T' ZAAIGJE

FINAL PRODUCTS

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CONTENT

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Graduation project Maritime heritage
2024/2025

Maritime heritage line

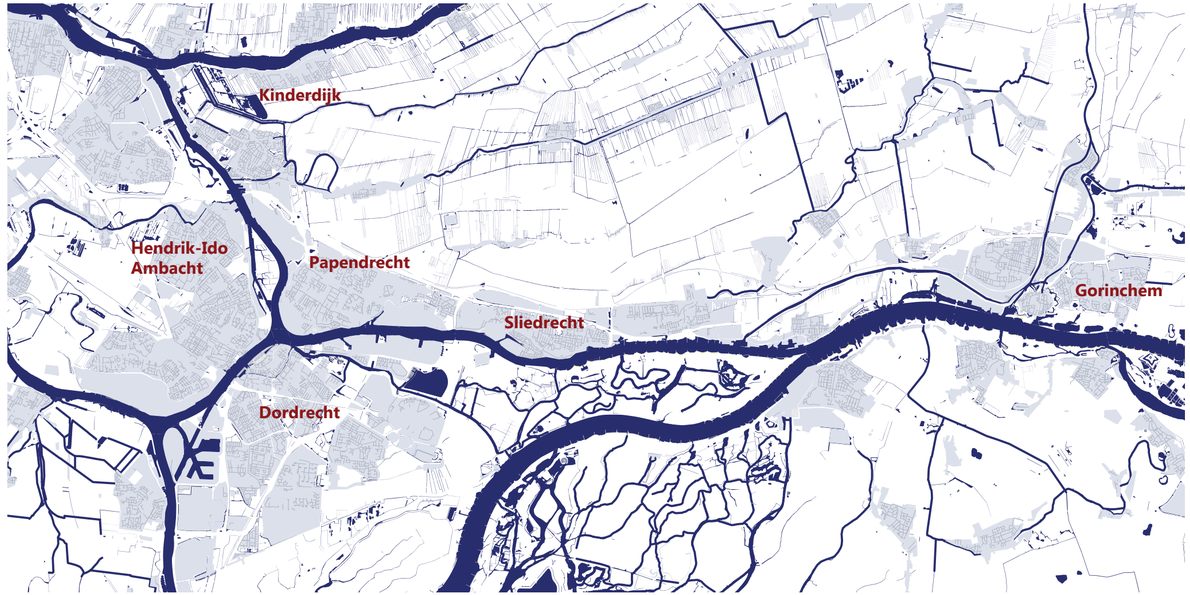
The maritime heritage line is a region that inlcudes the Biesbosch, the Drechtsteden and the World Heritage Site Kinderdijk. The presence of water serves as a connecting element within this area. The connection between the cultural heritage present and the water is of such significance that the province of Zuid-Holland has designated one of its heritage lines to represent this unique relationship. The province's cultural heritage designation specifically encompasses the maritime industry, which has had a profound impact on the development of this region.

In the 13th century, the area now known as the Waterdriehoek was largely a swampy area. In 1277, the first attempts to control water began with the 'afdamming' of the Albas River.
The region's landscape shifted dramatically in 1421 when the Sint Elisabeth flood destroyed many towns. It also created the Biesbosch wetlands.

By the 17th century, land reclamation (‘inpolderen’) projects were underway. Major waterway construction between 1866 and 1872 connected Rotterdam to the Waterdriehoek, spurring maritime industry growth.

In 1994, the Biesbosch was designated a protected natural area, and Kinderdijk, with its iconic windmills, was named a UNESCO World Heritage site.

Dordrecht 1844
Andreas Schelfhout



Old factory Alblasserdam
Photo by Eva van der Cammen

Dordrecht
Photo by Eva van der Cammen

Maritime industry
Photo by Eva van der Cammen

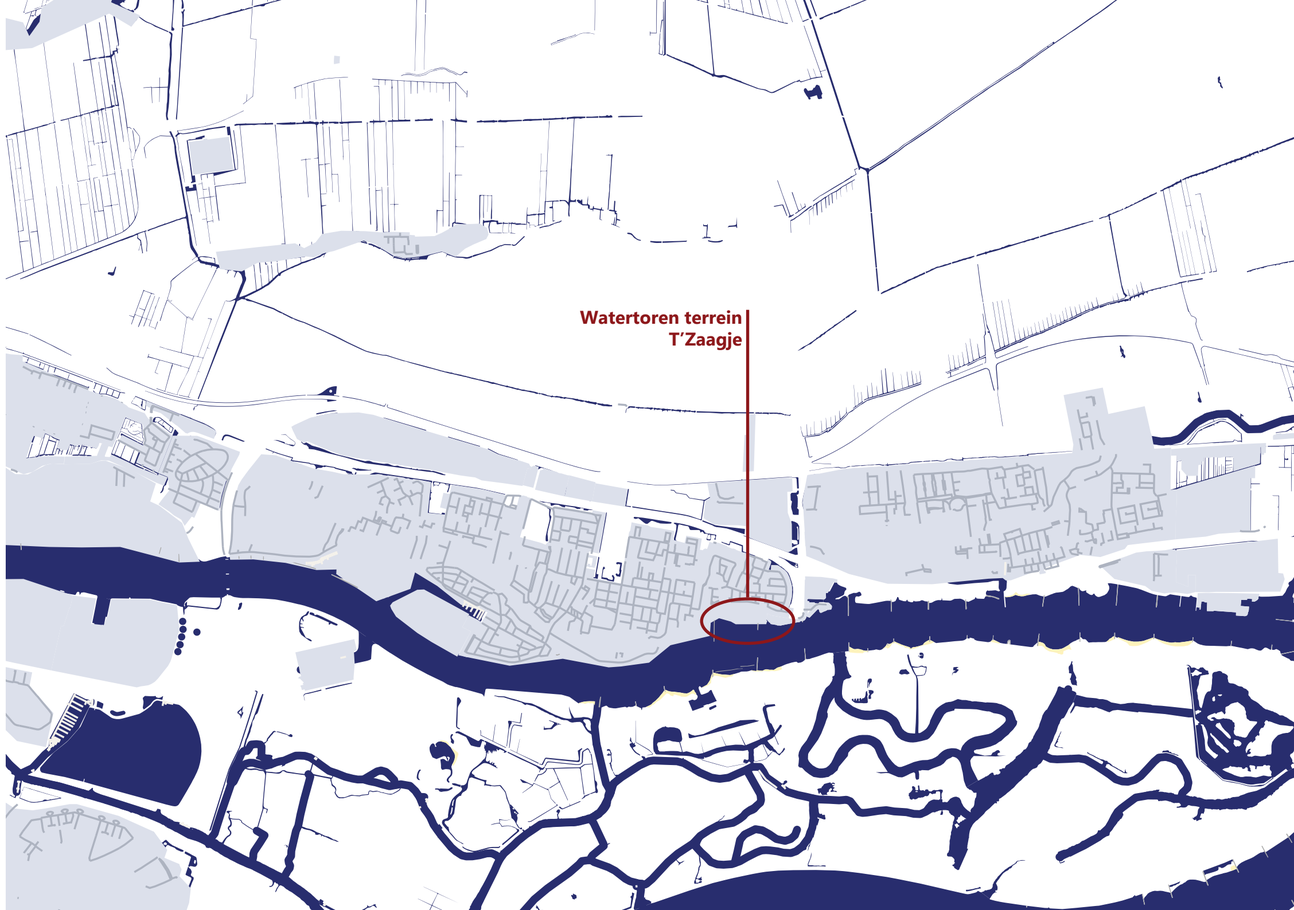
IJsselwerf
Photo by Eva van der Cammen

T'ZAAGJE

The T'Zaagje area consists of two prominent buildings: the historic water tower and the former shipyard. Historically, this area was known as T'Zaagje and is located within a floodplain to the north, bordered by a dike lined with residential homes.

The water tower was built in 1886, while the Delta Shipyard was established in 1957. The shipyard specialized in constructing boats designed to assist other vessels, playing a supporting role in the maritime industry.

The site is physically separated from the surrounding neighborhood by fencing. In many maritime contexts, shipyards mark a clear boundary between water and urban life. At Delta Shipyard, however, this separation is twofold: not only is the site fenced off, restricting direct access to the water, but it is also visually and spatially concealed by the dike and the row of adjacent houses.

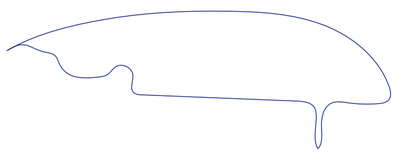


Value assesment

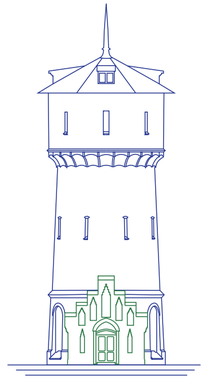
The conclusion of the value assesment draws upon three key theoretical frameworks to assess the value of T' Zaagje. The Richtlijnen Bouwhistorisch Onderzoek 2009 provided a contextual value framework, emphasizing the historical and architectural analysis of the shipyard and water tower against criteria such as preservation and rarity. The first value matrix, outlined in Designing from Heritage by Marieke Kuipers and Wessel de Jonge, facilitated a holistic assessment of the site, integrating contextual, architectural, and environmental perspectives to uncover nuanced historical elements. The second value matrix, developed by Pereira Roders and colleagues, enabled the identification of secondary values—such as age, social, and historical importance—highlighting the potential for adaptive reuse to reinforce community connections and preserve heritage. Together, these frameworks informed a comprehensive evaluation, balancing tangible and intangible values.

In conclusion, the T' Zaagje area, consisting of the water tower and the shipyard, presents a complex interplay of historical, social, and architectural values despite the deteriorated state of its structures. The shipyard, while holding some user and intangible value due to its historical association with Sliedrecht's maritime industry and unique floodplain context, does not meet high preservation or rarity standards and is in a state of severe decay. Conversely, the water tower demonstrates notable general historical, user, and ensemble values, reflecting its significance in Sliedrecht's development and townscape. However, its condition and modest architectural features limit its contextual significance.

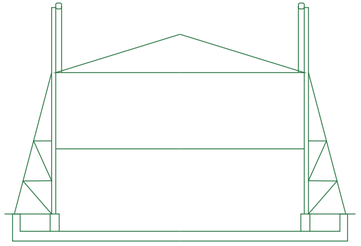
The broader site analysis highlights the intangible value of T' Zaagje's relatively undisturbed floodplain and its potential for community engagement, particularly in restoring features like the removed stream. Utilizing frameworks like the value matrix and methodologies for heritage conversion underscores the potential to enhance the historical and social value of the area through adaptive reuse and thoughtful preservation efforts. Introducing new functions could breathe life into these structures, fostering stronger community attachment and ensuring their relevance for future generations.



Tangible & Intangible value



Tangible & Intangible value



Tangible & Intangible value

High value

Positive value

Low value

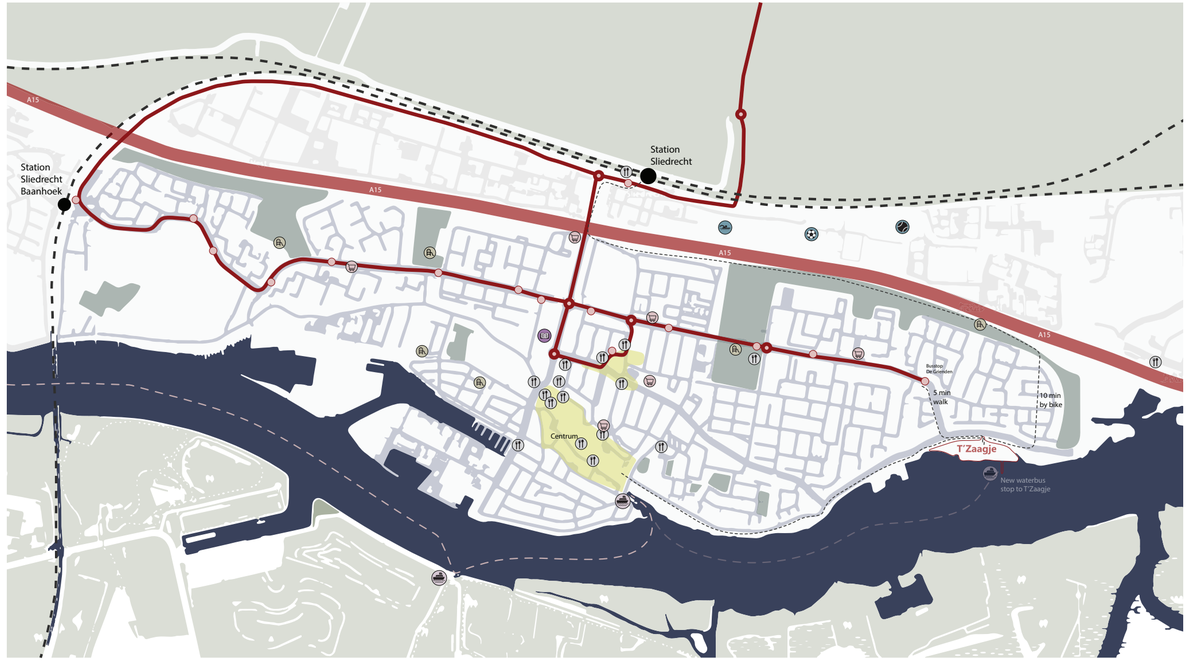
Analysis

Sliedrecht offers a comprehensive public transport system comprising three distinct modes of transportation: rail, bus, and ferry. The rail system has two stops in Sliedrecht, one in the west and another in the north of the city. Both stations offer bus connections that facilitate further travel into the city. Additionally, it is possible to walk from the stations to the city centre; however, this will take approximately 25 minutes. The majority of commercial establishments are situated in this vicinity. Furthermore, the city boasts a swimming pool, a library, numerous gymnasiums, and a tennis club.

Upon examination of the selected location, T' Zaagje, it becomes evident that the immediate vicinity lacks a range of practical facilities. The nearest bus stop is situated approximately five minutes' walking distance away, while the city centre is accessible within a similar timeframe by bicycle. The train station, meanwhile, is located approximately ten minutes' bicycle ride away.

For those living in the eastern part of the city, visiting a café or restaurant entail travelling to the city centre.

The city contains a number of green spaces, with the eastern part of the city having a greater proportion of green structures. It is notable that the majority of green structures are located adjacent to the highway, rather than in proximity to the water.



Vision municipality

Development Area 5. Merwedezichten

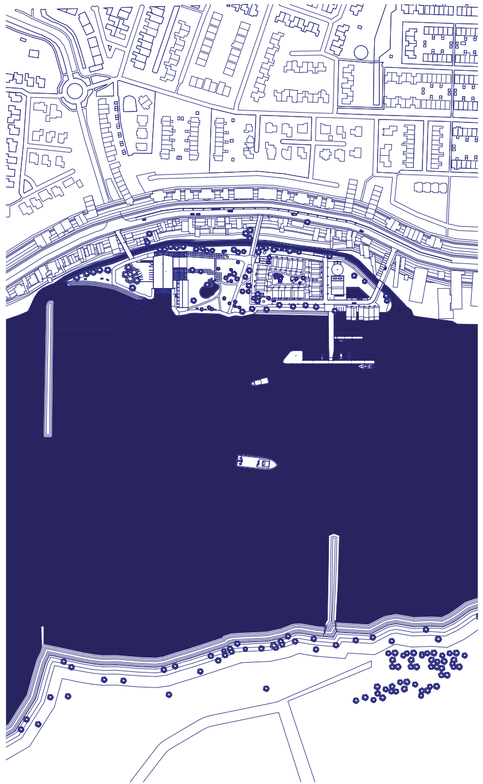
An important spatial wish is to make the banks of the Merwede experienceable and attractive in more places. At the moment the Adriaan Volkersingel is the only green recreational space where the Merwede can be experienced. A concrete development in this area is the Watertower terrain. **This terrain will become a showpiece of Sliedrecht, combining housing, greenery and recreation, the water tower itself will be given a new function and the banks of the Merwede will become publicly accessible.** In addition to the Watertower terrain, in the longer term it is conceivable to transform other (non-water-related) activities with similar frameworks into housing.

Development Area Merwedeoevers

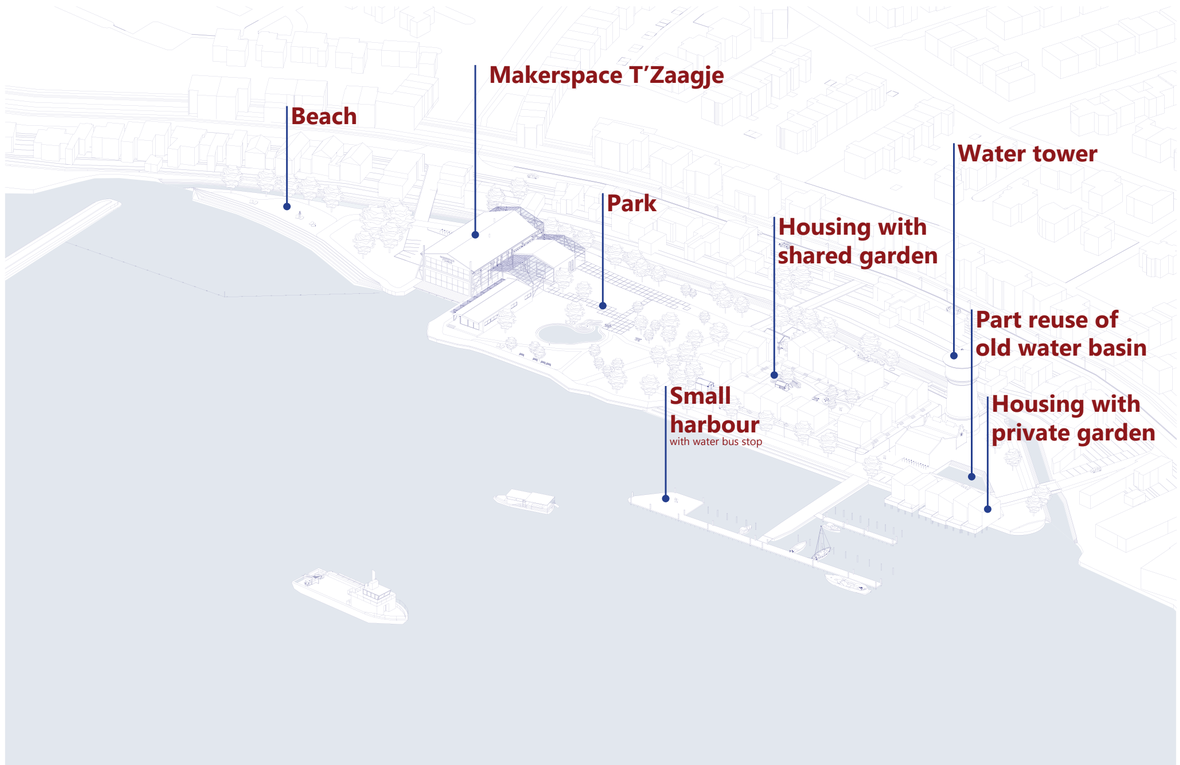
We want to make **the banks of the Merwede more attractive and enjoyable to experience**. Therefore we make them greener, more natural and more interesting to stay. Examples include the addition of planting on the west side or a new park on the east side. The Adriaan Volkersingel is an example of this.

Biesbosch
Photo by Eva van der Cammen

Masterplan

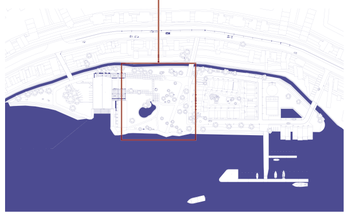


Masterplan 1:5000

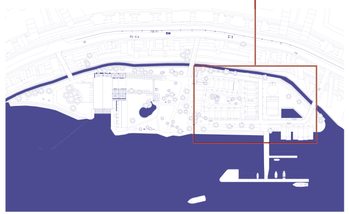


Masterplan

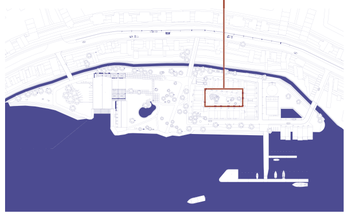
Park



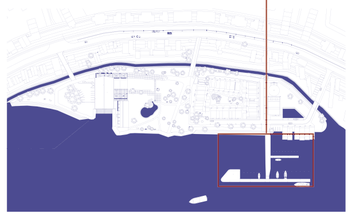
Housing



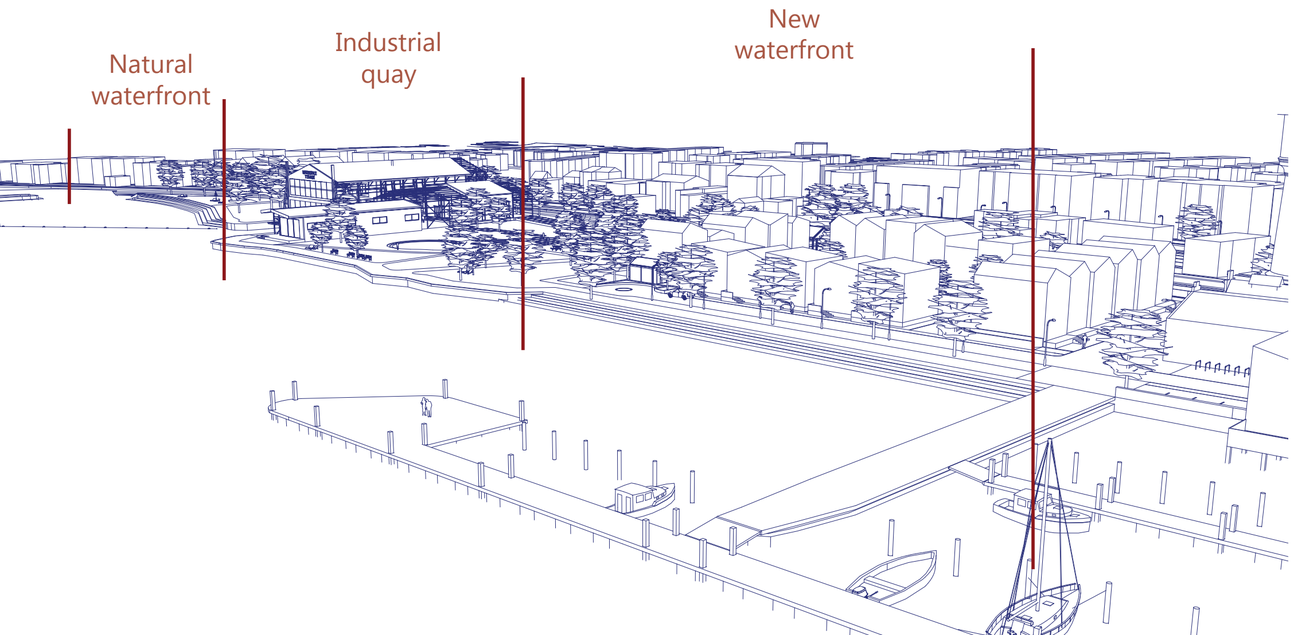
Shared garden

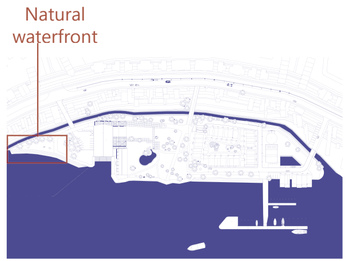


Harbour

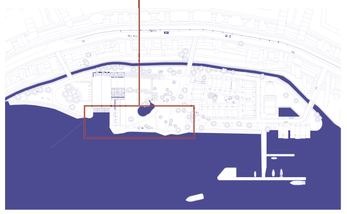


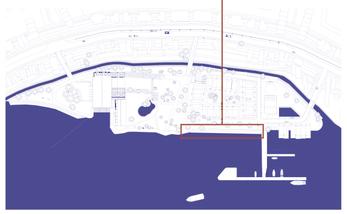
Masterplan


Natural
waterfront
Industrial
quay
New
waterfront


Natural
waterfront

Masterplan





Program of requirements

Makerspace

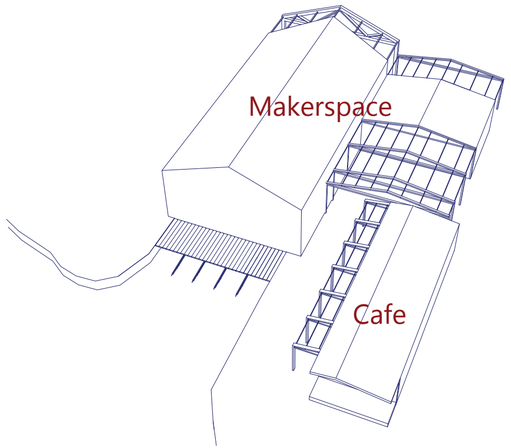
560m²	Wood, metal and boat building station
115m²	Interaction/digital station
85m²	Education space/shared workspace/ presentation room
20m²	Storage wood
20m²	Storage metal
20m²	Storage interaction
6x+-15m²	Studio space
70m²	Installation space
30m²	Toilets visitors
28m²	Staff room
10m²	Front desk/small stage
2x4m²	Miva

Total Makerspace: +-1050m²

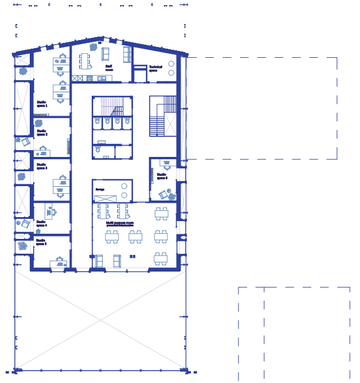
Cafe

140m²	Cafe space, including bar
100m²	Terrace
40m²	Kitchen
15m²	Toilets
20m²	Installation space
15m²	Storage kitchen
15m²	Office
10m²	Toilets staff

Total Cafe: 355m²



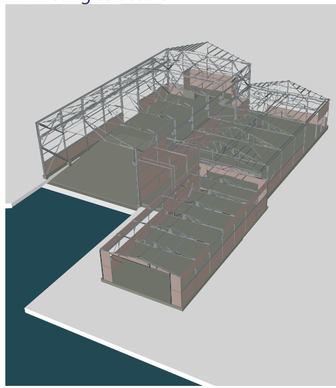
Ground floor 1:500



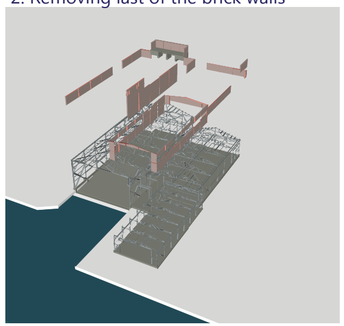
First floor 1:500

Repair and reuse

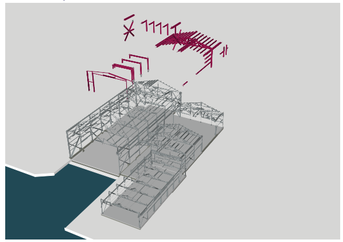
1. Existing structure



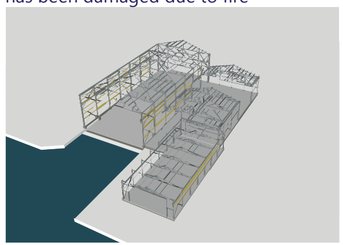
2. Removing last of the brick walls



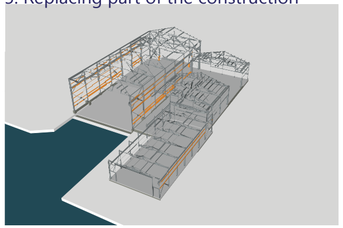
3. Removing part of construction to make space for new function



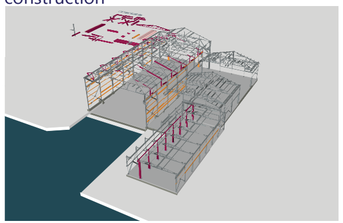
4. Removing part of construction that has been damaged due to fire



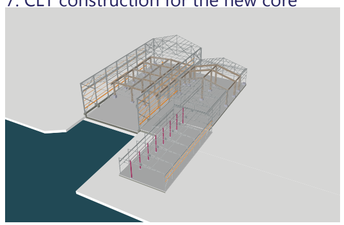
5. Replacing part of the construction

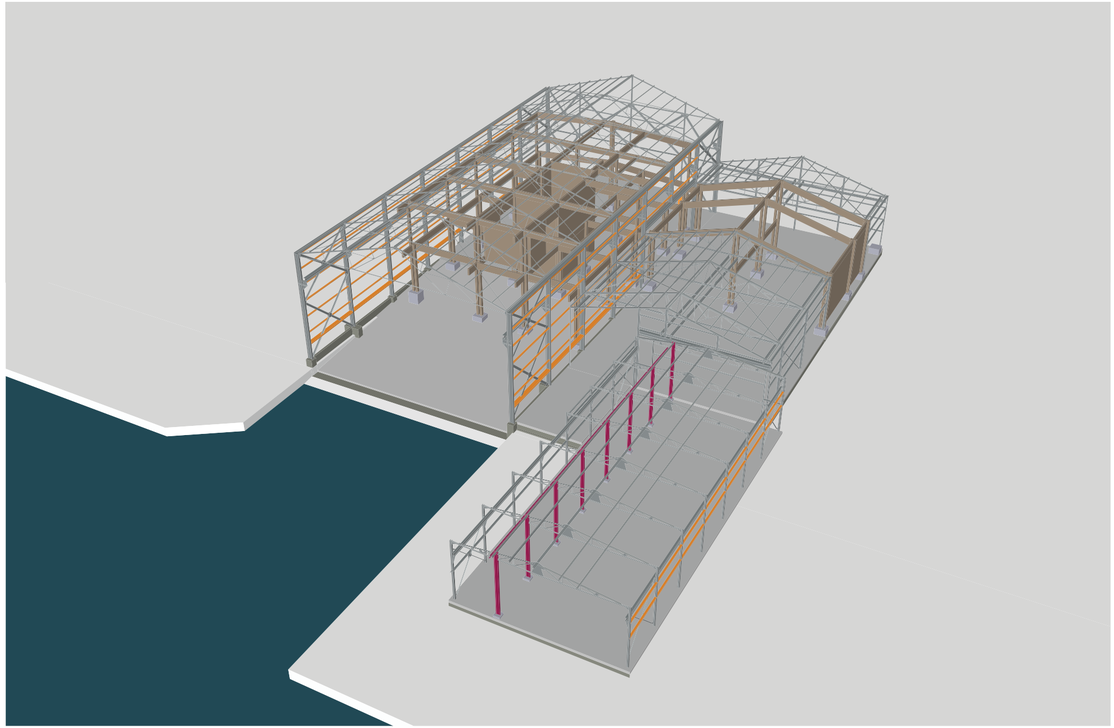


6. Repurpose part of the removed construction



7. CLT construction for the new core



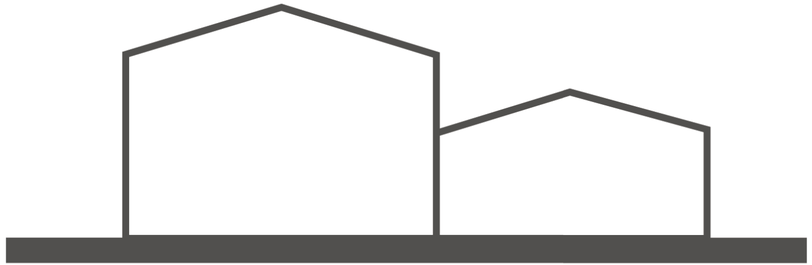


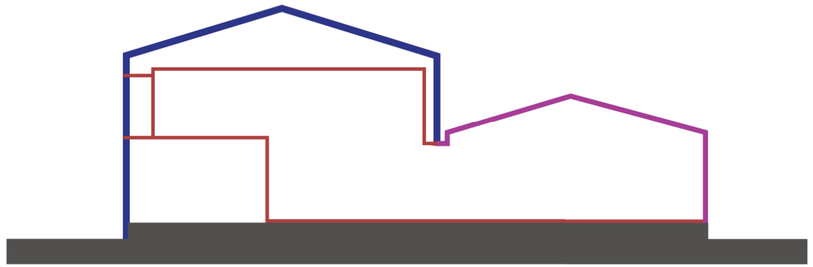
The hull and the core

The following strategy was applied to the design concept for the old Delta shipyard. From the value assessment there were certain aspects that had a positive value, mainly the structure and the large steel doors. The aim of this design strategy is to reuse and repurpose as much of the original structure as possible. However, as the building is also heavily damaged, certain parts of the structure will have to be replaced. The hull in this design strategy stands for the main building (the largest). The Dutch translation of the hull is 'de romp van een schip'. The function of a hull is to keep the water out and protect what is inside. In the case of the shipyard, the main building will have the same main function, it will protect against the wind, but it will not have insulating properties. The façade of this main building will be largely restored to its original state with a layer of brick and single glazed windows above.

The care in this concept represents the new addition to the building. In and around this addition are all the new functions. The core begins in the hull (main building), but on the east side of the building the core breaks out of the hull and becomes the new external façade and roof, following the same contours as the smaller hall that is attached to the main hall. On the west side, the core also breaks out of the hull to become the new external façade, but on a smaller scale than on the east side. These small interventions form a kind of bridge between the 'old' and the new.

The core material is softer than the hull. The hull has an industrial look and feel, but the facade of the core will be a combination of industrial and wooden. This look and feel will change even more as you enter the core through the main entrance. In this hall, the design is based on the experience of soft fascinations. Soft fascination is a feeling that can be experienced when looking at the movement of water or plants. This feeling helps a person to feel at ease without having to concentrate. To recreate this feeling in the entrance hall, a large wall is tiled with tiles with a curved surface. The tiles also have a pearly white surface, which creates a slight difference in tone from one tile to the next. Another aspect that contributes to the soft fascination is the lighting in the hall. The lamps are special lamps that reflect the movement of the water, creating a moving pattern on the floor and walls.





Facade design

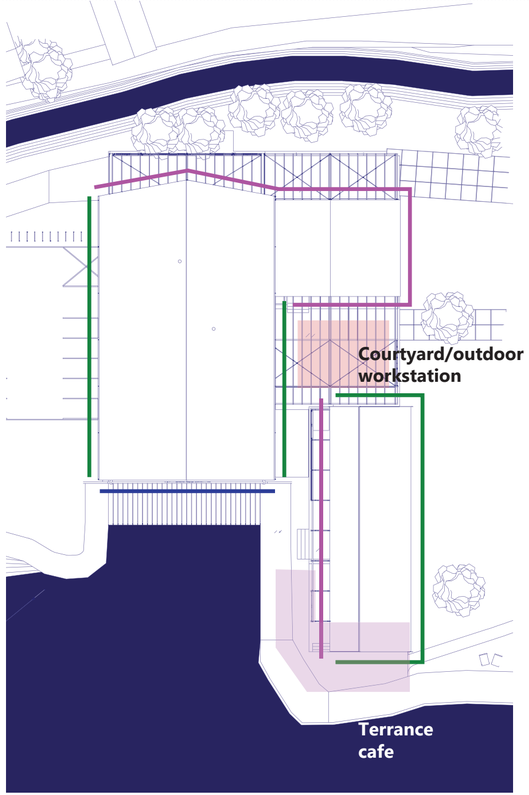
Design Proposal:

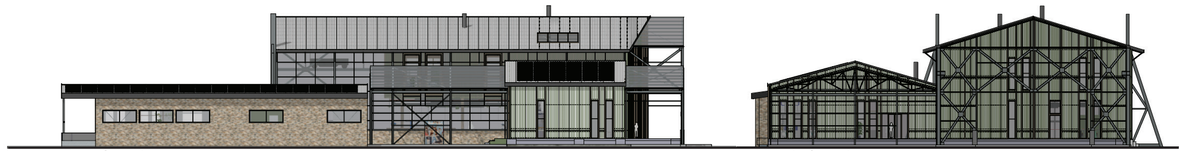
The existing structure will be retained and reused for the external façade, with selective restoration where needed. This outer layer will serve primarily as protection against rain and wind. Within the building, a new internal core will be constructed to ensure a comfortable and controlled indoor climate.

Reconstruction facade based on original design

The new facade

Partly bringing back the old function of the door





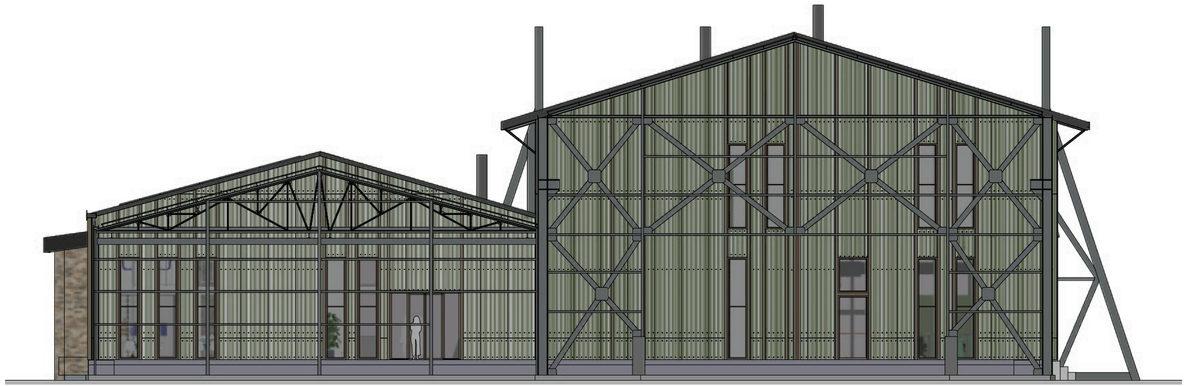
East facade

North facade

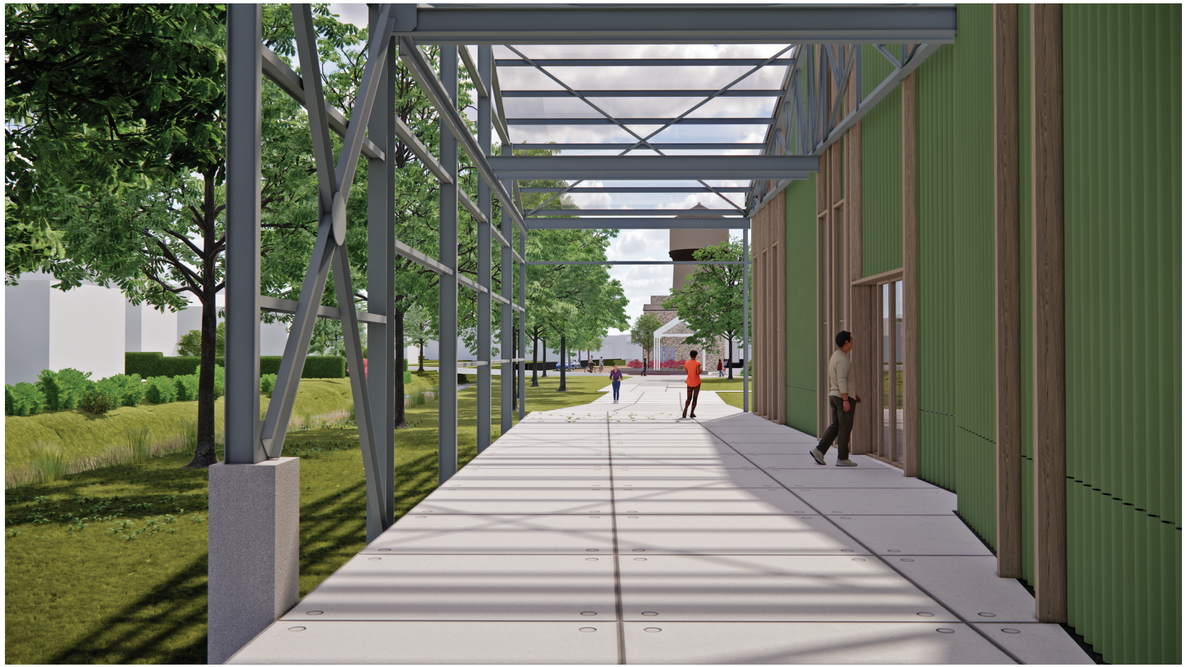
South facade

West facade

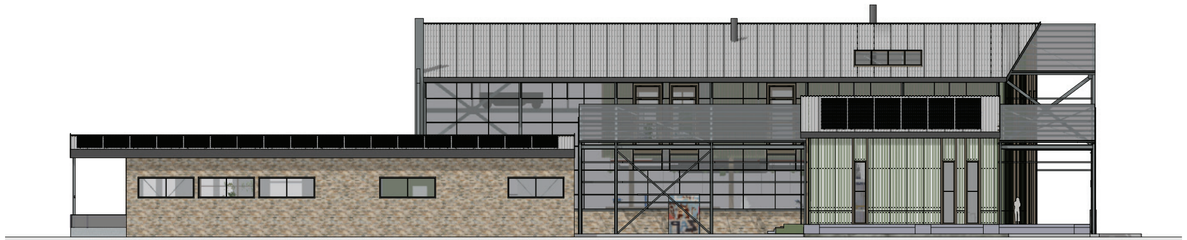
Facade design



North facade

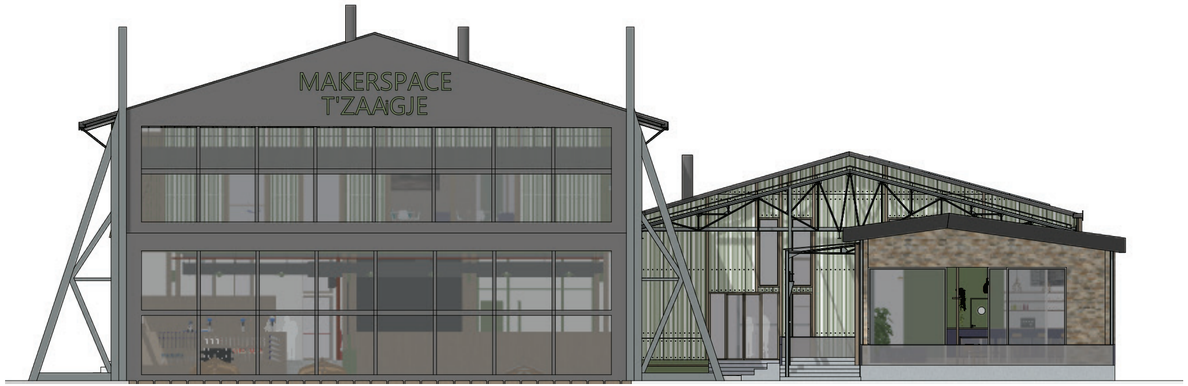


Facade design



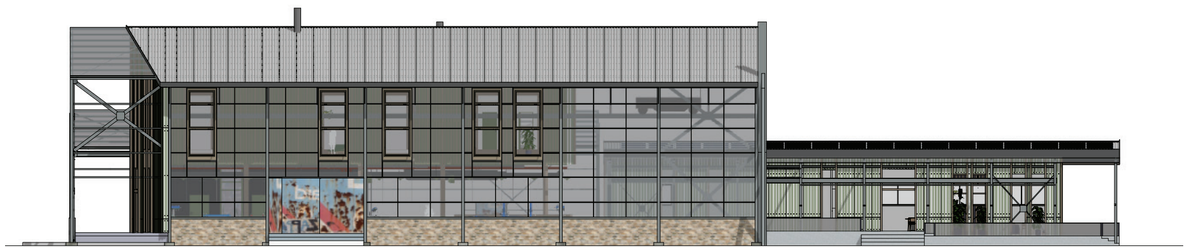
East facade

Facade design

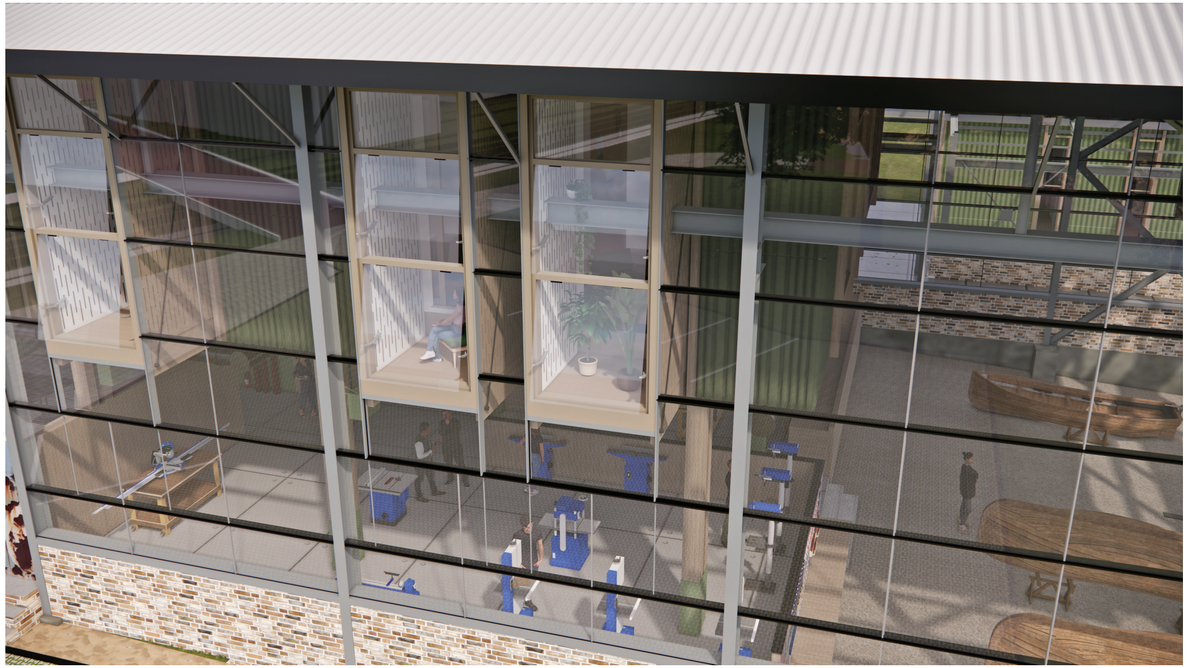


South facade

Facade design

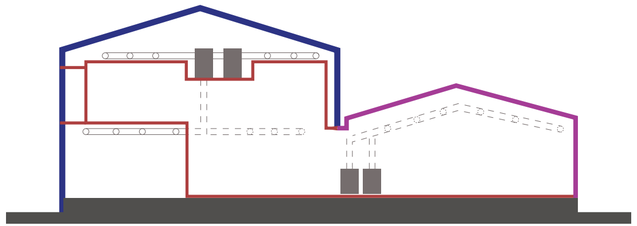


West facade



Climate

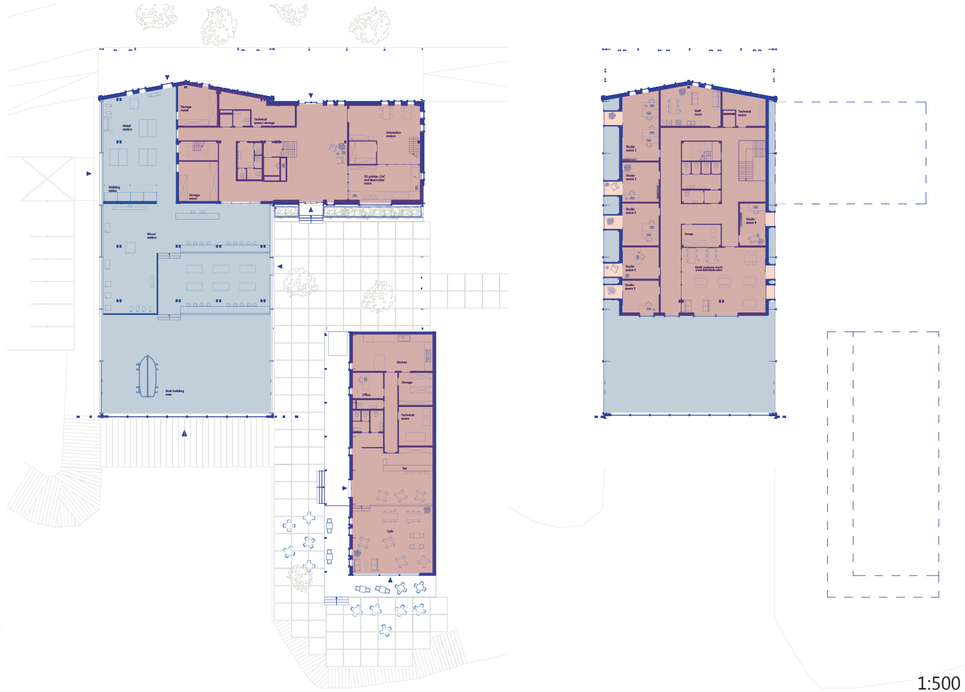
The building features a combination of temperature-controlled spaces and areas with an in-between climate, providing both comfort and energy efficiency. It is equipped with a Type D ventilation system, ensuring a continuous supply of fresh, filtered air. Sustainable technologies are integrated throughout, including solar panels for renewable energy generation and a water reservoir that supports resource conservation. Small insect houses are discreetly integrated into the façade to promote biodiversity.



In-between climate. Non-insulated space. Temp between 15-30 celsius.

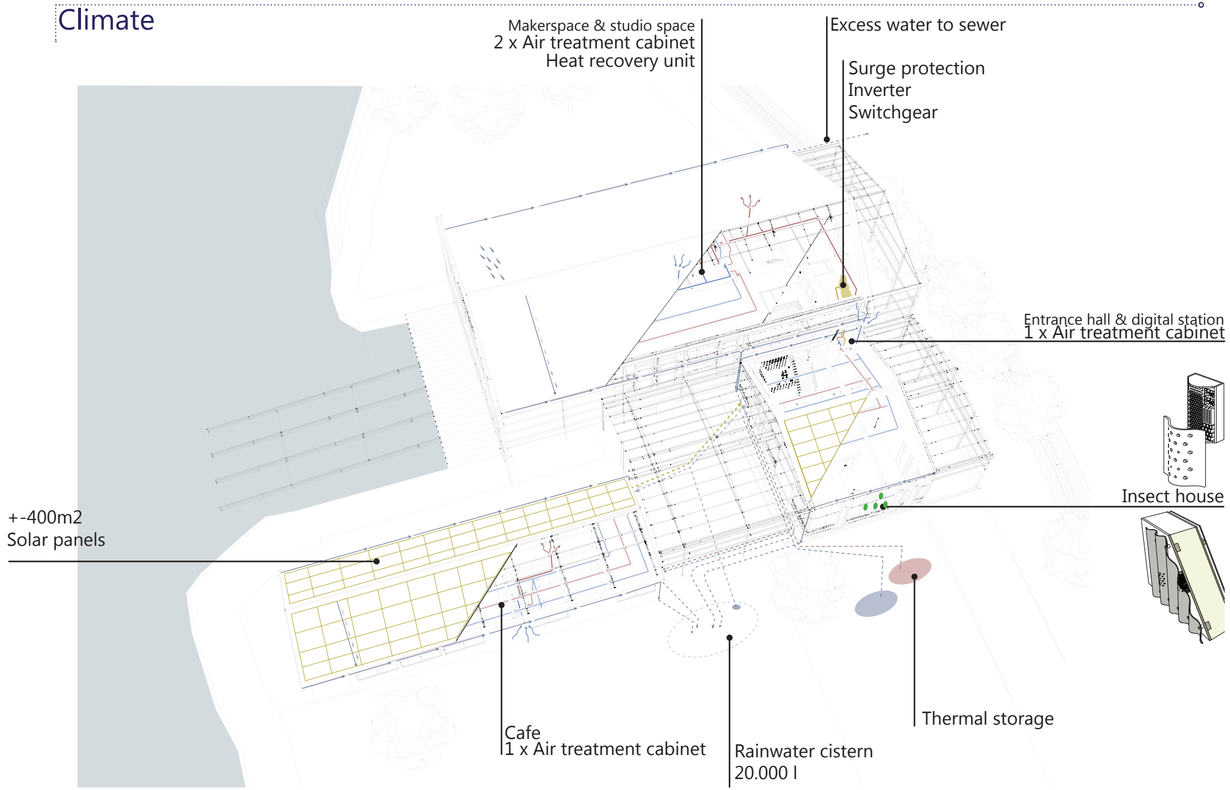
Insulated core. Temp. between 18-25 celsius

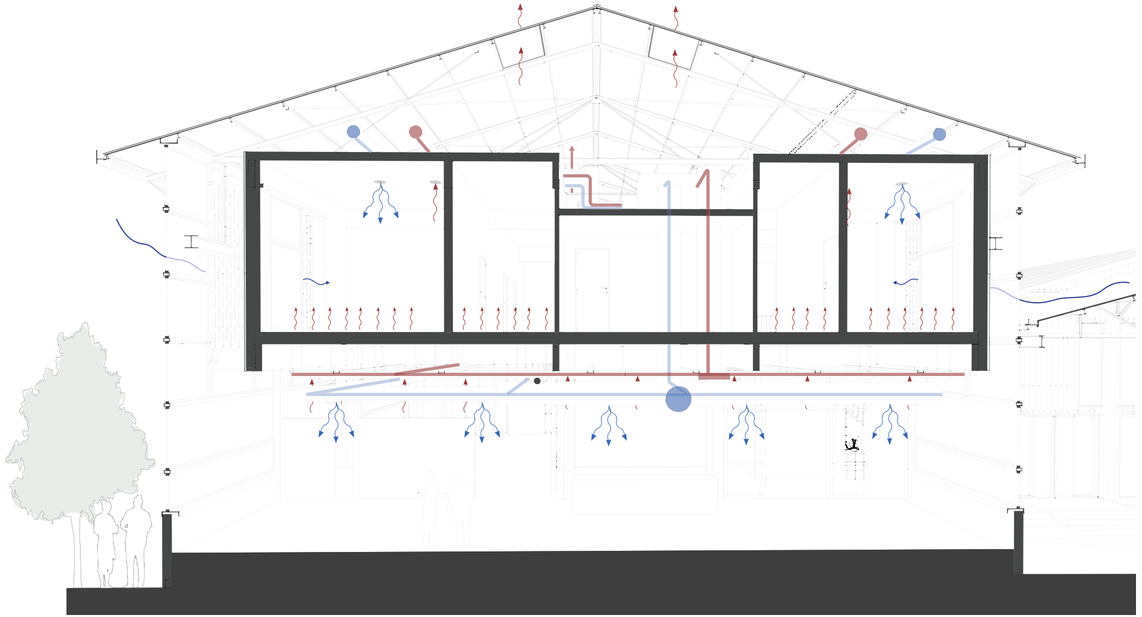
Balcony. Acoustic insulation. Single glazing



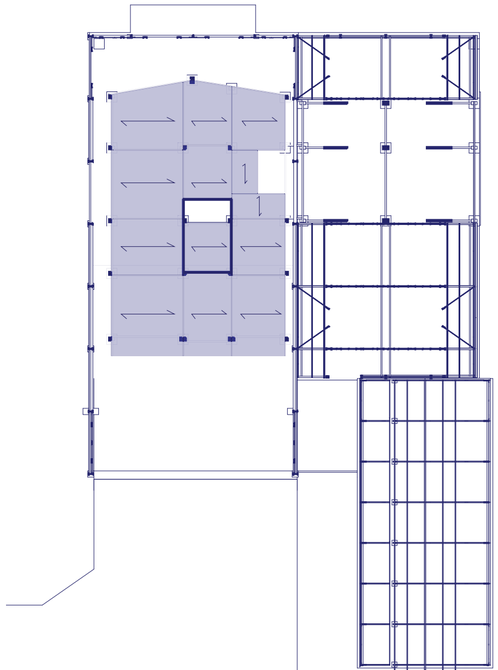
1:500

Climate


Makerspace & studio space
2 x Air treatment cabinet
Heat recovery unit
Excess water to sewer
Surge protection
Inverter
Switchgear
Entrance hall & digital station
1 x Air treatment cabinet
Insect house
+-400m2
Solar panels
Cafe
1 x Air treatment cabinet
Rainwater cistern
20.000 l
Thermal storage

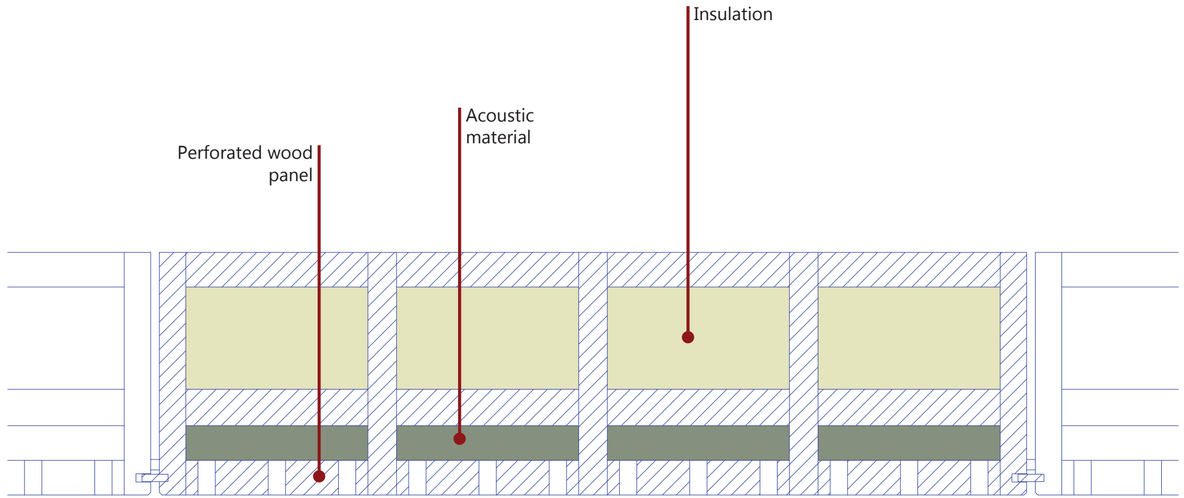


Construction and details



Span direction floor core

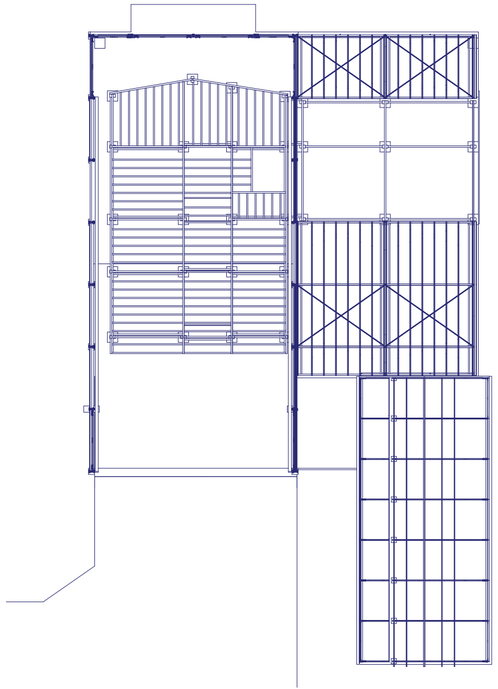
Floor core

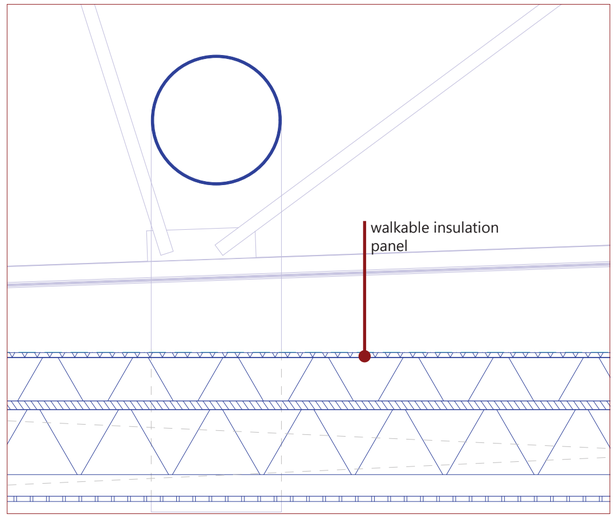


Detail 1:5
Lignatur floor

Construction and details

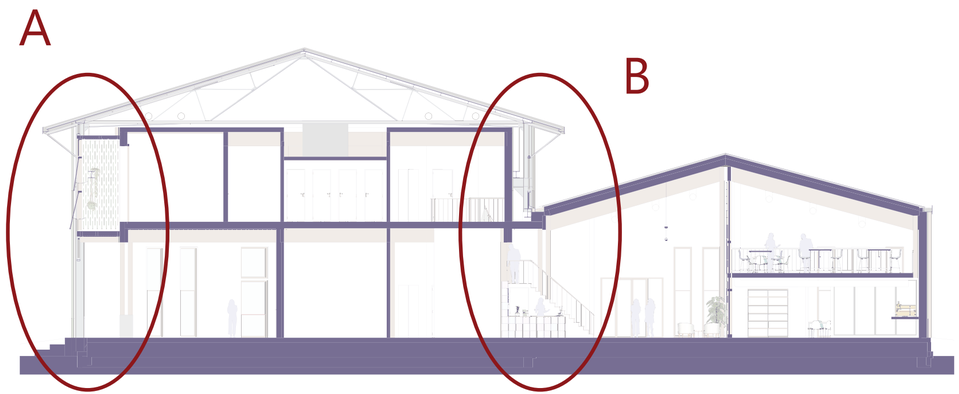
The roof of the core does not need to be waterproof, but there is a waterproof layer just in case the hull roof leaks. The roof is also walkable, making it easy to install installations.

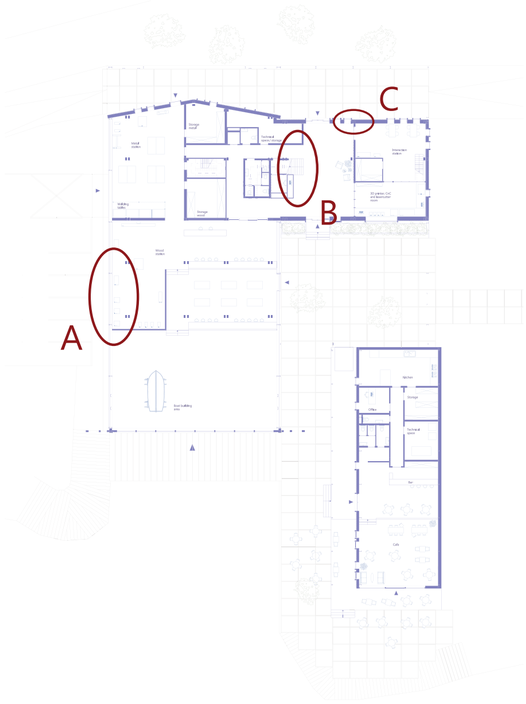




Detail 1:10
Roof core

Construction and details





Ground floor

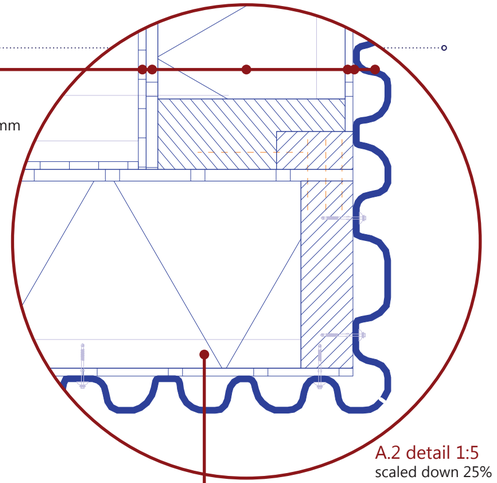
First floor

Construction and details

Detail A

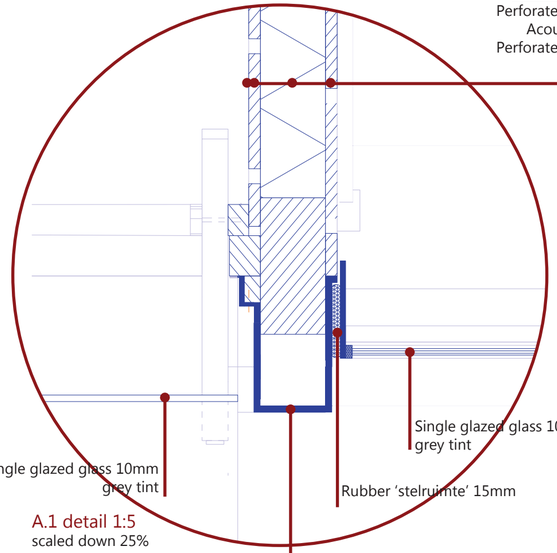
Core wall build up layers
Woven image curtain 9mm acoustic panel
Windproof vapour permeable wood fibreboard 12mm
Vapour-permeable insulation 280mm
Airtight vapour control rise board 18mm
Plasterboard 12mm

Balcony wall build up layers
Perforated wood panel 18mm
Acoustic material 100mm
Perforated wood panel 18mm
White paint finish

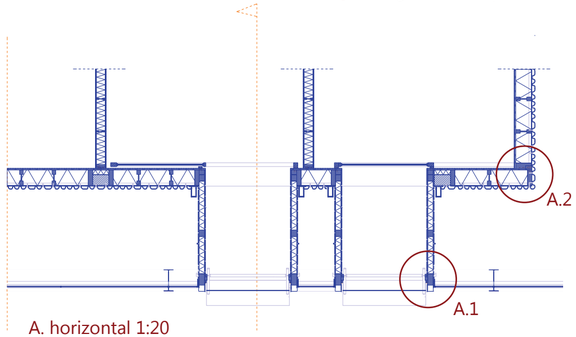


A.2 detail 1:5
scaled down 25%

Raveling for acoustic panels

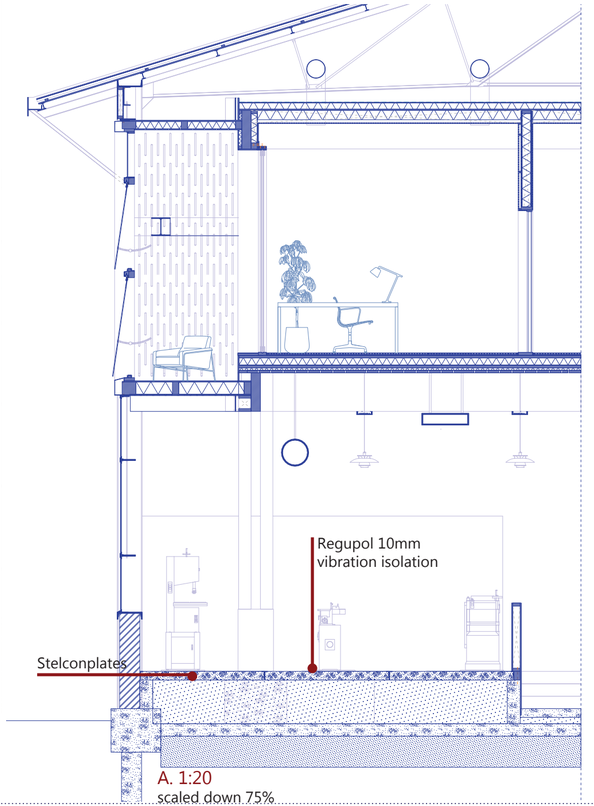


A.1 detail 1:5
scaled down 25%



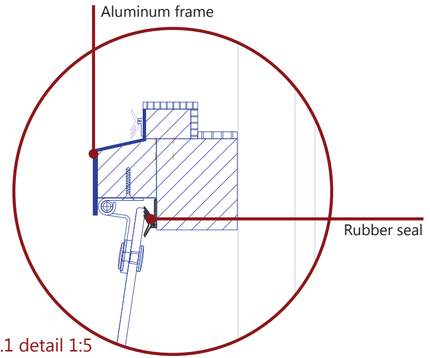
A. horizontal 1:20
scaled down 75%

A. 1:20
scaled down 75%

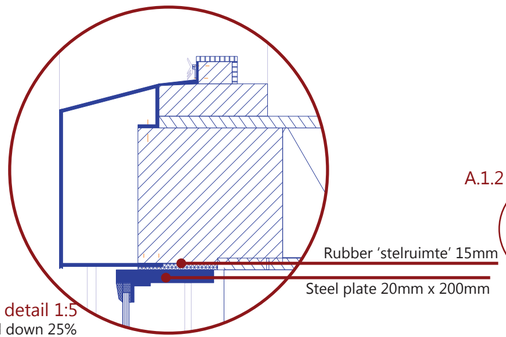


A. 1:20
scaled down 75%

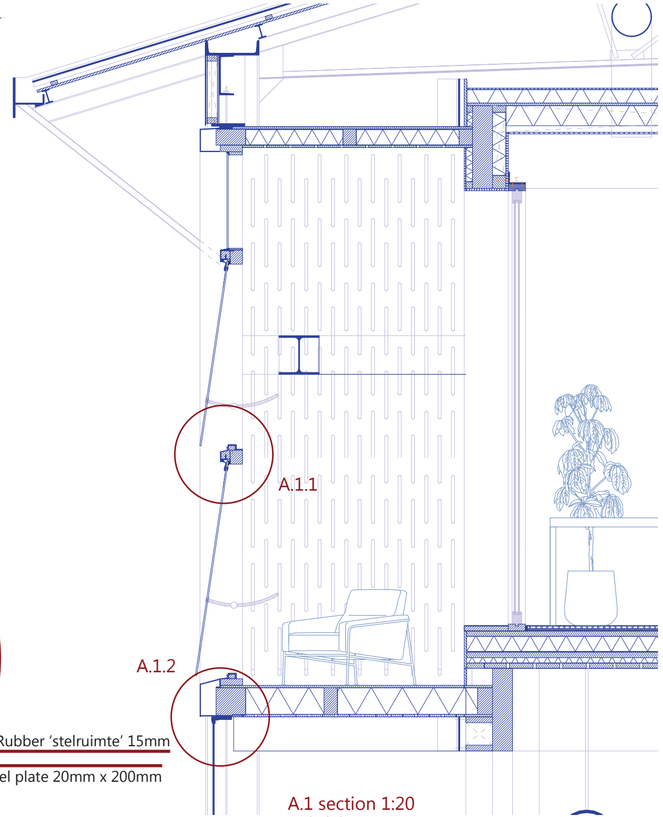
Detail A zoom-in



A.1.1 detail 1:5
scaled down 25%

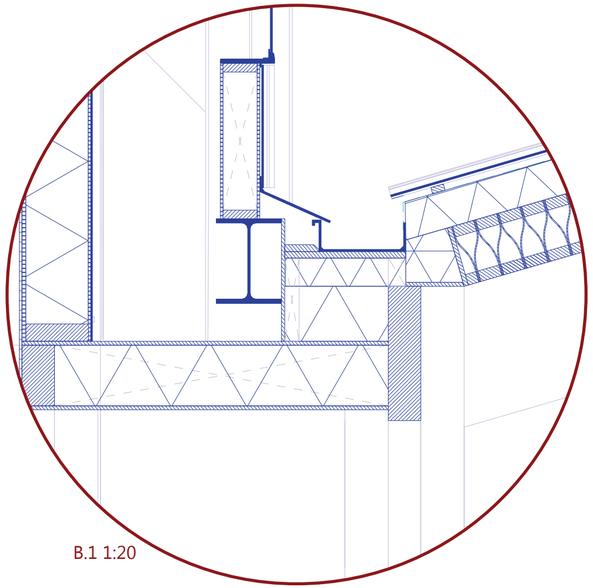


A.1.2 detail 1:5
scaled down 25%

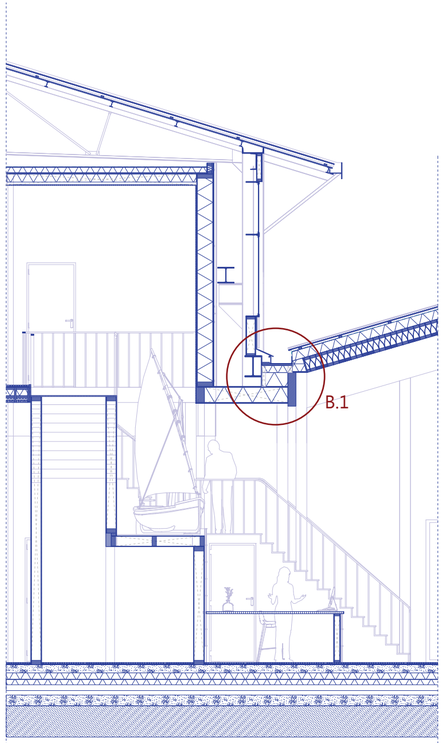


A.1 section 1:20
scaled down 30%

Detail B



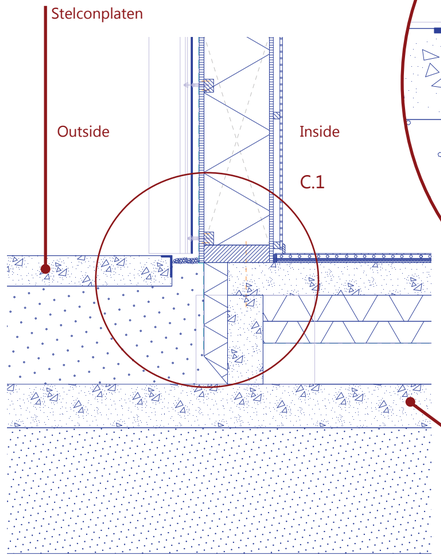
B.1 1:20



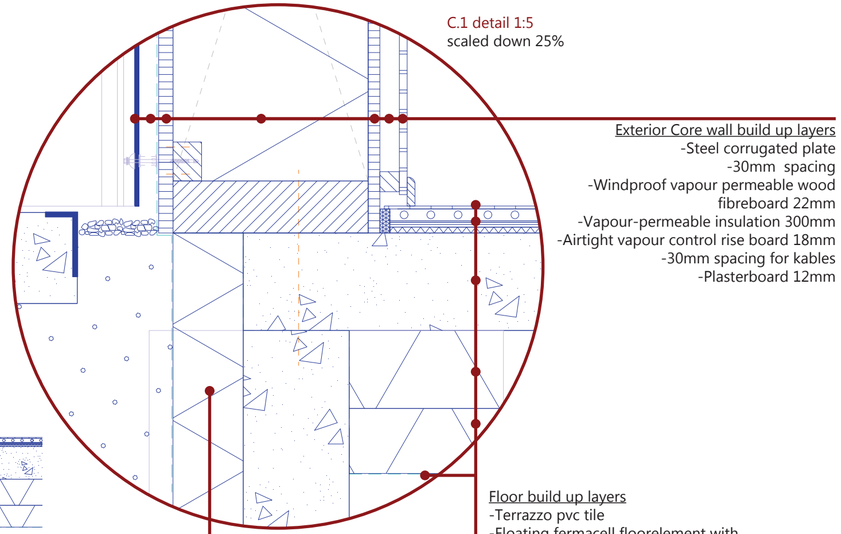
B. 1:20
scaled down 75%

Construction and details

Detail C



C. Vertical section 1:10



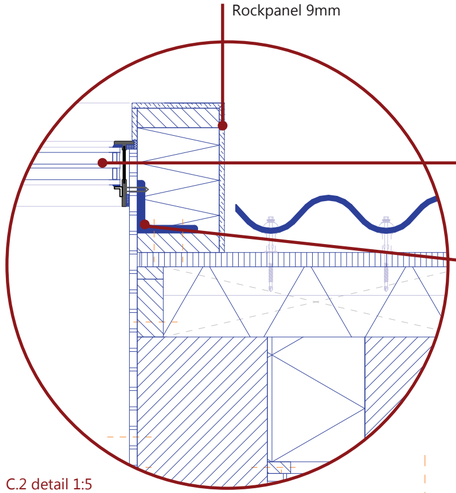
C.1 detail 1:5
scaled down 25%

Exterior Core wall build up layers
-Steel corrugated plate
-30mm spacing
-Windproof vapour permeable wood fibreboard 22mm
-Vapour-permeable insulation 300mm
-Airtight vapour control rise board 18mm
-30mm spacing for kables
-Plasterboard 12mm

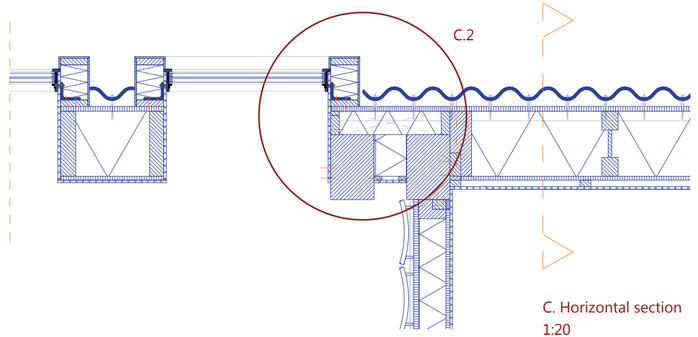
Floor build up layers
-Terrazzo pvc tile
-Floating fermacell floorelement with underfloor heating
-Hollow core slab floor 200mm
-Insulation Rockfit duo 120 mm
-Insulation Rockfit duo 100mm
-Water resistant vapor open foil

Moisture-resistant base insulation

Existing reinforced concrete floor 200mm



C.2 detail 1:5
scaled down 25%



C. Horizontal section
1:20

Visualisations