ACE

Aquatic Control Engineering



Drockmill Pumping Station

A modular precast concrete pumping station

Client: Pevensey and Cuckmere Water Level Management Board
Location: Pevensey Levels, East Sussex

Situation

Drockmill Pumping Station sits on Drockmill Hill Gut near Rickney, where it meets the Glynleigh Main River. It helps manage water levels on the Pevensey Levels, a low-lying wetland protected as a SSSI, Special Area of Conservation and Ramsar site, and reduces flood risk to the homes, businesses and farmland upstream.

The original station was built in the early 1980s and ran two Flygt submersible pumps of 250l/s each. They had reached the end of their working life, presented health and safety challenges, and were not fish friendly, so the station did not meet the Eels (England and Wales) Regulations 2009.



The Pevensey and Cuckmere Water Level Management Board, administered by the Water Management Alliance, commissioned a replacement station funded through the IDB Storm Recovery and Asset Improvement Grant Scheme. Stantec designed the scheme and Breheny Civil Engineering delivered the civils. ACE were appointed under an NEC4 contract to supply and install the mechanical plant.

The Project

ACE supplied two Fishflow Innovations Archimedean screw pumps, each 1.8m in diameter and set at 26 degrees. Each can deliver 750l/s, three times the output of the pumps they replace, and they run on duty and standby through variable speed drives. The screws are manufactured fully in GRP and were specified to carry Environment Agency fish and eel safe certification.

The sealed rotating-drum design removes the pinch points found on a conventional open screw, where fish and eels can be struck or crushed between the flights and a static trough. The pumps meet the Eel Regulations 2009 while also improving hydraulic efficiency, since there is no run-back of water between the screw and trough.

Debris is handled by a Nordling R03 overhead monorail weedscreen cleaner working across a 7.5m wide channel. Its 1,000mm grab lifts up to 210kg, travelling on a 13.5m galvanised track, with its own control panel, also built by Nordling. AQUIKO supplied two penstocks with AUMA actuators, two HDPE flap valves at the outfall structures and a set of aluminium stoplogs. ACE also supplied an eel pass: a V-profile HDPE channel lined with brush substrate, kept wet by two self-cleaning pumps on duty and standby with a no-flow alarm.

The station is built around a modular precast concrete structure: the inlet and pump support units were made by JKH, an approach ACE has used before at Harty and Leysdown. ACE and JKH invested in a dedicated mould so the units could be factory-made to fixed tolerances, spanning between pile caps designed specifically for the precast structure. The whole station was modelled in 3D, so every interface was checked, and the client could see exactly what they were getting, before anything was made. Casting off site vastly reduced time on site and delivered the station well below the cost of the original in-situ design.

Summary

Drockmill now has a fish-friendly pumping station with three times the capacity per pump of the one it replaced. ACE delivered a complete package consisting of the screw pumps, weedscreen cleaner, penstocks, flap valves, stoplogs, eel pass and the precast concrete pumping station structure, working alongside Breheny, Stantec and Paktronic.

Building the station from precast concrete gives clients certainty. Because it is designed in 3D, they know exactly what the finished station will look like before anything is made. Casting the units in a factory rather than on site removes weather risk from the programme, so lead times are more accurate. Far less time is needed on site, which reduces cost and suits environmentally sensitive sites such as SSSIs, where work is often restricted to set periods.

The new station meets the Eel Regulations, gives eels a route past the pumps, and supports the board's wider work on the Pevensey Levels, including a new wetland created to the west of the site.

Fishflow Innovations carried out an inspection and test plan on the pumps, and the weedscreen cleaner was factory tested before delivery. Installation began in March 2026 and ACE commissioned the plant on site in late September 2026.

750l/s

Capacity of each screw pump, three times that of the old submersibles.

1.8m

Diameter of each Fishflow Innovations screw, set at 26 degrees.

7.5m

Width of channel kept clear by the overhead weedscreen cleaner.

210kg

Debris lifted with each grab of the weedscreen cleaner.





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