



# Thornfield Heights, Cheshire

LOCATION	Thornfield Heights, Alderley Edge, Cheshire
REQUIREMENT	Retention to facilitate construction of a residential basement
TECHNIQUES	Cased, Rotary Bored
MAIN CONTRACTOR	Huntsmere Projects Limited

## Project Overview

Technik Ground Solutions Ltd (TGS) tendered and was awarded the contract for the design and installation of a temporary, contiguous bored pile retaining wall for the proposed private residential development.

The site was bounded by masonry walls along two elevations which had to remain in place during the works.

Retention heights of up to 4.5 metres were required over distance of approximately 25 metres in plan.



# Thornfield Heights, Cheshire

## Project Challenges

- Maximisation of the excavation footprint meant working at up to 750mm from the centre line of the wall to existing vertical faces of the perimeter wall.
- Low temperatures required controlled concrete placement and protection during curing.
- Tight site requiring careful planning with regard to material storage, concrete deliveries and spoil management.
- Shallow rockhead overlain by loose sand.

## Solution Delivered

TGS provided a retention solution comprising 450mm diameter piles installed at 600mm centres using a high power minipiling rig. This rig successfully installed piles to depths of up to 8 metres in the relatively weak sandstone bedrock.

The rigs safety cages were specially adapted to enable the installation of contiguous piles at a distance of as little as 700mm from the existing walls (centre of pile to vertical face).

All piles were reinforced using full length cages comprising H16s before the high slump C28/35 concrete was placed directly into the pile bore. Cube test results for the concrete confirmed the design strength was attained well before 28 days.

On the excavation of the basement, the piles were surveyed. They were found to have achieved the required plan and verticality tolerances.

**info@technikgs.com**

**Northern Office 01928 579464**

**Southern Office 0207 559 3425**

**Scottish Office 0141 637 2826**

**Technikgs**  
GROUND SOLUTIONS