

Wessex Water: Ringstead Sewerage Scheme

first time system for outstanding natural beauty area

by J. Crawford & M. Chavez

Ringstead Village, situated on the Dorset coastline at Ringstead Bay between Weymouth and Lulworth Cove is in an Area of Outstanding Natural Beauty, and the Purbeck Heritage Coast. The coastal slopes and various areas inland are registered as sites of Special Scientific Interest, SSSIs, and immediately to the west of the village is the listed monument of Ringstead medieval village covering an area of 12 hectare. The entire area is of significant environmental, archaeological and geological importance and roads running parallel to the shore form part of the South West Coast Path, very popular with walkers, which has unrestricted access throughout the year. However, before the inception of this Wessex Water scheme, Ringstead did not have an existing public sewerage system.



Ringstead STW

courtesy: Wessex Water

Existing drainage

There are 22 residential properties in the village, a static caravan park with 20 caravans, a seasonal shop and a public toilet block. Five of the residential properties are permanent residences and the other properties are seasonal rentals, many of which are occupied every weekend throughout the year.

It is a very popular destination for walkers and day visitors. During school holidays and at weekends there can be very large increases in visitor numbers. Before the inception of the new scheme there was no existing public sewerage in Ringstead.

All foul sewage flows drained to individual septic tanks. Effluent from these tanks discharged to the surrounding soil or direct to natural watercourses draining to the beach and designated bathing water areas. During winter months, residents experience drainage problems where the underlying clay subsoil saturated with ground water and septic tank effluent was forced to the surface.

Scheme purpose

In September 1996, West Dorset District Council, WDDC, made an application to Wessex Water under Section 101A of the Water Industry Act to deal with the environmental nuisance and loss of amenity caused as a result of the lack of effective drainage systems in the village.

Following an assessment to confirm the viability of providing mains drainage to the area, the duty to provide mains sewerage was accepted by Wessex Water, for delivery during AMP3, 2000-2005, investment period. Property owners gave the proposals overwhelming support and 100%, including the caravan park, expressed an interest to connect.

In addition, to eliminating polluting discharges, the new scheme would aid the long term success of coastal protection and land stabilisation works along the 500m of sea front completed by WDDC in 2001.

New works

The design provided for a network of 100mm and 150mm diameter gravity sewers draining all properties to a submersible pump station situated in the caravan park at the eastern end of the village. From there, flows are pumped to a new STW to the north of the village and treated effluent is discharged to the small water course that flows back through the village and discharges to the beach and designated bathing water area. To prevent the quality of bathing waters being compromised additional bacterial reduction would be needed.

It was considered that a reed bed would not guarantee appropriate bacterial reduction in the final effluent.



Ringstead STW: Aerial View of Ringstead Village courtesy: Wessex Water

Given the proximity of the bathing water and the Environment Agency’s concerns, it was decided to install an ultra violet, UV, disinfection plant.

Upstream of the UV disinfection, the treatment option selected was a submerged aeration filter, SAF system, which for this size of scheme, was shown to be the most appropriate and the least expensive. The plant can be configured to suit winter or summer seasonal loadings, with the population varying from about 15 in the winter to over 200 in summertime.

Works provided under the scheme are:

- * SAF treatment plant including UV disinfection;
- * 2 pump submersible pumping station;
- * 400m of 90mm HPPE rising main;
- * 700m of 150 and 100mm diameter gravity sewers and associated manholes;
- * 24 drainage laterals.

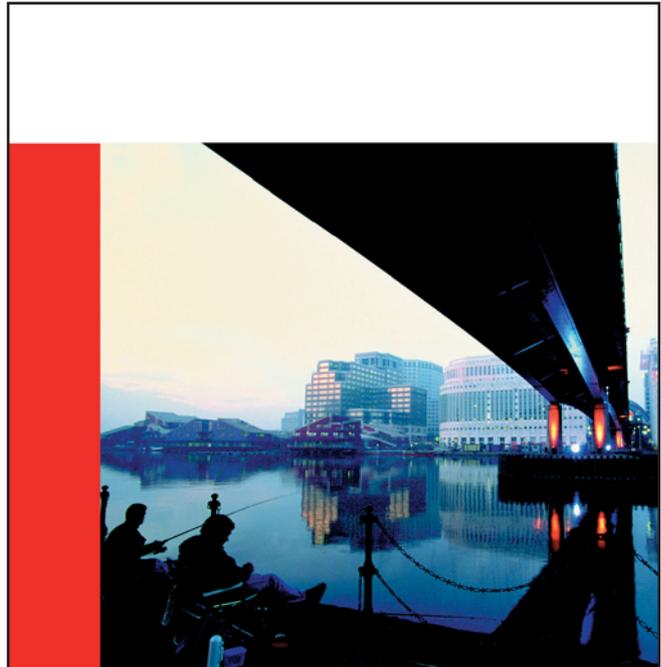
Construction/contractors

The works was competitively tendered and awarded to *T J Brent* as the main contractor. *WPL* supplied the SAF package treatment plant and *Sunwater* the UV disinfection plant. Pipe augering was undertaken by *BW Tunelling*.

The project was procured as a fixed price lump sum contract under option A of the ECC. All construction risks are carried by the contractor as part of the Fixed Price Lump Sum Contract.

Implementation strategy

The majority of the accommodation and amenities provided by the village are for the use and enjoyment of holidaymakers and other temporary visitors. Consequently, every effort was made in the



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Ringstead STW

courtesy: Wessex Water

programming of works to minimise or avoid inconvenience and disruption to the inhabitants and their businesses during construction of the works. This was a serious concern shared by many property and business owners in the village. The period from Easter through to the end of the summer season is the busiest time and consequently sewerage works were timed to start at the end of the school summer holidays, September 2004, and be substantially complete before March 2005 Easter weekend.

Much of the new sewer is built on private property and considerable effort went into contacting property owners many of whom are not resident in the village, to agree to the required easements, positions of manholes and connections, and standards of reinstatement.

Given the distinctive nature of the village and surrounding area and the large number of people who make use of the local amenities, the planning authority, Dorset County Council, imposed challenging

conditions relating to ground levels within the STW site, the size and position of any above ground structures and the degree of planting and landscaping required to minimise the impact of works on their surroundings.

The scheme has achieved its regulatory target, 31st March 2005, by providing a sewerage system to which local properties can connect, thereby eliminating the pollution problems that gave rise to the application from WDDC.

During commissioning of the treatment process and while new connections are being made by property owners, it is necessary to tanker sewage away to an alternative treatment plant. It is anticipated that the first local discharge of treated effluent will be made during May 2005. ■

Note on the authors: *J.Crawford is Project Manager and M. Chavez, Programme Manager, both with Wessex Water.*