

Holybourne Pumping Station, Hampshire

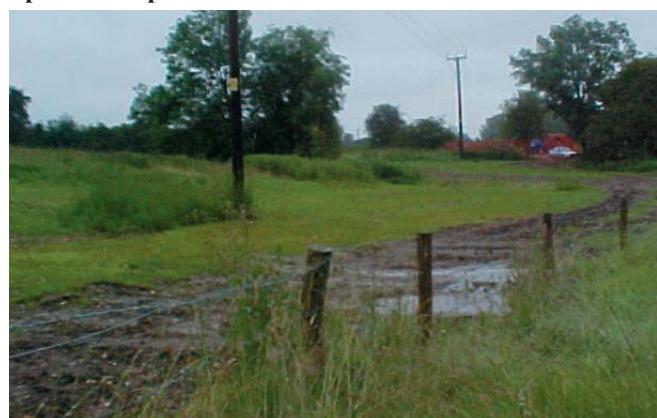
new pumping station, wet well, outfall and access road

by
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Holybourne Pumping Station is located off Upper Neatham Mill Lane in the Holybourne area of Alton in Hampshire. It serves a catchment in Thames Water's SE Provinces wastewater operational area of about 60 hectares of mainly residential properties and the Lord Mayor Treloar College, a total population equivalent of 1400. The existing pumping station was located in fields with no direct vehicular access and comprised two dry well pumps delivering some 45 litres of sewage per second through a 200mm rising main 1.4km long directly into Alton STW. An existing emergency overflow was located in the wet well which, when surcharged due to rain or pump failure, flowed directly to the River Wey. Basic screening was carried out using Copa-sacs. In heavy storms the manhole upstream of the station also overflowed across a public footpath into the river.



Route of foul sewers through farmland (courtesy Thames Water Utilities Ltd)



Route of foul sewers through farmland (courtesy Thames Water Utilities Ltd)



CSO (storm outfall) to River Wey (courtesy Thames Water Utilities Ltd)

The Pumping Station overflow was ranked second in its degree of nuisance on the list of unsatisfactory outfalls agreed between the Environment Agency and Thames Water. The EA had gradually imposed more conditions on the consent associated with this overflow, including increased storage, fine screening and telemetry to monitor incidents.

Access to the existing station was extremely difficult in the wet winter period and operational vehicles frequently got bogged down and had sometimes to be recovered from the field near the station. After outline approval to proceed was granted in summer 1999 the scope of the scheme expanded to remedy the poor access to the pumping station.

Implementation of this project was required to ensure that the River Quality Objectives were maintained by complying with



Site under construction (courtesy Thames Water Utilities Ltd)

consent restrictions imposed by the EA and prevent pollution to the Wey. A salmon fishery is located downstream of the overflow.

The state of this overflow was such that in wet weather with a high water table discharge occurred so often as to have caused concern within the EA.

Scope of work

Two options were considered:

Option 1

Construct a new pumping station adjacent to the existing station. This entailed acquiring additional land and upgrading the access road both for the new construction works and satisfactory long term operation and maintenance. This became the recommended option at an estimated total cost of £730k.

Option 2

Construct a new pumping station located in Holybourne, away from the existing station. This option was potentially more economical and better suited to EA requirements and was the preferred solution until April 2000. At this time, however, the local residents acquired the site where the pumping station was to be located and refused to sell to Thames Water for the intended purpose. The possibility of acquiring the site by compulsory purchase was considered but legal advice recommended against this in view of the likely adverse customer reaction. In any case, the timescale and uncertainty of such a course of action would jeopardise the objective of delivering the output within year two of the AMP3 programme.

Thus Option 1 was selected for implementation with the following scope:

- * a new pumping station with a compound adjacent to the existing, incorporating a 5m diameter, 10m deep shaft to provide storage in the wet well;
- * upgrading the access road to the station over a length of 400m to provide for both the construction works and long term operational access to the site;
- * M & E equipment with duty/standby configuration to pass forward 45 l/s with screening chamber, valve chamber, over pumping connection, standby generator and telemetry;
- * a motorised brush screen located adjacent to the wet well;
- * replacement of 200m of 300mm diameter gravity sewer which suffered from severe infiltration;
- * a 225mm diameter overflow pipe to the River Wey with outfall structure;
- * decommission the existing station, demolish the building and fill the dry well.

Estimated cost for the recommended solution was £730k

Operating costs were expected to increase due to routine inspections of the generator and brush screen but fall due to improved access, more efficient M & E plant and automatic screening. Overall it was expected that operating costs will remain unchanged.

Design, supervision and construction were by the Network Services group, South Alliance based at the Esher Regional Design Centre with provision for equipment supply under framework agreements as appropriate.

Planning permission was required for the proposed new pumping station and consent to work was required from the EA for construction of the outfalls close to the River Wey.

Work on site began in September 2001 in order to complete the work before the end of AMP3 year two. A few weeks delay was incurred due to adverse weather in January and February 2002 but the pumping station was available for use in time and is now operating satisfactorily. ■

Note: The author of this article Ben Nithsdale, is Project Manager Thames Water Utilities Ltd.

Consultants, contractors & suppliers not mentioned in the article include: Main Contractor: Morrison Construction; Electrical: JP Pridhams; Control systems: Safrtronics; Civil: TW Mechanical Headings; Process plant: Copia (Brush Screen); Flygt (pumps); Wyko (Generator refurb & fuel tank).