



Project Summary

Organization

Geotechnical Engineering Limited

Solution

Geotechnical Information Management (GIM)

Road and Highways

Location

England, United Kingdom

Project Objectives

- To accelerate site investigation and reporting for a major road scheme project.
- To streamline data collection and collaboration for improved decision-making.

Project Playbook

OpenGround®, OpenGround Cloud Data Collector

Fast Facts

- Since 1961, Geotechnical Engineering Limited has delivered a comprehensive range of site investigation services to a broad variety of markets.
- Highways England operates, maintains, and advances the Strategic Road Network (SRN) of England, which spans 4,300 miles of motorways and trunk roads.
- OpenGround Cloud is Bentley's enterprise cloud collaboration platform for geotechnical information management (GIM).

ROI

- Innovators like Geotechnical Engineering Limited use newer technology to increase efficiency, improve collaboration, and save costs.
- Geotechnical Engineering Limited saved over an hour each day and reduced errors with mobile data collection.
- They achieved faster delivery of data and logs and improved relationships with clients, reduced frustration, and supported data-informed decisions.

Geotechnical Engineering Limited Streamlines Site Investigation and Delivers Significant Savings

OpenGround Cloud Ecosystem Increases Collaboration and Accelerates Delivery of High-quality Data and Logs to the Client

Outdated Practices and Disorganized Data Demanded Change

Gloucester, England-based Geotechnical Engineering Limited has provided ground-investigation services since 1961. The civil engineering company delivers a comprehensive range of site investigation services to a broad variety of markets, including transportation, construction, renewable energy, utilities, and the environmental sector. The organization continuously invests in research and development, effectively differentiating themselves from their competition while striving to offer clients the best possible services and products.

Geotechnical Engineering Limited has relied on Bentley Systems' gINT® software for more than 20 years. The solution was instrumental in producing borehole logs and AGS data. However, they realized that the desktop approach had limitations when it came to efficient collaboration between the team and the client.

Accessing and managing geotechnical data has become more complex as clients are now placing more emphasis on the data deliverable from a project, and the inefficiencies

of the desktop application slowed project completion. For example, the site engineer had to log information on paper and re-enter the data into a desktop computer each day. While a common practice, the approach created two problems the user wanted resolved. As the data is only available to other team members as a copied project file, significant effort was required to ensure they did not have several versions in circulation. Secondly, the delay in data being available reduced its value with respect to making agile site investigation decisions on site.

Geotechnical Engineering Limited had previously pioneered the use of Keylogbook, a mobile data collection tablet-based system, to log driller data. The solution successfully introduced the team to electronic logging on site and produced benefits for the company. Nevertheless, being restricted to using a one-way transmission of data from the driller to the office-based team also had its limits. While Keylogbook was an improvement over their previous solution, it, too, required them to email and collate the data into a central system.

A Single Source of Truth to Streamline Two-way Communication

Geotechnical Engineering Limited required a central source of truth that enabled two-way communication with the drilling crews, site engineers, the laboratory, clients, and office staff. In establishing such a source, the entire team would avoid delays and errors with disparate data.

They adopted a two-phased approach. The first phase included migrating the borehole log production to OpenGround Cloud. Transitioning from a desktop application to a cloud solution provided the necessary first step to implement a secure, accessible central source of truth.

The second phase involved deploying OpenGround Cloud Data Collector to all site engineer collectors and any integrators, collaborators, managers, or administrators across the project supply chain. The software enabled secure tailored entitlements as required.



OpenGround Cloud data collector used on site to log rock core by Geotechnical Engineering Limited.

“The data manager for this project has described the system as ‘magic.’ Project managers now want to use OpenGround Cloud ... for all our new projects.”

*– Emma Leivers,
Engineering Technical
Manager, Geotechnical
Engineering Limited*

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OpenGround Cloud Proves “Magical” for Highways England

The solution was implemented on the third phase of a Highways England project, and Geotechnical Engineering Limited keenly experienced the difference this innovation produced.

The new phase included 178 locations that were uploaded to OpenGround Cloud and desk study work was completed on each location using the mapping tools and MWS mapping layers before beginning site work. Locations were downloaded to OpenGround Cloud’s Data Collector app by the site teams every day and they synchronized the data from each device at the start and end of boreholes and shifts.

The site data manager and the senior engineer had a full view of the drilling progress and data during each shift. They could preview logs on handheld devices or the browser interface at their convenience. Using the Synchronize feature enabled the data to flow freely between the day and night shifts, and the data from the drillers and engineers could be easily combined and checked by the senior engineer.

The system allowed Geotechnical Engineering Limited to supply preliminary data and logs to the clients within 24 hours and sometimes as quickly as 30 minutes.

“The true transformational nature of the upgrade is being harnessed now that we have the Data Collector operational,” said Emma Leivers, engineering technical manager with Geotechnical Engineering Limited. “The data manager for this project has described the system as ‘magic’ as the teams are now connected, and the geotechnical information ‘magically’ appears on their system each morning and evening.

“Working with the Bentley support and professional services teams has also improved significantly with the new system. Because there is no emailing of data or configuration files, we have simply given them access to the projects when

we’ve needed help and they’ve been very responsive during the implementation phases of this innovation.”

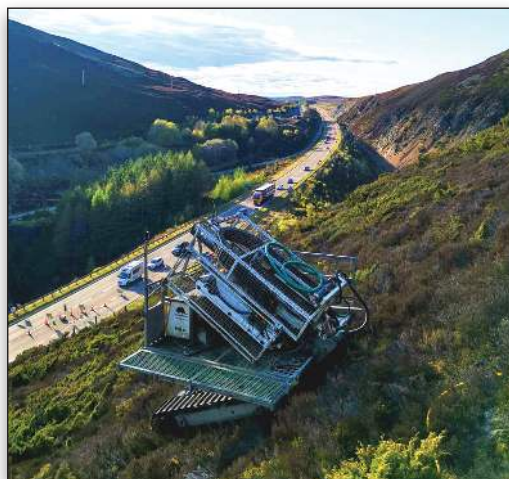
Bentley’s OpenGround Cloud unleashed technological advancement for geotechnical information management and offers significant savings in time and increased data availability for the entire team. Geotechnical Engineering Limited has achieved a positive return on investment from their OpenGround Cloud deployment in three distinct ways.

Firstly, engineers saved about an hour a day entering data directly into OpenGround Cloud.

Secondly, the benefit is tangible to the entire team. Accessing the data using a single source of truth each day allowed shift-working drilling crews to become more efficient and site management and checking staff to have much better visibility on the information. Clients and office teams also have a more collaborative role on agile decisions on site to improve product quality.

Thirdly, Geotechnical Engineering Limited has also worked as a sub-contractor to Atkins on different Highways England road schemes. Through this partnership, they have found that delivering the preliminary and final data deliverables into their OpenGround Cloud environments has enabled a closer relationship with improved data integration. They significantly reduced email communication between their data manager and the client’s streamlined collaboration.

Bentley’s OpenGround Cloud solution offers advanced team dynamics, in terms of centralizing data and decreasing unnecessary data entry, which proved highly beneficial to Geotechnical Engineering Limited and significantly contributed to the success of their Highways England project. “The project managers now want to use OpenGround Cloud rather than desktop solutions for all our new projects. That speaks for itself on the success of this innovative upgrade,” said Leivers.



Complex site investigation used OpenGround Cloud for geotechnical information management.



Site investigation for Highways England project by Geotechnical Engineers Limited.