



## Key achievements

- **Multiple successful phases of surcharge monitoring using Vibrating Wire Liquid Settlement Monitoring Plates.**
- **Long-term automated monitoring over several years with minimal maintenance requirements. Re-use of sensors provided significant cost saving.**

### • The project

A housing development in Seaton, UK required the long-term monitoring of settlement achieved by pre-construction surcharge works.

### • The challenge

The monitoring system needed to provide continuous, high-frequency, automated settlement monitoring during and post surcharge works within the sand layer.

The designed system had to include installation routes that limit the influence of site traffic on the system whilst allowing easy access for removal and re-use of the sensors.

### • The solution

GEO-Instruments installed solar and battery-powered monitoring system including a reconfigurable array of Vibrating Wire Settlement Cells connected to a gateway for data collection. Site data is then transmitted to GEO-Instruments' online data visualisation software, QuickView.

The software allows for detailed, management, analysis and reporting of the data to ensure the observed settlement remained within designed levels.

Effective and open communication with the client was needed to plan each phase of the settlement monitoring system.

### Application

Automation of surcharge settlement monitoring

### Technique

Geotechnical Monitoring

### Market

Residential Development

### Client

Vertase FLI  
Bovis Homes

### Project Duration

7+ Years

### Instrumentation

Vibrating Wire Settlement Cells

### Keller Companies

GEO-Instruments UK