



Editorial

>> Marc Cheves, PS

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A FOOT IN THE PAST... AN EYE TO THE FUTURE

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The 3D Train

The winds of change continue to blow, and blow they did in Denver. At the January 2012 International LiDAR Mapping Forum (ILMF) we proudly launched our latest venture, *LiDAR Magazine*, the only contemporary geo-publication dedicated solely to LiDAR technology. ILMF, now in its 12th year, attracted more than 700 registrants and offered beginner to expert sessions, complete with a well-rounded exhibit hall and plenty of networking opportunity. Some of the high-level technical sessions at ILMF pertained to the science behind LiDAR, covering such things as bare-earth DEMs derived from point clouds gathered with leaves on versus leaves off, and even more exotic subjects such as echo digitization and waveform analysis. But there were also plenty of basic sessions for the folks just now investigating this inevitable technology.

To the everyday surveyor, much of this is still uncharted territory. If you're in a position to diversify, this is a great event to attend. Rather than fill *The American Surveyor* with this information, we've chosen to offer it through a separate magazine—if you want to receive it, just ask. We've also worked to find the middle-ground, or topics most relevant to traditional surveyors. At ILMF, we caught up with an old friend, Joe Betit, who has researched the 3D field for years, relentlessly investigating opportunity rather than waiting for someone else to do it for him.

Survey managers like Joe, who co-wrote last month's cover feature about the Bechtel subway project in northern Virginia, are using every technology they can get their hands on to effectively manage projects. "There is no one single silver bullet," says Betit. "Complex infrastructure environments now require integration of high accuracy 3D survey systems, construction management database systems, robotic and GPS surveying for layout and as-builts, engineering 3D CAD models, laser point clouds, construction management and scheduling. Data interoperability and integrated 3D survey/construction systems are the keys to success."

According to Betit, 3D imaging technologies are valuable for structure monitoring, surface deformation, clearance verification, the monitoring of crane movements under bridges and overhead wires, ground and adjacent structure topographic mapping, train platform clearances and as-builts.

Scanning-wise, Betit has used Riegl mobile mappers, as well as Riegl, Trimble and Leica scanners for static scans. To integrate conventional surveying tasks with scanning tasks, he has placed his scanning staff alongside the survey monitoring and control densification group. As the saying goes, iron sharpens iron.

Since the dawn of recorded history, mapmakers have translated our three-dimensional world into two dimensions. At ILMF, Lewis Graham, CTO of GeoCue Corporation, made a presentation during an ASPRS Hot Topics session and predicted that within five years all imagery will be 3D. As I have talked with surveyors across the country, I have encountered quite a few who don't want anything to do with scanning. Granted, it's always been pricey to get into it, but with the prices for scanners approaching that of the price for a robotic total station, and a less than rosy horizon for traditional land development surveying, the 3D Train may be just the ticket. *A*