CASE STUDY

Lotmead Farm, Swindon

RESIDENTIAL

CLIENT

Vistry Homes Limited

TECHNIQUES

Driven Precast Concrete Piles
Precast Foundation System, RBeam

ACHIEVEMENTS

Over 1,000 piles and 4,100 linear metres of RBeam installed across three phases, delivering a sustainable, low-impact foundation solution that met tight programme demands and reduced environmental disruption.

Project Brief

Roger Bullivant Limited (RBL) were appointed by Vistry Homes Limited to deliver an efficient piled foundation solution for three phases of the Lotmead Farm redevelopment in the Cotswolds. The site, formerly agricultural land, presented complex ground conditions and a demanding build schedule. RBL's challenge was to engineer a solution that could overcome the tough upper strata, minimise environmental impact, and accelerate the construction programme.

Project Manager at Vistry Homes Limited said,

"The job has gone very well. Production has not only been high, but the quality has gone from strength to strength. The team has been fantastic to work with, very collaborative, responsive, and committed to delivering quality. Communication has been clear throughout, and everyone has been proactive in addressing challenges as they came up"

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Key Issues & Requirements

- Challenging Ground Conditions: A crust of made ground overlay soft organic silty clay, underlain by firm to stiff Kimmeridge Clay Formation.
- Spoil Management: A solution was required that minimised costly muck-away and reduced environmental disruption.
- Ground Penetration: The piling system needed to reliably penetrate dense upper layers.
- Programme Constraints: A rapid foundation solution was essential to meet tight construction timelines.

Solutions

- Driven Precast Concrete Pile Selection: RBL selected a Driven Precast Concrete Pile solution, proven to perform effectively in firm to stiff cohesive soils. The pile section size was optimised to maximise shaft friction and ensure structural efficiency.
- Displacement Technique: The use of precast piles eliminated the need for spoil removal, significantly reducing muck-away costs and environmental impact.
- Groundwater Protection: The installation method ensured minimal disturbance to groundwater, aligning with environmental best practices.
- Noise Mitigation: RBL deployed ‘quiet hammer’ rigs equipped with shrouded hammers and vertical exhaust systems to reduce noise emissions, supporting compliance with local noise regulations.
- Design Efficiency: Detailed ground analysis enabled precise pile positioning and reduced concrete waste.
- Integrated Precast Foundation System: RBL’s in-house designed RBeam solution allowed for a fully precast approach, reducing the number of piles by over 100 compared to a traditional in-situ scheme.
- Programme Acceleration: Across the three phases, RBL successfully installed more than 1,000 Driven Precast Concrete Piles. With over 4,100 linear metres of RBeam also installed across nearly 100 plots, RBL’s dedicated in-house installation teams ensured early handover of plots, enabling follow-on trades to commence ahead of schedule.

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