The Paradise Circus development, which has been renamed Paradise Birmingham, is the most central regeneration scheme in Birmingham. The whole scheme is expected to be completed in 2025. Paradise is the most important development Birmingham has seen in a generation.

LOGGING IN Paradise

A ROBERTSON GEO logging crew on site in central Birmingham, running both Optical and Acoustic Televiewers, 3-Arm Caliper and the PS Logger, making up a good suite of geotechnical probes.

All deployed by the Mini Winch and run in via a tripod. The versatile, portable Mini Winch proving it's worth yet again on a small site where vehicle access was not possible.

Reliable and consistent data from wireline borehole logging provides an important understanding of rock strength and the presence of fractures, essential for the location and positioning of new build construction and its foundations.

How does the PS Logger work?

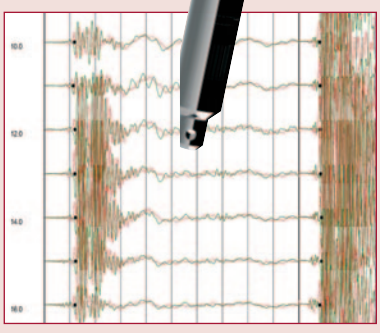
THE PS LOGGER probe measures P (compression) and S (shear) wave velocities in a single borehole without the need for external energy sources, making it simple and quick to deploy.

When combined with bulk density values (from a density log or from core sample tests) small strain moduli (Young's, Shear and Bulk) can be calculated using simple formulae.

It operates using indirect excitation rather than mode conversion as in a conventional sonic.

The probe contains a unique design of powerful hammer source and two receivers, separated by acoustic damping tubes. To acquire data, the probe is stopped at the required depth and the source is fired under surface command. Firing causes a solenoid-operated shuttle aligned across the borehole axis to strike plates on opposite sides of the probe in turn, setting up a pressure doublet in the surrounding fluid.

Full waveforms are recorded digitally at acquisition time across 6 channels (P wave, S wave left & S wave right at the near and far receivers) at a predetermined sample rate as low as 2.5µsec. The sample rate is carefully selected to be as small as possible to provide the best resolution but high enough to capture the arrivals within the listening window. Using the acquisition software, the waveforms can be displayed, scaled and filtered to allow for the picking of the first arrivals at each receiver.



Shear wave data.