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North Sea: Landscapes of Coexistence Transitional Territories Studio 2018–2019

MSc4 Building Technology Report

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1. General Arrangement







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![](_page_10_Picture_1.jpeg)

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![](_page_18_Picture_3.jpeg)

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![](_page_22_Figure_0.jpeg)

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![](_page_23_Figure_3.jpeg)

![](_page_24_Figure_0.jpeg)

![](_page_24_Picture_1.jpeg)

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![](_page_26_Figure_0.jpeg)

![](_page_26_Picture_1.jpeg)

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2. Climate Strategy

The Climate concept is heavily relient on mechanical ventilation. As the space is large, and requires regular ventilation flows, with a filter against the escaping chemical particles involved in both painting and molding. Although the exothermic process of the epoxy curing mold itself is deemed sufficient to heat the space, cooling can be achieved through air as well as ventilation. The installation room is placed within the concrete reaction block used for testing. Ideal as a placement because at one end of the building and can be extended to the other side if the building grows.

During the summer, River water is pumped up and used to cool the air which is then ventilated around the building.

The roof, due to its size is ideal for the placement of solar panels. A rough estimate is that around 31,350,000 kWH of energy a year can be produced just by the production building. A Manufacturing building consumes around 23,200,000 anually. The Green Roof , light sedum roof, is ideal for keeping the panel cool and efficient, whilst also stabilising the indoor climate of the hall.

![](_page_31_Figure_0.jpeg)

![](_page_31_Figure_1.jpeg)

![](_page_31_Figure_2.jpeg)

100 m

Climate Strategy General

![](_page_32_Figure_0.jpeg)

![](_page_32_Figure_1.jpeg)

![](_page_32_Figure_2.jpeg)

![](_page_32_Figure_3.jpeg)

![](_page_33_Figure_0.jpeg)

SUMMER

![](_page_33_Figure_2.jpeg)

Winter

Climate Strategy Top (Summer), Bottom (Winter)

3. Structural Strategy

The portal is the structure, also the storage element, which is then wrapped in one translucent shell. The Material used is Reinforced Fiber Glass profiles, stronger then steel, and can possibly form a circular system with the decomposition of old blades.

The South Facade also has a microlouvre roll sunshading that can be rolled down in the event of a very warm day in order to prevent over heating of the building. It is a very fine mesh bronze wire that can be coated in any colour.

The last main materilisation involves the rolling plastic glass fiber fabric that can seal off the sanding and painting rooms during the part of the process that releases the most fumes.

![](_page_37_Figure_0.jpeg)

![](_page_37_Figure_1.jpeg)

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Structural Strategy General Arrangement

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![](_page_39_Figure_0.jpeg)

Structural Strategy Molding Area Arrangement

![](_page_40_Figure_0.jpeg)

Structural Strategy Epoxy Area Arrangement

![](_page_41_Figure_0.jpeg)

Structural Strategy Painting Area Arrangement

![](_page_42_Figure_0.jpeg)

![](_page_42_Figure_1.jpeg)

Structural Strategy Testing Area Arrangement

![](_page_43_Figure_0.jpeg)

![](_page_43_Figure_1.jpeg)

Structural Strategy Bi-fold Door Arrangement

4. Details

![](_page_47_Picture_1.jpeg)

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- 1. Earth and Asfalt
- 2. 1m Concrete Base Column
- 3. Fiberglass Pultrusion Profile HEA 500
- 4. Stone retainment

![](_page_54_Figure_5.jpeg)

![](_page_55_Figure_1.jpeg)

![](_page_56_Figure_0.jpeg)

## 07- Glazing Bar Detail, 1:5 @ A3

- 2. RHS 200 Glass fiber reinforced
- 3. HEM 1000 Glass fiber reinforced
- 5. Rodeca Polycarbonate 50mm
- 7. RHS 200 Glass fiber reinforced

![](_page_56_Figure_7.jpeg)

![](_page_57_Figure_1.jpeg)

- 1. HEM 1000 Glass fiber reinforced column
- 2. HEA 350 Profile GFRP
- 3. Lateral Bracing RHS Profile 200mm GFRP
- 4. Pallet
- Rodeca Polycarbonate 50mm
  Fixing to Column
- 7. Special Polycarbonate Corner Profile

![](_page_58_Figure_1.jpeg)

![](_page_58_Figure_2.jpeg)

- HEA 350 Profile GFRP
  Lateral Bracing RHS Profile 200mm GFRP
- 4. Door Frame
- 5. Door Wheel
- 6. Rodeca Polycarbonate 50mm

![](_page_59_Figure_0.jpeg)

![](_page_60_Figure_1.jpeg)