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Autodesk® Revit® Structure 2011

Autodesk® Revit® Structure 2011 software offers Building Information Modeling (BIM) to structural engineering firms, delivering a better-coordinated and more reliable model for more efficient and accurate design and documentation. Help improve multidisciplinary coordination by using crucial information from architectural and engineering files, whether from Revit-based product models or from 2D file formats. Incorporate analysis through bidirectional linking to popular structural analysis software, including Autodesk® Robot™ Structural Analysis Professional software (2011 and previous releases of the software). Powerful parametric change management technology assists in coordinating modifications and updates across the model and documentation. Use a comprehensive set of drafting tools to help complete construction drawings in Revit Structure, and share design data with project teams for more efficient collaboration.

What's New

Key Features Common to All Revit Platform Software — Autodesk® Revit® Architecture 2011, Autodesk® Revit® MEP 2011 and Autodesk Revit Structure 2011 software share a common set of key enhancements for improved design functionality and workflow to help design teams accelerate better design with tools that promote productivity and support sustainable design and analysis. See the Autodesk Revit Platform Enhancements for 2011 backgrounder for information on platform enhancements.

Enhanced Design Features (Fit and Finish)

More Control and Easier Placement of Slanted Columns — Users can place slanted columns in a plan view and adjust the slanted column along an attached beam. Users can also cut the ends of a slanted column to an attached structural floor or slab and can even cut a slanted column horizontally, vertically or perpendicularly when it is not attached to an element.

More Flexibility to Create and Modify Beam Systems — Use the Beam system tool to select a support such as a wall or beam to specify the direction of a beam system. Draw a sketch line inside or outside a beam system to specify beam direction, and remove a beam system but allow the beams to remain in place.

More Flexibility When Placing and Modifying Trusses — Attach the bottom of a truss to a structural floor or foundation slab element and simultaneously sketch custom cords while the truss is attached. Remove a truss family while the truss chords and webs remain in place.

Ability to Display More Accurate Representation at Concrete Joins — The software includes improvements to the joining and cleanup behaviors of concrete object end joins for complex profiles for column, beam and walls so the construction drawings reflect a more accurate representation of the physical model.

More Rebar Options When Modeling and Documenting Concrete Reinforcement — Autodesk Revit Structure 2011 now provides structural reinforcement enhancements, such as 3D shape spiral rebar, reinforcement of slab edges, ability to configure rebar sets, additional hook bend radius and major spacing of area reinforcement in tags.

More Flexibility for Automated and Manual Analytical Model Adjustments — Horizontally project from columns to the default plane, the auto-detected plane or a named reference plane. Top or bottom vertical projection of a column will now auto-detect to beams when structural

floors are not present. For columns, engineers can use the top or bottom of a column analytical model as a source for manual analytical adjustment.

Ability to Display Several New Symbolic Connection Types for Documentation — Autodesk Revit Structure 2011 provides several new connection symbol families that can be loaded and selected through a new interface in the Structural Settings dialog box.

Improved Productivity (Ease of Use)

Improvements to Help Make Everyday Tasks Easier

- Users can place 3D beams using 3D lines, edges and curves from geometry that is imported with CAD files, minimizing the need to re-create designs from the beginning in Autodesk Revit Structure.
- The Structural Framing Length Roundoff parameter can be specified for a beam family, overriding exact calculation of the beam length to a broader, more applicable length.
- For walls, there is now a Split Walls with Gap tool for easier wall panel creation.
- The span direction for metal deck floors is now controlled within the floor boundary creation tool rather than through the annotation tag.

More Productivity Tools for Construction Documentation

- In previous releases of Revit Structure, the A (cross-sectional area) and W (weight) parameters were not accessible for use with schedules. With the newest release, these user-defined parameters can be used in schedules without the need to convert them into shared parameters for convenience and quantity takeoff (to calculate steel tonnage) purposes.
- Users can now add insulation (such as batt insulation) to detail views.

Extended Capabilities (Design Extensibility)
The following features are available only to Autodesk Revit Structure 2011 customers with a valid Autodesk® Subscription contract:

Quicker and Easier Creation of Simple 3D Framing Models — Use the new module frame generator to more rapidly define and generate a simple 3D frame model. This tool generates structural elements such as columns, beams and supports based on specified geometric parameters assigned to the structure, helping users save design time by automating this process with fewer mouse-clicks.

Quicker and More Accurate Modeling of Wall Framing Structures — Use the wood wall framing extension tool to more quickly and precisely model a wood frame structure within interior and exterior walls.

More Accurate and Efficient 3D Bridge Models — Use the bridge extensions to more accurately and efficiently model 3D bridges and help generate typical 2D drawings of plans and sections. Define basic parameters of more complex bridge geometry, including road profiles, decks, abutments, piers and railings.

Help Reduce Costly On-Site Redesign and Rework Caused by Improper Placement of Rebar Locations —The Interferences of Reinforcing Bars extension enables structural engineers and drafters to check for interference of reinforcements earlier in the design process. More easily generate a detailed list of conflicts and print in HTML format or export to Microsoft® Excel® and Microsoft® Word software.

Interoperability Improvements for Creating 2D Drawings and Analysis Design

- Reinforcement Drawings Extension Update — Autodesk® Robot™ Structural Analysis Professional 2011 software elements imported from a Revit Structure file now appear in

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AutoCAD® Structural Detailing 2011 software, and rebar defined by the user is now exposed in AutoCAD Structural Detailing.

- Reinforcement Design Extension Update — Improved rebar mapping functionality and user-defined rebar is now recognized in Robot Structural Analysis Professional 2011.

Enhanced BIM Workflow (Enhanced Integration Between Autodesk Revit Structure 2011 and Autodesk Robot Structural Analysis Professional 2011) — Steel connections created in Revit Structure can now be transferred to Robot Structural Analysis Professional and vice versa. Help bring required reinforcement to Revit Structure for beams and columns. Also, the content generator mapping component helps to integrate the transfer of unrecognized profiles, materials and rebars between the two programs.

Tools to Better Drive Engineers from BIM to Analysis (Load Takedown and Steel Composite Design Extensions) - the Load Takedown extension and the Steel Composite Design Extension that previously existed in the in Robot Extensions package are now part of the Revit Extensions package. Previously, these two extensions needed an Autodesk Robot Structural Analysis license in order to access these tools inside of the Revit Structure application. Now, these extensions will run inside of Revit Structure without the need to have Robot Structural Analysis installed on the same computer.

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