



Stonbury constructed a newly built reinforced concrete storm tank and overflow discharge chamber within a Sewage Treatment facility.

This site required an additional 55m³ storm capacity to comply with the new Environment Agency permit for storm volume which comes into force at the end of May. It aims to significantly reduce the amount of untreated wastewater that is discharged into UK rivers.

Constructing a larger replacement tank would have been costly to the client, carbon-intensive and would have eliminated storm capacity for the duration of the programme. Therefore, a design was created for an additional tank to integrate with the existing one.

The tank would require minimal pipework because of its locality to the existing tank and would ensure no disruption to the treatment works, even when re-routing the humus de-sludge pump main, thus protecting effluent quality.

The team began by removing an existing soil bund from the working area and broke out the concrete around the inlet chamber to locate the humus sludge main. After a trench was dug to house it, it was then re-routed around the footprint for the new tank.

The team then installed sheet piles and support frames before excavating for the new tank. Once safe for confined space entry, the team completed the excavation to level and placed down 50mm thick concrete blinding.

The new in-situ reinforced concrete tank was then constructed in three pours; first the sump with the sump drain, followed by the base and then the walls.

Temporary scaffold steps were used to provide safe access into the tank; these are considerably safer than ladder access. This allowed the team to re-route the existing inlet pump station storm overflow pipe into the new tank with an isolating gate valve, and install the sump drain into the inlet pump station.

An ultrasonic head was installed with a small controller unit in the control kiosk and telemetry alarms reconfigured to sound when the new storm tank is full and discharging to river. An automatic, non-powered, maintenance-free, tank-cleaning CWF flushing bell was then installed by Stonbury's sub-contractor Eliquo Hydrok.

Finally, the excavation around the new tank was backfilled with compacted Type 1 stone. Concrete footpaths were reinstated, with the addition of a new concrete path to the ultrasonic head location.