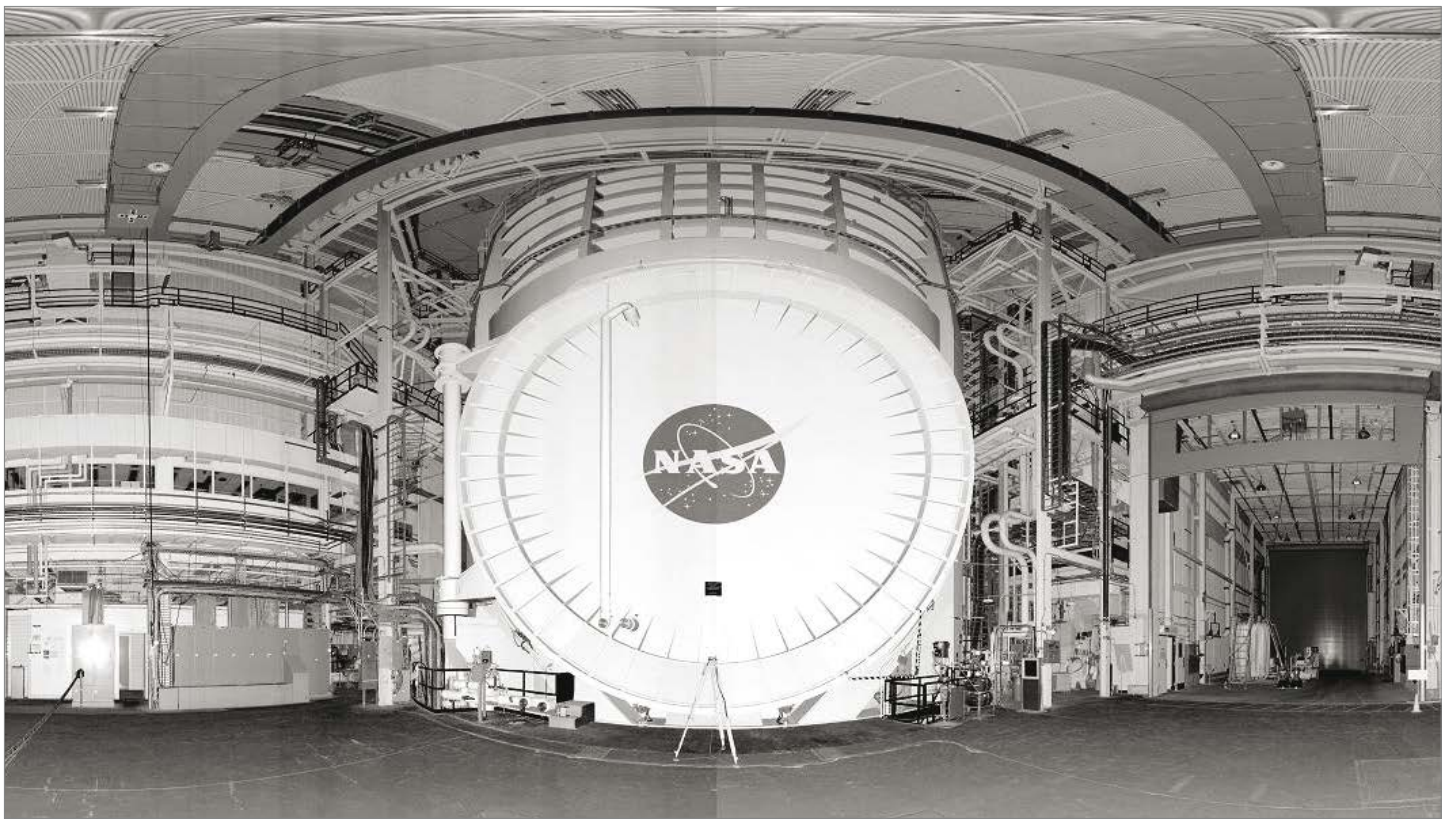
User Story
NASA



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FARO Laser Scanner LS Used to Model Home for NASA's New Space Telescope

FACILITY PLANNING / 3D DOCUMENTATION *Johnson Space Center's environmental simulation test Chamber A requires modifications to accommodate testing of the new James Webb Space Telescope.*

Some of these changes involve upgrades to cryogenic, vacuum pumping, and structural elements. To accomplish this, JSC requested a 3-D model of the existing 118 ft. tall chamber. This data would enable engineers to identify and correct any conflicts in upgrade design and installation of new piping, electrical conduit runs, cable trays and equipment.

NASA brought in Houston engineering firm, Taylor and Hill Inc., to scan and model all eight levels, two large staging areas, two mechanical rooms and liquid nitrogen piping and storage tanks comprising the cryogenic chamber and the area surrounding it. "We were hired to identify the major obstructions, clearances and open areas surrounding the test chamber," noted Glen Kearns, Taylor & Hill's Laser Scanning Dept. Mgr.

HIGH PRIORITY

The project was marked high priority status by NASA, requiring the measurements to be completed in a timely manner. Construction and maintenance had already begun, limiting Taylor & Hill's workspace.

Conventionally, engineers would gather the necessary data by using tape measures, photographs, and written notes to generate 2-D drawings. This would have been quite time consuming, obtrusive and open to error.

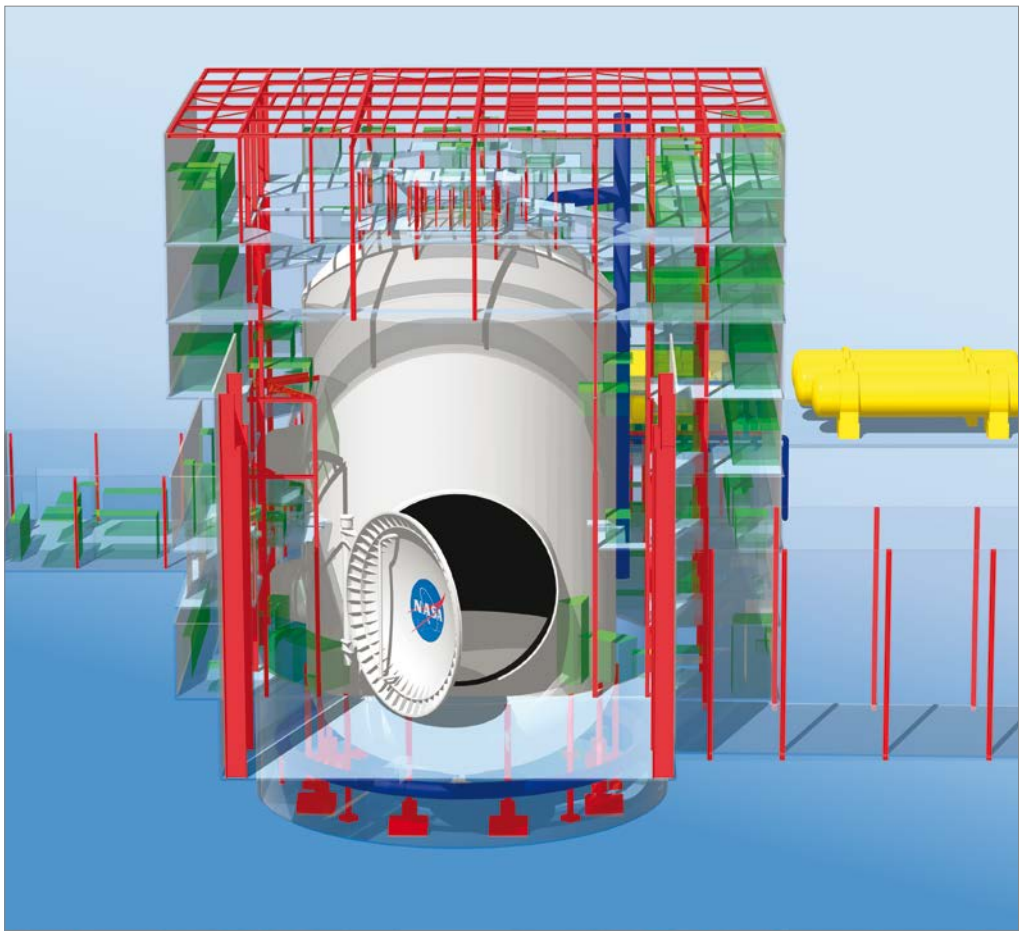
TECHNOLOGY SUITED FOR THE JOB:

Using FARO's Laser Scanner LS, and a combination of modeling and CAD softwares, Rito Morales and Don Meyer of Taylor & Hill produced the requested deliverables ahead of schedule. Scanning at a rate of 120,000 points-per-second, the FARO Laser Scanner builds a 360 degree 3-D point cloud of a scanned surface.

"The speed at which the data was col- >>

NASA

(company name website)



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>> lected with FARO's phase-based scanner is a major consideration," Kearns observed. "Traditional methods would have taken several weeks or months to collect the data we gathered in about 10 days of scanning."

Taylor & Hill produced over 170 point clouds from the data collected on the job site. All laser scans were registered to a building coordinate system established through dimensional control.

From the registered point clouds, 3-D solid models were developed through INOVx 3-D PlantLINx® showing objects outside of the chamber: floors, columns, major equipment and large diameter piping. The 3-D model was then exported into AutoCAD® where final presentation visuals were added.

"Contractors responsible for the upgrades are now aware of the obstacles that may impede their plans," stated Kearns.

"The speed at which the data was collected with FARO's phase-based scanner is a major consideration, Kearns observed"

GLEN KEARNS, TAYLOR & HILL'S LASER SCANNING DEPT. MGR.

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@ (COMPANY NAME WEBSITE)

– 4 GOOD REASONS –

The FARO Laser Scanner Focus^{3D} is a portable non-contact measurement system using laser technology to accurately capture measurements.

1 Small and compact: With a size of only 24 x 20 x 10cm and a weight of just 5.0kg, the Focus^{3D} is the smallest 3D scanner ever built.

2 Efficient: Due to its long range of up to 120 m, the level sensor, the compactness and ease of use and the auto-registration at no extra cost result in up to 50% savings of scan and processing time compared to conventional laser scanners.

3 Integrated colour camera photorealistic 3D colour scans due to an integrated colour camera featuring an automatic 70 megapixels parallax-free colour overlay

4 Revolutionary simple: Due to its intuitive control concept with touchscreen display, the Focus^{3D} is as easy to operate as a digital camera.

@ WWW.FARO.COM/FOCUS

SUMMERY

Bury Associates Limited verwendet zwei FARO-Laserscanner Focus^{3D} für Laserscans, 3D-BIM-Modelle in Revit sowie 3D-Dokumentation bestehender Gebäude.