

CASE HISTORY

Application: Linear Infrastructure

Technology: High Resolution Acoustic Televiwer (HRAT)®,
High Resolution Optical Televiwer (Hi-OPTV)®

Location: A487 Caernarfon and Bontnewydd Bypass, Gwynedd, North Wales

Work on a £135m bypass in Gwynedd, North Wales involved the construction of a new six-mile (10km) road between Caernarfon and Bontnewydd to avoid the town centres along its way and to improve the A487, an important commuter and holiday route into the Llyn Peninsular.

Background:

The Welsh Government invested substantially in the project and Transport Minister Ken Skates said the scheme would "provide a boost for the region's economy and make a real difference to local communities as well as the travelling public."



Requirement:

Robertson Geo Services (RGS) was contracted by CC Geotechnical to conduct televiwer logging on the A487 Caernarfon and Bontnewydd Bypass as part of the ground investigation phase. Boreholes were drilled to a depth of 25m with a diameter of 100mm.

Equipment:

A 4x4 vehicle with internally mounted winch and a portable system based on the Robertson Geo Mini Winch were deployed for the logging. High Resolution Acoustic Televiwer (HRAT)® and High Resolution Optical Televiwer (Hi-OPTV)® probes were deployed.

Operations:

The operation was relatively straightforward with most boreholes being accessible by 4x4 and the boreholes were logged to their full extent in a single pass of the probe. The High Resolution Optical Televiwer (Hi-OPTV)® was run first and if the borehole fluid was found to be opaque the High Resolution Acoustic Televiwer (HRAT)® was then run. Both probes provided essentially the same information allowing fractures and bedding to be delineated.

Challenges and Solutions:

The main challenge for the engineers was negotiating the often muddy conditions in and around the boreholes. Suitable PPE and a good housekeeping policy mitigated problems with the muddy conditions.

End value to client:

The unwrapped oriented images from borehole televiwers allowed fracture and bedding features to be picked and delineated and forming a valuable addition to the overall ground investigation.