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We will be using more BIM and Revit with energy modeling on all sustainable projects moving forward."

—Keith G. Pehl, P.E., LEED
President/Electrical Engineer
Optima Engineering, P.A.

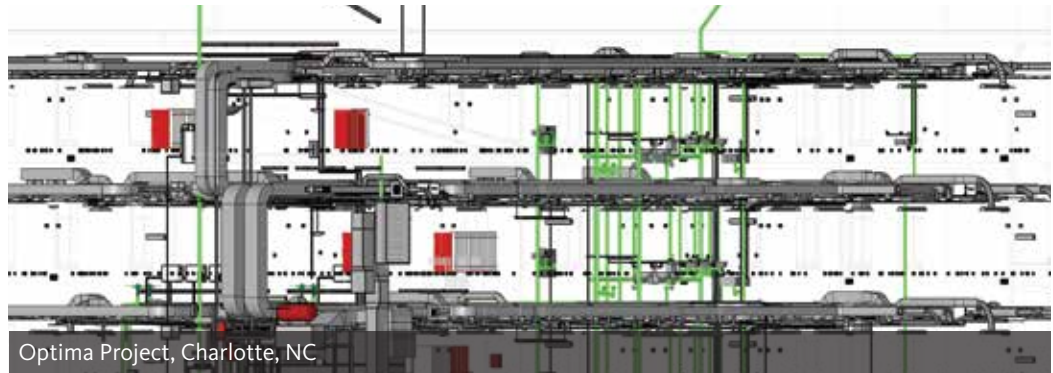
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Embracing Sustainability with Clash Detection and BIM

Optima Engineering utilized Autodesk® Navisworks® Manage clash detection during the design phase of the **Warriors in Transition** building for the Army



Optima Project, Charlotte, NC

Company Overview

Optima Engineering is a multi discipline, professional engineering firm specializing in mechanical, electrical, plumbing, fire protection, lighting, sustainable design, commissioning and energy audit services. The firm has positioned itself as a leader in sustainable design for the industries it serves. Over the past 8 years, Optima has positioned itself as a pioneer in the green building industry in North Carolina. Five years ago, they decided to practice what they've preached in constructing the first LEED Platinum building in Charlotte, North Carolina.

Working through the LEED process for their headquarters, with a solar PV system and solar water heating, Optima found they were motivated to truly embrace sustainability. With the industry focused on energy consumption, efficiency and savings within building systems, Optima is endorsing the 2030 Challenge. Keith G. Pehl, P.E., LEED AP BD+C, President/Electrical Engineer says, "We are striving for net zero energy and carbon impact by 2030. In order to make this a reality, we are actively seeking visionary clients."

Business Problem/Compelling Event

In 2009, Optima was awarded a contract for The **Warriors in Transition** (WIT) building for the U.S. Army Corps of Engineers who mandated BIM. The 3-story office

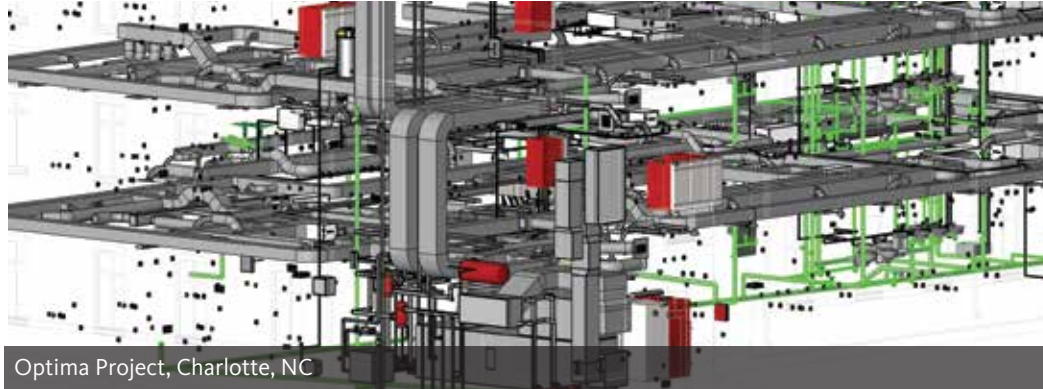
building, designated for the Warriors Transition Unit in Ft. Stewart, GA had to meet strict federal guidelines with efficient, sustainable design, while providing a quantifiable cost savings within the building systems.

This is where the design-build team's collaboration in Autodesk Revit became necessary. Optima needed to align all of the project partners through Building Information Modeling (BIM) in order to coordinate clash detection using Autodesk Navisworks Manage and Revit software. In order to do this, they needed to upgrade their entire software system with AutoCAD, AutoCAD MEP, Revit MEP, Navisworks Manage and Building Design Suite Ultimate.

The Solution

Optima turned to Advanced Solutions early in the BIM process to guide them through the project. Over a six month timespan Advanced Solutions helped them implement an entirely new software with systems upgrade, they provided customized personal training with each member of their team, as well as all collaborative partners. Advanced Solutions phased in each new software system and used it within the WIT project using actual models and specifications, giving a "real world" training experience. The continued flexibility of the Advanced Solutions trainer and being able to adapt the training in conjunction with the challenges of the actual project created a strong partnership between each firm, the

Avoiding costly mistakes with Autodesk Navisworks Manage and Autodesk Revit



client and Advanced Solutions. The training and implementation of Autodesk Navisworks Manage enabled clash detection, which alerted the team to a potential \$75,000-\$100,000 error within the initial Warriors in Transition project specifications. With what could have easily been a costly mistake in the field, detected within the modeling stages of the project, Optima was able to see the immediate ROI of this new software integration.

Performance

Optima came to rely on more than just the customized, project-specific training provided by Advanced Solutions during the BIM adoption process, as even network and hardware issues were addressed during the process. As a result, a hardware upgrade was necessary in conjunction with the software adoption to allow consistent access to Autodesk Revit for everyone on the project. "Advanced Solutions was very flexible, adapting to what we were seeing with the project, what others involved were noticing and with any and all challenges thrown their way," said Pehl.

In addition to being provided all costs and training time estimates in advance, Optima was able to purchase a block of service hours to be used at their discretion enabling the team to call on Advanced Solutions' specific areas of expertise when needed.

Results & Benefits

By the end of 2013, Optima expects over half of their major projects will be completed in Autodesk Revit. They are seeing the transition take place with over 120 of their current customers. Optima recognizes they would not have been able to cultivate a majority of their newer clients without having the latest MEP software. "Given the choice our guys would rather work in Revit on all projects," says Pehl.

Using Autodesk Navisworks Manage on the back end of this project has been beneficial in their design process and has enabled better BIM capabilities with a drastic decrease in change orders resulting in a noticeable return on investment.

Final Thoughts

Evolving each team member's perspective with the project specific software implementation has been one of the major building blocks in working with Advanced Solutions. A level of trust has been cultivated, which has allowed the entire team on the Warriors in Transition project to grow beyond expectations. The continued collaboration with regards to time, financial constraints and a real world training situation, has shown a true valued partnership with a willingness to solve challenges as a team.

"We will be using more BIM and Revit with energy modeling on all sustainable projects moving forward," says Pehl. "We now have a long term relationship with BIM and Advanced Solutions," he added.

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