

CASE STUDY: Southampton Waters/Eling Marsh Revetment Works



Environmental Sensitive SSSI Area. Pylon Foundation Revetment Works



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CASE STUDY DATE: 29/06/2018

PROJECT DETAILS

CLIENT: SSEN

LOCATION: Southampton Waters Eling Marsh

START DATE: 01/04/2018

COMPLETION
DATE: 08/06/2018

VALUE: £648k

CONTRACT: [NEC 3 Option A]



Completed Piling & Revetment Works

KEY ASPECTS

- Tidal Location: Southampton Waters/Lower Test.
- Marine based project: Working from, and delivering materials/plant, using barges.
- Project under an MMO licence with approval from Natural England/ and relevant Stakeholders
- Protection from erosion to Pylon foundations
- Piling/Revetment works under live 132k network
- Habitat: Environmentally sensitive and protected coastal marsh
- [Environmental Designations: SSSI, SAC, SPA, RAMSAR Site and LNR (HIOWWT)]
- Protected Species: Minimise disturbance to both local Wildlife, Overwintering birds and migratory Salmon
- Ecology: Minimising risk from pollution and physical damage to marsh
- Added value: Creation of 2 High Water Roost/Nest Sites beneath pylons

DESCRIPTION OF WORKS

Protection/Revetment works to 2 existing pylons being undermined by erosion in the upper reaches of Southampton waters.

Multiple barge movements were planned over a 10-week period to provide all plant/equipment and materials to both pylon sites at Eling Marsh close to Marchwood and Totton.

All materials and plant were loaded at a berth back at Southampton docks and transhipped safely on a two-hour journey up Southampton waters to the work site to coincide with the High Water.

Sheet piling was installed around each pylon base to protect from further erosion. Gabion stone was placed to the front/water's edge to protect from further erosion, above that and over the flat base was capped off with multi graded sized shingle as recommended suitable by local Wildlife Trust, creating additional habitat as a High-Water Roost area, or possible Nest Site for Turns and Plovers.

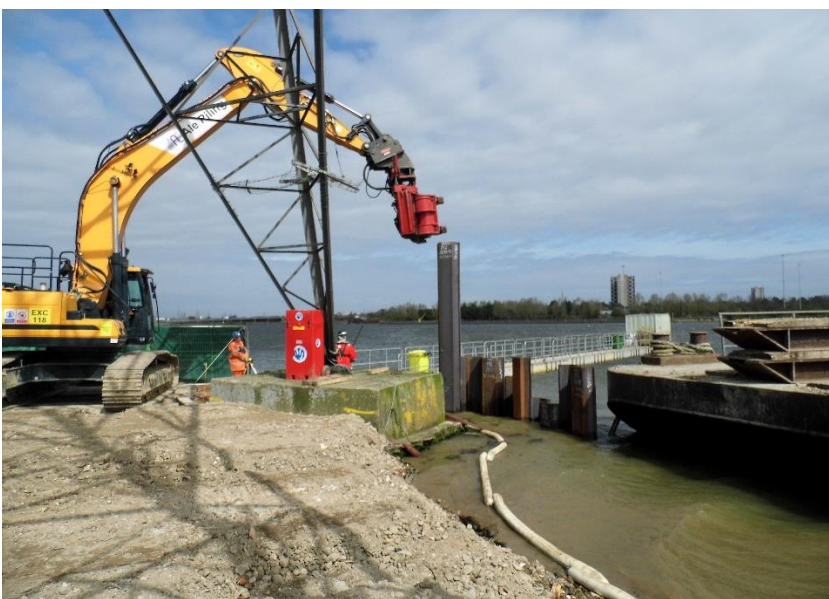
Both pylons had an environmental floating boom installed around them for the duration with additional environmental protection kit, including Spill Emergency Response Plan, training, procedures, specialised spill equipment installed at each of the sites which went over and above the standard control measures like use of hydraulic Bio Oil in plant, we consider that as standard.

Space was very constrained, it took considerable skill and experience from the plant operators and banksmen whilst operating. Housekeeping had to be "best in class" due to the nature of environment and very limited space for storage. One of the many additional control measures put in place was the use of double banksmen per machine to ensure we had no unplanned events like striking the pylon legs. The whole project was conducted a live environment beneath the live 132k network. Another key measure taken was the installation of a floating 45m jetty/dock/welfare unit. Rescue and workboats were in use throughout the contract. The jetty was a twofold aspect, providing both space saving welfare/storage and providing a safe access/egress point to the site 24/7 in case of emergencies.





Challenging conditions:



Extremely limited space and tidal aspects (marine environment) required extensive planning and mitigation control measures in place to ensure a successful outcome, delivering project on time, to budget and without incident.



Protection matting for pedestrian access across marsh



Protecting marsh ecology with special matting for pedestrian access. Resulting in no long term impacts.



Bridging creeks safely



Protected Coastal Marsh: Intertidal mud flats



Double Banksman in use due to tight space constraints



Multiple barge movements planned and coordinated around the spring tides, delivering all plant, equipment and materials.



All materials had to be handled multiple times, delivered in dumpy sacks and stored like a military operation.

CHALLENGES & SOLUTIONS

Objective for Zero long-term damage to marsh achieved through change of main access to seaward, foot traffic only on designated protection path over marsh.

Zero anti-pollution special measures put in place to provide effective mitigation to avoiding a spill and effective environmental control plan with emergency response measures planned and tested.

Minimise disturbance to Wildlife (Noise and vibration) (overwintering birds and migratory salmon) MMO licence was for a 4-month window of opportunity from April to August, use of non-percussive piling technique (Salmon), Soundex Screening system to further reduce noise disturbance for (birds and wildlife)

Working on and next to water. Logistical issues working in the inter tidal zone via the sea, all movements had to go through a robust risk assessment and planning stage.

Constrained by physical available space for storage of materials and conducting operations.

Working in a live environment under the 132K Network (SSEN)

Time scale restrictions linked to MMO licence, only 4-month window for operation.

Site access restrictions: Foot traffic only via Marchwood industrial estate (ABP kindly granted access) Restrictions on sticking to the installed protection mat pathway and scaffold bridges (North Pylon) or via the causeway (South Pylon) any plant/materials had to come via a barge including fortnightly consumables like fuel, water and waste and no night time working.

Scheme change: PTC proposed alternative method for accessing the works area (Pylons) From the originally proposed creation of 4000m² temporary access road crossing over the protected Salt Marsh and a difficult traffic management plan for Totton Bypass. This was changed to full access using a seaward approach utilising Tugs/Multicats and barges to deliver all materials and plant including: 2x 13t excavators, 40t piling rig, jetty, welfare facilities, rescue and work boats and all materials, steel, stone, shingle, concrete and piling mat 6S5. By taking the new proposed option to using a seaward approach, it totally eliminated the clients need for a proposed Traffic management plan for Totton bypass which would have caused significant traffic disruption and eliminating and risk of long-term damage to the marsh by creating a 4000m² temporary road access.

OUTCOMES

Project was delivered to the client on time

Project delivered on budget

Project delivered without any unplanned events or incidents

Project delivered without any losses

Project enhanced the local habitat and environment by removing 2m² of plastic waste washed up in the marsh and the creation of 2 High Water Roosts/Nest Sites

TESTIMONIAL

“We welcomed the open and constructive discussions with PTC, which enabled us to find a good solution in a short period of time. It was particularly great to have a contractor that appreciated how the works may affect the sensitive habitats and species and who was keen to find alternative work methods which accounted for this. The site has been left in good condition and the works provided additional nature conservation benefits as part of their construction design.” Natural England

[Natural England Facebook Post](#)

SSEN Testimonial - TB inserted