Your Engineered Solutions Provider

Bedford Pumps provide best pumping solution for Crossness

Bedford Pumps Ltd have commenced installation on their latest multi million pound contract, for the manufacture, testing, installation and commissioning of 13 pumps to Thames Water for the refurbishment of the Intake Pumping Station at Crossness in East London.

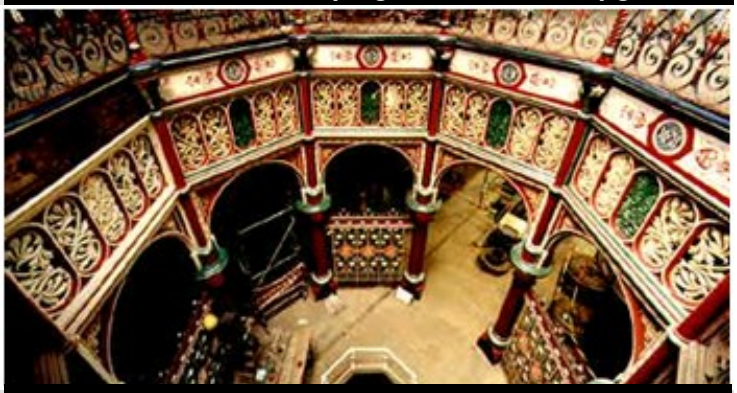
Crossness Sewage Treatment Works has been serving the population of London since the mid 19th century when the original complex, initially called the Southern Outfall Works, was officially opened in 1865. This comprised the Crossness Engine House, Boiler House and associated structures all of which were designed in the Romanesque style with spectacular ornamentation. At that time raw sewage was not treated but pumped away by four single cylinder rotative beam engines, which were later replaced by diesel engines.

Crossness's fascinating history is a result of Joseph Bazalgette's legacy. Following "The Great Stink" of London in 1858 he was empowered to construct a sewerage system for intercepting sewers north and south of the River Thames, adjacent to the river. These were to receive the sewage from the sewers which up to then had connected directly into the Thames. On each side three intercepting sewers at different levels divert sewage away from the river and lead it towards the outfalls at Beckton (North) and Crossness (South). At each outfall reservoirs enabled the sewage to be stored until high tide and then discharged. The major pumping stations to fill the reservoirs were Abbey Mills (for Beckton) and Crossness.

Today, Crossness is one of Thames Water's largest sewage treatment works, treating sewage from a population of over 2 million. Thames Water are currently investing £220M to upgrade the works which will enable the site to treat 44% more sewage than its current capability. Part of this upgrade was to construct a new intake pumping station to cater for the increased capacity, however during the tendering period Imtech Process worked closely with Bedford Pumps to provide a bespoke solution.

(continued overleaf)

Crossness Intake Pumping Station before upgrade



Crossness Pumping Station now protected by the Crossness Engines Trust

Allen Gwynne pumps previously installed

Bedford Pumps Case Study

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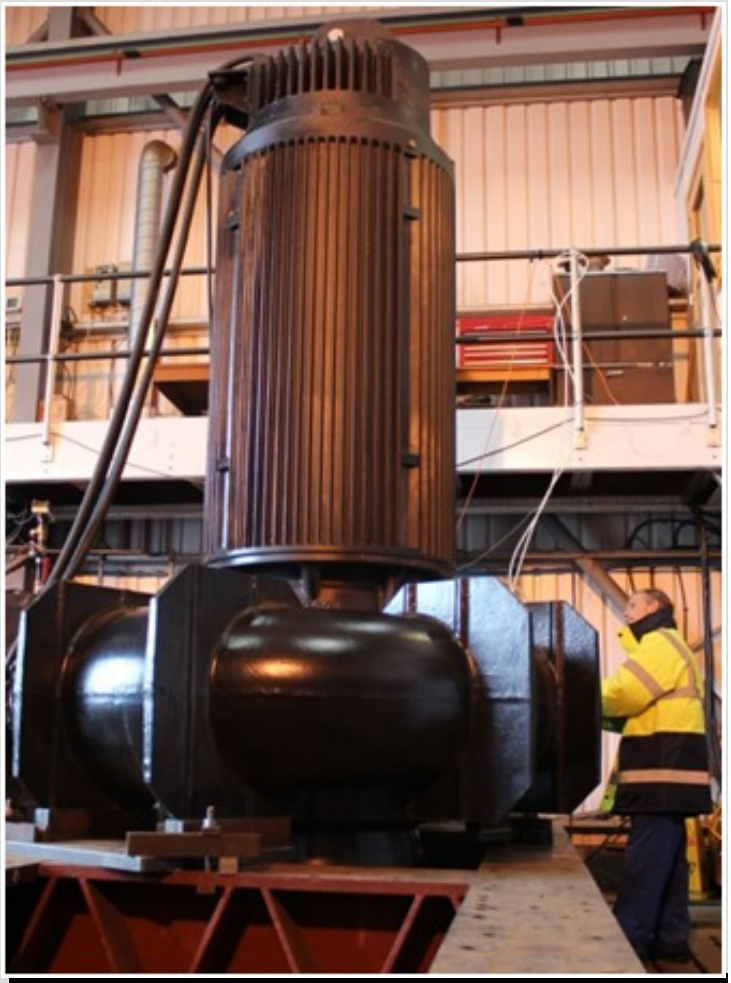
This involved utilising the existing intake pumping station thereby making substantial savings in the capital costs of the project.

The existing Intake Pumping Station is a Wet Well/Dry Well arrangement which receives coarse screened sewage. The 12 existing pumps are of the conventional long shaft design with motors situated at ground level to avoid any potential flood damage. They were installed by Allen Gwynnes over 50 years ago. Under this contract Bedford Pumps will replace them with 13 new dry well immersible pumps. These will consist of 6 Low Level pumpsets delivering 2,140 l/s each fitted with 650kW motors, 4 High Level pumpsets delivering 1,225 l/s each and fitted with 270kW motors and 3 Transfer pumpsets delivering 1,225 l/s each fitted with 140kW motors. In addition a "boxed" spare will be supplied for each application. The pumps are designed to handle 180mm solids and the motors will be oil cooled. The drive will be via 690v inverters.

In order to minimise civil modifications and ensure that the station could remain operational during changeover to the new pumps, Bedford Pumps redesigned the pump support feet in order to utilise the existing concrete plinths. In addition, they modified the motor design to ensure the diameter of the cooling jacket would fit through the existing hole in the motor room floor. This modification will ensure that the motors can be removed from the pump and lifted 12 metres directly to ground floor level for maintenance.

As a whole the Intake Pumping Station will convey flows of up to 12,522 l/s. Any flows in excess of the station capacity will spill to Storm Tanks, thereby eliminating the storm sewage which previously overflowed into the River Thames during heavy rainfall when the site became overloaded.

The Crossness project is due for completion in 2014 and is a significant accomplishment for Bedford Pumps.



Bedford Pumps replacement which will utilise the existing concrete plinths

For further information on this or any other of our applications please contact our Sales Team at:
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