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Blythe Marlow
Mechanical Engineer
Affiliated Engineers, Inc.

High value, smart solutions.

Affiliated Engineers, Inc., delivers improved productivity, accuracy, and coordination on the new Comer Children’s Hospital Pediatric Emergency Department at the University of Chicago with Autodesk® Building Systems software.

Project Summary

Affiliated Engineers, Inc. (AEI) knows its business—the design and creation of high-performance, technically complex buildings. That’s why their state-of-the-art mechanical, electrical, and plumbing (MEP) engineering design solutions have earned the firm a nationwide reputation. And kept clients coming back. From seven offices across the United States, the firm’s 460 engineers, designers, drafters, and support staff serve diverse markets, including higher education, health care, medical science, research and development, industrial, process, historic preservation, and commercial office space. To help improve its level of service, AEI began using Autodesk Building Systems design and documentation software in 2003. “One of our goals is to provide complete, correct, and coordinated drawings for our clients,” says Paul Petska, Managing Director for AEI in the firm’s Madison, Wisconsin, office. “We recognized that Building Systems could help us meet those delivery goals,” says Petska. Since adopting the new software, AEI has begun five major projects—including the 142,000-square-foot Comer Children’s Hospital Pediatric Emergency Department addition at the University of Chicago.

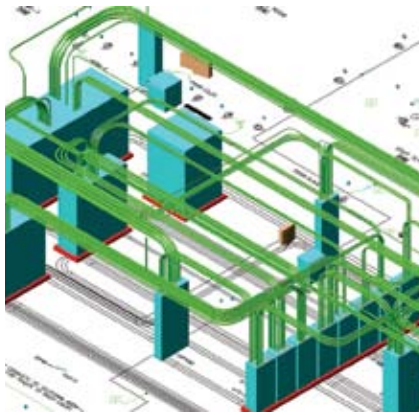
Coordination Challenge

“The Comer 2 project includes four floors, a basement, and a mechanical penthouse,” says Petska. “And although it’s attached to the existing children’s hospital, it is very much a stand-alone project.”

“Limitations within the ceiling plenum were a major issue,” continues Petska. “It was a very congested ceiling, with all the mechanical and electrical systems common to any health-care facility. We also had to coordinate our work with many other systems, such as the pneumatic tubes.”

Critical Needs

AEI engineers also had to ensure that the Emergency Department was isolated from adjoining spaces so as to prevent the spread of airborne infectious disease. “We had a dedicated supply and return for all the offices and exam rooms,” says Blythe Marlow, an AEI mechanical engineer. “As a result, we had multiple exhaust risers branching out to multiple spaces within the first floor and lower level.”



Affiliated Engineers, Inc., uses Autodesk Building Systems software on the Comer Children's Hospital Pediatric Emergency Department at the University of Chicago addition to

- *Provide an additional tool in assuring complete and accurate project documentation*
- *Better communicate design intent*
- *Improve coordination with project architects*
- *Significantly enhance client relationships*
- *Increase repeat business*

The Solution

To overcome these and other complex challenges, AEI chose to use Autodesk Building Systems, an AutoCAD® software-based building design and construction documentation solution for mechanical/electrical/plumbing engineers, designers, and drafters. And to ensure smooth implementation, AEI relied on reseller Master Graphics and Autodesk Consulting for training and customization. The implementation team helped define the standard and criteria for a successful project—as well as success with the software going forward. “The experience was very positive and helpful,” says Marlow.

Collaborate Seamlessly

Using Autodesk Building Systems, AEI was able to immediately reference the architectural plans for the project, developed with Autodesk® Architectural Desktop software by the architects at SmithGroup and structural engineers at Thornton Tomasetti Engineers. By taking advantage of the AutoCAD-based architectural and engineering workflows between these firms, they were able to provide an even higher level of accuracy and coordination in their design and documentation.

Improve Coordination with Architects

The 750 architects, designers, and support staff at SmithGroup excel at the planning and design of health-care facilities, government buildings, and higher-education institutions. SmithGroup found that the improvement in coordination resulting from both firms using Architectural Desktop and Building Systems together yielded a significant benefit: “A better designed building to our client in less time,” says Jens Mammen, studio leader for health care at SmithGroup.

Get Immediate Design Feedback

“AEI has always been an engineering firm that takes pride in producing highly coordinated documents,” says Marlow. “Autodesk Building Systems has helped us do that faster. Now when I draw a piece of ductwork or a pipe or a light, I get realtime feedback and know immediately whether that coordination fits.”

Identify Obstacles Sooner

AEI designers used interference detection to help ensure drawing and discipline coordination. “Building Systems helped us integrate pipe and duct routing as we started extending into the exam rooms and trauma spaces,” says Marlow. “This process was very successful.”

Communicate More Effectively

Building Systems also helped AEI engineers communicate more effectively with the university's project manager. “We were able to walk him through critical pinch points and room layouts,” says Marlow. “We cut virtual sections in real time, walked him through the building, and then got immediate feedback.”

The Result

The Comer Children's Hospital Pediatric Emergency Department at the University of Chicago will be complete in 2006. Based on the firm's success with that and several other early projects, the executive committee at AEI embraced Building Systems.

Based on the firm's success with that and several other early projects, the Executive Team at AEI has embraced model based design. “We anticipate that drawing-based modeling solutions such as Building Systems will become an integral part of the firm over the next five years,” says Petska.

To learn more about Autodesk Building Systems, visit www.autodesk.com/buildingsystems.

The Reseller

AEI relied on a 30-year partnership and MasterGraphics' expertise to recommend and implement an Autodesk solution that would enhance their current systems, processes and values. MasterGraphics' MasterAcademy Professional Learning program and dedicated support resources ensured a smooth transition to the new system.