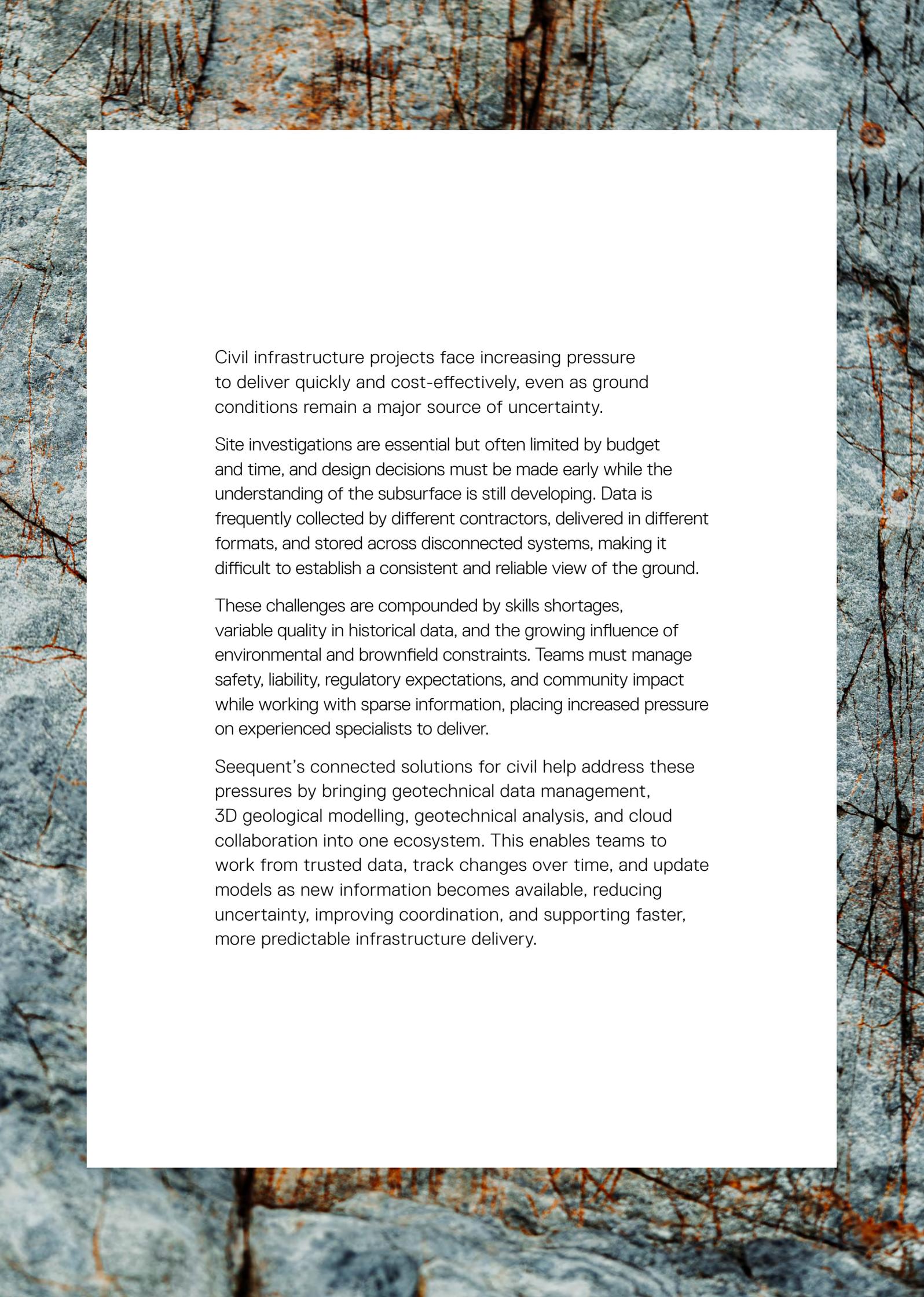![Seequent logo] **SEEQUENT**

SOLUTION BRIEF

ENGINEERING EXCELLENCE STARTS BELOW THE SURFACE

Civil infrastructure projects face increasing pressure to deliver quickly and cost-effectively, even as ground conditions remain a major source of uncertainty.

Site investigations are essential but often limited by budget and time, and design decisions must be made early while the understanding of the subsurface is still developing. Data is frequently collected by different contractors, delivered in different formats, and stored across disconnected systems, making it difficult to establish a consistent and reliable view of the ground.

These challenges are compounded by skills shortages, variable quality in historical data, and the growing influence of environmental and brownfield constraints. Teams must manage safety, liability, regulatory expectations, and community impact while working with sparse information, placing increased pressure on experienced specialists to deliver.

Seequent's connected solutions for civil help address these pressures by bringing geotechnical data management, 3D geological modelling, geotechnical analysis, and cloud collaboration into one ecosystem. This enables teams to work from trusted data, track changes over time, and update models as new information becomes available, reducing uncertainty, improving coordination, and supporting faster, more predictable infrastructure delivery.
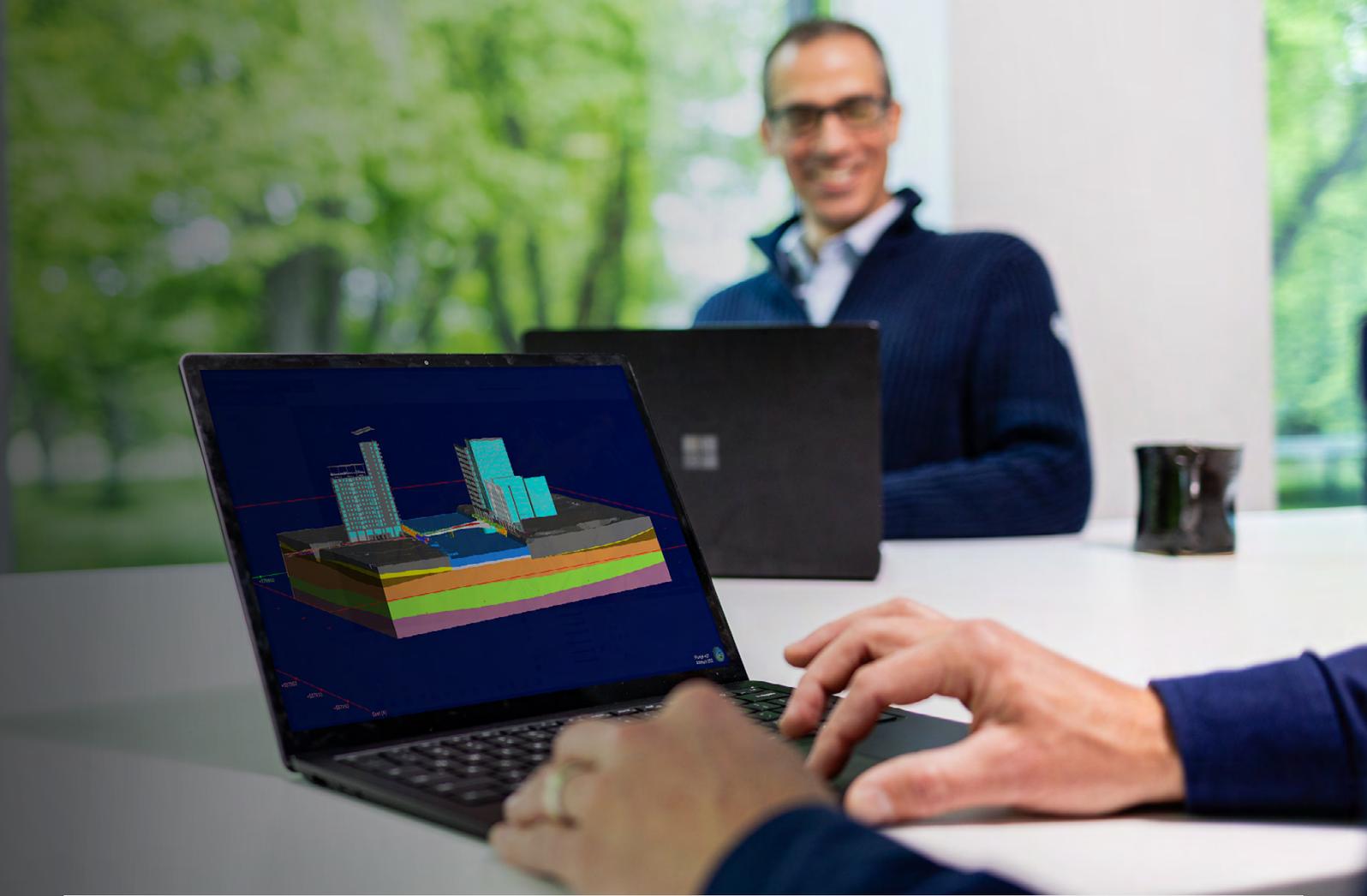
Arcadis used Seequent's connected solutions to design London's South Dock Bridge, reducing the ground investigation scope by 30%, improving coordination across 50+ stakeholders, and delivering a design that balanced aesthetics, constructability, and sustainability.

"Our 3D Leapfrog models integrated with project visualisation software allowed us to demonstrate complex geological conditions and optimise our design while meeting budget and sustainability goals."

Andrea Gillarduzzi
Senior Technical Director
Arcadis

🦅 ARCADIS

Civil teams around the world rely on Seequent's connected solutions to:

Work from consistent, trusted geotechnical data

Build shared subsurface understanding with dynamic 3D models

Reduce rework with continuous, connected modelling and analysis

Communicate subsurface conditions clearly to non-technical stakeholders

Support safer, more resilient designs with integrated geotechnical analysis

Future-proof geotechnical workflows with open, secure, cloud-enabled technology

Successful infrastructure projects are powered by Seequent

Seequent helps civil teams manage, model, and analyse subsurface data faster for a more consistent understanding of the ground, reduced uncertainty, and improved project outcomes across the infrastructure lifecycle.

Work from consistent, trusted geotechnical data

Reliable decisions depend on reliable data, yet civil teams often work with data captured by different parties in different formats and with varying levels of quality. OpenGround centralises ground investigation and laboratory test data with structured logging, QA/QC, support for standards like AGS and DIGGS, and data lineage, ensuring that everyone from field teams to designers works from a consistent, traceable foundation.

Build shared subsurface understanding with dynamic 3D models

Static 2D logs and reports make it difficult to understand complex ground conditions or assess how the subsurface will affect design. Leapfrog Works enables teams to integrate boreholes, lab tests, GIS layers, geophysics, and conceptual knowledge into a dynamic 3D ground model that updates as new information becomes available. This reduces uncertainty, aligns disciplines, and supports better decisions from early stage to detailed design and into construction.

Reduce rework with continuous, connected modelling and analysis

Civil infrastructure projects evolve quickly as investigations progress and designs shift. Seequent's connected workflow links geological modelling with geotechnical analysis tools such as PLAXIS and GeoStudio through Central, enabling continuous iteration without rebuilding models. Teams can test scenarios, validate assumptions, and respond to change efficiently, reducing rework, design delays, and ground-related surprises.

Communicate subsurface conditions clearly to non-technical stakeholders

Civil infrastructure projects are highly visible and often require engagement with project managers, civil designers, asset owners, regulators, and community groups. Seequent's 3D models translate complex ground conditions into clear visuals that support discussions about risk, design options, environmental impact, and construction planning. This helps teams build understanding, streamline approvals, and maintain confidence across technical and public audiences.

Support safer, more resilient designs with integrated geotechnical analysis

Geotechnical designs carry significant safety and liability implications. By combining engineering geological models with advanced geotechnical analysis for stability, deformation, seepage, and soil–structure interaction, Seequent helps engineers develop defensible designs grounded in current subsurface conditions. This strengthens compliance, supports risk assessments, and improves long-term resilience, particularly on brownfield and environmentally sensitive sites, or wherever existing infrastructure and buildings could be adversely impacted.

Future-proof geotechnical workflows with open, secure, cloud-enabled technology

Civil organisations need secure, scalable ways to manage data throughout the project lifecycle. Seequent supports open data standards, cloud-based collaboration, and controlled access across the supply chain. This ensures that teams can share information confidently, maintain version control, and build the governance foundation required for emerging tools, including responsible, data-driven applications of AI.

10/10
of the top international civil engineering design firms use Seequent software
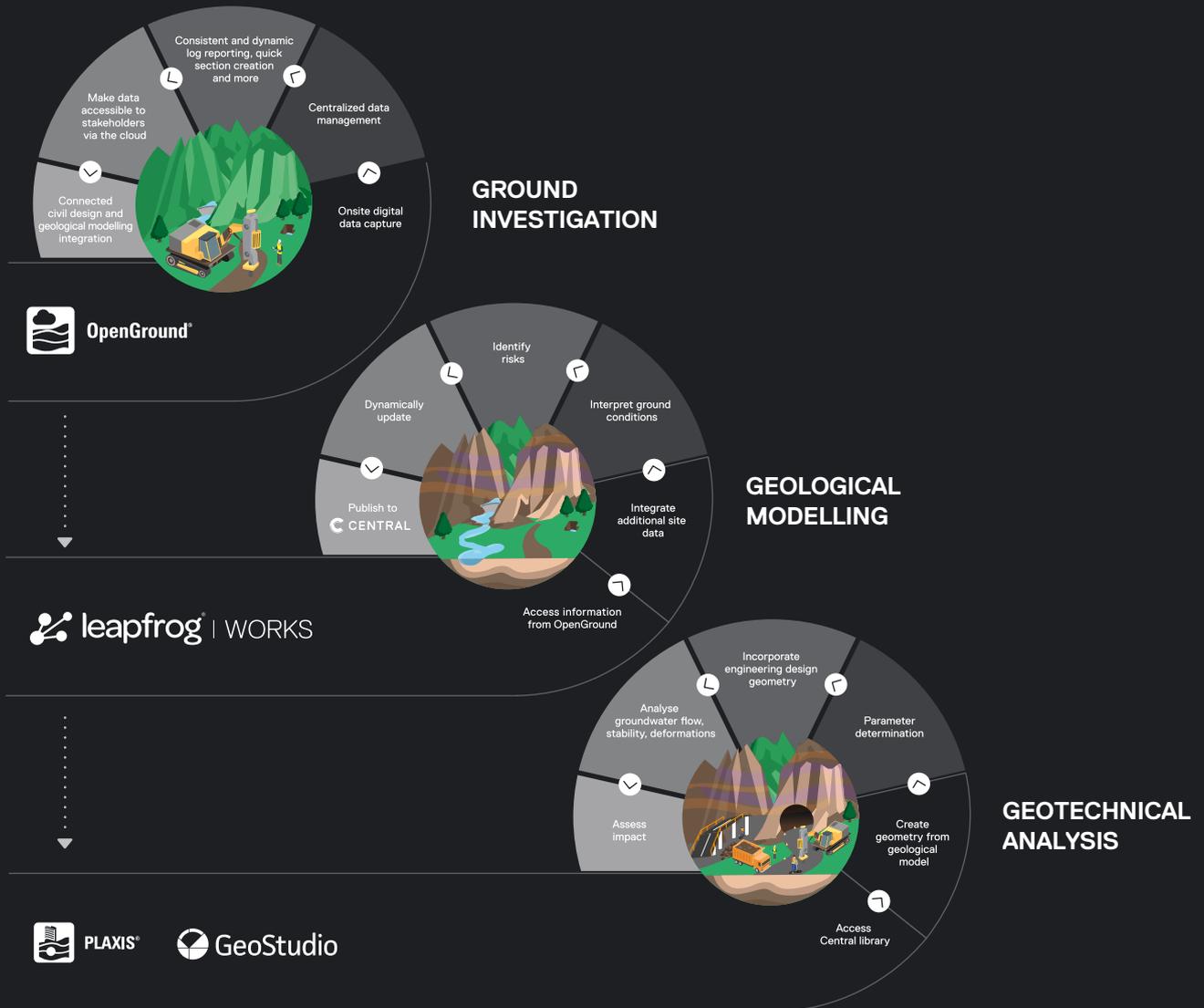
40+
years experience enabling success in civil engineering

Seequent's connected civil solutions

Familiar tools, unified for better outcomes
Seequent's connected civil solutions unite geotechnical, geological, geophysical, and environmental data in one collaborative ecosystem.

GROUND INVESTIGATION

- Consistent and dynamic log reporting, quick section creation and more
- Centralized data management
- Onsite digital data capture
- Connected civil design and geological modelling integration
- Make data accessible to stakeholders via the cloud

OpenGround®

GEOLOGICAL MODELLING

- Identify risks
- Interpret ground conditions
- Integrate additional site data
- Access information from OpenGround
- Publish to CENTRAL
- Dynamically update

leapfrog® | WORKS

GEOTECHNICAL ANALYSIS

- Incorporate engineering design geometry
- Parameter determination
- Create geometry from geological model
- Access Central library
- Assess impact
- Analyse groundwater flow, stability, deformations

PLAXIS®   GeoStudio

Geotechnical data management

OpenGround

OpenGround unifies geotechnical data securely in the cloud, enabling collaboration, connected workflows, and future-proofing ground investigation data. Unlock maximum data value and overcome today's governance challenges.Geological modelling

Leapfrog Works

Build categorical and numerical models from site investigation and boring data in a fraction of the time. Visualise, understand, and communicate subsurface risk using models, videos, and cross sections to support confident, data-driven decisions.

Geological model management

Seequent Central

Cloud-based Seequent Central offers shared 3D visualisation, team collaboration, and tracking of geological data and models within a single, auditable environment.

Geotechnical analysis

GeoStudio

GeoStudio offers an integrated suite of products for 2D and 3D geotechnical analysis. It empowers civil engineers to confidently model complex challenges like slope stability and groundwater seepage for infrastructure projects. By combining multiple analyses in a single file, GeoStudio provides a comprehensive understanding of subsurface behavior to ensure safer, more resilient designs.

PLAXIS

PLAXIS provides civil engineers with powerful 2D and 3D finite element analysis for soil and rock. It delivers trusted, realistic assessments of stresses and displacements for complex geotechnical challenges, including excavations, foundations, and tunnels. PLAXIS enables confident decision-making and efficient workflows for enhanced project safety and resilience.
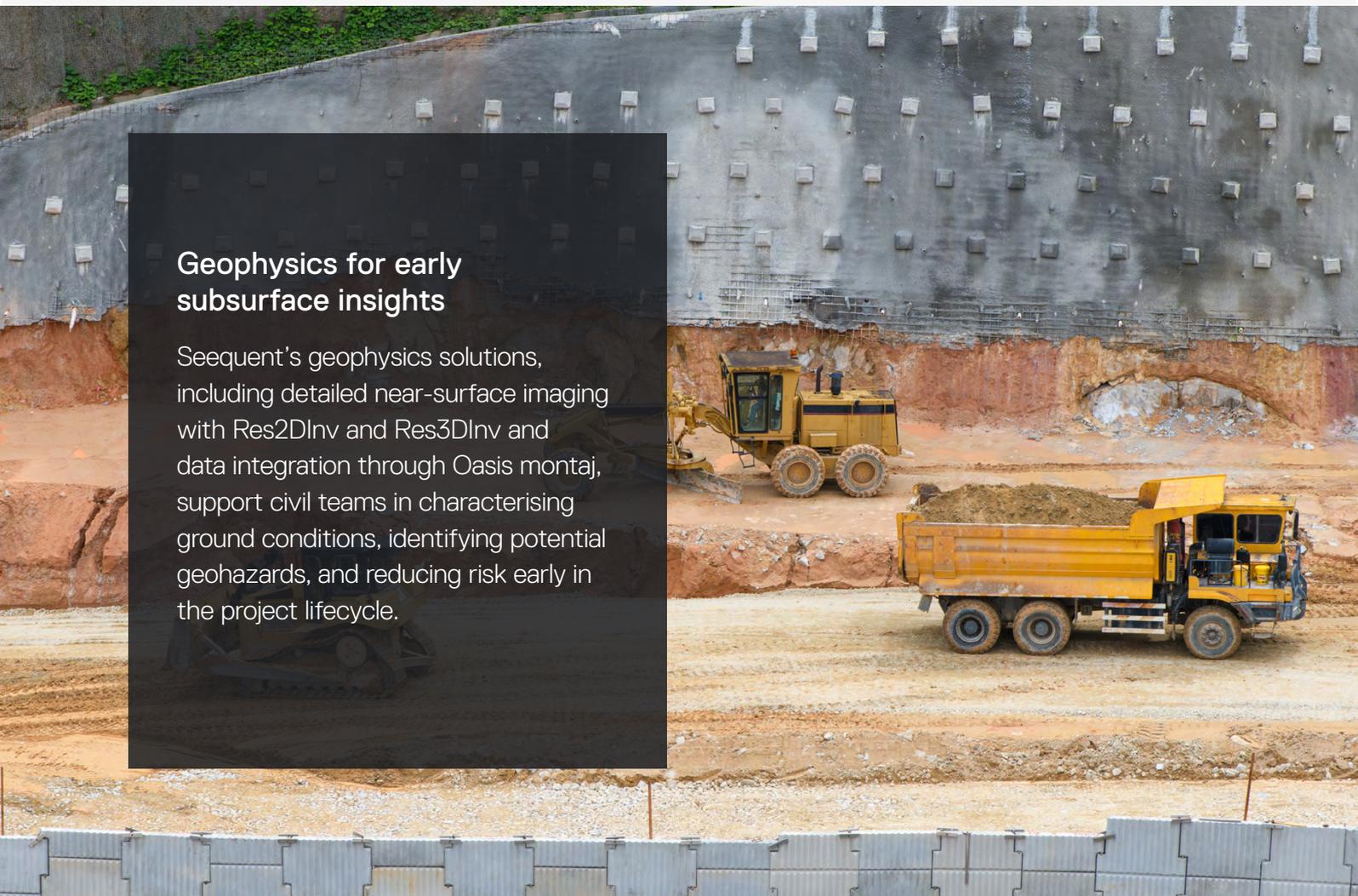
Geophysics for early subsurface insights

Seequent's geophysics solutions, including detailed near-surface imaging with Res2DInv and Res3DInv and data integration through Oasis montaj, support civil teams in characterising ground conditions, identifying potential geohazards, and reducing risk early in the project lifecycle.

Bentley and Seequent

Unifying the built and subsurface worlds for civil engineering

Through close collaboration, Seequent and Bentley are removing the traditional divide between geotechnical and civil engineering. We provide powerful, integrated digital workflows that ensure a project's design is continuously informed by an accurate understanding of the ground.

For linear infrastructure, the OpenGround Geotechnical Extension facilitates a seamless flow of information. It feeds live, detailed geotechnical data from OpenGround directly into Bentley's civil design applications, such as OpenRoads, ensuring designs are founded on the most current subsurface intelligence.

Our integrated tunnelling workflow creates a comprehensive digital twin. It connects the 3D geological modelling in Leapfrog Works with the context-aware structural design of OpenTunnel Designer and the detailed geotechnical analysis capabilities of PLAXIS. This ensures the final design is not only geometrically sound but also geotechnically robust, significantly reducing risk and improving project outcomes.
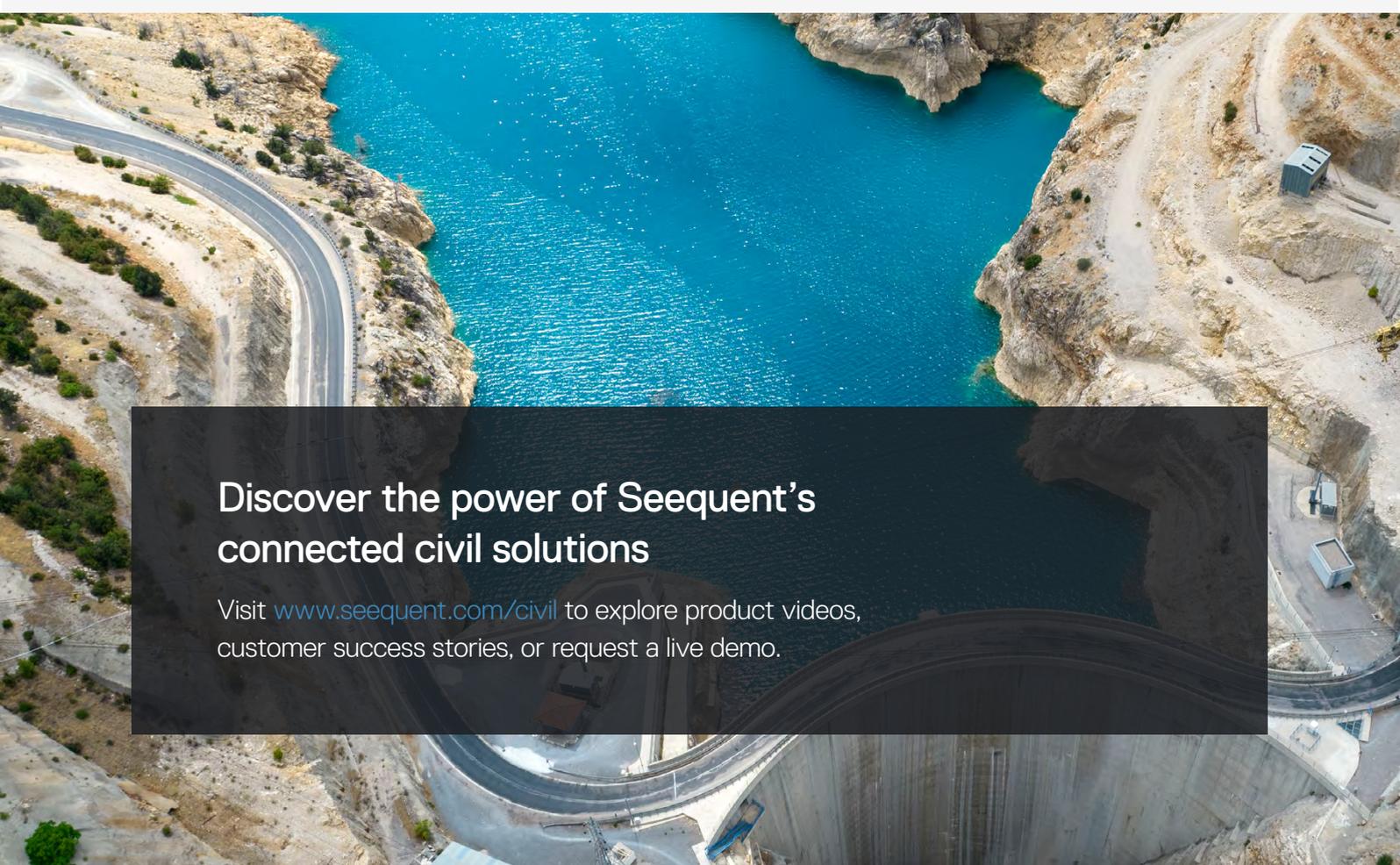
Discover the power of Seequent's connected civil solutions

Visit www.seequent.com/civil to explore product videos, customer success stories, or request a live demo.

A world of support at your fingertips

Beyond the powerful features of connected civil solutions, Seequent offers comprehensive support and learning resources to help you get the most out of your investment.

Learning Centre

Maximise the value of Seequent's solutions with a range of flexible learning opportunities through the Seequent Learning Centre. Whether you prefer online learning paths, on-demand videos, or instructor-led courses, there are resources tailored to your needs.

Explore learning opportunities →

4.9/5
rating for Seequent e-learning from 16,000+ reviews

Community

Connect with a global network of geoscientists and professionals through the Seequent Community. Whether you're looking for peer support, insights from industry experts, or practical tips to get the most from Seequent's solutions, the Community offers a space for shared learning and collaboration.

Join the Community →

7,400+
customers in 145+ countries

Support

Get the most from your Seequent solutions, anytime, anywhere. Access our knowledge base, connect with technical experts, or explore specific support options for all Seequent products, keeping your projects running smoothly and efficiently.

Get support →

95%
satisfaction with our front-line help and support

Understand the underground to build a better world.

Seequent is evolving the way organisations work through better subsurface understanding.

As the world leader in subsurface earth-modelling, analysis and data management, and collaboration software, Seequent is at the forefront of building a collective understanding of the Earth.

We hire amazing people who collaborate with our customers to find technology solutions to their challenges that deliver more positive outcomes for a better world.

As The Bentley Subsurface Company, Seequent connects our natural environment with the built world so organisations can manage the impact of their projects at every stage.

Seequent: Understand the underground.

seequent.com