



Blockage Detection Helps Flood Defenses in Rhondda

The blockage of watercourses or structures by debris reduces flow capacity and raises water levels. Well-managed blockage prevention in the right place can reduce flood risk and restore natural processes, while blockages in the wrong place can increase the risk of flooding, structural failure, or embankment breach. They can also change flow patterns, causing scour and undermining structures, obstructing navigation and presenting a hazard to water users.

The appropriate management of blockages is essential to mitigating these risks. In recent years, environmental legislation has emphasized the need to work with natural processes, promoting a move towards more sustainable practices.

Rhondda Cynon Council has invested a huge amount of time, money and resources into flood defenses within the Rhondda location due to damaging floods in the area

caused by debris blockages in the underground pipe network.

Part of the defenses include cameras and level measurement devices within the river network to monitor for blockages. When there is a blockage, the level measurement before and after the anti-debris barriers determine this via a difference in levels. Then Rhondda Cynon Council use the cameras to check the blockage and send in the local team to clear the debris.

Pressure Transducers Proving to be Unreliable

Rhondda Cynon Council were using pressure transducers to determine the levels, but were having a lot of trouble with the accuracy of these sensors, and as a result, engineers were wasting a lot of time attending sites for false readings. Pressure transducers are highly sensitive to environmental conditions and often give responses to shocks and vibrations, or become clogged from debris. As a result, Rhondda council were looking for something more reliable and robust.



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SignalFire RANGER with Pulsar Measurement dBi and MicroFlow-i

As the location was remote, the end-user decided to move forward with low power options. The dBi HART range from Pulsar Measurement are self-contained, intelligent non-contacting 2-wire ultrasonic level sensors. The low power design of the transducers make them ideal for remote locations. The MicroFlow-i is a 2-wire non-contacting velocity measurement solution, and its extremely low power requirement also makes it an ideal velocity measurement solution for remote locations. Coupled with its lightweight, compact design, installations are simple, especially within confined spaces and there is no interruption to operational flow.

With internal batteries, the SignalFire RANGER will power both the dBi and MicroFlow-i, take measurements at intervals easily configured by the user with a local connection to the SignalFire Toolkit PC software or anywhere anytime via the SignalFire Cloud. The MicroFlow-i, dBi and SignalFire RANGER help form a powerful, completely non-contacting area-velocity measurement solution. Because the RANGER can power and retrieve measurements from both sensors independently, it's a great solution for completely off-the-grid measurement applications. With the SignalFire Cloud you have access to settings and measurements with any internet enabled device, and you can also easily export data for conforming to agency requirements without having to get your hands directly on the products.



Successful Remote Monitoring

The measurements from the Pulsar Measurement dBi HART and MicroFlow-i sensors combined with the SignalFire RANGER have shown to be a lot more accurate and reliable than the previous pressure transducer system, and will lead to early detection of blockages and ultimately help with stopping floods in the area. The end-user was also pleased that they could measure the velocity of the water coming in on the main inlet from the top of the valley. Rhondda Council were so impressed with the system they said "This interface on the cloud is very easy to use and presents the information concisely. The combination of fast reporting and the alerts will be very helpful." Commenting on the application, Tom Denby, Pulsar Measurement Regional Sales Manager said, "It has been a fantastic experience learning how Pulsar Measurement and SignalFire products can work together to make a complete solution to supply information for such an important cause."

More Information

SignalFire RANGER: <https://pulsarmeasurement.com/en/telemetry-solutions>

dBi: <https://pulsarmeasurement.com/en/dbi-hart>

MicroFlow-i: <https://pulsarmeasurement.com/en/microflow-i>



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