

## 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.