

Pont Briwet
Ground Investigation
Method statement

A geotechnical survey is required to investigate the feasibility of constructing a new replacement bridge alongside and downstream of the existing bridge, Pont Briwet, which spans the Afon Dwyrdd immediately south east of the village of Penrhyndeudraeth – see Figure 1. The survey will need to be carried out within the channel of the Afon Dwyrdd and at locations between high and low water mark.

The geotechnical survey will consist of approximately 12 boreholes and 15 static cone penetrometer tests located in the area shown on drawing numbers 644/MI/1.

The depth of drilling will be up to approximately 35 metres, through drift/overburden soils and into bedrock.

The boring/coring will be carried out from a mobile over-water drilling platform which will probably be a jack-up platform. Dependent on the type of platform available this may be launched locally and manoeuvred into position close to or at high tide.

The boring operation will be by conventional light cable percussion techniques. The boreholes will be commenced using a maximum 300 mm casing with the casing diameter reducing with depth.

The leading length of casing will be pushed into the upper layers of sediment for approximately 1.0 metres before boring and sampling commences to reduce the disturbance of silt at river bed level.

Within drift/overburden soils the borehole will be fully cased which will prevent the escape of silt generated by the boring process.

On encountering bedrock the technique will change to rotary coring at a probable diameter of 100 mm or less using a drill string located within the casing used for the light cable percussion boring. This may be carried out using conventional top drive rotary coring equipment or possibly a wire-line system.

On completion of the boring a decision will be made, dependent on the ground conditions encountered, on the need for and type of backfilling required. If back fill is required the aim would be to backfill the borehole with material of a similar permeability to the stratum encountered at that depth and could be e.g. cement/bentonite grout within rock, bentonite within clay soils, sand and/or gravel within granular soils.

Static cone penetration testing (CPT) will also be required and will be carried out from the same or a similar platform or where required between, above or close to high water levels, access may be obtained from land, if an acceptable access method can be agreed. The CPT test is achieved by driving a small diameter (approximately 30 mm) probe into the ground which is withdrawn on completion of the test without the need to backfill the probe hole.