

Hydro-Brake® Drop Key to Undersea Sewage Line

Project Profile

Objective

To convey sewage 14 metres from street level down to the existing main sewage line below the water level in the dock.

Solution

The Hydro-Brake® Drop technology dissipates the energy of the falling liquid and protects the surrounding infrastructure from undue stresses, delivering an economical solution in terms of time, space and cost.

Welsh Water's challenge to upgrade the sewage infrastructure within the £multi-million Swansea Waterfront re-development was facilitated with an innovative Hydro-Brake® Drop solution.

Raw sewage needed to be conveyed down a 14-metre drop in a constrained space within the former Prince of Wales Dock as part of an innovative and cost-saving solution, which enabled construction within a tight 14-week project window.

As part of the £200 million development of the Swansea docks known as SA1 Swansea Waterfront, a two-year sewage infrastructure redevelopment was undertaken by Welsh Water.

"The solution recommended to Welsh Water involved installing the Hydro-Brake® Drop in an existing 4-metre bore access shaft within the dock," said Len Burgess, project engineer for Hyder Consulting. "The Hydro-Brake® Drop takes the sewage 14 metres from street level down to the existing main sewage line below water level in the dock.

"The Hydro-Brake® Drop uses a hydrodynamic vortex to dissipate the energy of the falling liquid and protect the surrounding infrastructure from undue stresses. This solution was much more economical in terms of time, space and cost than trying to incorporate a new cascade or other alternative in the dock."

Product Profile

- Self-activating system
- No moving parts
- Space-saving design
- Avoids noise and vibration that could damage network infrastructure

Find out more at: www.hydro-int.com



Swansea Waterfront re-development

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**Len Burgess - Project Engineer,
Hyder Consulting**

At Swansea, the 150 mm bore Hydro-Brake® Drop is designed for a maximum flow volume of 20 L/s. It is sited in a 4 m bore foul access shaft which had been located in the dock structure to access the sewage outflow pipeline installed following renewal of the area's sewage infrastructure in the 1990s.

Barry Louth, Contract Manager for Alun Griffiths added: "The main sewer is now around 8 metres below the mean tide level which complicated the overall installation. The Hydro-Brake® Drop was installed during a 14 week window within the two year sewage infrastructure project. Meticulous planning between ourselves, Hyder Consulting and Hydro International together enabled successful installation."



Hydro-Brake® Drop

In addition to the supply of new equipment, Hydro International's expert service teams provide plant condition assessment and planned maintenance programmes for our wide range of water and wastewater treatment equipment through tailored Service Agreements to meet the needs of each site.

Hydro International maintains a comprehensive and well-managed store of spares for all its equipment. Hydro International's customers can be assured of speedy delivery of plant, helping to reduce the time our customers need to spend sourcing replacement parts.

To enable wastewater and water treatment operators to avoid interruption to their processes during planned downtime, Hydro International offers a full equipment hire service for a wide range of primary, secondary and tertiary treatment plant, which can be operated on a stand-alone basis or integrated with existing equipment.