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COMPREHENSIVE BUSINESS NEWS

Engineering firm invests in efficiency

New LIDAR 3-D laser scanner has price tag of about \$150,000

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Anderson Engineering Inc. has invested thousands of dollars in new technology that allows it to capture images at a rate of several thousand per second.

The company's purchase of a light detection and ranging – or LIDAR – 3-D laser scanner for its survey teams is the latest example of its efforts to keep up with technological advances, said Vice President Jerrod Hogan.

Anderson Engineering paid \$150,000 for its LIDAR laser scanner, Hogan said.

"It's a big investment, but we believe it's going to open up new markets for us," he said.

Anderson's willingness to invest in the LIDAR stems from increased efficiency at survey sites. Hogan said survey teams now include two to four people using a traditional scanner that shoots as many as 1,000 pictures a day – on a good day.

"The LIDAR shoots 50,000 points per second, and it's just as accurate as the current equipment," he said.

The LIDAR scanner also collects data in a tighter time frame and reduces the need to scan from hazardous locations. Its visual data can easily be interpreted, Hogan added.

Hogan said LIDAR takes a continuous scan of the survey area, recording millions of points for highly accurate measurements. It uses robotic mirror and rotation controls along with a laser range finder and an internal digital camera to create a "point cloud" that is transferred to a geographic reference system, Hogan said. Every point in the cloud represents a real-world coordinate and elevation.

"Ever since I saw it, I knew it was cool, and I knew it was coming to our industry," Hogan said. "I'm

confident this technology will be around for a long time."

Because it's still fairly new, LIDAR is still cost prohibitive for many businesses, said Dianne Slattery, associate professor of technology and construction at Missouri State University.

"The traditional survey stations were about \$100,000 when they first came out," Slattery said. "But as time goes by, the price goes down. I think (traditional survey stations) are maybe \$7,000 now. I think as more companies begin to use the LIDAR scanner and more vendors start selling it, the price will go down."

Hogan agreed, noting that when his company saw the first LIDAR demonstration about four years ago, it cost a lot more.

"We couldn't justify the price – it was about \$250,000 then," he said.

Slattery said her department integrates the LIDAR scanner into some of its classes. One student project entails scanning the interior of the former Willow Brook plant to see how the building might best be rehabilitated. Slattery said MSU also used the scanner to provide research for the Illinois Department of Transportation, measuring how much earthwork might need to be done at specific project sites, or how much reconstruction might need to be done at deteriorating bridges.

"It provides rapid information from the side of the road," Slattery said, noting that its applications include developer use for building rehabilitation.

"In half an hour, it can produce literally millions of data points," she said.

While software and training are required to produce drafts from those images, Slattery said the upside is that once the scan is done, the rest of the work can be done at



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Anderson Engineering associate surveyor Ref Bagley sets up the company's LIDAR 3-D laser scanner, which markets for roughly \$150,000.

the office.

"There are also new integrations of the unit, such as a mobile LIDAR – which (the Missouri Department of Transportation) is looking at for its pavement management – and an airborne LIDAR, which is where we get things like Google Earth. There's a lot of cool stuff going on," she said.

Anderson's Hogan has seen broad interest as well, such as police departments who are considering using LIDAR at crime scenes to expedite data collection, and use in the public works sector for accurate measurement of flood plains and for mapping streets and intersections.

"Any kind of construction or engineering company is going to benefit from it," Hogan said. "It's so much more efficient than anything we have now, and it cuts down on time. It will definitely pay for itself."