# Holte Road UID, Birmingham

## Project Profile

**Client:** Severn Trent Water

**Designer:** Severn Trent Water

**Value:** £1.65m

A major UID project to replace two underperforming CSO's as part of the 5 year River Tame Catchment Quality Improvements Programme by Severn Trent Water to improve water quality in the River Tame.

The project was undertaken in main arterial traffic routes into Birmingham which were congested with major utilities and services. The location of the scheme was also adjacent to the Aston Villa football ground, Villa Park, with major elements of the work carried out in their coach park. The short programme period between the contract start date and the start of the football season to complete the installation of culverts, sewers and chambers in Witton Lane resulted in Aston Villa football club and the police being reluctant to allow the contract to start so close to the football season as, if the sections in highway were not complete, there would be traffic chaos on match days. It was agreed that the works would be closed up for match days to allow unhindered access to the ground.

In the event we decided to work extended hours and weekends to ensure that the works in the highways which affected Villa Park were completed a week prior to the commencement of the football season. A letter of commendation was received from AVFC on completion of the project.

The main work consisted of;

- Construction of a 10.5m diameter pumped storage shaft to a depth of 17m creating 2250m$^3$ of storage
- The shaft was constructed to 9m by caisson method through wet sands, with large reaction collar and jacking system, and then by underpinning through the lower rock strata.
- A 1.5m to 1.2m diameter steel back drop pipe was fitted into the shaft for the incoming flow.
- Pre-casting on site a contractor designed segmental concrete cover slab for the shaft.
- Constructing a new WAPUG designed 8m long x 3.8m wide in-situ reinforced concrete screen chamber with Huber ROK1 mechanical screen.
- Mechanical & Electrical works including pumps, screen, control panel and kiosk using Severn Trent's framework suppliers. The pumped shaft was fitted with 2 submersible pumps each capable of delivering 31.3l/sec
- Access to the screen in the CSO chamber was an 8m long x 1m clear opening cover supplied by Norinco and was the first cover of its size.

# Holte Road UID, Birmingham (Cont'd)

## Project Profile

**Client:** Severn Trent Water

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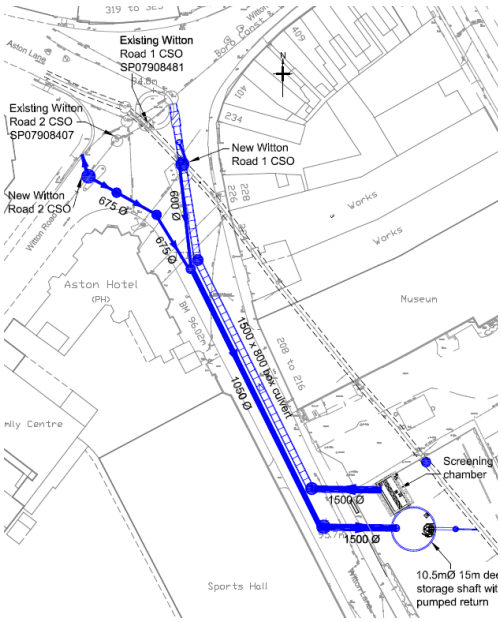
**Value:** £1.65m

- Constructing various sections of connecting and upsized pipework in highway including;
  - ◊ 34m of 1500mm diameter pipe jack under congested services in two parallel drives as inlet and outfall connections to the storage shaft and screen chamber
  - ◊ 72m of 1050mm diameter pipes in open cut, depth up to 4.5m.
  - ◊ 98m of 1500mm wide, 800mm deep x 2m long box culverts in Witton lane depth 4.5m, to cross under existing sewers and utilities. We redesigned this section of sewer from 1500 dia pipes to a wide, shallow culvert to pass under and prevent diversion of a bank of 3.3m deep fibre optic cables that were originally to be diverted at significant cost due to the level clash. To complete this section we had to break out, overpump and reconstruct a 1350mm diameter brick egg sewer and replace the invert within a 12 hour window
  - ◊ 34m of 675mm pipes in open cut (depth 2.7m), 27m of 600mm pipes using open cut method (depth 2.5m). Much of the open cut pipework and culverts were significantly affected by the extensive and congested nature of the existing utilities and services.




A number of sequential road closures and diversions were needed which required continuous liaison with Birmingham CC Streetworks Coordinators. The closure of Witton Lane allowed a 450mm gas main diversion to be carried out in advance of pipelaying work. Work at the junction of Witton Road & Witton Lane required using 3 way temporary traffic lights, manned 12 hours a day, 7 days a week.

We were able to optimise the programme by working in several areas at once - culvert and pipelaying work at Witton Road junction and in Witton Lane and installing the pipejacks at an early activity to allow shaft sinking to start.

Customer care was always going to be high profile due to the impact of the scheme on Local Residents, Aston Villa Football Club, Local Businesses and highways. A 700 door letter drop was carried out before the project started which included a plan showing the proposed traffic diversions. A newsletter to local residents & businesses was produced every 3 weeks giving a progress update. We also maintained our promise to the local businesses that we would open Witton Road 6 weeks from commencement

Site Agent Darren Ford received the 2010 'CECA Site Manager of the Year' award for his work on this difficult scheme.