

BIM in Action

This paper provides a real-world perspective from one firm that started experimenting with building information modeling several years ago and is now using Revit Architecture every day for 80% of their work - Oculus Inc.

For architects, engineers, builders, owners and other industry professionals, building information modeling (BIM) is a powerful new way of thinking about their work and how technology supports that work. Since the term was first introduced by Autodesk in 2002, BIM has changed how the industry talks about technology - but what about how the industry uses technology? What are IT and CAD managers doing today to implement building information modeling in their firms? How is their life different now than it was a year ago? What's working for them, and what has been difficult?

No Pain, Good Gain: A CAD Manager's Perspective on Implementing Revit Architecture

Oculus Inc. (www.oculusinc.com), headquartered in St. Louis, is a small firm with big clients. Brian Kern, IT/CAD manager at Oculus Inc., attributes his firm's competitive edge to its use of technology to deliver exceptional architecture, interior design and facilities management services. Originally using AutoCAD® software, Oculus Inc. implemented the product now known as the Revit® Architecture application in 2000 to benefit from its powerful parametric modeling capabilities. Using Revit Architecture to create building information models at the outset of the design process provides Oculus Inc. architects and designers with the ability to implement design changes rapidly, generate compelling 3D renderings and accurate construction documents, and manage building lifecycle information seamlessly.

Several factors contributed to Oculus Inc.'s successful Revit Architecture implementation. Following a straightforward network installation and with full support from Oculus Inc. executives, Kern provided his designers with access to Autodesk's web-based tutorials and conducted in-house training. Still, on-the-job training proved the most effective strategy for the Revit Architecture implementation. Mr. Kern points to the intuitive user interface in Revit Architecture as the primary reason architects learn the program so quickly. "Because Revit Architecture was designed around the way architects work, it's a whole lot easier to get people up to speed. Rather than working with lines and arcs, you're working with the walls, doors and windows. Designers are able to focus on what they're trying to produce rather than learning a new tool."

The ease-of-use of Revit Architecture and its design-based interface drove broad adoption rates and reduced the one-on-one training time required within the office. "During the Revit implementation, I spent a lot less time answering technical questions. The program itself is very intuitive," remarked Mr. Kern. Oculus Inc. job captain and Revit

Building end-user, Kurt Thompson concurs, "When I worked with a two-dimensional program, I had perhaps a hundred questions about how things went together and the clearances. With Revit, I had maybe five."

Revit Architecture Implementation Successful, Now Design Tool of Choice

Oculus Inc. now uses Revit Architecture on over 80% of design projects from start to finish, including all work for national, multi-location clients, Bank of America and Cingular Wireless. Rolling out 25 retail locations a year for Bank of America, Oculus Inc. uses the powerful parametric technology in Revit Architecture to globally implement design changes across all document sets, freeing architects from tedious coordination tasks.

"With Revit, when I make a change to the floor plan, it updates my construction plan, my electrical plan, wall sections... it updates the entire document set. I've done in one day what would have taken me at least two weeks," remarked Thompson.

Working on tight deadlines for Bank of America, Oculus Inc. relies on Revit Architecture not only to produce designs based the bank's prototype, but for client communication and approval. Said Thompson, "During design development, we quickly produced countless renderings of the site for the bank to review and to comment on." Renderings are also used to speed local review board approval for permit applications.



Figure 1

Revit 3D renderings help speed approvals for client Bank of America.

Designing and managing construction for nearly 50 Cingular Wireless retail locations in the last three years, Oculus Inc. has gained great flexibility in its design processes. "We're able to give the clients more in less time. Using Revit, we can provide three versions of a finished design in about two days, including renderings and area calcs," commented Thompson, "but where the real-time savings come in, once we get an approval, we are over half way done with our construction documents. In the past, you'd just be starting the documentation phase."

Oculus Inc. has also witnessed great benefits to its contractors. Construction documents produced in Revit Architecture have reduced RFIs from the field by 20-30 percent on the Cingular projects. Using the scheduling feature in Revit Architecture benefits contractors as well. Thompson says, "The building information model can populate order forms, schedules, quantity takeoffs, anything... allowing contractors to know the quantities are accurate and put together his price quicker."



Figure 2

Oculus Inc. has used Revit Architecture to design and build more than 50 Cingular Wireless retail locations.

Easy Implementation and Fast ROI Drive Oculus Inc.'s Technology Decisions

The ease of implementation and return on investment delivered by Revit Architecture have both changed the way Oculus Inc. does business. "Revit has become an integral design tool during the last four years allowing us to spend more time refining our designs while still delivering in the same time frame as our competitors and giving our clients more for their money," claimed Kern. "The Revit parametric, database-driven application has streamlined technical support required for Oculus Inc., freeing resources for other business operations.

About Revit

The Revit platform is Autodesk's purpose-built solution for building information modeling. Applications such as Revit Architecture, Revit® Structure, and Revit® MEP built on the Revit platform are complete, discipline-specific building design and documentation systems supporting all phases of design and construction documentation. From conceptual studies through the most detailed construction drawings and schedules, applications built on Revit help provide immediate competitive advantage, better coordination and quality, and can contribute to higher profitability for architects and the rest of the building team.

At the heart of the Revit platform is the Revit parametric change engine, which automatically coordinates changes made anywhere — in model views or drawing sheets, schedules, sections, plans... you name it.

For more information about building information modeling please visit us at <http://www.autodesk.com/bim>. For more information about Revit and the discipline-specific applications built on Revit please visit us at <http://www.autodesk.com/revit>.

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