

Seaton Housing Development

Seaton

GEO-Instruments have installed a ground monitoring system to assist with the preparations for a major new housing development.



The project

A leading property development company are building a large new residential area in Seaton with the help of Vertase FLI. The development will mean more than 100 two to four-bedroomed new homes for the town. The soil conditions on site mean it is necessary to prepare the ground before each phase of construction to ensure adequate consolidation and stability.

The challenge

Vertase are employing a Pre-loading (or Surcharging) method. The ground area is covered with a load equivalent to that of the final planned development and given time to compact and consolidate. This means that any ground deformation or settlement occurs before construction, avoiding damage to any buildings.

In order to confirm the expected settlement has been achieved and the ground has stabilised accordingly a system for measuring ground movement was needed. As the system must be buried it needed to be robust and reliable.

The solution

GEO-Instruments installed a liquid settlement monitoring system consisting of plates buried under the surcharge connected via tubing to a reservoir filled with liquid. Each plate is fitted with a vibrating wire pressure transducer that measures changes in pressure as the plates move relative to the reservoir. Settlement can then be calculated in millimetres using the pressure values.

GEO-Instruments have already completed five successful installations and monitoring phases over the previous three years. For the sixth phase, six settlement plates and transducers were arranged around the edge and in the centre of the pre-loading area. Once installed, the instrumentation gathers data automatically and requires no intervention under normal operation.

Project facts

Owner(s)

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Keller business unit(s)

GEO-Instruments

Main contractor(s)

Vertase FLI

Services

Settlement monitoring

Markets

Building Monitoring

Technologies

Geotechnical instrumentation

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