

## Ground Investigation at Combe Down Stone Mines, Bath.

<b>Client:</b>	Bath & NE Somerset Council
<b>Engineer:</b>	Stage 1 -Parsons Brinkerhoff
<b>Engineer:</b>	Stage 2 - Scott Wilson Mining
<b>Price Basis:</b>	Re-measurement <b>Value:</b> Stage 1 - £140k, Stage 2 - £49k
<b>Date:</b>	Stage 1 - July 2001, Stage 2 - May 2004

Site Investigation work comprising rotary open drill holes and rotary cased drill holes together with in-situ testing and down-hole geophysical surveys to determine the nature and extent of former mine workings within the Oolitic Limestone covering in excess of 50ha, at Combe Down.

The stage 1 work comprised the following

- Drilling 28 boreholes up to 30m deep
- Recording depths of superficial fills, mining voids, hydrological data and rock quality data
- Undertaking a range of in-situ tests including:
  - ◊ In-situ hydrological tests (modified falling head and single packer tests)
  - ◊ CCTV surveys
  - ◊ Geophysical surveys including optical televiewer, borehole caliper surveys wireline geophysical surveys (natural gamma, dual neutron and fluid temperature conductivity)
- Installation of stand pipes
- Logging of boreholes to ISRM standards
- Laboratory testing
- Production of factual report.

In the stage 2 work a further 12 boreholes were completed to obtain similar information in new locations.



Combe Down is a highly sensitive, mainly residential area, and a key consideration was to complete the work with minimal disruption, damage and disturbance. An Environmental Management Plan was prepared and was closely followed during the work.

Extensive control and protection measures were put in place including polythene sheeting, plywood sheeting, drilling platforms, conveyor belting, use of angled drilling as well as other measures to successfully complete the work with the absolute minimum of disturbance.

3 different drilling rig types were used depending on location, access, weight limits and type and depth of hole.

Klemm KR904 tracked geotechnical drill rig

Klemm KR701 tracked mini rig complete with separator diesel power pack

MTrack, air powered mini rig for shallow holes.