MOMENTUM

Mueller

Winter 2008

ALL SYSTEMS **GREEN**

From Higher Ed to Historic, Sustainable Strategies Set the New Standard

Duke University sought efficient, environmentally friendly building systems for its new School of Nursing.

Ambitious green strategies are highlighting the design of a number of new buildings in the region, including several for higher education campuses. Mueller Associates has engineered innovative mechanical/electrical and plumbing systems for many environmentally friendly buildings in recent months, working closely with owners, architects, and LEED consultants to conserve natural resources through advanced concepts in sustainable design.

The 71,000-square-foot School of Nursing building at Duke University in Durham, North Carolina, which opened last year and was designed by Ayers|Saint|Gross, is designed to meet LEED® certification standards through a host of sustainable strategies, including a high-performing, energy-efficient lighting system, a metered MEP system that monitors energy use, and several water conservation measures incorporated into the plumbing design. "The approach taken at Duke's new School of Nursing is one that not only signals respect for the environment, it's clearly designed to minimize operating costs," says Yancy Unger, PE, LC, project manager for Mueller Associates.

Another nursing school project is taking a similar approach to reduce overall operating costs and use of natural resources. At The Johns Hopkins University in Baltimore, where a 135,000-square-foot expansion of the nursing school is underway, sustainable measures are considered critical to the project's success. "From the beginning, the Hopkins project team focused on incorporating green design concepts," says John Morris, PE, Mueller's project manager. "They have been very conscientious about energy efficiency and water conservation."

Designed by Ziger/Snead, the addition will feature a green roof and a dedicated outdoor air ventilation system that controls the ventilation rate in high-occupancy spaces in the building. There is also heat recovery implemented in the air handling systems, radiant floor heating, lighting controls, and a daylighting control system.

"Johns Hopkins University is very excited about this project and is dedicated to designing and building an energy-efficient building," says Jennifer Dawson, senior project manager for Johns Hopkins University. "We continue to review sustainable initiatives and incorporate what is financially appropriate for the project." Construction will start in late fall next year with an anticipated completion in late spring 2010.

At Maryland's Salisbury University, the new 165,000-square-foot Teacher Education and Technology Center (TETC) will feature its own high-efficiency chiller plant with optimized chilled water distribution; and a demand-controlled ventilation system, with carbon dioxide sensors that control appropriate levels of outside air depending upon the number of people in a room. Nearing completion, the TETC was designed by Ayers|Saint|Gross.

State-of-the-art university campuses are not the only settings for green design. At Virginia's historic Monticello, once home to Thomas Jefferson, a new visitor and history center is being designed to LEED® Gold standards. Geothermal water-to-water heat pumps, variable air flow units, water-conserving plumbing fixtures, central lighting controls, energy use metering, carbon dioxide sensors, and highly efficient HVAC equipment will ensure that the 42,000-square-foot space provides enhanced visitor comfort while minimizing energy use and life cycle costs. Designed by Ayers|Saint|Gross, the center is currently under construction.

REVIT® REVS UP PRODUCTION

New Software Supports Building Information Modeling

Now under construction, the new University of Delaware Admissions Center will soon help create an all-important first impression for new and prospective students as they visit the Newark campus. But long before the doors open and the students arrive, the Admissions Center has been the source of another important "first." The 30,000-square-foot building was the inaugural project completed by Mueller Associates using Revit® MEP, an advanced new software system for building design.

Programmed to support the latest concepts in building information modeling (BIM), Revit® enables architects and engineers to coordinate design work in real time—enhancing workflow, communications, and the level of detail in construction documents. Working closely with Ayers|Saint|Gross, the architect of the Admissions Center, the Mueller project team found that the innovative software tool enabled them to keep a close watch on any potential design changes that might affect the mechanical, electrical, and plumbing engineering as it progressed.

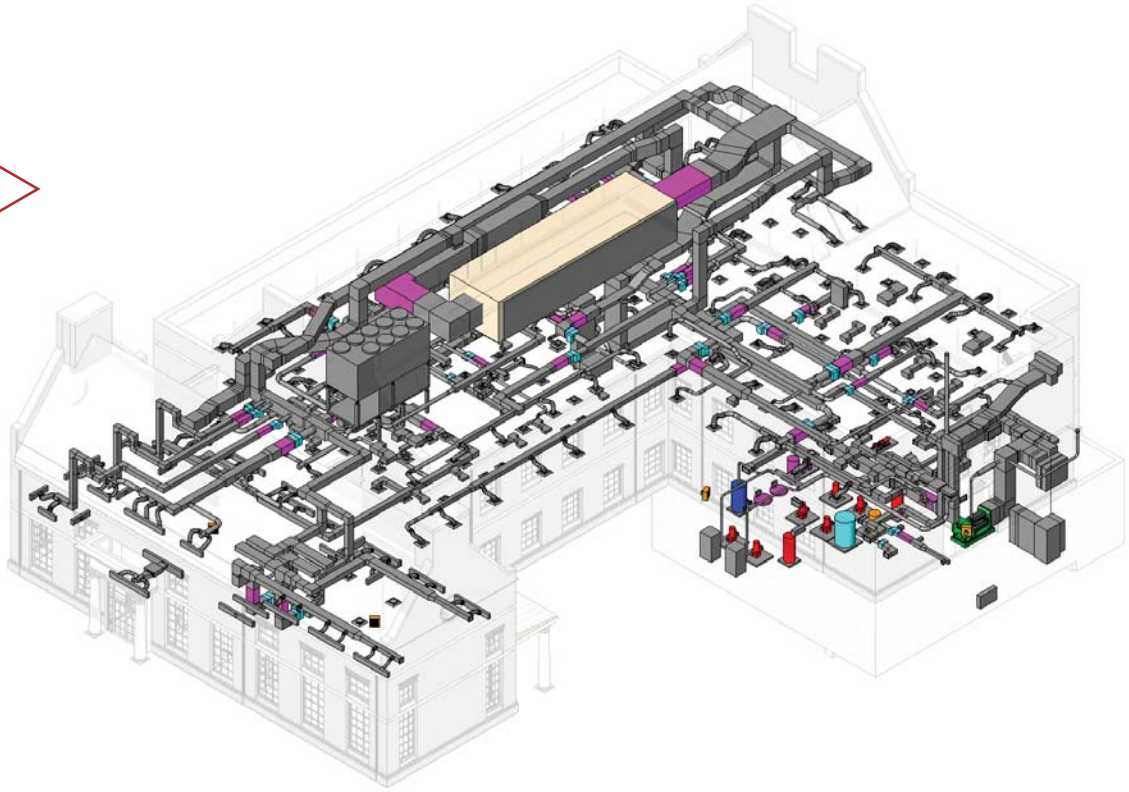
"Revit® is a parametric modeling tool," says Mueller Project Manager Todd Garing, PE. "The software enables us to work collaboratively with the architect and other members of the design team. It creates an electronic model for the building with all of the details linked to the same database. For example, we were able to immediately see how architectural or structural design changes might impact the positioning of our engineering components, such as ductwork. We were able to resolve issues quickly.

"The program is very intelligent, and it's detailed," Garing adds. "We can focus on a component, such as a pump, and cite all of the relevant information—capacity, pressure, motor size, and so on—within the database."

Many of Mueller's engineers have become proficient in the Revit® program, including Matt Danowski, an electrical engineer who has written about the software and been an active participant in the Autodesk User Group International. "It's the future," notes Garing. "We hope to use it more and more frequently as the architectural community embraces it."

"ASG has taken a leadership role in the deployment of BIM technology for architectural design," says Glenn W. Birx, AIA, LEED® AP, a principal with Ayers|Saint|Gross. "We are pleased that Mueller has supported us in the use of REVIT in MEP design."

The Whiting-Turner Contracting Company is currently building the new Admissions Center at the University of Delaware, one of the first higher education projects in the region to be designed using the new Revit® software.



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