

Wear Valley WTW

Contract Value	£25M	Commenced	Jan 2001
Contract Period	108 Weeks	Completed	Dec 2003

Features

- New 35 MLD works in Area of Outstanding Natural Beauty (AONB)
- Environmental Management System (EMS) to ISO 14001
- Partnering Team, Target Cost Contract
- Isolated, exposed site, flood prevention measures
- Major reinforced concrete structures, pipelines and buildings
- Building Services, heating, ventilation and air conditioning (HVAC)
- Off –site infrastructure – including a service reservoir
- Process works for Lamella Clarification

- Northumbrian Water - Client
- Faithful & Gould - Cost Consultants
- Byzak - Civils Contractors
- Degremont - Process Contractor
- Entec - Consultant – planning, environment, infrastructure
- MWH - Consultant – Civils design
- Casella Science & Environment - Landscape design & environmental liaison

Brief Description

A new 35 MLD capacity water treatment works was required for treating water drawn from the existing Burnhope reservoir situated in the Wear Valley, Co Durham, close to the Pennine watershed, a designated Area of Outstanding Natural Beauty (AONB). The new works site in the valley below the dam is 355m AOD, and is subject to extreme weather conditions.

The work is being carried out as Civils and Process partnering target cost contracts (ECC Conditions Option C) under a Partnership comprising:



The civils work comprised earthworks, reinforced concrete tanks and chambers, pipelines, steel frame buildings with masonry outer skin, and infrastructure.

The nature of the works and its location within the AONB invoked stringent planning and environmental controls. More than a third of the works was buried below final ground levels in order to maintain natural vistas. Another condition is the final appearance of the works – intended to match the exterior stone materials and vernacular style of Weardale farmhouses. The environmental measures took account of sustainability issues (e.g. local sources of materials, transport, re-use of excavated materials) and the project EMS certified to ISO 14001.

Byzak was initially awarded a professional services contract (ECC Option E) to assist with buildability and target cost preparation during the design development period before the main site works commenced.



Northumbrian Water – Wear Valley WTW

Due to the intractable problems encountered with the performance of the water treatment process

being installed under the existing NWL Partnership arrangements. Byzak was asked to manage a new specialist subcontractor (Passavant – Roediger) for the design, supply and installation of Turbo – LME Clarification Equipment (Mixers/Agitators, Lamella Separators/Thickener and sludge pumps). The scope of supply and contractual arrangements also includes associated pipeworks, measuring devices, control units, fabrication and installation, process and detailed engineering design, commissioning, performance guarantee, project management services. The value of the sub-contract was approximately £1 million.



Subsequently Byzak was asked to take over the management of all the Process specialist subcontractors through to Commissioning and Handover

Material handling strategy adopted for the site included the premise that all excavated materials would be incorporated into the permanent works. 25.000m³ of excavated rock was crushed on site and reuse as backfill around structures. Other arisings were used for landscaping.

A concrete batching plant was established on site.

All waste materials were sorted for recycling. Recycled materials were used in building construction.



Construction of the works has required approximately 14000m³ of reinforced concrete. 16,000 new trees were planted in 2Ha of woodland. 2 km of new footpath were constructed.



Water pollution and flood control measures protect the water quality of the River Wear. These include 2no 1880m² flood storage lagoons, bunded and MDPE lined, silt traps, a flood control device, and 900 metres of cut off drain

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