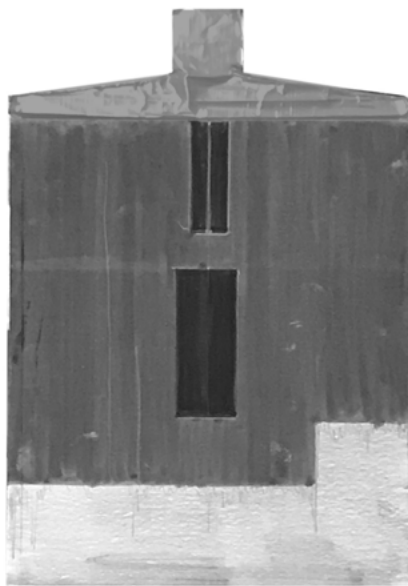


Handicraft House : Creation Through Architecture



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Chalmers University of Technology : School of Architecture

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Chalmers University of Technology : School of Architecture

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Abstract

Working with your hands brings with it a certain joy. Using your senses to create something from scratch is no longer a part of our everyday life. The knowledge of making brings with it not only a tactile understanding of materials and tools but it also teaches us about our human history.

A house for handicrafts encourages creation, fixing and maintaining by hand. It is a place to inspire an interest in handicrafts. It should be open for all in order to create an atmosphere where even small interventions are possible, to generate a sense of permanence and care to everyday objects made by hand, used by the maker.

Four crafts form the function of the building: woodworking, blacksmiths, weaving and ceramics. These crafts are closely linked to many household items used in everyday life. These crafts are also linked to the four elements of architecture described by Gottfried Semper in his 19th century book *The four elements of architecture*.

An important aspect is to, through the building itself, inspire the act of creating. To create something of lasting value requires a lot of care and attention to detail. Many aspects play an important role in the formation of the whole. By incorporating and exposing these crafts in the building the aim is to stimulate individual creation.

Infill projects in cities require sensitiveness. Placement, function, appearance and execution all become important aspects in creating a robust addition to an existing context. The task of placing a new building in a historically sensitive and coherent context is one of the main aspects of this thesis. A new addition will become part of the urban context and should suit the needs of many, it should be a public building.

Student Background

Master Studies, Chalmers, Gothenburg, SE (year 5)

Studio Capaul & Blumenthal 1 & 2, EPFL, Lausanne, CH (year 4)

Internship, Wingårdhs, Stockholm, SE (2018-2019)

Bachelor Degree, Chalmers, Gothenburg, SE (year 1-3)

Purpose

Technological change and globalization have made it easier than ever to produce goods and distribute them all over the world. While this globalization has many benefits, one negative aspect is the loss of certain knowledge. Traditionally, everyday knowledge related to crafts was local. There was a much closer connection to the act of creating. A closer connection to creating also brings with it a greater bond with the object and creates longevity for objects, of special or household character. This thesis looks at the act of creating and the aspects of knowledge that it brings with it - making, using and maintaining every day and household objects instead of replacing what's old and broken with something new off the shelf. The purpose of this thesis is to find an architectural solution that encourages and promotes crafts.

Reading Instructions

This thesis consists of two main parts. The first is the introduction, where the questions and aims as well as theory and method is presented. The second and largest part is the design proposal which attempts to answer the proposed questions. The site, structure, program, form and detail all play important roles in the forming of the whole.

Questions & Objectives

How can architecture inspire handicraft and an engagement with materials?

How do you conceive architectural additions in a context with a clear identity sensitive to change?

The new structure will house a cultural centre with focus on crafting arts such as carpentry, ceramics, weaving and blacksmiths. It would be used freely by individuals, by schools in the area as well as for public classes. The building would serve as a place for tactile engagement with materials and to promote the art of making.

The surrounding area was designed during a time period influenced by the Arts & Crafts movement. This can be seen in the built environment. It shows an admiration of the handmade rather than the industrially produced. Today, the appeal of the handmade is yet again gaining recognition.

The objective is to find a solution for a robust building that expresses the human touch and inspires creation by hand. The building should showcase its materiality and structure as well as provide a space for viewing and creating objects. The building is made of tactile materials that age and weather with beauty. The traces of use will be seen and felt over time. The crafts represented in the house all demand physical labour. This physical presence is something I want the building to express. The crafts-people use many senses when creating and the hope is to generate a multi-sensory connection within the building itself.

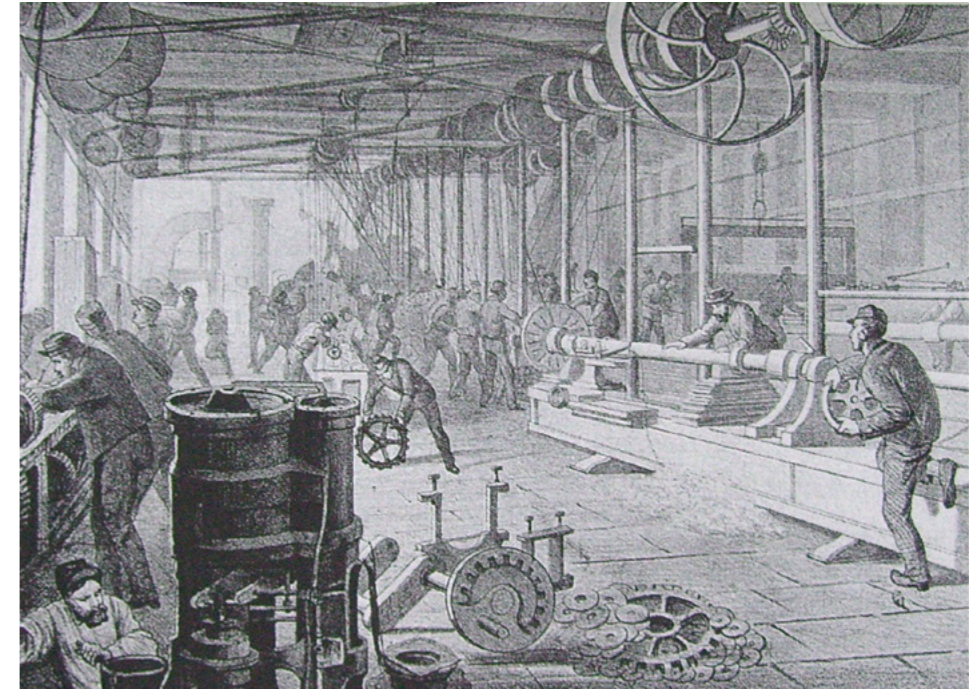
Background

100 years ago, Sweden was in an architectural period referred to as the Nationalromantik. It celebrated the hand-made and national history. A fear of losing a part of what was considered Sweden's heritage brought into focus the materials used in this era. Brick, stone and wood all represented the human touch that they sought after.

Today, 100 years later, the urban citizen is further away from these highly valued crafts than ever before. However, an increased DIY culture is present. This shows that even after all this time of technological change and innovation we still long for the feeling brought by creating something with your hands.

The sense of sight has become dominant in today's society. The eye is the most significant and mostly catered to of all the senses. This occularcentrism deprives us humans of the full sensory experience of life (Pallasmaa, 2012). Juhani Pallasmaa (2012) writes that "sight isolates, whereas sound incorporates; vision is directional, whereas sound is omnidirectional". By letting all sense have a presence, our lives and buildings would benefit from it.

The act of making something by hand involves many sensorial aspects. It is not only through touch but also through hearing, taste and smell a craftsman conceives their work. Aristotle called the hand the "tool of tools". Notably, the volume of the brain dedicated to the hand is the same as the volume dedicated to the other senses combined (Aicher&Caminada, 2018). Handmade objects made of natural materials express their age as well as the history of their origins and human use (Pallasmaa, 2012). Something made by hand has other qualities than that of the industrially produced. They have the human touch that many of our most used everyday items have lost.



Göteborgs mekaniska verkstad

This thesis is carried out through research by design, working with drawings and models by hand and digitally, by sketching and exploring different ideas linked to the main subject. Analysis of the site, context, historical and modern references lay the foundation for the work. Focus is put on a Scandinavian tradition of architecture with certain additions of international examples that emphasize a care for the art of building. Buildings from architects such as Bernt Nyberg, Bengt Edman, Sigurd Lewerentz, Erik & Tore Ahlsén, Sverre Fehn, Gion A. Caminada and Peter Zumthor are examples that show a great attention, care and dedication to architecture. They echo a certain robustness and permanence. This aspect of architecture forms an important foundation for my working method and serve as inspiration for my process. Looking closely at buildings to see their attention to even the smallest detail, you find inspiration from all eras of architecture. This care, to me, is a main aspect of what makes these buildings timeless and humane. They may be of different scales, programs and times but they retain the basic human touch that for me is crucial for lasting architecture.



1



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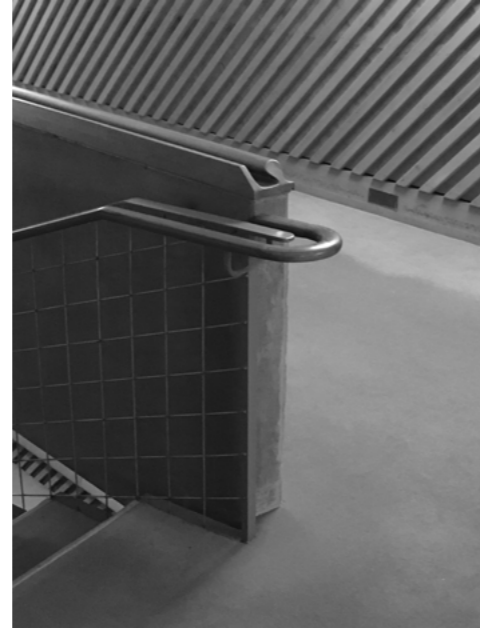
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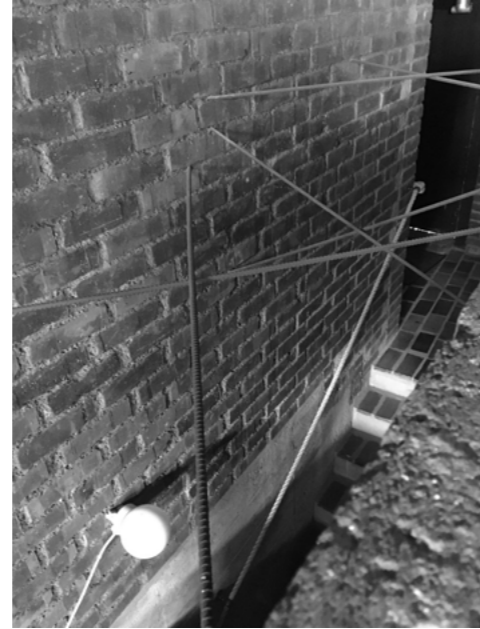
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18



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16



19



20

Theory

The writings of Juhani Pallasmaa, relating to the senses and architecture, form the basis of my interest in approaching architecture. Another important theoretician is Gottfried Semper and his writings on the four elements of architecture. Along with texts and conversations with Gion A. Caminada, these are my theoretical foundations.

The four elements of architecture are described by Semper (1851) as the hearth (fire), mound (foundation), roof and enclosure. They link back to the most ancient cultures. He states that the hearth is the first and most important element and that it was around the hearth that groups of people and alliances were formed. The hearth is the moral element of architecture, around which the other elements gathered as protective elements. They protect the hearth from the hostile elements of nature. These elements have since then developed differently according to the various climactic, societal and natural needs of different places. It is also around these elements that the different crafts are organized. From the hearth comes ceramics and metal works. From the mound comes earthworks and masonry. From the roof comes carpentry. From the enclosure comes weaving (Semper, 1851).

These four elements and their related crafts are interpreted into my project, forming a base that is adapted to a contemporary situation. The crafts are exposed in the building and the building consist of combinations of these elements. Textiles are room dividers and visual separators. Ceramics and earthwork are the foundation and surface materials in certain rooms. Metal forms the detailing such as stairs, windows, lights, furniture etc. Carpentry is not only applied in the roof but becomes the whole load bearing structure of the building. Thus we can see that these elements and crafts still play an important role in architecture today.

Delimitations

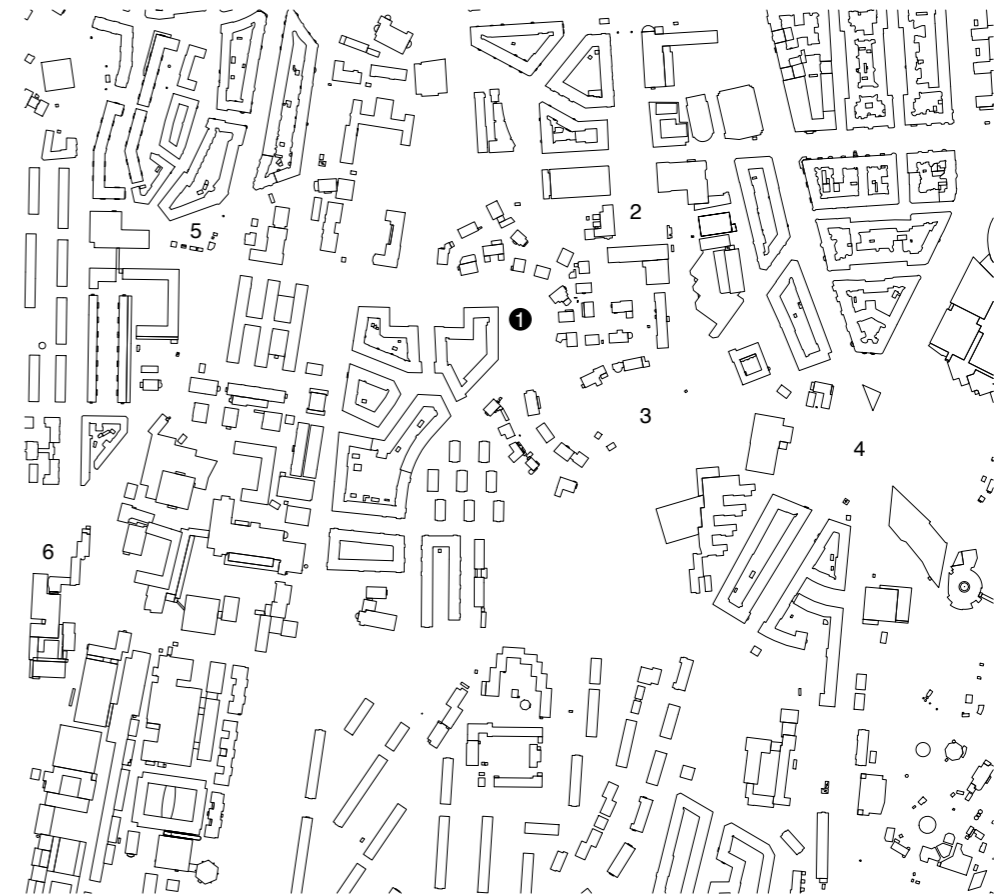
The current city plan over Johanneberg is from 1919 with revisions made in 1923 and 1969. Since the beginning it is stated that the plot for my project is to be built with a public building. As this was never carried out, a car park was proposed and approved in 1969 but never built. In 1969 the plot is described as a place with few attributes of value. This is true to some extent still today. As the requirements for the plot is quite vague I have interpreted it freely but with respect to the existing proposals. The granite stone walls are mentioned as valuable for the cityscape and this is something I agree with and have incorporated in my proposal. The plot is, as I see it, very well suited and situated for a public building.

The site is set between two building typologies from the same epoch of the early 20th Century. The plot is a sort of “in between” area that is hard to define. It has a varied topography and borders a granite retaining wall to the west. On the site there are many fully grown trees that are valuable to preserve. There are roads on all sides of the plot that connect to Viktor Rydbergsgatan at different places. The curving part of Terrassgatan that connects to Viktor Rydbergsgatan has been cut off from car traffic since the switch from left to right hand traffic.

The area was planned by Albert Lilienberg during the 1910’s. In sketches of the city plan there are different iterations of buildings on the site. Some show a clearer connection to the larger apartment blocks to the south and some show more resemblance to the detached single-family houses to the north of the site. The overall plan follows the topography and was one of the first areas designed by Lilienberg with the car in mind. Lilienberg himself was one of the earlier people in Gothenburg to get a car of his own (Bjur, 2018). The spaces in the area were designed with different functions in mind but all were to be connected with the unity of the overall design. He described the city as a growing organism and that with it came a greater beauty for the city (Bjur, 2018). The area has a pleasant relationship of buildings to vegetation and open space with many paths and stairs for pedestrians that cut through the neighbourhood. It is a beautiful example of early 20th century city planning that still today is largely untouched.

It is specified in the plan from 1919 that the site should be built with a public building, although this was never realised. There were also proposals from Lilienberg to build a fountain on the site to commemorate the author Viktor Rydberg. This fountain was also never realised.

The site is situated close to many travel/ public transportations nodes. The surroundings consists of mostly residential buildings but also educational and business buildings.



- 1. Site
- 2. Götaplatsen
- 3. Renströmsparken
- 4. Korsvägen
- 5. Kapellplatsen
- 6. Chalmers



1919



1969

Surrounding Buildings

Many of the surrounding buildings are quite simple in their base geometry but have facades connected to their inside functions/rooms. This makes for a varied and lively but still coherent whole. Materials used are robust and heavy in character. Stone, brick and wood are all present. The buildings are well situated and rooted to their sites with many stone foundations and walls undulating with the terrain to meet the buildings. Many of the buildings are designed by the architect Arvid Bjerke. He also lived and worked in one of the row houses that he designed himself (Bjur, 2018). Most of the buildings are built from bricks with a brown/red colour but there are also examples of redder and some yellow bricks used. Originally, there were three wooden houses in the area. Today only one remains. This house has a stone foundation and a dark brown painted facade. Most buildings have a red clay tile roof with details such as gutters and smaller roofs made of copper. Many roof lanterns are also made of copper, however some have been replaced during the years with other metallic solutions. There are also some original copper lanterns on the granite stone wall to be found.

Surrounding Buildings



Figure 1 : Villa Fischer, Ebbe Crone, 1916



Figure 3 : Terrassgatan



Figure 2 : Bjerke rowhouse, Arvid Bjerke, 1916



Figure 4 : Kjellbergsgatan

Space Program

The building consists of four workshops based on the four elements of architecture and their related crafts plus a cafe/gallery space. The workshops are divided on three floors and are given their own dedicated spaces that are connected by the main communication and the cafe/gallery space.

The workshops are:

- Wood
- Metal
- Ceramics
- Textile

Each workshop has a set number of working spaces. These are intended for individual work primarily and are fully equipped. Each workspace has the necessary tools provided in cabinets that help form the workspace itself. The cabinets are made to display both the tools available and works in progress, in order to emphasize the process of creating.

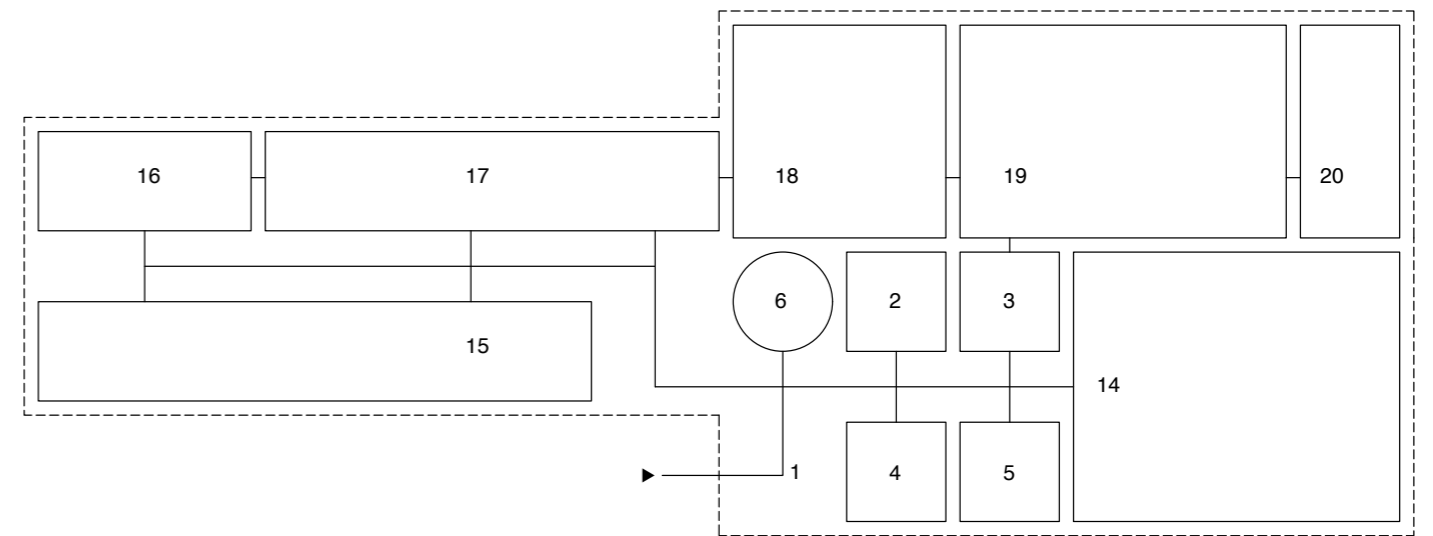
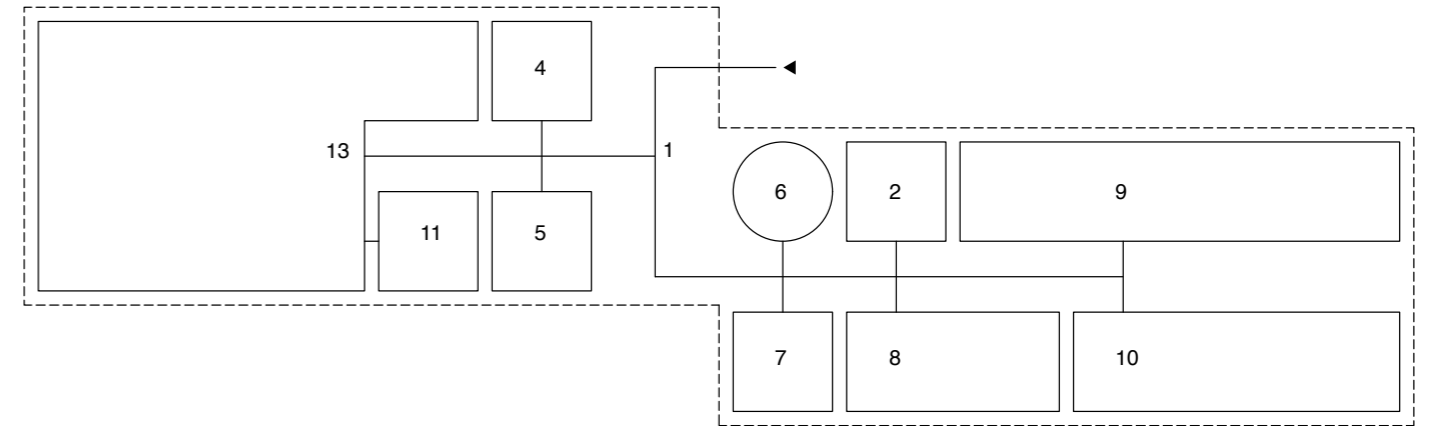
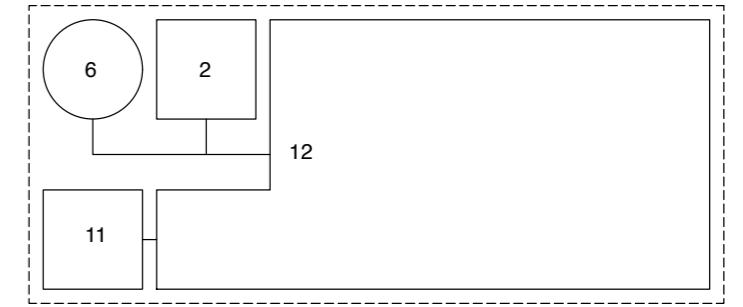
The cafe/gallery space provides an opportunity for creators to display and/or sell items made by hand and is a place where creators and passers-by can meet and engage with crafts in a more informal way.

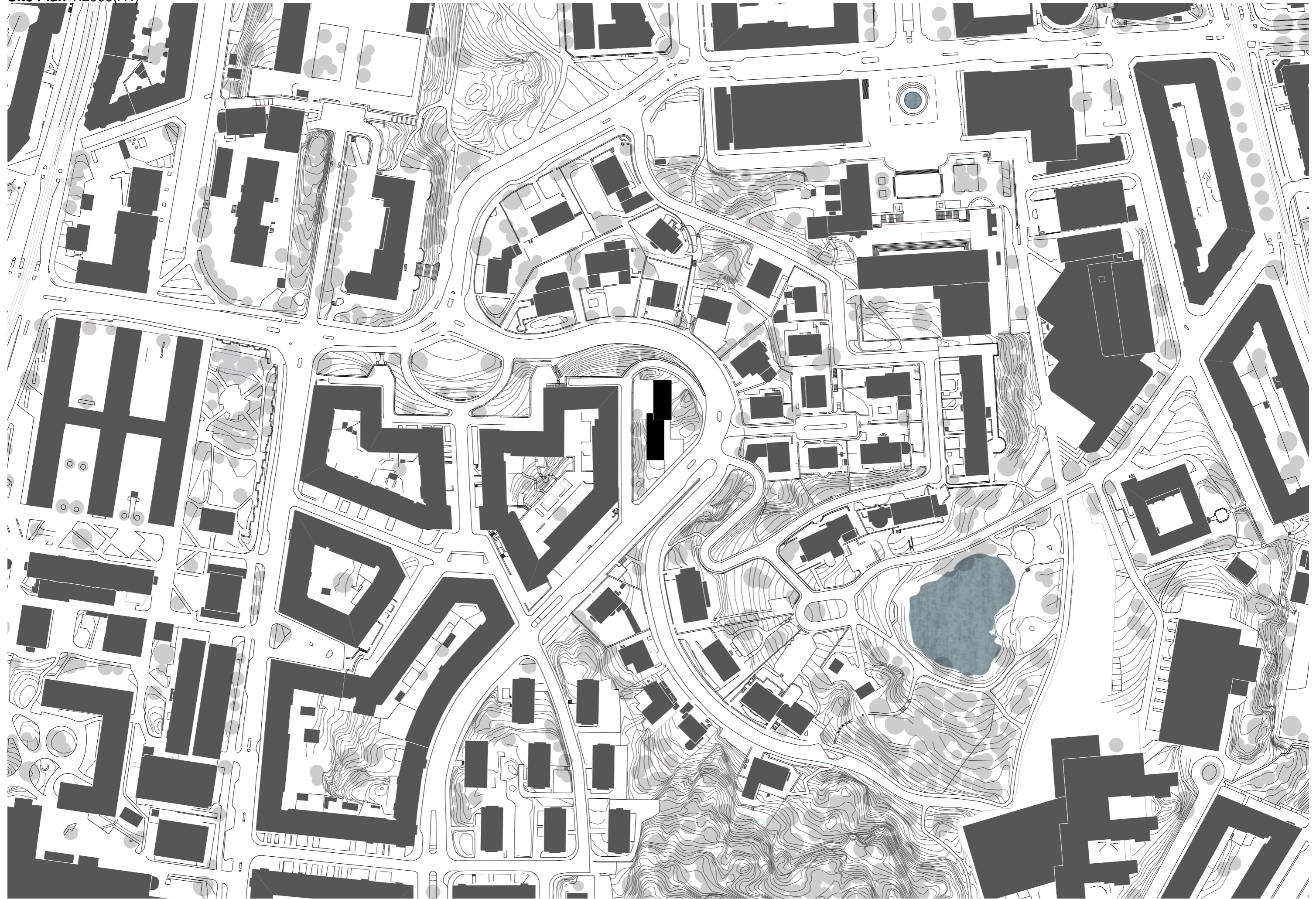
Number	Space	Quantity	Area (m2)
1	Entrance	2	40
2	Elevator	1	15
3	Deliveries	1	15
4	Office	2	15
5	Wc	2	15
6	Stair	1	15
7	Meeting	1	15
8	Cafe kitchen	1	30
9	Cafe	1	60
10	Gallery	1	45
11	Storage	2	15
12	Ceramics	1	175
13	Textile	1	144
14	Metal	1	120
15	Wood	1	115
16	Sanding	1	32
17	Machines	1	64
18	Saws	1	58
19	Storage	1	90
20	Changing area	1	30

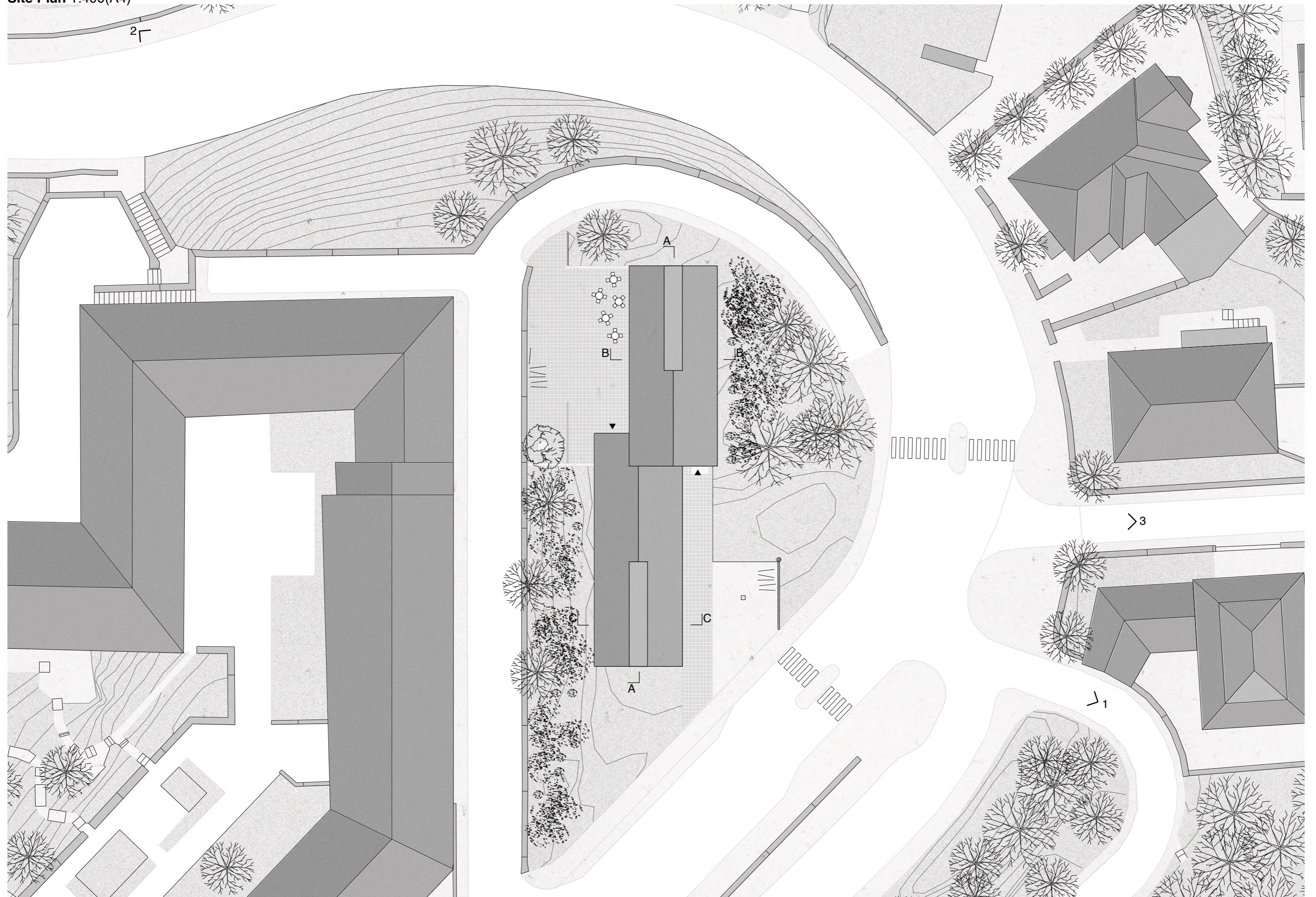
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Total building area : 1495 m2

Space Program



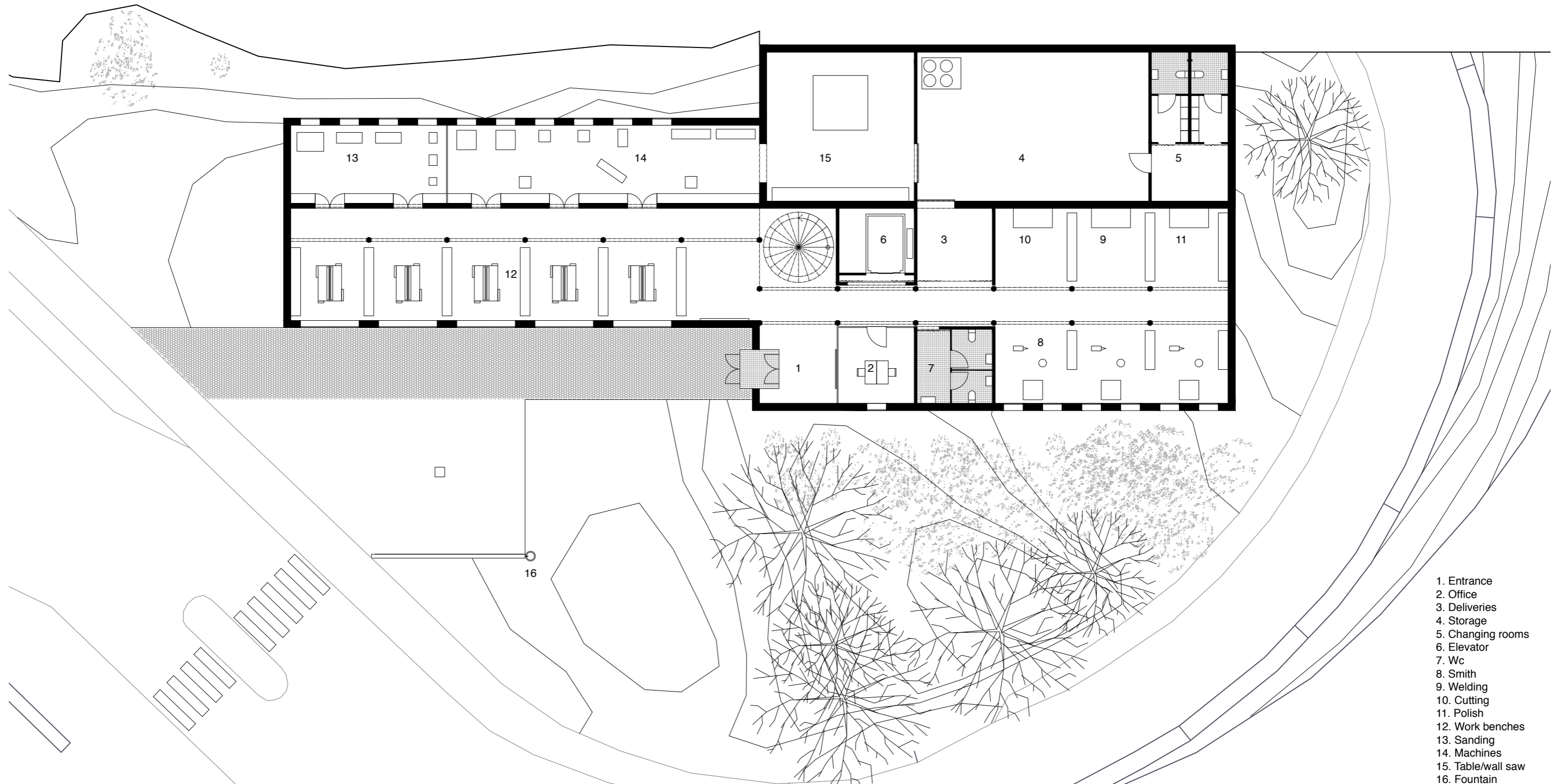








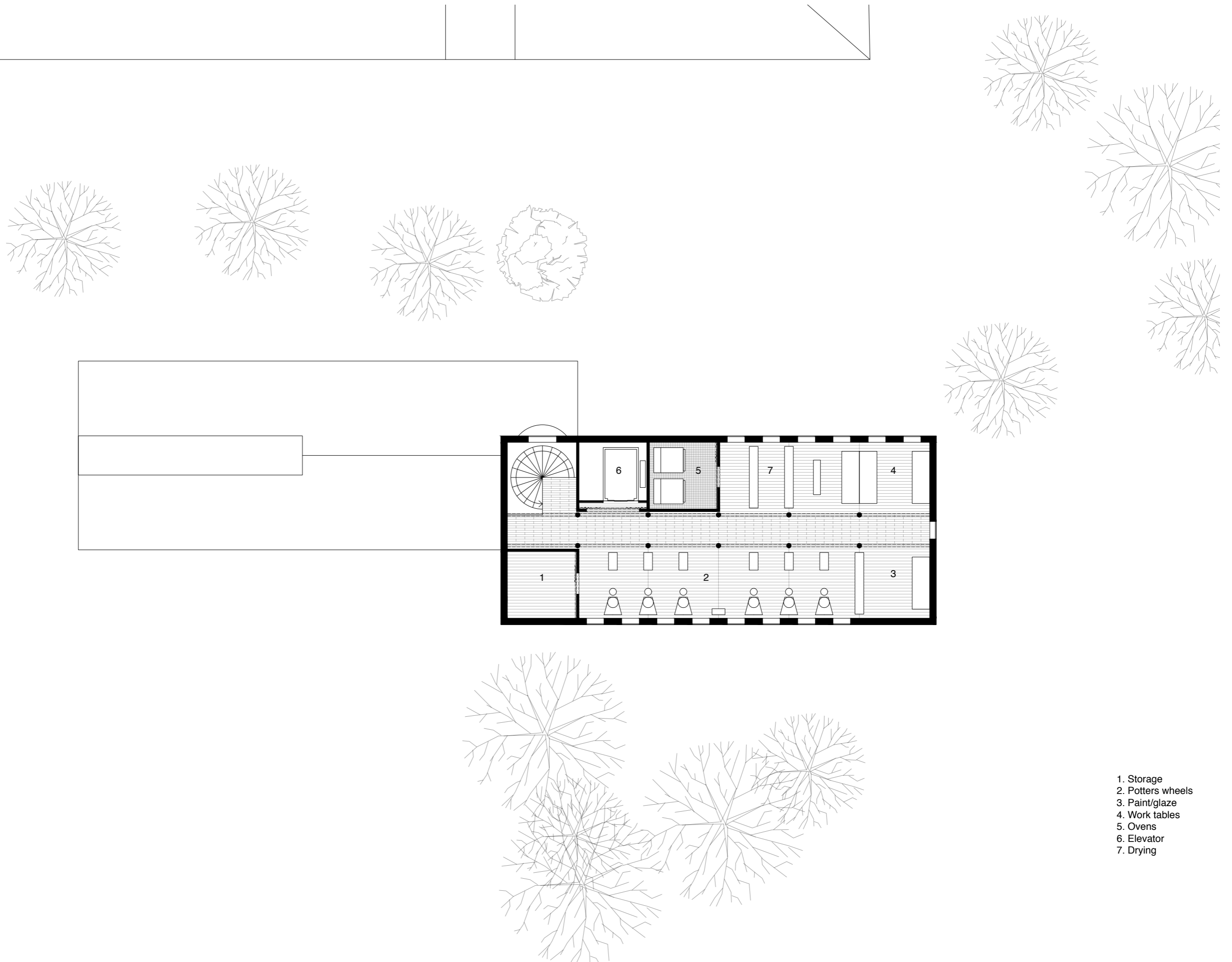




1. Entrance
2. Office
3. Deliveries
4. Storage
5. Changing rooms
6. Elevator
7. Wc
8. Smith
9. Welding
10. Cutting
11. Polish
12. Work benches
13. Sanding
14. Machines
15. Table/wall saw
16. Fountain



- 1. Entrance
- 2. Office
- 3. Meeting room
- 4. Kitchen/cafe
- 5. Gallery
- 6. Elevator
- 7. Wc
- 8. Storage
- 9. Large loom
- 10. Small loom
- 11. Entrance square



- 1. Storage
- 2. Potters wheels
- 3. Paint/glaze
- 4. Work tables
- 5. Ovens
- 6. Elevator
- 7. Drying

Entrance



Gallery

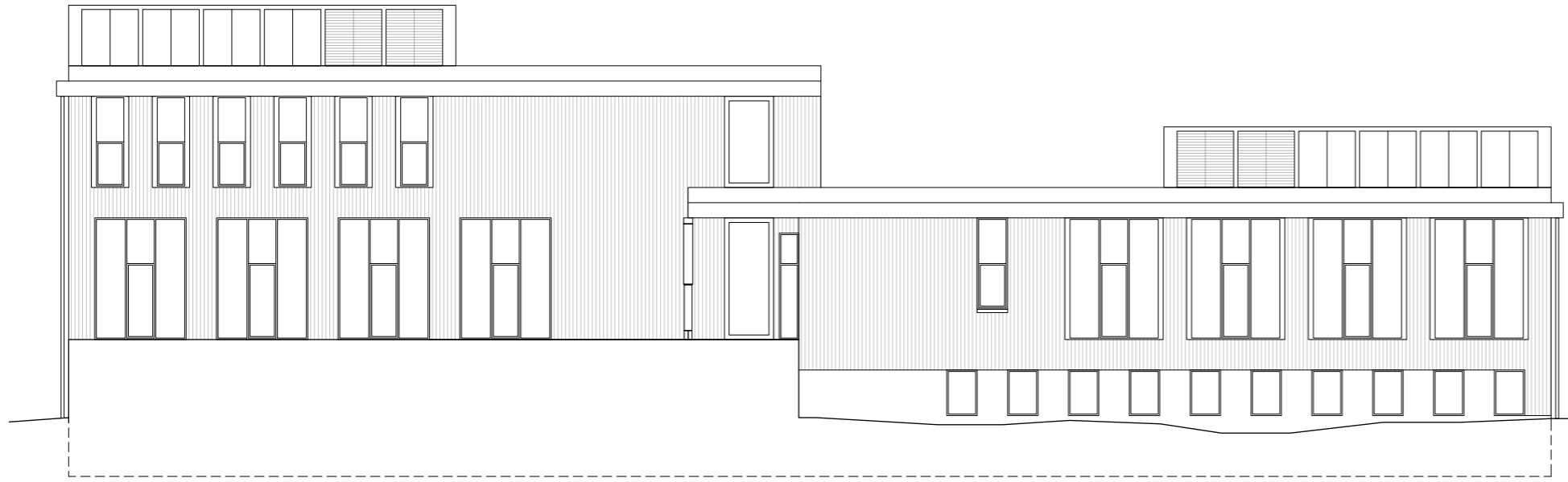


Weaving Workshop

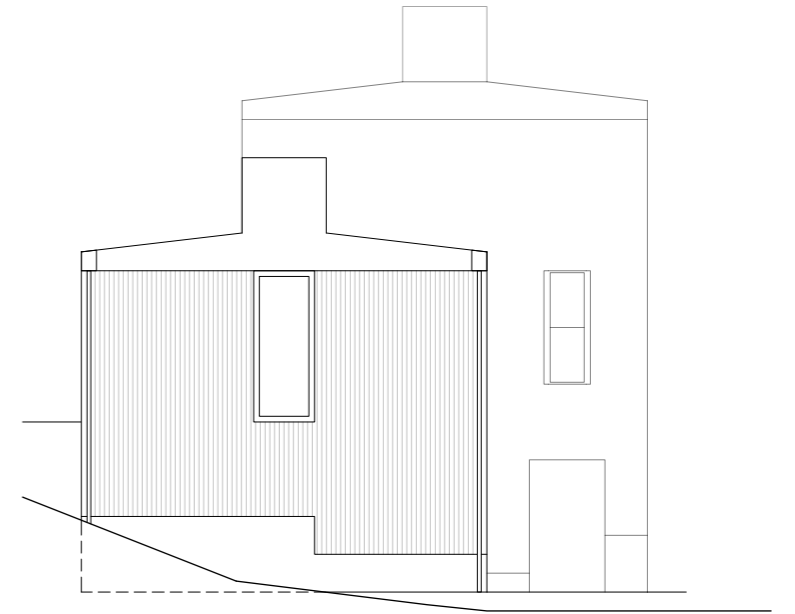


Weaving Workshop (furnished)





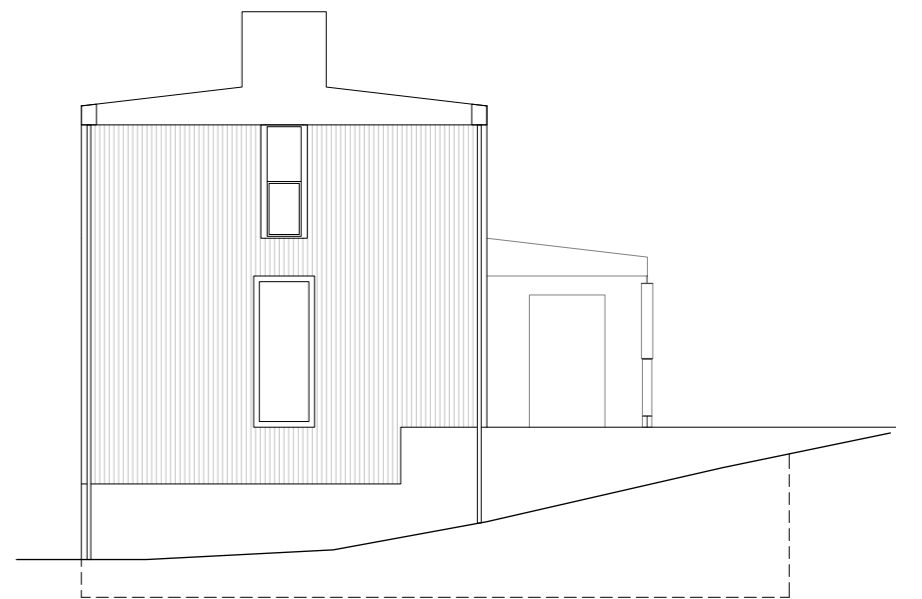
West



South



East



North

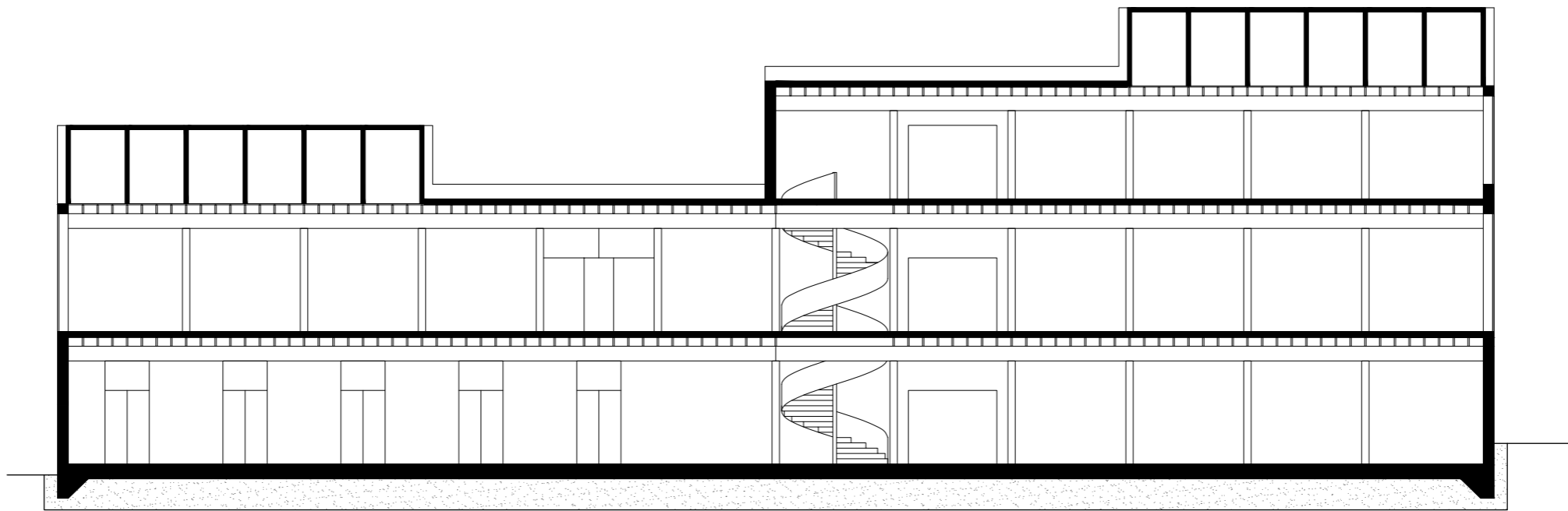
View 1



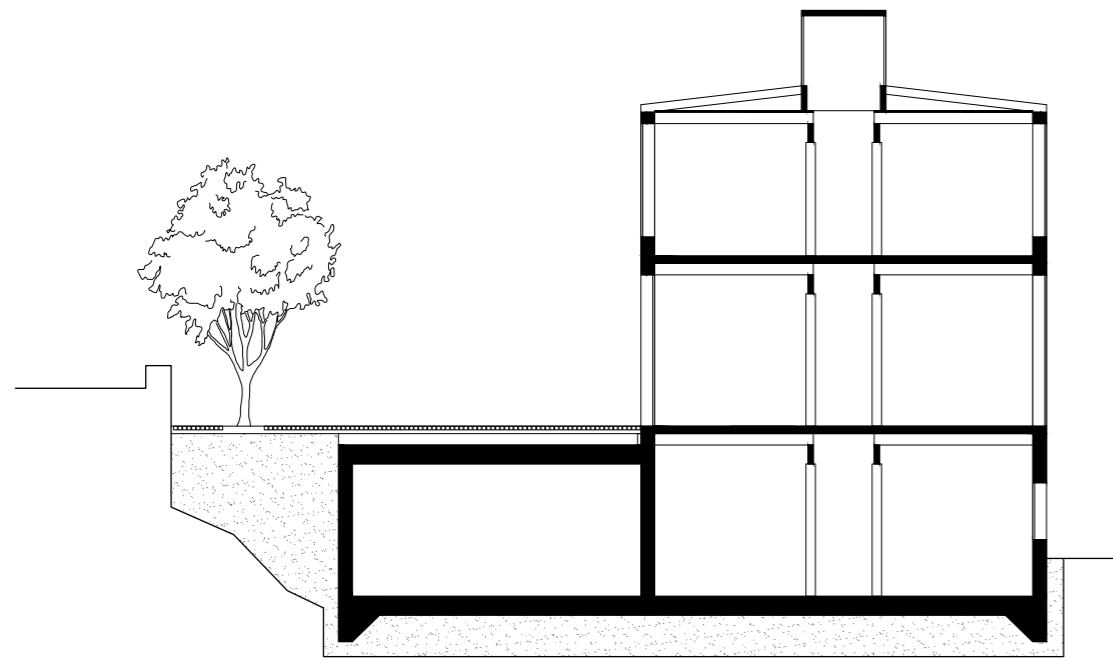
View 2



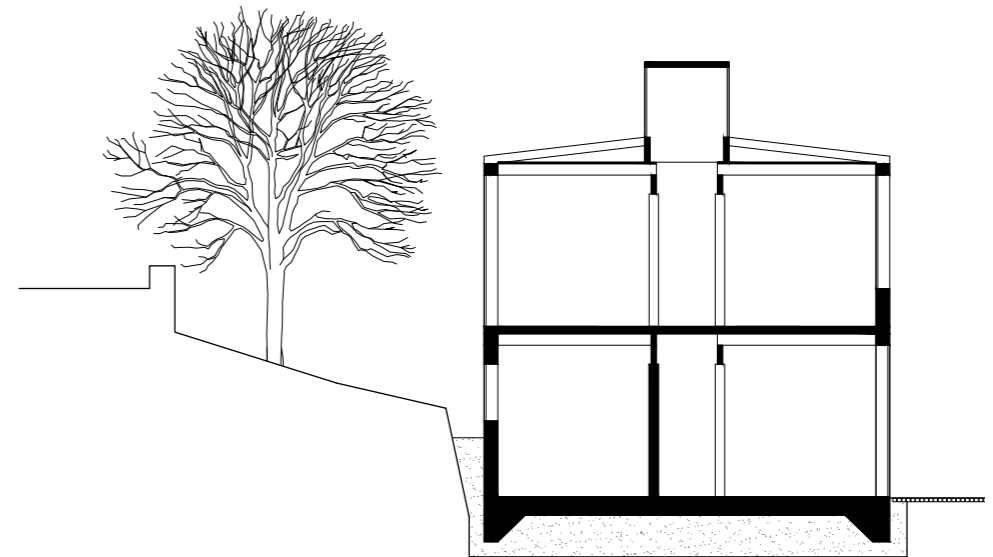


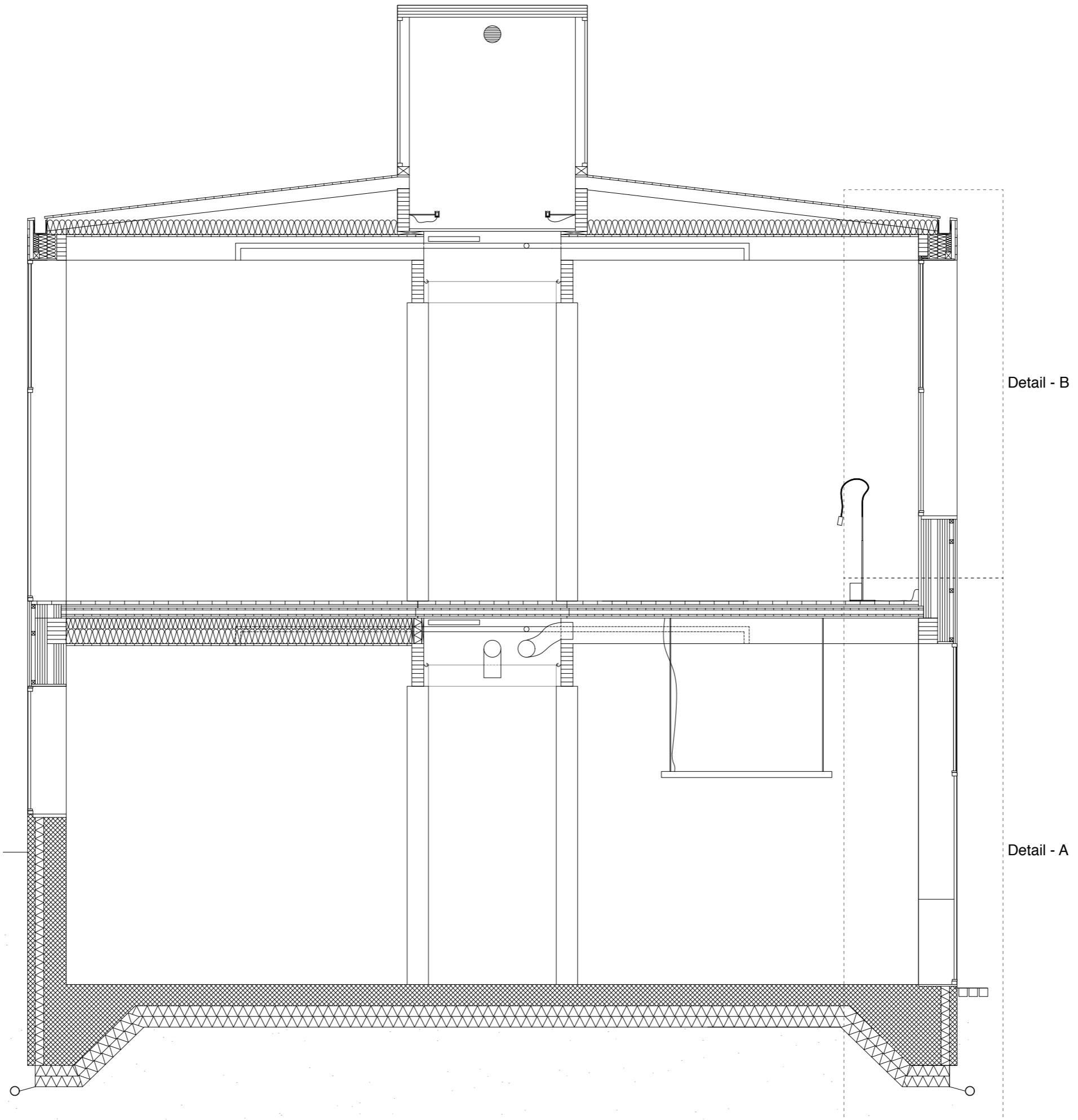


Section B-B 1:200(A4)



Section C-C 1:200(A4)





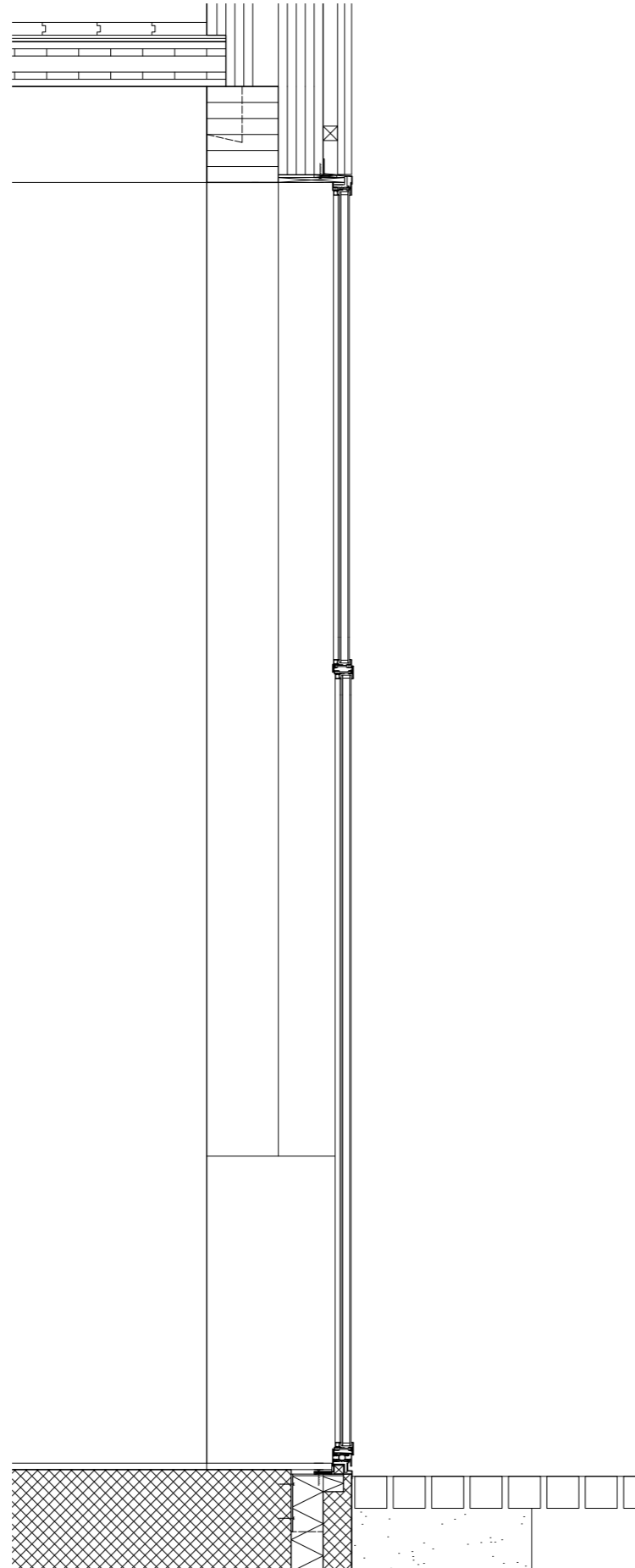
Building services run along the primary pillars and beams in the central corridor. They are then distributed transversally between the secondary beams. Heating and cooling are done with an FTX system that uses the access heat from the ovens and kilns to generate heat. Structurally the primary pillars only support vertical loads. Shear forces are taken care of in the internal walls.



Detail A 1:20(A4)

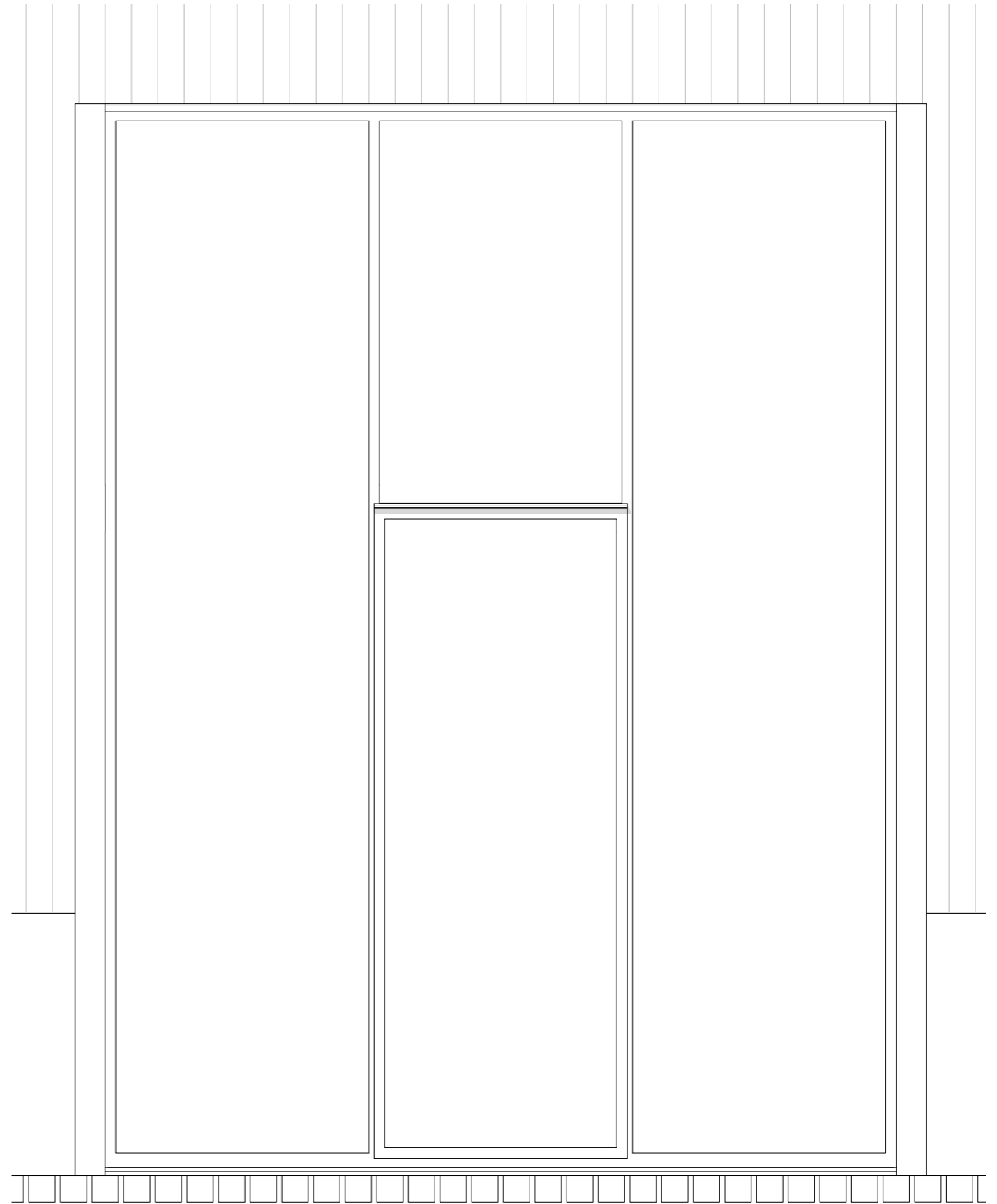
Floor (mm)

- 40 Wood plank floor (soap treated)
- 20 Sound insulation
- 140 CLT
- 300 Glulam beam (500 cc)



Foundation (mm)

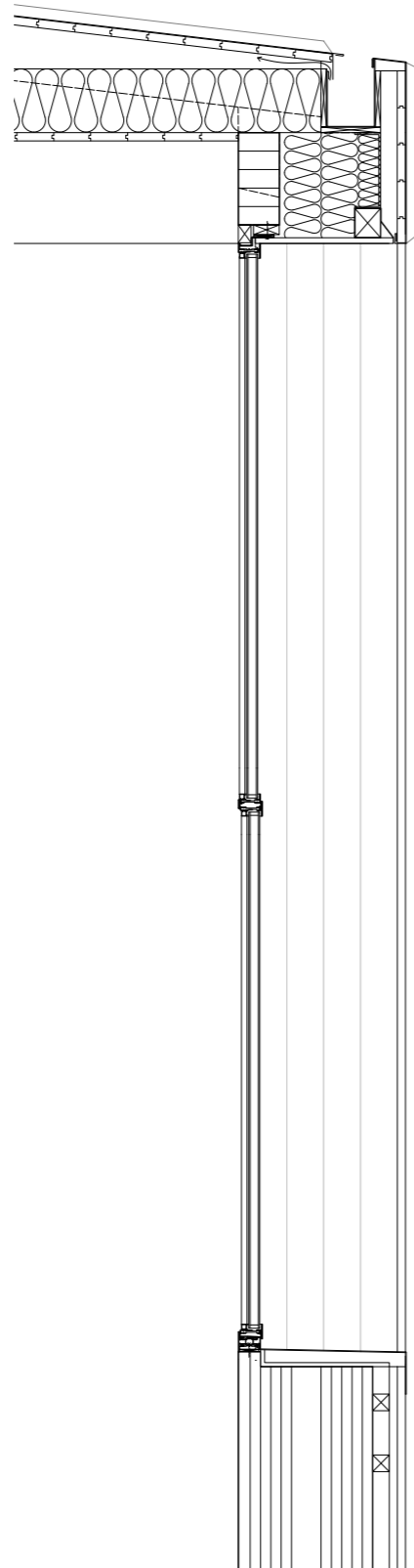
- 20 Polished concrete
- 230 In-situ concrete
- 250 Insulation
- Gravel
- Geotextile



Detail B 1:20(A4)

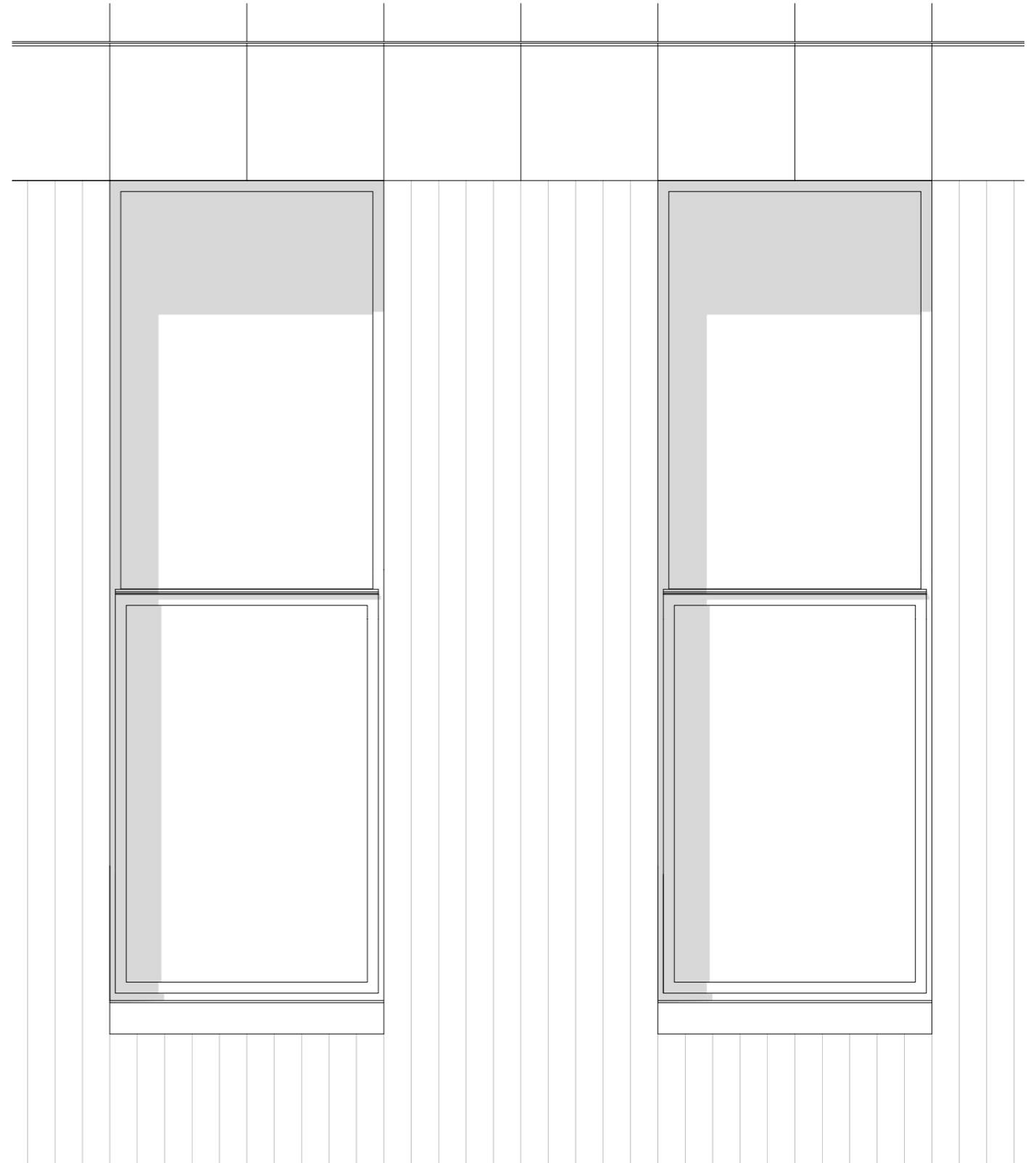
Roof (mm)

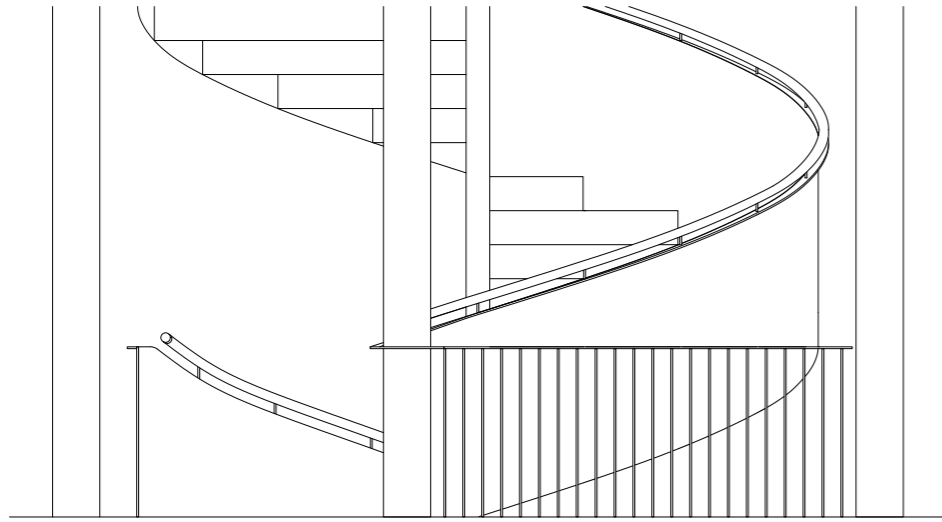
- 2 Copper standing seam
- Roof membrane
- 22 Wooden planks
- 150 Wood truss/air cavity
- 170 Insulation
- 22 Wooden ceiling
- 300 Glulam beam



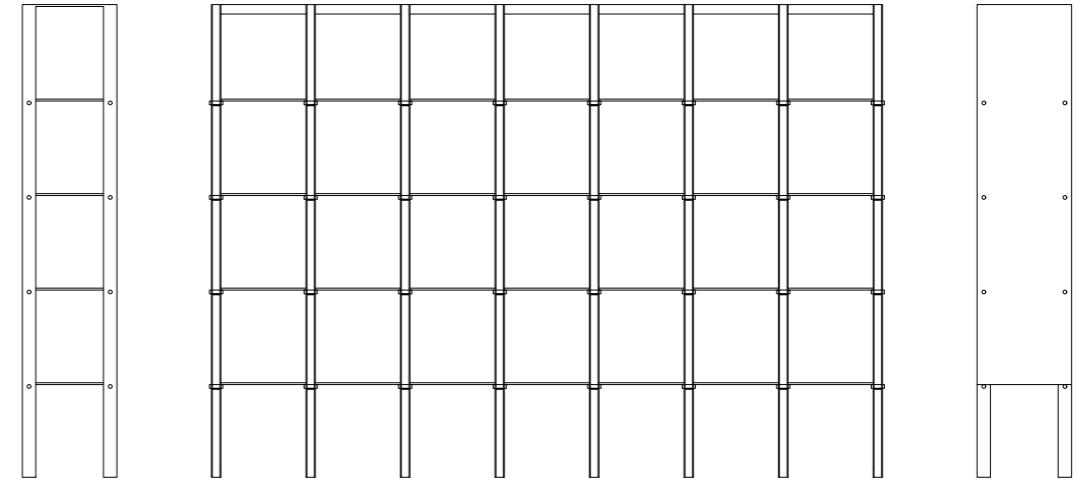
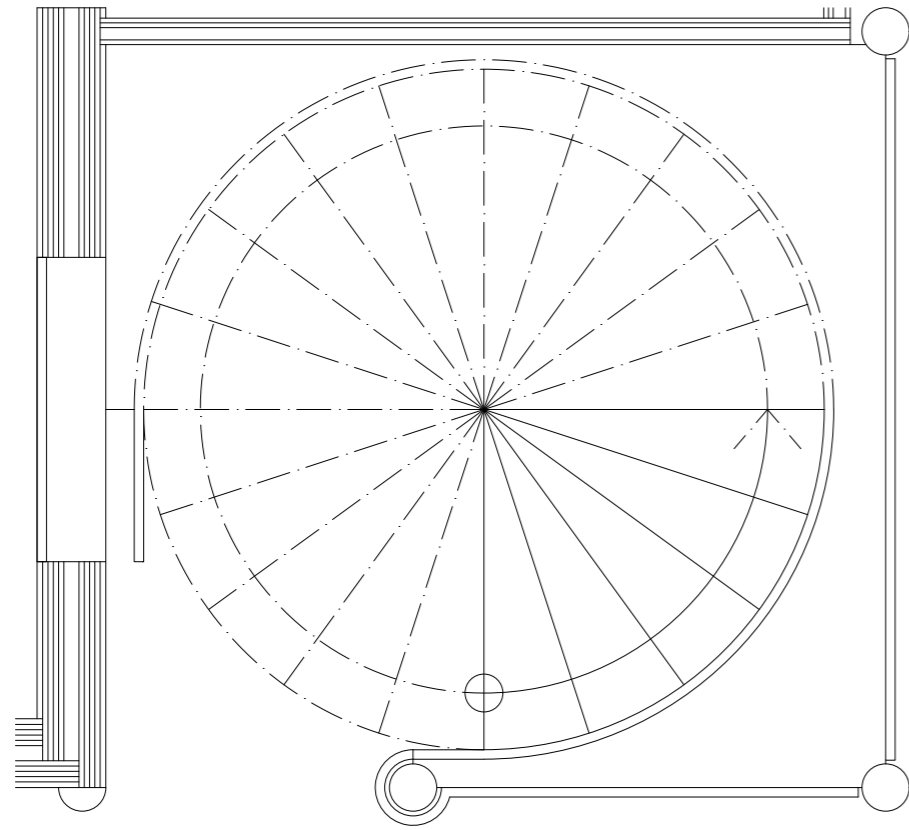
Wall (mm)

- 364 DLT 11-layer timber elements
- Vapour barrier
- 45 Battens and air cavity
- 22 Wood planks
- 22 Wood planks (Faluröd)

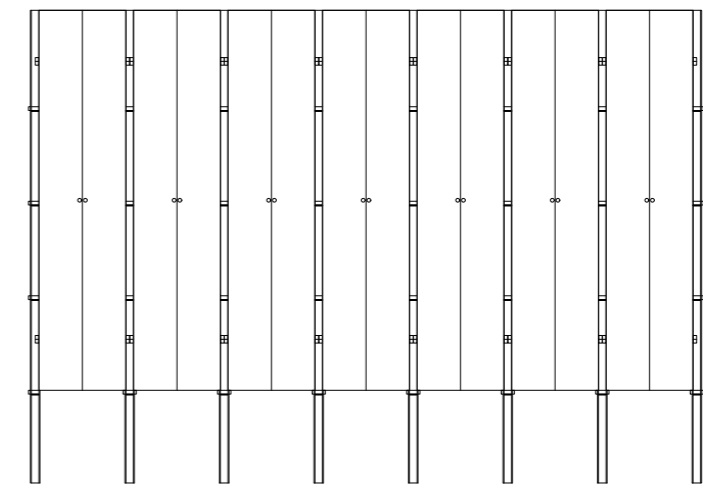
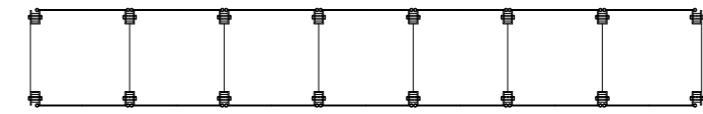




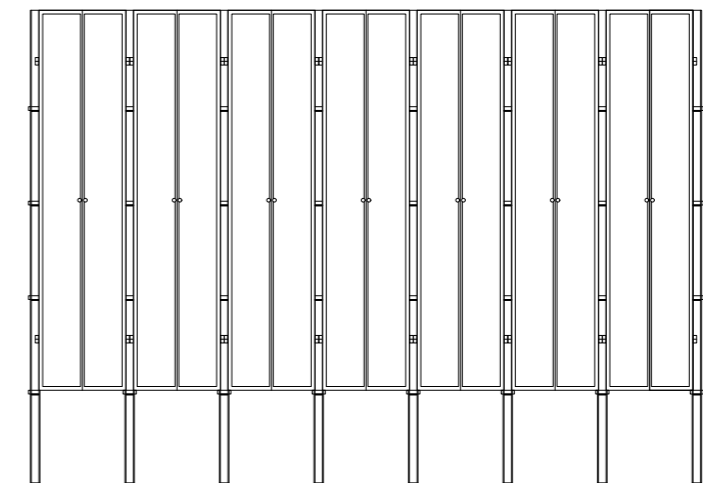
Stair



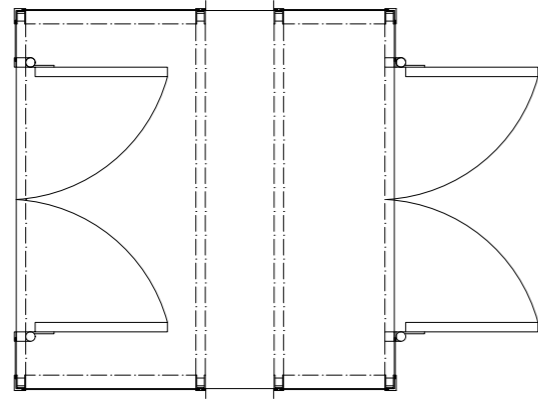
Steel cabinet structure



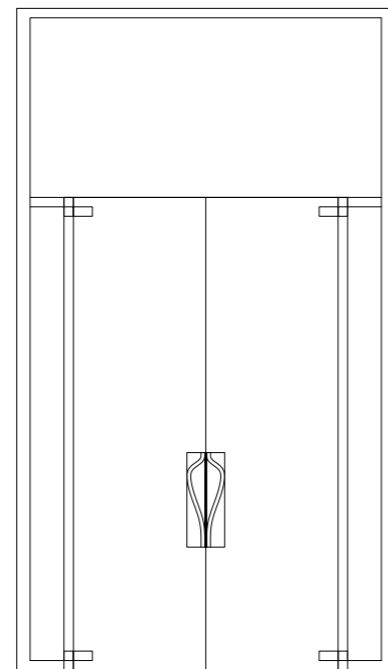
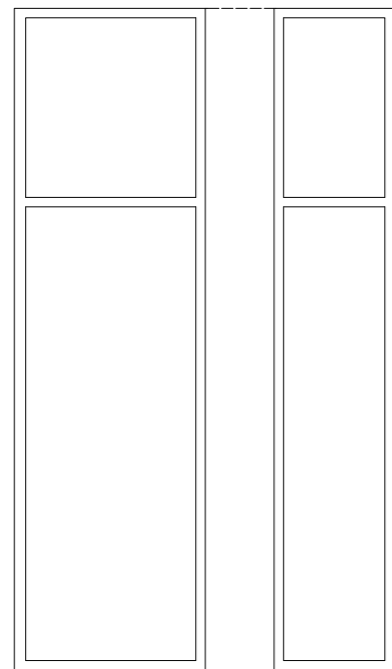
Steel door cabinet

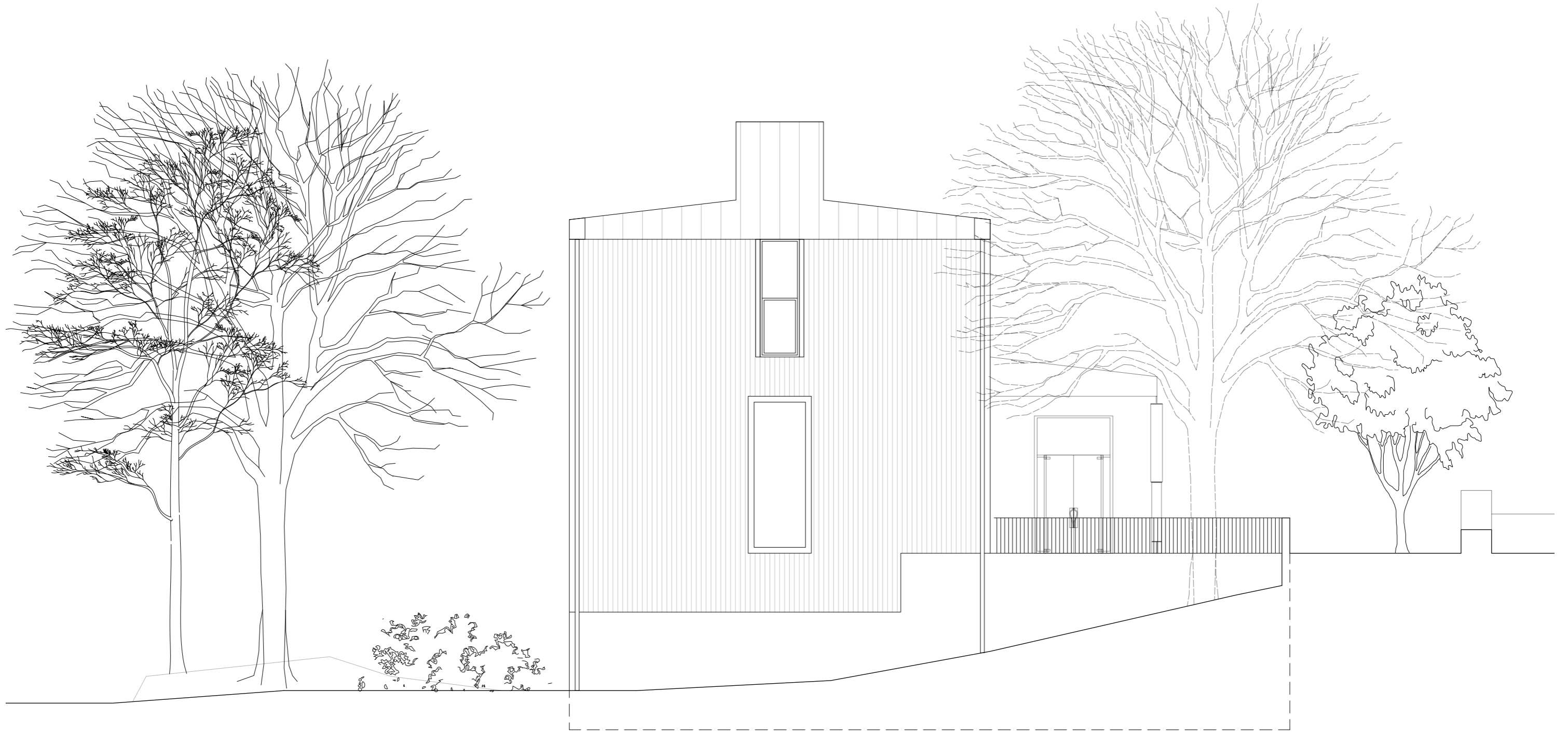


Glass door cabinet



Entrance





Discussion

I would argue that a house dedicated to the crafts, which promotes and engages in the societal issue, is something that could add value to any city. There are many reasons for the preservation and evolution of traditional knowledge. A house for crafts does not, as I see it, need to be the best and most complete workshop for every trait. It needs to inspire and create an interest in maintaining and gaining knowledge about a craft.

I believe that through examining history and the present a proposal that has robust attributes arises, a simple and honest building that can survive over time. It has spaces that engage the user in many ways, indirectly and directly, relating to the act of creating. I believe that the proposal has humane qualities, both in material, proportions and scale. It is neither an industrial nor a residential building. The materials chosen have a dialogue with the surrounding architecture. For example, the red wooden walls have a historical connection as a brick imitation that goes back many centuries.

The act of making reveals not only knowledge of a certain craft but also of our own human history. This is an important aspect to retain, and I think this could be a feasible program for a public building on the site, if it ever will be built on. I also think this site has great potential for the neighbourhood and the city as a whole. I do however see many difficulties with proposing a building on a site with such a rich historical character. If the question arises in the future, I am sure it will cause a public debate that could lead to something inspiring.

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Kjellbergsgatan. (2021). Kjellbergsgatan 8 [Photograph]. Bjurfors.

<https://www.bjurfors.se/sv/tillsalu/vastra-gotaland/goteborg/nedre-johanneberg/kjellbergsgatan-82/#bilder>

Own photos of reference buildings

1. Ritamäki, Torsby, Sweden
2. Oppstuhage atelje, Arvika, Sweden
3. Sågudden, Arvika, Sweden
4. von Echstedtska gården, Säffle, Sweden
5. Prästgård, Sövestad, Sweden
6. Prästgård, Sövestad Sweden
7. Medborgarhus, Örebro, Sweden
8. Medborgarhus, Örebro, Sweden
9. Klockarebackens kapell, Höör, Sweden
10. Ekonomibyggnader, Gävle, Sweden
11. Hedmarksmuseet, Hamar, Norway
12. Hedmarksmuseet, Hamar, Norway
13. Stiva da morts, Vrin, Switzerland
14. Stiva da morts, Vrin, Switzerland
15. St:petri kyrka, Klippan, Sweden
16. St:petri kyrka, Klippan, Sweden
17. Casa comunala, Lumbrein, Switzerland
18. Casa comunala, Lumbrein, Switzerland
19. St:benedict chapel, Sumvitg, Switzerland
20. St:benedict chapel, Sumvitg, Switzerland

Erik Hellström

Master Thesis Spring 2021



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