



Honswijkerplas

An (eco)nomical project execution

UEPG Sustainable Development Awards

Economic contribution & added value
to the society of Tull en 't Waal by Dekker Grondstoffen B.V.

April 2016



a natural resource for development

Dekker



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Project timeline

1990's: start
development
2008: start
execution

2014
completion of
recreational
lake

2015
end of
sand extrac-
tion

2016
start of
phase
3

2025
completion of
entire
project

1. Management summary

After years of careful preparation, since 2008 Dekker Grondstoffen has been working on the development of a recreational lake and a natural lake close to the village Tull en 't Waal. In the past few years, the floodplains have been transformed into a recreational area with the banks measuring a total of 3,000 metres of which 630 metres consists of sandy beaches and 1,000 m² has been used to create a playground. Different facilities have also been added such as benches, picnic tables, fishing piers, sanitary facilities and 500 parking spaces. All these facilities have been completely funded by mineral extraction.



‘630 metres consists of sandy beaches’

This project, named Honswijkerplas, improves spatial quality and creates added value by:

- > Making the recreational lake accessible to people with a physical disability by building sanitary facilities with special modifications.
- > Reducing the risk of floods by strengthening the inner verges of the primary dike.
- > Improving water quality to promote rheophilic fish species (returning salmon to Dutch rivers).
- > Creating a safe environment for different types of amphibians and breeding birds in line with the guidelines of Natura 2000, a network of nature protection areas in the territory of the European Union.
- > Stimulating the economic development of the region as it is a great location for organizing events and creating opportunities for suitable hospitality industry for this area.

The recreational lake was completed in 2014 and is used by the local residents. Sand extraction was completed in 2015. The completion and upgrading of the natural lake



will take place from 2016 until 2025. As soon as the extraction of natural resources in a certain area has been completed, redevelopment will commence immediately to allow the local residents and other visitors to enjoy the area as soon as possible. The timing of the redevelopment will allow the best possible quality to be achieved. ■

2. A natural resource for development : working with a purpose

The Dekker company was founded with the purpose of extracting sand and gravel from the river beds of the Dutch river areas. Since then, this 100-year old family business has been working with a single purpose: to build a relationship with our clients and the environment in which we operate. We focus on developing a sustainable living environment and also aim to build lasting relationships with our stakeholders.

The Dekker Group works with a set of core values that embodies the responsibility we feel towards nature, our employees and partners.

These core values are:

- > Corporate Social Responsibility – developing and extracting natural resources by taking people, planet and profit into account
- > Transparency – open and fair collaborations and business practices
- > Simplicity – clear agreements, services and products
- > Humanity – all developments, extraction activities, transportation and production of products respect people's needs and rights



‘respect people’s needs
and rights’



3. The Netherlands : delta country

The Netherlands is a country located in a delta and is largely located below sea level. This delta country is characterized by fertile river clay and soil. Gravel is extracted further upstream in the south of the Netherlands. We extract our sand and gravel directly from the river and the material can be used directly. The Netherlands is a small country with a high population density. This is why the extraction and mining of natural resources, which are used as building materials, never have a singular purpose and are combined with social objectives such as the improvement of flood protection, enhancing opportunities for recreation and creating better conditions in order to improve biodiversity.



‘improvement of flood protection, enhancing opportunities for recreation’

Safety and society: Room for the River

The Netherlands is a country with a great deal of waterbodies that make the country very vulnerable to floods. Following the large-scale flooding by the rivers during the 1990s, the government wants to protect the Netherlands against flooding and secure freshwater supplies, now and in the future. As a result, the government has laid out its plans in the Dutch Delta Programme. The discharge and storing capacity of the rivers needs to be increased. This is done by shifting or expanding rivers and dikes or digging side channels. This programme also focuses on improving the spatial quality of the river areas. The river systems in Europe are well connected and by taking these measures it creates a chain reaction on other river systems in Europe. Therefore, in cooperation with Belgium and Germany, work is being done to enhance flood protection and improve current ecological values.



An obligation towards birds and habitats: Natura 2000

The presence of more than 160 Natura 2000 areas is unique to our working environment. These areas cover a combined total of more than 1.1 million hectares of which about 69% is water and the remaining 31% is land. The areas are part of a connected network of nature protection areas in the European Union that have been designated based on the Habitats Directive and Birds Directive.

The goal of Natura 2000 is to turn the tide in terms of the loss of biodiversity. A large part of Dekker projects are located in a Natura 2000 area. Many breeding birds can be found in the Tull en 't Waal area. Before any work was started in this area, an ecologist always inventoried whether any nesting birds were located in the working area. This proved to be the case in several occasions and the order of work around some of the ponds and lakes in the area was adjusted as required. To protect the breeding pairs, nests and hatchlings from drowning, a framework was constructed around these ponds.



‘an ecologist always inventoried whether
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4. Tull en 't Waal

Honswijkerplas project is located on the right bank of the river Lek (the continuation of the Nederrijn river) and close to the village Tull en 't Waal. Since 2008, Dekker Grondstoffen created a recreational lake and a natural lake. The total surface area of these lakes is approximately 50 hectares.

During extraction, approximately 250,000 m³ of ceramic clay, 1.1 million m³ of industrial sand, and 1.7 million m³ of fill sand were removed. These raw construction materials are used for the production of concrete and the construction of embankments and foundations. Extracted clay is used for the building of dikes and for the production of bricks and roof tiles.

At the end of the project approximately 1,800,000 m³ of materials were brought in. Materials such as sand or riverbeds have been sourced from the area during work on the infrastructure and have been sustainably repurposed for this project. This greatly reduces transportation and fuel costs.

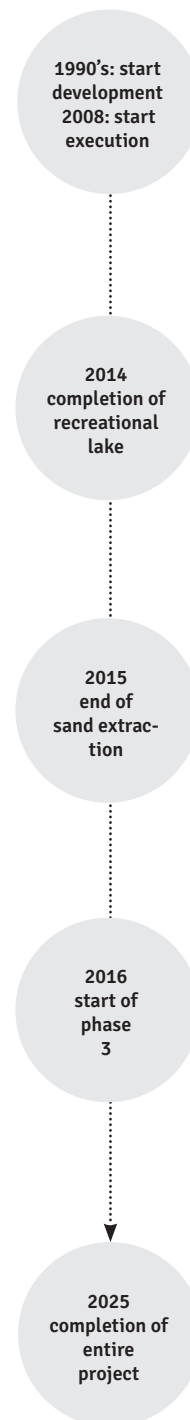


‘The project plan for Tull en 't Waal consist of three phases’

Phase 1: the development and construction of a lake for recreation

The emphasis of this phase was on making the lake suitable for swimming. A beach was created with a gentle slope that descends to a depth of two metres below the surface of the water and a buoy line was placed to mark a safe swimming area. Several facilities have also been constructed such as wheelchair accessible sanitary facilities with special modifications, a playground and parking facilities. This location has officially been designated as swimming water and the water is closely monitored and inspected for quality control. To ensure a high quality of the water, the Province of Utrecht and

Project timeline



the Rijkswaterstaat (the governing body in the Netherlands for public works and water management) have set up an extensive monitoring programme.

Phase 2: the development and construction of the southern natural lake

Special islands were constructed which are suitable for different flora and fauna. The purpose of these special islands is to attract nesting birds in a quiet area and therefore there were no trails or benches installed in this particular area. This area is already home to various bird species such as the white wagtail, the common pheasant, the great crested grebe, and the common kestrel. The natural lake area also has an abundance of riparian vegetation which includes bulrush and yellow iris.

‘Special islands were constructed
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Phase 3: the completion and upgrading of the natural lake

During the completion phase of the natural lake, a dam will be installed that creates a division between the northern lake (which is used for intensive recreation) and the southern lake. This creates a new recreational walking trail. Along the dike, a separate, shallow section of the lake has been made. This section of the lake is especially suitable for the development of aquatic plants and can also be used as a spawning pool for fish and amphibians.

In order to enhance the water quality of the swimming lake, which only had one side stream flowing into it, a new babbling brook was added to allow for better water circulation. This improves the water quality of the lake as it reduces the presence of blue-green algae (Cyanobacteria). The flowing water, which is of the highest quality, also creates an attractive area for visitors.

Rheophilic fish (fish species such as salmon, sea trout and sturgeon who live in streams with currents and migrate from salt water to freshwater to spawn) will benefit from this addition. Salmon disappeared from Dutch waters halfway through the twentieth century. By improving the water quality of the larger rivers, the salmon has been able to return and increase its numbers.

During phase 3 a large area was rewetted by releasing water and raising the ground-water level. This area was first used for agricultural purposes and is now being used to stimulate the return of indigenous flora and fauna in the future. ■

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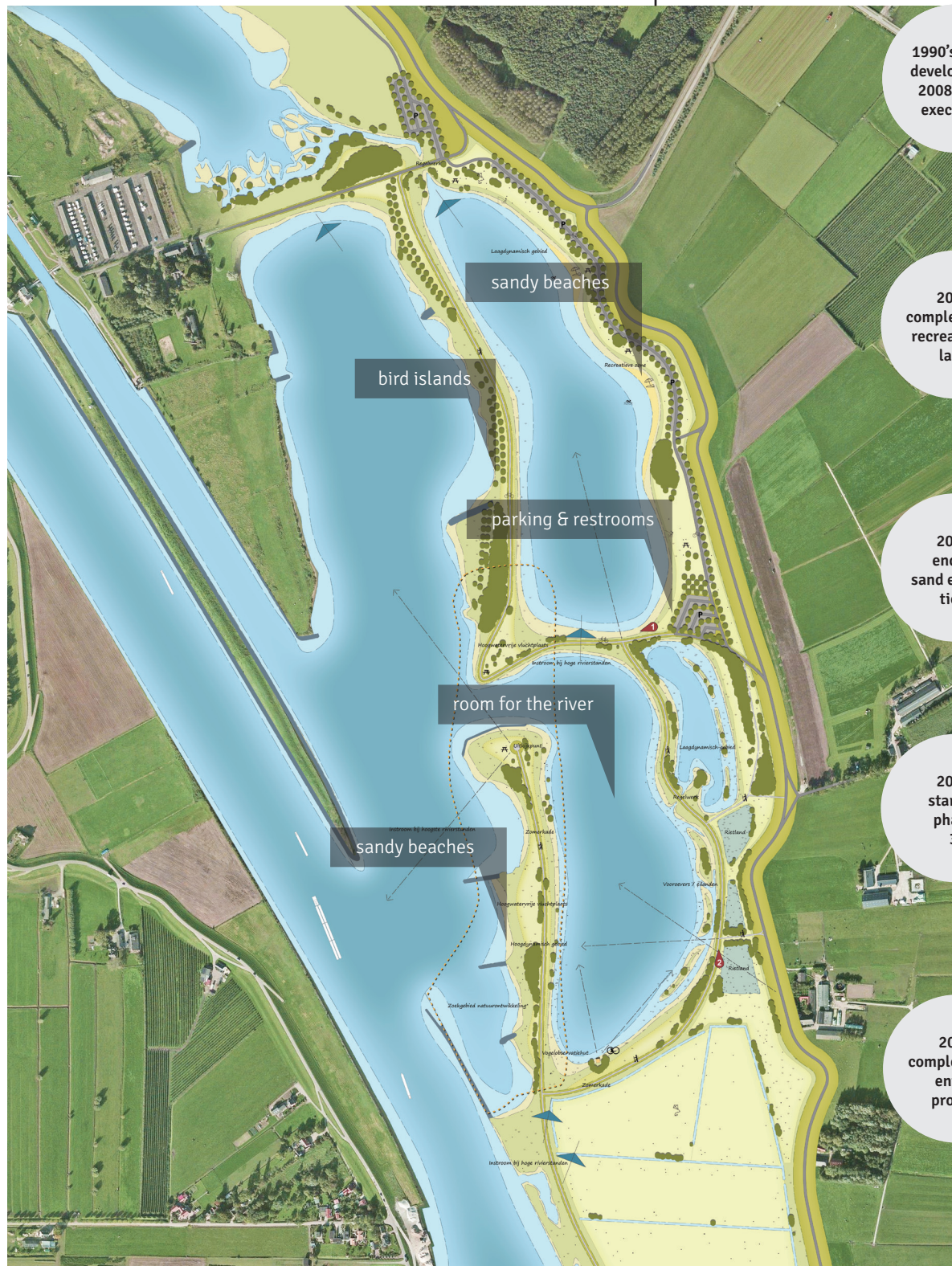
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General map of the Honswijkerplas at Tull en 't Waal.

Project timeline



1990's: start development
2008: start execution

2014 completion of recreational lake

2015 end of sand extraction

2016 start of phase 3

2025 completion of entire project

5. Working method and phasing

Approaching stakeholders / local approach

Dekker is a strong advocate for local approach and put together a reference group early in the process. This group consists of several representatives: the local residents, Stichting Behoud Fort Honswijk (conservation foundation of Fort Honswijk), Stichting Leefbaarheid Tull en 't Waal (foundation for quality of life in Tull en 't Waal), municipality of Houten, Recreatie Midden-Nederland (organization for recreation in the central Netherlands), Rijkswaterstaat (the governing body in the Netherlands for public works and water management) and the Province of Utrecht. This reference group meets regularly and will continue to do so in the future. Stakeholders were also invited to participate in public participation meetings and to join an excursion to the Merwede 5 suction dredger/processing installation organized for local residents.



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Reaching the next level together

Dekker makes its processes transparent to its stakeholders and stays connected throughout the duration of the project. This approach has resulted in a greater understanding of the goals of the project and of each other, which makes it possible to reach the next level together. By taking onboard the ideas and specific knowledge provided by the local reference group, the plan has been significantly improved and elevated to the next level. Following a recommendation made by the reference group, only one entrance to the area was constructed to make sure that motorists can not enter the area by passing by nearby the houses. Fences were also placed for the duration of the work to prevent noise nuisance being caused by illegal motorcycle racers.





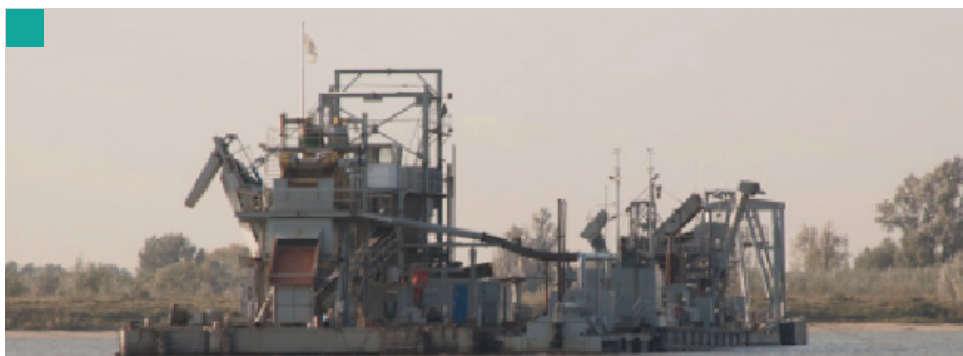
‘the dike was customized by the needs of all parties involved’

Reducing the risk of floods

The inner verges of the primary dike were strengthened following close consultations with local residents. The primary dike provides the residents protection against flooding and to emphasize this the residents were consulted and informed about necessary changes to the dike. During this process the dike was customized by the needs of all parties involved and this resulted in laying new pavement and the moving of summer houses to an alternative location.

Making sand extraction sustainable

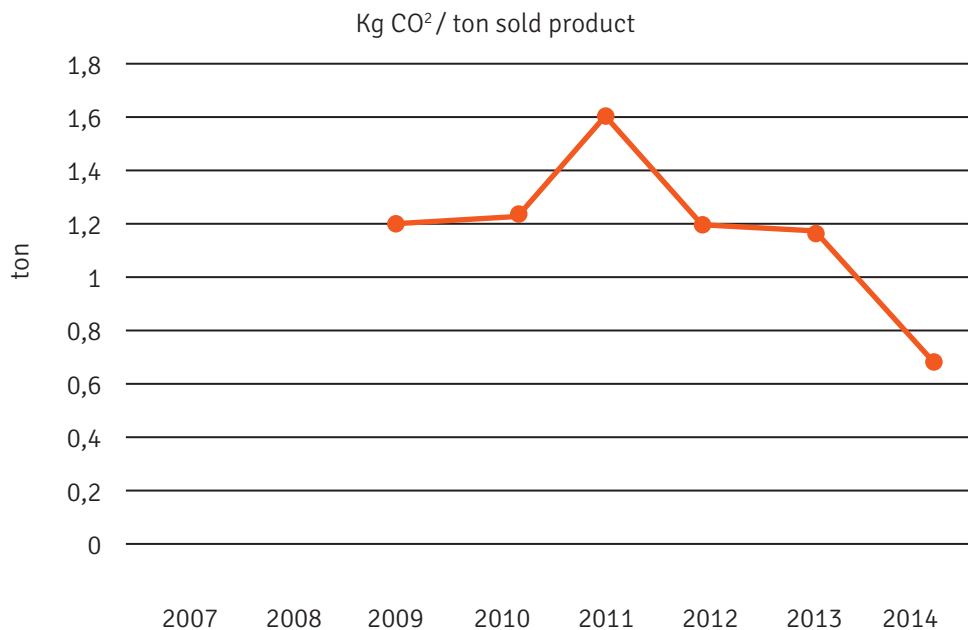
Dekker is dedicated to sustainability and reducing the impact on the environment. We are always looking for the best available techniques (BATs) that we can implement in all of our work processes. One of these techniques is storing energy during non-productive hours, which we can use during productive hours. This technique is used for the extraction activities performed by the suction dredger Merwede 5 at Tull en 't Waal. Dekker has been able to reduce energy and avoid using a generator when it comes to navigation lights, heating and the alarm system. We have been successfully storing energy since 2014 and have also reduced fuel costs and noise nuisance in the process.





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This approach to energy management has resulted in a reduction in CO₂ emissions of more than 50% per tonne of product sold in 2014 when compared to the period of 2009-2013. To power the Merwede 5 installation, a conscious choice was made for an engine type that meets CCR2 standards. These engines release less NO_x (nitrogen dioxide) and PM₁₀ (particulate matter) emissions. Reducing nitrogen emissions is currently an important topic in the Netherlands and an integrated approach has been formulated in the Programmatische Aanpak Stikstof (the Dutch integrated approach to nitrogen, PAS) which helps to protect Natura 2000 sites.

Financing

The Dekker Group is committed to work in harmony with nature. This project presents a great opportunity as we can combine extracting raw materials such as gravel and sand with increasing the water safety. This way The Netherlands is protected against flooding and the social capital is kept at a responsible level. The extracted materials act as the funding of this project and cover the costs of the development of the project such as permit requests, research and investigation, fees and all development measures. This also includes earthmoving, paving, street furniture and playground equipment. The completion of the project gives the region an economic boost as events can be organized in this area and the opportunities are created for developing suitable hospitality industry in this region. ■



6. Realized value

People

A new recreational area has been created for nearby residents of the Honswijkerwaarden. This area is densely populated as nearly 300,000 people live within a 10 km radius of the area. It is accessible to all residents including those with a physical disability. The area is open throughout the year and can be used for a variety of recreational activities such as swimming, walking the trails, sailing or simply enjoying all that nature has to offer.

Planet

The construction and development of lakes and ponds creates a suitable habitat for different types of fauna. Sand martins can nest in the steep banks while the area is also a suitable feeding area for bats. The development of shallow water pools creates a habitat that is perfect for amphibians. The area also attracts many different species of birds including the white wagtail, the common pheasant, the Eurasian coot, the great crested grebe, the greylag goose, the grey heron, the Egyptian goose, the black-headed gull, the great cormorant, the common wood pigeon, the sand martin, the common buzzard, the common kestrel, the common starling, the mallard, the Eurasian teal, the sedge warbler, the meadow pipit, and the common sandpiper.



‘The area also attracts many different species of birds’

To further enhance the ecological value of the area, a deep sand reclamation lake with steep banks will be connected to the riparian forests, reed beds and ponds. This creates a gentle, nature-friendly bank that extends the surface area of the lakebed and gives the flora and fauna ecosystems more room to thrive in.



Profit

Dekker works in harmony with nature and partners to ensure that all natural materials will be reused. For this project a new sluice will be build near the project area and a substantial amount of soil will be released during the digging of the sluice chamber. Thanks to an agreement with the contractor, the soil will be reused in a sustainable way for the Honswijkerplas project. This is beneficial both economically and environmentally as transportation costs are reduced and there is less disruption to the biodiversity of the area. ■

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