

Garnswllt WwTW

combined sewer overflows & waste water treatment works

Integrated Catchment Solution

Case Study

Garnswllt WwTW is located on the outskirts of Garnswllt village near Ammanford, West Wales. The works serves a large rural catchment with an equivalent population of 30,500. The original works was constructed in 1963 and underwent a major extension in 1996 to add inlet screens, grit separation, two aeration channels, a final settlement tank, an effluent flow measurement channel and the replacement of the existing rectangular storm tank with two new circular tanks.



Garnswllt: Centrifuge Building

The works is a conventional activated sludge plant with storm storage. The effluent and storm spills from the works discharge via a common outfall to the River Lougher (RE1 River) approximately one kilometre downstream of the confluence with the River Amman.

CSO improvements

Garnswllt WwTW is located in a catchment in which both Meica Process and Morrison Construction are delivering parts of DCWW's investment programme Part of Morrison Construction's programme is the improvement of 45 unsatisfactory CSOs in the Amman Valley. MEICA Process is delivering a quality sludge and capital maintenance scheme in the area.

Garnswllt WwTW is one of a number of schemes in AMP3 which has more than one type of driver, with both sludge work and CSO work required.

At early feasibility it was identified that improvements to the treatment facilities could produce the storage requirements for the CSO in the catchment and therefore produce cost savings, therefore *MEICA Process* and *Morrison Construction* collaborated to arrive at the optimum solution for the whole catchment, which was to increase the treatment capacity of the works.

The close working relationship also included the works operator *United Utilities* in order to develop a commissioning plan that ensured that the consents were maintained throughout the period of construction.

Compliance with the following standards is required by March 2003.

* **U16BATH11-Amman Valley CSO Scheme** – current consent is 30/25/5 and in order to accommodate the proposed increase in FFT pro rata reductions in consensive limits to 18/15/3 (indicative) will apply. The Amman Valley CSO strategy has meant the duration and volume of storm flows has been increased and in order to avoid increased storm storage at the works the FFT will be increased from 288L/s to 360L/s. This has meant the addition of a final settlement tank that is being delivered by *Morrison Construction*. The improved discharges to both the River Amman and Lougher tributaries will improve the river water quality.

* **New Sludge to Agriculture Regulations** – effective from 1st January 2002 focus on effective pathogen reduction by the treatment process. *Meica Process* will deliver work on sludge treatment processes at DCWW waste water treatment sites within areas of North and West Wales to ensure the quality of the sludge produced complies with the requirement of the new regulations. Garswllt Sludge Strategy, to dry the sludge prior to application to land was programmed to be the last of the sludge works.

The region is attempting to attract inward investment for development and these works will assist in the lifting of an Environment Agency imposed planning embargo.

The joint *Meica Process and Morrison Construction* approach clearly shows the benefit of working together within the Alliance to achieve best value by integrating the CSOs and the process works into a catchment solution. This is the first time the two partners have worked in collaboration to reach a best overall solution for a sewage area catchment ie the network including CSOs and sewage works.

The integrated catchment solution has had positive benefits for the partners, the Alliance and DCWW. Experiences and resource procurement have been shared, generating savings e.g. by using the same M & E suppliers as set up costs and on costs applied only once.

This approach is being seen as key to DCWW achieving its business objectives, particularly Environment Agency outputs, and as a potential model for AMP4.

Programmes of Work: Combined Sewer Overflows (CSOs) and Wastewater Treatment Works



Garswllt: Catchment storage solution