

SOLUTION BRIEF

TRANSFORM GROUND DATA INTO INSIGHT WITH LEAPFROG WORKS

In civil engineering and environmental projects, understanding subsurface conditions is critical for reducing risk and driving project success. Whether it's during the planning or construction phase, project teams need efficient, reliable geological insights to make informed decisions and avoid costly surprises.

Seequent's Leapfrog Works is the industry-leading 3D geological modelling software built specifically for civil and environmental projects. Designed to deepen subsurface understanding, improve collaboration across teams, and simplify communication with stakeholders, Leapfrog Works helps organisations keep projects on time and on budget.

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Leapfrog Works allows for a quick and user-friendly way for the geologist to directly develop a 3D model which can be examined and reviewed very quickly. It also allows for fast and elegant communication of the model to other team members and clients via cross-section layouts and slicing the model to display it in real-time.”

Andrew Little

Geotechnical Engineer, HDR

Projects around the world rely on Leapfrog Works to:



Maximise efficiency with fast, dynamic geological modelling



Mitigate risk with data-driven decisions



Bring clarity to complex data with powerful 3D visualisations



Increase ground condition confidence through 3D geological modelling



Accelerate project timelines with real-time model updates



Improve stakeholder communication and collaboration



Successful projects are powered by Leapfrog Works



Maximise efficiency with fast, dynamic geological modelling

Advanced implicit modelling quickly transforms raw data into actionable 3D models, enabling teams to move from data to insights faster. Its intuitive workflows allow geologists to efficiently explore multiple scenarios at once, improving decision-making and minimizing risk. By streamlining the modeling process, Leapfrog Works helps keep projects on schedule while delivering better outcomes.



Mitigate risk with data-driven decisions

Civil engineering and environmental projects rely on understanding subsurface risks that can disrupt construction or lead to environmental damage. Leapfrog Works integrates a variety of data sources—from boreholes to geophysics—into a comprehensive model, enabling teams to make well-informed, data-driven decisions that minimise costly risks.



Communicate complex data with clear visualizations

Leapfrog Works lets you visualise your data through 3D models that make it easier to communicate complex geological data to non-technical stakeholders, including management, clients, and the general public. These visualizations help convey subsurface risks and opportunities clearly, fostering trust and understanding among stakeholders.



Increase ground condition confidence through 3D geological modelling

Accurately assessing subsurface continuity is critical to civil engineering projects such as tunnelling, dam construction, and large-scale road developments. Leapfrog Works provides reliable 3D models that allow teams to better understand geological continuity, reducing uncertainty and enabling confident planning, ensuring the safety and stability of infrastructure projects.



Accelerate project timelines with real-time model updates

As new data becomes available throughout the project, Leapfrog Works dynamically updates models, ensuring they always reflect the latest information without the need for manual updates. This enables project teams to respond quickly to changing site conditions, reducing delays and avoiding costly rework.

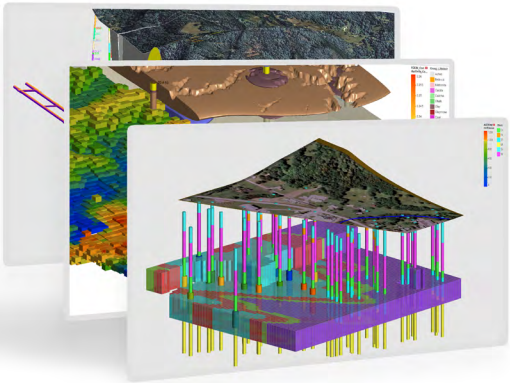


Enhance collaboration across geotechnical workflows

Leapfrog Works is part of Seequent's connected geotechnical ecosystem, including OpenGround, Central, GeoStudio, and PLAXIS. By enabling team members to flow outputs through interoperable and complementary solutions, Leapfrog Works breaks down siloes and ensures geotechnical data is always up-to-date and accessible. This iterative, dynamic workflow reduces rework, keeps projects on track, and supports better decision-making, enabling teams to collaborate more effectively and deliver aligned project outcomes.

Explore the key features that power Leapfrog Works

Leapfrog Works helps transform raw data into actionable insights with a range of advanced modelling and visualisation tools. Here's a look at the key features that support faster workflows, better collaboration, and more confident decision-making.



Dynamic 3D modelling

Spend less time building models and more time interpreting and sharing insights

Explore various hypotheses and update them dynamically with your latest information
New borehole data is dynamically updated
Create static models for comparison and reference

Ground type classifications

Build 3D geological and numeric models from a wide variety of data sources

Integrate data from boreholes, GIS, 2D grids, maps, and more
Combine rock mass ratings, soil behaviour, or contaminant concentrations with geological domains
Perform structural modelling and use borehole planning tools to improve accuracy

Engineering designs

Visualise and work with your engineering data directly in the geological context model to make better design decisions

Import alignments, build surface topography, and create excavation volumes for design integration
Create and manage longitudinal sections to inform project planning
Understand tunnel, earthworks, bridge, dam, and foundation designs in geological context

Environmental insights

Assess environmental risks with dynamic geological models

Combine geological models with geophysical data or water sample screens to visualise environmental risks
Model contaminant plumes and saltwater intrusion in 3D
Use the Hydrogeology Solution Kit to integrate geological and flow models for groundwater simulation

Industry interoperability

Ensure seamless compatibility with industry standards and other common software

Export data in industry-standard BIM formats such as DXF, DWG, and IFC
Import and export data from GIS software, including Esri and Map Info
Part of a connected workflow with OpenGround Cloud, GeoStudio, PLAXIS, and Seequent Central

Collaboration tools

Effortlessly share geological insights and work in tandem with teams and stakeholders

Export and share 3D scenes, movies, and cross-sections
Annotate scenes for enhanced clarity
Collaborate via Seequent Central for version control and team alignment

Cross sections

Create and visualise cross sections from any angle to improve analysis and project planning

Generate cross sections and update them dynamically as models evolve
Import historic sections and tailor outputs for reports and geotechnical analysis
Detect errors and identify correlations in your models faster

Intuitive interface

Leapfrog Works is designed specifically for geologists, offering intuitive workflows that allow users to

Learn the fundamentals in just days
Start modelling faster and spend more time on analysis
Navigate tools with ease, focusing on geological tasks

Hydrogeology extension

Integrate hydrogeology models, reducing groundwater risks in your projects

Create and visualise MODFLOW and FEFLOW grids/meshes directly from your geological models
Assign properties and update flow models dynamically
Share 3D models and grids with stakeholders using Leapfrog Viewer

Contaminants extension

Characterise and visualise contaminants in land and groundwater environments

Model contaminant mass and location in 3D
Create auditable estimates of contamination levels
Enhance environmental safety and remediation planning