

Case study

Transportable units keep treatment moving for UU



United Utilities (UU) is the main regulated water and wastewater services provider for North-west England, supplying some seven million people daily. In June 2014, the company needed to undertake essential investigative work on an existing nitrifying trickling filter at Huyton Wastewater Treatment Works (WwTW) near Liverpool. The work could only be achieved by taking the filter system off-line, which meant installing temporary package treatment plant to keep the site operating at full capacity.

Working closely with contractor Nomenca, a total of five modular transportable Submerged Aerated Filter (SAF) units were purchased from WPL and installed to meet the 5MI/day flow through at Huyton WwTW. The temporary nature of this application, plus similar challenges across the utility's asset base, led to UU's requirement that it should be possible to relocate the SAFs elsewhere within the region on completion of the project.

Andrew Haywood, WPL’s utility and industrial sales manager says, “In discussion with United Utilities and Nomenca a temporary solution was offered for Huyton. A side-stream treatment plant was required whilst refurbishment of an existing asset, which needed to be taken off-line, was undertaken.

“A range of temporary, above-ground, portable, off-site build tertiary SAF units was proposed. Using the clients specified loading rates, five modules were required, each designed to treat 1 MI per day.”



Redeployment request

Although five ST1000 Model units were required for this project, the modular nature of the equipment means it can be readily redeployed to other sites and configured in any combination - as five units or just one. The selected units, which are housed in skid-mounted kiosks and manufactured in steel, are designed to be robust enough to withstand the rigours of transportation. Each unit is container-size and fits on the back of a lorry.

The package treatment plants, including the blower panels, are built at the factory prior to transportation to keep whole life costs low. This means fewer workers are required on-site, which minimises health and safety concerns, and installation can be completed in one day.



Flow challenge

The five modular SAF tanks were arranged in parallel due to the restricted footprint, but equal flow control still had to be mounted on each tank. WPL advised Nomenca on each SAF's flow based on United Utilities' specification. This allowed Nomenca to design a five-way flow-splitter using an innovative submerged orifice to restrict flow to the tanks.

Project schedule was also a major challenge as the blowers were on a particularly long lead-time. However, by working closely with suppliers, the project was delivered on time and to budget. All tanks were off-loaded, installed and set to work under automatic control within the agreed contract times, much to the satisfaction of the client.



Uzair Osman, contracts manager at Nomenca said: “WPL were able to install the modular units over a weekend – which enabled us to finish the work ahead of schedule.

“The client, United Utilities, chose the ST1000 modules manufactured by WPL because they wanted units that could be moved from site to site after the Huyton project was completed.”

In addition, the lessons learned on this project will inform future similar works at other sites, to ensure efficient delivery and optimal use of the temporary SAF treatment units.



About WPL

Environmental wastewater treatment solutions

We offer a comprehensive range of wastewater solutions designed to deliver long term cost-effective on-site treatment at even the most challenging sites; meeting customer specific requirements in terms of stringent environmental discharge consent standards, physical footprint, site access, ease of installation and refurbishment.

Our packaged wastewater treatment systems are designed by an expert team of process engineers and manufactured at our dedicated quality controlled UK facility.

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