

Project Case Study

Hawick Sludge Digestion Plant

Client	:	East of Scotland Water
Value	:	£0.6 million
Capacity	:	2,000 kgDS/d
Process	:	Rosewater Digestion™
Contract Type	:	Turnkey (Red Book)
Scope of Works:		Process, Mechanical, Electrical & ICA Works



Description

The digesters at Hawick Sewage Treatment Works provided for Borders Regional Council (now known as East of Scotland Water) represent the latest development in modular packaged plant.

The plant differs from previous designs in its use of a standardised concentric tube, externally mounted heat exchangers combined with an unusual type of waterside heating circuit which automatically controls digester operating temperature and heat exchanger surface temperature. This control is achieved through the use of a single three-way mixing valve responding to the input parameters. The design incorporates technology previously reserved for large and expensive bespoke-designed digesters, but can now be deployed economically in modular packaged plants.

The scheme provides treatment of indigenous primary and activated sludges, imported sludges and trade waste. A separate stream is employed for the trade waste to ensure optimum thickening of the feeds, balancing of the waste and control of the digestion process. Digestion takes place in a single FarmGas™ type reactor of 850 m³ capacity, insulated with GRP encapsulated polyurethane foam panels bolted externally onto the steel panels.

The anaerobic digestion process operates most efficiently at 35-37 °C and this plant incorporates automatic sludge temperature control which is activated by means of a mixing valve in the water heating circuit, linking the boilers and heat exchangers.

This novel, low cost system, gives sophisticated control of the total digester heating process with benefits to boiler life, heat exchanger serviceability and digester process control.