CASE STUDY
GATWICK AIRPORT RAILWAY STATION

Project Description

The Contract:
To construct six new re-locatable equipment buildings (REBs) and a new section of railway line at Gatwick Airport Railway Station. In addition there will also be a new platform constructed with associated track and upgrades to the current access routes on Platforms 5 and 6. Geotechnical Engineering Limited (GEL) was instructed to carry out the investigation to determine the ground conditions.

The Challenge:
GEL were required to drill six boreholes and nineteen windowless samples, undertake in situ DCP and electrical resistivity testing and delineate pile caps on selected platforms to assist with the new design. We also carried out geotechnical and chemical testing and brought the information together in a factual report. It was necessary to carry out the works during the day, at night and at weekends to comply with the programme and make best use of the booked possessions. The job proved to be quite challenging due to time constraints and access issues associated with the site and the adjacent airport.

The Solution:
GEL used their multi-purpose Pioneer rotary drilling rig to form the boreholes as tight access and restricted headroom of the site required more manoeuvrability than is available with road towable standard plant. The rig dynamic sampled through the overburden and cored through the rock to create a continuous lined sample to a maximum of 25m bgl. The windowless samples were formed to refusal by either the Terrier or, where access issues could not be avoided, using hand held equipment. Four of the windowless sample locations were used to extract lined samples for suction testing in an area suspected to be soft.

There were also a large number of track trial pit locations where in-situ electrical resistivity and a DCP was undertaken at each location to provide information for the new proposed track route. An SDS drill was used to delineate the extension of the existing pile caps on selected platforms to assist with the access upgrades.

Samples were tested for a number of geotechnical properties, redox potential, WAC and a large selected of contamination tests. Once the laboratory results were complete a factual report was produced in accordance with BS5930 (1999) Amendment 2 (2010) by our Technical Team.

For further details please contact: Sam Theophilus sam.theophilus@geoeng.co.uk
Or visit our website www.geoeng.co.uk

Geotechnical Engineering Limited, Centurion House, Olympus Park, Quedgeley, Gloucester. GL2 4NF
Tel: 01452 527743