User Story

Mollenhauer Group

LA Convention Center West Tower.

Bringing accurate survey results with FARO Focus^{3D}

INDUSTRY / AS-BUILT DOCUMENTATION *Since 2003 Mollenhauer Group, a professional consulting firm serving land and property development, has been providing their customers with laser scanning, 3D CAD modeling and BIM ready Revit models of existing buildings.*

The Mollenhauer's Group 3D team was contracted to provide accurate 2D plans and a 3D CAD model of the John Anson Ford Theatre to help inform the restoration process. The Ford Theatre is one of the oldest performing arts venues in Los Angeles that is still in use. Completed in 1931, the Theatre was designed in the Judaic style to resemble Jerusalem and constructed of poured concrete. The Theatre is now undergoing a complete restoration and redevelopment program under the guidance of Levin and Associates Architects.

The theatre was scanned with the FARO Focus3D. All scans were tied together using overlapping spherical targets and total station control, relating the data to a common survey control framework. The entire site was measured and controlled in less than a week by a single Mollenhauer Group surveyor, who had to work around the Theatre's busy schedule.

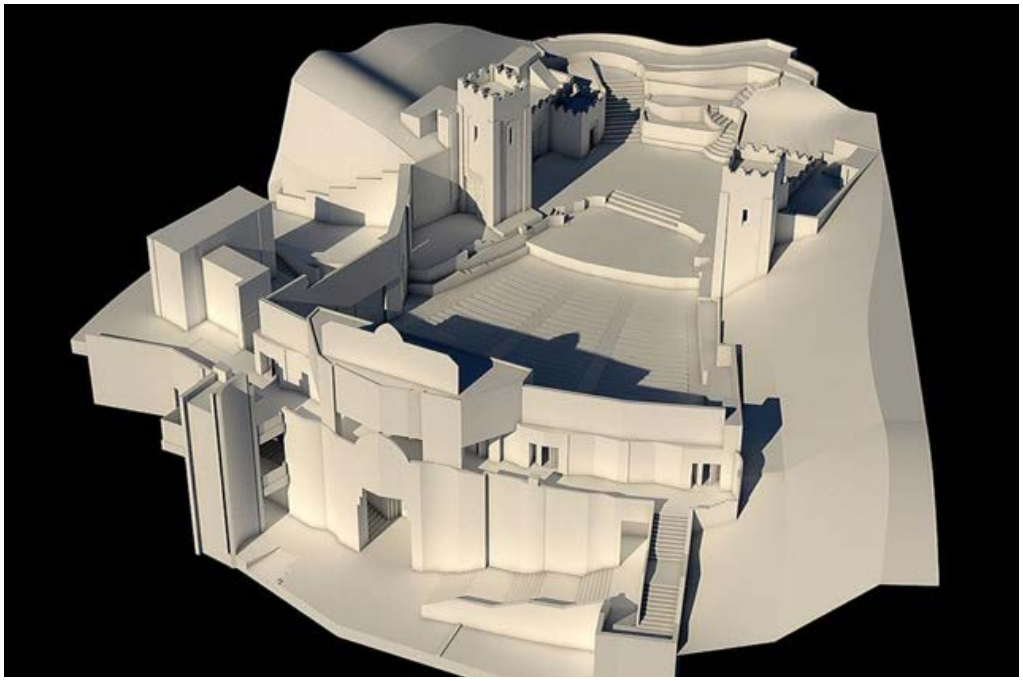
The data was processed in the Faro Scene software to create a registered point cloud of the basement up to the amphitheatre and tower levels. The software Cloudworx was then used to view and slice through the data in AutoCAD.

The scan data was combined with conventional survey data to create an accurate 3D CAD model of the theatre. The model is being used by both the Project Architect and the structural engineers to plan the redevelopment of the site. Of critical importance is the thickness of the poured concrete across areas of the Amphitheatre. The registered point cloud and 3D model will enable the engineers to view sections through the structure and analyse the relationship of the exterior to the levels below.

There were several benefits to using laser scanning technology. Laser scanning enabled the structure and surrounding site to be recorded in detail with relative ease and speed. The >>

Mollenhauer Group

www.mollenhauergroup.com



John Anson Ford Theatres, Hollywood, Los Angeles.

>> use of laser scanning also allowed details such as undulations in the concrete floors to be recorded, which was of great importance to plan drainage improvements.

Another important project was the accurate surveying of the existing Los Angeles Convention Center West Tower. The site is being redeveloped to incorporate a new NFL Stadium, which will position the Convention Center as one of the Nation's premier destinations for sports and entertainment. The rear of the West Tower will be demolished to accommodate the new stadium. The Project Architect had some existing data but required verification of this information and supplementation to include the basement and plant rooms.

The West Tower was laser scanned using a FARO Focus3D which captured the complex structure with ease and speed. The scan data was tied to the on-site control framework using total station control. The data was processed in Faro Scene software to create a single registered point cloud of the basement up to the upper tower level.

The scan data was used to create an accurate Revit Model of the West Tower to provide sufficient detail to the Project Architect to help design and plan the complex abutment of the proposed new stadium to the Tower. The existing foyer design is extremely complicated and surveying by other means would have been virtually impossible.

"We have been using laser scanning for many years and use this technique on most of our measured building survey projects. The speed and the ease of use of the FARO Focus3Denabled us to record interior spaces rapidly and accurately reducing time on site, says Jenny Clark, the Director of 3D Surveying at Mollenhauer Group. "Another main advantage was the ability to publish the scan data on FARO Webshare (at no additional cost) to enable the client to view and share the data".

"The compactness and portability of the FARO Focus^{3D} Laser Scanner enables complex structures to be measured accurately and safely with ease and speed."

JENNY CLARK, THE DIRECTOR OF 3D SURVEYING

MOLLENHAUER GROUP

Mollenhauer Group is a professional consulting firm serving the land and property development industries. The company is headquartered in Los Angeles, California with branches in Denver, Colorado and Bath, United Kingdom. Mollenhauer's 3D Group specialize in the creation of accurate 3D models of the built environment in both CAD and BIM formats using laser scan data coupled with conventional surveying methods. They offer measured building surveying, laser scanning, heritage recording, land surveying, 3D CAD modelling and BIM ready Revit models. Mollenhauer has been using laser scanning since 2003 and owns a FARO Laser Scanner Focus^{3D}.

@ WWW.MOLLENHAUERGROUP.COM

– 4 GOOD REASONS –

3D Surveying Director Jenny Clark

1. The FARO Focus^{3D} laser scanner is compact, portable and enables large volumes of data to be collected in a relatively short time span.
2. FARO Focus^{3D} laser scanner suited the needs of the detailed interior measurement projects.
3. Areas that would have been difficult to access by other means were easily and safely measured using the Faro Focus laser scanner.
4. FARO Webshare enables the on-line publishing of scan data which can be shared with the client and other project partners.

@ WWW.FARO.COM/FOCUS

SUMMERY

Mollenhauer Group uses a FARO Focus^{3D} Laser Scanner to record interior spaces rapidly and accurately, reducing time on site.