

The Haskell Company

Customer Success Story

Revit® Architecture
Revit® Structure
Revit® MEP
AutoCAD® Architecture
AutoCAD® MEP
Autodesk® 3ds Max®
AutoCAD® Civil 3D®
Autodesk® Consulting

About a month into the NSC project, we learned that...we had to adjust our entire building from the second floor up through the sixth-level penthouse. Using traditional methods, it would have taken more than eight hours to update the corresponding design documents. Using Revit Architecture, we completed it in only 49 minutes. Revit Architecture automatically updated all the elevations, floor plans, callouts, schedules, and structural components. It even added a tread and riser to the first-floor stairs.

—Richard Binning
Manager of AE Technology Applications
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Work better—together.

The Haskell Company boosts multidisciplinary productivity with the Revit® building information modeling platform.



Project Summary

The Haskell Company is one of the nation's premier design-build organizations. Since 1965, the firm's architects, engineers, administrators, and other skilled professionals have completed more than 1,200 major projects throughout the Western Hemisphere, with annual sales topping U.S.\$750M. "We're an integrated design-build firm," says Richard Binning, manager of AE Technology Applications. "We provide developers, public agencies, and large corporate and institutional clients with a single source of responsibility for all the services they need to complete their projects in a timely, cost-effective manner." These services include planning, architectural design, engineering, construction, program management, financing, and facility management. "Because we have all of these disciplines in one office, we need a base engine that can support their different design efforts," says Binning. That's why Haskell recently standardized on the Revit building information modeling (BIM) platform. "We see it as a common framework that can help us further integrate our practice."

The Challenge

"We began exploring Revit several years ago," says Binning. "One of our architects and a senior designer taught themselves Revit Architecture software—without any official training—and began to use it successfully on architectural projects."

Based on this early success, Haskell initiated three pilot projects, including the 127,000-square-foot Northwest Specialty Clinic (NSC) building, managed by the architectural project team. "It's a five-story medical group practice and ambulatory care facility in Springfield, Oregon," says Binning. "We had to design and build it, and also connect it to an adjacent hospital via two bridges being designed and built by other parties." The firm's goals were to use this project to introduce the two additional components of Revit® Structure and Revit® MEP software—and then to use the entire platform all the way through construction.

Autodesk®

Haskell experienced zero conflicts.

The Solution

For help with the implementation, Haskell turned to Autodesk® Consulting. “Rather than try to find our own experts, we went right to the source and asked them for a two-day assessment,” says Binning. “Based on their recommendations, we contracted with them for complete training services, mentoring, data migration, and data translation on the pilot projects.”

Work from a Central Model

Because the software was still new to the firm, Haskell designers created the schematic design layout for the NSC project using AutoCAD® Architecture software. “We brought that sketch into Revit Architecture and re-created everything in a central model file that all of the disciplines could access across our local network,” says Binning. “For the rest of the project, we addressed all of the architectural, structural, and mechanical HVAC design and documentation from this single, 325-megabyte file.”

Supercharge Collaboration—and Productivity

This approach had immediate benefits. “By maintaining the design in a single model, our five architects, two structural engineers, and two MEP engineers worked more closely than ever before,” says Binning. “All of them were able to quickly react to decisions made by each other through the course of the project, and significantly improve productivity by reusing the model.”

Create Naturally—Design Freely

Because the Revit platform is purpose-built for its respective discipline, architects and engineers can work the way they think on a holistic representation of the building. “The Revit platform is changing the way we look at design engagement,” says Binning. “It very efficiently showcases the design and shows us how everything interacts. For example, using Revit Architecture, we can quickly and efficiently generate any elevation, plan, section, or 3D view—with no impact on the original schedule. It’s a huge change.”

Customize for Greater Productivity

Haskell has also begun creating its own customized library of parametric components that will further improve design productivity on future projects. “We’re creating all types,” says Binning. “Structural footings, windows, doors, mechanical equipment, VAV boxes, electrical fixtures and fittings, and more.”

Optimize Construction Documents

And because the Revit platform relies on a parametric change engine, anytime the Haskell architects and engineers make a design change anywhere in the model, the Revit platform automatically coordinates it everywhere in the project. “The whole platform is very well suited to delivering our regular set of construction documents,” says Binning.

We requested a two-week extension to rework the building exterior. Using Revit Architecture, we turned it around in two days. Revit Architecture automatically modified or updated more than 45 drawings in the set without us ever having to modify them directly.

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Spend More Time on Design

“As a result, we can really focus on design decisions,” says Binning. “We don’t have to waste time chasing down text and dimensions that would require coordination in a CAD-centric project. Instead, we can leave coordination of the documents to the software and concentrate on design.”

Explore Multiple Design Options

“For example, early into the project we decided that some exhaust ducts would penetrate the roof,” says Binning. “We didn’t believe that this decision would impact the aesthetics of the design.” However, rather than leaving it to chance, the mechanical engineer and project architect chose to add these elements to the model and create a realistic view of the roofline.

“After review, we decided to use louvers rather than stacks,” says Binning. “This resulted in a much more aesthetically pleasing roofline and solved the design requirement at the same time. Being able to visualize the design during a meeting and make the decision in real time kept the project on track and on schedule. Revit Architecture enabled us to make this decision in minutes rather than days.”



Easily Make Sweeping Changes

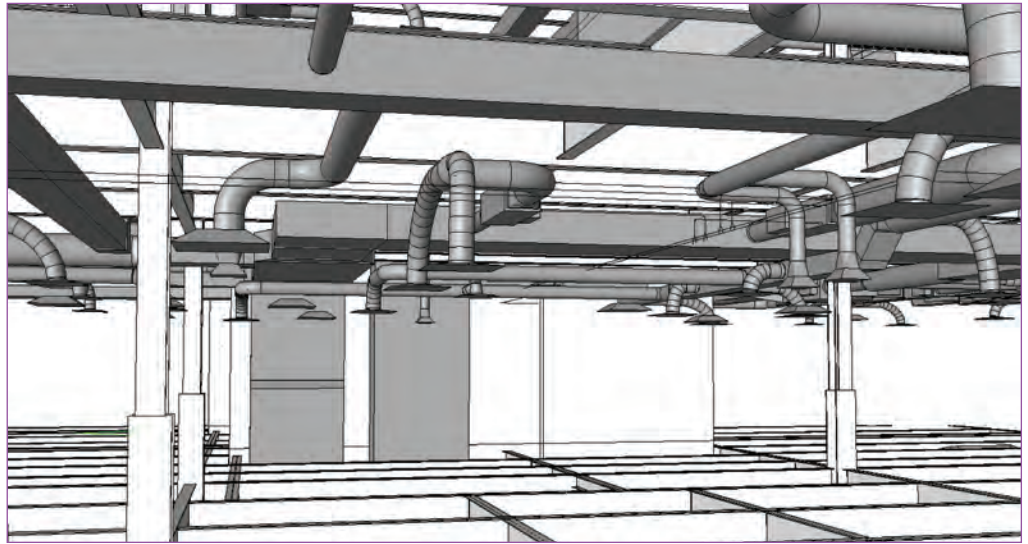
Using the Revit platform, Haskell architects and engineers could handle even greater challenges. “About a month into the NSC project, we learned that one of the bridges connecting to the adjacent hospital had recently had its finish floor elevation changed to match the hospital finish floor at that level,” says Binning. “That meant we had to adjust our entire building from the second floor up through the sixth-level penthouse.”

“Using traditional methods, it would have taken more than eight hours to update the corresponding design documents,” says Binning. “Using Revit Architecture, we completed it in only 49 minutes. Revit automatically updated all the elevations, floor plans, callouts, schedules, and structural components. It even added a tread and riser to the first-floor stairs.”

“In another instance, we requested a two-week extension to rework the building exterior,” says Binning. “Using Revit Architecture, we turned it around in two days. Revit Architecture automatically modified or updated more than 45 drawings in the set without us ever having to modify them directly. The software proved capable of turning it around much quicker than we anticipated.”

Reduce Coordination Errors

To further enhance coordination among MEP team members and with the architects and structural engineers, Haskell relied on the Revit platform’s Worksharing feature, which incorporates worksets,



element sharing, and file or model linking. “This feature is critical to a successful workflow when using the various flavors of Revit within a single central model,” says Binning. “On the NSC project, we encouraged our team members to make their worksets visible within the central model. As a result, we experienced zero conflicts in openings and interferences between major design components. We were able to design around the other teams’ elements in real time, and to identify and discuss changes as we encountered them.”

Maximize Design Accuracy

“And although we prefer to design around other objects in real time, sometimes our MEP team members turned off content from the other disciplines to maintain performance, particularly once the model grew above 120 MB,” says Binning. “Fortunately, even then Revit MEP software’s built-in interference checker enabled us to maintain coordination as they continued designing.”

Make Better Decisions—Faster

“The Revit platform enables us to view each component of a structure in context rather than as a 2D abstraction,” says Binning. “The software’s ability to quickly cut a section and see each discipline’s specific objects in relation to each other has provided a new, near real-time ability to make important design decisions.”

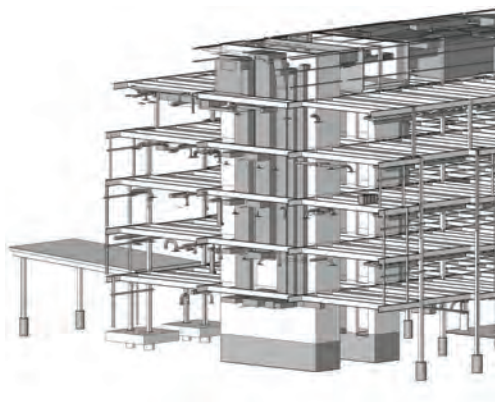
“In fact, at different times throughout the project, Revit Architecture and its holistic project view helped us get design decisions from external partners in record time,” says Binning. “Seeing and discussing the impacts of design decisions in real time enabled us to make decisions in minutes that would have taken hours or days in a CAD-centric delivery scheme. The holistic view of the in-progress design also makes Revit Architecture particularly well suited as a learning tool for our interns.”

Interoperate with Visualization Tools

For help with visualization, Haskell designers used multiple tools, including Autodesk® 3ds Max® software. “It works beautifully with Revit Architecture,” says Binning. “Our project architect used the two together for much of the conceptual design process. He’d stay in Revit as much as possible, and then occasionally pop over to 3ds Max to map something out.”

Get Help from the Source

Throughout it all, Autodesk Consulting provided expert guidance. “They were very helpful in both helping us avoid problem areas and developing solutions when we encountered technology roadblocks,” says Binning. We also have a close relationship with Imaging Technology, our area reseller, and plan to engage them more fully on future projects.”



After the pilot project, all project team members want to continue working with the Revit platform.

Access Online Support

“And because every product we have is on subscription, we’ve been able to use the web-based support system,” says Binning. “That’s been very helpful because we’re probably one of the few companies hitting one file with all three products, and we sometimes run into problems. As we encounter them, Autodesk is very prompt in providing solutions.”

The Result

“Currently, we’ve moved through a series of successful pilot projects, including the NSC project, and are preparing to implement Revit Architecture, Revit Structure, and Revit MEP throughout the firm,” says Binning. “We see them as the ideal tools for implementing BIM into our integrated design-build firm—and as the future of AE design practice.”

Significantly Greater Collaboration

“It’s absolutely a powerful new way of working,” says Binning. “In a lot of ways, it’s increased the frequency of interaction among our design team members. We already walk down a few cubicles and share information or get advice. But being able to pull up the entire design model, spin it around, cut a new section, and talk about it all in real time is a huge improvement. Every single architectural project team member has indicated that they want to continue to work that way.”

Repeat Business—Expanding Analysis Capabilities

“Our client on the NSC project was also very pleased,” says Binning. “In fact, we’ve leveraged our experience in BIM into two additional projects—the Broken Arrow Hospital and an adjacent Medical Office Building in [Broken Arrow, Oklahoma]. We’ve already used Revit Building Maker tools to create both projects’ conceptual massing diagrams, and we plan on integrating analysis with modeling this time

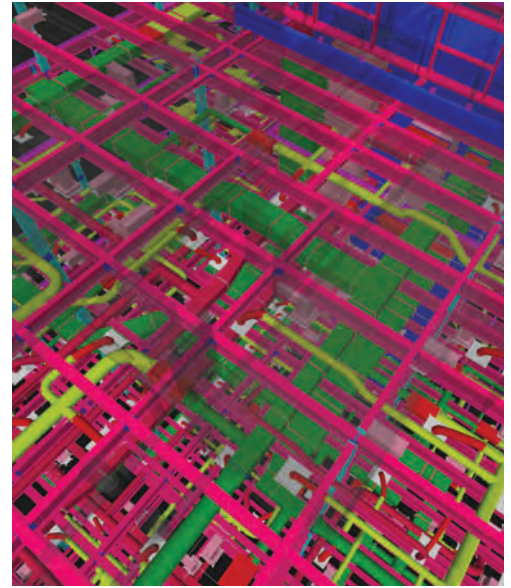
around. We purchased two copies of RISA structural analysis software for that purpose because we’ve found good interaction between its analytical models and the Revit model.”

Unlimited Opportunity

“We are currently laying the groundwork for an AutoCAD® Civil 3D® implementation,” says Binning. “Together, all of these new tools are enabling even greater integration and understanding of our design practices and project goals. We expect to uncover additional areas for growth as we continue to learn more about the products.”

“For example, although we already incorporate green building principles into every project and have used many different Autodesk products—including AutoCAD Architecture, AutoCAD® MEP, and AutoCAD® Land Desktop software—to achieve LEED certification in the past, we definitely expect to use the Revit platform on our future sustainable design projects.”

For more information about Revit-based building information modeling software, visit www.autodesk.com/revitarchitecture, www.autodesk.com/revitstructure, or www.autodesk.com/revitmep.



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