

## » REMOTE STRUCTURAL MONITORING AT LONDON BRIDGE



- 80+ Arches monitored on a weekly basis across the project
- 24-7 automated track monitoring scheme
- Tilt sensors and strain gauges positioned throughout Joiner St. ticket hall
- Numerous manual surveys, e.g. crack monitoring, structural displacement, and levelling runs

### ARCH MONITORING:

A weekly schedule is undertaken to monitor for any movement in selected arches across the London

Bridge project. These monitoring surveys are created to determine any arch displacement, and recently proved extremely valuable after arches E55&E57 were recorded to have displaced vertically over 45mm in the last two months.

Depending on detected movements of the arches, these observation periods can often be increased to once or twice daily regimes.

### TRACK MONITORING:

An automated track monitoring system is in place to continuously monitor movements of running rails. The system monitors the cant and twist of each track within the station. If any trigger levels are breached, the system is configured to notify the end user via text messages and emails. All information collected throughout the day is recorded in an online database provided by SOLDATA.

### INCLINOMETERS AND STRAIN

#### GAUGES:

These devices have been installed within the Joiner St. ticket halls, and across the Jubilee line beams and columns. Inclinerometers are tilt sensors which measure displacement and export data in real-time.

The strain gauges are currently being used along the listed 'Warren Truss' support across Joiner St. These measure tension and compression upon static objects, and the movement is determined by a change in electrical resistance. When electronically excited, the sensors produce an output signal in the form of an alternating current.

The frequency of this can then be measured in strain.

### MANUAL MONITORING

#### SCHEMES:

A variety of manual levelling runs and structural observations are also frequently undertaken within the project. Using digital levels, levelling runs are commonly completed above important drain and sewer runs to check for any surface settlement, and weekly condition surveys are carried out to check the structural integrity of structures within the zone of influence of our site.

### CONTACT

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## ENGINEERING TOMORROW...TODAY

InP\_028 Rev. 003

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