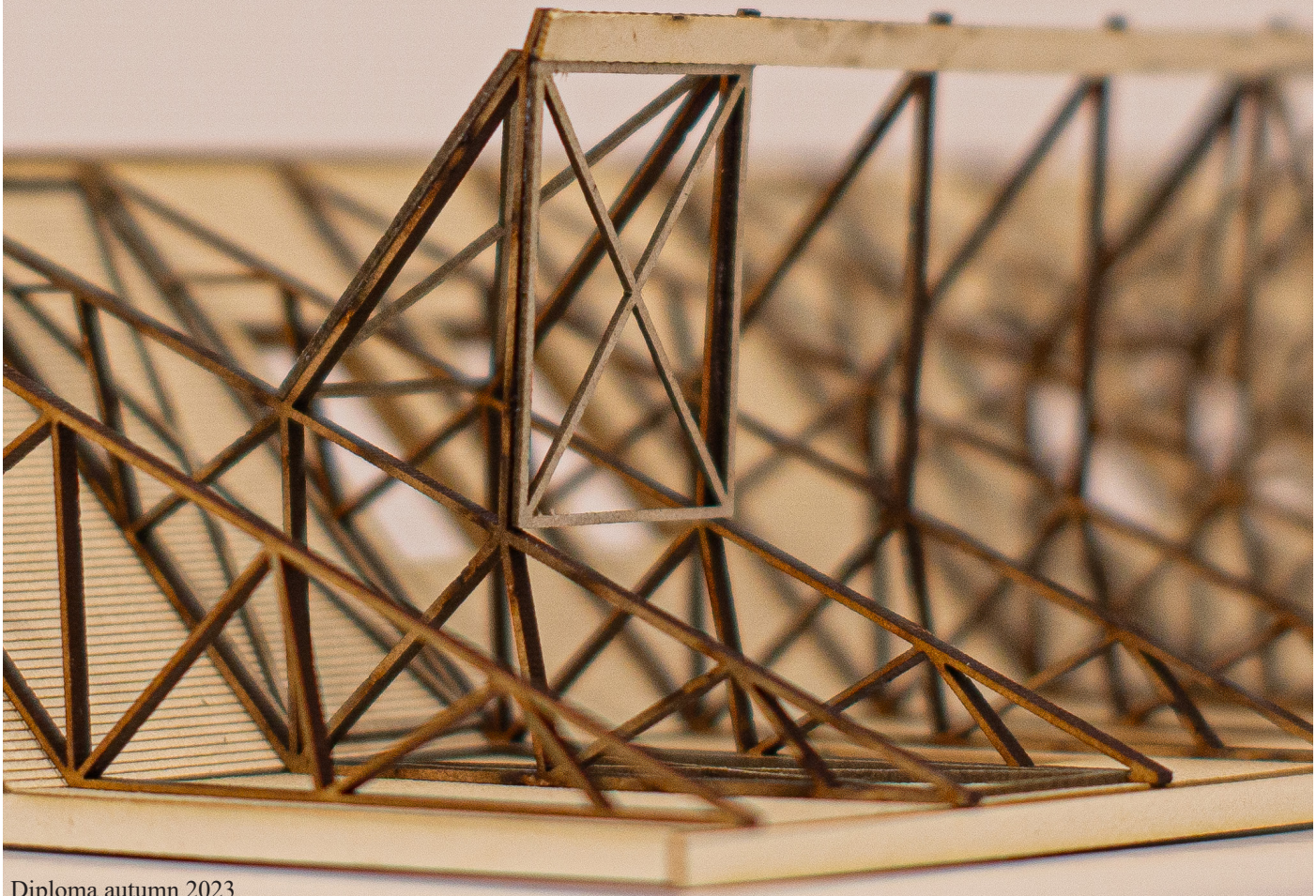
Preserving the intangible

Traditional boat-building craft in Lista



Diploma autumn 2023
The Oslo school of Architecture and Design

Ahmad Mikael Spinnangr Al-Shamma

Supervisors

Lone Sjøli
Rolf Gerstlauer
Wenkai Xu

Binder II

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Binder II

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Organization of the binder

This is binder 2 of the diploma. It contains the research work and field work that was conducted for the diploma.

CHAPTER I

Existing site conditions

The project is interested with Lista's history and culture. It is located in Farsund municipality in Agder county. This area of Norway has a high number of cultural assets as well as natural assets.
It has undergone a continous change since the last ice age. During WWII it became of vital interst to the german forces due to its postion, thus the large amount of war structures present in the landscape.
Its also an area where many animals live both of the land and of other places, migrating birds use it as its first resting stop in Norway before heading North or the last stop before heading south again. They come from all over the world.

Norways Counties

The project is interested with Lista's history and culture. It is located in Farsund municipality in Agder county. This area of Norway has a high number of cultural assets as well as natural assets.
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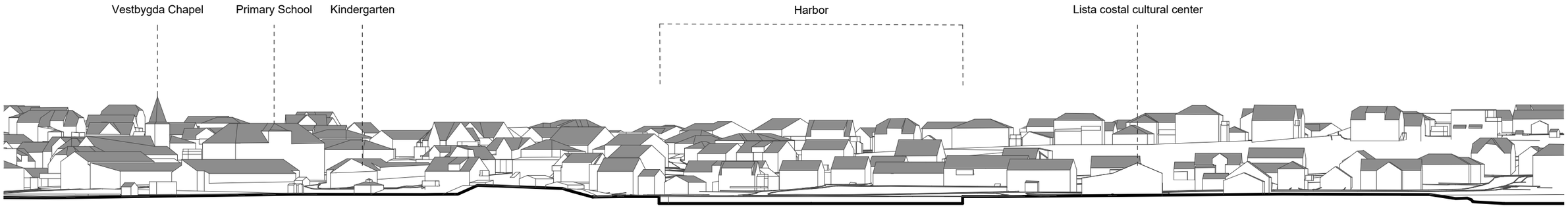
Farsund in Agder

The Project takes place in Borhaug. Borhaug is a village in south east of Lista peninsula. The lista light house is to the west of the village and the Lista airport is to the north of the village.
Borhaug was once known for building boats *Listeskøyta.* in 1814 Gjert Gundersen traveled fron Jondal to Lista to sell fruits and cheese and started building boats in Borhaug.
This activity was soon proven to be commercially valuable which pushed Ole Stave to develop *Listeskøyt.* Stave was the first to build a boat with a deck.

Situation Plan

9/20/2023

1:2000

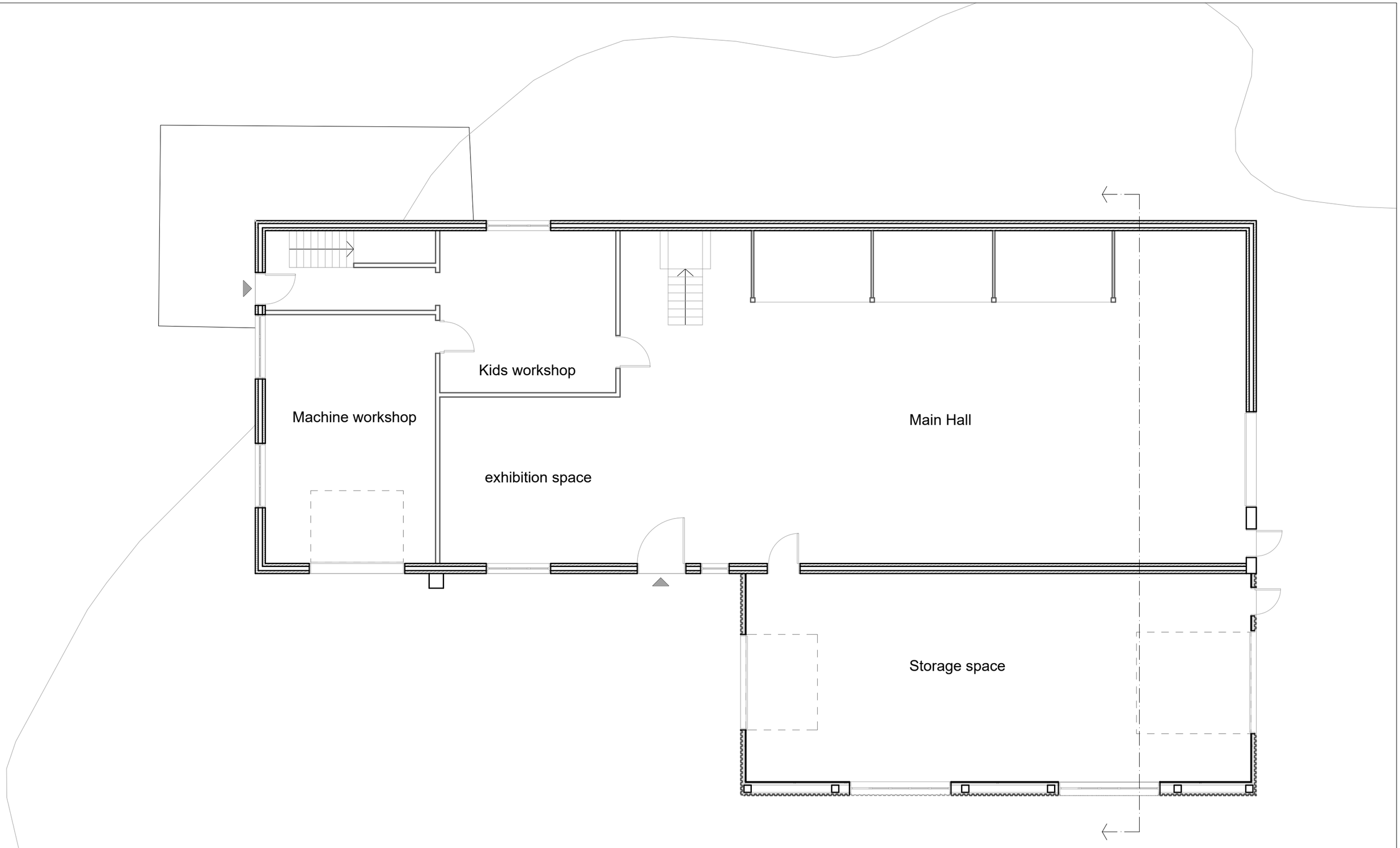


Borhaug is a costal village. The connection to the sea side is important. The site takes place in an important and rather highly contested area.
Here there are many interested parties. The public wants access and views. The kindergarden uses the area for activites for the children. The fishing shop has many parties interested in it as a restruant, appartment, workshop for boats etc.
The project has to take into consideration all theses asperiration and the propsal should be as inclusive as possible.

A Costal village

11/3/2023

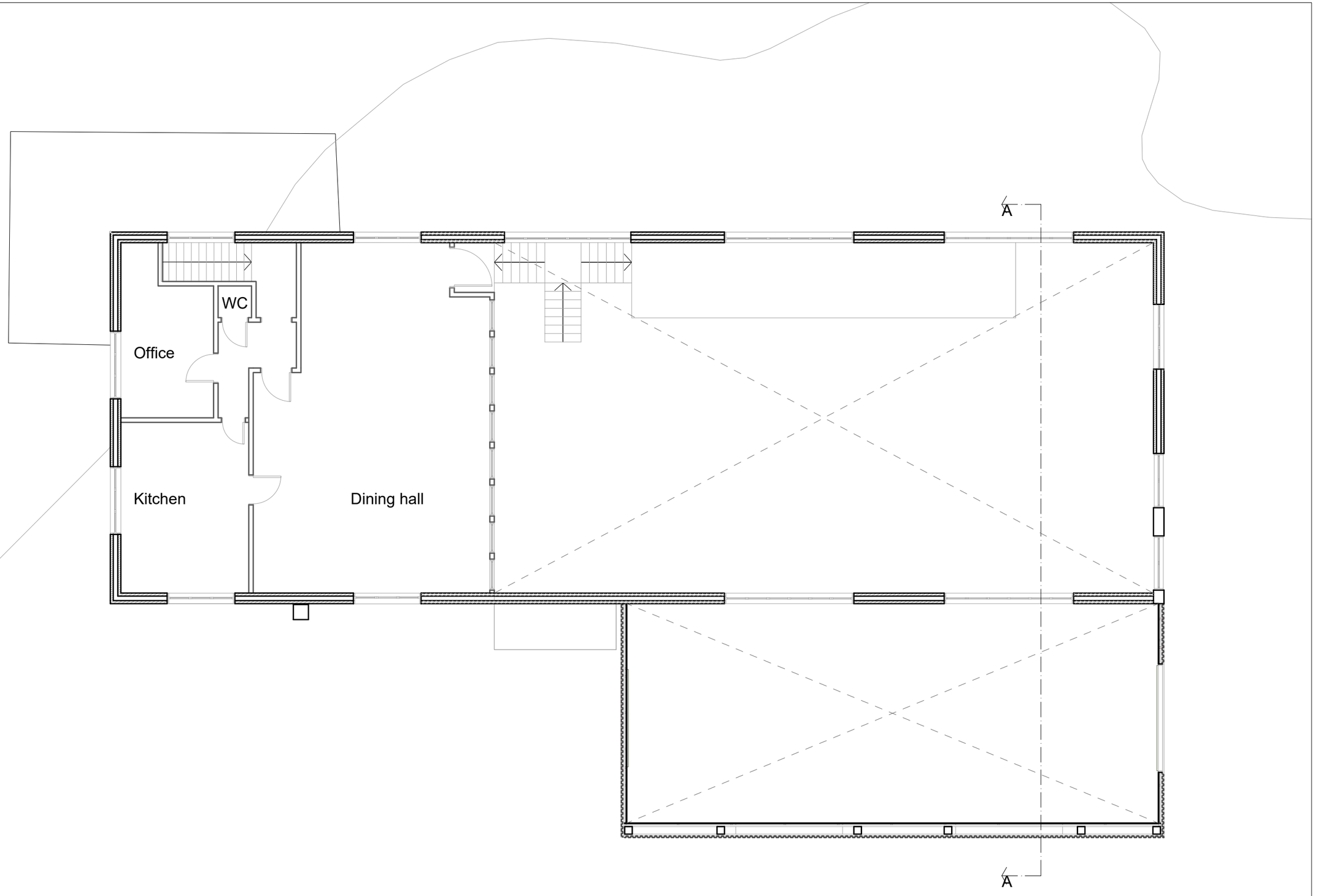
1:1000



The costal cneter most imporant peice is *the Linda Boat* is the center of the exhibiton. The rest of the spaces in the main hall are dedicated for objects collected from Borhaug that relate to the history of the boats. That includes tools that were used, machines and models.
The center has also a significant number of boat models that can be found on the second floor and on the mezzanine.
There is a dedicated room for children to build their own simple boat models.
The history of the boats is told through posters hanged on temporary walls.

Costal Center
Existing Situation
Plan 1st

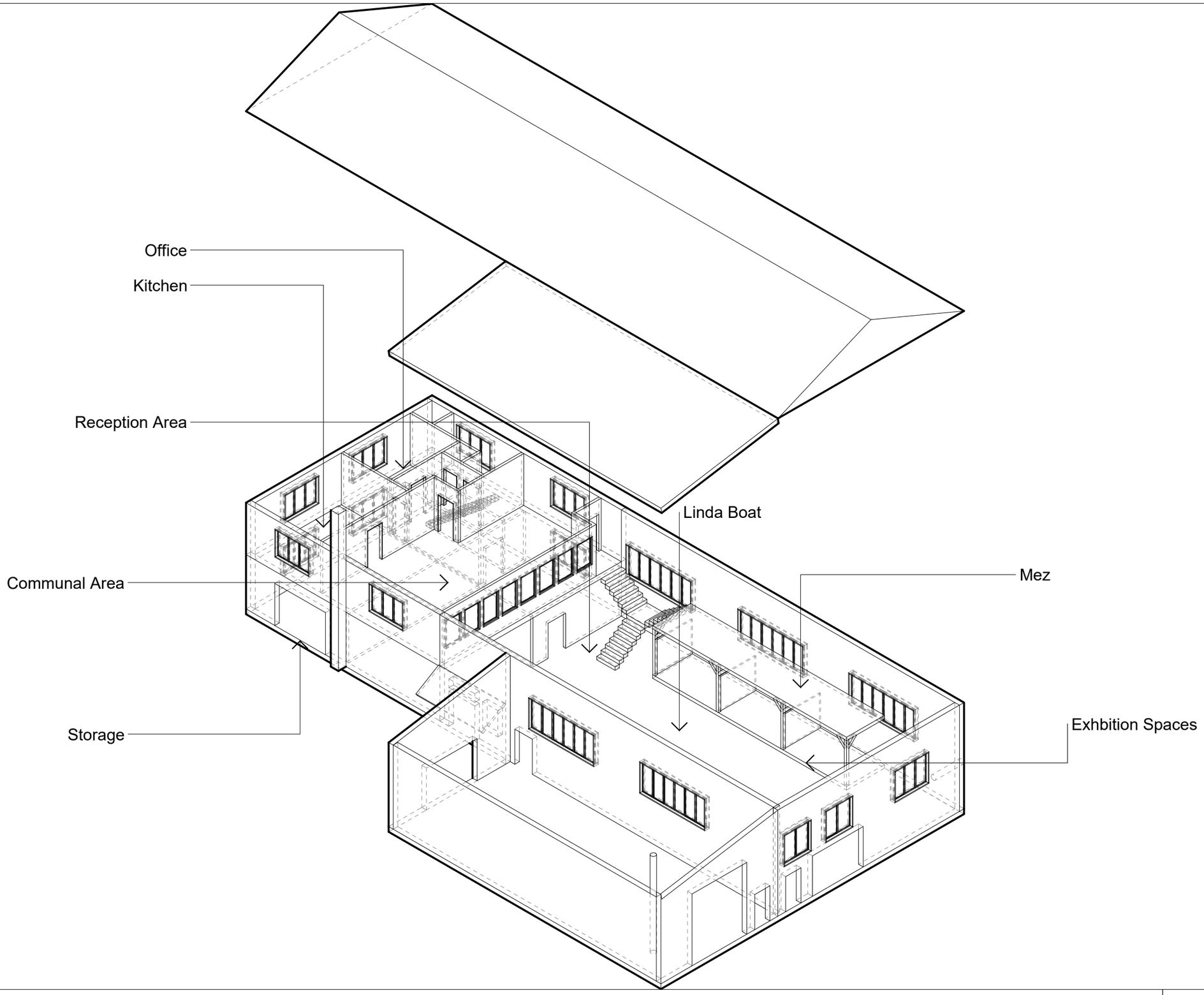
1:125



The second floor is the adminstration space.
Here the center has an office a kitchen and a dining hall that can be used during events.
Receiving guests is important for the people working here.
The center however has a challenge communicating the history of boats to the visitors.

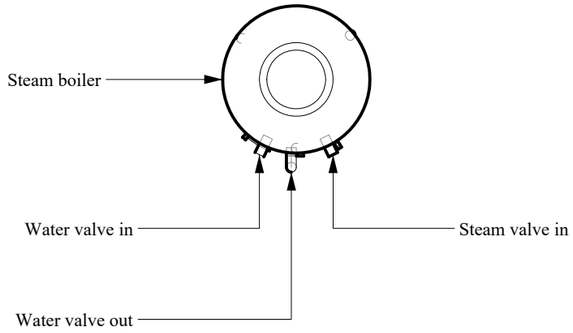
Costal Center
Existing Situation
Plan 2nd

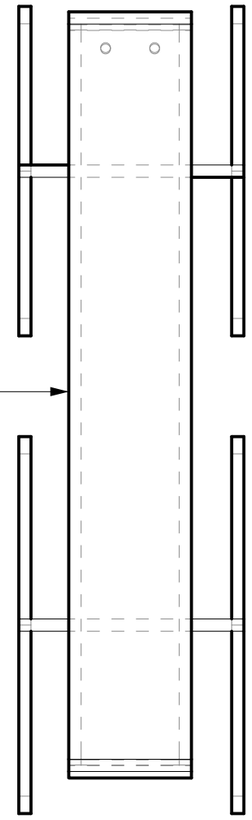
1:125

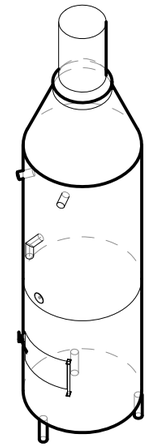


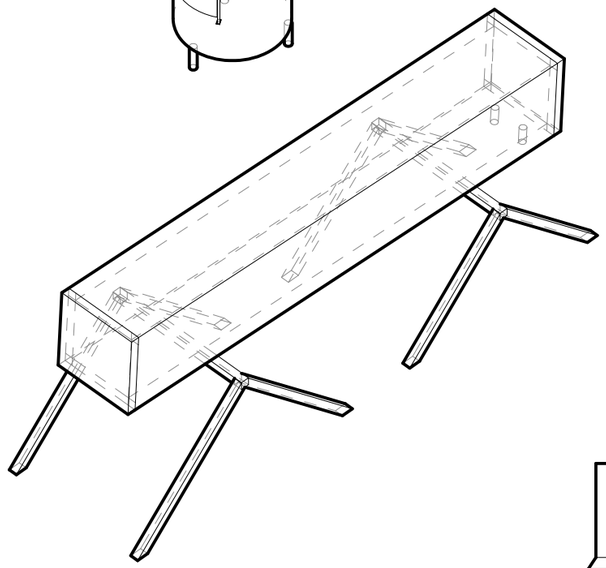
The center seems to have overgrown its inteded purpose. The user experience is not connected to the history of the boats.
The addition of new elementes like the mezzanines comes in conflict with the existing windows.
The adpative reuse of the building is a positive aspect but it connects very little to its orignal function.
From the outside its hard to see how this building is hosuing the history and the tradition of boat building.

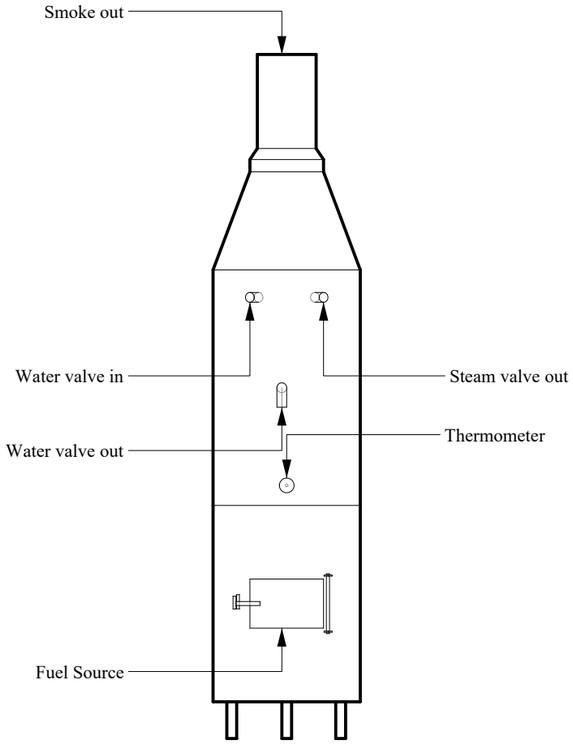
Lista costal culture center

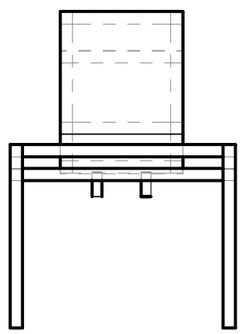








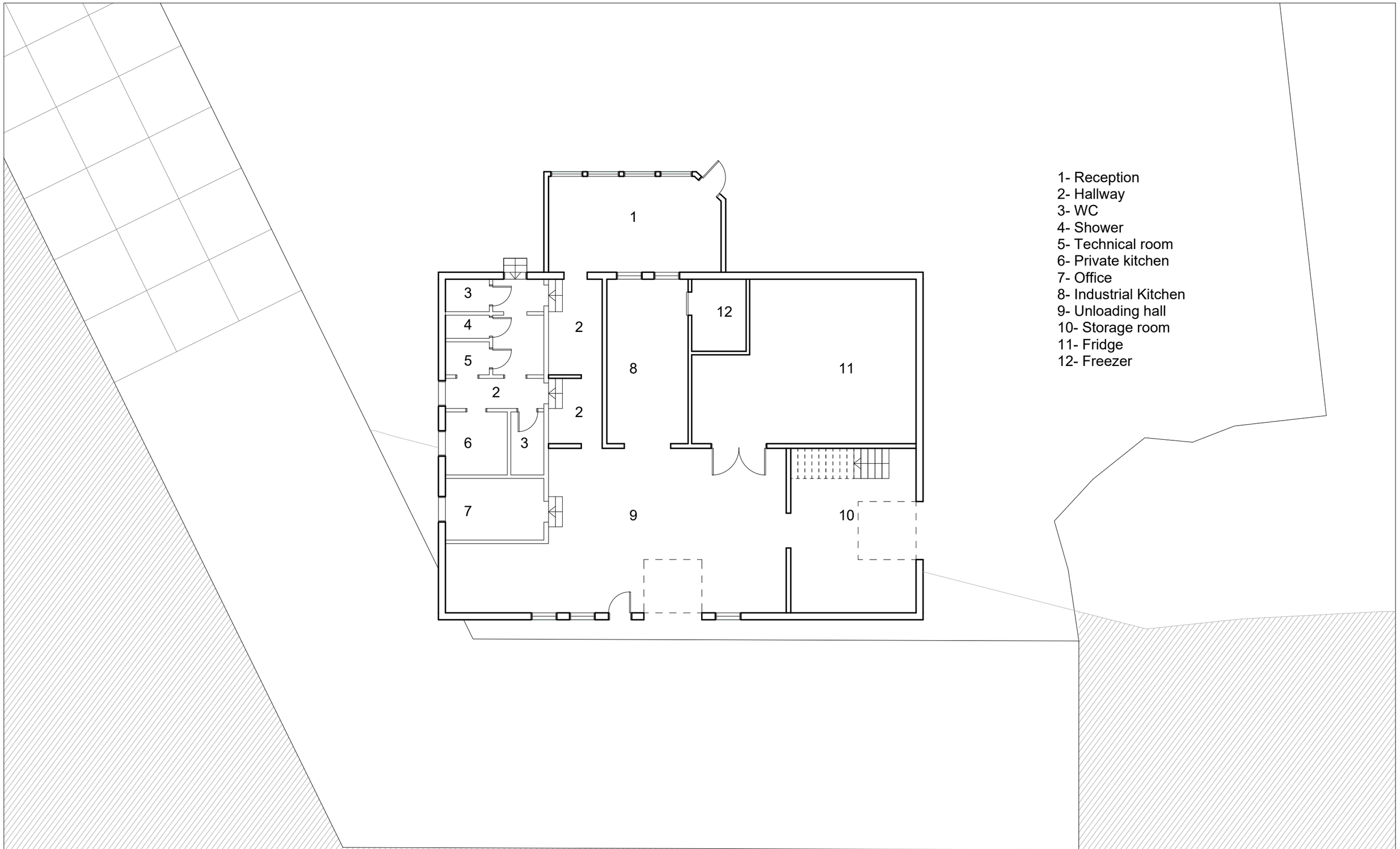




In addition to boats and models the center has some machines. This steamer for instace was once used by boat builders in Lista. It is now tranfered to the new proposal.
The boiler system is a vintage reclamed system that has been repaired and function though not in use anymore.
The system was once used in a boat building shop to bend the wood plates that would later cover the outside of the boat.
The system is based on steam. The fuel source heats up the water taken in by the water in valve. There after the steam accumalted would travel to the wooden steam box via the steam out valve.
It is imporant to let the steam box be at a ngle so that the condensed water would have an escape valve.
The steam also has to start at a low place so that it can travel up the steam box.

Steam Boiler System

1:25



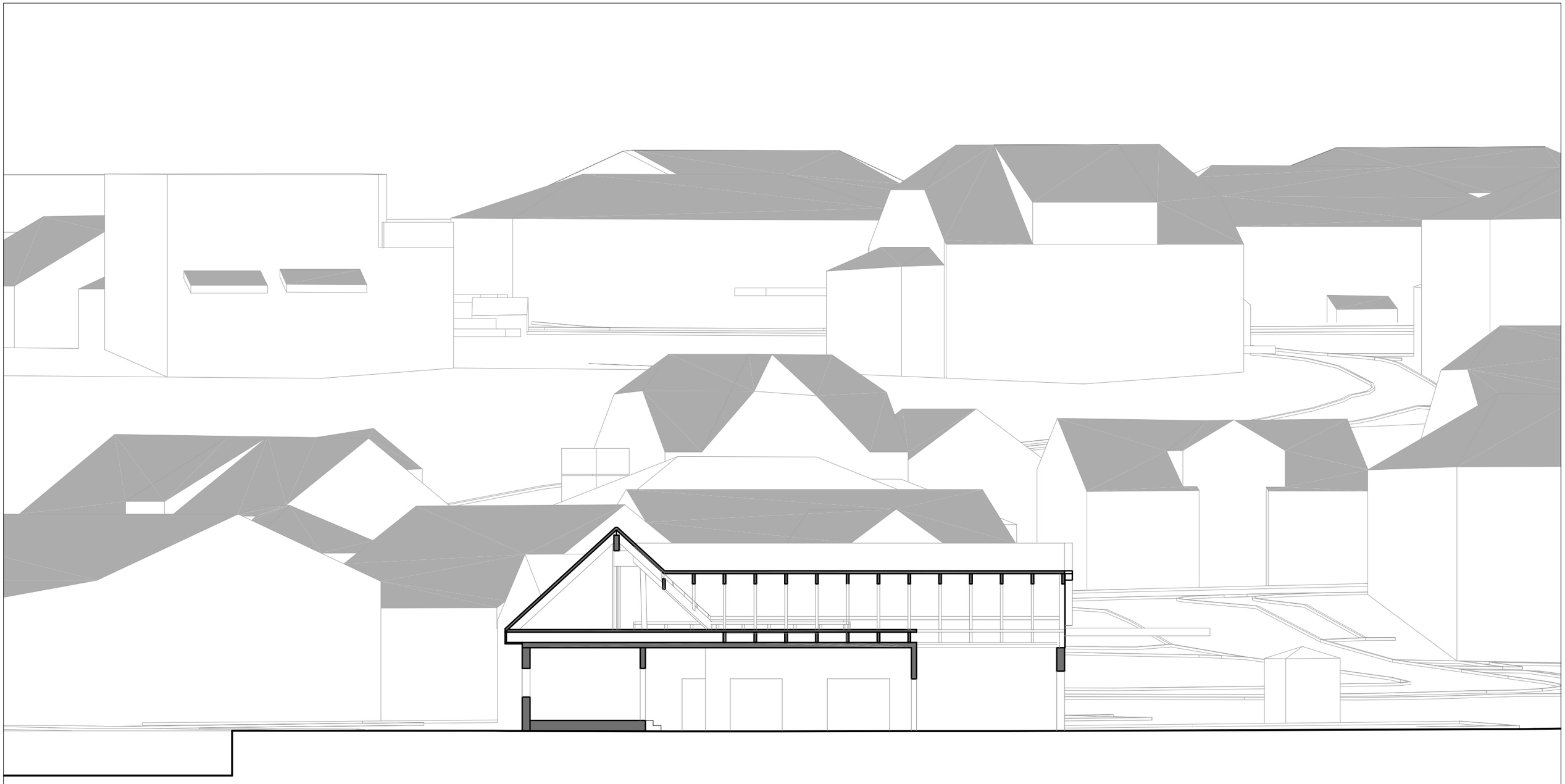
1- Reception
2- Hallway
3- WC
4- Shower
5- Technical room
6- Private kitchen
7- Office
8- Industrial Kitchen
9- Unloading hall
10- Storage room
11- Fridge
12- Freezer

The *Sjø Fisk og Skalldyr* shop takes place in this building.
The building has a small selling area a personal area for the employees to change clothes take breakes etc.
The large areas are reserved for unloading, preparing and freezing the fish that gets unloaded from the boats.
The building is active during the week with sale happening only twice a week.

Plan 1st

12/8/2023

1:150



The building is active all week with fishermen coming in and out and boats docking and unloading the fish.
Its where the locals get their fresh supply of fish. While developping the project it became clear that connecting these building under the same program is a positive developpment.
It ensures that these the boat related activities and fishing can coexist at the same place in what other wise is a very contested area of the village.

Fish shop
longitudinal Section

1:150

CHAPTER II

Site visit to Brekneholmen


AG-8-FS


"På sjø og land"
minnesmerke over fortjenstmennen
O. S. Tjørve
1845–1922
Gave til Vestbygda fra
Ingar Foss Reymert
utført av Alfhild Vaagenvold
1990

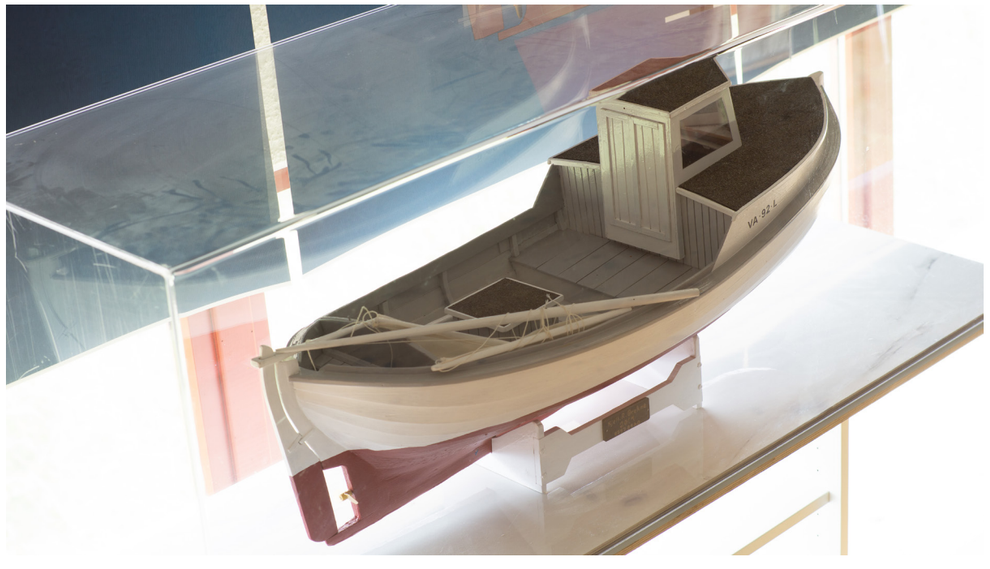

JXGY
SEBULON


JXGY
SEBULON

CHAPTER III

a visit to the Lista costal cultural center


Gjert
Gundersen
Ole Olsen
Stave

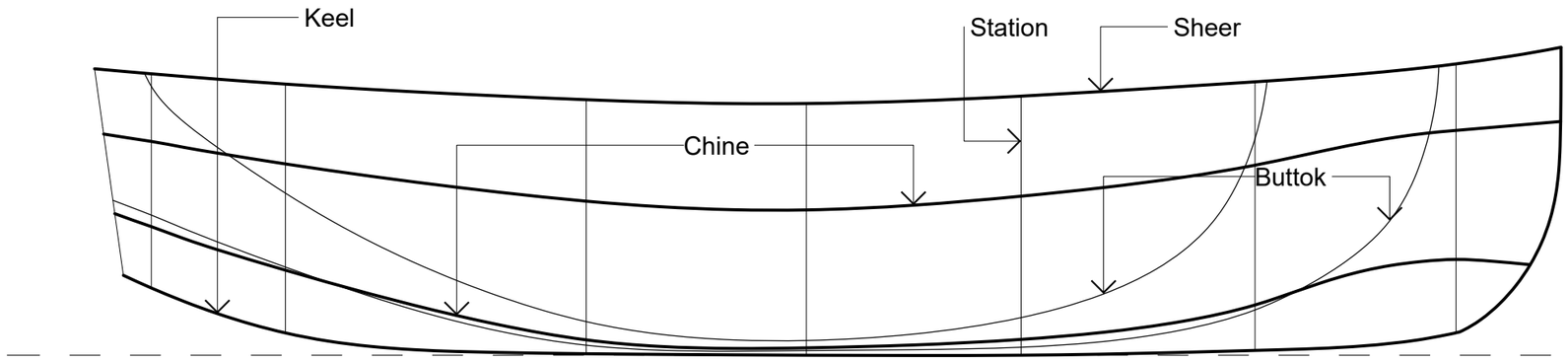



DEWALT

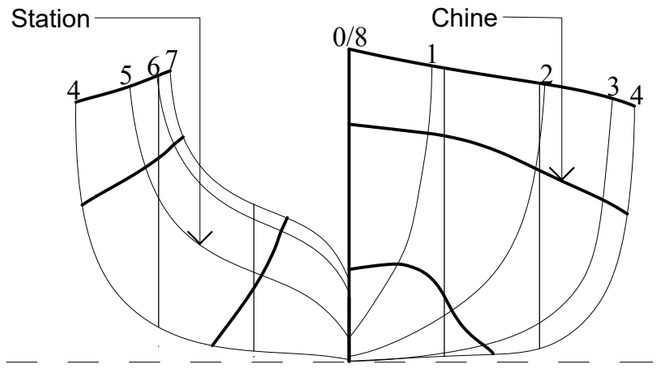

SOLAR

CHAPTER IV

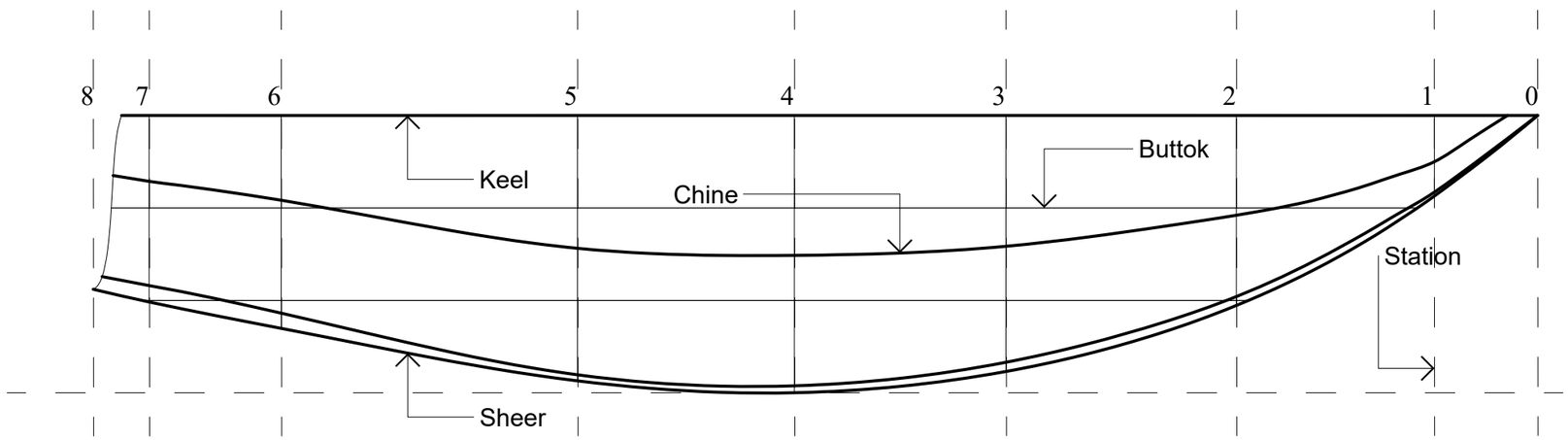
what are boats and how to build one ?



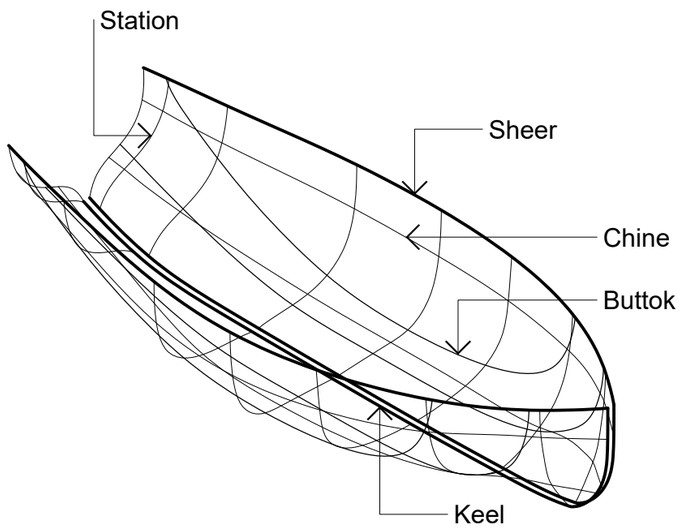
Sheer plan



Body plan



Half breadth plan



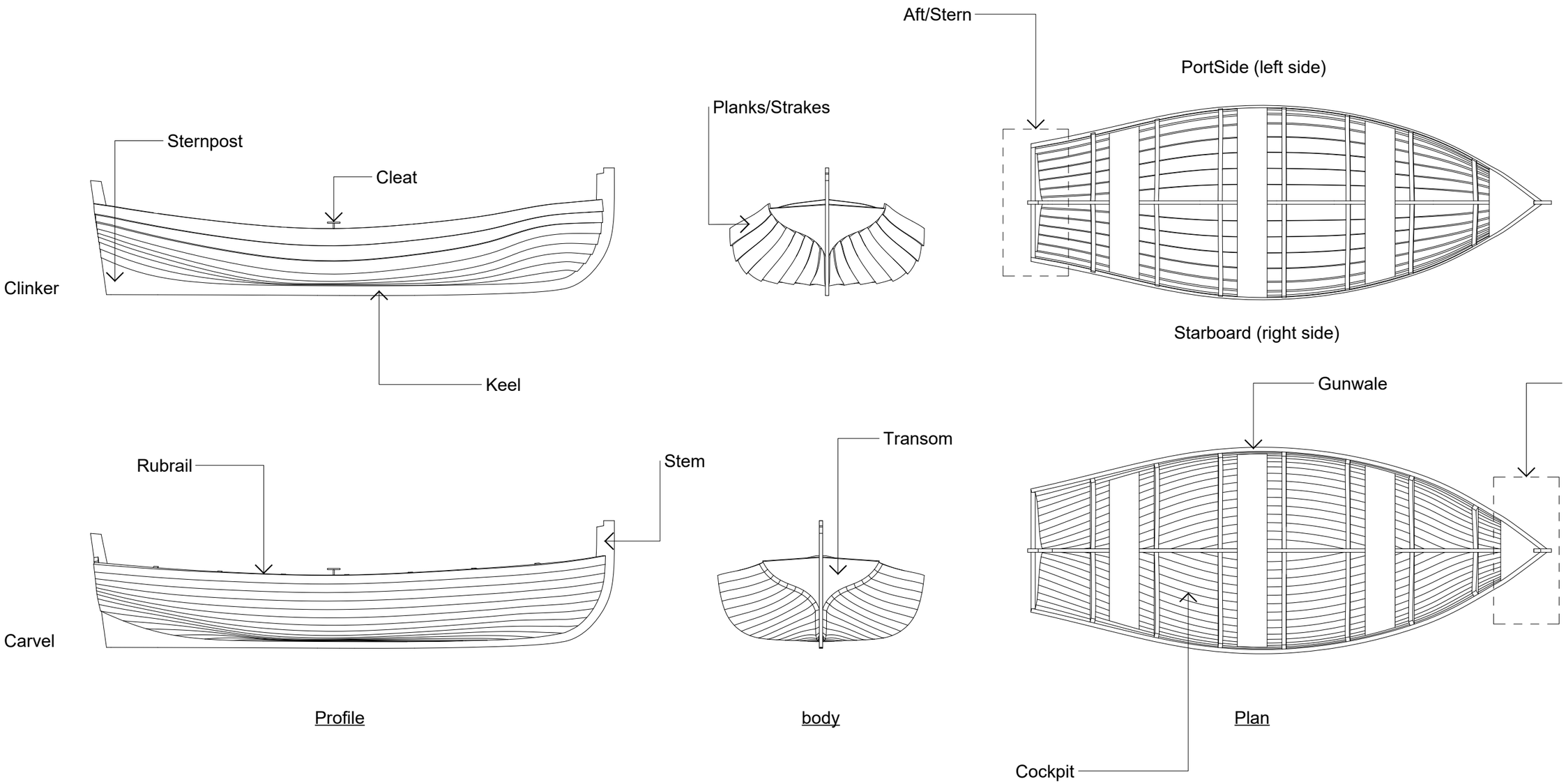
Axonometric*

The boats lines plan is a set of drawing that show how one can obtain the hull of the boat.
The half breadth plan and the sheer plan tend to show only half the boat since its symetrical around its axis.
The body plan shows both front and back side.
To construct a boat the boat buildder would need the drawings for referance and an offset table so that it would be possible to trace the lines in 1:1
* Axonometric are unsual in the lines drawing here its used to help see the lines in three dimensions.

Boats line plan

10/5/2023

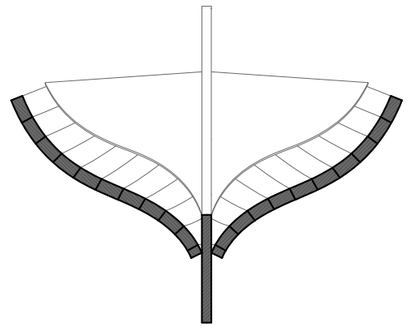
1:25

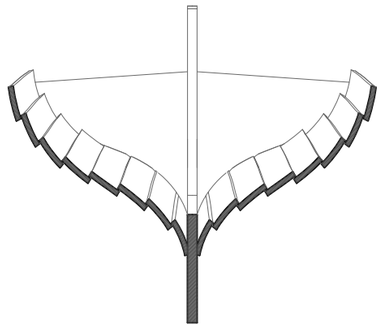


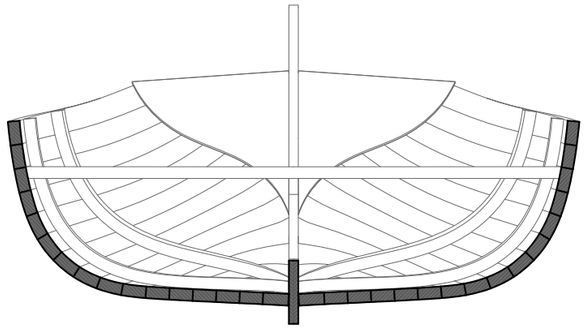
Boats are very much affected by the cutlure of the place they are made even at at national level. Different places in norway would refer to the same parts of the boat different names.
The main differance between the clinker and the cravel is the planking technique. Clinker boats planks overlap however Cravel planks dont.
They also have different construction methods. The Clinker boat tends to be lighter but more time consuming to build. It most likely that the bending technique of planks involved submerging the planks in water overnight as they did it in Hardanger with the Strandebarmaren.

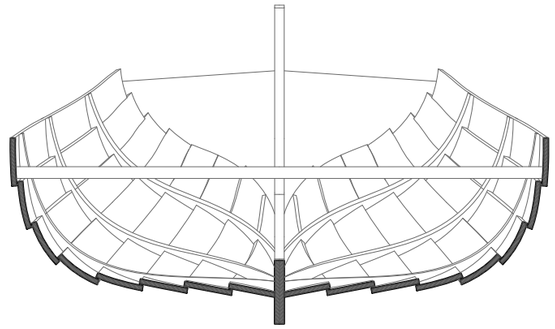
Clincker vs Cravel
10/5/2023

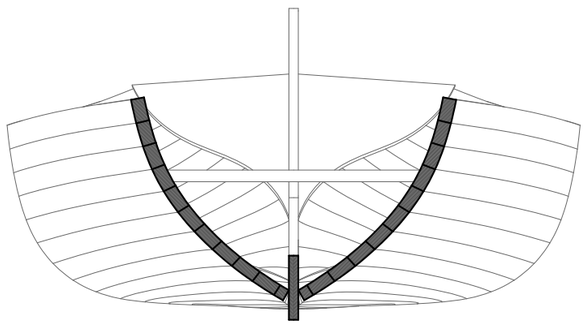
1:50

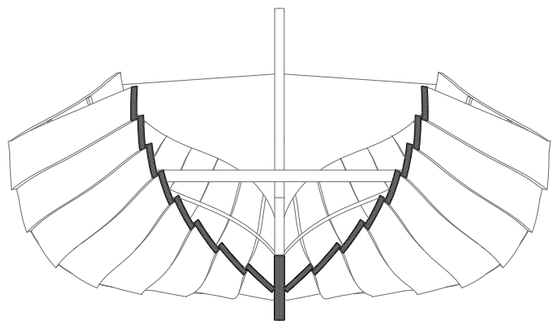












Cravel Boat

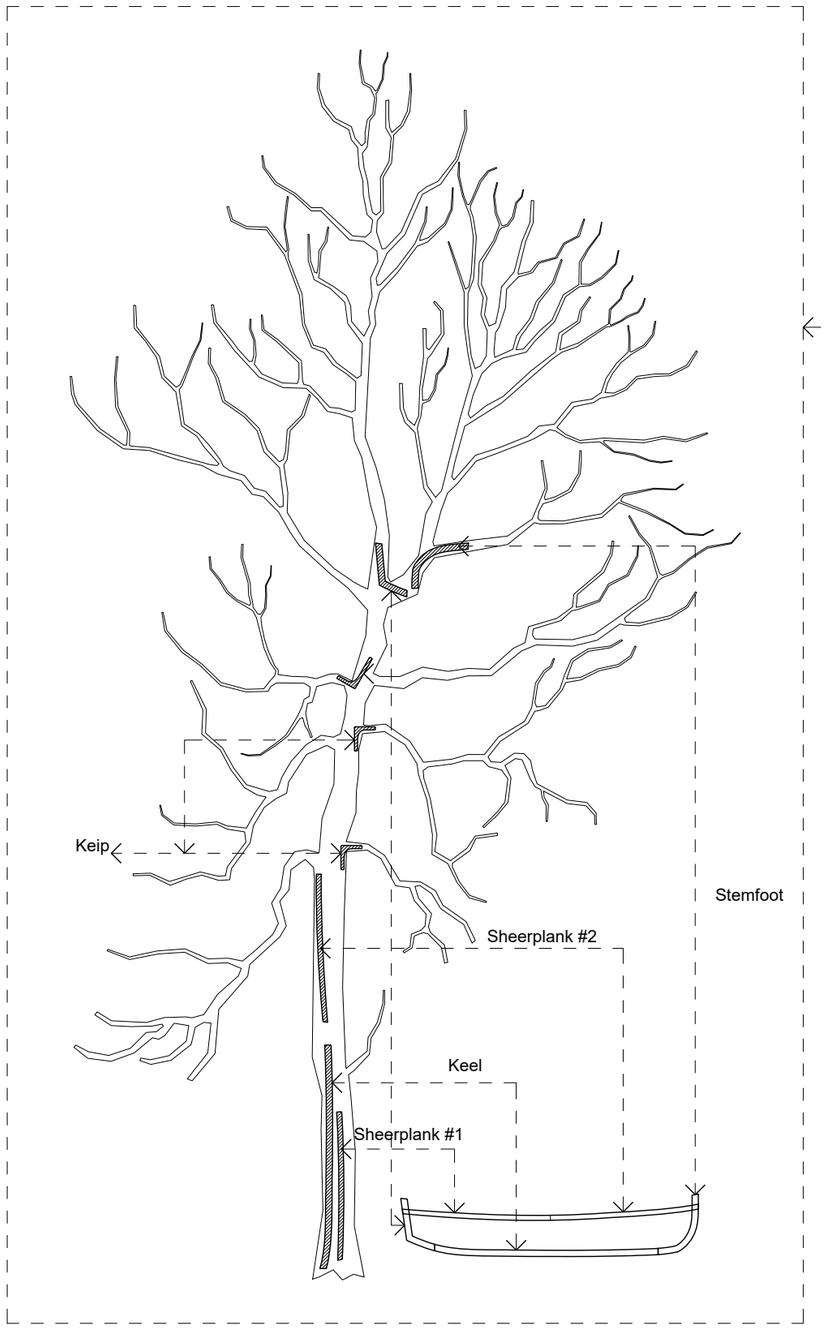
Clinker Boat

The main differance between *Clinker* and *Cravel* boats is the way the planks are layed out.
In the clinker boats the layers overlap and they produce generally lighter boats. Histroically, the boat buildder would use 4 planks in a small dinghy.
Each section of the boat has its own name. The naming convention is not national. Each part of Norway would call the part a different thing.

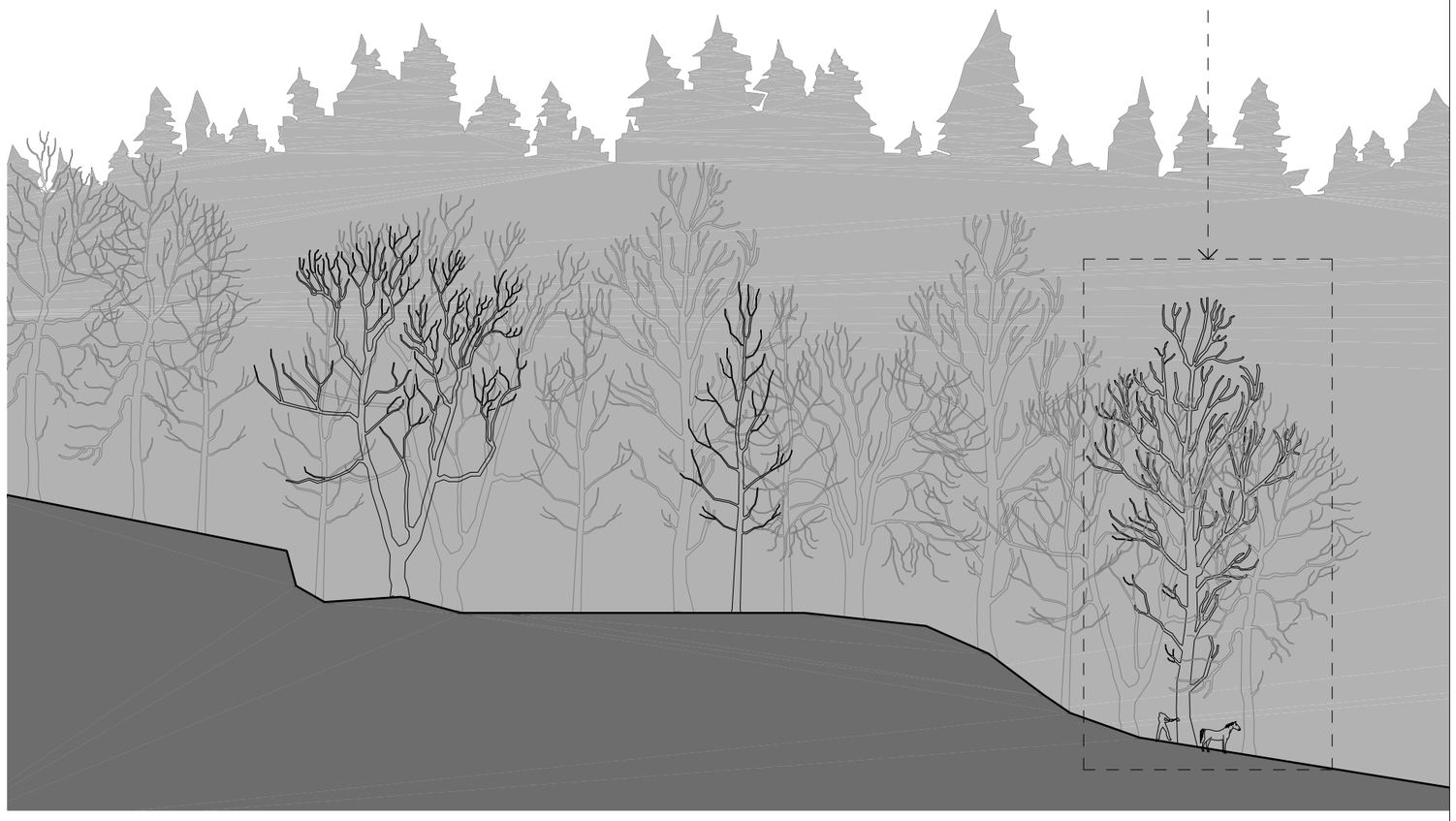
Section Clinker/Cravel

10/9/2023

1:25



How to cut a tree for a boat lumber 1:125

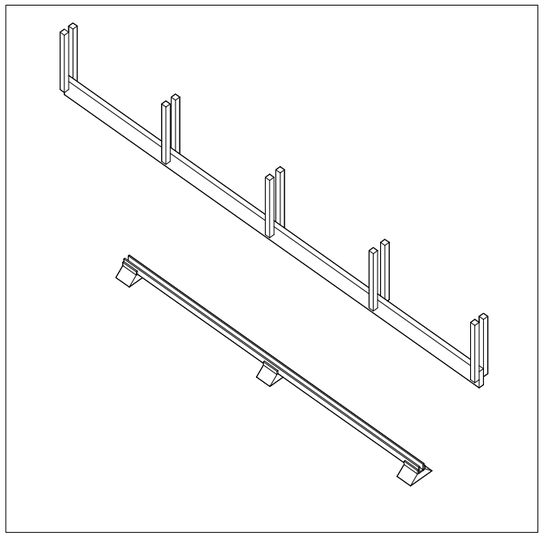


Choosing a tree_1:400

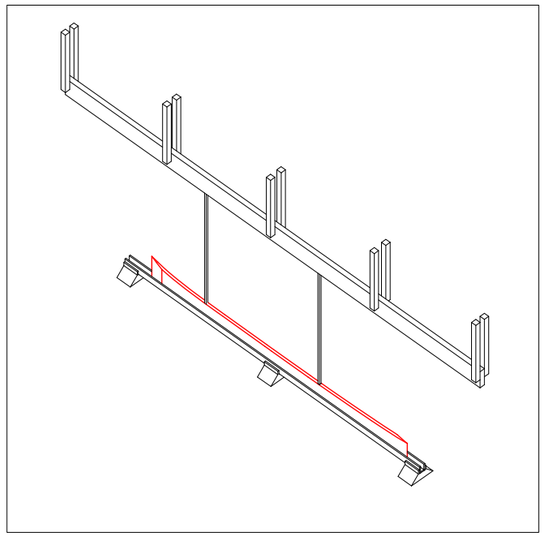
Boat building happens in areas close to raw material and where harbor conditions are suitable for the process.
When the type and size of the boat is known; weather through drawings or not, the master boat builder would venture to the forest and cut down the trees that needed for the boat.
The cutting of trees is not a random process. A tree is selected due to its placement in the ladnscap. Here the trees on hill are prefered since they would have better wood quality due to their orientation in relation to the sun.
Anthor important creteria is the geometry of the selected tree. It is selected due to its dimensions and the fact that it will fit the geomtry of the boat thus reducing the amount of cutting needed.
Although this would result in higher respect for the forest material but it is mainly done since the cutting proceess is work intesive.
Horses are still used even today to gather the wood. Horses are quite flexiable and get to spaces where machines cant.

Trees from forest

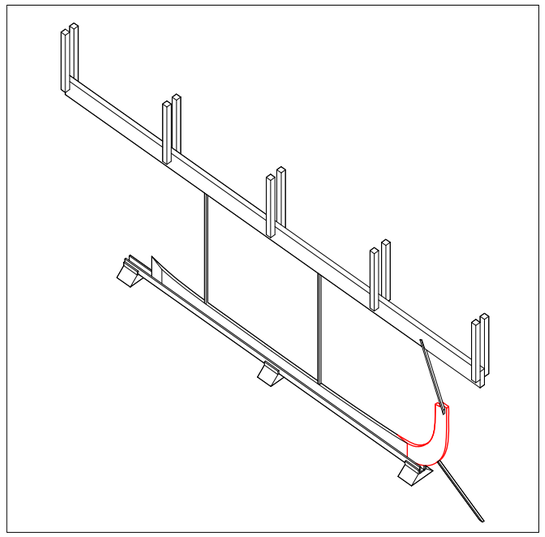
12/12/2023



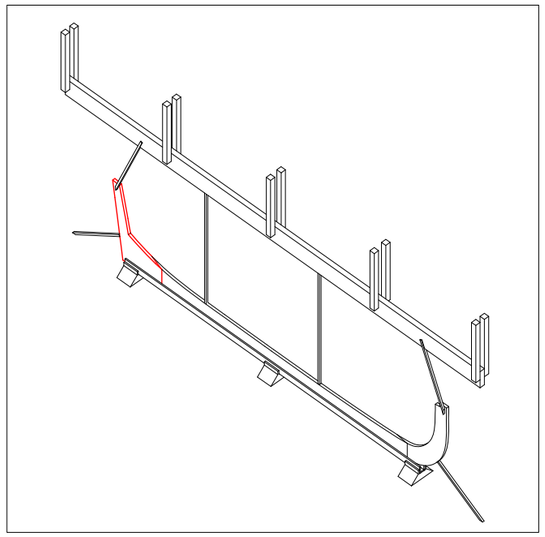
Step 1 : The boat building space is prepared where the slot beam carrying the keel is placed underneath the support beam



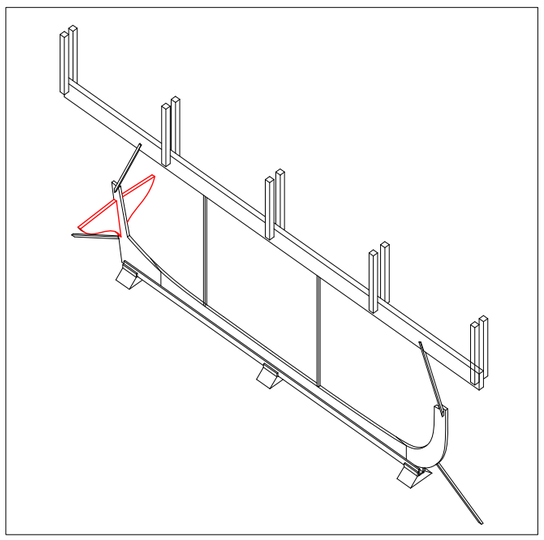
Step 2 : The keel is place into the the slot and is stablized using sticks



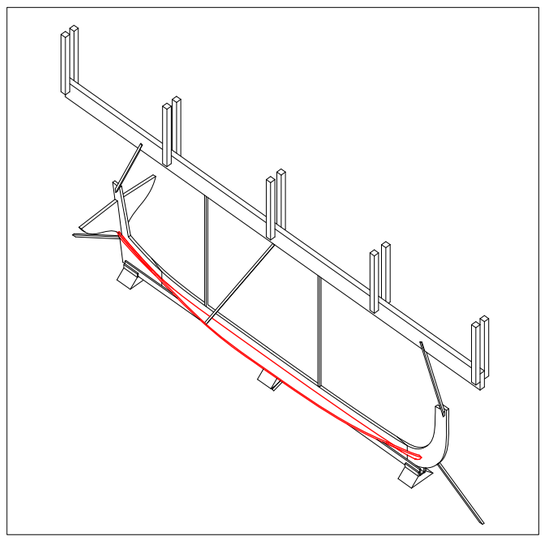
Step 3 : The Stem is place and connected to the keel and stablized with stiks to the ground and the beam



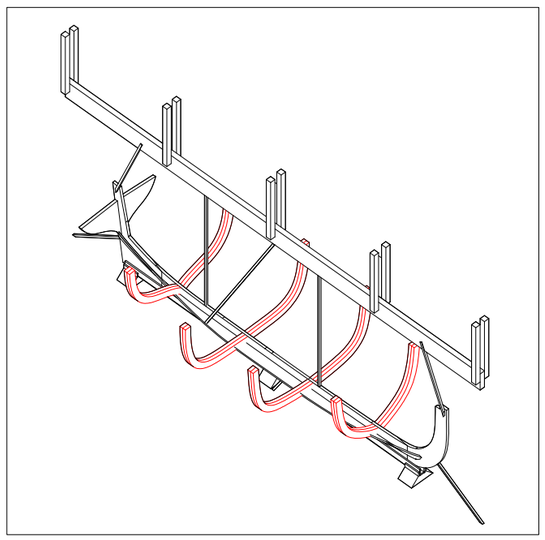
Step 4 : The Stren post is connected to the keel and stablized with sticks



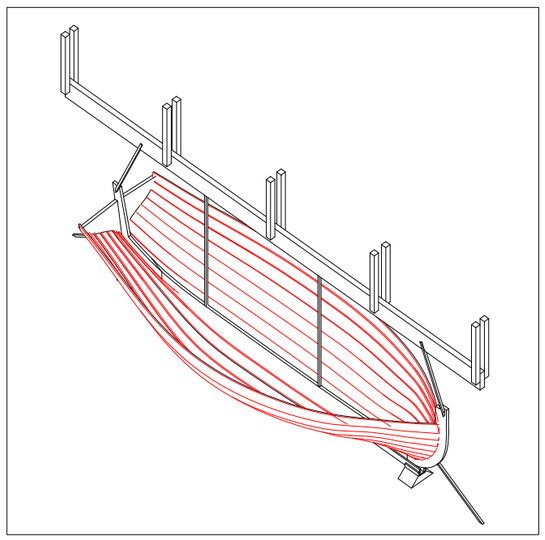
Step 5 : The transom is connected to stern post and stablized



Step 6 : The Planking process can start. The boat builder starts from bottom or top and would ensure the angle using sticks. The plank is cut to fit the keep



Step 6 Alt : The planking can also go around the sation lines if the boat is based on a lines plan

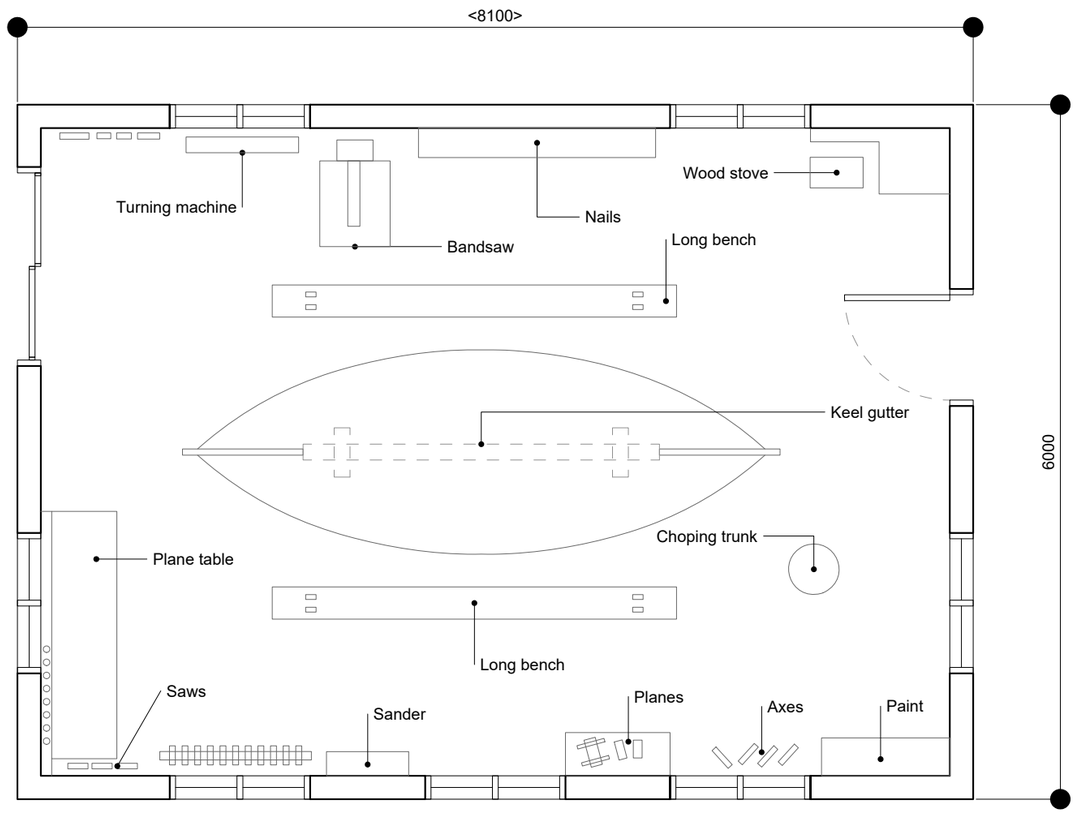


Step 7 : The Hull now is finished and is ready for the application for frames for further stablization. The planks are joined with meal or wood nails

The steps of building a boat. Here the boat is built without any referance drawings.
The boat buildder would use realtion numbers to get the dimnesions of different elements. The angles are also based on the tradional way of building boats.
The planks are joined with wood or metal nails (based on the local culture).
The planks are regarded as water tight however to ensure further that water wont get into the boat, a layer of tar and wool strings would be inserted between the planks.
When the boat is based on the lines plans, the boat builder could then loft the curves on the sacle 1:1 to extact sations that would be used for bending the wood.
In larger boats the stations are not removed but are part of the structure of the boat.

Boat building stages

10/11/2023



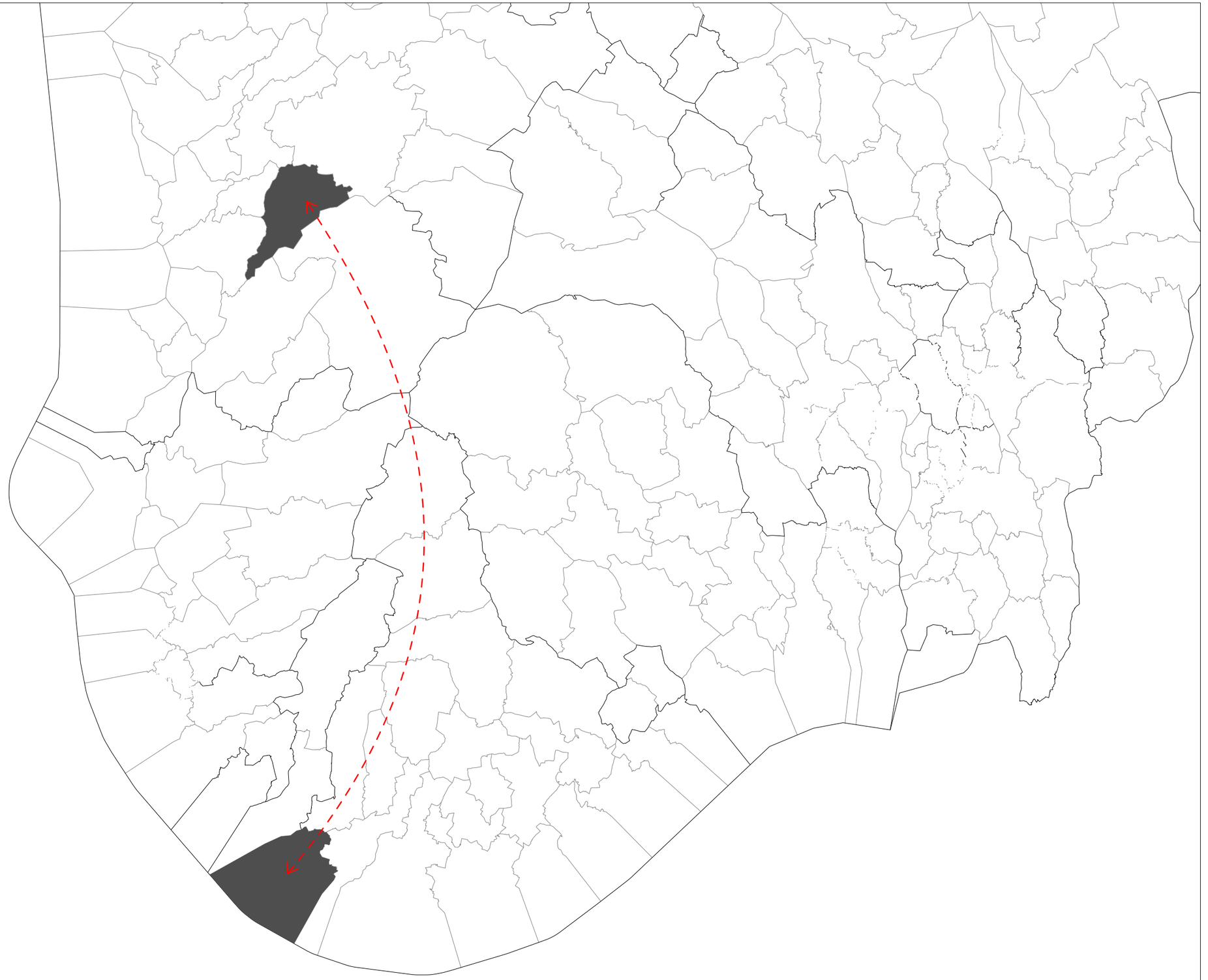
The sketch is traced from *Strandebarmaren : Småbåtbygging i Hardanger*.
It shows how the boat builder Arne Tveit has organized his workshop.
Alot of common traits between different workshops can be found, for instance the presnce of the keel gutter and the helping beam.
The tools are orinted to wood working if the workshop in question is interested in traditional boat building.

Boat Workshop
10/11/2023

1:50

CHAPTER V

a visit to Hardanger fartøyvernsenter



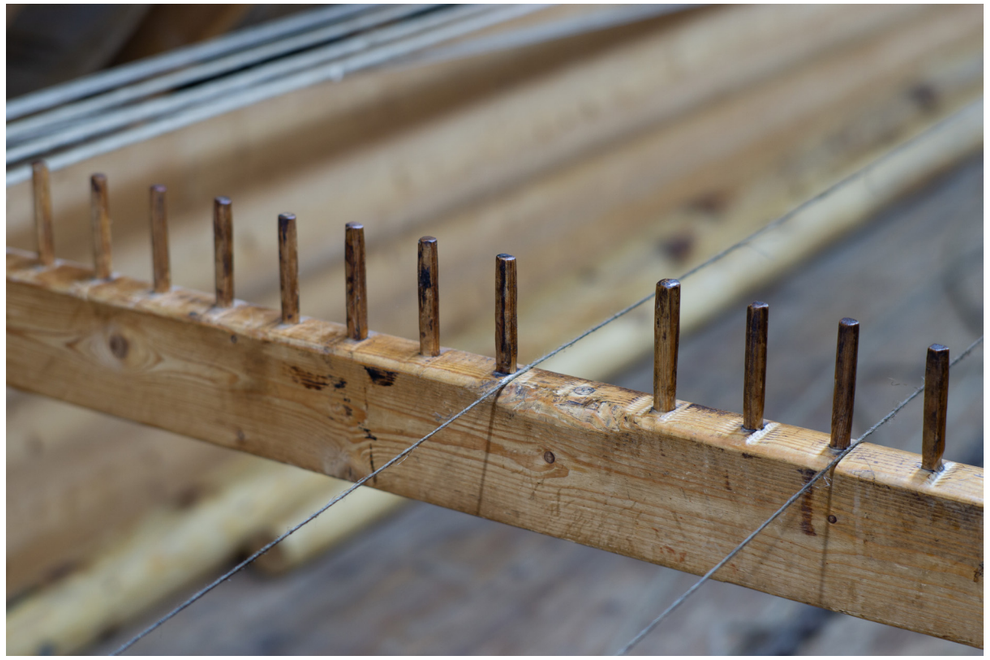
The boat history in Lista connects it to the larger boat building tradition in Norway and sepecifcally the Hardanger region. It was Gier Gundersen (born in 1785 in Hardanger) who broguth the knowledge of boat building to Lista.
He combined the east and west boats into what was to be called Lista boat afterwards.
This inscribes Lista boat building in a long tradition that streches back all the way to the viking age.

Hardanger-Farsund

10/18/2023


Reiparbane
Ropewalk

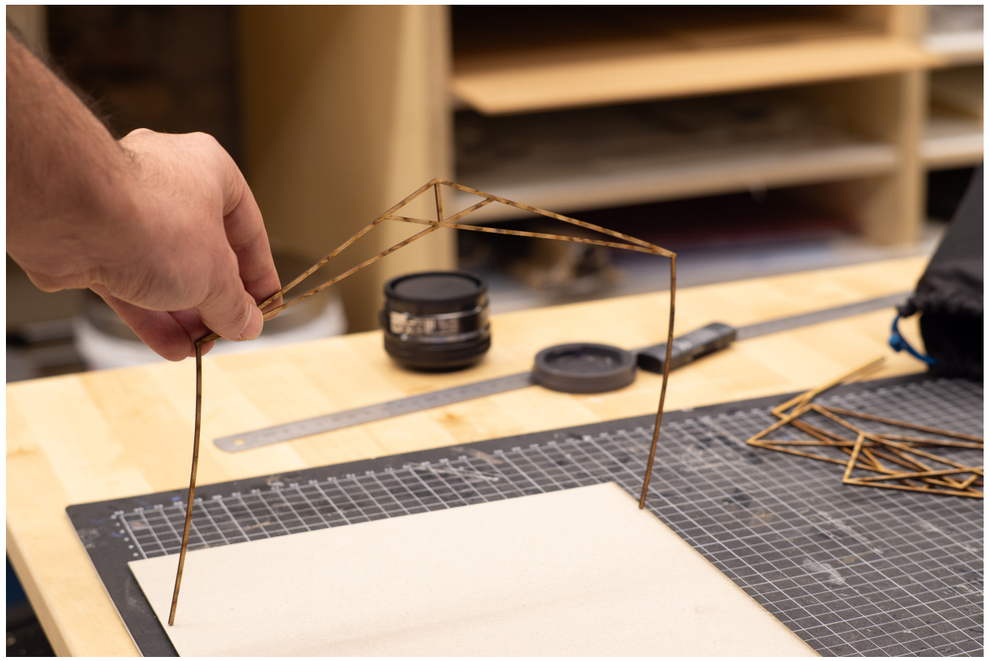

LN-NAA

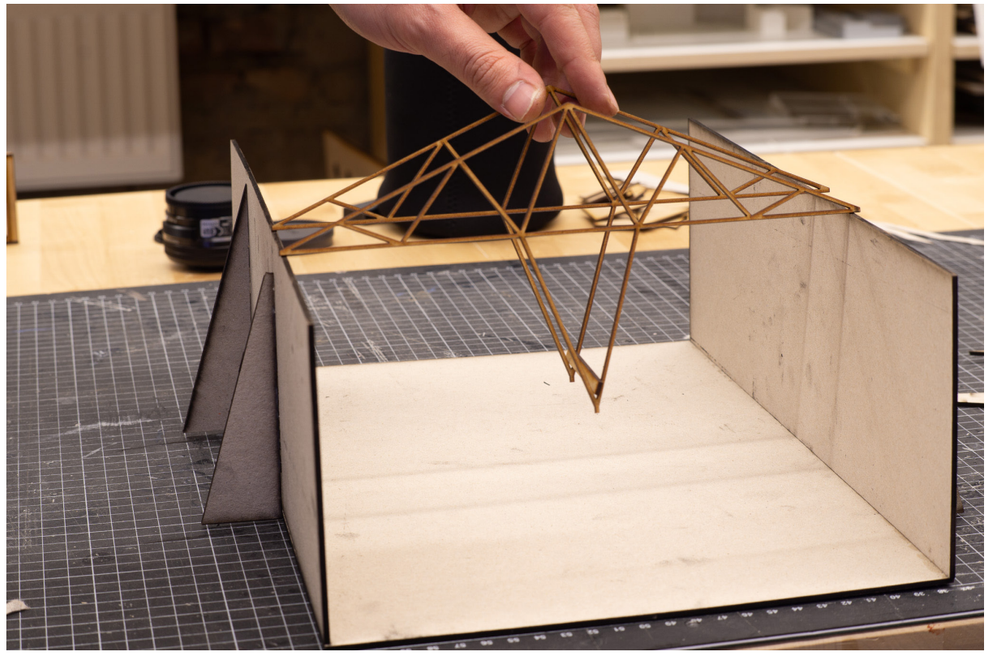


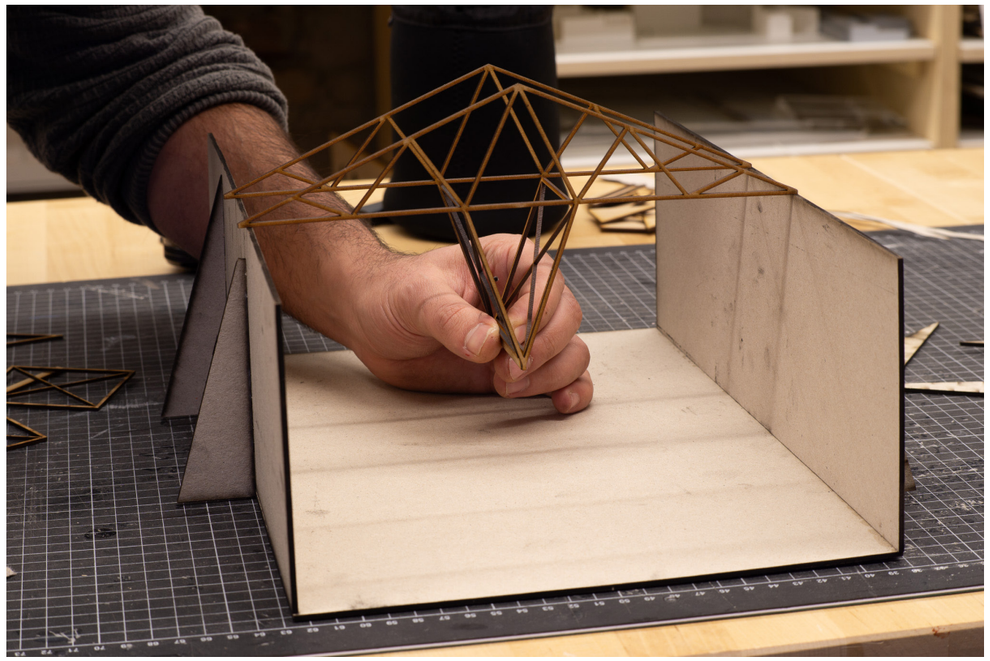

Legging av tau - For å få eit trelagt lind
Reier

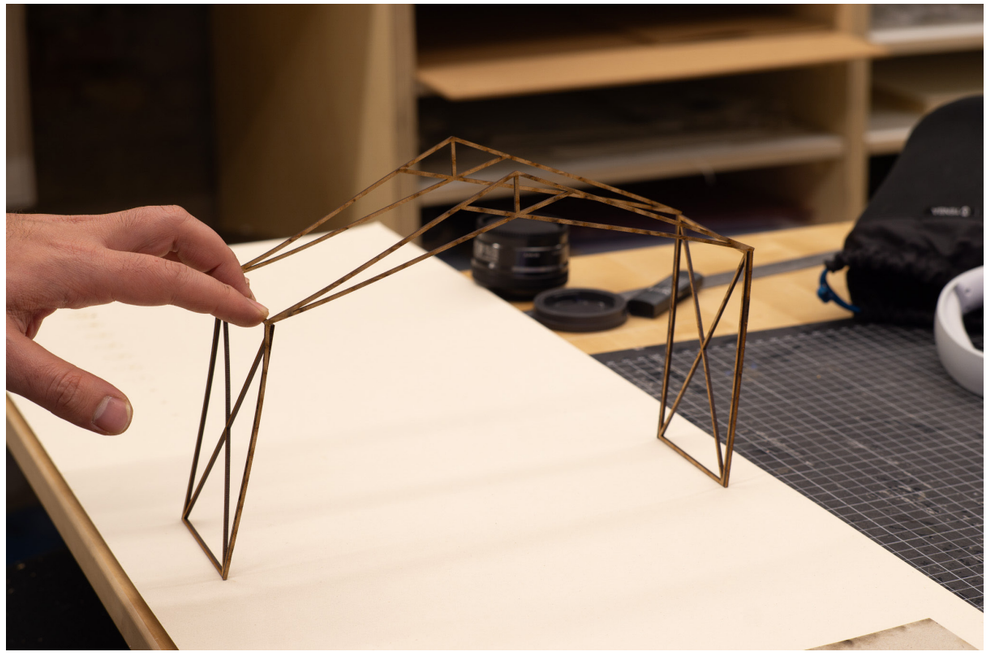
Appendix I

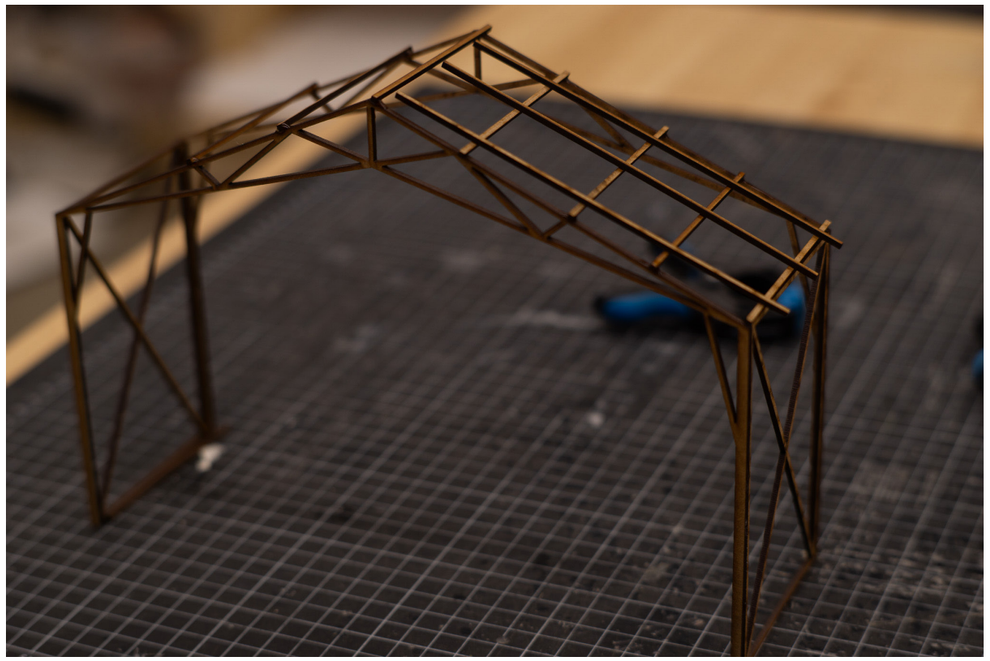
Exploring truss systems

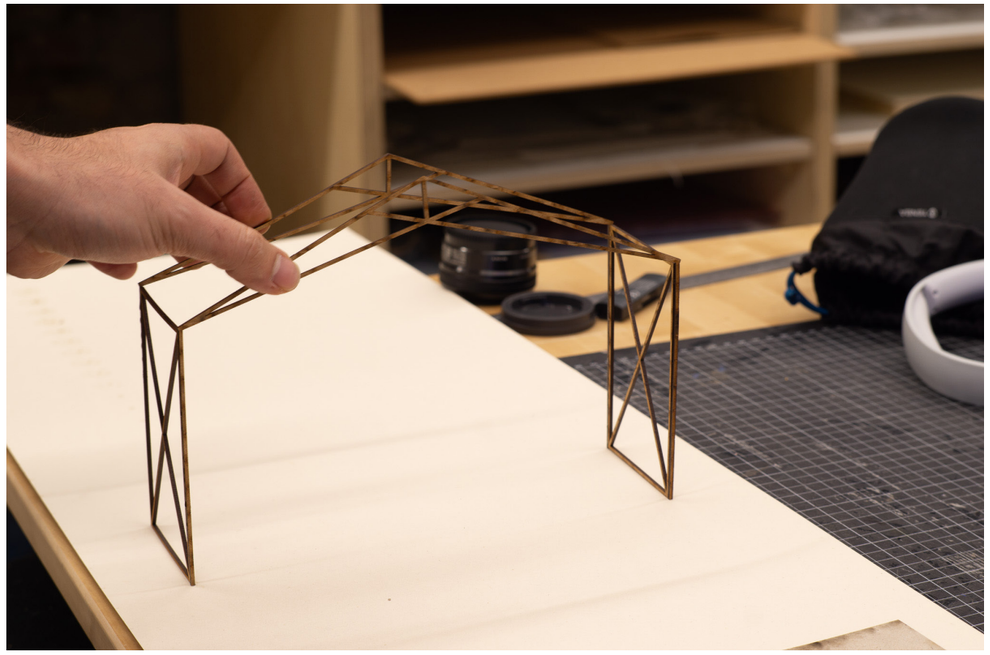


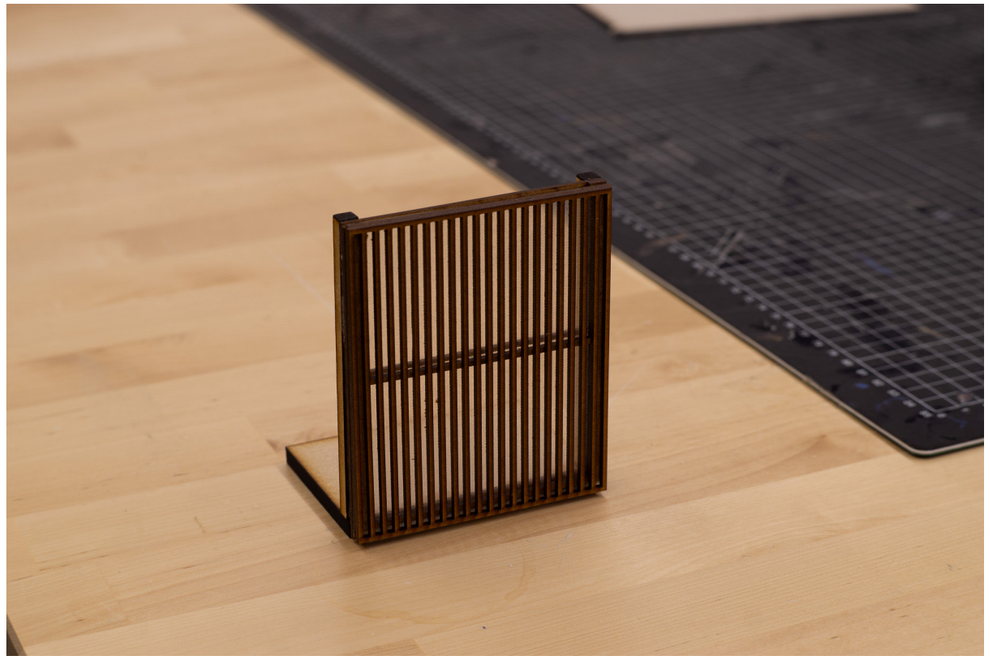


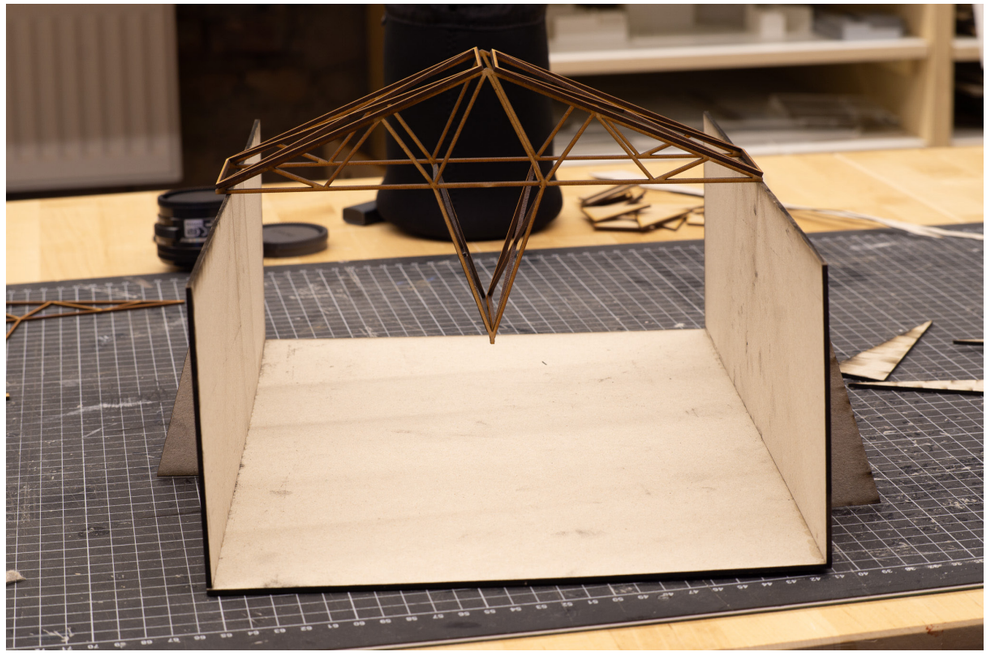


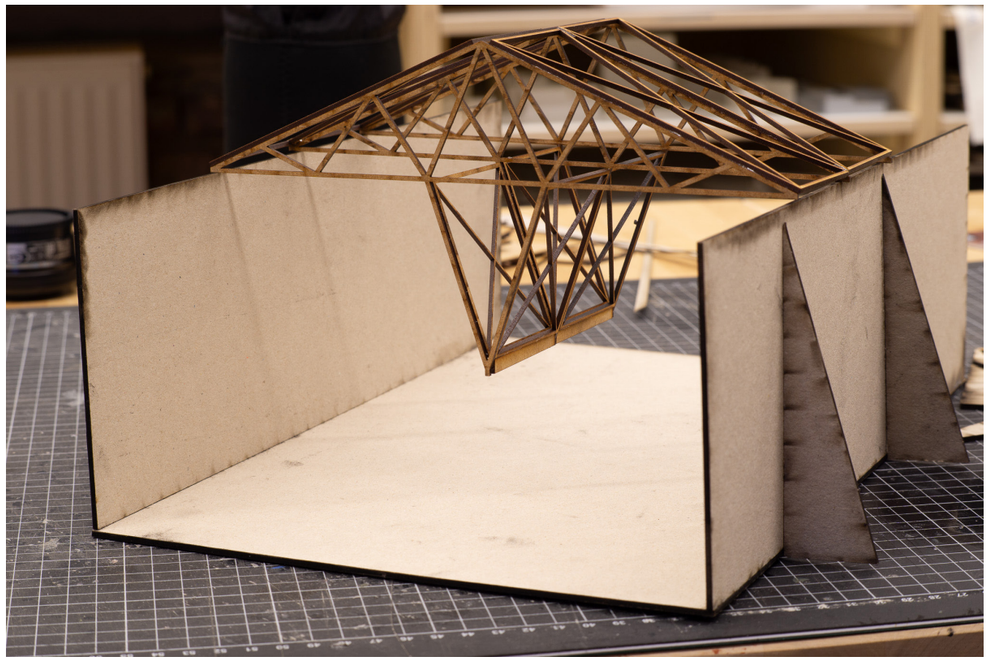


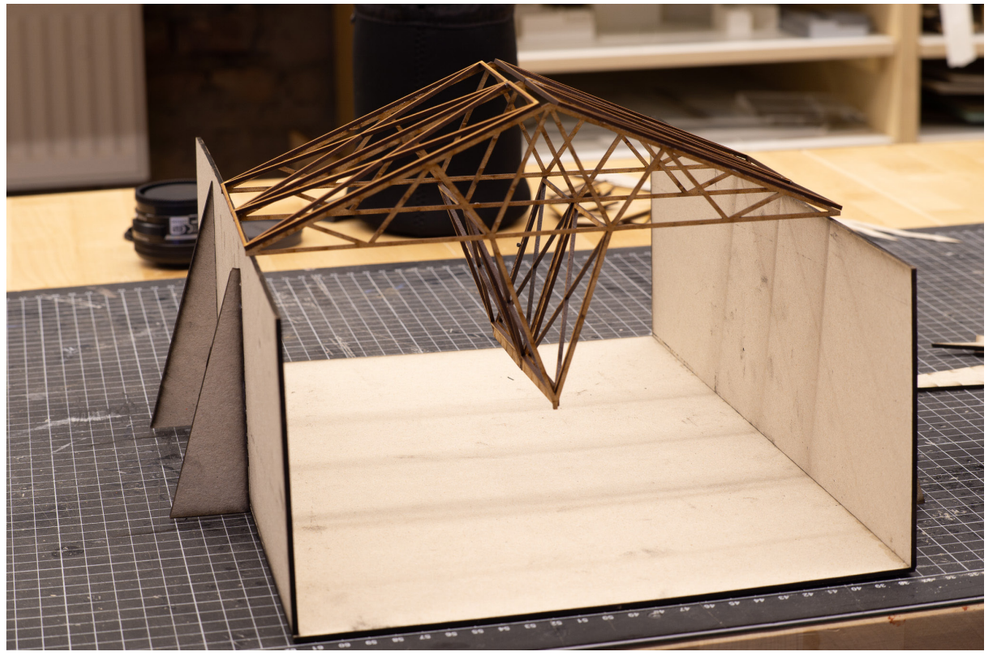


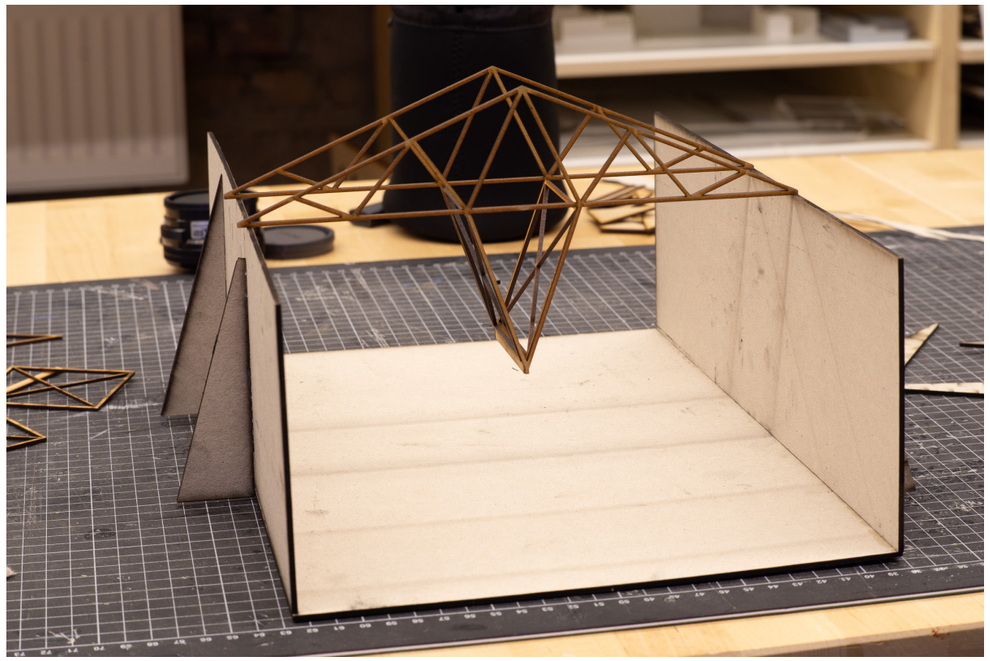








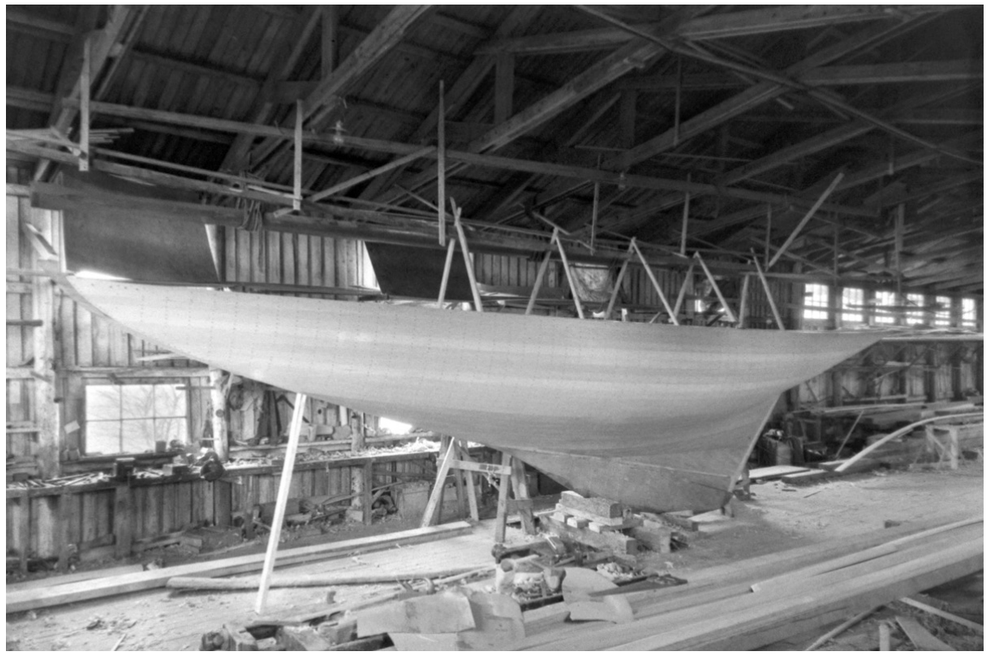




Appendix II

Boat workshops from history

Williams (1950) *Storvik mekaniske verksted i Kristiansund*



Sollem. (1934) *Bygging av seilbåt.*

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My wife Marthine Spinnangr for her unlimited support.

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