

Adding real customer value



by Angus W. Stocking, LS

WestLAND Group, Inc., founded in 2000 in Rancho Cucamonga, California, spent years looking for the right 3D laser scanner. The firm had a definite need for various projects. But there wasn't a huge demand; buying a dedicated scanner seemed like too much of an investment. Also, WestLAND's topographic and as-built survey workflow is already quite efficient; ideally, scanning would fit into and extend this workflow, not be a separate solution with parallel-but-separate field and office workflows.

The company looked with special interest at the first instruments that combined total stations and scanners into one housing. They weren't impressed. The ones WestLAND looked at just didn't provide the speed, point density and precision that they needed. On the occasions they needed a scanner, they needed a complete high-definition solution.

That changed in December 2013, when WestLAND took delivery of a Leica Nova MS50 MultiStation. The fact that the Nova MS50 is a complete robotic/ reflectorless total station that could be put straight to work on WestLAND's typical topo, boundary, and construction surveys made a lot of sense. When they received the initial demonstration, the surveyors could tell that this instrument was the 'real deal' for regular surveying work and for scanning. They could put it to work immediately in the field, and were able to create opportunities to integrate scanning into design and as-built surveys, and that would be a great way to market scanning and expand their services into scanning-specific projects.

After a couple of months working with the Nova MS50, WestLAND Group is confident they made a good choice. It's already proved itself to be a very effective scanner – they were scanning 20 minutes after it was delivered – and have now performed several scans for rail, building façade and pipeline as-built surveys. It really is simple to switch from



conventional surveying to scanning, and they have found that processing and adjusting point cloud data is a relatively easy extension of the current workflows.

Since acquiring the Leica Geosystems instrument, WestLAND has been in the same position as any firm that has just made a big investment in capacity; they've been learning to use the Nova MS50 on the job, finding ways to use the new data forms, and looking for opportunities to market their new deliverables. Three early projects managed to do all these things at once and are excellent examples of how to get started scanning.

Much better deliverables for as-builts

One of several scanning opportunities for WestLAND came from an existing client, CGM Development located in the City of Industry in Southern California. CGM asked for an as-built survey of an office building, to support redevelopment as a condominium. WestLAND surveyed the building interior and submitted a

condominium plan. They were then asked to provide a survey to support redesign of the exterior for ADA (Americans with Disabilities Act of 1990) compliance and facade renovation. As they were going to be there anyway, they decided to scan the facades as well. The client wasn't paying, specifically, for scanning. However, WestLAND had already learned that they could perform and process scans quickly; on this project, the Nova MS50 was used to provide a much better deliverable with small extra investment in time and the client was delighted. It also gave them the opportunity to see how scanning would support WestLAND's BIM work.

They did not actually create a complete BIM model because that would typically include a complete intelligent 3D model of the building exterior and interior with utilities, walls, structural components, etc. Instead, after processing the point cloud in Infinity and importing it into Revit and AutoCAD Civil 3D, WestLAND Survey/GIS Analyst Matt Corcoran modelled and rendered the building exterior and sur-



WestLAND Group Inc.

WestLAND Group, Inc., founded in 2000 in Rancho Cucamonga, California, is a mid-size, well-established firm that provides civil engineering, GIS, surveying and mapping, and also planning to clients in energy, rail, construction, municipal, and development, spent years looking for the right instrument. For many of the contracts the company was awarded, the Nova MS50 turned out to be the perfect solution.

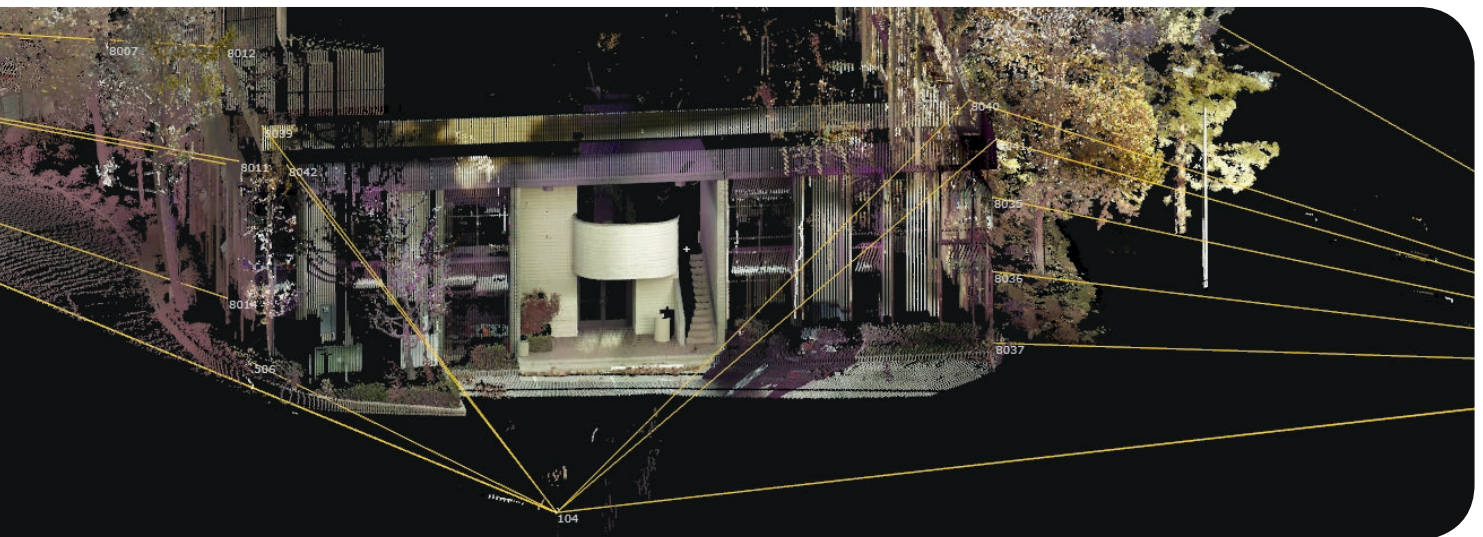
The Nova MS50 combines a robotic total station with a reflectorless range of 2,000 meters (6,561 feet) with an impressive built-in scanner that has a scan range of 1,000 meters (3,280 feet), millimetre preci-

sion, and up to 1,000 points a second. GNSS can be integrated, and the Nova MS50 also has very good imaging capacity and image-assisted documentation. The operation and the workflow with the Leica Nova MS50 are the same as with a total station. In this way, WestLAND Group was able to seamlessly integrate scanning into their familiar workflows and deliver cost-effectively added value to their customers by providing 3D models.

For more information about WestLAND Group, visit <http://westlandgroup.net>.

rounding topography, and provided a deliverable to the project architect that was created in the familiar native Revit environment. Basically, the idea is to scan existing buildings when appropriate, and deliver the data to the design firm as a starting point or

“shell” for an actual BIM model. In this case, WestLAND said the client loved it, because they were able to use the data for design and for presentation purposes. WestLAND expect them to ask for similar models when requesting work for future projects.



■ WestLAND Group expands into 3D laser scanning with the Nova MS50 maintaining familiar total station workflows.



Adding scanning to a familiar workflow

Another project started with another request from JLP. They asked for an clearance survey of an existing bridge, together with surrounding topography along existing tracks in a railroad yard. WestLAND had done similar projects for JLP, but this time, thanks to the good outcome of a previous tunnel project, scanning was specified.

WestLAND confirms that the fieldwork was straightforward. They had to set up on both sides of the bridge anyway, for control and conventional topo, so the additional scanning only took about an hour. This time, they performed a total of four scans, five to fifteen minutes apiece depending on density, from set-ups they were using anyway. They also took reflectorless shots on key features to compare these to the point cloud for QA/QC purposes, and everything is always within millimetre accuracy.

After that, the entire project – point cloud, control, and topography – went straight into Leica Infinity office software for adjustment and then into JLP's preferred CAD environment for line work, breaklines

and contours. It only took about an hour to review and incorporate the point cloud into the drawing. It was a good example of a pilot project paying off with new work.

All-in-one surveying

A surveyor at WestLAND says the Leica Nova MS50 lives up to the claims. "After a few hours training from the dealer, we were able to get to work immediately on actual projects and provide high-quality 3D deliverables with minimal extra time. Processing all the points we gather, in one environment, is a real time saver. We're looking forward to using it more. We're already under contract to provide an as-built of a pipeline network located in a steam power plant; that's work that would be very difficult for us to perform cost-effectively without a good scanner." ■

About the author:

Angus W. Stocking, L.S. is a licensed land surveyor who has been writing about infrastructure since 2002.