DOSTER

3D LASER SCANNING

Doster's BIM Department

Doster Construction would like to provide your team our expertise in renovations, laser scanning, and modeling. Doster's **BIM Department** has extensive experience in major renovation projects and utilizes technologies, like laser scanning, to help deliver a successful project. We would like the opportunity to use these technologies and processes on your next project to enhance visualization and collaboration and reduce conflicts.

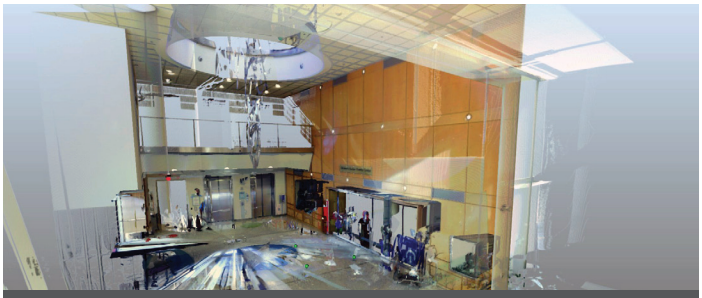
What is Laser Scanning?

Laser Scanning, or **LiDAR** (Light Detection And Ranging), is a technology used to take extremely accurate measurements by measuring distances with a laser. Laser scanners, like Doster's Faro Focus 3D laser scanner, are LiDAR devices that take hundreds of thousands of measurements every second to generate point clouds of existing buildings.

What is a Point Cloud?

A laser scanner produces a **"point cloud"** consisting of millions of points that together produce an accurate, three-dimensional representation of your building. A point cloud can be imported in all of the major BIM/CAD packages for accurate measurements and quick as-builts.

Doster primarily uses point clouds for communicating with design teams, coordinating in existing spaces, creating as-builts, and analyzing spaces.

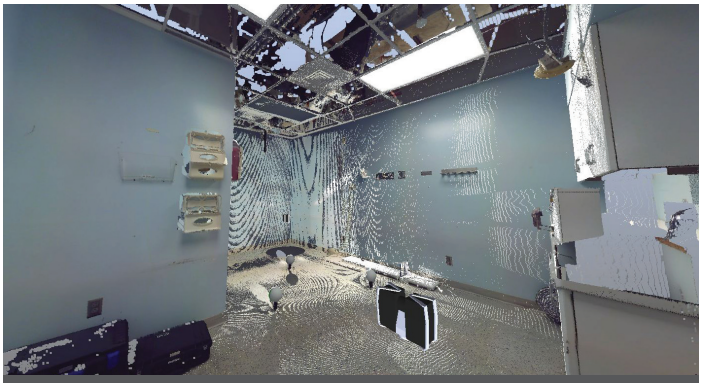


Point Cloud at Children's Harbor: The Doster team laser scanned the lobby to quickly produce visualization of design options for the Owner.

The Laser Scanning Process

Doster's laser scanning team will plan and coordinate the scanning activities with you to minimize the impact of scanning on your operations. We will travel to the site, scan the required areas, and stitch the scans together. We will deliver the scans to you and train your team on how to use them effectively.

The scanning technician places the scanner and a series of spheres in the room. The spheres help the scanning software stitch the scans together into a singular point cloud.



The point cloud resulting from stitching 2 scans together.

BENEFITS OF USING DOSTER'S 3D LASER SCANNING SERVICES:

1. Create better as-builts in less time
2. Have an exact 3D as-built for future work
3. Enhance coordination of systems and utilities
4. Quickly visualize project in context of reality
5. Reduce travel to the project
6. Measure difficult to reach areas safely

CASE STUDIES

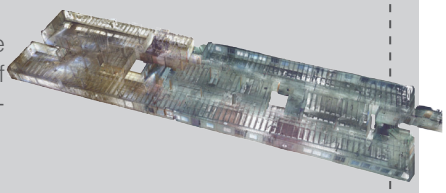
DOSTER

Scanning & Modeling at Children's Hospital of Alabama

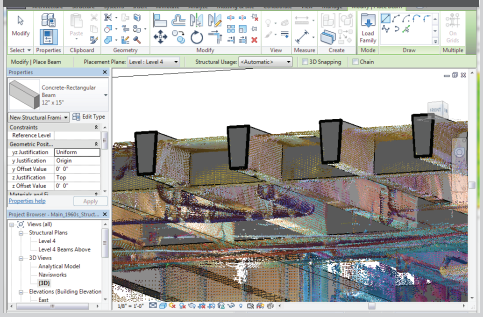
One Scan with Many Uses

The Children's Hospital of Alabama needed accurate as-builts for major renovations in an active area of the hospital. The Doster team **laser scanned** the floors after demolition and used the **point clouds** to coordinate the design in 3D with the design team and subcontractors.

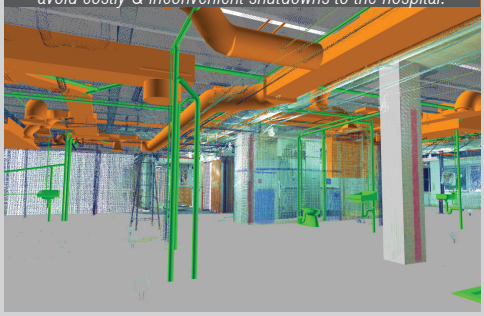
This laser scan enabled the team to precisely locate building services, reduce rework, avoid interruption of hospital activities, and provide a lasting, accurate as-built for future work.



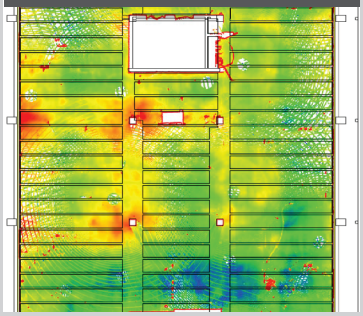
Once the area was scanned, Doster imported the scans into Revit and adjusted the structural model to match the as-built conditions.



Doster reviewed the laser scan with the design team to make informed decisions on how to maximize ceiling heights while minimizing the existing scope that needed to be demolished & avoid costly & inconvenient shutdowns to the hospital.



Doster utilized the laser scan to visualize the variations in slab height to identify areas of the slab that needed floor leveling compound.



Laser Scanning at the Van Antwerp Building

Capturing Historic Details & Renovating without Existing Drawings

The Van Antwerp Building located in downtown Mobile, Alabama was originally built in 1907. After time, concerns grew over the safety and stability of the building's cornice. The cornice was ultimately demolished and the pieces were used as a fill for a road bed on the Van Antwerp family farm. In 2013, extensive interior and exterior renovations began under the management of Doster Construction. Part of the renovation included a reproduction of the original cornice. As no drawings or photographs of the original cornice were available, Doster sent their laser scanning team to the Van Antwerp family farm to unearth pieces of the original cornice. The pieces were cleaned, arranged, and scanned with 3D Laser Scanning Technology. Doster's BIM Department then assembled the scanned pieces like a puzzle to create a **digital, 3D, point cloud reproduction** of the original cornice. These 3D representations will be used to create the new reproduction cornice.

Doster laser scanned the exterior of the building in **1.5 days** and delivered the scans to the Design team the next week to begin modeling the exterior of the building. The point cloud proved invaluable. If you have a project or property with no drawings, there is not a better tool to capture as-builts than using our laser scanner.

FOR MORE INFORMATION

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The 3D, point cloud reproduction of the original cornice