

Kempsford STW, Gloucestershire - Submerged Aerated Filter

Kempsford STW

- Increased biological capacity of an existing treatment works without major modification to existing structures
- Compact above ground design reduced civil costs
- Stainless steel SAF tank with 25 year design life reduces replacement frequency and whole life costs



Project Completed

February 2008

Background

Before installation of the SAF tanks, Thames Water's Kempsford STW treated domestic sewage using only traditional percolating filters and pyramidal settlement tanks. The plant achieved a 95%ile discharge quality of 16 mg/l BOD, 24 mg/l Suspended Solids and 4 mg/l AmmN

Brief

Increased sewage contributions to the site resulted in a need to augment the biological capacity of the works. Thames Water decided that a new SAF treatment plant should be installed in parallel with the existing secondary process, accepting approximately 60% of the incoming flows and biological loads and achieving the same effluent quality.

Solution

Working with Black and Veatch, Thames Water's designated contractor, Jacopa designed and installed a new SAF wastewater treatment system. The new plant was capable of accepting a maximum flow of 10 l/sec and removing 40 kg of BOD and 6.4 kg of AmmN each day.



The Jacopa scope of work included the design, manufacture, testing, installation and commissioning of 4 No. Above Ground CB1000 SAF treatment tanks manufactured in grade 304 stainless steel and incorporating fine bubble membrane diffusers and structured corrugated media. In addition, Jacopa supplied 2 sets of duty/duty/standby air blowers each with their own acoustic enclosure (see picture, right), a form 4 control panel in a walk-in kiosk, a flow distribution system, 2 No. walkways with staircases for inspection of the air pattern, all interconnecting pipework and training of the site operators under this contract.