

Lesson 14

Residence: Construction Documents Set::

This lesson will look at bringing everything you have drawn thus far together onto sheets. The sheets, once set up, are ready for plotting. Basically, you place the various views you have created on sheets. The scale for each view is based on the scale you set while drawing that view (which is important to have set correctly because it affects the text and symbol sizes). When finished setting up the sheets, you will have a set of drawings ready to print, individually or all at once.

Exercise 14-1: *Setting Up a Sheet*

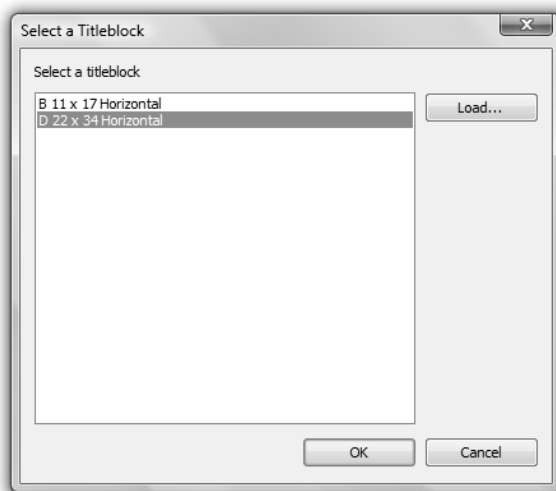
Creating a Sheet view:

1. Open ex13-4.rvt and **Save As** 14-1.rvt.
2. Select **View** → **Sheet Composition** → **New Sheet**.



Next Revit will prompt you for a Titleblock to use. The template file you started with has two; 11 x 17 and 22 x 34. (Figure 14-1.1)

3. Select the **D 22x34 Horizontal** titleblock and click **OK**.



That's it; you have created a new sheet that is ready to have views and/or schedules placed on it!

NOTICE:

A new view shows up in the Project Browser under the heading: *Sheets*. Once you get an entire CD set ready, this list can be very long.

Figure 14-1.1 Select a Titleblock

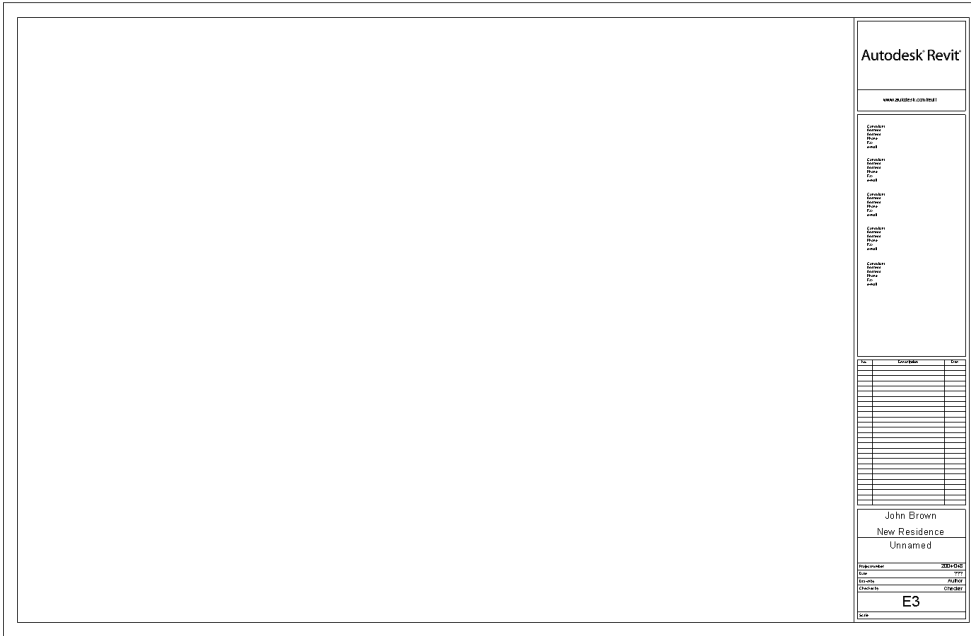
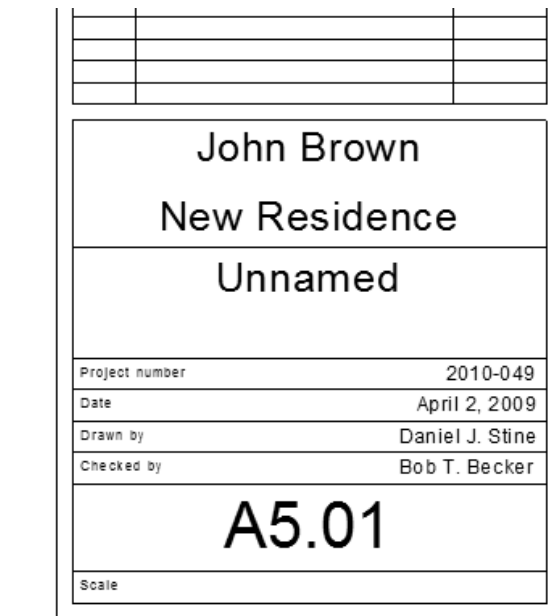


Figure 14-1.2 Initial Titleblock view

4. **Zoom** into the sheet number area (lower right corner).
5. Adjust the text to look similar to **Figure 14-1.3**; click on the text and edit (make sure *Modify* is selected).



TIP: Select the title block, hover the cursor over the text you wish to edit, and then click. Notice some of the fields are filled in based on the project setup you did earlier in the book (i.e., project name and number).

Notice the time and date stamp. This helps to remember when a sheet was plotted, especially if you forget to update the date before printing.

Figure 14-1.3 Revised Titleblock data



6. **Zoom out** so you can see the entire sheet.
7. With the sheet fully visible, click and drag the **Living Room - East** label, under *Elevations (Interior elevations)*, from the *Project Browser* onto the sheet view.

You will see a box that represents the extents of the view you are placing on the current sheet.

8. Move the *Viewport* around until the box is in the upper-right corner of the sheet (this can be adjusted later at any time) and click to place.

Your view should look similar to **Figure 14-1.4**.

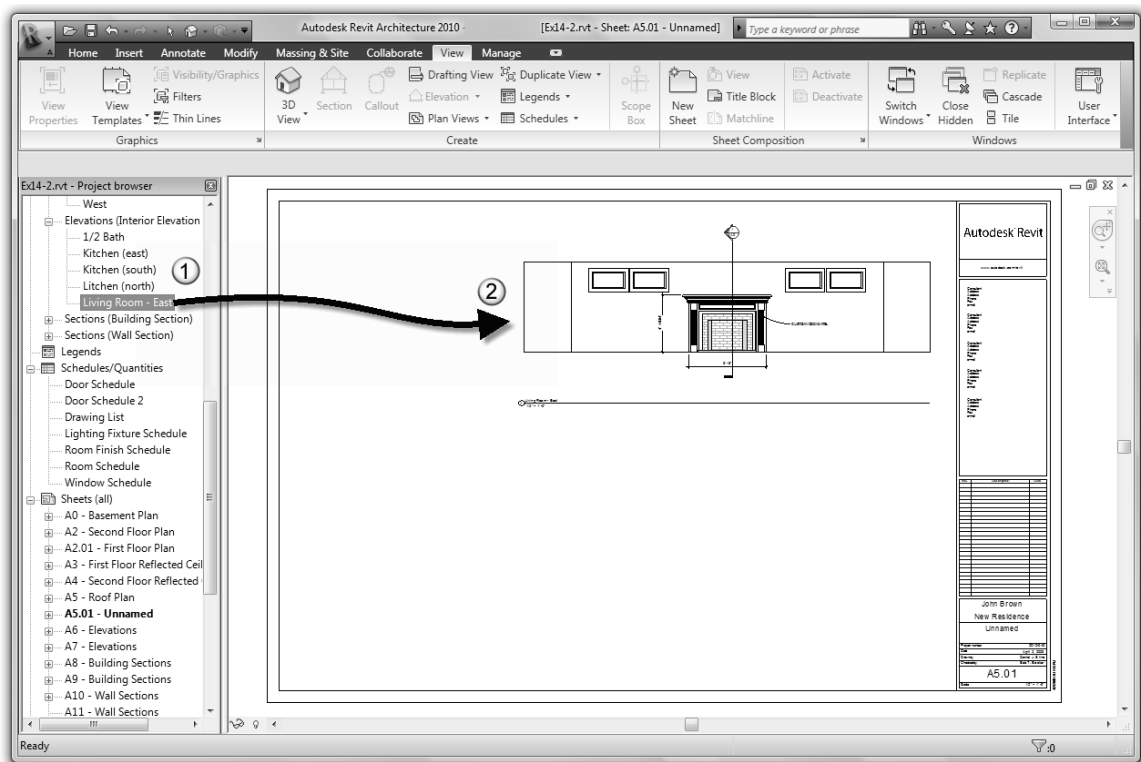


Figure 14-1.4 Sheet with Living room view

9. Click the mouse in a "white" area (not on any lines) to deselect the *Living Room - East* view. Notice the red box goes away.

1 **Living Room - East**
1/2" = 1'-0"

Figure 14-1.5 Drawing ID tag

10. **Zoom In** on the lower left corner to view the drawing identification symbol that Revit automatically added (Figure 14-1.5).

NOTICE: The drawing number for this sheet is added. The next drawing you add will be number 2.

The view name is listed. This is another reason to rename the elevation and section views as you create them.

Also notice that the drawing scale is listed. Again, this comes from the scale setting for the Living Room - East view.

As you can see (if you added furniture to the living room), the furniture is showing up, normally this would be turned off. You can turn these off using the same technique covered later for the trees in the exterior elevations.

Setting up the Floor Plans:

Setting up floor plans is easy; actually, they are already setup from the template you started with.

11. From the *Sheets* section in the Project Browser, double-click on the sheet named **A1 – First Floor Plan**.

As you can see, the floor plan is already setup on a sheet. Again, a few things can be turned off (i.e., trees, RPC People) per the techniques covered next. You would also want to move the exterior elevation tags closer to the building so they are within the title block (if they are not already).

12. Change the sheet number to **A2.01**.
13. Close the First Floor plan, *Sheet*.

Setting up the Exterior Elevations:

Next you will set up the exterior elevations. Again, the sheets are already setup but the Views have not been placed on the Sheet like the floor plans have.

14. Open Sheet **A6 – Elevations**.
15. Drag the **South** elevation view onto the sheet. Place the drawing near the bottom (centered).

Your drawing should look similar to Figure 14-1.6.

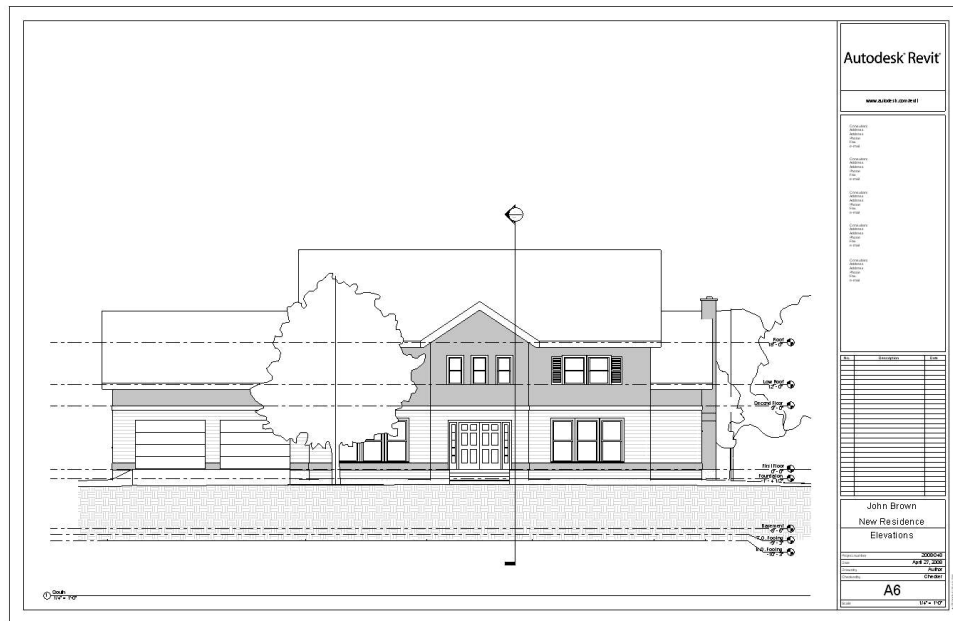


Figure 14-1.6 South exterior elevation

Next you will turn off the trees in the south view. Normally you would turn them off in all views. However, you will only turn them off in the south view to show that you can control visibility per view on a sheet.

16. In the sheet view, click on the south exterior elevation view to select it; the outer black rectangle is called the viewport (Figure 14-1.6).
17. Now **Right-Click** and select **Activate View** from the pop-up menu.

At this point you are in the viewport and can make changes to the project model to control visibility, which is what you will do next.

18. Right-click in the "white space" and select **View Properties...**
19. Click the **Edit** button next to *Visibility/Graphics Overrides*.
20. In the Visibility dialog **Uncheck Planting**.
21. Close the open dialog boxes.
22. Right-click anywhere in the drawing area and select **Deactivate View** from the pop-up menu.

Now the trees are turned off for the South Elevation, if you would have had another elevation view on this same sheet, the trees would still be visible for that view.

23. Add the **North** elevation to the **A7 – Elevations Sheet**.

TIP: You may need to switch to the North view and turn on the Crop and Crop Display icons on the View Control Bar to make the area placed on the sheet smaller so it will fit; when finished, turn off Crop Display.

Now you will stop for a moment and notice that Revit is automatically referencing the drawings as you place them on sheets.

24. Switch to **First Floor** (Figure 14-1.7).

Notice in Figure 14-1.7 that the number A6 represents the sheet number that the drawing can be found on. The number one (1) is the drawing number to look for on sheet A6. The empty tag is the enlarged elevation view you setup earlier in the book; it has not been placed on a sheet yet so it is not filled in.

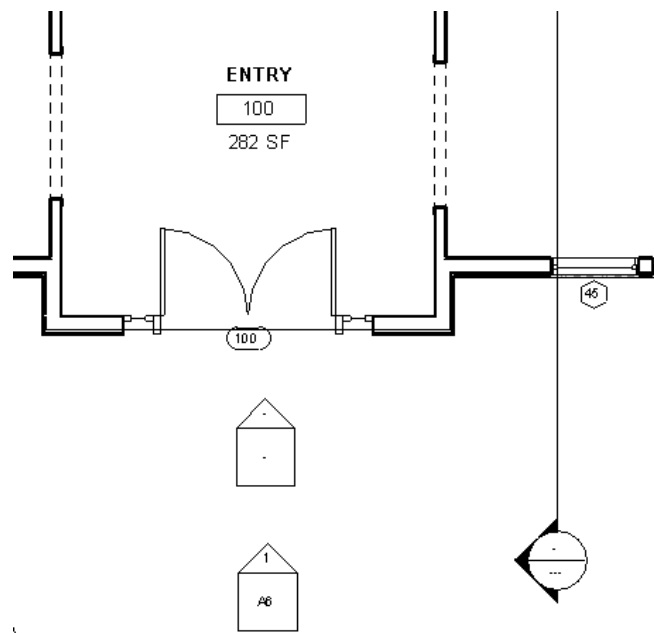


Figure 14-1.7 First Floor – elevation tag filled-in

Setting up Sections:

25. Open **Sheet A8 – Building Sections** and place Cross Section 1
26. Open **Sheet A9 – Building Sections** and place Longitudinal Section view on the *Sheet*.
27. Switch to First Floor plan view and zoom into the area shown in Figure 14-1.9.

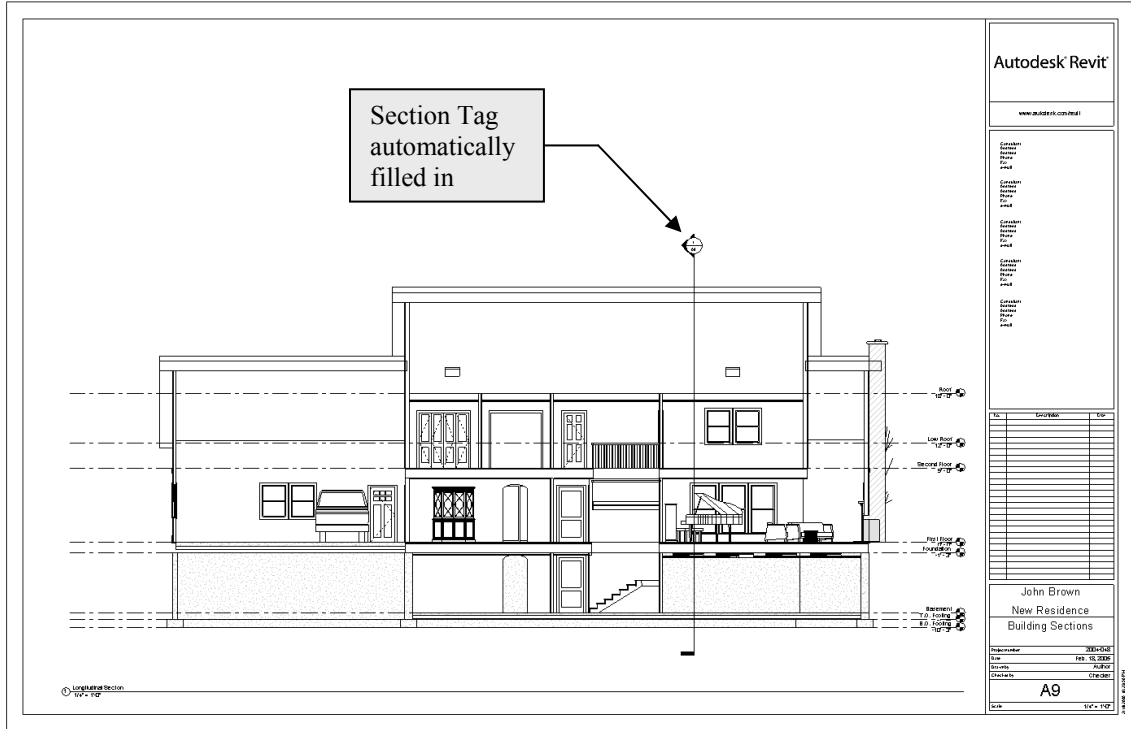


Figure 14-1.8 A9 – Building Sections sheet

Notice, again, that the reference bubbles are automatically filled in when the referenced view is placed on a sheet. If the drawing is moved to another sheet, the reference bubbles are automatically updated.

You can also see in Figure 14-1.8 (above) that the reference bubbles on the building sections are filled in.

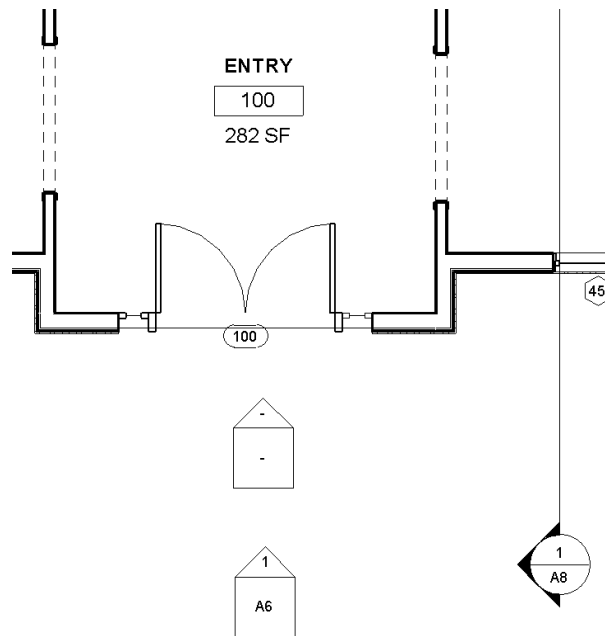


Figure 14-1.9 First Floor – Section ref's filled in

Setup the remaining sheets:

Next you set up sheets for the remaining views that have yet to be placed on a sheet (except for the 3D views).

28. Add the remaining views to the appropriate Sheets, if one does not exist you can create a new sheet.

Question: On a large project with hundreds of views, how do I know for sure if I have placed every view on a sheet?

Answer: Revit has a feature, called *Browser Organization*, that can hide all the views that have been placed on a sheet. You will try this next.

Take a general look at the *Project Browser* to see how many views are listed.

29. Select **View → Window → User Interface (drop-down) → Browser Organization...**
30. On the *Views* tab, click the check-box next to **not on sheets** (Figure 14-1.10)
31. Click **OK**.
32. Notice the list in the *Project Browser* is now smaller (Figure 14-1.11).

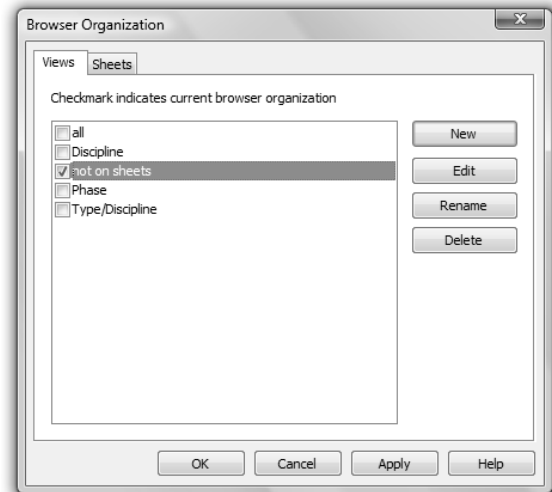


Figure 14-1.10 Browser Organization dialog

The *Project Browser* now only shows drawing views that have not been placed onto a sheet. Of course, you could have a few views that do not need to be placed on a sheet, but this feature will help eliminate errors. Also notice the label at the top: *Views (not on sheets)*; this tells you what mode/filter the *Project Browser* is in.

Next you will reset the *Project Browser*.

33. Open *Browser Organization* again and check the box next to **all** and click **OK** to close the dialog box.

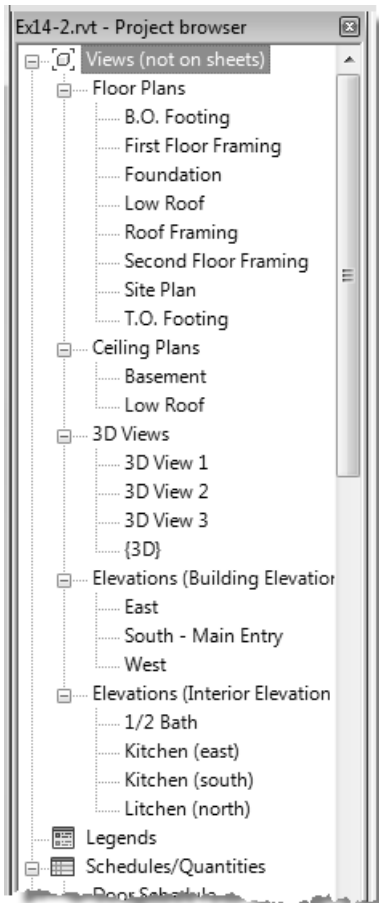


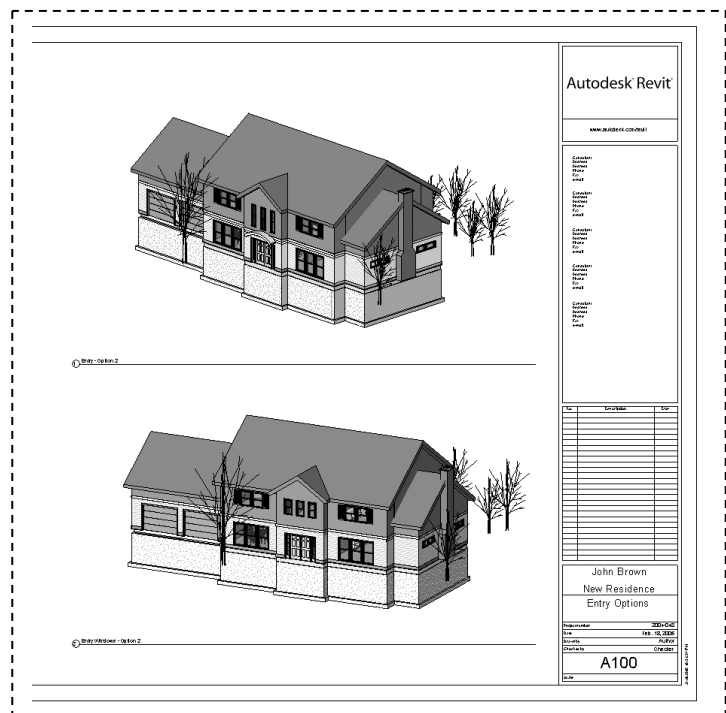
Figure 14-1.11
Project Browser

Sheets with Design Options:

Finally, you will setup a sheet to show the two Design Options.

34. Create a *Sheet* named **Entry Options** and number it **A100**.
35. Place both *Entry - Option 2 3D view's* on the new Sheet and change the scale to **1/8" = 1'-0"**.

TIP: Right-click on placed view and select *Element Properties*; change the Scale.



Each 3D view has its Visibility modified to show the desired *Design Options*. When a view is placed on a sheet those settings are preserved.

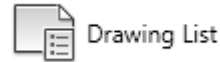
36. **Save** your project as **ex14-1.rvt**.

Exercise 14-2: Sheet Index

Revit has the ability to create a sheet index automatically. You will study this feature now.



Creating a Sheet List View



1. Open ex14-1.rvt and **Save As** ex14-2.
2. Select **View** → **Create** → **Schedules** (down-arrow) → **Drawing List**

You are now in the *Drawing List Properties* dialog box. Here you specify which fields you want in the sheet index and how to sort the list (Figure 14-2.1).

3. Add **Sheet Number** and **Sheet Name** to the right (Click *Add* →).
4. Click **OK**.

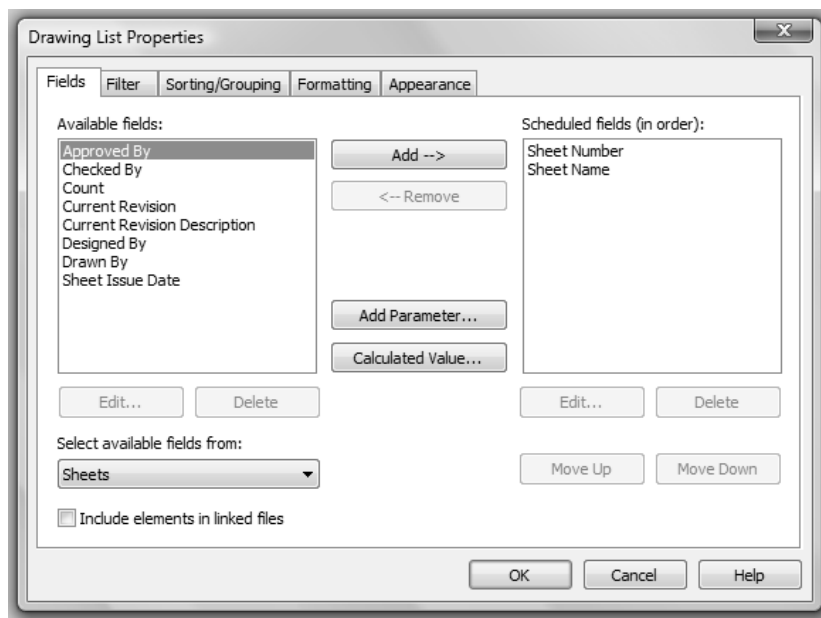


Figure 14-2.1 Drawing List Properties Dialog; sheet number and name “added”

Now you should notice that the *Sheet Names* are cut off because the column is not wide enough (Figure 14-2.2). You will adjust this next.

5. Move your cursor over the right edge of the *Drawing List* table and click-n-drag to the right until you can see the entire name (Figure 14-2.2).

Drawing List	
Sheet Number	Sheet Name
A1	First Floor
A2	Second Fl
A3	First Floor
A4	Second Fl
A5	Roof Plan
A6	Elevations
A7	Elevations
A8	Building S
A9	Building S
A10	Wall Secti
A11	Wall Secti
A12	Details
A13	Interior Ele
A14	Interior Det
A15	Schedules
C1	Site Plan
S0	Foundatio
S1	First Floor
S2	Second Fl
S3	Roof Frami
A0	Basement
E0	Basement
E1	First Floor
E2	Second Fl
A5.01	Interior Ele
A100	Entry Opti

Figure 14-2.2 Drawing List view; notice sheet names are cut off in right column

Drawing List	
Sheet Number	Sheet Name
A1	First Floor Plan
A2	Second Floor Plan
A3	First Floor Reflected Ceiling Plan
A4	Second Floor Reflected Ceiling Plan
A5	Roof Plan
A6	Elevations
A7	Elevations
A8	Building Sections
A9	Building Sections
A10	Wall Sections
A11	Wall Sections
A12	Details
A13	Interior Elevations
A14	Interior Details
A15	Schedules
C1	Site Plan
S0	Foundation Plan
S1	First Floor Framing Plan
S2	Second Floor Framing
S3	Roof Framing
A0	Basement Plan
E0	Basement Electrical Plan
E1	First Floor Electrical
E2	Second Floor Electrical
A5.01	Interior Elevations
A100	Entry Options

Figure 14-2.3 Drawing List view; sheet names are now visible

Adjusting which sheets show up in the list:

Looking at the drawing list (Figure 14-2.3), you decide to remove the Entry options sheet from the list as it is not part of the construction document set (i.e., sheet A5.01).

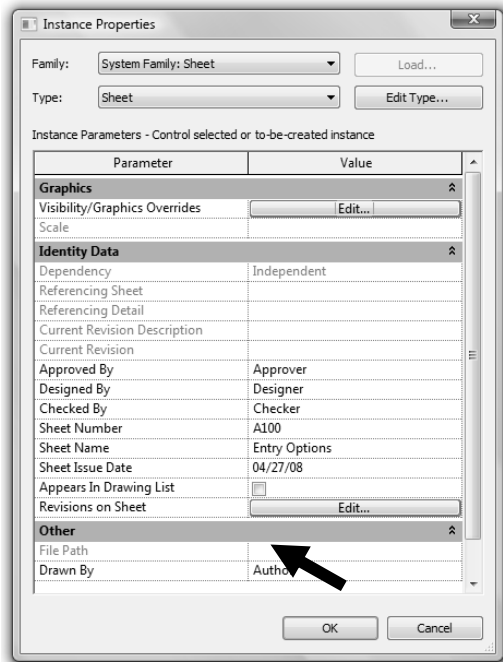
As with other schedules, this is live data which is directly connected to the model. If you change a sheet number here, the number will change throughout the Project. If you delete a number (i.e., a row), Revit will delete the sheet from the project.

You will look at the option that allows you to remove a sheet from the drawing list without deleting the sheet.

6. Right-click on sheet **A100** in the drawing list and select **Delete Row(s)**. (You will NOT actually delete this sheet.)

You will get a warning stating the sheet will be deleted and what you should do if you only want to remove the sheet from the drawing list.

7. Click **Cancel**.
8. Right-click on the *Sheet A100 – Entry Options* in the *Project Browser* and click **Properties**.
9. Uncheck “appears” in Drawing List (Figure 14-2.4).



Notice the *Sheet* was removed from the *Drawing List* view.

10. In the *Drawing List*, right-click on sheet A13 Interior Elevations and select **Delete Row(s)** from the menu.
11. Click **OK**.

Not only was the sheet removed from the *Drawing List*, it was also deleted from the Project. Next you will Renumber a sheet via the drawing list.

12. Click in the cell with the sheet number A5.01 and change the number to read A13.

Figure 14-2.4 Properties for sheet A100

Now an existing sheet has been renumbered and so has all the detail, elevation and/or section bubbles that point to this sheet.

13. Right-click on the schedule and select **View Properties**.
14. Click Edit... next to Sorting/Grouping.
15. Set *Sort By* to **Sheet Number** and click **OK** to close all open dialog boxes.

Now the sheets should be sorted correctly, including the sheet you just renumbered.

Setting up a Title Sheet:




Now you will create a title sheet to place your sheet index on.

16. Create a new Sheet:
 - a. Number: **T1**
 - b. Name: **Title Sheet**
17. From the *Schedules/Quantities* category of the *Project Browser*, place (i.e., drag-n-drop) the view named **Drawing List** on the *Title Sheet*.
18. Drag the column grips so each row is only one line.
19. Create a new text style named **1" Arial**, and adjust the settings accordingly.
20. Add large text across the top of the sheet that reads "NEW RESIDENCE FOR JOHN BROWN" (Figure 14-2.5).

Next you will place one of your rendered images that you saved to file (raster image). If you have not created a raster image, you should refer back to Lesson 13 and create one now. (Otherwise, you can use any BMP or JPG file on your hard drive if necessary.)

If you used the *Save to Project* feature you can simply drag one of the images listed under *Renderings* from the *Project Browser*. The interior kitchen rendering was added to the title sheet using this method. Here you can see Revit has added a Drawing Title tag beneath the image; which would allow you to reference this image from another location.

21. Select **Insert → Import → Image**  Image
22. Browse to your JPG or BMP raster image file, select it and click **Open** to place the Image.
23. Click on your Title Sheet to locate the image; use the corner grips to resize the image.

Your sheet should look similar to Figure 14-2.5.

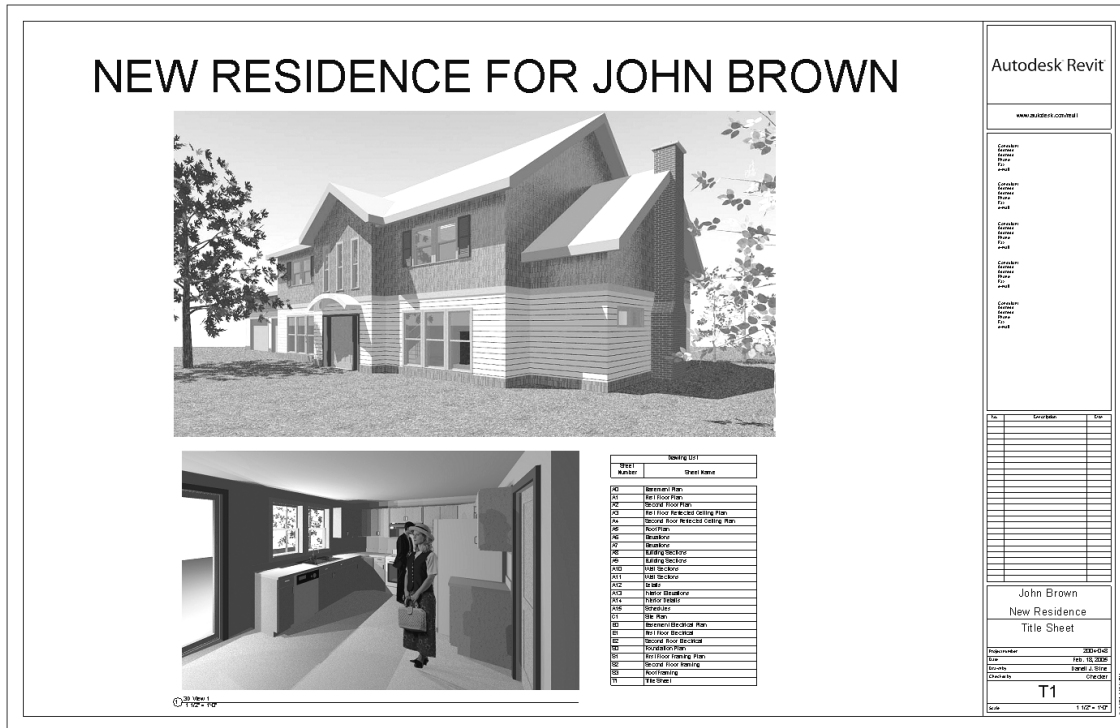


Figure 14-2.5 Sheet View: Title Sheet with drawing list, text and image added

24. Select **Insert** → **Import** → **Manage Images**

You are now in the Raster Image dialog which gives you a little information about the image and allows you to delete it from the project (Figure 14-2.6).

FYI:

You can delete a view from a Sheet with out deleting the view from the project. Also, you can only place a view on one sheet; you would have to duplicate the view in order to have that view repeated.

TIP:

You can use the standard modification tools on raster images (e.g., Move, Copy, Rotate and Resize). You can also control the draw order (to make sure your leaders, pointing at the image, show up).

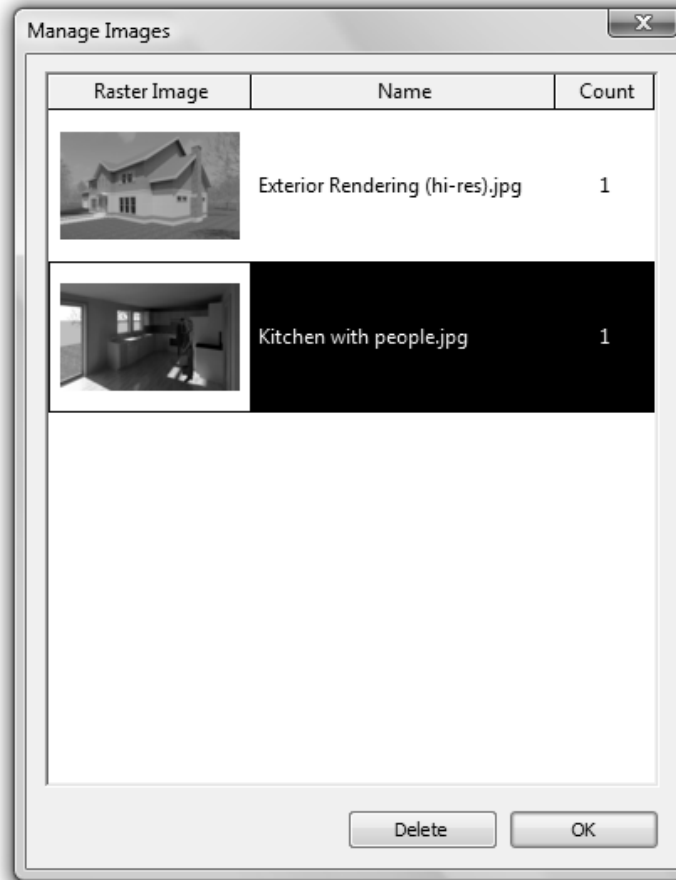


Figure 14-2.6 Manage Images dialog

25. Click **OK** to close the **Manage Images** dialog.

Exporting a 3D DWFx file:

The 3D DWFx file is an easy way to share your project file with others without the need to give them your editable Revit file (i.e., your intellectual property) or the need for that someone to actually have Revit installed.

SIDE NOTE: You can download Revit, from Autodesk's website, and run it in viewer mode. (It's free – full Revit with no save functionality.)

The 3D DWFx file is much smaller in file size than the original Revit file. Also, Autodesk Design Review is a free viewer that can be downloaded for free from www.autodesk.com.

26. Switch to your default **3D view**.

You must be in a 3D view for the 3D DWF feature to work. If you are not in a 3D view, you will get 2D DWF files:

27. Select **Application Menu → Export → DWF**

TIP: Turn off Section Box.

28. Specify a file name and location for the DWF file; click **Save**.

That's all you need to do to create the file. Now you can email it to the client or a product rep. to get a more accurate cost estimate.

The 3D DWF file is a meager 400kb whereas the Revit Project file is 11 MB. (Your file sizes will vary slightly based on factors like the number of families loaded, etc.) In most cases, an individual's networks and servers are set up so they cannot receive large files via email, so the 3D DWF is very useful.

The DWF viewer should have been installed with Revit. You can access it from *Start → All Programs → Autodesk → Autodesk Design Review 2010*. You can zoom, orbit and select objects. Notice the information displayed on the left when the front door is selected (see image below). Also notice, under the Windows heading, the sizes and quantities are listed.

TIP: Autodesk Design Review 2009 is a free download from Autodesk. This is their full-featured DWF viewer and markup utility!

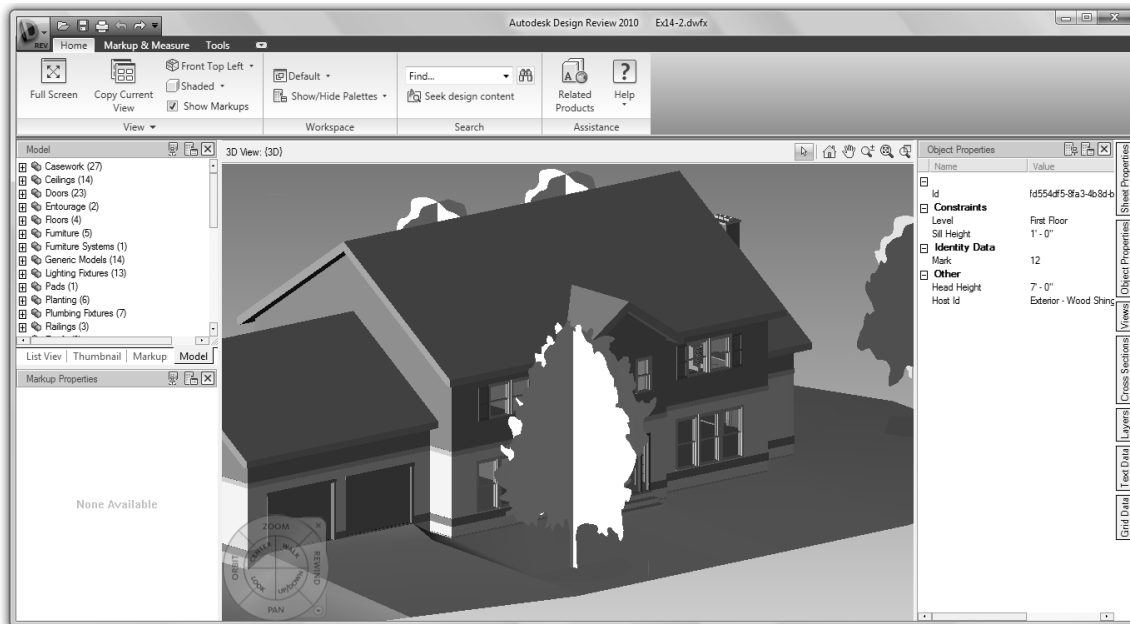


Figure 14-2.7
3D DWF in Autodesk Design Review

29. **Save** your project as **ex14-2.rvt**.

Exercise 14-3: Printing a Set of Drawings

Revit has the ability to print an entire set of drawings, in addition to printing individual sheets. You will study this now.

Printing a set of drawings:

1. **Open ex14-2.rvt.**
2. Select **Application Menu → Print → Print.**
3. In the *Print range* area, click the option **Selected views/sheets** (Figure 14-3.1).
4. Click the **Select...** button within the *Print Range* area.

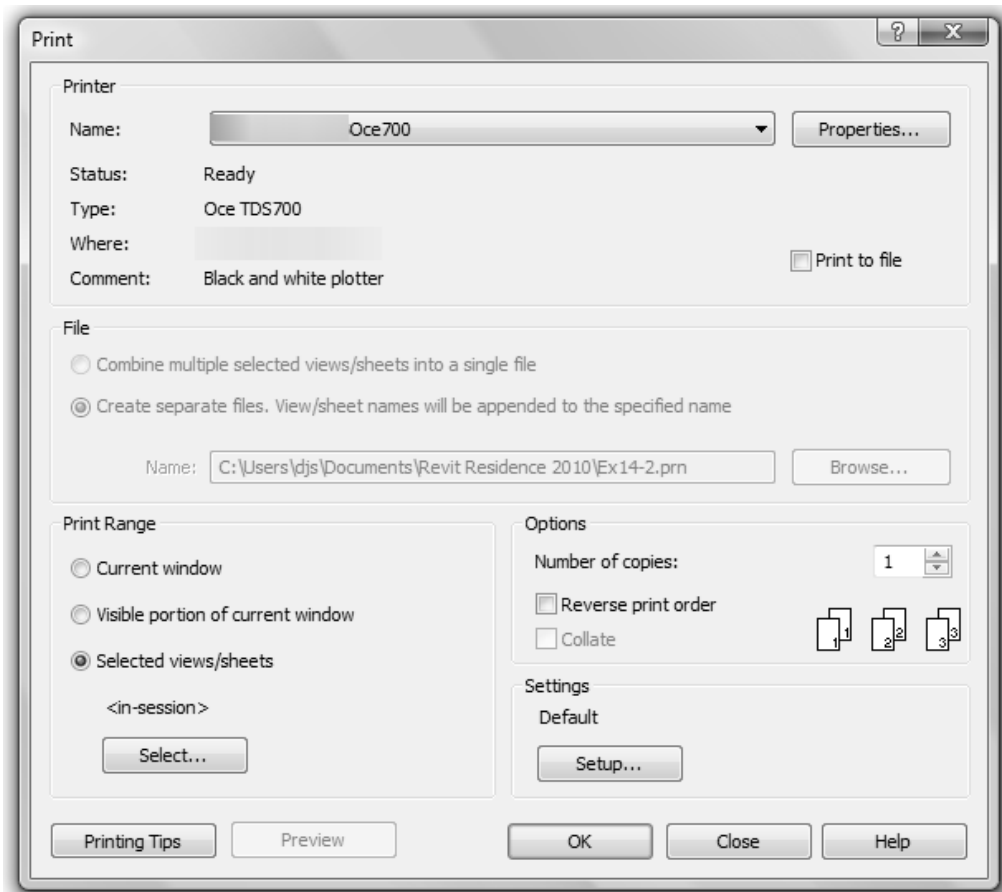


Figure 14-3.1 Print dialog box

You should now see a listing of all *Views* and *Sheets* (Figure 14-3.2).

Notice at the bottom you can show both Sheets and Views, or each separately. Because you are printing a set of drawing you will want to see only the sheets.

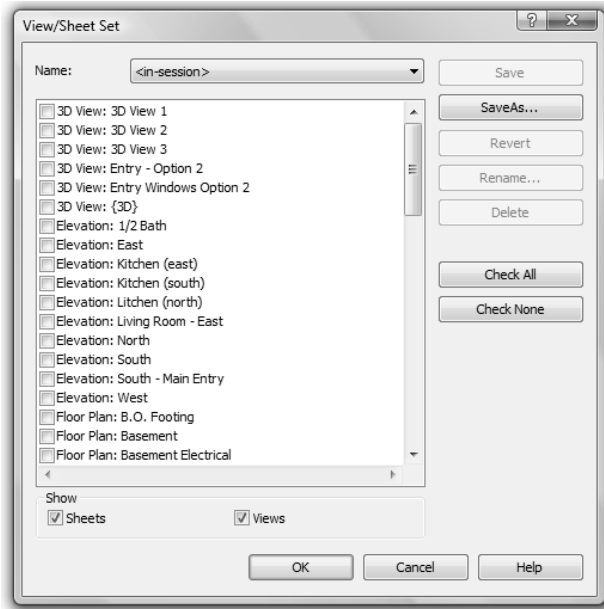


Figure 14-3.2 Set tool for printing

5. **Uncheck** the **Views** option.

The list is now limited to just *Sheets* that have been set up in your project.

6. Select all the Drawing Sheets except A100.
7. Click **OK** to close the **View/Sheet Set** dialog.
8. **IF YOU ACTUALLY WANT TO PRINT A FULL SET OF DRAWINGS**, you can do so now by clicking **OK**. Otherwise click **Cancel**.

FYI:

Once you have selected the sheets to be plotted and click OK, you are prompted to save the list. This will save the list of selected drawing to a name you choose. Then, the next time you need to print those sheets, you can select the name from the drop-down list at the top (Figure 14-3.2).

On very large projects (e.g., 20 floor plan sheets) you could have a Plans list saved, a Laboratory Interior Elevations list saved, etc.

9. You do not need to save the file at this time.

[End of exercise 14-3]

You should now have a basic understanding of the Revit Architecture software. **Gook luck with your future Revit projects!** Be sure to visit www.augi.com to share knowledge with other Revit users.

Self-Exam:

The following questions can be used as a way to check your knowledge of this lesson. The answers can be found at the bottom of the page.

1. You have to manually fill in the reference bubbles after setting up the sheets. (T/F)
2. You cannot control the visibility of objects per viewport. (T/F)
3. It is possible to see a listing of only the views that have not been placed on a sheet via the Project Browser. (T/F)
4. You only have to enter your name on one titleblock, not all. (T/F)
5. Use the _____ tool to create another drawing sheet.

Review Questions:

The following questions may be assigned by your instructor as a way to assess your knowledge of this section. Your instructor has the answers to the review questions.

1. You need to use a special command to edit text in the titleblock. (T/F)
2. The template you started with has two titleblocks to choose from. (T/F)
3. You only have to enter the project name on one sheet, not all. (T/F)
4. The scale of a drawing placed on a sheet is determined by the scale set in that view's properties. (T/F)
5. You can save a list of drawing sheets to be plotted. (T/F)
6. Use the _____ tool to edit the model from a sheet view.
7. The reference bubbles will not automatically update if a drawing is moved to another sheet. (T/F)
8. On new sheets, the sheet number on the titleblock will increase by one from the previous sheet number. (T/F)
9. DWF files can consist of an entire set of drawings which a client/owner can view with a free download (similar to Adobe PDF files). (T/F)
10. It is not possible to remove sheets from the Drawing List without deleting that Sheet from the project. (T/F)

Self-Exam Answers:

1 – F, 2 – F, 3 – T, 4 – F, 5 – Sheet