



Features and Benefits

The Autodesk® Revit® building information modeler is a powerful design and documentation system delivering competitive advantage, improved coordination and quality, and higher profitability to architects, builders, and other building industry professionals.

In the Autodesk Revit parametric building model, every drawing sheet, every 2D and 3D view, and every schedule is a direct presentation of information from the same underlying building database. As you work in familiar drawing and schedule views, Autodesk Revit collects information about the building project and coordinates this information across all other representations of the project. The parametric change technology in Autodesk Revit automatically coordinates changes made anywhere—in model views or drawing sheets, schedules, sections, plans, renderings ... you name it.

Autodesk Revit supports all phases of the building process, preserving all information from beginning to end. The same model that is rendered in design generates quantities exported to an estimating database after construction documents are prepared.

Integrated Project Model

These features deliver coordinated construction documents at all times, providing enormous time savings and quality improvements in drawing deliverables.

Feature	Benefit	New
Automatic sheet/drawing references	Ensures that no section, elevation, or callout ever references the wrong drawing or sheet.	
Bidirectional associativity	Ensures all changes to any part of the building need to be made only once. Ensures annotation decisions, such as a changed sheet scale properly resizing all annotations and graphics, need to be made only once.	
Dimension driven	Enables you to modify geometry by typing a new number, saving time during iterative design processes. In Revit 6.1, the Rotate tool creates a listening dimension for more accurate placement.	X*
Drawing coordination	Ensures all data and graphics, details, schedules, drawings, and sheets in the drawing set are current and coordinated.	
Integrated building materials	Real-world materials drive detailed plan, section, and elevation representations of building components to save documentation time. The integrated AccuRender® raytracing and radiosity engine uses the same materials, saving time and effort when producing visualizations.	
Integrated project phasing	Project phasing reduces the amount of time required to create renovation and planning documents.	

Autodesk Revit 6 Features and Benefits

Feature	Benefit	New
Live building sections and elevations	Sections and elevations are computed on demand in a fraction of the time required to draw the sections by hand or with traditional CAD. Work in any appropriate view of the building, including sections and elevations.	
Live editing in any view or sheet	Work in any appropriate view of the building. All views are updated without user intervention, ensuring drawing coordination.	
Parametric design	Quickly make changes to refine your design, arriving at your optimum design in the shortest amount of time.	
Project browser	Project-wide browser reduces the time needed to manage and navigate the various views, families, groups, renderings, and sheets of the project. In Revit 6, reorganize the project browser's Views and Sheets sections to match your desired project organization.	X
Project templates	Creating convenient starting points for your project types saves time when making a new project.	
Relationships between parametric components	Lockable, user-defined relationships between building components in the model enable you to preserve your design intent as your design progresses.	
Scale-dependent annotation and symbols	Automatic scaling of annotation items ensures that no drawing has incorrectly sized text or annotation symbology.	
Single multiuser building database	Single, compact project database file simplifies project management and ensures drawing coordination across the project.	
Design Options	Develop and study multiple simultaneous design alternatives to make key design decisions. Present multiple schemes to your clients easily. Each option can be substituted into the model for visualization, quantification and other data analysis to inform decision making. In Revit 6.1, this feature has been enhanced to include more control options.	X*

Building Design and Components

These features are the heart of the Autodesk Revit modeling capability and deliver a robust, single building database with many valuable downstream uses.

Feature	Benefit	New
Assemblies of "nested" component families	Multiple family components can be combined into more complex assemblies, with parametric control of the individual components within the assembly. Enables building a kit of parts to speed designs that use combinations of standard components. In Revit 6.1, the visibility of solid elements and nested families can be controlled parametrically.	X*

Autodesk Revit 6 Features and Benefits

Feature	Benefit	New
Attachable and insertable components	Components attached or inserted into built-in-place construction support complex hosting relationships; for example, doors and windows that span different wall materials.	
Butt-glazed curtain walls	This common curtain wall system, including automatically mitered horizontal mullions, is supported, reducing layout time dramatically.	
Complex roofs and joining	Multiple, simple roofs can be joined to form more complex roofs. All roofs are defined by simple 2D sketching, delivering flexible yet geometrically complex 3D roofs that can be iteratively changed by altering the sketch or slopes of sketch lines. In Revit 6.1, additional roof slope control has been added.	X*
Complex solid geometry	Expressive geometry and design are supported by real-world, constructible materials and systems.	
Compound assemblies and joins	Built-in-place (host) items (wall, floor, roof, and so forth) support complex assemblies of multiple materials and material functions. Join information between host components speeds section and detail creation.	
Curtain walls	Flexible, intuitive curtain wall tools make designing any curtain wall easy. Panel and mullion families can be designed to produce any type of wall and can be substituted for rapid evaluation of exterior curtain wall ideas.	
Curtain wall grid patterns	Layout curtain walls quickly by defining complex grid patterns in the wall definition. Edit portions of already placed grids without disturbing the relationship of the remaining grids to the pattern.	X
Demolition and construction phasing	Make an existing condition, perform demolition, and then design the renovation. Autodesk Revit automates renovation projects by managing the different time phases assigned to components within the building.	
Edge conditions; Fascia, Gutter, Soffit	Profile-based tools for creating roof and floor edge conditions save time, representing accurate, real-world construction practices.	
Mass modeling	Updating the massing changes the building. Simple yet powerful massing interface enables exploration of building ideas while providing the ability to iterate between mass and finished shell of a proposed building.	
Nonstandard host geometry (wall, floor, roof, and so forth)	"Create-in-place" mechanism enables custom, nonstandard component creation such as sloping or spline-based curved walls.	
Parametric building component library	Thousands of imperial and metric building component families for every project type, delivered on CD, can be used as is or customized for specific designs.	

Autodesk Revit 6 Features and Benefits

Feature	Benefit	New
Preannotated model families	Make self-annotating building components by inserting annotation families into model family components. This eliminates errors resulting from having untagged items and ensures drawing consistency because annotation always scales with the paper.	
Railings	Define railings on stairs, ramps and floors. In Revit 6, create railings with complex patterns of rails and balusters. Specify their start, end, and corner conditions.	X
Rooms and Spaces	Create and maintain a wealth of information about rooms and space. Develop area plans that aggregate spaces and use standard area reporting rules. In Revit 6, rooms understand project phases.	X
Sketch-based hosts	Built-in-place items (wall, floor, roof, and so forth) are defined by simple 2D sketching, delivering flexible but geometrically complex 3D items in the building that can be iteratively changed by altering the sketch.	
Sketch-based stair layout	Stairs, ramps and railings are defined by simple 2D sketching, delivering flexible yet geometrically complex 3D stairs that can be iteratively changed by altering the sketch.	
Sloped and complex glazing systems	Create sloped glazing representing roofs and other special curtain construction, making complex designs easy. Special tools for ruled surfaces, now more common in today's buildings, make creating and maintaining nonstandard designs simple.	
Splines and spline-based solids	Splines can be used for geometry creation by creating them in sketches for walls, floors, roofs, site elements, and other free-form project geometry. In Revit 6.1, this includes sweep path sketches.	X*
Stairs and Ramps	Create stairs and ramps that match a wide range of forms and construction types. In Revit 6, define true monolithic stairs with control over material and form. In Revit 6.1, define curved ramps in the same manner.	X*
Stair slope calculator	Enables creation of stairs calculated by the slope method (as opposed to U.S. tread/riser) in European countries.	
Structural detailing	Library of parametric 2D structural detailing components enables you to create structural details directly in the model.	X
Structural modeling	Library of parametric 3D structural framing components enables you to create structural frames and foundations directly in the model.	X
Structural design and drafting	Structural engineers and architects use the structural tools in Revit for design and documentation. New tools in Revit 6.1 make this process even more streamlined	X*
Structural grid	Create and identify grid lines with simple intuitive tools. Use intelligent structural grid elements to control your design. Revit 6 supports curved and radial grids.	X

Feature	Benefit	New
Subscription component library	Web-based content library available directly in the system. Includes detailed component families from quality manufacturers.	
User-defined building components	Graphical parametric component editor enables component creation by simply drawing, without programming or scripting. In Revit 6.1, constrained elements are driven interactively in the Family Editor	X*
Vertically compound wall types	Designing complex wall types in section saves time by preinserting different heights of materials and surface features, such as reveals. Saves both modeling and drafting time. In Revit 6.1, enhanced wall layer wrapping gives detailed control over how individual layers of a compound structure wrap at inserts such as doors and windows.	X*

Powerful, Intuitive Editing Tools

These straightforward tools contribute to the Autodesk Revit software's widely recognized ease of use, providing a design system that is accessible to everyone.

Feature	Benefit	New
Active workplane grid	This user-displayable grid provides easier visualization of modeling and sketching operations, resulting in fewer errors.	
Align, split, trim, offset tools	These editing tools are like their CAD equivalents, but better. As you use these tools, they imply constraints between the things you pick so the model knows how to update as your design changes, saving effort and rework.	
Arrays: linear and radial	These tools are similar to their CAD equivalents, but more powerful. Arrays make constrained groups of items, saving you time when altering the layout of multiple items constrained by their endpoints or radii.	
Flexible graphic controls	Detailed graphic controls and view-specific graphics make drawings look exactly the way you want them to.	
Group tool	Groups are similar to AutoCAD® blocks, but more flexible. More than just dumb geometry, grouped items maintain join behaviors (walls, floors, and so forth), sequential annotation numbering, and constraint relationships to other items in the model, saving you time when switching layouts.	
Linework tool	Provides a parametric model line/edge override, enabling you to easily create a picture of what is needed in any specific view.	

Feature	Benefit	New
Paint tool	A simple tool for painting surfaces with different material so you can perform what-if rendering studies. Also used for making portions of objects that have different materials, such as a floor with multiple carpet colors, speeding the description of many plan and elevation material-change conditions drawings.	
Spell Checker	Improve the quality of documents. Check spelling of text entries using a dictionary containing standard architectural terms and abbreviations, standard dictionaries, or your custom dictionary.	X
Temporary thin-lines mode	This viewing mode makes drawing complicated sketches and small components in details easier, reducing errors.	
Transfer view templates	Enables moving preset view settings between projects, and eliminates duplication of effort among projects.	
View templates	Specify all the settings for a certain type of plan, section, elevation, or other view and name it as a template that can be applied to other views in the project. Ensures graphic consistency and saves setup time.	
WYSIWYG display and printing	An important usability benefit. Enables all team members (even those who don't use CAD) to look at the screen and see exactly what will print. Ensures graphic consistency, and makes Autodesk Revit accessible to everyone.	

Site and Landscape Design

These features constitute Autodesk Revit software's acclaimed site design environment and are important in the creation of construction documents, saving time and eliminating rework.

Feature	Benefit	New
Automatic contour line labels	Ensures consistency of annotation in site plans. Saves time, since contour lines self-annotate and the labels are always neatly lined up.	
Construction logistics component library	Provides clarity in construction planning. Add cranes, trailers, scaffolding, and other temporary and staging items to the project to plan the actual delivery of the building project.	X
Parametric plant library and editor	Choose from a large library of plant component families arranged by common and Latin terms, or create your own with the Autodesk Revit plant editor.	
Parametric site component library	Thousands of imperial and metric building component families for every project type, provided on CD, can be used as is or customized for specific designs.	
Parking components and schedules	No more time counting parking spaces. Autodesk Revit schedules them automatically.	

Feature	Benefit	New
Procedural plants	High performance: stores no geometry in the model. Plants are calculated at rendering time by a fractal algorithm that produces unique plants in all locations. Plants can be rendered for different seasons and growth conditions.	
Property lines	Entering bearing and distance data from deed descriptions to create your closed property boundary reduces drawing headaches and the need to switch to different drawing units.	
Site grading and pad layout	Enables architects to model buildings in context of the site.	
Site terrain surfaces	Provides site context for the building and creates all ground lines and hatch patterns in sections and elevations, saving time and eliminating tedious hatching chores.	

Drafting and Documentation

These tools help you create integrated construction documents by taking full advantage of the building model. The result drastically reduces the amount of drawing needed, saving time and ensuring document coordination and quality.

Feature	Benefit	New
Automatic sheet index	The sheet index always lists the right drawing sheets in your set. Renumbering drawings in the sheet index renumbers all the sheets themselves, ensuring consistency.	
Automatic sheet and drawing references	Automatic drawing references ensure that no section, elevation, or callout ever references the wrong drawing or sheet.	
Detail-level view control	User-defined control of what level of detail displays at different scales of drawings. Saves time in detailing.	
Detail Views	Easily create many standard detail view types and control their keying in other views to match your standards.	X
Edit Cut Profile tool	Make your own joins between walls, floors, or roofs by altering the boundaries between different materials so your drawings look exactly the way you want.	
Ellipses	Create true full and partial ellipses with a simple input interface for lines and sketches. Ellipses can be used for geometry creation, including in sweep path sketches.	X
Insulation tool	Draws parametric, variable width/length batt insulation for use in detailing, providing time savings on most detail drawings.	
Keynoting	Use keynote families to reduce the time required for creating a schedule of generic notes based on any system (CSI, and so on). Tag items in any view with keynotes.	

Autodesk Revit 6 Features and Benefits

Feature	Benefit	New
Live schedules	<p>Schedules are computed on demand. Dramatically reduces the time to create and edit schedules. Work in any appropriate view of the building, including schedules. Changing schedules makes the appropriate geometric changes in the model.</p> <p>In Revit 6.1, enhancements include associative split schedule sections, selectable design elements via schedule views, and enhancements to door schedules.</p> <p>You can also apply filters to schedules to show only the elements you need, and use computed fields which contain formulas calculated from values in other fields.</p> <p>In Revit 6.1, conditional tests for formulas are supported.</p>	X*
Manage office standards across projects	Project standards comprise a specific list of settings that control the look and types of construction in a project. These settings can be preset in templates and transferred between projects, providing high-level control over projectwide settings. They can also be checked out to a project lead to make them read-only, providing security and change control.	
More project templates	Templates are included for residential and light commercial project types, saving time in project setup.	
Multicategory schedules	Enables more scheduling/queried reporting than typical architectural schedules. Allows scheduling all components with certain properties within the project, enabling useful data gathering, and provides valuable answers to project questions.	
Opening rough width and rough height	Doors and windows provide guaranteed fields for rough openings, eliminating errors and providing more value in schedules.	
Parametric annotations/tags/keys	Powerful, data-driven tagging enables you to link your tags to your building components and rapidly create and maintain live schedules directly in the model.	
Parametric detailing	Powerful 2D drafting and parametric detailing tools enable you to create detail drawings directly in the model that can update as the model changes.	
Plan Regions	Create regions with different view ranges in plan and RCP views. Supports standard methods for representing split levels and wall hosted elements above the standard cut plane.	X
Prints sets/saved print settings	Save batch print settings and sheet lists for different print sets, eliminating redundant tasks when reissuing drawing sets.	
Reference schedules and keys	Save project time and tracking by making schedule keys to represent a group of items for creating reference schedules such as door hardware type, room type, and finish type.	

Autodesk Revit 6 Features and Benefits

Feature	Benefit	New
Reference sections and callouts	Referring to similar conditions that are already detailed in your project saves detailing time and ensures coordination.	
Repeating Detail components	Create and modify detail views more quickly. Draws linear arrays of detail components that add and remove items as the defining line is modified.	X
Revision cloud	Provides bubbling of revisions and tagging for display in title blocks. Speeds issuing addenda.	
Scale-based line weight control	User-defined control of what level of line weights display at different scales of drawings helps establish drawing consistency.	
Scale-dependent annotation and symbols	Automatic scaling of annotation items ensures that drawings always have correctly sized text or annotation symbology, removing this headache from the project team.	
Sheet-based view rotation	Provides toggle between portrait and landscape orientation of views to place them on sheets, saving time when laying out deliverables in differing formats.	
Sheet layout tools	Drag-and-drop sheet layout makes setting up and maintaining a set of construction drawings easy.	
Split sectional views	Enables detailed section views to be split (with breaklines) to fit on a drawing sheet. Used for enlarged sections, such as wall and stair sections.	
Spot elevations	An annotation as well as a parametric control, spot elevations enable movement of items as well as ability to report their elevations, ensuring consistency.	
Title block families	Use multiple title blocks in a project to make different sheet formats for presentation, design approval, and construction documents.	
"True North" views	View can be switched between Project North and True North orientation, saving time by eliminating the need to rotate text and symbols.	
View duplication with detailing	Copying a whole view with all its detailing components enables quick creation of similar detail conditions.	
Dimensioning	Dynamic dimensions update as your design changes, reducing rework. In Revit 6.1, walls support single-click dimensioning including dimensioning support for openings such as windows and doors.	X*
Color-Fill Regions	In Revit 6.1, color-fill regions now support transparent backgrounds.	X*

Multiuser Work Environment

Teams can simultaneously design a building while Autodesk Revit coordinates all the changes between the team members, decreasing time cycles for any design.

Feature	Benefit	New
Autodesk Buzzsaw web folder support	The ability to export drawings for consultants and post families and other Autodesk Revit files directly to your Autodesk® Buzzsaw® site using web folders simplifies collaboration for the extended design team.	
Change history audit trail	Workset change history shows which team member changed what and when, helping to maintain an audit trail for key changes on your project.	
Graphic controls for linked Revit models	Standard model-viewing mechanisms are supported for linked models. Linked models can also draw themselves based on phase- and floor-level information in the linked project, enabling a range of drawing deliverables not previously possible.	
Model linking	Link other Autodesk Revit building models directly within your project. Create multiple buildings and link them together for campus-style projects, enabling teams to do much larger projects.	
Multiuser worksets	Worksets enable multiple team members to work together on the same model, while their work is fully coordinated. In Revit 6.1, worksets have been enhanced with the removal of reference restrictions.	X*
Element Borrowing	Allows sharing of elements across worksets, reducing editing conflicts in multi user work teams.	X
On-demand database reading	Autodesk Revit reduces memory usage and increases performance on large models by computing only those things you see in your currently open views.	
Runtime shared parameters	In addition to adding external shared parameters at family creation time, you can also add them to family components in existing projects. This enables more powerful queries for many design and construction situations.	
Selective workset opening	Opening portions of a large building model increases performance and provides project-wide visibility control, speeding your interactive work.	
Shared coordinate systems	Once a model is located with respect to another model, its position is "known" by every model in the project that shares the coordinate system. This saves time and tedious effort in continually trying to match up coordinate systems between multiple projects and DWG files.	
Task-specific user interface	Customizable design bar with grouped tools for modeling, detailing, site design, structural layout, and construction planning makes it easier for design professionals to do their job.	

Feature	Benefit	New
Temporary hide/show/isolate	Something getting in your way while editing? Isolate your selection or temporarily hide it make editing easier.	

Presentation and Visualization

Integrated rendering and other tools provide on-demand presentation material as an added benefit, without additional work by the team.

Feature	Benefit	New
AccuRender rendering	Integrated AccuRender raytracing and radiosity for on-demand visualizations enable any designer to create fast, high-quality renderings for clients.	
Animated walkthroughs	Path creation produces rendered animations for stunning client presentations, enabling any designer to create fast, high-quality walkthroughs for clients.	
Area takeoff and diagramming tools	Industry-standard, built-in area analysis for producing multiple area schemes for any given floor dramatically improves the productivity of architects needing to produce area studies for their clients.	
Automatic color fill	Instant color-plan diagrams of program assignments or any other room data dramatically improves the productivity of architects needing to produce area studies for their clients. In Revit 6.1, Color schemes can be controlled by Area, or Perimeter values. Color Fills can also be derived by Value Range.	X*
Daylight sources	Include doors, windows, and skylights in rendering calculations to simulate daylight conditions.	
Decals	Apply signage and other graphics to surfaces. Enables realistic rendering and reduces modeling.	
Entourage	ArchVision® RPC™ image-based rendering for unprecedented realism.	
Integrated rendering material library	Use thousands of renderable materials, textures, and patterns, or create your own to speed the time required for anyone in the firm to create a rendering.	
Light groups	Make sets of lights that turn on and off together, for faster evaluation of lighting alternatives during rendering.	
PANTONE color support	Integrated PANTONE® Color Picker for thousands of print-coordinated color selections.	
Photo backgrounds	Superimpose photographs for rendering.	
Procedural plants	High performance: stores no geometry in the model. Plants are calculated at rendering time by a fractal algorithm that produces unique plants in all locations. Plants can be rendered for different seasons and growth conditions.	
Radiosity rendering	Provides daylighting and interior lighting study capability.	

Feature	Benefit	New
Render scenes	Creating collections of settings representing the environment for a rendering reduces tedious tasks creating several renderings.	

Reporting and Data Sharing

The robust building database in Autodesk Revit can interface with and drive many valuable downstream uses such as publishing, cost estimating, and construction planning.

Feature	Benefit	New
DWG/DXF file support	Autodesk Revit imports, exports and links your data with the industry's best DWG compatibility. Native support for DWG and DXF™ formats assures fully compatible data exchange for smooth coordination between team members, including engineering consultants. Enables some people on the team to work in Autodesk Revit while others can continue to use their favorite drafting system.	
External shared parameters	Shared parameters added to family components can be output via schedules. This enables powerful queries for many design and construction situations. In addition, Revit 6.1 additional shared parameters have been added to various families for export to ODBC databases.	X*
Image (bitmap) import	Include graphic image formats directly within your project. Reuse standard detail images in title blocks or presentations.	
Import and linking (xref)	Use data in DWG, DXF, or MicroStation® DGN file formats directly within your project. Reuse standard detail files without redrawing, enabling some people on the team to work in Autodesk Revit and others to work on their favorite drafting system.	
Integrated local layering standards	Built-in support for local layer standards, including U.S. standards (AIA/NCS), BS1192 (U.K.), ISO13567 (Europe), and CP83 (Asia) ensures layering consistency and enables error-free file transfer with other team members.	
Interface to external databases (ODBC)	Output to any ODBC-compliant database product to communicate with third-party estimating, planning, procurement, and facility management tools.	X
Interface with energy analysis (gbXML)	Output to Green Building XML (gbXML) and perform energy analysis using web service from GeoPraxis Inc.	X*
Interface to external spreadsheets	Text output from standard schedules can be used to provide data for Microsoft® Excel and other spreadsheets.	
Material take-off for detailed cost estimating	Reporting of "preferred unit of measurement" for all items exported to ODBC databases enables detailed cost estimating from construction assembly data.	
MicroStation DGN file support	Output to MicroStation DGN file format for smooth coordination between team members.	
PDF file support	Plot directly to PDF for digital collaboration and document sharing.	

Autodesk Revit 6 Features and Benefits

Feature	Benefit	New
Save out loaded families	Preserve long term data integrity and ability to modify projects. Save families from projects to independent modifiable family files.	X
Unifomat II support	Use ASTM Unifomat II classification for mapping to cost-estimating and other assembly-based data.	
DWF Export	Use the free Autodesk® DWF™ Writer for distributing finished sheets via email, the Web, or Autodesk Buzzsaw in an unalterable format to easily communicate and collaborate with other members of the project team.	

* Features marked X are new or improved in Autodesk Revit 6 and those marked X* are new or improved in Autodesk Revit 6.1.

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