# No limits

Chris White of Rockbit UK describes a recent limited-access drilling project in Scotland

*Clockwise, from left: Danbar Drilling's Massenza MI3 on site at George Heriot's School; the rig's remote control system; the drill rig manoeuvring through the narrow gates on site; an operator remotely controlling the rig*

Site investigation for building development is proving to be a strong part of the UK drilling sector. When extensions are required for existing buildings, access to areas that fit the foundation design are often through narrow routes, difficult to manoeuvre for larger, conventional machines.

In the past, this has led to many compromises between the drilling company and the client regarding the location of the boreholes, as well as compromises on the quality of the testing and sampling.

However, this is no longer a problem with the new generation of multifunctional drilling rigs, such as the Massenza MI3, which are small enough in size to get to the right location and are designed to carry the same tools a larger machine would be equipped with to get the work done.

## SCHOOL'S OUT

Danbar Drilling Services, based in Pemberton, UK, which is a specialist in geo-environmental and geothermal ground-investigation drilling services, recently worked on a project with a long list of limitations.

The site investigation was carried out on the grounds of George Heriot's School in Edinburgh, Scotland, for the design of a two-storey extension building.

The work scope comprised standard penetration tests (SPTs) of two boreholes, as well as dynamic sampling with Class-1 U100Ts through the superficial deposits to prove rock head, then rotary coring down to 15m. The work could only be carried out within a limited timeframe during a school holiday to reduce the disruption to school life.

The access route for the drill rig led through two pedestrian gates, which were maximum 1.09m wide, and only minimal disturbance was allowed on site.

Daniel Havard, managing director of Danbar Drilling, said: "We have had our Massenza MI3 for just over half a year, and it is proving to be one of the busiest machines on our fleet, with clients that are aware of its capabilities now asking specifically for it for their projects. When I saw this access, I knew I had the confidence to get in and do the work they wanted."

The MI3 also comes with a remote control for tracking and full drilling operation, which allows for easier control of the rig from a safe distance. Moreover, the operator, who is free to move around, has a good view of the machine at all stages of the project.

In the end, the project was carried out well within the specified timeframe, and the boreholes and sampling requirements were carried out to the client's specifications. ▼

## Drill rig specs

The Massenza MI3 is suitable for site-investigation from ground level down to 30m depth. The 70hp/52kW-powered machine carries the same tooling as its larger counterparts and features:

- a four-speed Massenza rotary head (also found on the larger MI4 and MM4 models) with 5000Nm of torque and up to 400rpm for coring;
- 3.2t pull-up;
- a FX25 dynamic sampling hammer;
- on-board SPT tester with digital readout;
- 2.4m stroke for 2.0m rods;
- 200mm clamps; and
- additional hydraulic power take-off with pump controls.