

Crack and Movement Monitoring System



System installed 1997 for The Dew Group on behalf of WS Atkins and Railtrack

Waverley Station is the major railway terminus in Edinburgh. Most of the platforms are beneath a glazed roof structure, spanning from a retaining wall alongside Princes Street to Klondyke Wall, a free-standing masonry structure. Klondyke Wall runs the full length of the station, between two of the through tracks at the south side.

Klondyke Wall was constructed some 100 years ago and is showing signs of cracking and differential movement. Some cracks follow masonry joints but there are also a number of cracked stone blocks. Railtrack have addressed the problem through a programme of ground investigation, material testing and remedial works. Structural monitoring was incorporated as a low cost alternative to underpinning.

The STRAINSTALL system allows remote monitoring of strain, movement and temperature at four locations along the wall. It is designed to monitor static and temperature loading changes as well as dynamic effects due to passing trains and wind loading. Regular readings are made to build up a history and trigger levels are set to enable abnormal events to be fully recorded.

The benefits of the system include:

- Enables extensive range of structural movement to be monitored.
- Static and Dynamic effects are recorded
- Client has remote access to information via modem connection.
- Allows temperature related/ seasonal effects to be plotted.
- Records data for abnormal loading conditions.
- Cost effective alternative to underpinning.

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



The monitoring system comprises:

- LVDT's
- Strain Sensors
- Inclinerometers/ Tiltmeters
- Temperature Sensors
- PC based data logging system complete with modem connection
- Continuous sampling of all channels at 100 readings per second

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