



New York City College of Technology Division of Continuing Education

Building Information Modeling with Revit 2014 Module 09: FH.06 Bunkhouse Foundations & Roof



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

http://students.autodesk.com/

Day 09 FH.06

Bunkhouse

- Copy Walls
- Propagate Extents
- Adjust Walls
- Fix doors

Foundation

- Create
- Footing
- Split . .
- Base Constraint
- Attach Top/Base

Floors

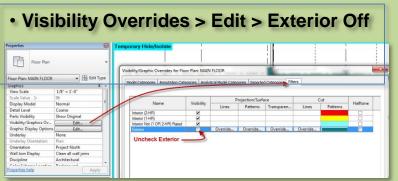
- View Range
- Slab @ Footing
- Slab @ Ground
- Slab@ Main
- Section view

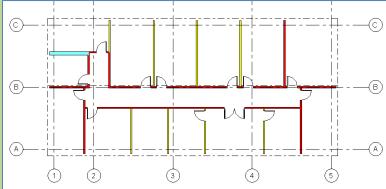
Continue to Roofs

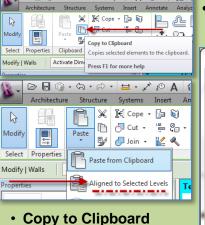
Revit Computers 3

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Bunkhouse: Copy Walls From Floor to Floor





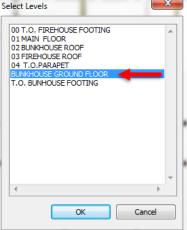


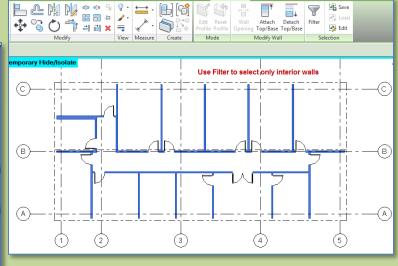
Paste Aligned to

 BUNKHOUSE Ground Floor

Selected Levels

 Filter to display Interior Walls only





Day 09 FH.06

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- Slab @ Ground
- Slab@ Main
- Section view

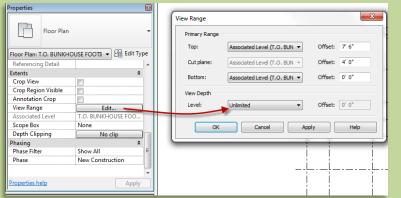
Continue to Roofs

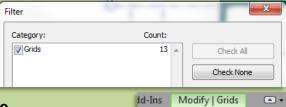
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Bunkhouse – Propagate Extents of Grids

(E)-



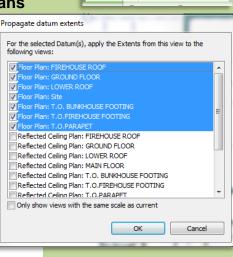


Propagate

Extents

Datum

- View Range
 - Depth > Unlimited
- Grid > Propagate Extents
 - All Floor Plans

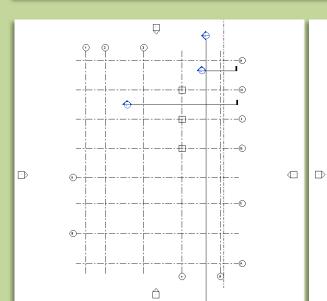


Save

△" Load

△ Edit

Selection



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Bunkhouse

- Copy Walls
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- Attach Top/Base

Floors

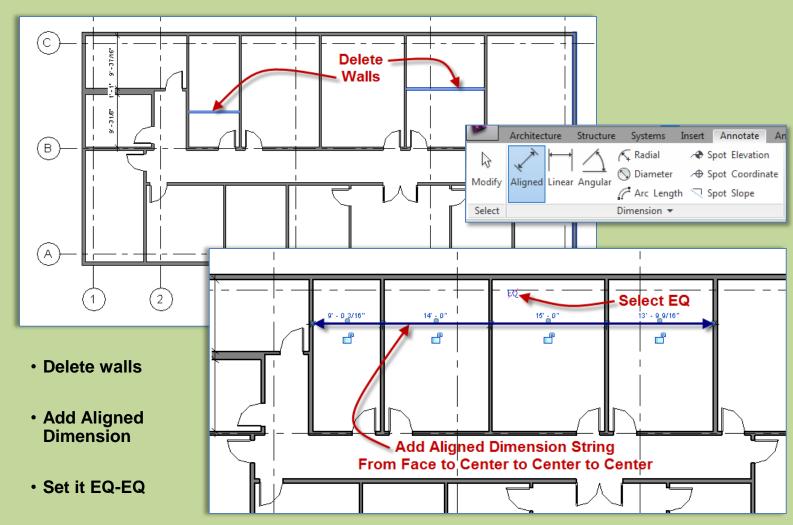
- View Range
- Slab @ Footing
- Slab @ Ground
- Slab@ Main
- Section view

Continue to Roofs

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Bunkhouse: Delete Walls & Add Dimensions



Day 09 FH.06

Bunkhouse

- Copy Walls
- Propagate
- Extents
- Adjust Walls
- Fix doors

Foundation

- Create
- Footing
- Split . .
- Base Constraint
- Attach Top/Base

Floors

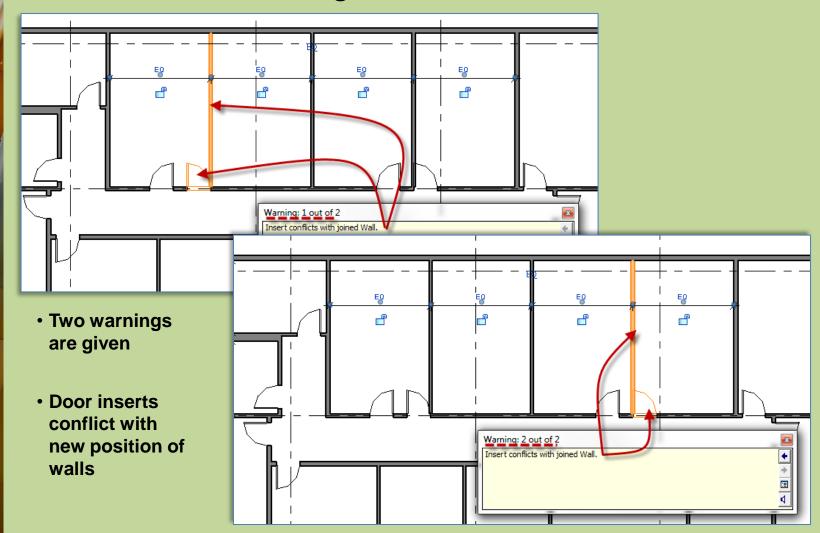
- View Range
- Slab @ Footing
- Slab @ Ground
- Slab@ Main
- Section view

Continue to Roofs

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Bunkhouse: Warning – Doors Conflict with Walls



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Bunkhouse

- Copy Walls
- Propagate
- Extents
- Adjust Walls
- Fix door

Foundation

- Create
- Footing
- Split . .
- Base Constraint
- Attach Top/Base

Floors

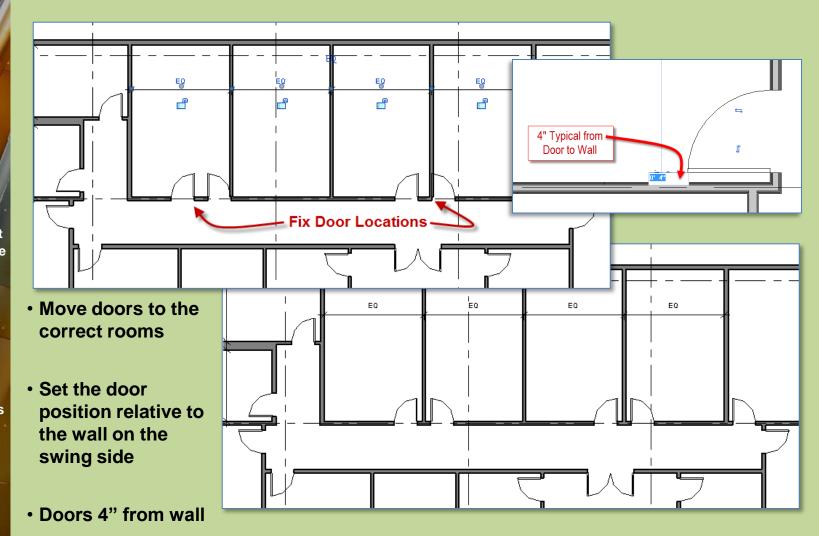
- View Range
- Slab @ Footing
- Slab @ Ground
- Slab@ Main
- Section view

Continue to Roofs

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Bunkhouse: Fix Door Locations



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Bunkhouse

- Copy Walls
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Foundation

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- Footing
- Split . .
- Base Constraint
- Attach Top/Base

Floors

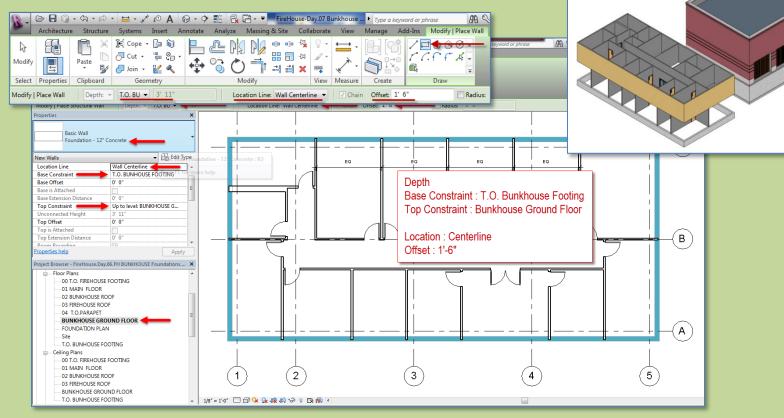
- View Range
- Slab @ Footing
- Slab @ Ground
- Slab@ Main
- Section view

Continue to Roofs

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Bunkhouse: Create 12" Foundation



- Structure > Wall > Structural
- Create: Foundation 12" Concrete
- Rectangle Tool with Offset 1'-6"
- Snap from A-1 to C-2
- Location: Wall Centerline

- Depth
- Base Constraint: T.O.Bunkhouse Footing
- Top Constraint : Bunkhouse Ground Floor

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Floors

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- Slab @ Ground
- Slab@ Main
- Section view

Continue to Roofs

Revit Computers 3

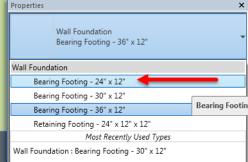
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Bunkhouse: Add Wall Foundation Bearing Footing

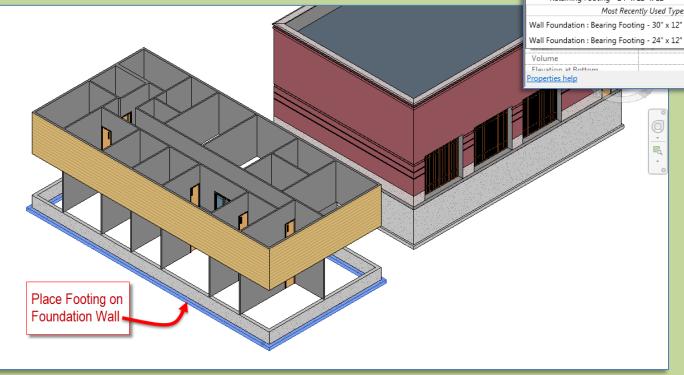
 Wall Foundation Bearing Footing 24" x 12"

 Snap to Foundation Wall





Apply



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Bunkhouse

- Copy Walls
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- Adjust Walls
- Fix doors

Foundation

- Create
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- Attach Top/Base

Floors

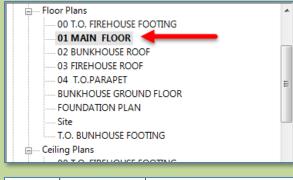
- View Range
- Slab @ Footing
- Slab @ Ground
- Slab@ Main
- Section view

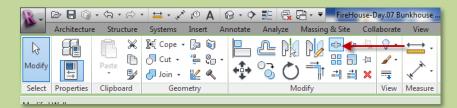
Continue to Roofs

Revit Computers 3

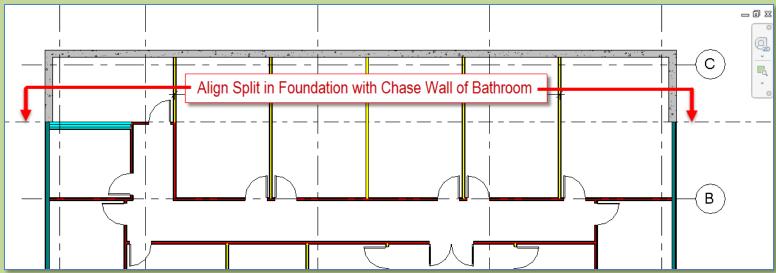
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Bunkhouse: Split Existing Exterior Wall





Go to 01 Main Floor Select Split Tool



Align Split with Face of Bathroom Chase Wall

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Bunkhouse

- Copy Walls
- Propagate Extents
- Adjust Walls
- Fix doors

Foundation

- Create
- FootingSplit
- Base Constraint
- Attach Top/Base

Floors

- View Range
- Slab @ Footing
- Slab @ Ground
- Slab@ Main
- Section view

Continue to Roofs

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Bunkhouse: Update Base Constraint

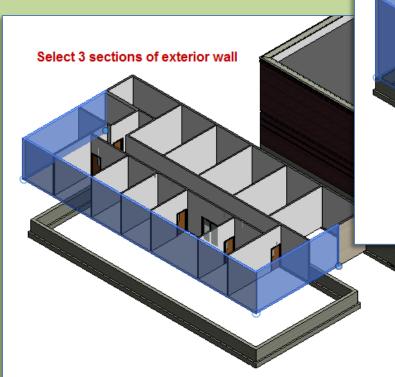
•Go to 3d View

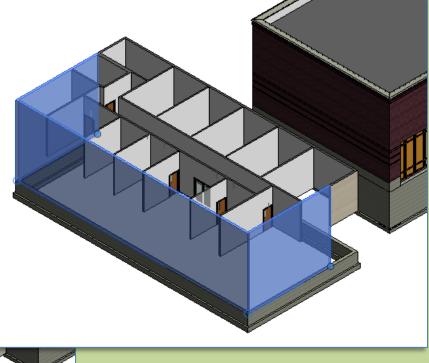
Highlight 3 Front Exterior Walls (hold CTRL)

•Change Base Constraint :

•BUNKHOUSE GROUND FLOOR

Top Constraint: Up to level: LOWER ROOF





Match front half of split walls to top of foundation

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Bunkhouse

- Copy Walls
- Propagate Extents
- Adjust Walls
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Foundation

- Create
- Footing
- Base Constraint
- Attach Top/Base

Floors

- View Range
- Slab @ Footing
- Slab @ Ground
- Slab@ Main
- Section view

Continue to Roofs

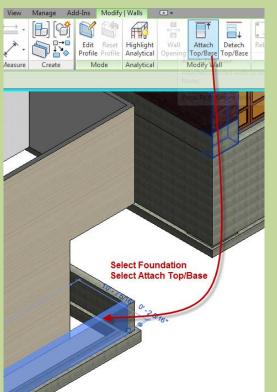
Revit Computers 3

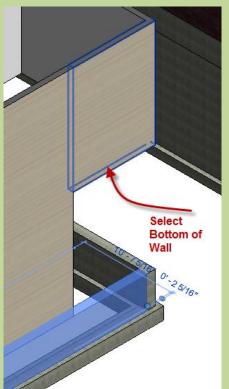
Institute of Design and Construction

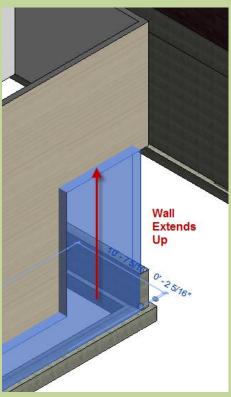
Bunkhouse: Foundation Attach Top / Base

Go to 3d View

Select Foundation Wall Select Attach Top/Base







Repeat for the back foundation wall Repeat for the opposite side

If you have problems with alignment move chase wall away from exterior wall

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Bunkhouse

- Copy Walls
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Foundation

- Create
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- Split . .
- Base Constraint
- Attach Top/Base

Floors

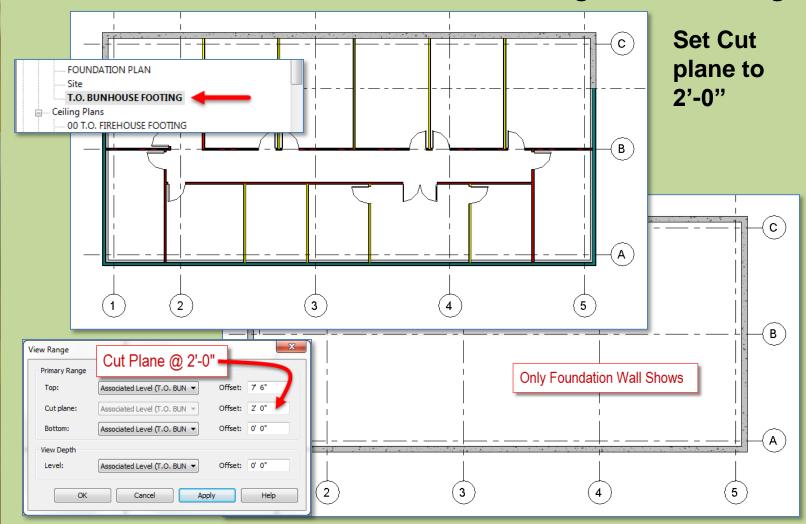
- View Range
- Slab @ Footing
- Slab @ Ground
- Slab@ Main
- Section view

Continue to Roofs

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Bunkhouse: T.O. Bunkhouse Footing: View Range



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Bunkhouse

- Copy Walls
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Foundation

- Create
- Footing
- Split . .
- Base Constraint
- Attach Top/Base

Floors

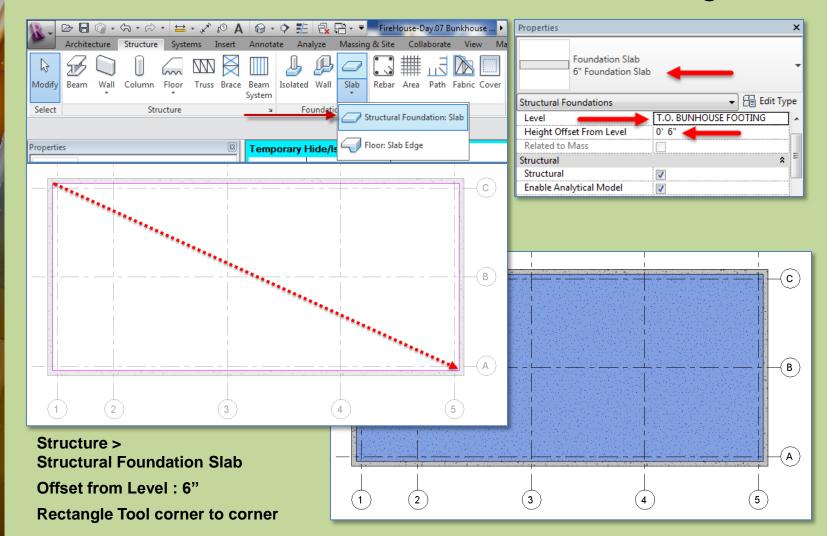
- View Range
- Slab @ Footing
- Slab @ Ground
- Slab@ Main
- Section view

Continue to Roofs

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Bunkhouse: Slab @ T.O. Bunkhouse Footing



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Bunkhouse

- Copy Walls
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- Adjust Walls
- Fix doors

Foundation

- Create
- Footing
- Split . .
- Base Constraint
- Attach Top/Base

Floors

- View Range
- Slab @ Footing
- Slab @ Ground
- Slab@ Main
- Section view

Continue to Roofs

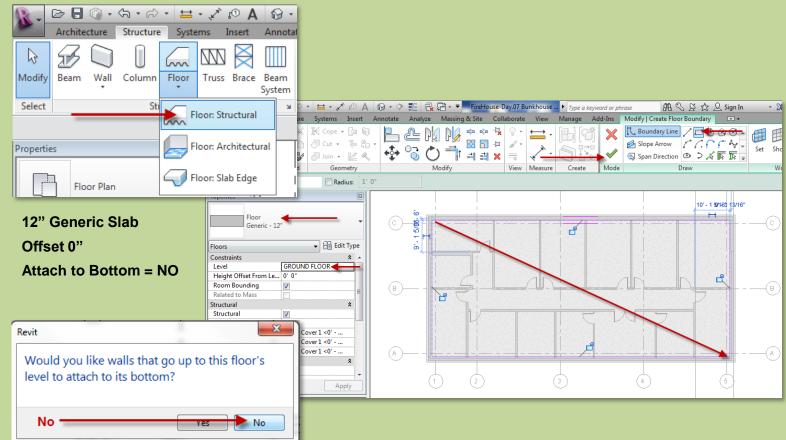
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Bunkhouse: Slab @ Bunkhouse Ground Floor

Go to GROUND FLOOR

Structure > Floor : Structural > Generic 12"



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Bunkhouse

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- Adjust Walls
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Foundation

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- Footing
- Split . .
- Base Constraint
- Attach Top/Base

Floors

- View Range
- Slab @ Footing
- Slab @ Ground
- Slab@ Main
- Section view

Continue to Roofs

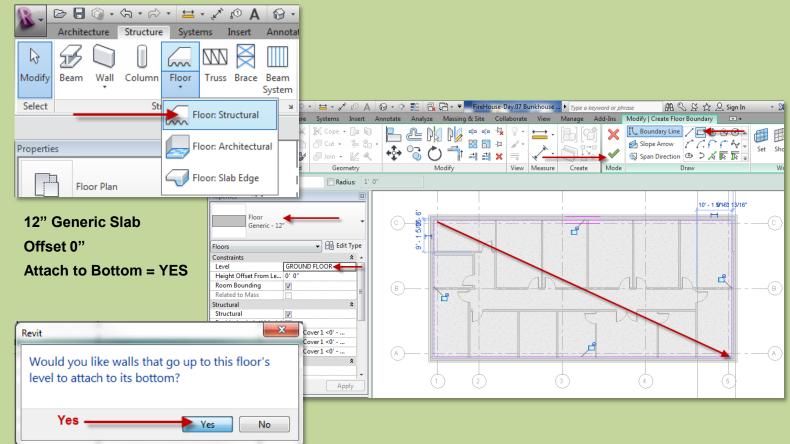
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Bunkhouse: Slab @ 01 Main Floor

Go to 01 Main Floor

Structure > Floor : Structural > Generic 12"



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Bunkhouse

- Copy Walls
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- Adjust Walls
- Fix doors

Foundation

- Create
- Footing
- Split . .
- Base Constraint
- Attach Top/Base

Floors

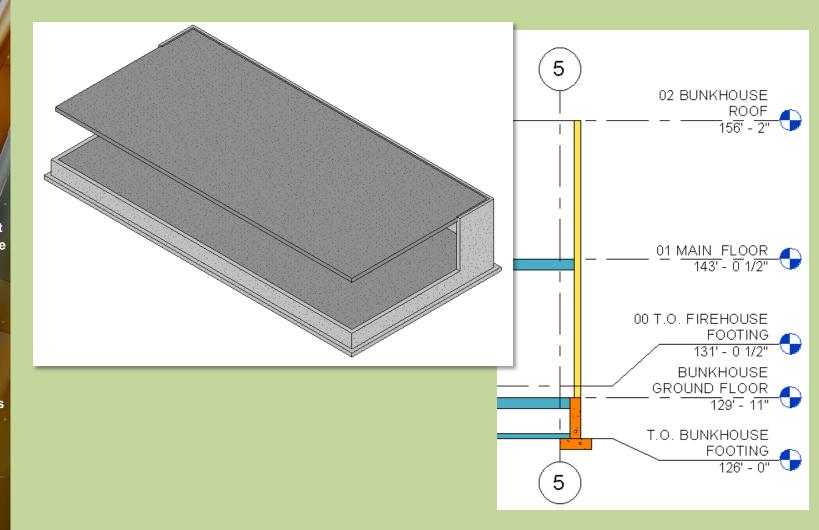
- View Range
- Slab @ Footing
- Slab @ Ground
- Slab@ Main
- Section view

Continue to Roofs

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Bunkhouse: Foundation Footing & Slabs Section



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Roofs

- Overview
- By Footprint
- Overhang
- Slope (1) (2)
- Attach Top/Base
- Uneven
- Slope (4)

Neck

- Add Walls
- Work plane
- By Extrusion
- Join/Unjoin

Main Roof

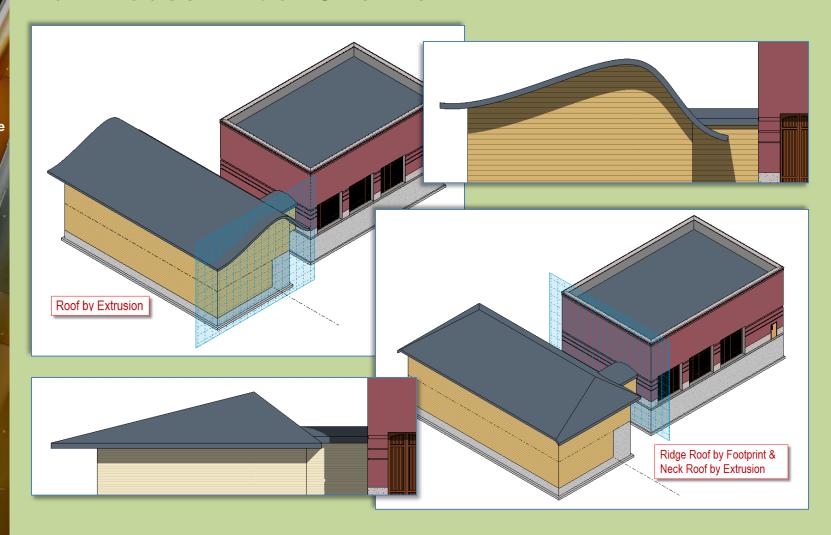
- Delete
- Work plane
- Spline By Extrusion
- Start / End
- Cleanup

Wrap Up

Revit Computers 3

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Bunkhouse: Roof Overview



Day 09 FH.06

Roofs

- Overview
- By Footpr
- Overhang
- Slope (1) (2)
- Attach Top/Base
- Uneven
- Slope (4)

Neck

- Add Walls
- Work plane
- By Extrusion
- Join/Unjoin

Main Roof

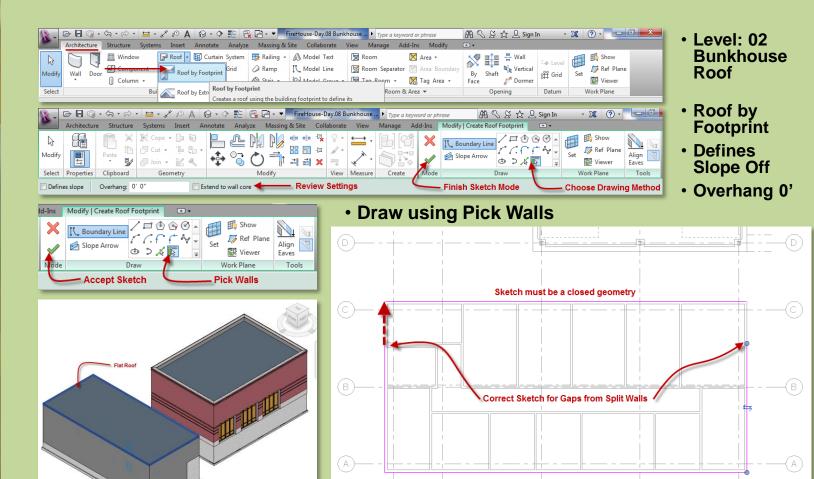
- Delete
- Work plane
- Spline By Extrusion
- Start / End
- Cleanup

Wrap Up

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Bunkhouse Roof: By Footprint: No Slope



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Roofs

- Overview
- By Footpr
- Overhand
- Slope (1) (2)
- Attach Top/Base
- Uneven
- Slope (4)

Neck

- Add Walls
- Work plane
- By Extrusion
- Join/Unjoin

Main Roof

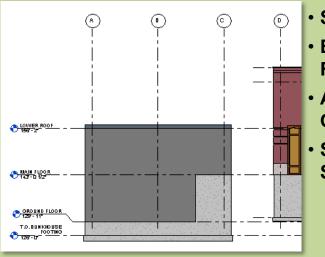
- Delete
- Work plane
- Spline By Extrusion
- Start / End
- Cleanup

Wrap Up

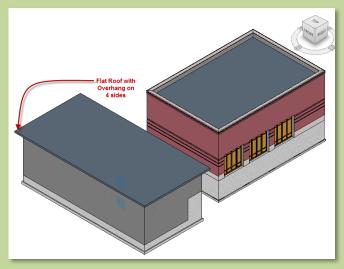
Revit Computers 3

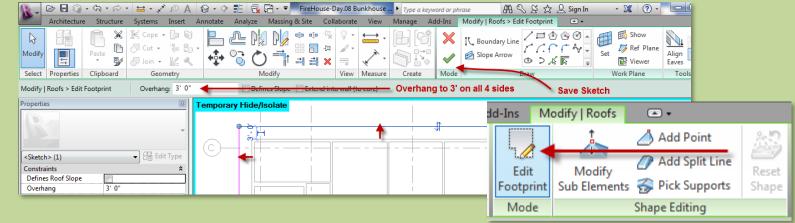
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Bunkhouse Roof: By Footprint: Add Overhang



- Select Roof
- Edit Footprint
- Add 3'-0"Overhangs
- SaveSketch





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Roofs

- Overview
- By Footpr
- Overhan
- Slope (1) (2)
- Attach Top/Base
- Uneven
- Slope (4)

Neck

- Add Walls
- Work plane
- By Extrusion
- Join/Unjoin

Main Roof

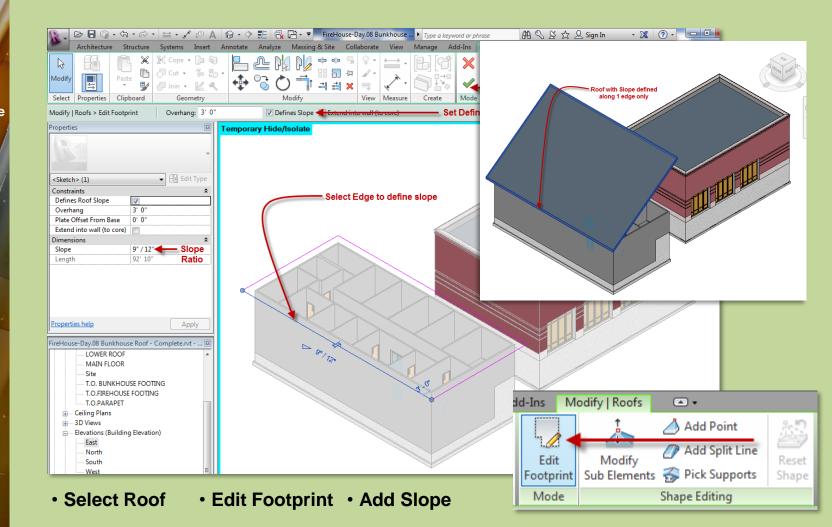
- Delete
- Work plane
- Spline By Extrusion
- Start / End
- Cleanup

Wrap Up

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Bunkhouse Roof: By Footprint: Add 1 Slope



Day 09 FH.06

Roofs

- Overview
- By Footpr
- Overhan
- Slope (*
- Attach Top/Base
- Uneven
- Slope (4)

Neck

- Add Walls
- Work plane
- By Extrusion
- Join/Unjoin

Main Roof

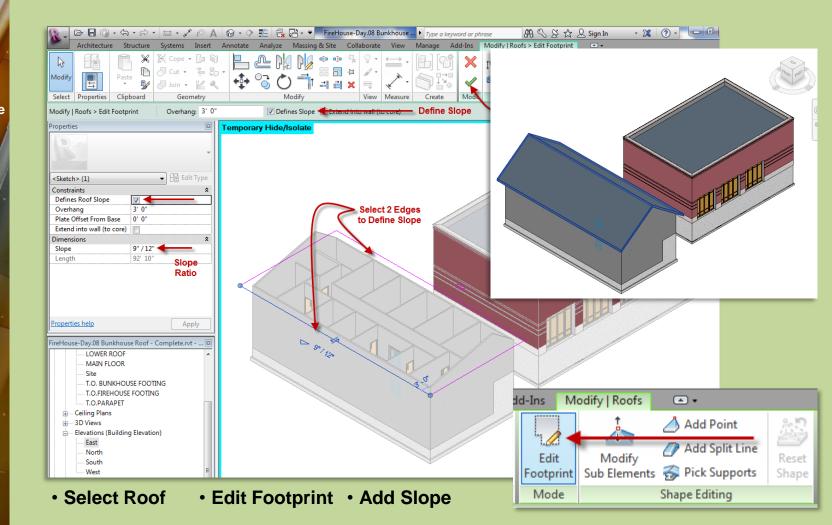
- Delete
- Work plane
- Spline By Extrusion
- Start / End
- Cleanup

Wrap Up

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Bunkhouse Roof: By Footprint: Add 2 Slopes



Day 09 FH.06

Roofs

- Overview
- By Footpr
- Overhang
- Slope (1)
- Attach/Top/Bas
- Uneven
- Slope (4)

Neck

- Add Walls
- Work plane
- By Extrusion
- Join/Unjoin

Main Roof

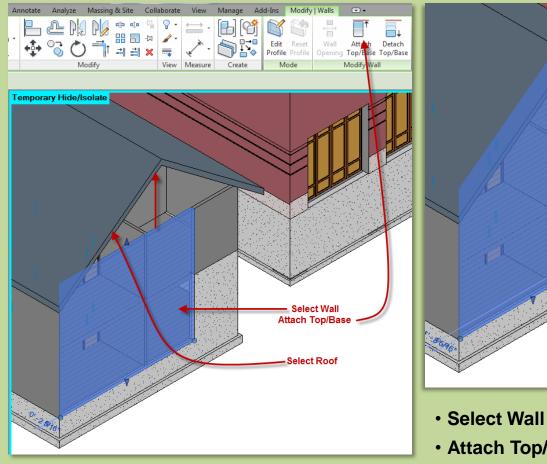
- Delete
- Work plane
- Spline By Extrusion
- Start / End
- Cleanup

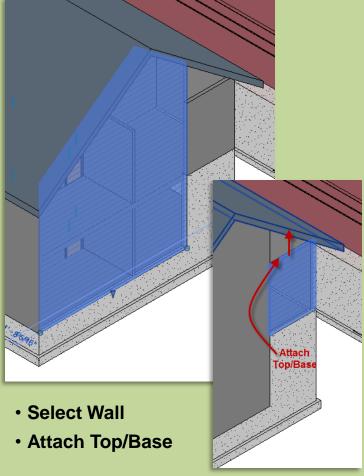
Wrap Up

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Bunkhouse Roof: By Footprint: Attach Top/Base





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Roofs

- Overview
- By Footpr
- Overhan
- Slope (1)
- Attach/Top/Base
- Uneven
- Slope (4)

Neck

- Add Walls
- Work plane
- By Extrusion
- Join/Unjoin

Main Roof

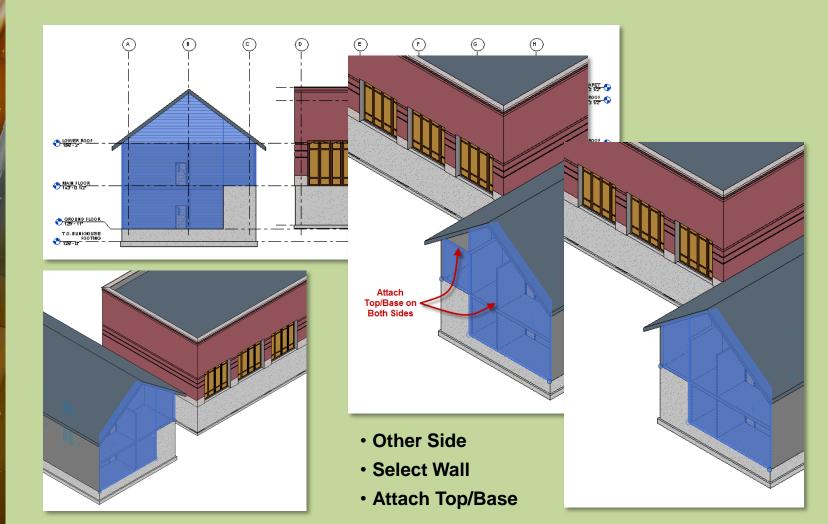
- Delete
- Work plane
- Spline By Extrusion
- Start / End
- Cleanup

Wrap Up

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Bunkhouse Roof: By Footprint: Attach Top/Base



Day 09 FH.06

Roofs

- Overview
- By Footpr
- Overhang
- Slope (1)
- Attach/Top/Base
- Uneven
- Slope (4)

Neck

- Add Walls
- Work plane
- By Extrusion
- Join/Unjoin

Main Roof

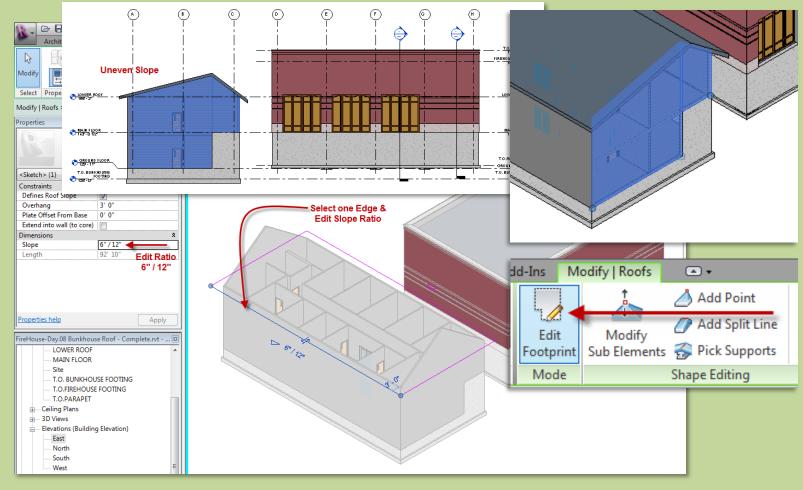
- Delete
- Work plane
- Spline By Extrusion
- Start / End
- Cleanup

Wrap Up

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Bunkhouse Roof: By Footprint: Uneven Slope



Select Roof

• Edit Slope Ratio : Change 9/12 to 6/12

Day 09 FH.06

Roofs

- Overview
- By Footpr
- Overhan
- Slope (1)
- Attach/Top/Bas
- Uneve
- Slope (4)

Neck

- Add Walls
- Work plane
- By Extrusion
- Join/Unjoin

Main Roof

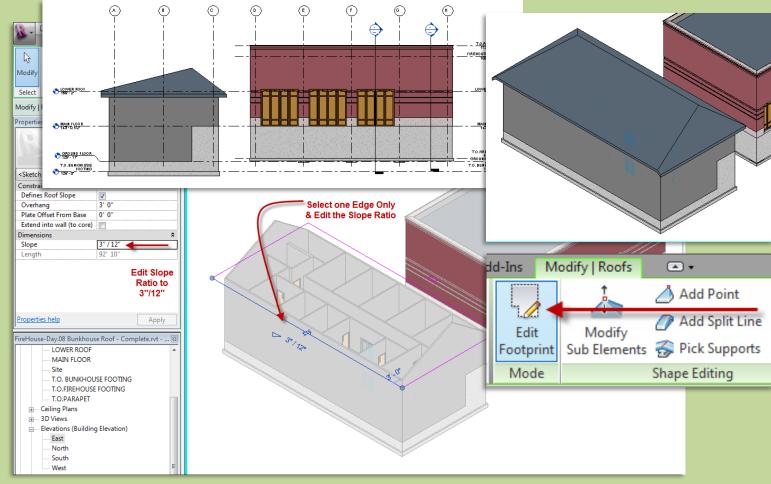
- Delete
- Work plane
- Spline By Extrusion
- Start / End
- Cleanup

Wrap Up

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Bunkhouse Roof: By Footprint: 4 Slopes



Select Roof

Defines Slope Set Ratio of one edge to 3/12

Day 09 FH.06

Roofs

- Overview
- By Footprint
- Overhand
- Slope (1) (2)
- Attach Top/Base
- Uneven
- Slope (4)

Neck

- Add Walls
- Work plane
- By Extrusion
- Join/Unjoin

Main Roof

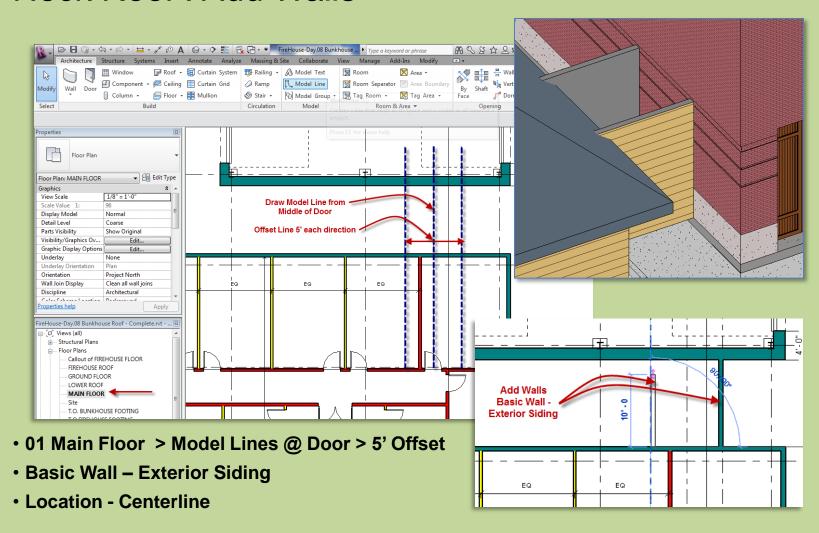
- Delete
- Work plane
- Spline By Extrusion
- Start / End
- Cleanup

Wrap Up

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Neck Roof: Add Walls



Day 09 FH.06

Roofs

- Overview
- By Footprint
- Overhang
- Slope (1) (2)
- Attach Top/Base
- Uneven
- Slope (4)

Neck

- Add Walls
 Work plane
- By Extrusion
- Join/Unjoin

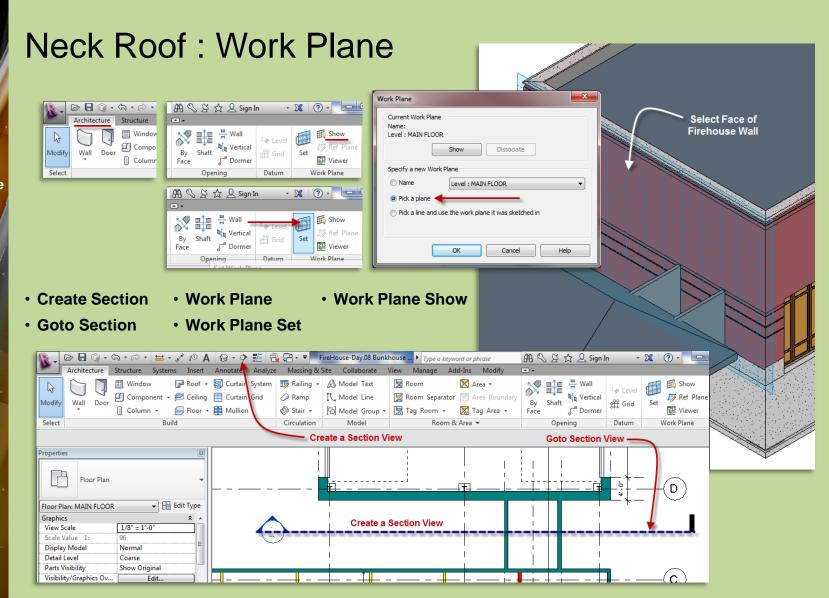
Main Roof

- Delete
- Work plane
- Spline By Extrusion
- Start / End
- Cleanup

Wrap Up

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Day 09 FH.06

Roofs

- Overview
- By Footprint
- Overhang
- Slope (1) (2)
- Attach Top/Base
- Uneven
- Slope (4)

Neck

- Add Walls
- Work planeBy Extrusion
- Join/Unjoin

Main Roof

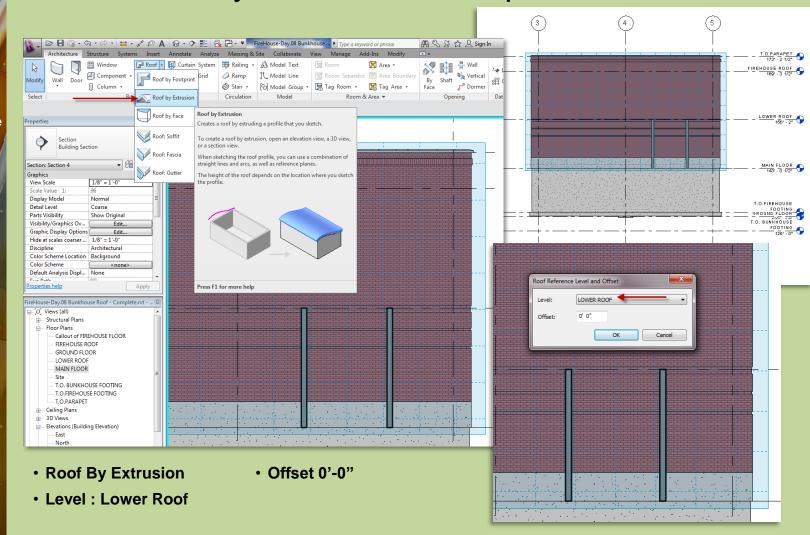
- Delete
- Work plane
- Spline By Extrusion
- Start / End
- Cleanup

Wrap Up

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Neck Roof: by Extrusion: Setup



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Roofs

- Overview
- By Footprint
- Overhang
- Slope (1) (2)
- Attach Top/Base
- Uneven
- Slope (4)

Neck

- Add Walls
- Work plane
- By ExtrusionJoin/Unjoin

Main Roof

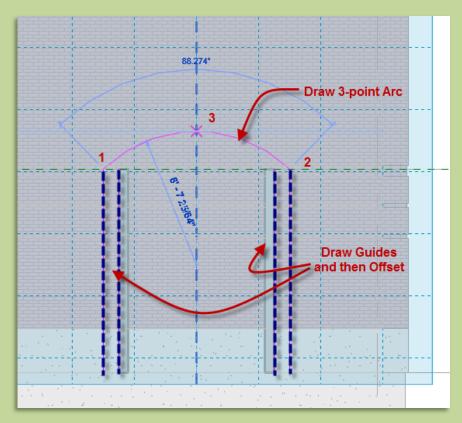
- Delete
- Work plane
- Spline By Extrusion
- Start / End
- Cleanup

Wrap Up

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Neck Roof: by Extrusion: Sketch



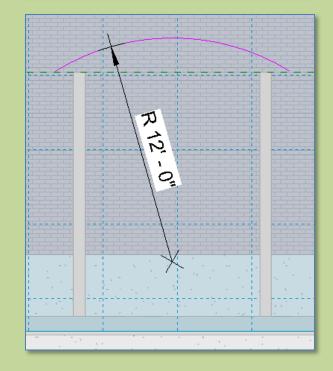
- Draw Guidelines 1' Offset
- Set Radius to 12'-0"

Draw 3 Point Arc

Finish Sketch

Erase Guides





Day 09 FH.06

Roofs

- Overview
- By Footprint
- Overhang
- Slope (1) (2)
- Attach Top/Base
- Uneven
- Slope (4)

Neck

- Add Walls
- Work planeBy Extrusion
- Join/Unjoin

Main Roof

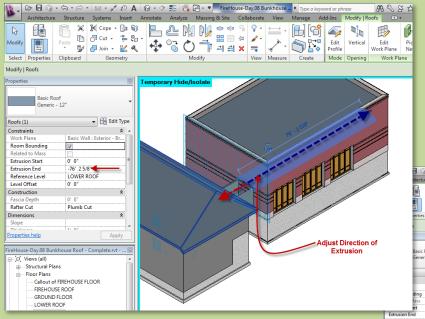
- Delete
- Work plane
- Spline By Extrusion
- Start / End
- Cleanup

Wrap Up

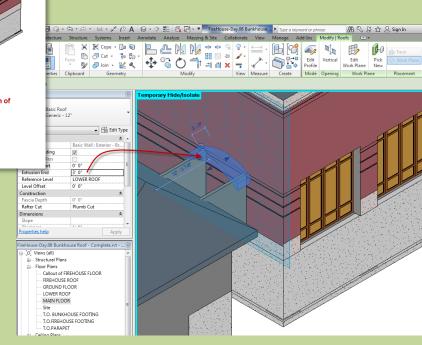
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Neck Roof: Roof by Extrusion: Adjust Direction



- Adjust Direction of Extrusion
- Change direction from negative to +3'-0"



Day 09 FH.06

Roofs

- Overview
- By Footprint
- Overhang
- Slope (1) (2)
- Attach Top/Base
- Uneven
- Slope (4)

Nec

- Add Walls
- Work planeBy Extrusion
- Join/Unjoin

Main Roof

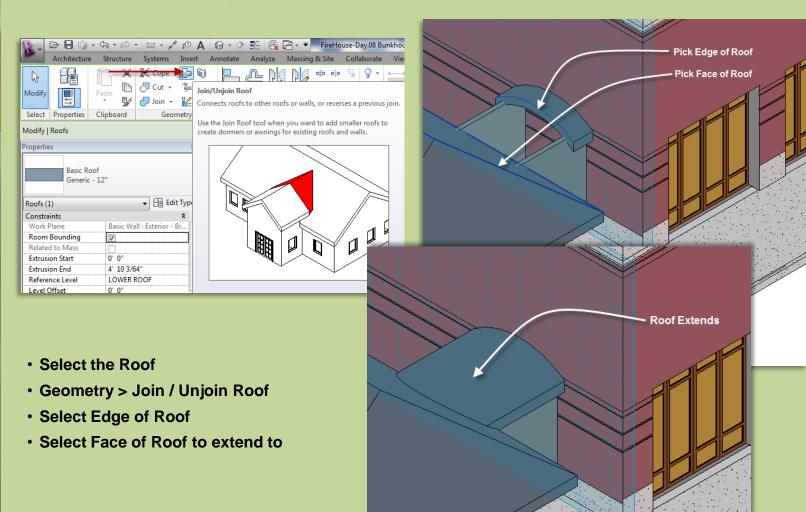
- Delete
- Work plane
- Spline By Extrusion
- Start / End
- Cleanup

Wrap Up

Revit Computers 3

Institute of Design and Construction

Neck Roof: by Extrusion: Join / Unjoin Roof



Day 09 FH.06

Roofs

- Overview
- By Footprint
- Overhang
- Slope (1) (2)
- Attach Top/Base
- Uneven
- Slope (4)

Neck

- Add Walls
- Work plane
- By Extrusion
- Join/Unjoin

Main Roof

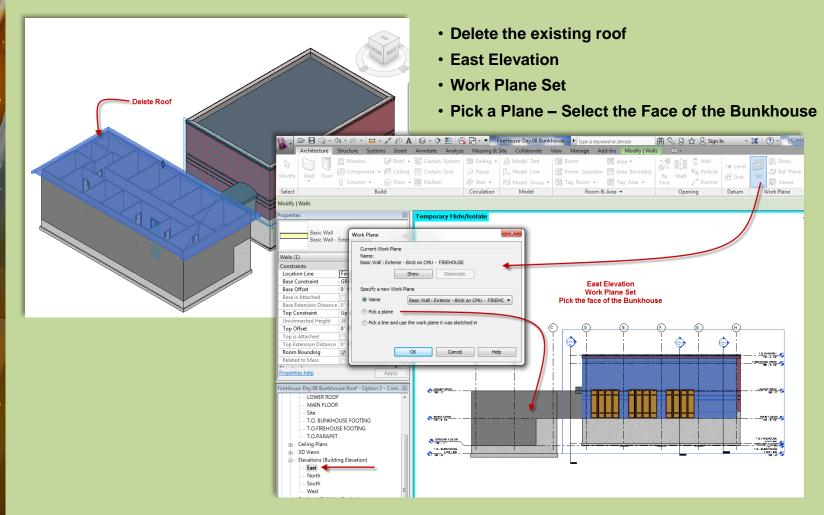
- Delete
- Work plane
- Spline By Extrusion
- Start / End
- Cleanup

Wrap Up

Revit Computers 3

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Option 2: Main Roof by Extrusion : Delete Roof



Day 09 FH.06

Roofs

- Overview
- By Footprint
- Overhang
- Slope (1) (2)
- Attach Top/Base
- Uneven
- Slope (4)

Neck

- Add Walls
- Work plane
- By Extrusion
- Join/Unjoin

Main Roof

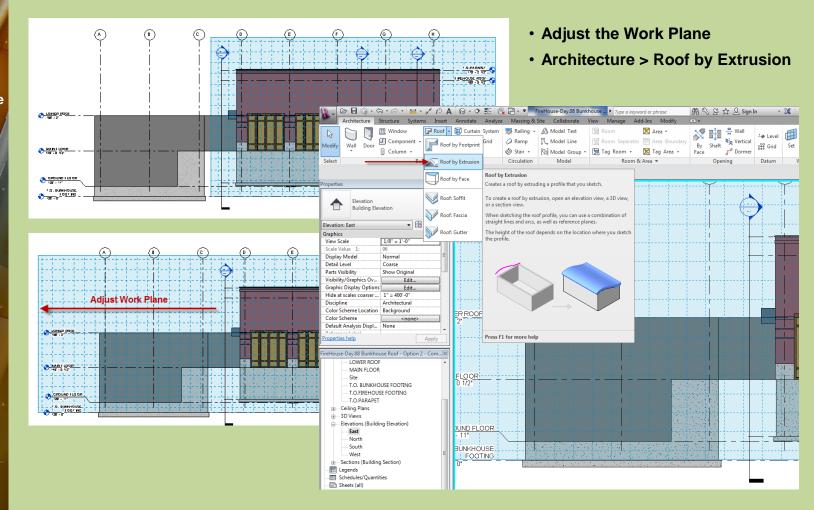
- Delete
- Work plane
- Spline By Extrusion
- Start / End
- Cleanup

Wrap Up

Revit Computers 3

Institute of Design and Construction

Option 2: Main Roof by Extrusion: Work Plane



Day 09 FH.06

Roofs

- Overview
- By Footprint
- Overhang
- Slope (1) (2)
- Attach Top/Base
- Uneven
- Slope (4)

Neck

- Add Walls
- Work plane
- By Extrusion
- Join/Unjoin

Main Roof

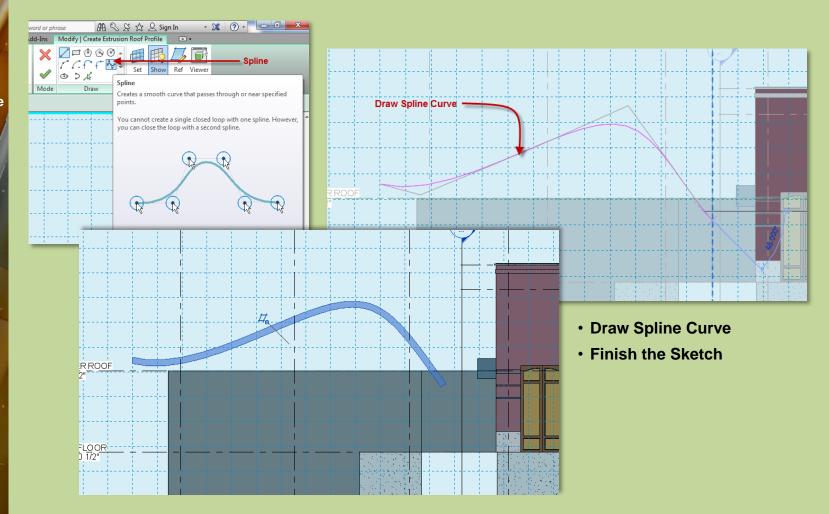
- Delete
- Work plane
- Spline By Extrusion
- Start / End
- Cleanup

Wrap Up

Revit Computers 3

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Option 2: Main Roof by Extrusion : Spline



Day 09 FH.06

Roofs

- Overview
- By Footprint
- Overhang
- Slope (1) (2)
- Attach Top/Base
- Uneven
- Slope (4)

Neck

- Add Walls
- Work plane
- By Extrusion
- Join/Unjoin

Main Roof

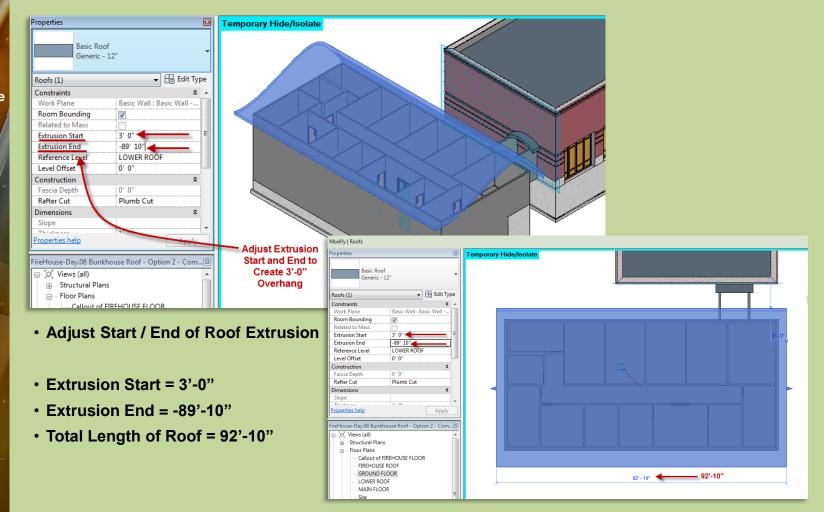
- Delete
- Work plane
- Spline By Extrusion
- Start / End
- Cleanup

Wrap Up

Revit Computers 3

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Option 2: Main Roof by Extrusion : Start / End



Day 09 FH.06

Roofs

- Overview
- By Footprint
- Overhang
- Slope (1) (2)
- Attach Top/Base
- Uneven
- Slope (4)

Neck

- Add Walls
- Work plane
- By Extrusion
- Join/Unjoin

Main Roof

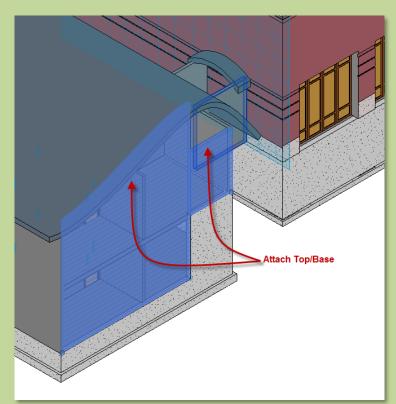
- Delete
- Work plane
- Spline By Extrusion
- Start / End
- Cleanup

Wrap Up

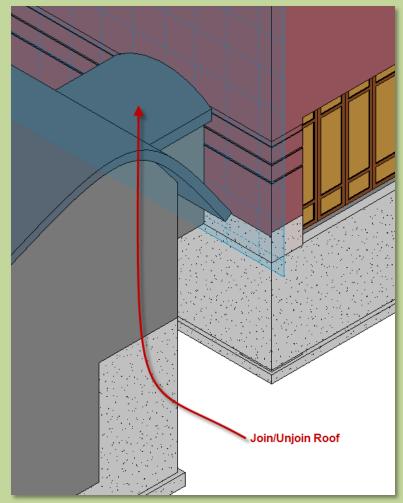
Revit Computers 3

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Option 2: Main Roof by Extrusion : Cleanup



- Attach Top/Base walls on both sides
- Join Roof at Neck to new Roof Profile



Day 09 FH.06

Roofs

- Overview
- By Footprint
- Overhang
- Slope (1) (2)
- Attach Top/Base
- Uneven
- Slope (4)

Neck

- Add Walls
- Work plane
- By Extrusion
- Join/Unjoin

Main Roof

- Delete
- Work plane
- Spline By Extrusion
- Start / End
- Cleanup

Wrap Up

Revit Introduction

Division of Continuing Education

Day 09 (Firehouse Day 06) - Wrap Up

Bunkhouse

- Copy Walls
- Propagate Extents
- Adjust Walls
- Fix doors

Foundation

- Create
- Footing
- Split . .
- Base Constraint
- Attach Top/Base

Floors

- View Range
- Slab @ Footing
- Slab @ Ground
- Slab@ Main
- Section view

Roofs

- Overview
- By Footprint
- Overhang
- Slope (1) (2)
- Attach Top/Base
- Uneven
- Slope (4)

Neck

- Add Walls
- Work plane
- By Extrusion
- Join/Unjoin
- Main Roof
- Delete
- Work plane
- Spline By Extrusion
- Start / End
- Cleanup