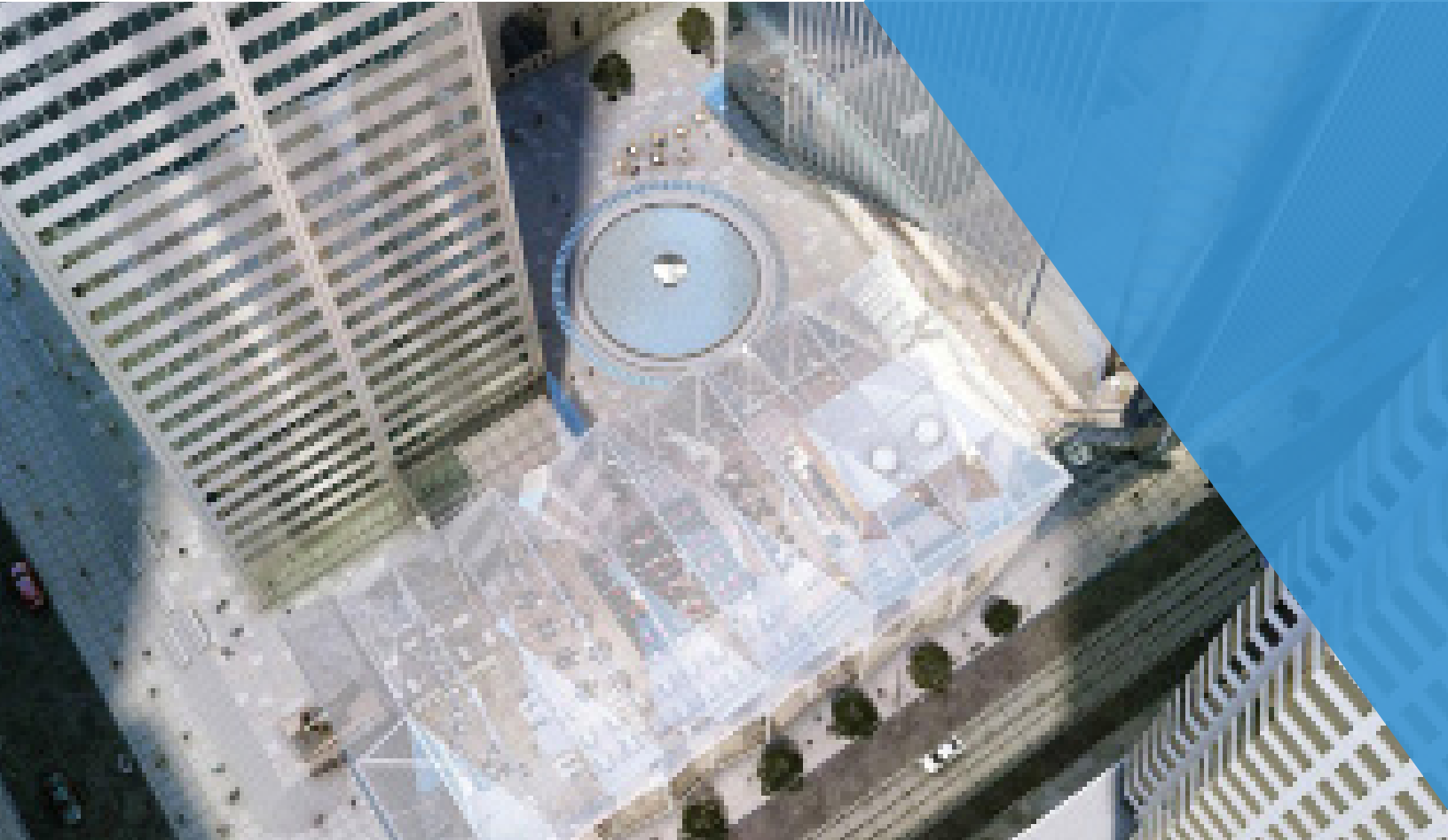


DIALOG®

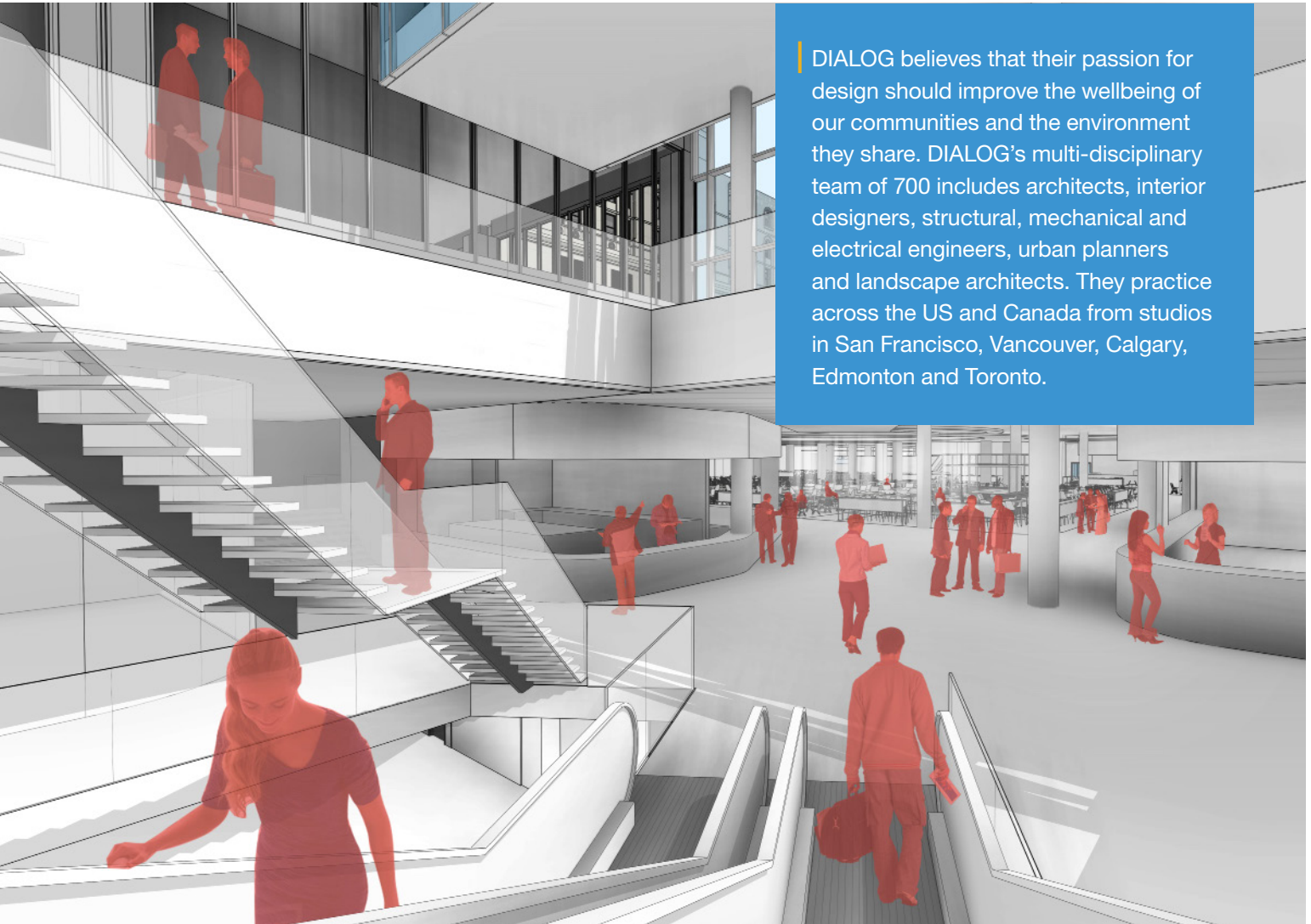


Partnership for Innovation

DIALOG efficiently captures a 7 trillion point project successfully with partners SolidCAD and Cansel.



DIALOG



DIALOG believes that their passion for design should improve the wellbeing of our communities and the environment they share. DIALOG's multi-disciplinary team of 700 includes architects, interior designers, structural, mechanical and electrical engineers, urban planners and landscape architects. They practice across the US and Canada from studios in San Francisco, Vancouver, Calgary, Edmonton and Toronto.

DIALOG's multi-disciplinary team provides their clients with a comprehensive and collaborative approach to design. Their team can overcome the challenges of increased complexity within design and planning with their diverse perspective and expertise for greater efficiency.

For years, DIALOG has worked on various projects including: designing for urban vibrancy, health and wellness, transportation, education, arts and culture,

residential, retail, and commercial. Their vision has always been to think outside of the box and adopt new design technologies that will improve digital collaboration, improve communication among their team and clients, and provide quality services on any project.

Challenge

A client turned to DIALOG for a redevelopment of a city block in the Toronto Financial District named Commerce Court 3. The site encompassed a 460 feet lot frontage and a new 64-storey office tower and a glass pavilion. The project would include replacing two smaller buildings in the existing four-building complex, while redesigning the connections between heritage buildings and renovating the courtyard and underground PATH level.

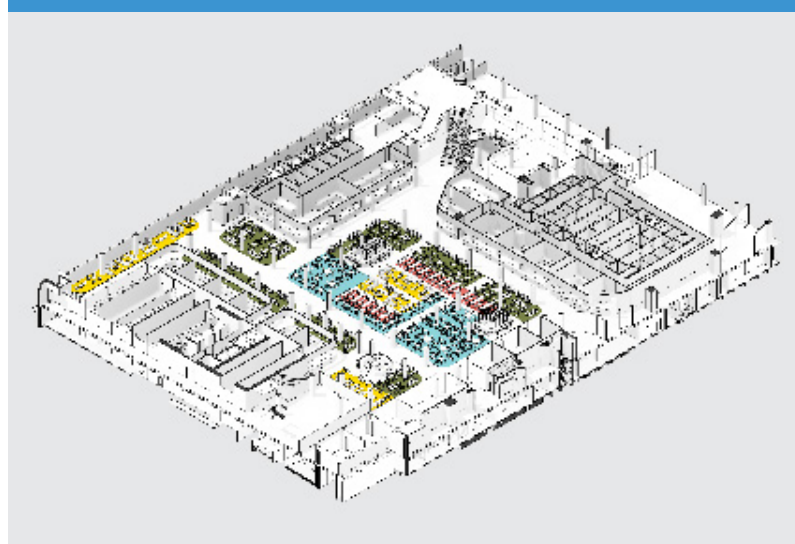
CAD file drawings of the complex structure and architecture existed, however, the accuracy of the archived files was uncertain. DIALOG was unaware of any design changes or updates to the structure and if the CAD files were trustworthy.

Based on the project's complexity, the decision was made to create a BIM model that would utilize the data in the CAD files to begin the redesign. To ensure accuracy with the existing structure, DIALOG understood that they would have to spend both time and resources to perform onsite-verifications, which would affect their overall focus.

Solution

With a growing number of DIALOG's clients interested in Scan-to-BIM, DIALOG quickly understood that this service would be the most effective and efficient way to get high-quality data of the complete structure. This scan would produce accurate point clouds which would be converted into BIM models.

For the Commerce Court 3 project, DIALOG needed to quickly compile a lot of information with a high level of detail that they could easily review and compare with the existing CAD data.



Given their tight deadline, DIALOG's staff did not have the time to learn how to scan and model the existing structure, which is when they turned to SolidCAD and Cansel for their Scan-to-BIM services.

The SolidCAD and Cansel team scanned over 600,000 sq. ft of existing conditions with a total 1150 scans. This produced a point cloud with 7 trillion points and 575 GB of data, which included five subbasement levels and architectural, structural, MEP and fire protections scans of newly identified areas that were not part of the original CAD files.

All of the onsite laser scanning survey information was retrieved, optimized and registered into usable point cloud data. The team then converted the points into a LOD 200 Revit model. This provided DIALOG a precise and detailed as-built digital prototype of the project that they could use as part of their redesign.

The Result

The Scan-to-BIM services allowed for an easier integration into the new design that DIALOG was working on and eliminated the need for staff to conduct their own site surveys and/or as-built exercises, saving valuable time. Their staff were able to focus primarily on design changes above ground, while the SolidCAD and Cansel team worked on retrieving information of the existing sub-levels.

The DIALOG team was able to link pertinent details from below ground to the changes above ground, ensuring that the design changes would work. Having this accurate as-built model not only helped DIALOG speed up their overall processes, but also kept the owner and all consultants informed about the project. Since the Commerce Court 3 project was a successful proof of concept, DIALOG has now purchased different laser scanner technologies to preform their own scans for the future.

DIALOG continues to work closely with SolidCAD and Cansel for outsourced professional services, hardware and applications when needed, allowing the team to allocate valuable time to different aspects of future projects.

Professional services, software and hardware used:

- **Professional Services:** Scan-to-BIM with Cansel – scanning of site
- **Professional Services:** Scan-to-BIM with SolidCAD – point cloud transition to Revit model
- **Professional Services:** Outsourcing – studio office additional BIM Management support
- **Professional Services:** Programming & Customization
- **Software Design & Collaboration:** Autodesk Revit, ReCap, and BIM 360 Design
- **Software Registration, Clean up; element extraction:** ClearEdge Edgewise, Faro As-Built PointSense & Scene, Autodesk ReCap
- **Hardware:** Faro X330 scanner



The Scan-to-BIM service described in this white paper is just the tip of the iceberg in terms of the services SolidCAD/Cansel offers. Visit us at www.solidcad.ca or www.cansel.ca to find out more.