

The future of Hätbergadammen



Restoration and re-purposing of an abandoned hydroelectric powerplant



LUNDS
UNIVERSITET

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AAHM10 - Degree Project in Architecture

Lunds Tekniska Högskola 2021

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The path to the site

Acknowledgements

I would like to thank my supervisor Ingela Pålsson Skarin for sharing her expertise in the field of restoration, especially since it is my first time working with existing structures and buildings. Thanks for providing me with helpful advice, resources, and recommendations. I want to thank my examiner Christer Malmström for his input, and the numerous courses over the past two years.

Thanks to my classmates, and a special thanks to Óli for all the conversations we had. Additionally, I want to thank everyone in my family, and especially my parents for their endless support. Lastly, I would like to thank Marius, Federica, and especially Yasir for making the time of the pandemic so much easier and keeping me company while spending endless hours by their kitchen table.

Thank you to all of you, I could not have done this without you.



Powerhouse Northeast

Abstract

This thesis work is an academic study investigating how to transform and re-purpose the abandoned hydroelectric powerplant, Hästbergadammen. The powerplant has been abandoned since the dam collapsed in 2010, and the case of rebuilding it has been in the Land and Environment Court since 2016.

The thesis proposes a new purpose for the site. It suggests giving back a public monumental place where the locals affected by the accident finally can get closure. It aims to take into consideration what can be most beneficial from an environmental point of view, for the potential visitors and local inhabitants. The report covers research of the location, and in the end, suggests a new design proposal meant to improve and strengthen the connection to the site's history.

Since it is abandoned, the main goal has been to activate the area and make use of it. This has been achieved by re-programming the location with public programmes to enhance its cultural and natural values. The site is divided into three main parts, the residential building, the Powerhouse, and the spillway. The design proposal focuses on the Powerhouse and how to transform it into a museum and cafe.

A thorough investigation of the site has been made by studying the history of the area, the original blueprints, through site visits and by conducting interviews with the locals. Literature about restoration and references of designing with contrast has also been studied. Furthermore, a value assessment of the Cultural property values in the model of Feilden has been carried out in regards to the Powerhouse. The assessment has been used as a framework to evaluate what to preserve, what to remove, and what to add to the project.

This thesis explores the meeting between the existing structures and the new proposed design. It aims to enhance the Powerhouse's original values while at the same time create new values which are adapted to our modern society. The concept brings new life to the powerplant, which will not only continue to tell its history but it also enables use for future generations.

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Introduction



View from North side

Background

Hästbergdammen is an abandoned hydroelectric power plant located in the northeast part of Skåne in Sweden. In 2010 the dam wall supporting the water reservoir of the power plant collapsed and over one million cubic meters of water flooded Helge å. No one was seriously injured, but the material damage was significant, destroying a bridge, roads and damaging properties in the area.

The future of the site has been unclear ever since the accident, whether to create a natural reserve or to rebuild the power plant again is still in question. Today the case of rebuilding the power plant is being evaluated by the Land and Environment Court, but the years are passing and the structures of the site are decaying. The landowners of the area have still not gotten closure after the accident. They want something different than the two alternatives mentioned. They would prefer keeping the local cultural heritage by preserving the old buildings and natural rivers.

Given that it has been more than ten years since the accident, nature has started to take over the site. Where there used to be 10 meters of water there is now land-grown greenery, and the natural river has returned bringing along greater biodiversity. The river provides a unique quality to the region since most natural rivers in Skåne have disappeared after the 13th century when the construction of sawmills and windmills started.

The river is used by canoeists, and the site is in connection to two hiking trails, one being the popular Skåneleden trail and the other the local Vieåleden trail. A lot of hikers and canoeists pass the site and according to reviews on Google maps, some visitors are intrigued by the possibilities of urban exploring, while others find the site mysterious and creepy.

The site has an uncertain and debated future. The opinions on the development are scattered, and no one seems to know what will happen with the future of Hästbergdammen.



View from South side

Purpose & Goal

Given the background of the site, I would like to propose a third option; to transform and re-purpose Hästbergadammen for public use and give back a monumental place for the people. The memory of the site deserves justice and protection, and it needs changes to make it accessible and safe to all public. It is important to value the site and instead of rebuilding the hydroelectric power-plant or making it into a nature reserve, I want to take into consideration what can be most beneficial for the environment and for local inhabitants and visitors.

Since it is abandoned, the main goal is to activate the site and make use of it. From an environmental point of view, it is important to find a new purpose for the site. The decay of the structures of the site is not a sustainable option, and with the UN 2030 Agenda for Sustainable Development it is crucial to think of how the site can be reused. By not rebuilding the hydroelectric power plant again, the newly returned river will be preserved, and the biodiversity will have good opportunities to increase.

The goal of the suggestion is to preserve and respect the industrial memory and history of the site. It aims to make use of the infrastructural value while representing the history throughout the time as a hydroelectric power plant, the event of the dam collapse, and the time of abandonment.

Through this thesis, it explores the meeting between the existing structures and the newly proposed design. The research gives a framework of the existing site which informs the design language of the newly added elements. The main focus of the project is to celebrate the existing Powerhouse and its context by preserving it and improving it for public use. The quality of the site can be improved by providing social and architectural values supporting a space for exploring and learning while allowing the visitor to take a rest to appreciate the history and surrounding nature.



Generator Hall

Method

To achieve the purpose and goals of the project, a thorough investigation of the site was made. At the beginning of the research, the history of the site was studied and interviews with the inhabitants and the municipality were conducted to understand their point of view.

Later on, Microfilm blueprints were received from Hässleholm municipality showing the upper floor plan and the east elevation of the Powerhouse. With help of the blueprints and satellite photos in scale, I combined a 3D model of the site. The 3D model was then used to extract the first drafts of the floor plans and elevations.

To complete the drawings and to make a complete inventory of the Powerhouse, a site visit was made. I used the printed floor plans from the 3D model in scale 1:100, a laser measuring tool, and a yardstick to control measure the building and the concrete structure outside. During the site visit, details of the floor plans, four elevations and details of windows and doors were also documented.

Literature about restoration and references of designing with contrast has been studied. A Value assessment of the Cultural property values of Feilden has been made regarding the Powerhouse. It has made it easier to evaluate what to preserve, what to remove, and what to add to the project. Based on these studies a new design has been proposed with new functions of the site.

Introduction of site



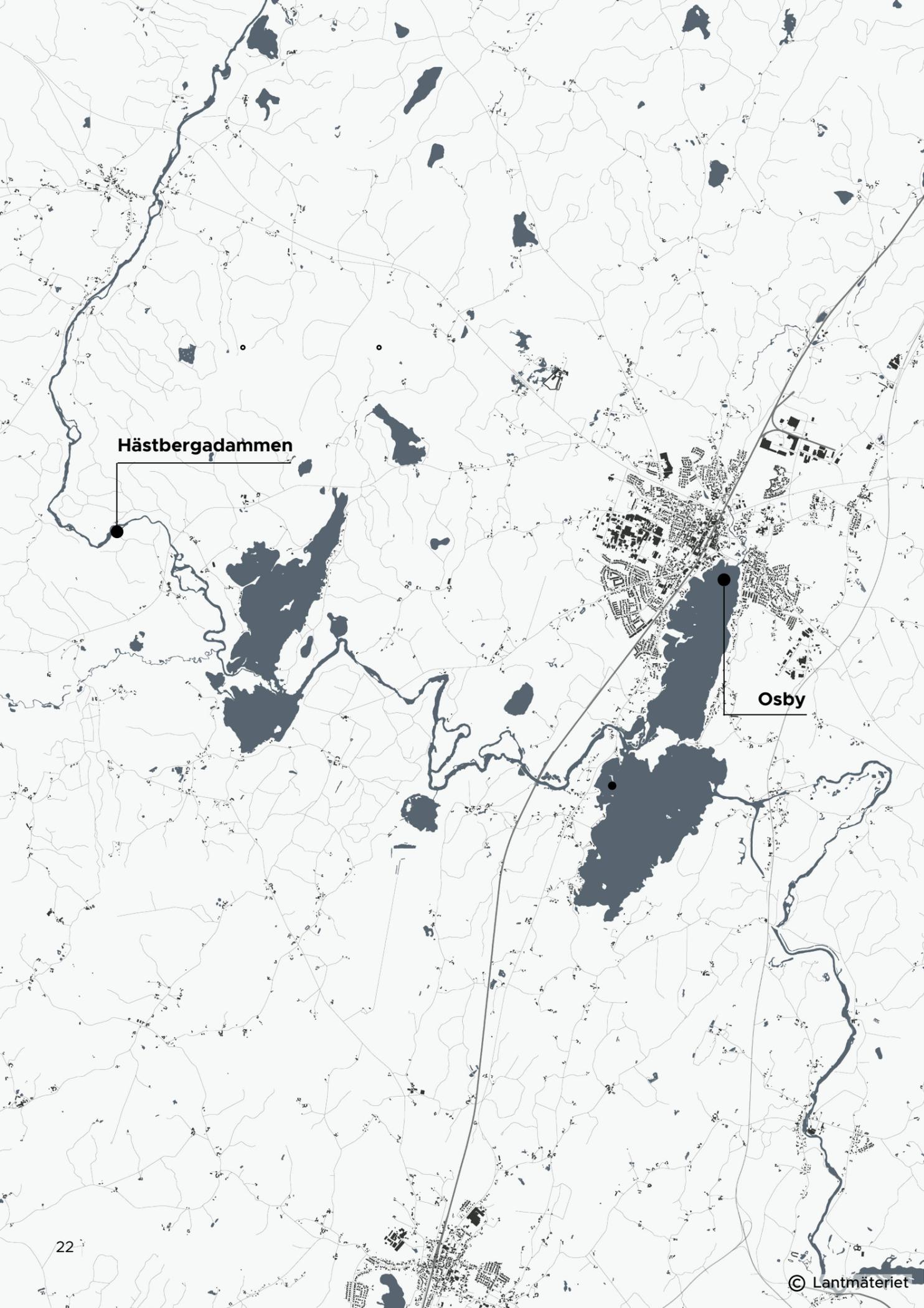
View from spillway gates

The site

Hästbergadammen

The hydroelectric powerplant Hästbergadammen is located 10 kilometers outside of Osby in the northeast part of Skåne. It is connected to Helge å, Skånes largest watercourse, providing possibilities for industries and recreational activities. The area has been populated since the Iron Age and there are still historical remains surrounding the site (Biosfärkontoret Kristianstads Vattenrike 2021).

Today there is a low-density population in the area with mainly elderly and retired middle-income earners living in spread-out villas or farms. The area is popular for its cultural and natural values which can be appreciated on the hiking trails and canoeing routes. The popular hiking trail of Skåneleden passes by the site from Osby in the east, to Verum in the southwest. The trail used to pass over the dam wall by the hydroelectric power plant and connect the two sides separated by the water reservoir. After the collapse of the dam wall in 2010 the trail was rearranged and now follows a local car road located to the east of the site. In the area, there is also a local hiking trail called Vieåleden. It was conducted by Hässleholm Municipality 2000-2004 to preserve, highlight, and improve the accessibility of the landscape and the route also connects to Hästbergadammen. The site is abandoned today, but it is still an intriguing stop for visitors interested in urban exploring, history and nature (Hässleholms Tourist information 2013).



The site

Hästbergadammen

Country: Sweden
County: Skåne
Municipality: Hässleholm
Coordinates: 56°22'53.4"N 13°51'21.0"E



History of site

The surrounding area of the hydroelectric power plant has been used and inhabited since the Iron Age, which can be seen in historical remains surrounding the site. It shows how during the middle ages, towns and villages started to develop along Helge å and use it as a means of transportation from the north to the south.

In the 19th century, the area was industrialized with sawmills, ironwork and paper mills. The river was used for the transportation of iron, timber, tar and pitch. When Skåne started to use electricity in the 20th century the hydroelectric powerplants became significant for the area. The mill wheels were replaced with electrical turbines in the power plants (Regions Museet Kristianstad 2011).

The expansion of hydroelectric power had an essential part in modernizing industries and households in Sweden, but it also brought some negative effects. The biodiversity decreased due to the transformation of the natural rivers and rapids into water reservoirs and dam walls. Animals and plants adapted to live in rapids had a change of their habitat and hence a harder time to survive (Bergsten 2016).

Hästbergadammen was constructed at the beginning of the 1950s and the official inauguration was on the 11th of May 1953. The power plant was owned by Brittedals Kraftproduktion and was managed for a long time by the engineer Edvard Nilsson, living in the residential building next to the power plant. The water reservoir of the power plant was big enough for two million cubic meters of water and had a maximum water flow of 20 cubic meters per second. The yearly production of electricity was 9 GWh with a capacity of 1,7 MW (Swedish Accident Investigation Board 2011), which can be compared to the biggest hydroelectric power plant in Sweden, Harsprånget. It is located in a more powerful river up north and has a capacity of 830 MW (Vattenfall AB).

Hästberga hydroelectric powerplant constructed.

1902

1953

1960

1975



The accident of Hästbergadammen

On the 7th of November 2010 two canoeists going along Helge å observed how the water in the water reservoir of Hästbergadammen started to flow over the dam wall. They contacted the authorities, but it was too late. Within a few minutes the dam wall supporting the water reservoir of the power plant collapsed and over one million cubic meters of water flooded Helge å. The large amounts of water destroyed a car bridge, roads and had significant damage on private properties in the area (Swedish Accident Investigation Board 2011).

Three persons fell into the water during a walk and one of them was taken to the hospital due to hypothermia. Two other persons got stuck on an island created by the rising water level and had to be rescued by a boat (Hielscher, Tanaka, Palmkvist 2010).

The hydroelectric powerplant was owned by the local electricity distribution company, Brittedals Kraftproduktion AB. In the report from the Swedish Accident Investigation Board, it is stated that the accident happened due to lacking management, control, and maintenance of the power plant. The alarm from the power plant was not controlled by the company which allowed the water to rise without control. Erosion had occurred and due to the pressure, the dam wall collapsed. The case was investigated by the Swedish Accident Investigation Board in 2011, and the board of Brittedals Kraftproduktion was granted discharge from liability.

After the accident in 2013, the County Administrative Board of Sweden wanted to obtain the property and turn it into a natural reserve to protect the biodiversity. Their offer was not good enough for Brittedals Kraftproduktion, and instead, the property was sold in 2016 to Watten i Sverige AB, who has made a request of rebuilding the hydroelectric powerplant (Lööf 2016). Today the case is being evaluated by the Land and Environment Court, and the future of the site is still up for debate (Bergsten 2016).

Over one million cubic meters of water flooded Helge å.

Brittedals Kraftproduktion: accident due to lacking management, control and maintenance.

Sold to Watten i Sverige AB: request to rebuild powerplant, case being evaluated by the Land and Environment Court.

2010

7th of November

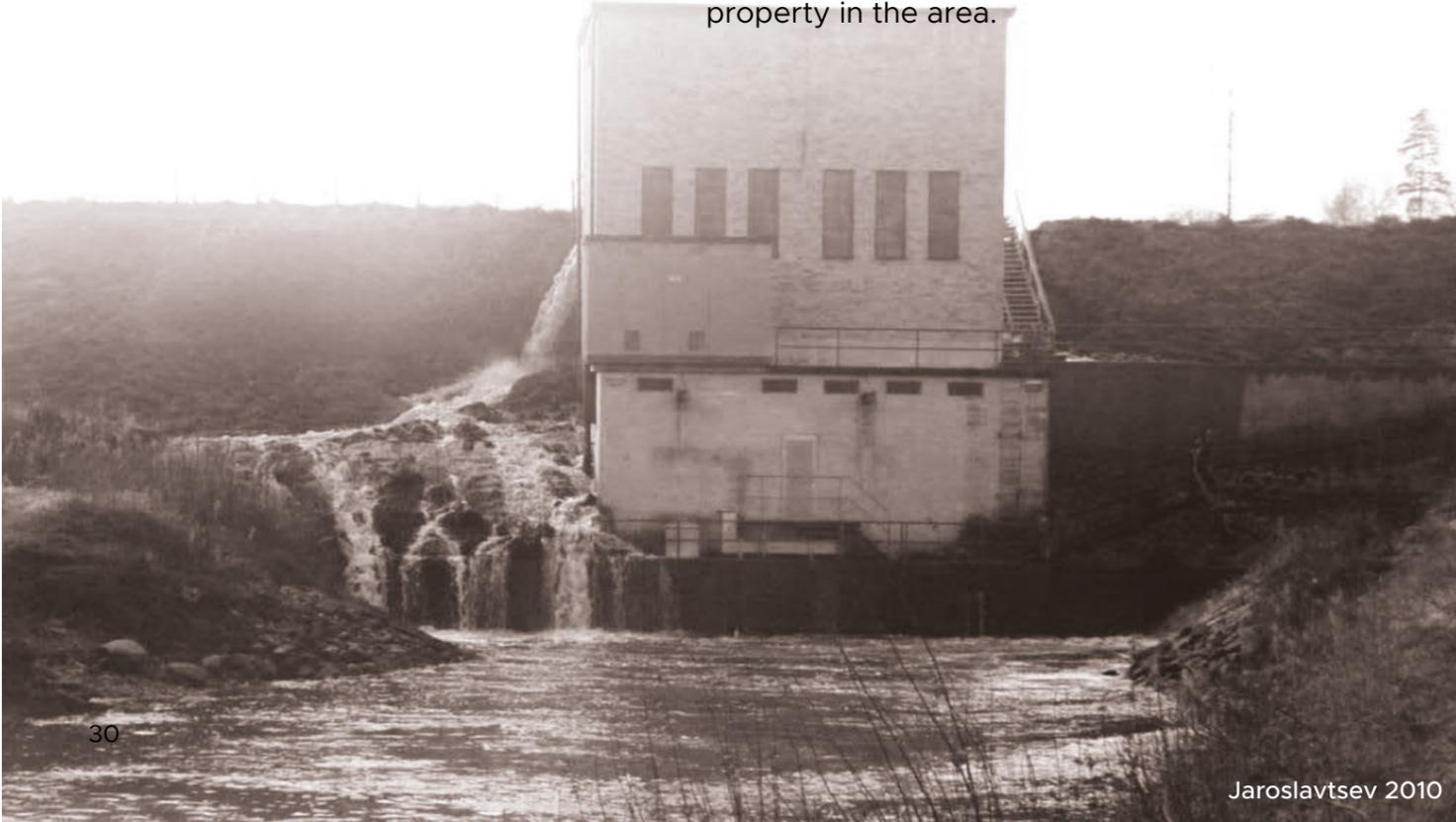
2011

2013

2016

Material damage was significant: destroying a bridge, roads and property in the area.

County Administrative Board of Sweden wanted to obtain property and turn it into a natural reserve to protect the biodiversity,



Jaroslavtsev 2010



Brauer 2020

Site - today



Site - showing previous conditions



Residential building

Skåneleden

Powerhouse

Spillway

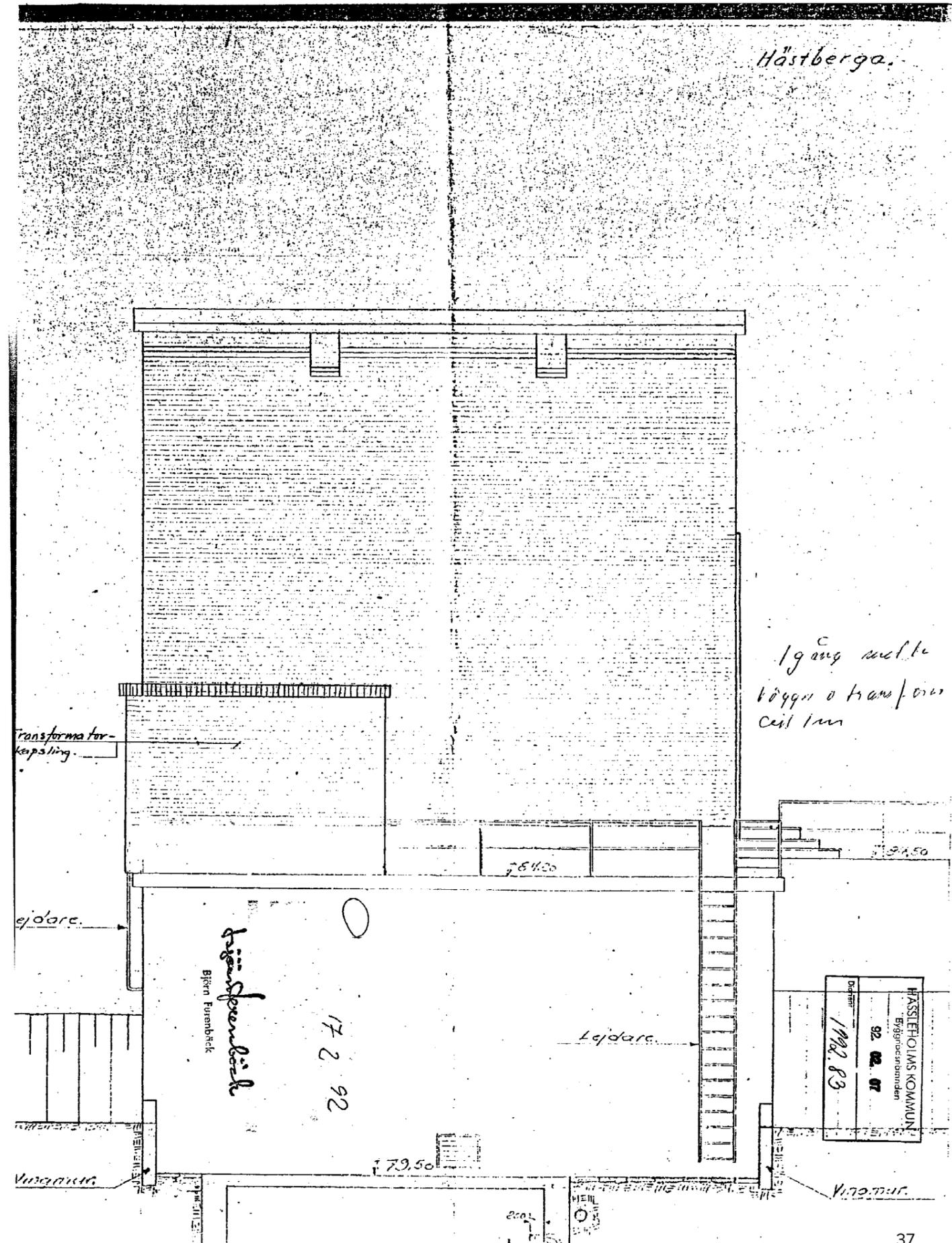
Damwall

Water reservoir

The Powerhouse

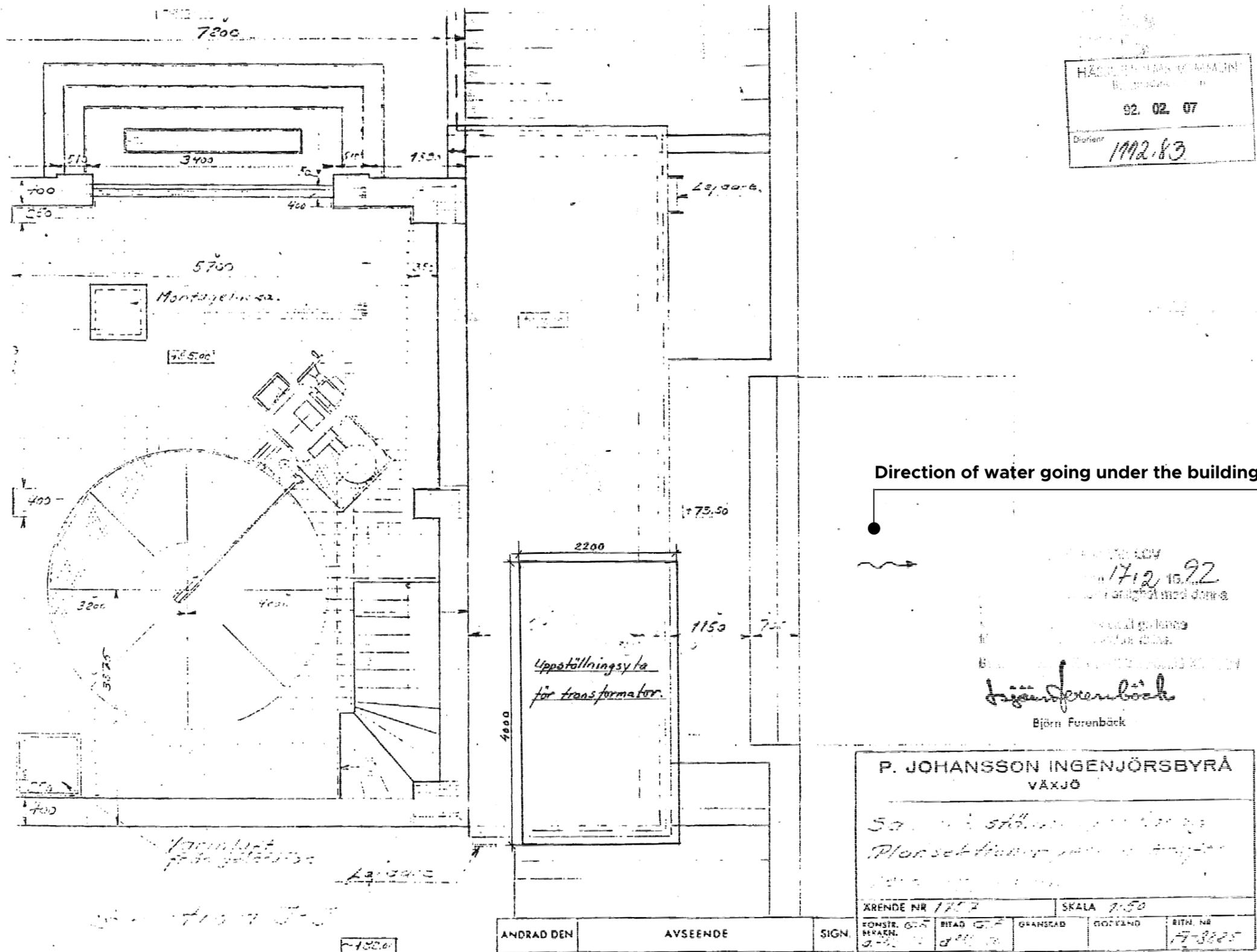
1992 - East elevation

The public access to blueprints and documents of the site has been limited. These show microfilm blueprints of the Powerhouse received by Hässleholm municipality. The blueprints were possibly produced in connection to a request for a building permit of new windows on the east facade. The blueprints were made in 1992, and the elevation is not showing the existing windows which can be observed on the building today.



The Powerhouse

1992 - Plan floor 1



The site today



My first personal impressions of the site

My first encounter with the site was in the fall of 2020 during a hike with some friends. Since I have always had an interest in abandoned places the site intrigued me and made me want to explore it.

I started by exploring the buildings on the north side of the river, consisting of the abandoned residential house. It was noticeable how bad shape the house was in, with mold, wallpapers hanging down the walls, overgrown greenery, broken windows, and graffiti from previous visitors. While exploring the three floors of the house I was intrigued by the views in the windows demonstrating the old hydroelectric building on the other side of the river. As I walked outside to the overgrown garden, my feelings became mixed as I observed the old flag post on the lawn and trying to imagine the history and life that once had occurred there.

It was a sunny day, which made the surrounding nature and river even more appreciated. I sat down by the river and grasped the view of the hydroelectric power station on the other side. The brick facade of the Powerhouse with its large windows and interesting form intrigued me more than the residential building. We decided to go and have a look at it.

To be able to reach it, we had to follow the local road to the east for three kilometres and pass a car bridge over the river. Skåneleden connects to the road, and as we approached the site from the south I could spot the Powerhouse from a top of a hill. Instead of following the local car road down, we turned off and followed the old signs of Skåneleden up to the remains of the dam wall of the powerplant. We passed the spillway, and we went down the slope where the dam wall was destroyed 10 years earlier. Nature had started to take over, with new trees on their way up and grass covering the landscape.

In front of us, we had the history of an abandoned industrial area with the hydroelectric power plant and its huge gap of more than 60 meters in the dam wall, created during the accident. At the time I did not know about the accident or why the site was abandoned, I remember trying to make sense of the old dam and where the water reservoir must have been.

We made our way to the Powerhouse, and my impression of the first floor was that the space was enclosed and dark, with old electrical cabinets in the corners. I followed the stair upstairs and the impression of the space changed. The generator hall was open and airy, showing the heavy machinery and a beautiful sight out over the river. The Powerhouse appeared in bad shape, but mainly due to vandalism, with broken windows, stolen objects, and graffiti on the walls. I remember thinking that it was a shame to see it decay, and little did I know that one day I would do my thesis work there.



Northeastern view from Powerhouse

Site visit

After I decided to make my thesis project about Håstbergadammen I knew that it was suitable to revisit the site to better grasp it and take inventory of the existing buildings.

The site visit occurred in the middle of February 2021 during a snowy day. To be able to reach the site I had to walk through 30 centimetres of snow that covered the abandoned path down to the Powerplant. The site visit allowed me to experience and appreciate the site once more but in a different type of climate.

For preparing, I tried to get blueprints from the municipalities of Osby and Hässleholm. I also contacted Brittedals Kraftproduktion AB, but without any luck. Finally, Hässleholm municipality sent me two blueprints of the Powerhouse which I used in combination with online satellite maps in scale to combine into a 3D model with all the information I had at the moment. From this, I exported floorplans on a scale 1:100. The floorplans were not completed and missed a part of the west side and major details. I printed out the floorplans and brought them with me to the site visit.

During the site visit, I used the previous floorplans, a laser measuring tool, and a yardstick to measure the building and the concrete parts outside and to complete the inventory. I drew the remaining parts of the floorplans, four elevations, and details. The site and buildings were also documented through photographs and sketches made at the site.



1



2

Site visit

Photos

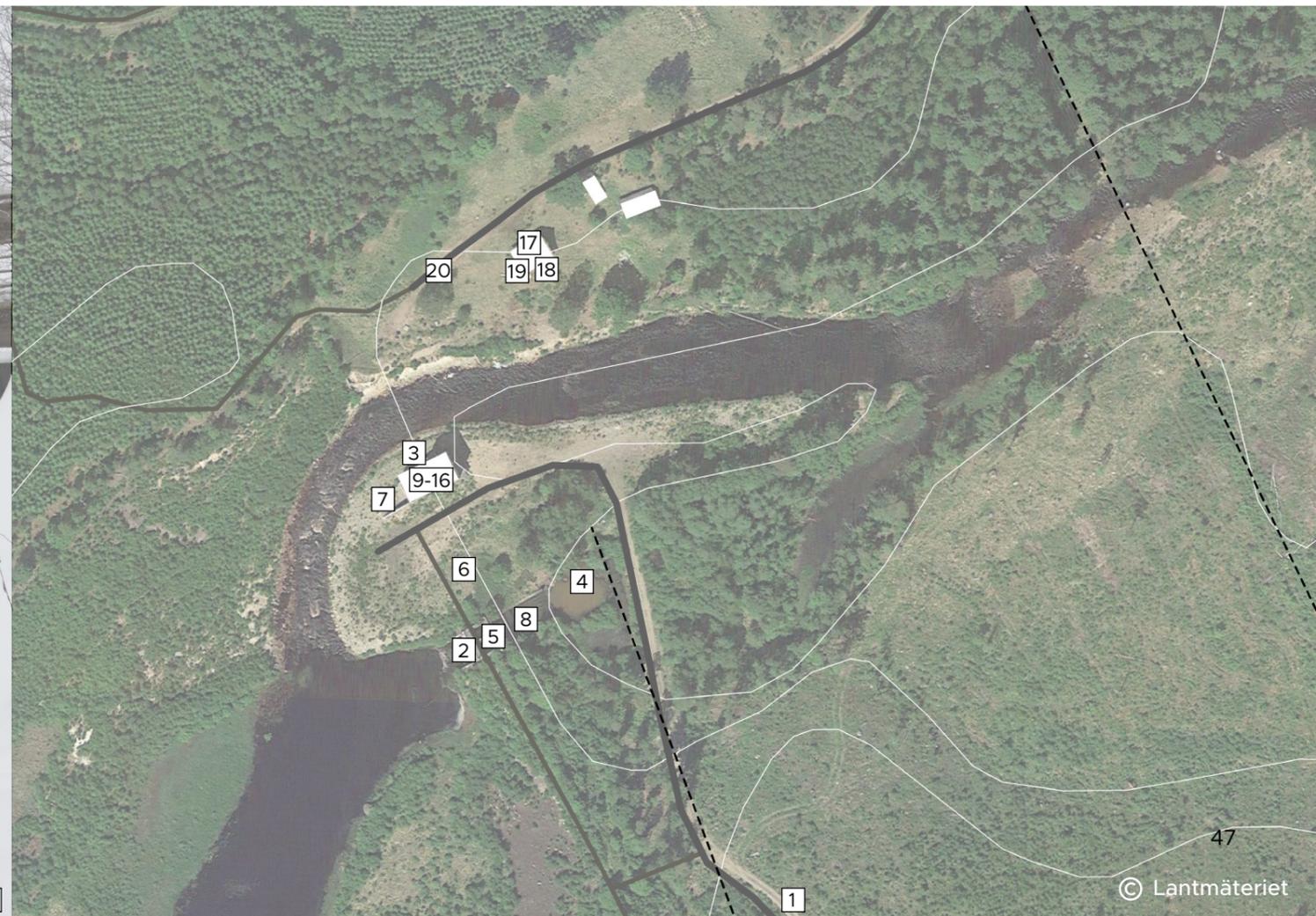
The photos of the site were taken during the two different site visits in September 2020 and February 2021. Below it is shown where the photos on the following pages were taken.



3



4





5



6

Site visit - South side

Outside of the Powerhouse

Nature has started to take over the site. Where there used to be 10 meters of water there is now land-grown greenery. The natural river has returned and today it separates the hydroelectric power plant from the residential building on the other side.

The photos are showing the spillway, the water in-take, as well as the Powerhouse from the outside.



7



8

Qualities

- Natural viewpoint on top of damwall over spillway.
- Possible viewpoint on top of water-intake by the Powerhouse.
- Intriguing nature with water draft, hills, forest, and biodiversity.
- Concrete walls with possibility for re-purposing as support for extensions or for a programmatically active walls.

Restrains

- Spillway and water-intake can be hard to re-purpose.
- Possibly contaminated soil after dam collapse (Swedish Accident Investigation Board 2011).
- Unclear state of structures.



9



10

Site visit - South side

Powerhouse

The Powerhouse is where the power was produced when the Hydroelectric powerplant was up running. The main entrance was located on the north side and could be reached by a car road connecting the residential building to the power-plant. On the west side of the road, the dam wall was supporting the water reservoir and on top of it, Skåneleden crossed.

The Powerhouse consists of two floors and a foundation where the water used to pass underneath to the turbine. The upper floor has a high ceiling with big windows and open space compared to the lower floor with more enclosed space.

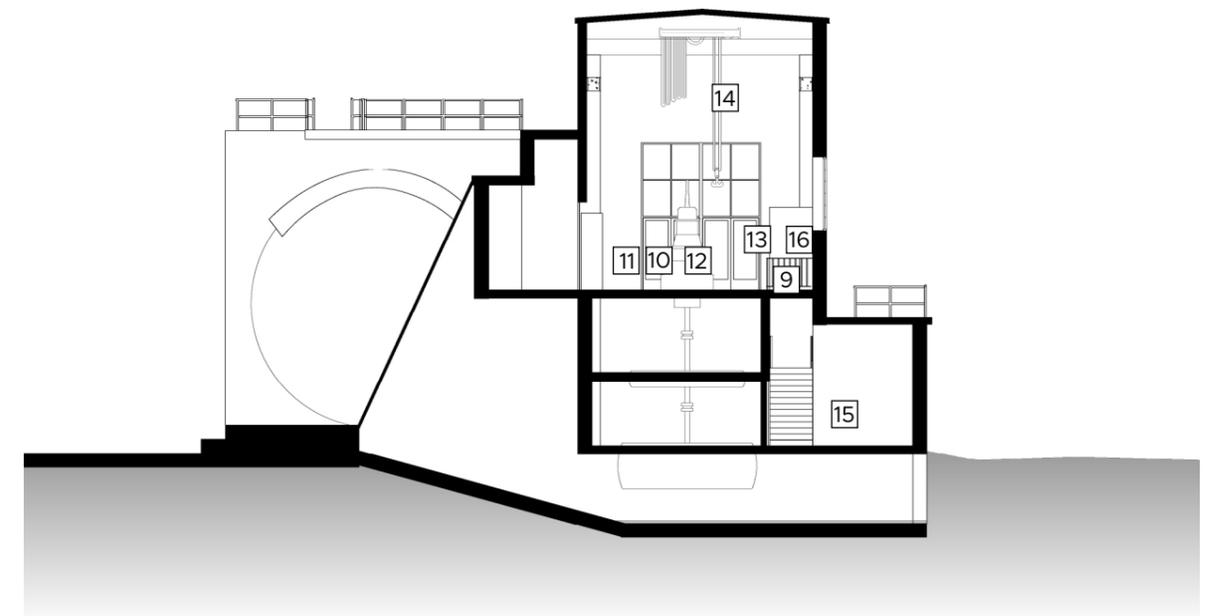


11



12

Location of photos





13



14



15



16

Site visit - South side

Powerhouse

Qualities

- Stable brick construction.
- Big open space in Machine Hall with 8 meters in ceiling height.
- 4 meter high windows by old entrance from the north.
- 6 windows on the east facade.
- Handcrafted red painted steel handrail by stairway.
- Industrial history of the machinery and generator of the powerplant.
- Possibility for viewpoints and openings.

Restrains

- Two dark enclosed rooms for the turbine hall under the generator. Low ceiling height and hard to reprogram without removing one floor and machinery.
- May need new insulation and a cold air entry for preservation of heat.



Site visit - North side

Residential villa - previous engineers house

The restoration of the Powerhouse will be the main focus of the project, while the residential building will be approached conceptually. To restore the house supports the suggested programmes and the concept. The design of the residential building can be approached in a second phase of the project.

Qualities

- Stable brick construction.
- Adaptable floorplan with possibilities to fit several programmes.
- Three floors that can be separated.
- Good road connection.
- Open space in the garden.
- View of Hydroelectric Powerplant.

Restrains

- Overgrown.
- Possibly water damaged.
- Vandalised and in bad shape.

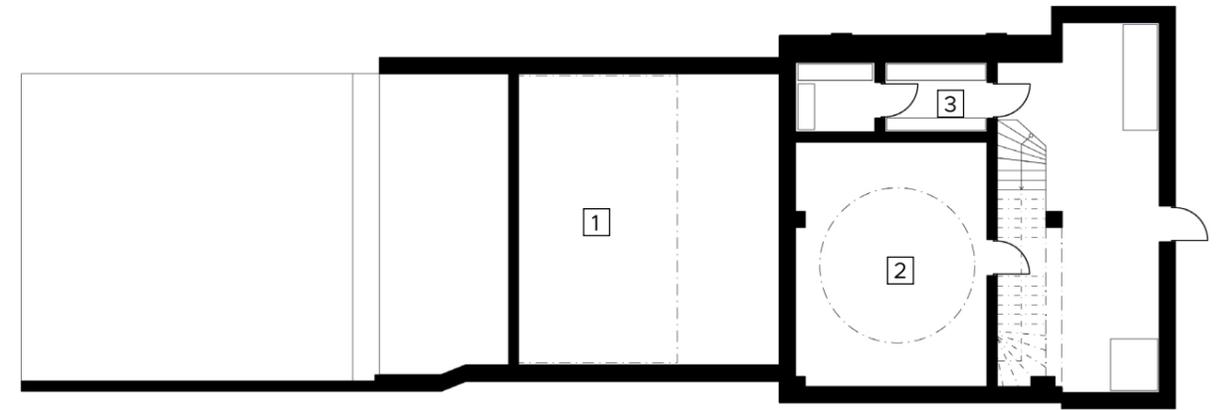
The buildings - Powerhouse

2021

1:200

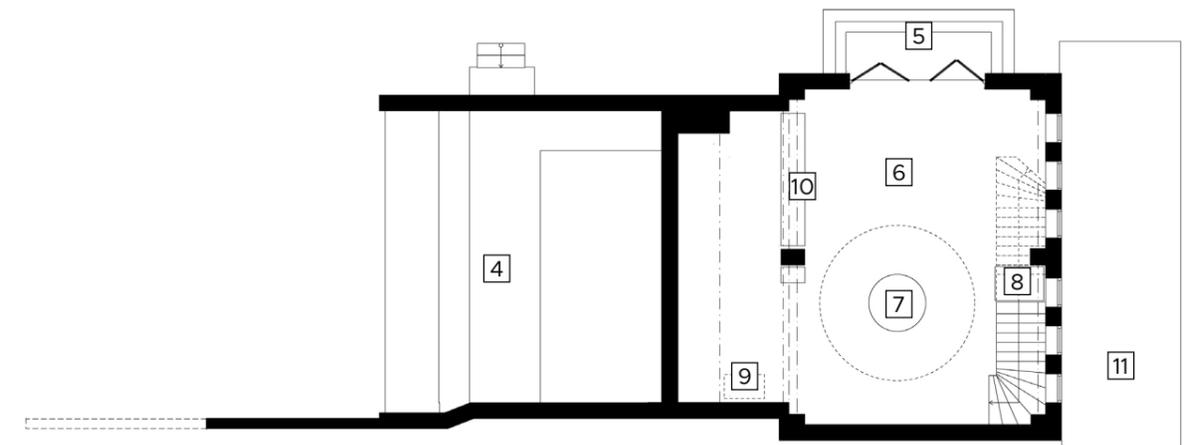
The drawings were made by a combination of earlier blueprints from 1992 and measurements taken during the site visit with a laser measuring tool.

Plan 0



- 1 Water intake
- 2 Turbine hall
- 3 Electrical room
- 4 Dam floor
- 5 Previous main entrance
- 6 Machine hall
- 7 Generator
- 8 Telefon box
- 9 Entry upper turbine hall
- 10 Electrical cabins
- 11 Previous location of transformer

Plan 1



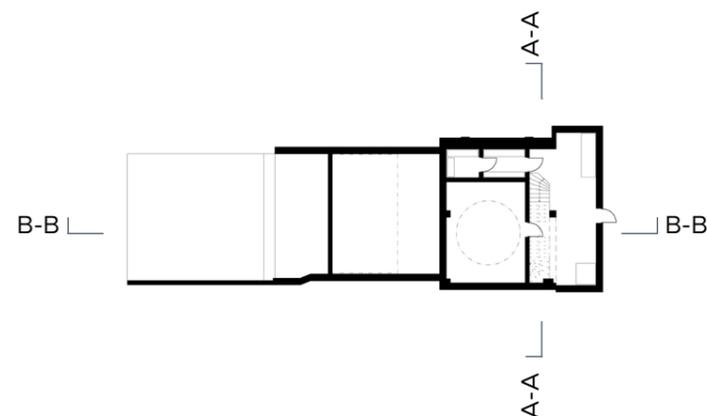
The buildings - Powerhouse

2021

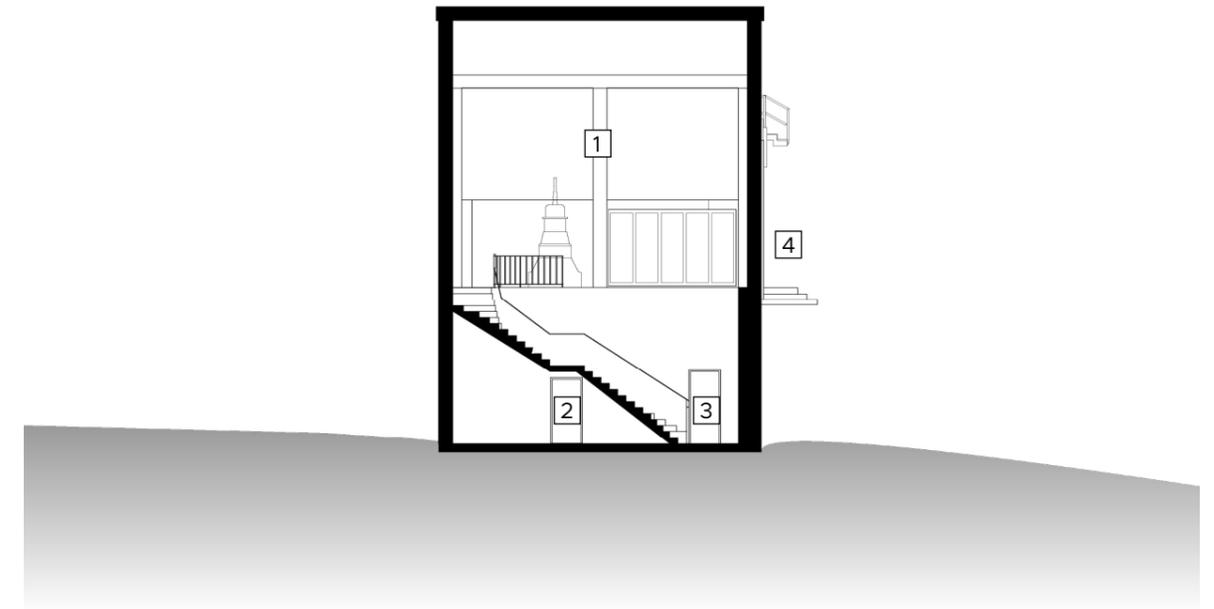
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The drawings were made by a combination of earlier blueprints from 1992 and measurements taken during the site visit with a laser measuring tool.

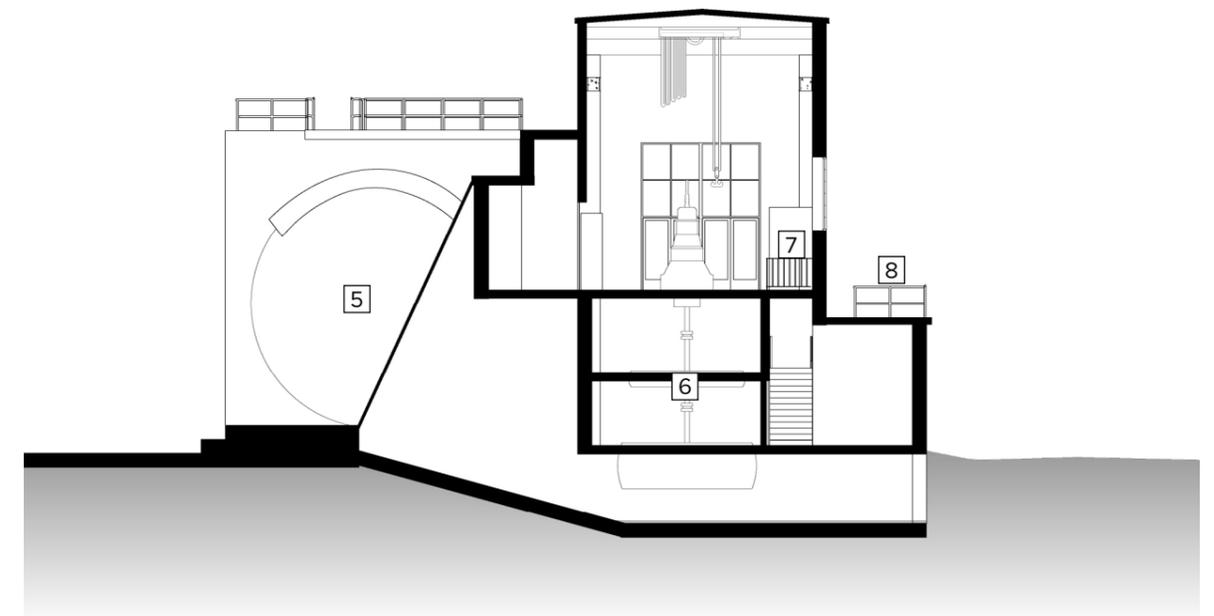
- 1 Machine hall
- 2 Entry turbine hall
- 3 Entry electrical room
- 4 Previous main entrance
- 5 Water intake
- 6 Turbine halls
- 7 Telefon box
- 8 Previous location of transformer



Section A-A



Section B-B

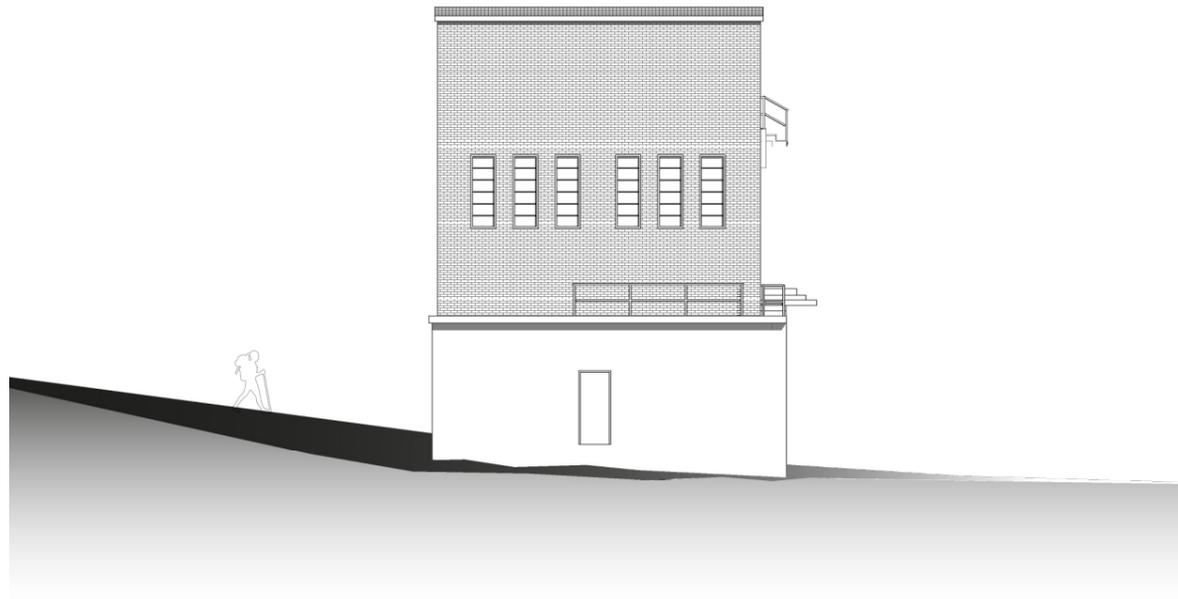


The buildings - Powerhouse

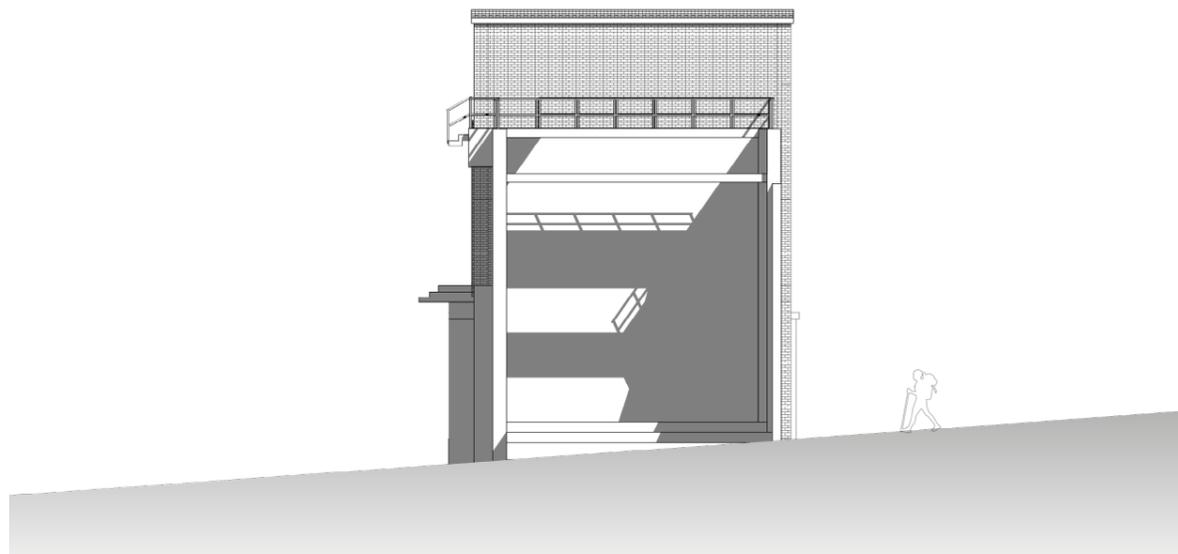
2021

1:200

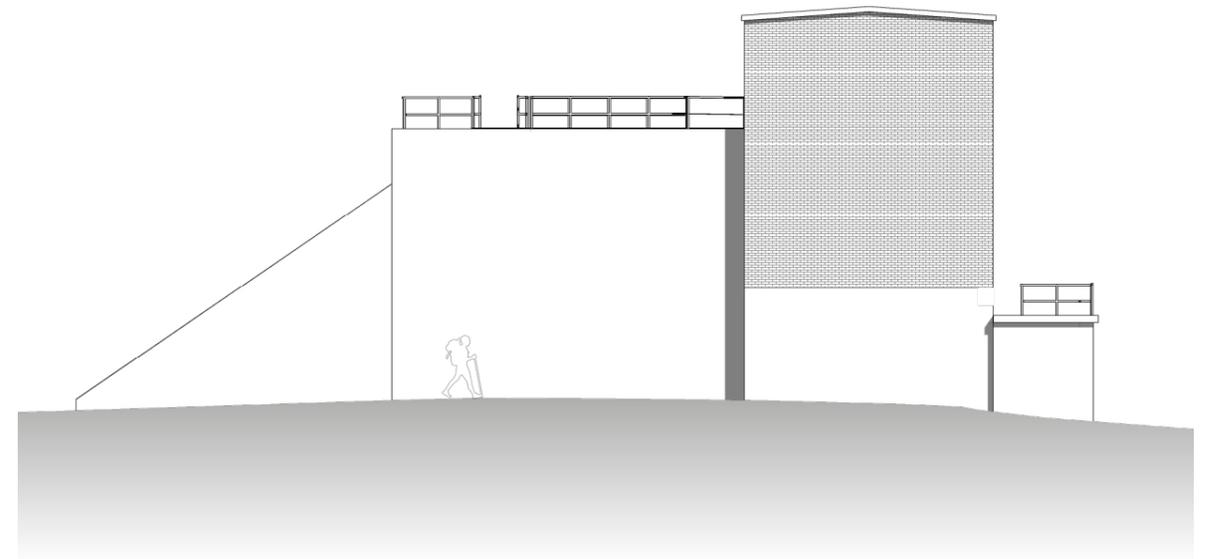
East Elevation A2



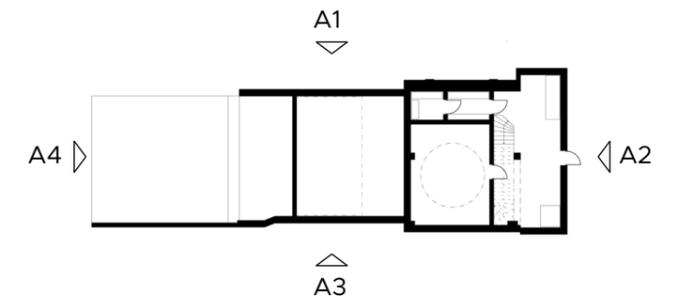
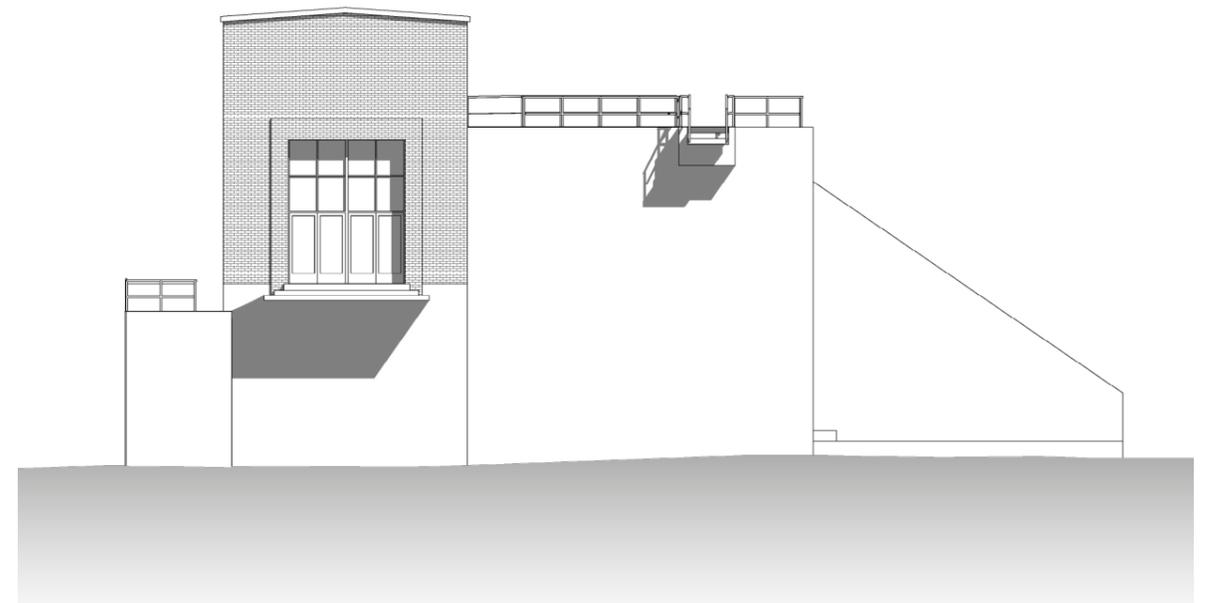
West Elevation A4



South Elevation A3



North Elevation A1

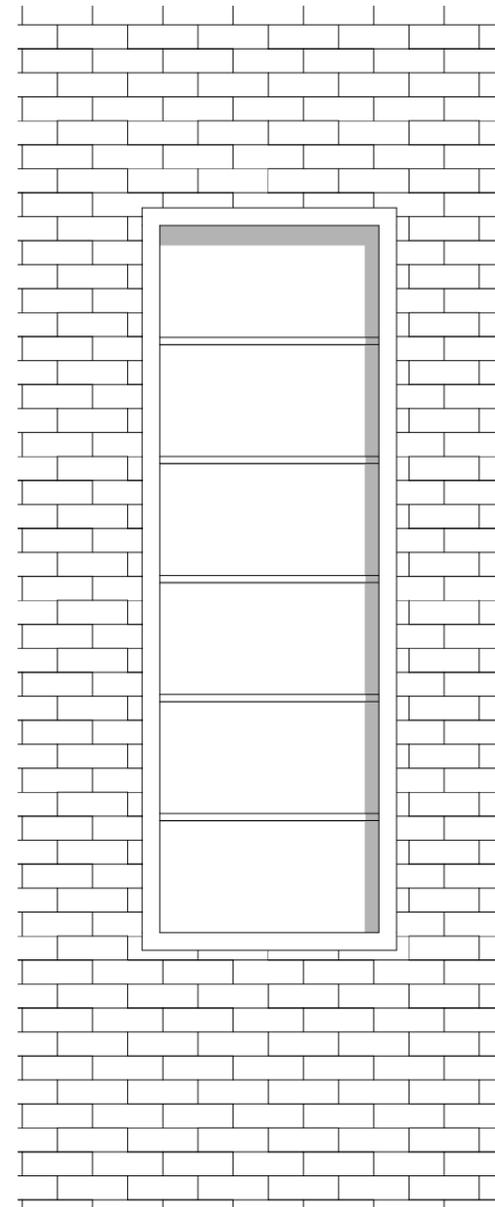


Details - Powerhouse

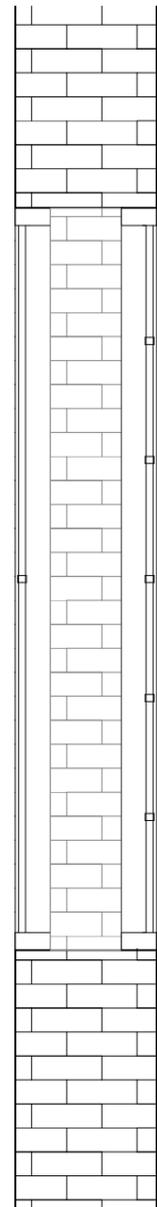
Windows - east facade

1:20

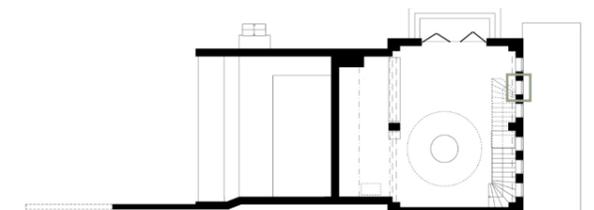
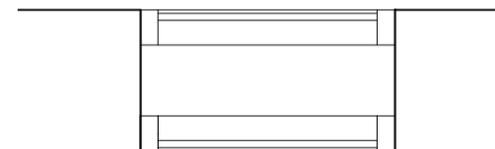
Outer elevation



Section



Plan

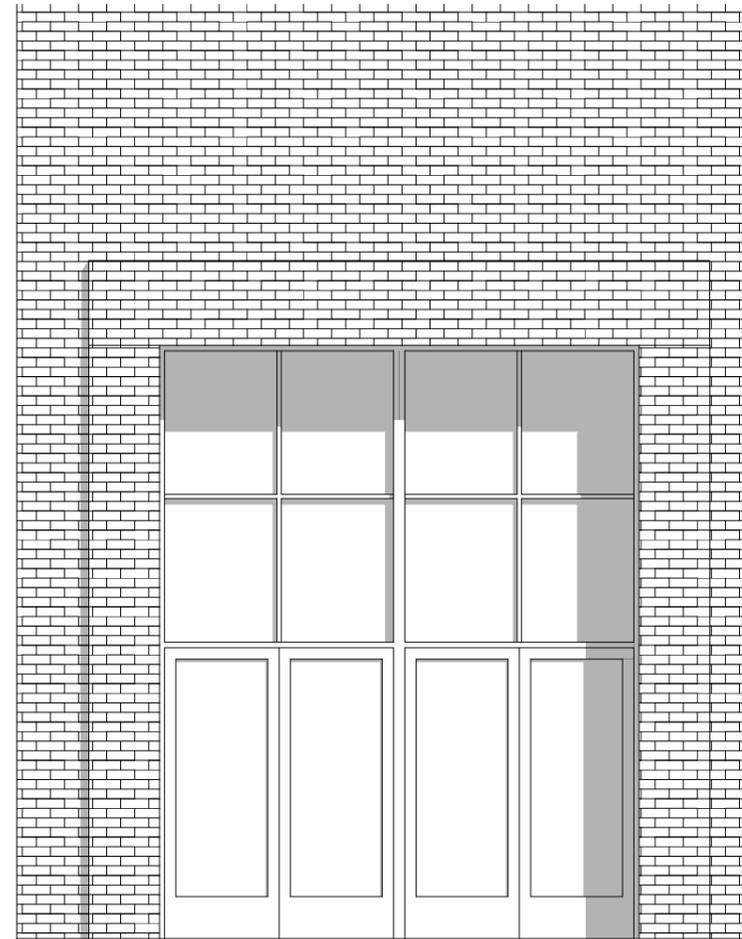


Details - Powerhouse

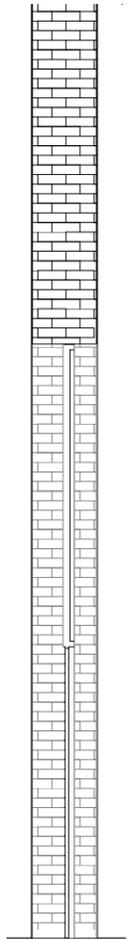
Door - north facade

1:50

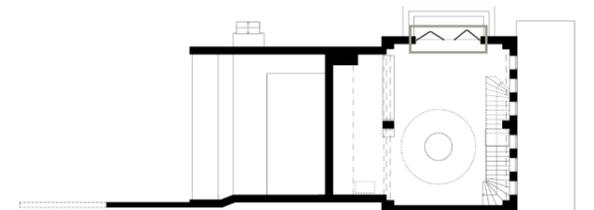
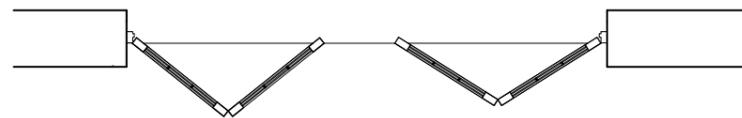
Outer elevation



Section



Plan

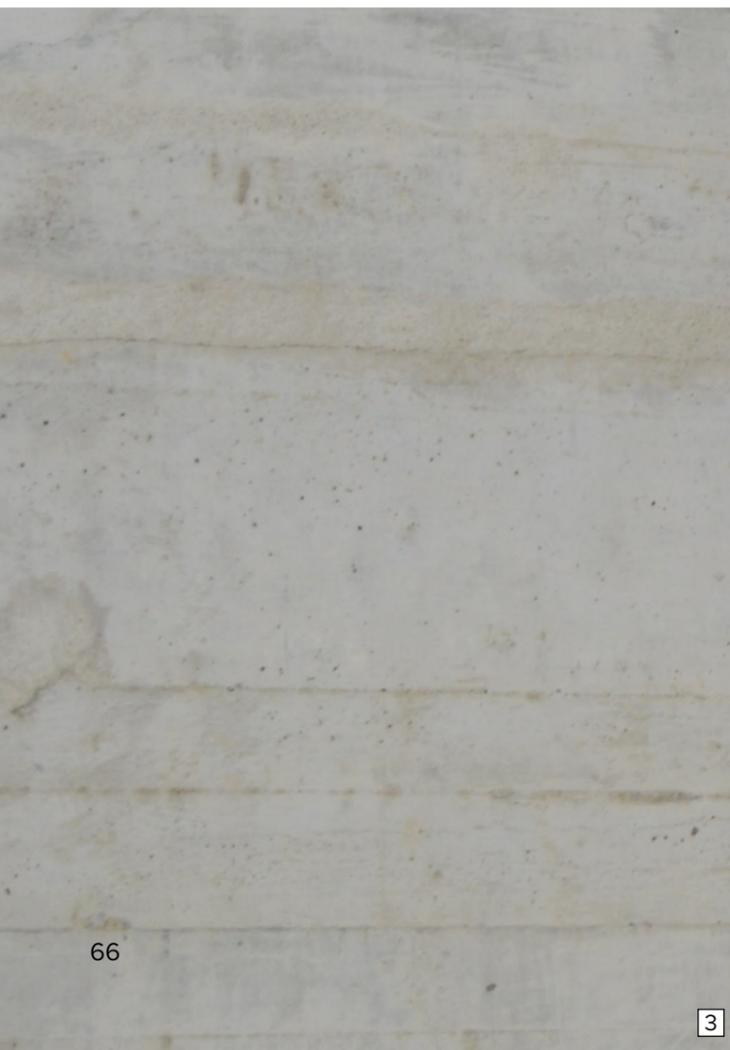




1



2



3

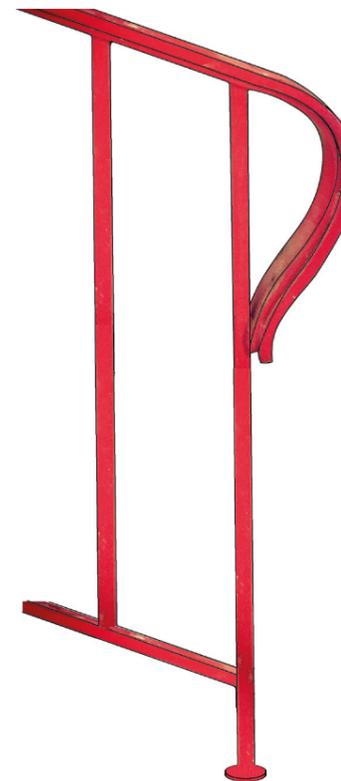


4

Details - Powerhouse

Materials

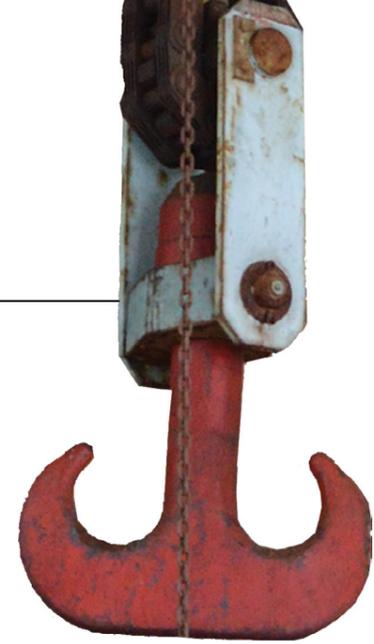
Perspective view railing



Top view railing



5



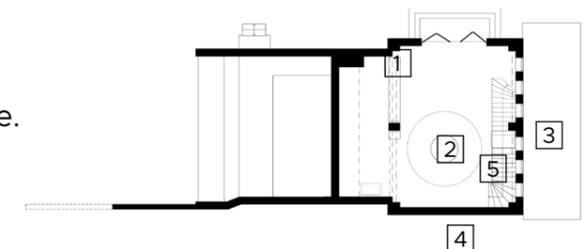
1 Steel, white painted concrete, yellow brick.

2 Steel machinery and beams.

3 Site poured concrete.

4 Yellow brick on inner and outer facade.

5 Red painted steel.



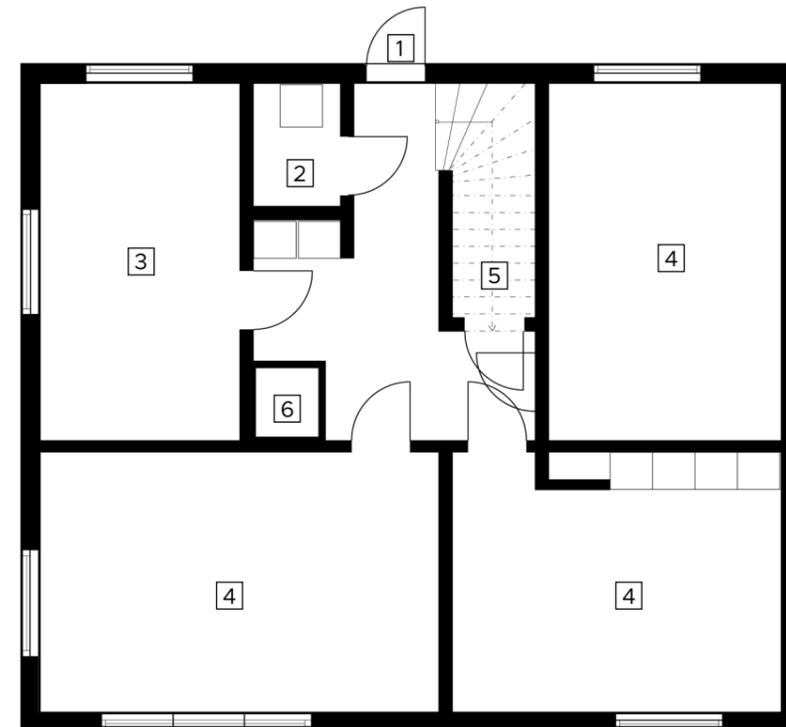
The buildings - Residential villa

2021 - previous engineers house

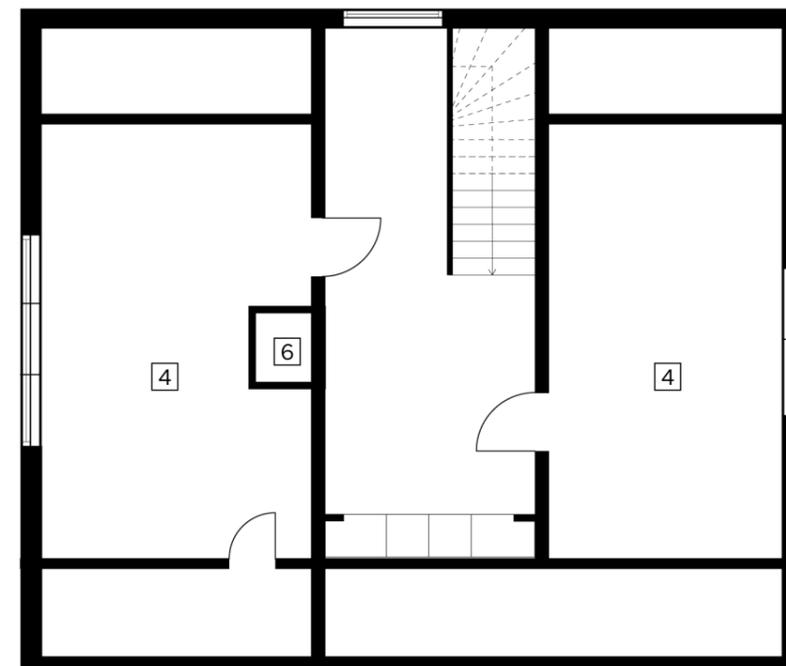
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No blueprints to be found, made from assumptions. The residential villa will only be approached on a conceptual level in this thesis, leaving the design part for a second phase of the project.

Plan 0



Plan 1



- 1 Main entrance
- 2 WC
- 3 Kitchen
- 4 Bedroom
- 5 Stair upstairs & downstairs
- 6 Chimney



Theories & facts

Architectural theories

When a building no longer serves a function there are three different options for its future: to do nothing, to tear it down, or to change it. Since I have decided to go with the third option in this thesis, I must take a stand on how to change the building.

When conserving a building it should improve its values and messages. Even though interventions usually cause a loss of the cultural property value it can be justified since the building is preserved for a future purpose (Feilden 2003, 2, 8). To be able to preserve a building additions and alterations must be made, the question is of how to do it. Whether a new addition should melt in with the existing design or if it should be made with a contrast.

Through times there have been different ways of handling restoration and changes in historical buildings. After the first world war and with its destruction of valuable architectural spaces, individuals started to collectively discuss restoration. In 1931, the Athens conference occurred and 120 delegates from 23 countries gathered to create a document with guidelines of how to work with restoration on a national scale. It was a significant meeting for the industry.

Over time the need for a global non-government association of conservation and restoration specialists grew. Consequently, in 1964 the International Restoration Charter, better known as Venice Charter, was established along with the International Council on Monuments and Sites (ICOMOS) (ICOMOS 2011). In article 9 of the charter, it states: *“The process of restoration is a highly specialized operation. Its aim is to preserve and reveal the aesthetic and historic value of the monument and is based on respect for original material and authentic documents. It must stop at the point where conjecture begins, and in this case moreover any extra work which is indispensable must be distinct from the architectural composition and must bear a contemporary stamp.”* (ICOMOS 1964).

This can be interpreted that additions made to an existing structure should to some extent be able to distinguish from the preserved parts. The alterations should fully respect the existing structures, but at the same time add a new layer of history.

When it comes to the conservation and restoration of existing structures, there is no right answer of how to do it. There are several ways to approach it, just as there are several different architectural theories with different viewpoints. Over the centuries the opinions of how to restore a building have varied. Our opinions are influenced by the current trends of the architectural style and techniques, which are different today from just a few years ago.

In the end, the decisions of how to change a building comes down to the intentions of the newcomers, patrons, designers, and builders (Semmes 2009, 25.). The alterations can be made with different degrees of contrast to the existing structures. To find out to which extent it is possible to change a building, it is important to carry out a Value assessment. It helps to evaluate what to keep, what to discard, and what is possible to add without diminishing the value of the structure. It gives a framework of how it is possible to generate more value to the existing structures.

Architectural theories

Cultural property values

Bernard Feilden (1919-2008) was one of the world's best-known conservation architects. He was part of several building repairs, consulted and taught internationally, and wrote several important texts in the field. From 1977 to 1981, he was the director of the International Centre for the Study of the Preservation and Restoration of Cultural Property in Rome (ICCROM) (Fidler 2008).

One of his publications was *Conservation of Historic Buildings*, published in 1982. It became a standard text for architects and for people involved in the conservation of historical structures. The book includes fundamental principles and guidelines on solutions of conservation of historical buildings. In the book, Feilden introduces a new version of Cultural Property values. It is separated into three major categories, "Emotional values, Cultural values, and Use values". They are subdivided into different value aspects and works as guidance for making an evaluation of the cultural significance of a property (Feilden 2003, 1-6).

According to Feilden, the definition of a historical building is a building that creates a sense of wonder in us. It makes us think about the history of it, and about the people and culture behind it. By studying the different phases of a building, from the construction to later interventions, as well as its environmental context, the structural and material qualities can be documented. The first impact of the evaluation is always emotional, and hence the evaluation is affected by our cultural identity and continuity (Feilden 2003, 1-6).

For this project, I have done a value assessment of the Powerhouse and with the help of it, I have established the cultural significance of the property. To make the assessment clearer I have added a value scale going from low value to high value. This functions as a summary of the text and has helped me analyse the values.

To summon the cultural value assessment, I believe that the Powerhouse is worth preserving for its social, documentary, and historical value. The site is associated with the Hydroelectric power plant and the dam collapse, which have more value than the architecture itself. For the Architectural value of the building, I have evaluated that the upper floor with brick facade has more value than the lower parts in concrete.

Cultural property values

Value assessment Feilden - Powerhouse

Emotional value

Wonder

Wonderment, uniqueness and representing an achievement.



The building characterizes hydroelectric power buildings of the period. The upper parts of the building have more interesting features with a brick facade and big windows providing light to the generator hall, while the lower parts have a concrete facade and barely no windows.

Identity

Individuality, strong character, relate to or awakes feeling of a relation.



The hydroelectric power plant is part of the identity of the industry along Helge å. Today it is hard to relate to how the building used to work and how it relates to the area since nature has started to take over.

Continuity

Telling the story of development in society.



It tells the history of the industry of hydroelectric power in Skåne. The building's generator hall, turbines, and water in-take, together with the landscape show the historical industry as well as the accident that occurred.

Spiritual & Symbolic

Symbolic value, a sign/symbol for the nation, a town or a region, historical event.



It shows the history of the river and hydroelectric power in Sweden, as well as the historical event of the accident. The area is associated with the abandoned power plant and the uncertainty of the site's future development.

Use values

Functional

The ability of a building to adapt to different uses.



There is not a lot of flexibility in the building due to the heavy machinery, and ceiling heights. Though the flexibility increases with the stable construction and the grid of the columns.

Economic

The worth in financial terms.



The building's architecture and surroundings add character to its activities/ uses. Today the building does not generate any income, but the structure can bring it with the right programmes.

Social

Social historic value, "building explaining how we lived".



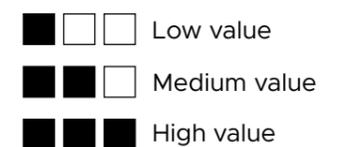
Associated with the industry of hydroelectric power, it was mainly used by the engineers to maintain and control it (the engineer lived for a long time in the residential building). It also represents the dam collapse and the affect it had on the locals' lives.

Political & Ethic

Representing a specific religion or leadership.



Representing the industry of hydroelectric power and the risk of dam failure accidents in modern society.



Cultural values

Documentary

Time document, building linked to a specific event or occurrence in history.



During the beginning of the 19th century hydroelectric power expanded, it was the most common energy source at the time (95% of power in Sweden, 1965). It was built during the time of objections to hydroelectric power because of the effect on the biodiversity. It is also associated with the event of the dam collapse in 2010.

Historic

Building historical value. What age? How rare?



Built 1952, during the 1950s there were about 4000 hydroelectric plants in Sweden. However, today there are almost 2000 in service. The buildings are site-specific and differ across the country. Olidans kraftverk has more details in the brick and a “monumental style”, the big volume represented the power it produced. Hästberga is smaller, with fewer details but represents a small-scale industry adapted to the tinier watercourses of Skåne.

Archaeological/age/scarcity

Importance out of an archaeological point of view.



The building doesn't have any archaeological value, but around the site there are ancient remains mapped out.

Aesthetic & symbolic

Artwork, craftsmanship, unique interior.



Simple design language. Although, adorned with some simple brick ornamentation around northern doors and in the upper facade. Hand-crafted details on indoor stairway.

Architectural

Architectural style value and historical value.



The upper parts of the building with the brick facade have more value than the lower parts of concrete. It is representing the industrial architecture of a hydroelectric powerplant of the period.

Townscape/landscape/ecological

Importance for a context.



Tells what was once there and represents the history along Helge å, of the Hydroelectric power plant and the dam failure.

Technological & scientific

Building technique value.



The building has a quite massive construction with thick walls and columns. It is built rather typical for the period looking at the space and choice of material, but doesn't have a rareness in the building technique.



Hydroelectric power

Today there are approximately 2000 hydroelectric powerplants in Sweden, and 80% of the energy produced comes from the powerplants in Norrland (Lindholt 2020). Hydroelectric power produces between 50 and 75 TWh per year, approximately 30-45% of the electricity usage in Sweden.

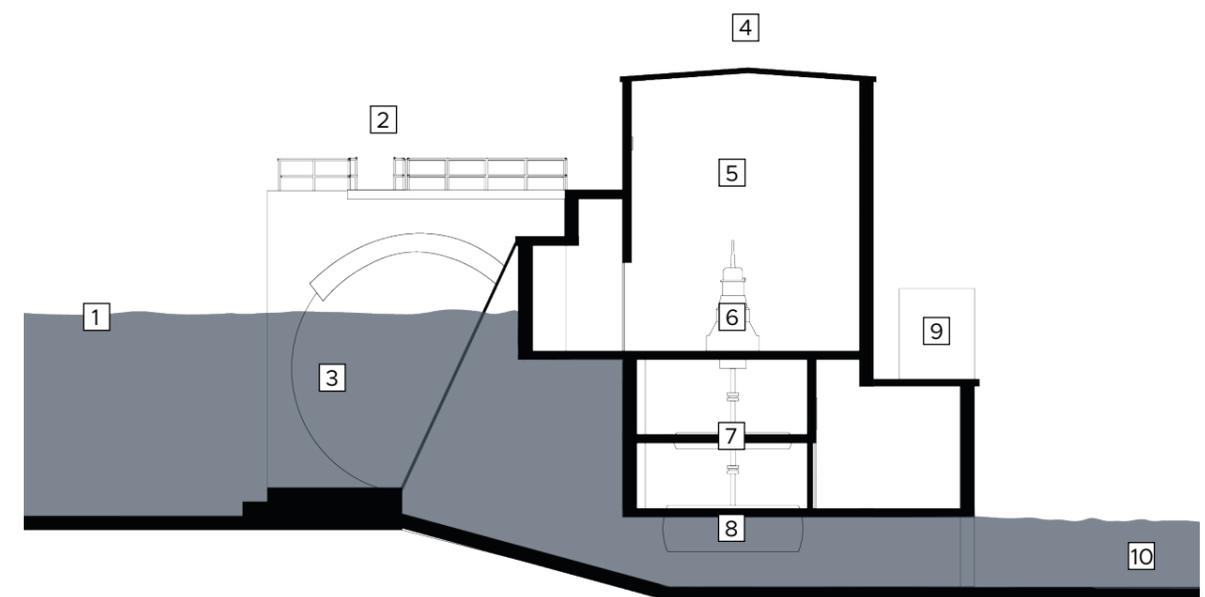
The water wheel was invented over 2000 years ago. It moves when water goes from one level to another and passes it. It became a source of power for mills, saws, mines, and blast furnaces. In the end of the 19th century, the water turbine was introduced for the production of electricity for industries and homes. In a modern hydroelectric plant, the water passes by the turbine that drives the generator, which in turn generates electrical energy.

The expansion of hydroelectric power in Sweden was initiated at the beginning of the 20th century. Hydroelectric power expanded and became the most common energy source with 95% of power production in Sweden in 1965. Initially, the powerplants were built in the south of Sweden and the expansion occurred across Sweden until the 70s when it became aware of how biodiversity is affected by the powerplants and nuclear power was introduced (Tekniska museet 2019).

Hydroelectric power has several advantages. It is renewable, has a low impact on the climate, and provides a secure electricity supply by the ability to reserve water for when production is needed.

Generally, Hydroelectric power has some negative effects on aquatic ecosystems. Flora and fauna dependent on rapids and falls have disappeared in several areas since their habitat has disappeared, hence the biodiversity has decreased. Several species of fish and eels are dependent on being able to transport themselves through the seas, lakes, and rivers to reproduce. The dams cut off the streams, and the turbines kill up to 40% of the eels trying to pass by (Naturskyddsföreningen 2021). In Skåne there are barely any natural rivers left.

- 1 Water reservoir
- 2 Dam wall
- 3 Water intake
- 4 Powerhouse
- 5 Machine hall
- 6 Generator
- 7 Turbine halls
- 8 Turbine
- 9 Transformer
- 10 Tailrace



Biodiversity

Helge å is Skånes largest river which flows from the north in Småland to Hanöbukten in the south where it leads out to the Baltic sea. The river is bordered by a varied landscape of wetlands, deciduous and coniferous forests, meadows, and fields. It is connected to several smaller streams and various sizes of lakes. The varied nature creates a good habitat for animals and plants to thrive, and the conditions have improved after the dam collapse.

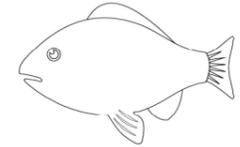
During the last century Helge å was heavily polluted by surrounding industries, but a lot has been done from different municipalities to reduce the emissions. The wetlands are part of the international Ramsar Convention (international treaty for the conservation and sustainable use of wetlands) and the area includes six Natural reserves and 18 Natura 2000-areas (Biosfärkontoret Kristianstads Vattenrike 2021).

The surface of the water in the water reservoir used to be 10 meters higher up. Today the bottom of the artificial lake is covered with land-grown greenery and the free-flowing river. When the hydroelectric power plant was in service the terrain and habitat were different with a regulated water flow and the lake consisting of the water reservoir. After the accident, the natural river came back with five new rapids, providing a unique environment for Skåne with improved habitat for species living in currents.

The river stretches 27 kilometers without dams which have brought along natural and environmental values with greater biodiversity. Helge å has 42 different species of fish, making it one of the most species-rich watercourses in Sweden (Ålander 2016). The space between the powerplant and Skeingesjön hosts one of the biggest populations of Thick shell river mussels (*Unio Crassus*) in Sweden. This specie is endangered across Europe and is under protection in Sweden (Naturvårdsingenjörerna AB 2015). The new environmental conditions of the area can help other endangered species to increase as well, such as *Dichelyma capillaceum*, Royal fern (*Osmunda regalis*), Common Kingfisher (*Alcedo atthis*), and otters (Larsson 2013).



Thick shell river mussels
Unio Crassus



42 different species of fish



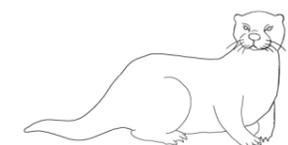
Common Kingfisher
Alcedo atthis



Royal fern
Osmunda regalis



Seaweed
Dichelyma capillaceum



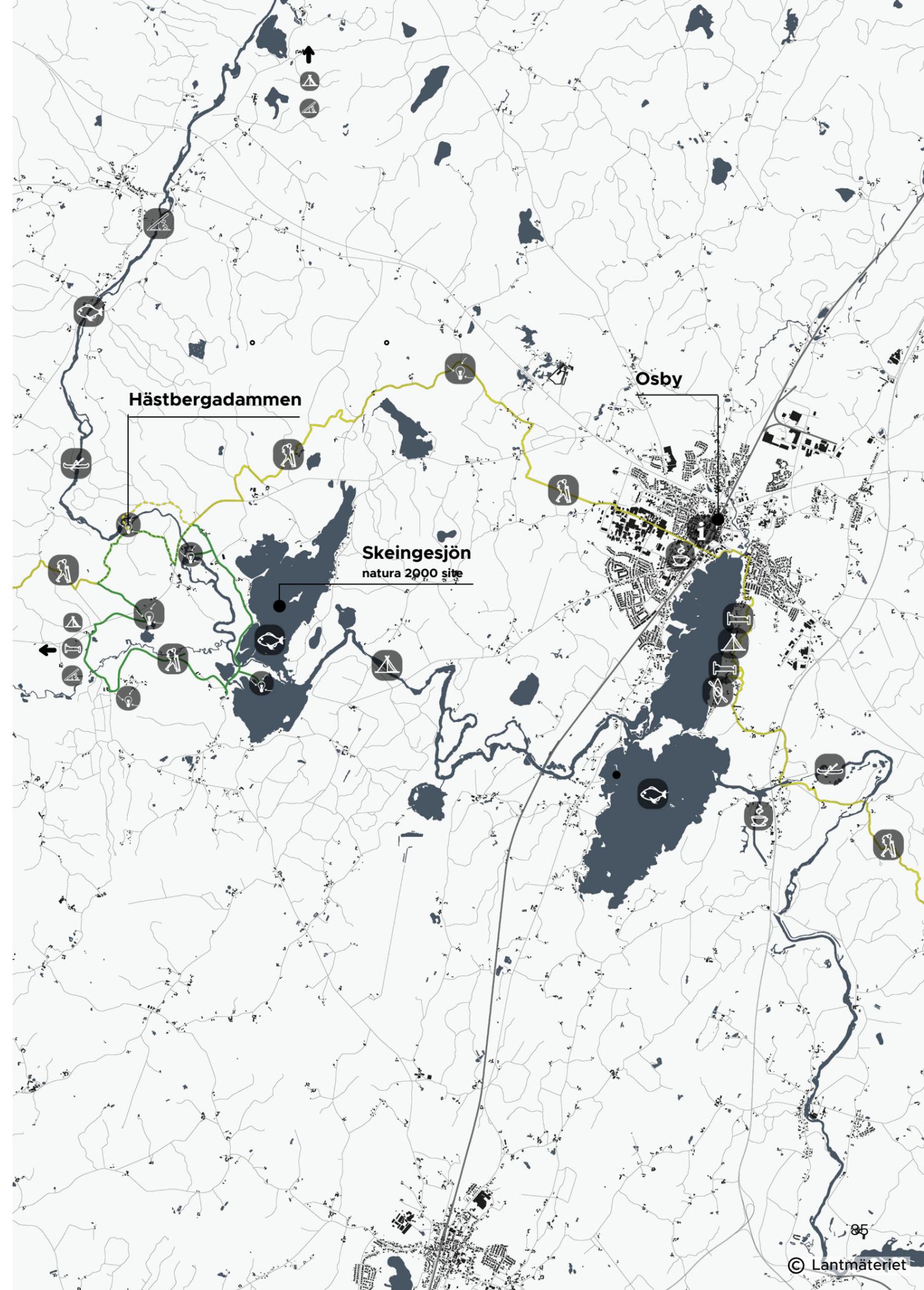
Otter
Lutra lutra

Mapping

Helge å

The area is popular for its cultural and natural values which can be appreciated on the hiking trails and canoeing trail. The popular hiking trail of Skåneleden passes by the site from Osby in the east, to Verum in the southwest. There is a local hiking trail called Vieåleden, which passes the site. It was conducted by Hässleholm Municipality 2000-2004 to preserve, highlight, and improve the accessibility of the landscape. Hörlinge ängar outdoor museum is located 3 kilometres south of the site. It has unique wetlands for the region and is a popular bird watching spot with views out over the vast beach meadows.

-  Hiking trail
-  Canoe trail
-  Resting spot
-  Camping
-  Accommodation
-  Fishing
-  Café/ Restaurant
-  Canoe rental
-  Tourist information
-  Place of interest
-  Vieåleden
-  Skåneleden
-  Previous route Skåneleden





Process

Interviews

"In Skåne, there are basically no rivers left, not of this nature in any case. Therefore, there are great natural values associated with this type of environment."

Lukas Österling, water manager
County Administrative Board Skåne
(Sveriges radio 2016)

*"No one knows what will happen with the place."
"Canoeing is popular by the river."
"The area has a lot of natural and cultural values."
"Need to attract enough people."
"There are no accommodations along the river. "*

Agne Andersson, Municipal ecologist Osby
(Telephone interview 2021)

"I wish we could cross the water as the Skåne trail used to allow."

"A lot of noise by the road and people who vandalise the power plant. We have put up a road barriers and we don't clean the road from snow regularly."

"My sons farm was flooded; the material damage was significant and it was a lot of work to clean it up. The reimbursement was not good enough."

Local man, 72, Osby
Part owner of local road
(Interview 2021)

"We have no plans to do ugly things, we just want to preserve it. It has its value to us."

"Helgå å should flow freely, to tear everything down also cost money."

"The powerplant has to be maintained, it has been abandoned for so long, it can't be left as it is today."

Karin Ralsgård, property owner by Hästberga
(Telephone interview 2021)

Social media

Instagram

When looking at Google Maps and Instagram it can be observed that people do use the site even though the conditions are poor. A lot of hikers pass the site and according to reviews on Google Maps, some visitors are intrigued by the place with the possibilities of urban exploring, while others find the site mysterious and creepy.



24 gilla-markeringar
radio_ronne_a



5 gilla-markeringar
olaherrey #vattenkraft #hydropowerplant
#gonewrong #hästbergadammen
Bilderna tagen från botten av en före detta
kraftverksdamm av Ola Herrey.



210 gilla-markeringar
juliaabergman Former, färger och förlorad funktion.
Mystik, tragik och trasig teknik. Så kan man beskriva
det här havererade kraftverket som stannade när
dess fördämning plötsligt brast.



210 gilla-markeringar
juliaabergman



24 gilla-markeringar
radio_ronne_a #kraftverkkochkanoter #sommarminne
#paddling #kraftverk #kraftwerk #urbanexploring
#ruralexploring #hästbergakraftverk
#hästbergadammen #abandonedplaces



24 gilla-markeringar
radio_ronne_a

Inspirational projects

Several projects have been studied for this thesis for inspiration of re-purposing a building and of how to work with existing structures and design languages.

Hause des Meeres and Seaholm Power Plant Re-Development gave me ideas of how to re-purpose buildings for semi-public use. Both have preserved qualities from the existing structures and improved their usage. Two Directions, Tower Restoration of Huerca-Overa and Domkyrkoforum gave me ideas of working with contrast to the existing structures. All of them work with new materials and architectural shapes. For the design language I've been inspired by the Miramon bridge and its organic shape and how it flows through the landscape.

In my project I have decided to take a similar stand and design organically to create a contrast to the existing structures.



Miramon bridge - HozFontán - Paseo de Miramón



Haus des Meeres - Friedrich Tamms - Vienna



Two Directions - Lone-Pia Bach, Outi Pieski - Nordic museum, Stockholm



Tower Restoration of Huerca-Overa - Castillo Miras Arquitectos - Almeria



Seaholm Power Plant Re-Development - Charles Rose Architects - Austin, USA

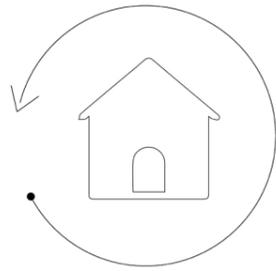


Domkyrkoforum - Carmen Izquierdo - Lund, Sweden



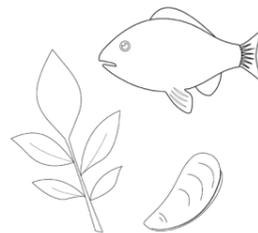
Strategy

Purpose & goal



Restoring

Restore the abandoned buildings, make use of infrastructure on site.
Preserve and respect industrial memory and history.



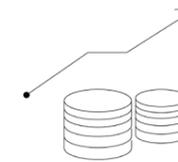
Biodiversity

Preserve surrounding nature and improve biodiversity.
Give a chance for natural rivers in Skåne.



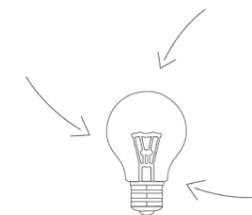
A safe place

Make the site and buildings accessible.
Create a safe environment.



Profit

Expensive to take away parts - make use of infrastructure on site.
Find programmes with profit to financially support project.



Attract visitors

Find new programmes to re-purpose the building and activate it.
Attract the right visitors with friendly intentions.

Users



The locals

The locals live with the uncertainty of the site's future and the memory of the accident. The site can be a monumental place for them, where they finally get a closure. The population is mainly elderly and retired middle-income earners living in villas consisting of a low density population. It is popular to hunt, sportfish, canoeing, and walking. They can be possible co-owners for an investment.



The hiker

Skåne trail and Vieåleden passes in the area and provides great opportunities for scenic nature. The site is a common stop for a day tour with its intriguing history. An improvement of its programming can intrigue more visitors and create a comfortable and interesting place for taking a short rest or for staying the night.



The canoeist

Helgå å is the biggest water draft in Skåne and provides good routes for canoeing with resting spots along with it. It passes the site, and the spillway creates a good canoe dock and rental place. The river separating the site is more vivid than upstream and it provides good opportunities for extreme canoeists.



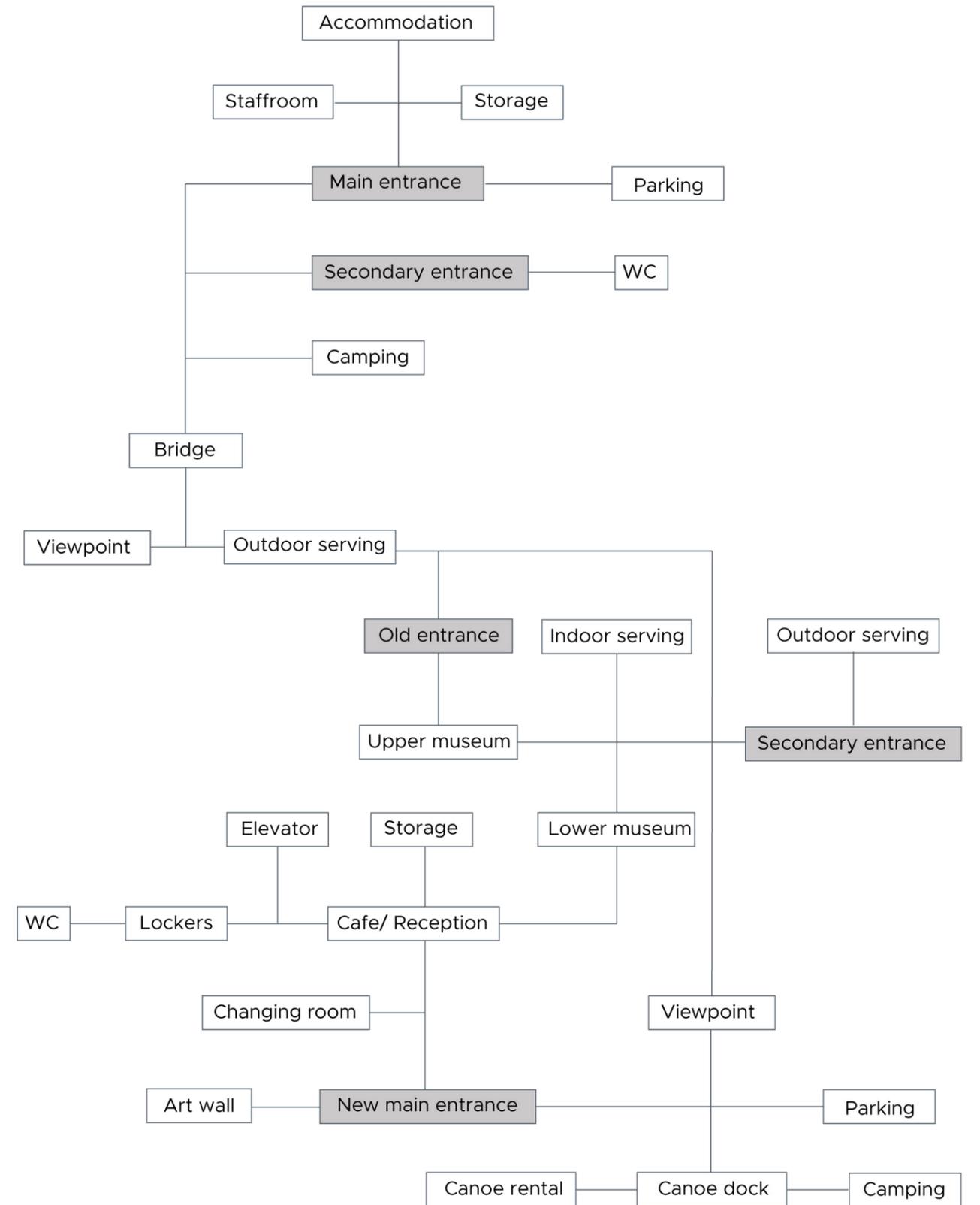
Siteplan - programme

When I started the project, I had the idea to create an unsupervised museum. After conducting interviews and realizing that the site is frequently vandalized and raided, I decided the site would be in better use with active programmes to avoid future problems. The Powerhouse will work as a museum and for complementing its function a café will be added.

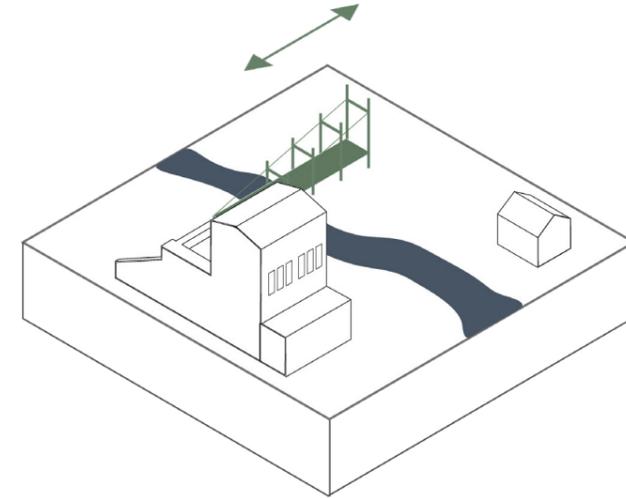
-  Viewpoint
-  Bridge
-  Cafe
-  Fishing
-  Canoe rental
-  Museum - History of hydroelectric power, the dam failure and info about biodiversity in area.
-  Camping
-  Accommodation
-  Bathroom
-  Parking
-  Canoe dock
-  Art wall
-  Water monument
-  Plants to absorb contaminated soil



Flowchart

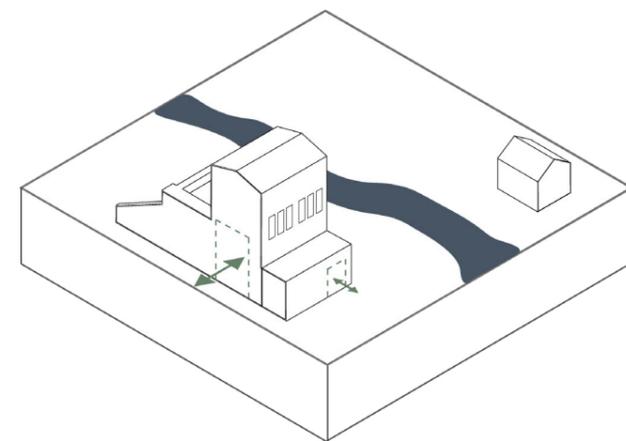


Design strategies



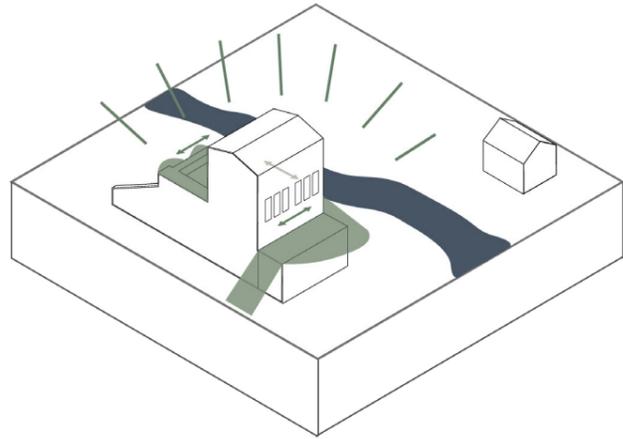
Connection

Skåne trail used to pass across the damwall. A bridge can connect the path once more and provide a connection between the residential building in the north and the powerhouse in the south.



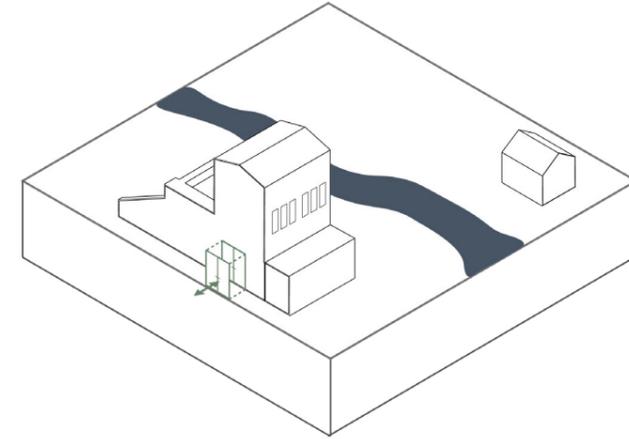
Openings

Create a stronger connection to the outside and provide a lighter atmosphere to the inside where it is needed.



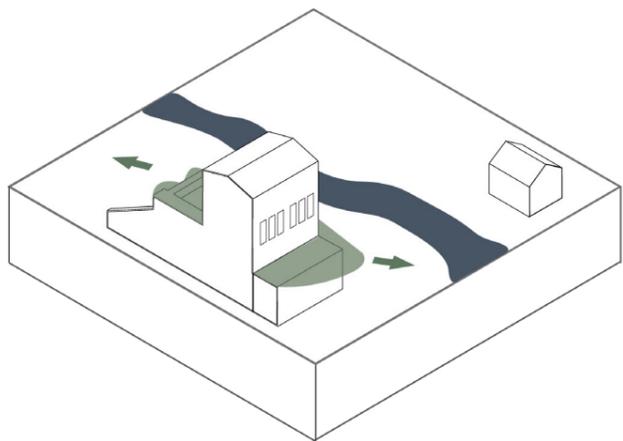
Activate

Activate the site and buildings by creating connections in the forms of stairways and terraces going around the building.



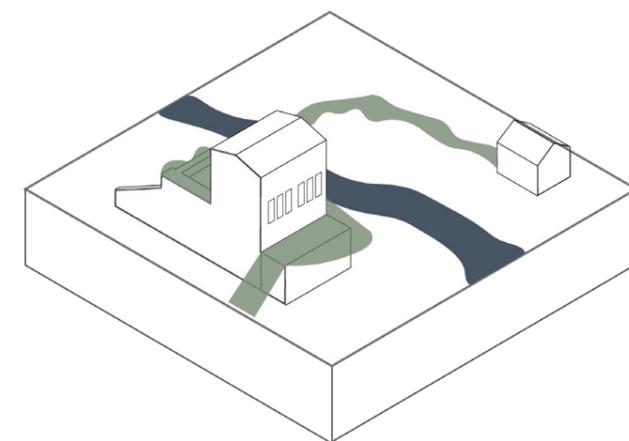
Air gate extension

Make the building energy-efficient and accessible all year around.



Viewpoints

Activate the building by framing viewpoints in the landscape, while taking support of the existing roofs and structures.



Contrast & Unity

Create a contrast to show what is added to the hydroelectric powerplant by adding new materials and elements informed by the original structure. The new elements should have a unity in the design language to create the impression of one added element.

Design proposal

Design proposal

By analysing and studying the site, a framework has been established of the architectural language for the existing structures. The framework has been used during the design process and has helped me evaluate what to keep, what to discard and how to work with possible add-ons without weakening the values of the site. When summarizing the research, it is evident that the upper floor of the Powerhouse has more architectural values than the lower one. This has informed my design process, and consequently, more alterations have been made on the lower floor, while the upper floor is almost restored to its original state.

To make the site's history understandable for the visitors, a goal has been to represent the different time phases of the Powerplant with help of the design. With the final design proposal, I strive to represent the phase of its time as a hydroelectric power plant, of the event of the dam failure, and of the time of its abandonment. Structures have been preserved, re-purposed, and added to represent the phases and simultaneously improve the spaces for public use.

The existing Hydroelectric power plant consists of three different main parts. The water intake on the west side, the Powerhouse in the middle, and the concrete structure to the east (which used to support the removed transformer). Most of the parts have been preserved in the proposal, except the concrete structure to the east, which is partly taken away to create a better walking flow and views from inside the building. To represent the history of the removed structure, parts of the walls are preserved in their original location and works as displays and room dividers to an added part of the museum.

The Powerhouse's upper brick facade is preserved, and the lower part made from concrete has a few added windows in the south direction to let in the sunlight into the main entrance and the café. The lower concrete parts are surrounded by a newly added structure that improves the flow and use of the building.

The water intake and the concrete walls supporting it are preserved but with add-ons in form of a water monument, a viewpoint, and an art wall. The water monument is meant to create a monumental spot for reflection and to give a sense of where the water level used to be before the dam collapse. Another water monument is located on the east side of the site, describing where the water used to exit the building. The concrete walls are given new life with an art wall to the south, which represents the time of abandonment of the site. The walls are also used as structural support for the viewpoint in the southwest direction on top of the water intake.

To make the site and the buildings accessible to all public, an elevator has been added inside of the Powerhouse. It generates accessibility both to the indoor- and outdoor spaces. The spaces can also be reached by the newly added stairways which are integrated to an added curved line connecting several different spaces and levels while surrounding the existing Powerhouse.

For the added structures, a contrast to the existing design language has been made to separate the newly added elements from the existing ones. It gives a contrast towards the existing squared brick building and the concrete walls by adding a new curved wall with cladding of Siberian larch. The new design was inspired by the flow of water and how it used to pass underneath the building. It suggests an organic design that has been combined with a good walking flow to create an accessible building.

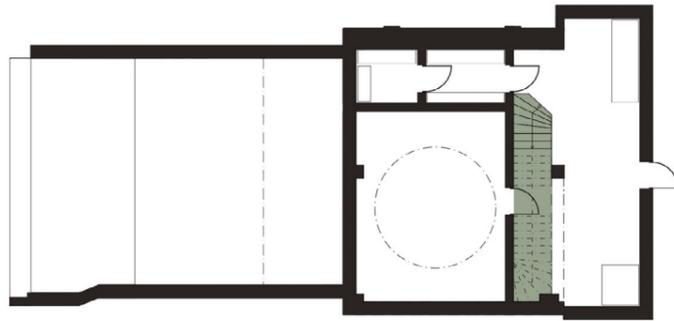
Siteplan

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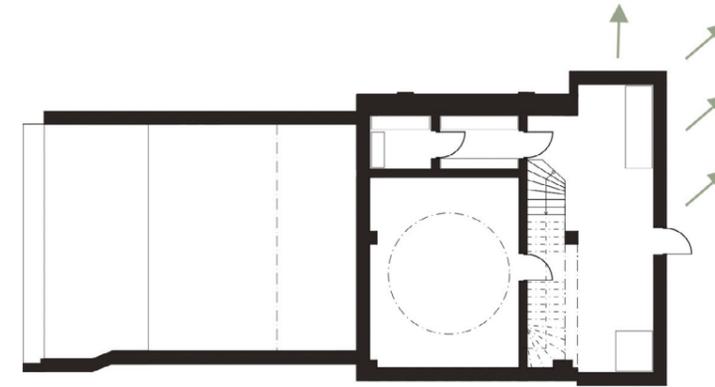


Design process

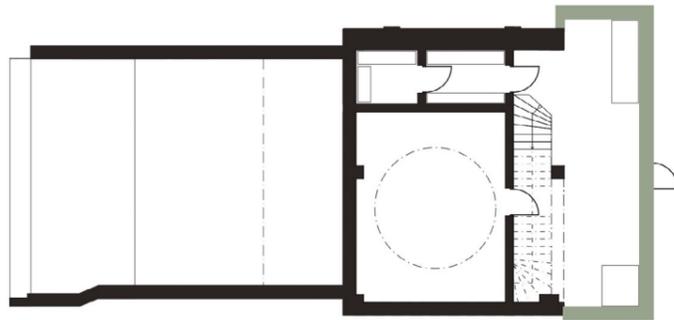
Powerhouse



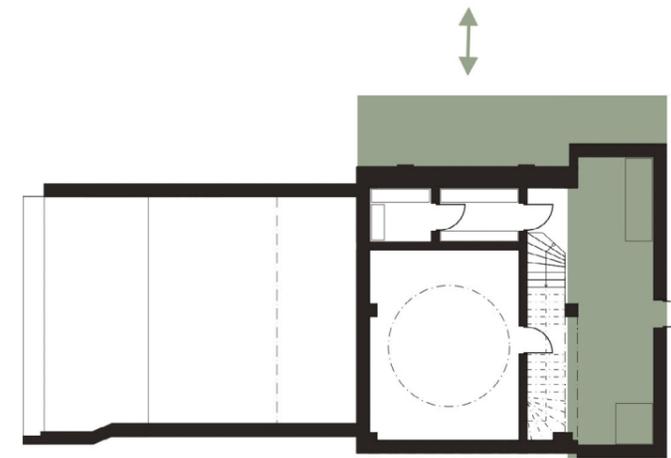
Original stair and inner walk flow to the upper floor is preserved. The space needs a better flow for public functions.



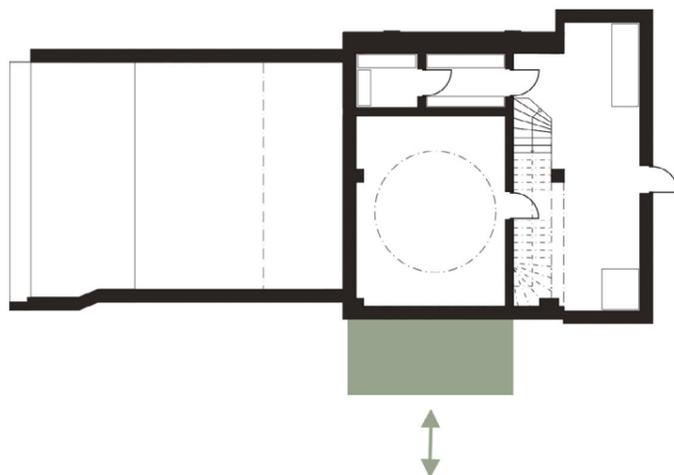
The river passes north of the building and creates a good opportunity to frame views in that direction.



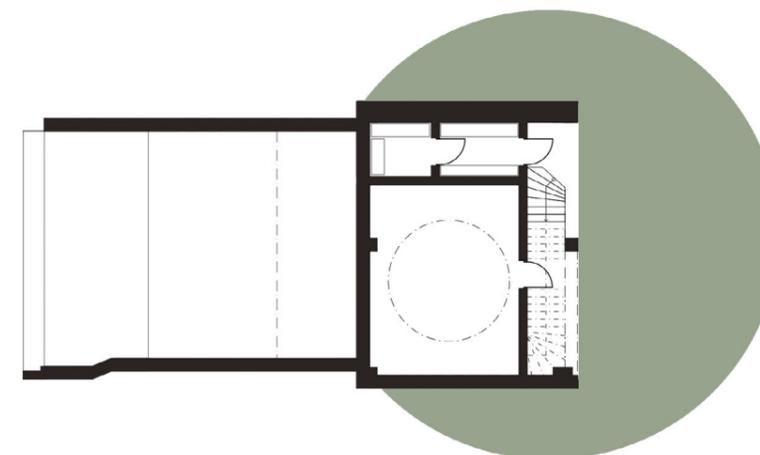
The concrete structure on the bottom floor does not have a lot of value (see Cultural property value assessment). It can be partly removed to create better flow and viewpoints.



To make the original upstairs entrance on the upper floor reachable a terrace is needed around the building.



To make the building more energy-efficient and accessible all year around an air gate extension is needed in front of the main entrance that leads to the café/reception.

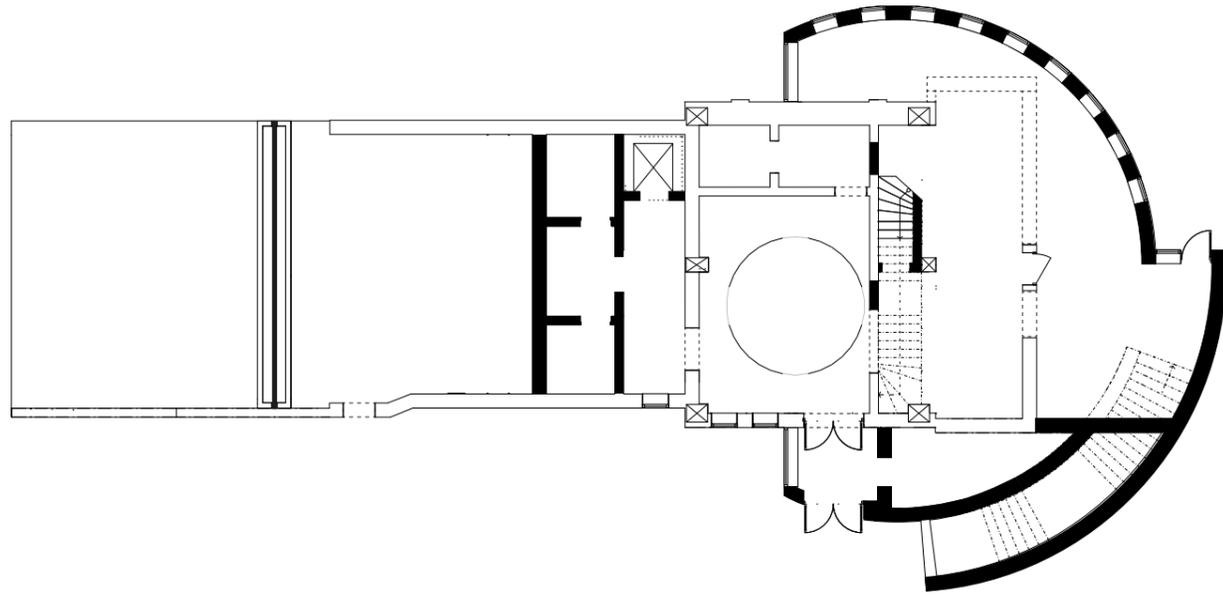


To achieve the previous goals a circular shape is integrated to the design. It's inspired from the organic movement of water which used to pass under the building. The architectural language gives a contrast to the existing structure, both with the shape and material.

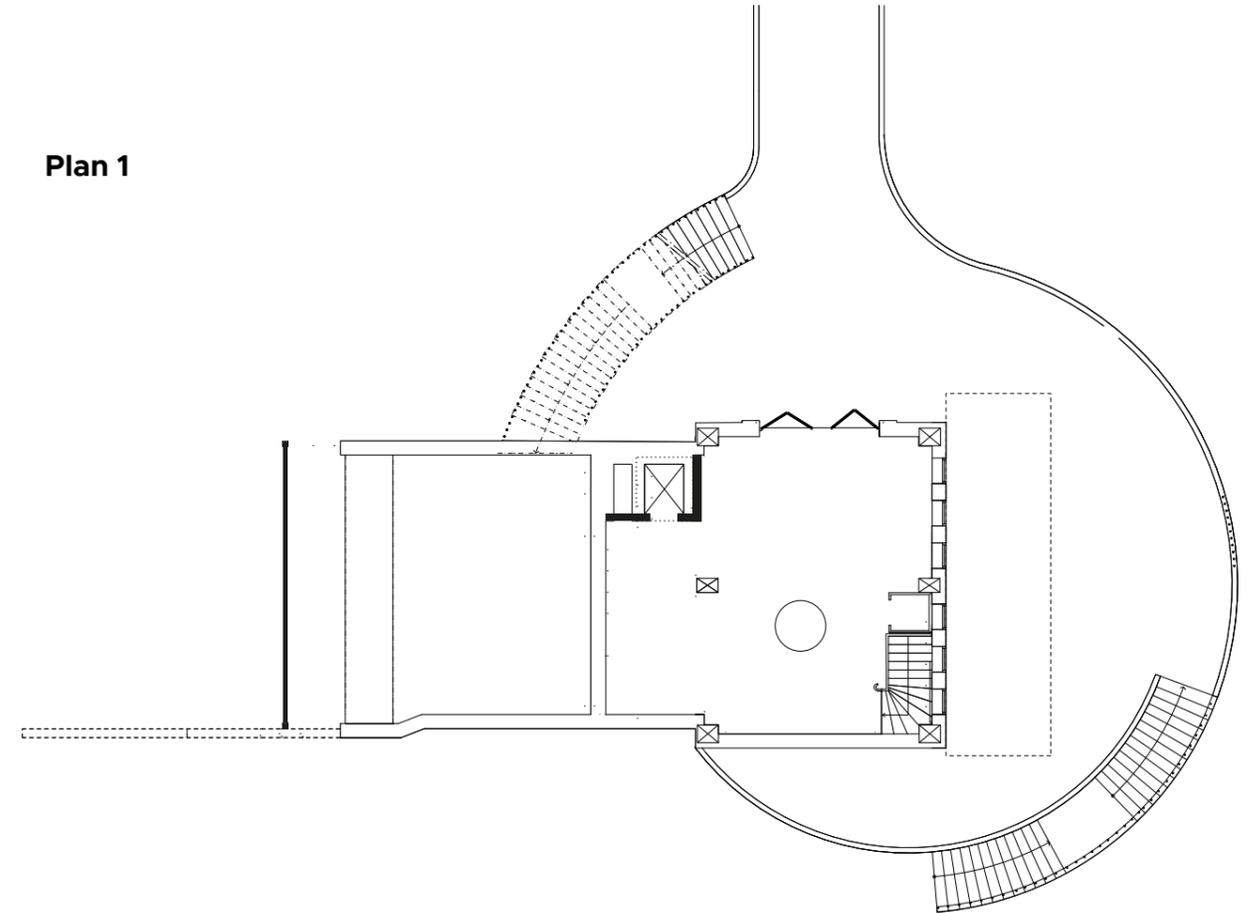
Preservations and alterations

Powerhouse

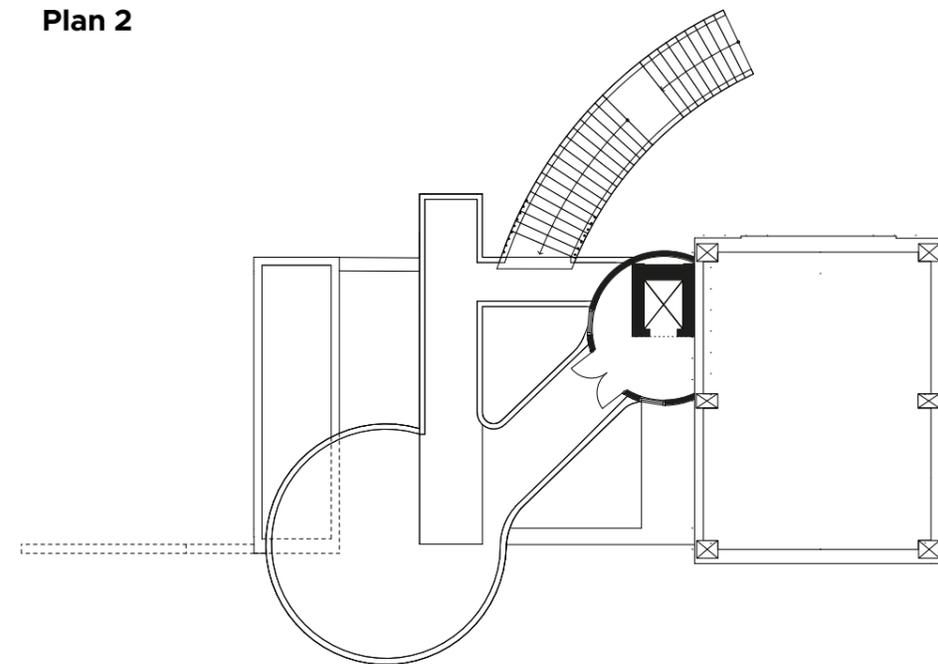
Plan 0



Plan 1



Plan 2



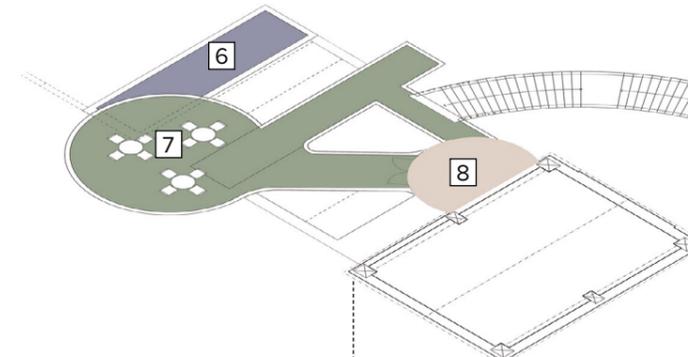
-  Original structure
-  Added structure
-  Removed structure

Programme volume

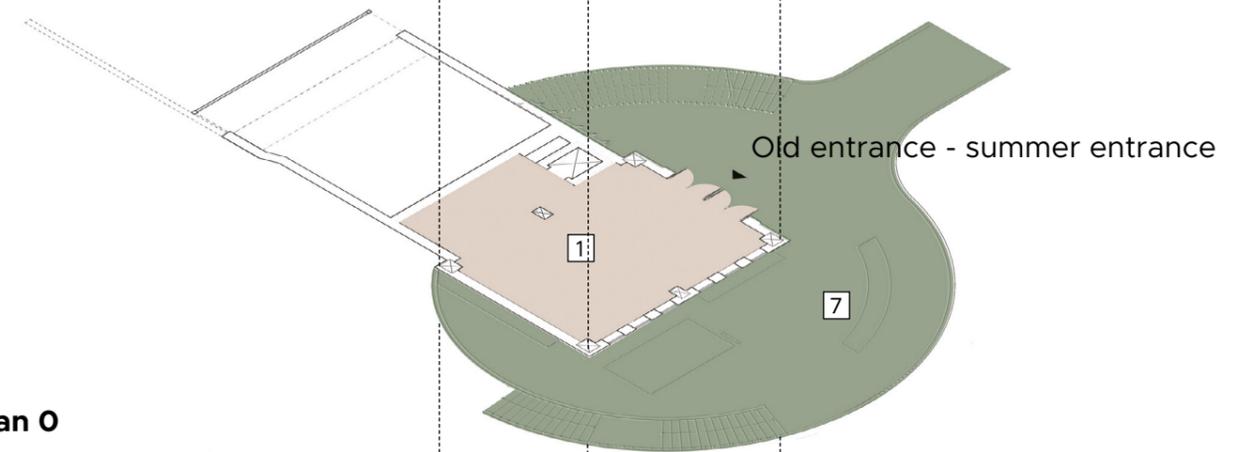
Powerhouse

- 1 Museum (Machine hall)
 - 2 Cafe/Reception (Turbine hall)
 - 3 Storage (Electrical room)
 - 4 Changing room
 - 5 WC
 - 6 Water monument
 - 7 Viewpoint/ Outdoor serving
 - 8 Elevator house
- Water monument
 - Semi-public indoor space
 - Private indoor space
 - Public outdoor space

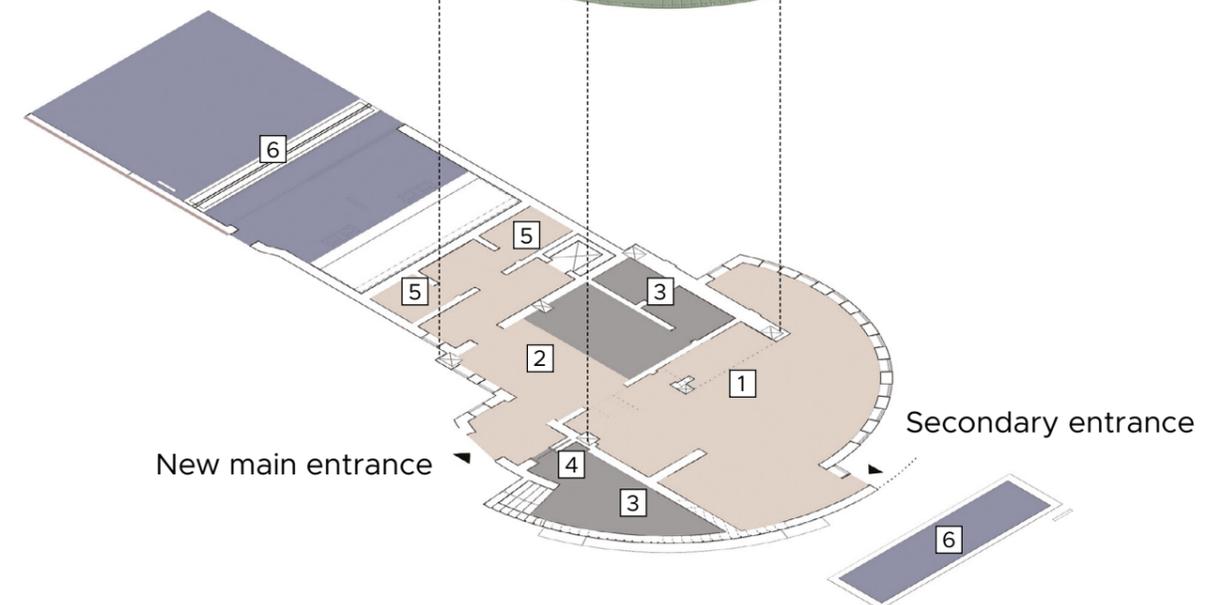
Plan 2



Plan 1



Plan 0



Siteplan

South side

1:500

The proposal works with connections across the site by creating a flow between different programmes and the two sides of the river. A bridge is added where the road used to go up to the old entrance of the Powerhouse from the north. It is placed here to frame the beautiful view into the Generator Hall and to create an easy walking flow with a connection to the lower stairway.

The site can be approached from several directions, either by foot or bike on Skåneleden, by canoe to the canoeing dock, or by car to one of the parking lots. The site is accessible for everyone to explore with help of added slopes, stairs, and an elevator.

- 1 Accommodation
- 2 Bridge
- 3 Outdoor serving
- 4 Water monument
- 5 Viewpoint
- 6 Art wall
- 7 Canoe dock
- 8 Parking
- 9 Skåneleden



Design proposal Powerhouse

Plan 0

The first floor has the most invasive changes in the project. It has new openings for connecting the new rooms and the inside to the outside. One of the floors in the Turbine Hall is taken out, leaving a higher ceiling of four meters and creates the space for the reception and café. The upper parts of the turbine are taken outside of the building for display while the lower part is preserved in the café under a glass floor. Windows are added on the original facade in the south to let in light, and also an air gate extension to make the main entrance accessible all year round. The design of the windows and doors has been inspired by the original ones. The measurements and details are taken to the added parts, but with Oakwood as a new material.

To create good accessibility, the elevator is placed inside of the old water intake, which gives access to all three floors of the building. In connection to the elevator, the bathrooms and lockers are located. Since all are under the water intake the dominating material chosen for the rooms is blue tiles to represent the water that used to pass through the space.

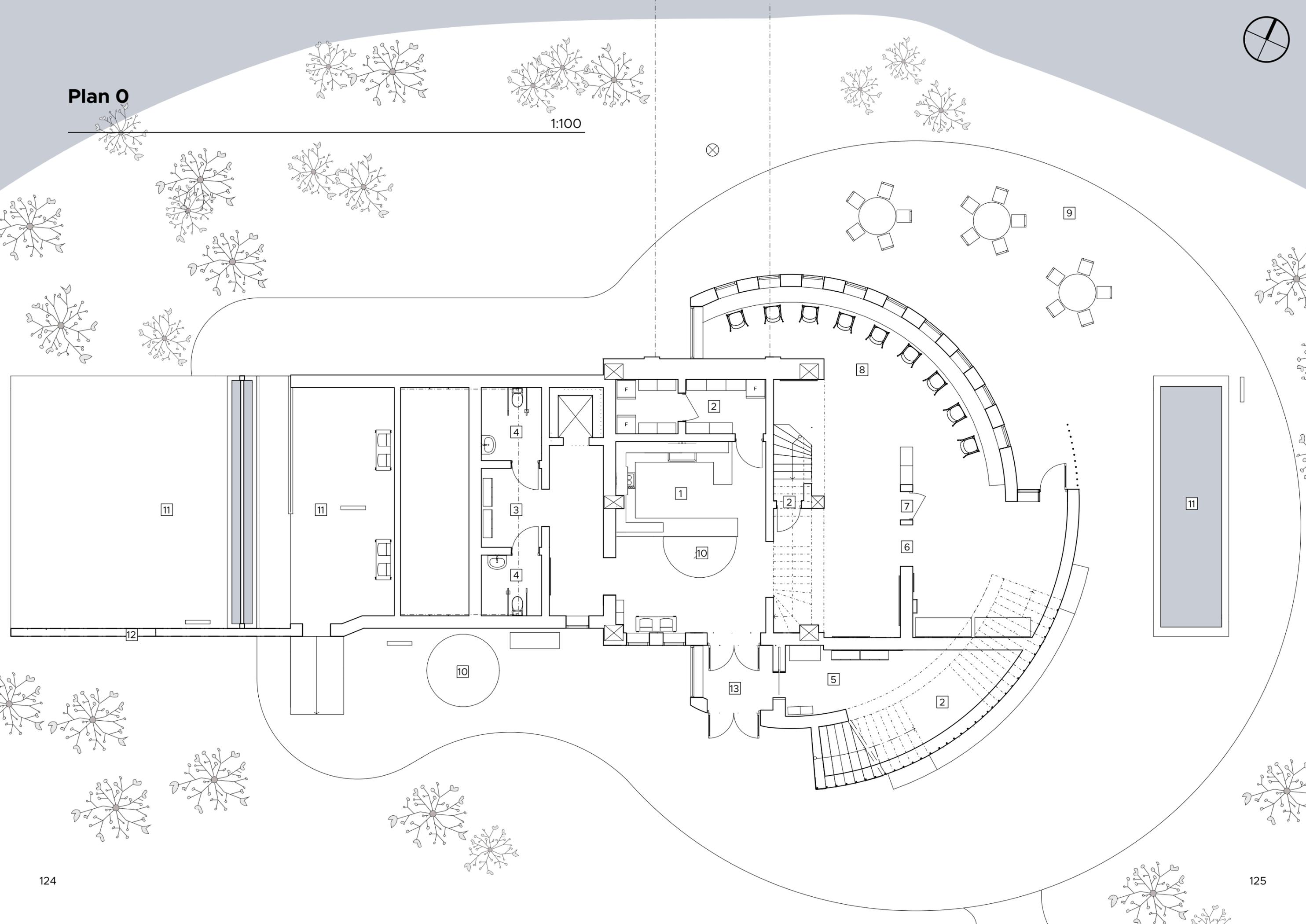
The concrete structure on the east side of the Powerhouse is partly removed and replaced with an organically inspired wooden wall to create a contrast to the existing structure while making the building more efficient. This part hosts the museum which becomes a part of the café and the indoor serving. Some of the walls from the structure in the east remain in the exhibition and display the original ladder, the entrance door, as well as newly added panels. The seating area is offering scenic views out over the river and landscape, and a new summer entrance is added to the outdoor serving area in front of it. The outer space is protected by the roof and provides space for bigger groups to gather.

To create a celebration of the connection between the added structure and the original one, the newly added curved wall ends with two straight walls connecting to the original structure. These walls have wider windows and seen from the inside they provide a view towards the west, and from the outside gives a glimpse of the main entrance and indoor seating area.

- 1 Cafe/Reception (Turbine hall)
- 2 Storage (Electrical room)
- 3 Lockers (Water intake)
- 4 WC (Water intake)
- 5 Changing room
- 6 Museum
- 7 Preserved door
- 8 Indoor serving
- 9 Outdoor serving
- 10 Turbine parts
- 11 Water monument
- 12 Art wall
- 13 Main entrance

Plan 0

1:100



Plan 1

1:100

The upper floor has the beautiful original brick construction with smaller details both on the inner and outer walls. It has a great inner space of almost eight meters of ceiling height. The east facade is ornamented with six windows and the north with the old entrance with four meters high doors and windows. The light input provides a suitable space for a museum and there is no need for bigger alterations of the space.

The machinery will be preserved for observation and the electrical cabinets will be remade into panels and exhibition boxes. The museum is reachable from the original indoor stair, the summer entrance from the north, and from the new elevator hidden behind the electrical cabinets and water intake.

The outdoor spaces are improved by adding a terrace connected to the bridge leading to the other side of the river. The bridge is located in the same location where the dam wall used to be located for supporting the car road going up to the old main entrance of the Powerplant. The location of the bridge frames the view of the museum and creates a good walking flow through the site.

The new roof of plan 0 creates the terrace, and it is lifted from the old concrete structure's height to the same level of the floor by the northern entrance to create an accessible terrace. The new terrace is connected by a stairway up to the upper viewpoint, and down to the main entrance. It has new seating arrangements in the northeast and south direction to frame the different views. The added railings are unitary to the facade of the building to create a feeling of one single element connecting the stairways, terraces, and the bridge.

- 1 Museum (Machine hall)
- 2 Generator
- 3 Telefon box
- 4 Exhibition boxes/ panels (Electric cabinets)
- 5 Bridge
- 6 Bicycle parking
- 7 Outdoor serving/ Viewpoint
- 8 Previous location of transformer shown on floor



Plan 1

1:100

5

6

7

1

2

3

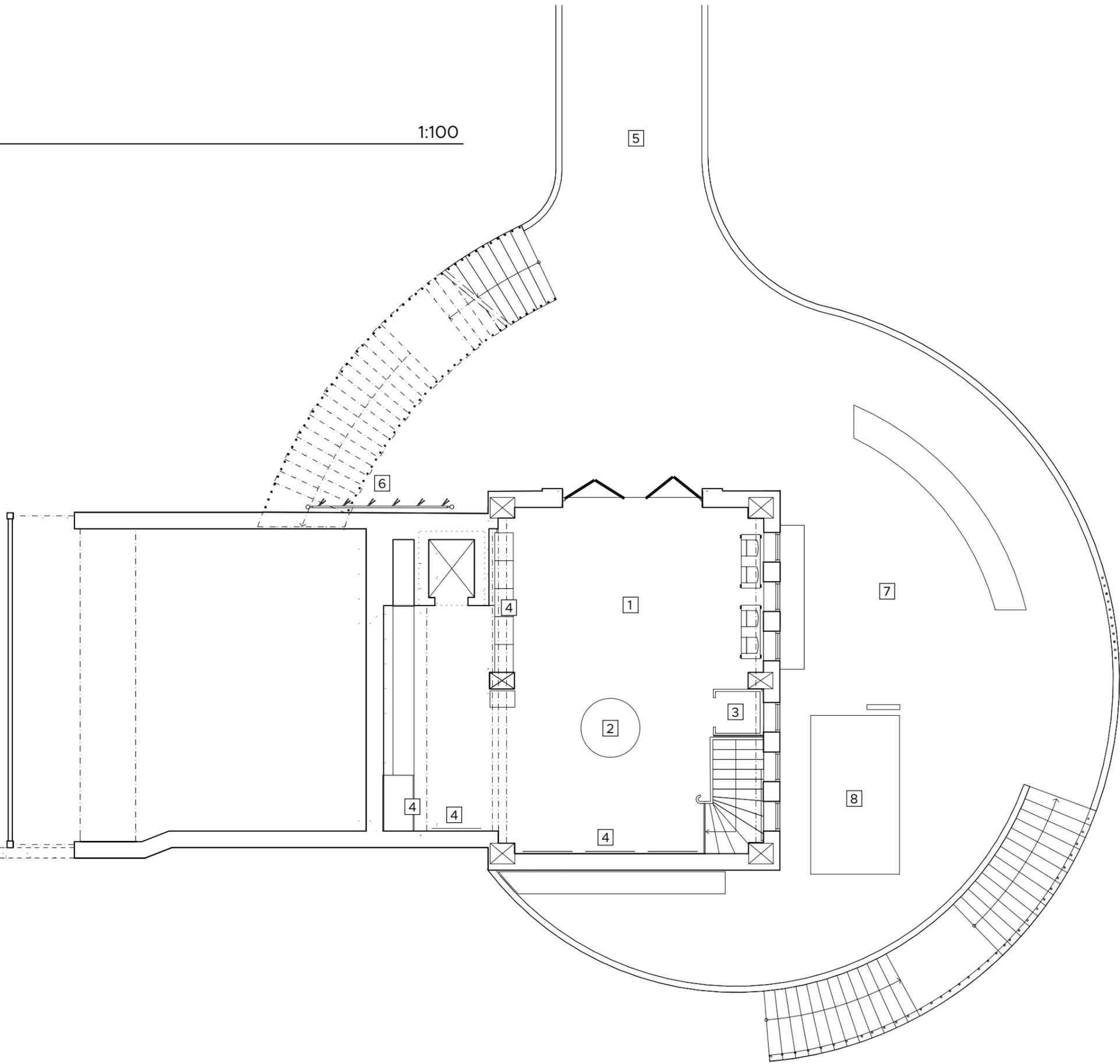
8

4

4

4

4



Plan 2

1:100

The original concrete structure of the water intake is used as a support for an upper terrace providing views out over the water and mountains from the south direction to the west. The viewpoint and outdoor seating area are both accessible at all hours through the elevator and the outdoor stairways. The elevator house has the same design language as the added wall on plan 0 and provides a shelter while waiting for the elevator.

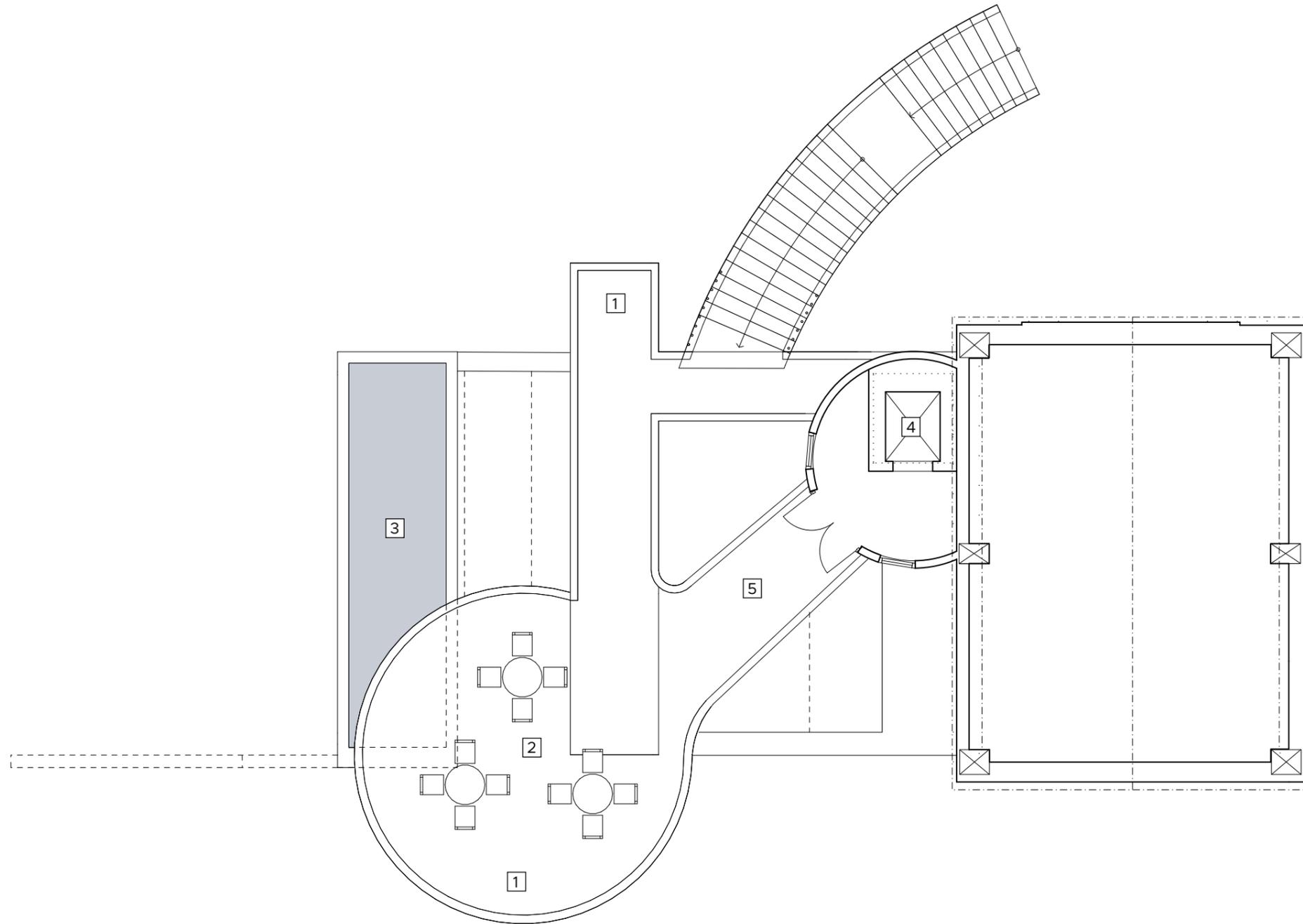
When exiting the elevator-house you can glimpse the water intake down below and the landscape in front of you. Under the added rounded floor the water monument can be spotted. The water monument is showing where the water surface used to be before the accident in form of a mirror pond which transfers into a glass wall with water floating down along with it on both sides to the bottom floor.

- 1 Viewpoint
- 2 Outdoor serving
- 3 Water monument
- 4 Elevator
- 5 View over water in-take



Plan 2

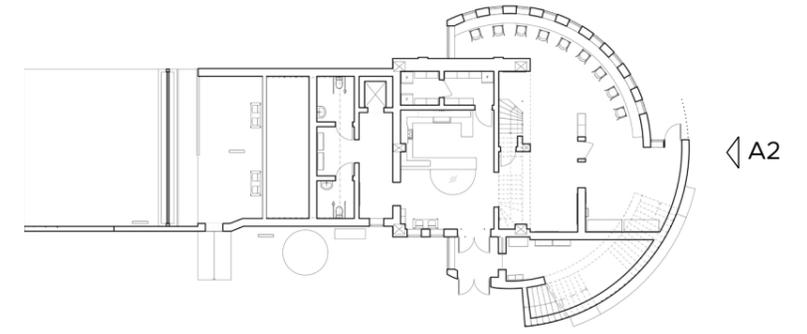
1:100



East elevation

A2

1:100

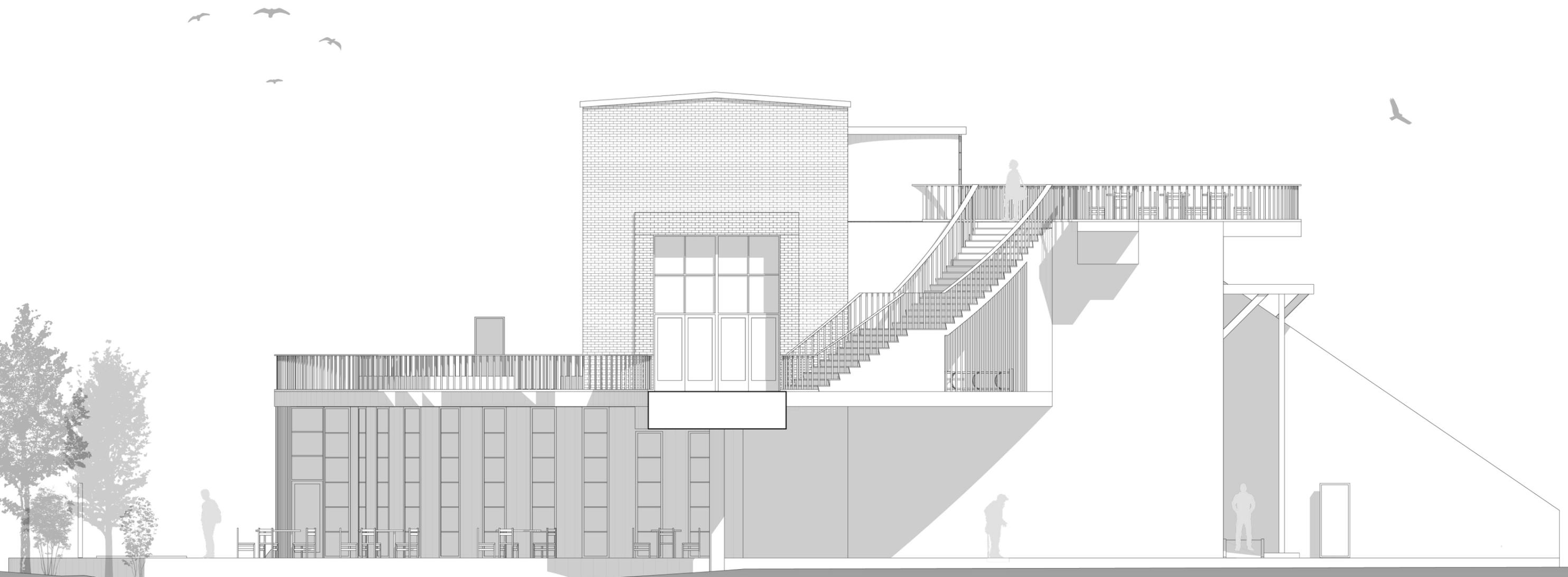
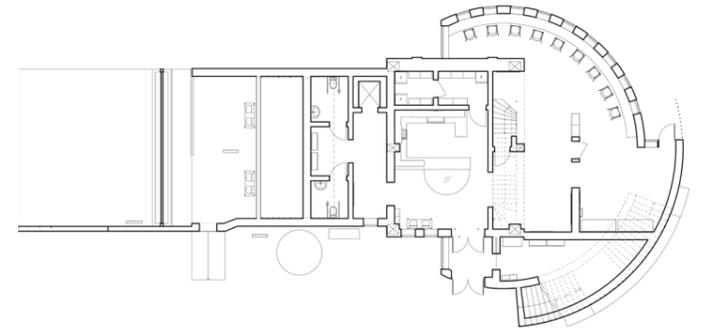


North elevation

A3

1:100

A3
▽



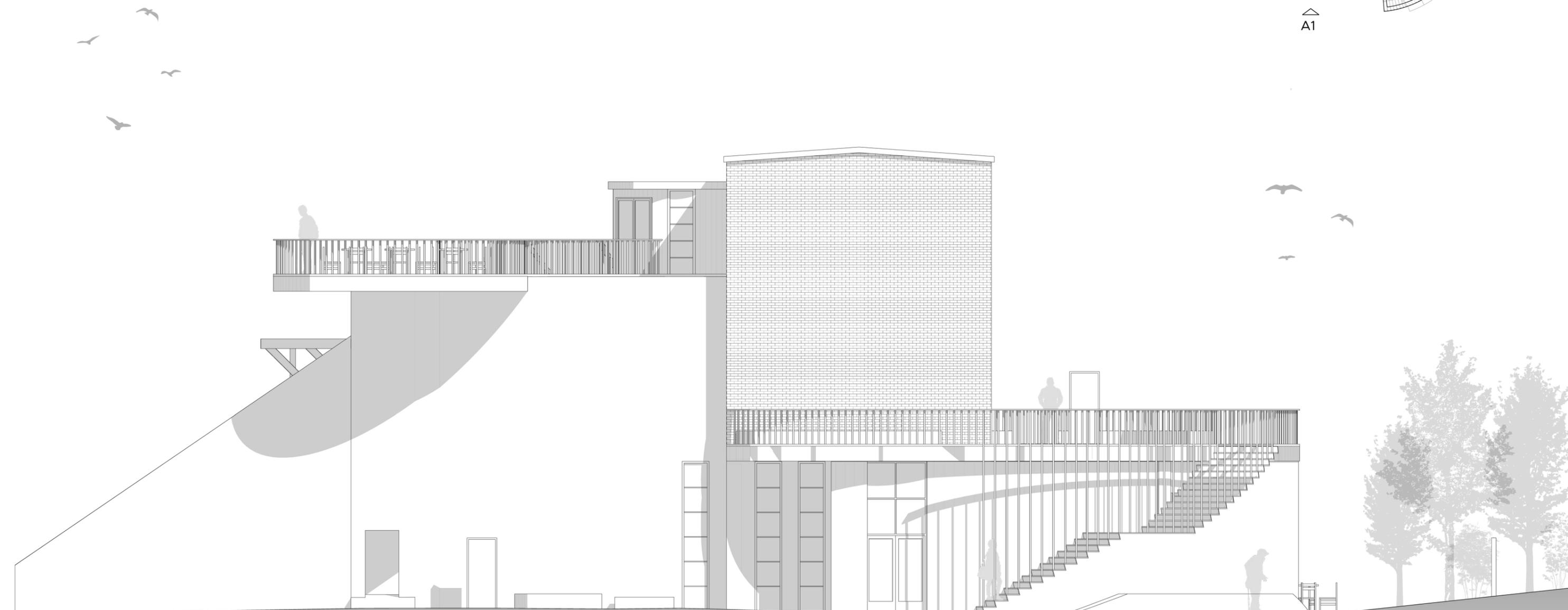
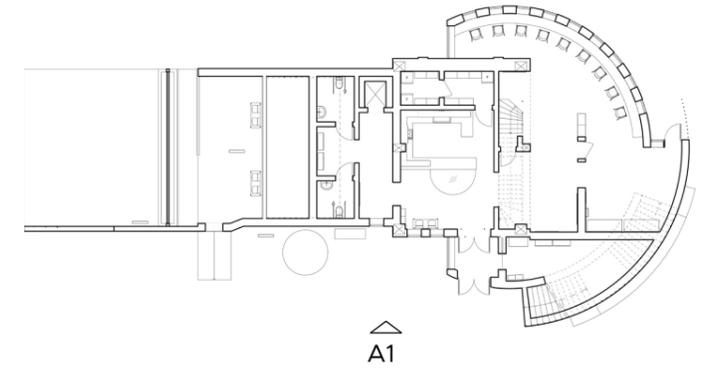
View from northwest



South elevation

A1

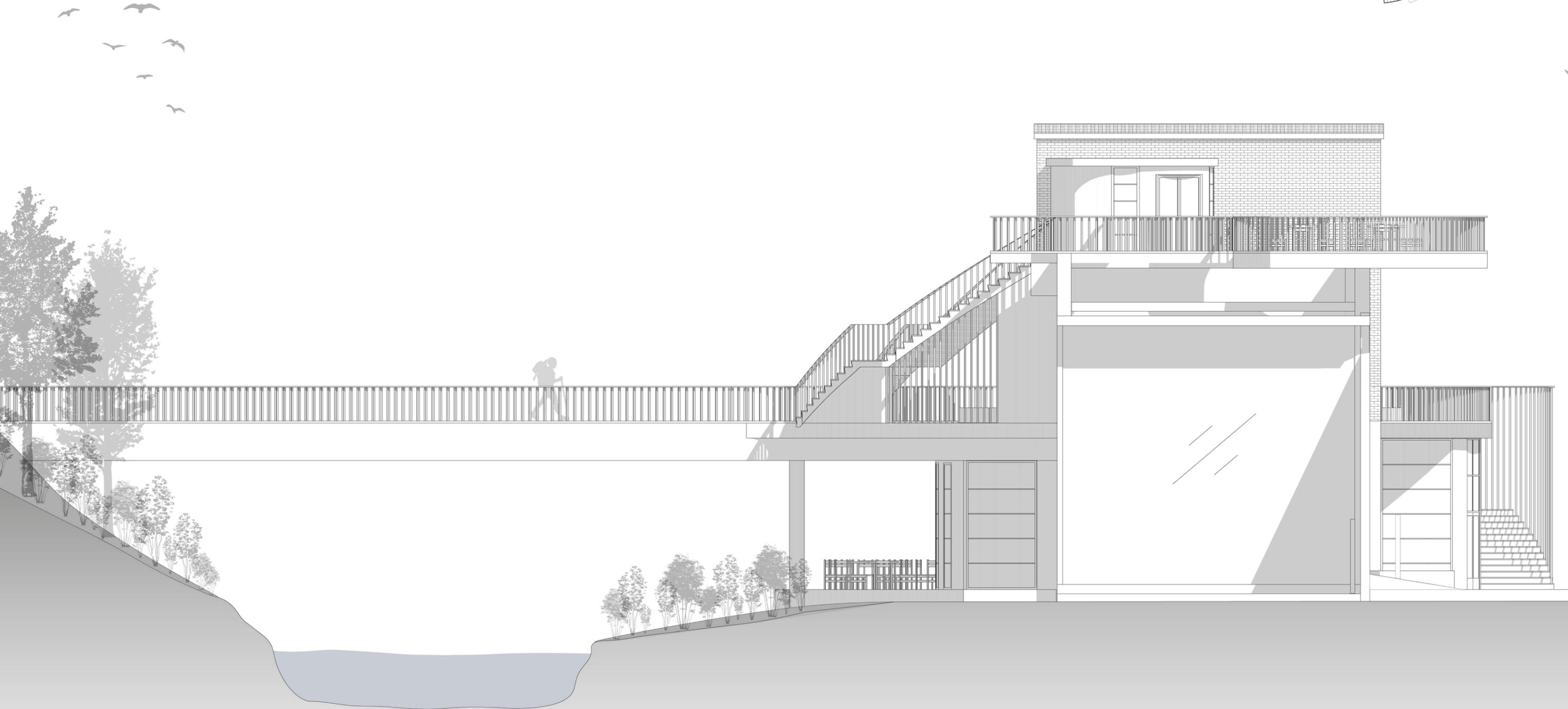
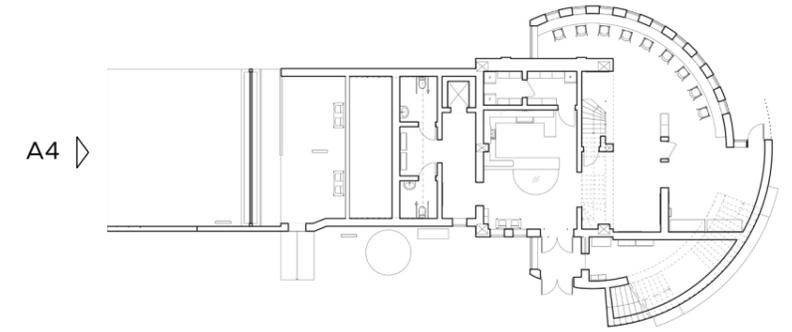
1:100



West elevation

A4

1:100

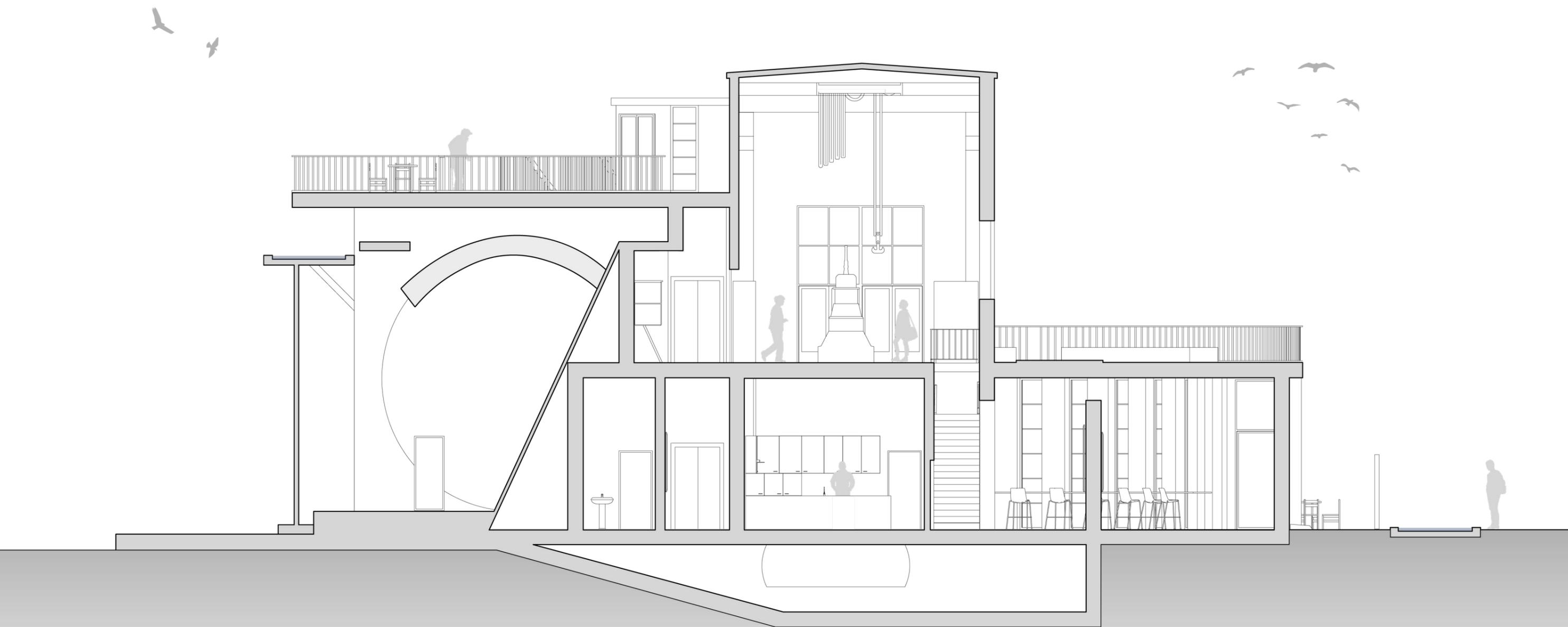
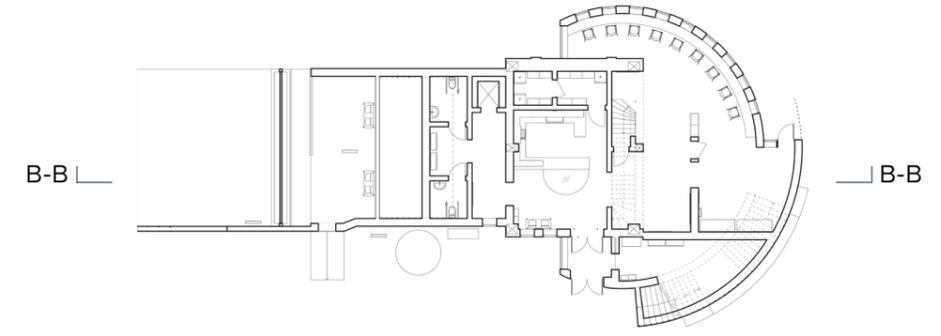


View from west



Section B-B

1:100



Details

Windows

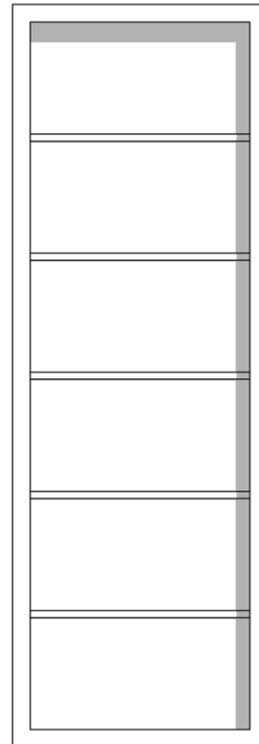
1:20

The new proposed windows are informed from the design of the existing windows on the upper facade of the Powerhouse. The current single glazed cast iron windows have oxidized and require restoration.

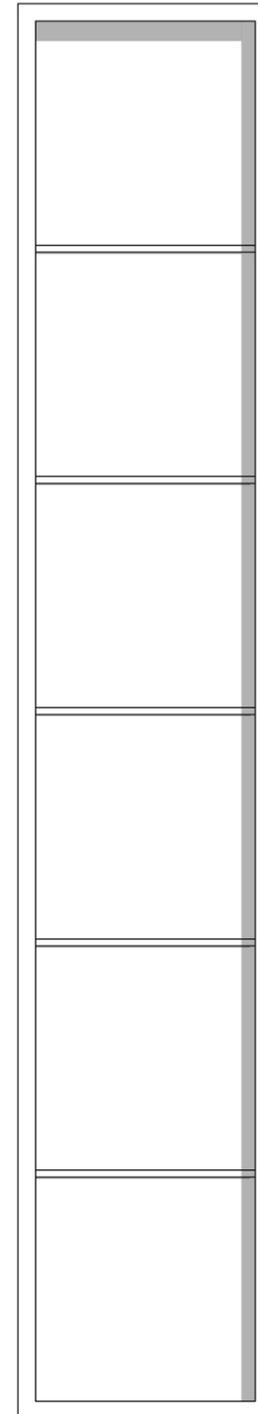
The new proposed windows have the same fixed frame and the same width of the casing and window rails. Moreover, they have five muntins creating a coherent language but with different sizes to maximize the light input to the building. The new oak frame windows will be 2+1 to preserve heat inside the building.

The windows under the bridge have four muntins to create a continuation of the same width of the window sheets and height of the muntins of the windows in the rest of the facade.

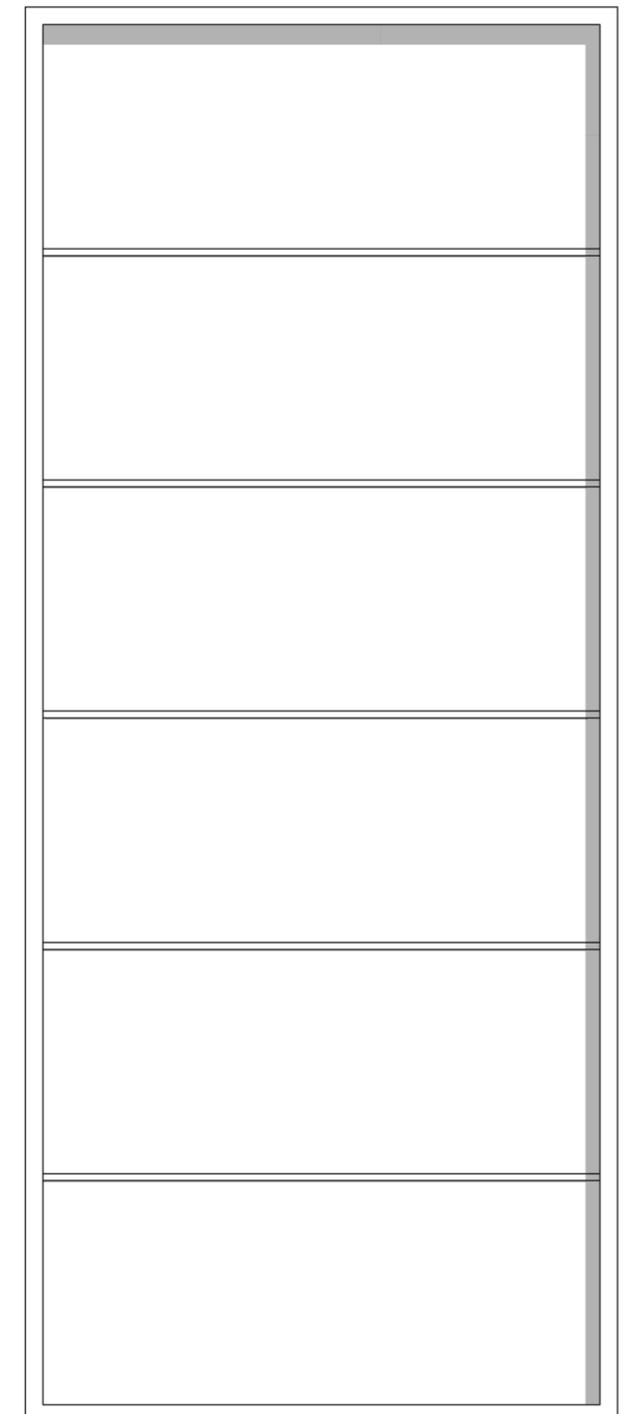
Original window



New windows



Meeting between new & old structure



Details

Materials

A goal in the project has been to make the visitor aware of the newly added layers of architecture. This has been achieved by creating a contrast to the existing structures, both in shape and material. The added material palette works with a limited number of materials to create unity in the new proposed design language. Furthermore, it aims to create the impression of one single added element, consisting of the new facade, bridge, stairways, and terraces. This is achieved by using the same cladding material for these specific areas.

The facade of the existing Powerhouse consists of yellow brick on the upper facade, both on the inside and outside. Whereas the lower facade and the structure of the water intake are made by site poured concrete. The new proposed materials are meant to contrast to the existing ones, but at the same time gather the natural tones of the brick and concrete. Therefore, I have suggested using Siberian larch as outdoor cladding. It picks up the natural grey and yellow tones of the concrete and brick structures, whereas it gives a warmer feeling of the spaces when compared to the existing industrial materials.

By using wood, it creates a representation of the site's previous connections to the industry of sawmills and the transportation of timber along the river. Wood is a sustainable material and using it supports today's local industry in Skåne.

Siberian larch is a durable wood with a natural resistance against rot. Similar to the brick and concrete, it does not require regular maintenance. The density of the wood is very high and provides a natural impregnation, therefore it doesn't require pressure impregnation or maintenance with chemicals. Thus, it is a good material to use in this context since it will not contaminate the soil and the biodiversity further. Untreated, the tones of the Siberian larch shift from golden brown to silvery-grey over the years. The material is used for the exterior cladding of the facade, in the flooring of the terraces and the bridge, as well as for the railing. All for creating the visual representation of one added element.

To complement the new facade, the new window- and door frames will be made from oak. The wood needs oiling during spring and fall for the first three years and later it only requires treatment when the surface becomes dry.

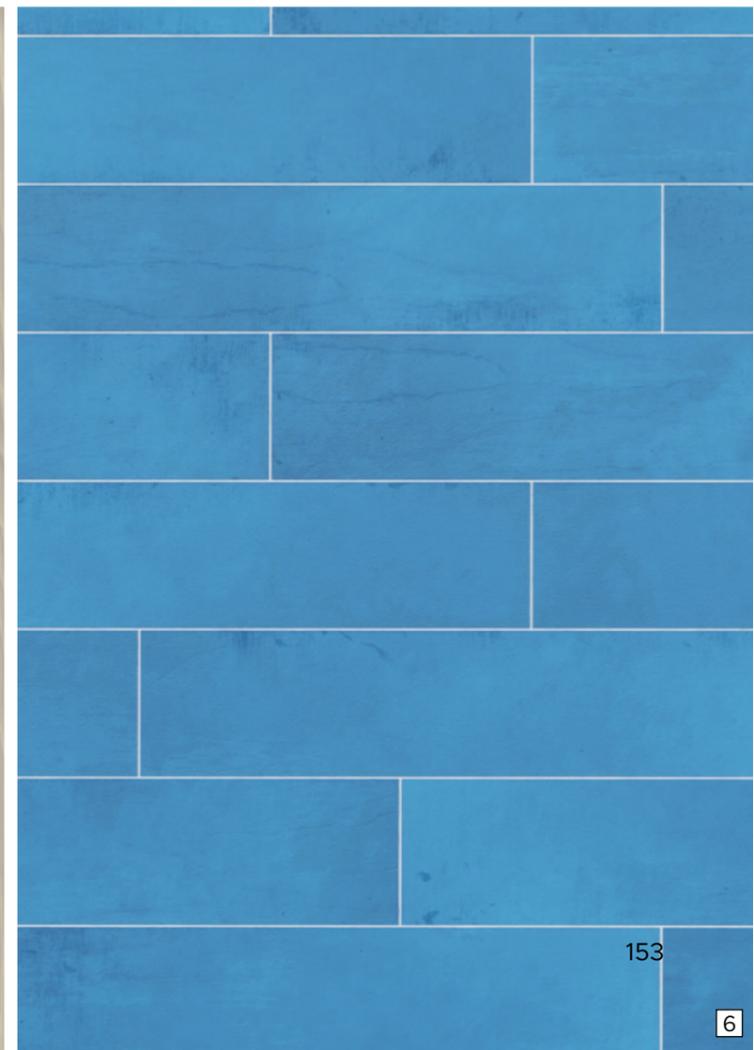
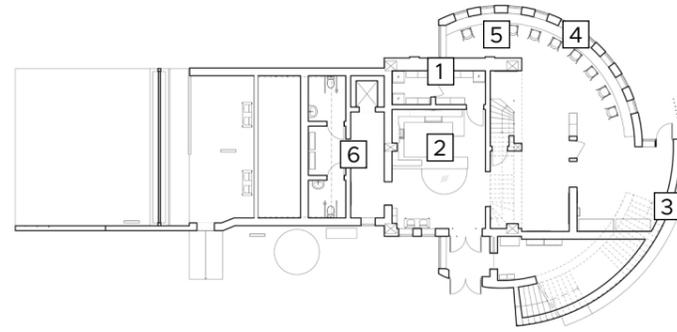
The load-bearing construction of the newly added elements will mainly be made from glulam and CLT. The bridge will have a thick construction that is covered by the Siberian larch, creating a simple architectural language when looking out towards the river. The simple language is also represented in the columns added on each side of the bridge. The goal has been to not severely interfere with the river and the landscape. It provides an open visual field and does not disturb the view.

The inner walls are covered with birch plywood to make the room lighter and to make it evident that it is an added structure to the Powerhouse when seen from the inside. The ceiling is covered by thin birch plywood which continues from the inside to the outside, providing a visual connection of the continuation.

Details

Materials

- 1 Yellow brick
- 2 Site poured concrete
- 3 Siberian larch facade
- 4 Oak windows
- 5 Birch plywood
- 6 Blue tiles



The water monument

The water intake and the concrete walls supporting it are preserved into their original state, but with add-ons in form of a water monument, a viewpoint, and an art wall.

The site poured concrete walls are given new life with an art wall to the south, which represents the time of abandonment of the site. The walls are also used as structural support for the viewpoint placed in the southwest direction on top of the water intake.

The water monument is meant to create a monumental space for reflection and to give a sense of where the water level used to be before the dam collapse. The wall is made from a glass sheet which has floating water going down on both sides of it. It displays the movement of water going from one level to another, and when seen from the inside of the old water-intake the ending of the glazed wall is hidden behind the ramp going down towards the river. This creates an appearance of a continuation of the water-flow going down under the floor and works as a representation of the old function of the space. When seen from the outside, the end of the wall creates a small pond where the water later is circulated up to the top of the glazed wall from inside of the pillars.



The reception & cafe

This space used to be divided into two floors consisting of the Turbine Hall. By taking out the middle floor and the machinery the space is turned into the reception and cafe. Three windows and the air gate extension are added to the existing south facade, proving more light and a new walking flow.

The space is also opened on the west side to create a new entrance into underneath the water-intake. This space has been reprogrammed to host the bathrooms, lockers, and elevator. The dominating material is blue tiles, which are representing the water that used to pass through the space. The first panel of the museum can be seen here on the way to the elevator which takes the visitor to the second floor with the continuation of the museum inside the old Generator Hall.

The cafe and reception also connect to the newly proposed structure to the east. The space there is mixed with the exhibition of the museum and the indoor serving. The partly preserved concrete walls in and the original stairway adds value to the space by telling the story of the past. The stair displays the beautiful red original handrail while leading the visitors up to the Generator Hall.



The indoor serving

The indoor serving frames the view of the river through the newly added facade. The architectural language of the meeting between the existing structure and the newly added one is a manifestation in itself, where the windows become wider to create a visual connection between the inside and the outside.

On this side of the newly added structure, the windows are lower since the structure of the bridge is resting on top of it. To make the facade coherent the windows in this lower part only have four muntins, which makes the measurements of the glass in the windows the same as the initially added windows with five muntins.



The entrance path

With Skåneleden back on its original route, the proposal connects the buildings of the site as they used to be. The newly proposed concept creates accessibility for everyone to come and visit the site free of charge and in a safe environment. The location becomes a pit-stop on the way for hikers and canoers, and in addition, it can attract visitors from afar for a longer visit. It becomes a functional monument where the locals can gather, to reflect on the past, but also as a local meeting spot to enjoy a coffee or for taking a stroll through the landscape.

The old brick structure of the Powerhouse manifests itself on top of the new structure. The render shows the contrast between the existing straight walls on the top and the newly added curved wall below. The existing structure displays its facade in brick, while the newly added wall has a cladding of Siberian larch. The tones of the materials are similar, and both volumes come from simple geometrical language; the existing structure being cubic and the newly added one being circular.



The view from the elevator



View from north



Reflections

Reflection of concept:

Through the thesis, I have given an alternative future for Hästbergadammen. As seen in the proposal, I do not think that the Hydroelectric power plant should be re-established. According to *Energi företagen* more than 80% of the energy production comes from larger rivers in the north of Sweden, and for that reason, it does not make sense to once again take away one of the few natural rivers left in Skåne. The alternative of creating a natural reserve makes more sense in some ways, but can not be justified since it would not value the history of the site and make use of the infrastructure that is already there.

Since the site has a sensitive history, it is peculiar to me that nothing has been done to it so far. In Sweden, we often take for granted that accidents of this kind do not occur. The dam collapse of Hästbergadammen is a piece of evidence that catastrophes do happen, even in modern times. It is an important historical event and for that reason, I find it essential to value the history of the site and to enlighten the public of these matters.

I have tried to find the best way to restore and re-purpose the Powerplant into public use while at the same time tell its history. A good tool to communicate the story is through a museum. It creates storytelling throughout the site and informs us of its different layers. It starts in the landscape and manifests itself in the Powerhouse, as well as in the existing structures and added elements. This type of concept can possibly be applied to other Powerplants in need of a new purpose, where it can bring back value to future generations as a space of history, nature, and space for reflection.

The proposal gives back value to the site by re-establishing Skåneleden to its original route. This connects the buildings of the site as to how they used to be. The newly proposed concept provides activities free of charge and an accessible space safe and open for everyone. The site becomes a node in the forest and creates opportunities for both spontaneous visits and planned ones from afar.

Reflection of design proposal:

There are no right or wrong answers of to how to restore a building. The important part is to respect the existing values and try to enhance them. From the Cultural value assessment in the model of Feilden, I have concluded the existing values and tried to strengthen them with the new proposal.

The design proposal has different scales of alterations to enable the Powerhouse for public use. Most of the structures have been preserved, except the concrete structure in the east, which is partly taken away to create a better walking flow and views from inside the Powerhouse. To represent the history of the removed structure, parts of the walls are preserved in their original location and works as displays and room dividers to the added part of the museum. In this way, I hope to still respect the cultural value of the building, while at the same time improve its function. The parts that were taken away, provide a minor value in my opinion. While the new additions would improve the value of the site.

I have decided to work with contrast towards the existing structures to create a distinction between what is added and what is preserved. For me, it has been crucial to distinguish what are the historical parts and what are the added parts. It becomes a part of the storytelling of the site and it makes the visitor aware of the different layers. The added parts also serve the purpose to enhance the existing design and improve it for public use.

With the proposal, I believe the Powerhouse obtains more value as it arises and manifests itself on top of the newly added structure. To make the added structure still blend in with the existing ones, details and materials have been informed from the original. The windows and doors can clearly be seen as inspired from the existing ones with the same width and amount of muntins.

Reflection of design proposal:

Something that can be discussed is whether the inner load-bearing structure made from glulam and CLT is strong enough to withstand the loads. For the bridge, it would possibly be necessary to change the construction to steel or concrete, but likewise, it can still be covered by the Siberian larch as cladding to create the feeling of on single element. Since I do not want to interfere too much with the river and landscape, I suggested using only one column on each side of the bridge. It provides several qualities for the visual experience, but the construction might need reconsideration to make it into reality. The goal was to make the railing unitary with the facade by using Siberian larch, though it might also need another type of construction to make it more stable.

The project started with a bit of a struggle to find public access to documentation of the site. Therefore, a lot of time in the project has been spent on trying to analyse and measure the existing location and structures. If I would develop the project further, I would like to focus more on the landscape to improve the storytelling through the site. To complete the project a cooperation with landscape-architects and biologists would help to add the right type of greenery to the area. Furthermore, I would also like to start working on the second phase of the project, which is to design the existing residential building into accommodations. It would also have been nice to have more time to figure out all details for the Powerhouse.

Throughout the project, the goal has been to make the site's history understandable for the visitors and to represent the different time phases of the Powerplant with help of the design. With the final design proposal, I strive to represent the phase of its time as a hydroelectric power plant, of the event of the dam failure, and of the time of abandonment.

Finally, I hope that the new design proposal will represent a new phase of history, the phase of a public monumental space. A place where the site and the locals finally can get closure and an answer of what will happen to the future of



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AAHM10 - Degree Project in Architecture

Lunds Tekniska Högskola 2021

Examiner: Christer Malmström

Supervisor: Ingela Pålsson Skarin

