

### BOSKALIS WESTMINSTER: SKILLS, RESOURCES, EXPERIENCE

Boskalis provides clients with tailored, project-specific solutions for dredging and marine engineering services, as illustrated by the following project summary.

### **PROJECT DESCRIPTION**

The Solent is a major shipping route for passengers, freight and military vessels, as well as a recreational area for water sports, particularly yachting. It is sheltered by the Isle of Wight and has a complex tidal pattern, which has greatly benefited Southampton's success as a port because it produces a 'double' high water, extending the time which a vessel can transit the channel. With the increase in size of both cruise and container vessels that are regularly visiting the Port of Southampton, the Marchwood Widening Works, an early phase of the major capital works planned for the Southampton Approaches, were a critical element allowing container and cruise ships to operate safely at the port.

The project involved the removal of material over a 900m length of the western edge of the navigation channel in Southampton Water opposite berths 104-106. The channel was widened by around 30m at the existing maintained dredge level of 12.6m below Chart Datum (CD). The total volume of material dredged was approximately 270,000m<sup>3</sup>.

The material dredged varied from soft mud/silt to medium stiff clay. A stable slope was designed based on soil samples taken before the project. This combined a 1 in 3 from the toe of the slope at 12.6mCD to -5mCD in stiffer material and 1 in 6 thereafter to the existing seabed level at approx. -0.5mCD, in softer alluvium.

Project delivery was strictly time bound. To prevent disruption to the salmon migration season, works had to be completed by the start of April, otherwise significant environmental monitoring works would haveto be undertaken, efficient and effective operations were therefore critical.

Following award, we were required to mobilise rapidly in order to meet the deadlines for this project. Plant was mobilised and dredging commenced within ten days of award.

# PROJECT SHEET

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MARCHWOOD, SOUTHAMPTON, HAMPSHIRE, UNITED KINGDOM

### FEATURES

Project Name	Marchwood Channel Widening
Client	Associated British Ports - Southampton
Contractor	Boskalis Westminster Limited
Location	Marchwood, Southampton, United Kingdom
Execution period	March - April 2013



 A Location map
B 3d CMS Technology used
C Rind barge and Manu Pekka backhoe dredger at work in the narrow channel





#### MARCHWOOD CHANNEL WIDENING MARCHWOOD, SOUTHAMPTON, HAMPSHIRE, UNITED KINGDOM



Boskalis Westminster used a combination of four split hopper barges; Long Sand, Cork Sand, Frigg and Rind, alongside the backhoe dredger, Manu Pekka. Loading of the barges was tightly coordinated so that as one barge was full another was ready to be loaded, keeping the cycle going 24 hours a day and seven days a week. Close cooperation and communication with Southampton Vessel Traffic Service was needed to prevent delays to both the barges and other commercial shipping in such a busy port and this was achieved to the satisfaction of all involved.

The licensed disposal site, was located at Nab Tower, around 28km from the dredging area. The travel time was eight hours from the dredge area, to the disposal site and back. With four barges in operation and the Manu Pekka dredging both types of material using an 8.5m3 bucket, we were able to achieve twelve loads per day, and excellent production rates of over 450m3/hr. The disposal area is subject to rough seas, however the barges were designed for relatively extreme conditions, so were able to continue operations safely throughout rough weather.

The dredge masters used a newly installed 3D



CMS system to monitor the position of the vessel and to direct and report the progress of dredging works. It is very simple to extract screen shots from the system and together with the daily report it gives a clear visual representation of the progress.

Due to the close proximity of the work to residential properties in Marchwood, consultations were held and a noise impact assessment was carried out resulting in the development of a plan to mitigate noise impacts by working in sections closer to residences during day time only.

With the professionalism of the dredger and the barge crews the project was completed within budget and well before the 1st April deadline.





E Cruise ship departs
Southampton through the
Marchwood Channel
F Work continuing throughout
rough weather
G F48 at Marchwood

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