

Slapton STW & Torcross Pumping Station

£4.9m project in environment sensitive area

by
Andy Dawe; Mike Court; George Handley John Reddington; Simon Brown

This £4.9m project was commissioned to design, construct and install equipment for a new pumping station at Torcross; to remove the raw sewage outfall; install 4.5km of twin pumping mains and upgrade the existing sewage treatment works at Slapton in line with the latest consent requirements of the Environment Agency. Special attention to environmental issues were most important as the work associated with the pumping mains and Slapton STW involved activity around Slapton Ley National Nature Reserve (largest freshwater lake in South West England, a Site of Special Scientific Interest (SSSI) and a bird sanctuary. Construction proved to be quite eventful with the unearthing of an old bomb and a live tank shell - both of which required the Bomb Disposal Team to make safe. The new pumping station at Torcross was sited under an hotel car park and all work had to be completed by Easter 2004 so as not to impinge on the hotel's seasonal trade. In addition public toilets sited in the hotel car park were converted to house the motor control centre and a new toilet block had to be located on the seafront car park.



Slapton STW: Combining two village catchments for treatment before return to Torcross for discharge.

courtesy: South West Water

The scheme was constructed under the AMP3 partnering agreement which, in this instance, included *South West Water* using a team comprising of *Purac Limited* for Process, Mechanical and Electrical input; *M J Gleeson Construction Services Ltd* for the Civil input and *Jacobs Babtie Ltd* as Civil Design Consultant.

The team undertook significant community activity prior to work beginning and provided a weekly update on progress for the residents in the area. The renovation of the hotel car park, a new public convenience block on the seafront and some excellent new traditional earth filled Devonian stone wall screening at Slapton STW, which is sited close to a public footpath, have all been significant factors in getting acceptance for the works from local people.

Prior to the works being carried out, flows from the Torcross catchment were discharged via a sea outfall under an existing Environment Agency consent. Clearly this was unacceptable under today's environmental legislation.

The existing Slapton works, which dated back to 1950, consisted of *Copa Sac* screens, a macerator, storm overflow with a storm tank, two primary settlement tanks, one stone trickling filter and humus tank and a nitrifying BAF, before discharge of the final effluent into the sensitive waters of Slapton Ley.

New scheme

The new scheme involved combining the two village catchments and treating flows in the new plant before returning effluent to Torcross for discharge via the existing sea outfall which has also been upgraded.

The scheme, completed and handed over to South West Water in December 2004, was needed to cope with a static population of 1000 and a seasonal population of treble that figure with the influx of tourists to hotels and caravan parks in the area from Easter through until September.

The new works provides preliminary and secondary treatment for sewage from the Slapton and Torcross catchments, together with thickening for the resultant sludges. The scheme involved the provision of a new inlet works where influent is screened to 6mm. Preliminary treatment provides grit removal and fine screening, with secondary treatment as an activated sludge process (donut) tank).

The final effluent is pumped back to Torcross prior to discharge via a pumped sea outfall. This involved laying a 4.5km of dual pipework between Slapton STW and Torcross PS. The existing sea outfall was found to be in very poor condition and was replaced.



Slapton & Torcross: Torcross pumping station under hotel car park & MCC building is a converted toilet

courtesy: SW Water

The treatment plant is fed by a pumping station at the Torcross catchment and the existing gravity main from the Slapton catchment. There is separate storm separation and storage at Torcross PS before transfer and at the treatment inlet works for the Slapton flows. Storm flows that overflow the storage at Torcross are pumped to the sea, together with return final effluent via the existing outfall and storm flows that overflow storage at Slapton are discharged to Slapton Ley via the existing storm overflow.

The new final effluent consent is a standard of 40 mg/l BOD and 60

mg/l suspended solids (95%ile on spot samples). Surplus sludge is being exported from the site to Kingsbridge by road tankers as thickened sludge, at approximately 5% dry solids for further treatment. ■

Note on the authors: Andy Dawe is Programme Leader & Mike Court, Project Leader, both with South West Water; George Handley is Project Manager with Purac; John Reddington, Project Manager with M J Gleeson and Simon Brown, Project Manager with Jacobs Babbie.

DON'T LET YOUR INLET STAY A COST CENTRE...

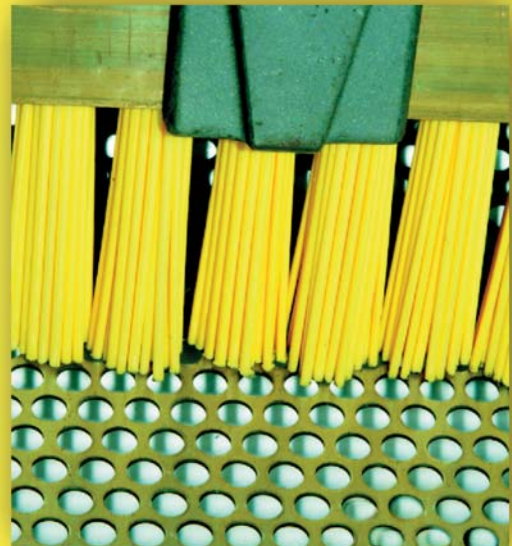
Capital cost is only part of the equation. Ongoing costs after installation can easily build up to more than match the original installation. Wash water and landfill costs are expensive month after month when running even a small works.

ACE Screeners are designed for inlets of up to 100 lps. They require no wash water, at all. Compared to other screens on the market this will save you serious money, year on year*.

High volume reduction of screenings with 95%** of organics returned to flow and the end result highly compacted can reduce your landfill costs dramatically.

Is your inlet screen costing more to operate than it could? Screener savings don't just stop with the purchase cost.

Talk to us about how we can help you save money. After all, capital and operations budgets feed to the same bottom line.



* Alternative equipment on the market can use up to 70,000 litres of water per day. Every litre has a value.

**Result of independent analysis.

The Haigh Engineering Company Ltd, Alton
Road, Ross-on-Wye, Herefordshire, HR9 5NG.
England. Tel: 01989 763131

www.haigh.co.uk



HAIGH