15 properties in Kirk Hallam, Derbyshire prone to flooding, prompts the up-sizing and general sewer network improvements from Severn Trent Water.

nmcn plc were tasked with improving the sewer network that runs through the village of Kirk Hallam. Using the Pulsar UltraTWIN controller and 2 x dB10 transducers they were able to gain successful measurements of both the main trunk sewer and the water levels in an offline shaft tank.

nmcn plc work in partnership with their customers to deliver major built environment and critical national infrastructure projects across the UK. Their specialist engineering and construction teams bring multi-sector innovation and technical skill, from building and highways to large scale water networks and treatment plants. Within a village of Kirk Hallam, Derbyshire, they were responsible for alleviating the flood risk to 15 properties located within the village.

The scheme carried out by nmcn plc, on behalf of Severn Trent Water, included the installation of an offline stormwater shaft tank, which doesn't receive constant flow to pump away and only comes into operation during long periods of rainfall/storm conditions - a common application throughout the UK water industry.

A Pulsar UltraTWIN controller and 2 x dB10 transducers were installed, to measure the 7.5 m (24.61 ft) down into the shaft tank and the downstream sewer which measured 6 m (19.69 ft) deep.

The UltraTWIN controller offers twin-channel ultrasonic measurement, with the ability to combine applications. Each channel is user-configurable to operate independently whether as a full-function open channel flow monitor, a pump control system, or as a level and volume monitoring unit for liquids or solids, calculating volumes and providing alarms.

"The Pulsar products are always critical to the operation/installation. Our engineers are experienced with the products and someone is always on hand should we ever encounter any issues."

David Greaves, Mechanical Engineer, nmcn plc

Pre-set levels are built into the controller and once these levels are reached, it triggers a relay in the panel which starts the pump. Once it has reached the stop level another relay is triggered, and the pump is stopped.

In times of heavy rainfall/storm conditions, the water levels in the sewer rise, a pre-set weir is breached upstream and the flow cascades via a section of stainless-steel pipework into the new shaft.

Downstream in the sewer network, once the main sewer level has dropped sufficiently, it sends a signal back to Pulsar's UltraTWIN controller, located in the panel, which will start the ejector pump - to agitate the solids - and then a duty pump to empty the shaft.

The dB10 located within the shaft constantly monitors the water level as it rises/falls. Once the level has reached the pre-set pump stop level, the duty pump is automatically switched off and the water will be returned to the sewer.

Without having the ability to monitor the main sewer level downstream, the pumps may discharge early into the trunk sewer causing it to surcharge and likely flood at its lowest point.

Commenting on the project, David Greaves, a Mechanical Project Engineer for nmcn plc stated, "The Pulsar products are always critical to the operation/installation. Our engineers are experienced with the products and someone is always on hand should we ever encounter any issues."

Featured Products

UltraTWIN Wall Mount Controller

Pulsar dB10 Transducer

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