

CASE STUDY

Project: Wingham WTW
Location: Canterbury, Kent
Client: Principal Contractor – CMDP JV
(Costain/MWH Delivery Partnership)
Client – Southern Water



Project Introduction

Coleman Construction & Utilities Limited has received high praise during the completion of its civil engineering sub-contract for Principal Contractor CMDP JV, on behalf of Southern Water. The works encompassed a new WTW Ferric Dosing package and was secured off the back of Coleman Construction & Utilities Limited's (CC&UL) previous contract delivery, company progression, safety performance, as well as the quality of their workmanship.

Coleman Construction & Utilities Limited's contracted civil engineering scope comprised bulk excavation, new chambers, pipework, drainage and manholes, extension of a roadway and provision of hardstanding's, site wide ducting, draw pits and new reinforced concrete structures, including a new LV kiosk base. The total amount of concrete poured was 673m³, including a single pour of 128m³, the largest to date on any CMDP JV project.

These works were in support of Southern Water's wastewater directive to reduce the phosphorous from 1.0mg/l to 0.08mg/l in line with the new permit (Driven by Habitats 1 and No Deterioration 2).

The contract was underpinned throughout by a collaborative approach with CMDP JV and Southern Water, as well as other project stakeholders, providing the basis for proactive

communication and highly coordinated activities, resulting in the safe and successful completion of this wastewater civil engineering project – meeting time and budget requirements.

Project Deliverables - Civil Engineering Scope

Storm tank extension works:

- A 25m x 25m x 4m deep stepped excavation was undertaken to cleverly avoid the need for any temporary works.
- 34 tonnes of rebar were fixed into position to reinforce the 350mm deep concrete base.
- 128m³ of concrete was poured for the base using a 42m concrete pump and then finished by hand – largest single pour to date (for CMDP JV and CC&UL).
- Construction of reinforced concrete walls using 'Peri' formwork.

Pump station construction works:

- 7m deep excavation works using a 35-tonne machine.
- Temporary works installation, using a sheet and frame method (receiving high praise from supplier Groundforce Shorco for one of the best installations they had seen).
- 4m diameter (6 tonne) concrete rings lifted in position using a 35-tonne machine to create a 6m deep chamber.
- Groundwater management.

Tertiary area works:

- Installation of 150m of 500mm ductile iron pipework.
- 15No cable draw pits installed.
- 8000m of connecting ductwork.
- Concrete bases constructed for backwash and vessels.

Spoil:

- All excavated spoil was kept on site.
- 4000m³ was banded and then later made into an Ecological Enhancement.

Challenges and Solutions

Several challenges have been met throughout the project by Coleman Construction & Utilities Limited, which are detailed below:

- Deep excavations were solved with a 2-part manhole box system of temporary works design and installation.
- Problematic groundwater issues due to water levels, were managed through continuous pumping from the excavation away from the area.
- Pipes and manholes within the temporary works were designed and installed using two systems of manhole boxes and trench boxes.
- Congested areas of works within all new pipes, manholes, ducts, draw pits and chambers joining together, were managed through regular programme and sequencing reviews to enable all works to be carefully planned.
- Deliveries were part of a co-ordinated plan of plant and equipment logistics to ensure works kept on track.
- Interface with other contractors/stakeholders included collaborative early engagement meetings, regular planning, and liaison through weekly project meetings.

Benefits

- Coleman Construction & Utilities Limited provide a non-confrontational approach to commercial and contractual matters, preferring to work collaboratively in the interests of the project. As a result, working relationships with the client at all levels and across all disciplines are at an all-time high.
- Collaborative working has become a daily norm for Coleman Construction & Utilities staff. We always offer a solution-based approach.
- We are always striving for best practice working especially where health, safety and wellbeing are concerned - we aim for zero harm every day.
- We take pride in our work and aim to leave our sites snag free. Our attention to detail is second to none.