WEST PINCHBECK, United Kingdom

Country: England

Length of Pipe: 15.1 km

No. of Vacuum Stations: 2

No. of Biofilter Units: 2, each 4m diameter

No. of Interface Valves: 76

No. of Automatic Air Ingress Units: 3

Volume of Flow: Station A - 8 litres/sec, Station B - 6 litres/sec

Specialist Feature: Wireless Radio Valve Monitoring

West Pinchbeck is a typical rural English village lying on the banks of the River Glen.

The village was identified as in need of an upgrade away from the existing septic tank systems in use. Due to the speed of construction and the avoidance of multiple pumping stations, the client decided that a vacuum sewage system was the best option to provide the residents of the village the opportunity to connect to a mains sewage system.

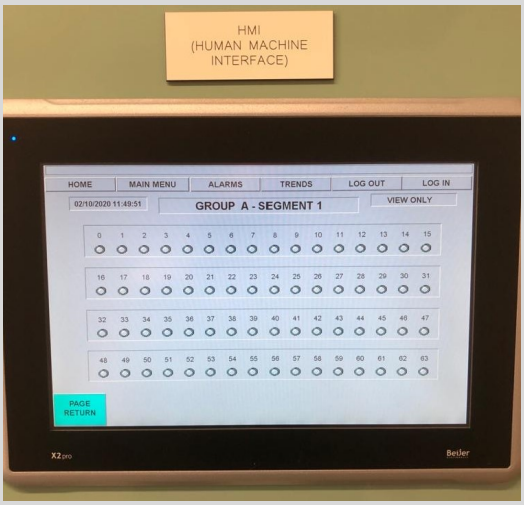
Iseki Vacuum Systems had the privilege to team up with a framework Contractor to deliver this £10M flagship project.

The site required the construction of two vacuum stations which have been positioned on vacant land either end of the village. The station layout designs followed standard specifications and drawings which have been developed over many years with input from relevant parties including operators, contractors and the preferred vacuum technology specialist, Iseki.

As well as modern electro-mechanical vacuum station equipment and advanced process control software, the system was equipped with a wireless valve monitoring system using the latest in radio technology.

The wireless valve monitoring system provides significant benefits for the operational and maintenance of the system without the need for installing cables between all valve chamber around the site, a feature much welcomed by the Contractor.

Completed within time and budget in late 2019, the residents of West Pinchbeck are now served by a state of the art sewer system which greatly reduces any potential impact on the environment.



Radio Valve Monitoring displayed on HMI

Vacuum Pipework

Vacuum sewers in PN10 polyethylene sizes from Ø90mm - Ø160mm with electro-fusion joints.

Vacuum Station Equipment

Two stations each operating with three dry claw vacuum pumps each rated at 400m³/hr (Busch) together with two dry well screw centrifugal discharge pumps (Hidrostal).

Vacuum collection vessel 8m³ fully tested to Lloyds certification. Motor control centre fully automatic with a HMI/PLC arrangement. All pumps start in rotation and all conditions are monitored with a data logging system.

Wireless radio valve monitoring system which continuously monitors for the occurrence of the following events:

- An excessive number of interface valve operations in a predetermined time period
- An interface valve remaining open for an excessive time period
- High level of sewage inside the valve chamber

Summary

Another successful project between the UK's largest operator of vacuum sewage systems, a framework Contractor, and the UK's leading vacuum sewage technology specialists, Iseki. The implementation of wireless valve monitoring shows the commitment from all parties to deliver the very best product available to the end user.

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Radio Valve Monitoring Mast

Vacuum Vessel positioned into basement

Vacuum Pumps