ACE

Aquatic Control Engineering

WATER & WASTEWATER UTILITIES

ENGINEERED FOR ESSENTIAL WATER INFRASTRUCTURE.

Pumping, screening and flow control for the assets that keep water moving, from wastewater to drinking water.



MEICA contracting by ACE
UK flow control manufacturing by AQUIKO

AQUIKO

ABOUT US

ONE TEAM FOR CRITICAL WATER ASSETS



WHO WE ARE

Aquatic Control Engineering (ACE) is a family-run MEICA contractor, founded in 1995. Our roots are in land drainage and flood defence, and for three decades we have also delivered pumping, screening and flow control solutions across the utility sector, including wastewater treatment works, sewage pumping stations, raw water intakes and power stations.

ACE AND AQUIKO

ACE delivers the project: design, installation, commissioning and aftercare. AQUIKO, our UK manufacturing brand, builds stainless steel and HDPE flow control equipment and is the sole UK importer of WaStop. You deal with one team from survey to handover.

WHERE WE WORK

Sewage pumping stations, wastewater treatment works, storm tunnels, raw water intakes and power station inlets. Live operational sites where access is tight, flows don't stop and the work has to be planned around both.

WASTEWATER PUMPING

XRW SOLIDS HANDLING PUMPS

Wipes, fibres and rag wrap round conventional impellers, choke capacity and bring crews out on call. The Pentair Fairbanks Nijhuis XRW series is built for modern sewage. Its Xcentric impeller has no traditional leading edges, so flushables pass through instead of catching between the impeller and the wear plate.



Clog resistant

Passes solids rather than chopping them, cutting blockages and capacity drift.*

Lower running costs

A balanced impeller reduces vibration and energy use over the pump's life.*

Easy to maintain

Sliding frame, inspection opening and permanently lubricated bearings in a compact bracket.

Built to last

Double mechanical seal, adjustable wear rings and a ductile iron casing. IEC B5 motors as standard.

Fewer call-outs

Wipes and rag go through the pump, so crews spend less time clearing blockages and more time elsewhere.*

3,000 m^3/h

Flows up to

60 m

Heads up to

2 orientations

Horizontal or vertical, installed in a dry well

Applications: sewage pumping stations, wastewater booster stations, treatment works, sludge transfer and storm water pumping. ACE supplies, installs, commissions and services XRW pumps across the UK.

*Pentair figures based on field data from previous Xcentric retrofits. Actual results vary by application.



INLET AND STORM PUMPING

SCREW PUMPS



Archimedean screw pumps have lifted flow at wastewater treatment works inlets for generations. They turn slowly, pass rag, grit and debris without clogging, and follow incoming flow without complex controls.

We supply screw pumps through our partner Fishflow Innovations. Their enclosed composite screws contain no steel, so they resist corrosion and H_2S gas, cover a greater flow envelope, need less maintenance and have a 60 to 80 year design life. ACE designs the installation, manages the lift, fits the pumps and builds the controls.

0.5–8 m
Typical lift

100 l/s–3 m^3/s
Per screw, more on request

INLET WORKS

Lifting incoming sewage to the head of the works so it can run through treatment by gravity. Multiple screws or variable speed drives match the incoming flow.

STORM AND RETURN FLOWS

Storm tank return, return sludge and other low-lift, high-volume duties where flows swing widely and solids are always present.

PROVEN AT SCALE

Four fully enclosed composite screw pumps delivered for EDF at Hinkley Point C. Screw pumps are a core part of our pumping work, from single units to multi-screw stations.

SCREENING

AUTOMATED SCREEN CLEANERS

WASTEWATER INLETS

The coarse screen at the inlet works takes out the large items before they reach the pumps and fine screens: timber, traffic cones, rag mats. Our cleaners rake or grab that material off the bars and drop it into a skip or onto a conveyor, so the screen doesn't blind and nobody clears it by hand.

RAW WATER INTAKES

River intakes collect branches, leaves and flood debris. A coarse screen with an automated cleaner protects the intake and keeps flow to the works steady, including through storms when debris loads peak.

EEL SCREEN PROTECTION

Fine-mesh eel screens fitted to meet the Eels (England and Wales) Regulations 2009 can't take heavy debris. A cleaned coarse screen in front of them takes the load and keeps them working as designed.



At a glance

- Grabs 1 to 3 m wide
- Payloads from 210 kg to 1.5 t
- Run on timer, level difference or pump start
- Few submerged moving parts
- Retrofit with little or no civils

ENVIRONMENTAL COMPLIANCE

EEL PASSES

MANY UTILITY WEIRS AND INTAKES NEED ONE

Under the Eel Regulations 2009 (England and Wales), the owner of a weir, sluice or other obstruction can be required to provide safe passage for eels. Water companies own a large number of these structures, from abstraction weirs to reservoir spillways.

ACE helped develop the UK eel pass with the Environment Agency and the Rivers Trust. Our modular passes follow the Environment Agency's eel and elver pass guidance and fit around almost any existing structure, usually without major civils.

01 **Site survey and route options**

02 **3D design to support consent**

03 **Climbing substrate matched to slope and species**

04 **Attraction and flushing flow**

05 **Manufacture, installation and aftercare**



AQUIKO

PENSTOCKS

Designed, built and tested in the UK by our manufacturing brand AQUIKO, our penstocks isolate, divert and regulate flow across sewage pumping stations, inlet works, storm tanks and tunnels. Rising and non-rising spindle options are available, and non-rising spindles keep threads out of the flow so rag and debris can't foul them.



Isolation penstocks

Wall-mounted and inline gates to isolate wet wells, tanks and pipework for maintenance.

Weir penstocks

Downward-opening gates that set top water level, with flow passing over the crest.

Hand stops

Simple manual stops for smaller channels and chambers, from 100 to 500 mm.

Channel penstocks

Set into open channels at inlet works and treatment stages to divert or isolate flow.

Double leaf penstocks

Two leaves in one frame, so one gate can drain down and act as an adjustable weir.

Bespoke gates

Designed to the opening, head and duty, like the 6 m wide tunnel penstocks in Belfast.

316 / HDPE	BS 7775	50 years	100–1,500 mm
Stainless or HDPE	Leakage standard	Design life	Standard, bespoke beyond

STOPLOGS



A quick, positive seal for isolating channels, inlets, outfalls and storm tanks during maintenance or an emergency.

Aluminium

Marine grade aluminium beams in 316 stainless or HDPE frames. Light to handle, with lifting beams that engage automatically under water.

Bespoke designs

Stainless steel, coated carbon steel for large openings, or HDPE. Circular stoplogs for pipe and culvert openings.

NON-RETURN VALVES

HDPE flap valves

UV-stable HDPE for wall, pipe, flange or square mounting. Rated to a minimum 8 m water column, with no casting in or grouting.

Stainless steel flap valves

316 stainless for larger outfalls and heavier duty.

WaStop inline check valves

A rubber membrane closes under back pressure, with no mechanical parts. Fits inside the pipe at any angle and keeps out backflow, odour and pests. DN75 to DN2000. We are the sole UK importer.



CASE STUDY · NI WATER

BELFAST TERMINAL PUMPING STATION

Client NI Water · Main contractor GRAHAM · Framework consultant Tetra Tech · Completed 2025







38 m
Below ground

2
Stainless penstocks

6 m × 2 m
Each gate

4 t
Each gate

SITUATION

Belfast's storm tunnel runs about six miles under the city at an average depth of 30 m, feeding a 37 m diameter wet well at the terminal pumping station inside Belfast Wastewater Treatment Works. Two isolation penstocks separate the wet well from the tunnel. Both had dropped and their frames had cracked, so they no longer sealed.

THE PROJECT

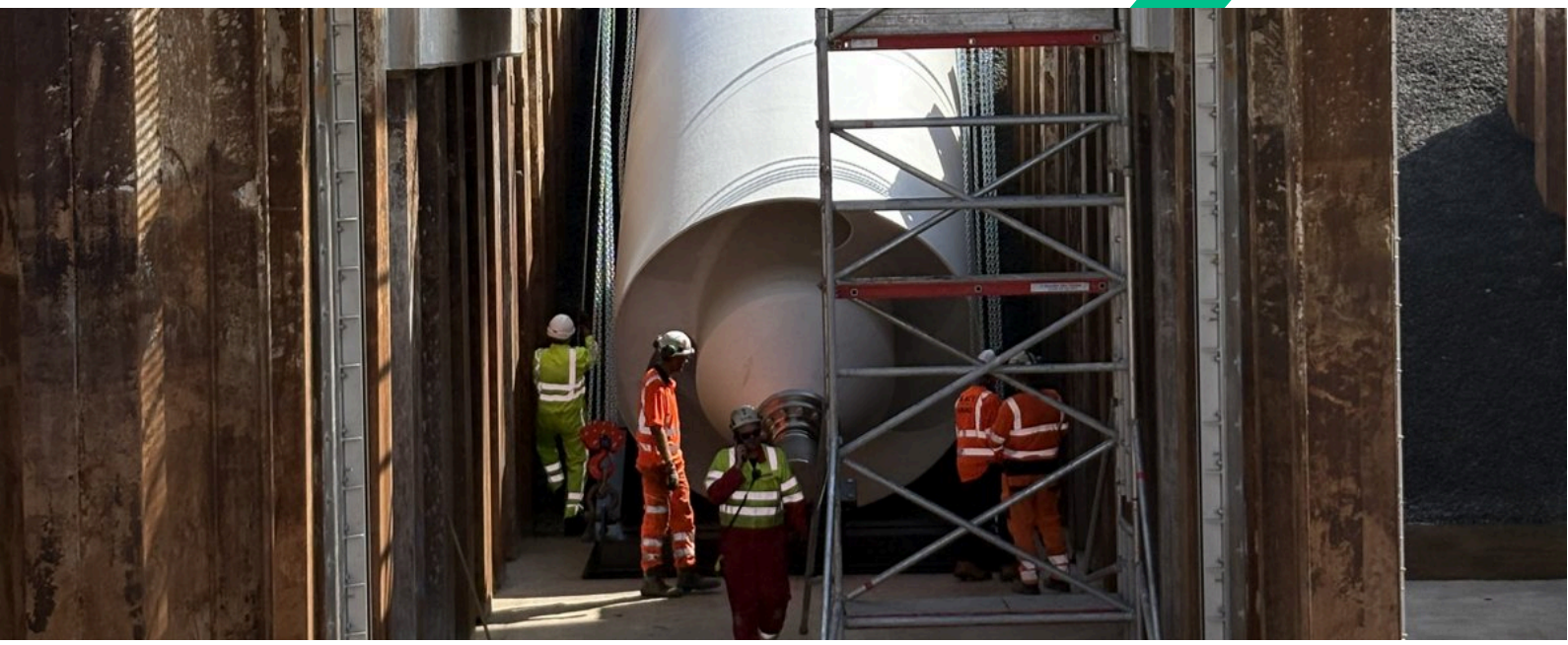
ACE supplied and installed two AQUIKO stainless steel penstocks, each in a cassette frame. Loosen two bolts and the whole gate, with its seals, door and hydraulic cylinder, lifts out for maintenance at ground level. A power unit on the wet well roof drives the cylinders, and sensors detect creep and raise the doors to their resting position automatically. The gates can overtop safely if flows rise while they are shut. The lift needed three cranes.

SUMMARY

Work finished in late summer 2025 under GRAHAM's early contractor involvement contract. Storm Amy arrived the following month.

OUR SERVICES

DESIGN, INSTALL AND MAINTAIN



01 In-house design and engineering

Mechanical, electrical and controls designed in house, from survey and 3D model to drawings.

02 Project management

One project manager from award to handover, working to CDM and your site standards.

03 Confined spaces team

Engineers trained and equipped for entry into wet wells, chambers and tunnels.

04 PASMA trained

Safe access towers and work at height, with IPAF operators and SSSTS and SMSTS supervisors.

05 NEBOSH qualified

In-house NEBOSH and IOSH qualified staff plan, review and audit our site work.

06 Installation and maintenance

Installation, commissioning and planned servicing, backed by our aftercare team.

PROJECT EXPERIENCE

WORKING FOR UK UTILITIES

THAMES WATER · GEL

London outfall WaStops

Twelve WaStops fitted into existing outfalls at Deptford, plus a bespoke 1.7 m multi-flange valve at Savoy Street.

THAMES WATER · GEL

Greenwich Pumping Station

Five large 316L stainless penstocks rated to 10 m head, on and off seating: four 2.15 m x 2.6 m gates and a 2.15 m circular gate, with ATEX electric actuators.

THAMES WATER

Circular stoplogs

Bespoke circular stoplogs for isolating large pipe openings.

RWE

Great Yarmouth Power Station

A 2.5 m diameter inlet penstock and a 2.08 m diameter pipe bung for isolating the cooling water intake.

EDF

Hinkley Point C

Four fully enclosed composite screw pumps, designed and manufactured for the new nuclear power station.

DŴR CYMRU WELSH WATER

Five Fords

Four channel penstocks, including three weir penstocks with electric actuators, installed in live channels at the Wrexham treatment works.

ANGLIAN WATER

Washingborough

A DN1050 stainless steel WaStop fitted inside the outfall culvert at Canwick Water Recycling Centre.

ESSEX & SUFFOLK WATER

Automated screen cleaner

An overhead monorail cleaner with a 1 m grab protecting the Wormingford eel screens. In delivery.

NORTHUMBRIAN WATER · ESH

Snowdon Road, Middlesbrough

A 2.2 m penstock and 2.2 m flap valve to stop Tees tides backing up the outfall.

WESSEX WATER

Poole Harbour

A custom 1.5 m WaStop at the Sterte outfall, the largest installed in the UK, with more to follow.

NI WATER · GRAHAM

Faughan weir

Three 6.5 m wide x 2 m high weir gates, with polymer sliding blocks and new rack and pinion drives, plus two 6.5 m x 2.5 m stoplogs for isolation.

NI WATER · GRAHAM

Belfast tunnels

Two 6 m × 2 m penstocks, 38 m below ground. Full story on page 09.

ACE
Aquatic Control Engineering

GET IN TOUCH

Talk to us early. A site visit or a short call at feasibility stage usually saves time, cost and redesign later.



Website
www.aquaticcontrol.co.uk

HQ address
Hall Farm, Main Street, Rampton, Retford, DN22 0HR

Phone
01777 249080

E-mail
info@aquaticcontrol.co.uk

Acclaim Accreditation
Achilles UVDB AUDITED
QMS ISO 14001 : 2015 REGISTERED
QMS ISO 9001 : 2015 REGISTERED
ec european certification group ISO 45001 REGISTERED FIRM
UKAS MANAGEMENT SYSTEMS 054
Constructionline Gold Member