

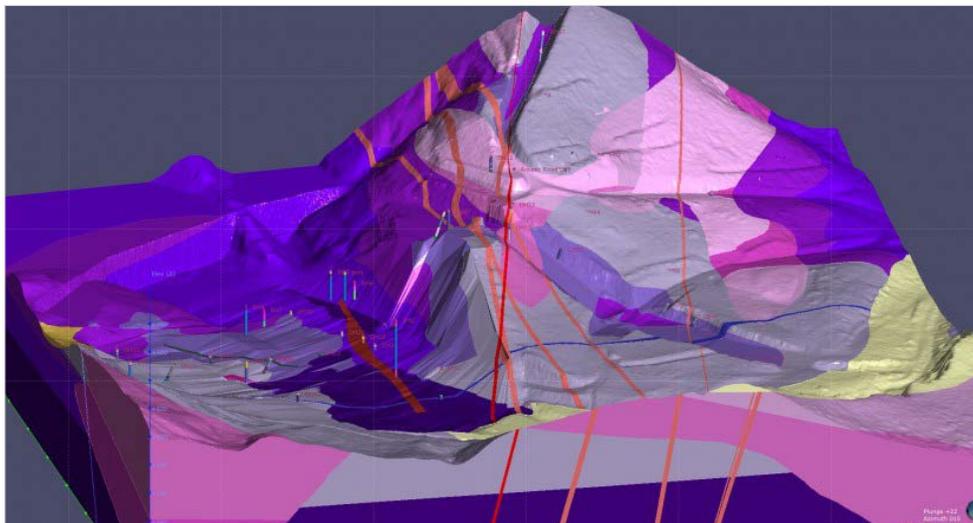
Geoprofessional Finalists in the 2022 Going Digital Awards in Infrastructure

Geoengineer.org

The annual awards program honors the extraordinary work of Bentley software users advancing infrastructure design, construction, and operations throughout the world. Eleven independent jury panels selected the 36 finalists from over 300 nominations submitted by more than 180 organizations from 47 countries encompassing 12 categories.

The winners will be revealed on November 15 during the 2022 Going Digital Awards in Infrastructure celebrations in London at the Intercontinental Park Lane in front of invited press members and industry executives. Finalists presentations will be available for viewing using this link on November 7, 2022. Visit the site to hear from the people behind these extraordinary infrastructure projects as they tell their stories of leveraging digital advancements to achieve unprecedented outcomes.

Nicholas Cumins, Bentley's chief operating officer, said, "After two years of hosting the event virtually, we are excited to reunite in person with the Going Digital Awards' finalists to celebrate their accomplishments along with press members and industry analysts. Bentley executives will share insights about digital advancements in infrastructure along with updates on Bentley applications and technology innovations." The Geoprofessional finalists in the 2022 Going Digital Awards in Infrastructure are:



Credits: GHD

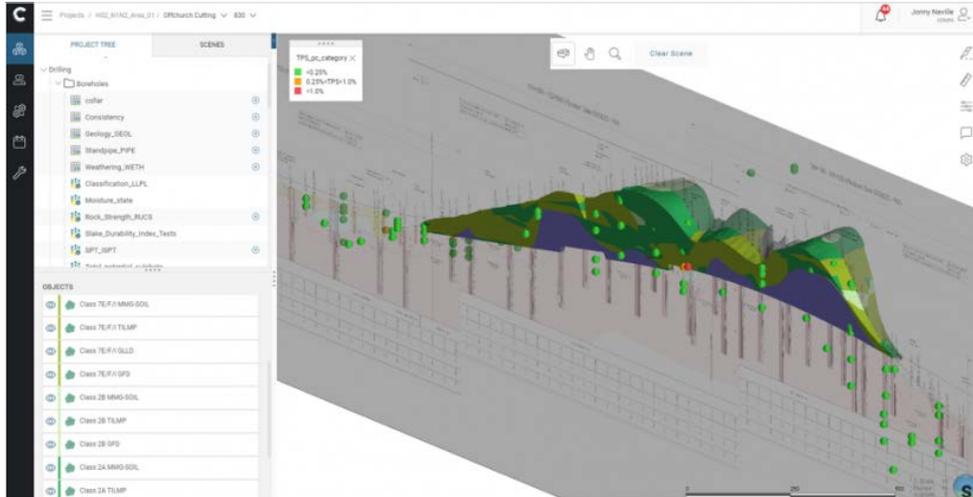
GHD: CRESSBROOK DAM

Location: Toowoomba, Queensland, Australia

Project Playbook: ContextCapture, gINT®, Leapfrog®, Seequent®

Cressbrook Dam creates the major source of water supply for Toowoomba and the surrounding Queensland region. Responsible for managing the dam over the years, GHD has access to voluminous historical paper and multisourced digital geological data and maps. Therefore, they wanted to convert the historical information into a single digital data source. Faced with geological data collection and integration challenges, they realized that traditional approaches were time consuming and risky, requiring an integrated digital data capture and modeling solution.

GHD selected ContextCapture to create a 3D reality mesh of the existing conditions, saving AUD 80,000 in on-site survey costs. Using Leapfrog allowed them to overlay historical maps and import design layers to recreate a geological model as it would have been in 1983, augmented in 3D. The digital model is critical to understanding the dam foundations, geological components, and risks necessary to perform future upgrades and design works. As a digital asset retained by TRC, the model ensures dam safety and reliability for decades.



Credit: Mott MacDonald

MOTT MACDONALD: DRIVING EFFICIENCY AND SUSTAINABILITY IN MATERIAL REUSE THROUGH GEOBIM

Location: Birmingham, West Midlands, United Kingdom

Project Playbook: Central, Keynetix, Leapfrog, OpenRoads™, ProjectWise®

The 90-kilometer HS2 Phase 1 rail route has over 21 million cubic meters of material earmarked for excavation, making the volume of earthworks one of the largest sources of carbon emissions. The integrated project team identified mass haul efficiencies that could minimize wasted material and reduce carbon emissions by 50%. They needed to accurately understand the material types for reuse, but they faced geotechnical and coordination challenges that traditional assessment methods could not accommodate, requiring an integrated digital geological information and BIM solution.

Leveraging ProjectWise with the Central and Leapfrog applications from Seequent, The Bentley Subsurface Company, the team developed a collaborative geoBIM assessment technique based on the 3D spatial assessment of ground investigation data within the proposed earthworks excavations. The ability to model specific geometric earthwork profiles optimized mass haul movements during construction, which provide critical insight into material reuse across the project, reducing waste and carbon emissions. The 3D models provide a foundation for the development of a digital twin to support future earthworks projects.



PT HUTAMA KARYA (PERSERO): SEMANTOK DAM PROJECT

Location: Nganjuk, East Java, Indonesia

Project Playbook: ContextCapture, PLAXIS®, SYNCHRO™

Located amid the lowland and mountain terrain of Nganjuk in East Java, the Semantok Dam aims to reduce flood discharge, ensure water availability, and boost the district's agricultural productivity by 186.33%, providing a sustainable infrastructure solution to support society. PT Hutama Karya undertook most of the construction works, facing geotechnical challenges related to ineffective foundation design and insufficient rock fill quantities. These challenges were compounded by a strict construction period. To timely and cost effectively resolve these issues, the team needed flexible and integrated technology applications.

PT Hutama selected ContextCapture and SYNCHRO to perform reality modeling and construction simulation. Combined with their project management information system and GIS systems, they provided real-time understanding of field conditions and a holistic project overview for timely, cost-efficient management. Using PLAXIS resolved the foundation and quarry issues, saving a total of USD 3.8 million in potential rework. Bentley's integrated digital solution saved 183 days in the construction schedule and provides the basis for digital asset management during operations and maintenance.

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