

# Surveying and Mapping Without Visiting the Project Site



Due to COVID-19 restrictions, site visits are often out of the question for professionals supporting projects in the field. How can essential surveying and mapping work continue to be done during the coronavirus pandemic?

Many project teams have managed to stay connected by adapting to collaborative online tools like Skype and Zoom, but maintaining access to data and

information on a distant project site so that essential work can continue presents a different challenge.

While some restrictions may be easing soon, others are likely to continue for months and may even necessitate lasting changes to the way we do 'business as usual'. For many impacted projects, remote sensing and visualization technology are becoming feasible tools to enable virtual access to projects and interact with site data in new ways.

## New remote sensing and visualization solutions

Geospatial data acquisition and visualization applications to make that data useful are both areas that have rapidly advanced in recent years. Outputs for end-users range from conventional CAD files for design and engineering, to digital twins hosted online that enable virtual reality walk-throughs of a project site from anywhere. Even before the abrupt paradigm shift brought on by the COVID-19 pandemic, Canadian survey, mapping and geomatics firm [Challenger Geomatics](#) has been hard at work developing and testing new remote sensing and visualization solutions to enable their clients to virtually access critical project data.

"At Challenger, we've always come to work focused on finding new solutions to problems," says Paul Burbidge CLS, Challenger Geomatics' chief operating officer. "But the COVID crisis has really accelerated interest and opportunities to use our remote sensing and visualization tools in new ways to keep our clients connected to their projects. I've seen our people at their best collaborating on new ways to solve problems that didn't exist until a month or two ago."



Using UAV imagery and survey data, an immersive 3D point cloud projects your proposed route or site into the real world.

## Geospatial data delays

According to Challenger Geomatics, many of their clients' project teams have experienced significant delays in getting the geospatial data they need to continue planning, design and engineering work. The cause: difficulties and restrictions on travel and access to their project sites as a result of pandemic containment measures. Some remote project sites have even simply been shut down.

"Right now we're performing a high definition laser scan of a key piece of energy infrastructure that's deforming. Due to travel restrictions, subject matter experts can't visit the site to investigate what's causing the deformation. Using the scan data, we're setting up a virtual model online where they can view it in 3D, make measurements and analyze the deformation from afar."

## Virtual survey solutions

While laser scanning delivered the millimetre-level precision required for deformation measurements on that particular project, Burbidge says the unique needs of each client for their project means a customized approach every time. "After consulting with you to determine the specific needs for your project, we advise you on the appropriate technical solutions for your unique challenge."

Challenger Geomatics can deliver a wide range of solutions to enable clients to continue or enhance work on their projects, such as: CAD files to support design and engineering, inline 3D viewers to enable virtual project visits, virtual reality walk-throughs, 3D PDFs to enable virtual project visits, proprietary 3D visualization and site/route selection software, and collaborative video conferences hosted by Challenger using their specialized software.

And while the idea of a customized solution may sound pricey, it often is not the case according to Burbidge. “These visualizations don’t always require new data and can often be put together by using data that already exists in new ways.”



PlanworX GIS is a customized web-based mapping and data maintenance solution. It has the ability to manage multiple types of geospatial data.

## Time efficiency and cost savings

In instances where new data is required, Challenger Geomatics can use a variety of remote sensing technology depending on the need and project, including UAVs, aerial orthophotography, satellite imagery, Lidar.

Once the virtual project solution is delivered to the client the journey is not over, however, says Burbidge. “We get great feedback about the visualization solutions themselves, but we also hear that our continued advice to make sure they are getting the most out of their data is really important too.”

While physical visits to project sites will eventually rebound as restrictions associated with the pandemic ease, Burbidge doesn’t think that means interest will wane in remote sensing and visualization solutions. “Our clients are realizing all sorts of other benefits like better time efficiency and cost savings on travel by accessing spatial data on their projects virtually rather than in person.”

“Our experience has been that once they discover the value of remote sensing and visualization for themselves, it’s something they see value in continuing.”



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<https://www.gim-international.com/content/news/surveying-and-mapping-when-you-can-t-visit-your-project-site>

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