

EGNEBU IN VARDØ

with Sámi values as guidelines



BINDER 1

DIPLOMA - AHO - SPRING 2022

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*Supervisor:
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ABSTRACT

THEISIS

The diploma investigates the relevance indigenous cultures have for sustainable design today, selecting the Sámi as it is an indigenous people in Norway. Choosing three values from my study of Sámi architecture, I developed a method of using these as guidelines for a design process. My case study is a fishing industry site in Vardø, working on both a strategy for the site and the design of *Egnebu* (fisher's sheds).

Does Sámi architecture contain values that are relevant and can aid sustainable design in Norway today?

INTRO

The project started with an interest in my Sámi ancestries (The Sámi people is an indigenous people with settlement across the borders of Norway, Sweden, Finland and Russia). I used my prediploma to read about and have conversations about Sámi architecture. Randi Sjølie, Joar Nango, Elin Kristine Haugdal and Sunniva Skålnes were among those who introduced me to the discourse.

Through my research I uncovered a complex and varying picture of Sámi architecture. The concept of Sámi architecture can be hard to define, partially because it is based on an oral tradition. Also, Sámi culture has developed close to other cultures, and there are great variations within their own traditions and climate conditions. There are many ways of looking at Sámi architecture, from the traditional wooden structures and nomadic lifestyle, to the big public buildings found around Sápmi today. Many of these public buildings are drawn by non-Sámi architects, portraying/translating an old culture more or less successfully. Equally interesting are the small changes and individual adjustments to a more modern Sámi everyday life in post-war standard houses. This complexity makes it hard to define precisely what Sámi architecture is. Therefore, the basic values embedded in their building traditions became the core of my prediploma study. (*Read more in Binder 1, Appendix*)

Towards the end of my prediploma study I no longer wanted to draw a "Sámi building", but rather continue to learn by letting my study inspire a "non-Sámi" project. Among the values that I discovered, three stood out to me because I find them highly relevant beyond the Sámi, values that I can learn from and use in a non-Sámi building reaching for sustainable strategies within our design practice. As we are entering an era of climate change leading to changes in our industry, learning from cultures with traditions for ecology, limited resources and nature can inform future architecture.

The chosen values are: *ORGANIC LANDSCAPE – functionally adapted, REUSE – humble efficiency, IMPROVISATION – self-made solutions*. These values are general, and are found in many other cultures as well. My focus however, has been the Sámi way of relating to them.

METHOD

This diploma investigates a method of using the chosen values as guidelines in a design process. Creating a base for making decisions where both cultural and environmental factors are considered. The three values are a part of every decision, guiding the project, looking for ways of implementing the values in both direct and philosophical ways. When using the method for a project, the values of place and program are added, in this case *Vardø* and *Egnebu*.

ORGANIC LANDSCAPE – functionally adapted

The Sámi settlement grows in an organic way, also called *organic topographic principle*. Placing the buildings relating to each other, nature, terrain, landscape, water, resources, weather and transport lines. The internal context, and use of the buildings when harvesting and utilizing nature resources, are and was the core of the structure of a Sámi settlement. Coexistence with landscape makes the lines between inside/outside, settlement/nature, blurred.

The settlement normally consists of buildings, racks and vehicles, filled with everything you need, changing through the seasons. Function ties them together.

REUSE – humble efficiency

A minimum use of resources is in the backbone of Samí architecture. A creative reuse and a vivid imagination create an almost non-existence of trash. Everything has a value, and can be used for something. The material leads the way, maximizing its potential using it as it is, for example whole walls or boats are reused, and in the Sámi shed “njalla” the whole timber log is used including the roots. In the same way it's important to build in a way where the materials can be used again in a new structure, when the old has served its purpose.

Local and available materials where used. An example is driftwood from Siberia used in the Varanger region where this was found on the beaches.

IMPROVISATION – self-made solutions

When the expert is far away you must improvise and do it yourself, making something into something else. A flexible way of adjusting a broken car or boat. Nothing is sacred, everything can be changed/fixd. An example is additions of sheds to dry meat on top of post-war houses, or removal of an entrance becoming a shed in the garden.

When you make something yourself, you know how to fix it or add/remove from it, improvising on the way. Improvisation is rooted deep in Samí culture and we also find it in the music. Limited by accessible materials and tools the imagination grows.

(Read more about the values in Binder 1, Values)

CASE

The project aims to revitalize a worn-out fishing industry site in Vardø, by looking at the site as a whole, adding new programs and buildings. With inspiration from the Sámi values, the project aims at;

Organic landscape:

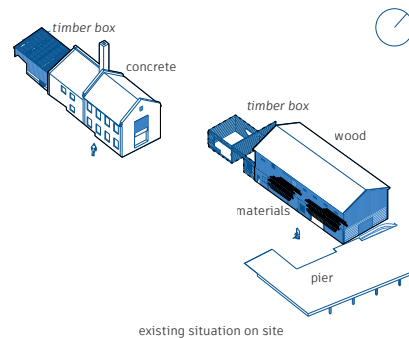
- a close connection between the program and the built structures
- a starting point for something that can continue to grow

Reuse:

- construction system suited for reuse of materials
- possible to disassemble/remove and reuse, when changes are needed

Improvisation:

- dimensions and technical solutions for self-building
- flexibility within the system to aid improvisation



VARDØ

The case is set to Vardø, a location where both culture and climate makes the method relevant. Placed in Finnmark, on an arctic island as far north-east in Norway as you get. Vardø is in Sápmi, in the area where the Sámi culture developed, but has little or no Sámi identity today, as it is a harbour town where cultures have mixed. The town is built on the resources of the ocean and has very engaged inhabitants, who love their town and are currently in a process of rebuilding after a period of depression. The cod crisis in the 80s led to a 50 % decrease in inhabitants over a period of 40 years. Today there is only 2000 inhabitants in Vardø. (Read more in Binder 1, Vardø)

EGNEBU

Egnebu (fisher's shed), has a function that carries long traditions in the Norwegian coastal culture. Today the fishing industry in Vardø is growing again, and there are not enough *egnebus* in the modern harbour environment.

The word *egne* means to thread bait on the hooks of the line in longline fishing, and a *bu* is a small shed. Today *egnebu* is a shed to store, prepare and repair fishing gear in addition to the traditional *egning*. It is also a place where you meet other fisherfolks and make a social- and knowledge-network. It's a place to get warm after a long and cold day at sea. (Read more in Binder 1, *Egnebu*)

SITE

The chosen site is at the southeast part of the harbour, with the fish reception and other *egnebus* nearby. A large chimney formerly used for cod liver oil production welcomes you to the site from the road. It has been used for fishing industry earlier, but today the site is decaying, not taken care of, and partly used as storage. The pier on the site is frequently visited by inhabitants to watch the seals visiting the harbour.

Both the placement and buildings on site today have high potential to develop into a lucrative place for both fish industry and public involvement. Referring to the values; The site has good wind conditions with sheltering buildings in both main wind directions, access to both sea and the main road, buildings with potential for reprogramming, and materials on site suitable for reuse. It also has a large open area suited for adding structures and making self-building possible.

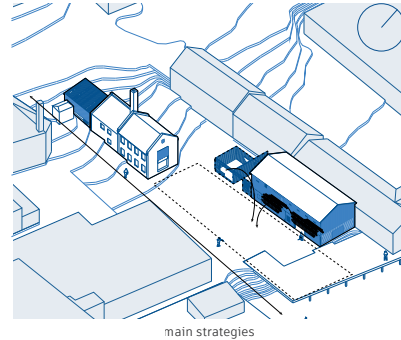
The site already consists of buildings from early 1900 and building materials. Next to the road there is a small lafted timber structure (referred to as *timber box*) that will be rebuilt and reprogrammed. Connected to the *timber box* there is a two-storey building built in concrete, that will be refurbished. Towards the pier there is a large wooden structure with two tall floors. This building will also be refurbished. On the east side of the building there is another *timber box*. Most of the timber is in good condition, but will be moved before reused due to the rotten foundation. There are also wooden materials in large dimensions on the ground floor of the wooden building and on the east side of the site. (View illustration on top of page) (Read more in Binder 1, Site)

PROJECT

The project has three main strategies

- Reintroducing a former public path between the water and the main road called *allmenning*
- Refurbish/rebuild the buildings on site and give them new program
- Building new structures on the open area mainly using materials found on site and around Vardø

My focus has been on the last part, designing the new structures.



DIPLOMA PROGRAM

The Sami buildings are extending outside the four walls of a house into the courtyard, normally with a varying program all tied together with the practicalities and necessities needed to utilize the resources. The program is often varying from the most private shed, to the more public smoke *lavvu* (tent) that your neighbour can borrow.

My diploma program is divided into three users, *the fisher, the fisher community and the inhabitants of Vardø*. It's also divided into three types of activities moving from *execution* by the harbour front to *prepare* and *produce* by the road. The users take part across these categories.

PRODUCE

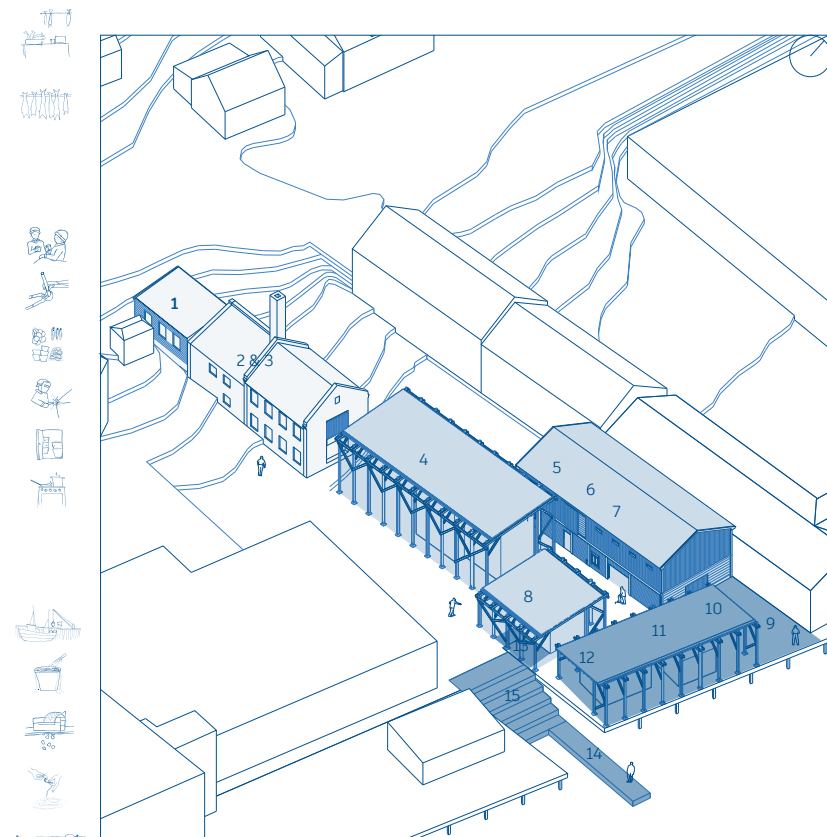
1. Shop for sale of fish products
2. Area for small scale production of fish products, such as salted, smoked and dried fish
3. Freezers

PREPARE

4. 2 x private *egnebus* (sheds) with small kitchen and bathroom
5. Freezers
6. Storage for gear
7. Common workshop with larger equipment
8. Common break room with kitchen and bathroom

EXECUTION

9. Load on/off boat
10. Section for cleaning gear
11. An insulated room for making bait
12. An insulated room for *egning*
13. Public roofed space for gutting and filleting fish
14. Floating pier for short time parking
15. Stairs giving access to the water and the floating pier



program on site

ABSTRACT

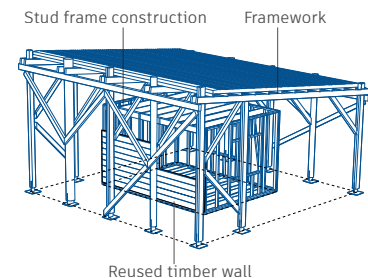
CONSTRUCTION

In Vardø, three houses are demolished every year. Most of these houses are made of the same type of material as I find on my site, lafted timber from Siberia and wooden stud frame houses. In addition, there is plenty of materials lying around in Vardø after a time of depression and demolishing. Among these materials are timber logs of large dimensions, some formerly used for pier foundation.

In my project I have focused on the large timber logs and the *timber boxes*. The large, dimensioned timber is used to create large frames for an outer roof. The walls from the *timber boxes* are used in smaller insulated volumes (underneath the roofs), as wind brace, insulation and interior. The roofs are built first, providing shelter for further construction, and creating both room for improvisation and a limit for further development. These two structures together create different types of situations, grading from the most shelter insulated room, to the zone between in- and outside, to the open air on site, to the open sea. How they communicate, their void and placement, make sure there always is a place in shelter and a place to feel the forces of nature.

FRAMES + ROOFS

The structure of the frames is made of reused materials, and aids for different dimensions of the pillars and beams in both width and length. The frames are founded to the pier's foundation with a grid of 2x2. Between the pillars the space can be left open or be closed off to create permanently or temporary shelter. I imagine this to happen in an organic way, using what is available, for example old fishing boxes, panel from a demolished house, parts of a sail from a boat et cetera. This type of temporary improvised shelter is a tradition through the Norwegian coast that the project facilitates and continues.



CLIMATE PROTECTED + INSULATED VOLUMES

The insulated rooms are not dependent on the pier's foundation and stand freely underneath the outer roof. They are constructed of 60x60 wooden stud frame combined with reused lafted timber walls from the site. The volumes on the pier are placed on a strip footing foundation of impregnated wood to make them less dependent on the pier's foundation. The volumes on ground are founded with Leca blocs. Unlike the outer roofs, the volumes have an almost flat roof making a gap between the two, making the construction of the insulated roof easier and creating extra storage space.

The project allows for varying window sizes, as reused windows from Vardø are used. In the meeting between the reused timber wall and the stud frames, the windows are placed on the outside, allowing them to extend past the timber wall, visually exposing the old timber in the facade of the building. On the pier a hole in the floor allows for the rooms to be cleaned, flushing fish waste into the harbour for the seals to enjoy.

PLACEMENT + EVOLUTION

Placing the volumes on site, both the programmatic specifications and the existing situation on the site has been important. The site has an old former *allemning* (public access between road and harbour front) in south. As most of the former *allmenninger* no longer exist in Vardø, it became important to leave this part of the site open.

Today there is a large open underutilized area by the harbour front. As the program seeks nearness to the sea, this became the starting point for my project. The roofs grow from the pier towards the road, leaving the public passage free and making an offset to the existing buildings. There is also made extra room in front of the main entrances of the existing buildings and a courtyard protected from wind.

I expect the project to develop in steps:

1. Refurbishing of the wooden building and building of the roofs
2. Building the insulated rooms
3. Refurbishing the concrete buildings and *timber box* by the road
4. In need of more space, adding volumes under the roof in east and expanding at the north-east part of the site
5. Partly or fully disassembling/removing to make room for something else

SUMMARY

To answer my own question, “Does Sámi architecture contain values that are relevant and can aid sustainable design in Norway today?” yes, definitely. This project has given me a new way of viewing the important subject of sustainability. Old traditions gave me a refreshing insight. Using the values, I manage to focus and get inspired at the same time as they made limitations.

METHOD + ACHIEVEMENTS

Close connection between the program and the built structures, a starting point for something that can continue to grow

The project facilitates for further development both with its step-by-step plan and by leaving open areas under the roofs. Even if the project shows a final proposal for the development of the site, it is possible to make adjustments within the framework without destroying the concept. My proposal is likely to be changed depending on the fisher using it. I have researched to understand the fishing profession and the program, which vary depending on the fisher. Therefore, the project creates boundaries, but also attempts to give freedom within the framework.

Construction system suited for reuse of materials, possible to disassemble/remove and reuse, when changes are needed

Available materials from the site and the area around inspires the projects, focusing on the properties and potential of the materials. In the frames for the roof the joints are made to allow for pillars and beams to continue past the joints to maintain their dimensions to potential reuse later in its lifecycle. To make disassembly possible, there are steel joints, Leca foundation and whole materials.

Dimensions and technical solutions for self-building, flexibility within the system to aid improvisation

The project focused on having dimensions and joints possible to execute without large machinery. This has been both a limitation and an inspiration source during the semester. How to plan for improvisation? This has been a huge and important question through the semester. My solution is found between the pillars and under the roof, where it facilitates for different types of infill and improvised solutions. The concept, roofs with insulated volumes underneath, creates a framework while it also invites to playing around and improvising.

What would the project be without the values?

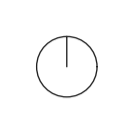
To imagine the project without the values is almost impossible, as they have been a part of every decision. Somehow, the values have been most obvious when they have made limitations, including in the discussion of foundation, use of materials, flexibility et cetera.

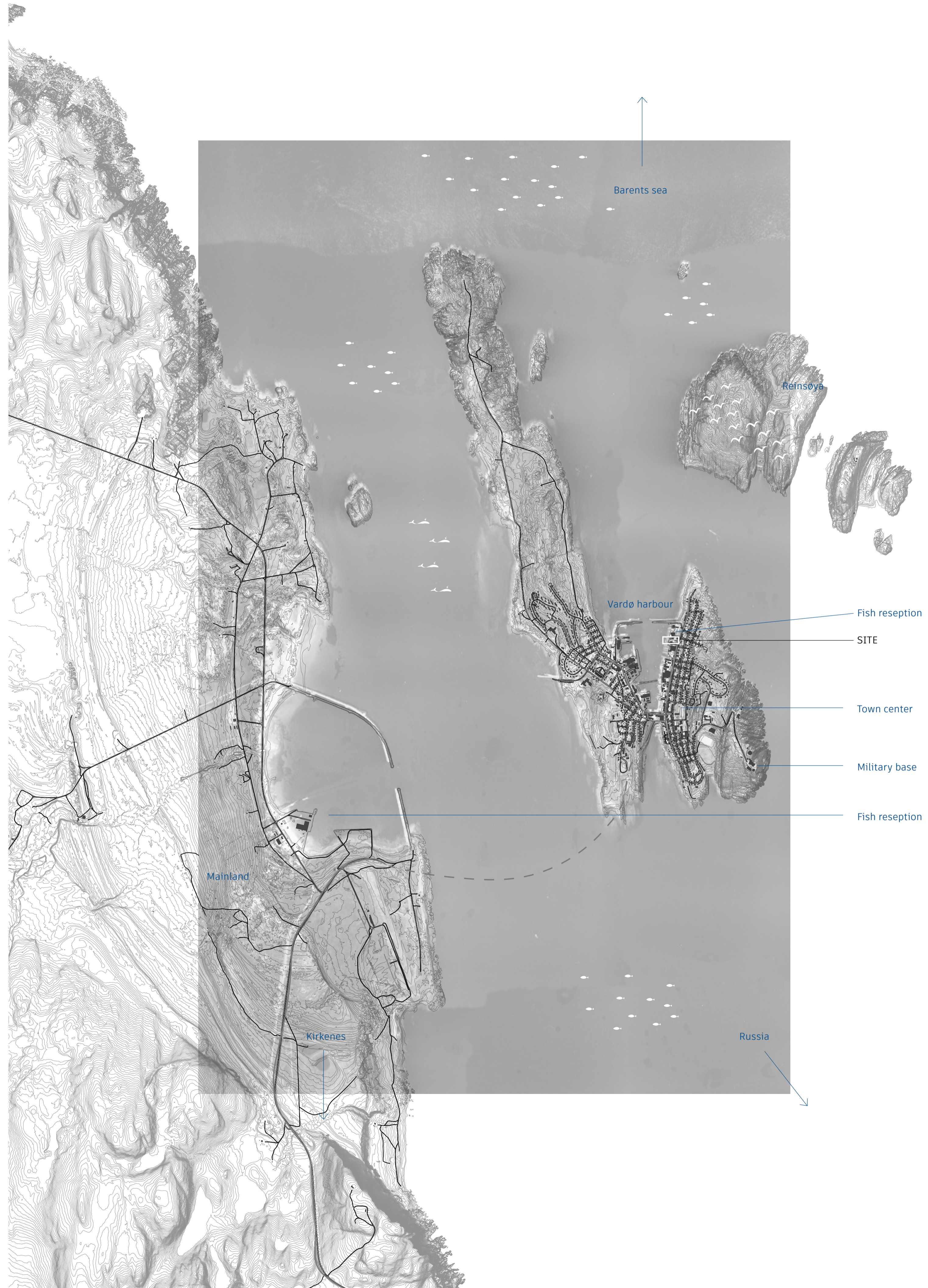
OUTPUT

The project has been enlightening, but for another time I would probably choose only one value. This would give me the opportunity to go even deeper and further into how a value could influence the project to a greater extent. At the same time this project has given me a taste of the method of focusing on values and some of what Sámi architecture has to offer.

Next time, I might look into movable structures or biodegradable houses? – two other relevant topics for the era we are entering, a future architecture will design.

NORWAY





Barents sea

Reinsoya

Vardø harbour

Fish reseption

SITE

Town center

Military base

Fish reseption

Mainland

Kirkenes

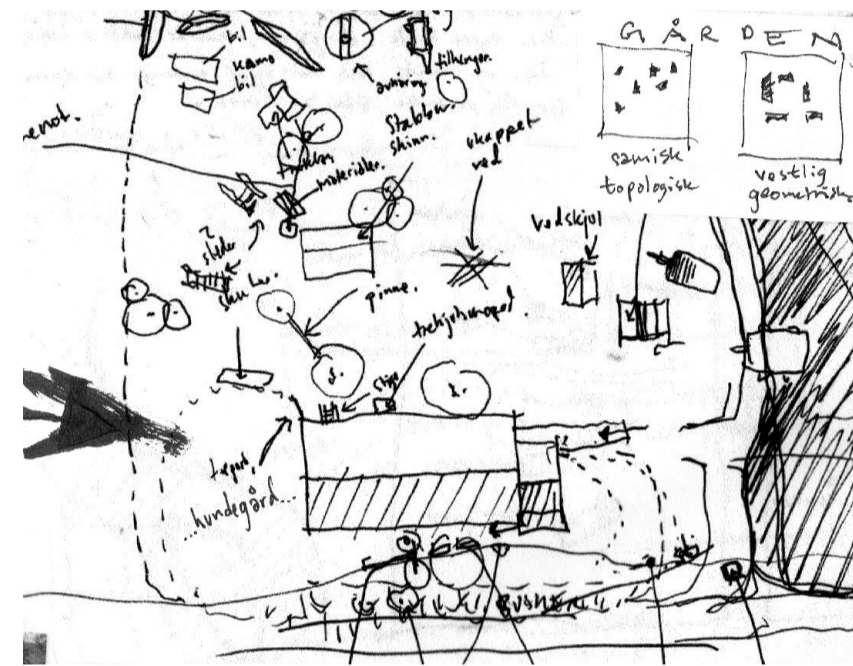
Russia

SÁMI VALUES

used as guidelines in the project

ORGANIC LANDSCAPE

functionally adapted



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REUSE

humble efficiency



A minimum use of resources is in the backbone of Samí architecture. A creative reuse and a vivid imagination create an almost non-existence of trash. Everything has a value, and can be used for something. The material leads the way, maximizing its potential using it as it is, for example whole walls or boats are reused, and in the Sámi shed "njalla" the whole timber log is used including the roots. In the same way it's important to build in a way where the materials can be used again in a new structure, when the old has served its purpose.

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IMPROVISATION

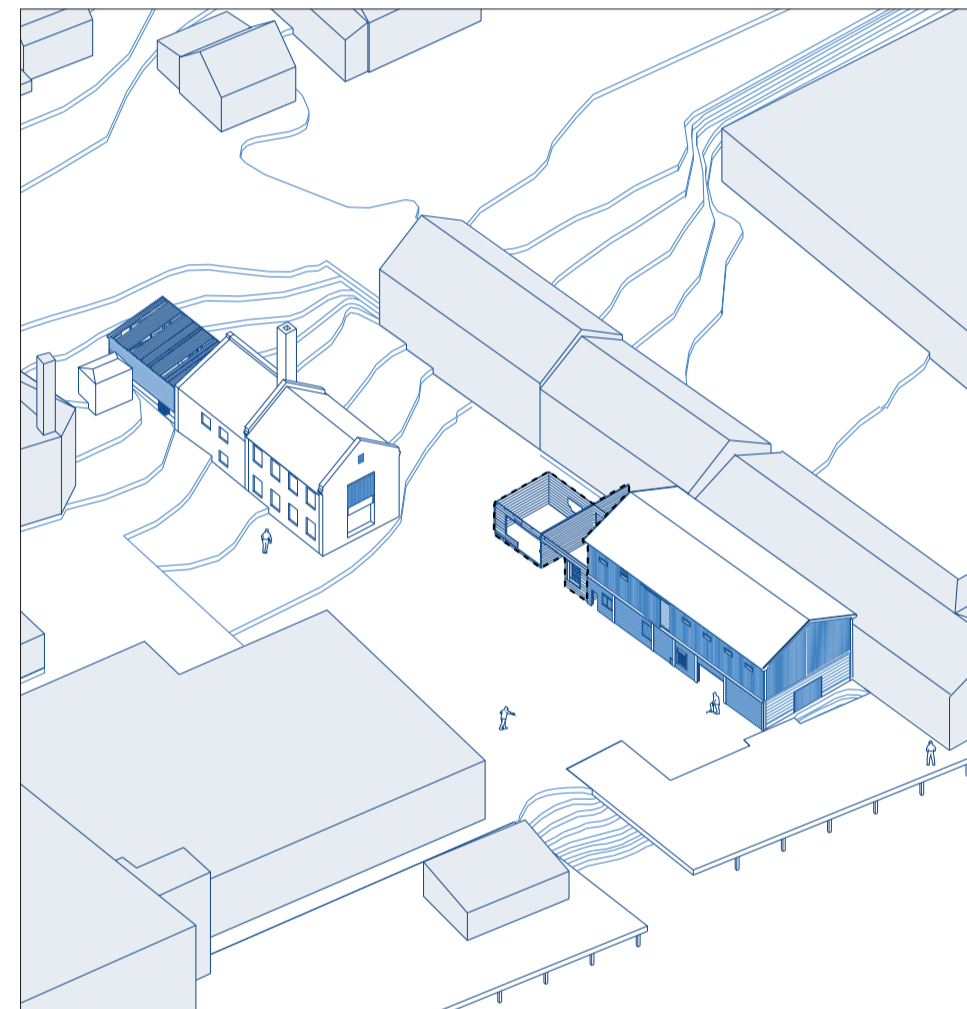
self made solution



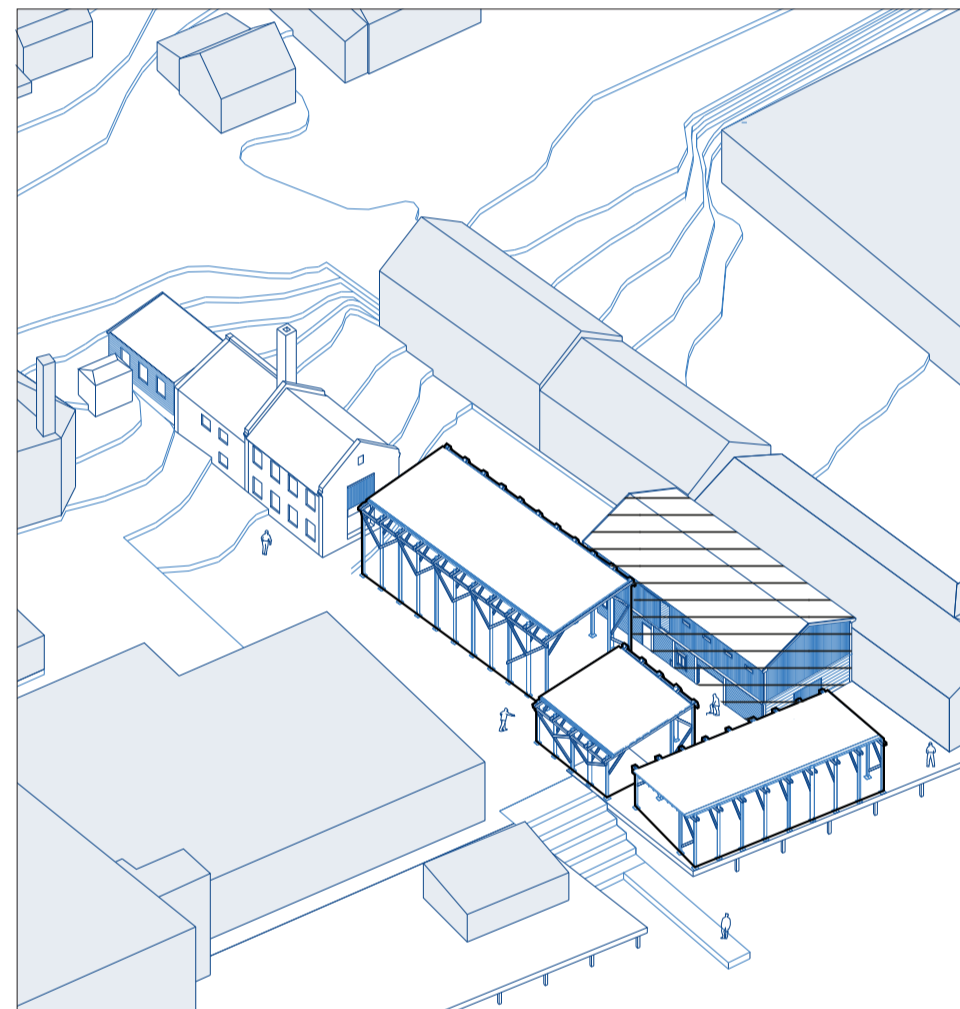
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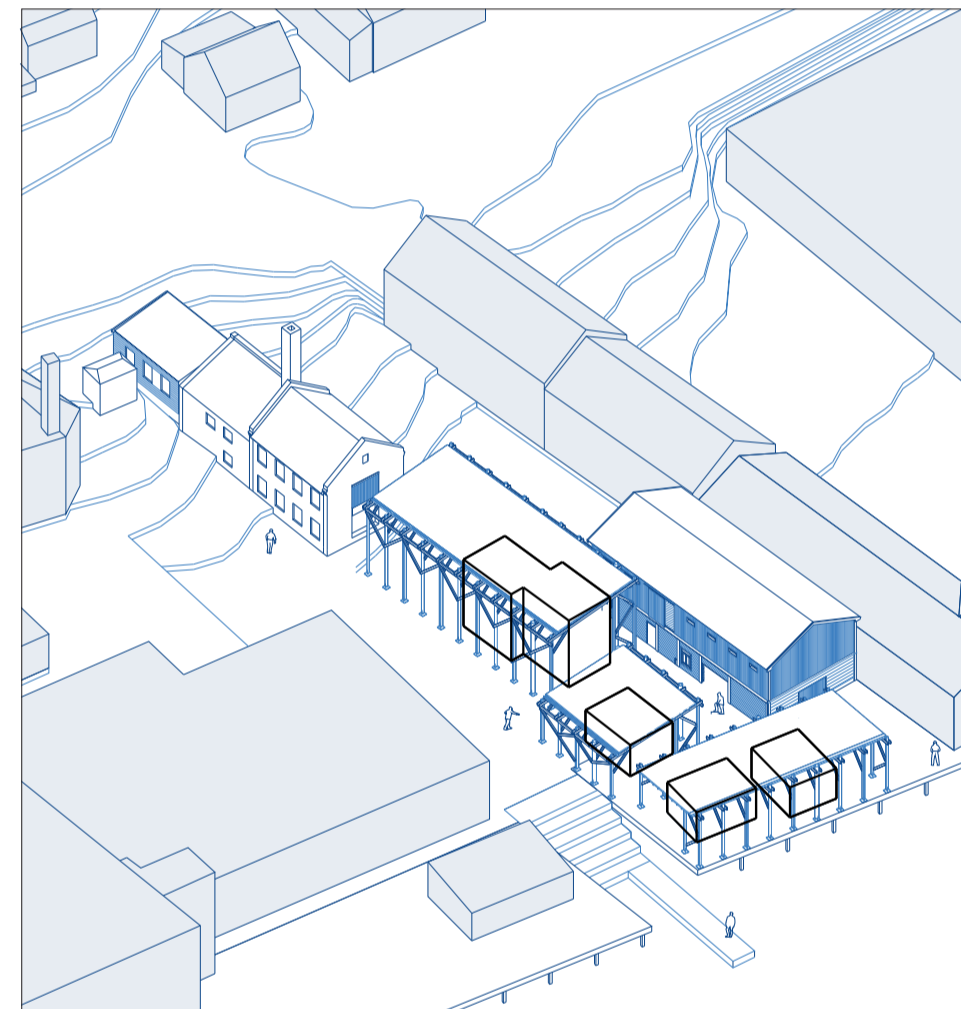
PROJECT EVOLUTION



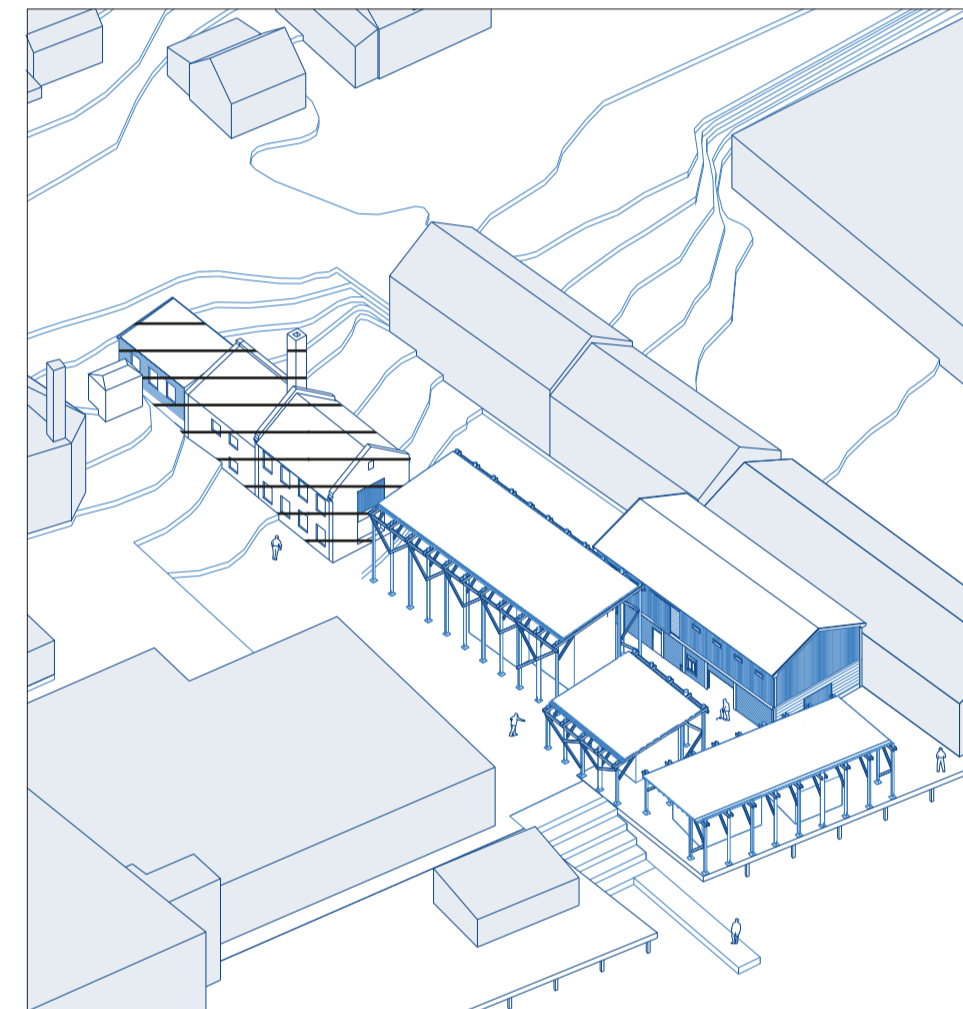
Disassembling *timber box* for reuse



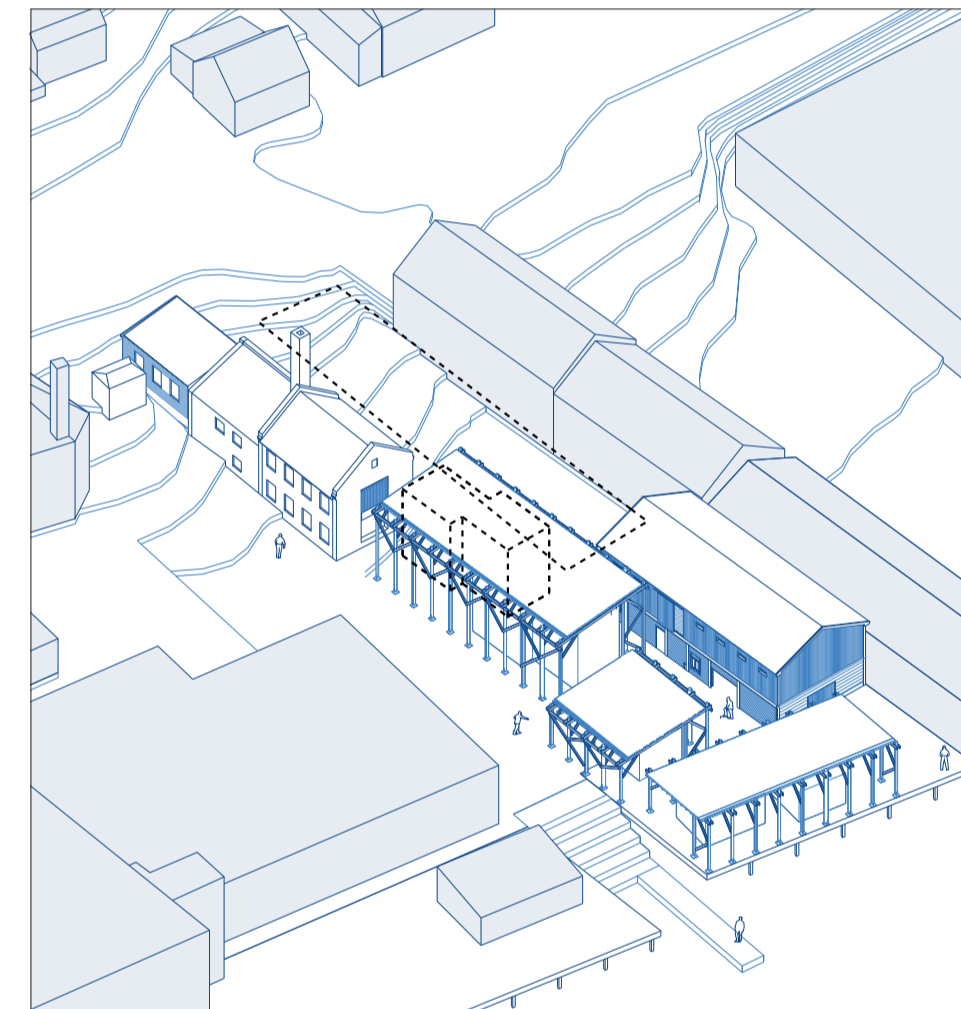
Refurbishing of the wooden building and building of the roofs



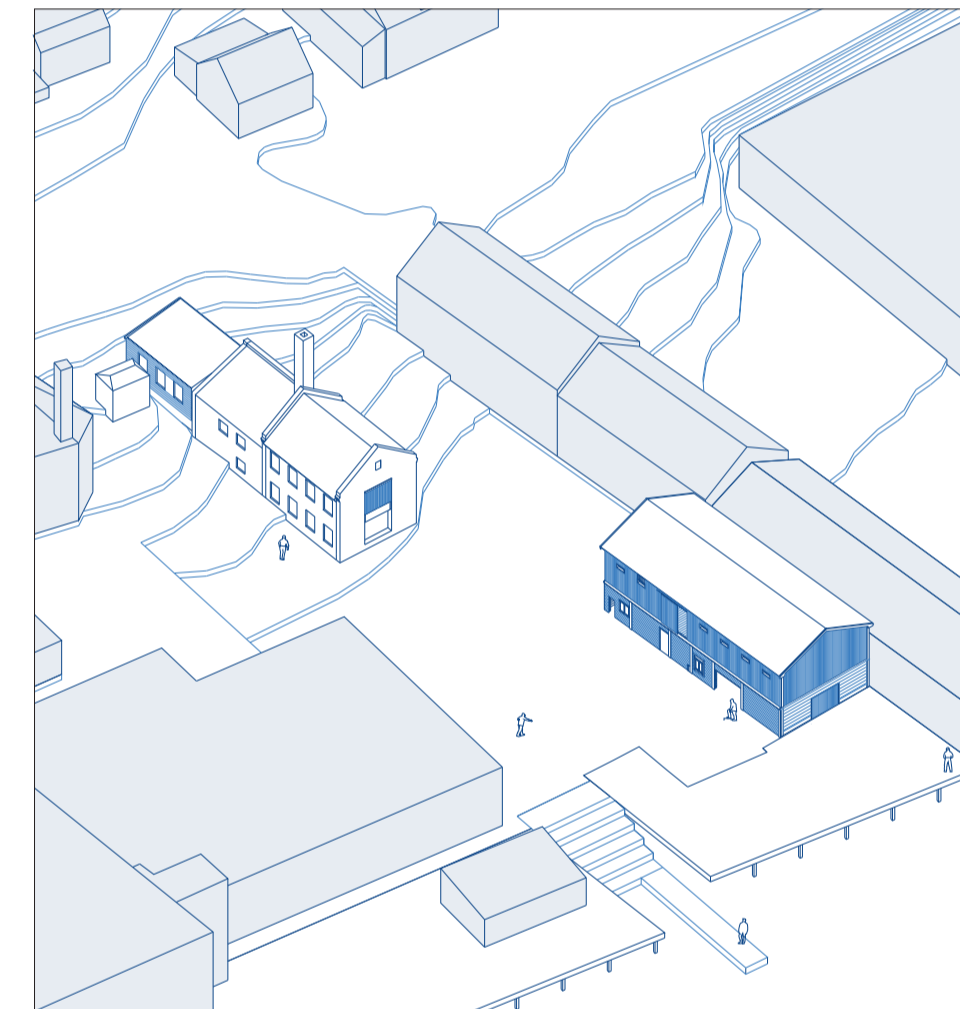
Building the insulated rooms



Refurbishing the concrete buildings and *timber box* by the road



In need of more space, adding volumes under the roof in east and expanding at the north-east part of the site



Possible future: Partly or fully disassembling/removing to make room for something else

SITUATION PLAN

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0 5m 10m 20m

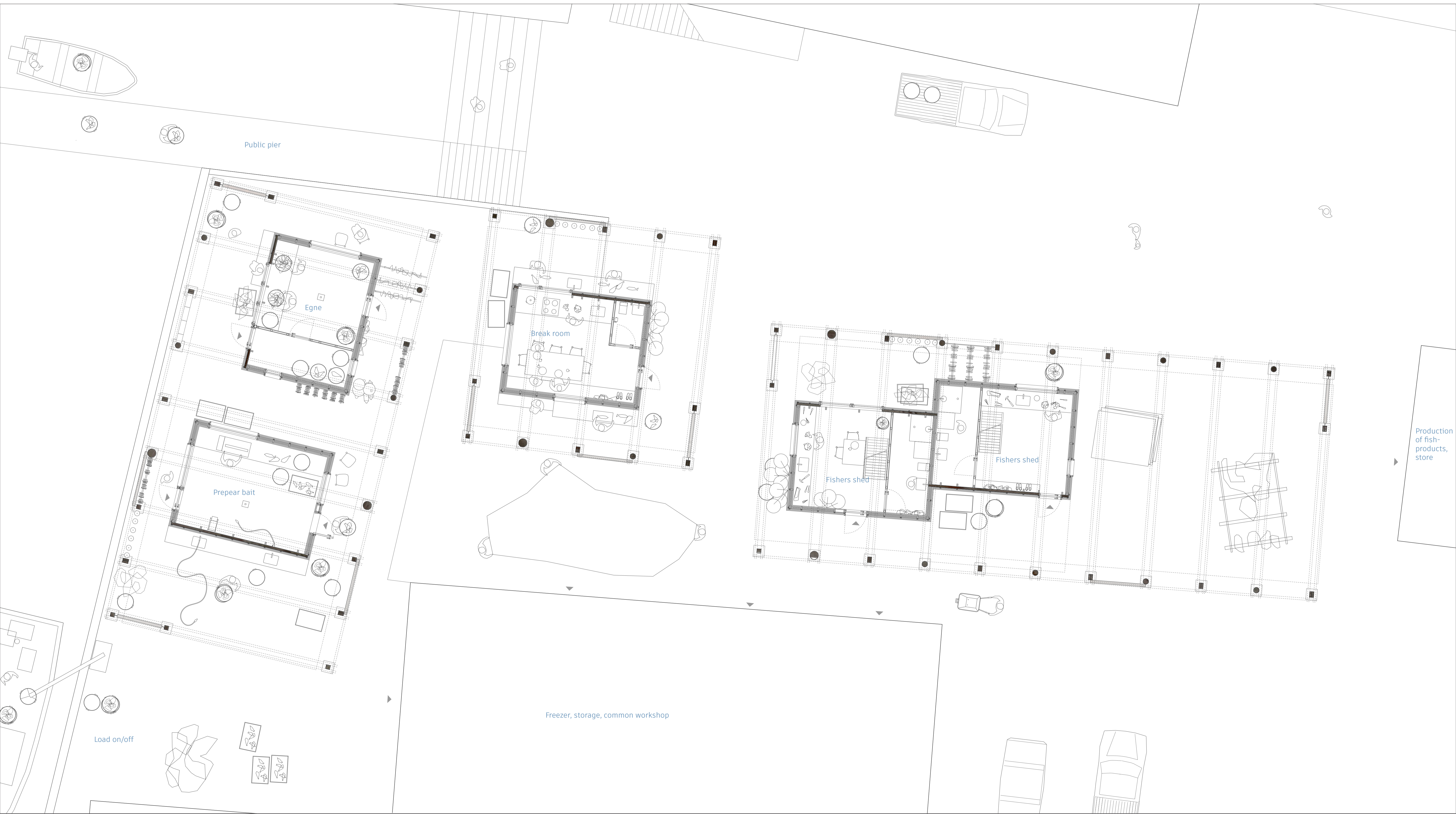
● Added volumes in the project

○ Possible future development



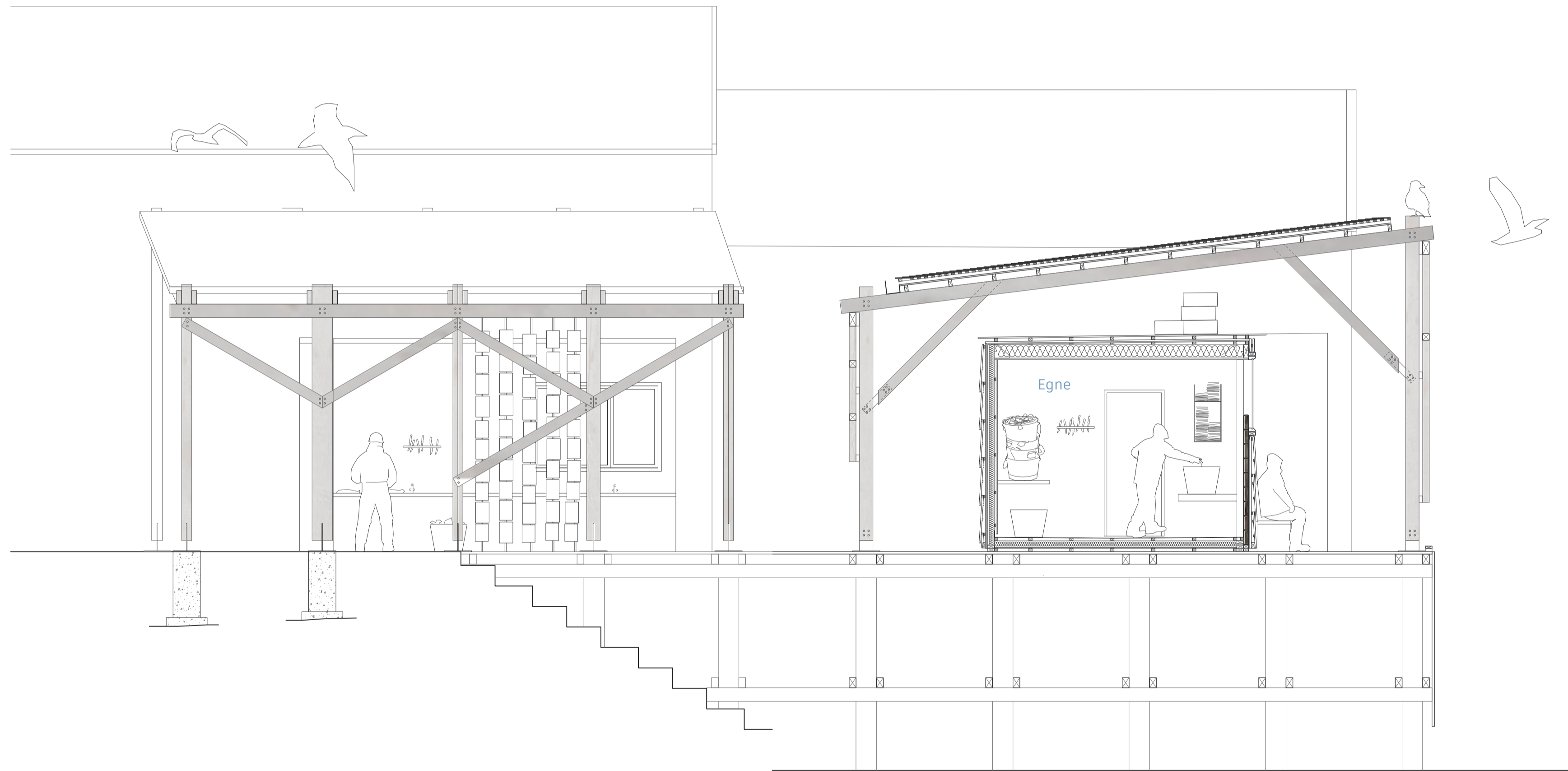
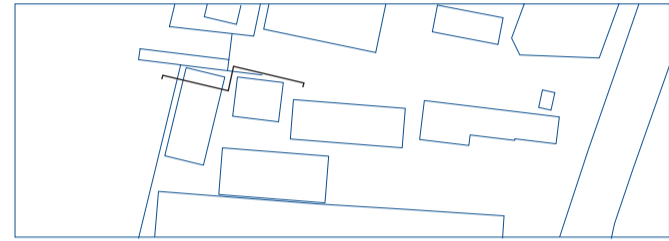
PLAN

1:50 on oversized A1



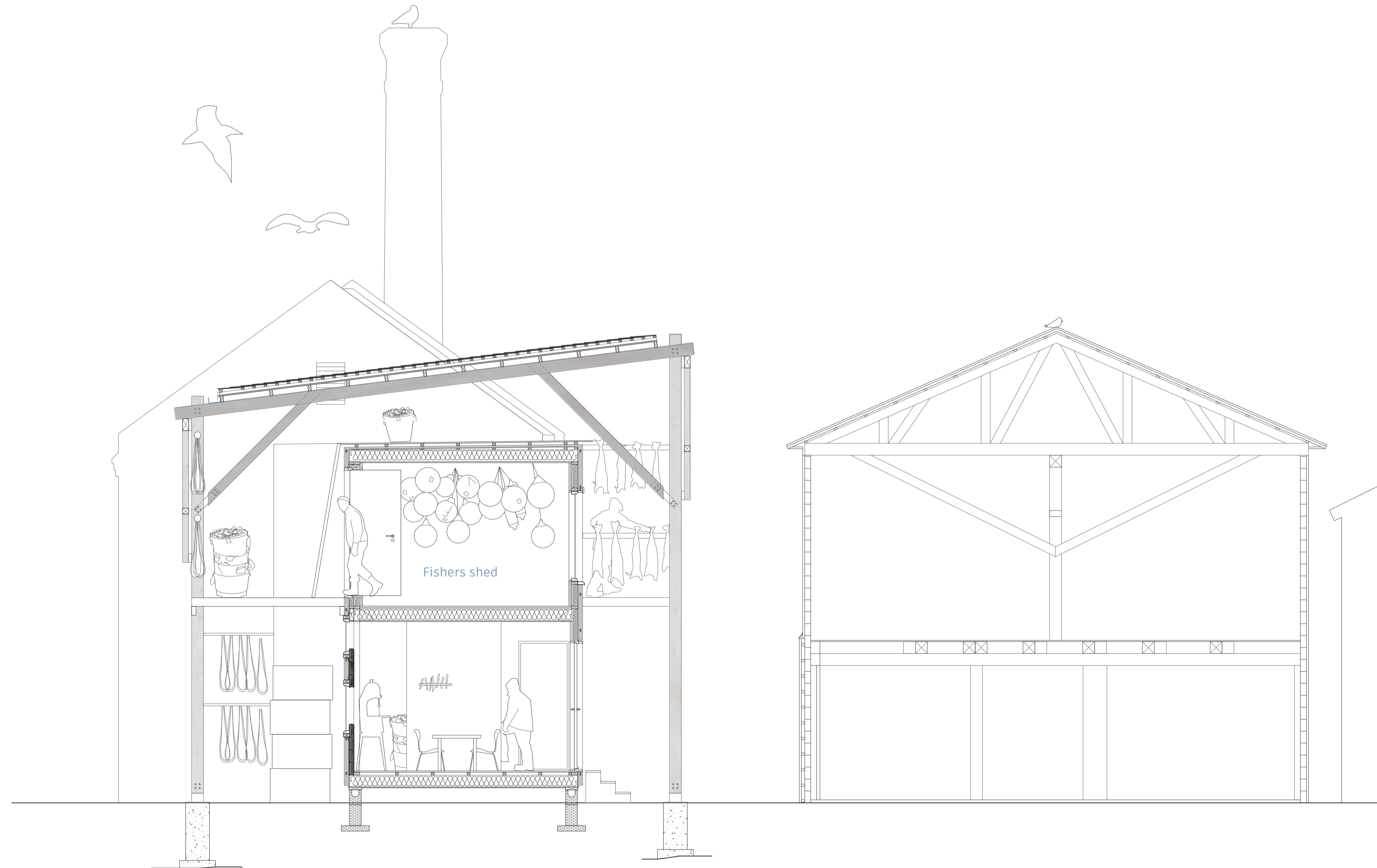
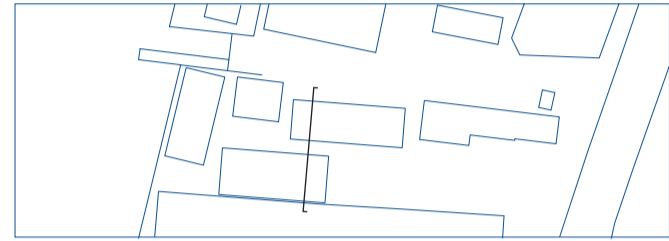
SECTION 1

1:50 on A1



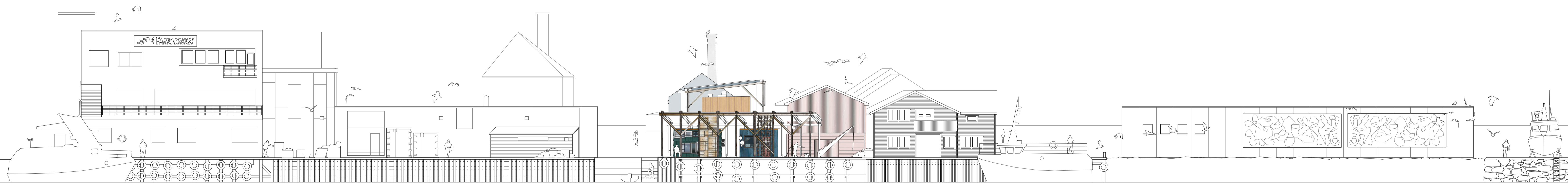
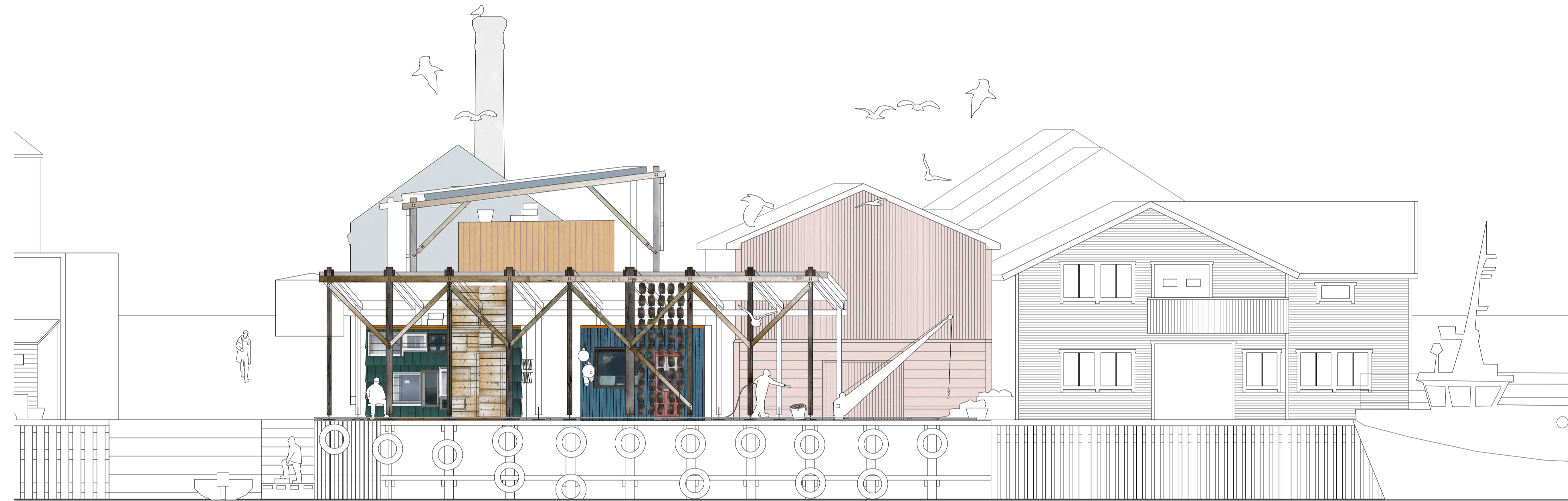
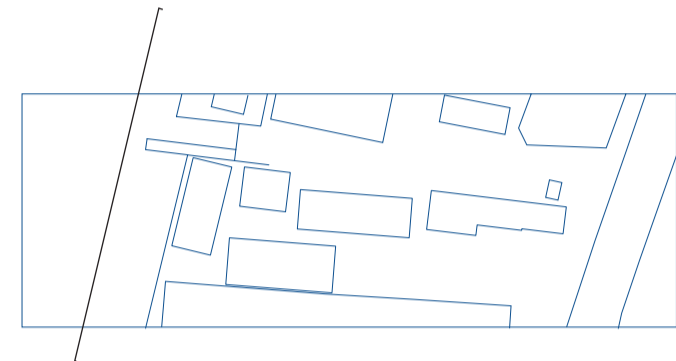
SECTION 2

1:50 on A1



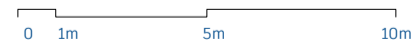
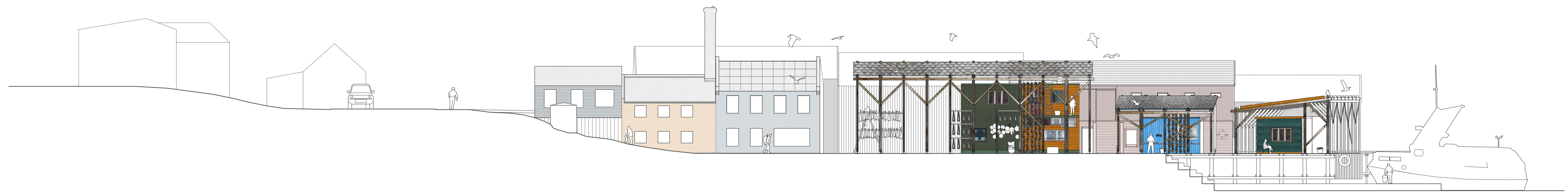
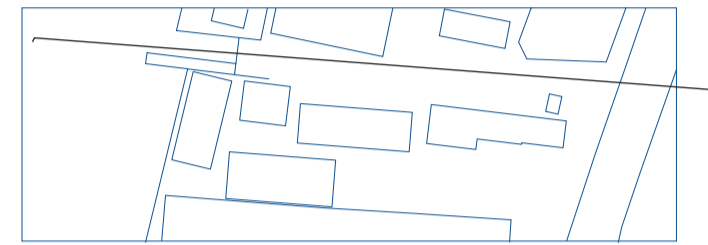
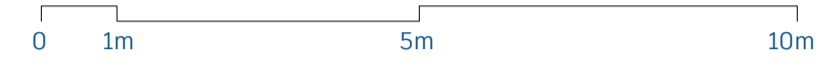
ELEVATION FROM HARBOUR

1:100 on A1



ELEVATION THROUGH SITE

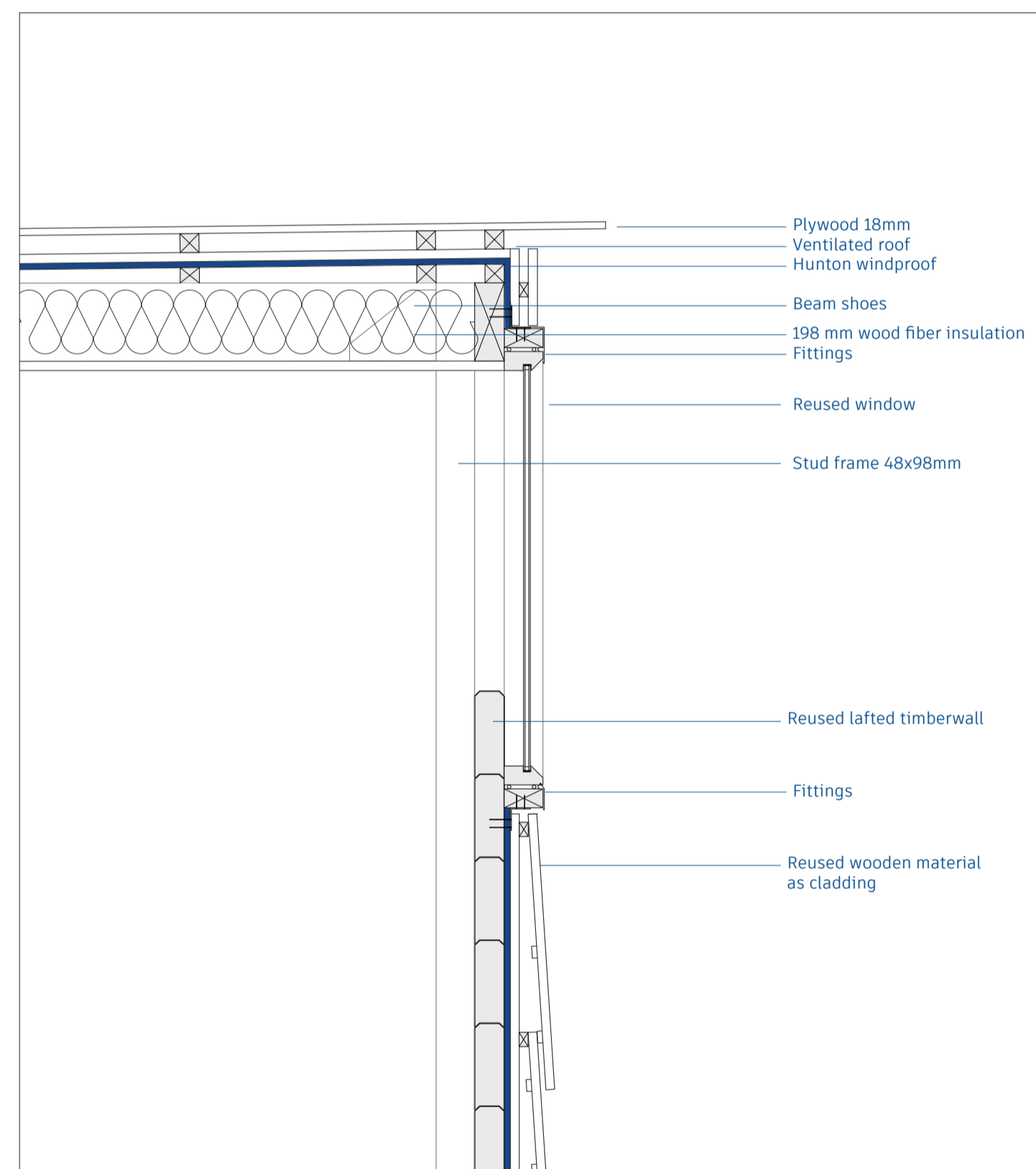
1:100 on A1



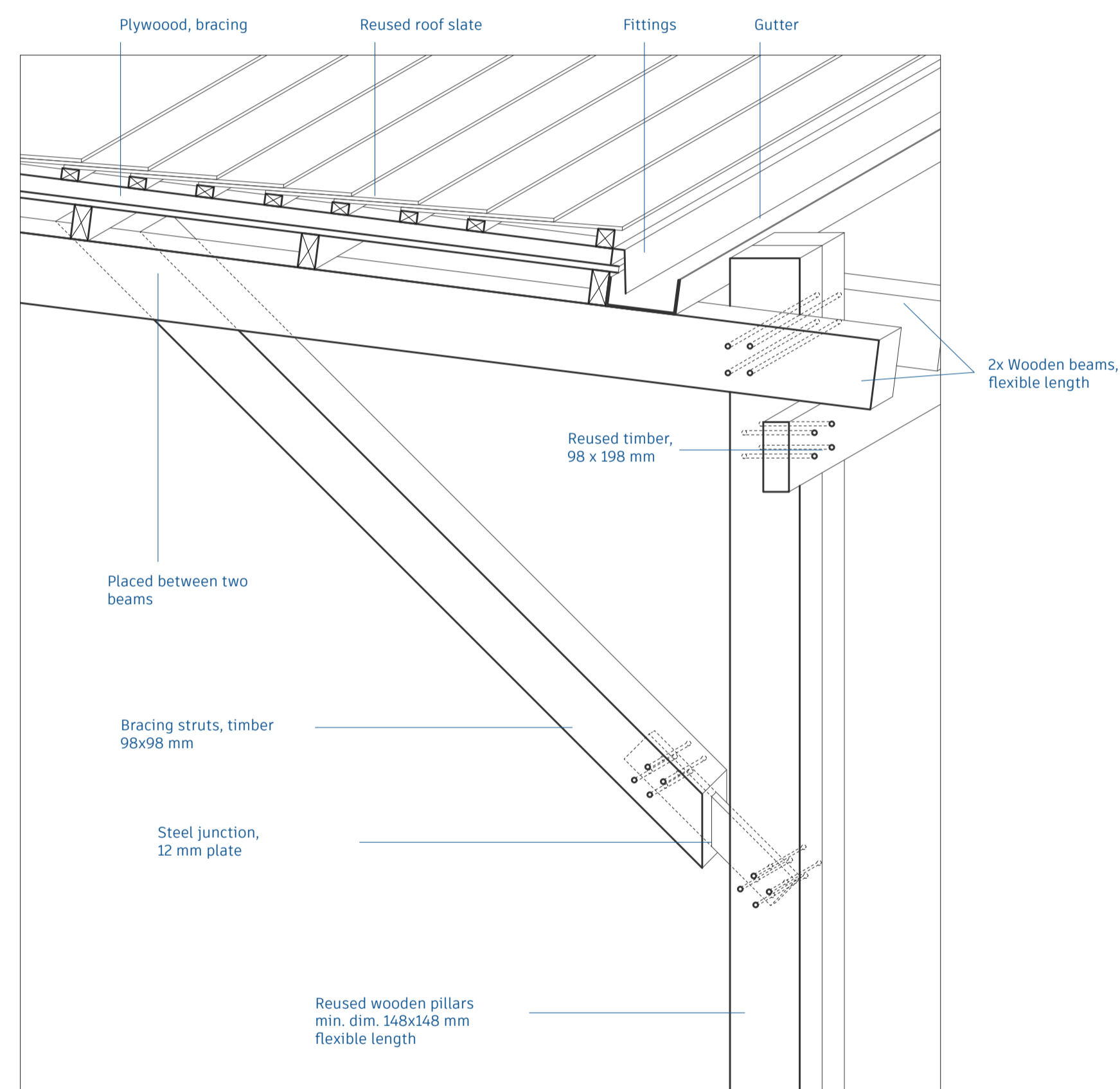
DETAILS

1:20 on A4 (when printed separately)

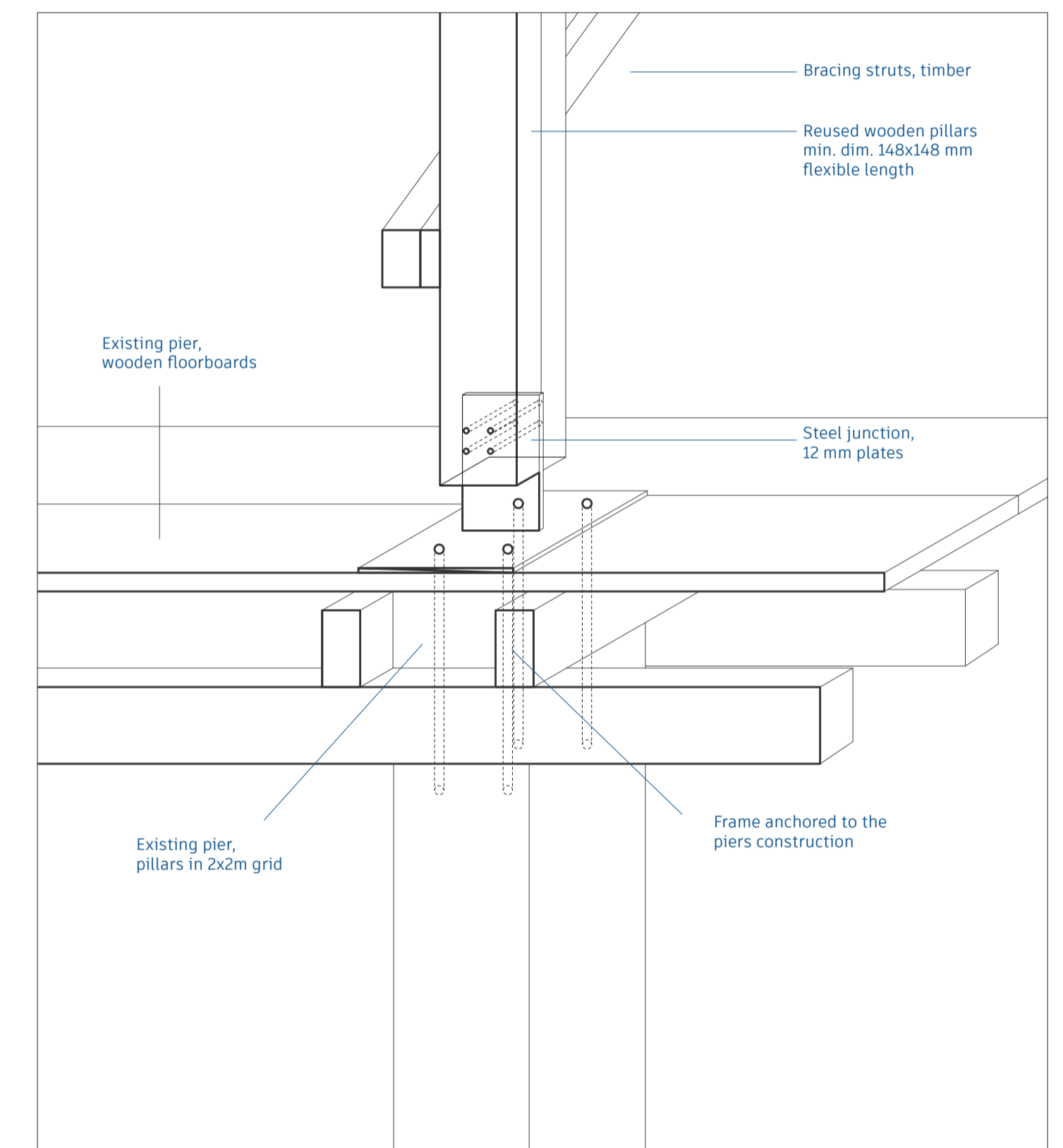
INSULATED ROOM + WINDOW



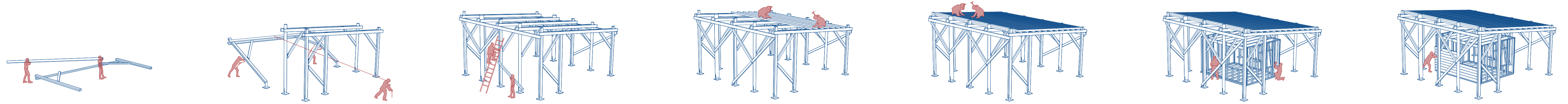
ROOF + FRAME



FRAME + PIER



BUILDING





PRODUCE

- 1. Shop for sale of fish products
- 2. Area for small scale production of fish products, such as salted, smoked and dried fish
- 3. Freezers



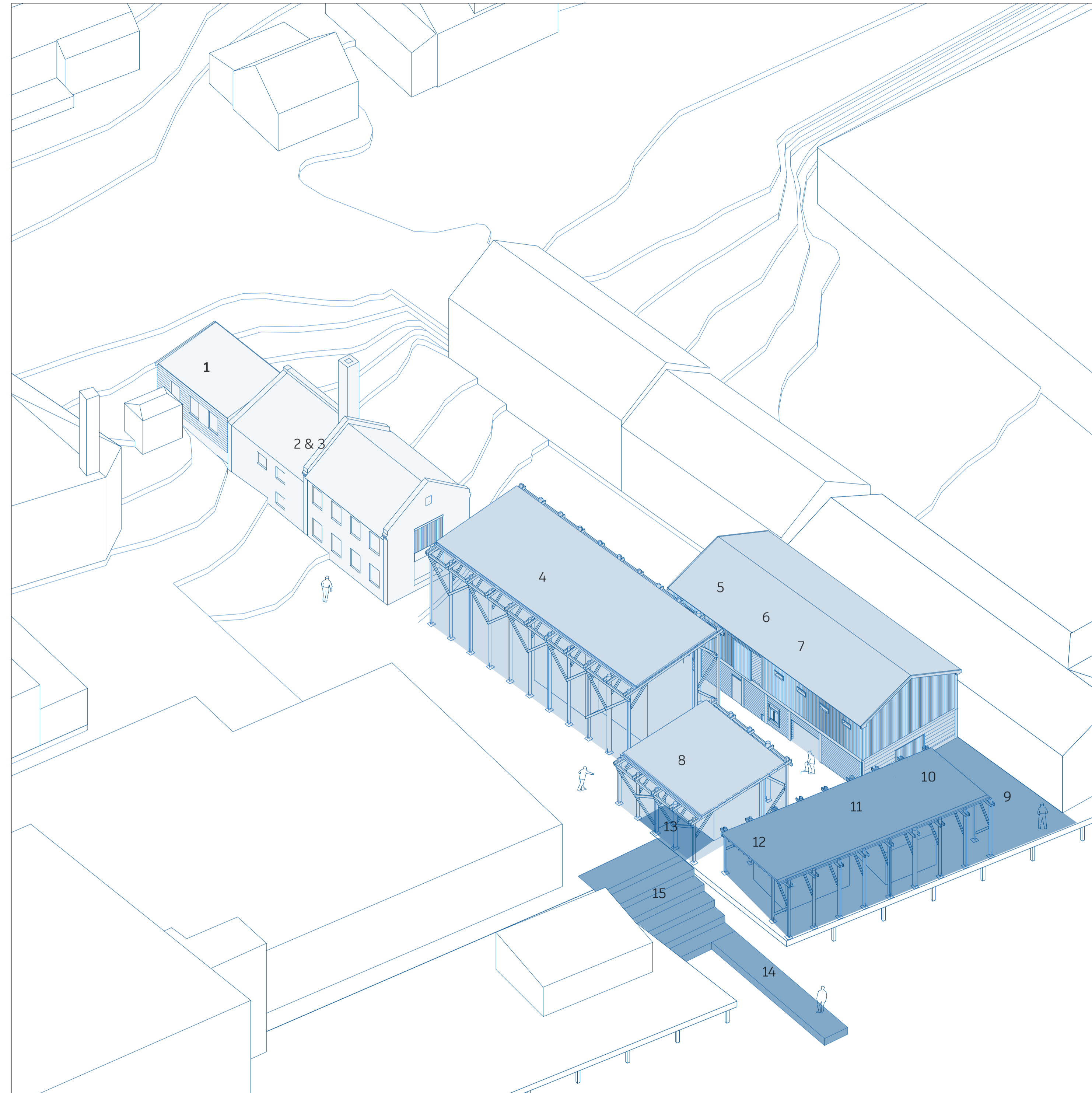
PREPARE

- 4. 2 x private *egnebus* (sheds) with small kitchen and bathroom
- 5. Freezers
- 6. Storage for gear
- 7. Common workshop with larger equipment
- 8. Common break room with kitchen and bathroom



EXECUTION

- 9. Load on/off boat
- 10. Section for cleaning gear
- 11. An insulated room for making bait
- 12. An insulated room for *egning*
- 13. Public roofed space for gutting and filleting fish
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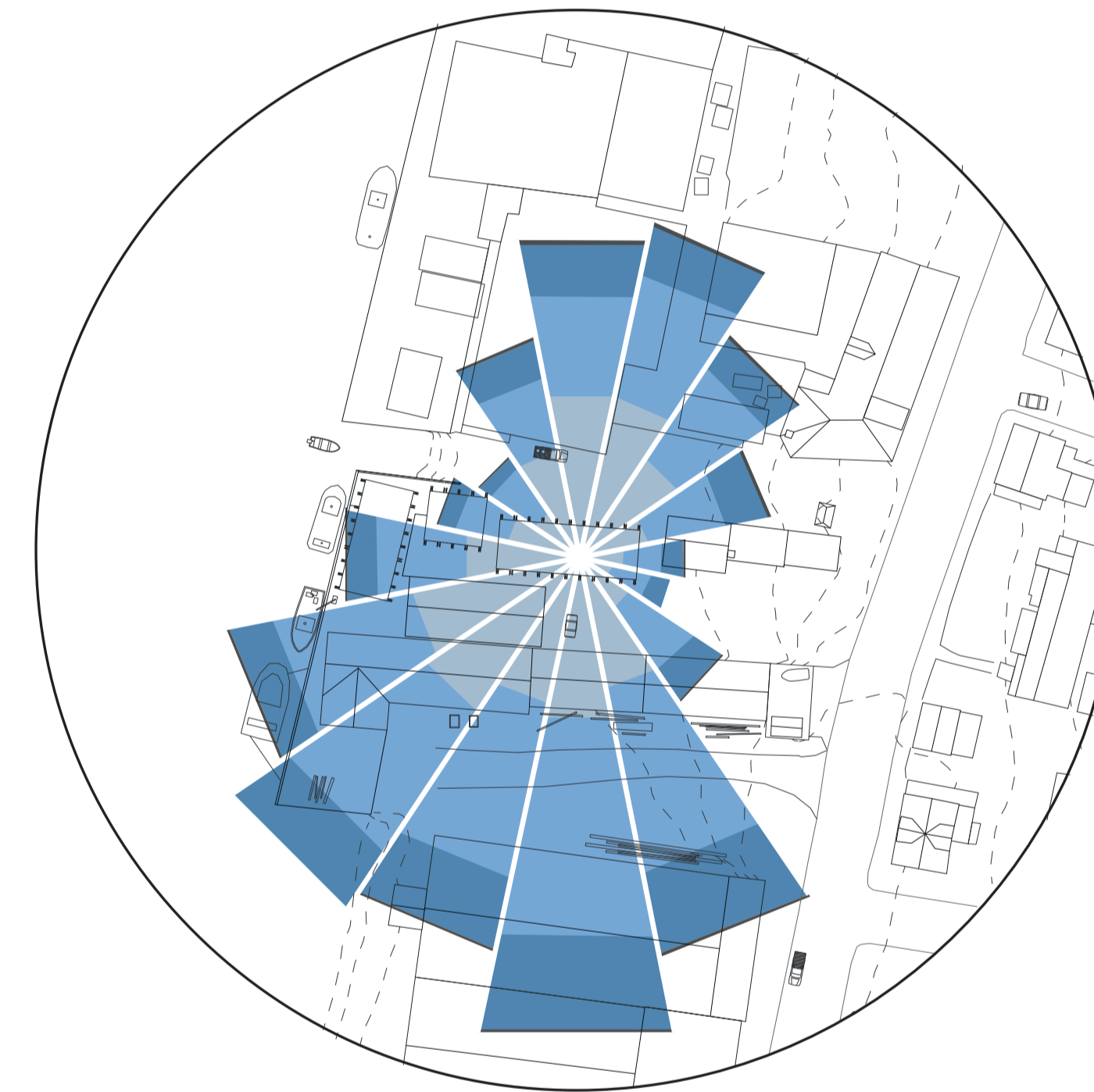


SUN + WIND



SUN PATH

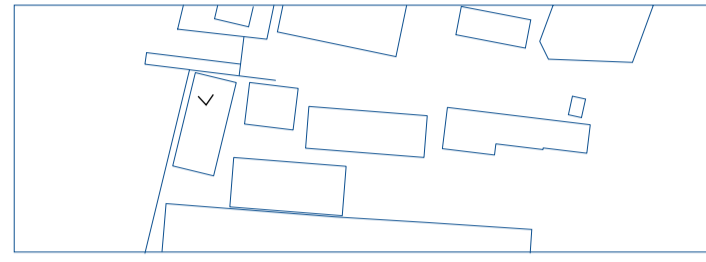
- 15. Mai - 28. July : 24 h sunlight
- 15. September : 13,5 h sunlight
- 15. November : 3,3 h sunlight
- 24. Nov - 18. Jan : 0 h sunlight



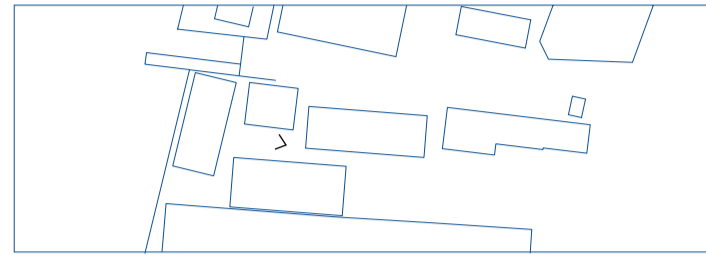
WIND ROSE (1 year)

- 0 - 6.9 m/s
- 6.9 - 11.45 m/s
- 11.45 - 20.53 m/s
- 20.53 < m/s

INTERIOUR EGNE



EXTERIOUR COURTYARD



MODEL PHOTO

1:20 model

Break room



MODEL PHOTO

1:20 model

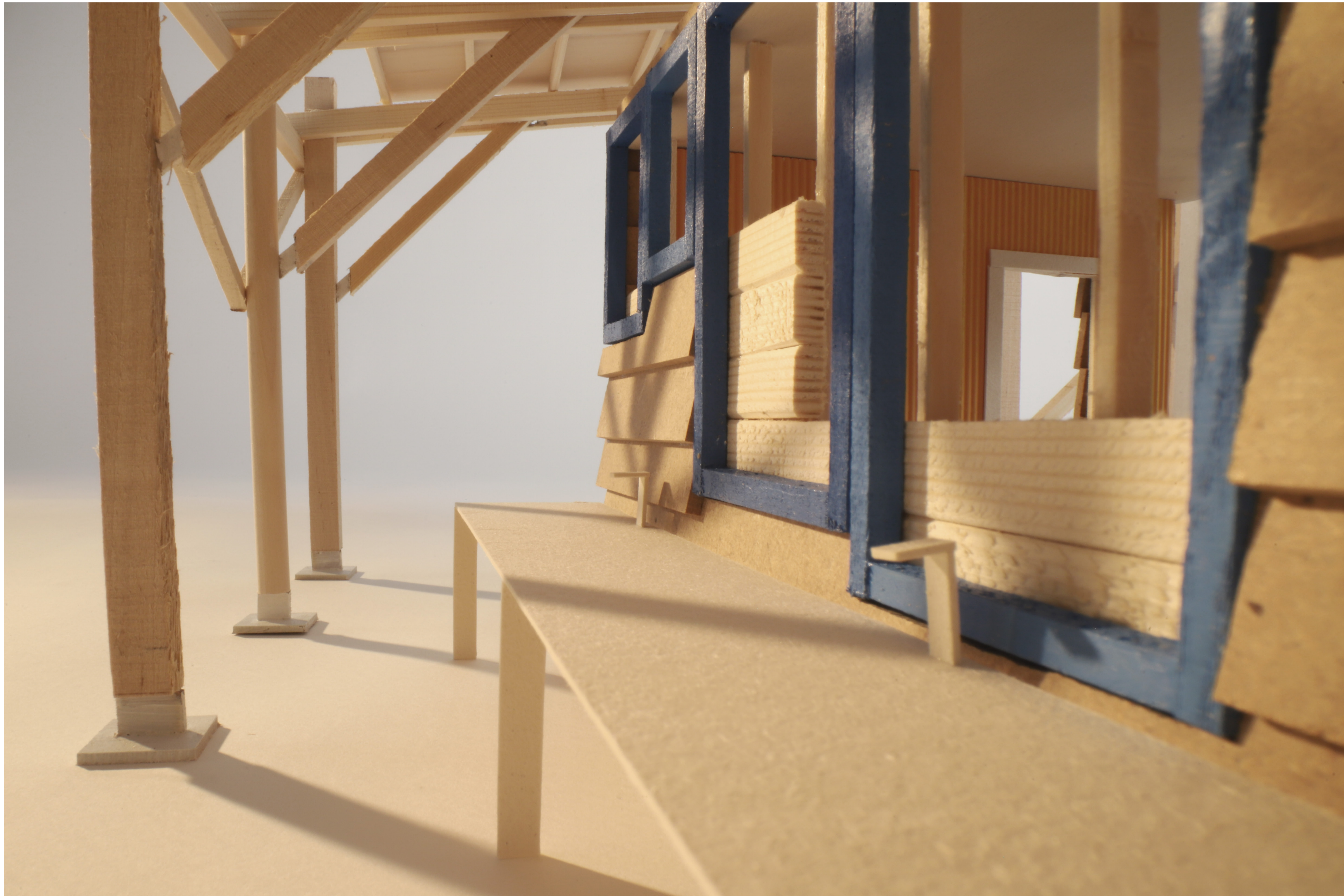
Break room



MODEL PHOTO

1:20 model

Public gutting/filleting



MODEL PHOTO

1:200 model

Harbour front

