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Working in a
Machine-Controlled World

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CASE STUDY

Learning the benefits of GPS machine control.

“If you got rid of your GPS-controlled excavation equipment, I would quit and go to work for someone who had it.” This was the tongue-in-cheek comment a senior equipment operator made to Dave Van Vactor, founder of Van Vactor Construction (VVC), a progressive construction firm located in Plymouth, Indiana.

His operators don't need to worry, though, because Van Vactor recognizes the application and potential of his machine control equipment. “Anyone who has studied engineering appreciates the unlimited possibilities brought about with the proper application of that science,” says Van Vactor, who holds degrees in science and business. “Let's face it, engineering is all about doing something in the most efficient and cost-effective manner possible. When you accept that truth, your efforts to improve quality and efficiencies of production are more easily attained.”

In 2005, Van Vactor's desire to increase efficiency attracted him to the Leica Geosystems' (www.leica-geosystems.us) booth at World of Concrete. After conversations with Leica Geosystems' representatives at the show, he invested in one of the company's GradeStar GPS systems because the benefits made sense to him—about 20 percent time savings and associated cost reductions related to materials, labor, equipment wear and even fuel.

After purchasing the Leica GradeStar GPS system, Van Vactor managed the learning curve required to fully utilize the technology. He used VVC employees with a strong engineering flare to handle the equipment, and was aided by highly



skilled and experienced Leica Geosystems' representatives. Van Vactor asked his site engineer, Territorial Engineering of Walkerton, Indiana, to provide site topography profiles that digitally interface with GPS-controlled grader systems.

The opportunity to test the GPS equipment was provided by a contract VVC won for Toll Brothers, one of the nation's leading builders of luxury homes. As part of its Midwestern expansion, Toll Brothers planned a new manufacturing plant in Knox, Indiana, to produce wall panels, trusses, signature millwork and other house components. VVC won the contract to execute the entire project, which called for surveying, site clearing, resurfacing and the actual construction of the facility on the 32-acre site.

VVC equipped its John Deere (www.deere.com) 700J dozer and its Volvo (www.volvo.com) Champion G740A motor grader with Leica Geosystems' GradeStar system, which can be used with terrestrial positioning equipment such as lasers and total stations, as well as GPS, while incorporating a daily setup strategy. The system's automatic side-shift function, which allows the operator to easily locate and build the exact edge of the road or structure without any alignment reference while maintaining accurate grade, was a welcomed feature since this irregular site was challenging.

Van Vactor's future plans call for increased machine automation with the purchase of two scrapers that will be equipped with Leica Geosystems' GradeStar GPS systems. He believes a trickle-down effect takes place when such technology is incorporated, ultimately resulting in a surge of confidence for his employees as they begin to feel more and more at ease with such advanced equipment. “The high quality of our work with this GPS equipment is a given,” Van Vactor says, “but mainly we save time because of dramatically increasing our accuracy. In this business, when we have a history of saving time and money while producing high quality work, new projects always come our way.” **SP**

