

Questions and Answers

In Revit® Architecture software, every drawing sheet, every 2D and 3D view, and every schedule is a direct presentation of information from the same underlying building database.

As the user works in familiar drawing and schedule views, Revit Architecture collects information about the building project and coordinates this information across all other representations of the project.

Revit Architecture 2008 includes many new and enhanced features to help you work the way you think, provide higher coordination and quality, and improve your business for a competitive advantage.

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1. General Product Information

1.1 What is Revit Architecture?

Revit® technology is Autodesk's platform for building information modeling. Built on the Revit platform, Revit® Architecture software is a complete, discipline-specific building design and documentation system supporting all phases of design and construction documentation. From conceptual studies through the most detailed construction drawings and schedules, Revit-based applications help provide immediate competitive advantage, deliver 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.

1.2 How does Revit Architecture help with Sustainable Design?

Revit Architecture offers a rich set of capabilities that support better sustainable design decision making. For example:

- Calculating material quantities to support cost estimating and study design analysis against LEED criteria is greatly simplified through the use of the material takeoff feature.
- Revit Architecture sun studies enable designers to quickly analyze sun positions and solar effects while informing the design process.
- Designers can also export building information, including materials and room volumes, to green building extensible markup language (gbXML) to perform energy analysis and study building performance.
- Using design options easily develop and evaluate multiple sustainable design alternatives. Visualize, quantify and present any combination of schemes to inform the decision making process.

Whether you're considering one or several sustainable design options, through the analysis of materials, quantities, energy use, and lighting in a virtual building information model, designers can better create sustainable building performance in the real world.

1.3 What is building information modeling?

Building information modeling (BIM) is the creation and use of coordinated, internally consistent, computable information about a building project in design and construction. The ability to keep this information up-to-date and accessible in an integrated digital environment gives architects, engineers, builders, and owners a clear overall vision of their projects and contributes to the ability to make better decisions faster—helping raise the quality and increase the profitability of projects.

For more information about building information modeling and Autodesk's strategy for the application of information technology to the building industry, see the white papers and other information at www.autodesk.com/bim.

1.4 Are there any other industry-specific applications built on the Revit platform?

Revit® Structure software is a fully integrated modeling, design, and documentation system for structural engineers and drafters that takes full advantage of Revit platform change management technology. Revit Structure offers building information modeling for structural engineering firms.

Revit® MEP is the building information modeling solution for mechanical, electrical, and plumbing (MEP) engineering design and documentation.

1.5 What is AutoCAD Revit Architecture Suite software?

AutoCAD® Revit® Architecture Suite is a bundle consisting of Revit Architecture and AutoCAD® software with a single serial number and a single authorization code. This combination enables you to maintain your investment in technology and training, while offering the competitive advantage of building information modeling, and providing the

flexibility to move to a new technology platform when you're ready. For more information about AutoCAD Revit Series—Building, visit www.autodesk.com/autocadrevitarchitecturesuite.

2. Revit Architecture Features

2.1 What are the important new features in Revit Architecture 2008?

Revit Architecture helps communicate design proposals more quickly and clearly, offers better design insight through on-demand visualization and analysis, and provides a process that mirrors the real world of building.

With its parametric change technology, you can make any change, anytime, anywhere, and Revit Architecture automatically coordinates that change everywhere in your project.

Download the complete feature list for Revit Architecture 2008 at www.autodesk.com/revitarchitecture.

Revit Architecture 2008 continues to deliver the best possible information for decision making by further enhancing existing functionality, and better leveraging performance and quality. Graphic display options and visibility control during design and documentation are key themes in Revit Architecture 2008. In addition, increasing support for interoperability streamlines workflow with other Autodesk products and industry leading software applications. Here are a few of the key features in Revit Architecture 2008:

Color Fills: Color Fill enhancements provide better control over the creation, management and display of color fill patterns. Because the software offers more options for conveying design ideas in plan, Revit families such as furniture, equipment, and floors no longer hide behind color fills. Maximizing valuable drawing real estate, the color fill legend reports only those color fills represented in the active view.

Revit Groups: Revit Groups, also known as repeating units, provide a modular design technique ideal for building types comprising of many rooms of similar size, shape, or configuration; such as, hospitals, hotels and apartment buildings. New workflow enhancements include the ability to load an RVT file as a group, save a group as an RVT, or change a group to a linked file. Additional enhancements include a new Group Edit Mode which provides for the creation of elements while editing a group, numerous user interaction improvements, and the ability to exclude elements on an instance basis to accommodate special conditions.

Dependent Views: Addressing the needs of firms managing large projects, dependent views provide a robust mechanism for segmenting projects across multiple sheet views. Coordination across sheets is automatically maintained between parent and dependant views helping to ensure model fidelity. All building information, including annotations, is kept accurate and up-to-date throughout the design process.

Autodesk VIZ and Autodesk 3ds Max Interoperability: Autodesk® VIZ or Autodesk® 3ds Max® software products can import or link 3D DWG™ files produced with Revit Architecture. Maximize your workflow by sharing model geometry, materials, and camera positions throughout the iterative design process. Create stunning photorealistic interior and exterior renderings to help sell your design ideas.

Graphical Overrides

Graphic overrides provide an ability to modify the graphic representation for a single element, thereby offering additional options for how elements appear in views. Graphic overrides also provide a visual method for hiding or revealing single elements or groups of elements by view. Settings are visually retained from session to session, reducing setup time in anticipation of plotting and printing.

File Linking

Offering more flexibility and easier management of linked model information, Revit links are organized within the project browser to provide new drag-and-drop management,

together with quick and easy access to the Link Manager. Project visibility is significantly improved for the project team by displaying nested links within host files. The functionality of color fills is also enhanced as fills within host files are applied in linked views.

These and other features take advantage of the continuous and immediate availability of high-quality, reliable, and coordinated information—efficiencies that users have come to expect from purpose-built software for building information modeling (BIM).

2.2 Revit Architecture handles modeling well, but what about conventional drafting and detailing? Do I still need AutoCAD for that?

Designers can work entirely in Revit Architecture to generate construction documentation. AutoCAD software is not required.

For more information about producing construction documents in Revit Architecture or interoperability with AutoCAD software and other CAD systems, see the Autodesk white paper on the subject at www.autodesk.com/revitarchitecture.

2.3 How does Revit Architecture work with large teams and projects?

Revit Worksharing distributes the power of the Revit parametric building modeler across the project team. Worksharing provides a complete range of collaboration modes, from on-the-fly simultaneous access to the shared model, through the formal division of the project into discrete shared units, to complete separation of project elements or systems into individually managed linked models. Worksharing enables team members to choose the best way to collaborate and interact based on their workflow and project requirements.

A white paper on using worksets, “Multi-User Collaboration with Revit Worksharing,” is available at www.autodesk.com/revitarchitecture.

2.4 Can Revit Architecture produce elaborate geometry?

Yes, Revit Building Maker is a flexible and responsive conceptual modeling and design environment linked to the Revit Architecture model. Like no other software tool, it allows for a cumulative understanding of the relationship between expressive, conceptual shapes and built form as the design develops. The designer independently develops conceptual models and maps them to building model components as the design progresses. The designer works fluidly between the conceptual model and the building model, capturing both design intent and detail at the moment of conceptualization.

3. Interoperability

3.1 What standards and file formats does Revit Architecture support?

Revit Architecture supports a wide range of industry standards and file formats, including

- CAD formats: DGN, DWF™, DWG, DXF™, IFC, SAT, and SKP
- Image formats: BMP, PNG, JPG, AVI, PAN, IVR, TGA, and TIF
- Other formats: ODBC, HTML, TXT, MDB, XLS, and gbXML

3.2 What if clients or consultants insist on DWG deliverables?

Revit Architecture can produce DWG deliverables just as AutoCAD can. Revit Architecture provides industry-leading DWG compatibility using the RealDWG™ toolkit. And because these DWG deliverables were created in a modeler, they are well structured and easy to change.

Revit Architecture supports the process most architectural firms use with their consultants by producing well-organized and layered DWG files using any layering standard the user wants. Revit Architecture helps to ensure that nothing in an exported DWG file ends up on the wrong layer, easing consultant interactions and accelerating the design and construction process.

If you are looking to migrate to building information modeling gradually, AutoCAD Revit Architecture Suite software was created for just that purpose.

For more information about using Revit Architecture with conventional CAD systems, see the “Revit Interoperability with CAD” white paper at www.autodesk.com/revitarchitecture.

Revit Architecture provides features that help integrate your work with that of consultants. Import or link DWG files directly into Revit Architecture to use as reference geometry or as the starting point for a new design, such as a site plan. Any CAD system that supports the DWG, DGN, or DXF file formats can work effectively with Revit Architecture.

3.3 What about object compatibility between Revit Architecture and AutoCAD Architecture and AutoCAD MEP?

Revit Architecture can read and write ACIS® solids. This capability gives users a way to export their models from AutoCAD® Architecture and AutoCAD® MEP software and import or link 3D information into Revit Architecture. Use this method to cut sections and perform visual interference detection.

3.4 Does Revit Architecture have layers like the products based on AutoCAD software? How does Revit Architecture organize data?

No, Revit Architecture software does not have layers. Revit Architecture uses a system of categories and subcategories to organize information within the building information model. Users can create their own subcategories for organizing data and various filtering and graphic override techniques for visibility and graphic control.

Categories and subcategories can be mapped for export in a way that creates layered DWG, DGN, or DXF files conforming to various CAD standards.

Four default mappings ship with the product: AIA CAD Standard 2000 (United States), BS1192 (United Kingdom), ISO13567 (Europe), and CP83 (Asia). Users can also create their own project-specific layer mappings. Autodesk is investigating components that can be added to templates for improved compliance to the NCS version 3.

Revit Architecture supports the process most architectural firms use with their consultants by producing perfectly layered DWG or DGN files using any layering standard the user wants.

3.5 What about data compatibility between AutoCAD or Bentley MicroStation software products and Revit Architecture?

Revit Architecture provides several important interoperability capabilities for AutoCAD and Bentley® MicroStation® users. First, Revit Architecture can import, export, and link any version of DWG and DGN (V7) format files. Users can draw on imported files to create Revit Architecture parametric model geometry. Revit Architecture can manage imported or linked files so that detail libraries in either DWG or DGN file format can be placed on sheets and all callouts are automatically managed. Further, Revit Architecture can map a specific DWG layer on import to a specific DGN level number on output or vice versa in any combination.

3.6 How do I use Autodesk Buzzsaw with Revit Architecture?

The Autodesk® Buzzsaw® on-demand collaborative project management solution is independent of the software used for building design and documentation. Revit Architecture enables users to upload projects directly to predefined project locations. It automatically saves the project to either DWG or DWF file format. Model files (RVT files) can be posted to Buzzsaw for sharing with the project team just like any other file. A read-only copy of Revit Architecture enables users to print and export models that have not been edited, serving as a robust viewer and file translator for team members who receive Revit Architecture models but who are not using the software themselves. And because Revit Architecture also publishes directly to industry-leading file formats, team members can share sets of deliverables on Autodesk Buzzsaw in this way as well.

3.7 Revit Architecture uses AccuRender raytracing and radiosity as a rendering solution. Can I use Revit Architecture with Autodesk VIZ or Autodesk 3ds Max?

Users can transfer geometry from a Revit Architecture model into the Autodesk VIZ or Autodesk 3ds Max application through DWG file export. The Autodesk VIZ 2005 Interoperability for Revit plug-in imports the DWG file exported from Revit 7 or Revit Building 8 and maintains material assignments. Because this functionality is incorporated into Autodesk VIZ since version 2006 and in 3ds Max since version 8, the plug-in is no longer necessary.

3.8 Is there an application programming interface (API) or other third-party development tools for Revit Architecture?

Yes. Revit Architecture ships with a general API, in addition to the previously existing ODBC (Open DataBase Connectivity) export functionality.

Partners who are already developing applications for Revit Architecture include the following:

Green Building Studio, Inc.

Green Building Studio is a web service that gives 3D CAD users quick, reliable, and free estimates of a building's energy costs during the early stages of conceptual design. Find out more at www.greenbuildingstudio.com.

InterSpec

e-SPECSSM for Revit automates project specifications by linking the product and material requirements directly to the Revit Building model. Find out more at www.e-SPECS.com.

Mcs Software (Italy)

ArchVISION[®] Revit provides a dynamic link between Revit Building and ACCA Primus 3000 r2, a popular Italian cost-estimating software. Find out more at www.mcs-software.it/pages/Revit.html.

Analist Group (Italy)

ArchiPlan for Revit offers integration between Revit Building and cost estimation product, Quanto. Find out more at www.inrevit.com.

U.S. Cost

Success Design Exchange uses Success Estimator and Autodesk Revit Building to create accurate cost estimates. Find out more at www.uscost.com.

Innovaya

Visual Estimator is a BIM-based estimating solution that integrates Autodesk Revit Building with Sage Timberline Office Estimating. Find out more at www.innovaya.com.

4. Parametric Components

4.1 What are *families* in Revit Architecture, and how many are there in the library?

All elements in Revit Architecture are based on families. The term *family* describes a powerful concept that helps users manage data and make changes easily. It refers to an element's ability to have multiple types defined within it, each of a different size and shape. Even though the types can look completely different, they are all still related and come from a single source, hence the term *family*. Changes to a family or type definition ripple through the project and are automatically reflected in every instance of that family or type in the project. This capability keeps everything coordinated and saves users the time and effort of manually tracking down components to update.

The Revit Architecture library contains thousands of families and includes components in both imperial and metric units. Revit Architecture family files are also available from the Revit Architecture web library (accessible from within the product) and from other publicly accessible websites. Each family file can produce many components. Because each file typically includes several sizes or types, the number of parts available is in the tens of thousands.

4.2 Do I need to know a programming language to create content in Revit Architecture?

No, Parametric Components are an open, graphical system for design thinking and form making, a powerful way of expressing design intent at increasingly detailed levels. No programming language or coding is required to drive this powerful system. And any and

Use Parametric Components to generate the most elaborate assemblies—including those with intricate, iterative, algorithmic, and behavioral characteristics—as well as the most elementary building parts.

all relationships can be expressed directly in the system; nothing is assumed other than that you are thinking about a building design.

5. Parametric Change Engine

5.1 What does *parametric* mean, and how does the parametric change engine keep everything updated when I make changes? Why is the concept important?

The term *parametric* in this context refers to the relationships among and between all elements of the model that enable the coordination and change management that Revit Architecture provides. These relationships are created either automatically by the software or deliberately by the user as they work.

A fundamental characteristic of a building information modeling application is the ability to coordinate changes and maintain consistency at all times. The user does not have to intervene to update drawings, links, tags, and so forth.

This concept is important because it is this capability that delivers the fundamental coordination and productivity benefits of Revit Architecture: Change anything at any time anywhere in the project and Revit Architecture coordinates that change through the entire project. This change management is also one of the fundamental characteristics of a building information modeling solution.

5.2 Do I have to regenerate sections and schedules manually? What if I want to work in the section?

No. In Revit Architecture a section view is “live” and presents itself instantly when the user creates it. The section view will automatically update if the defining section line is moved. Designers can work (add or edit components) in the section view without restrictions.

Schedules are created using the same principle. They are simply another type of view. So they are also “live” and they update as the designer changes the model. In fact, designers can change things in the schedule and Revit Architecture updates the model and drawings.

The beauty of Revit Architecture is that designers work in the view that makes sense for their project. Revit Architecture was built to work the way an architect thinks.

6. Licensing Revit Architecture and AutoCAD Revit Architecture Suite

6.1 Can I use the product in trial mode or demonstration mode?

You can use the software in trial mode for a 30-day period without an activation code. You can also use the product in demonstration mode, which enables all features except save, plot, and export.

6.2 Is Subscription available for Revit Architecture?

Yes, Subscription is available in most countries for many of Autodesk’s products including Revit Architecture.

Autodesk® Subscription is the best way to keep your design tools and learning up-to-date. For an annual fee you get the latest versions of your licensed Autodesk software, self-paced training options, and a broad range of other technology and business benefits.

Autodesk Subscription includes direct web support. You get one-to-one online communication with Autodesk support technicians for fast, complete answers to your installation, configuration, and troubleshooting questions. Web and email communications deliver support straight to your desktop. Plus you have web access to your account, so you can track and manage questions and responses.

Additionally, Autodesk Subscription includes access to Autodesk University (AU) conference materials and home use licensing options.

For more information about Autodesk Subscription, contact your Autodesk Authorized Reseller or visit <http://www.autodesk.com/subscription>.

Designers can make changes in section, elevation, or schedule and Revit Architecture propagates the changes throughout the model.

6.3 Does Revit Architecture use the Network Installation wizard like AutoCAD–based products for network deployment?

No, Revit Architecture 2008 uses its own network installation technology and process. The Network Installation wizard is designed to work only with AutoCAD software–based products.

6.4 Does a stand-alone AutoCAD Revit Architecture Suite user have to put both Revit Architecture and AutoCAD applications on one machine?

Yes, a stand-alone user of AutoCAD Revit Architecture Suite must use both applications on one machine and cannot split up the bundle.

6.5 Can I install my network license of AutoCAD Revit Architecture Suite with a separate network license of AutoCAD on one server? What gets checked out when I open my AutoCAD-only licenses?

Yes, if you have both AutoCAD Revit Architecture Suite and an AutoCAD license on the same network, the server identifies whether it is AutoCAD from AutoCAD Revit Architecture Suite or a stand-alone AutoCAD license and will check out the appropriate license from the server.

6.6 Does the License Borrow feature available for the network version of AutoCAD software–based products work with Revit Architecture?

Yes, one of the biggest benefits to network users of Revit Architecture is the ability to use the License Borrow feature for laptop users. This feature replaces the concept of external floating licenses that existed in earlier versions of the software.

7. Consulting, Training, and Support

7.1 What consulting services are available for Revit Architecture?

Check with your local Autodesk Premier Solutions Provider or Autodesk Authorized Reseller for consulting services they offer.

Autodesk Consulting also provides consulting offerings for project assessments, process audits, and a range of Revit Architecture implementation services. Custom consulting offerings are also available to meet your specific project needs. For more information on Autodesk Consulting, contact your local Autodesk Authorized Reseller or Autodesk Account Executive, or visit www.autodesk.com/consulting.

7.2 Where can I find training courses for Revit Architecture?

Training courses are available from Autodesk Authorized Resellers, Autodesk Consulting, and Autodesk® Authorized Training Center (ATC®) sites. Check with your local Autodesk Authorized Reseller for a schedule of training classes.

You can enroll in instructor-led training at ATC locations around the world. These training centers use Autodesk Official Training Courseware (AOTC) to deliver comprehensive courses for new and intermediate Revit Architecture users. To learn more, visit www.autodesk.com/atc.

Training courses through Autodesk Consulting include Autodesk Classroom Training (onsite or at Autodesk), Revit Architecture Distance Learning Seminars (online or instructor-led), or custom training to match your specific needs. For more information, or to register for a course, go to www.autodesk.com/revit-training. For more information about Autodesk's training services for Revit Architecture, call 781-839-5858 or send an email to RevitEducation@autodesk.com.

7.3 How can I get technical support information?

Technical support information is available from several sources. First, Autodesk Authorized Resellers offer technical support information to their customers. Second, you can locate the answers to frequently asked technical questions in the support knowledge base on www.autodesk.com/revit-support. Third, you can ask questions and read information about the use of Autodesk products in the peer-to-peer discussion groups on

www.autodesk.com/discussion. Autodesk hosts topical discussion groups about specific products, including Revit Architecture.

Autodesk Subscription customers receive personalized web support from Autodesk technical experts. For complete information, visit www.autodesk.com/subscription or contact your Autodesk Authorized Reseller.

Information on other support options can be found at www.autodesk.com/support. Contact your Autodesk Account Executive or Autodesk Authorized Reseller for more details.

Autodesk Authorized Resellers also provide telephone support services for Revit Architecture, and all other Autodesk products. In the United States and Canada, call 800-964-6432 to locate a reseller near you, or visit www.autodesk.com/reseller.

Find a complete list of support options on the Autodesk website at www.autodesk.com/revit-support.

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