# Weedon Dam Flood Alleviation Scheme

## A Stormwater Case Study

## Project Profile

### Objective

To prevent flooding of the villages in the upper River Nene valley.

### Solution

Environment Agency specified a dam to contain floodwater in the catchment area. The key component of the project is the 6.5 ton, 2 metre diameter Hydro-Brake® Flow Control from Hydro International.

## 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 pretty Northampton villages around Weedon, in the upper River Nene valley, suffered disastrous flooding in 1998, with Weedon Bec being particularly affected.

To alleviate this problem, the Environment Agency (EA) has put into place a dam project to contain floodwater in the catchment area, of which the key component is a 6.5 ton, 2 metre diameter Hydro-Brake® Flow Control device located in the dam, supplied by Hydro International.

Contractor Edmund Nuttall has created an embankment across the valley, using locally won blue clay as the embankment core topped with a granular hogging layer, with a centrally located concrete culvert to channel the water flow.

Environmental sensitivity of any flood control solution was a crucial part of the scheme and the EA has made an arrangement with local farmers to allow their fields to flood behind the dam during heavy rainfall to avoid damage downstream.

By using a Hydro-Brake® Flow Control at the inlet to the culvert, the EA provide a controlled maximum flow of water despite a fluctuating head, with a designed maximum flow of up to 12,000 l/s. The operating characteristics of the Hydro-Brake® Flow Control allow for a dramatic reduction in land take due to a reduced requirement in storage capacity.

The design work carried out by Hydro International prior to manufacture of the Hydro-Brake® Flow Control included incorporation of an adjustable intake to allow future adjustment of the flow rate either upwards or downwards between 8,000 l/s and 12,000 l/s.

Further benefits of Hydro-Brake® Flow Controls are that they have no moving parts and need no power, so operating costs are very low. Openings can be up to six times the size of the equivalent flow orifice plates or penstocks, so are less prone to blocking and maintenance is therefore minimal.

*Installation of the Hydro-Brake® Flow Control at Weedon Dam.*

*Aerial view of the dam during construction.*

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