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Bedford Pumps Case Study

Fish Friendly Pumps go Direct Drive for Cam P.S.

Bedford Pumps, the UK's leading manufacturer of large submersible and conventional pumps for the Land Drainage industry, has recently installed and commissioned a Direct Drive Variant of their Fish Friendly pumps for Cam Pumping Station in the South Level Cambridgeshire Fens.

The Fenland area is comprised of mainly high grade agricultural land, much of which is below sea level, considerably below flood level, and therefore totally dependent on pumped drainage. Cam Pumping Station is one of three stations within the district and part of a 7,000 acre (2857ha) pumped catchment, managed by Waterbeach Level Internal Drainage Board.

Cam Pumping Station, located close to the village of Streatham, discharges directly into the River Cam. The pumping station had been operating with diesel driven pumps, but with a requirement for the pumps to be upgraded combined with new legislation requiring that measures be put into place to reduce eel mortality at pumping stations, the decision was made to install two new pumps from Bedford Pumps Fish Friendly range.

Bedford Pumps manufactured, installed and commissioned two DAF (Fish Friendly Direct Drive Axial Flow) pumps for Cam Pumping Station through consultants Hannah Reed. The pumps have been installed in a vertical suspended position with below floor discharge, in a new sump on the existing site. The pumps are powered by electric motor through a gearbox with an external PTO facility. This offers the ability to drive the pump by tractor in the event of a power failure. Each pumpset will provide a duty of 1,150 l/s at 5.6m head.

In addition to the pumps, Bedford Pumps also supplied Siphon Breaker Valves and Sub Bellmouth Flow Splitters for the units. They also undertook the M & E works for the site, taking out the old control panel and replacing it with a new Motor Control Centre. This will operate both the new pumps and an existing pump, which was retained as a stand-by.

Bedford Pumps' new range of Fish Friendly pumps are a complete solution for Eel Regulation compliance. There need be no changes to the civil structure, nor additional fish scare tactics. Utilising a Fish Friendly pump will even improve hydraulic efficiency with up to 10% reduction in power absorbed. Bedford Pumps' Fish Friendly pumps cover from 400 to 8,000 l/s at 2m to 6m head. Larger capacity pumps can also be designed to meet specific requirements. Fish Friendly pumpsets are also available as a Submersible Variant (SAF Range).

Bedford Pumps Fish Friendly pumps have **proven** credentials awarded from independent research consultants in the field of water management, VisAdvies BV, following extensive and stringent trials. The tests prove conclusively that Bedford Pumps' range of submersible and direct drive pumps are fish and eel friendly with no direct mortality observed from exposure to the pump. Copies of the official report which state that Bedford Pumps have manufactured the "best fish friendly pump on the market" are available on request.

Bedford Pumps were delighted to work with consultants, Hannah Reed, in upgrading Cam for Waterbeach Level IDB to supply the best Engineered and Fish Friendly solution for this Land Drainage station.



Diesel engine driving the old pumps at Cam Pumping Station



Bedford Pumps Fish Friendly pump being installed at Cam Pumping Station



Bedford Pumps Fish Friendly Impeller