



As the Reservoir Refurbishment Framework Contractor for South Staffordshire Water, Stonbury had the opportunity to tender for the design and build of a 10Mg potable water storage point at SSW's Outwoods site, on the outskirts of Burton on Trent.

The site had earlier planning permission in 2014 for a new build reservoir on the footprint of Reservoir No 1, which had passed its life and was beyond economic repair. However, the demolition and construction project of the tank was postponed due to other operational priorities within the South Staffordshire network. The option to construct an alternative reservoir was chosen to ensure the continued supply of potable water to the local area.

The decision was made to locate the new reservoir on a greenfield area of the site rather than in the footprint of Reservoir 1 to reduce the overall construction programme and meet supply demand. This would not only enable South Staffs to operate two reservoirs at all times, but also opened up the opportunity to build an additional reservoir in the future. This investment will help to guarantee the quality and reliability of the local water supply for the next 100 years and will play a key part in meeting growing demand from new housing being built in the area.

The tender process involved a high level of optioneering of all possible solutions, including temporary, steel and GRP tanks. The option selected was a hybrid solution for a reinforced concrete structure, which included precast concrete columns and roof structure. This was deemed to be the most cost-effective solution, as well as one capable of being delivered to the very challenging programme.

Stonbury subsequently completed the detailed design stage, which developed the outline design, submitted at tender stage. It was decided that the reservoir would be split into two tanks to enable delivery of one of tank into service at the earliest opportunity.

Shortly before work was due to begin, an ecology evaluation highlighted the presence of Great Crested Newts (GCN) on a housing development adjacent to the site. A full ecological survey was carried out and reptile

barrier fencing, and hibernaculum were erected to ensure the protection of GCN during and beyond construction.

Due to a very specific timeline – already impacted by the ecological work and poor weather – the Stonbury civils team established site and completed all excavation works and preparation for the floor slab in a matter of weeks. In addition to these delays, the construction of a concrete valve chamber to house all the pipework coming into and out of the reservoir was added to the original specification. These delays resulted in 12-hour day and weekend working by the team on-site to bring the project in on time.

Following completion of the floor slab, works began erecting the formwork for the walls. The reinforcement was prefabricated on the ground and lifted into place with the crane to eliminate working from a height. The team worked quickly to build up the walls and install piping, ducts and precast columns and beams.

Once the roof was fully installed, a flood test was successfully completed and the access stairs, ladders and covers were installed. The first tank was then cleaned in preparation for the first fill. A waterproof roof membrane was installed whilst the seven-day water test was carried out. After a drain down and final inspection, the first tank was put back into supply whilst works continued to the second tank.

Once the valve chamber walls were complete, security doors were installed, and GRP flooring was fitted inside the building and on the access staircase. Telemetry control panels, a new fuse board and flow meter heads were also installed along with the water sampling system. Following completion of the second tank, the site was backfilled and handed back to the client just seventeen weeks from breaking ground.

Due to the residential nature of the site location, Stonbury and South Staffs were proactive in engaging with residents online. Using Community Portal, members of the public were able to follow the scheme and communicate with the team regarding any questions or concerns.