Marker Wadden - A Laboratory for Living with Nature
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colophon

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The EMiLA summer of 2017 began with sailing on a historic ship from the centre of Amsterdam to the Marker Wadden. It is the study site of the summer school, and a part of the newly created ‘Nieuw Land National Park’. We spent two nights on this new island and took a tour guided by ‘Natuurmonumenten’ (the Society for the Preservation of Nature in the Netherlands). The next day, we took a bus tour through the National Park road around the Markermeer lake, visiting unique Dutch landscape sites such as the Houtribdijk, Oostvaardersplassen and De Realiteit. These experiences provided inspiration and knowledge to make a design for the settlement on the Marker Wadden.

The goal of the Summer School was to learn to consider ourselves as part of nature, so that designing for men is designing for all that lives. We learned from Matthijs Schouten to be an ‘interbeing’, to consider ourselves as one of them. We followed the lessons of Bruno Latour to be more sensible as designers for the needs and wishes of the others. We played ‘The Parliament of Things’. Our minds were slightly brainwashed. We could start thinking about settling amongst the black sterns and shore swallows.

We designers learned about building with nature from experts. We listened to the heroic story of Roel Posthoorn, the developer and initiator of the project. The forest ranger of Oostvaardersplassen showed the effect of building with nature and the interventions taken over time. Rik de Visser explained his design for the Marker Wadden, from islands to objects. Simon Bell explained about measuring the impact of large scale interventions in the landscape. And Tracy Metz educated us on the Dutch mentality of reclaiming land and fighting the water. This gave us the extra tools to start drawing.

The archipelago is a laboratory for designing with nature. It’s a landscape machine made to clean the Markerwaard, thus improving the conditions for all that lives and can live on the Marker Wadden and in the Markermeer. The islands themselves are breeding grounds for birds. Five thousand black sterns have already taken over the place, which is not yet finished. Our stay overnight on a boat at the island was overwhelming, awakened by shore swallows, chatting on the mooring ropes of our sailing ship. We loved the place! Welcoming people will definitely create support for this adventurous project.

Natuurmonumenten is developing a settlement, a walking track and a beach to seduce the people to love the place. We studied the settlement with architecture, urbanism and landscape architecture students. Designers were tasked with making a settlement and improving the conditions for nature at the same time. The students discussed the need for building on the islands in relation to visiting the Marker Wadden. Is Marker Wadden this beautiful new archipelago to sail through? Or an island to set foot on? And finally, does visiting Marker Wadden mean that you sleep on land? When do you have the feeling ‘you’ve been there – done that’?

Everybody comes by boat. While modern boats are equipped with facilities such as toilets, beds, drinking water, heating, is it necessary to build a settlement on the island? Can’t the visitors feel welcomed through sleeping in the harbour?

The first team created an extra offshore island that functions like a base camp. The visitors anchor their big and noisy ships here and leave them behind. They rent little unmotorised boats to the island, and from there a little floating hut to settle further into the archipelago. This transforms a visit into a ritual!

The second team proposed creating new land along the Houtribdijk with the same landscape as the Marker Wadden. On this land, they designed the settlement. And it can thus be reached by boat as well as by car, bus, bike or on foot. So everybody, no matter which means of transport they use, in groups or alone, with little or lots of time, can spend a night at the Marker Wadden without disturbing the birds. This design is costly but multifaceted, and will make the Marker Wadden popular.

Three teams made a settlement on the island near the harbour. The first team designed sleeping places who are taken back by nature once left behind. They are made of objects, sand and wind. This can be created on all beachy areas.
The second team settled around the harbour in buildings that provide nestling possibilities for animals, as well as for men. The shelter is shared, literally giving space to those who live on the island. The other team was into reuse and saving energy, and using the energy of nature. They envisioned a circular settlement of leftover construction materials and other local products.

We visited the newly created Nieuw Land National Park. We absorbed the knowledge of the experts and we bridged the different views on nature of the international team members. Designers can make a settlement and improve the conditions for nature at the same time. There is not one good solution, but many ways of looking at the task. The projects brought together in this book are rich and inspiring. We give this to Natuurmonumenten in return for their great generosity and hospitality.
Assignment

The EMiLA Summer School 2017 will take place at two locations: the Marker Wadden islands in the Nieuw Land National Park and Hamerkwatier in Amsterdam. The Marker Wadden are islands located in the Markermeer lake, north-east of Amsterdam. They are man-made hills built in the lake to improve the water quality and to provide biotopes for flora and fauna. In the plans of the islands, there is an area dedicated to human settlement. On the islands, which are dominated by birds and other animals, building a settlement will have an impact on the ecosystem. The assignment is to design the settlement. Come up with a settlement which enhances biodiversity, and which creates space instead of consuming it. We will apply the lessons learned from this case in our response to a plan for an inner-city district of Amsterdam named Hamerkwatier. How can we design for animals and plants while designing cities for the people?

Programmes
The proposal must include:
- all year-round accommodation for at least 20 researchers and 12 visitors on the Marker Wadden.
- a plan for visitor accessibility.

Approach
Themes of the day for the first five days:
Day 1- Introduction to building for biodiversity
Day 2- Philosophy of living together
Day 3- Inventory of the site on the Marker Wadden
Day 4- Reference tour for building for biodiversity
Day 5- Designing for biodiversity

Product
The final design of the site should include, but not be limited to, the plan and diagrams from the scale of Marker Wadden to the scale of the settlement and details. A detail plan on a scale of 1:500, and 1:200 for sections. A4 page text to explain the proposal of the group and how it applies to the Hamerkwatier.

Visuals and reference projects should also be used to clearly explain the design. Everything will be put on three A1 panels.

Presentation (02.09.2017, 10:00-13:00)
There are two moments for the presentation of the product: the interim presentation on 31 August and the final presentation on 2 September. The interim presentation is a pitch in which to communicate the ideas in progress. The final presentation needs to fulfil the above-mentioned requirements of the assignment. The final presentation is a slide show in the ‘Hoge Zaal’. The A1 panels and other presentation materials made will be presented in the adjacent ‘Omloop’.
During the visit to the Marker Wadden, our group experienced the power of humans creating an island for nature. It is a Dutch tradition to construct and refine their landscape to meet needs and desires.

This time, the Dutch are not creating an island for human needs, but for nature. By constructing the island from silt that is currently destroying the ecosystem of the Markermeer, depth and height differences are created, improving the natural water flow. In this way, the island becomes a cleansing tool for (part of) the Markermeer. The depths in the water formed by sand pits turn into breeding grounds for fish. This attracts birds that are migrating from the north to the south and vice versa, as the Marker Wadden island is on their migrating route from and to the Wadden islands of the Netherlands.

While people are creating and thereby changing this landscape now, time will take over the shaping of the islands after the construction is finished, by natural processes, such as water and wind erosion, dune shaping, vegetation and so forth. These changes will create new ecotopes for fish, birds, small animals and insects.

Our group not only considers itself a steward of nature, but also part of it. Therefore, the goal of our group was to design settlements that are not only meant for people, but which also function as an ecotope for all species living in the area. The settlements should also be reshaped in time by nature and eventually transform into a new ecotope in line with the changed environment.

Keeping the goal of Natuurmonumenten in mind – reclaiming a higher ecological water quality for the Markermeer – our design aims to improve the ecological balance of the island and to stimulate the interrelations between species, in other words: interbeing.

To make sure the human visitors won’t disturb the vulnerable ecosystem, we designed a buffer zone to prevent motorised boats coming too close to the shore. Before entering the island, visitors and researchers have to get on a floating platform at the harbour island, which is located on the border of the buffer zone about a kilometre in front of the harbour. From this point, people transfer to unmotorised boats with which they can get to the shore. On the island, there are nests and a small walking path from where human visitors can spot birds and experience the ecosystem. To enhance the feeling of being part of nature and behaving accordingly, we let the human inhabitants (researchers) and human visitors experience the influence of natural forces like wind and water on the islands. The visitors of the island are supposed to be self-sufficient by using the power of nature, like solar energy, recycling, rainwater catchment and wind power. We translated this into ‘nests’ that are available for visitors of the island. The nests are, like the Marker Wadden themselves, a human intervention, but made for multiple species; humans, birds, fish, insects and other animals, as well as plants. All the structures are made of natural materials and will also be suitable for animals. In the main nest, laboratories, a visitor centre and necessary facilities are integrated. We chose to place the main nest and a family nest on the main island, to minimise disturbance of the ecosystem on the other islands.

In the case of researchers, we thought of movable housing ‘capsules’ that are moved around the island by these natural forces, which makes researching and visiting a dynamic activity that leads the human to different parts of the islands, being placed naturally. The capsules are connected to the ‘main nest’, which offers a connect and disconnect system for the research and tourist capsules. The capsules can be attached to facility points that are strategically distributed on the island. This also means that in certain natural conditions or breeding seasons, these facility points cannot be reached by humans. Visitors can only visit the other islands accompanied by a researcher. We also wanted to construct these nests and facility points in such a way that natural elements will not only place the nests, but also in time take over the nests; they will literally become a part of the new ecosystem and dwellings for all kinds of natural life (birds, fish, and other small animals and plants).

In this way, we want visitors of the Marker Wadden to experience this power of nature in an ever changing landscape. Visiting the islands makes you experience the accumulation of different time scales on one specific moment in time.
Naturally placed

Placement conditions determined by natural dynamics let visitors and inhabitants of the island experience the power of nature in one moment of time.
Building for biodiversity in the Marker Wadden

Markermeer is the physical connection for all the ecology within the ‘blue heart’ of the Netherlands. However, in current conditions it does not sustain much life. To improve the ecosystem and biodiversity around the Markermeer and all the humans and non-humans that benefit from it, actions need to be taken to improve the water quality. In this scenario, the Marker Wadden becomes a vital tool that will clean the water and return the ecosystem to a healthy whole system. A healthier, more resilient Markermeer benefits everyone.

An ‘inside out’ approach is proposed in order to preserve the sensitivity of the Marker Wadden landscape while allowing humans to interact with the island from the fringes, creating experiential connections with nature. The proposal is based on the improvement of the Marker Wadden ecological services, which will increase the biodiversity as well as the water quality of the lake. The island will be a sensitive functional ecological system and contain sensitivity landscapes for migratory animals, but the human presence may impact the inhabitants and functions of the water filtration. The design intervention addresses this issue, but still allows human beings to experience the ‘untouched nature’ from water and driving on the dyke from Lelystad to Enkhuizen.

The proposed design intervention will use the existing dyke, but will extend further into the Markermeer. This extended greenspace will allow humans to experience the water and the ecology surrounding it from different perspectives, while preserving the sensitive ecology on Marker Wadden. The dyke will contain a mix of landscape experiences, interpretive paths that meander along the new landscape, a new interpretive centre, and further services such as lodging, offices and a harbour. From the analysis, it has been found that the cleaning function provided by the Markerwadden can only filter approx. 10% of the lake. With an increased naturalised waterfront edge and additional mussel habitats, the reach and efficiency of the water filtration could be increased. The Houtribdijk Dyke is reimagined as a new destination for education, experience, connection to the Markermeer, and is accessible not only for motorists, but also for cyclists and pedestrians. This means that people without a boat can experience the natural environment.

In addition camping sites and other accommodation facilities, as well as cafés and restaurants, were designed. A port at the height of the Checkpoint Charlie allows access to the waterway. In order to give explorers a chance to experience the island as well, there are two floating destination points. These are multifunctional usable spaces, which are designed with a multi-layer habitat approach, green roofs for birds, ground level for humans, subsurface for mussels. They serve as sleeping places for the researchers and ensure water quality, for example, thus promoting zebra mussels. In addition, various anchor points have been designed around Marker Wadden to give sailors the opportunity to stay in this environment and explore it. Due to the many possibilities to experience the Marker Wadden inside out, visitors are asked to respect the nature and the processes that are taking place in it. The project could initiate a more comprehensive restoration of all dykes and a reassessment of the relationship between people and ecology and biodiversity.

This type of strategy maybe utilised in other contexts, such as the Hamerkwartier, by utilising existing infrastructure to build habitat for non-human species, and increasing opportunities for additional biodiversity. This follows the ‘inside out’ approach, in which biodiversity is still integrated into the human landscape, but may be preserved from direct human contact, such as: green roofs, vertical greenscapes, habitat built into building facades. Humans will still benefit from the interaction with nature, while biodiversity and ecology can continue to increase and create a healthy whole system.
INSIDE : OUTSIDE
Building for Biodiversity in the Markerwadden

Markermeer is the physical connection for all the ecology within the "blue heart" of the Netherlands, however in current conditions it does not sustain life. To improve the ecosystem and biodiversity that connects all the living spaces around the Markermeer and all the humans and non-humans benefit from it, actions need to be taken to improve the water quality.

The Markerwadden becomes an effective and imperative tool that will clean the water and return the ecosystem to a healthy whole system. A healthier, more resilient Markermeer benefits all.

A inside/outside approach is proposed in order to preserve the sensitivity of the Markerwadden landscape while allowing humans to interact with the island from the fringes giving experiential connections to nature.
Living with Nature on the ‘Marker Wadden Islands’

During our first explorations on the first ‘Marker Wadden Island’, we thought that settling on this nature-oriented, but man-made, island required a highly sensitive approach to processes and conditions of nature. During our exploration tour, we already discovered that natural processes like erosion are already changing the shape of the island. For instance, wind and water are starting to reshape the island at the microscale and these natural powers are creating small spatial gradients or units at the beach, also known as ecotopes in the field of landscape architecture. These small-scale ecotopes, as shown on our poster, are nesting hollows for swallows or small gradients of shallow water at the beach serving as a habitat for fishes or crabs. These gradients of ecotopes should be the basic idea for developing a strategy to settle on the island of ‘Marker Wadden’. That means the spatial structure of the settlement will not only host animals, but also adapt to the characteristics of its surrounding natural conditions. Furthermore, as in the examples at the beach, the physical structure will be shaped by the natural forces like wind and water and finally it may disappear completely. The inhabitants, who are visitors and researchers, are not only passive observers, but will be part of the experience of the changes through natural processes. This will help them to understand how we as humans are still connected to these natural forces and how it effects our way of living or the other way around. Like the island, our design is an experiment in how humans can live with or even for nature.

By analysing the layers of the gradients of soil, water, plants, animals and the possible movement of humans on the island, we developed certain rules for the spatial configuration of the settlements and the process of settling on the island. The most important one is that the settlement moves over time and only stays at the same place for one season. So, there might be less settlement activities through winter time for instance. This also avoids having a long-term impact on one spot of the island. In addition, this enables visitors and researchers to settle in more sensitive areas of the island. The human’s role is to build the settlement by themselves, which means the experts or professionals, such as botanists, architects, etc., will teach the visitors how to build up the shelters. The shelters should not only be inhabited by humans, but they should also give a new physical structure to nature. For instance, the dike could be extended to from a shelter and at the same time flatten out the slope, which creates several small ecotopes for various types of marine animals. While visitors and researchers observe the island during their stay on the island, they will also learn how to maintain their natural environment. As the island is man-made, it probably needs temporary interventions to maintain these man-made, but natural, conditions. This could also be a way for visitors to participate and contribute in order to preserve the nature on the island. When moving from one place to the other, the settlement will disappear or leave something for nature, which will enrich the habitat for certain animals or plants. To show how our design strategy works, we created scale models of our settlement in gradients at the beach, behind the dyke and in the marshlands. All sections show that the settlements are different in terms of the characteristics of the material, activities, comfort, durability, interaction with nature etc.

Finally, there is not only an impact on the island but also on its surroundings as people from Amsterdam, Enkhuizen or Lelystad will have different expectations on how to use the island. For instance, people from Lelystad will use it mainly for daily recreation, whereas people from Amsterdam might stay there at least one night like us. Their experience on the island will reflect on their permanent living conditions at home.
SETTLE IN GRADIENTS
LIVING IN NATURE ON THE MARKER WADDEN ISLANDS

ARRIVING FROM AMSTERDAM
ARRIVING FROM ENKHUIZEN
ARRIVING FROM LEIJSTAD

GRADIENT OF ECOTONS

GRADIENT OF SOIL
GRADIENT OF WATER
GRADIENT OF PLANTS
GRADIENT OF ANIMALS
GRADIENT OF PEOPLE

LIVING AT THE BEACH
LIVING BEHIND THE DIKE
LIVING IN THE MARSHLAND

GRADIENT OF ACTIVITIES
The project 'We Don’t Care – We Love It!' wants to appoint some fundamental facts of the island, the so called 'Marker Wadden'. The new archipelago, made out of sand, silt and manpower, is placed in the artificial lake, the 'Markermeer', which was divided from the 'IJsselmeer' in the north by the 'Houtribdijk'. The surrounding polder land in the east has been created through pumping out the water through centuries. 'Noord-Holland' to the west of the 'Markermeer' is protected by huge dykes, which have been strengthened over the years and will continue to be strengthened in the future, to protect the land from flooding of the rivers. As shown, there is a lot of man-made energy in this area and this will continue.

The island is built up for the purpose of cleaning the water of the 'Markermeer', as after closing the dyke, the water quality decreased dramatically. The idea is to create shallow water, thus reducing the speed of the water and also reducing the effect of wave movement, which causes the silt to rise, floating in the water. In this way, the huge amount of silt in the lake can be stored between the plants and the lake bottom.

This inspired us to point out these silent processes by incorporating it as a symbol within the design, but also to give people this experience by watching and joining the dialogue themselves.

Another layer of the design is to show the huge amount of energy that was used during the construction of the islands. The remains of the big and rough machinery that were used during the construction of the island will be used to create settlements for researchers and visitors. At the visitor centre located near the harbour, visitors will be equipped with a helmet and high-visibility clothing to make them aware that the island is undergoing endless construction and is always in dialogue with the present energies. Both type of settlements include the big steel tubes of the construction dredge. At the visitor centre, there is a thirty-metre long pipe built up vertically to create a landmark that is constructed from the steel tubes of the dreges. At the same time, these steel tubes can contain the same amount of fuel that is needed to keep the machines running for one day: 17,000 litres of oil. The researchers’ settlement is built up out of 42 steel tubes, which could include 308 tonnes of the CO2 emission that the machines would emit in one week. Artificial elements, such as shovels and drills of the dreges, are placed at the beach in a clear and rigid line, as if the dredging is done at the bottom of the lake. These elements will attract people who leave their personal footprint. By doing this, the people shape the surface in a comparable way to the birds. In addition to this, the wind and water energies will shape the surface even more. This will show the continuous dialogue between the nature and the artificial. With this experience on the artificial natural island, people might start to think about their actions, in their daily life and in the future. Hopefully, we will care, because we love it!
We don’t care,
we love it!

The artificial Dutch landscape, layers

The artificial Marker wadden landscape, artificial layers & and natural forces

ARTIFICIAL NATURE
ARTIFICIAL ISLAND (MARKER WAADEN)
ARTIFICIAL WATER (MARKER MEER)
BOTTOM OF THE LAKE, LAND

Overview 1:500

Section 1:200

Intervention location

Impression of the site
A synergy between species

Marker Wadden is a beacon of freedom. For one species, it is an escape from reality, while for another is it a place to create new life or to survive life itself. In both cases, Marker Wadden breathes life and opportunity. It can be compared to an oasis in the middle of a desert where all species can regain strength. In contrast to an oasis where the sand is the main dominant factor/obstacle and creates death, Marker Wadden sand gives and creates new life for all species in the middle of water. The inverse oasis.

All those species have the right to be on the Marker Wadden, therefore all users are equal but with different needs. Our goal was to create an environmental balance on the island between all species where they live in sympathy with each other. With our proposal, we have tried to answer one question: Can design make us equal?

By using wind power, we create a high dynamic natural dune landscape on the island. The dunes can be used as a living area for humans, flora and fauna. In time, the different dune structures for housing (for people and animals) and barriers will shape the dune landscape in a natural form. The dune topology can ultimately function as a barrier for water or sound, but it also creates microhabitats for different animals and plant species.

Due to the small scale, it means that a large dune houses sleeping areas or facilities for people below the surface. Wooden bird nets and insects homes are created on top of the dune. The slope of the dune will create different distances to the fresh groundwater and therefore varied planting opportunities. A small dune mostly creates a habitat for animal and plants, while the microhabitat differs per location on the island. The function ranges from blocking sand or water, but the main goal of stimulating an ecological environment remains the same.

In addition to the goal of Natuurmonumenten to reclaim a higher ecological water quality for the Markermeer, this design will improve the ecological infrastructure on the island and stimulate the interrelations between species, because they are always in a close proximity to each other.
THE INVERTED OASIS
A SYNERGY BETWEEN SPECIES

CONNECTIONS

MARKER WADDEN
LELYSTAD
AMSTERDAM

PROJECT

ACTIVITY

TIME (DAY)

CONTRAST
OPEN VS. CLOSE SPACES AND MATERIAL

(INVERTED) OASIS
FREEDOM, ESCAPE FROM REALITY

ENVIRONMENTAL BALANCE
INTERVENTION, EQUALITY, SYNTHESIS

CREATION OF THE DUNES
ILSAND TO SPRINKLE THE SAND

THE WIND FOR SCULPTOR

DETAILS PLAN OF THE DUNE
ZOOM OF THE PLAN

SECTION

PLAN OF THE DUNES

CAN DESIGN MAKE US EQUAL?