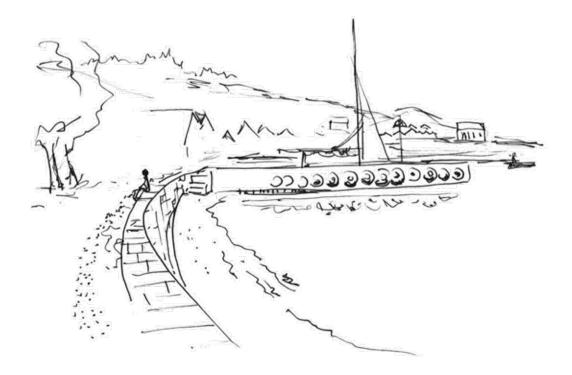
# process

Mina-Matilde Håøya / Maria Højgaard Molden



sketches on site



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Today Fitjar has approximately 3200 inhabitants, where about 1700 of the lives in the centrer of Fitjar. Until the 1970's was most of the islands inhabited, but this is not the case today. In the summer season the islands is used by cabindwellers, tourist, canoes and hikers. Fitjar is a municipality with a lot of islands at the north side of Stord, in Hordaland county. Most of the municipality is a part of the island Stord, with an addition of 380 islands, sheers and islets towards Selbjørnsfjorden. The main road at the west coast of Norway is E39 and it runs on the east side of the island, Stord. On the west side, RV545 goes to Fitjar center. The roads are connected by ferry connection, Halhjem-Sandvikvåg, towards Bergen, and underground tunnel further south on the E39. To get to Fitjar center, drive 7 km along RV545 from the ferry in Sandvikvåg. This location makes it easy for further transportation.

Historically the municipality extends back to the Viking Age, and people have lived in Fitjar since the Bronze Age. Håkon, den gode (the good one), who was the king of Norway from around 933 fell in the battle of Fitjar in 961, and he also had his royal farm there. The municipality emphasizes the cultural heritage from this time and it's plays a big role in Fitjars history and their identity. All the way back to the Bronze age the inhabitants has been farming and fishing and hats leads us to the next diagram about the nature of Fitjar.

The will to create something now is a old habit for the people of Fitjar. People from the western coast of Norway is used to be independent and self sufficient. It was a long travel to the main land and even longer to the capital in Oslo. They had to survive on the own out on the islands. Therefore they have always had this will to create and start with new things. For example the largest windmill park in Norway. There has been a lot of new small businesses in Fitjar municipality the recent years but there is missing a larger strategy. A small town like Fitjar needs a larger plan for the placement of new stores and businesses. If all of them are placed in the outskirts of down town Fitjar it will result to a very quite town.





The local farmes, form the district, drying the hay. Photo: K. Knudsen

Historically small towns and villages has always been dependent on bigger town. Fitjar transported and sold most of the local resources to Bergen. Here you can se a picture from the harbor of Bergen in 1872. All the small boats are from outskirts municipalities of Bergen. Photo : k. Knudsen

Krago is a peninsula 5 minuttes from Fitjar centrum. 400-500 summer cabins is completed since 2011 and there is several new cabins planned.

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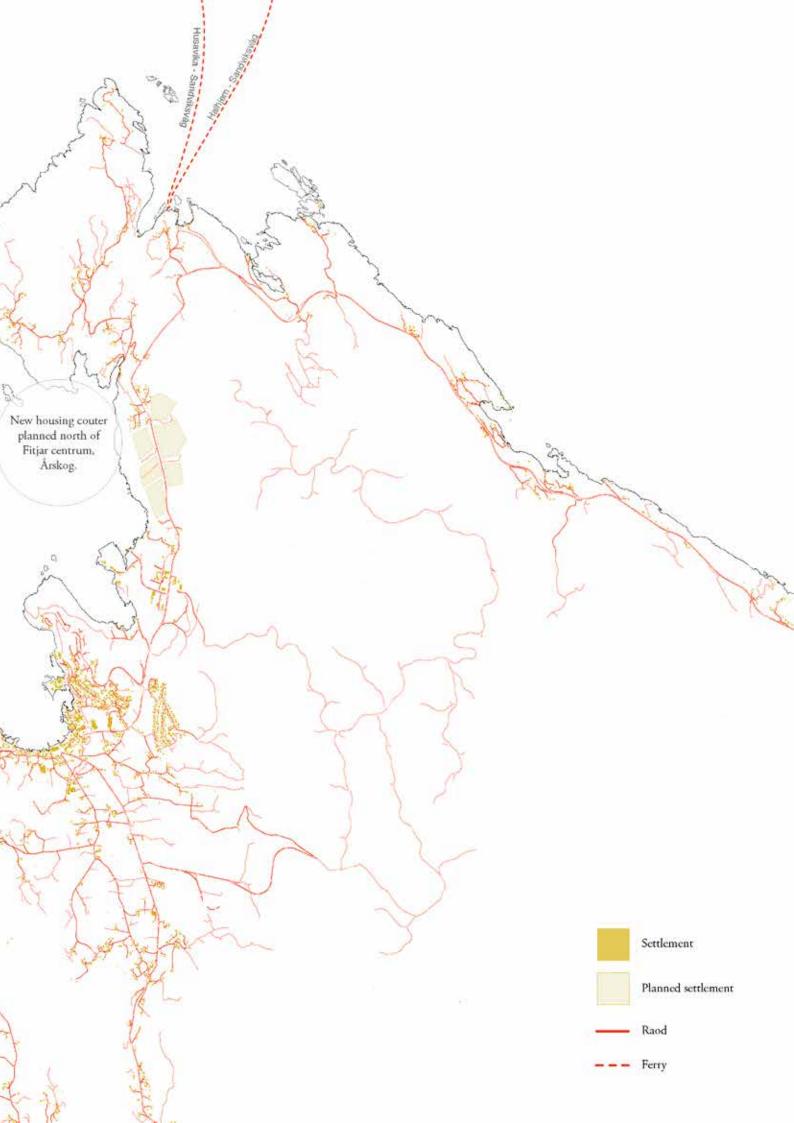
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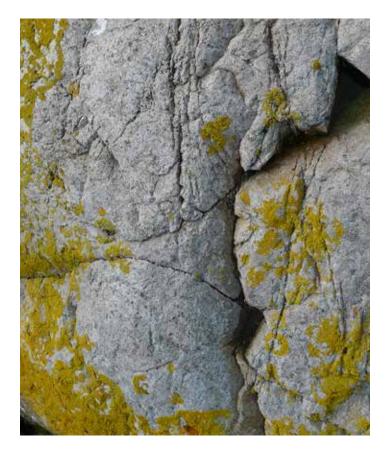
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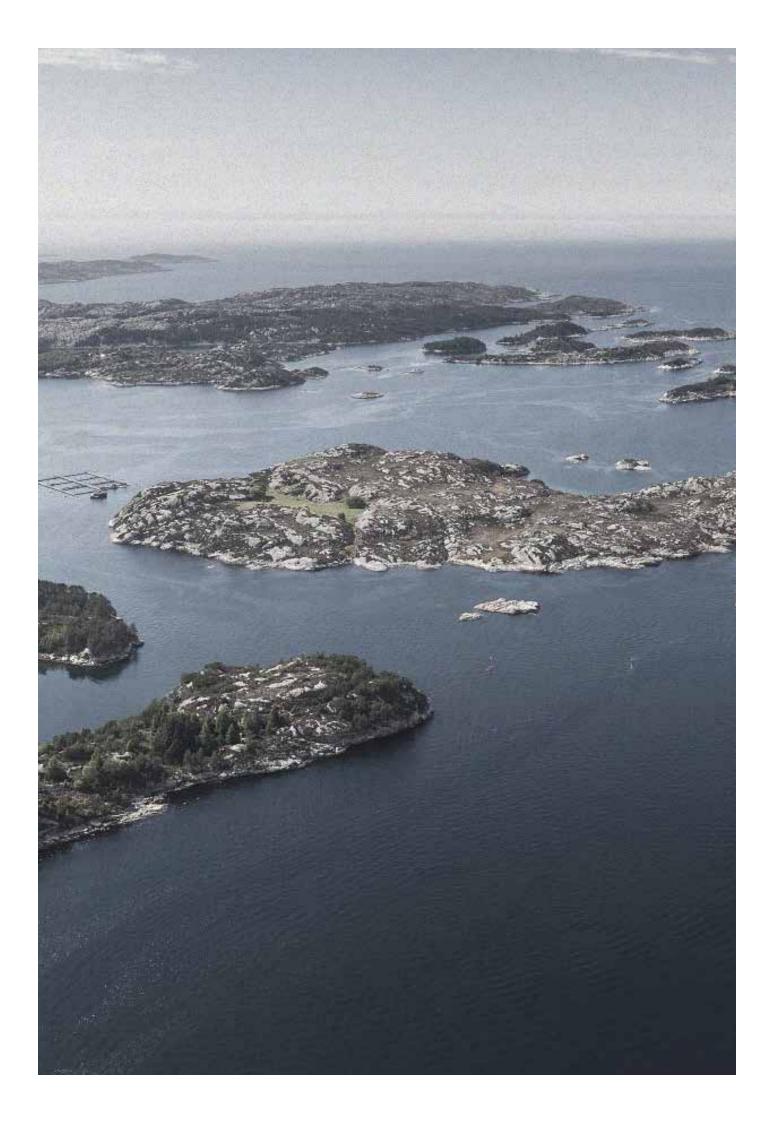
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A few movements in a glacier 15 000 years back laid the foundation for their good cultivation soil i Fitjar even though it's far out to the sea. The name Fitjar is an old farm name from the Norwegian word fit, grønn bakke mot sjøen (green hill towards the sea).

Bare granite rock forms the islands to the west, whereas the flat eastern part is transformed gabbro covered by arable land and fields and the northern part facing Tynes is Tysnes gabbro covered by birch, oak and pine forest. the terrain covering the gabbro rock has ideal conditions for farming. The coastline forms a shifting landscape, changing from rocky beaches, cliffs and cultivated land. All the islands works as a protection against the hard coastal climate.









Climate

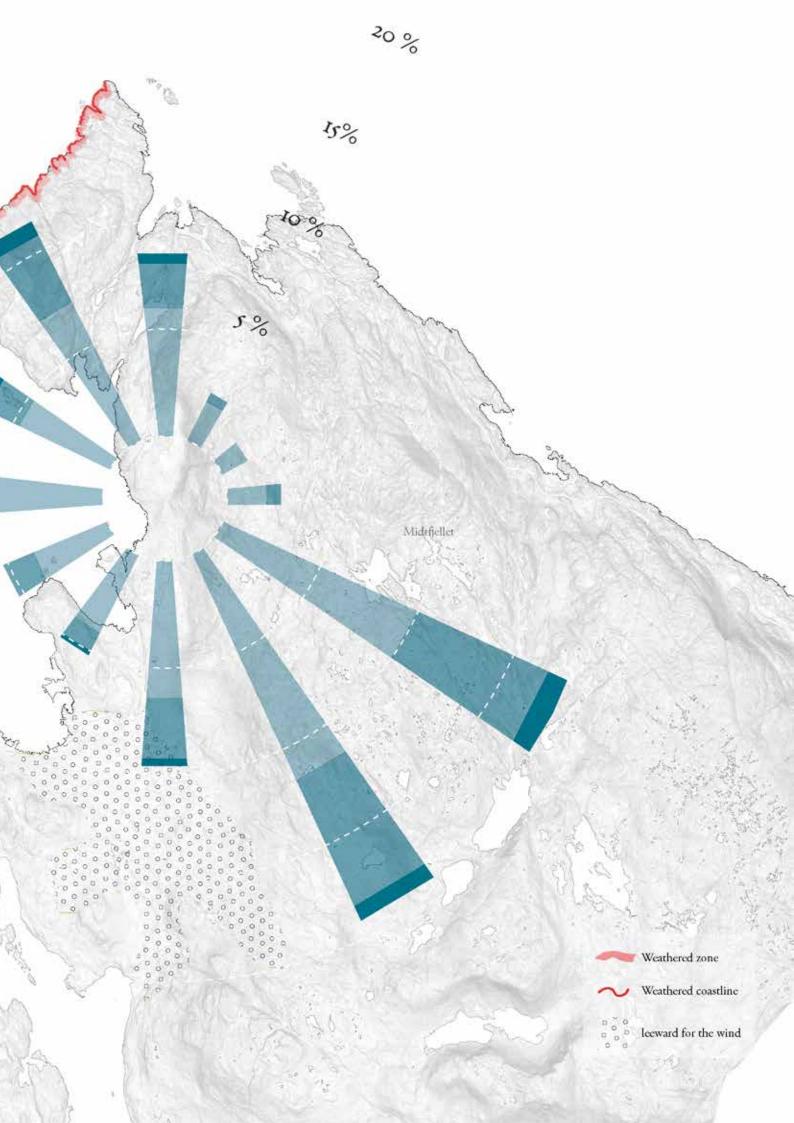
The whole coast of Norway has a strong western wind but the 380 islands works as a protection coat for the mainland of Fitjar. That's why there is a milder climate inland with less wind and warmer temperature then at the islands. Due to this conditions; staible climate, closeness to the sea and nutritious soil Fitjar has a lot of local resources.



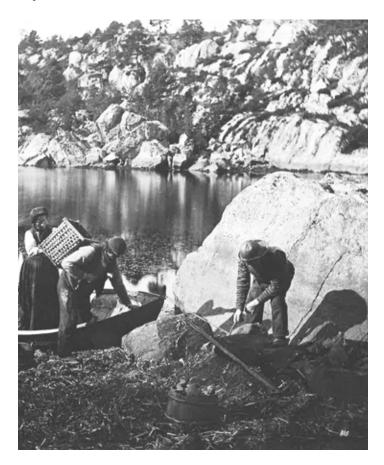
Fitjar in a cloudy sky own picture







Historically Fitjar has been a agricultural municipality. They took a part of fishing herring around of 1890 but it wasn't up to 1960's the fishing industry became a significant part of Fitjar's local production. The potato from Fitjar, Fitjar-poteten, is known for its superb quality. In 17th century Fitjar was the main supplier of potatoes in the near region, also Bergen. In recent time the industry has taken over but the municipality has a growing community with farmers. Today there is a tendency for smaller local businesses that produces; vegetables, berries, cows, angus ox, sheeps, pigs, chickens, eggs, milk, bear, soap and more.



In the old days the locals were farming on all the small islands that had soil for vegetables especially potatos. The potatos from Fitjar was known for its good quality and Fitjar was the main contributor of potatos to Bergen. Photo: K. Knudsen, 1872





locally produced plum and raspberry



Potatos from Fitjar



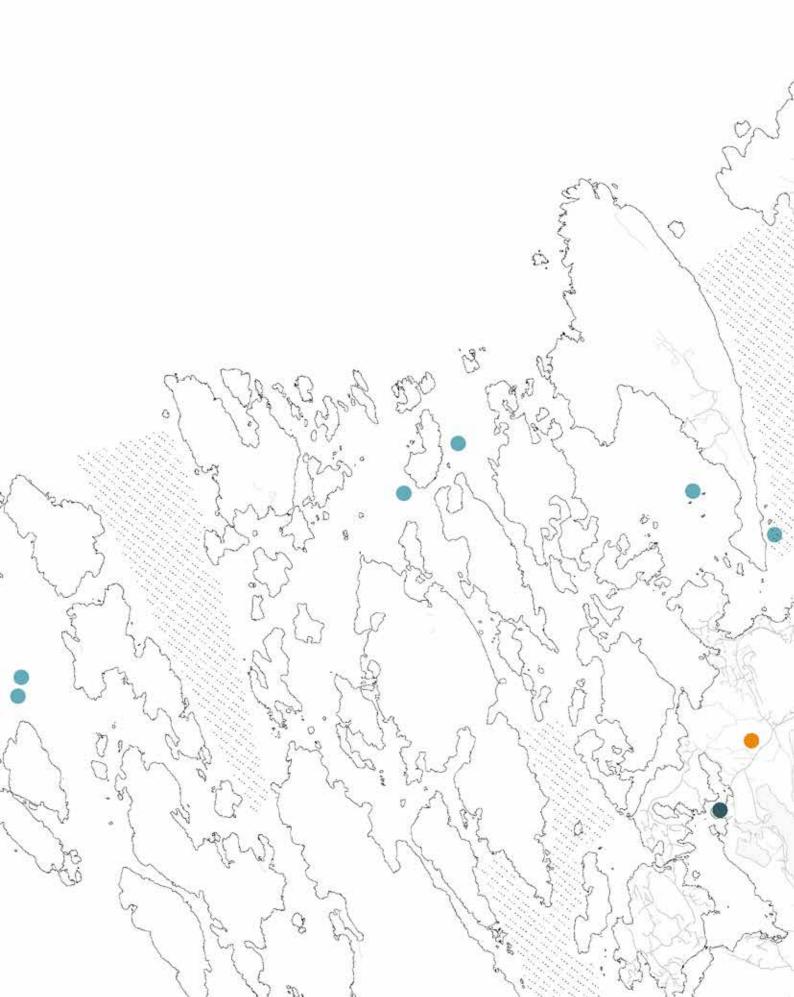
Hogste egg from Fitjar

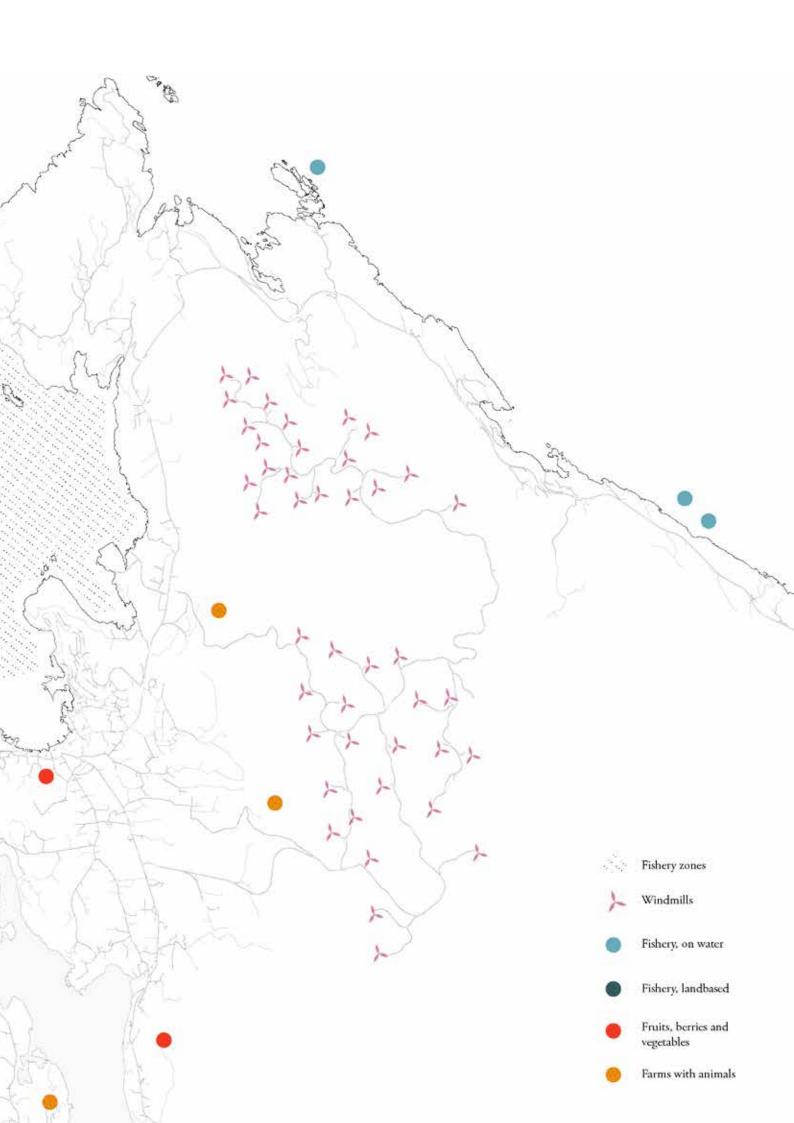


Lokal pigs



ox from Fitjar Gardsmat





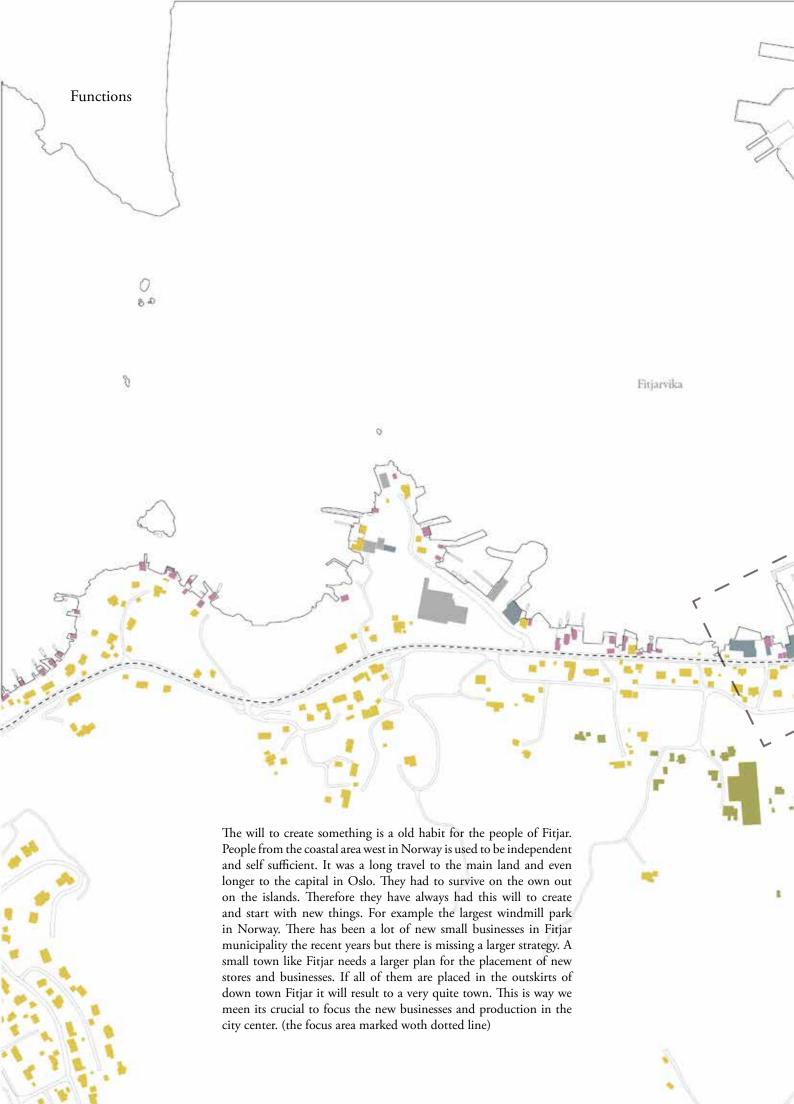
The Tide

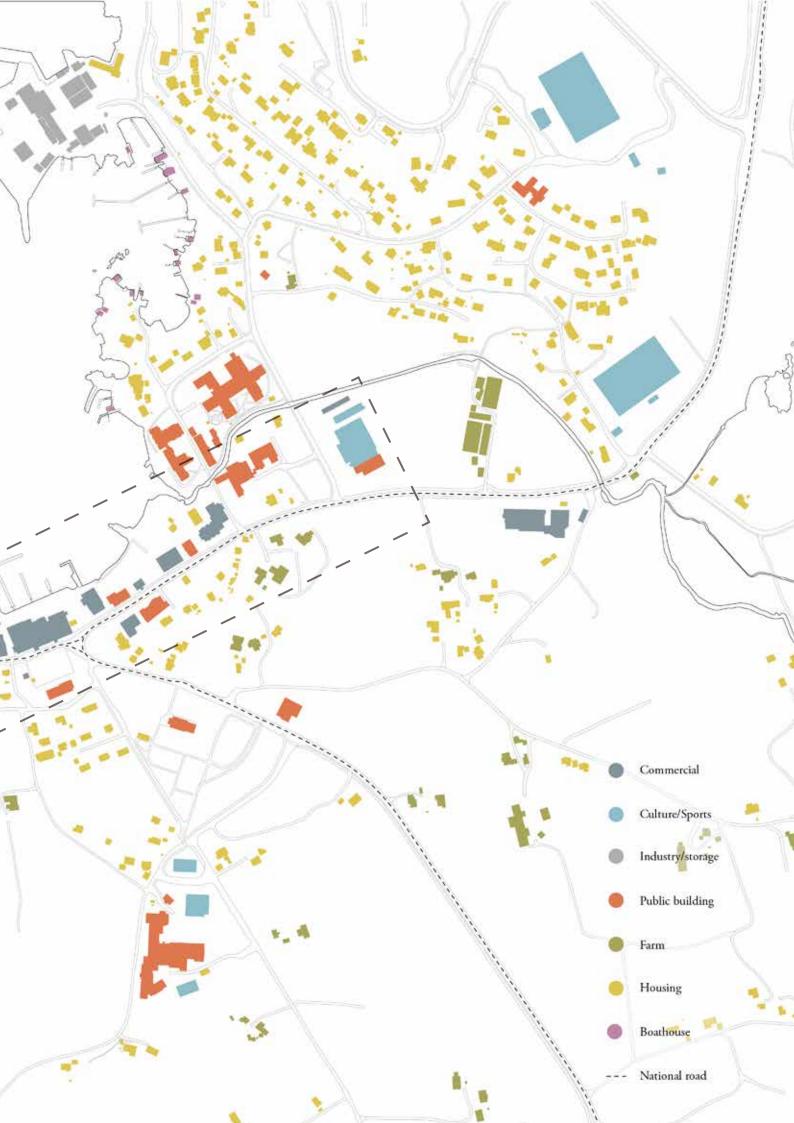
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261 Safety class (climatised zone Tek 17)	-
209 High water with 1000 years return	
146 Highest astronomical tide (HAT)	
110 Mean high water 73 Mean sea level (coastal line)	
o Cart Datum	
-28 Low water with 20 years return	

One of the challanges by building along the coastline is the tide. In Fitjar the tide varies around 100-150 cm near the shoreline.



The shoreline of Fitjar. Photo: own pictures





### City production



Too place the production remote by the sea could be ideal if you don't take into account that the harvest season is only 4 months. This is in fact the reason why there aren't any permanent production facilities for seaweed in Norway. They have to depend on something.





If the production is placed in the small towns, they could depend on each other. The production on the towns needs, resources and functions and the town could benefit from creating new jobs.

In the city there is also the possibility to open up more for the public. To show and include not shut out. The facility could be a part of the cultural program of the small town. In our case Fitjar.

"In New York they allow production, logistics and transportation to be places side by side with cultural industry and services."

Grete Lyche , arkitektnytt 16.05.2017

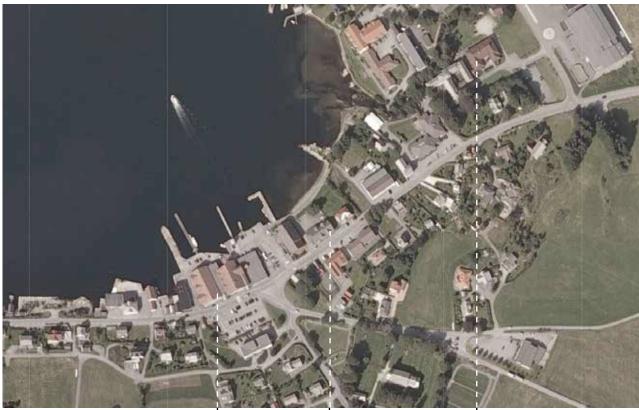


Anton Tangen had a store that was know and loved by all the locals and islands dwellers. The facility was to small stores and some storage and boat houses towards the waterfront.

Back in the days our site flourished with green vegetation.

The history of Fitjar high school goes back to 1877, then as the school of the municipality and was known as the , husmorskole (housewife school). From 1933 it became a high school, but is still to this day called , *husmorskolen*.

1969



Odd Victor Larsen bought the store and planed the ekspantion, that is here today, in the early 80's. It was finished in 1988.

Fitjar youth house made a big rehabilitation i 1985 has stood like that since. In 1999 the high school of Fitjar got a new extention to the school fasility.

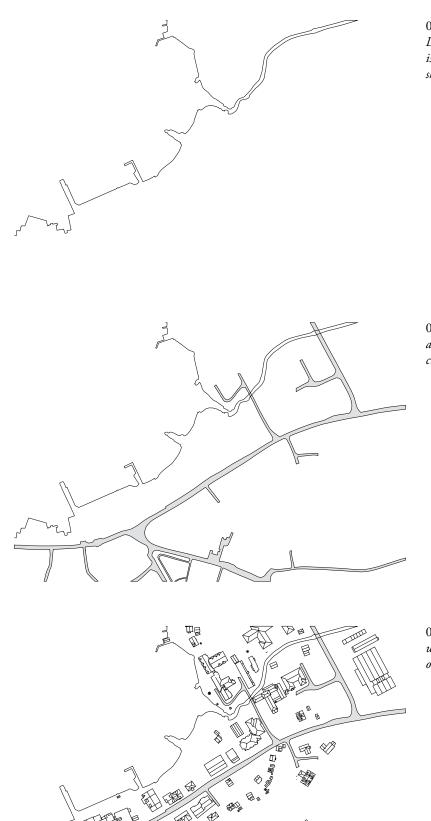
#### 2008



From 2016 Engesund fiskeoppdrett has organised boat trips to there facilities on water from this storefront.

From 2016 Engesund fiskeoppdrett has had boat trips to there facilities on water from this storefront. Today Fitjar high school is a thriving school with focus on health, design and restaurant and food health. The school exists of 230 students og 50 employees.

2016

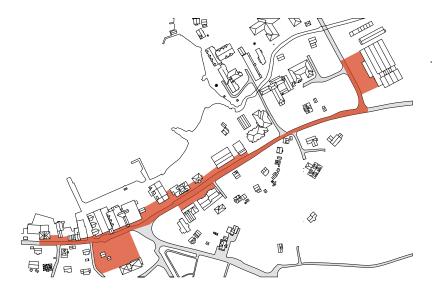


01. Waterfront Down town Fitjar is situated along the shoreline

02. Road and the main road close by

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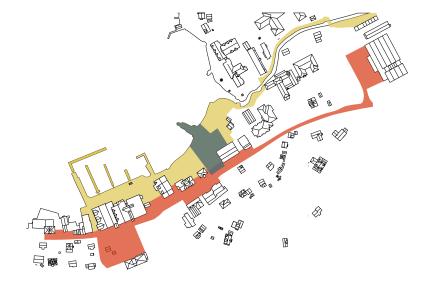
03. Settlement with the settlement on both sides.



04. Activty The buildings are facing the road with a clear backside towards the sea.



05. Potential When arriving from the sea the town gives the impression of turning it's back on you. The north facades dosn't have any main entrences and there is a lot of parking space and waste containers.



06. Reclaiming the waterfront We propose to reclaim the shoreside. This is a forgotten or unused potential and could be a vital part of the futher development of Fitjar. From the street and the sea





Hairdresser - Duo Hårstudio

Bus stop

Youth centre - Fitjartun

Apartments for rent - 2nd floor

Flower shop - Galleri Flora

Cafe - Kaffiståvo

ATM

Parking

Larsen Multihandel

Post

Supermarket - Spar

Parking



Shop - Husflidkroa

Site

Commercial - Knitting shop

Commercial - Euronics

Health and social care services

Hotel - Fitjar Fjordhotell



two beautiful threes

Harbour

Delivery zone for goods

Parking

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## Qualities





01. Small pathway by the waterfront and up along the river.



01. Small adjustments to signalize where to go.



02. The vegetation creates a filter from the waterfront. Hideing the backfacades of the buildings.



03. Two beautiful maple threes near the site.



04. Thoughtful details. Selution for the tide and how to meet the water.



05. Out on the dock there is a simple table and bench so your eyes can wonder towards the sea.

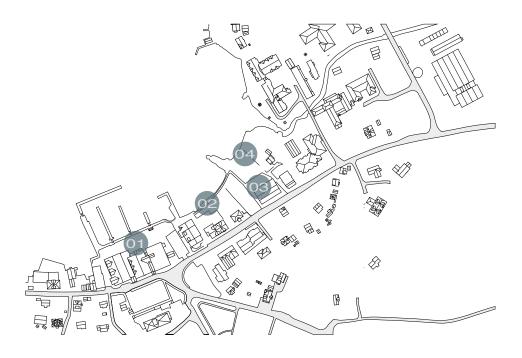


06. A new play ground by the cityhall is always used by local and visiting children.



07. In Fitjar there is a old tradition with stone walls dividing the farmland. Here there is a new wall towards the sea.

Potentials





01. When arriving from the sea there is a lot of wate containers and parkingspace. It fells like the back side.



03. The buildings of Fitjar has often a clear back side to the water. We suggest to make a plan for repaint some of the buildings, clean up the facades and/or plant new threes and vegetation to make a filter from the sea.



02. The local pathway along the waterfront has more potential both for activity and planned design.



04. When walking along the waterfront pathway its is sometimes unclear which way to go. We suggest small interventions along the pathway with signs and pavings to show the way.

## Mobility waterfront



The new porposed greenery is marked with blue and the backfacades is marked with black.





We wish through a simple strategy to improve Fitjars appearance as a more coherent town by adding new vegetation and restore or repaint some of the facades down town. With simple measures, like using paint with traditional colours, we can improve the impression of Fitjar.



The gaps

A characteristic caracter of down town Fitjar is the gaps between the bulidings. They preserve the view from the street. The distance from one storefront to another feels long to be an active street.









gap 1

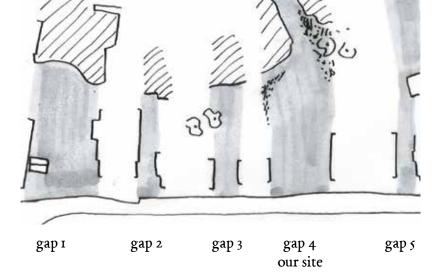
gap 2



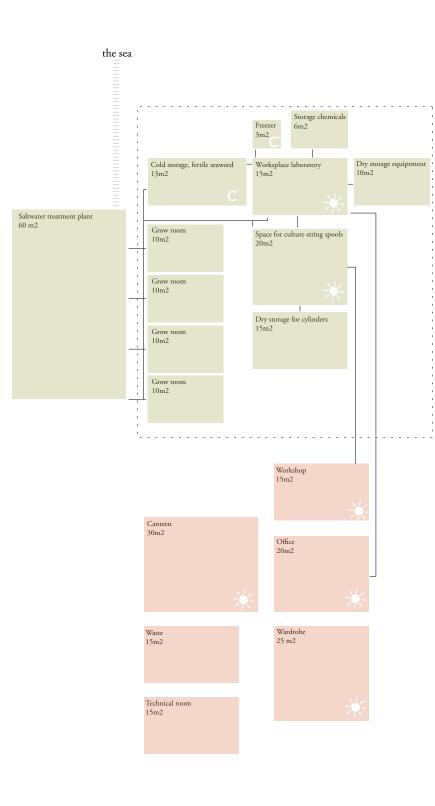


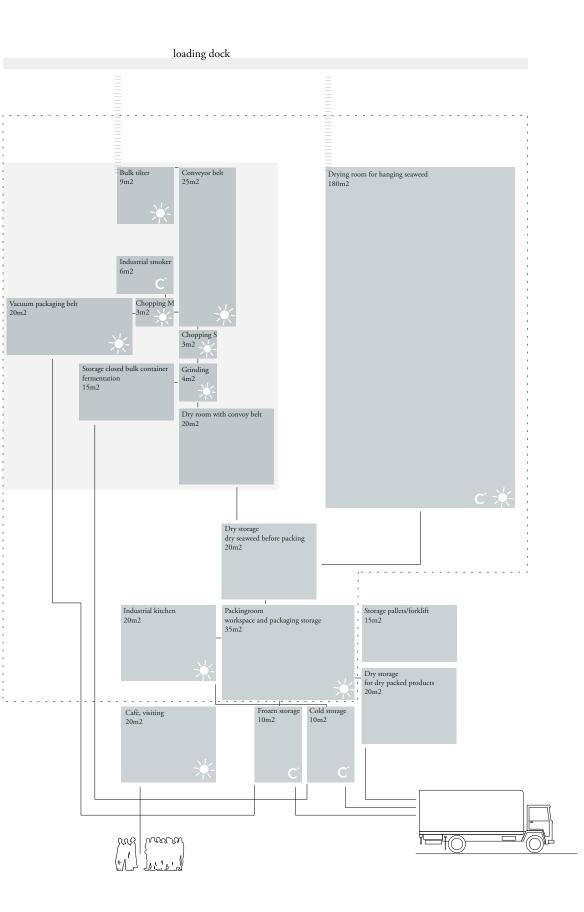






Flow











#### Fishery from sea to land land to facility fish filleting processing smoked dried fresh frozen industrial kitchen packing / Vegetables storage from road to facility rinse processing cut fresh frozen smoked dried fried industrial kitchen

#### Fruit and berries

from road to facility rinse processing fresh frozen dried cooked - juice and jam industrial kitchen

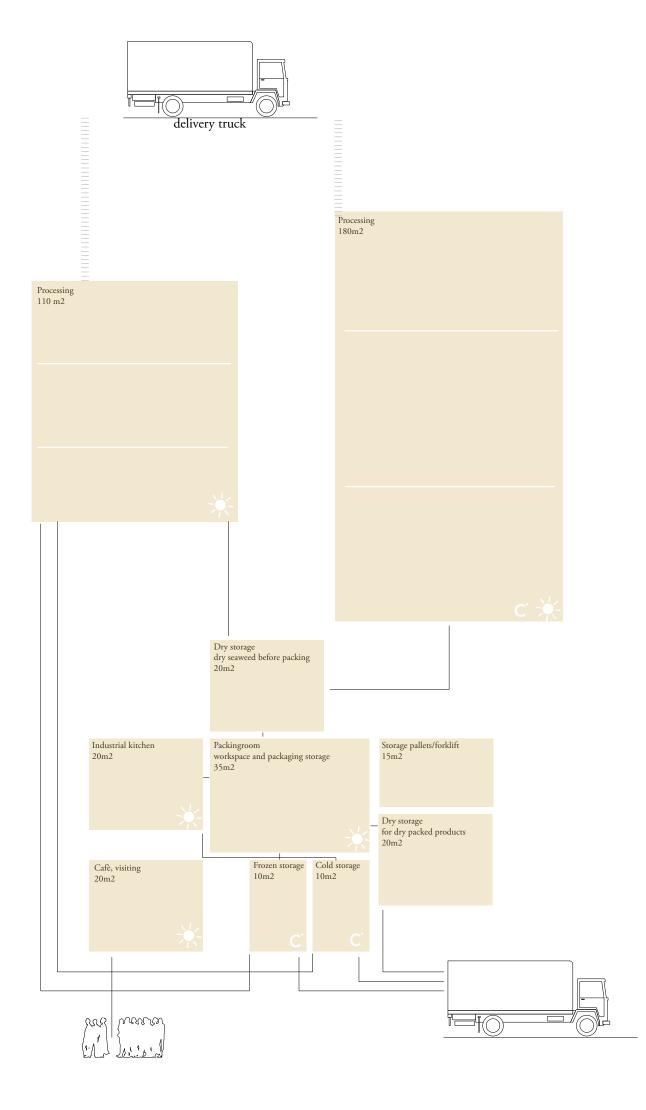






Technical room 15m2

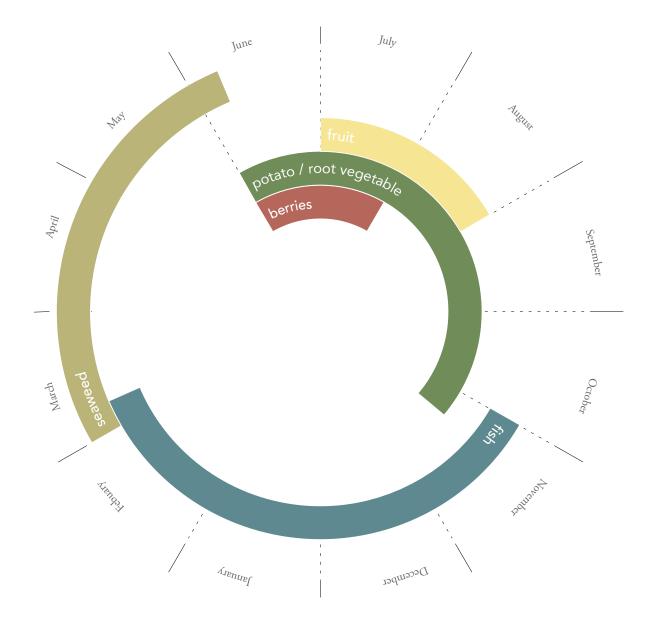
Waste 15m2



## Seaweed cycle



### Local resouces cycle



# Fishery

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Fishery The west caost is known for its rich and diverse coastlife with a lot of good quality salmon, cod, cusk, trout and pollock.

## Vegetables

Near by the fjords and on the islands of sunnhordaland they have always been growing vegetables in the moist and nutritious soil.



Fruit and berries This area near the coast and fjords, with its nutritious soil and moist climate is ideal for friut and berries. Sunnhordalands is known for the delicous flavour.



Seaweed and kelp The currents with fresh water from the Atlantic ocean combined with even sea temperature makes the west coast an ideal environment for growing seaweed.

10 km

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Haugesund

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FITJAR

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Bergen

1

1



#### Fishery

from sea to land land to facility fish filleting processing smoked dried fresh frozen industrial kitchen

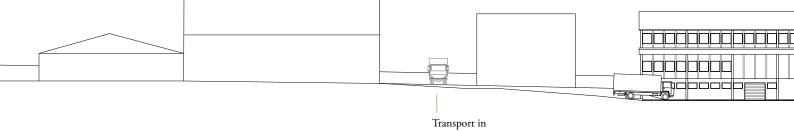


Vegetables from road to facility rinse processing cut fresh frozen smoked dried fried industrial kitchen



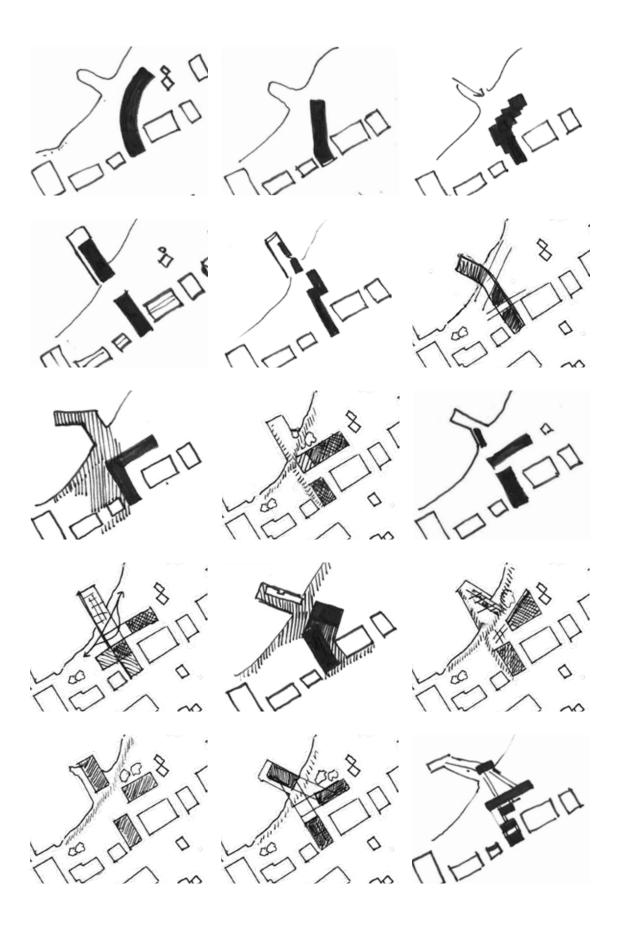
#### Fruit and berries

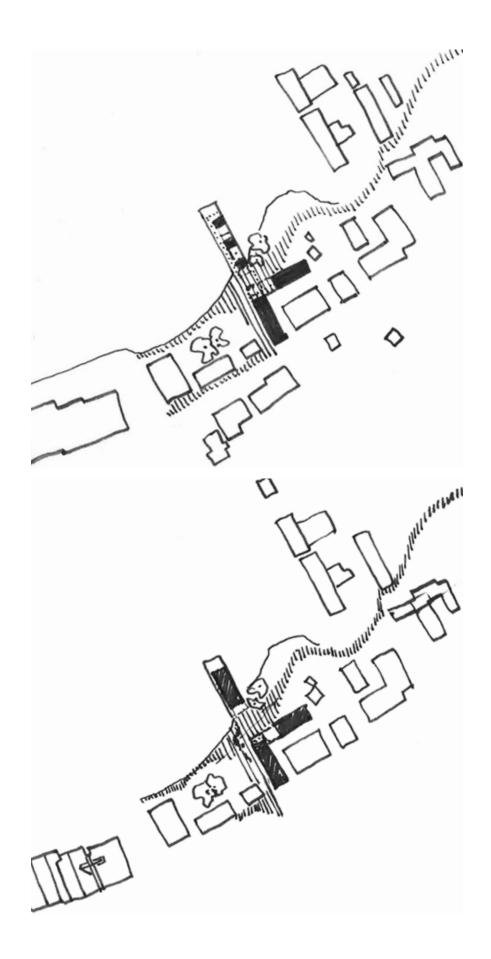
from road to facility rinse processing fresh frozen dried cooked - juice and jam industrial kitchen



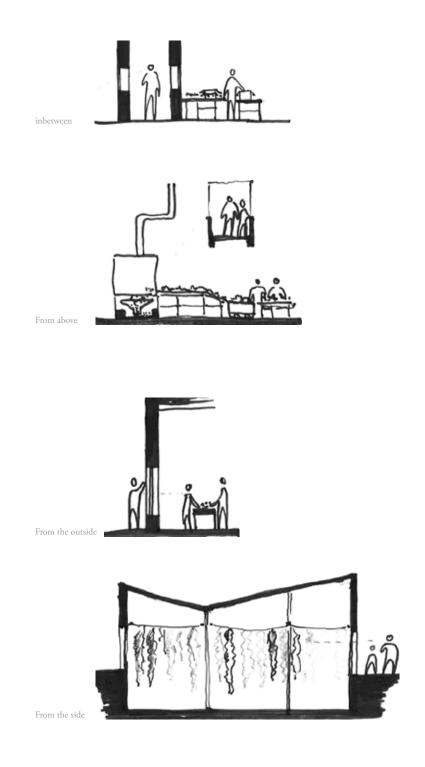
When you design a processing facility of any kind, the transport and logistic becomes a vital part of the project. We have studied different transportation alternatives. we landed on alternative 4. where we can use the existing driveways and connect them through the existing loading sone behind the Euronics store. as well as we would like to preserve the green area southwest for the padestrians.







## Show and visit the production



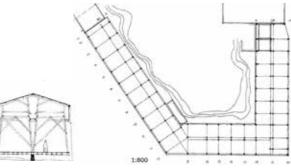
Hjellenes notbøteri



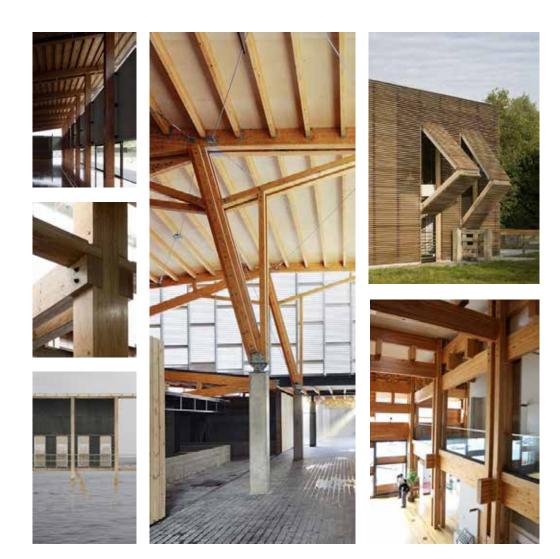


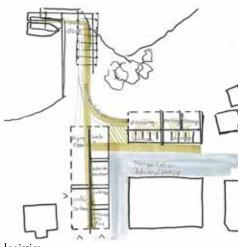




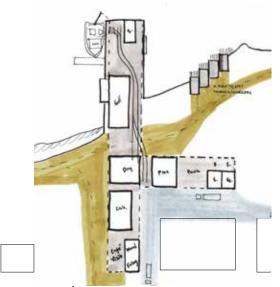


*Sjøbu* in Fitjar

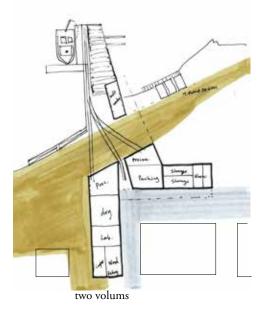




logistics



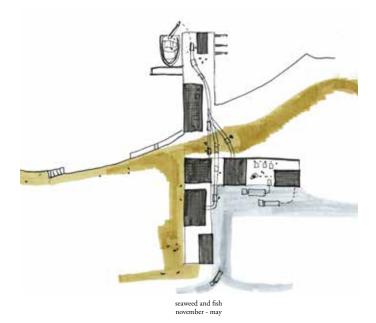
scattered



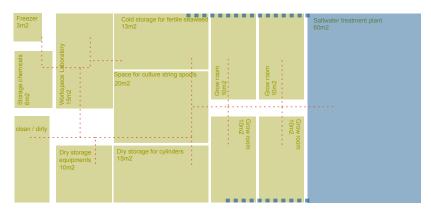
Here we got some alternatives of how we can organise the different functions both internal and external. we have studied witch functions should relate to the active side by the waterfront, and witch is more enclosed around the transportation zone. the cafe, drying room and processing should be located towards the seafront because they are more active functions.

we have studied two concepts inside this . one where you have a structure that is more open with halv climatised zones, climatised zones and fixed rooms for the specific functions as a laboratory or processing hall. we could say the functions are connected by one roof.

The other is a more compact solution with two enclosed volumes.

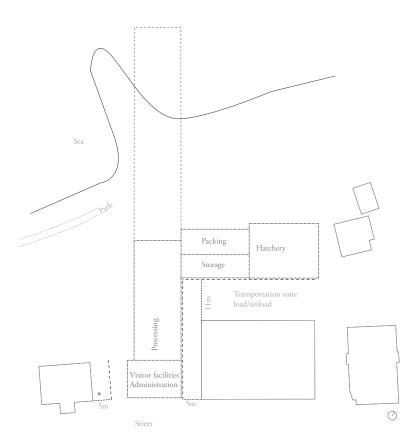


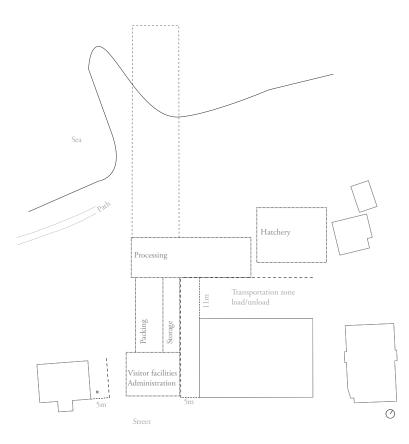
> vegetables, fruits and berries june - oktober

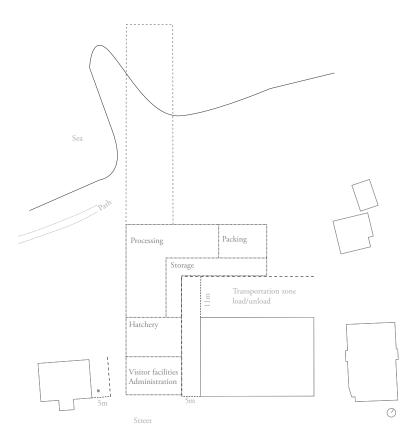


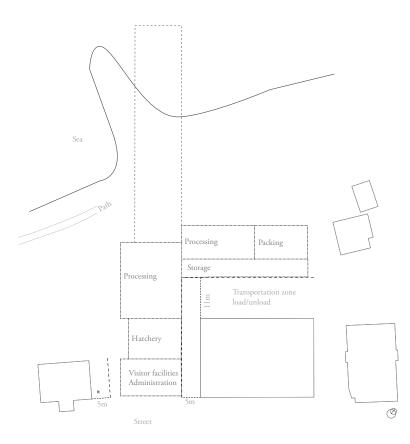
This logistical plan of the hatchery is missing the cronical story of seaweed and how you would look at the different stages of the seaweed production.

The fresh water comes in to the facility. Passing the fertile plants, that is imfortant for the spores, you would turn to the lab and spools room where the spools gets prepered. Then you are walking by the growing rooms with the high sylinders the light from the inside glows into the koridoor. From here the spools are tansportet out to the sea for futher growth in 3-4 months.



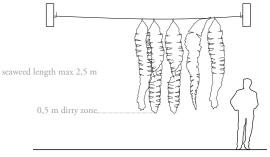




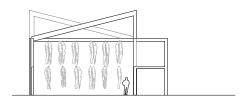


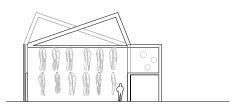
## Drying of seaweed

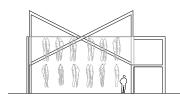
length between suspensions max 5 meters

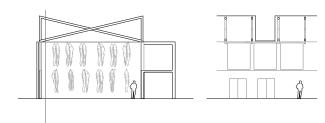


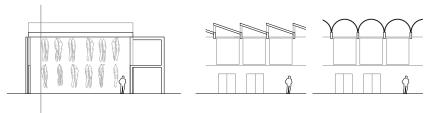
hight requirements for drying seaweed 1:100









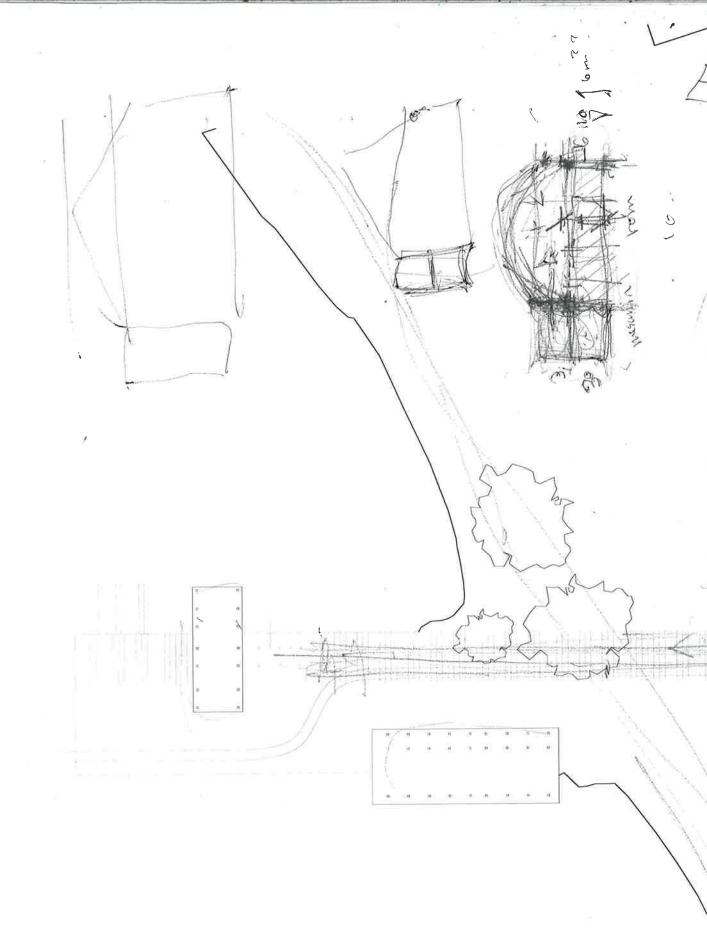


section studies of the driying hall 1 : 400

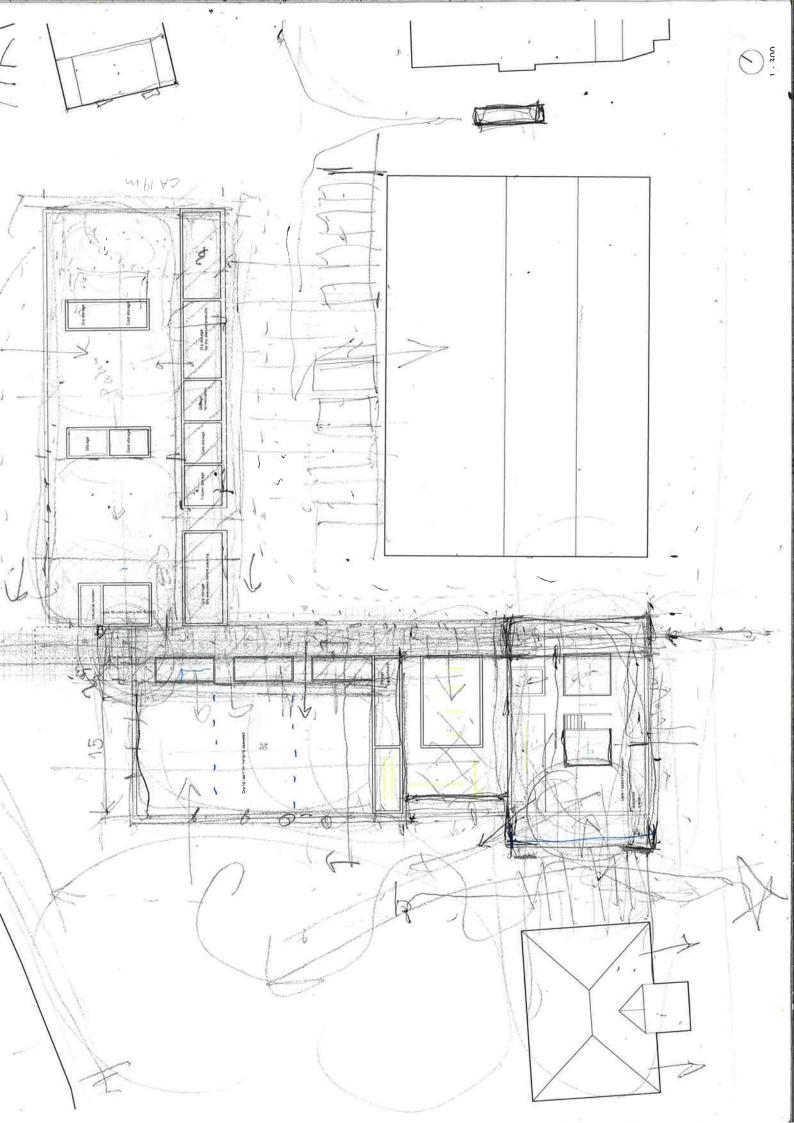
The story of Fitjar )00 000 )00 000 900 1700 1800 1900 The plundering and trade . The fisherman earned a Herring became more Herring became more profitable in the 1890s. The industry was gradu-ally modernized through new fishing methods and larger motorized vessels that could follow herring along the coast. during the Viking era undoubtedly led to great great amound of money from fishing herring. wealth ECONOMY As early as in the 1200's, fish was eksported to England and Germany. The farmers were happily met by Bergen 's ladies after climbing up the steep slopes and narrow smaug with their potato backpacks. The potatoes from Fitjar was well known in the district from 1860 to beyond 1900. Fitjar was Around 1980's the fishing industry was more profi-table due to the gradually modernized methods and In 2013 Fitjar opened Norawys's larges windmill park, with 44 windmills. The vikings farmed their land, but did also depend on resourses from the sea like fish and seaweed. For Fitjar has long traditions INDUSTRY motorized vessels. the main supplier of pota the long trips across the oceans, dried seaweed tos to the town of Bergen with building boats. In 1957 Fitjar Mekaniske for more than 100 years. In late 1960's Lars Kleppe was used to provent started Fitjars first fish farming in Engesund. Verksted open up for buil-ding and vessle repairs. scurvy. The governments decision of merging mu-nicipalities in 2016 ended in two separate parts, Stord and Fitjar. *The little* Today there are plans to build a new floating brid-ge. This will shorten the traveltime from Bergen to Stord with 35 minutes. 45 REGION/POLOTICS The Danish King Christian Quart decided in the 16th century that there should be built With a new trading law From 1500's the fisher-With a new trading law in 1842 it was possible to trade outside the big cities, like Bergen. It allowed smaller towns to have their own trading spots like the one by the harbour in Fitjar. man had to pay taxes for fishing herring at the western coast. guest houses for every one or half-day voyage or the sea. There was built 4 in Fitjar. -ms to brother (Fitjar) said, no! minutes by ferry will take 11 minutes by car. In the 90 's Stord became a part of the new E39 along the west caost of Norway. This changed the positioning of Filjar in the district of Sunnhorda-land. Now the town was near the main transport route in the region. The sea was the main tra-vel route for transorting The archipelago of Fitjar was a safe haven for vessels traveling along the western coast. Because of all the fjords For the inhabitant that For the inhabitant that lived on the islands of Fitjar archipelago, transportation happened by sea. They even took the boat to school on the main land. Because of all the fjords and islands on the west coast of Norway, they have been and are depen ding on ferries to travel from town to town. people and goods. CONNECTIONS At this time there was migration in Europe. Factors such as populati-on surpluses in Scandina-Times shifted and the da-ily life happened around the car, the local inhabi-Fitjar has today a stable inhabitant growth. Since it is a small municipality tants of the archipelago there is always a risk for MIGRATION via, political pressure and opportunities for wealth through viking travel, has been emphasized. of Fitjar began to move to the main land in the 60's. depopulation, but the will to create new things will Now the are only cabins and tourists living on the islands. go a long way. Tumulus, Rimsvarden, is from the Bronze age, approximately 900 AD. A new church was built in the center of Fitjar in 1867. The style is a The district of Sunn-The guest house in Bek esund Guesthou hordaland is known for kjarvik (which was then a Gjestgiveri) was built in part of Fitjar municipa 1840. It was a place to its rich food diversity. Fitjar is mentioned in the lity) was built as a part of stay over night with a safe combination of classicism In 2017 a food festival Fitjar is mentioned in the Snorre saga. After Harald Hårfarge had united Norway as one kingdom, the farm in Fitjar became a kongsgård. the royal request in the 16th century. harbor and something and baroque. started at Stord, called Herifrå. CULTURE to eat

## The story of seaweed

Japan have used seaweed since the beginning of time. Records show that for over 2000 years seaweed has been used as a supportive food in the Japanese diet.		2700 BC China	It is reported that seawe- ed has been used since 2700 BC in China.	3000 BC	>	Greece	In Greece, detailed ornate cutlery from King Mino's time was fouund from 3650 to 1450 BC, with kelp as a frequently used symbol.		
		In 600 BC, Sze Teu wrote that in China that seawe- ed was made for special guests or kings.	In 300 BC, Chi Han wro- te a book about seaweed. In China, kelp was used in the 5th century for food. In China, Lami- nara japonica(a specific species of seaweed) was imported from Japan in the 5th century.		45 BC Greece	In Bellanum Africum, written by an unknown author in the year 45 BC, it is reported how the Greeks gathered seaweed on the beaches, washed it in fresh water and gave it to livestock to prolong the life of the animals.	961 BC Irland	One of the oldest recorded writings in Iceland, dating back to 961 BC, included detailed regulations about coastal property rights to be re- spected in the collection of sea vegetables.	
100BC Irland	In Europe, Mediterranean seaweeds were used as medicine in Greek and Roman times. Greeks even used seaweed to feed animals as early as 100 BC.	1 1 1 1 1 1 1	         	0		In the Mediterranean, some red algae were used as sources of dying agents and as a medicine to treat parasitic worms since pre-Christian times.			
- «	-	794 AD Japan	In 794, Japanese people used seaweed to make nori, which is a dried sheet of seaweed, which we see in sushi.		Non to		900-1200 AD Scandinavia	The vikings depend on resourses from the sea like fish and seaweed. For the long trips across the oceans, dried seaweed, with C-vitamines, was used to provent scurvy.	
			It is reported that at least six types of seaweeds were used in 800 A.D in everyday cooking in Japan.						
and in many cultures, seaweed has been used for food and fertilizer.	In Ireland, people started collecting algae in 1200 AD. Farmers have used seaweed for hundreds of years as mulch for soil, and even today there is a large seaweed industry in both Scotland and Ireland.		an silan				grew kelp gardens. They used 60-70 species of sea- weed for food, medicine, ceremonies and even for their leis.	In Hawaii, the story is that Hawaiians believe that a shark-man was killed and the ashes turned into a reddish seaweed that was deadly. The Hawaiians smeared it on their spears to make the spears fatal.	
NORWAY LAST TWO DECADES			Ser. Refer Ser a			Seaweed farming began in Japan as early as 1670 in Tokyo bay.	1670 Japan	Hawaii	For a long time, the Tongans were the only people who knew the secret of Limu Moui. When Captain Cook visited Tonga in 1777, the Tongans offered him Limu Moui to restore his strength and energy.
						Currently production is 1 ow i Norway, but there are great prospects in 1 this industry that can 1 contribute 1 with large amounts of 1 biomass produced with 1 sunlight, CO2 and nutri- 1 ent salts from the ocean.			
			Frequent kelp harvesting, in the 90's led to restricti- ons. The kelp forrest and it's habitat took longer to restore then the industry originally thought.	2000			The Norwegian grown seaweed and kelp is competitive on the global marked because of qua- lity, regulations and the Norwegian brand.		400 A
The awareness of kelp and seaweed has increased the last few years. The first norwegian research team focusing on microalgee started up in 2011. It is called norwegian center for seaweed- and kelpte- cnology.		<ul> <li>Fiskelaget is critical</li> <li>kelp harvesting be-</li> <li>cause there is a lack of</li> <li>knowledge about the</li> <li>effects on spawning and</li> <li>fish stocks.</li> <li>Sandruk, 2014</li> <li>i</li> </ul>	Ja -			There is a need to incre- ase the knowledge about this new industry both in terms of techn- ological development, biology, environmental impact, food safety and market.		In future, we can think of cultivation as a form of agriculture at sea; aquaculture. To farm the sea as well as our land.	The small towns along the western coast can prosper and grow in a synergy together with this new industry.

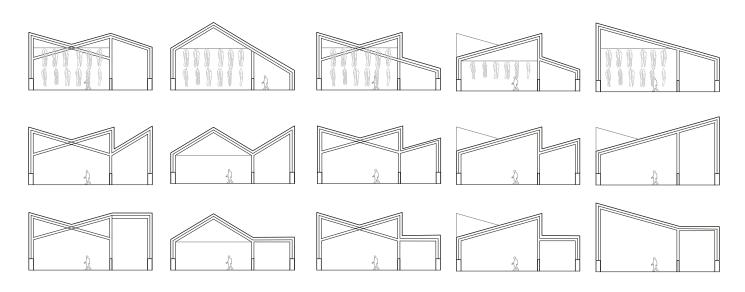


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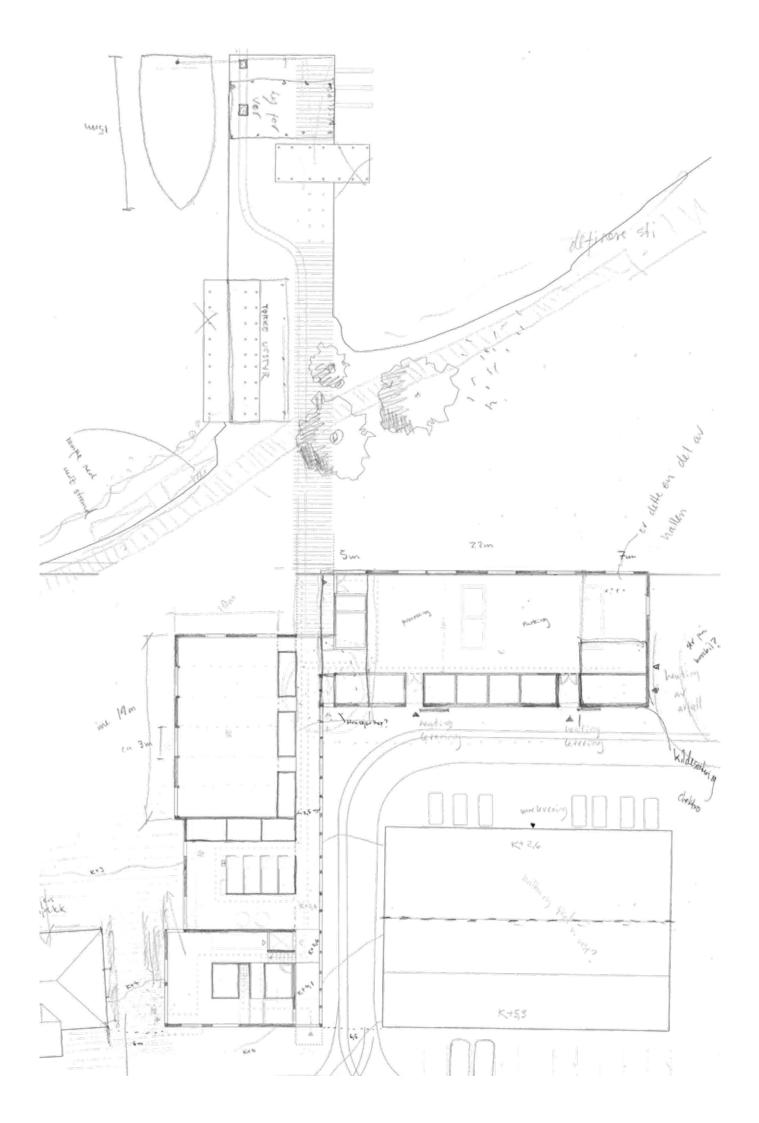


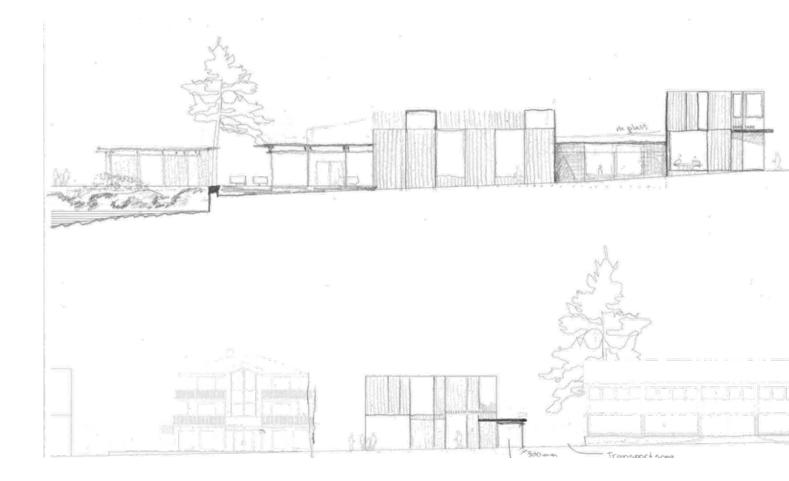


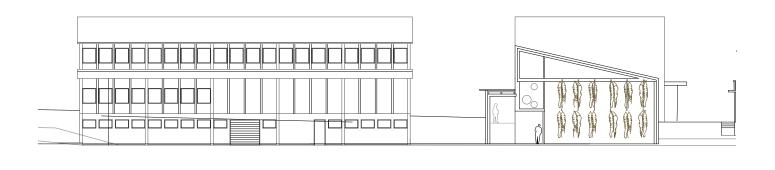
## Roofscape investigations

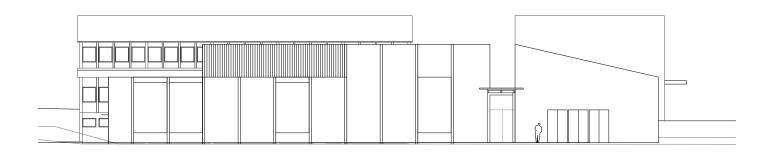


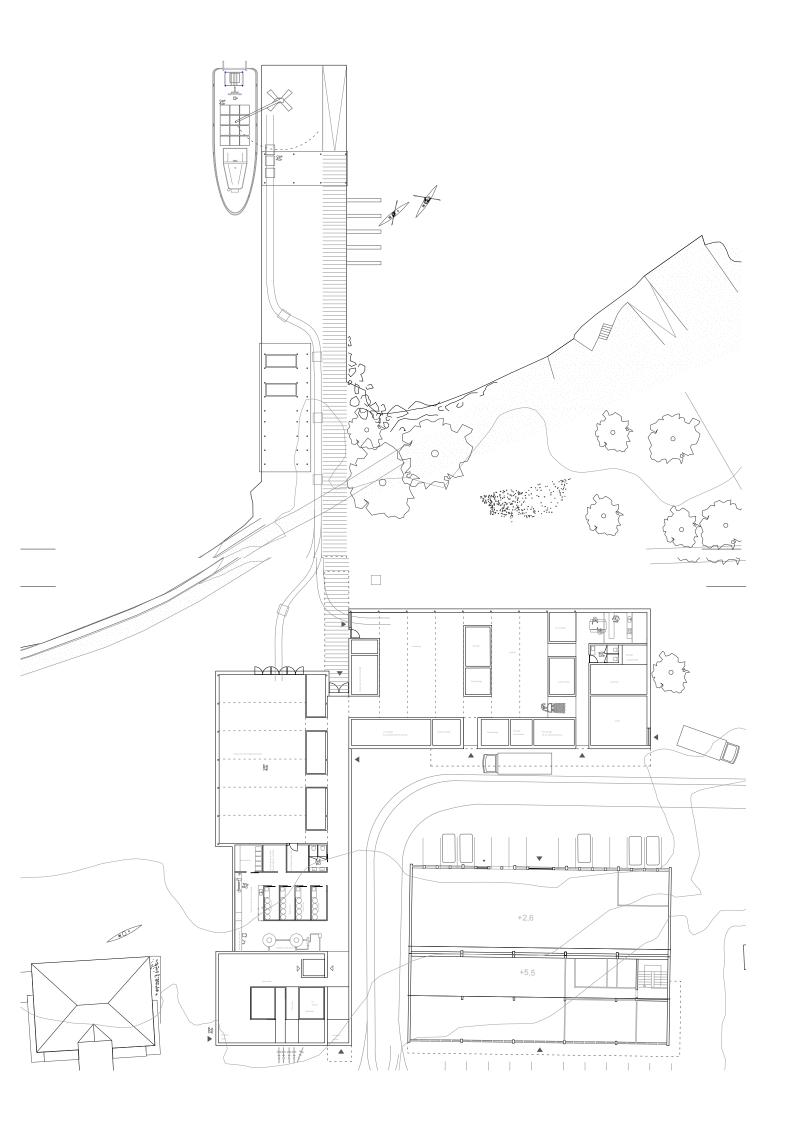
1:500 section drying hall and sirculation

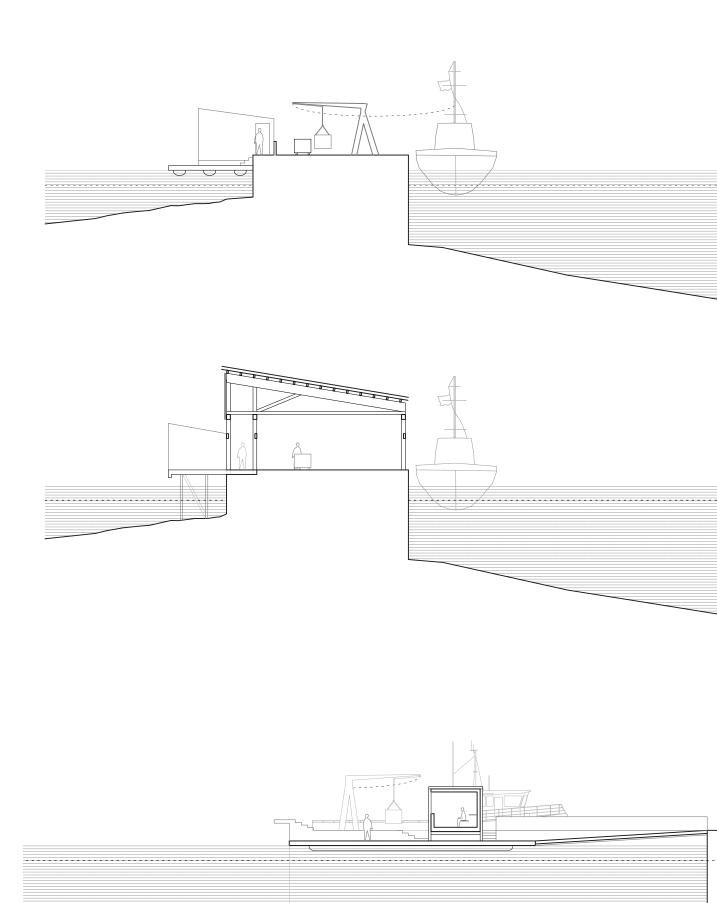


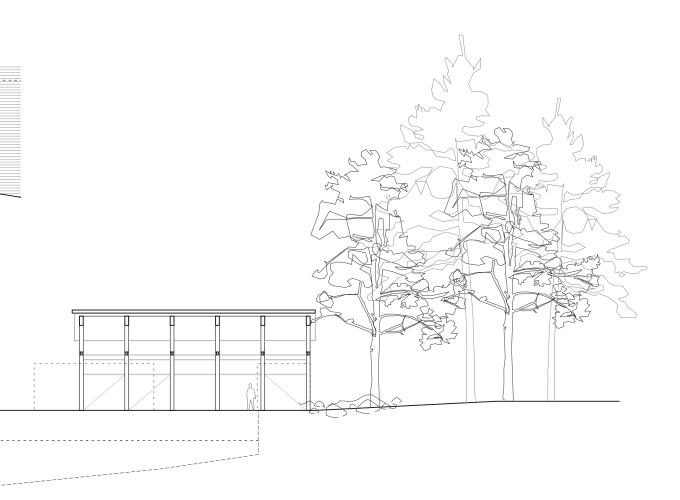








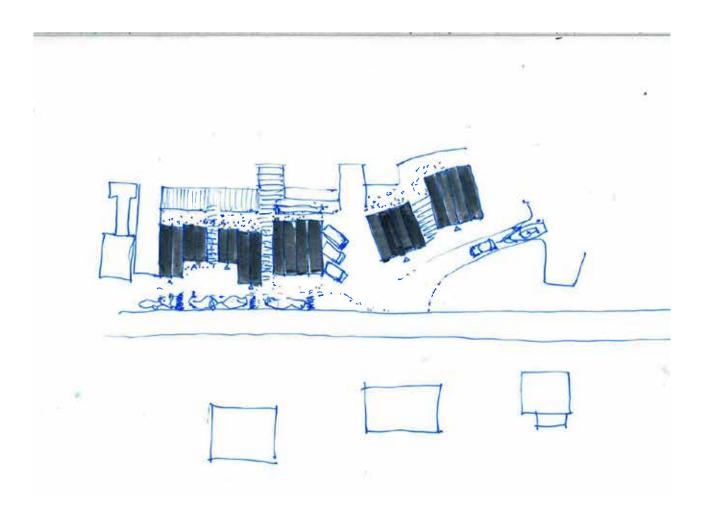


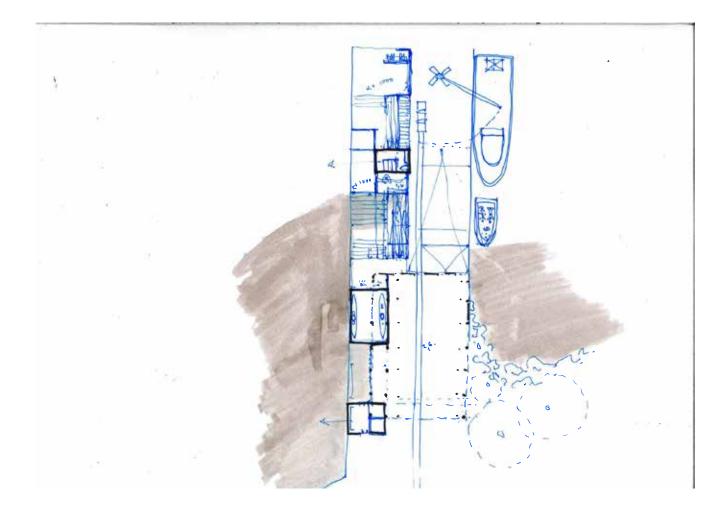


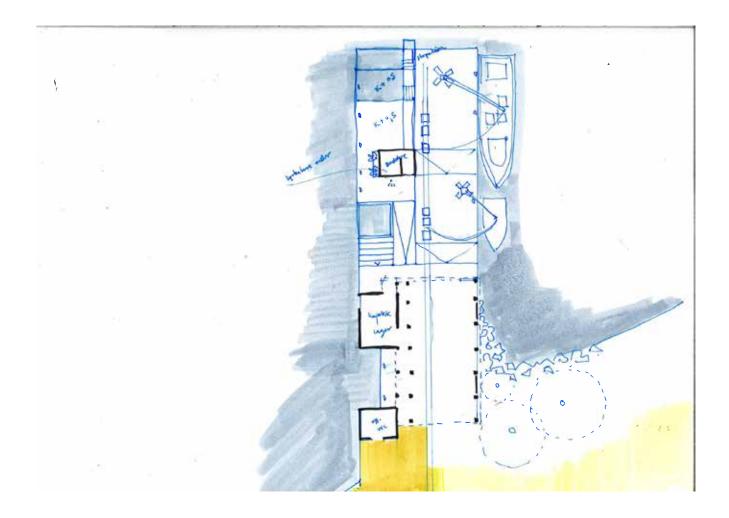


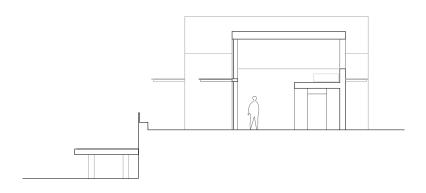
collage study of atmosphere in dryinghall

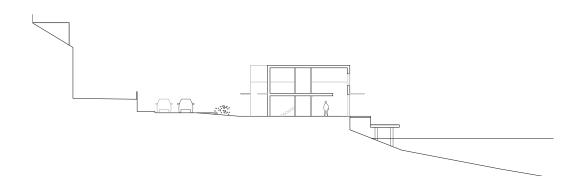


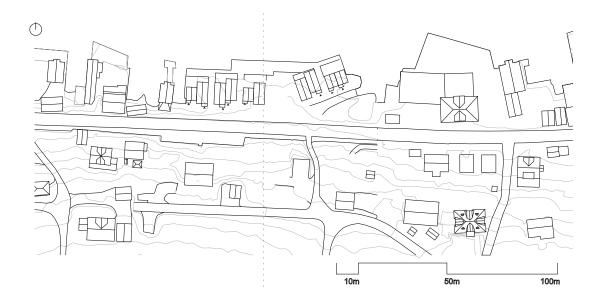


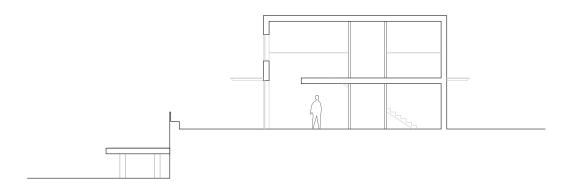


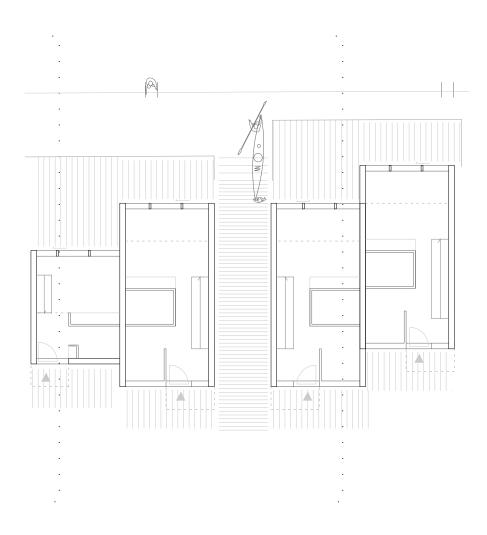


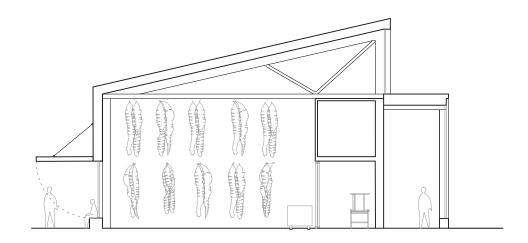


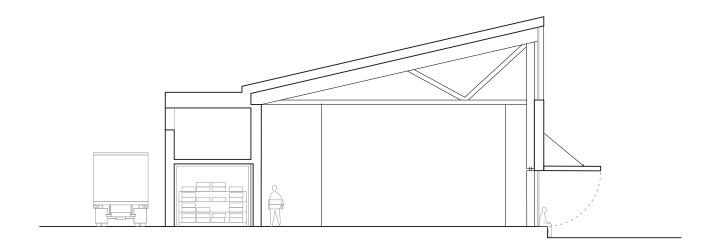


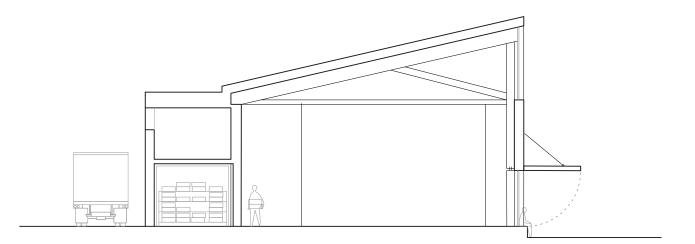


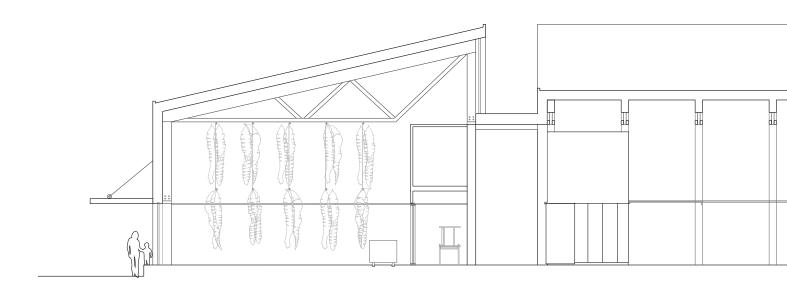


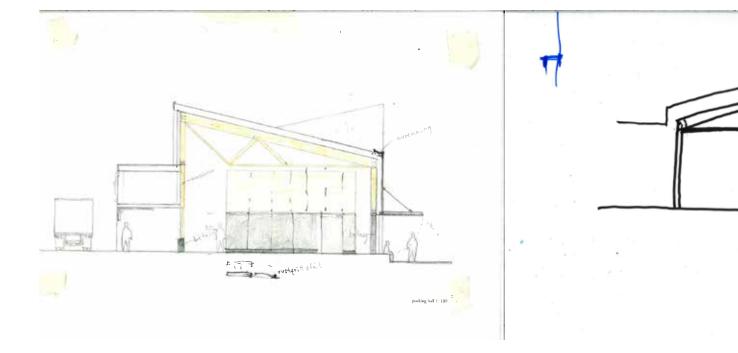


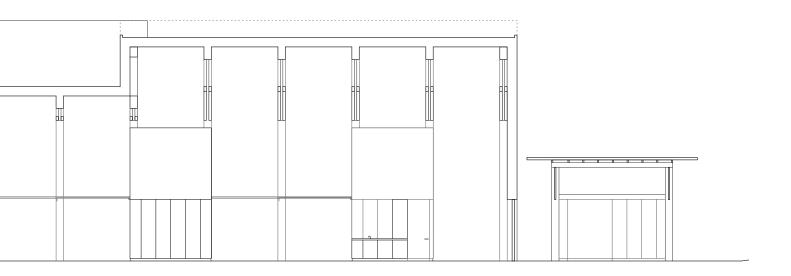




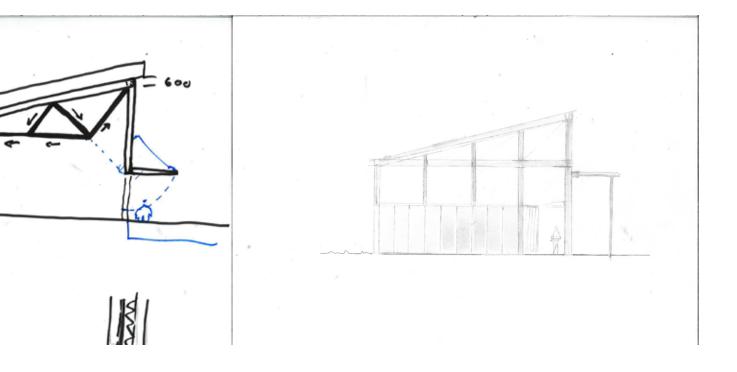




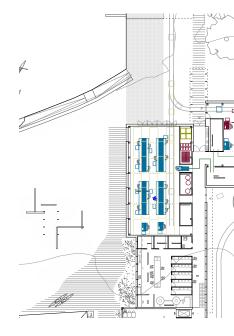


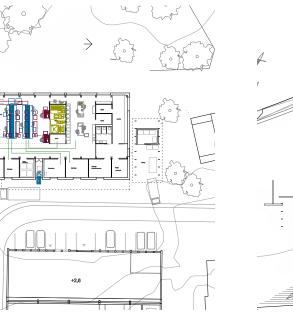


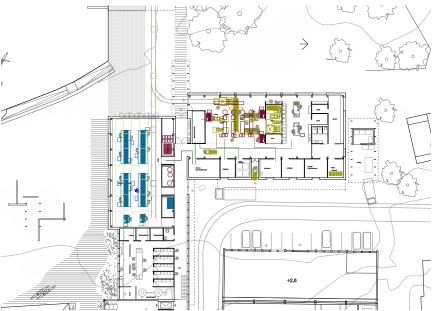
elevation drying hall 1: 100

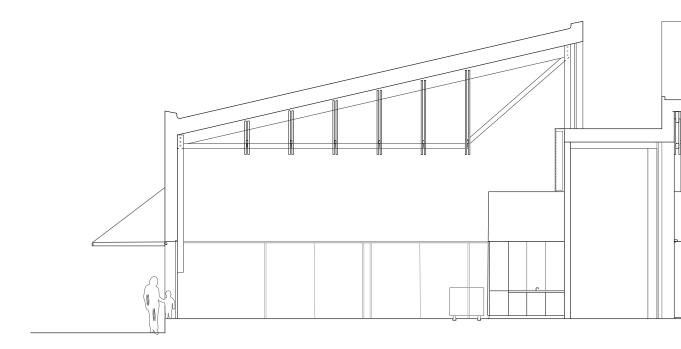


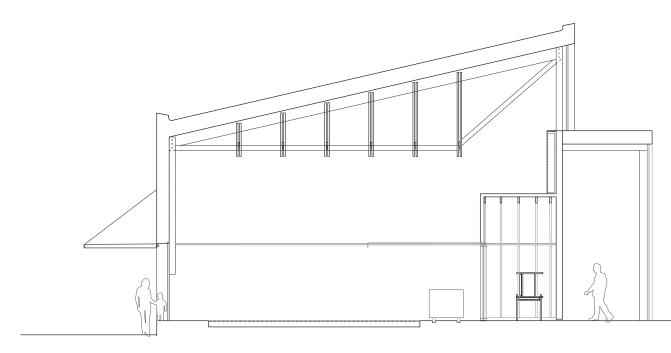


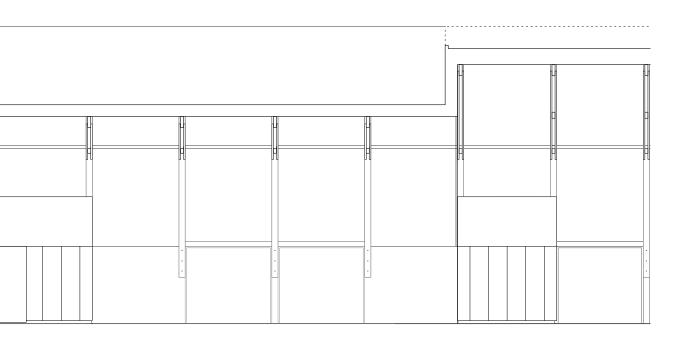




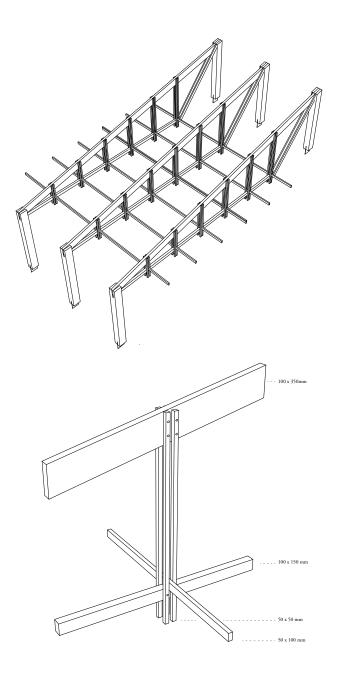






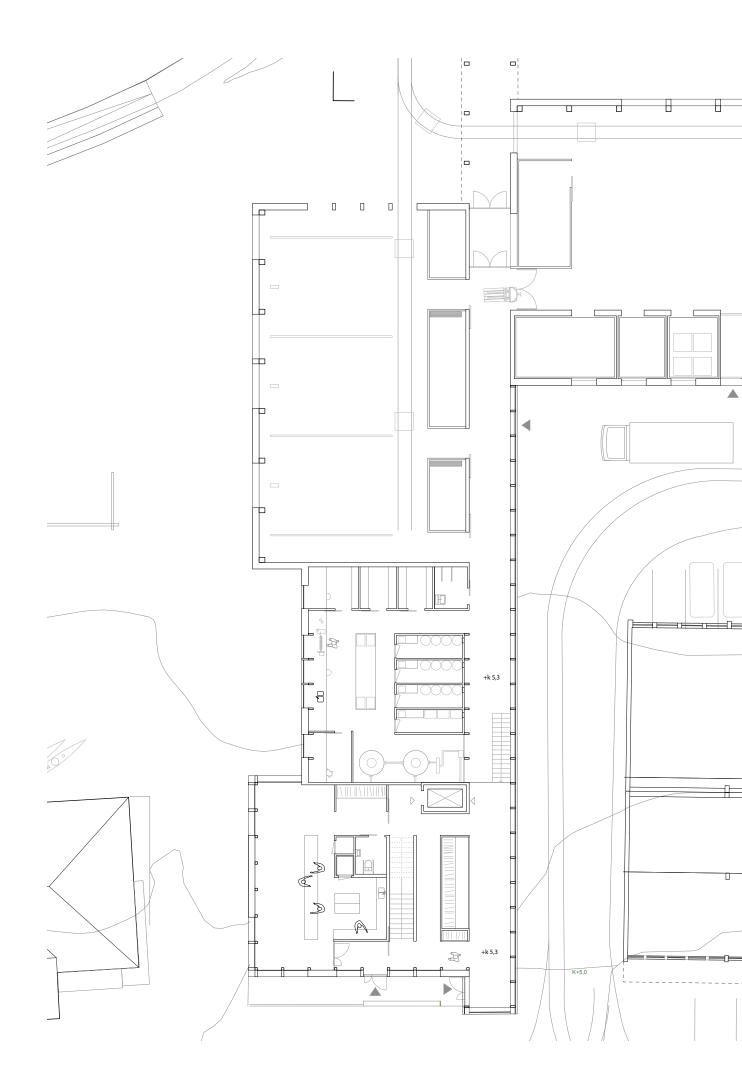


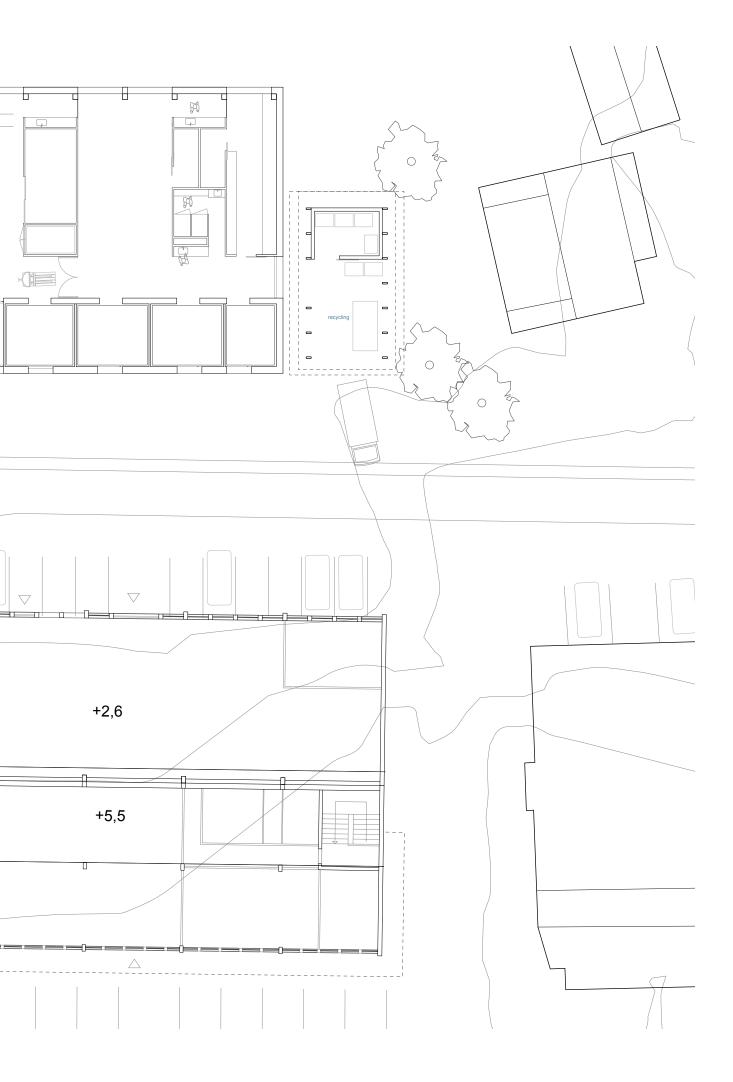
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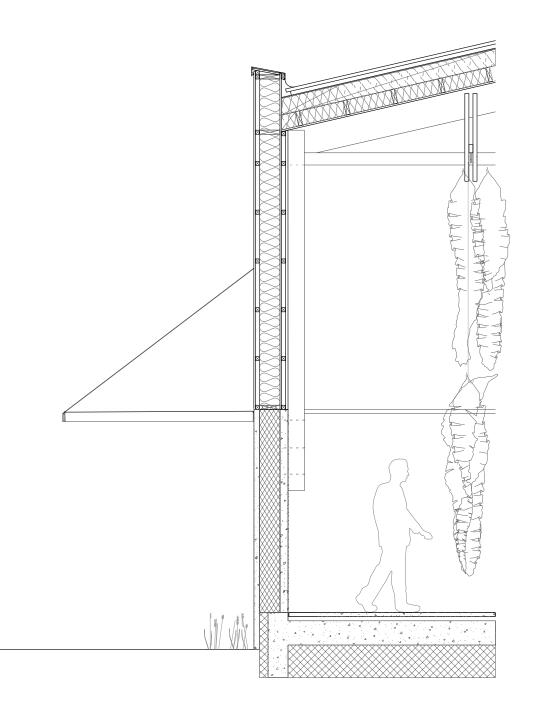


timber roof construction

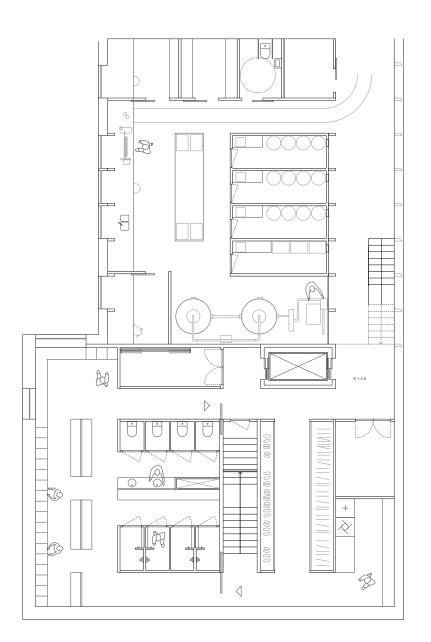


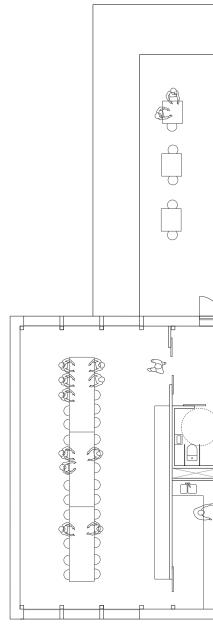


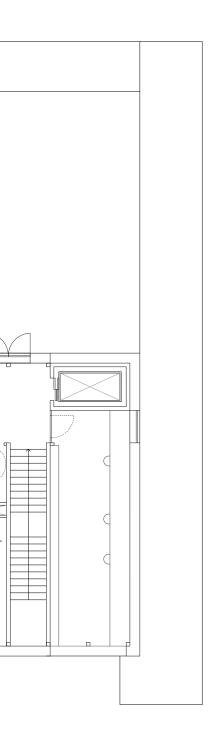


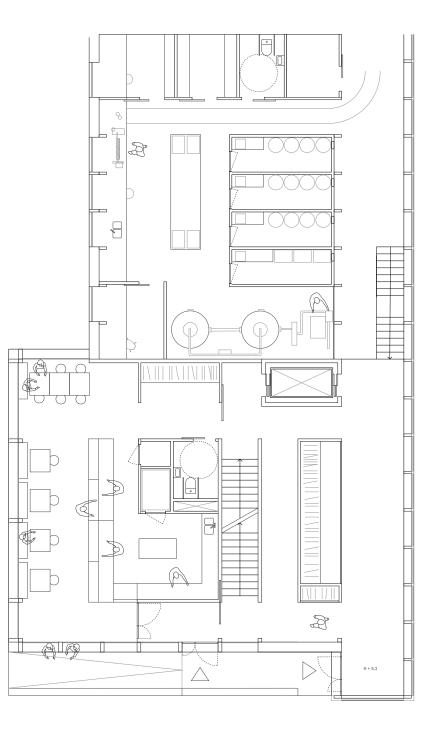












16/11-18 Diplom, Mina-Matilde og Mana Som antydet blir de vertikale altjør svake. Må trolig være ca 1350 i bredde -Parimot toor jeg løsningen kan vare denne statiske tøsningen Dette oil vesentlig redustre dimmy over på overgunten "Pinnene" vil da kun for laster opp til overgunten. Takkomtr. stod med 4/2 3,0 m Hvar befant bygget seg (Kommine?) Jes kan anslå dimensjon på overginten Mal? 2. VEN/