u-knight LIMITED

INFORMATION SHEET

HAND HELD SCREW PILE

As the name suggests this system is run by a power pack and hand held torque head. Its small size enables access through the width of a door and allows piles to be driven on the smallest of sites.

Two types of piles can be used; 60mm with ultimate loads of 12 tonnes or 89mm with ultimate loads of 24 tonnes. Various adaption plates can be added to the pile top. These can be used to connect concrete raft reinforcement, RSJ's or grillage formations. Pile pressure and resistance is constantly monitored via a gauge on the unit.

Benefits include: quick installation times, zero vibration, no spoil, minimal noise levels, completely portable and ideal for low headroom situations. It makes a very cost effective option.

CONSTRUCTION

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CASE STUDY 1

Client: Private client

Purpose: Extension base

Ground conditions: Unstable / backfill

Pile type: 60mm to a depth of 4 to 7m

Quantity: 5

Additional work: excavations, reenforcement, concrete footings, brickwork and over site concrete.

Completed: 2 days excavating,1 day piling, 1 day reinforcement with concrete, 1 day brickwork, 1 day oversite.

Due to bombing during the war ground conditions were proving very problematic on this site. To overcome this, the ground engineer chose to use screw piles. It was predicted the piles would give good ground bearing at four metres. However the ground proved to be very unstable and two piles were driven to a depth of seven metres before correct resistance was achieved.

After pile installation was completed, footings were concreted with a C35 mix and a brickwork base was built with 100mm cavity up to finished floor level. To save time the concrete over-site was filled to a depth of 150mm with a smooth finish eliminating the need for 75mm floor screed.

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CASE STUDY 2

Client: Private client

Purpose: Summer house base

Ground conditions: Unstable / backfill

Pile type: 60mm to a depth of 2m

Quantity: 12

Additional work: transporting materials and setting out.

Completed: 1 day

Access was a problem for the client on this project. Concrete was considered but due to poor soils, trees and no rear access screw piles were the preferred option. The hand held rig is less than a doorways width, this allowed all equipment and piles to be brought in through the house. Following the clients plans, a total 12 screw piles were driven to a depth of two metres.

The site was set out and piles installed in one day, with minimal disruption, and without the need for skips or concrete.

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CASE STUDY 3

Client: Private client

Purpose: Summer house base

Ground conditions: Unstable / backfill

Pile type: 60mm to a depth of 1.5m

Quantity: 8

Additional work: Install Ibeam and build summer house

Completed: 2 days for the piles and base

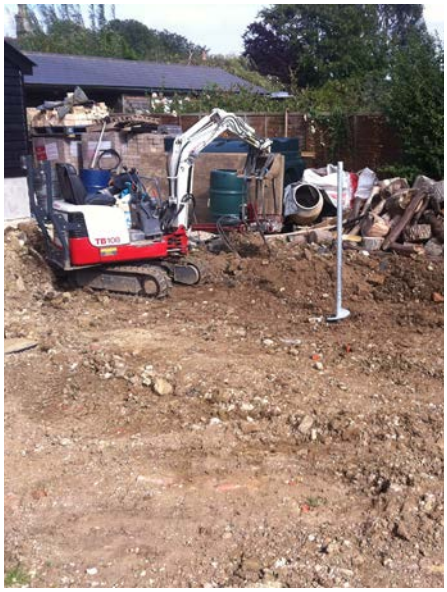
This site was previously a farm, there was considerable made up ground to a approximate depth of one metre. Concrete footings or a raft base were unsuitable on this project due to excavation depths that would be needed, thus making the job too expensive.

Screw piles were a suitable option incorporating a Ibeam suspended base. A plywood inner lining was placed inside the Ibeam joists, insulation could then be suspended in the floor. This was then covered with a damp proof membrane layer and a plywood sheet covering.

Walls were prefabricated off site which made for a quick installation. The roof was finished with plywood and covered in a single ply membrane. After the bifold doors, were installed the outer walls were clad in 22mm plywood and covered with breathable felt. A breathable cavity was created using 50mm batten. In keeping with barn conversions in the area the outer cladding was applied using 150mm feather board.

The internal sections of the wall including the roof were insulated with 150mm Kingspan and foil taped. Electrics and plumbing were installed ready for a shower room, toilet and kitchen. The walls were then plaster boarded with skirting and finished ready for painting.

Later the pool and decking area was installed.



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