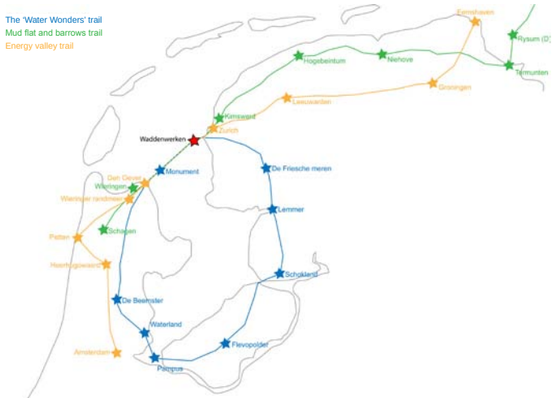
Phased development of sustainable recreation
The project will also serve to create an attractive landscape for visitors, providing a boost to tourism and leisure in the region. The process will begin with an upgrading of the existing facilities and the phased construction of the Climate Information Centre at Kornwerderzand. This centre will inform and educate visitors about the history of hydraulic engineering in the Netherlands, climate change, energy and the local ecology, doing so in an accessible and entertaining way. The centre will gradually grow, both in size and importance, and by 2020 will form the hub of several walking trails and cycle routes. The focus at Den Oever will be on culture and history, while Breezanddijk will offer tranquility and wide open space. There are also plans, as yet unconfirmed, for a beach area with all associated amenities on the southern side of the IJsselmeer lake.



Recreational trails in the Wadden Works area


Artist's impression: cycle route across the mud flats


Artist's impression: footpath across the mud flats


Artist's impression: Climate Information Centre at Kornwerderzand, with bridge and observation point

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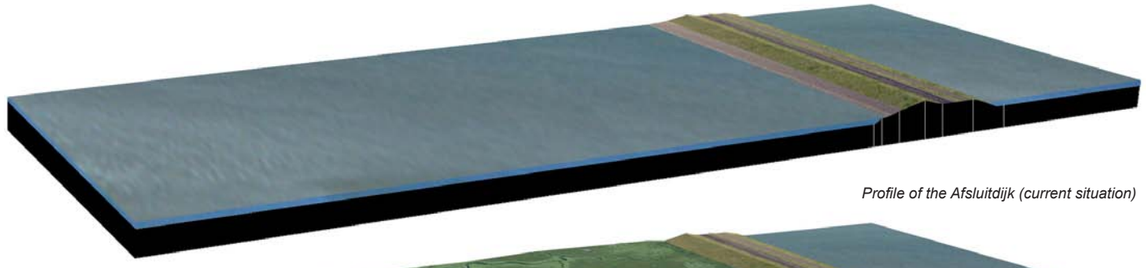
The Wadden Works Project

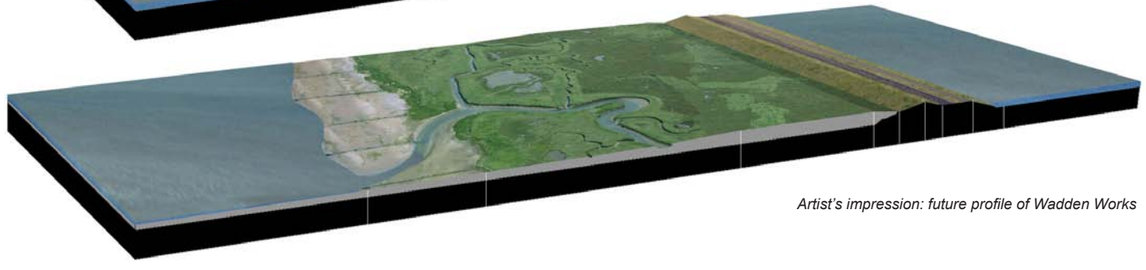
A safe water barrier which will grow with the sea


Artist's impression: Waddenbrug and mudflats and salt marshes along the Afsluitdijk

Building with nature
The Netherlands has a long and rich tradition in coastal engineering. There have been many technical innovations, but recently there has also been a dramatic cultural change in the way we try to interact with nature. Until the 1960s, little attention was devoted to the negative impact of major water protection projects. A radical shift in thinking followed, with efforts made to minimize any detrimental effects. The Oosterschelde Dam is a good example. This dam was initially designed as a closed barrier, but redesigned as an open tidal barrier. It is now time for the next step in the evolution of Dutch coastal engineering. Rather than merely minimizing negative effects, we now wish to create positive effects. The narrow technological approach will be abandoned in favor of an approach which addresses a broad range of environmental, ecological and social interests.

Recent evaluations raised some doubt about the long-term safety of the Dutch *Afsluitdijk* ('enclosing dike'). The traditional means of rectifying the shortcomings would be to increase the height of dike by several meters and to entirely reface its surface, The Wadden Works project takes an alternative approach. Rather than increasing the height of the dike, it is to be extended laterally by means of artificial mud flats. This will create a robust water barrier which actually 'grows' with the sea. The technique to be employed is actually centuries old. It relies on the natural processes of silt accretion, which can be accelerated using relatively simple means.

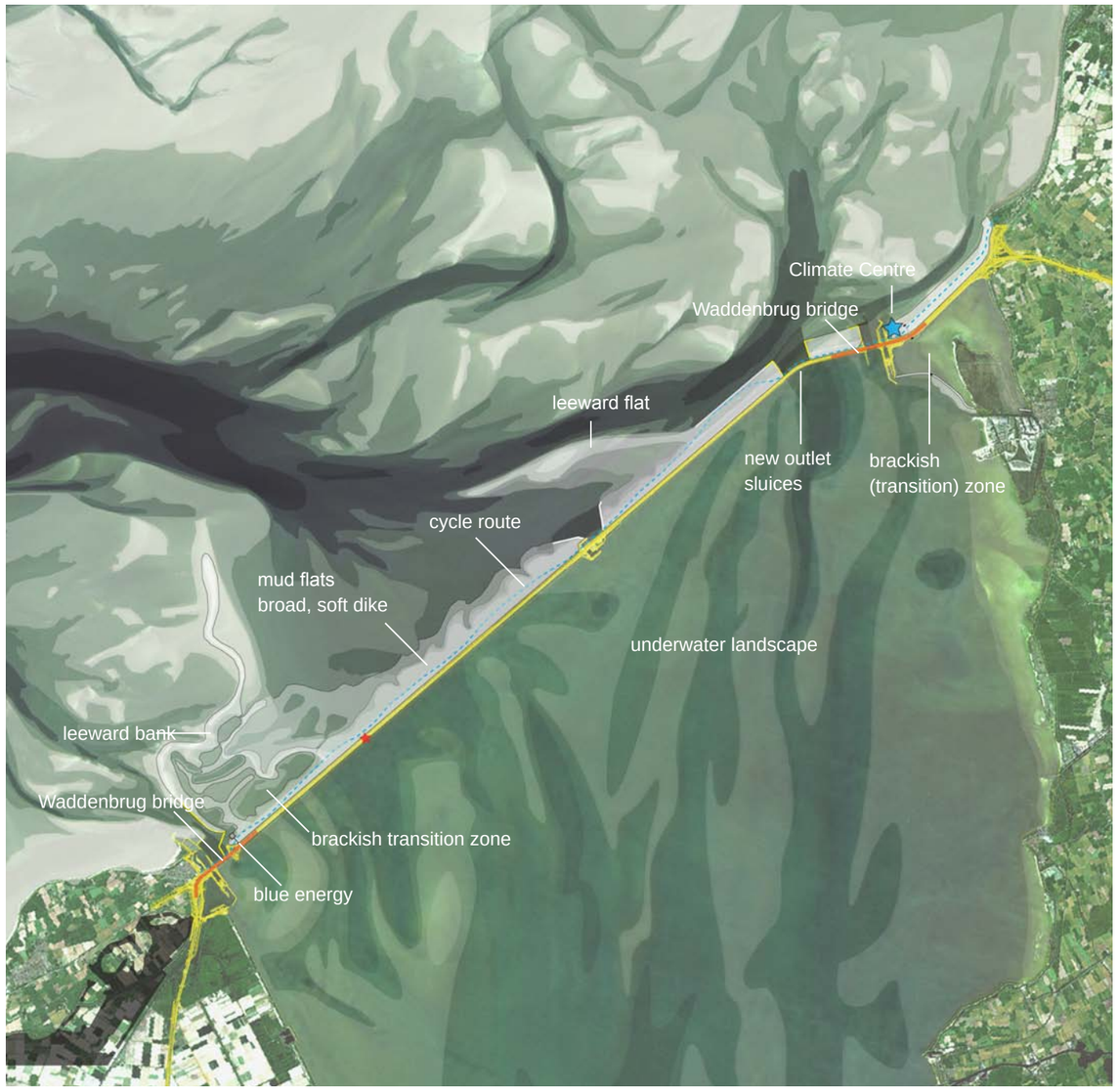

Profile of the Afsluitdijk (current situation)


Artist's impression: future profile of Wadden Works

The Wadden Works in 2030

Under the Wadden Works project, the existing dike will not be raised (increased in height) but expanded laterally by means of mud flats. This will create a robust, low-maintenance sea barrier which will grow with the sea as the water level rises. The mud flats will be between four hundred and six hundred meters in breadth. Between the flats and the dike itself a raised ‘buffer zone’ of some 100 meters will be made, which joins the dike at a slight angle. The concept has been designed in such a way as to retain the cultural historical values of the dike (which dates from 1932), while enhancing the ecological values. An ingenious combination of outlet sluices and leeward banks will mitigate the effect of the unnatural bi-daily fresh water incursions. The concept also provides for the inclusion of ‘estuarine’ areas, being transition zones between fresh and salt water.

The sand required for the project will be obtained from the IJsselmeer (lake), which enables an ‘underwater landscape’ of unusual diversity to be created. This will provide an ideal habitat for many species of fish and birds. The Wadden Works project will also include two bridges which will become the ‘gateways’ to Friesland and Noord Holland, and will provide an unobstructed view over the Wadden and the IJsselmeer itself. They will straddle local waterways and protected monuments, forming an elegant solution to the current rather chaotic situation with its many junctions and bottlenecks. ‘Blue Energy’, derived from the interplay of fresh and salt water, can be generated in the brackish transition zones. Last but not least, a public Climate Information Centre is to be built at Kornwerderzand.

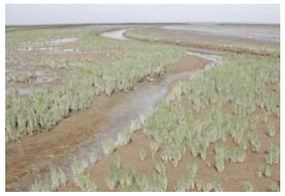


Map: the Wadden Works in 2030

Innovation and international interest

Never before has the foreshore itself been incorporated into the safety concept on this scale. “Building with Nature” is rapidly becoming an international trend, with growing interest in creating sustainable sea defenses by means of natural processes.

Wadplaat flats



Starter vegetation

Brushwood dams contain the silt deposits

Mature mud flat

Artist’s impression: basic profile of Wadden Works

Artist’s impression: recreation on the flats off the coast of Friesland