

Controlling Flood Risk on Devon's New Link Road

Project profile

Objective

To manage surface water flows from the new link road to reduce flood risk to the rivers Creedy and Yeo.

Solution

Three Hydro-Brake® Optimum vortex flow controls were used as part of a SuDS (sustainable drainage systems) approach so that Environment Agency requirements for discharge limits at a 1 in 100 year level were met and the flood risk in nearby rivers Creedy and Yeo was reduced.

Product profile

The Hydro-Brake® Optimum vortex flow control provides customised water quantity management for storm, surface, foul or combined water across a wide range of flows and for a variety of applications.

- Customisable design for precision-engineered control.
- WRc and BBA approved.
- No moving parts and no power requirement
- Self-activating
- Chamber option for faster, safer, plug-and-play modular installation.

Controlling surface water flooding was a vital consideration in planning and building Mid Devon's £8.42 million A3072 Crediton Link Road. Vortex flow control technology was integral to a solution that managed surface water flows across undulating topography to protect local rivers.

By using Hydro-Brake® Optimum vortex flow controls as part of a SuDS approach, South West Highways (SWH) & Devon County Council (DCC) were able to meet Environment Agency requirements for discharge limits at a 1 in 100 year level and reduce flood risk in nearby rivers Creedy and Yeo.

The River Creedy is to the east of the road, and not, itself, classed as sensitive to flooding. However, it also feeds the River Yeo, which lies to the south of the link road, which is classed as being at serious risk of flooding, so any changes to the surface water flow would need considerable care in planning the drainage strategy.

Link road in Crediton, Devon where the three Hydro-Brake® Optimums are controlling surface water runoff

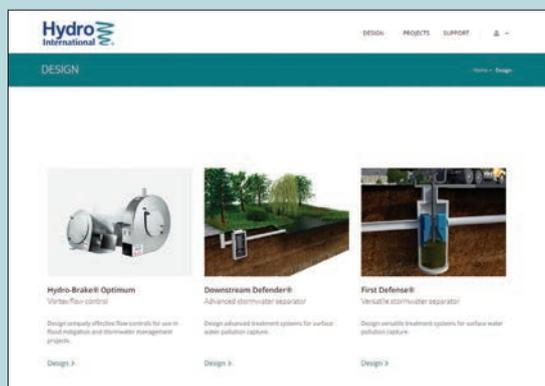


“The new link road was built up and over the steep Downes Head Hill to link the A377 with the Lords Meadow Industrial Estate,” said SWH Site Agent Stuart Cheesman. “This meant DCC had to design discharge points at either end of the road into a variety of catchments and detailed the allowable design head and discharge at each of the discharge points which then allowed Hydro-Brake® Optimum flow control units to be designed by Hydro International. The complexity of the drainage system on the road gradients and the time constraints of the project made it appropriate to install the drainage pipe system at an early stage, including the concrete manhole chambers to house the Hydro-Brake® Optimum vortex flow controls but not install the flow controls themselves.

“Three Hydro-Brake® Optimum vortex flow controls were fitted with maximum discharges of 5 l/s, 20 l/s and 30 l/s via storage tanks, a swale and an attenuation pond to the field drains and eventually the Rivers Creedy and Yeo,” added Stuart Cheesman. “Final changes to the drainage design during construction necessitated having bespoke connections made for the flow controls that could be retrofitted into manholes that had already been installed. Hydro International were very helpful in making the adaptations.”



Pollution and congestion from the heavy goods vehicles has been a long-standing blight in Crediton. Through an Air Quality Action Plan, Devon County Council planned to improve the situation by offering an alternative route outside the town. Following two years of planning and consultation, construction on the new link road began in July 2013, opening in October 2014.



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Explore the Options with our Online Design Tool

Our online design tool is a sizing engine that gives you the flexibility to compare flow control design options, output detailed design drawings and hydraulic data and import the results into commercially-available hydraulic modelling software.

The tool also has the added options to size and design the First Defense® and Downstream Defender® stormwater treatment separators.

The tool also allows you to save project designs and submit them to our expert technical team for a free design review.

Learn more

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