



Dawlish Warren Coastal Defence Works

Repair and maintenance of groynes to extend operating lifetime

Dawlish Warren has a history of being affected by storm events. It is protected by 17 timber groynes every 100 metres along the beach and a buried line of rock filled baskets and concrete, beneath the sand dunes. These baskets, called gabions form a 'backbone' along the length of the spit, which help to stop breaches from the sea. Because a large amount of sand had been washed by waves from the seaward side of the dunes the existing gabions had become exposed and damaged, particularly between groynes 8 and 10.



To combat this coastal erosion we constructed a new anchored gabion revetment along a 200m length of dune frontage between groynes 8 & 10 and constructed a new vehicle/pedestrian access ramp over the dunes at groyne 8 to improve beach access. The new revetment was constructed over the existing "grasscrete" revetment and held in place by steel anchors. We also carried out repairs to Groynes 8, 9 and 10, utilising a method developed for works that we carried out in 2008 to Groyne 7. The existing reno mattress to the toe of the existing revetment was dismantled and the stone stockpiled for reuse. The stone was used to form a foundation for the new toe and to fill the 285 additional baskets that were used to reinforce the revetment.

Challenges

Access to the site was restricted by a low railway bridge, so all materials had to be delivered over a Friday and Saturday night track possession between midnight and 6am. In total 1,200tns of stone was delivered during these possessions, and the concrete access ramp was cast in two separate night possessions. Light vehicular access through the dunes to the site was restricted to a single track as it ran through a Special Area of Conservation (SAC) abundant with petalwort which is a plant protected under UK and European Law.

Client

Environment Agency

Principal Contractor

Team Van Oord

Duration

16 weeks

Value

£380k

Scope

Maintenance and refurbishment works to coastal defences





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Environmental

Dawlish Warren is a SAC and supports 2000 species of invertebrate, 620 plants and 250 fungi. Its mosaic of dune scrub and inter-tidal habitats make it the second most important reserve in Devon. The site also supports native common lizards and sand lizards. The sand lizards are a European Protected Species (EPS), protected under the Habitats Directive and the UK Conservation of Habitats and Species Regulations.



Safe

The beach had to open to the public 24 hours a day, all construction materials had to be safely stored during working hours and then removed and returned to our local storage area at the end of each day to ensure public safety.

Innovative

Prior to work commencing we identified access restrictions through groyne 8 and 9, with the only route possible along the beach being around the groyne ends. Following a redesign, we increased existing groyne openings to 3.5m width with removable planks secured with padlocks rather than bolts so that the planks can be removed easily for future works.

Honest & Collaborative

Complete transparency was essential on this project; we worked closely with the Environment Agency, Park Rangers and local authorities who were on site daily to ensure the protection of this SAC and Ramsar site. Teignbridge District Council, Devon Wildlife Trust and the Environment Agency were delighted with the quality of the work, reinstated dunes and management of the project with all 16 points in the Environmental Action Plan achieved.

Team Van Oord
Lockside Place
Mill Lane
Newbury
Berks RG14 5QS
T 01635 529101
F 01635 521548
E info@vanoord.com
W www.teamvanoord.com