HS2 - N1 N2 - Long Itchington Wood (Tunnel)

Instrumentation & Monitoring Services

Bascote Heath - UNITED KINGDOM

Inclinometer casing awaiting installation

Tunnel Datalogging Enclosures

2021

Balfour Beatty Vinci JV
HS2

9 Multi-level VW Piezometers	**6** Magnet Extensometer
168 Precise Levelling Points	**12** Combined Inclinometer Extenso
4 Wireless Biaxial Tiltmeters	**4** Tell Tale Gauges
45 Prism Monitoring Targets	**1** Cyclops Automatic Total Station

THE PROJECT

The Long Itchington Wood Tunnel is a 1.6km (1 mile), twin bore tunnel on the new HS2 railway in Warwickshire. The tunnel runs under Long Itchington Wood – an ancient woodland – and is an important part of HS2's environmental strategy to protect nature. One tunnel boring machine, Dorothy, is being used to create the tunnels and was the first TBM on the Midlands section of HS2. Long Itchington Wood, and neighbouring Ufton Wood, are ancient woodlands that date back to around 1600AD. They are a 'Site of Special Scientific Interest' (SSSI) with very complex ecosystems that have taken hundreds of years to establish.

THE SCOPE

Sixense were appointed to deliver the scope of Instrumentation and Monitoring on the project which included a variety of structural and geotechnical monitoring at surface level as well as the instrumentation of tunnel segments to measure their performance. The scope included manual surveying of surface based levelling points, piezometers, magnet extensometers and tell tale gauges as well as the automated monitoring of inclinometers, prism targets, tiltmeters and temperature sensors.

PROTECTING OUR HERITAGE

Particular care was required at surface level working within the ancient woodland of Long Itchington Wood. This included the use of track matting and trackways to protect the ground to enable the drilling rigs to move to the borehole positions and minimise any impact on the ancient woodlands. Additionally many of the installed instruments were automated to eliminate the need to visit site to undertake readings, thus minimising the environmental impact of the monitoring works.

The project programme is approximately 4 years.