Project Navigator: Empowering your Elements Part II

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In my previous article I overlooked one small technical issue. This process only works in Architectural Desktop (ADT) 2007 and AutoCAD Architecture (ACA) 2008. AutoCAD 2007 introduced the External References Palette which replaced the obsolete External References dialog box of previous versions of AutoCAD and ADT. This upgrade included the lower pane which allows users to view a preview or property details of an external reference. Therefore, this workflow will not work in ADT versions 06 and earlier.

Now that I cleared the air, we can pick up where we left off in the previous article, documenting the model. For those of us who are veterans of "Projects" the project workflow is straight forward. The project's trail of external referencing normally looks like the diagram in *Figure 1*.

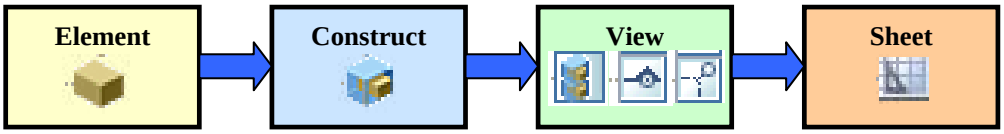


Figure 1

To understand the tasks that lie ahead, it is important to understand the purpose for each type of drawing. The Elements and Constructs contain the model objects only. Views contain referenced Constructs and annotation. Sheets contain referenced Views and are utilized for plotting.

The problem that we will encounter involves how to deal with the intelligence or Property Data in each object of the repeating Element. An object's Property Data is comprised of Property Sets. Each Property Set contains multiple Property Definitions. Property Sets can be applied a majority of ways. The typical method involves the use of a Tag tool. The data is then extracted by the Schedule Table designated to that object. The typical trail of applying and reporting Property Data looks like the diagram in *Figure 2.*

Figure 2

This process works great when an object is a single instance in a model. When it is redundant, it involves a small detour from the project workflow process. Here we go!

Step 1: Making the Detour

Create an intelligent Element

1. Select the **Construct** tab on the **Project Navigator**.
2. Double-click the **Typ Dorm Room Lt** element in the **Project Navigator** to open it.
3. Switch the workspace to **Document** on the **Workspaces** toolbar.

4. Select the **Room Tag – Project Based** tool on the **Tags** tab of the **Palette Set**. *Figure 3*

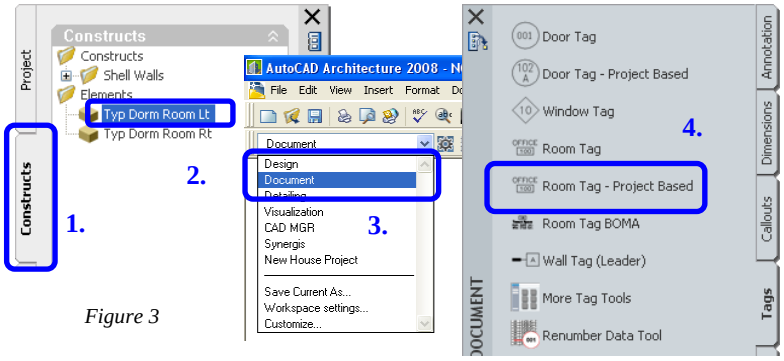


Figure 3

Project Tip!
When tagging objects in a Project use project-based Tag tools. These tools add Project Property Definitions to the object being tagged.

5. Select the large diagonal hatch pattern of the space object.
6. Enter the values to the **Property Definitions** in the **Edit Property Set Data** dialog box under **RoomFinishObjects**. *Figure 4*
   a. **CeilingMaterial** **ATC**
   b. **EastMaterial** **GWB**
   c. **FloorMaterial** **CPT**
   d. **NorthMaterial** **GWB**
   e. **SouthMaterial** **GWB**
   f. **WestMaterial** **GWB**
7. Click the **OK** button to continue to the next room. *Figure 4*

Project Tip!
Values that are grayed out are automatically created and cannot be edited.

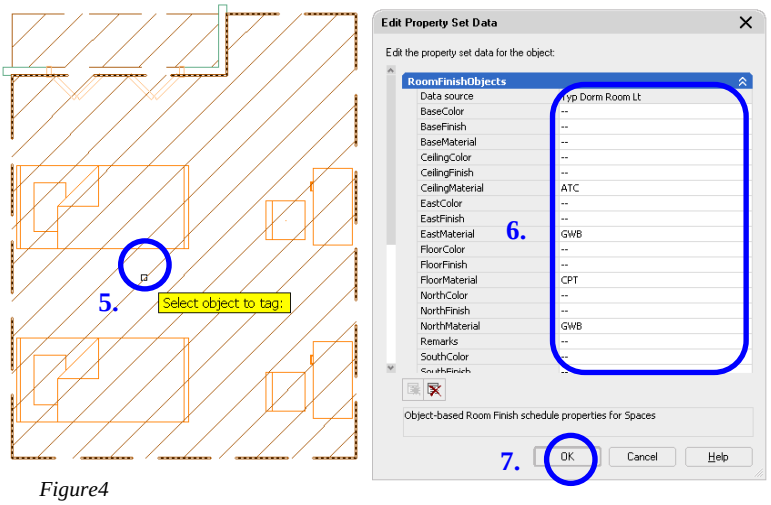
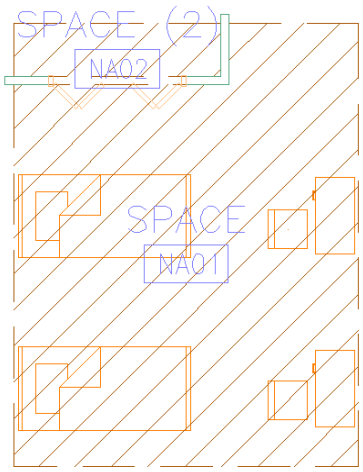


Figure4

8. Repeat the process for the small closet space.
9. Click the **Enter** key or **Spacebar** to exit the command. *Figure 5*



Project Tip!
The Tag only serves a single purpose in this workflow and that is to imbed Property Data into the objects of the Element.

Figure 5

10. Select the **Door Tag – Project Based** tool on the **Tags** tab of the **Palette Set**.
11. Select the bi-fold door into the closet and place the tag.
12. Clear the value for **NumberSuffix** in the **Edit Property Set Data** dialog box. *Figure 6*

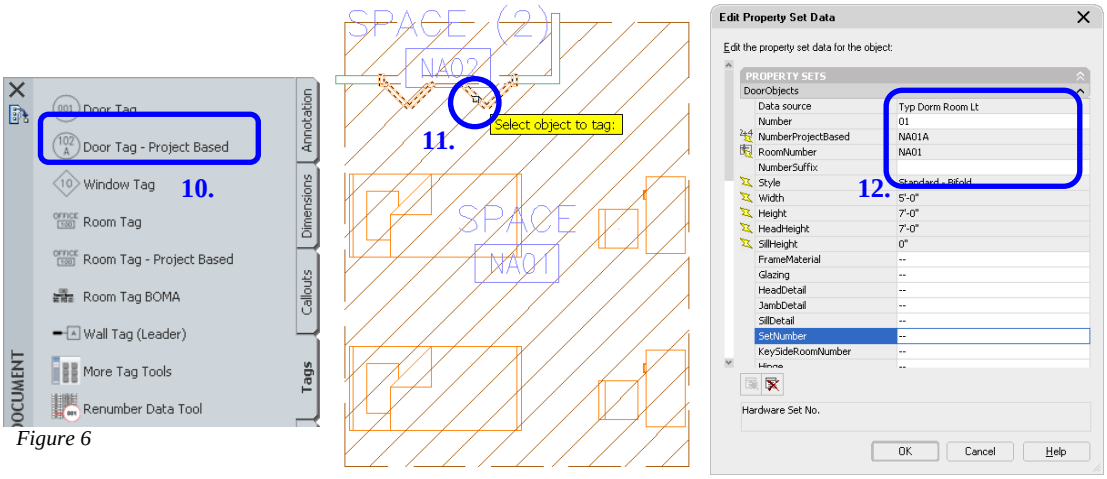
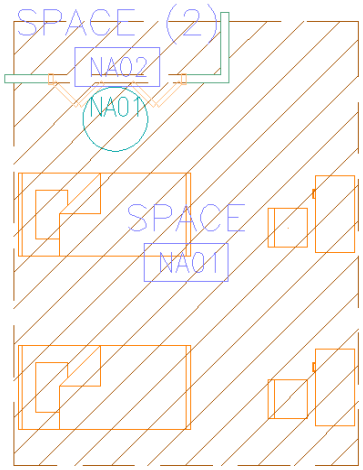


Figure 6

13. Click the **Enter** key or **Spacebar** to exit the command. *Figure 7*



Project Tip!
The project-based Door Tag will assume the room's number it is associated to.

Figure 7

14. Select the bi-fold door object.

15. Select the **Property Data Location** grip (star shape).
16. Drag the grip into the closet to associate the door to the closet. *Figure 8*

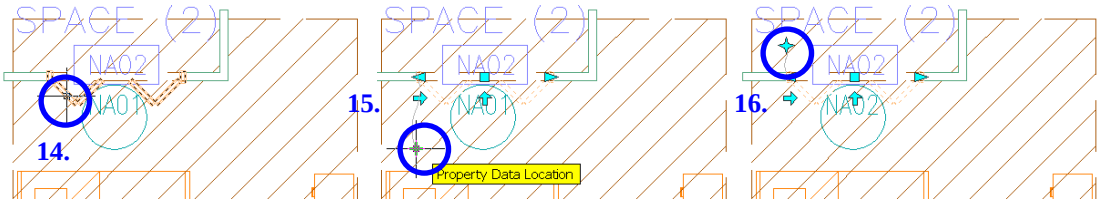


Figure 8

Project Tip!
The Property Data Location grip of a door allows the user to designate which room the door's number should be associated to.

17. Select the larger space.
18. Enter **Dorm** for the **Name** property in the **Properties Palette**.
19. Repeat steps 17 and 18 to name the small space **CL.** *Figure 9*

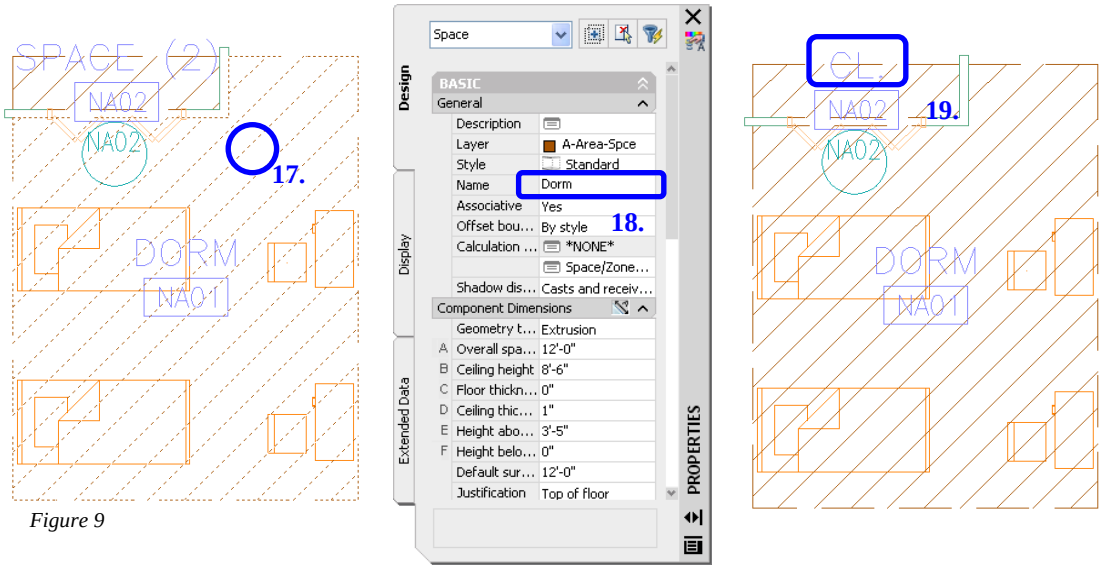


Figure 9

20. Select the tags and delete them.
21. Save and close the **Typ Dorm Room Lt** element.
22. Repeat steps 2 thru 21 for the **Typ Dorm Room Rt** element.

Step 2: Create a General View of the First Floor

Create a View to annotate the First Floor

1. Select the **View** tab on the **Project Navigator**.
2. Select the **Views** category.
3. Click the **New View** button.
4. Select the **General View** radio button in the **Add View** dialog box.
5. Click the **OK** button to begin the **Add General View** wizard. *Figure 10*

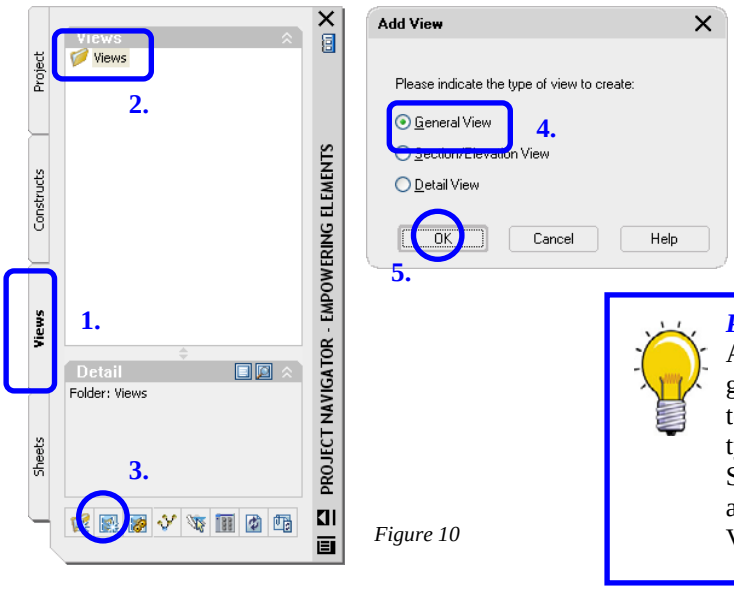


Figure 10

Project Tip!
A General View type is meant for general use. A different drawing template can be assigned to each type of view. Callout tools such as Section, Elevation, and Detail tools automatically create the appropriate View type.

Navigate the Add View Wizard

1. Enter **A-FP01** for **Name** and **First Floor View** for **Description**.
2. Click the **Next** button to move to the next page.
3. Click the check box for **Level 1** to tell ADT / ACA what construct drawings to reference into the View.
4. Click the **Next** button to move to the next page.
5. Verify that the **01 Shell Walls** construct is checked.
6. Click the **Finish** button to complete the wizard. *Figure 11*

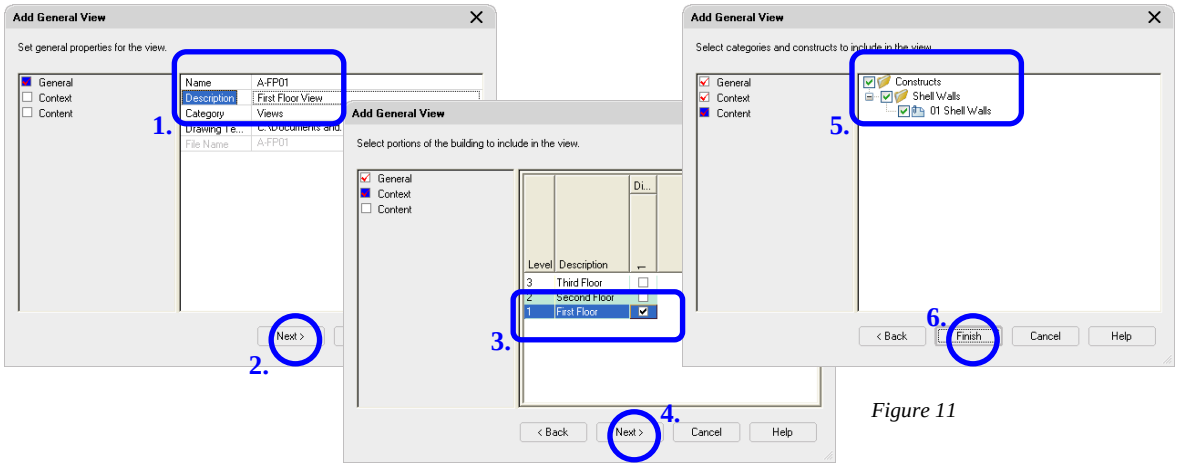
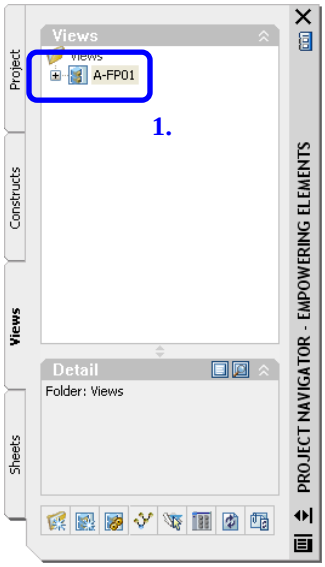


Figure 11

Set up the View

1. Double-click the new view **A-FP01** in the **Project Navigator** to open it.
2. Verify that the right constructs are referenced in. *Figure 12*



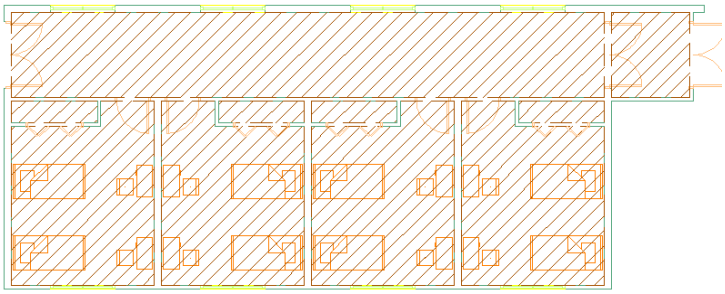
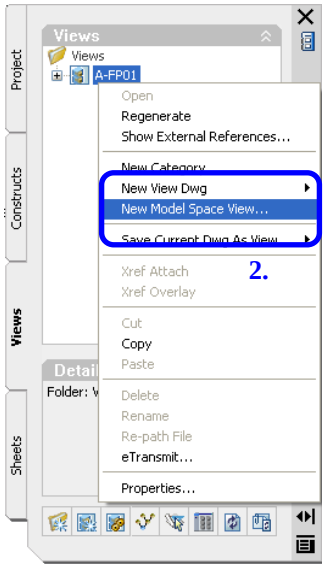


Figure 12

> ***Project Tip!***
> Use ADT / ACA's Callout Tag Tool buttons and View Wizards to properly reference drawing files. Abstain from using Insert>DWG Reference in "Projects."

Create the View's Model Space View

1. Right-click on the view **A-FP01** in the **Project Navigator** to open the **Context Menu**.
2. Select New **Model Space View** from the menu.
3. In the **Add Model Space View** dialog box, enter **First Floor Plan** for the **Name** and select **1/4" = 1'-0"** from the **Scale** list.
4. Click the **Define View Window** button. To create a viewport boundary around the model. *Figure 13*



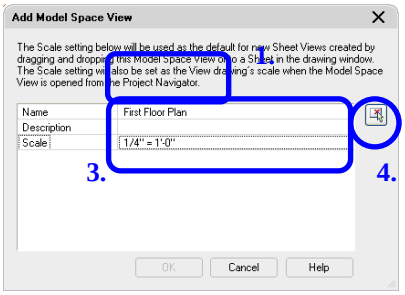


Figure 13

> ***Project Tip!***
> ADT / ACA uses the Sheet Set functionality of AutoCAD. Therefore, viewport boundaries are created in Model Space.

5. Drag a selection window around the model to create the viewport boundary.
6. In the **Add Model Space View** dialog box, click the **OK** button. *Figure 14*

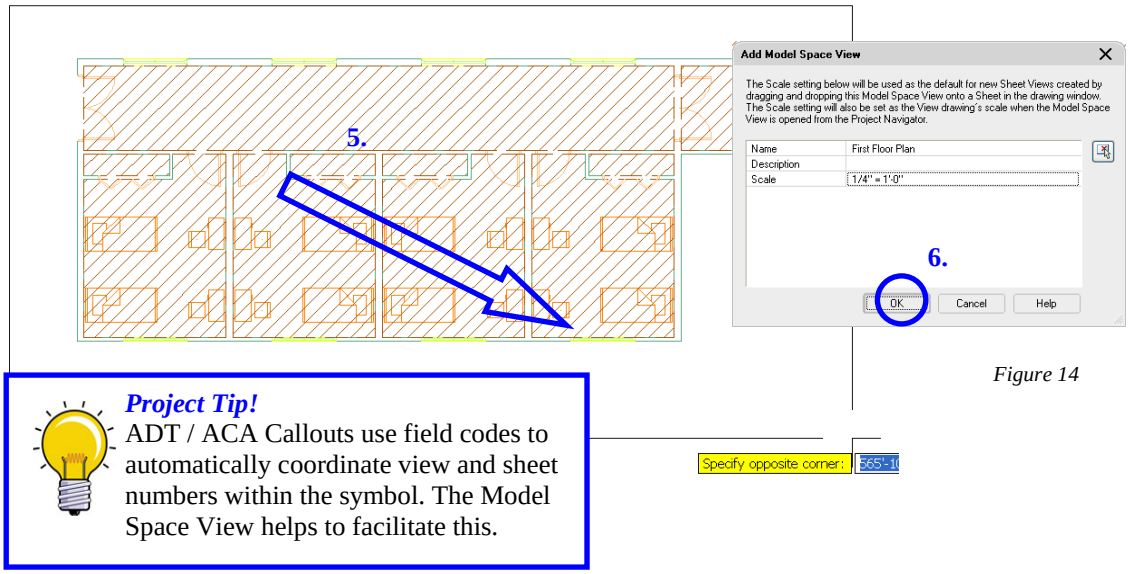


Figure 14

Project Tip!
ADT / ACA Callouts use field codes to automatically coordinate view and sheet numbers within the symbol. The Model Space View helps to facilitate this.

Annotating the Model Space View

1. Double-click the nested model space view **First Floor Plan** in the **Project Navigator** to open it. This will display a temporary window indicating the name and boundary of the viewport. This will also set the **Annotation Scale** on the **Drawing Status Bar** to the model space view's scale. *Figure 15*

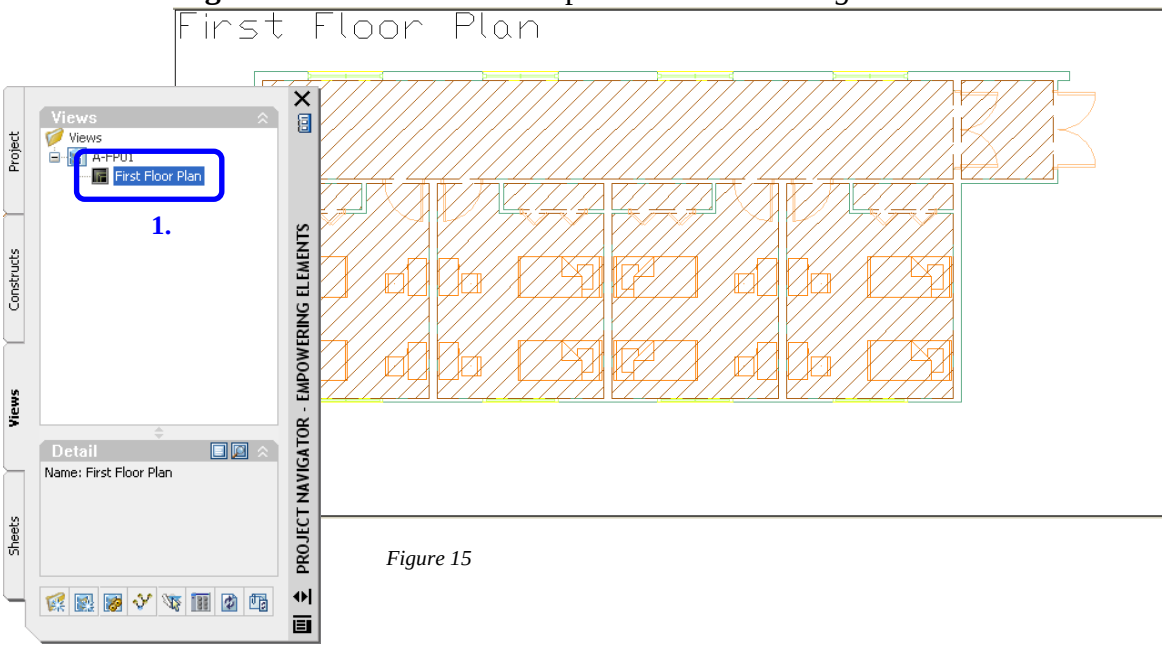


Figure 15

2. Select the **Callouts** tab on the **Palette Set**.
3. Select the **Title Mark** tool to add a title mark to the model space view.
4. Specify two endpoints to draw the title mark within the red boundary of the viewport. Note that the fields of the title mark symbol have filled themselves out with the name and scale of the model space view. *Figure16.*

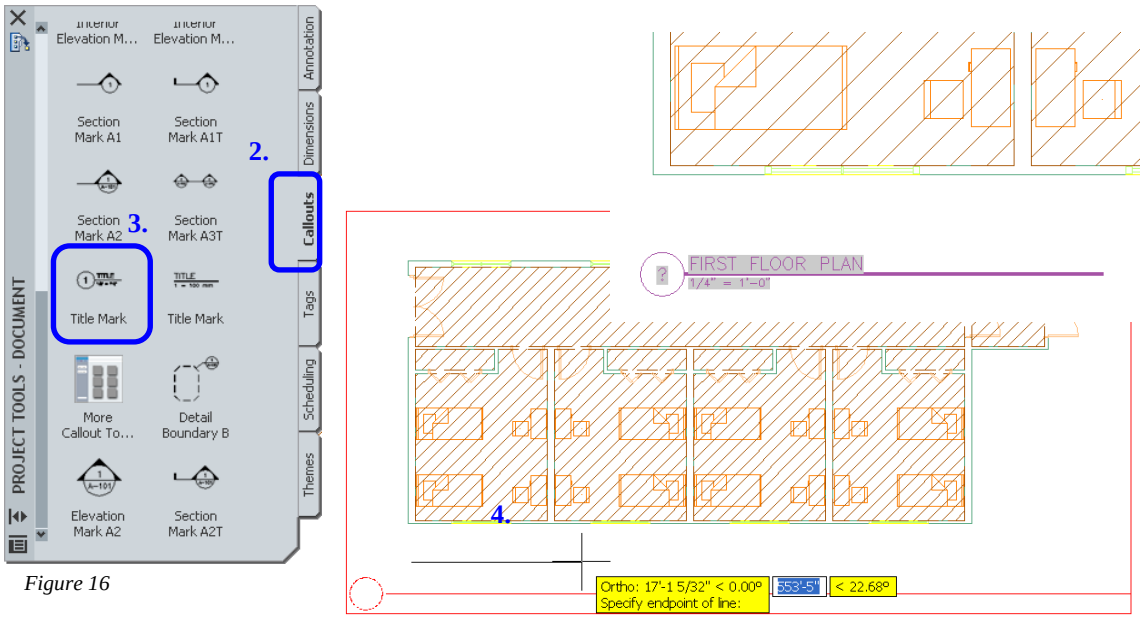


Figure 16

5. Select the **Tags** tab on the **Palette Set**.
6. Select the **Room Tag – Project Based** tool.
7. Select the large space of the lower-left room.
8. The **Edit Property Set Data** dialog box will open. Click the **OK** button to continue because you will notice that the values are already there. *Figure 17*

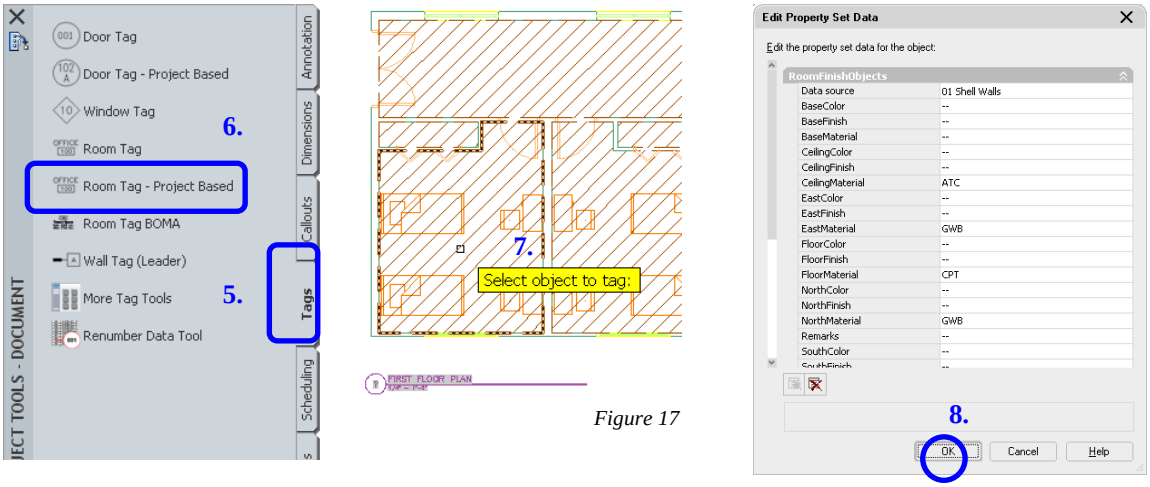


Figure 17

9. Select the closet of that room and click the **OK** button to continue.
10. Repeat steps 7 thru 9 for the next three dorm rooms and their closets.
11. Now, select the long corridor.
12. Enter the values for **CeilingMaterial**, **EastMaterial**, **FloorMaterial**, **North Material**, **South Material**, and **West Material**.
13. Finally, select the remaining room and fill out the values mentioned in the previous step.
14. Click the blue **hyperlink** on the **External Reference** balloon notification.

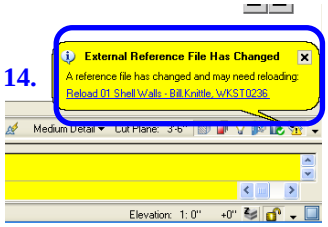
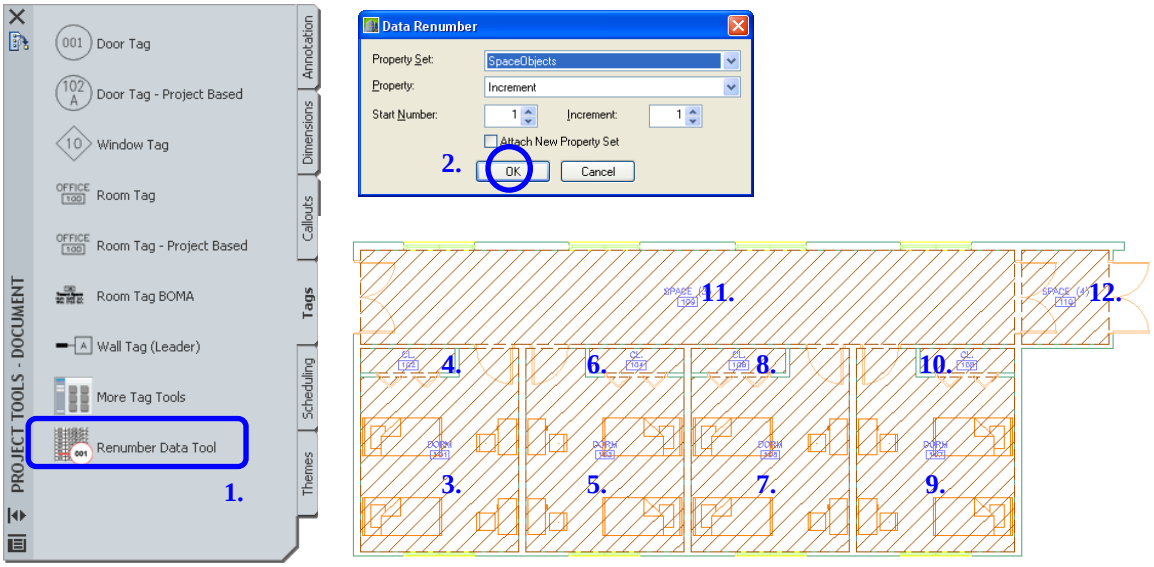


Figure 18

Project Tip!
Whenever you right information through the reference file, you will be prompted by the balloon notification to reload.

Renumbering the Rooms

1. Select the **Renumber Data** tool on the **Palette Set**.
2. Click the **OK** button to accept **SpaceObjects** as the **Property Set** and **Increment** as the **Property** in the **Data Renumber** dialog box.
3. Select the Room Tag in the large space of the first room.
4. Select that room's closet tag.
5. Select the Room Tag in the large space of the second room.
6. Select that room's closet tag.
7. Select the Room Tag in the large space of the third room.
8. Select that room's closet tag.
9. Select the Room Tag in the large space of the fourth room.
10. Select that room's closet tag.
11. Select the corridor's tag.
12. Select the remaining room's tag.
13. Click the **Enter** or **Spacebar** key to exit the command. *Figure 19*



14. Click the blue **hyperlink** on the **External Reference** balloon notification when it appears.

Tag the Doors

1. Select the **Door Tag – Project Based** tool on the **Palette Set**.
2. Tag the entry door into room 101.
3. Clear the "**A**" value for **DoorSuffix** in the **Edit Property Set Data** dialog box.

4. Click the **OK** button to continue. *Figure 20*

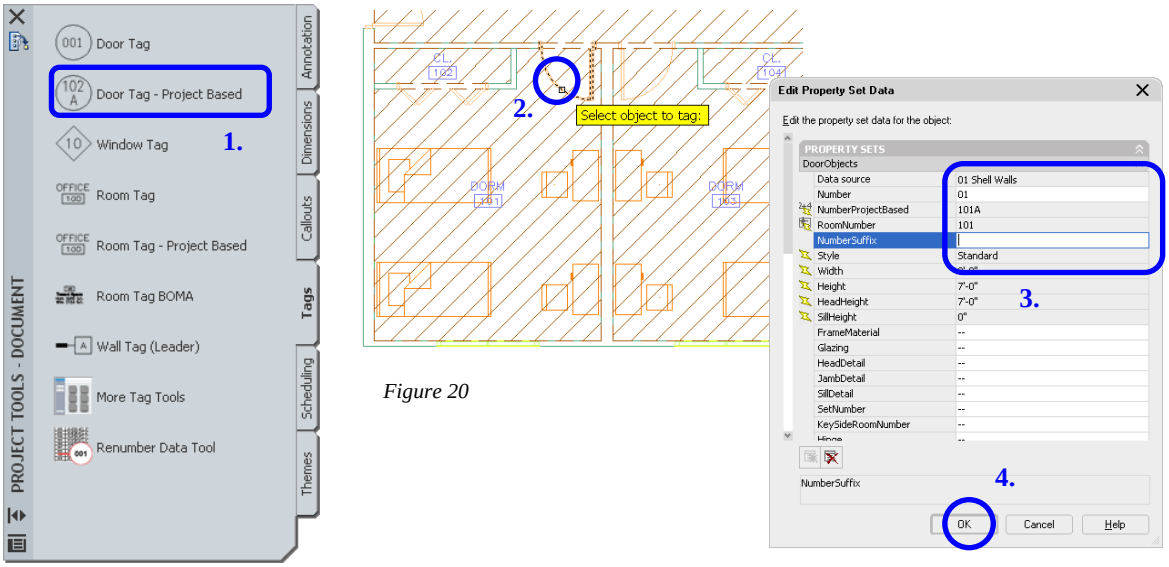


Figure 20

5. Right-click and select **Multiple** in the **Context Menu**.
6. Drag a selection window around the bottom four rooms. *Figure 21*

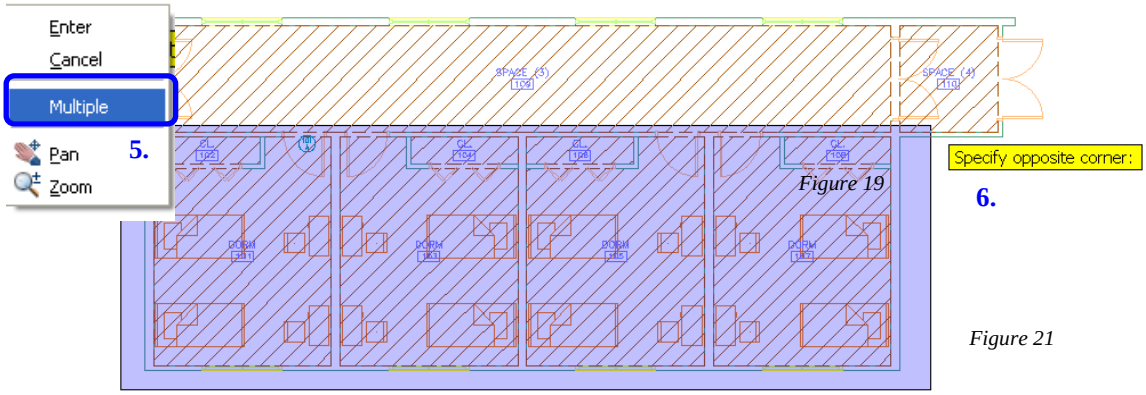


Figure 19

Figure 21

7. Click the **Enter** or **Spacebar** key to exit the command.
8. Click the **No** button in the warning dialog box to avoid re-tagging the same door. *Figure 22*

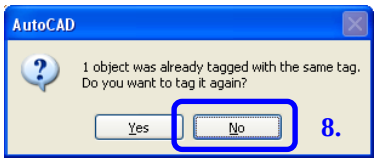


Figure 22

9. Clear the **NumberSuffix** property in the **Edit Property Set Data** dialog box
10. Click the **OK** button to see the results.

11. Delete the four window tags. (The DoorObjects Property Set applies to Door/Window Assemblies as well.) *Figure 23*

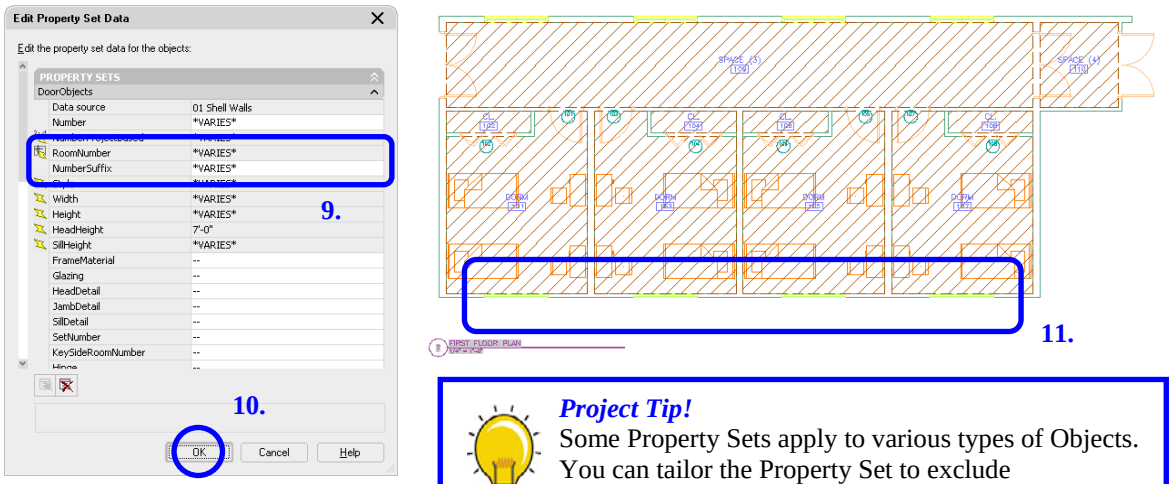


Figure 23

Project Tip!
Some Property Sets apply to various types of Objects. You can tailor the Property Set to exclude Door/Window Assemblies or add a filter to the schedule to avoid scheduling the assemblies.

12. Tag the far right double-door and allow the **NumberSuffix** to remain as "**A**" in the **Edit Property Set Data** dialog window.
13. Click the **OK** button to continue.
14. Tag the double-door directly left of that one.
15. Enter "**B**" for the **NumberSuffix** in the **Edit Property Set Data** dialog window.
16. Click the **OK** button to continue.
17. Tag the far left double-door and clear the **NumberSuffix** value.
18. Click the **Enter** or **Spacebar** key to exit the command. *Figure 24*

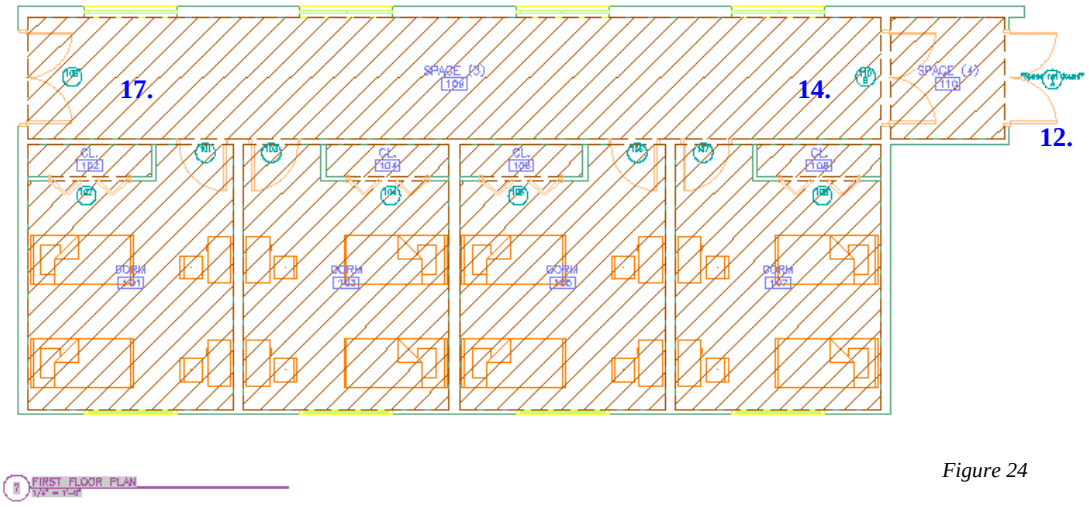


Figure 24

Repair Door Tags

1. Select the referenced construct and right-click.
2. Select **Edit Xref in-place…** in the **Context Menu**. *Figure 25*

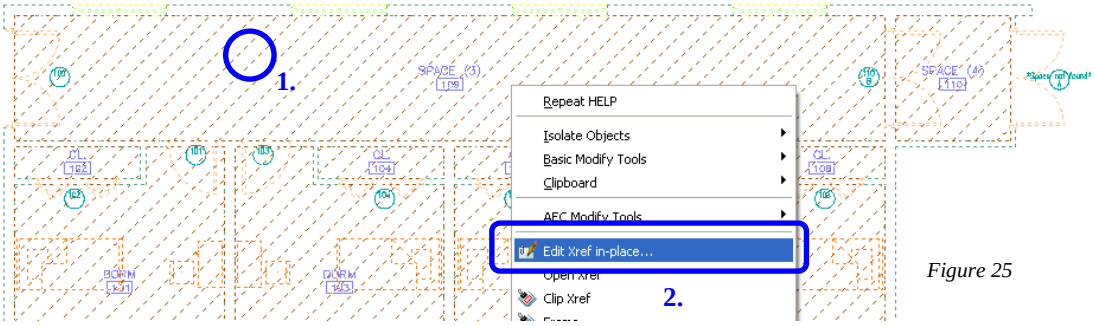


Figure 25

3. Select the **OK** button in the **Reference Edit** dialog box.
4. Select the far right double-door. *Figure 26*

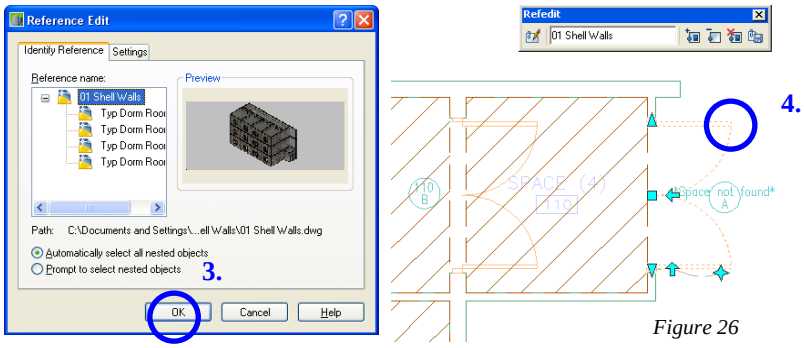


Figure 26

Project Tip!
Edit Xref in-place allows you to quickly modify the referenced drawing from the host drawings

5. Select the **Property Data Location** grip on the door object.
6. Drag it into the space, left of the door.
7. Select the **Save back changes to reference** button on the **Refedit** toolbar.
8. Click the **OK** button on the warning dialog box. *Figure 27*

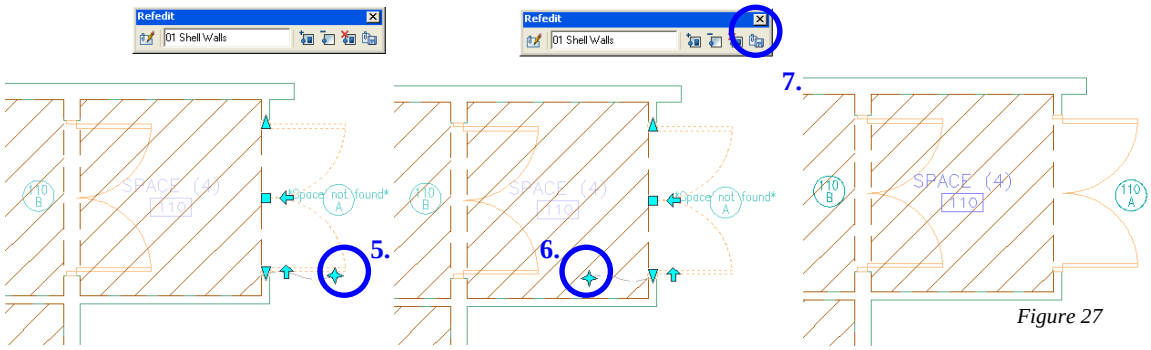


Figure 27

Repair the Room Tags

1. Select the referenced construct and right-click.
2. Select **Edit Xref in-place…** in the **Context Menu**. *Figure 28*

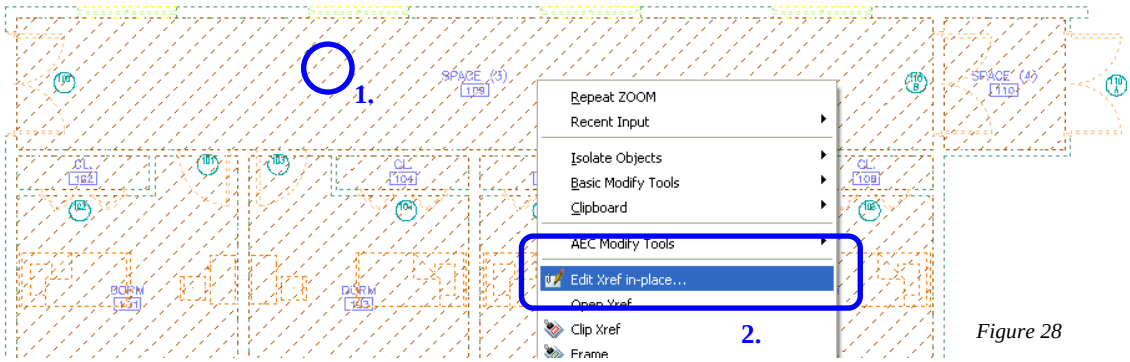


Figure 28

3. Select the **OK** button in the **Reference Edit** dialog box.
4. Select the long corridor space.
5. Enter **Corridor** for the **Name** property in the **Design** tab of the **Properties** palette. (Note that these spaces are the Standard style. If you use predefined space styles, you may need to select a name from the list.)

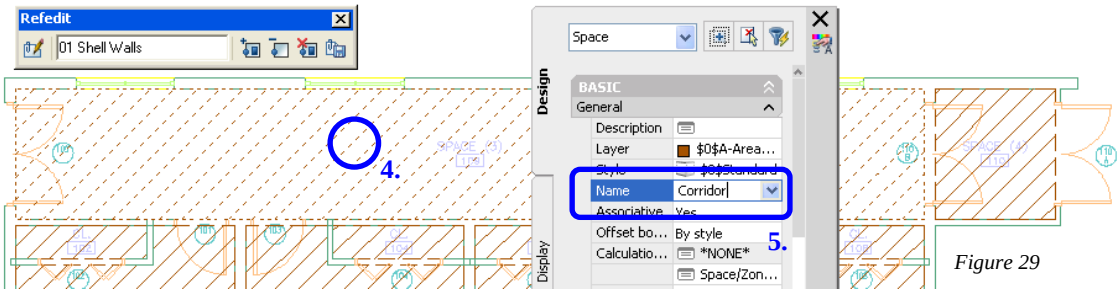


Figure 29

6. Deselect the corridor space and select the square space at the far right.
7. Rename this space **Vest.** in the **Properties** palette.
8. Select the **Save changes back to reference…** button on the **Refedit** toolbar.
9. Click the OK button in the warning dialog box. *Figure 30*

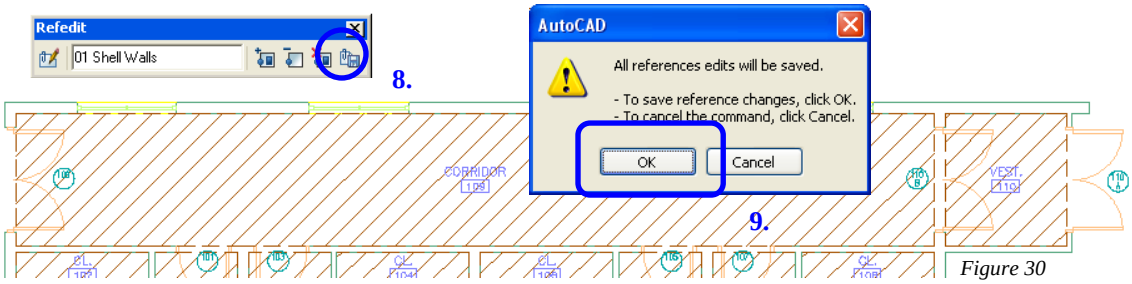


Figure 30

10. Continue annotating the view as usual by adding text, dimensions, callouts, etc…
11. Create the views for the remaining floors and repeat this process..
12. Freeze the ***Spce** layers in each view. (Layer property filters work great for this.)

Step 3: Finishing the job, creating the plotting Sheets

Create a Sheet

1. Select the **Sheets** tab on the **Project Navigator** palette.
2. Select the **Architectural** subset.
3. Select the **Add Sheet** button at the base of the **Project Navigator** palette.
4. Enter **A100** for the **Number**.
5. Enter **First Floor Plan** for the **Sheet title**.
6. Click the **OK** button on the **New Sheet** dialog box.
7. Double-click the new sheet **A100 First Floor Plan** in the **Project Navigator** palette. *Figure 31*

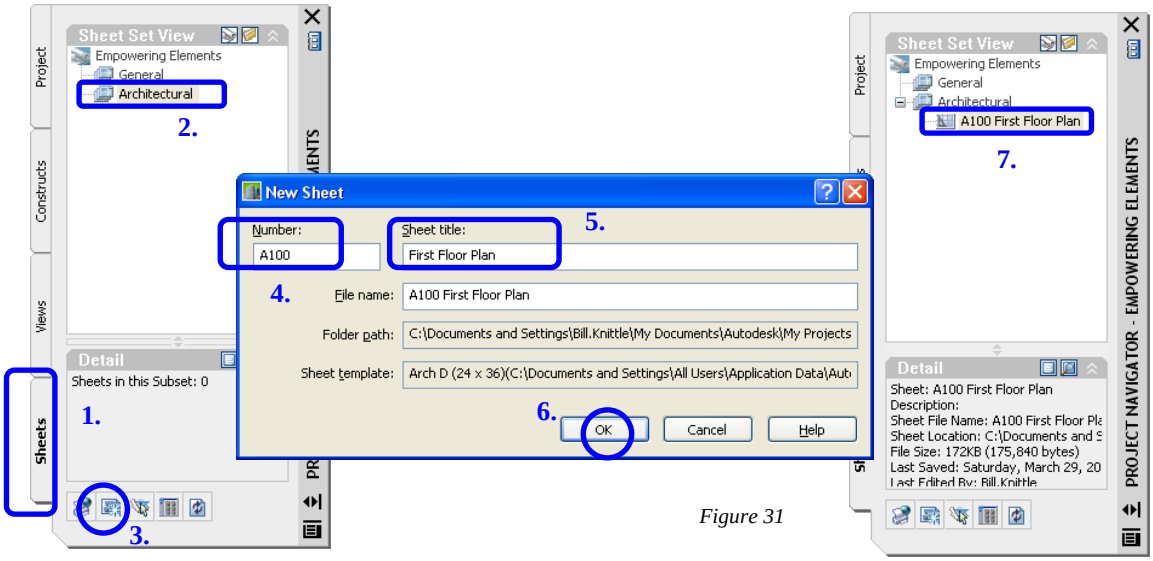


Figure 31

Add the Model Space View to the Sheet

1. Select the **Views** tab on the **Project Navigator** palette.
2. Expand the view **A-FP01** to see the **First Floor Plan** model space view.
3. Press and drag the **First Floor Plan** into the sheet. *Figure 32*

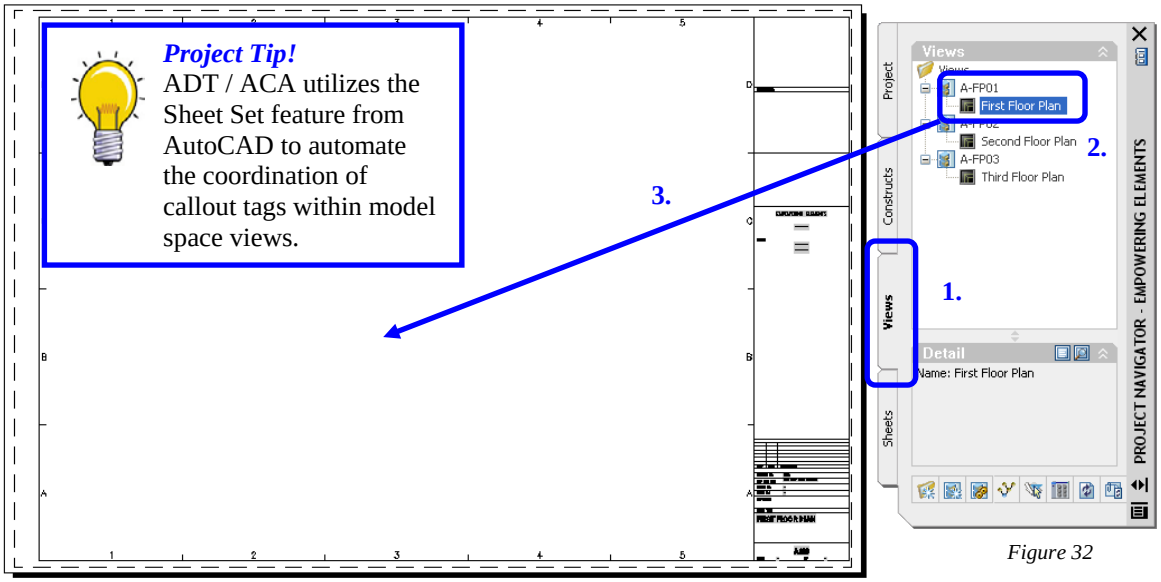


Figure 32

4. Click to place the model space view on the sheet.
5. Select the **Scheduling** tab on the **Palette Set**.
6. Select the **More Scheduling Tools** tool to open the **Content Browser**. (In ADT 07, you must go to *Window>Content Browser>Documentation Tool Catalog – Imperial>Scheduling Tables*)
7. Press and drag the **i-drop** symbol of **Room Finish Schedule Project Based** tag into the sheet.
8. Click the **Enter** or **Spacebar** key to schedule an external reference drawing. *Figure 33*

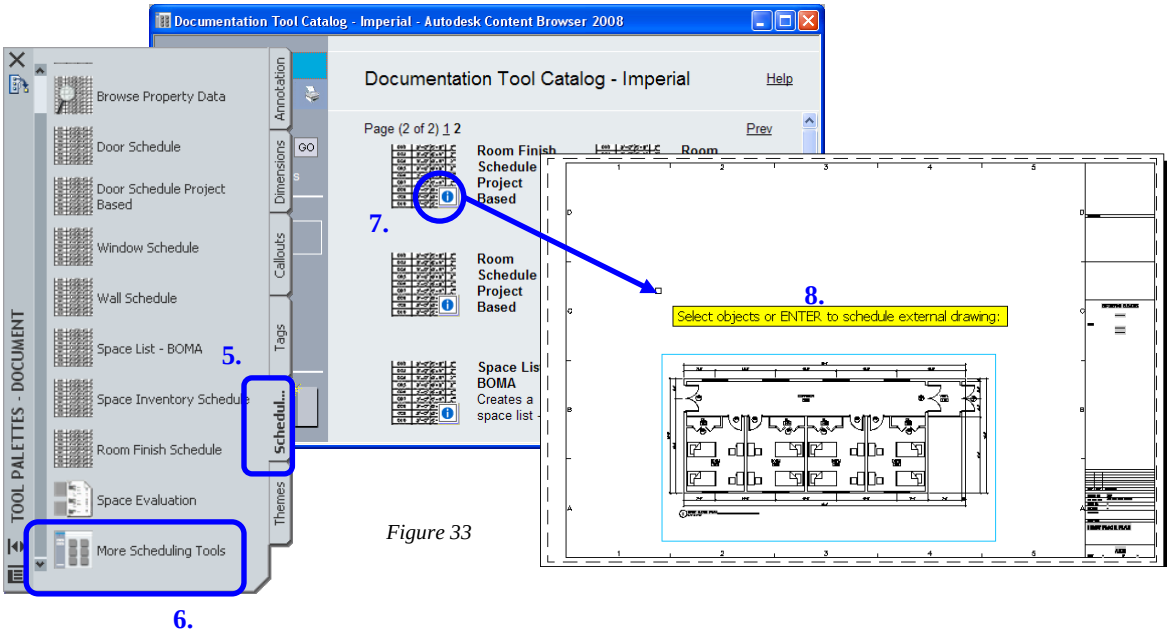


Figure 33

9. Click to place the schedule header in the sheet.
10. Click the **Enter** or **Spacebar** key to scale the schedule appropriately. *Figure 34*

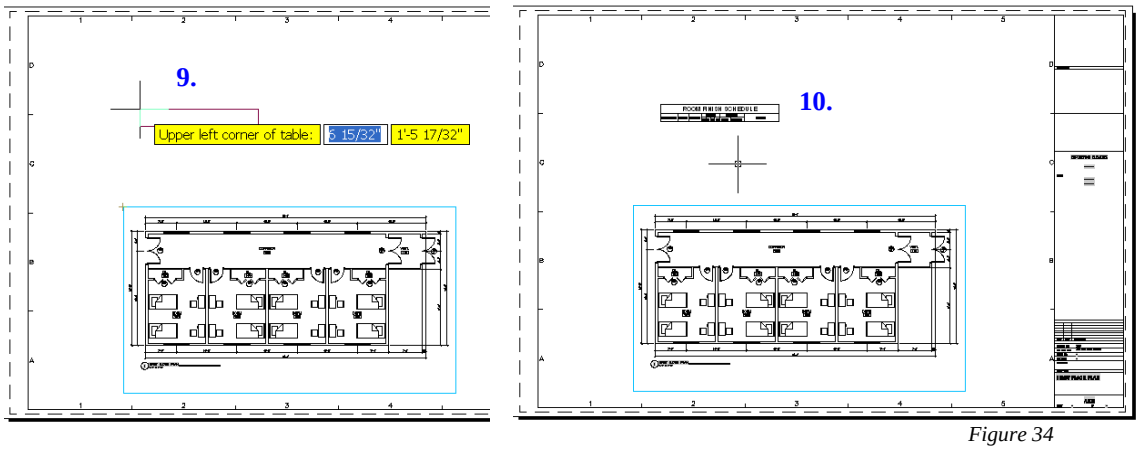


Figure 34

Adjust the Schedule Table's Properties

1. Select the schedule table.
2. Select **Yes** from the drop down for the property **Schedule external drawing**.
3. Select the **Browse** option in the drop down for the property **External drawing**.
4. Browse to ***<project name>/Views/*** and select **A-FP01.dwg**. *Figure 35*

> ***Project Tip!***
> When schedules are referencing drawing files, they automatically update each time the plot ensuring the consistency of data

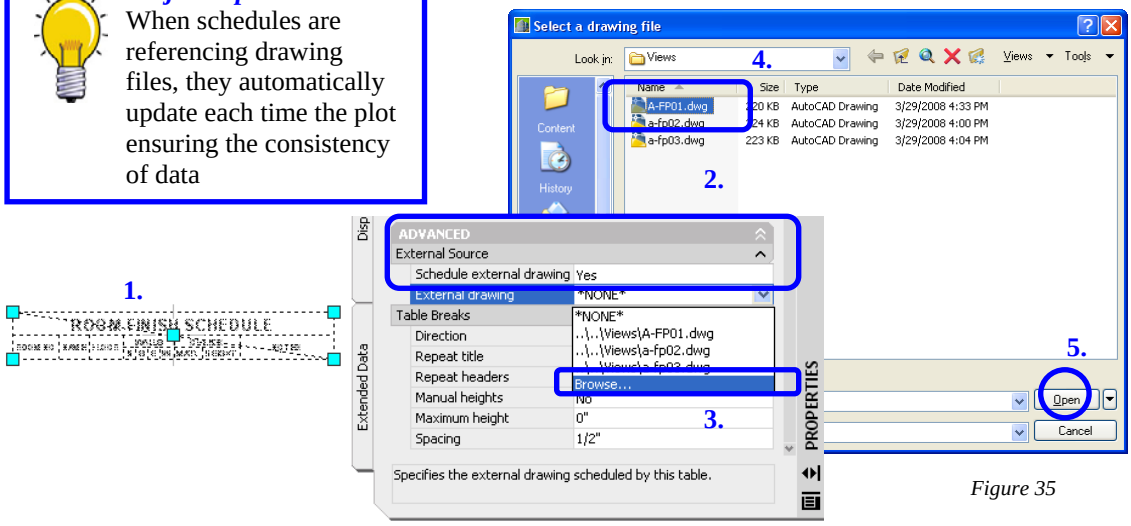


Figure 35

5. Right-click while the table is selected to open the **Context Menu**.
6. Select **Update Schedule Table** from the **Context Menu**.
7. The table is updated. *Figure 36*

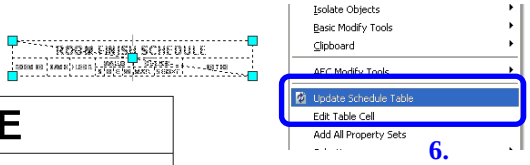


Figure 36

ROOM FINISH SCHEDULE

ROOM NO	NAME	FLOOR	WALLS				CEILING		NOTES
			N	S	E	W	MATL	HEIGHT	
101	DORM	CPT	GWB	GWB	GWB	GWB	ATC	8'-6"	--
102	CL.	CPT	GWB	GWB	GWB	GWB	ATC	8'-6"	--
103	DORM	CPT	GWB	GWB	GWB	GWB	ATC	8'-6"	--
104	CL.	CPT	GWB	GWB	GWB	GWB	ATC	8'-6"	--
105	DORM	CPT	GWB	GWB	GWB	GWB	ATC	8'-6"	--
106	CL.	CPT	GWB	GWB	GWB	GWB	ATC	8'-6"	--
107	DORM	CPT	GWB	GWB	GWB	GWB	ATC	8'-6"	--
108	CL.	CPT	GWB	GWB	GWB	GWB	ATC	8'-6"	--
109	CORRIDOR	GWB	GWB	GWB	GWB	GWB	ATC	8'-6"	--
110	VEST.	GWB	GWB	GWB	GWB	GWB	ATC	8'-6"	--

8. Repeat the process to create the additional sheets for the additional plans.

ROOM FINISH SCHEDULE

ROOM NO	NAME	FLOOR	WALLS				CEILING		NOTES
			N	S	E	W	MATL	HEIGHT	
201	DORM	CPT	GWB	GWB	GWB	GWB	ATC	8'-6"	--
202	CL.	CPT	GWB	GWB	GWB	GWB	ATC	8'-6"	--
203	DORM	CPT	GWB	GWB	GWB	GWB	ATC	8'-6"	--
204	CL.	CPT	GWB	GWB	GWB	GWB	ATC	8'-6"	--
205	DORM	CPT	GWB	GWB	GWB	GWB	ATC	8'-6"	--
206	CL.	CPT	GWB	GWB	GWB	GWB	ATC	8'-6"	--
207	DORM	CPT	GWB	GWB	GWB	GWB	ATC	8'-6"	--
208	CL.	CPT	GWB	GWB	GWB	GWB	ATC	8'-6"	--
209	CORRIDOR	CPT	GWB	GWB	GWB	GWB	ATC	8'-6"	--

Each schedule on each sheet should show the appropriate information for that floor plan. The finish information is derived from the elements therefore, all the information is consistent. If a room needs different finishes that makes it unique. You will need to make it part of the construct. If you need more scheduling control, investigate the use of classifications to filter similar objects based on classification. Happy documenting!