

## Old Kilpatrick Pumping Station Byzak Contractors

West of Scotland Water (WoSW) were required to upgrade the sewage treatment facility at Old Kilpatrick, which previously discharged via a septic tank into the Clyde Estuary. The objective of the project was to improve the quality of water in the estuary in accordance with the urban wastewater treatment directive. Any proposals were also expected to alleviate the additional problem of flooding of residential properties caused by tidal effects through the sewerage system.

Entec designed a unique tidal pumping regime, based on a 'need to pump' philosophy, giving a power consumption reduction to WoSW of approximately 90%. By use of an isolated, high level, outfall chamber, the upstream sewerage system was protected from future high tides, which would previously have caused flooding to nearby properties.

Entec provided cost savings of over £50k to Byzak, by recommending the re-use of the existing septic tank as part of the required storm water storage volume, thus reducing the proposed storage tank. Associated with this recommendation was the structural assessment of the existing septic tank.

Entec was able to provide Byzak with additional services to solve problems encountered on site. Following discussions with the local planning authority, Entec produced a report assessing the impact of proposals on the surrounding vegetation. The report was of particular importance due to parts of the site lying within areas designated as a site of special scientific interest, a special protected area and a Ramsar site.

During excavation of the rising main an area of contaminated land was discovered. Entec was able to produce a desk study, recommend further site investigation and analysed chemical test results on behalf of Byzak. As Entec were already familiar with the site, the efficient response enabled construction work to progress with the minimum of delay and extra cost.

Using flexible, yet fast track approach to design work, Entec's multidisciplinary skills provided Byzak with civil, structural, geotechnical, mechanical, electrical and ICA innovative design solutions, and the end user, WoSW, with a suitable, low maintenance operation.

### Facts and Figures

**Project**  
Old Kilpatrick Pumping Station

**Client**  
Byzak Contractors

**Location**  
Old Kilpatrick, UK

**Capital Project Value**  
£1.5m

### Entec Services

The project comprised:

- Interception of the existing sewerage system
- Tunnel below the Forth and Clyde British Waterways Canal
- Open cut sewer construction
- Storm water storage
- Storm water screening
- Tidal outfall pumping station
- Storm outfall pipe
- Foul sewage pumping station
- Rising main



*Multidisciplinary  
skills focused on water  
quality improvement  
and flood prevention*

