

Case Study | Vac Excavation

Project Example

Ground Source Heat Pump (GSHP)
4000m² office & manufacturing facility
Southwest Region

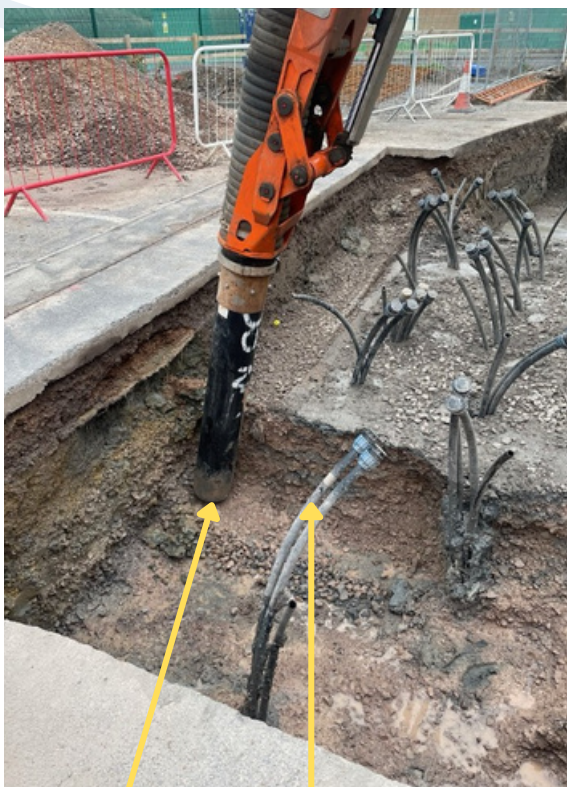
In Partnership with:

Celsius Energy
Barnwood Construction

Scope of work

The GSHP will replace the existing gas fired boiler system with a low energy low carbon heating and cooling system. Our work involved trenching and associated enabling works to allow Celsius Energy to drill 18 boreholes and install pipe work to connect the plant room to the boreholes. After the drilling was completed, we were tasked with removing circa 40 tonnes of Type 1 that we'd previously laid to support the drilling equipment.

The challenge was to extract the Type 1 without damaging any of the exposed PE pipework. Each borehole contains a 400m loop of PE pipe. Once operational, these pipes will contain fluids under pressure as part of a sealed system. Any damage to the pipe work would compromise the system and require costly repairs.



Type 1

PE Pipes Installed
by Celsius Energy

Solution:

The agreed course of action was to use a Vac Ex machine. This approach significantly reduced the risk of damaging the PE pipes compared to conventional excavation techniques. The Vac Ex machine was hired along with two trained operatives from the same company, and the work was overseen by Gardiners.

The extraction of the Type 1 was completed successfully in one day. No pipes were damaged, and we will be able to re-use the excavated material as backfill after the pipework has all been connected, tested and commissioned.

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Photographs of work

Some example photographs of the work being undertaken (and completed) are provided for additional context.

