

CASE STUDY

Woodlark Place, Newbury



RESIDENTIAL

CLIENT

Persimmon Homes

SCOPE OF WORKS

Continuous Helical
Displacement Piles

ACHIEVEMENTS

Completed on time
Completed on budget
Reduction in exposure to
contaminated ground

Project Brief

Persimmon Homes approached Roger Bullivant Limited (RBL) for a residential housing project located in Newbury. The site presented significant challenges due to landfill reaching a depth of 13.0m.

To address these complexities, RBL proposed a Continuous Helical Displacement (CHD) piling solution. This approach was carefully assessed and found to be well-suited for the unique site conditions and project requirements. As a result, the implementation of the CHD piling solution led to a successful outcome, effectively resolving the challenges associated with the landfill and paving the way for the progress of the development.



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RESIDENTIAL



Key Issues/Requirements

- ↘ The site, previously a quarry, comprised backfill with high methane levels. The team expected to encounter approximately 5.0 meters to 13.0 meters of made ground overlying clay/silty sand. The landfill material posed a hazardous threat due to its composition, containing elevated levels of sulphates and asbestos. A conventional replacement pile such as Continuous Flight Auger (CFA) would generate, and require the disposal of this waste at substantial cost both financially and in terms of environmental impact
- ↘ The initial site investigation provided lacked precise details regarding fill depth, necessitating the need for additional investigation to acquire comprehensive soil strength parameters.
- ↘ In the Newbury area, NHBC had not been aware of the Continuous Helical Displacement (CHD) pile option.

Solutions

- ↘ The CHD (300/600) piles offered a pile depth of 18.0m and a project duration of 54 days. CHD piles also excel in environmental sustainability with reduced CO₂ emissions compared to a similar Continuous Flight Auger (CFA) piles. CFA piles would have required a greater pile depth, a longer project duration and contribute to 40% more CO₂ emissions while generating 2,300 m³ of spoil disposal.
- ↘ Persimmon Homes allocated a significant budget towards the disposal of pre-existing waste debris. The strategic utilisation of the CHD pile option effectively mitigated the additional expenses incurred in managing a volume of 2,300 cubic meters of contaminated spoil. This approach not only yielded substantial financial savings for client but also aligned seamlessly with environmentally conscious practices.
- ↘ NHBC's approval for the CHD piles in this project. To ensure a seamless process, RBL worked with Persimmon took a proactive approach and engaged the NHBC during the project's design phase. By presenting comprehensive test data and technical specifications, the team successfully demonstrated the viability and reliability of the CHD pile option. As a result, NHBC granted preliminary approval for the CHD pile design, allowing RBL to move forward with confidence while fulfilling any remaining conditions for final implementation.
- ↘ Despite the challenges posed by the Landfill, the project was completed successfully through careful planning and execution. The CHD piles were incorporated into the foundation much to same as a traditional pile. The project exemplifies the significance of thorough planning, effective design, and collaborative efforts in accomplishing project objectives.
- ↘ Moreover, the successful completion of the project solidified RBL's reputation as a competent and dependable service provider. The Newbury piling project serves as a remarkable achievement, attesting to the team's ability to overcome obstacles and deliver exceptional results.