

## Prescott Channel Water Control Structure

Transporting materials for major construction projects in an efficient yet environmentally friendly way can be challenging, especially on the busy roads of East London. By opening up existing waterways in the area, a more sustainable and practical alternative has been developed that will enable a huge array of construction materials to be transported to the area by barge.

British Waterways lead the project for a new lock and water control structure on Prescott Channel in Bromley-by-Bow to service the large scale construction projects in the area. The project was undertaken by main contractor Volker Stevin Ltd. Bennett Associates formed part of the supporting design team, bringing to the project their extensive expertise in locks and waterways.

The Three Mills Lock opens up a network of waterways to enable large river barges to access the new development area by water. Tonnes of construction materials will be diverted from local roads onto the waterways as a much greener and more sustainable alternative to road haulage. This will potentially take hundreds of lorry journeys off local roads and save thousands of tonnes of CO2 by reducing carbon emissions and traffic congestion.

The £20 million Prescott Channel complex incorporates a navigational lock and water control mechanism as well as a footbridge, lock control building, fish pass and fixed weir. The water control system consists of two horizontal adjustable fishbelly sluice gates, along with a lock system with two pairs of high sector gates, providing flood control in the Bow Back Rivers. Both the sector gates and fishbelly gates are mechanically operated by hydraulic rams and powered by hydraulic power units. These are controlled from within the Prescott Channel Control Structure.

The lock is used to enable boats to pass from the tidal section of the river, upstream to the impounded level and is 62m long, 8m wide and 2.4m deep, providing access for up to two 350-tonne barges.

Bennett Associates were consulting engineers for the structural, mechanical and electrical design of a new river impounding structure for the development. Their involvement in the project included:

- Design and supervision of 6m high sector style lock gates and fishbelly impounding gates for impounding Bow Creek to allow barge access to the development and future boat use
- Design and supervision of all associated hydraulic and control systems
- Production of the operation and maintenance manual for the lock gates and water control gate

The locality will continue to benefit in the long term as a result of the renovation of the waterways. It will provide a green freight route for the redevelopment of East London as well as a platform for a new 'Water City'. New opportunities will be created for leisure boats, water taxis, trip boats and floating restaurants, providing a boost to the local economy.

Construction of the new lock was completed in June 2009 with a team managed by British Waterways and undertaken by main contractor Volker Stevin Ltd, with a supporting design team including Tony Gee & Partners LLP, Bennett Associates, Clague Architects and Weetwood Environmental Engineering.

Bennett Associates (originally founded in 1984) was acquired in 2008 by Atkins; bringing their proven technical expertise to the UK's leading engineering consultancy.

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