

Case Study

Bathgate Sewage Treatment Works Sand Filters



Client:
Scottish Water

Specialist Subcontractor:
Colloide

Location:
West Lothian,
Scotland

Project:
Sand Filters

Bathgate Sewage Treatment Works (STW) had previously one existing sand filter which was used for many years acting as a tertiary treatment stage for the effluent.

This filter was constantly overloaded and thus, a new sand filter, similar in design to the existing plant was required to increase the capacity of the plant and installed as part of this refurbishment contract to act in parallel with the existing unit.

Flow is split in the splitting chamber immediately upstream of the two filters and flows to each filter in parallel. As the flow passes through the filters (by a small gravitational differential head), solids are removed. The final treated effluent then flows from both filters into the collection manholes through the sampling chamber and then to the outfall.

Project Deliverables

The main components of the system

These solids are removed from the filter by a travelling bridge which moves over each cell in turn and backwashes than cell, discharging the dirty backwash water into trough which in turn is returned to the head of the works.

Each filter consists of 46 'cells' providing approximately 1.5m² filtration surface area each. These cells are washed individually on a regular basis, the backwash being triggered automatically or manually. The plant remains idle and only moves and is active when backwashing and the flow is passing through the sand filter. Flow is controlled to the plant via a manual penstock and weir arrangement situated at the inlet end of the existing filter.

Colloide designed the complete new filter. Colloide manufactured and installed all mechanical and electrical components of the new filter while EPS/Farrans undertook the civil works. Colloide also undertook the refurbishment of the existing filter which included the replacement of the filter cells and media.

