

New York City College of Technology Division of Continuing Education

Building Information Modeling with Revit 2014 Module 04 : FH.01 Starting the Firehouse : Grids & Levels



Professor Paul C. King, RA, AIA, ARA Prof.Paul.King@Gmail.com

http://professorpaulking.wordpress.com/ http://openlab.citytech.cuny.edu/bim101-sp14/

http://students.autodesk.com/

Modify Command Review

Day 04 Modify Shortcuts

Firehouse

- New Project
- Grids..
- Perimeter
- Levels . .
- Exterior Wall . .
- Fix Bricks

Bunkhouse •Exterior Siding Wall

New Sheets
1/8" or 1/4"

Wrap Up

Revit Introduction

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Modify

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- AL = align
- OF = offset
- MV = move
- CO, CC = copy
- MM = mirror
- MD = mirror draw axis
- RO = rotate

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TR = trim / extend to corner



- AR = array, RE = scale
- trim / extend single, trim extend multiple





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- PN = pin in place / lock
- UP = unpin / unlock
- DE = delete

Day 04

Modify

Shortcuts

Firehouse

Keyboard Shortcuts (common)

View

- ZR, ZZ = zoom region
- ZO, ZV = zoom out
- ZE, ZF = zoom to fit
- ZS = zoom sheet size
- ZP = zoom previous

Interface

- **PP** = properties on/off
- VV = visibility graphics

Display

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- WF = wireframe
- HL = hidden line
- SD = shaded with edges





Modify

- AL = align
- OF = offset
- MM = mirror
- MD = mirror draw axis
- SL = split element
- MV = move
- CO, CC = copy
 - RO = rotate
 - TR = trim / extend
 - AR = array

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- RE = scale
- PN = pin in place / lock
- UP = unpin / unlock
 - DE = delete

Drafting

- LL = create level
- GR = create grid
- TG = add tag
- RT = add room tag
- TX = add text
- DI = add dimension

	Architecture		Structure	Systems	Insert Ani		
6	\Box	·		IJ			
Modify	Wall	Door	Window	Component *	Colun	nn	
Select						Bui	

Modeling

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- WA = add wall
- WN = add window
- DR = add door
 - CM = place component
- CL = add column
 - MA = match properties

New Project
Grids . .
Porimeter

- Perimeter
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Fix Bricks

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Keyboard Shortcuts

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Wrap Up

Revit Introduction

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• F 📑 Replicate 🖳 Cascade User se 🗄 Tile Interface • ✓ ViewCube Navigation Bar System Browser Project Browser Properties ٠ Status Bar Status Bar - Worksets Status Bar - Design Options Recent Files Browser Organization 🔄 Keyboard Shortcuts

- View > User Interface > Keyboard Shortcuts
- Revit xxxx \ program \ Keyboardshortcuts.txt
- Additional Shortcuts can be created

All Defined

Keyboard Shortcuts		2 <mark>- x</mark>
Search: Type a comman	nd name	۶ All
Filter: All Defined	(- Defined
Assignments:		
Command	Shortcuts	Paths
Modify	MD	Create>Select; Insert>Select; Ann
Properties	PP Ctrl+1 VP	Create>Properties; View>Windo
Model Line; Model Line; Bound Lines	Ш	Create>Model; Create>Detail; Cr
Place a Component	CM	Create>Model; Architecture>Buil
Model Group:Create Group; De Group:Create Group	GP	Create>Model; Annotate>Detail;
Reference Plane; Reference Plane	RP	Create>Datum; Create>Draw; Mo
•		4
Press new keys:	🖨 Assign	Remove
Import	Export	OK Cancel

All Reserved

Filter	All Reserved	-	- Reserved
Assignm	ents:		Reserved
Comm	and	Shortcuts	Paths
Exit Rev	vit	<alt+fn4></alt+fn4>	Application Menu
Close		<ctrl+fn4></ctrl+fn4>	Application Menu
Copy to	o Clipboard	<ctrl+c></ctrl+c>	Modify>Clipboard
Cut to	Clipboard	<ctrl+x></ctrl+x>	Modify>Clipboard
Paste; F	Paste from Clipbo	<ctrl+v></ctrl+v>	Modify>Clipboard
Undo		<ctrl+z></ctrl+z>	Quick Access Toolbar
Undo		<ctrl+shift+z></ctrl+shift+z>	Quick Access Toolbar
Redo		<ctrl+y></ctrl+y>	Quick Access Toolbar
Open; l	Revit file	<ctrl+o></ctrl+o>	Application Menu; Application M
Print		<ctrl+p></ctrl+p>	Application Menu; Application M
Save		<ctrl+s></ctrl+s>	Application Menu; Quick Access
Open; I Print Save	Revit file	<ctrl+d> <ctrl+p> <ctrl+s></ctrl+s></ctrl+p></ctrl+d>	Application Menu; Application Application Menu; Application Application Menu; Quick Acce

Day 04

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Wrap Up

Revit Introduction

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New Project – Firehouse & Bunkhouse











Day 04

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Architectural Template

Construction Template

C Architectural Templa Structural Template

Mechanical Template

Save

application menu.

Press F1 for more help

rac basic sample project.R13 Day.02.0001.rvt

rac_basic_sample_project.R13 Day.02.rvt

FireHouse rvt

Files of type: Project Files (*.rvt)

rac basic sample project.R13(Recovery).rv

🔶 ОК

<None>

C> E

Arch

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Modify

Select

Tools 👻

Fix Bricks

Bunkhouse Exterior Siding Wall

New Sheets • 1/8" or 1/4"

Wrap Up

Revit Introduction

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New Project – Fireł	nouse & Bunkhouse
Image: Constraint of the constraint o	 New > Project Architectural Template Save & Name Project > Firehouse
New Project	Name your file Firehouse-yourfullname.rvt

Browse...

Help

Massir

Floor

g

2/13/2013 12:27 AM RVT Fil

2/19/2013 10:48 PM RVT Fil

• Options...

Save

2/12/2013 10:33 PM RVT Fil -

Cancel

ate

Cancel

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>
 >
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Firehouse.rvt

Saves the current project, family, annotation, or template file.

To save a copy of the current file, use Save As on the Revit

Name Project



Day 04

Modify Shortcuts

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Fix Bricks

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Wrap Up

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New Project – Add Grids



Day 04

Modify Shortcuts

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Bunkhouse •Exterior Siding Wall

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Wrap Up

Revit Introduction

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New Project – Edit Grid Formatting





Day 04

Modify Shortcuts

Fireho

- New Project
- Grids. Perimeter
- Levels . .
- Exterior Wall.
- Fix Bricks

Bunkhouse Exterior Siding Wall

New Sheets • 1/8" or 1/4"

Wrap Up

Revit Introduction

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- Architecture > Model Lines
- Line Style to Centerline
- Rectangle tool
- Set Offsets





Type of

<Bevond>

<Hidden>

<Overhead>

Hidden Lines

<Centerline> 🤜

<Demolished>

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New Project – Add Building Perimeter



Day 04

Modify Shortcuts

Firehouse

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Bunkhouse •Exterior Siding Wall

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Wrap Up

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New Project – Add & Adjust Levels

🖻 🖯 🕥 • 🕮 🔍 🖄 🏠 🔔 Sign In - 🗙 Architecture 2 20 T 22 4 Level Modify Wall Door Tag Shaft भी Grid Select Area Face 🔊 🖉 Dormer Opening Datum

- Adjust Height of Levels 1 & 2
- Level 1 to 143'-0 1/2"
- Level 2 to 156'-2"
- Adjust Graphics in East & North Elevation
- Grids must intersect each level to display





Day 04

Modify Shortcuts

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Wrap Up

Revit Introduction

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New Project – Add & Adjust Levels



Day 04

Modify Shortcuts

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Wrap Up

Revit Introduction

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New Project – Add Exterior Wall for Firehouse

- Wall > Architectural > Basic Wall : Exterior Brick and CMU
- Rectangle > Finish Face Exterior > Main Floor up to T.O.PARAPET > Snap to Perimeter



Day 04

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Day 04

Modify Shortcuts

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Bunkhouse Exterior Siding Wall

New Sheets • 1/8" or 1/4"

Wrap Up

Revit Introduction

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New Project – Add Exterior Wall for Firehouse

Fix Orientation of Bricks

- Select Objects and Filter for Walls
- Change Location Line to Wall Centerline
- Flip each wall





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Begin the Bunkhouse



Modify Shortcuts

Firehouse

- New Project
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- Exterior Wall . .
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Bunkhouse •Exterior Siding Wall

New Sheets
1/8" or 1/4"

Wrap Up

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Education

Create New Wall : Basic Wall - Exterior Siding

Day 04	Properties 🛛		
	Basic Wall		Type Properties 23
Modify	Interior - 5" Partition (2-hr)		Sector Contra Sector Parts Well
Shortcuts			Parniy: System Parniy: Dasic Waii
	New Walls 🗸 🕞 Edit Type	+	Type. Interior - 5" Partition (2-1ii) Duplicate
Firehouse	Constraints * ^	۱ŀ	Rename
New Project	Base Constraint MAIN FLOOR		
nen i reject	Base Offset 0' 0"	111	Name A A A A A A A A A A A A A A A A A A A
Grids	Base is Attached	411	Family: System Family: Basic Wall Load
Perimeter	Base Extension Distance 0' 0"		Name: Basic Wall - Exterior Siding 🚣 Type: Basic Wall - Exterior Siding 🔷 Duplicate
	Top Constraint Up to level: LOWER		Rename
Levels	Unconnected Height 13' 11/2"		OK Cancel Type Parameters
Exterior Wall	Top Offset 0' 0"		Parameter Value ^
- Fix Bricke	Top is Attached		Width Construction *
- FIX BRICKS	Properties help		Function Interior Structure
A CONTRACTOR			Graphics Wrapping at Inserts Uo not wrap Wrapping at Inserts None
Bunkhouse	FireHouse-Day 06 Firebouse Compound Wall and Rol 🛛	สป	Coarse Scale Fill Pattern With 0° 5°
	= [a] Views (all)	411	Coarse Scale Fill Color Black Function Interior
Exterior Siding	Structural Diana		Materials and Finishes *
Wall			Structural Material Matal Stud Lawar Coarse Sale Fill Color Black
		411	Materials and Finishes
	I.O.FIREHOUSE FOOTING		Identity Data Structural Material Metal Stud Layer
New Sheets	T.O.PARAPET		Keynote Sector Keynote Keynote
1/8" or 1/4"	Element Floor Plans		Model Model
• 1/8 OI 1/4	Callout of FIREHOUSE FLOOR		Manufacturer Manufacturer
	FIREHOUSE ROOF		Type Comments Type Comments
Wrap Up	LOWER ROOF		URL Description
мпар ор	MAIN FLOOR		Description Assembly Description Partitions - Drywall w/ Metal Stud
	Site		Assembly Description Partitions - Drywall w/ Metal Stud
	T.O.FIREHOUSE FOOTING		<< Preview OK Cancel Apply
Revit Introduction	T.O.PARAPET		<< Preview OK Cancel Apply
	📄 Ceiling Plans		
Division of	FIREHOUSE ROOF		
Continuing			

Day 04

Modify Shortcuts

Firehouse

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Wrap Up

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Create New Wall : Basic Wall - Exterior Siding

Family: Basic Wall Type: Basic Wall Total thickness: 0' 5" Resistance (R): 14.9775 (h Thermal Mass: 2.8740 BTU	Exterior Siding S ft²·ºF)/BTU /ºF	Sample Height: 20' 0"	shown be • You may	elow need to c	create s	some of the ma	iterials
Layers Function Materia 1 Structure [Sycare 2 Finish 2 [5 Gypsum 3 Finish 2 [5 Gypsum 4 Core Bound Layers Ab	EXTERIOR SIDE Thickness 0' 0 5/8" 0' 0 5/8" 0' 0 5/8" ov 0' 0"	Wraps Structural Material					
5 Structure [Metal Stu 6 Core Bound Layers Be	Edit Assen	nbly					
Insert Octo	Type: Total th Resista Therma	Basic Wall - Basic Wall - nickness: 0' 7 3/8" - Ince (R): 8.3706 (h f al Mass: 2.1506 BTU	Exterior Siding t²·°F)/BTU /°F			Sample Height:	20' 0"
		Function	Material	Thickness	Wraps	Structural Mater	ial 🔺
Assign Layers	1	Finish 1 [4]	Siding, Clapboard	0' 01/2"	V		
<< Preview	2	Membrane Layer	Air Infiltration Barrie	0' 0"			
	3	Substrate [2]	Plywood, Sheathing	0' 0 3/4"			
	4	Core Boundary	Layers Above Wrap	0' 0"			
	5	Structure [1]	Softwood, Lumber	0' 51/2"			
	6	Core Boundary	Layers Below Wrap	0' 0"			
	7	Membrane Layer	Vapor Retarder	0' 0"	V		
	8	Finish 2 [5]	Gypsum Wall Board	0' 0 5/8"	V		_
		1					*

Day 04

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Wrap Up

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• Finish Face Exterior > Rectangle Tool

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Wrap Up

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Sheet Layout (create new sheet)



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Wrap Up

Revit Introduction

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Setup Project Sheets – 22 x 34 Format



Floor Plans, RCP Plans at 1/4" or 1/8"



Day 04

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Wrap Up

Revit Introduction

Division of Continuing Education

Setup Project Sheets – 22 x 34 Format



Exterior Elevations at 1/4" or 1/8"



Day 04

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Bunkhouse •Exterior Siding Wall

New Sheets1/8" or 1/4"

Wrap Up

Revit Introduction

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Day 4 - Wrap Up

Grids

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- Draw in Order
- Rename
- Adjust graphics
- Copy
- Model Lines
 - For perimeter
 - For Guidelines

Family Editor

- Window
- Edit Type
- Duplicate
- Rename
- Change Size

- Levels
 - Adjust graphics
 - Copy or create new
 - Add Plan view if needed
- Creating New Walls
 - Select Type
 - Select Justification
 - Select Bottom Constraint
 - Select Top Constraint
- Drawing Best Practices
 - Always select the proper level
 - Pay attention to naming
 - Pay attention to project browser