



Key achievements

- Combined manual and automated scheme for comprehensive monitoring
- 24-hour, high frequency environmental monitoring for site works in a UK National Park

- **The Project**

The dam is located on one of a series of reservoirs that are crucial infrastructure assets with an important role in ensuring a reliable water supply for a major urban area.

Keller UK are carrying out piling works to strengthen the structure of the reservoir's dam. These ground improvement works are part of a scheme that will help safeguard the integrity of the dam, ensuring the long-term safety and effectiveness of the structure.

- **The Challenge**

GEO-Instruments needed to design a monitoring scheme to supplement the ongoing historical monitoring of the dam incorporating multiple types of automated and manual monitoring of the structure as well as environmental monitoring to measure the impact of ongoing site works.

- **The Solution**

Manual levelling offers precise, long-term data on the physical movement of the structure. Surveyors take precise measurements of the height of the dam's surface, monitoring for any signs of differential settlement at regularly spaced, fixed points along the structure. The technique is simple but effective, offering high accuracy and reliability, making it an indispensable part of the monitoring program.

Before piling works began, a triaxial geophone vibration sensor was installed on the downstream side of the dam. This sensor is highly sensitive to all sources of vibration but is ideal for measuring the impact of ground works on the structure. Two S50 sound level meters monitor the noise levels generated by the site. Three In-Place Inclometers (IPIs) will be also installed into selected piles to provide continuous, high-frequency data to monitor the lateral movement and structural integrity of the piles and surrounding ground.

Application

Dam Monitoring

Technique

Geotechnical Monitoring
Structural Monitoring

Market

Infrastructure

Project Duration

Ongoing

Instrumentation

Noise & Vibration sensors
Manual Levelling
In-Place Inclometers

Keller companies

GEO-Instruments
Keller UK

