

PROJECT SHEET

COWES OUTER HARBOUR BREAKWATER
COWES, ISLE OF WIGHT, UNITED KINGDOM

BOSKALIS WESTMINSTER: SKILLS, RESOURCES, EXPERIENCE

Boskalis Westminster brings together the skills, resources and experience of Royal Boskalis Westminster. Our capabilities include seabed rectification works for pipeline/cable and platform installation, construction of pipeline shore approaches and landfalls, offshore mineral mining, offshore supply and support services and decommissioning services. Boskalis provides clients with tailored, project-specific solutions, as illustrated by the following project summary.

PROJECT DESCRIPTION

In January 2014 Boskalis Westminster (BWL) were awarded the contract to undertake the design and construction of the new detached breakwater on behalf of Cowes Harbour Commissioners, at Cowes on the Isle of Wight. Construction of the 350 metre long detached rock armoured breakwater that will protect existing homes, businesses and harbour users and that enables the continued regeneration of East Cowes and the further economic benefits that brings to the Island. The first phase of transforming Cowes into a sheltered harbour and creating a variety of development and business opportunities for East Cowes, Cowes and other Island stakeholders was carried out in February 2014.

Boskalis Westminster are the main contractor, bringing together several divisions of their group of companies to offer the client an effective and efficient design and construction package. Hydronic, our in house consulting engineers, undertook the permanent breakwater design and settlement calculations. Cofra, one of our sister companies installed 1,100 vertical drains. BWL executed all further works.

FEATURES

Project Name	Cowes Outer Harbour Breakwater
Client	Cowes Harbour Commissioners
Contractor	Boskalis Westminster Limited
Location	Cowes, Isle of Wight, United Kingdom
Execution period	Feb 2014 - Oct 2015



- A** Cowes Breakwater
- B** Modelling the breakwater at Hydronic's facilities, NL
- C** D2 spreader pontoon linked to trailing suction dredger Sospan Dau via floating pipeline



The construction of the new breakwater was carried out in two phases, the first being the creation of the core structure of the breakwater which commenced in Spring 2014.

The core was constructed by placing a base layer of coarse gravel followed by the installation of the vertical drains. A geotextile membrane was then placed to cover the footprint of the breakwater and then more sand and gravel was placed to build up the core.

After Cowes Week closed, BWL continued installing the breakwater's gravel core up to between 4 and 5 metres above chart datum, using a trailing suction hopper dredger, floating pipeline and spraying pontoon. When the crest of the breakwater became visible above the water surface, the spraying pontoon was utilised to spray gravel against the slopes of the breakwater. The gravel was left to consolidate for one month prior to being raised up to 5 metres above chart datum along the whole length of the breakwater.

All the sand and gravel was beneficially used from the capital dredging of the Southampton Channel that was ongoing simultaneously.

SAFETY

By September 2014, and during a nine month period over the autumn and winter to allow for settlement of the gravel core, the breakwater resembled a gravel spit and then began to take its final finished appearance during the 2015 works. After this consolidation period, BWL returned to install the rock layer and complete the construction of the breakwater during the summer of 2015.

To help to keep sailors and other craft safe, an Exclusion Zone was created around the submerged breakwater and construction area. Cowes Harbour Commission issued Local Notices to Mariners for the most up-to-date information on the extent and shape of the Exclusion Zone, which was shown by lit buoys and cardinal marks. A 300 metre long floating orange and black pipeline, also lit, was anchored parallel to the breakwater on its northern side, and a 60 metre barge could be positioned anywhere along the breakwater footprint. For their safety, all vessels ensured they stayed outside of this Exclusion Zone and entered or departed Cowes Harbour via the fairway or Small Craft Channel.

For Cowes Week, although operations were ceased for safety, BWL worked with the client to produce a safety message which was played twice on every Red Funnel journey to and from the Island, as well as in various hospitality areas on-shore.



- D** 1,100 vertical drains were installed to aid settlement
- E** Breakwater Construction
- F** Cowes Harbour is a popular sailing destination
- G** Craft Safety - Exclusion Zone created

Boskalis Westminster Ltd
Westminster House
4 Crompton Way
Segensworth West
Fareham, Hampshire PO15 5SS
United Kingdom

T +44 1489 885933
F +44 1489 578588

bwl@boskalis.com
www.boskalis.co.uk