



Country / City	The Netherlands, Delft
University / School	Delft University of Technology
Academic year	2017-18
Title of the project	Aeolis - Gap the Border
Authors	Niels van Hasselt, Jui Deuskar, Thomas Zaw, Isabella Banfi, Elissavet Markozani, Anna Saracco, Shuai Shao, Chang Guo, Marleen de Groot, Sophie Vrisekoop, Jorren Verheesen, Evi Goedemans, Purvika Awasthi, Anne de Jong



TECHNICAL DOSSIER

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Authors: Niels van Hasselt, Jui Deuskar, Thomas Zaw, Isabella Banfi, Elissavet Markozani, Anna Saracco, Shuai Shao, Chang Guo, Marleen de Groot, Sophie Vrisekoop, Jorren Verheesen, Evi Goedemans, Purvika Awasthi, Anne de Jong
Title of the course: Q4 Elective - Landscape Architecture ON site
Academic year: 2018/19
Teaching Staff: dr. René van der Velde, ir. Janneke van Bergen, ir. Michiel Pouderoijen
Department/Section/Program: Landscape Architecture
University/School: Delft University of Technology

As part of an elective module, a group of master students at Delft University of Technology designed and built an installation for the Oerol cultural festival on the island of Terschelling in the Netherlands. They developed a project to harvest wind-borne sand and aid dune formation to tackle sea-level rise. A mosaic of hessian screens aligned at various angles and supported on an array of poles of different heights engaged the dynamic play of wind and sand to form a pattern of embryonic dunes.

The project takes a different approach than conventional dune defence by revealing and engaging natural forces and anthropocentric practises that have shaped the island over centuries. Seen from the air, the installation traces a zigzag 'stitch' across the beach at the point where the island was once divided in two. As such the screens invoke the sails of ships which might have once passed through the passage, and at the same time creates an experiential 'infographic' of dune formation and innovative coastal defence.

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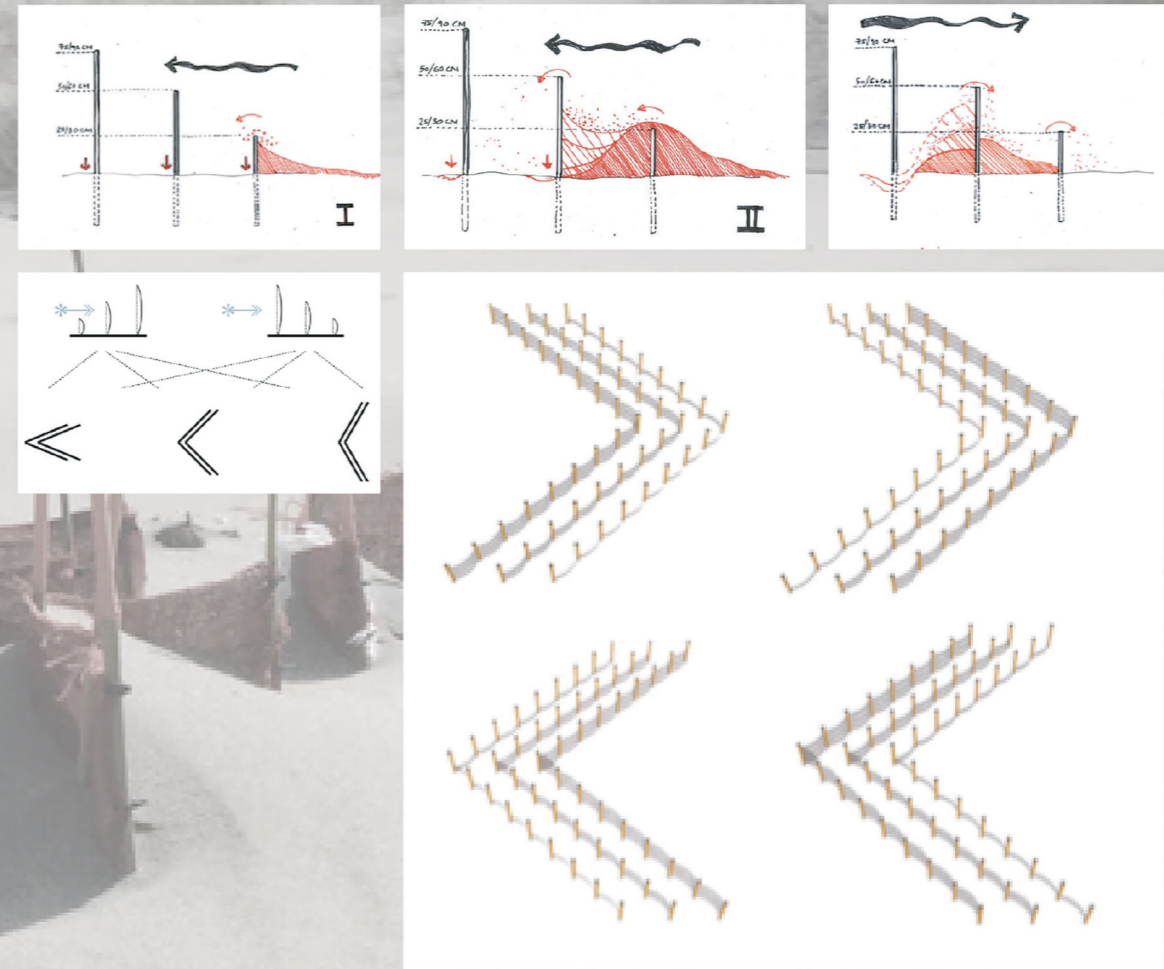
Barcelona September 2020
SCHOOL PRIZE



The Aeolis-Gap the Border project forms part of the 'expedition' programme of Oerol, research and educational projects complementing the theatre and music agenda of this 10-day long festival. In the project student teams, led by researchers and staff, research, conceptualize and construct temporary design-and-build installations to be visited by a (festival) public over a period of 10 days. For master track students it is an opportunity to take part in a 'live' design assignment and build a physical installation, to learn how to collaborate with fellow students and stakeholders, work with a festival audience in a multidisciplinary environment, and bring together different notions of nature and landscape. A recurring conceptual frame for the projects is the notion of place: understanding how landscapes form specific locales and what landscape architectural methods can do to reveal and engage a 'sense of place'.

The problematique of sea-level rise and coastal defence was the theme of the project realized in 2018. For the coastal defence of Terschelling the fore and rear dunes need to receive more (sand) deposits in order to keep pace with sea-level rise. This premise set the scene for the first phase of the project in which aeolian techniques for dune formation were explored by students in field workshops for rapid prototyping and sediment accretion. By stimulating sediment accretion on the beach and in the dunes these experiments explored how to assist dune growth and compensate for coastal erosion. In early on-site workshops 'fencing' in the form of hessian screens turned out as a promising technique for sediment accretion.

Design esquisses for the on-site installation went on to elaborate contextual factors and ideas for conceptualization and realization.

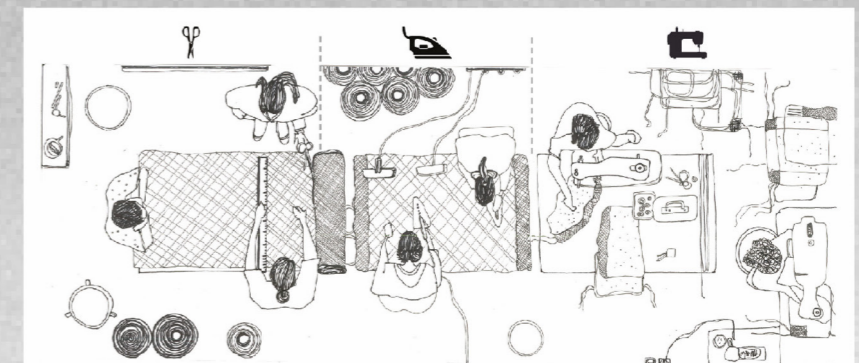
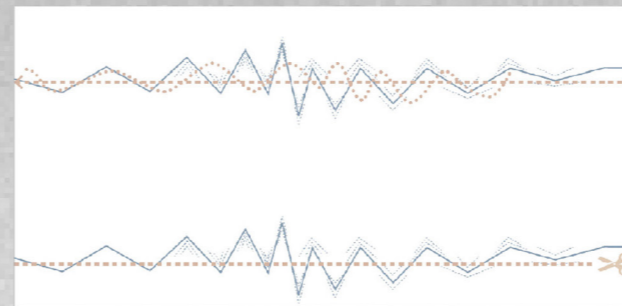
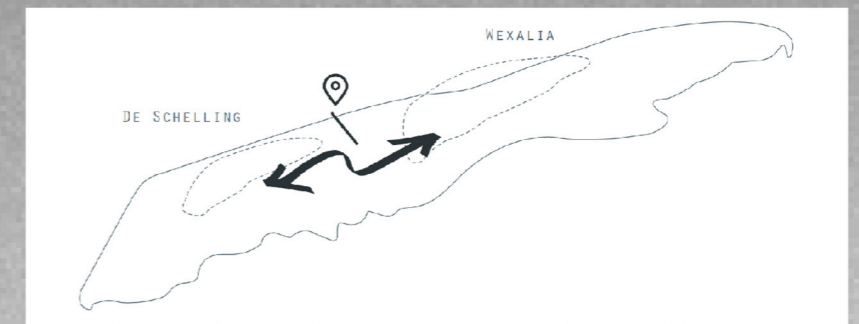




Moving to the site and context of Terschelling itself, the design process turned to detailed descriptive and projective mappings of the island. This research revealed a complex history of natural and anthropogenic processes including erosion and sedimentation, vegetation, grazing, cultivating, dune and dike-building, and settlement (infra)structures.

A site for the installation was then chosen where the two former islands of (Der Schelling & Wexalia) were united into one island during the middle ages. Projective mappings and form studies led to a design for a zig-zag line placed perpendicular to the coastline from the foredune to the shoreline. This configuration effectively spatialized a large-scale (historical) stitching of the two islands together.

The goal to capture and transport sand driven by the (angled) winds across the beach with the hessian fences, led to the further development of the scheme into a woven configuration of columns and screens in the beach-foredune complex. As such the design became a connective assembly of screens at different heights in a zig-zag configuration, leading from the dynamic surf zone to the foredune zone over a distance of 200m.





In the final built installation, stepped fences were designed to trap different modes of sediment such as creep, saltation and suspension. The angled structure was able to trap sediment from various wind directions, including the less-favourable offshore winds, thus stopping sediment from blowing back into the sea. Rows of fences also served as tunnels for sediment transport to the inner parts of the installation while elevated 'blowholes' accelerated trapped sediment to the inner chambers of the installation, where it could settle further as start of embryonic dune growth. With the project forming part of the 'expedition' program of the festival, the public visited the installation over a 10-day period. A route was set out for visitors, starting in the mature dunes behind and above the installation. Here the public were introduced to the necessity of dune formation, with a route along panels showing the different phases of dune formation and ending in a panoramic overview over the installation. From this point they could observe the various stages of dune formation, including the effects of human intervention such as the decline in vegetation around beach accesses, but also the effects of 'tramping' which helps keep sediment mobile for transport. Descending to the installation, visitors passed through the central axis of the installation where they could observe the progress of accretion in the installation, by measuring its progress at stops on the route.

