

COMPANY

The Ohio State University

LOCATION

Columbus, Ohio, United States

SOFTWARE

Autodesk® Building Design Suite Ultimate

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—**Joe Porostosky**

Senior Manager of Facilities Information and
Technology Services
The Ohio State University

Model university

The Ohio State University turns to BIM to drive better, faster facilities management decision making

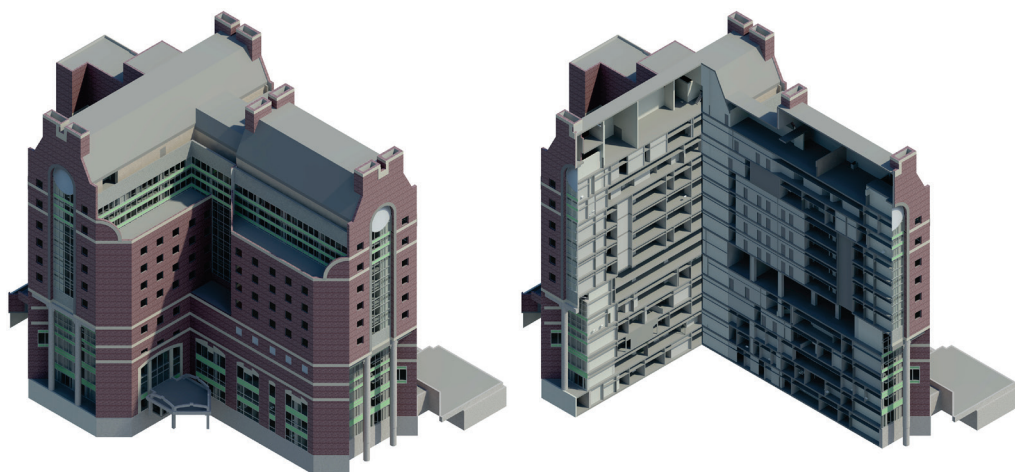


Image courtesy of The Ohio State University.

Introduction

The Ohio State University (OSU) is among the top public universities in the United States. With a total enrollment of more than 64,000 students, it's also one of the largest. Managing the facilities that serve the OSU community is no small task. There are more than 507 buildings just on OSU's main campus, including 53 at the school's medical center. The facilities information department at Wexner Medical Center at The Ohio State University recently undertook an ambitious initiative to bring the power of Building Information Modeling (BIM) to the way it manages its buildings. Thanks to the success of the initiative, OSU decided to extend the BIM program to its main campus.

Most commonly associated with building design and construction, BIM is a process that uses intelligent, digital building models to add value to the building lifecycle. Using Autodesk® Revit® software*, OSU is in the process of creating 3D models of all its buildings. "We've found that working from models helps us understand our buildings and collaborate more effectively with the people who use them," says Joe Porostosky, senior manager of facilities information and technology services for OSU. "The core benefit of BIM for us comes down to being able to make better, more cost-effective decisions faster."

With BIM and support from Autodesk Revit software, OSU has been able to:

- Save time and money on planning building renovation projects
- Improve and accelerate facilities management decision making
- Increase user satisfaction with renovation results
- Provide better building information for projects aiming to reduce energy consumption

The challenge

Wexner Medical Center has long used 2D building plans in its facilities management processes. Its facilities information team relied on Autodesk® AutoCAD® software to help document and communicate equipment locations, safety plans, and space usage. Though valuable as documentation, the 2D plans weren't readily understandable to decision makers not accustomed to reviewing building drawings. The 2D plans also lacked the intelligence that would have allowed them to contribute to energy consumption analysis.

BIM saves time and money on renovations

“Because it’s based around 3D models, BIM allows people to visualize and understand a building in ways simply not possible with 2D,” says Porostosky. “We thought BIM could improve our planning, renovation, and energy analysis processes, and decided to find out. Our team created building models for many of the buildings at Wexner Medical Center to explore the value of BIM for facilities management and planning.”

The solution

The facilities information team chose to use Autodesk Revit software, available as part of the Autodesk® Building Design Suite Ultimate edition, to develop models of the Wexner Medical Center buildings. Prior to creating the models, they collaborated with Brian Skripac, director of digital practice at Astorino, to establish the standards for the amount of detail required and a process for developing each model. They then hired several architecture and engineering students to create the models in Revit.

“Having clear standards set us up for success,” says Porostosky. “When using BIM for facilities management of existing buildings, you don’t need all the details that go into construction. We especially wanted accurate representations of interiors and elements that contribute to energy consumption.”

Porostosky adds, “Getting the right details into the models gave us a very powerful tool to improve decision making and plan renovations. We had more than just 3D visualizations of walls and rooms; the models captured and conveyed important details about how we’re using space. After seeing how much we could do with the medical center models, we decided to expand BIM to all buildings at OSU.”

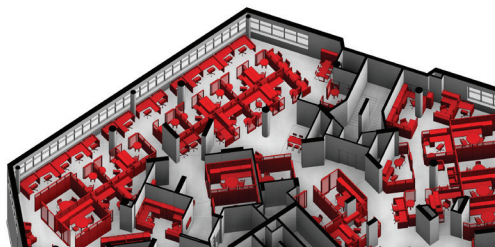


Image courtesy of The Ohio State University.

Better renovation decisions

When planning a large or small renovation, OSU now turns to BIM to help plan the project. The facilities information department shows building users a model of the proposed changes early in the planning process. Building users can see what the changes may look like, and recommend modifications to the plan. When the plan is ready, the facilities department or a subcontractor can implement the changes by following the details in the model for smaller renovations. For larger renovations, OSU can use the model to help communicate the changes to the project design team.

Porostosky explains the role of BIM on a recent renovation: “We planned to turn one floor of a circular tower on campus into office space. Using Autodesk Revit, we modeled the floor with the addition of cubicles and partitions. The future users saw the plan and immediately suggested modifications that would better match the way they worked and increase the amount of natural light in the space. Capturing and implementing their feedback took very little time. Making those changes after construction would’ve taken time and cost thousands of dollars.”

According to Porostosky, BIM has proved particularly valuable for office renovations for new high-level hires. In the past, the facilities information team sent a few sample 2D office layouts to new leadership hires. The new hires would select a preferred layout and make suggestions, but often, when they arrived at their offices they were surprised by the results of their selections. “Requests for changes were common, but not anymore,” says Porostosky. “New hires review and comment on a 3D model. We apply their preferences in Revit and secure final approval before modifying the office. When new hires arrive, they hit the ground running with an office that looks exactly as they expected.”

Reducing energy consumption

OSU has ambitious plans to reduce its energy consumption drastically over the next decade—and BIM is already playing a role. The facilities information department has begun sharing its Revit models with the team conducting energy use analysis for the university.

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Image courtesy of The Ohio State University.

“Compared to 2D plans, the Revit models are more accurate and easier to use with the team’s energy analysis software,” says Porostosky. “We’ve just started applying BIM in energy use analysis, and it’s likely to play a key role in helping OSU achieve its goal of being carbon neutral by 2050.”

The result

As OSU continues its push to develop intelligent models of more than 35.4 million square feet of interior space, Porostosky sums up the overarching value of BIM for the university: “For us, BIM is a communication tool that improves decision making. It brings people without design or drafting experience into space planning and other facilities management processes. Ultimately, our facilities better meet the needs of users without as much time-consuming back-and-forth and expensive rework.”

*Autodesk Revit 2014 software is only available as part of the Autodesk® Building Design Suite 2014 Premium and Ultimate Editions and Autodesk® Infrastructure Design Suite 2014 Ultimate Edition.