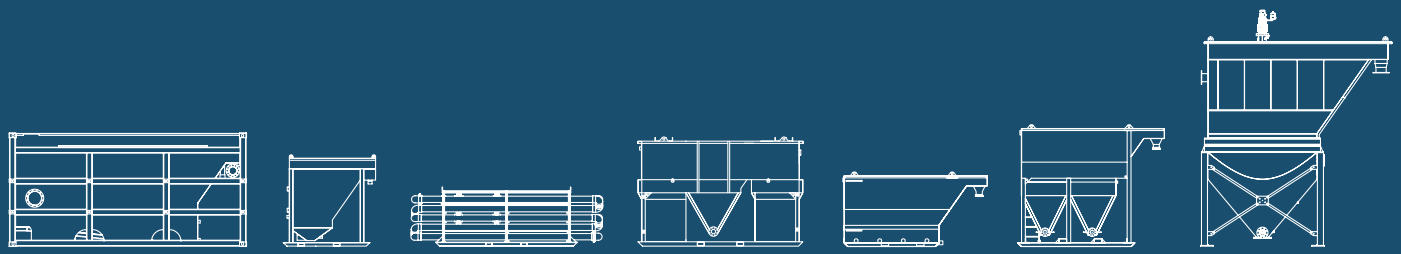
SPS Siltbuster Process Solutions Limited

Municipal Sector Case Studies



Hire, Sales & Technical Support

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Municipal Case Studies

Scottish Water - Fauldhouse WwTW

Temporary Primary Settlement Tanks

Temporary treatment capacity was provided to allow the existing primary settlement stage to be taken offline for refurbishment works.

148 m3/h screened sewage was treated using 4 No HB40R installed in parallel. A simple valved manifold flow distribution arrangement was used, allowing equipment to be installed and commissioned within days.

Access walkways provided easy safe access to the top of the units and auto desludging systems reduced operator input while maintaining unit performance.

Kelda Water Services - RMB Chivenor

Dissolved Air Flotation (DAF) for Temporary FST Duty

When the Final Settlement Tank (FST) on a single stream activated sludge plant was taken offline for half-bridge scraper repair, temporary treatment was required to provide mixed liquors suspended solids separation. Available space on site was restricted, so a compact solution was required.

Whilst the use of DAF for sludge thickening applications is well documented, they are still relatively unused on municipal sites. DAFs are ideal for this type of temporary application because they are small and portable - they can be brought onto site and installed via lorry-mounted crane.

At Chivenor, a single D100 DAF was deployed to treat the 43 m3/h with a solids concentration of 3,500 mg/l and produced a treated water to meet the 30 mg/l TSS site consent and return activated sludge concentration of 3% solids.

Southern Water - Brockenhurst WwTW

Dissolved Air Flotation (DAF) for tertiary solids removal

A two-fold problem was solved by providing DAF as a non-conventional tertiary solids removal solution - treating 33 l/s (119 m^3/h). Existing Iron being dosed to meet a tight Phosphorus consent limit, bio-accumulated in the trickling filter biomass. When biomass sloughs off this puts at risk the solids consent limit, but more importantly Iron. If iron is breached, the works is classed as failed, affecting serviceability targets. Additionally, the iron caused sloughed solids to be particularly fine, reducing normal solids removal performance in the HST.

Residual Iron in suspended solids was close to the Iron consent limit, but DAF achieved a sufficient solids reduction to ensure compliance with the 1 mg/l Iron limit. The D100 DAF allows site to flush the system while maintaining consent, reducing long term compliance concerns.

Municipal Case Studies

Dwr Cymru - Welsh Water/Imtech - Kingstone WwTW

Temporary Moving Bed Biofilm Reactors (MBBR)

Temporary biological treatment was required while the existing trickling filters were upgraded. Programme constraints meant that both filters were upgraded simultaneously, so a treatment solution was required to take the full biological load.

2 No Moving Bed Biofilm Reactors (MBBR) were mobilised to provide a compact treatment solution. The modular nature of both the blower skids and treatment tanks allowed them to fit into the small amount of space available on site.

Southern Water - Cuckfield WwTW

Permanent Humus Settlement Tanks (HST)

Following an on-site trial using skid mounted HB50s from the hire fleet, a non-standard solution was proposed to meet the specific site constraints. A modular above ground solution was chosen after considering CAPEX due to the rocky ground conditions and significant programme savings.

SPS designed and supplied 2 No HB50R lamella clarifiers for humus settlement, providing an effective settlement area of 100m^2. The installation footprint including units and walkway was only 30m^2.

The equipment was designed to treat a flow rate of 12 l/s (43m^3/h - 40% of the site's FFT).

Kelda Water Services

Complete Temporary Wastewater Treatment Solution

As part of planned maintenance, an existing Activated Sludge Plant was taken off-line and a temporary treatment solution was required to provide complete treatment capacity for the works.

Temporary treatment equipment included three duty streams, each comprising lamella primary settlement tank, Submerged Aerated Filter unit for biological treatment, plus a lamella humus settlement tank. Both lamella settlement tanks were fitted with auto desludging systems, so that only minimal operator input was required.

The 30 l/s plant was mobilised, on site, and operational within 3 weeks of the order being placed. This demonstrates the capability of Siltbuster's fleet of equipment for this kind of upgrade programme that the industry is embarking on as part of AMP6.

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