

Structural Analysis Toolkit 2015

Autodesk, Inc

The toolkit is a suite of tools that supports the BIM process and allows structural engineers to analyze structures from within the Autodesk® Revit® environment

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Description

The Structural Analysis Toolkit for Autodesk Revit software is a suite of tools that supports the Building Information Modeling (BIM) process and allows structural engineers to analyze structures from within the Revit environment.

- The toolkit contains the following items: The link with Autodesk® Robot™ Structural Analysis Professional 2015 Autodesk® 360 Structural Analysis for Revit
- Structural Results Storage & Exploration tools.

Using this toolkit structural designers and engineers can optimize their workflows in the cloud and on the desktop by using the analytical model built in Revit to conduct cloud-based structural analysis with access to Autodesk 360 services and by extending the Revit model to Autodesk Robot Structural Analysis Professional software or supported third party analysis solutions. Once complete, analysis results can be easily stored and explored in the Revit environment.

General Usage Instructions

Integration with Autodesk® Robot™ Structural Analysis Professional



Autodesk® Robot™ Structural Analysis Professional is a structural analysis and design software application. Use it to analyze any type and shape of a structure as well as to design elements of the structure (steel, concrete, timber elements).

Usage

- . Open a Revit project that includes an analytical model. . Click **Analyze** tab >> **Structural Analysis** panel >> **Robot Structural Analysis** >> **Robot Structural Analysis link**. . Select **Send model** and set up transfer options and click OK. The link will transfer your model to Autodesk Robot™ Structural Analysis
- Select Sen Professional.
- A. Analyze and optimize your design in Autodesk® Robot™ Structural Analysis Professional.
 5. After you are done, switch to Revit. Click Analyze tab >> Structural Analysis panel >> Robot Structural Analysis >> Robot Structural
- Analysis link again 6. Select Update model and set up update options and click OK. The link will update your model.

For more information, click Help link on any dialog window or see the Help for Integration with Autodesk Robot™ Structural Analysis Professional (http://help.autodesk.com/view/RVT/2015/ENU/?contextId=DRevit2Robot).

For a comprehensive description of how to use Autodesk Robot™ Structural Analysis Professional, please see the Help (http://www.autodesk.com/rsapro-help-2015-enu).

Autodesk® 360 Structural Analysis for Revit



Lets you perform cloud-based structural analysis of a Revit Structure analytical model

Usage

Open a Revit project that includes an analytical model. Click Analyze tab >> Structural Analysis panel >> Analyze in Cloud.

Note: The Analyze in Cloud dialog appears and displays steps of the preparation process for uploading the model to the cloud.

• To use Structural Analysis for Revit, you need to sign in to your Autodesk account or create a new account clicking "Need an Autodesk ID?" link

• The Structural Analysis for Revit tool is available to Subscription customers. You need to have proper entitlements to use it. Your Subscription can be verified within your Autodesk Account. After signing in, click **Enable your Subscription benefits** to verify your Subscription and enable your account with the Autodesk 360 cloud services you're eligible for. • To perform an analysis you need to have enough cloud credits. To see the FAQs on cloud credits, go to FAQ for Structural Analysis cloud credits. (http://help.autodesk.com/view/RVT/2015/ENU/?contextId=FAQ_STRUCTURAL_ANALYSIS_CLOUD_CREDITS)

- 3. In the Analyze in Cloud dialog specify the desired values for Model, Analysis name and Report name
- Note: Each analysis for a given model needs to have a different name
- 4. For Report template, select:
 - Status only, to obtain short information that the analysis is completed or failed.
 Simple report, to view the analysis results including maps and diagrams.
- 5. For Analysis profile, select Draft, Normal or Fine.

Note: This setting impacts accuracy of calculations. It only affects models that include analytical walls, floors and foundation slabs

6. In the Self-weight options, specify if you want to automatically add a self-weight of the analytical model to an existing load case or not S. Select Add to existing load case, and then select the load case on which the self-weight will be generated. Select Ignore if you don't want to generate a self-weight on the load case.

Note: If there are no loads defined, then the Ignore option is disabled and the self-weight is generated on the existing load case

8. Click Start Analysis

For more information, see the Help for Autodesk® 360 Structural Analysis for Revit (http://help.autodesk.com/view/RVT/2015/ENU/? contextId=EXLINK_STRUCTURAL_ANALYSIS_FOR_REVIT).

Structural Results Storage and Exploration tools



Lets you download, remove or check status of structural analysis results of your Revit Structure analytical model.



Lets you display diagrams and maps based on structural analysis results.

Usage

Click Analyze tab >> Structural Analysis panel >> Results Explorer. The Results dialog opens.
 At the top of the Results dialog, select the model, analysis, and load case for which you want to display results.
 In the Result column, select the result you want to display.
 Click > if you want to specify display settings such as the style, units, and scale for the selected result.

The list of styles displays predefined Structural Analysis styles. To select or modify these styles, use the Analysis Display Styles dialog.
The list of units shows by default units set for a Revit project (they display in angle brackets). If you want other units to show on these lists, select them in the Project Units dialog.

5. Specify if you want to the Local coordinate system for members to be displayed.

Note: If the option is selected then all types of linear elements of analytical model (Columns, Beams, Braces) are displayed in the local coordinate svstem

Specify if you want to the Local coordinate system for surfaces to be displayed.

Note: If the option is selected then all types of surfaces of analytical model (Floors, Slabs, Walls) are displayed in the local coordinate system.

Specify if you want to the Global coordinate system to be displayed.
 Click Apply.

For more information, see the Help for Exploration (http://help.autodesk.com/view/RVT/2015/ENU/?contextId=CONC_RESULTS_EXPLORER_DIALOG) and Management (http://help.autodesk.com/view/RVT/2015/ENU/?contextId=CONC_RESULTS_MANAGER_DIALOG) in Revit.

Screenshots



(/Resources/original_daab6abe-f17c (/Resources/original_8246ee92-f799 (/Resources/original_cd7fd891-571c -48d6-9f48-f06d5742477a_.png) -4a90-876a-4b891f3c5315_.png) -4d37-96cc-38ac48cc5891_.png)

Commands

Ribbon/Toolbar Icon	Command	Command Description
RID	Robot Structural Analysis	Autodesk® Robot [™] Structural Analysis Professional is a structural analysis and design software application. Use it to analyze any type and shape of a structure as well as to design elements of the structure (steel, concrete, timber elements).
	Analyze in Cloud	Lets you perform cloud-based structural analysis of a Revit Structure analytical model
	Results Manager	Lets you download, remove or check status of structural analysis results of your Revit Structure analytical model
₩¶1	Results Explorer	Lets you display diagrams and maps based on structural analysis results

Installation/Uninstallation

The plug-in has already been installed with the toolkit that you downloaded from the Exchange apps (http://apps.exchange.autodesk.com/RVT/Home/Index) website. You may need to restart the Autodesk product to activate the plug-in.

To uninstall this plug-in, exit the Autodesk product if you are currently running it, simply rerun the installer by downloading it again from Autodesk Exchange Store, and select the 'Uninstall' button, or you can uninstall it from 'Control Panel\Programs\Programs and Features' (Windows 7/8) or Add/Remove Programs (Windows XP), just as you would uninstall any other application from your system.

Known Issues

None.

Contact

Company Name: Autodesk, Inc.

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Author/Company Information

This set of plug-ins was created by Autodesk DLS-Simulation team

Support Information

Email us at structural.toolkit.support@autodesk.com (mailto:structural.toolkit.support@autodesk.com) with feedback or requests for enhancements.

Version History

Version Number	Version Description
2015.0	Original Version