



This Month:

Revit Architecture 2009

Welcome to **INFOCUS**, C3 Consulting Solution's Monthly Newsletter. This month, we take a look at Revit Architecture 2009.

Finally the new version is nearly here! This month's INFOCUS newsletter lifts the lid on some of the new features in Revit Architecture 2009.

It must be noted as a standard disclaimer that not all of the features listed here may be included within the final (public) release.

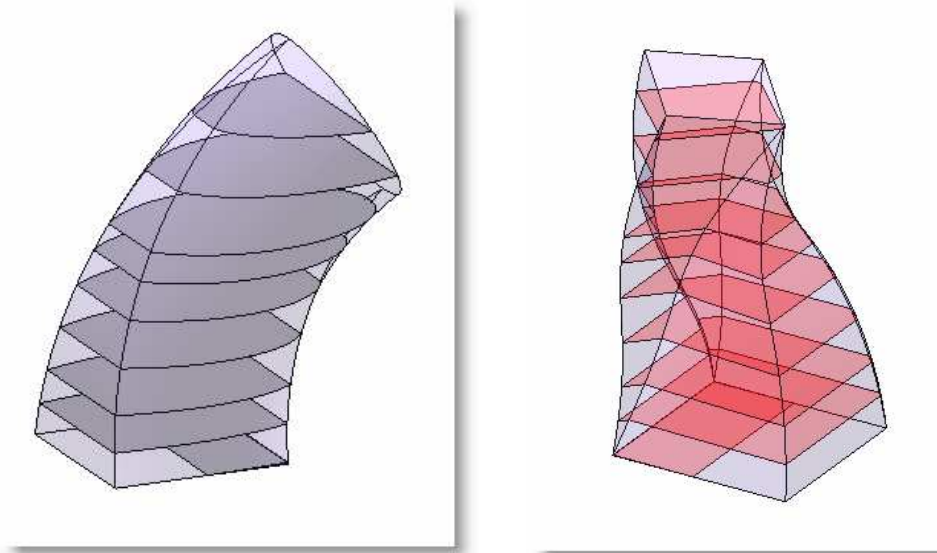
Firstly, a word to the wise! Don't rush in too quickly and seek to upgrade *all* of your projects at once. The first few weeks of a new version are usually the ones to beware of. A suggested practice is to upgrade **copies** of a selection of projects and then observe the results for yourself. For large projects, the upgrade process can tend to be quite thirsty on computer memory. You may require some high-end hardware with a 64-bit operating system and more than 4Gb of RAM to be able to successfully upgrade your projects to 2009 format. If you can't, you may be able to get Autodesk to assist. Revit will prompt you about this if you do run out of memory.

This newsletter is long enough as it is (though most of it is screen grabs), and thus will not cover *every* improvement that has been added. It will, however, seek to cover *some* of the most notable features, including:

- Addition of a 'Swept Blend' tool
- Accurerender gone: Mental Ray arrived
- Alphanumeric Revisions
- Mirror Project
- Improved project navigation via Viewcube and Steering Wheel
- Improved control over Room geometry
- Improved Warnings resolution
- Improved support for dimensioning
- Improvements to scheduling
- Improvements to View Templates

Swept Blend

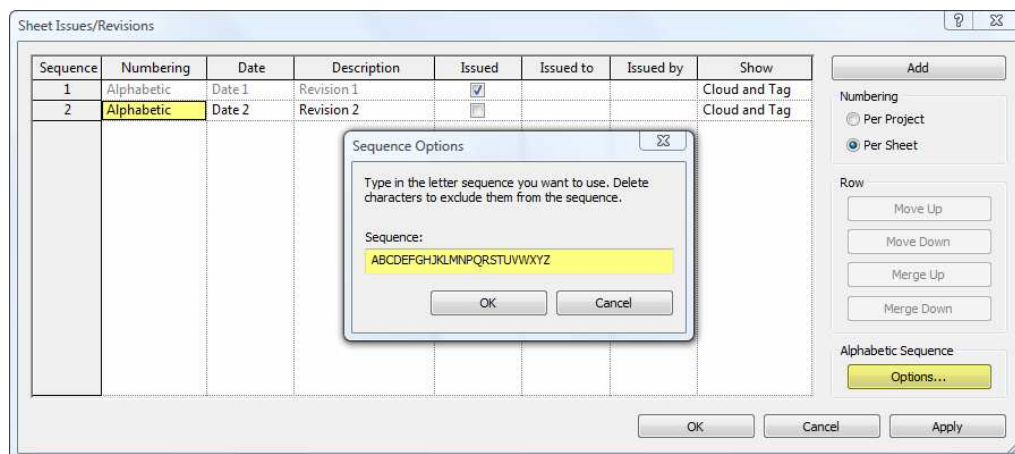
The new Swept Blend is, as the name suggests a blend, swept along a path. This can be a straight line, curve or spline. What distinguishes it from being a true *loft* is that the path over which the two profiles are blended can only be a single path segment.

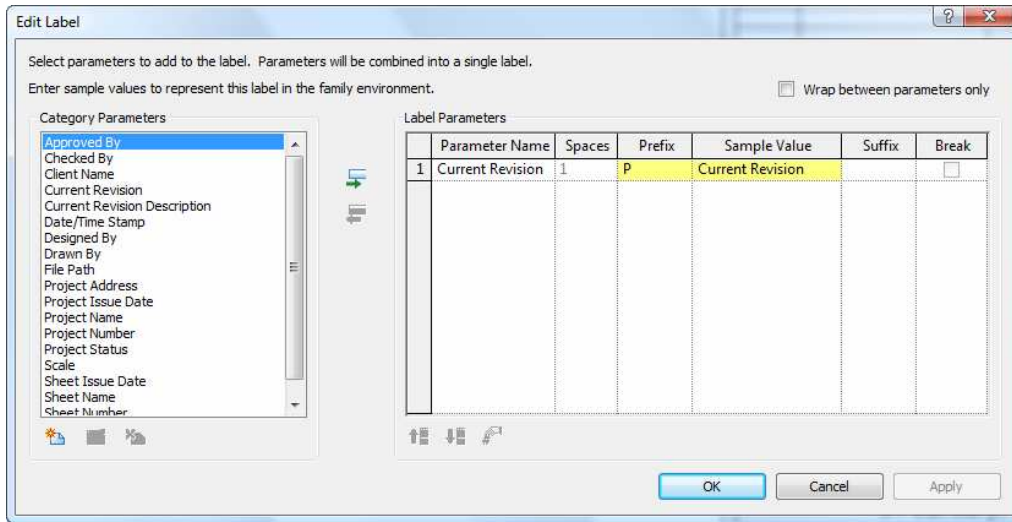


While it's not a loft, it is useful, and opens the door to much more complex geometric forms, which should appeal to at least some users who aspire to 'Gehry-esque' forms.

Revisions

Revisions can now be numbered alphabetically and/or numerically, or as a hybrid of both. Alphabetic revisions can be controlled via a string of characters, from which you can remove characters of your choice, e.g. I and O. You cannot add numbers, non-alphabetic characters, or have repeating characters.





At first it may not be obvious how you can create hybrid revisions, but using the new multi-parameter labels (as seen in the image above), you can provide your revision values with a prefix or suffix. This way, you can use revision P1, P2, P3 etc. for preliminary revisions, or C1, C2, C3 for construction documentation revisions etc.

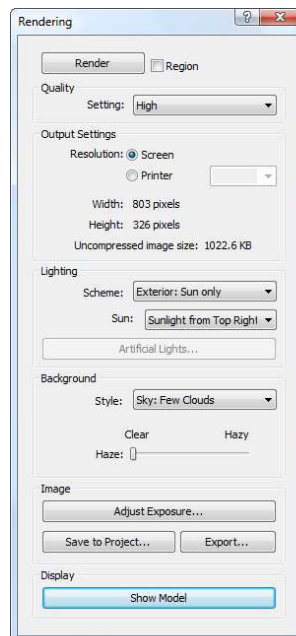
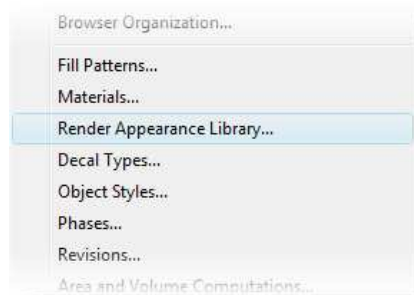
Revision tables can now also be rotated on a sheet, either 90 degrees clockwise or anti-clockwise.

Despite the improvements, and the addition of a 'current revision' label, it is still not yet possible to add revisions to a drawing list.

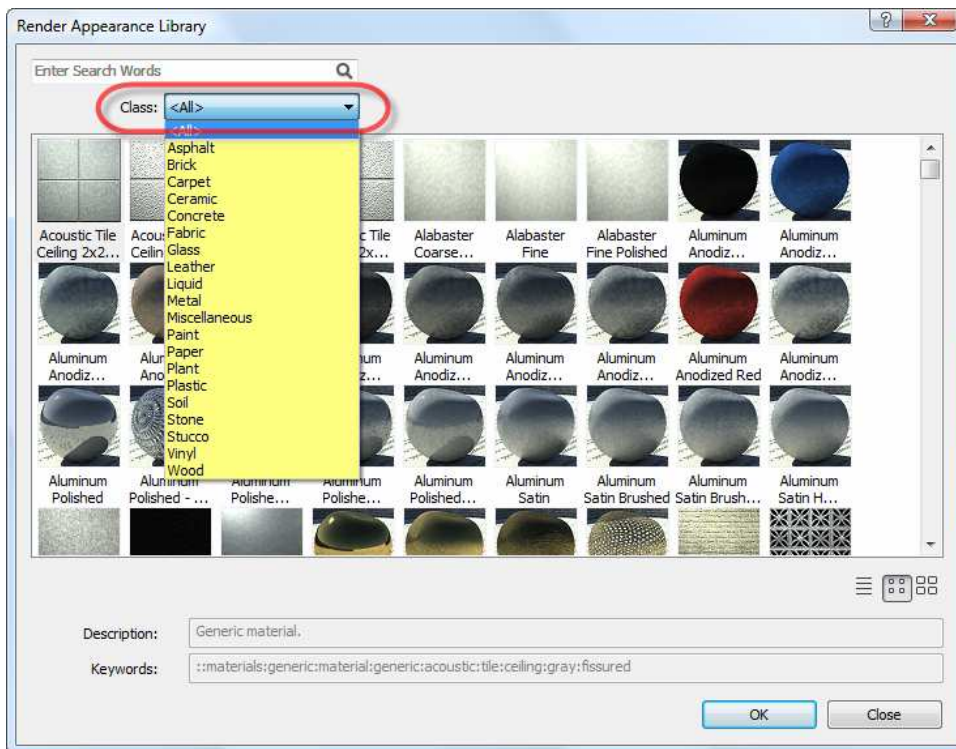
Accurender gone, Mental Ray arrived

A new rendering engine has finally arrived. It was one of the most inevitable changes to make it into this version, in line with Autodesk's approach to keeping such things consistent across their range of software.

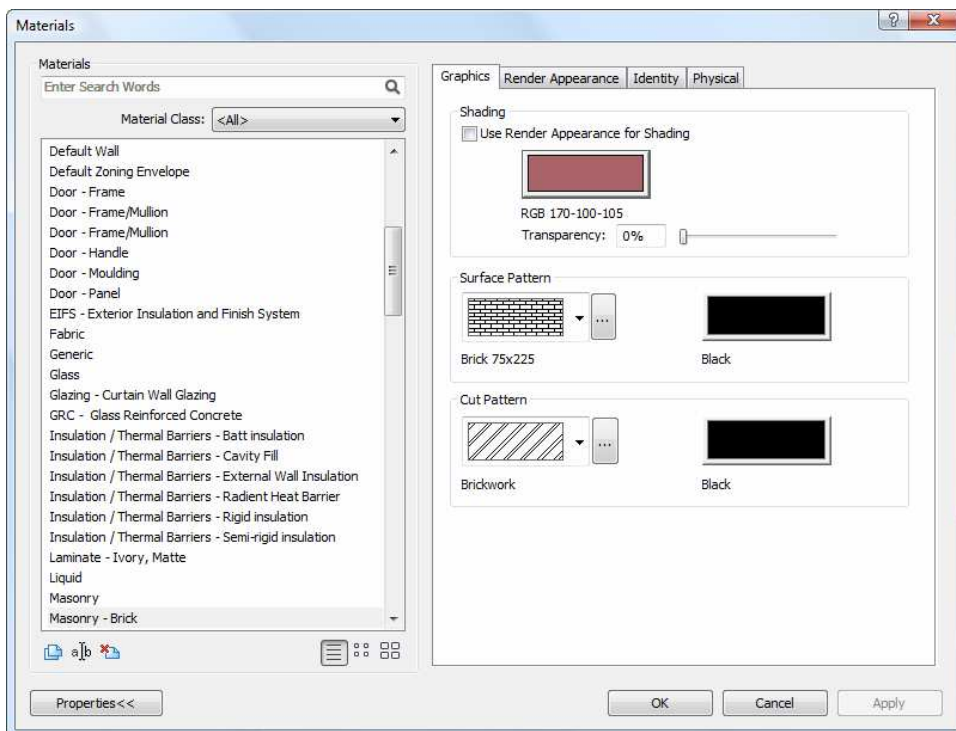
It comes complete with new floating rendering dialog, rendering appearance library, and material properties dialog.

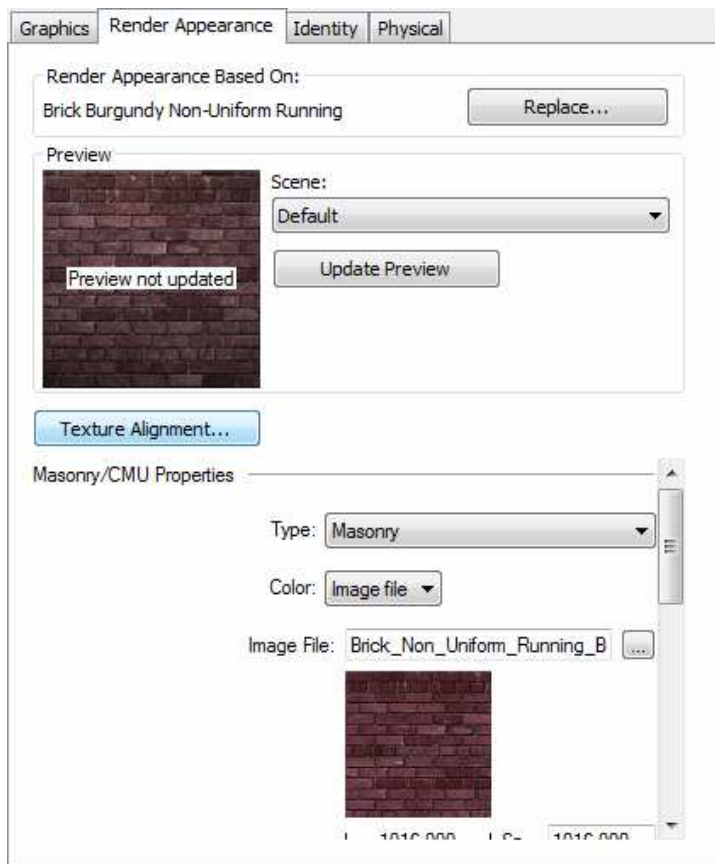


The new Render Appearance Library dialog, with much more informative swatches.



The new materials dialog. Note the addition of a 'Material Class', allowing better material organisation.





The contents of the Render Appearance tab will vary with the material selected.

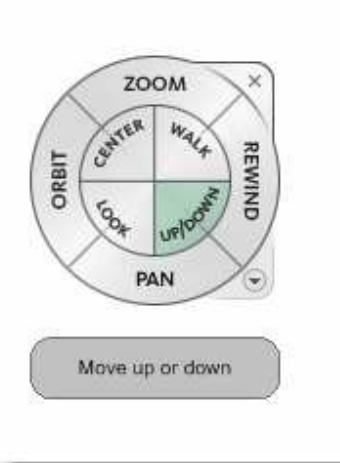
Overall, for most users, this would seem to be a vast improvement on what was used previously.

Mirror Project

An entire project can be mirrored now, including the annotations within it. This is an extremely technical procedure, so it's no wonder it's taken several years to get it working well enough for Autodesk to publish publicly as part of the software. It has previously existed in other versions, but in a less publicly accessible fashion.

Navigation Tools

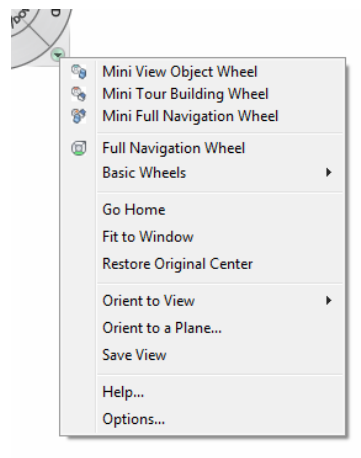
The **Viewcube** is a welcome addition to Revit's UI, particularly for anyone who has worked on large projects where they may have previously lost sense of direction in a file. By clicking on the appropriate part of the viewcube, you can find yourself looking from the appropriate direction within a very short space of time. No longer do we have to use 'dynamically modify view', or navigate our way through three or four clicks just to get to a predefined view.



With the North view of the viewcube usually oriented do Project North, you simply click on the part of the viewcube and you will navigate to the equivalent view within the model. Should you still manage to get 'lost', at any time you can click on the home icon to return to the default view orientation.

The **Steering Wheel** has been seen before, but not inside Revit. It has made earlier appearances inside Autodesk Design Review, and is now also a part of AutoCAD suite of products. The basic idea is to have the ability to navigate the model in any way by having the controls immediately adjacent the cursor (until you instruct otherwise).

The steering wheel *does* take some time to get used to, but it is useful, especially for real-time navigation of 3D views. You can tour the project for client presentations, technical resolution or coordination purposes, and the only real limitation is how well your computer will cope. When we are able to run 64-bit versions of Revit (permitting effective use of more than 3Gb of RAM), we should see marked improvements in performance overall, not just in terms of graphic performance. Precisely when this will be released is yet to be determined.

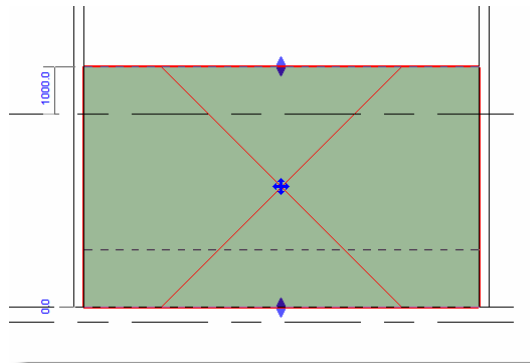


The steering wheel's context menu offers a collection of associated tools.

Improved control over Room geometry

Rooms used to be fixed to a particular plane or level, with their height always expressed as an offset from that level. Now, they can have an offset from their base constraint as well as their top constraint. They can also be selected in elevations and sections that cut through them. They can then be edited once selected.

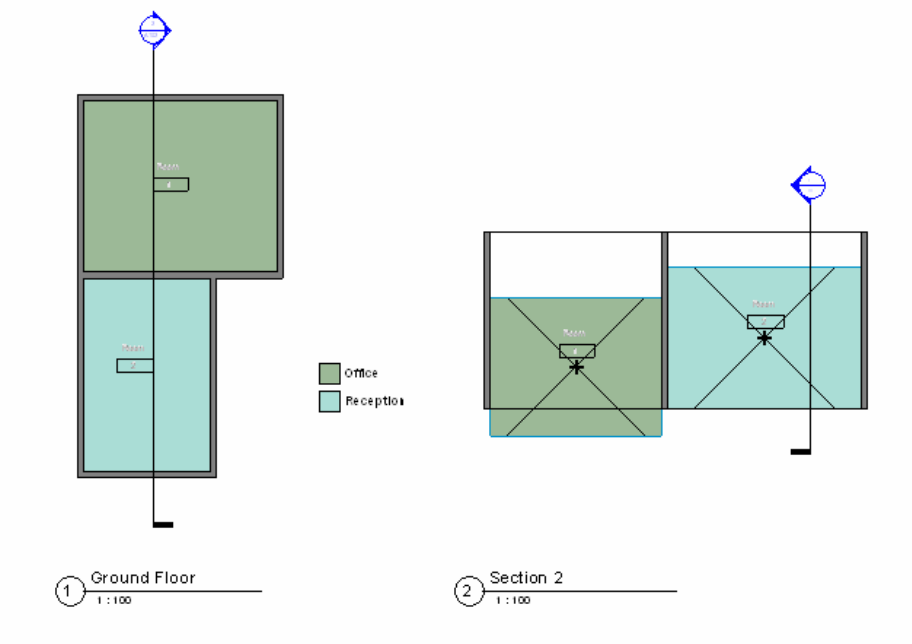
The Room bounding property of elements always affects both 2D and 3D calculations.



Parameter	Value
Constraints	
Level	Level 1
Upper Limit	Level 2
Limit Offset	1000.0
Base Offset	0.0
Dimensions	
Area	56.580 m ²
Perimeter	30200.0
Unbounded Height	5000.0
Volume	Not Computed
Identity Data	
Number	1
Name	Room

Note the calculation height shown dashed, which is only visible if it is not set to automatic (project setting). You are now also able to drag the top and bottom extents of rooms in sections or elevations using the drag controls.

Boundaries of rooms selected in section or elevation views represent the boundary being used for volume calculation.

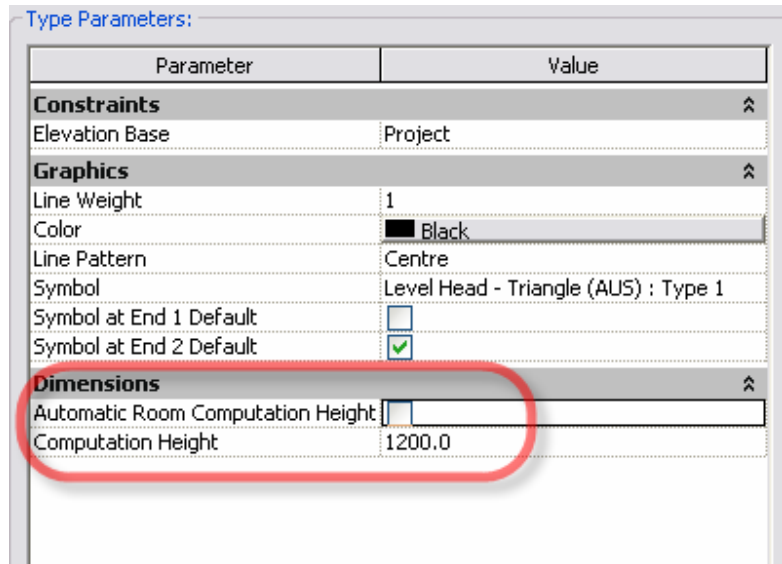


Colour fills can be applied to sections and elevations. Since they are project-wide, the same colour fill can be used for multiple views.

Rooms can now be bound by elements in Linked Models.

Rooms deleted from the model are no longer removed altogether. Instead, they will become 'unplaced' rooms – kept in the project for later re-use. In order to delete a room entirely, you will need to delete it from a schedule.

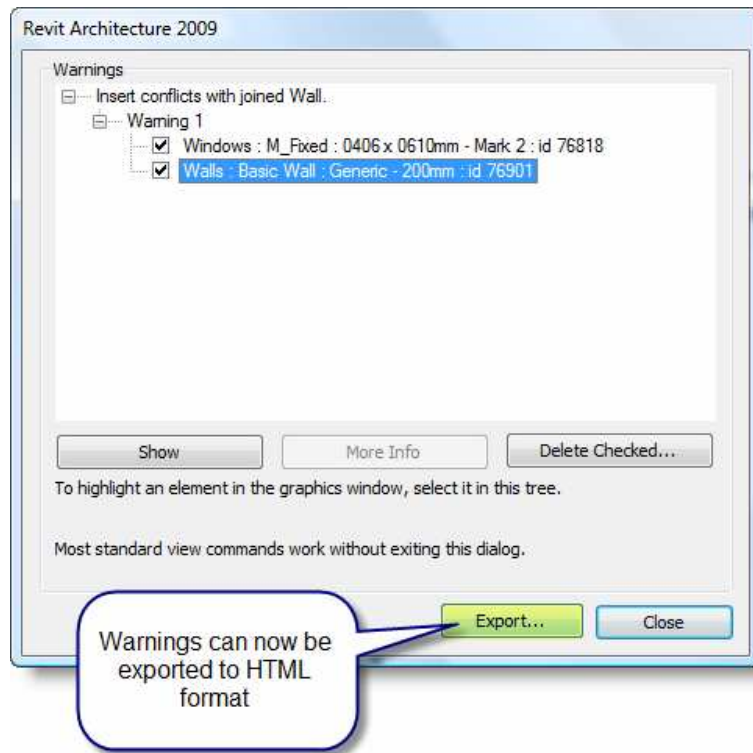
Calculation height of rooms set by Level Type.



Volume Calculation is now always measured to finish face of room bounding elements. The *Tag All Not Tagged* command is available for rooms and areas in any 2D view.

Improved Warnings Resolution

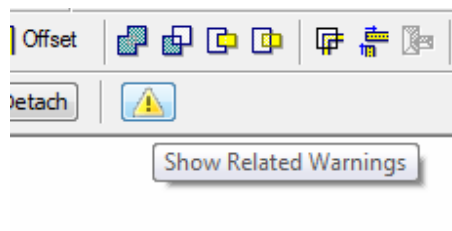
Warnings can now be exported to file (only to HTML format). The ability to export to XLS (or some other equivalent) was not provided because they did not want the feature to be dependent on the user having compatible software. With the prevalence of the internet, HTML was seen as an ideal format for accessibility. Either way, one key improvement is that you can now select the element ID numbers from the report in order to copy/paste them back into Revit for better warnings resolution. This type of activity is best done with a dual monitor setup – stick the report on one screen, and Revit on the other.



Hopefully we'll continue to see further improvements added to the Review Warnings tool in future releases.

Project1 Error Report (13/04/2008 7:55:36 AM)

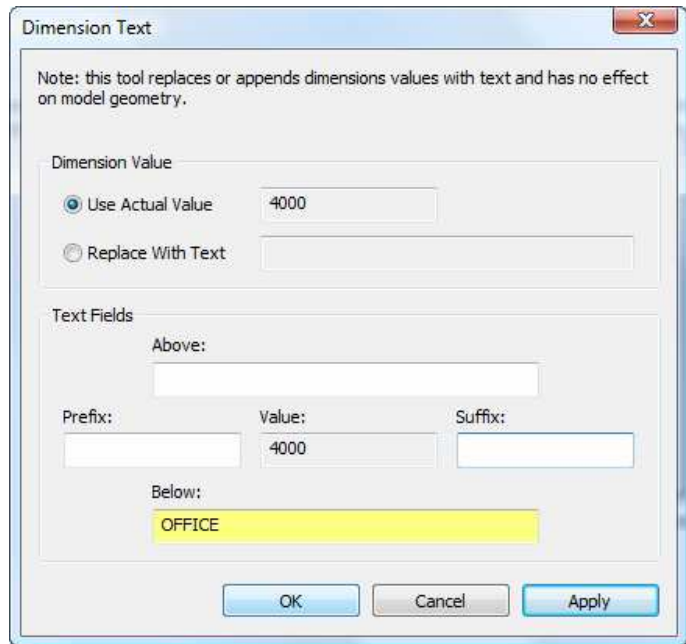
Error message	Elements
Insert conflicts with joined Wall.	Windows : M_Fixed : 0406 x 0610mm - Mark 2 : id 76818 Walls : Basic Wall : Generic - 200mm : id 76901



An icon will display in the Options bar where an item is selected that relates to a Warning. Clicking on the icon invokes the Review Warnings dialog.

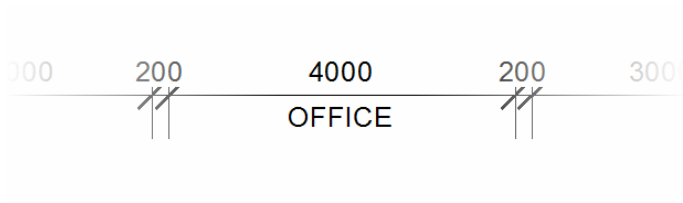
Improved support for Dimensioning

You can now apply proper text overrides to dimensions. You can add text strings above, below, before or after dimensions. To do so, simply click on the dimension value.

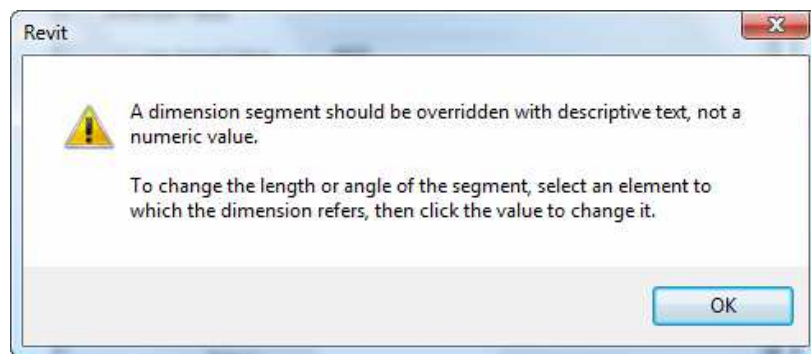


At present, if the string of dimensions that contains a text override is edited, the text override will disappear.

Hopefully this is resolved prior to Revit's public release.



Note that the dimension figure itself, however, cannot be overridden.



Type Parameters:

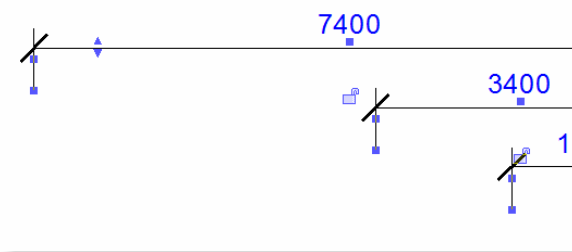
Parameter	Value
Centerline Pattern	Solid
Centerline Tick Mark	Default
Interior Tick Mark	Diagonal 3mm
Ordinate Dimension Settings	Edit...
Color	Black
Dimension Line Snap Distance	10.0000 mm
Text	
Width Factor	1.000000
Underline	<input type="checkbox"/>
Italic	<input type="checkbox"/>
Bold	<input type="checkbox"/>
Text Size	2.5000 mm
Text Offset	0.7500 mm
Read Convention	Up, then Left
Text Font	Arial
Text Background	Opaque
Units Format	1235 [mm] (Default)
Show Opening Height	<input type="checkbox"/>

Dimensions can now have formatted text – bold, italic or underline as well as an adjustable width factor.

Type Parameters:

Parameter	Value
Graphics	
Dimension String Type	Continuous
Tick Mark	Continuous
Line Weight	Baseline
Tick Mark Line Weight	Ordinate
Dimension Line Extension	0.0000 mm
Flipped Dimension Line Extension	0.0000 mm
Offset Line Center	True to Dimension Line

Baseline dimensions and ordinate dimensions have been added as new dimension styles.



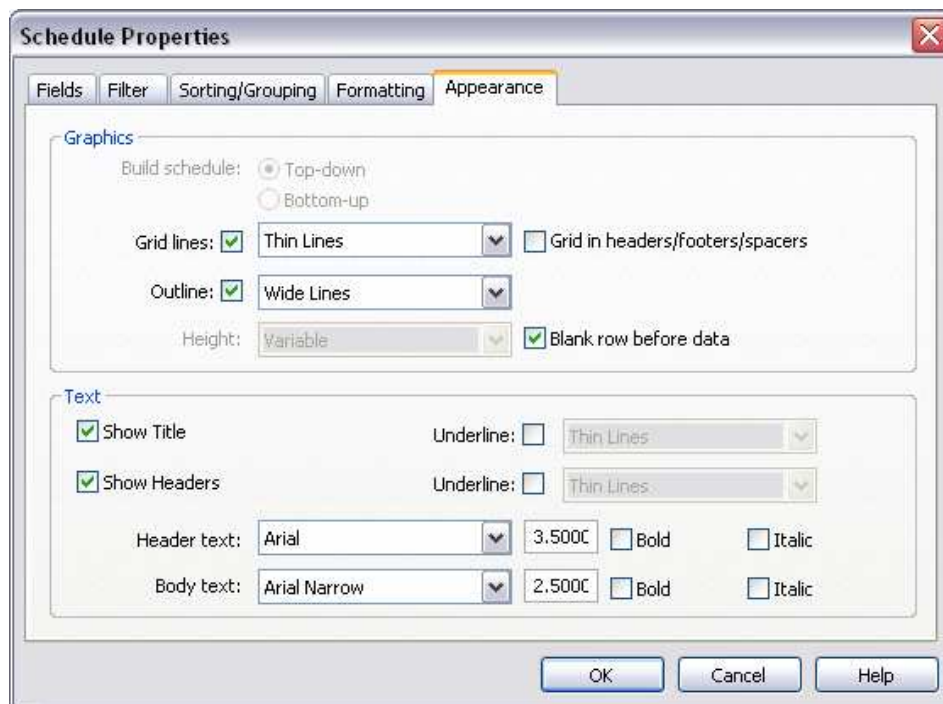
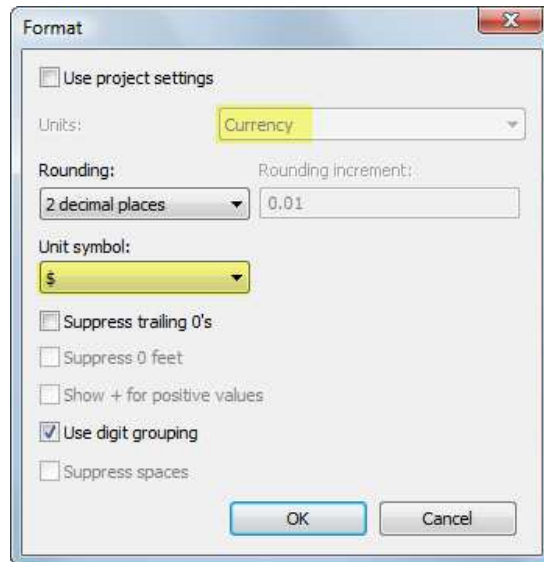
Scheduling improvements

Another unit format (currency) has been added for scheduling, available with a currency symbol.

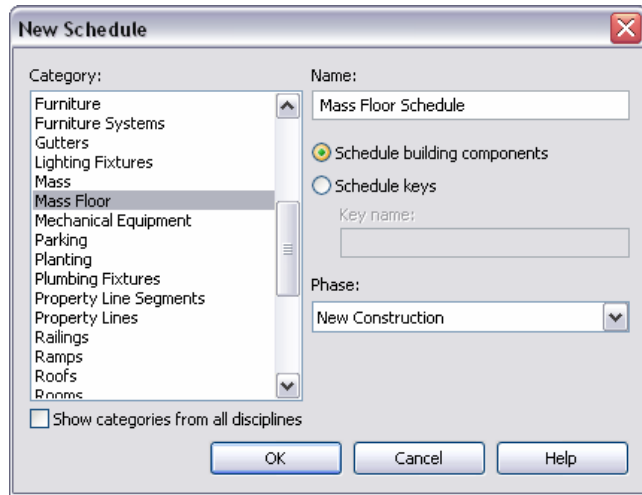
Better control over large numbers has also been added.

There is now additional control over the appearance of schedules.

This is welcome, but there is still so much more that could be added.



Schedules now have the ability to schedule *Floor Area Faces*, (which are now referred to as 'Mass Floors').

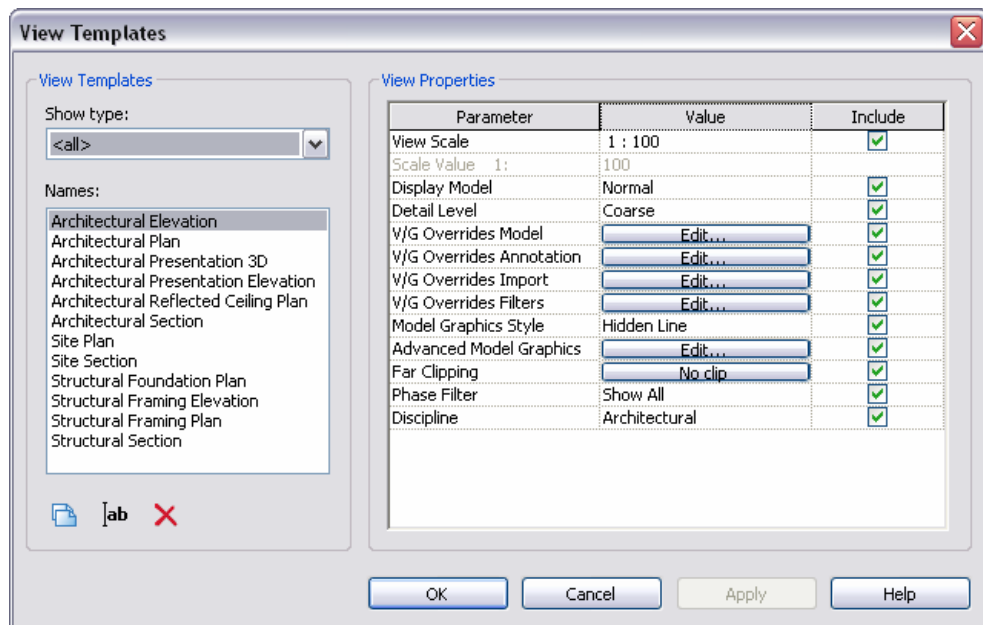


Mass Floor Schedule	
Usage	Floor Area
Building A	
Office	1330 m ²
Penthouse	1223 m ²
Retail	1023 m ²
Grand total	3576 m ²

Don't be too excited by the gray fill behind the Grand total – that's not a real scheduling feature. It's a tedious workaround using a drafting view in the background containing a filled region. However, the thicker outline border is now possible.

View Templates

Now support the optional application of view properties. No longer do you have to create a view template for every scale of each type of view. Most welcome...



Other feature improvements and additions

General

Pads can now be sloped, and are now marked as Room Bounding. They also now support drag controls for each edge or point. Sloped Pads also now support curved edges.

Railings can now be tagged. Columns (non-structural) remain 'untaggable'.

Additional **parameter groups** have been added for better sorting of parameters. These include **Analysis Results, Green Building Properties, Photometrics** and **Slab Shape Edit**.

Grids now have a new parameter called **Center Segment**, which can be set to 'Continuous', 'None' and 'Custom'. They can now have their symbols distinguished between plan views and elevation/section views.

Linked Files now support work in section, elevation and 3D views (not just plan views)

Phases now supports phase mapping between linked files and their host. By default, Revit® will try to map phases based on phase name. If this fails, it will seek to map them based on chronology. Custom mapping is permitted.

Graphic Overrides can now be applied to Line Styles and Fill Patterns. Material graphic overrides affect only render appearance and transparency.

Fill Patterns can now be applied to double-curved surfaces. Previously they could only be applied to planar or single-curves surfaces (e.g. cylindrical objects).

Keynote Legends are considered to be another type of legend view and are located as such in the project browser.

Structural

Beam Joins are better supported (no pun intended) with greater editing ability to show the join.

Editing **shared end controls** of multiple beams (coinciding) can occur all at once.

Structural **framing tags** have the ability to follow the point of attachment. These are predefined as 'Start', 'Middle' and 'End' of the member.

Control over **automatic tagging** for new structural members can be determined per view.

You can now create **isolated pad footings** by selecting **intersecting grids**, or by picking structural columns.

Spot Elevations can now graphically point to the symbolic line of a structural member, while reporting the coordinates at the end of the location line. They can also now rotate to match any element with a location line.

Other

Revit® Architecture 2009 now supports Autodesk's new **DWFx format**. This format can be opened and viewed using the Microsoft XPS viewer built into Windows Vista.

Revit's base or startup screen now has built-in access to recently used projects and families. This is called the **recent files window**. You may see this when switching views, which is annoying, but not the end of the world.

You will see some improvements to Revit®'s **file dialogs**.

Snap Overrides have been added to the right-click context menu during object creation. An additional snap override, 'CLOSE' has been added, available after two successive line segments have been sketched.

Object selection management has been improved. A new icon on the status bar shows the number of objects selected at any one time, and filter dialog lists how many of each object type are selected.

This concludes our look at Revit Architecture 2009. Hopefully, it's been useful to you. Good luck with the new version, and stay tuned for next month's edition of INFOCUS!

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