



## CASE STUDY

# CLEANING UP RIVERS – FASTER AND MORE EFFICIENTLY

Actemium was appointed by international civil engineering firm Ward & Burke to deliver three critical control and automation projects for United Utilities as part of their £3 billion 'Better Rivers' programme. Working to compressed timelines and detailed technical standards, Actemium delivered a fully compliant solution that improved environmental performance, reduced programme risk and cost, and set a new benchmark for future schemes.

**Sector:** Water & Wastewater  
**Customer:** United Utilities  
**Location:** West Yorkshire

**Scope:** Automation, Process Control,  
Standardisation

# 01

## CLIENT & REQUIREMENTS

United Utilities provides water and wastewater services to around seven million people across the North West of England. As part of its £3 billion 'Better Rivers' programme, the utility company aims to reduce sewage spills into more than 300 miles of rivers - a problem that occurs during heavy rainfall when sewer systems become overwhelmed. To address this, United Utilities needed to increase storage capacity to reduce pollution risk.

A CSO (Combined Sewer Overflow) is designed to manage flows by directing spill water first into detention tanks, and if capacity is exceeded, into a receiving watercourse. This infrastructure is critical to improving water quality and meeting environmental commitments.

To deliver this solution, United Utilities engaged Ward & Burke Construction, an international engineering firm specialising in water and civil infrastructure. Ward & Burke, on the other hand, appointed Actemium to design and implement the automation and process control systems for the:

- CSO screens with automated brush-cleaning systems, and
- Detention tanks equipped with storm return pumps, mixer pumps, and level-monitoring instrumentation.

# 02

## THE CHALLENGE

Both businesses encountered several challenges throughout the delivery process, namely:

- **Alignment from the start:** As this was Ward & Burke's first project with United Utilities (UU), the contractor needed to work closely with Actemium, who were well-versed in the client's operational technology standards and compliance processes.
- **Compressed timeline:** The projects had to be completed in half the usual time to meet UU's accelerated 'Better Rivers' programme schedule, requiring exceptional planning and execution.
- **Design and documentation changes:** Frequent updates to design parameters introduced additional complexity.
- **Telemetry challenges:** Abortive telemetry testing caused some delays due to issues with existing systems.

# 03

## THE SOLUTION

Recognising that the three CSO projects shared substantial similarities, Actemium proposed a delivery strategy focused on standardisation and repeatability. This technical alignment created a strong opportunity to streamline engineering effort, improve programme certainty and reduce cost. Early engagement with Ward & Burke allowed this approach to be embedded from the start, ensuring design, software, hardware, and testing could be replicated across both sites.

Actemium also recommended staggering the project timelines, enabling the first scheme to form a template for the others. This allowed the team to replicate major engineering deliverables - URS, schedules, ENT045, FDS, SDS, test documentation, and telemetry elements - with minimal modifications. Standardisation of System Architecture, ENT045, Bill of Material, I/O layouts further simplified software development and created a repeatable FAT/SAT process.

The testing part of the project followed an efficient multi-stage FAT approach, with Phase 2 and 3 FATs conducted at the panel manufacturer's facility. HMI graphics, telemetry testing, SAT, and other system integrator deliverables were completed with reduced rework thanks to the consistent design approach. Siemens hardware was also procured for both projects to match the agreed architecture.

Throughout delivery, Actemium worked closely with Ward & Burke, enabling rapid issue resolution, consistent governance, and strong alignment with United Utilities' standards. The project was completed on time despite the demanding schedule, with final as-built documentation scheduled for completion in January 2025. This structured, collaborative approach delivered efficiency, compliance, and measurable cost savings.



# 04

## CLIENT BENEFITS

- **Stringent timelines met:** The project was completed in half the usual timeframe, supporting delivery of United Utilities' £3 billion 'Better Rivers' programme.
- **Cost savings realised:** Standardisation and repeatability reduced duplication, minimised rework, and delivered efficiencies for both Ward & Burke and United Utilities.
- **Compliance assured:** Designs fully aligned with United Utilities' operational technology standards, reducing governance risk and avoiding late-stage redesign.
- **Improved operational resilience:** Standardised CSO screens, detention tanks, and storm return controls ensure reliable performance during heavy rainfall events.
- **Positive environmental outcomes:** The upgraded assets contribute directly to reducing pollution and improving river water quality.
- **Supporting AMP8 objectives:** The projects advance key AMP8 commitments by improving water quality, strengthening environmental protections, enhancing the resilience of wastewater systems, and reducing reliance on storm overflows.



We had the pleasure of working with Actemium on a recent project, and I can confidently say that their team was exceptional. From the very beginning, they demonstrated a "no task too big, no problem" attitude, which made the entire process smooth and stress-free.

Sudheer and his team were particularly outstanding - knowledgeable, professional, and always ready to offer solutions to any challenges we faced. His deep understanding of United Utilities procedures was invaluable and ensured that every step of the process was handled efficiently and in compliance with their requirements.

Actemium's support, expertise, and proactive approach made a significant difference, and we could not have asked for a better partner in this project. I would highly recommend Actemium to anyone looking for a reliable, knowledgeable, and hardworking systems integrator.

Derek Bennet  
Project Manager, Ward & Burke

## TECHNOLOGY PARTNERS

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