

ARCH 2431. Building Technology III

Building Information Modeling with Revit Day 02

Scavenger Hunt Assembly Search

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Scavenger Hunt Assembly Search Assignment

Day 02

Scavenger Hunt

- **Assignment Description**
- Create New Views
- Orient to View
- Section, Elevations & Callouts
- Sample Stair Sheet
- Duplicate Views

Sheets

- Add Sheet
- Add Views
- Plot to PDF

Create new views to investigate an assembly in the drawing.

Group (4) coordinated views (plan, elevation, section & isometric) on a sheet at the appropriate scale.

Complete additional research into the assembly- in order to determine how to annotate and dimension the details.

Plot the sheets into a single PDF using 22 x 34 title blocks. Plot these at 50% on 11 x 17 for in class pinup, discussion and grading.



Scavenger Hunt and Presentation

This assignment will introduce you Building Information Modeling (BIM) and the Revit program. Working with the sample file provided your goal is to identify how the building is constructed. You will be required to create a series of new views (partial plans, sections, details and 3d isometrics) that help to explain the assembly of a component of the building.

Remember that this is a design model and to illustrate construction assembly you will need to conduct some research!

You will create three separate studies on three separate components of the building, each formatted on a separate sheet.

Selecting a study subject:

Use your selection as a means to investigate the building. Ask yourself a question: How is the stair constructed or how is a balcony supported? There are many more questions you can ask. Investigate these questions by creating new views and formatting these on 22" x 34" title blocks.

Selecting views:

To properly understand and explain a study you need to create a set of matching views at the same scale. This typically consists of coordinated plans, elevations & sections with a 3D isometric view. For these studies use either 1/4" or 3/8" scale as appropriate. From each of these first studies create additional callout views that study smaller components like connections and again create a set of coordinated views (plan, elevation, section, 3D isometric) at larger scales 1 1/2", 3" or 6".

Annotation and dimensions:

As appropriate add annotation and dimensions to better explain your assembly.

Sheet layout:

Each study will require one or more sheets. For three separate studies this assignments minimum requirement is three separate sheets plotted to PDF. Look to make neat but tightly organized sheets without a lot of empty white space. Remember these are to be construction document style drawings and not presentation drawings.

Grading:

Criteria for grading will include but will not be limited to the following:

- Completeness and deadlines – requires three assignments handed in on time
- Good selection of assembly to study.
- Appropriate views – well organized and at appropriate scales
- Proper view titles, annotation and Dimensions
- Level of detail – do the studies show enough information to explain construction. This requires that drawings exist at two scales (1/2" or 3/4") and then the second set of drawings at larger scales. (1 1/2", 3" or 6")
- Demonstration of the mastery of the Revit software. Good control over views, proper organization of project browser, creation and organization of sheets with title blocks, proper printing to PDF, etc.
- Oral Presentation – student ability to describe what has been drawn.

**This assignment is included in the 30% of grading listed Studio Lab Assignments in the syllabus

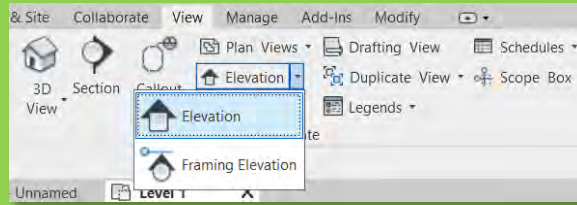
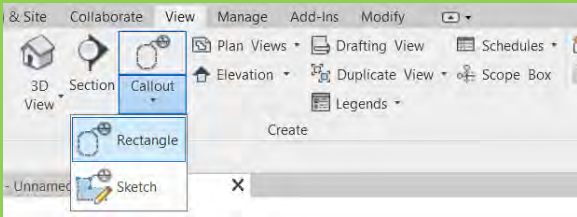
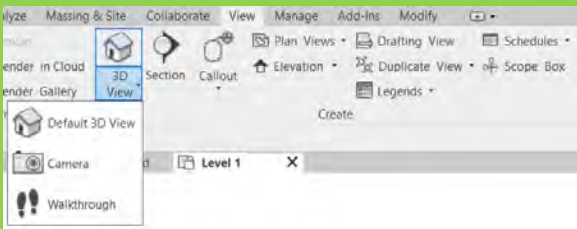
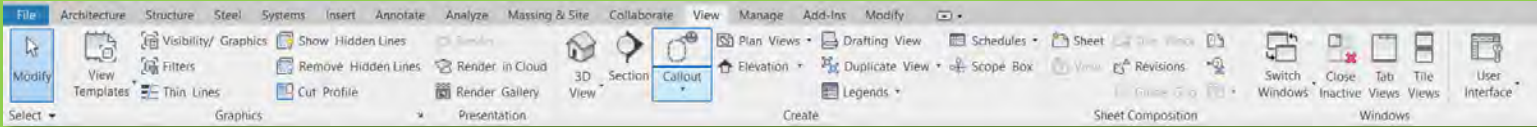


Creating New Views

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- 3d Views –
 - Default 3D View (isometric)
 - Camera (creates a perspective)
 - Walkthrough (animation)
- Callout – (always 2x the scale)
 - Rectangle
 - Sketch (can be any shape)
- Elevation Views -
 - Elevation (interior or exterior)
 - Framing Elevation (structural)

Stair : Isometric View using "Orient to View"

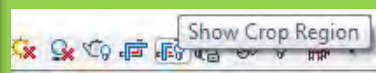
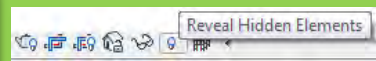
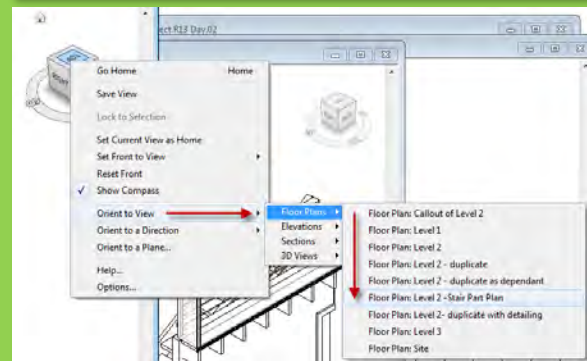
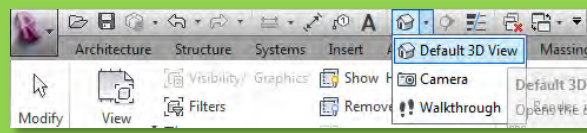
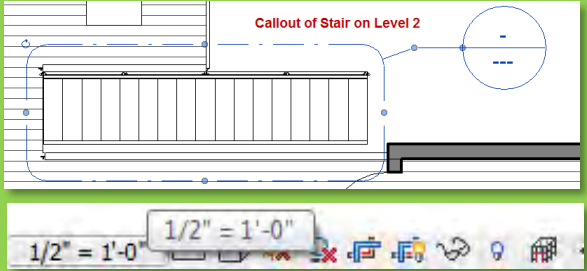
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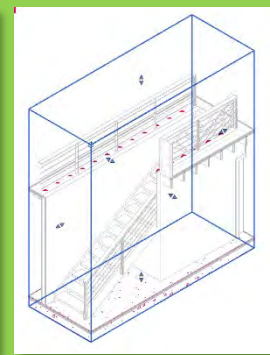
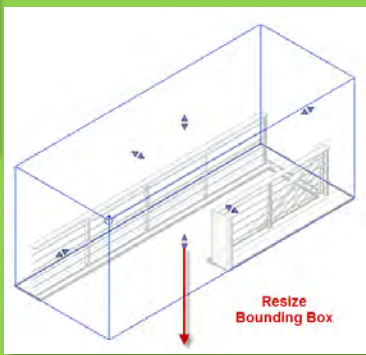


Stair Callout:

- Callout of Stair on Level 2 (scale 1/4")
- Go to View
- Adjust Scale to 1/2" = 1'-0"

Isometric Detail

- Create Isometric View
- Default 3D View > Viewcube > Orient to View > Stair Callout
- View Cube > Home
- Reveal Hidden Elements & Resize
- Set Scale to 1/2" to match the plan detail
- Duplicate View and Name it "Stair Isometric"
- Adjust Crop region of view



Stair :Section & Elevations & Callout Details

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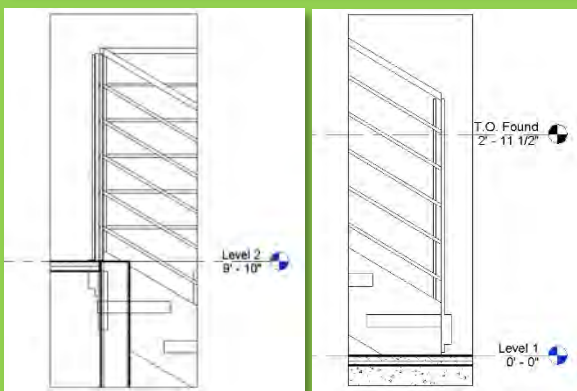
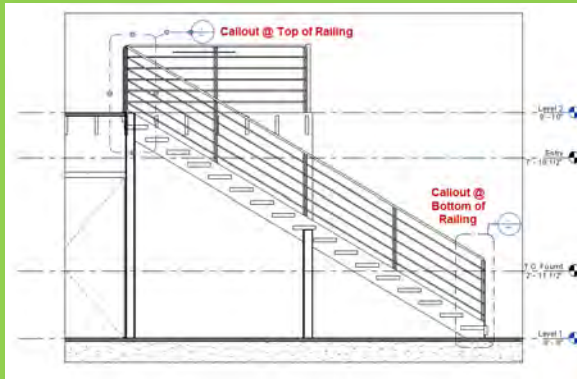
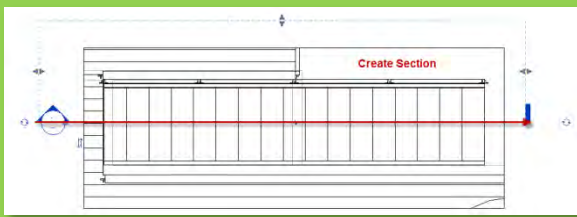
Sample Stair Sheet

- Duplicate Views

Sheets

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Building Technology III



Stair Section:

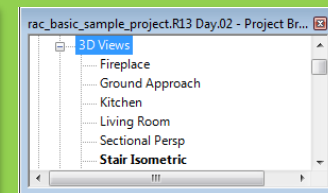
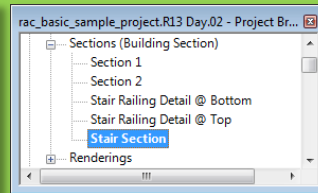
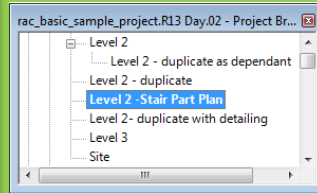
1. Section on stair callout (scale 1/2")
2. Go to View
3. Adjust Crop Regions of View

Section / Elevation Callouts

1. Callout of "Stair Railing Detail @ Top"
Scale will be set to 1" = 1'-0"
2. Callout of "Stair Railing Detail @ Bottom"
Scale will be set to 1" = 1'-0"

Notes

1. Names of Views in project Browser
 - Level 2 – Stair Part Plan
 - Stair Section
 - Stair Railing Detail @ Top
 - Stair Railing Detail @ Bottom
 - Stair Isometric



Duplicating Views

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Duplicate View	Duplicate
Convert to independent view	Duplicate with Detailing
Apply Dependent Views...	Duplicate as a Dependent

Original View:

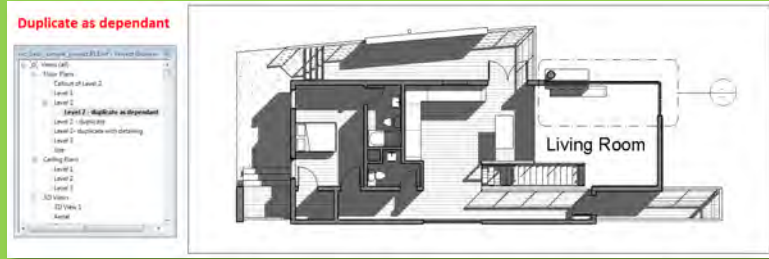


- Duplicate:**
- Annotation not copied and view can be set to a different scale than original



- Duplicate as dependant:**
- Identical in scale and annotation but can be cropped

- Duplicate with detailing:**
- Annotation is copied but can be edited independently & scale can be different



Create a New Sheet

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The process is shown in six sequential screenshots:

- Project Browser:** The 'Sheets' folder is expanded, and 'New Sheet...' is selected in the context menu.
- Load Family:** A dialog box showing a list of titleblock families. 'D 22 x 34 Horizontal.rfa' is selected. A preview window shows a title block with '22 x 34' in red.
- New Sheet (Step 1):** The 'Select titleblocks:' list is empty. The 'Load...' button is highlighted with an orange arrow and the word 'Load' in red.
- New Sheet (Step 2):** The 'D 22 x 34 Horizontal' titleblock is now loaded into the 'Select titleblocks:' list.
- New Sheet (Step 3):** The 'Select placeholder sheets:' list contains 'New', which is highlighted.
- Final Sheet:** The main Revit window shows the newly created sheet with a title block and a placeholder for a view.

Adding Views to a Sheet

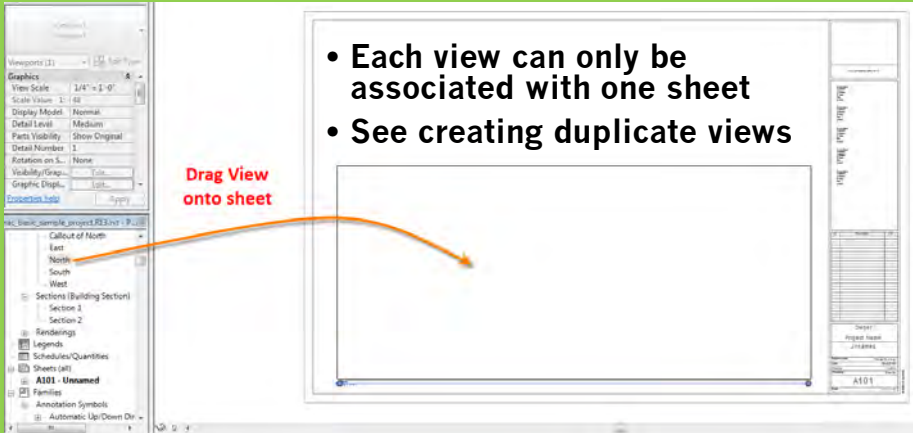
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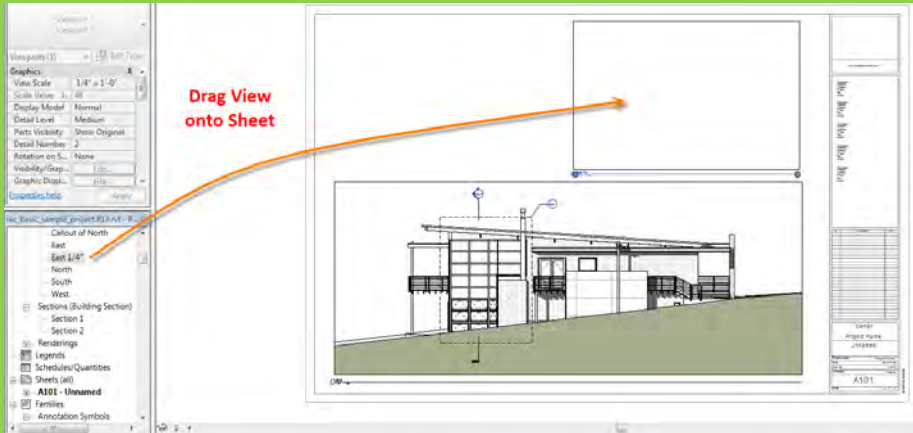
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- Each view can only be associated with one sheet
- See creating duplicate views



Plot to PDF

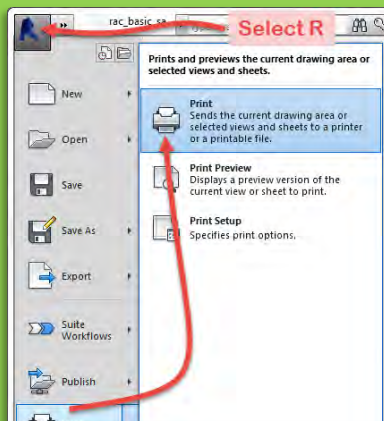
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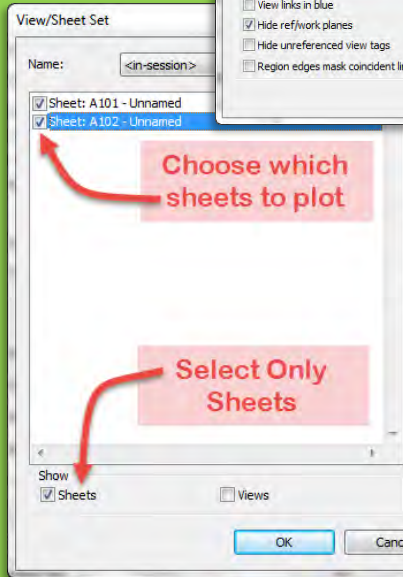
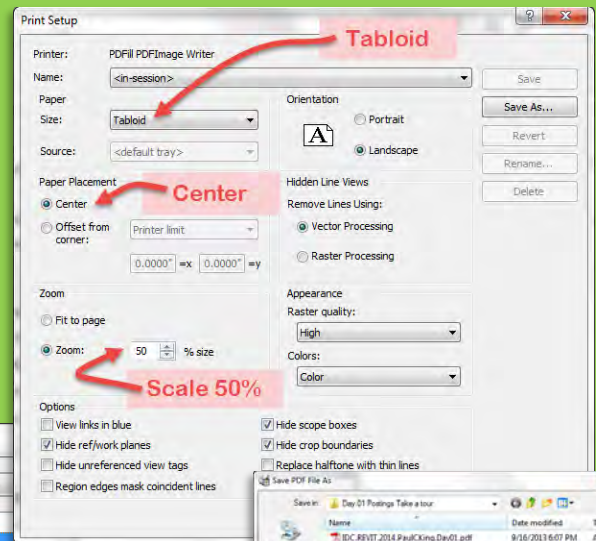
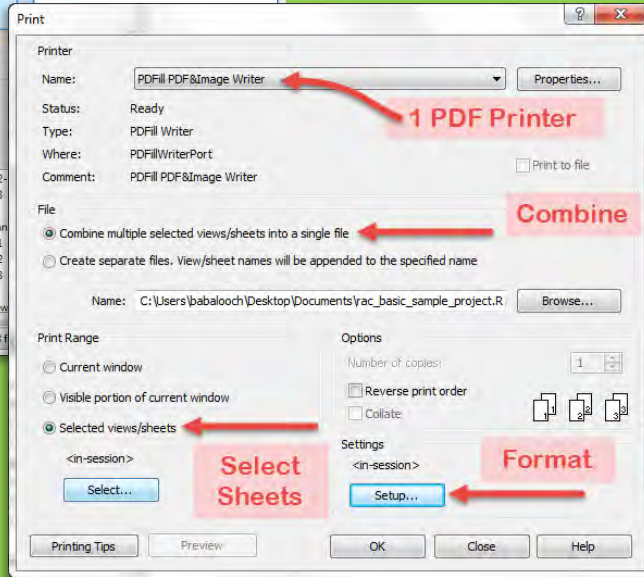
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- Print
- Select a PDF Printer
- Select Multiple Sheets
- Combine into single PDF
- 22 x 34 to Tabloid
- Center and Scale to 50%



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