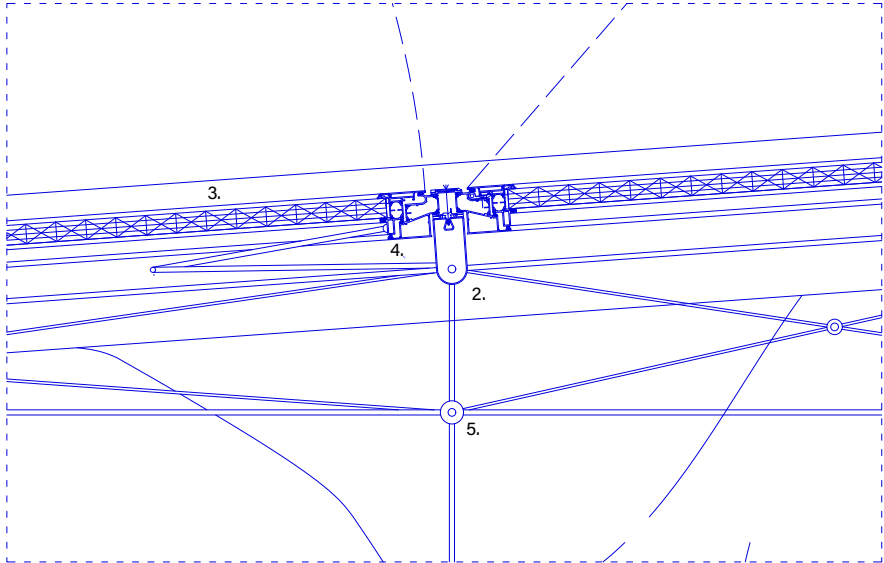
The garden offers an ecosystem that is not seen in Brussels. Therefore, the glass-house can figure as an education center for children who are willing to learn about this new area.



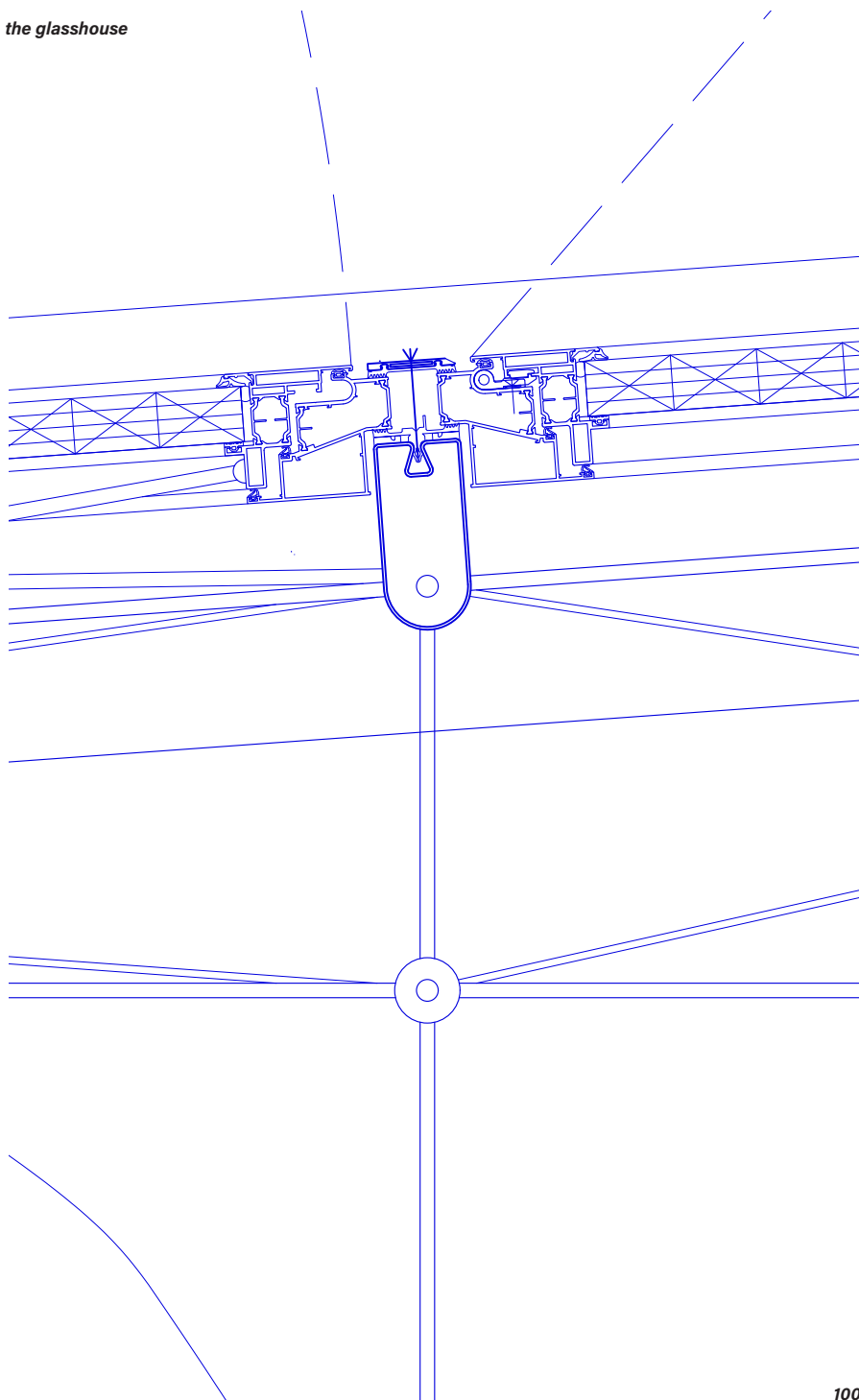
1. translation element: aluminum quiver profile, fixed on standard aluminum profile (fixed moment)
2. aluminum curtain wall/ roof system (60 x 100 mm/ 60 x 200mm) with an integrated suspension system for technical/ constructive ceiling.
3. polycarbonate channel plate 40 mm
4. aluminum hinge system: wax auto vent connected to aluminum profile; opens automatically when the temperature rises in the glasshouse.
5. technical ceiling: aluminum construction, suspended on curtain wall/ roof system: a system for structural stability and attachment for lightning fixtures and curtains.
6. prefab wall attachment: structural steel of foundation attached to prefab wall element, closed off by concrete.
7. floor construction: flat foundation, in-situ made (200 mm isolation), leveling layer (30 mm), cement (20 mm), stone bricks (50 mm).

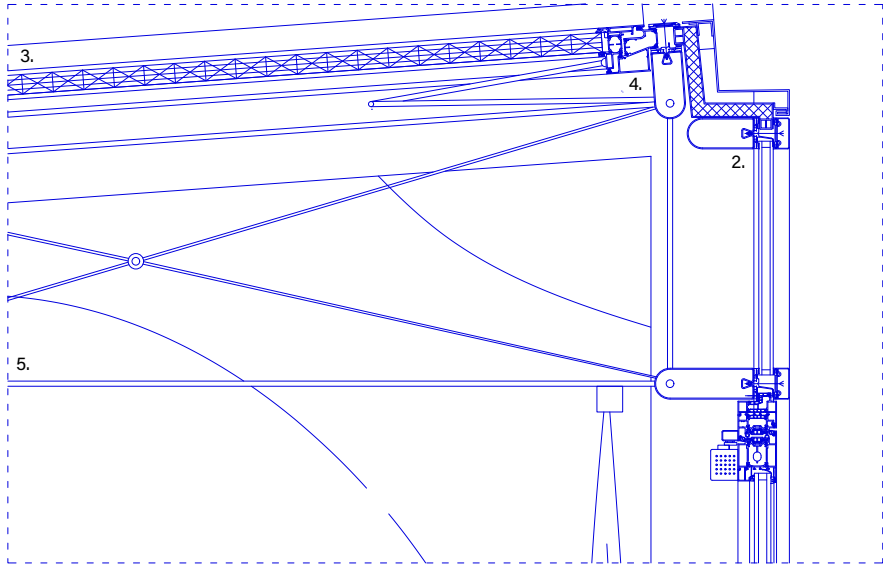




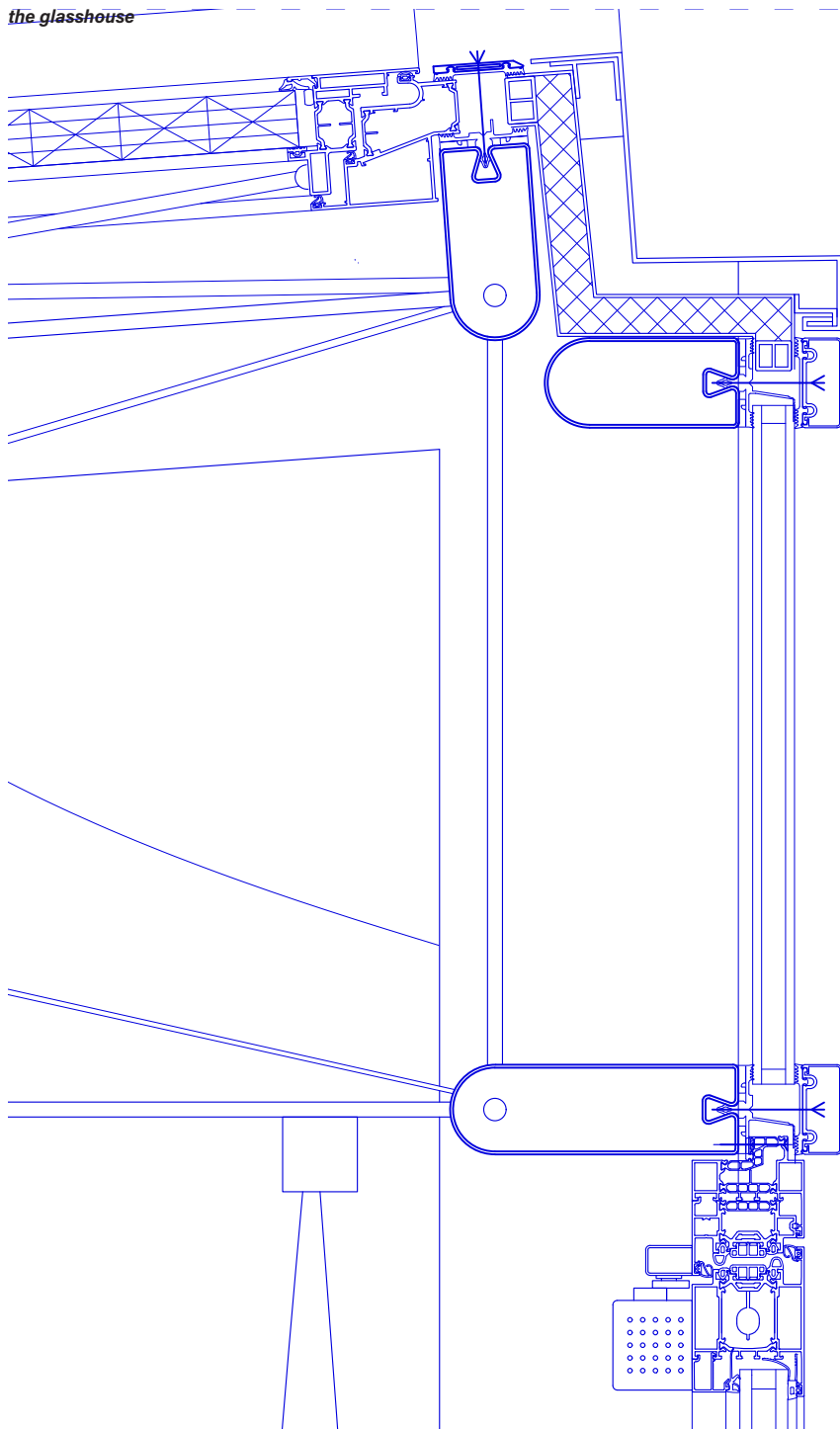


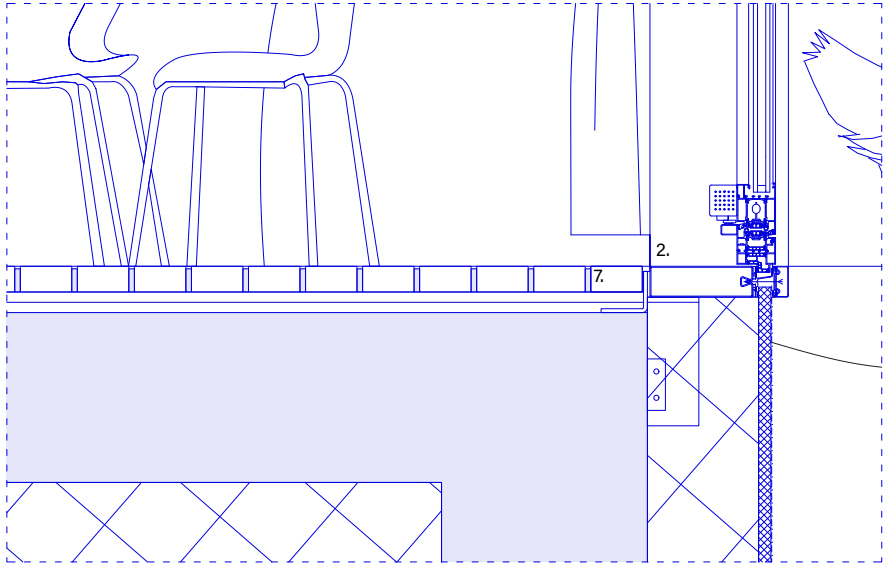
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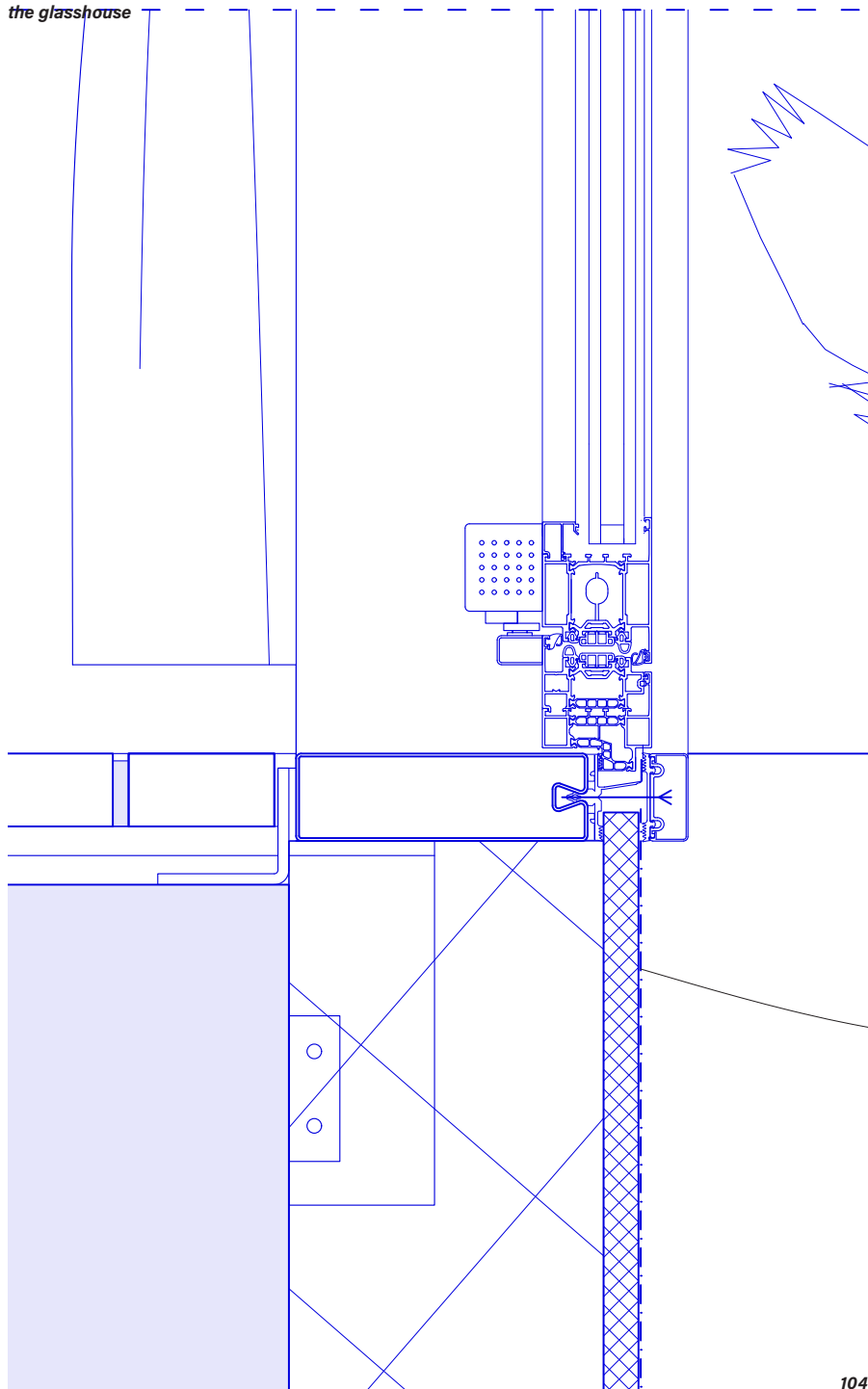
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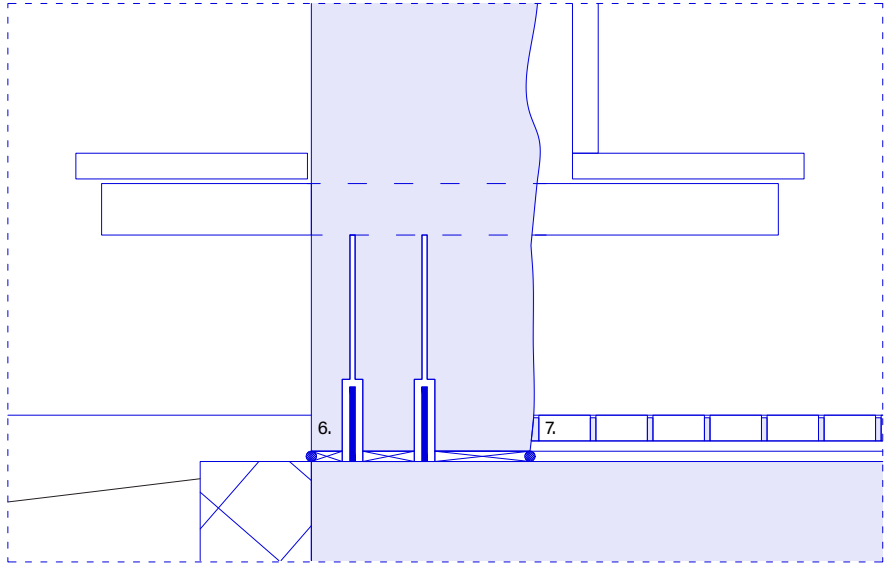




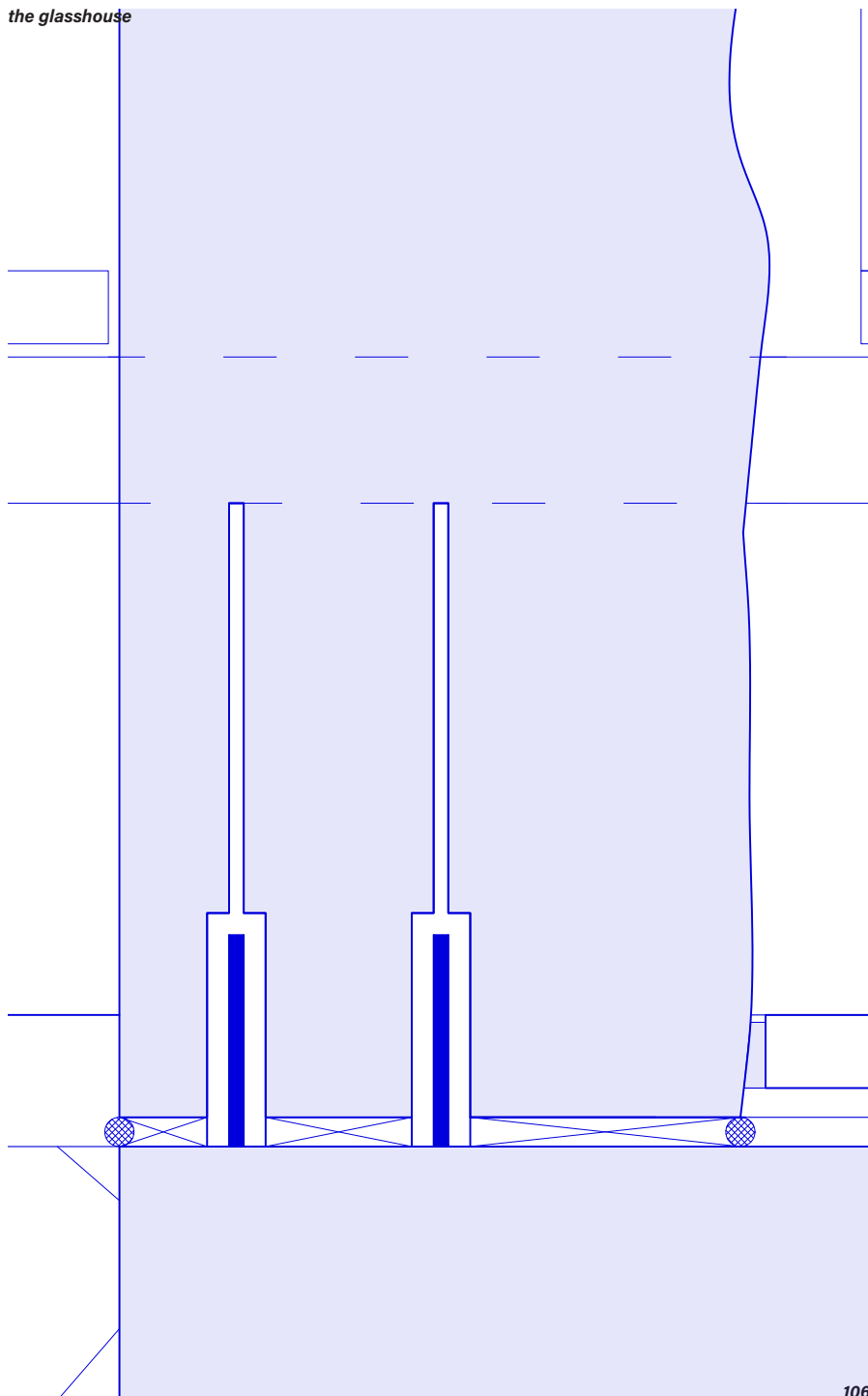
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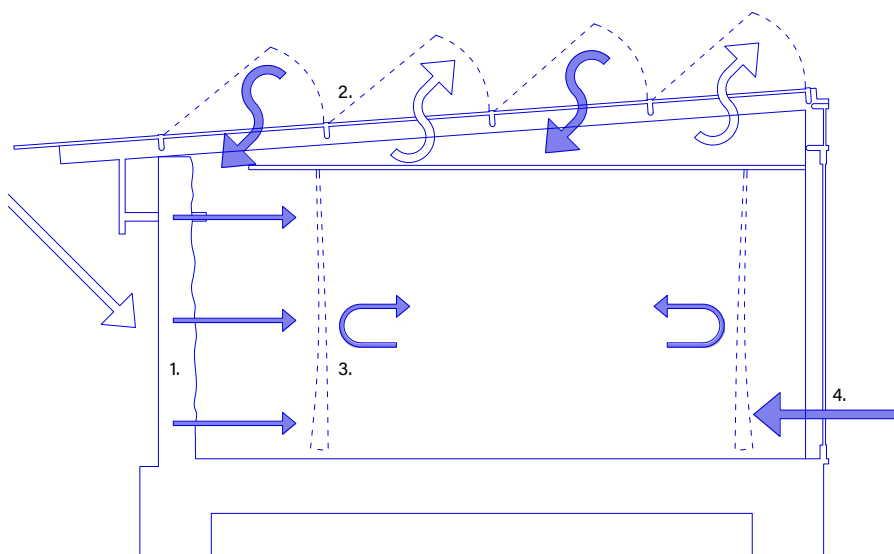






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1. thermal mass of concrete wall element
2. automatic window for natural ventilation
3. isolated curtains to reflect the heat/ partitioning the space.
4. natural ventilation via facade.

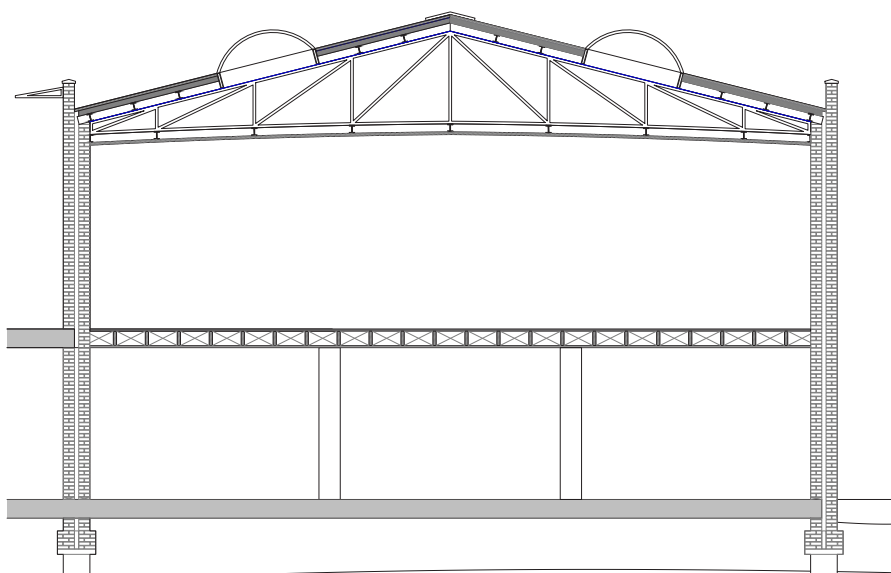
## ***a theater***

The theater shed was constructed during the '60s when there was a need for parking. The shed was used as parking on the -1 level and as a canteen for the office employees on the ground floor level. However, since the offices at Wetstraat 93-95 have been vacant, the shed is also not in use.

The building is defined by its simple construction and common materials. The thick walls are holding the trusses in the roof. The skylights offer daylight to the former canteen. Columns on the -1 level hold the floor.

The project is transforming the shed into a performance place; the removal of the floor and columns and the creation of a large balcony. Two staircases and a technical ceiling are added to the space. The large double-height area can be used for concerts or performances; here, the balcony can be used as a seating area. The balcony can also be used by itself; with its direct connection to the deck and the public square, the balcony offers a public character, which can be used to organize discussions and talks.

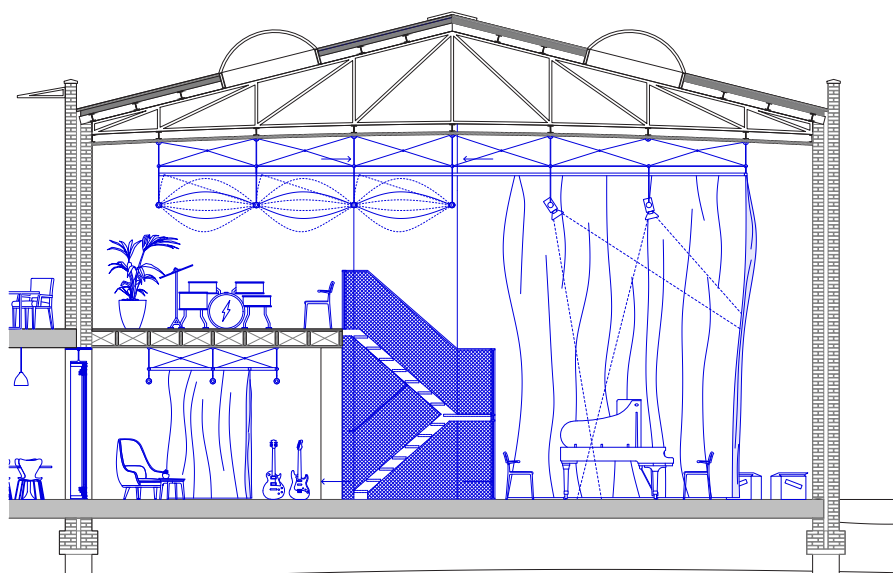
The added ceiling offers a set of light fixtures that can be adjusted to the use of the space. It is also offering a set of adjustable etfe cushions, which can be used for different acoustic settings in the space. The ceiling is used as a curtain system. The added staircases are beside the connection between the two floors, which is also part of the climate installation of the room. Two technical spaces are made in the core of the staircase. Here, a heating installation is made. The doors on the ground floor can be used for natural ventilation and cooling of the space.



**Section 1.20, current situation**

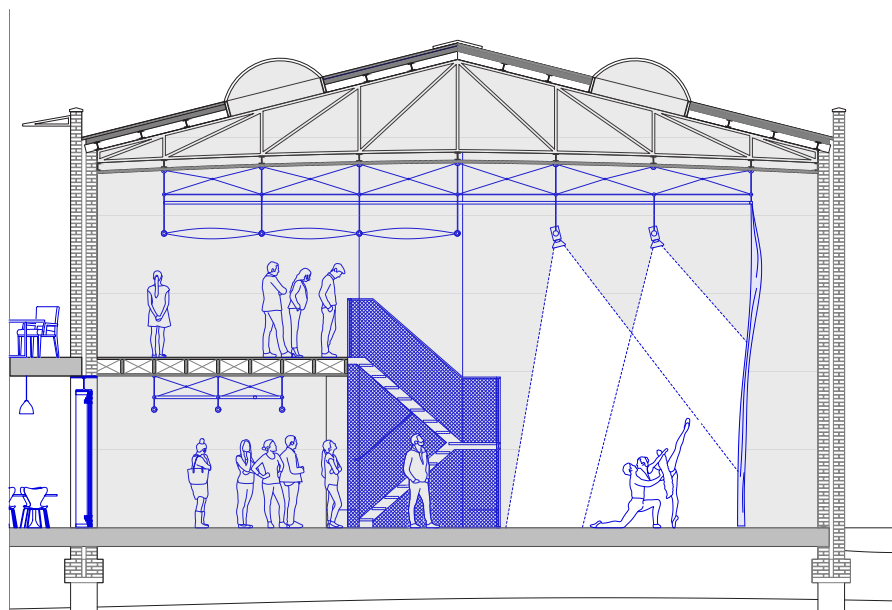
The shed was used as a parking space for cars. The building has a simple construction; the walls are holding up the truss construction in the roof, and the columns are lifting the floor.





**Section 1.20, addition of a staircase, removal of a floor**

The shed is transformed into a performance space. Two parts of the floor are removed; now, a double-height space is seen. A staircase with an integrated climate installation is placed. On the existing ceiling, a theater ceiling is placed.



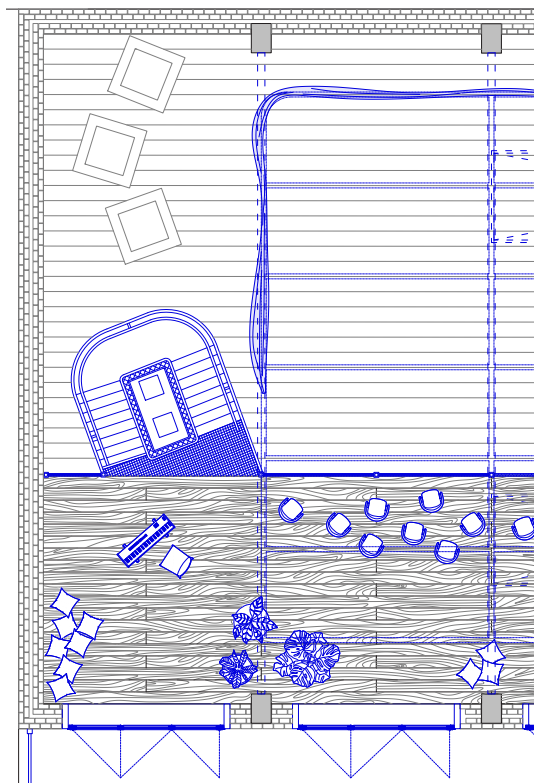
**Section 1.20, a theater - a dance room**



***A classical concert***

The view shows how the double-height space can be used for a concert. The curtains will work as part of the acoustic of the room.





**Floorplan 1.20**

The staircase is used as part of the climate installation. The balcony connects to the existing roof of the basement.





***A room for discussion***

The balcony is an intimate space. The floor can be used for talks, as seen in the visual.





the independent group  
msc 3 - 4

# *a walled garden in Brussels*

sander meert  
january 2023

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