02 GRID SLIDE

The sea

In 1160 Copenhagen was founded by King Valdemar. He saw the possibilities of using the calm water between Zealand and the small island of Amager as a natural harbor. Access to the sea is the starting point for the city's development. Islands have been constructed in the sea to establish berths for merchant ships and shipyards for the production of new vessels. The port has developed new land with channels, quays and docks. Today maritime development has been taken over by devolopment of new neighborhoods.

When the sea around Copenhagen rises and falls it is a result of water mass migration between the Baltic Sea and the North Sea. Winds and currents are pushing like giant lungs back and forth between the two seas . Recently in autumn 2013 the water pressure through Øresund was of such power that the sea was pushed up into the streets. The port's large surface divides the city into two and at night it seems like a sleeping whale slowly in- and exhaling.

This project is based on a land-fill constructed in the 1940s, as part of the B & W shipyard. The scaffolding has been erected in long dry docks where large steel shells have been welded together to ships. At the completion of works the docks have been filled with water, and the ships sailed away.

The landscape

Refshaleøen is a landfill, designed to build steel ships. A dynamic area, where curved steel plates have been assembled creating shipconstructions, and the docs letting in the ocean to let the ships sail away.

The landfill consists of series of docs and peninsulas streching towards west, constructed in 1945 with long, low and slim buildings, creating a horisontal landscape, that seems to be floating on the horison. Behind this area a greater landfill extends towards east, dominated by B&W's giant assembly building from 1970, and rows of windmills and high slim chimneys creating a vertical background representing the modern industrial energy landscape.

The water level in Copenhagen Harbour changes constantly between high and low water – normaly a change of level up to 1,8 meters. Grid Slide is a landscape, created on the ever changing water surface. A landscape of skewed surfaces, that let the water change the shape the landfill as it flods and drains.

The surface of the landscape is partley paved surfaces, giving acces to a recrational landscape, creating pathways through slim water, piers for docking and stairs leading into the water, facing south towards the sun and downtown Copenhagen.
But as well a surfaces partly taken over by nature, that show its diversed ways to adjust to the natural wetland conditions.
Three long slim structures rises 50 meters above the wetland, interacting with the industrial skyline behind the plot. Seen from the little mermaid, the towers stand slim, interacting with the chemneys behind. Seen from down town, the towers take shape as translucent screens, creating relations with the massive walls of B&W's assembly building.

The static structure of the towers created by cortin steel, creates a fog of constructive pipes, revealing the slim curved screens created by a patchwork of translucent bioreactors. The bioreactors consisting of slim glasscreens containing clear coloured algae water, turns in order to spread the light among the algaes. The ever changing position of the screens, creates towers, that will never be the same next time you look upon them.

" Microalgae lives in water where they grow and multiply by utilizing the energy from sunlight and organic compounds and through the absorption of nutrients such as phosphorus, nitrogen and carbon. Many of these resources are found in wastewater and can therefore be used as a plant for the production of new algal biomass. Wastewater is a low - value resource that through the algae is transformed into high - value protein, oil , carbohydrates and pigments. These bio- components can be used in the production of biofuel , cosmetics , pharmaceuticals, fertilizers, feed and food. Therefore there is a huge untapped potential in embracing the use of sewage and other waste streams from cities and industries in the production of microalgal biomass. At the plant in Kalundborg the Kalundborg Munciplity Development operates a test and demonstration facilities for large scale production of microalgae using photobioreaktorer where sewage and other waste streams from industry used as a resource for new sustainable processes - better known as Industrial Symbiosis . "

Co-working
Project Manager
DEVELOPMENT STAFF

"Low temperature thermal gasification is a robust and flexible biomass conversion platform with high energy efficiency, low equipment costs and a superior ash fertilizer product. The system performs well on many different fuel types and provides high recovery rates of e.g. P, K and recalcitrant carbon (biochar) thus securing a low – or even negative, energy carbon footprint."

Co-working
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Algae of different species takes different colours

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