

Cherington Sewage Treatment Works Upgrade

Warwickshire

Project Profile

Client: Costain Severn Trent
Water

Designer: MWH Global

Value: £583,520.00



The contract was a consent led upgrade of Cherington Sewage Treatment Works Near Shipston on Stour under Severn Trent's AMP5 non-infrastructure framework. The aim of the scheme was to reduce the ammonia level in the final effluent. The work was carried for Costain as a tier 2 partner under an NEC option C contract.

The main elements of the project consisted of:

- Installation of a new 6.5m diameter primary settlement tank
- 2 new 14m diameter bio-filter beds
- A new 5.5m diameter humus tank
- Extension to and modification of the existing humus tank distribution chamber
- A new re-circulating pumping station
- New MCC with new power supply & telemetry outstation
- Nine new chambers/manholes & connecting pipework
- Electrical ducting & draw pits
- A new concrete site access road and footpaths.

Early construction of the new bio-filters was a critical milestone in the programme due to the 12 week 'seeding' time of the media beds prior to being brought on line.

The platform constructed for the base slab of the new bio-filters required the excavation of approximately 1,000m³ of clay and the import of 4,600 tons of 6F2 onto site. This involved a total of 460 vehicle movements in a 4 week period and a proactive traffic management plan was required due to the small rural roads accessing the works. Close liaison between the site team and the suppliers during the contract was also essential.

As the program was led by the requirement to expedite the construction of the bio-filters, the site team were presented with the problem of safely constructing the new 6m diameter humus tank, which had a formation level 6m below the bio-filter slab, whilst retaining the required angle of repose for the newly constructed platform. The placement of a 1m high manhole ring onto the base slab of the humus tank was a simple solution and allowed work to continue on both aspects of the project uninterrupted.



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Early submission of RAMS allowed STW Operations staff the time to review and assess the operational implications and interfaces of our proposed methods and programming of the new works construction and this enabled them to issue permits for connecting into the existing works. The acceptance of our proposals minimised the use of over-pumping and reduced both risk and cost.

The new PST tank was constructed above ground using precast concrete sections. A 20 Tonne excavator was used to lift the sections into place which were then bolted down onto the preformed slab.

As part of the learning process on site we were able to advise the client that the use of precast sections with starter bars cast into the foot, allowing them to be cast directly into the base, would in our opinion have been a better system, giving both an improved program and eliminating the requirement for intrusive drilling into the new base.

Throughout the contract we worked closely with Costain to deliver the scheme and were actively involved in the collaborative planning along with their other sub-contractors. By carefully highlighting tasks which were not essential to the works processes and producing a flexible program around these tasks we were able to maintain continuous work and a smooth interface with both STW Operations and other trades

The scheme was safely delivered to the client Severn Trent Water on programme and within budget.

