Dean Dyball
Civil Engineering

# Brixham Harbour Regeneration


## Project Description

Dean & Dyball Civil Engineering has completed the first phase of a major project of works at Brixham Harbour, in Devon, to increase capacity of the fish market.

Brixham has a large, active fishing fleet and one of the busiest fish markets in England. Construction of a new jetty for client Torbay Council, has created approximately 4,500 square metres of additional space. Sufficient to provide a new market hall, enabling the white fish most frequently landed there, to be processed separately from the black fish, such as ink-carrying cuttlefish, soon to become a necessity by law. A number of employment units, offices and a restaurant have also been built.

This design and build contract was originally tendered and won on the requirement for an open jetty structure. Dean & Dyball Civil Engineering subsequently proposed an alternative design that was more useable at a reduced cost. The lightweight nature of the original design left very limited scope as to what might be built on it in the future. The alternative, mass-filled structure, proved more adaptable for future use at minimal cost.

The alternative design was for two, 75 metre long, 12.5 metre wide jetties of in-filled steel sheet pile walls. The two jetties were linked together by a steel sheet pile caisson at the seaward side and the section between them filled before being capped with a reinforced concrete slab.

The site for the new jetty was located at a pinch point between the sea and a headland, overlooking the harbour. With only narrow lanes for access and no spare space for storage, the most logical approach was to build the new jetty from the sea, using barges. The majority of materials were also brought to site by sea.

The fill material, some 47,000 tonnes, was delivered by sea. This involved shipping 1,300 tonnes of reclaimed aggregate, from Cornwall's china clay mines, and recycled crushed concrete from the quarry, near Plymouth, to the site every 36 hours.

China clay sand, a by-product of the china clay industry, was used to fill the area between the steel sheet pile walls of the two jetties. It was chosen because of its engineering characteristics, its ability to self compact underwater, and due to it being very well washed, it had the added advantage of barely discolouring the harbour water during the filling operation. It was also cheaper than conventional aggregate as there was no levy payable and being a waste product, it was a sustainable solution.

**Client:**
Torbay District Council

**Duration:**
78 weeks