

Bulk Jetty, Dublin Port **- pile repairs using concrete encasement**

Consultant: Jacobs

2006

Proserve Ltd.

80 Priory Road,
 Kenilworth,
 Warwickshire, CV8 1LQ,
 England

UK: 01926 512222
 Int: 00 44 1926 512222
 office@proserveltd.co.uk
 www.proserveltd.co.uk

Fabriform



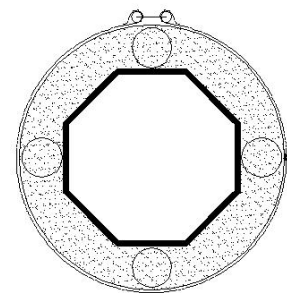
Bulk Jetty



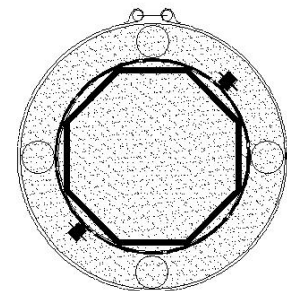
Holed Pile

The Bulk Jetty was built in 1950. The steel piles to the jetty were in such a poor condition with many piles holed through corrosion that the structure was considered for demolition. The pile jacket system enabled strengthening and protection by concrete encasement and allowed the jetties use to continue.

The jetty piles had suffered from Accelerated Low Water Corrosion. Following a steel thickness survey and structural appraisal, the Consultant Engineers selected a 100mm thick concrete encasement with weakened lengths to be reinforced with steel sprit rings.



Pile Encasement



Reinforced Pile Encasement

A traditional 2: 1 sand: cement micro concrete mix was developed to achieve C35 / 45. strength. Polypropylene fibres were included to aid shrinkage control. A site test was conducted on the strengthening arrange to demonstrate the systems use.

The renox steel section piles were high pressure jet cleaned and inspected before the pile jacket system was applied. 138 piles were protected including raker piles. Pile encasement lengths were typically 9-11m long down to bed level. The top 0.3m of the pile was protected by sprayed concrete onto joint continuity mesh reinforcement. The work was completed in some 7 months, generally using 2 dive teams., putting the jetty back into working condition.



Repaired Piles Using Pile Jackets