

Autodesk Revit Building 9.1 Feature Summary

This Autodesk Revit Building Feature Summary provides an overview of the new functionality in Autodesk Revit Building 9.1. This release of Autodesk® Revit Building is a service, release that focuses on the following themes:

- Interoperability
- Fit and finish (Modeling and Drafting improvements)
- Quality
- Compatibility

Interoperability

- Select units for DWG export
- Import and export of images to PNG-format
- Export room and area properties to 2D DWF
- Export globally unique identifier (GUID) to 2D and 3D DWF
- Export unit information and unformatted values to 2D DWF
- Specify the building type and zip code for exported gbXML files
- Room/area reports with exclusions

Modeling and Drafting Improvements

- Independent visibility control for revision clouds and tags
- Improved control of Elevation Tag visibility based on view scale
- Improved snapping for section views
- New area property for filled regions
- Plan view placement of windows/doors in inplace walls
- set boundary conditions for columns prior to placement
- Improved concrete joins and cleanups
- Modeling and editing (copy/move/rotate/extend) enhancements for braces
- Trim/extend for beams and braces
- Single-click Beam System creation
- 3D non-planar Beam System*
- Plan display options for hidden non-rectangular concrete beams

Quality

- bug fixes, stability and performance improvements

Compatibility

File format compatibility with Revit Structure 4 and Revit Systems

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Interoperability

Selecting units for DWG export

You can set the DWG units for projects you export to DWG format. Unit options are feet, inches, meters, centimeters, and millimeters. The default preset units are inches for imperial projects and meters for metric projects. The option to change those during export is in the Export dialog box / Options.

Exporting room and area properties to 2D DWF

When you export a project or a view that has rooms or areas to 2D DWF, you can have the room/area properties exported on a separate layer than the geometric representation. Setting this option allows you to view individual rooms and room data when you are exporting a project or a view for use with facility management software (such as Autodesk® FMDesktop), or DWF markup software (such as Autodesk® Design Review).

Export globally unique identifier (GUID) to 2D and 3D DWF

When you export object data to 2D or 3D DWF, a unique, consistent ID is also exported. This ID consists of the GUID and the element ID, which virtually eliminates duplicate element IDs when DWF files are merged from multiple sources outside of ProductName.

Export unit information and unformatted values to 2D DWF

When you export object data to 2D DWF, any property with an assigned unit of measurement exports user visible and user invisible information. This information is available when you import 2D DWF into Autodesk FMDesktop®. User visible information consists of formatted values. User invisible information consists of 2 additional fields; an unformatted, raw value, and a field that describes the unit type or data type.

Importing and exporting portable network graphics (PNG) image files

Import and export image functionality now allows you to import PNG files into projects, and export project views (shaded and non-shaded) as PNG files. Imported PNG images behave like other supported image formats; you can resize, mirror, array, copy, group the image, and so on. Note that PNG format is not supported for the Export Image command on the Rendering tab of the Design Bar. You can export a captured rendered view to a PNG file using the Export Image function.

Room/area reports with exclusions

You can now create room/area HTML reports with different exclusion settings. When you create a room/area report with exclusions (for example rooms with room-bounding columns) triangulation is performed, reported, and displayed separately for each bounding loop. This method gives a better visibility and graphic presentation of area reports of complex rooms with exclusions.

The option only applies to Revit room area triangulation reports and not to Revit room area numerical integration reports.

Specifying the building type and zip code for exported gbXML files

You can now specify the building type and zip/postal code for projects that export to gbXML. Several analysis software packages use this information when importing gbXML files to add default design values for energy use and costs, thermal loads, and construction.

Views

Hiding elevation tags

You can set the view scale at which elevation tags are hidden in project views. Each elevation tag instance can have a different view scale at which it is hidden. A parameter “Hide at scales coarser than”

Improved snapping for section views

You can now snap a section line either parallel or perpendicular to a non-orthogonal datum or wall. Snapping to a wall is available in plan views.

Modeling

Set room bounding condition for columns prior to placement

You can now specify whether an architectural column is room bounding before placing it in a project environment. This setting is available either on the Options Bar, when the column tool is selected or on the context menu of the column. The setting persists until you change it.

Placing windows and doors on in-place walls in plan view

You can now place windows and doors on in-place and face-based walls in plan view. (example: a sloped wall).

Moving end-joined components

Components that share a common end join can be moved simultaneously without breaking the join by using a new drag control, or by selecting an option on the context menu. This functionality is available for walls, lines, beams, braces, and line-based families, available on the context menu of one of the joined walls.

Using the Trim/Extend tool with beams and braces

You can now use the Trim/Extend tool (trim/extend to corner and trim/extend single element options) to trim or extend braces and beams.

Moving braces out of their originating plane

You can now copy, move, mirror, array, and rotate braces out of the vertical plane they were created in. You can accomplish this in plan and 3D views.

Non-planar beam systems

You can create non-planar beam systems in which the elevation of a beam is defined by its sketch lines. Sketched beam lines:

Beam System has a new checkbox property: "3D". By enabling this property the Beam System can become non-planar to accommodate different support heights. The elevation of beams in non-planar systems is defined by its sketch lines.

New option for the Layout Rule instance parameter

The Layout Rule instance parameter for structural beam systems has a new Clear Spacing value. This value is similar to the Fixed Distance value, but measures spacing between the exteriors of the beams instead of between their centerlines. When you adjust the size of an individual beam in a beam system with the clear spacing layout rule value, adjacent beams move to maintain the distance between them.

Structure

Concrete drawing improvements

Concrete beams that are in the same plane and are joined to the same concrete column (where the beams are wider than the column) automatically clean up.

This improvement is not automatically applied to existing models that are being upgraded. You can click on existing concrete beam joins in the drawing to reconnect them and reestablish the join.

Automatic concrete joins

The following concrete structural components now automatically join:

Beams that intersect beams
Beams that intersect columns
Foundations that intersect foundations

If you unjoin auto joined members using the unjoin geometry tool, auto join is suspended for these elements and they can only be joined again using join geometry. Upgraded elements from previous releases do not automatically join unless manipulated.

Beam Direction Edge tool renamed

The Beam Direction Edge tool has been renamed Beam Direction. This tool is available when you are sketching a beam system.

New options for sketching beam directions

When you are sketching a beam system and you click the Beam Direction tool, there is now a draw tool on the Options Bar in addition to the existing pick lines tool. The draw tool allows you to sketch a line that defines beam direction independent of the boundary lines.

The draw tool draws a sketch line between any 2 points you specify. This dashed blue line describes the direction of the beams in the beam system. The line has no other function in the sketch other than to define direction and therefore cannot be used to close a loop. The line can overlap existing lines, but you will receive a warning.

Drawing a direction sketch line, or using the pick lines tool to pick another sketch line to define direction, deletes any previously existing direction sketch line. Arc walls can no longer be used to define the direction of a beam system.

Different display options for hidden, non-rectangular concrete beams

In the Family Editor, there is a new family parameter (under Settings menu Family Category and Parameters) named Display in Hidden Views. This parameter allows you to specify what edges display as hidden for the current concrete or pre-cast concrete family.

Details and Annotations

Independent visibility control for revision clouds and revision tags

You have the following options for revision cloud and revision tag visibility:

None: This option (formerly Off) turns off the display of the revision cloud and the revision tag in the drawing.

Tag: This new option displays the revision tag (if one has been applied) and draws the revision cloud but does not display it in the drawing. You can highlight and select the cloud to move or edit it.

Cloud and Tag: This option (the default) displays the revision cloud and the revision tag (if one has been applied) in the drawing. This was previously the On option.

To set the visibility control for revision clouds and revision tags:

1. Click Settings menu Revisions.
2. In the Revisions dialog, select an option from the Visible drop-down list.

New area property for filled region

To quickly determine area you can now use the filled region tool and view the new area property.

You view the area property for a filled region in its Element Properties dialog. The area value is the area of the region's closed perimeter loop less the area of any closed loops within the perimeter. The area property is reported in the project units (for example, square meters or square feet). The area property is read-only and cannot be scheduled or tagged.

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