PROCESSING FACILITY FOR SEAWEED

candidate
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title:
Processing Facility for Seaweed

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The project investigates a new industrial typology - a facility where high quality seaweed food products are produced. My interest is how the conditions and the requirements of a production process can inform architectural space.

Seaweed is one of the most unexploited natural resources on the planet. Norway has a large and rich occurrence of this re-growing resource and it can be turned into an important source of income for coastal communities.

My starting point for this project is The Northern Company which today are located at the island Selvær in Træna and are temporarily using an old fish landing facility as a production space. I therefore started this project by locking into the possibility of reusing the old building, but through the process I discovered I was more interested in investigation how the conditions and the requirements of a production process can inform architectural space and working with a typology.

The location and the topography for where a processing facility for seaweed can be places will vary, but a common challenge is the difference in the tide and the water level. The scheme is therefore based on the production line and the idea of the building as a bridge between the ocean and the infrastructure on land. By placing the building on columns the production facility can be placed in different types of terrain along the coast. The building is also oriented towards southwest to let the morning light come into from the east and the afternoon light from the west. This way one can also use the sun to dry seaweed is one wants to.

Since the seaweed industry still in its early stage I also had to envisage the production process and define a set of rules as a base for the architectural work. There are many ways of processing seaweed and a variety of products one would also imaging that each producer has different need and the size of the production facility will vary depending. In addition the building vary in size depending on the site. The load bearing structure is therefore independent from the walls to allow each producer to customise their facility for their needs. In addition is the whole building based on prefabricated elements.
1. Harvest
2. Lift and rinse
3. Bulk dripp
4. Cut and sort
5.a Dripping
5.b Weighing and packing

Dried products
Frozen products

Production line
1. Harvest
2. Lift and rinse
3. Bulk drip
4. Cut and sort
5.a Weighing and packing
5.b Dripping
6.a Cold drying
6.b Freeze
7.a Warm drying
7.b Freezer storage
8.a Weighing and packing
9.a Dry storage
10. Production kitchen
11. Shipping

Frozen products
Dried products
January

February

March

April

May

June

July

August

September

October

November

December

Harvest season

Træna Foodlabs

Product development
Harvest areas
Roof beam 1 - x 44
Roof beam 2 - x 11
Roof beam 3
Roof beam 4 - x 22
Roof beam 5 - x 22
Column - x 24
Beam - x 12
Floor element 1 - x 75
Roof cladding - x 100

Roof element 2 - x 67
Wall element 1 - x 100
Wall element 2 - x 120
Wall element 3 - x 22
Wall element 4 - x 7
Wall element 5 - x 67
Wall element 6 - x 4
Wall element 7 - x 12
Window 1 - x 21
Window 2 - x 6
Window 3 - x 5
Door 1 - x 5
Door 2 - x 5
Door 3 - x 2
Door 4 - x 3
Door 5 - x 2

Prefabricated elements
Axonometric of the assemblage of the prefabricated elements
Assemblage of the facades with prefabricated elements of the refabricated elements.
Section and plan
Examples of different combinations and sizes of production facilities
Plan, section, elevation of the proposed production facility for The Northern Company on Selvær