As part of Network Rail’s extensive track upgrading on the London to Birmingham line, the Blisworth embankment required significant upgrading and reinforcement. The reinforcement of the embankment involved the use of cast in-situ bored piles to ‘stitch together’ the embankment.

**Project Summary**

- **NAME:** Blisworth Embankment
- **YEAR:** 2005
- **CLIENT:** Network Rail
- **MAIN CONTRACTOR:** Birse Construction
- **CONSULTANT:** Scott Wilson Kirkpatrick & Co Ltd
- **INSTRUMENTATION SPECIALIST:** Geosense

**Overview**

As part of the construction and post construction requirements instruments were installed within the piles.

Inclinometer casing was installed within certain piles so that the lateral movement could be measured using a portable inclinometer.

Strain gauges were also installed along the re-bar cages within the pile to measure strain thus allowing the bending moments of the piles to be calculated.

A GeoLogger data logger monitors and stores all the data from the strain gauges.

**Monitoring**

~ **VW strain gauges**
   Used to measure strain.

~ **Inclinometer casing**
   To allow the measurement and monitoring of lateral displacement.

~ **MEMS portable inclinometer**
   To measure lateral displacement.

~ **VW 2106**
   Portable readout for use with any VW sensor.

~ **GeoLogger**
   Automatic data logger which can be used for a wide range of sensors and outputs.