Autodesk[®]
Revit[®] Architecture 2010

Questions and Answers

Autodesk[®] Revit[®] Architecture 2010 software works the way architects and designers think, allowing you to work naturally, design freely, and deliver efficiently.

Purpose-built for building information modeling (BIM), Autodesk Revit Architecture helps you explore early design concepts and forms, and more accurately maintain your vision through design, documentation, and construction. Use the essential BIM data that Autodesk Revit Architecture provides to help support sustainable design, clash detection, construction planning, and fabrication. Then share the model to work collaboratively with engineers, contractors, and owners in an integrated process. And with parametric change technology, any change you make is automatically updated throughout your project, keeping your design and documentation coordinated and more reliable.

Contents

www.autodesk.com/productcenter

1. General Product Information

1.1 What is Autodesk Revit Architecture?
Built on the Revit® platform for building information modeling (BIM), Autodesk Revit Architecture software is a discipline-specific building design and documentation system that supports all phases of design, construction documentation, and even fabrication. From facilitating conceptual studies and analysis at the earliest stages of a project's development, through the production of the most detailed construction drawings and schedules, Autodesk Revit Architecture helps provide a competitive advantage by delivering better coordination and quality across project phases and disciplines. As a result, Autodesk Revit Architecture can contribute to better efficiency and higher profitability for architects, designers, and the rest of the building team.

1.2 What is building information modeling?
Building information modeling (BIM) is an integrated process that allows architects, engineers, and builders to explore a project digitally before it is built. Coordinated, reliable information is used throughout the process to design innovative projects, more accurately visualize appearance for better communication, and simulate real-world performance for better understanding of important characteristics such as cost, scheduling, and environmental impact.

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/powerofbim.

1.3 In addition to Autodesk Revit Architecture, are there other industry-specific applications built on the Revit platform?
Autodesk® Revit® Structure 2010 software offers building information modeling (BIM) to structural engineering firms, delivering more efficient and more accurate design and documentation, helping to improve multidiscipline coordination, and incorporating structural analysis and design.

Autodesk® Revit® MEP 2010 software provides design and analysis tools both to help optimize building systems and enable mechanical, electrical, and plumbing engineers to make better design decisions.

1.4 What is AutoCAD Revit Architecture Suite software?
AutoCAD® Revit® Architecture Suite software combines AutoCAD® 2010, AutoCAD® Architecture 2010, and Autodesk Revit Architecture 2010 software applications into a single, comprehensive package, helping you to transition to building information modeling (BIM), while protecting your legacy software, training, and design data investments. With the benefit of access to three architectural design solutions under a single license, you can support ongoing work in either AutoCAD or AutoCAD Architecture while you make the switch to BIM with Revit Architecture, at your own pace. For more information about AutoCAD Revit Architecture Suite, visit www.autodesk.com/revitarchitecturesuite.

2. Technology

2.1 What are the important new features in Autodesk Revit Architecture 2010?
Autodesk Revit Architecture 2010 continues to deliver superior design information to support better design decision-making by introducing new conceptual design features, adding more control and flexibility to existing features, and better utilizing performance and integration. The following are a few of the key features of Autodesk Revit Architecture 2010.

Conceptual Design Tools: New and innovative Autodesk Revit Architecture 2010 conceptual design features provide easy-to-use tools for free-form modeling and parametric design, and the ability to perform design analyses at the earliest stages of your project. Sketch freely, create 3D forms quickly, and manipulate forms interactively. Prepare your models for fabrication and construction with built-in tools that transform your conceptual forms into real buildings. Take your design from concept model all the way to construction documents, all within one intuitive environment.

User Interface: Autodesk Revit Architecture 2010 features a streamlined user interface. Find your favorite tools and commands faster, locate lesser-used tools more efficiently, and discover new features more easily. The result is less time searching through menus and toolbars, and more time getting your work done.

Native 64-bit Support: New native 64-bit support enhances Autodesk Revit Architecture 2010 software's ability to handle large projects and improves performance and stability for memory-intensive tasks such as rendering, printing, model upgrading, and file importing and exporting.

Enhanced Interoperability: Interoperability enhancements enable you to work more efficiently with members of your extended project team. Now you can export your building model or site, complete with critical metadata, to AutoCAD® Civil 3D® software. You can also import accurate, data-rich models from Autodesk Inventor® software.

API Enhancements: The conceptual design API (application programming interface) gives users access to advanced modeling techniques and workflows, using complex formulas and other techniques. The family editor API will allow manufacturers to automate the creation of large content libraries, so that they can provide architects, engineers, and designers with more accurate and relevant native Autodesk Revit Architecture content.

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 BIM.

2.2 How does Autodesk Revit Architecture 2010 help with sustainable design?
Autodesk Revit Architecture 2010 offers a rich set of capabilities that support better decision making for sustainable design. 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.

- Autodesk Revit Architecture 2010 sun studies enable designers to quickly analyze sun positions and solar effects while informing the design process.

- Designers can export building information to gbXML (green building extensible markup language) to perform energy analysis and study building performance.

- Using design options, easily develop and evaluate multiple design alternatives. Visualize, quantify, and present any combination of schemes to inform the decision-making process.

Whether you are 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.

2.3 How does Autodesk Revit Architecture 2010 support design-to-fabrication workflows?

The combined capabilities of Autodesk Revit Architecture and Autodesk Inventor software provide a digital design-to-fabrication workflow that helps enable architects to more reliably communicate their design intent such that a fabricator can cost-effectively manufacture key building components—thus gaining more control over their design. Through digital prototyping and building information modeling, project teams can experience a project digitally before it is built, simulate performance and constructability, and communicate and interpret design intent to help produce design-intensive building components more cost effectively.

2.4 Autodesk Revit Architecture 2010 handles modeling well, but what about conventional drafting and detailing? Do I still need AutoCAD for that?

Designers can work entirely in Autodesk Revit Architecture 2010 to generate construction documentation. AutoCAD software is not required.

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

2.5 How does Autodesk Revit Architecture 2010 work with large teams and projects?

The native 64-bit version of Autodesk Revit Architecture 2010 surmounts the 4-gig memory limitation found in all 32-bit applications, which enhances the software's capability to handle large projects. As a result, users of the 64-bit software may see improved performance and stability for memory-intensive tasks such as rendering, printing, model upgrading, and file importing and exporting compared to the 32-bit versions of the Revit platform products.

Worksharing in Autodesk Revit Architecture 2010 distributes the power of the Revit platform parametric building modeler across the project team. Worksharing provides a complete range of collaborative 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.

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

All elements in Autodesk Revit Architecture software 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 in the project. This capability keeps everything coordinated and saves users the time and effort of manually tracking down components to update.

The Autodesk Revit Architecture software library contains thousands of families and includes components in both imperial and metric units. Autodesk Revit Architecture family files are also available from the software's 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.

2.7 Do I need to know a programming language to create content in Autodesk 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 all relationships can be expressed directly in the system; nothing is assumed other than that you are thinking about a building design.

2.8 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 Autodesk 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. 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 Autodesk Revit Architecture: Change anything at any time anywhere in the project and Autodesk Revit Architecture coordinates that change through the entire project. This change management is also one of the fundamental characteristics of a BIM solution.

2.9 Do I have to regenerate sections and schedules manually? What if I want to work in the section?
No. In Autodesk Revit Architecture 2010 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 building 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 Autodesk Revit Architecture 2010 updates the model and drawings.

3. Installation, Configuration, and Licensing

3.1 Can I use Autodesk Revit Architecture 2010 in trial mode or demonstration mode?
You can use the software in trial mode for a 30-day period without an activation code. Using the software in demonstration mode allows all features except save, plot, and export.

3.2 Does the License Borrow feature available for the network version of AutoCAD software—based products work with Autodesk Revit Architecture 2010?
Yes, an important benefit to network users of Autodesk Revit Architecture 2010 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.

3.3 What are the hardware and system requirements of Autodesk Revit Architecture 2010? The recommended hardware and operating system requirements Autodesk Revit Architecture 2010 can be found at www.autodesk.com/revitarchitecture. Please ensure that you have read these requirements before making your purchasing decision or installing software.

4. Compatibility and Interoperability

4.1 What standards and file formats does Autodesk Revit Architecture 2010 support?
Autodesk Revit Architecture 2010 supports a wide range of industry standards and file formats, including

- CAD formats: ADSK, 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, FBX, and gbXML

4.2 What if clients or consultants insist on DWG deliverables?
Autodesk Revit Architecture 2010 can produce DWG deliverables just as AutoCAD can. Autodesk Revit Architecture 2010 provides industry-leading DWG compatibility using the RealDWG™ toolkit.

Autodesk Revit Architecture 2010 supports the process most architectural firms use with their consultants by producing well-organized and layered DWG files using any layering standard. Autodesk Revit Architecture 2010 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.

Autodesk Revit Architecture 2010 provides features that help integrate your work with that of consultants. Import or link DWG files directly into Autodesk Revit Architecture 2010 to use as reference geometry or as the starting point for a new design, such as a site plan. CAD systems that support the DWG, DGN, or DXF file formats can work effectively with Autodesk Revit Architecture 2010.

4.3 Does Autodesk Revit Architecture 2010 have layers like the products based on AutoCAD software? How does Revit Architecture 2010 organize data?
No, Autodesk Revit Architecture software 2010 does not have layers. Autodesk Revit Architecture 2010 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. Autodesk Revit Architecture's unique organizational convention helps to prevent costly drawing mistakes due to user error.

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.

4.4 Is there an API (application programming interface) or other third-party development tools for Autodesk Revit Architecture 2010?
Yes. Autodesk Revit Architecture 2010 ships with an extensive .NET API that includes the abilities to programmatically create Revit families and MEP systems. The Revit 2010 platform includes Microsoft's Visual Tools for Applications (VSTA), a C# and VB.NET programming environment enabling Autodesk Revit Architecture users to create document and application macros.

5. Consulting, Training, and Support

5.1 What are my options for training?
Check with your local Autodesk Authorized Reseller for a schedule of software training classes. To locate a reseller, visit www.autodesk.com/reseller.

Attend hands-on, instructor-led classes at an Autodesk Authorized Training Center (ATC®). Increase your competitive edge with proven training from over 2,000 ATC sites in more than 90 countries. For more information about Autodesk Authorized Training Centers, visit the online ATC locator at www.autodesk.com/atc.

Whether you are a novice or advanced user, Autodesk offers a robust portfolio of learning tools to help you perform ahead of the curve. Get hands-on experience with job-related exercises based on industry scenarios from Autodesk Official Training Courseware, books, e-books, e-learning, and training videos. To find out more, visit www.autodesk.com/aotc and www.autodesk.com/learningtools.

Autodesk certifications reliably validate your skills and knowledge, and can accelerate your professional development, improve your productivity, and enhance credibility in your field. Receive immediate diagnostic feedback to assess your strengths and identify areas for improvement. For more information, visit www.autodesk.com/certification. Note that certification is only available for select products in certain areas.

Training courses are also offered through Autodesk Consulting and include Autodesk Virtual Classroom Training (online, instructor-led), custom training to match your

organization's specific needs, and Autodesk Classroom Training. To obtain more information about Autodesk's training services, visit www.autodesk.com/training.

6. Subscription

6.1 What benefits does an Autodesk Revit Architecture software subscription offer?
Get the benefits of increased productivity, predictable budgeting, and flexible license management with Autodesk® Subscription. With Autodesk Subscription, you get any new upgrades of your Autodesk software and any incremental product enhancements, if these are released during your subscription term, and exclusive license terms that are available only to Subscription members. A range of community resources, including web support direct from Autodesk product support specialists and self-paced training to extend your skills, make Autodesk Subscription the best way to optimize your investment in Autodesk Revit Architecture software. To learn more, visit
www.autodesk.com/revitarchitecturesubscription.

6.2 What product downloads are available for Autodesk Revit Architecture for Subscription members?
For up-to-date information on the latest product downloads for Autodesk Revit Architecture, please visit www.autodesk.comrevitarchitecturesubscription. Product downloads may include the latest release of the software, extensions, bonus packs, or other rich content for Autodesk Revit Architecture—exclusive to Subscription members and can be downloaded from the Subscription Center
www.autodesk.com/subscriptionlogin.