THE MONGSTAD EXPERIENCE
Facilitating a transition in time, function and space

Elise van Herwaarden
Delta Interventions 2017/2018
North Sea: Landscapes of Coexistence

P5 - Graduation Presentation
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NORTH SEA FISHING
NORTH SEA FISHING
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Changing fishing industry

Fish migration

Global warming

CO2

Oil/gas industry
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World's richest countries (2018)

<table>
<thead>
<tr>
<th>Country</th>
<th>GDP per capita (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Qatar</td>
<td>128,702</td>
</tr>
<tr>
<td>2. Macao</td>
<td>122,489</td>
</tr>
<tr>
<td>3. Luxembourg</td>
<td>110,870</td>
</tr>
<tr>
<td>4. Singapore</td>
<td>98,014</td>
</tr>
<tr>
<td>5. Ireland</td>
<td>79,716</td>
</tr>
<tr>
<td>6. Brunei Darussalam</td>
<td>79,924</td>
</tr>
<tr>
<td>7. Norway</td>
<td>74,065</td>
</tr>
<tr>
<td>8. United Arab Emirates</td>
<td>68,662</td>
</tr>
<tr>
<td>9. Kuwait</td>
<td>66,673</td>
</tr>
<tr>
<td>10. Hong Kong</td>
<td>64,533</td>
</tr>
</tbody>
</table>

© International monetary fund
GDP per capita Norway (USD). Source: World Bank
Oil + gas contribution to GDP volume Norway (USD). Source: Norwegian Petroleum Directorate & OECD Economic Outlook 102 Database
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Norway

Oil

90 %
Export

10 %
National use
Norway Oil

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petroleum cars
electric cars
H₂O

NOK NOK NOK
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NORWAY
OIL

NOK
NOK
NOK

H2O

petroleum cars
electric cars
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The New York Times

Both Climate Leader and Oil Giant? A Norwegian Paradox


June 17, 2017
Norwegian Oil

**Upstream** - localising and extracting oil from underground/underwater fields.

**Downstream** - processing (refining) of oil into a finished product.

**Consumption** - commercial resale and use by companies and individuals.
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Downstream - processing (refining) of oil into a finished product.
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troll 80 km
MONGSTAD
THE SITE

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Problem

- Mongstad is still a strictly closed off territory;
- Little to no awareness of the scale of impact to environment;
- Pollution in direct context and worldwide.

Potential

- Mongstad’s aim at being a ‘sustainable’ pioneer;
- Being well connected to sea and mainland;
- Beautifully located in the Fennsfiorden.

While acknowledging that the future of the oil industry is very uncertain.
How to facilitate a transition in time, function and space within the scope of the Mongstad refinery and its potential future?

1. How to support a productive, yet more sustainable future for Mongstad?

2. How can different geographical conditions be enhanced within and connected by one infrastructural architectural intervention?

3. How to cause people to critically reflect on oil as an important source of income for Norway?
Creating a flexible building, which bridges the gap between
land and water,
industry and nature,
oil and post-oil,
pollution and sustainability,
perception and reality.
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LINE PROGRAM

Visit
Walk
Emphasize
Neutral
Block
View
Climatised functions
Visitors centre
Rest

Production
Carry pipes
Carry
Entering/leaving
Crossing

Nature
Tectonics
Permeability

Project
Program
Guide cars
Guide
Entering/leaving - local
Entering/leaving - regional
Guide workers
Entering/leaving
Meeting
Carry pipes
Guide cars
Entering/leaving
Entering/leaving - local
Entering/leaving - regional

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INFRASTRUCTURE SCENARIO’S

Scenario I: continuation (extension)
- infinite oil extraction

Scenario II: greening (transformation)
- greener ways of energy production

Scenario III: loss of function
- abandonment of land post-oil

Today

Future
“setting down traces of an architectural infrastructure that allows for flexible development to take place (...); a directed field within which the future life of the site can unfold” - Stan Allen
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INFRASTRUCTURE

INFRASTRUCTURE

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INFRASTRUCTURE MODULE
INFRASTRUCTURE MODULE

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Main module
Expanded metal CorTen

Tube profile
200 x 200 mm - CorTen

Grating
h = 25 mm - CorTen

HEB profile
200 x 200 mm - CorTen

U profile
175 x 175 mm - CorTen
MASTER PLAN

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SCENARIO 2

Scenario I

Today

Scenario II

greasing (transformation)
greener ways of energy production

Future

Scenario III

---

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SCENARIO 3

Today
Scenario I
Scenario II
Scenario III
- loss of function
- abandonment of land post-oil
Future

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Primary design rules

1. Only 90° or 45° angles
2. As minimal as possible
3. Grid: 3000 x 3000 x 3000 mm
4. Max dim 15000 x 15000 x 15000 mm
6. Visitor in enclosed space at all times

Secondary design rules

A. Loadbearing slabs 500 mm
B. Secondary slabs 250 mm
C. Window/ door openings 1 grid / 0.5 grid
D. Narrow openings 300 mm...

Connection Infrastructure + Nodes

A. Width steel path: 1500 mm ctc
B. Height steel path: 3000 mm
C. Distance to concrete: 0,5*3000*...
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### MASTERPLAN CONCRETE

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<thead>
<tr>
<th></th>
<th>Tactics</th>
<th>Relation to Line</th>
<th>Focus on View</th>
<th>Say / Conjure</th>
<th>Service?</th>
<th>Experimental Tools</th>
<th>Level of comfort</th>
<th>Comforting Tools</th>
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<td>S</td>
<td>X</td>
<td></td>
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</tr>
</tbody>
</table>

- Directing view
- Framing view
- Directing visitor
- Roof/!shelter
- Heated bench
III - EXPERIENCE
EXPERIENCE

9 NODES

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1 - VISITOR CENTRE
EXPERIENCE
3 - VIEWPOINT
EXPERIENCE

4 - JUNCTION

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5 - WALL I

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EXPERIENCE
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