GEOSENSE

Case Study - Settlement

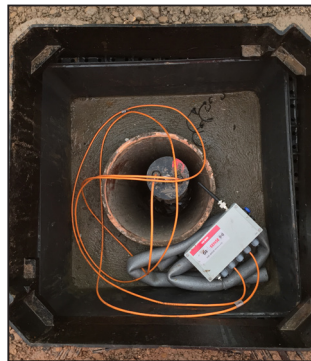# Percy Road, Bournemouth, UK

PROJECT SUMMARY

PROJECT: Percy Road Settlement

DATE: February 2018

CLIENT: Wessex Water

CONTRACTOR : Socotec - ESG

INSTRUMENTATION SPECIALIST: Socotec - ESG

OVERVIEW

Despite its appearance as a small, local street, Percy Road is one of the busiest roads in Bournemouth, located in the Boscombe area.

Settlement at different rates had been happening on a short stretch, approximately 100 yards, of Percy Road, over several months, starting in September 2016.

This settlement was associated with a sewer located 18 meters below ground level. It was observed that groundwater was entering a section of the sewer and subsidence was taking place at the surface.

Wessex Water completed the repair works and the road re-opened to traffic in February 2018.

Wessex Water project manager Joe Edmunds said: "We will continue to monitor Percy Road regularly."
Daily Echo, 5th February 2018

MONITORING

Four borehole rod extensometers were installed in the asphalt pavement

- Three borehole rod extensometers with two rods each, anchored at 3.4m and 6.4m depth
- One with five rods, at 3.4m, 7.4m, 11.4m, 14.4m and 20.4m

All rods are fitted with vw linear displacement gauges in the head, range 300 mm, totalling 11 measuring points.

Data was collected by the Wi-SOS 480 - Wireless Observation System - nodes and gateway. The whole monitoring system can be checked and set up over the Internet.

Using a wireless system avoids the need for road closure to access the data. Other data logging systems would have required direct access to the head of the borehole rod extensometers.

Low and stable temperatures during the first days, meant base readings for this rod extensometer system was of high quality. Reading frequency was set at one-hour intervals and the data, in millimetres, showed great stability.

PRODUCTS USED

Borehole rod extensometers
To control vertical ground movements at surface

Wi-SOS 480 vibrating wire nodes
To log and transmit data and follow up data and system performance long term

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