

Davyhulme WwTW Amp 3 Refurbishment

Contract Value	£4.0M	Commenced	Oct 2003
Contract Period	122 Weeks	Completed	Mar 2006

Features

- Design and Construct – Target Cost
- Operational Site
- Major mechanical works
 - detritors, screens, access bridges, pumps, crane
- Major electrical works
 - SCADA, control panels, CCTV systems, cabling
- RAS pumps and NR reflux valves
- Operator controls and display
- Concrete repairs and Tanker Unloading Station

and underwater steelwork, inlet screens, compactors and discharge tubes and pumps.



Brief Description



New pumps with new panels and instrumentation were installed on the three return activated sludge (RAS) lines in the RAS pumping station during a staged sequence to ensure operational continuity of the Works. Each 750 dia centrifugal pump with its 250kW motors is capable of delivering up to 2 cumecs. Under installed test conditions it was observed that the existing RAS line non return valves located on the discharge side of the pumps were not functioning properly.



Davyhulme is one of the largest waste water treatment works in Europe, serving a population of 1.4 million and having a treatment capacity of 714,000m³/day. The works are bounded by the Manchester Ship Canal and the M60 motorway.

All members of the project team (Byzak, Designer, MWH and United Utilities Operations) were involved in extensive investigations and flow analysis which resulted in increased scope of work and an extended contract period for additional design work and procurement and installation of new replacement non return reflux valves.

The contract provided for a range of replacement and upgraded plant, equipment and controls to two existing Activated Sludge Plants, replacement of reciprocating rakes, drive heads, access bridges

A new overhead crane was installed in the RAS Pump House. Civil engineering works included concrete repairs and new access and pavement for a tanker unloading station.

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New control systems included panels, control room and displays, upgraded SCADA /PLC systems and Siemens SCADA hardware and software. The CCTV system was upgraded; a 6km long ring fibre optic cable / ETHERNET network was installed

Byzak's project management included significant roles for design co-ordination and supply chain management. A contractual requirement applied to provision of specialist equipment through United Utilities appointed kit framework suppliers included:

- Pumps (Weir, Grundfos)
- Variable Speed drives
- Panels (Blackburn Starling)
- Software (Siemens)
- Valves (Glenfield)

In addition, software integration was provided free issue through United Utilities appointee TATA Control Systems (TCS).



The majority of the work was undertaken by SEMPi, Byzak's in-house M&E/Process Division. Management of interfaces with United Utilities Operations and other contractors on the site was critical to successful delivery.



Safety Initiative

In order to establish site-wide standards, and engender awareness and commitment to safety across the whole operational site where three external contractors were working concurrently, a joint Safety Forum was set up with representatives of all parties (UU Project Delivery, UU Operations, MWH and the contractors). A safety initiative was put in place in which incident free and best practice performance by site based teams were rewarded. All parties made contributions to a charity chosen by workforce teams, in this case Guide Dog for the Blind and the target was £5000 for full sponsorship. This was achieved and Progress Reports were received for "Davy" at intervals.



Davy with trainer (Caroline) at Bolton Centre



Thank you to Byzak Ltd for sponsoring Davy through his puppy walking

The Guide Dogs for the Blind Association

The contract is target cost (NEC ECC Option C) design and construct. Byzak appointed Atkins as its Design Consultant.

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