Case History

CINTEC™ REINFORCEMENT SYSTEMS

Lock Gates Clarendon Docks, Belfast, U.K.

Cintec anchors have been used to fix two 20 ton lock gates, as part of the 750 million pounds sterling, regeneration of Belfast's Laganside Development.

Clarendon Docks, where shipbuilding in Belfast first commenced, was severely affected by the river's tidal range. Construction of a temporary dam across the existing dock basin, and installation of a lock between the basin and the river, has created an aesthetically pleasing non- tidal water feature capable of facilitating small craft. Although the dock basin was pumped dry for the refurbishment of the waterfront site, it was vital that the fixing method selected was suitable for use underwater.

Each gate is supported by two hinges bolted into the 600mm concrete wall of the lock. One of the key reasons for selecting the Cintec system, was that although the top hinge for each gate is well above the water level, the lower hinge falls within the tidal zone, "explained Brian Campbell. Design engineer for the installers. During the installation, sea-water poured through at one of the anchor locations. We were concerned that alternative fixing methods would not be as successful in such wet conditions."

Following extensive testing, 48 Cintec anchors were embedded into the wall to support the two lock gates. Each lower hinge required 12 fixing anchors, 450mm in length and 102mm in diameter at 200 and 220 centers. The installation of the anchor bolts at the lock gates has been undertaken by ACE Fixings, the approved installers of Cintec anchoring system for Ireland.

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