AUTODESK UNIVERSITY 2013

Autodesk® Revit® Architecture 2014 New Features

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AB1356 Learn about the exciting new features in Autodesk Revit Architecture 2014 software. Get introduced to new concepts of Building Information Modeling (BIM) and efficient, easy-to-use tools for parametric design and documentation.

Learning Objectives

At the end of this class, you will be able to:

Describe the new features, concepts, and benefits of Building Information Modeling

Explain the fundamental concepts and features of Autodesk Revit Architecture

Use the parametric 3D design tools to start designing projects

Develop an initial level of comfort and confidence with the new tools in Autodesk Revit

About the Speaker

Michael is a Senior Application Specialist currently based out of Atlanta. He travels the southeast spreading the word about Revit, BIM, the AEC industry and software technology. Michael has more than 18 years of experience ranging from CAD management, commercial architectural drafting/Team Leader, 3D modeling, visualization and program customization to information technology. He has experience in software applications that include AutoCAD, AutoCAD Architecture, Revit Architecture/ Structure, 3ds Max Design, Photoshop, SketchUp, and Autodesk 360. Michael is an Autodesk Certified Instructor and Revit Certified Professional for AutoCAD, AutoCAD Architecture, Revit Architecture, 3ds Max Design and is an Autodesk Consulting Specialist and Structural Specialist. He is an Associate Member of the American Institute of Architects. He has had the distinct honor of presenting and teaching at Autodesk University in 2006, 2010, 2012and 2013, as well as a presenter at RTC and multiple AUGI CAD Camps. He can be reached via email at: mbzeeveld@yahoo.com

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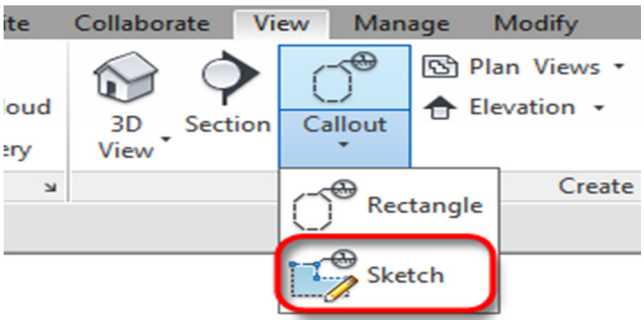
2014 New Features

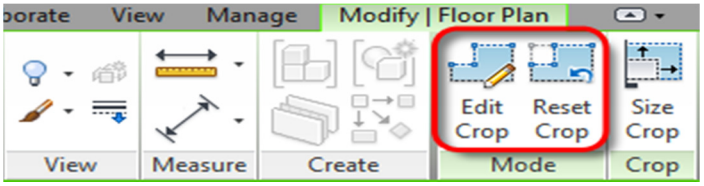
Topics

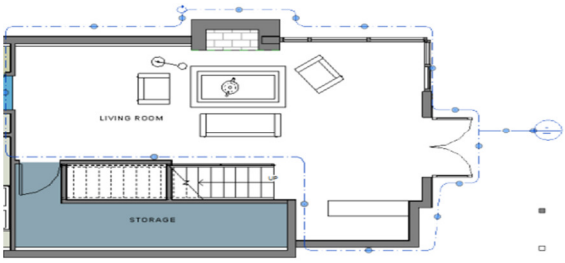
- Non-rectangular crop regions
- Element selection toggles for links, underlays, pinned items, and select by face
- Displace Element: new tool to create exploded views in any 3D view
- Split segment feature for elevations
- “Use Optimized View Navigation” setting that significantly improves performance
- Several enhancements to schedules
- Temporary view properties, especially nice for views with a fixed View Template

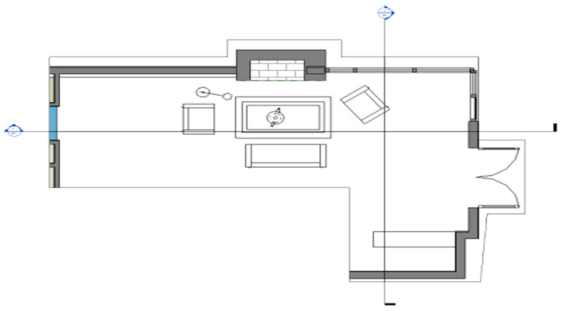
Non-Rectangular Crop Regions

- Reference and crop regions of arbitrary shape
- More efficient documentation layout
- Easier presentation of referenced model areas



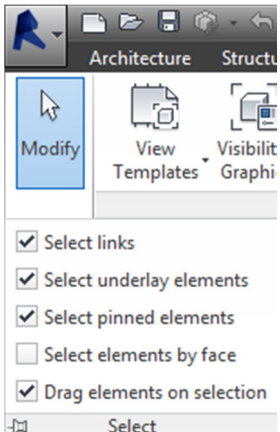






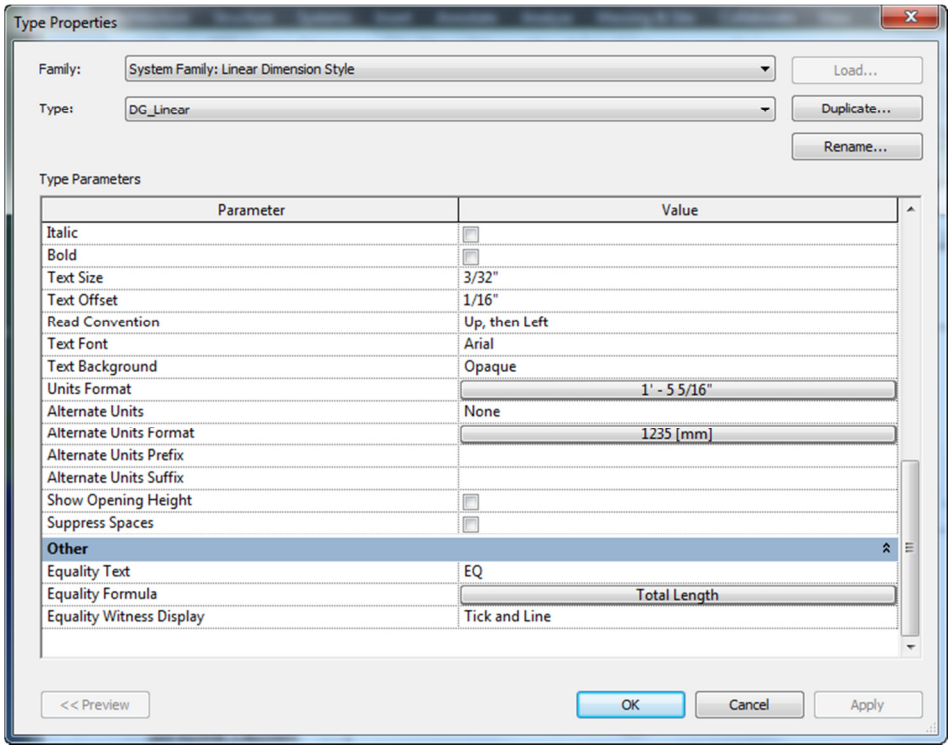
Element selection toggles

- Element selection toggles for links, underlays, pinned items, and select by faces



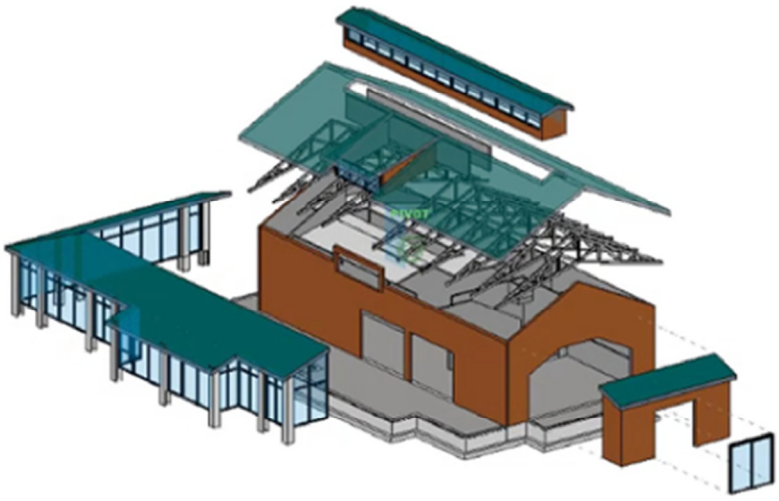
Alt. Dimensions

- Primary Dimensions
- Alternate Dimensions



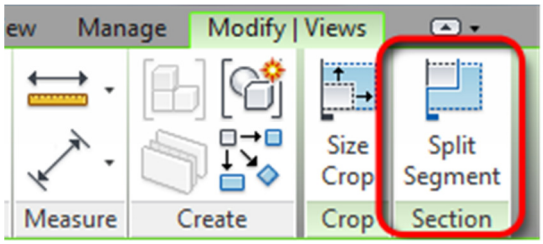
Displace Element

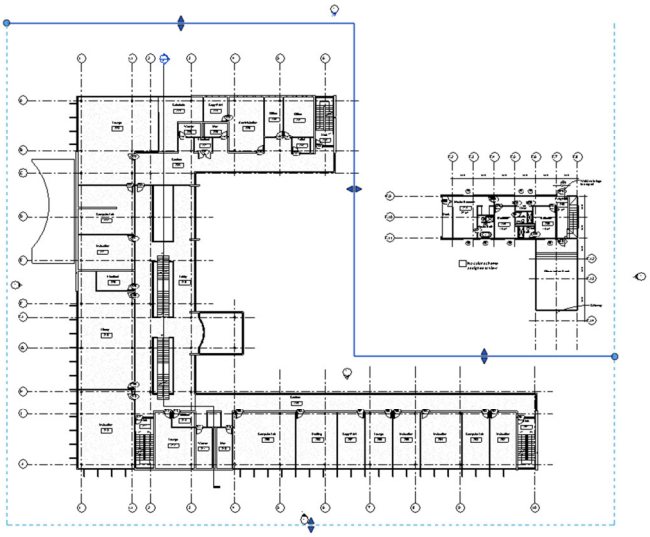
- create exploded views in any 3D view



Split segment feature for elevations

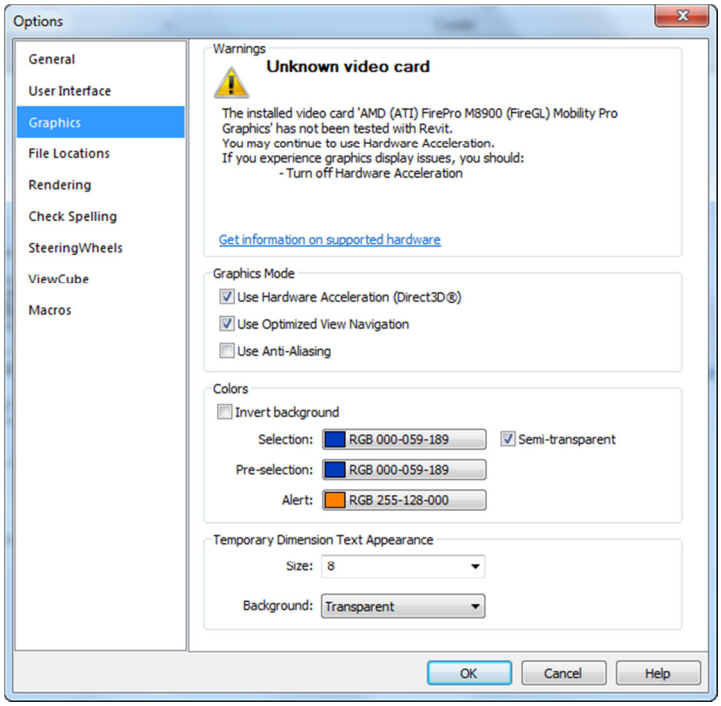
- Manage elevation cut-line configuration
- Exclude unwanted or overlapping objects in elevation





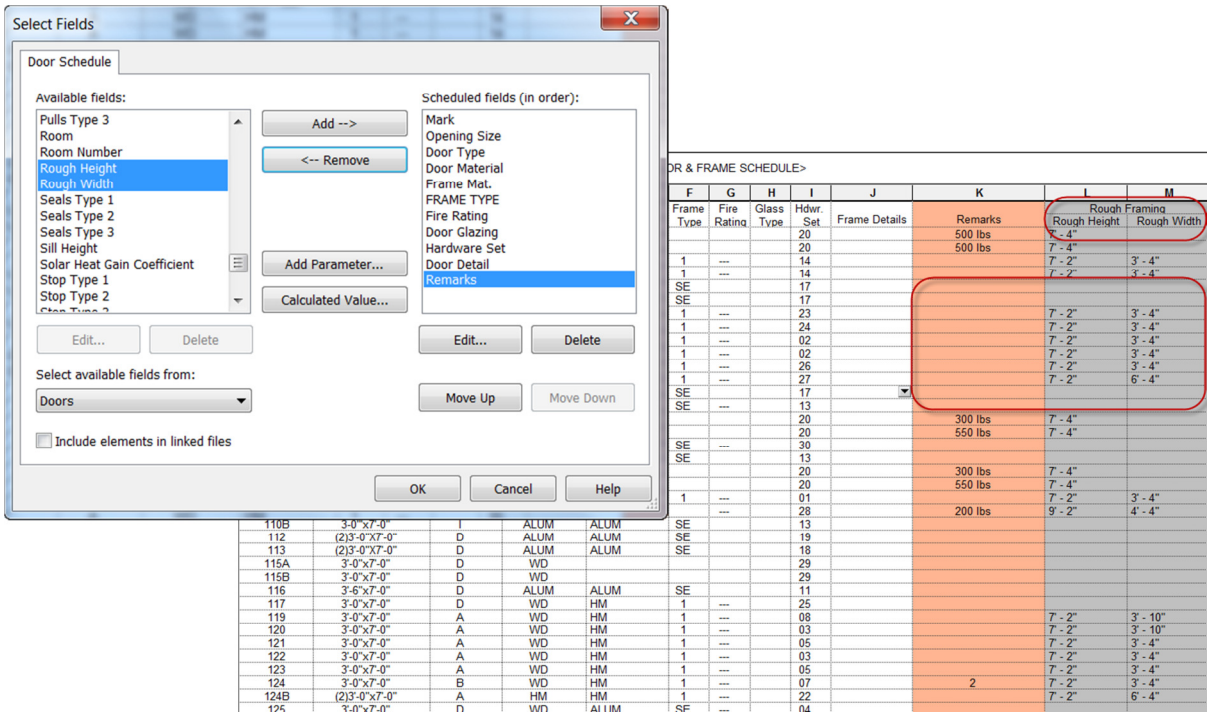
Optimized View Navigation

- Setting that significantly improves performance



Schedules enhancements

- Text properties and table formatting improvements
- Improved data access, display, and relationships
- Ability to display graphics in schedule headers



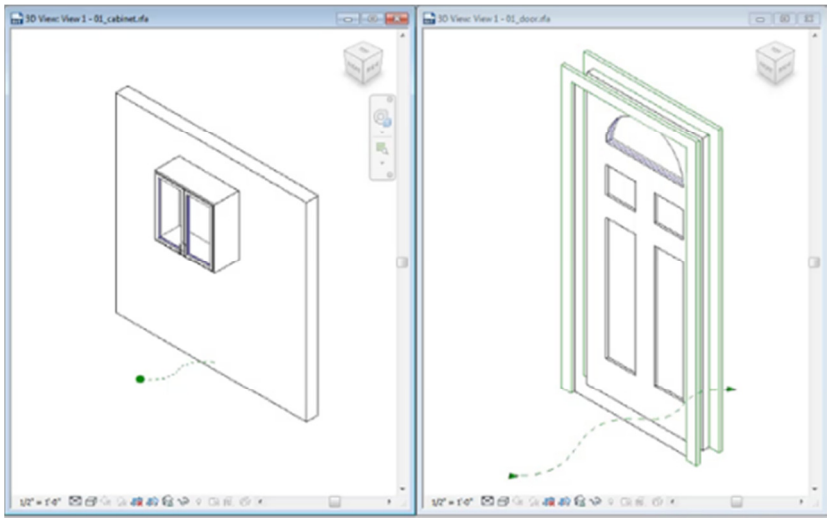
Temporary view properties

- When a view has a view template assigned, the visibility and graphics controls for the view are disabled. The view template controls these settings. To make changes, the settings in the view template need to be altered, or the assigned template set to <none>.
- In some cases you may not want to alter the template settings or the assigned template in order to accomplish your work. In this case you can use the Temporary View Properties Mode to temporarily make a change to the visibility and graphics of a view without affecting the template settings.
- The mode enables the visibility and graphic controls of the view or allows you to apply the visibility and graphic settings of a view template in the project. In this case an analytical template is applied so the structural model can be verified.
- When a template is applied in this mode, visibility and graphic controls can still be individually adjusted. A purple border is applied to the view window as an indicator the temporary view properties mode is active.

- Toggle off the temporary view properties when no longer needed and the visibility and graphic settings from the assigned template are restored.
- If the temporary view properties mode is selected again the most recently used templates are listed for quick selection.

Room Calculations

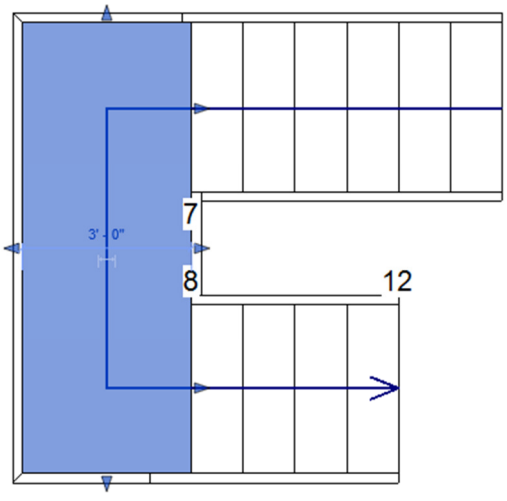
- Location “tails” to identify where object related to a room



Stairs

New enhancements to stairs have been added for layout and assembly

- Additional location line options to choose from
- Edit the Run width before or after stair placement
- Snapping behavior is improved when placing stairs. More snap points are supported as you place the components.
- Temporary dimensions have been added to assist in placement of stairs.
- Railings cleanup better at intersections.
- Stair materials now cleanup better when joined with adjacent geometry.
- Landings now have more grip controls to allow for direct manipulation of the landing without resorting to convert to sketch



Additional New Features

- Building Element Energy Analysis
- Displaced Elements
- Dockable Window Framework and Enhancements
- Double-Click to Edit Enhancements
- Interoperability Enhancements
- Materials UI Enhancements
- Productivity Enhancements
- Non-Rectangular Crop Regions
- Parameter Variance for Groups
- Room Calculation Point
- Schedules Enhancements
- Selection Enhancements
- Split Elevations
- Temporary View Templates
- View Navigation Performance
- Stairs & Railings Enhancements
- Point Cloud Improvements
- Alternate Dimensions
- Enhanced API

Autodesk® Revit® Architecture 2013 New Features

Introduction

For those of you who are maybe new to Revit in general, I wanted to include some additional New Features that were included in last year's release. The following pages include those items.

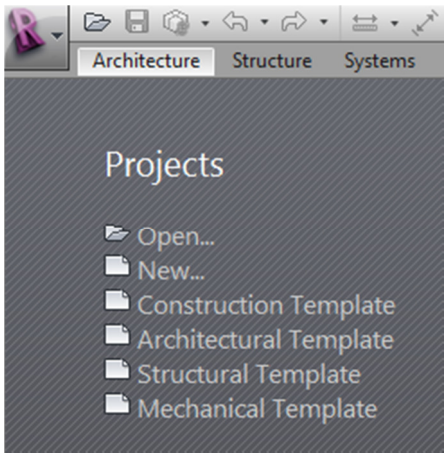
2013 New Features

General Enhancements

Application

Building Design Suite Ultimate 2013

"One Box" concept

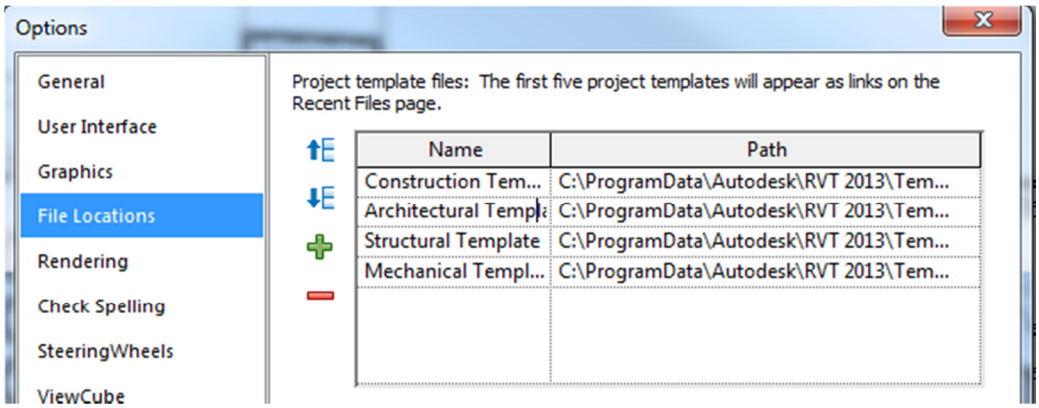


Multiple Disciplines

Templates

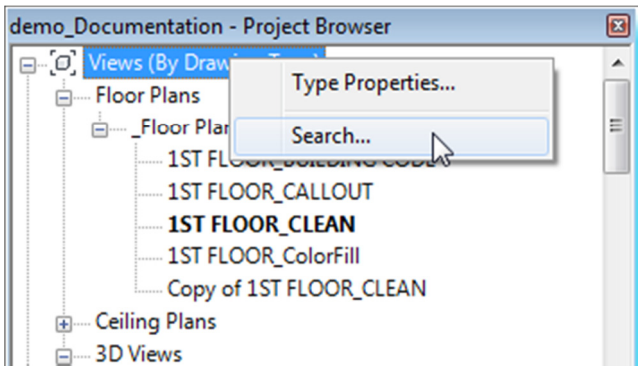
Multiple discipline templates to choose from

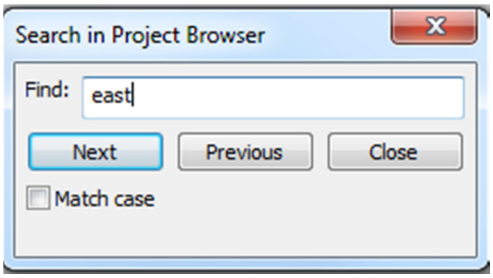
File Locations



Searchable Project Browser

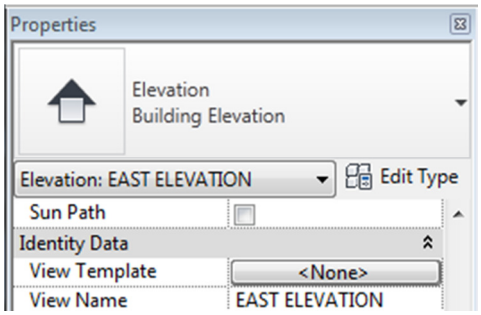
Right click in Project Browser





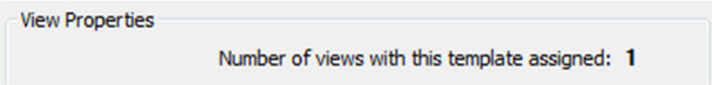
View Templates

Assign by a view template properties



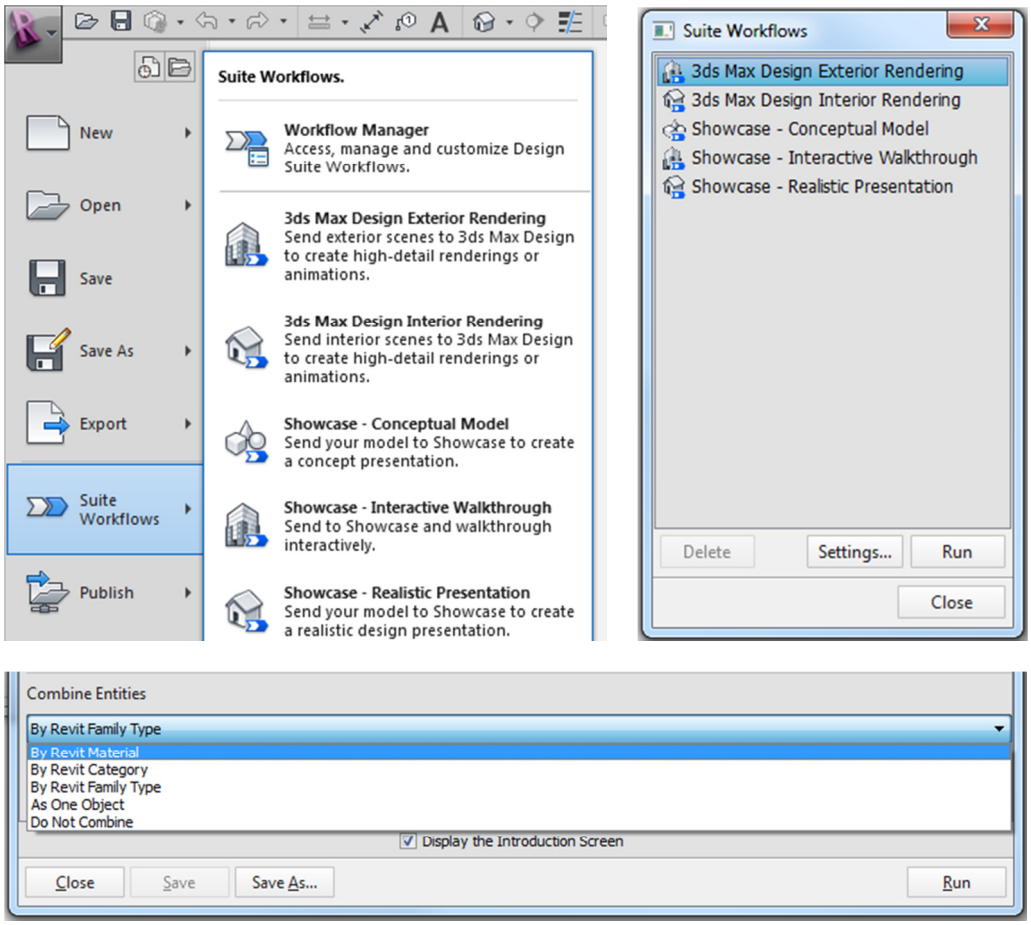
Template to view

Future changes to template affects views it is assigned to



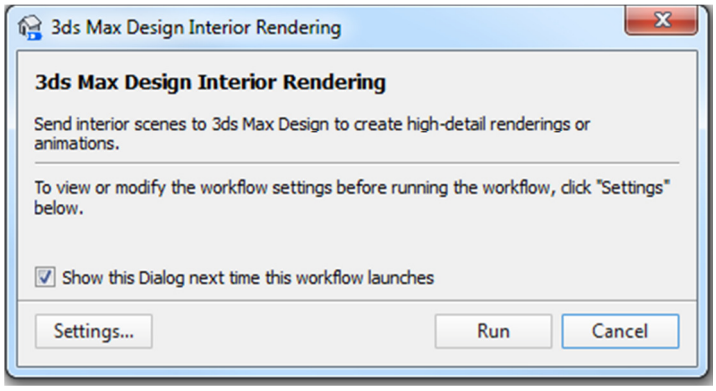
Suite Workflow

Simplified workflow



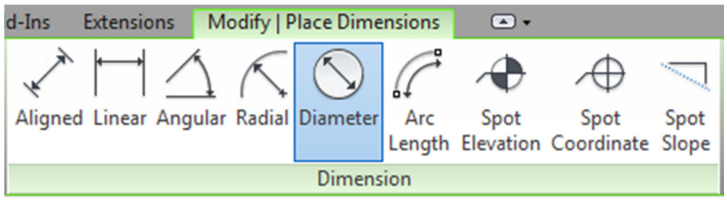
3ds Max Design

Showcase



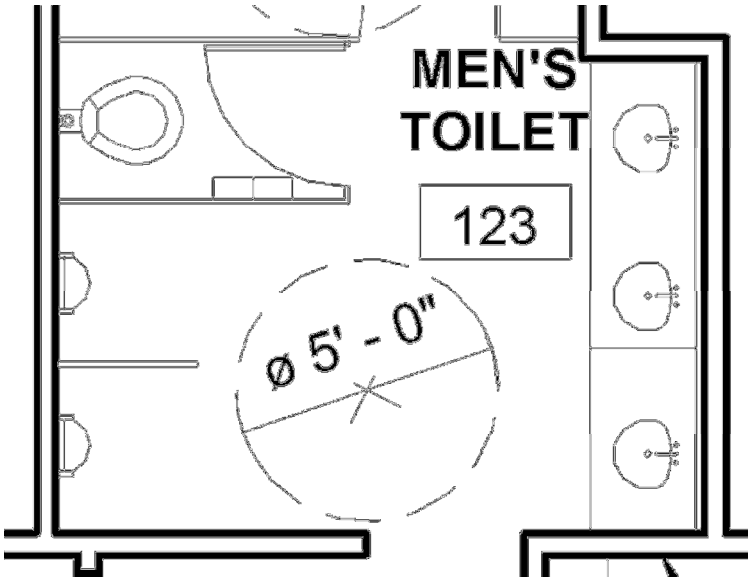
Dimensions

Diameter Dims

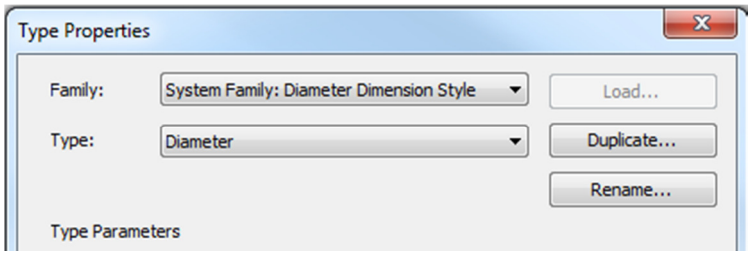


Delete Dim segments - Tab - Delete

Dim Display

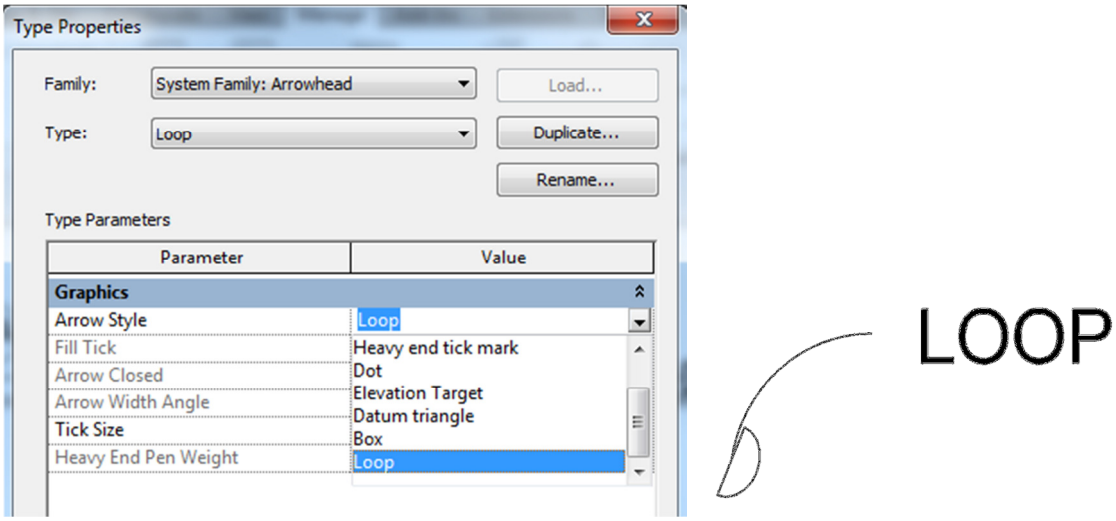


segment values, equality text, or the equality formula string



Arrowhead

Loop

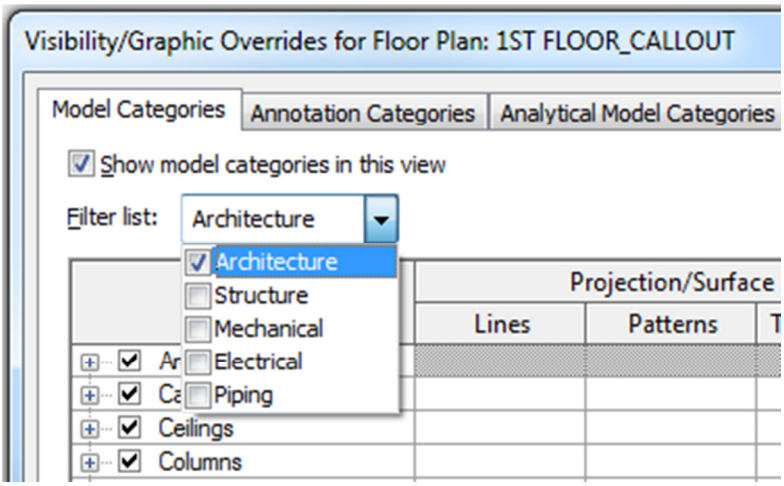


Families

Double click editing

Filters List

Multi-discipline

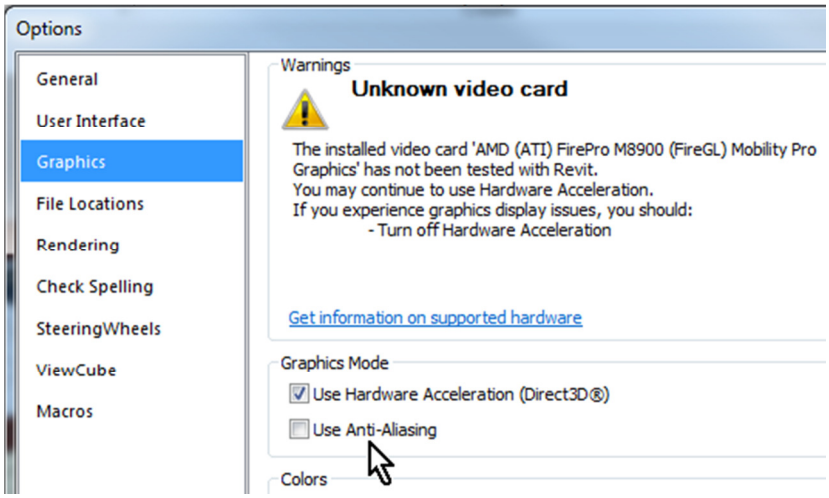


Surface Transparency Slider

Replaced Ghost Surfaces

Hardware Acceleration

Anti-Aliasing



Improved Performance:

- realistic mode
- ambient occlusion
- surface transparency
- anti-aliasing

Parts

Merge parts

Part project excluded

Divider offset for part divisions

Parts from loaded families

Assemblies

New view options

Assembly views placement

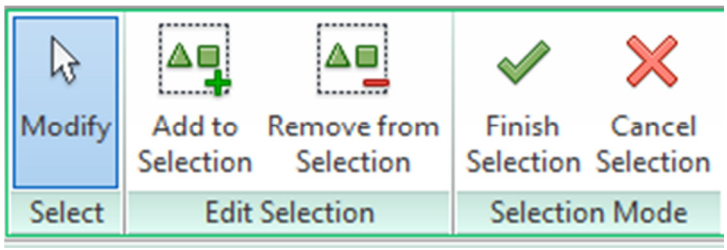
Element edit assembly mode

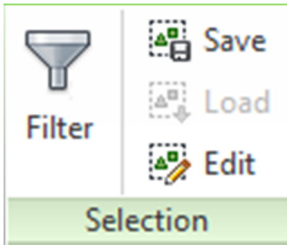
Origin

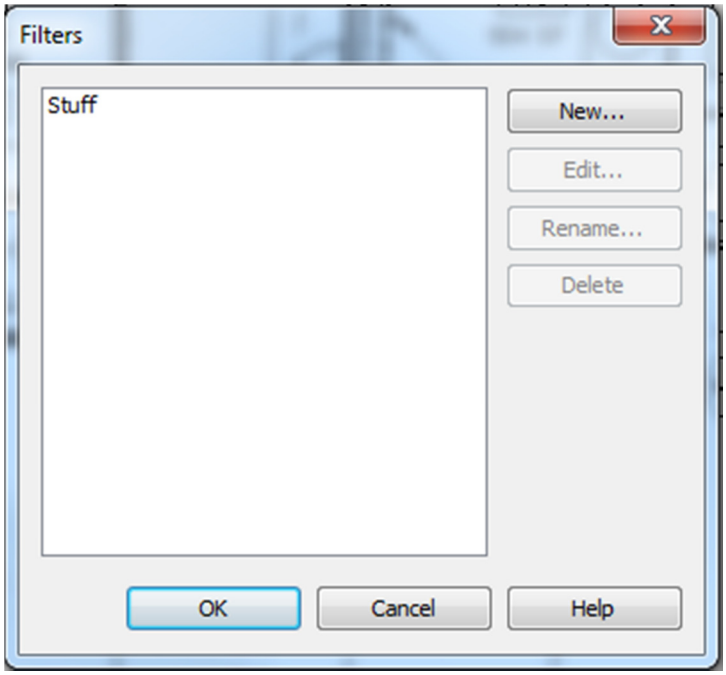
Local coordinate system

Selection Sets

Previous only in Revit Structure

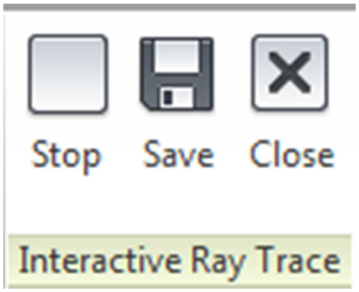




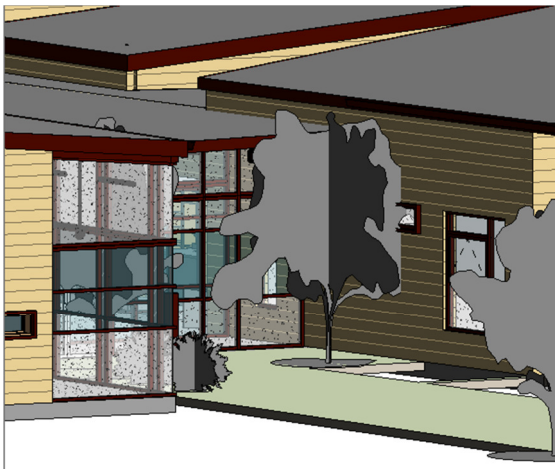


Visual Style

Ray Trace



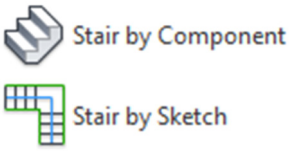
Interact with Camera in real time

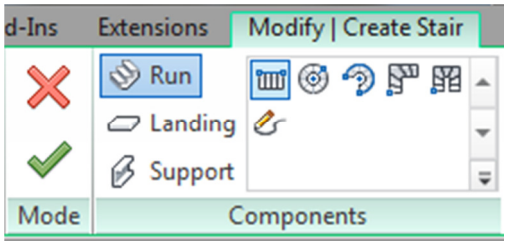


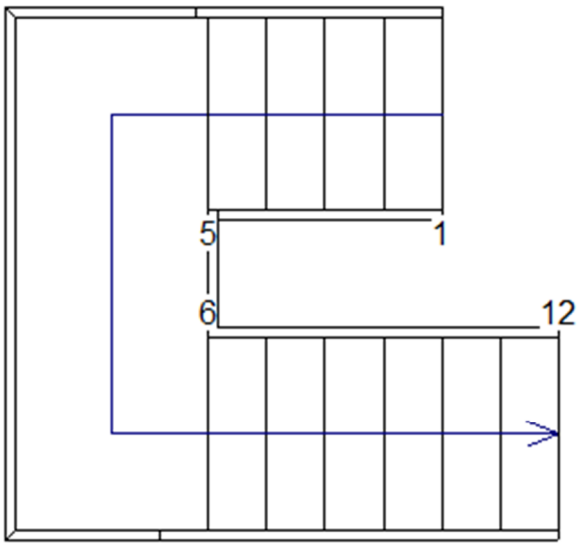
64 bit systems only

Stairs

Component based







Railings

Sketch Path

Place on Host

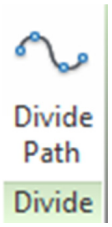
Handrail transitions

Extensions

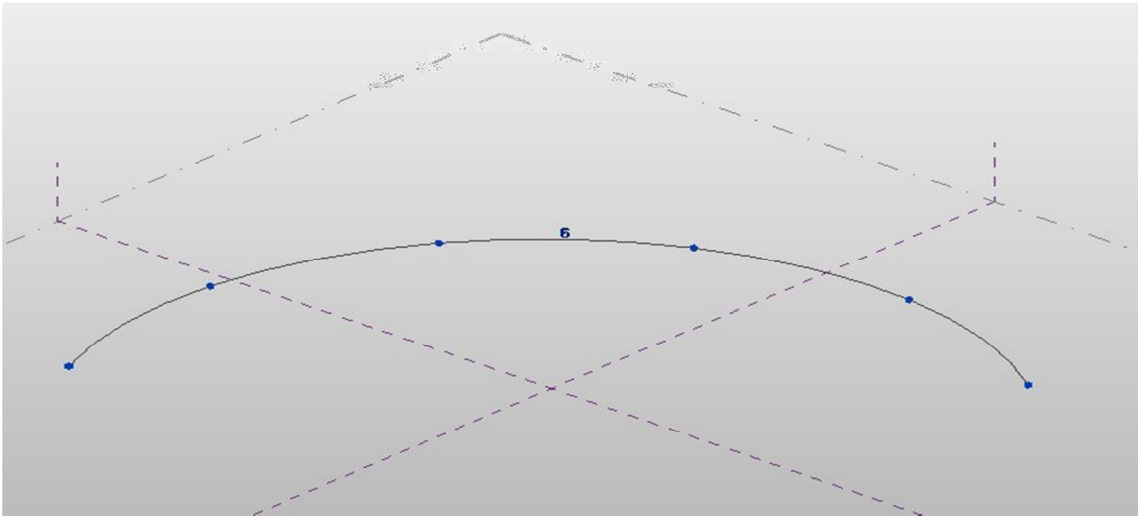
Type Parameters

Parameter	Value
Construction	
Railing Height	3' 6"
Rail Structure (Non-Continuous)	Edit...
Baluster Placement	Edit...
Baluster Offset	-0' 1"
Use Landing Height Adjustment	No
Landing Height Adjustment	0' 0"
Angled Joins	Add Vertical/Horizontal Segments
Tangent Joins	Extend Rails to Meet
Rail Connections	Trim

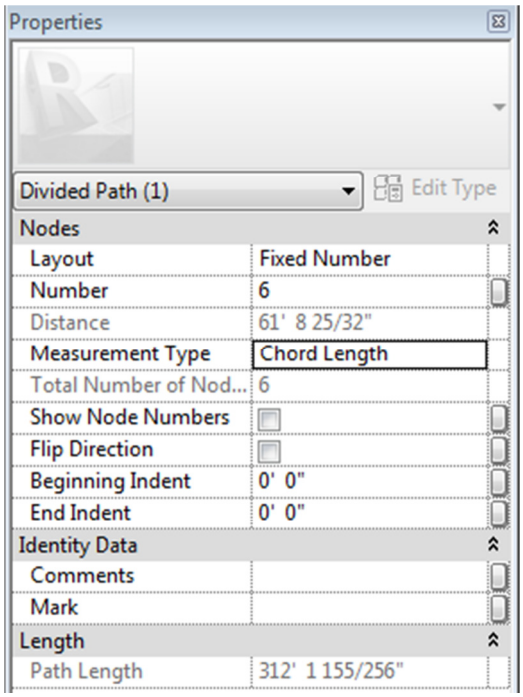
Conceptual Design Environment



Division placement

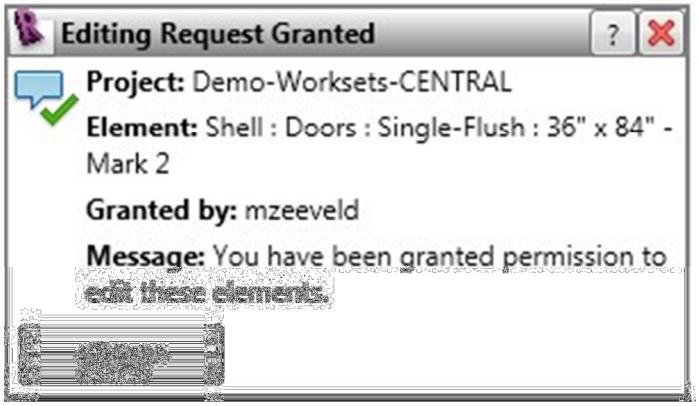


Node edges

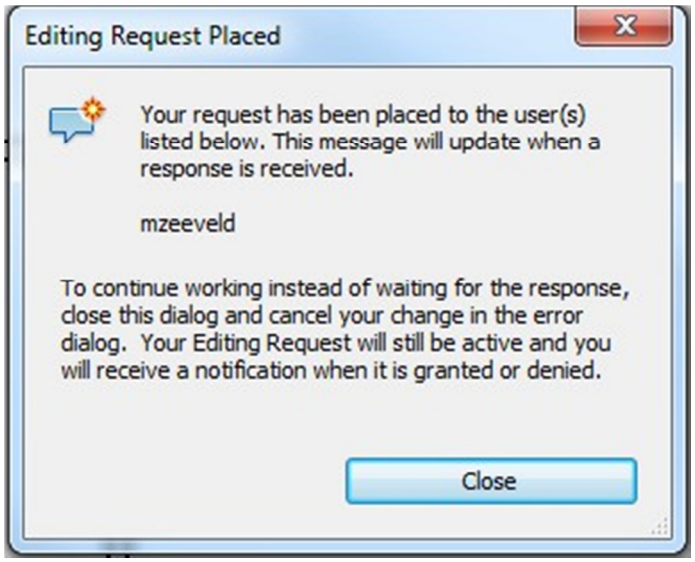


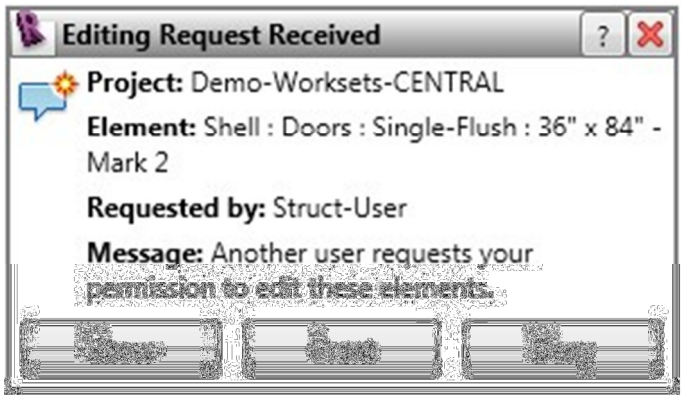
Worksharing Enhancements

Edit request



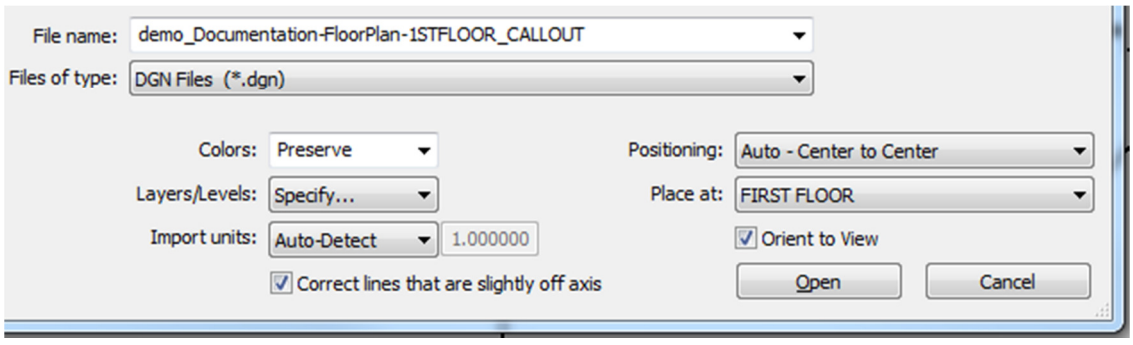
Dynamic Interactive Notifications





Import

DGN

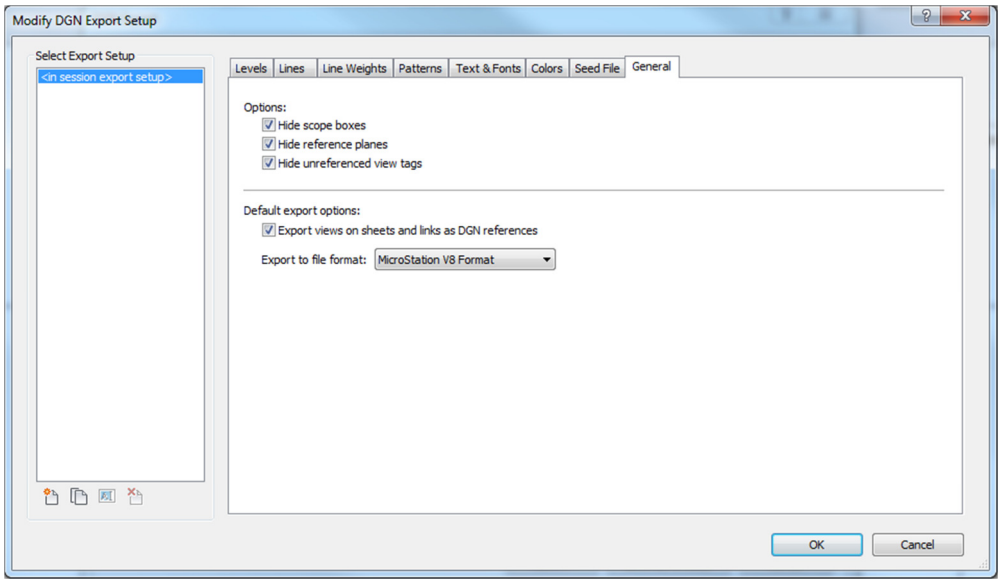


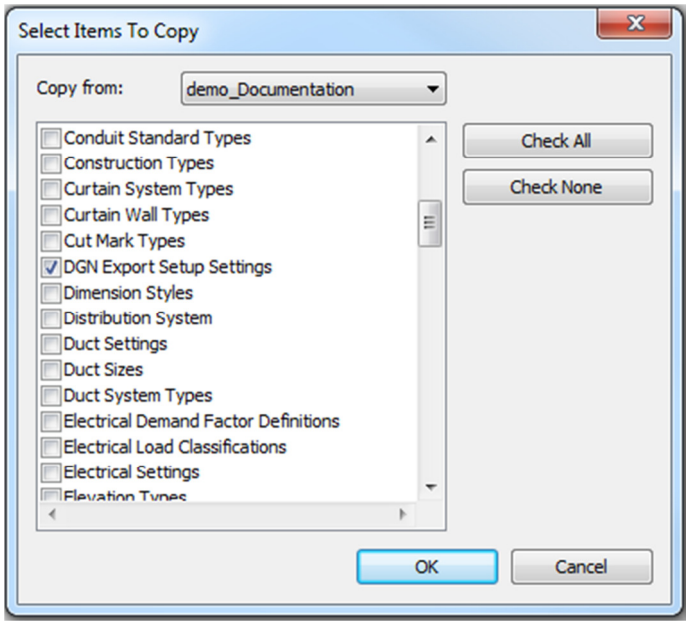
V8 support

Export

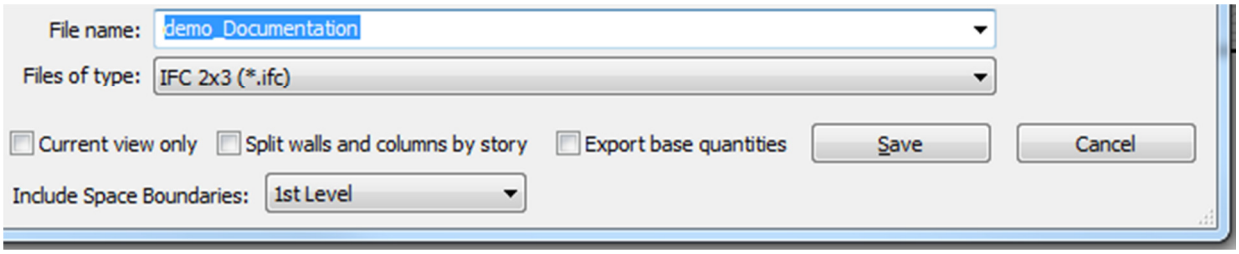
DGN

- Additional Mapping Functionality
- V8 Support
- Save Setups
- Project Transfer

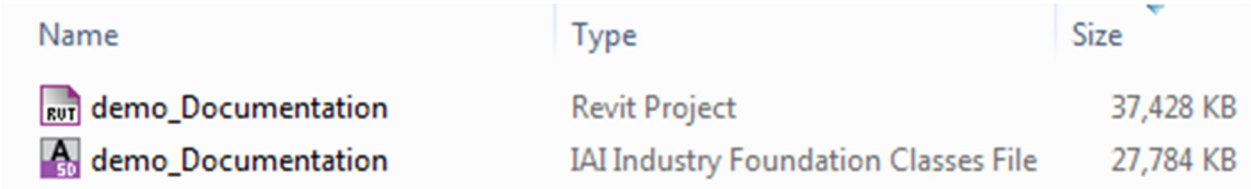




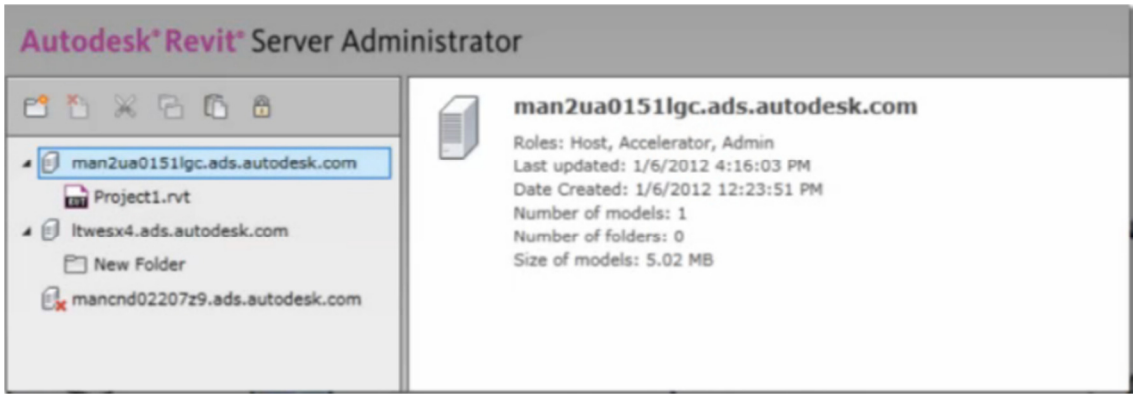
IFC: Import / Export



- Reduced surfaces
- Better Performance
- More elements supported
  - Assemblies
  - Parts
  - Curtain walls on massing elements
- Reduced file size

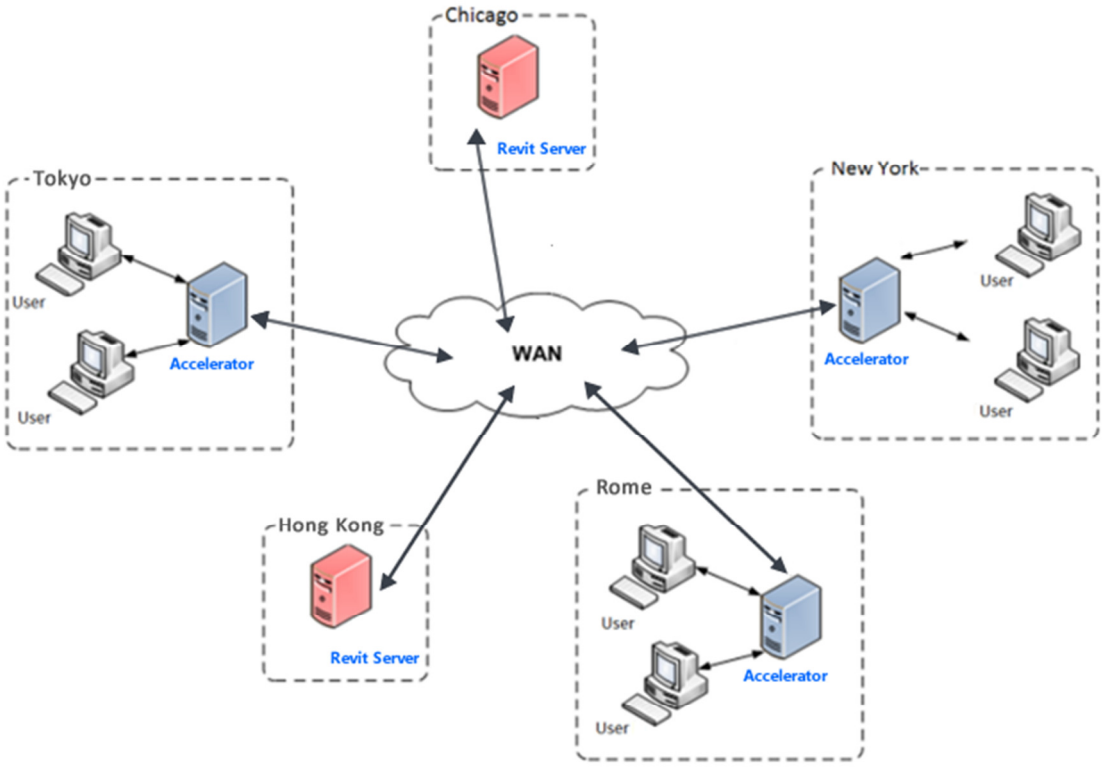


Revit Server



Multiple Host Servers

- Administrator tools
- Reduced locks
- Vault

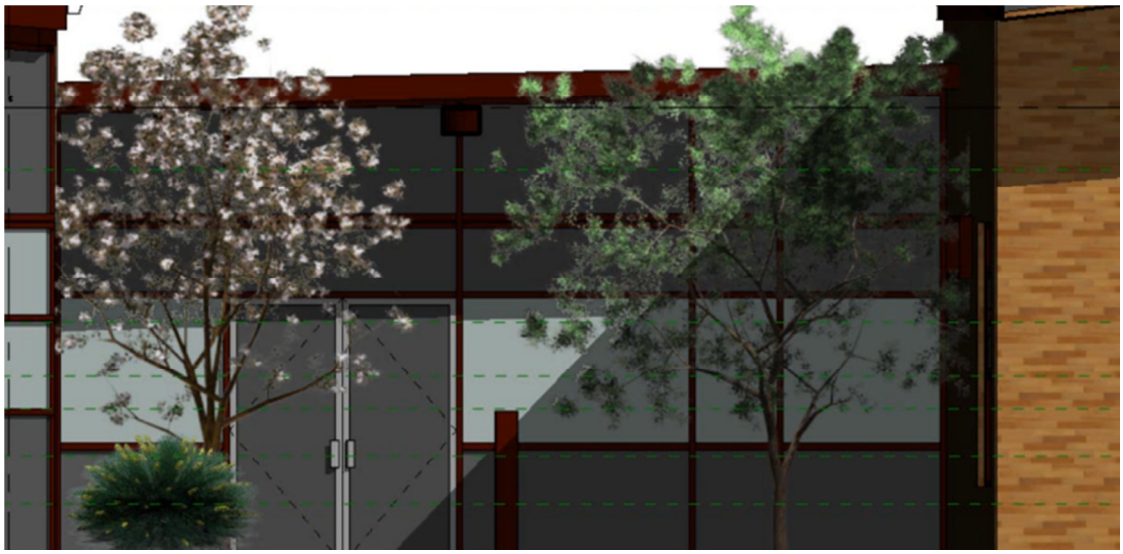


Visualization

- Image background
- Sky

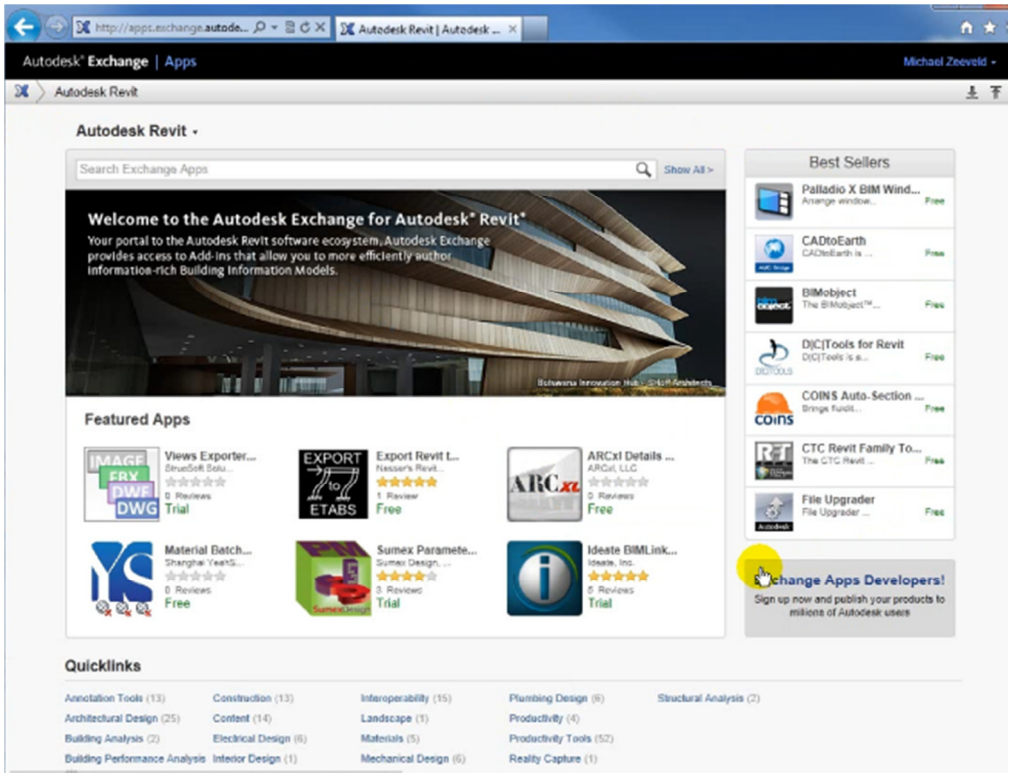
Realistic Foliage Display

RPC



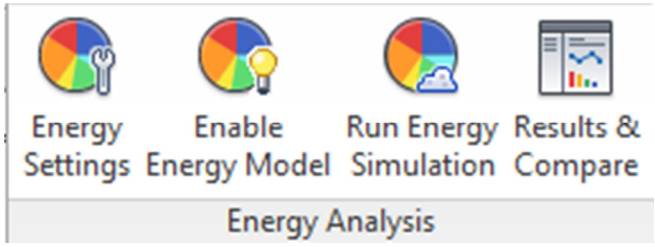
Exchange Apps

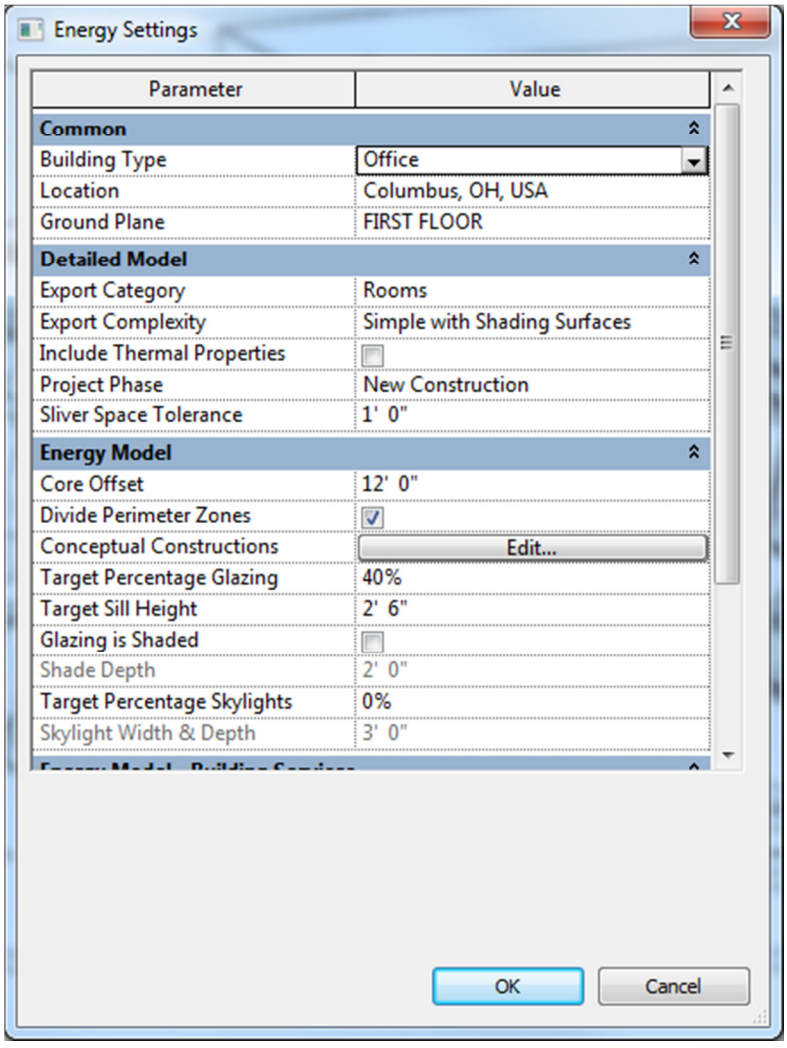
http://apps.exchange.autodesk.com



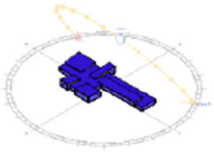
Autodesk 360 ~ Cloud

Analysis





Reporting



Building Performance Factors

Location:	Atlanta, GA, USA
Weather Station:	41715
Outdoor Temperature:	Max: 95°F/Min: 17°F
Floor Area:	19,308 sf
Exterior Wall Area:	15,208 sf
Average Lighting Power:	1.01 W / ft²
People:	63 people
Exterior Window Ratio:	0.58
Electrical Cost:	$0.09 / kWh
Fuel Cost:	$1.05 / Therm

Energy Use Intensity

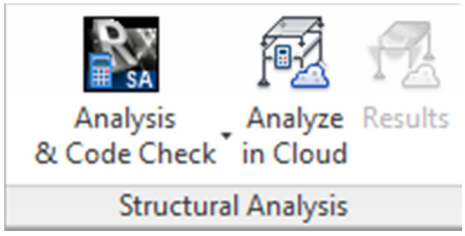
Electricity EUI:	14 kWh / sf / yr
Fuel EUI:	21 kBtu / sf / yr
Total EUI:	69 kBtu / sf / yr

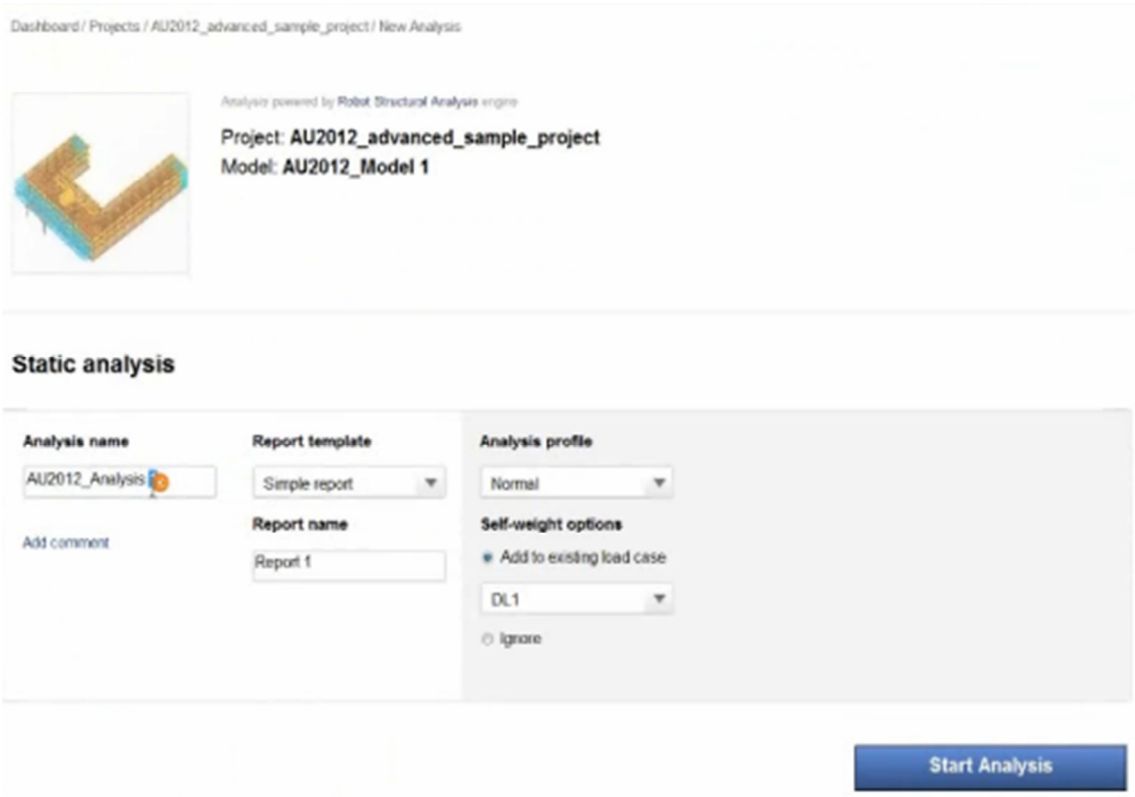
Life Cycle Energy Use/Cost

Life Cycle Electricity Use:	8,156,526 kWh
Life Cycle Fuel Use:	119,648 Therms
Life Cycle Energy Cost:	$393,097

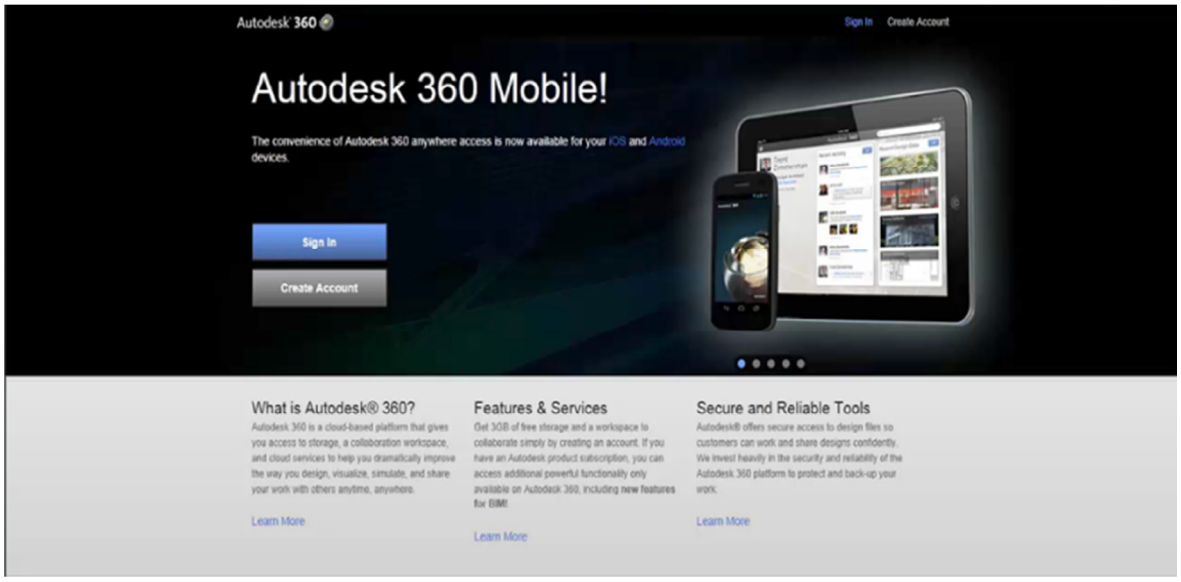
*30-year life and 6.1% discount rate for costs

Structural



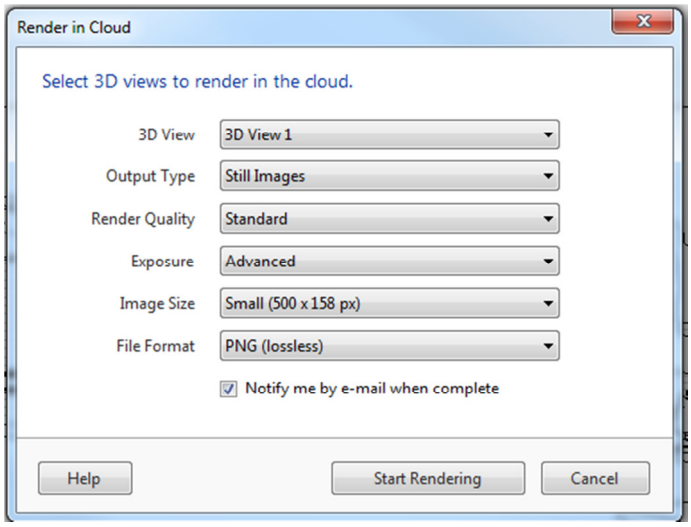


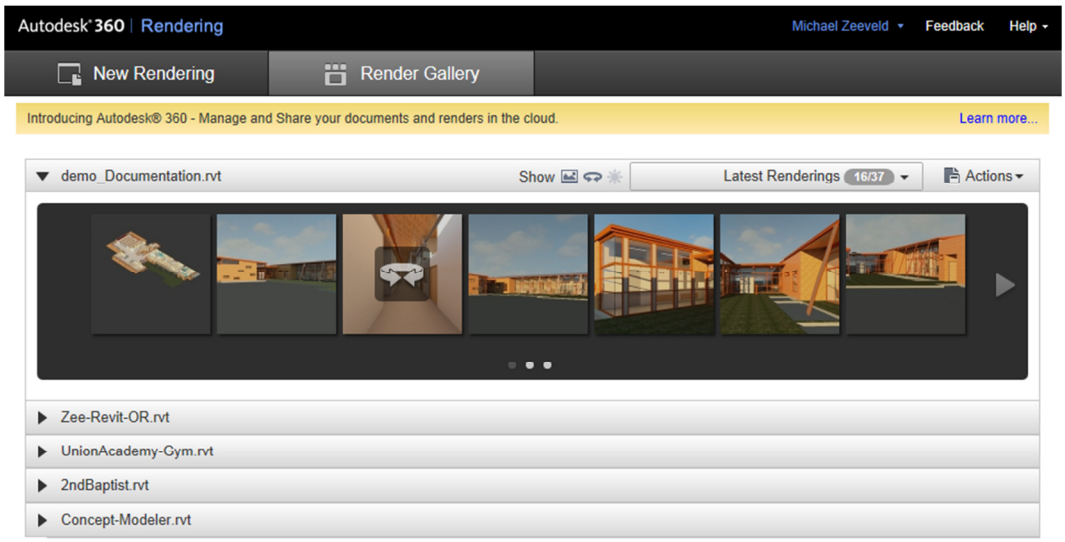
360 Cloud



- Collaboration
- Sharing
- Editing

Cloud Rendering



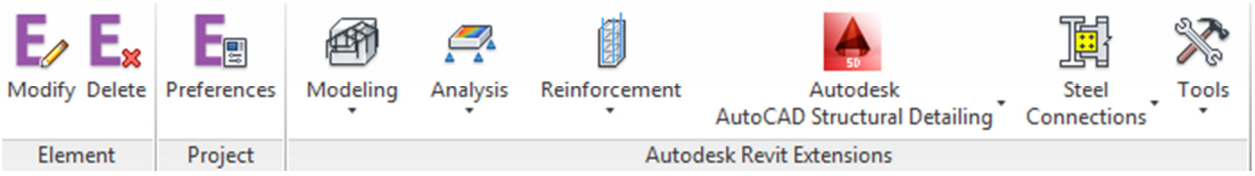


Additional Information

Extensions

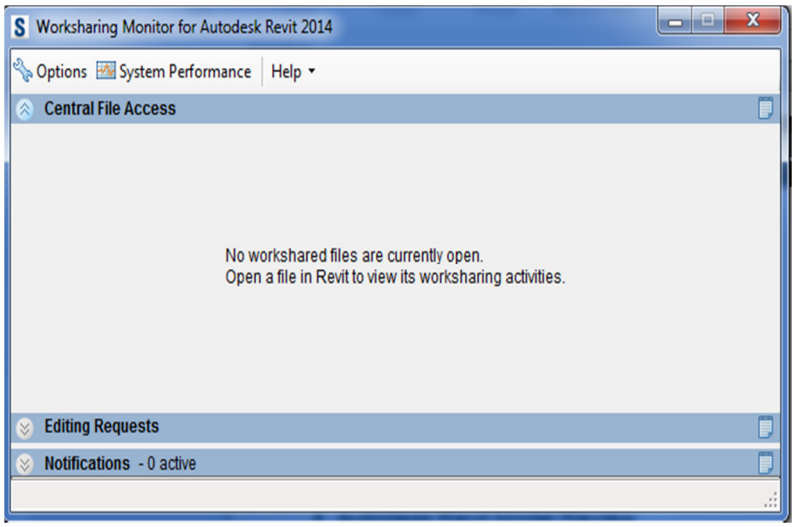
Wood Walls Framing, Roof Framing, and Roof Trusses extensions are available now as Timber Framing package

- Compare Models
- Grids Generator
- Civil Structures
- CIS/2 Import/Export
- SDNF Import/Export
- Excel based model generation
- Frame Generator
- Composite Design



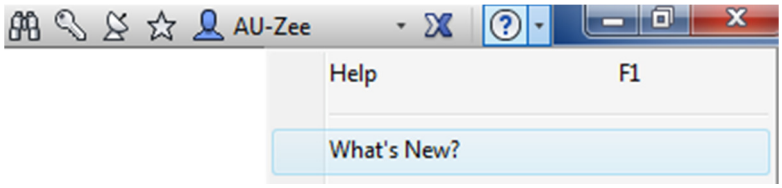
Add-Ins

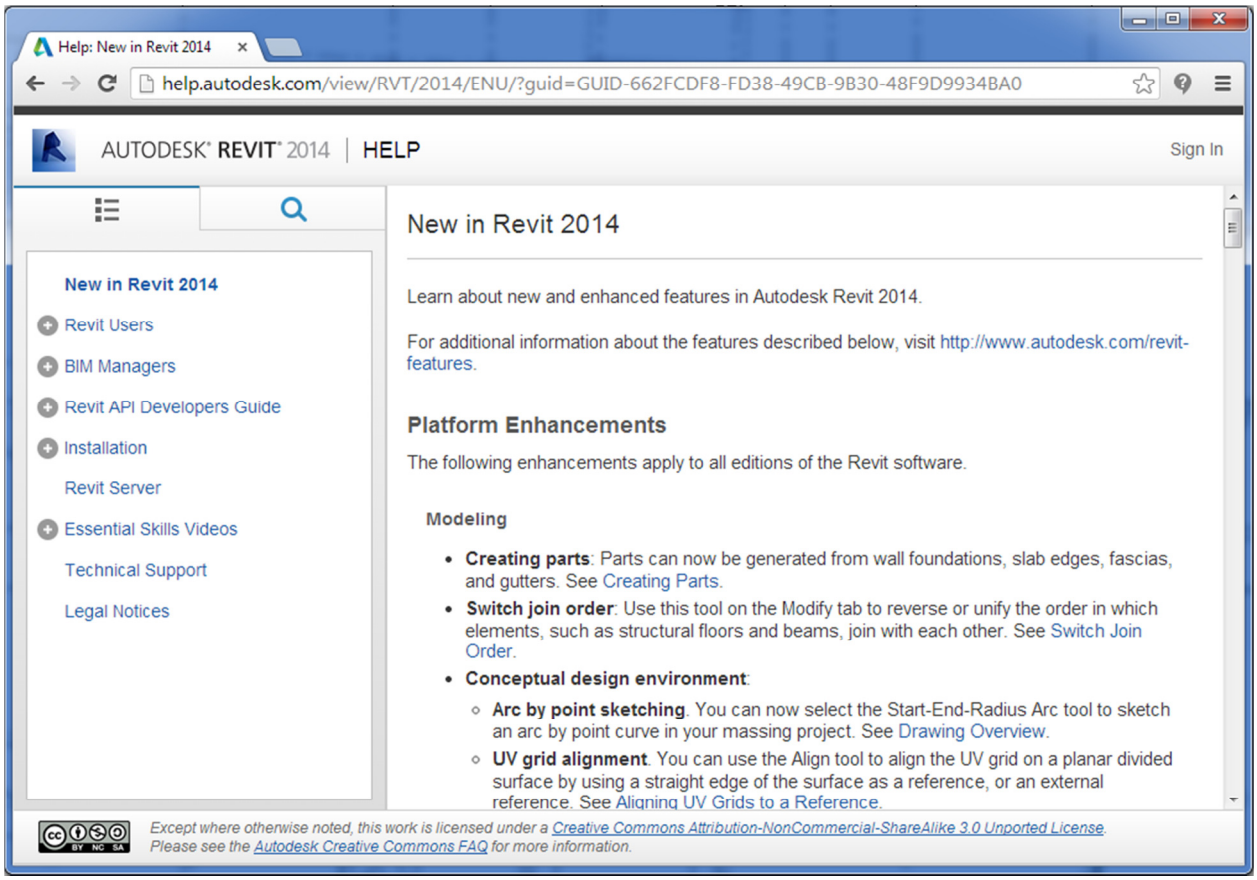
- Worksharing Monitor
- Globe Link
- Roombook Areabook
- eTransmit
- Autodesk Revit Server
- Autodesk Revit DB Link
- Autodesk Revit Model Review
- Batch Print for Autodesk Revit



Help

Whats New section accessed un “F1” or from the “?” at the top right corner or the application. Great resource for the new features, tutorials, and useful information.

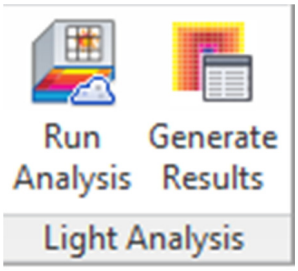


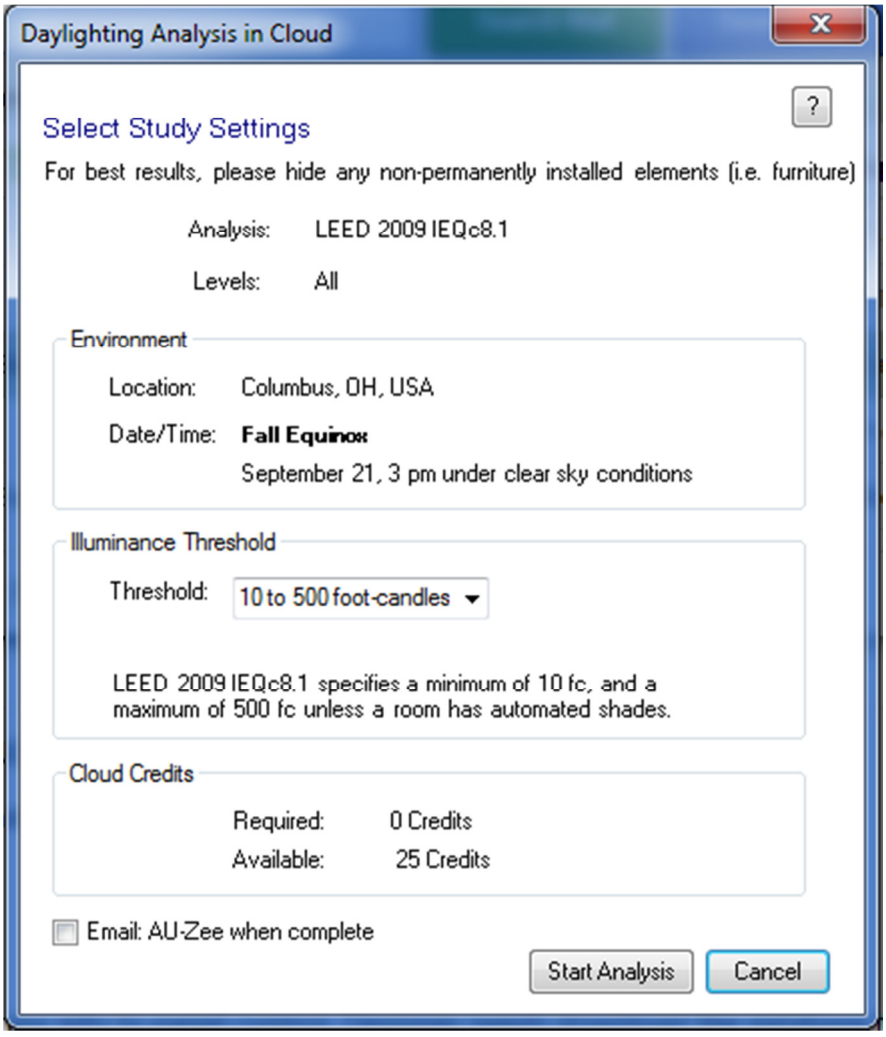


In Labs

Daylighting Analysis

Perform lighting analysis within Revit using this Labs tool.





Summary

In summary we learned about the exciting new features in Autodesk Revit Architecture 2014 software. Get introduced to new concepts of Building Information Modeling (BIM) and efficient, easy-to-use tools for parametric design and documentation.