

Dawlish Warren Beach Management Scheme

Dawlish Warren is an eroding sand spit at the mouth of the Exe Estuary in Devon and plays a vital role in protecting key infrastructure and property from flooding, including 5km of the London-Penzance mainline railway. The Dawlish Warren Beach Management Scheme implements a balanced and sustainable solution taking into account the unique demands of the location.

Further benefits of the scheme include reducing long-term maintenance costs, re-naturalising 1.5km of sand dunes, dramatically improving the aesthetic and amenity value of the beach and bringing economic benefit to the area. This has been achieved through sustainable design principles and construction techniques that protect the natural coastal cell and work with nature (e.g. local sand re-cycling and re-generation of dunes).

Construction of the £12m scheme finished in October 2017, 2 months ahead of programme and £2m under budget, and involved a range of innovative coastal engineering techniques.

Scheme elements include:

- The removal of gabion baskets from the dune face along the length of the sand spit
- Construction of a new revetment at the western end of the spit, preventing a flood route forming to the village of Dawlish Warren
- Refurbishment, extension and replacement of timber groynes
- Dredging from a local source at Pole Sands and beach recharge
- Installation of a 'Geotube®' defence buried in the dunes at the 'neck', the narrowest point of the Warren. This solution offered £1.4m saving over traditional methods, the ability for future removal, and critically was more acceptable in relation to the future evolution of the dunes.

The Dawlish Warren Beach Management Scheme was a unique project tailored to the demands of the location. Strong leadership, a cohesive project team adopting innovative approaches, and extensive engagement, ensured the project was delivered under budget and ahead of time, with headline activities completed significantly ahead of schedule.