

Hydro-Logic® Services team delivers early warning system for flood-prone Maesteg

Project profile

Objective

Bridgend County Borough Council needed to monitor conditions at culverts around Maesteg in order to identify and clear blockages before they caused flooding to streets, homes and businesses.

Solution

The Hydro-Logic® Services team conducted a site survey and designed and installed a Smart Monitoring system to provide automated alerts to direct support teams quickly to areas where attention is required.

Service profile

Design, installation and management of a Smart Monitoring flood warning system.

- Site survey
- Smart monitoring system design
- Smart monitoring system supply and installation
- Ongoing system operation, maintenance and support

Situation

Maesteg is a small town in Bridgend, south Wales. It lies at the northern end of the Llynfi Valley, in former coal mining country, and is situated in a hilly catchment area that is prone to flash flooding.

The town has a series of culverts that are designed to allow rain to enter the drainage network and prevent flood water from building up in the town.

Bridgend has experienced problems with fly tipping (the illegal dumping of refuse), however, with over 1,000 instances recorded each year since 2014.

Problem

Climate change has meant that the UK is facing more frequent extreme weather events, and geographical factors mean that flooding is a serious issue for Maesteg.

Heavy rain washes debris—such as refuse generated by fly tipping—into culverts that subsequently block, forcing flood water to back up and flow into local streets, causing severe damage to homes and businesses and disrupting road and rail links.

Bridgend County Borough Council needed a way of identifying flood risks and monitoring culverts for blockages, in order to warn local residents and help maintenance teams to remove blockages and mitigate flood effects.

Solution

Having secured Welsh Government funding, Bridgend County Borough Council approached Hydro-Logic® Services and asked the team to conduct a site survey and design a smart monitoring system that would meet Maesteg's flood warning needs.

Having already delivered similar projects for local councils in Wales, as well as smart monitoring systems to help Dŵr Cymru Welsh Water manage water resources, Hydro-Logic® Services had experience of operating in Wales and successfully managing Welsh geographical factors.

Led by Regional Head of Hydrometry Simon Bond, the team identified areas of high risk and recommended a smart monitoring network now consisting of six **Hydro-Logic® Flexi Loggers**, with Impress pressure sensors, connected to a central **Hydro-Logic® Timeview** telemetry system, to provide automatic, remote monitoring of the culverts and deliver early warning of blockage risks.

The Hydro-Logic® Services team installed the data loggers in discreet locations and in sturdy, vandalism-resistant housings, and continue to manage and maintain the network on behalf of Bridgend County Borough Council.

Outcome

The installation was completed in March 2017, and is providing the Council's support teams with early warning of flood risks and culvert blockages.

Alerts are now issued to response teams when water pressure in the culverts reaches a predetermined level, enabling them to identify blockages or potential blockages and set the priority of their response accordingly.

A year on from flooding in Maesteg said to have been the worst in fifty years, Councillor Richard Young alluded to the part that smart monitoring had played in improving local teams' responsiveness to emerging flood conditions.

"A schedule of regular culvert inspections is already in place and the council carries out additional checks when severe weather has been forecast," he said in a Bridgend County Borough Council statement.

"The [council's] annual flooding report has also highlighted that in many cases during last year's severe weather, swift intervention by the council's highways team prevented water from entering a number of properties throughout the county borough."

About the expert: Simon Bond

Simon Bond is Regional Head of Hydrometry (Wales) at Hydro-Logic® Services.

An extremely experienced member of the team, he has worked with a number of UK water companies—including Scottish Water, South Staffordshire Water, Yorkshire Water and Severn Trent Water—over many years to provide hydrometric data to help them improve their water resources management.

Simon manages the Dŵr Cymru Welsh Water hydrometric network project, measuring more than 100 reservoir level and compensation flow sites to help the water company to manage water resources across Wales.

He also conducts hydrometric training for the Environment Agency.

Simon joined the Hydro-Logic® Services team in 2001, and was appointed Regional Head of Hydrometry for Wales in 2011.



The data loggers are discreet and resistant to vandalism



The system provides remote, near real-time insight into conditions at difficult to access sites

Learn more

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Americas

+1 (207) 756 6200
inquiries@hydro-int.com

Asia Pacific

+61 436 433 686
enquiries@hydro-int.com

Europe & RoW

+44 (0)118 933 1325
enquiries@hydro-int.com

Middle East

+971 506 026 400
enquiries@hydro-int.com

hydro-int.com/contact