

TENDER FOR WEAK LINK NORTH HOLLAND

The Hondsbossche and Pettemer Sea Defence is the weakest link in the sea defence of the North-Holland coastline and is located between the villages of Petten and Camperduin. The old sea defence of pitched stones will be replaced by a combined beach-dune system in front of the old dike. The tender comprises the construction and maintenance of the new sandy coastline for 20 years.

Svašek Hydraulics has an integral part in the design team of the winning tender combination Van Oord – Boskalis. Within the joint venture Svašek Hydraulics is responsible for the prediction of 20 years of sand losses and for the design of the maintenance buffer and nourishments.

An extensively calibrated FINEL2D model is set up. The flexibility in grid generation of the finite element method makes it possible to have both a model resolution of 20 m in the area of interest and to calculate 4 years of morphological sea bed development within 24 hours of computation time in high performance mode.

The differences between the model results and calibration data are translated into probability

density functions describing the model uncertainties. By means of a Monte Carlo analysis the range of sand losses that can be expected at the new beach (50% and 90% range) is established.

For 20 years ahead the morphological development of the new coastline including the effects of the planned nourishments is simulated. The result allows for the design of an optimised nourishment programme with high efficiency.

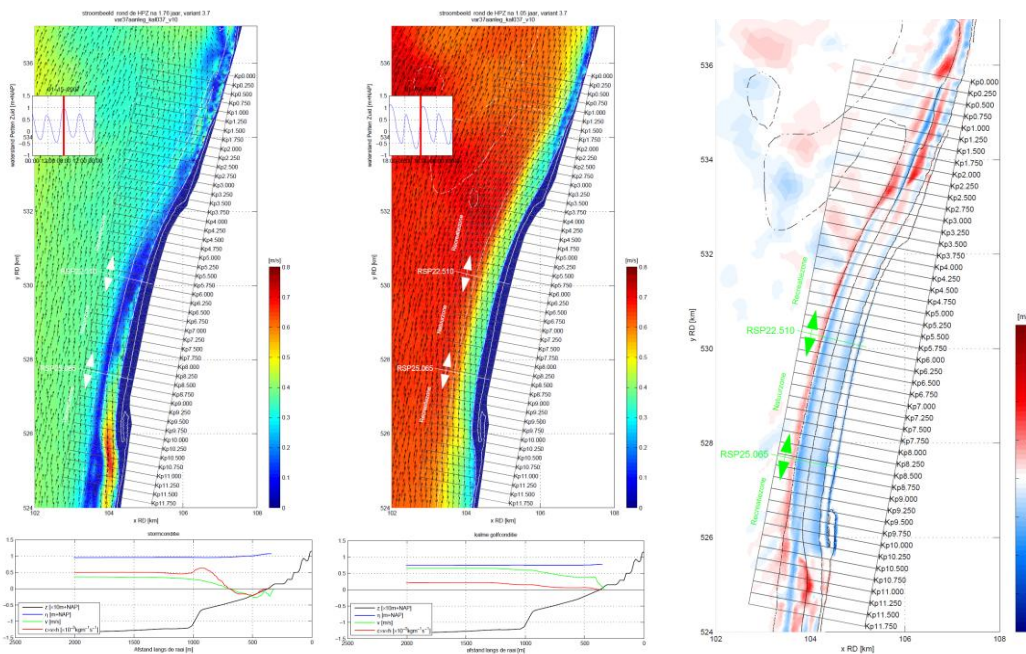
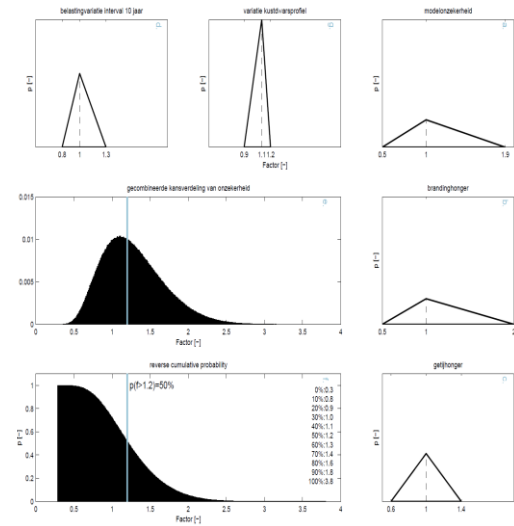
In January 2014 the Hollands Noorderkwartier Regional Water Board (HHNK) and the Department of Public Works and Water Management (RWS) awarded the contract for the reinforcement and maintenance to this joint venture Van Oord - Boskalis.

CLIENT
VanOord/Boskalis

LOCATION
Netherlands

DATE
2012-2013

SERVICES
Long-term morphological modelling



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