

Case Study – Basement Dewatering – Ashby Folville Manor

Client: Private Client
Location: Ashby Folville, Leicestershire
Duration: April 2020 – March 2021

Project overview

High groundwater pressures were present in the limestone interbeds within the Blue Lias Formation below basement formation level. As a result, upward groundwater seepage through the blinding concrete prevented construction works from proceeding, whilst also subjecting the basement to potential uplift and structural damage during construction.

A groundwater control system was required to reduce and control groundwater pressures in the limestone, below the deepest basement excavation level allowing works to proceed in safe and dry conditions.

Basement Detail:

- Dimensions: 47.0m x 18.2m
- Excavation Depth: 5.20m below surface
- Excavation support: Secant piled wall.

Scope of Works

14no. x 12m deep external pressure relief wells were installed using cable percussion drilling techniques, evenly spaced around the basement perimeter. The wells penetrated the pressurised limestone beds allowing groundwater pressured to be controlled. To speed up the drawdown process and observe groundwater levels directly beneath the basement, 2no. x 7m deep internal wells were installed from the lower basement slab level.

Submersible 415v x 0.75kW borehole pumps were installed at the base of each well and controlled by water sensor probes. Pumped groundwater was collected in a perimeter header main, passing through a settlement tank with final discharge into the adjacent brook.



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