

Long Term Strain Monitoring



System installed 1996 for Cardiff County Council (formerly West GlamorganCC)

Penarth Road Bridge is a curved, post tensioned concrete bridge taking the A4160 Penarth Road across the River Ely, west of Cardiff. It was constructed in the 1960's and features precast beams with a slab forming the central one third span with in situ post-tensioned cellular cantilever sections for the remainder. It had an optical stress measurement system installed as part of a monitoring programme during the mid 1960's.

In response to ongoing durability problems with the bridge, STRAINSTALL UK Ltd. installed strain sensors and thermocouples at critical locations on the in situ cantilevers at each end of the bridge. The sensors are wired to a conventional data logging system which takes readings on a three hourly cycle.

STRAINSTALL's field service team visit the site on a monthly basis in order to download data, check the system and change batteries. Following data acquisition, STRAINSTALL then collate the information and produce graphical reports highlighting:

- Long term trends that are observed, for example seasonal temperature effects.
- Sudden changes in strain readings that may indicate problems with structural integrity.

Strainstall's team of experienced engineers operate from offices in Cowes, Bath and Aberdeen (UK) and Tønsberg (Norway).



Strainstall

The monitoring system comprises:

- Strain Sensors
- Temperature Sensors
- Proprietary data logging system suitable for unattended static condition monitoring

Strainstall UK Limited
Charlton Lane
Midsomer Norton
BATH
BA3 4BE

Tel: +44(0)1761-414939
Fax: +44(0)1761-416655
Email: info@strainstallbath.co.uk
Web: www.strainstall.com