

## SmithGroup

Customer Success Story

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Autodesk® Revit® Structure  
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Autodesk Consulting

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—Eric Watson  
Project Architect/Designer  
SmithGroup

# Facing the future with BIM.

SmithGroup succeeds with diverse building types using Autodesk® Revit®-based software.

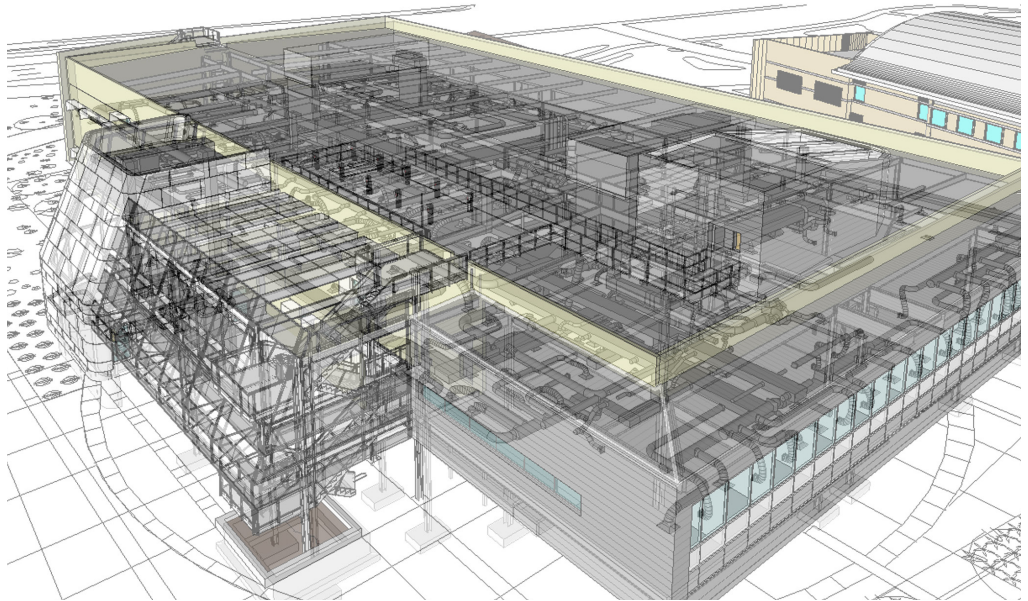


Image courtesy of SmithGroup.

### Summary

Founded in 1853, SmithGroup is the longest continually operating architecture and engineering firm in the United States. Headquartered in Detroit, Michigan, the company has created many of that city's most famous structures, including the Detroit Opera House (in 1868), the Detroit Public Library (1932), the National Institutes of Health Laboratories (1968), the Joe Louis Arena (1979), Ford Field (2002), and many more. These days, the company's reach stretches far beyond Detroit, and it has become known throughout the United States for innovative work on high-profile projects, particularly for the health care, higher learning, and science and technology industries.

A longtime Autodesk customer, SmithGroup recently standardized on building information modeling (BIM) processes and the use of software based on the Autodesk® Revit® platform. Two projects stand out as validations of SmithGroup's success in moving to BIM: the 240,000-square-foot Cardiovascular Research Building (CVRB) of the University of California, San Francisco (UCSF) and the 64,000-square-foot Mesa Community College Southwest Physical Sciences Building in Mesa, Arizona.

### Moving to BIM: UCSF Cardiovascular Research Building

Initiated in 2005, the UCSF Cardiovascular Research Building (CVRB) is the first major SmithGroup project to use BIM processes and integrated project

delivery (IPD) an emerging business model that enables the entire extended team to collaborate early in the process to make the most effective decisions together. By sharing a building information model, architects, engineers, designers, contractors, building owners, and other project stakeholders can add and track discipline-specific changes to the model, significantly enhancing collaboration and improving value for building owners.

Although SmithGroup had used Revit-based software products on smaller projects, including the renovation of its San Francisco offices, a project the size of the CVRB was definitely a new challenge.

Luminita Ruva-Ciupitu, SmithGroup principal and project manager on the CVRB, indicated that the client was asking for BIM processes on the project, and the firm was ready to take on a larger BIM project. "The company has seen enough of BIM and Revit-based software to know this is the way the industry is moving," says Ruva-Ciupitu.

The CVRB also served as the inaugural Revit Architecture project for UCSF, which has since required the software on all future building projects. The large project presented many design, logistical, and financial challenges for the SmithGroup team. "The project got started just when the construction market in California was at its peak," says Ruva-Ciupitu. "Within seven years, we saw a doubling in construction costs. We had to find a way to keep the

project on track financially. What made this project particularly challenging was the fact that we had limited experience with Revit-based software.”

### The CVRB Solution

To train team members, the SmithGroup team engaged Autodesk Consulting’s QuickStart service, providing in-depth, project-specific training, configuration consulting, and on-going mentoring on Autodesk® Revit® Architecture software.

“Our relationship with Autodesk Consulting is excellent,” says Ruva-Ciupitu. “Almost our entire project team was new to the software, and they were trained on the job. The extremely well-organized Revit-based software implementation was essential to the success of our project. Our team was trained in our office, on our systems, over the course of our project. Autodesk Consulting was always there to provide mentoring or answer questions. The consulting support was carefully tailored to our specific needs.”

The CVRB is now about 50 percent complete and already winning acclaim for its innovative design and efficient construction.

“As we progressed, we were able to share the Revit model with our contractors and the owners,” says Ruva-Ciupitu. “We made it essential for each trade or specialty to stay within a predetermined budget. Together with our contractors, we were able to truly value-engineer this building and determine the most efficient ways to address constructability issues and reduce costs.”

### Bringing It All Together: Mesa Community College Southwest Physical Sciences Building

“For me, this was just a must-do.” That’s how Eric Watson, SmithGroup project architect and designer in Phoenix, Arizona, explains the company’s decision to use Revit Architecture for the first time. The project, now complete, is the Physical Sciences Building at Mesa

Community College Southwest in Mesa, Arizona. At 64,000 square feet, the building houses the engineering, geology, chemistry, and astronomy departments.

“Mesa was our first Revit project in the Phoenix office of SmithGroup,” says Watson. “People are very excited about what Revit-based software and BIM can do. When we started working on Mesa, however, people were more skeptical about the possibilities. The biggest challenge was to convince everybody that this is the direction we need to move in and that Mesa should be our pilot BIM project.”

### The Mesa Solution

It didn’t take long for Watson’s colleagues and contractors to see the advantages of the Revit-based software and BIM.

“Using Autodesk Revit Architecture, we were able to share a single 3D model between myself, another project architect here in Phoenix, and the SmithGroup office in Detroit, who do all the lab planning. Since we are all on the same network, we were able to log in and access one file. What was more, on our first Autodesk Revit project we saw a 30 percent decrease in requests for information compared to our previous method, and we had no change orders due to documentation content and coordination.”

A particularly compelling component in the Physical Sciences Building is the planetarium, which serves as both a college study resource and an outreach project to the community. The planetarium is skinned with tiles of a sturdy metal composite that resulted in some problematic compound curves in the design.

“The problem we encountered involved metal panels that were staggered,” explains Watson. “On our model, they were tapering and bending in opposite directions. Revit Architecture enabled us to smoothly blend and stack the shapes for the planetarium skin. The fabricator was then able to

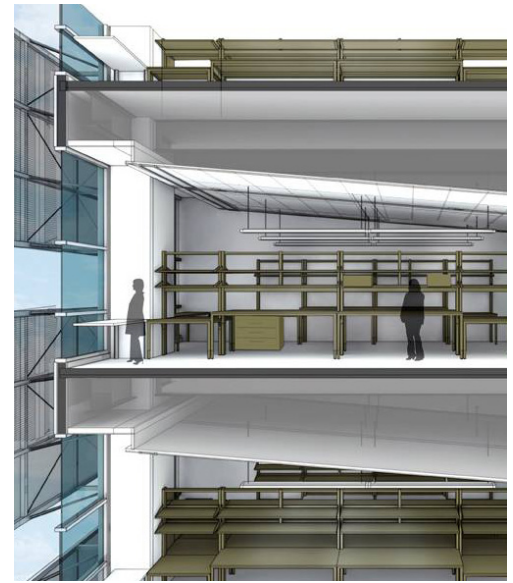


Image courtesy of SmithGroup.

use the model to better understand exactly what we were trying to achieve with the shape. In the end, the project was all virtually coordinated before fabrication began.”

Watson says that his company’s transition to BIM and Autodesk Revit-based software has gone smoothly. “Our transition to Autodesk Revit-based software has been entirely positive,” he says. “Revit Architecture is definitely making things easier for everybody through smoother coordination and the ability to virtually build projects before construction starts.”

For more information about BIM, visit [www.autodesk.com/bim](http://www.autodesk.com/bim).

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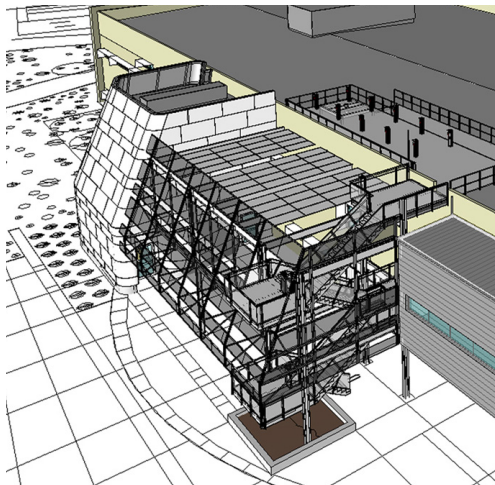


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Principal, SmithGroup