

Case Study

Alloa Wastewater Treatment Works



Client:
Scottish Water

Principal Contractor:
ESD

M&E sub-contractor:
Colloide

Location:
Clackmannanshire,
Scotland

Project:
Longitudinal scraper bridges

Colloide was contracted by Scottish Water to undertake the project at Alloa Wastewater Treatment Works in Clackmannanshire, Scotland. The task at hand was to replace the dedicated bridge scrapers in the existing 2No. PSTs and 2No. Storm Tanks at the works which are of a rectangular construction. The site is designed for a PE of 60,000, treating flows up to 348 l/s from Alloa and the neighbouring areas of Clackmannan, Menstrie, and Tullibody.

The longitudinal scraper bridges for the Primary Settlements and Storm Tanks will travel at a fixed speed along guide rails and scrape the settled sludge along the bottom of the tank from the home position to the sludge hoppers at the end of travel position of bridge. The scum scraper draws surface scum, directing it to the collection chamber for disposal through descum valves. Full Bridge Scrapers are equipped with adjustable local control parameters, allowing manual movement, scraper adjustment, and sensors for regulation. Mechanical limit switches serve as failsafe measures against bridge overtravel.

Technical information

The main components of the system

The key components which Colloide will provide will include:

- Upgrade both tank scraper bridges with new scrapers featuring retractable blades and hinged support poles as specified in the SW Engineering Specification. Ensure the bridge design allows for access to the adjacent bridge.
- Include the provision and installation of a guide rail system for the bridge drive mechanism, incorporating a pin rack rail system, rotation sensors, and dual safety travel sensors.
- Provide and install new conventional lockable waterproof LCPs in accordance with SW Specifications, with one LCP for each scraper. Install these LCPs on the respective scraper bridges.
- Replace the existing drum cabling system with a new one that is equivalent.
- Implement the replacement of weir plates, weir housing, and scum board as part of the upgrade.

