The Mongstad Experience

Facilitating a transition in time, function and space

p4 reflection

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Delta Interventions 2017/2018
North Sea: Landscapes of Coexistence

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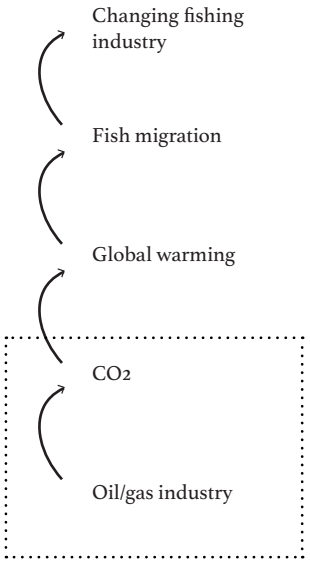
Whereas the P4 presentation mainly aims at showing a (developing) spatial intervention as the conclusion of a year-long research trajectory, it's a moment of looking back at the process leading up to this 'conclusion' too.

The relationship between research and design.
The Delta Interventions graduation studio is a multidisciplinary studio, which in this case meant a part of the research has been done in multidisciplinary groups of students from watermanagement and the urbanism, landscape and architecture tracks of our faculty.

This year's studio topic - North Sea: Landscapes of Coexistence - has covered a huge territory, with many challenges to be faced. From the first week onwards all the studio has been concerned with analyzing, subterritories, geography, politics and many other systems that define, or have defined, this territory.

Where other groups were concerned with the impact of Brexit, flood risk and illegal activities in and around the Sea, my subgroup focussed on the impact of climate change on the fishing industry. The conclusions that we drew were quite shocking, but at the presentation of the results I found out that I was more interesting in the findings of our parallel group on the oil and gas industry.

What I found striking about this topic was that it is actually at the root of the problem I had been concerned with. In the extraction, processing and end-use of these resources, extreme amounts of CO_2 are being emitted, which on their turn (among other influences) cause a large share of global warming.



Relational research focus scheme

Research method and approach in relation to the graduation studio methodical line of inquiry.
As soon as we continued working on our individual projects I found out that the groupwork we had done formed a solid basis - not only to have come op with conclusions as clear starting points already, but also because we had been provided with new tools to make the scale graspable and to narrow down to a specific problem in relation to a larger system. This mainly had to do with the research methods we have been using throughout all phases of the research and

project: that of an interscalar analysis through mapping. In this way I have been able to make well-founded choices on consecutively my research topic (the oil industry as a definining system of the North Sea's territory), narrowing down to a specific part of this topic (oil refinement) and eventually a site (Mongstad AS, Norway).

The relationship between the graduation topic, the studio topic, the Architecture master track, and the wider master programme. Since I chose for the Delta Interventions studio not only because of the territorial approach and scale of the studio scope, but for the water-related topic too, my choice for an oil refinery in Norway as my project's site was obvious to make. Situated in a fjord, close to its outlet in the North Sea, the industrial land was reclaimed from marshlands.

The impact the production on site have not only had their output on land, through soil pollution, but in direct and indirect sense on the waterscape too. Living species suffer from water pollutio, and on a longer term the water in the fjord will heat up and rise because of global warming caused by CO_2 emission.

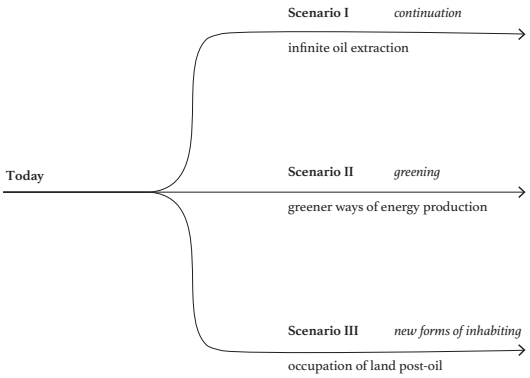
As I was zooming in to the chosen site, and even further to where and what the project exactly was going to be, it helped to remind myself of the existence of the larger system of the oil industry to find relevance in thinking of an architectural intervention at all. Especially when this intervention could contribute to a 'greener' future of the site and its surroundings, and maybe even to (a part of) the oil industry as an extremely polluting, but equally socially important, system too.

Elaboration on the relationship between the graduation project and the wider social, professional and scientific framework. Because my aim has been to make sure the refinery can adapt to different (more sustainable) future scenarios, the architectural solution had to facilitate this. The only way to make this work seemed to be to come up with a robust, but modular, project. Adapatation should happen through more, or less, utilizing the designed and provided system.

The strategy of Mongstad is to be competitive through innovation. This is the reason the site houses the most advanced CO_2 capture and storage test centre in the world. Even

though the technique has been proved to work and to be efficient, since 2013 the Norwegian government decided to stick with the testing of this technology only.

In order to create a better future we have to assume that soon Norway will invest in keeping up with its sustainable image, which means a full implementation of the CO_2 capture and storage (CCS) techniques. My design will mainly function on supporting this.



Future of the refinery

The CCS techniques are an interesting research topic for other oil companies owning refineries. It's a way to be less pollutant while being equally productive; which might be the only way to embrace a more sustainable transition phase from an oil-driven world towards an (almost) oil-free world. Coming up with a solution of supporting this shift, of which no one exactly knows what it will look like, might be interesting for other refineries too. Especially when it ensures a more efficient production in general by regulating flows of people on site.

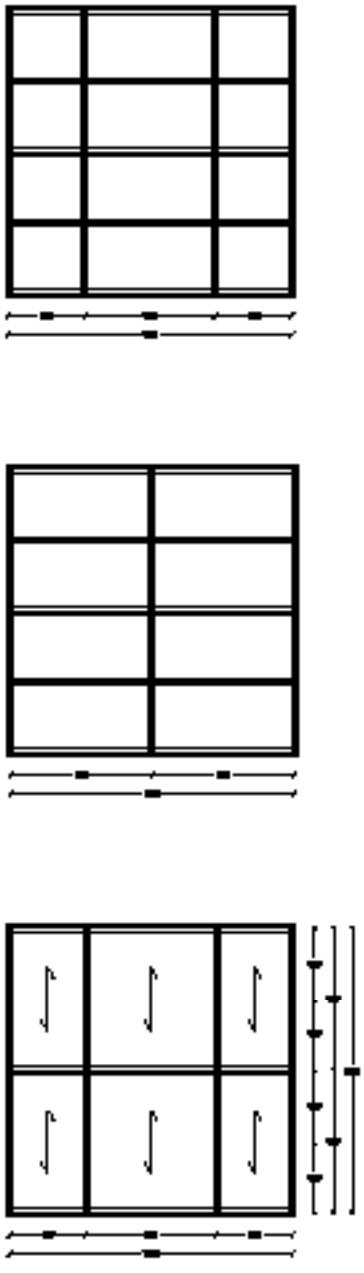
Ethical issues and dilemmas I have encountered in doing the research, elaborating the design and potential applications of the results in practice.
The shift that has been made from an incredibly big (territorial) scale towards an architectural intervention initially caused a lot of confusion in my case. This didn't have anything to do with the line of reasoning and the question of relevance of the research topics, but with my own doubt: how could an architectural intervention ever be relevant on a bigger scale than its direct context, such as the province it's located in and the specific processes on site?

The beforementioned line of reasoning through mapping has helped in reasoning back to the big scale too. It was also interesting that the project I involved myself in only seemed to work on a scale as large as the site, which meant a total span of 2 kilometers: a project that can't be ignored.

At the same time, the size of this intervention made it quite unlikely to happen in reality. It didn't seem an unfortunate outcome. The theory behind the modular design is as such that it might give helpful insights and options to continue researching on, when one aims for coming up with a more modest solution for this case.

The length and location of the project was decided on from P2 onwards. On it's specific location the project could have multiple functions at the same time. Among others it would be a new infrastructural spine for the site itself, connect the site to regional infrastructural networks, facilitate the shift towards the capture of CO_2 and on top of this could host visitors that are interested in the processes that are so important for the welfare state that Norway is nowadays.

After P2 many options have been explored for the adaptability and multifunctionality of the project. My design steps took me to a lot of places, which were always different but not always good. After every sidestep I kept coming back to the solution that proved to be the strongest in any case: sticking to the concept of a straight spine which deals with every event along its way.



Module in cross- and longitudinal section and plan