

ECS performance-tests upgraded flood gates for Nottingham

ECS Engineering Services is supporting the Environment Agency in Nottingham by designing and testing a new clamping arrangement for flood gates. The system has been developed and installed by ECS engineers to improve the seal integrity of the flood doors, thereby reducing the threat of flooding to residential areas in Nottingham city centre.

In 1947, the first defences were built in order to minimise the impact of inundation from the River Trent and its tributaries. These were updated most recently in 2000, resulting in the Nottingham Left Bank Flood Alleviation Scheme. The investment has resulted in widening of embankments and the installation of protective walls in six sections along the River Trent.

Matt Coles, Project Engineer at ECS, explained: "We are committed to keeping communities safe from flooding. This means ensuring that the flood defences function at all times by regular inspections to assess their condition and identify any necessary repairs."

As a result of a recent assessment, ECS was commissioned to carry out improvements to several third-party demountable flood protection systems in three districts. Thanks to its ability to deliver high-quality, reliable and cost-effective engineering solutions for water, energy and environmental processing, ECS was able to design, manufacture and install a number of upgrades to the protective structures to improve their performance.

According to the British Standards Institution (BSI) regulations on flood protection products (PAS 1188:2014), the testing required for temporary and demountable systems is carried out solely in laboratory conditions. Nonetheless, ECS and the Environment Agency wanted to perform real-world tests on the installation to prove that the new design would solve the issues previously experienced, i.e. the doors could withstand the pressure from large volumes of river water.

The contract required each one of the flood doors with the clamping arrangement to be performance tested. Following the construction, ECS assessed the gates' static leakage rates in line with PAS 1188:2014.

Minimising the inconvenience to property owners that may need to leave or access the property was a must. As a result, ECS needed to assemble the temporary structure, assess the presence of leaks and disassemble the structure without inconveniencing the residents.

ECS managed to conclude the hydraulic test on each flood gate in less than a day. Also, a thorough inspection by the company and the Environment Agency indicated a nil leakage rate, which attested to the quality of the new clamping arrangement.

Photo Captions

Pic 1:- ECS Engineering Services wanted to perform real-world tests on the installation.

Pic 2:- ECS Engineering Services managed to conclude the hydraulic test on each flood gate in less than a day.

Pic 3:- The system has been developed and installed by ECS Engineering services engineers to improve the seal integrity of the flood doors.

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About ECS Engineering Services

ECS Engineering Services has over 20 years experience in delivering high quality, reliable and cost effective engineering solutions, specialising in bespoke design and construction of water, energy and environmental processing and management projects.

In conjunction with key supply partners, ECS has the expertise and capacity to design and install a wide range of water control engineering projects. With in-house fabrication services, which have CE Marking approval to EXC3, well equipped and highly skilled engineers can also complete structural steelwork, bespoke fabrication work and access metalwork to the highest standard.

With a complete range of site services available, ECS offers a full turnkey project managed service for mechanical and electrical installations including managing civils contractors and supplying pipework, control and automation work to ensure that every installation is installed and commissioned to the highest standard. Existing clients include the majority of the UK Water Utility companies, Government Agencies and Internal Drainage Boards.

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