Design sea defence - Weak Link Waterdunen

The West Zeeuws-Vlaanderen weak link runs from Breskens to the Zwin. It's such a large area, that the weak link is split into five sub-areas. One of them is Weak Link Waterdunen. Waterdunen is located in the south-western part of the Netherlands at the entrance of the Western Scheldt.

Project Waterdunen is a combination of sea defence and the development of a recreation area and natural area. Because there is a deep tidal channel off the coast, it will not be possible to reinforce the dyke here in seaward direction so reinforcing of the dyke is located in landwards direction with dunes. The new design is to construct a new dune area in order to combine the coastal defences with a natural silt and salt marsh area. Currently, there are also plans for a dune camp site, a hotel and recreation homes, all carefully made to fit in with this. The water board is creating a tidal culvert in this natural area as part of the water barrier. It is a water outlet in the dyke through which the water can flow into and out of the area twice a day.

The numerical wave model SWAN is used for the derivation of the Hydraulic Boundary Conditions, the hydraulic conditions with an exceedance frequency of 1/4000 year. Svašek Hydraulics has written the design report of the sea defence. First, after consultation of all parties involved, a list of demands, wishes and boundary conditions has been formulated. With this list several alternatives have been developed and the selected design was engineered in detail (Steentoets, PC-overslag, computation of dune development.).

The dike will be under construction in 2013.

Clients
Scheldestromen water board/
Zwakke Schakel project office

Location
Breskens, Western Scheldt,
the Netherlands

Date
2011-2012

Services
SWAN wave modelling
Morphological advising
Detailed design sea defence

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