



Modeling Stairs with Ease

by Anna C. Seidel

In August 2012 group LESCAD from Slovenia faced a challenging project that required new thinking and new equipment. The company that primarily produces technical drawings for yacht interiors, public areas of commercial enterprises, and office furniture was looking for a measuring device that could directly output into CAD. They found what they were looking for in the Leica 3D Disto.

The project they needed this new tool for involved measuring a complex, double winged staircase and providing 3D models and drawings of the structure. The staircase had curved stairs, followed flat walls on the outside and was curved on the inside. In addition, the individual stairs were irregularly shaped.

Completing the measurements using traditional procedures would have involved tape measures, card-

board stencils, and time. Lots of time; for detailed measurements and notes, for input to CAD, and to correct the errors from both. Using more modern tools such as line lasers and laser distance meters would have reduced measurement errors but not the time consuming process of data transfer and input to CAD.

The Leica 3D Disto paid off immediately by allowing the measurements to be taken in just one day by only one operator and with direct data transfer to CAD. Multiple setups were possible to gather the full spectrum of data. By marking reference points with target stickers measurements were repeatable, precision could be controlled, and data from different stations was simply merged together.

Alojz Merela at LESCAD knows from experience “It is much better to start 3D modeling on the basis of accurate measurements. It reduces questions and helps point out critical points on site. Problems can

Leica 3D Disto: Award for "Performance and Innovation"

The Leica 3D Disto recently won the Performance and Innovation Award at the EquipBaie trade fair in Paris in December. This revolutionary tool is able to measure, scan or project to any location in a room independent of a room's geometry or around a building in three dimensions while visualizing and documenting the results immediately.

For more information about the Leica 3D Disto please visit: www.3d-disto-info.com



be solved at an early stage of documentation." All of which saves time and effort.

By automatically generating lines between measurement points on the control tablet in the field the entire survey is visualised on the go. The operator can check the survey and identify possible blind spots or problem areas that need additional measurements before leaving the site.

After just a few hours of measuring, enough data was gathered to generate a complete 3D plan of the staircase – not just of the stairs leading up, but also of the complex underside of the staircase.

In the office the results were transferred from the tablet directly into CAD in DXF format using a USB stick. Processing in CAD soon produced complete 3D models of the entire structure. But that's not all, says Miha Rijavec "We can obtain cross-sections, views, dimensions, details, and notes from the processed model."

After completing the staircase LESCAD went on to measure rooms and to model the interior of the rest of the building. Their Leica 3D Disto proved its worth in more ways than one by not only measuring exact 3D positions and scanning but also because it is able to project CAD data obtained in the office back onto the floor or walls of a structure. The Leica 3D Disto allowed them to perform even the most demand-

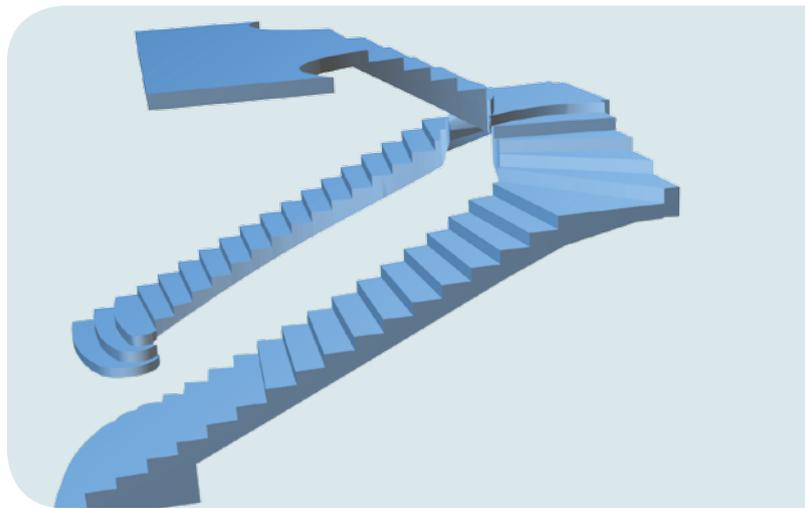
ing field measurements quickly and accurately. This process has proven especially useful with curved and irregular shapes.

All these functions were put to good use on this project and will be used in the future as the Leica 3D Disto has found its place in LESCAD's (www.lescad.si) toolbox. ■

About the author:

Anna C. Seidel is a Surveying Engineer and freelance writer based in East London, South Africa.

anna.c.seidel@googlemail.com



■ Leica 3D Disto provides modeling data.