

PROJECT SHEET

4 NEDERRIJN MEASURES ROOM FOR THE RIVER

INTRODUCTION

Within the governmental programme Room for the River, in more than thirty places the Rhine, IJssel, Waal, Nederrijn and Lek are getting more space. Boskalis was commissioned by Rijkswaterstaat to work along the Nederrijn.

PLAN, DESIGN & CONSTRUCT (PD&C)

For the first time in water-related engineering, plan study, design and realisation are integrated into one assignment: creating support in the surroundings, proceeding with the approval process, developing spatial quality and realisation. In all phases we have shown our added value and expertise. Because we were involved at a very early stage, we were able to contribute cost-effective and time-saving ideas. With the Boskalis approach, the work was ready earlier than the client considered as a starting point. And at a very competitive price. Risk evaluation and management were also very important here because of the planning challenges. The client and subcontractors were involved in NINA, our distinctive safety programme, from the very beginning.

THE PROJECT

The project for the Nederrijn foreland expansion consisted of four measures: the external deviation of Doorwerthse Waarden, Middelwaard, De Tollewaard and the Elst obstacle removal. In each of these four, regional safety was different and we chose a different solution. Attention has also been paid to the spatial quality of each area.

DETAILS

Client	Directorate-General for Public Works and Water Management [Rijkswaterstaat]
Location	Elst (U), Lienden, Doorwerth
Period	2011 - 2014
Contractor	Boskalis Nederland B.V.
Type of contract	PD&C



A Consultation on the activities of project staff

B Excavation work at the Tollewaard site



DOORWERTHSE WAARDEN: QUAY RELOCATION

The summer quay along the river has been moved here; the agricultural area is now smaller, the riverbed is more spacious. Between the new quay and the river, the shore has been lowered and cleaned. The pile field (brick storage) of the local brick factory has been moved from the river side to the west side of the mound. Between the quay wall and the mound, a new road has been laid on the lowered ground level. The height of the new summer quay is such that the flooding frequency of the agricultural area is no higher.

MIDDELWAARD: EXCAVATING FLOOD PLAINS

The bridge at Rhenen, which forms part of the N-road between Ochten and Veenendaal, narrows the Rhine at Middelwaard. The bridge works like a bottleneck on the river. For a good flow with a higher drainage capacity, it was chosen to expand the riverbed. Middelwaard is now a little bit lower. Part of the summer quay has also been excavated.

DE TOLLEWAARD: EXCAVATING FLOOD PLAINS

Due to the excavation of the summer quays on the east and west sides of the flood plain, the river has gained more space. On the flood plain, the ground level is lower in a number of places. This creates shallow pools with a valuable function for nature. Because the flood plain is more often underwater, the access to the mounds has been adjusted. To this end we have built a 233 metre long high water bridge to the western mound. The eastern mound is accessible under normal conditions over a road at ground level. At high water there is the bridge to the western mound and a connection along the summer quay between both mounds.

ELST: DEMOLISHING OF FORMER BRICK FACTORY

In this area, a higher area with a former brick factory blocked the river water. The brick factory has been demolished. The former storage area (pile field) for bricks around the factory has been excavated and cleaned. A mound arose from which the bank runs to the river. On the village side, the pile field has been dug down to a low-lying meadow that can flood. The waterway has been widened and has gotten a nature-friendly bank.

MANAGEMENT OF THE LOCAL ENVIRONMENT

The involvement of residents, administrators and other stakeholders has been crucial for the success of this extensive project. Boskalis has invested a lot of time and effort in this from the start. Through information evenings, kitchen table discussions, a website, Twitter and newsletters, residents were kept informed. Residents were also asked to share their wishes. A few times this has even led to adaptation of the design.

With this active setup, we have created a great deal of support and avoided lengthy objection procedures

Key quantities:

Design and application of high water bridge:	233 m
Total amount of soil excavation	± 660.000 m ³
Performing soil remediation in Elst, De Tollewaard and Doorwerth:	195.000 m ³
Applying asphalt layers:	4.500 ton
Applying footpaths, cycle paths and walking paths:	7,5 km



C Tollewaard, construction of high water bridge



D Excavation work at the Tollewaard site