# Autodesk®
# Design Review 2009
## Architecture, Engineering, and Construction

## Getting Started Guide

## Contents

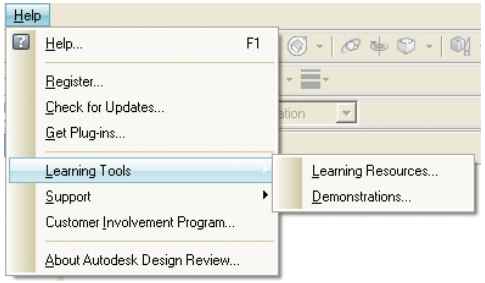



Figure 1

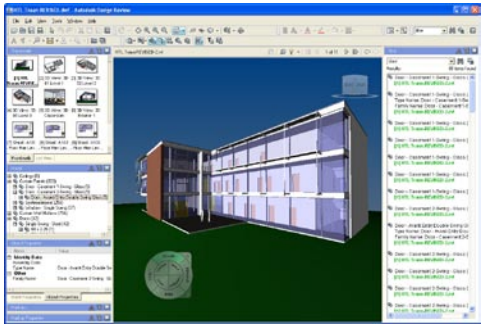


Figure 2

*Robust navigation and search tools provide the ability to fully investigate models and quickly find detailed design data and object properties.*

## Getting Started with Autodesk Design Review

Optimize your integrated design workflows with Autodesk® Design Review—the free,* digital solution to review, mark up, measure, and track changes to building information models and 2D designs. Adopting Design Review enables non–CAD users to easily access designs and reinforces the high-quality data use that the BIM process delivers.

For CAD Managers: Autodesk Design Review powers effective design review, markup, and collaboration across project teams, including non–CAD users in the digital workflow.

For Designers: Autodesk Design Review is integrated into all Autodesk design applications, including AutoCAD® Architecture, AutoCAD® MEP, Revit® Architecture, Revit® MEP, and AutoCAD® Civil 3D® software. Design Review enables you to effectively communicate your design and import design markups from reviewers back into the original design.

**Installation Instructions**
To install the software, visit **www.autodesk.com/designreview**, and select Download Now.

**Training and Support**
Within Autodesk Design Review, choose Help from the drop-down menu, and select Learning Tools (Figure 1) or Support to access a rich library of information about the product.

The tutorials can also be seen by visiting **www.autodesk.com/designreview-tutorial.**

## Using Autodesk Design Review

**The Autodesk Design Review Workflow: Send, Review, Mark Up, Import, Revise**
The instructions below represent the typical design collaboration workflow between a designer using an Autodesk design application and a reviewer using Autodesk Design Review software. (Figure 2)

### Step 1: Open and Review

You can review the contents of a sheet set (2D) or model (3D) within a DWF™ file or DWFx file (note: this combination will be referred to as *DWF(x) file* within this document).

**Open:**

1. Double-click on the Autodesk Design Review application icon on your desktop, or navigate to Autodesk Design Review 2009 from your Start menu.


2. Open the DWF(x) file you want to work with by using the file open icon or File>Open command.

3. Navigate to the DWF(x) file you wish to open.

4. You may also double-click on any DWF(x) file in the Internet Explorer® window to launch Autodesk Design Review.

**Review:**

**SteeringWheels**
The SteeringWheels™ feature makes it easy to navigate even complex 3D models during deep model exploration. Autodesk Design Review contains three types of wheels: the Full Navigation wheel, the Tour Building wheel, and the View Object wheel. In this case we will only cover the Full Navigation wheel, an ideal tool for performing real-time virtual building walk-throughs.

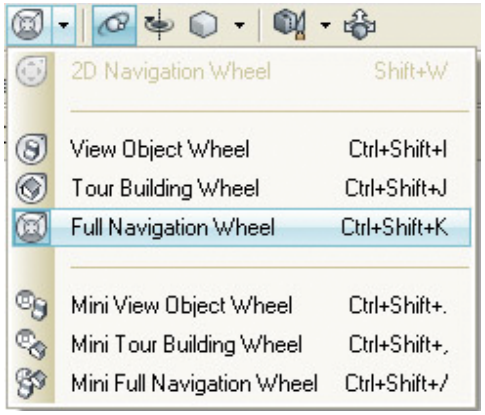



Figure 3


Figure 4

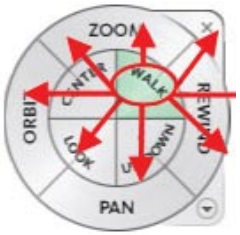



Figure 5

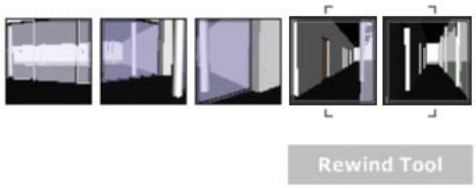



Figure 6

**Full Navigation Wheel**
Use this wheel to examine 3D objects or conduct a virtual walk-through of architectural models. To access the Full Navigation wheel and perform a virtual walk-though of your 3D model:

1. Click the pull-down arrow next to the SteeringWheels button on the main toolbar and select Full Navigation Wheel from the menu. (Figure 3)

2. The wheel will appear overlaid on your model and will follow your cursor. You can use any of the tools on the wheel by clicking and holding on the tool wedge, then dragging in a direction. (Figure 4)

**Full Navigation Wheel Tool Wedges**
Each navigation wheel has tool wedges to help you move around the 3D model. Below is a list of all the available tools on the full navigation wheel.

| Wedge | Description |
|---|---|
| Walk | Move the camera within the model, simulating walking. |
| Orbit | Orbit the view within the display window. |
| Zoom | Dynamically zoom the view. |
| Look | Turn the camera to look in any direction from current location. |
| Rewind | Return to a previous view by scrolling through previous views. |
| Pan | Move the view parallel to the screen. |
| Center | Mark the center of the model for orbiting. |
| Up/Down | Raise and lower your viewpoint from the ground. |

**Change the view's movement speed** (Figure 5)

- You can change the speed at which you move through a model when using the Walk tool.

- Any movement rate changes you make while using the Walk tool will be in effect when you use the Look tool.

**Use the Look tool to look around the view without changing the camera location**

- Click and hold the Look wedge. The mouse pointer changes to the Look tool.

- Drag the Look tool in any direction to point the camera in that direction.

**Use the Rewind tool to return to a previous view** (Figure 6)

- Click and hold the Rewind wedge. The mouse pointer changes to a horizontal series of thumbnails.

- A new thumbnail view is created each time you release the mouse button when using the SteeringWheels feature.

- Move the Rewind tool over the thumbnails. As you do so, each of the views is displayed on the canvas.


Figure 7


Figure 8

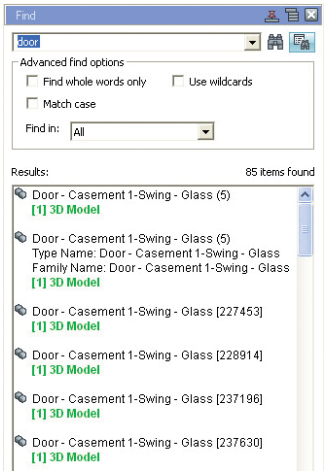



Figure 9

## ViewCube

The ViewCube™ feature, when enabled, is always displayed in the upper-right corner of the canvas. As you manipulate the 3D object displayed on the canvas, the ViewCube displays the current orientation of the object. Regardless of the tool you are currently using, you can click the ViewCube. (Figure 7)

### To change views with the ViewCube

When you move the mouse pointer over the ViewCube, regions of the cube are highlighted. The highlighted areas of the cube correspond to standard 3D views as well as edge views such as Top-Front, or Back-Left.

- Click the cube to immediately orbit to the selected view.

### To reset the view to its original state

- Click the Home button above the ViewCube.

### To view adjacent faces

When viewing a face view, the four small arrows surrounding the ViewCube can be used to immediately rotate the object to an adjacent face view. For example, when viewing the Front face, click the arrow to the left of the cube to see the Left face view. (Figure 8)

- Click an Adjacent Face Arrow to immediately pan to that face view.

### To roll a face view

The Roll Arrows near the top-right corner of the cube roll the current face view 90 degrees, counterclockwise or clockwise, each time one is clicked.

- Click a Roll Arrow to rotate the view 90 degrees.

### To orbit an object with the ViewCube

- Click and drag the ViewCube in any direction.

### To hide the ViewCube

- Choose View›Show›ViewCube.

## Find and Locate

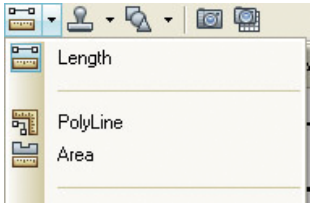
The Find tool makes it easy to quickly locate text in an open design file by searching for tabular data, markups, text on 2D sheets, objects, sheet names, and their properties. Found results are shown in a convenient list, enabling you to click a result to display the found text or associated object on the canvas or in a palette. (Figure 9)

### To locate any text or object

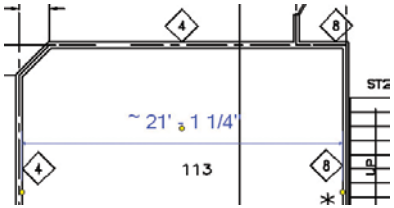
1. Click the find icon on the toolbar to open the Find tool.
2. Type a word or string into the Find text entry box, then click the Enter key. The Find dialog will open, displaying all results that match your entry. Results are displayed by sheet name, model, or parts list.
3. Select the hyperlink of the result you wish to see. This will highlight the object within the display window.
4. To edit your string, simply edit the search entry and click the Find button again.

## Rotate Sheet

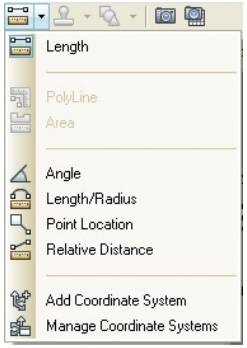
Select the Rotate Sheet button on the main menu to rotate any sheet (90 degrees clockwise or counterclockwise) to orient the sheet for better printing.




*2D Measure Tools* Figure 10




*2D Measure Example* Figure 11




*3D Measure Tools* Figure 12

*3D Measure Example* Figure 13

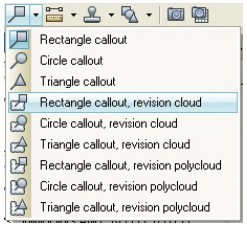



Figure 14

## Step 2: Measure

DWF(x) files are smart. They contain rich information about the drawing and models, including geometric data. You can measure distances on 2D sheets or 3D models. (Figures 10–13)

1. Click the Measure button on the main toolbar. Select the down arrow next to the measure button to show all measuring options (different tools are available for 2D sheets and 3D models). *For this example, we will measure the length between two points.*
2. Move the cursor over the canvas window, and hover over the starting location of your measurement (center point, line, point, arc). Click the starting point, once located.
3. Move the cursor over the second location, and select, once highlighted.
4. Select the location for your annotation.

## Step 3: Mark Up

The Autodesk Design Review Markup tools—including revision clouds, text, shapes, and stamps—enable reviewers to comment on 2D and 3D designs.

1. To create a revision cloud with comments, click on the Markup tool from the main toolbar. If the rectangular markup cloud is not displayed, click on the down arrow of the Markup tools and select it from the expanded list. (Figure 14)
2. Select one corner of the revision cloud.
3. Place the opposite corner for your revision cloud.
4. Select a location to place the text for the markup.
5. Type in your text.
6. Click outside the text box or press the Esc key to finish. Notice that a markup has been added within the markup panel.
7. Edit the status of the markup in the markup properties panel.
8. (Optional) Notes may be added to the markup status.

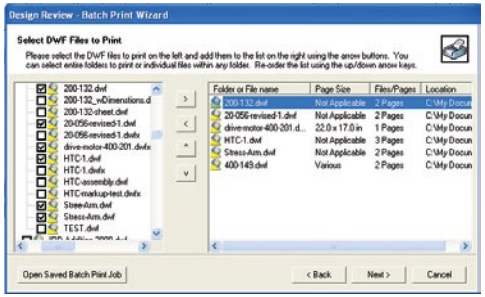



Figure 15

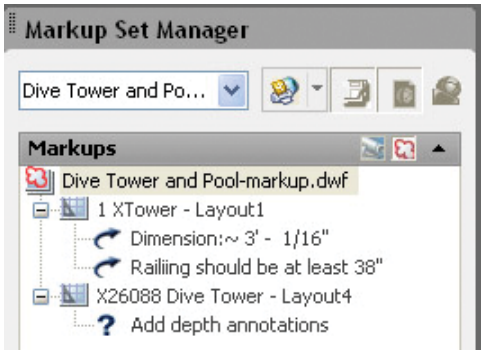



Figure 16

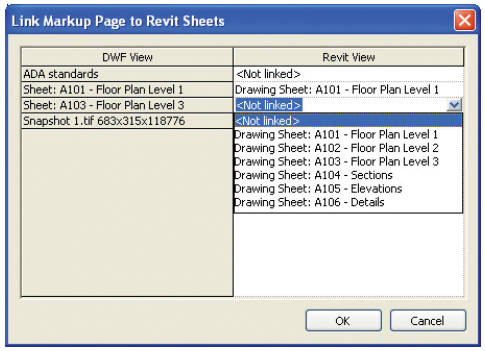



Figure 17

## Step 4: Print

Layout information for all sheets will be saved in the DWF(x) file when published, enabling you to quickly print sheets within Autodesk Design Review. Additionally, the integrated Batch Print wizard makes printing multiple sheets from multiple files a simple task.

### Single File Printing

1. To print any sheet, simply select the print icon, or select File>Print from the toolbar.
2. The Print dialog will open, giving options for printing your sheet(s).
3. Select OK to send your sheets to the printer.

### Batch File Printing

1. Select File>Batch Print Wizard. (Figure 15)
2. The Batch Print Wizard will walk you through printing of multiple sheets from several DWF(x) files.

## Step 5: Import Drawing Sheets into Design Package

Once you have created markups, you can save the DWF(x) file and send it back to the designer or on to other reviewers until all comments and changes are noted and communicated throughout the review process.

If the individuals to whom you send the marked-up DWF(x) file have Autodesk® design software, they can open the file directly using the Markup Set Manager feature in their design application. They can add notes and change the status of the sheet just as you can.

The Markup Set Manager feature has the same markup status view as that in Autodesk Design Review, enabling the designer to systematically walk through and make revisions easily. The designer can also toggle on/off the markup layer to see what changes are requested and make the changes in the design.

### For AutoCAD (including AutoCAD Architecture) users

1. Select File and then select Load Markup Set. The Load Markup DWF dialog will open.
2. Select your DWF(x) file to load.
3. AutoCAD will display all sheets (within the DWF file) that contain markups in the Markup Set Manager.
4. Select the + to the left of the sheet name to display all markups within each sheet.
5. Double-click on any markup to display the markup overlay in the canvas window, as it was displayed within Design Review.
6. Within AutoCAD you have the ability to edit the status and make notes to the markup.
7. Republish the sheets with revised status when complete. (Figure 16)

### For Revit Architecture users

1. Select File, then select Import/Link, then Link DWF Markup Set.
2. Load the DWF(x) file.
3. In Link Markup Page to Revit Sheets, match the DWF sheet to the Revit sheets.
4. Repeat step 3 for all marked-up sheets. This will display all markups created in Design Review.
5. Within Revit you have the ability to edit the status and make notes to the markup. (Figure 17)

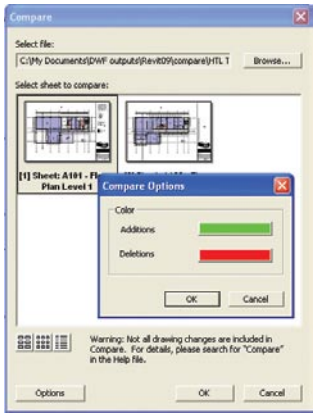



Figure 18

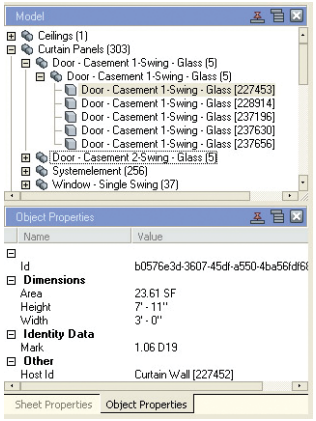



Figure 19

## Step 6: Drawing Version Compare

With Autodesk Design Review, reviewers can compare 2D DWF files and vector content to clarify what has changed between versions. (Figure 18)

1. From the main menu, select Tools and then select Compare. The Compare dialog box opens.
2. Select the Browse button and locate the DWF(x) file you would like to compare, and click Open. A full list of the sheets in that file will appear in the Compare dialog.
3. Select the sheet that coincides with your current open sheet.
4. Click on Options to choose the color used to define additions or deletions to the drawing between the versions.
5. Select OK. A visual comparison will be displayed in the display window, along with a list of the additions and deletions between the versions in the Markup panel.

***Warning:*** *Occasionally, comparing DWF(x) files may produce some unexpected results. Autodesk Design Review will identify all differences between two DWF(x) files, whether the difference is made intentionally by a reviewer or unintentionally by an anomaly in a publishing program. It will be unable to compare both vector (shapes) and raster (pixels) content—a common publishing error that occurs when a 2D DWF(x) file is published from a 3D model space.*

## Step 7: Building Information Modeling

Autodesk Design Review enables export of BIM data from architectural design applications so non–CAD users can review rich BIM data within the file. (Figure 19)

### To view BIM data within a DWF file

1. Either select an object on a 2D sheet or 3D model or select an object within the Model panel.
2. Be sure the Object Properties panel is open to view all BIM data of the particular part.

## More Information

To find more information on Autodesk Design Review, review the links below:

**Publishing**
For specific instructions on publishing DWF(x) files from Autodesk products, visit **www.autodesk.com/dwf-publishing.**

**DWF(x)**
For details on the differences between DWF and DWFx, and more information on both, visit **www.autodesk.com/dwfx.**

**Autodesk DWF Writer**
For specific instructions about Autodesk® DWF™ Writer software, and how to download, visit **www.autodesk.com/dwfwriter.**

**Toolkit**
Interested in developing an API around Autodesk Design Review? To find out more, visit **www.autodesk.com/dwftoolkit.**

**Community**
For more information, including sample files, tips and tricks, and real-world user stories, visit the DWF Community at **www.autodesk.com/dwf.**

DWF™



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