



New tool for an old problem

Charlotte-based
BLUERIDGE Analytics
creates high-tech solution
for evaluating options,
costs in site development

photo NANCY PIERCE

Mike Detwiler's pitch for his firm's SITEOPS technology addresses developers' pocketbooks — the software can present any number of scenarios for site development with costs attached, all within 24 hours or less. Lowe's Cos. Inc. is a client, and Detwiler is shown here at a site in Concord where the home-improvement retailer is preparing to start construction of a store.

Police officers and firefighters have dangerous professions, but real estate developers will tell you they face another kind of risk on every deal.

While building and land costs are readily determined, site-development costs — which can easily equal a third of overall project expenses — are often a complete unknown. Without knowing what unpleasant surprises lurk below the surface, owners often follow gut instinct and assume they can keep land-development costs in line when they decide to purchase a property and pursue a project.

A Charlotte-based software development company thinks it can remake that risk formula with a tool called SITEOPS.

BLUERIDGE Analytics, based in South End, developed the program, testing it initially with Mooresville-based Lowe's Cos. Inc., which was looking for a way to cut site-development costs for its massive store-building program.

The technology allows real estate developers to do a quick assessment of a site and decide more quickly and with better assurance that a project's development costs won't torpedo its profitability.

SITEOPS relies on predictive analytics — the same technology that allows computers to beat humans at chess — to consider innumerable site designs and the costs of each in a fraction of the time it takes civil engineers to work up such numbers. The system will offer choices for siting a building, grading, building retaining walls and stormwater drains, among other variables, and spit out a cost estimate. Modifications that improve efficiency can readily translate to significant savings. SITEOPS, its proponents say, can think faster and handle more moving parts at once than an engineer.

"We only have limited information and we try to make our best guesstimate on what site costs are to develop property," says Timothy Dock-

ery, founder and partner at The Crown Cos., a Dobson-based development firm working in the Triangle and Mooresville that has adopted SITEOPS. "That's risky business for us."

BLUERIDGE Analytics launched in 2003 to create a computer program that could read a CAD file and calculate design options and their cost.

Mike Detwiler, who had led his own management-consulting firm, joined the company that year and oversaw product development. Five full-time evolutionary computing researchers on staff wrote the program and repeatedly retooled it to consider a multitude of circumstances that might arise at a development site. The key was to figure how the scenarios would impact a developer's bottom line.

By 2005, the company had built its product and was ready to test it.

Executives at Lowe's, which opens more than 100 stores a year, were kept abreast of the com-

pany's progress and agreed to serve as a beta tester for the program.

"Lowe's was very instrumental," Detwiler says. "We worked closely with their civil engineers and management team to build the product."

Lowe's is now one of the company's leading clients, as is Target Corp.

As the software gained momentum, BLUERIDGE Analytics hired Heather Palmer-Palavido as VP of Product Development to take the product to the commercial market. SITEOPS rolled out commercially a year ago.

SITEOPS functions as an Internet-based service. Clients buy a subscription for \$1,000 per acre, with the cost varying depending on project size. BLUERIDGE estimates savings have averaged \$15,000 an acre in development costs.

"Every project we've run through SITEOPS has saved money every time," Detwiler says.

Typically, the only way developers get a good estimate for land-development costs is to do a full design and submit it for bids. That process can take six to nine months, a luxury few developers have. More often, they decide to buy land and then deal with site problems as they arise.

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Its system crunches numbers and considers thousands of iterations of potential designs, simultaneously considering cost and building-code requirements. It minimizes paved areas where possible, moves a building if necessary to avoid rock outcroppings and retains the necessary number of parking spaces.

The final report includes cost breakdowns for clearing, grading cut and grading fill, transporting any excess material from the site, the cost of retaining walls and the size and cost of drainage



Palmer-Palavido

pipes. Results are back in 24 hours, and usually in less than six hours, for a 15- to 30-acre site.

"We've saved money on sites as flat as a pancake," Detwiler says. "When you get into difficult terrain, it's a no-brainer."

Developers have found the service helps them determine the areas of a site where it's easiest to build. The process can also provide savings by showing additional acreage is not necessary for a development to work.

"We have demonstrated to big-box retailers that they can easily save \$100 million" over time, Detwiler says.

"When you first mention it to civil engineers, they draw back a little bit," says Daniel Barnes, a civil engineer and partner at The Crown Cos. "But it's not meant to replace civil engineering. It's meant to be a tool to an engineer."

All final site designs must be certified by a licensed civil engineer. On projects that use SITEOPS, civil engineers will verify all of its considerations and costs before giving their stamp and sending it for regulatory approval, Barnes says.

Some civil engineering firms have begun using the program for their customers and see it as a competitive advantage.

"It gives us a final design with actual true numbers that we can utilize from the get-go and be able to come up with better lease numbers for a tenant," Barnes says.

Landon Wyatt, a partner at Childress Klein Properties sees potential in the program, but the company has not used it.

"It certainly is one of the biggest risks we take," says Wyatt, who oversees the firm's industrial-development division. "It's an enormous risk in industrial. Office footprints are much smaller, but large industrial sites have a small tolerance for grade changes."

Subscribers are awaiting BLUERIDGE Analytics' launch this month of the software's next generation, called SITEOPS Multi Pad.



Bringing science to bear on an age-old problem

Mike Detwiler is leading BLUERIDGE Analytics' charge to revolutionize the land-development process.

Instead of calculating site designs for a lone building, the system will juggle the components of an entire shopping center. Detwiler expects it to greatly increase demand as SITEOPS becomes more useful for large developers.

The company is also fine-tuning a version for release next year for application in highway construction.

BLUERIDGE Analytics won't reveal details about its finances, but Detwiler says the company is in its third round of funding. Investors include real estate developers, engineering firms and land developers. The company has nine U.S. and international patents pending for its product.

Its staff has grown to 25, including six salespeople around the country.

"We are doing five demos a day to major players," Detwiler says of the sales team. "The value proposition is so strong that demand has been amazing."

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Wyatt