

COASTAL DEFENSE KATWIJK

THE NETHERLANDS

An integrated design
Coastal defense, parking and recreation

The field of coastal defence and waterworks is the epitome of Dutch expertise. Where the famous Delta Works consist of movable dams and locks, the majority of the Dutch coastline is protected by dunes against water. 'Rijkswaterstaat', the department responsible for all water related infrastructure within the ministry of infrastructure and environment, is constantly working to improve the coastal defence in the Netherlands. In recent decades it works to strengthen some of the 'weak links' along the coast. In many places, dunes and dikes are being strengthened to ensure safety inland for the next 50 years.

The Netherlands is situated largely below sea level. Protection against water is therefore important. Legal safety standards have been drafted for coastal defences. Part of Katwijk's coast did not meet with these standards. The coast at Katwijk has therefore been reinforced with a dyke in new, wider dunes. The need for parking in Katwijk was quite urgent as well. A space for underground parking garage between the Boulevard and the dyke was realised. The Dyke-in-Dune solution thus offers security and parking space, while improving the spatial quality.

Dry feet

A part of the Katwijk embankment ran through the city centre. This part did not meet with the safety standards. In case of a super storm, combined with a very

high water level, the centre of Katwijk would get flooded. Via this vulnerable spot, the water is at full liberty to put large parts of the Randstad (conurbation) under water. That is why a new, stronger weir was built. Everyone can thus keep dry feet: the hinterland is being protected against flooding and the centre of Katwijk is inside the safety zone.

Ready for the future

Katwijk is ready for the future. By constructing an underground parking garage, there is more space to park cars, and wider dunes offer more opportunities for recreation. The consequences for Katwijk, its residents, businesses, recreation and wildlife have been taken into account in the plans. The preservation of the character of Katwijk was crucial when performing the

Dyke-in-Dune. The dunes will therefore have remained as low as possible and the distance from the Boulevard to the sea has remained as small as possible.

1. Dyke-in-Dune

A dyke has been constructed seawards from the boulevard. It is made out sand, lined with stones. The new, wider dunes were constructed on top of that. As a consequence, the beach moved seawards. The widened dunes kept the same height as the current situation, so seaview was preserved. The solid package of dunes around the dyke will reduce the beating of the waves on the dyke and it is a future-proof solution.

2. Parking garage

Between the Dyke-in-Dune and the Boulevard, an underground parking



Poor spatial quality in former situation



Katwijk as one of the weak links



Majority of the Netherlands is below sea level



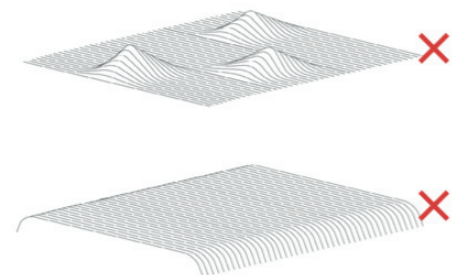
Katwijk is now included in the safe zone



Former boulevard and dunes



Aerial view after realisation of the coastal defense project



Natural dune landscape

