

CROSSNESS JETTY DREDGING

RIVER THAMES

OBTAINING MARINE LICENCES AND CONSENTS

The Frankham Consultancy Group were commissioned by Thames Water to obtain marine licences and consents for proposed dredging works to the riverbed adjacent to their jetty at Crossness, River Thames.

The Thames Water site at Crossness, London, serves as a sewage water treatment plant, however, the jetty at Crossness serves the "Thames Bubbler" and Environment Agency operations. Over the last decade, the bed levels adjacent to the jetty have raised due to silt deposits rendering the jetty inoperable at low tides due to insufficient draft.

We recommended at an early stage that water injection dredging (WID) methods would be well suited to for the site, due to the silty nature of the riverbed and the lower environmental impact other dredging methods can cause. Our maritime team liaised with Van Oord, who conduct regular WID campaigns on the River Thames, who agreed to provide preliminary RAMS required for the consenting process.

Consents were required from the following statutory bodies:

- Port of London Authority - Capital Dredge Licence
- Marine Management Organisation - Marine Licence
- Environment Agency - Flood Risk Assessment Permit

Our team prepared applications for each type of licence which included details of the project proposals showing extent of works, a Water Framework Directive (WFD) assessment, provision of pre/post work hydrographic surveys, RAMS, riverbed sample data and details of any potential effects of the proposed works on nearby sites.

The predominantly Victorian sewage system found throughout London means that in the summer months a mixture sewage and rainwater run-off pollute the River Thames which impacts the oxygen levels in the water. The Thames Tideway Strategy Group, which includes Thames Water and the EA, assessed the impact of this and found that extreme cases of pollution can have devastating effects on the river's ecosystem.

The cost to upgrade the archaic sewage systems to fix the problem would be astronomical, so an alternative solution was put in place. The purpose-built vessel "Thames Bubbler" was constructed and tasked with injecting up to 30 tonnes of oxygen per day directly in the river at strategic time and locations. The original vessel is now joined by the "Thames Vitality" vessel which provides an additional 100% bubbling capacity. The jetty at Crossness is vital to the operation of both bubbler vessels and EA patrol boats and it is important to ensure it is suitably maintained.



FRANKHAM

The clean up of the River Thames over the previous few decades is a significant achievement of which Frankham are pleased to play a small part in. The challenge now faced is to maintain and progress achievements to date.

Several innovative technologies and techniques were recommended by Frankham on this project to provide cost savings and improve data collections.

When collecting riverbed samples, we partnered with Ecospan Environmental to use vibro-coring techniques to collect window samples within two tides and keep costs to a minimum.

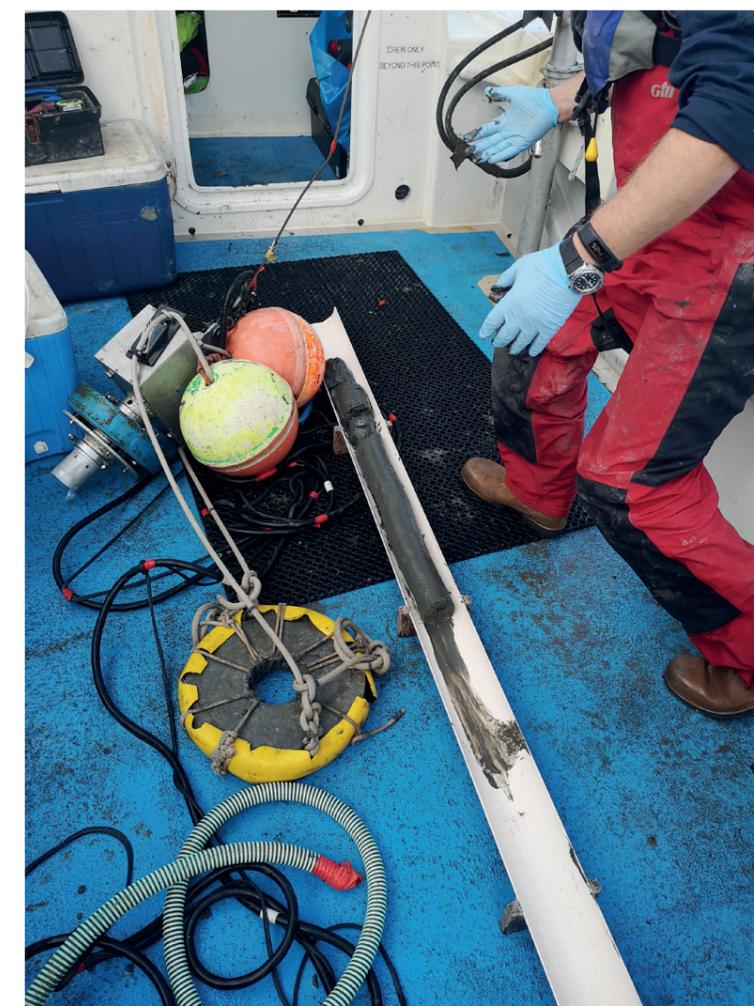
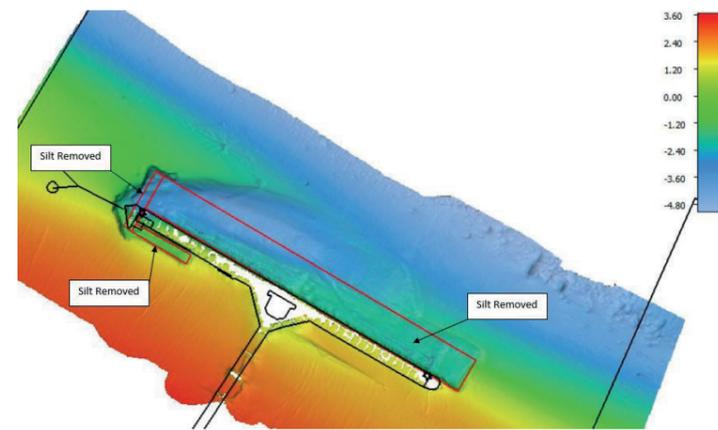
Water injection dredging techniques were applied by Van Oord which reduced the amount of potentially harmful substances into the watercourse and provided a cost-effective solution to the client.

The Port of London Authority hydro services department deployed multibeam echo sounder techniques to produce cost effective and highly accurate pre- and post-dredge riverbed soundings (as pictured).

This project allowed our maritime team to demonstrate our commitment to sustainable engineering through various channels. The civil engineering team have several sustainability champions who are passionate about using their engineering platform to right some of the wrongs in the ways of the industry.

Dredging cannot be excluded as a low-risk activity and therefore scoping was required. Frankham identified the receptors at risk and proposed mitigating measures which justified that the proposed works would not harm the river's ecosystem and biodiversity.

Frankham collaborated with numerous third parties, each with highly specialised skillsets to help this project over the line. As no dredging around the jetty had been commissioned over the previous decade an expensive capital dredge licence was required. Frankham are now working with the client and statutory bodies to secure a less costly maintenance dredge licence to allow for future dredging works where required.



Client:
Thames Water

Sectors:
Transport - Port/Marina
Industrial - Maritime

Services:
Civil Engineering