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

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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

Modify Command Review

- AL = align
- OF = offset
- MV = move
- CO, CC = copy
- MM = mirror
- MD = mirror draw axis
- RO = rotate
- TR = trim / extend to corner
- PN = pin in place / lock
- UP = unpin / unlock
- DE = delete
- SL = split element, split with gap
- AR = array, RE = scale
- trim / extend single, trim extend multiple
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
- WF = wireframe
- HL = hidden line
- SD = shaded with edges

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

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

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

- All Defined
- All Reserved

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Revit Introduction
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New Project – Firehouse & Bunkhouse

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Wrap Up
New Project – Firehouse & Bunkhouse

- New > Project
- Architectural Template
- Save & Name Project > Firehouse
- Name your file Firehouse-yourfullname.rvt

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Revit Introduction
New Project – Add Grids

- Architecture > Grid
- Grids 1 to 5 across horizontal
- Grids A to H up vertically

- Vertical Grids: 11'10, 23'8, 23'8, 23'8
- Horizontal Grids: 18'6, 18'6, 16', 18', 18', 18', 18'
New Project – Edit Grid Formatting

- Architecture > Grid
- Grids 1 to 5 across horizontal
- Grids A to H up vertically

After Creating the First Horizontal Grid > Stop and Rename it to A

- Show Hide Bubbles
- Add an Elbow
- Remove an Elbow

Show / Hide Bubbles
Add Elbow
Drag back to remove elbow
New Project – Add Building Perimeter

- Grid D-3 to H-5
- Offset 1’-11 13/16”

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

- Grid A-1 to C-5
- Offset 2’-0”

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Wrap Up
New Project – Add & **Adjust** Levels

- 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
New Project – Add & Adjust Levels

- Add Plan View

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Wrap Up

Revit Introduction
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- Level 4 @ 173’- 2 ½”
- Rename T.O.Parapet
- Level 3 @ 169’- 3 ½”
- Rename Main Roof
- Level 2 @ 156’- 2”
- Rename Lower Floor
- Level 1 @ 143’-0 ½”
- Rename Main Floor

Black display has No Associated

Create 2 new levels

Line or Pick Lines Offset

• Select “Make Plan View”
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

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Wrap Up
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

• Draw from upper left to lower right to avoid needing this fix
Begin the Bunkhouse

Day 04

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Revit Introduction
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Create New Wall: Basic Wall - Exterior Siding

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Wrap Up

Revit Introduction
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Create New Wall: Basic Wall - Exterior Siding

- Create a new wall with a total of 8 layers as shown below
- You may need to create some of the materials

<table>
<thead>
<tr>
<th>Function</th>
<th>Material</th>
<th>Thickness</th>
<th>Wraps</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Finish 1 [4]</td>
<td>0’ 0 1/2”</td>
<td>✔</td>
</tr>
<tr>
<td>2</td>
<td>Membrane Layer</td>
<td>0’ 0”</td>
<td>✔</td>
</tr>
<tr>
<td>3</td>
<td>Substrate [2]</td>
<td>0’ 0 3/4”</td>
<td>✔</td>
</tr>
<tr>
<td>4</td>
<td>Core Boundary</td>
<td>0’ 0”</td>
<td>✔</td>
</tr>
<tr>
<td>5</td>
<td>Structure [1]</td>
<td>0’ 5 1/2”</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Core Boundary</td>
<td>0’ 0”</td>
<td>✔</td>
</tr>
<tr>
<td>7</td>
<td>Membrane Layer</td>
<td>0’ 0”</td>
<td>✔</td>
</tr>
<tr>
<td>8</td>
<td>Finish 2 [5]</td>
<td>0’ 0 5/8”</td>
<td>✔</td>
</tr>
</tbody>
</table>

**EXTERIOR SIDE**

<table>
<thead>
<tr>
<th>Function</th>
<th>Material</th>
<th>Thickness</th>
<th>Wraps</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Core Boundary</td>
<td>0’ 0”</td>
<td>✔</td>
</tr>
<tr>
<td>10</td>
<td>Structure [1]</td>
<td>0’ 0 1/2”</td>
<td>✔</td>
</tr>
<tr>
<td>11</td>
<td>Membrane Layer</td>
<td>0’ 0”</td>
<td>✔</td>
</tr>
<tr>
<td>12</td>
<td>Finish 1 [4]</td>
<td>0’ 0 1/2”</td>
<td>✔</td>
</tr>
</tbody>
</table>

**INTERIOR SIDE**

<table>
<thead>
<tr>
<th>Function</th>
<th>Material</th>
<th>Thickness</th>
<th>Wraps</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Finish 1 [4]</td>
<td>0’ 0 1/2”</td>
<td>✔</td>
</tr>
<tr>
<td>2</td>
<td>Membrane Layer</td>
<td>0’ 0”</td>
<td>✔</td>
</tr>
<tr>
<td>3</td>
<td>Substrate [2]</td>
<td>0’ 0 3/4”</td>
<td>✔</td>
</tr>
<tr>
<td>4</td>
<td>Core Boundary</td>
<td>0’ 0”</td>
<td>✔</td>
</tr>
<tr>
<td>5</td>
<td>Structure [1]</td>
<td>0’ 5 1/2”</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Core Boundary</td>
<td>0’ 0”</td>
<td>✔</td>
</tr>
<tr>
<td>7</td>
<td>Membrane Layer</td>
<td>0’ 0”</td>
<td>✔</td>
</tr>
<tr>
<td>8</td>
<td>Finish 2 [5]</td>
<td>0’ 0 5/8”</td>
<td>✔</td>
</tr>
</tbody>
</table>
Draw exterior wall of Bunkhouse

- Basic Wall – Exterior Siding > Main Floor up to Lower Roof
- Finish Face Exterior > Rectangle Tool
Sheet Layout (create new sheet)

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Wrap Up
Setup Project Sheets – 22 x 34 Format

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

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Wrap Up
Setup Project Sheets – 22 x 34 Format

Exterior Elevations at 1/4” or 1/8”

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Wrap Up

Revit Introduction
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Day 4 - Wrap Up

• Grids
  ▪ 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