

Revit[®] Architecture/MEP/Structure: Collaborating Across Disciplines

David Cohn Independent Consultant/Revit Evangelist

1

Evaluation Forms

Please remember to fill out your evaluation form

(In Hall B or via an email you receive. Complete by 8pm to be eligible for prizes)

This is session AB210-4



And, please silence your cell phone.

David S. Cohn



- Independent consultant and Revit Evangelist
- Contributing editor *Desktop Engineering* contributing editor
- Former editor of CADalyst, Engineering Automation Report and CADCAMNet
- Frequent contributor to Computer Graphics World, PC Magazine, and others
- Registered architect—25+ years experience
- AutoCAD experience—20+ years
- Author of numerous books & articles

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President of Eclipse Software

COMPUTER GRAPHICS WORLD





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What We Will Cover

- File linking
- Shared positioning
- Managing links
- Controlling visibility in linked files
- Monitoring changes
- Project coordination
- Interference check
- Revision tracking

File Linking

Similar to external reference in AutoCAD

- 1. File>Import/Link>Revit
- 2. Select file in Add Link dialog
- 3. Select positioning method



-

Positioning issues: Files of type: RVT Files (*.rvt) Positioning: Auto - Center to Center Image: Center to Center Auto - Origin to Origin Auto - Origin to Origin Image: Center to Center Auto - By Shared Coordinates Manual - Origin Image: Center to Center

Manual - Center



Revit	
⚠	The document and the imported instance do not share the same coordinate system. Default center-to-center positioning will be used.
	ок

Why this message appears



Shared Positioning

Only share coordinates from one file:

- Publish: sends coordinates from the host model to the linked model
- Acquire: gets coordinates from the linked model

Share Coordinates						
Shared coordinates of the current project and 'Arch-building-01-START.rvt' have not been reconciled. This is a one-time operation.						
Publish the shared coordinate system of the current project and record it in 'Arch-building-01-START.rvt'. This will modify all named locations of the linked model.						
Acquire the shared coordinate system of 'Arch-building-01-START.rvt' and record it in the current project. This will modify the current model and all named locations of other linked models.						
Record selected instance as being positioned at location:						
Arch-building-01-START.rvt : Internal Change						
Reconcile Cancel Help						

Managing Links

Similar to external references in AutoCAD

- Overlay: link appears in the host but will not follow if the host is linked into another file
- Attach: link appears in the host and in any files the host is subsequently linked into

Alerts



A linked file Contains a link to the host the host model C: \Documents and Settings \Administrator \My Documents \PPI \Revit Collaboration class \Building 1.rvt has the same name as the host model. The link will be unloaded. Contains a link to the host the host model C: \Documents and Settings \Administrator \My Documents \PPI \Revit Collaboration class \Building 1.rvt has the same name as the host model. The link will be unloaded. Contains a link to the host model C: \Documents and Settings \Administrator \My Documents \PPI \Revit Collaboration class \Building 1.rvt has the same name as the host model. The link will be unloaded. Contains a link to the host model C: \Documents and Settings \Administrator \My Documents \PPI \Revit Collaboration class \Building 1.rvt has the same name as the host model. The link will be unloaded. Contains a link to the host model C: \Documents and Settings \Administrator \My Documents \PPI \Revit Collaboration class \Building 1.rvt has the same name as the host model. The link will be unloaded. Contains a link to the host model C: \Documents and Settings \Administrator \My Documents \PPI \Revit Collaboration class \Building 1.rvt has the same name as the host model. The link will be unloaded. Contains a link to the host model of the host model of the host model of the host model. The link will be unloaded to the host model of the



Visibility Control

- Simply using Visibility/Graphics won't work
 - Change the control on the Revit Links tab
 - Click the By Host View button
 - Change RVT Link display setting to Custom



Visibility

Plan: Level 1

d Categories | Filters

Halftone

Revit Links

Display Settings

By Host Vie

Change the Model Categories pull-down to Custom

Basics Model Categories		Annotation Categories	Import Categories	
Model	categories:	<custom></custom>		*
√ Sh	ow model categories	s in this view	iew>	

Monitoring Changes

- Use the Copy/Monitor tool
- Turns on the Copy/Monitor mode





- Objects being monitored show an eyeball icon
- ۲

Use Options bar tools



Structural Concerns

- Walls created in Revit Architecture cannot be copied and monitored in Revit Structure unless they are structural walls
- Floors copied from Revit Architecture to Revit Structure may need to be changed to structural floors

Parameter	Value	~
Top Extension Distance	0' 0"	
Room Bounding	V	
Related to Mass		
Structural		0
Structural Usage	Non-bearing	×
Dimensions	Non-bearing	1
Length	Bearing	
Area	Structural combine	
Volume	Padetara compile/2	

Parameter	Value	^
Constraints		\$
Level	Level 2	
Height Offset From Level	0' 0"	
Room Bounding		_
Related to Mass		
Structural		*
Structural		
Dimensions		*
Slope		
Perimeter	449' 9"	
Area	11235.94 SF	

Project Coordination

- Revit updates links automatically when you load the host project
- You can reload links manually

Arch-b Edit			CAD Formats	DWF Markups				
Reload	Į.	or	Linked File	Loaded Reference Type	Not	Saved Path	Path Type	Local Alias
Unload	Źł	•	Arch-building-0	1 🗹 Overlay	Arch-Ł	building-01-START.rvt	Relative	
Open ((and Unload)							
Reload	From			1				
			Save Lo	cations Relo	ad From	Reload	Unload	Remove
Make E	Element Editable					4		

Revit tells you if there is a change you must address

evit Structure 2009			
Warning - can be ignored			
Instance of linked .rvt file	e needs Coordination	Review	A.
			×
	Show	More Info	Expand >>
		OK	Cancel

Architecture, Engineering and Construction

Publish to Buzzsaw Import/Export Settings

Raster Images... よう Shared Parameters...

Worksets...

Coordination Review

Use
 Coordination Review
 to resolve changes



n	Comment
on <u></u>	Comment
<u>×</u>	Add comment
2	
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	ce

- Postpone: do nothing
- Reject: make no change in the host file
- Accept difference: accepts the changed relationship
- Modify/Rename/Move: makes a change in the host to match the linked file

Interference Check

Used to detect objects that interfere with each other



Select the objects you want to check

Interference Check	N 100 100 100 100 100 100 100 100 100 10
Categories from Current Project Air Teminals Duct Fittings Ducts Flex Ducts Roors Mechanical Equipment Walls	Categories from Struct-building-02.rvt Floors Floors Structural Columns Walls
Selection All None Invert	Selection All None Invert OK Cancel

Interference Check (con't)

Identify the problems

	Interference Report	
	Group by: Category 1, Category :	
	Message Ducts Structural Framing Ducts : Rectangular Duct : Radius Elbows / Tees - Mark 10 : id 379494	
	Struct-building-02.rvt : Structural Framing : W-Wide Flange : W24X76 : id 186842	
ATT	Created: Saturday, October 18, 2008 11:03:06 AM	\mathbf{X}
Ê	Last Update: Note: Refresh updates interferences listed above. Show Export Refresh Close	

 Revit can open a view to show you the problem, but it's up to you to find an appropriate way to solve it

Revision Tracking

Set up the revision table

Project Information
Project Parameters
Manage Place and Locations
Browser Organization
Fill Patterns
Materials
Render Appearance Library
Decal Types
Object Styles
Phases
Revisions
Area and Volume Computations
View Templates
Color Fill Schemes
Keynoting
Filters

Settings Window Help

Sequence 1	Numbering Numeric	Date Date 1	Description Revision 1	Issued	Issued to	Issued by	Show Cloud and Tag	Color Fill Schemes Keynoting Filters
								O Per Sheet
								Row
								Move Up
								Move Down
								Merge Up
								Merge Down
								Alphabetic Sequence
								Options

Sheet Issues/Revisions

Revision

Use the Revision Cloud tool

 Use the Revision Cloud tool on the Drafting tab of the Design bar to indicate the revision.



 When you finish creating the cloud, click Finish Sketch.



Tagging Revisions

♦ Keynote »	1
🗘 Tag »	By Category
🚍 Room Tag	Multi-Categor
础 Tag All Not Tag	Material
IN Utam Defenses	

 Use Tag By Category to add tag numbers in the drawing to tag each revision cloud with its appropriate revision number

в

 You can change the revision number assigned to a cloud by changing its element properties

Remember: The numbering method is based on the choice you made in the Revisions dialog.

amily.	System Family: Revisi	ion Cloud: 2 · Moved 💌	Load .	
Гуре:	Revision Cloud	*	Edi / New	
Type Pa	arameters: Control all elem	ents of this type		
	Perameter	Value		
Instance	e Parameters - Control sel	ected or to be created instar	xe	
-	Parameter	Value		
and the second s				
Revisio	ty Data	Sen. 2 - Moved Grid	Cweetby 7	
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Issuing Revisions

 To issue a revision, select Issued in the Revisions dialog.

Sequence	Numbering	Date	Description	Issued	Issued to	Issued by	Show
1	Numeric	11/05/08	Moved grid 8 west by 2'		General Constr	David Cohn	Cloud and Tag
2	Numeric 💧	10/05/08	Moved doors on east sid		General Constr	David Cohn	Cloud and Tag

Once a revision has been released, you can't modify it.

Revit Archi	tecture 2009			
Error - can	not be ignored			
Can't add	cloud to an Issued	Revision.		6
		Show	More Info	Expand >>
		Show	More Info	Expand >>
			OK	Cancel

Revision Schedules

 Revit automatically adds each revision to the revision schedule that appears in the title block of each project sheet.

No.	Description	Date
1	Moved grid B west by 2'	11/05/08
2	Moved doors on east side	10/05/08
-		
8		

Conclusion

Revit provides all the tools you need to collaborate across multiple disciplines, linking data created by architects, engineers, and other consultants. You can use these tools to ensure that your designs are accurate, computable, coordinated, and complete.

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Questions & Answers

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This concludes the American Institute of Architects Continuing Education Systems Program



