

SCHOTEN HOOGMOLENBRUG BRIDGE 54
SCHOTEN, VLAANDEREN, BELGIUM

Reinforced Soil Walls and Slope Reinforcement

Problem

With almost 40 million tons of goods transported per year, the Albert Canal is the most important waterway in Flanders. Container transport, in particular, has seen a steep rise over the past decade. As part of the effort to increase the capacity of the Albert Canal, De Vlaamse Waterweg nv is therefore investing in the further expansion of the Albert Canal.

The current limitation in clearance height and width under the bridges forms a bottleneck for inland navigation on the Albert Canal. The raising of the bridges to a vertical clearance of 9.10 m will allow barges with four layers of containers to sail safely and smoothly. In addition, Short Sea Shipping will have better opportunities on the Albert Canal.

The new Hoogmolen bridge is located on the reservation strip of the A102 and is used as the main connection for freight traffic between both banks, in combination with the Houtlaan. There is an additional bicycle connection and attention is paid to embedding in the landscape.

For this purpose, the Hoogmolen bridge 'was moved' 250m towards Antwerp to provide:

- A direct link between N120 (Merksemsebaan - Bisschoppenhoflaan) and Metropolitan street -Schoten's traffic safety/livability: keep freight out of the center
- High-quality cycle connection between both banks
- Landscape connection between both banks
- Green Corridor

Solution

The design of the reinforced soil structure has been carried out following the Eurocode 7 in combination with the Belgian Annex.

The possibility to modify the units to follow the exact shape of the bridge has been very well appreciated by the contractor FRANKI, that later chose the same system for the next bridges on the Albert Canal, like in Meerhout and Kuringen.

In this case, the original plan was to have a slope inclination equal to 75°. to respect this design requirement Maccaferri prosed to use 80° Green Terramesh element installed with some little steps between the units. In correspondence to the bridge abutment, some units were directly connected to the concrete wall as a cladding system.

Client: Texion Geosynthetics NV

Designer / Consultant: Arcadis NV / Sweco

Contractor: FRANKI / HYE

Products used (Qty.)

- Green Terramesh 1500 sqm of facing

Date of construction: 06/2021 - 09/2021



Start of the installation phase



During the installation: detail of the bridge abutment



During the installation: detail of the cladding system



During the installation: detail of the cladding system

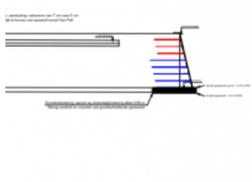


After installation

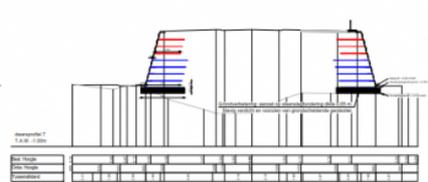


After installation: detail of the steps between the units

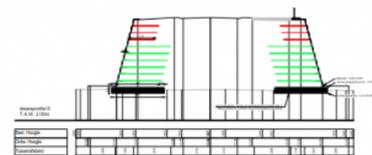
inval Van Pelt (aanzicht G)



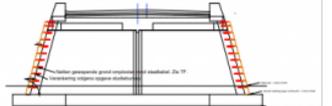
Deursproef 7



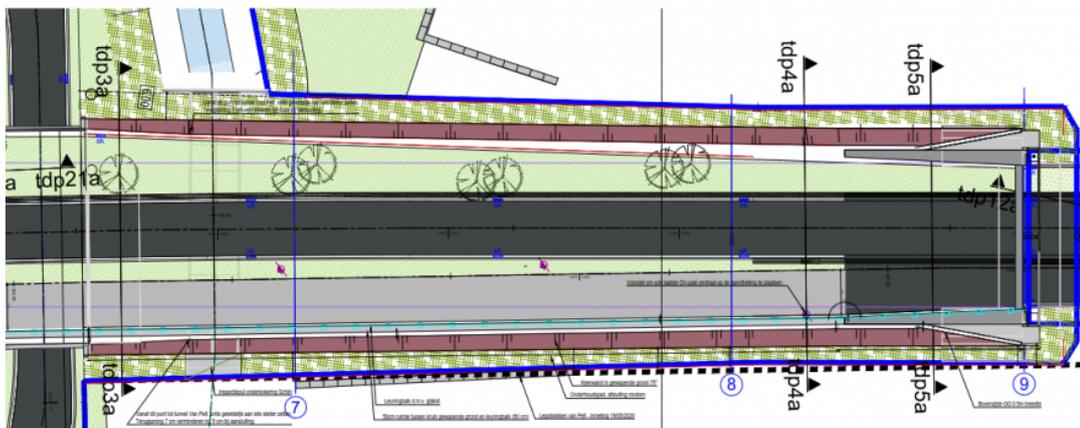
Deursproef 8



Vooransicht gewapende grond - aansluiting LH



rapende grond LO



LEGENDA	
[Red line]	Gewapende grond - cladding
[Green line]	Gewapende grond - versterkingsgidsje 3 m
[Blue line]	Gewapende grond - versterkingsgidsje 4 m
[Purple line]	Gewapende grond - versterkingsgidsje 5 m
[Black line]	Gewapende grond - versterkingsgidsje 6 m

OPMERKINGEN
 1. De afmetingen van de wand zijn te nemen op de buitenzijde van de wand.
 2. De afmetingen van de gewapende grond zijn te nemen op de binnenzijde van de wand.
 3. De afmetingen van de versterkingsgidsjes zijn te nemen op de binnenzijde van de wand.
 4. De afmetingen van de versterkingsgidsjes zijn te nemen op de binnenzijde van de wand.
 5. De afmetingen van de versterkingsgidsjes zijn te nemen op de binnenzijde van de wand.
 6. De afmetingen van de versterkingsgidsjes zijn te nemen op de binnenzijde van de wand.
 7. De afmetingen van de versterkingsgidsjes zijn te nemen op de binnenzijde van de wand.
 8. De afmetingen van de versterkingsgidsjes zijn te nemen op de binnenzijde van de wand.
 9. De afmetingen van de versterkingsgidsjes zijn te nemen op de binnenzijde van de wand.

PROJEKT
 Werving weggebruiker
 De Vlaamse
 Waterweg
 AARCADIS SWECO
 BINA HOOGWATERBUREAU SINTENA
 Gewapende grond LO
 Omschrijving: Gewapende grond LO

Schematic top view

Maccaferri Balkans Sh. P. k.
 Autostrada DR-TR; KM 6, SH2, Xhafzotaj, Durrës, Albania

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