



Hydro-Brake® Flow Control at Core of Portpatrick Flood Defences

A Stormwater Case Study

Project Profile

Objective

To help alleviate flooding incidents from the Dinvin Burn which runs through the centre of the village of Portpatrick.

Solution

An earth dam was built incorporating a 727 mm Type CX Hydro-Brake® Flow Control device to regulate the flow.

Product Profile

- Reduces stormwater storage requirements by up to 30%.
- Up to 50% savings in project costs.
- Self-activating and self-cleansing with no moving parts or power requirements.
- Area of opening is 3-6 times larger than the equivalent orifice.
- Virtually maintenance free.

The new WRc and BBA approved Hydro-Brake Optimum® is now available. Find out more at www.hydro-int.com

The small harbour and fishing port of Portpatrick, opposite Belfast on the Galloway coastline, lies at the foot of a range of hills which catch the prevailing rain coming over Ireland from the Atlantic. To help alleviate flooding incidents from the Dinvin Burn, which runs through the centre of the village, Dumfries and Galloway Council have invested in an earth dam incorporating a 727 mm bore Type CX Hydro-Brake® Flow Control device to regulate the flow.

The last major incident in Portpatrick occurred in October 2000, when the burn overtopped its banks, flooding the Main Street and causing extensive damage to shops, hotels and houses. Climate change and more unsettled weather could increase the frequency of these storm conditions.

James McLeod, Senior Engineer for the Dumfries and Galloway Council explains: "The best place to build a retaining dam was on agricultural land at Merrick, above the village, incorporating a flow attenuation device. This was designed to release water up to a maximum of 850 l/s identified by the Council's consultants, The Ewan Group Plc as the volume the watercourse could carry."

"To achieve this flow attenuation at maximum head of water, the fixed opening of a standard orifice type device would have had to have been relatively small, and this would have backed up water in the dam even at low water heights. Furthermore, the large opening of the Hydro-Brake® unit (between three to six times larger than the equivalent orifice plate) meant it was less susceptible to blockage from water borne debris."

"The benefit of the Hydro-Brake® Flow Control is that its larger diameter allows greater flows to pass at lower heads, whilst still restricting the flow within design limits. This ensures that land take under most conditions is much less than with alternative fixed opening devices, and means that the farmer who owns the land will suffer flood inundation of his fields much less frequently."



A flooding incident at Portpatrick.



Complete landscaped Hydro-Brake® Installation.

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