ELIQUO | HYDROK

Casestudy

MecMex mechanical CSO screens
Accrington - Hyndburn, East Lancashire

Accrington, Hyndburn

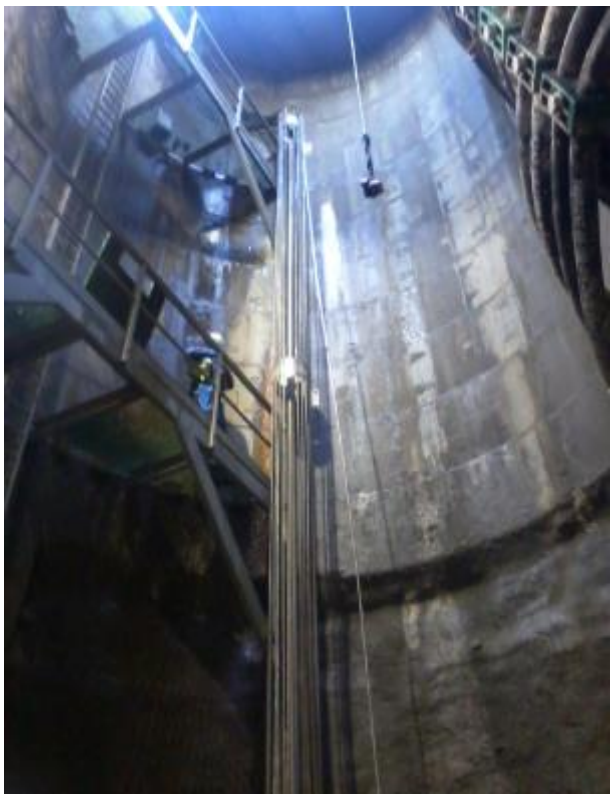
Client: United Utilities

Eliquo Hydrok were asked by United Utilities to offer a solution for the refurbishment of their Combined Sewer Overflow system located in the Church catchment of Accrington in the Hyndburn drainage area of East Lancashire. The unusual factor in the project was that due to a fairly steep topography in an area of approximately 1,700 hectares, serving a total residential population of around 85,000, the CSO chamber is located 18 metres below ground within an 84m long tunnel.

Access to the CSO chamber through the existing entry point was restricted due to Health and Safety issues, therefore, a solution to resolve access issues whilst installing the new CSO system became the task for the Eliquo Hydrok Design and Engineering team.

Eliquo Hydrok worked closely with United Utilities consulting partners for a period of 3 years to develop a workable / buildable engineering solution to this unique problem. It was decided by UU and their Consultants that the full engineering specification, method and completion of installation as well as the commissioning and handover should be undertaken solely by Eliquo Hydrok. This ensured that all design FEA, CDM and RAMS conformed to the Eliquo Hydrok quality control specifications thus providing the end Client with a robust fully operation and fit for purpose solution.

The location made it necessary to construct a temporary bridge over the local canal to enable access for construction and delivery vehicles etc. and to excavate a second 20m access shaft to the CSO chamber below. The MecMex screening solution enabled United Utilities to utilise the existing chamber and for the screening facility to be assembled in sections capable of passing through and down the 20m access shaft.



The Eliquo Hydrok proposal was to install 10 MecMex 3m/180 degree hydraulic screens to meet the sewer flow demand within the first 25m of the tunnel. This meant that to comply with Health and Safety issues a new 4m diameter shaft needed to be sunk down to tunnel level. Through the new shaft, the MecMex screens and equipment could be lowered and it could also be used as a secondary emergency escape route via powered winches for personnel. Specifically designed bespoke equipment was manufactured to allow for the 10 MecMex screens and associated steelwork, over 20 tonnes worth, to be correctly installed in the designated location.

A bespoke hydraulic management system was designed to control the hydraulic operation of the MecMex screens, with controls located at ground level thus reducing the need to enter the chamber for operational control and general maintenance. Eliquo Hydrok engineers both designed and installed the complex solution using an ingenious array of hydraulic pipe work to comply with all Health and Safety requirements.

The complete installation was carried out by Eliquo Hydrok engineers and in house fitting team without the use of sub-contract labour. The commissioning was also carried out with, reference to the Eliquo Hydrok requirements including internal QA system of check sheets. The equipment was finally handed over to the client following the completion of the commissioning checks, the issue of full Operation and Maintenance manuals and the delivery of operator training.

Mechanical CSO screens for retrofit, new installations
or bespoke off-site built stainless steel chambers

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