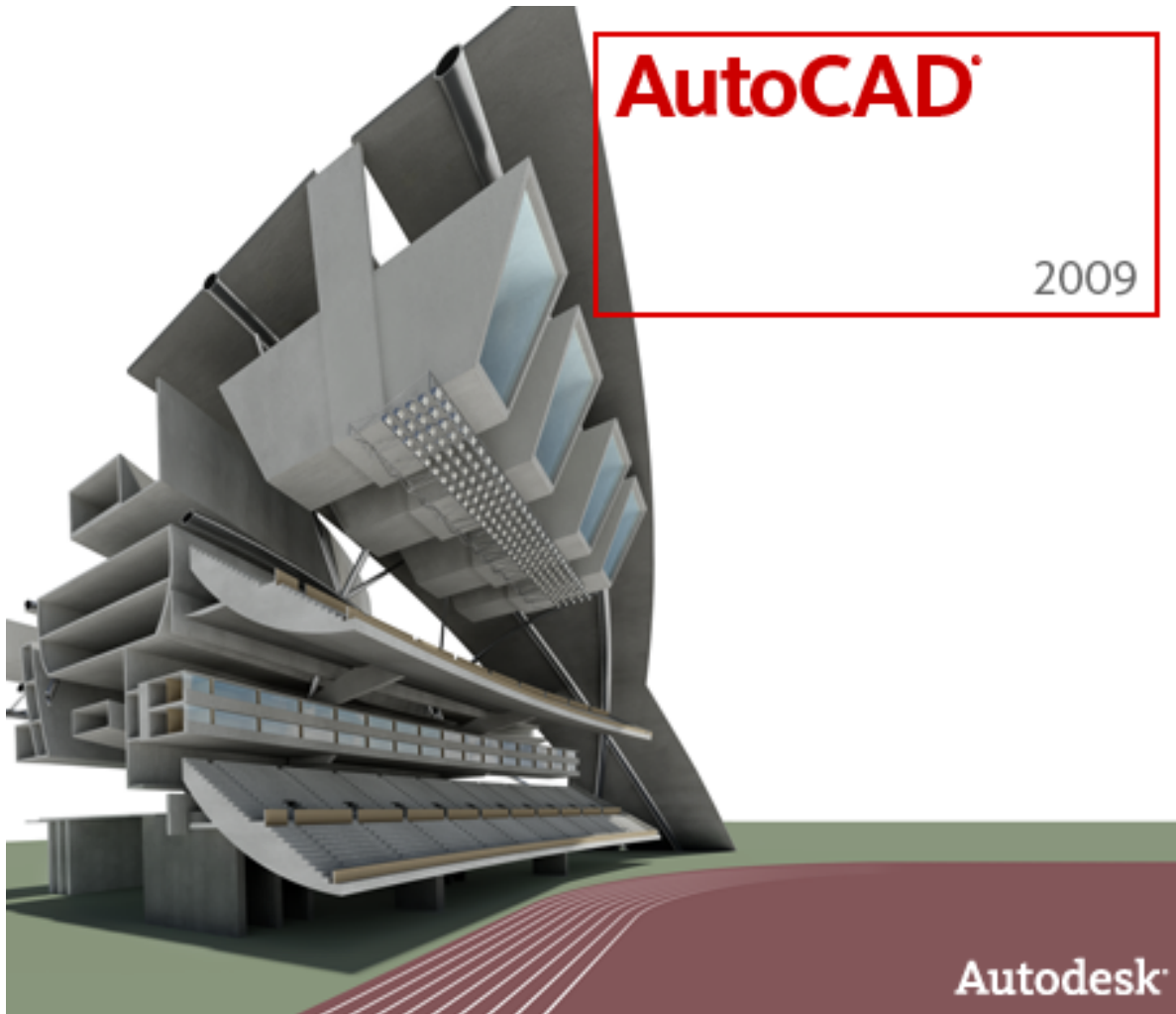


AutoCAD 2009

# Preview Guide



## Contents

<b>Introduction</b> .....	<b>3</b>
<b>User Interface</b> .....	<b>3</b>
Application Window .....	3
Menu Browser .....	4
Quick Access Toolbar.....	8
InfoCenter.....	8
Ribbon .....	8
Status Bar.....	10
Quick Properties .....	11
Quick View Layouts .....	14
Quick View Drawings.....	16
Tooltips .....	18
Hidden Message Settings.....	21
<b>Design and Drafting</b> .....	<b>22</b>
Action Recorder .....	22
Layer Management.....	23
Working with DGN files.....	24
DWFx Support .....	26
Xref Clipping .....	27
Interactive Array Preview.....	28
Find and Replace.....	28
<b>Visualization</b> .....	<b>28</b>
ShowMotion .....	28
New View/Shot Properties .....	30
Lighting .....	31
Geographic Location.....	31
3D Navigation Tools .....	32

# Introduction

With AutoCAD® software, Autodesk has just one goal in mind: increasing your productivity. AutoCAD 2009 boosts efficiency with customizable and extensible user interface enhancements that increase overall drafting productivity by decreasing the number of steps needed to reach a command. Newly designed, innovative features simplify working with layers and help make new users productive as quickly as possible. Easy-to-use navigation tools make finding your way around 3D models a snap. Move to new highs of productivity with AutoCAD software.

## User Interface

### Application Window

The AutoCAD 2009 Application window has a new look and feel. It provides easy access to the most commonly used tools while maximizing the drawing area. The default application window includes the Menu Browser, Quick Access toolbar, InfoCenter, Ribbon, and Status bar. Many of these user interface enhancements become even more valuable with a dual monitor configuration.

The model space background has been changed to a default off-white color, enabling you to draw in model space with dark colors that you can see just as easily on the white paperspace layouts.

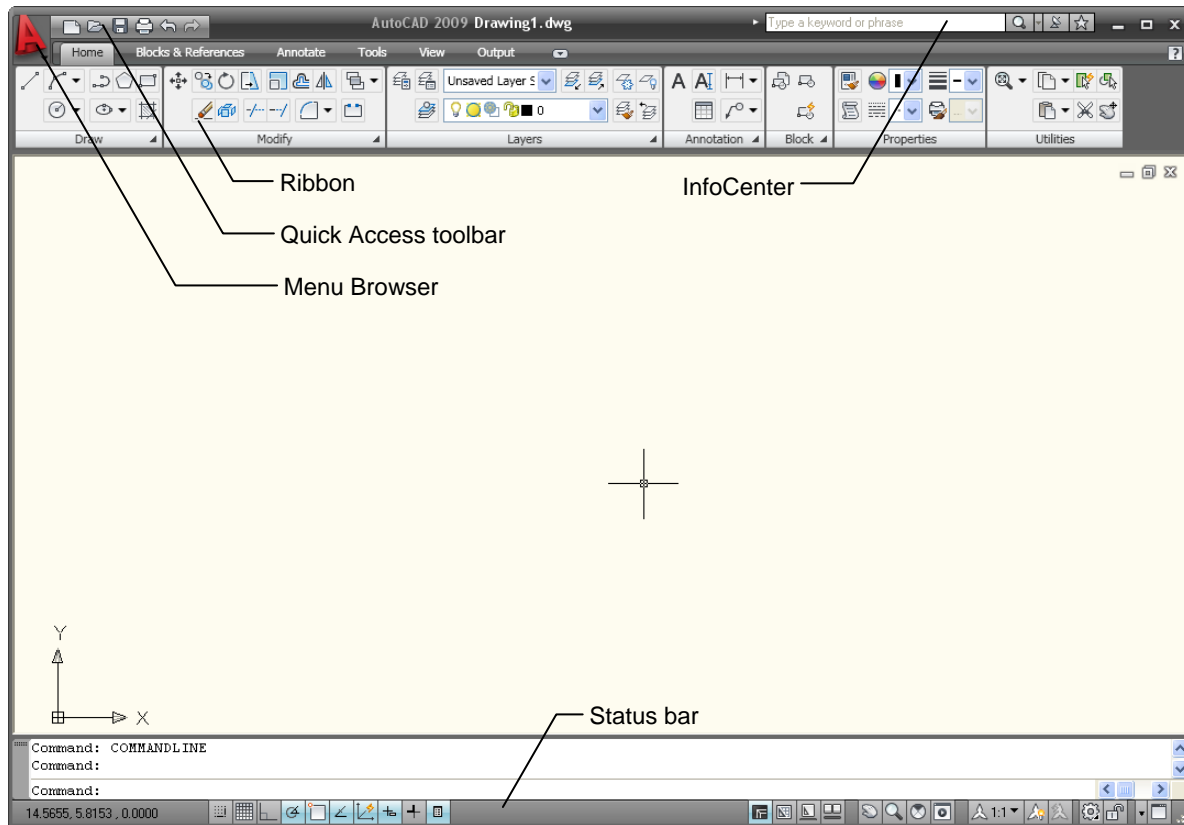


Figure 1. AutoCAD 2009 application window

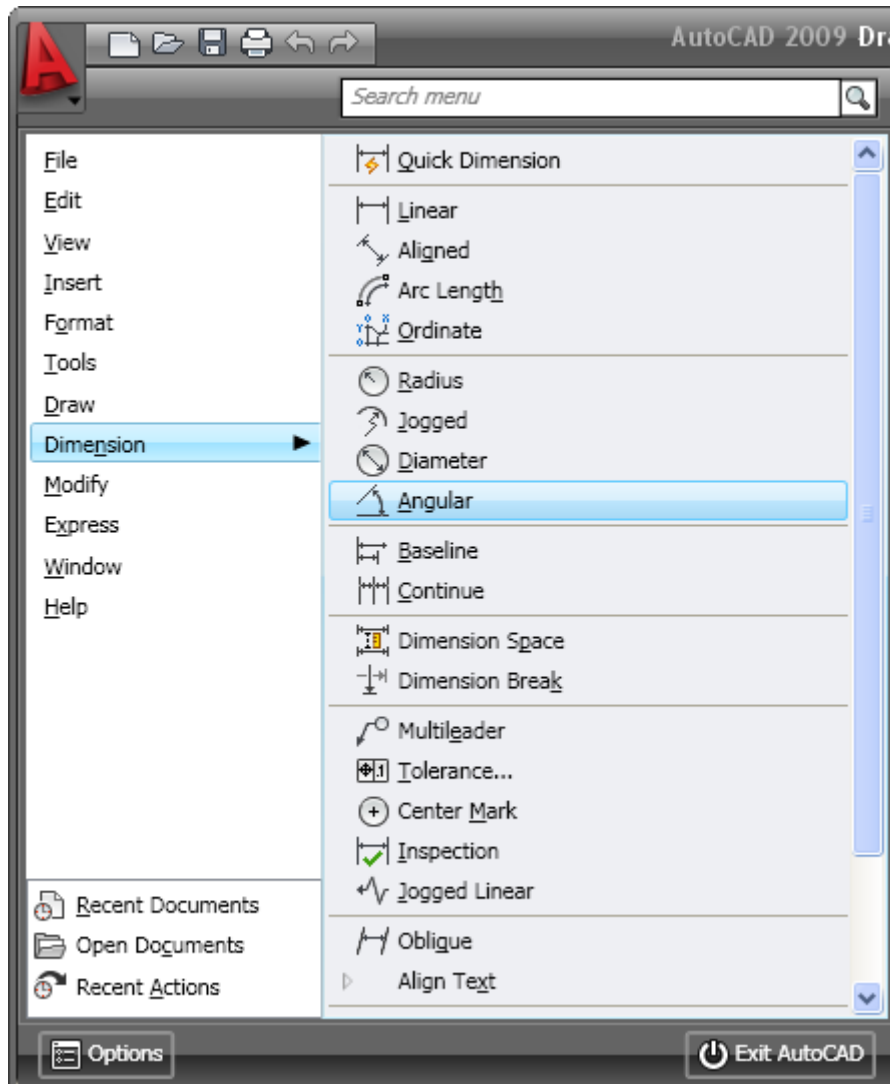
## Menu Browser

The new Menu Browser provides easy access to a variety of content, including commands and documents, from a single button in the upper-left corner of the AutoCAD display.



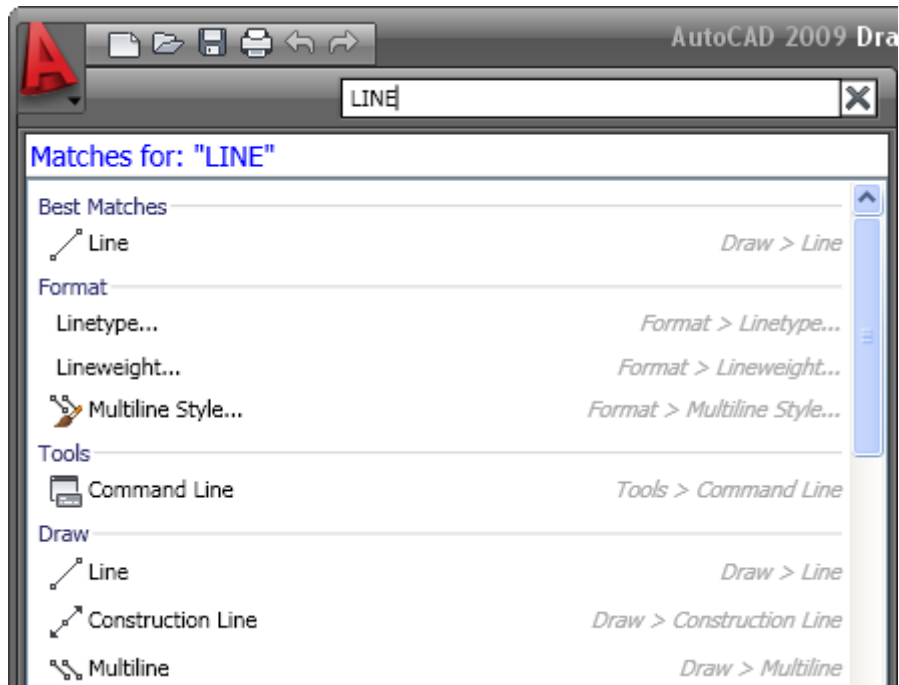
**Figure 2. Menu Browser button**

The Menu Browser displays a vertical list of the menus, emulating the menus that traditionally ran horizontally across the top of the AutoCAD window. Selecting a menu from the Menu Browser expands the menu list, enabling you to launch a command.



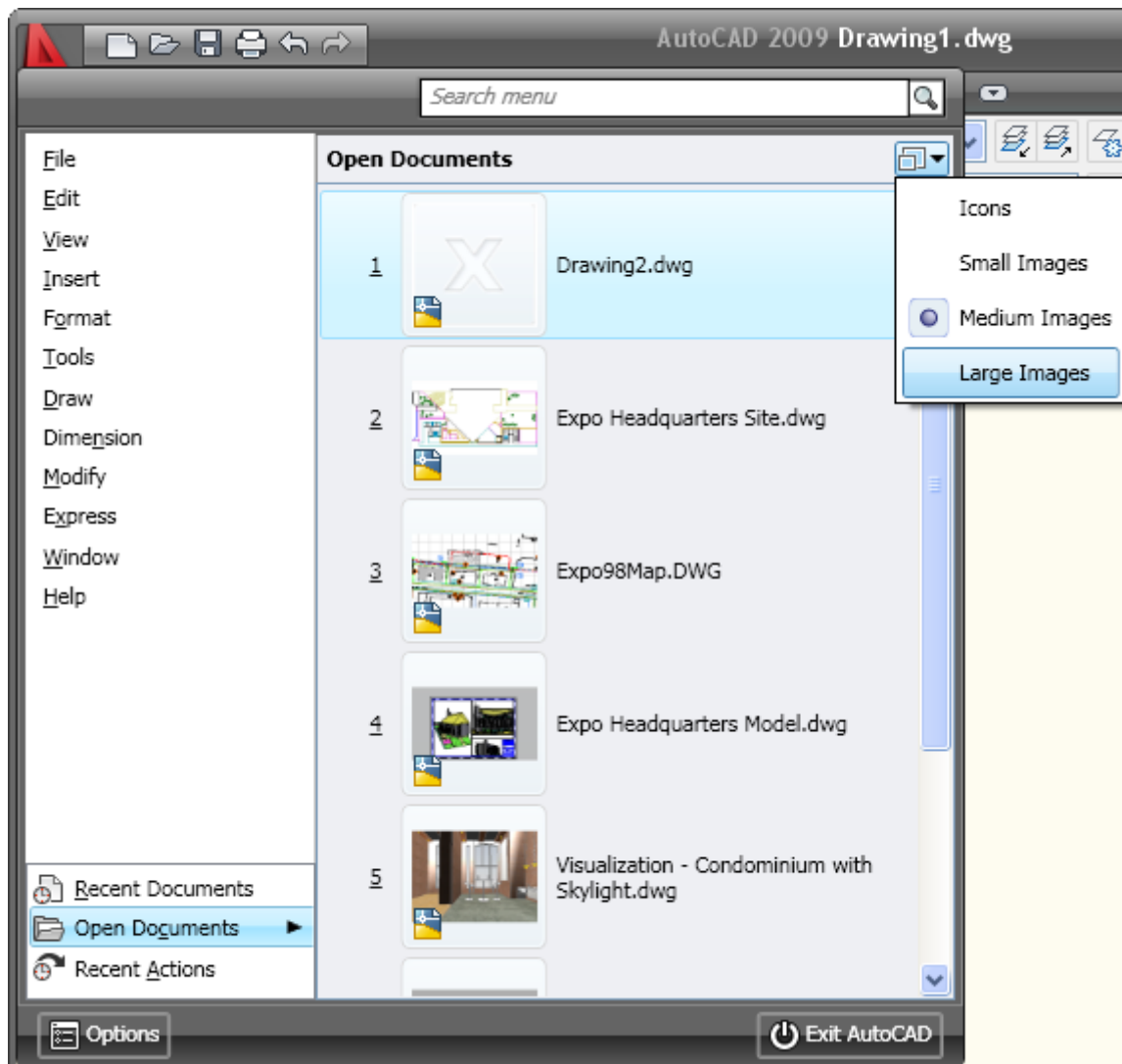
**Figure 3. Menu Browser**

A search tool at the top of the Menu Browser enables you to search the CUI file for key terms. For example, as you begin typing L-I-N-E in the search field, AutoCAD dynamically filters the search options to display all CUI entries that include the word *line* (Linetype, Command Line, Line, Multiline, and so forth). You can then double-click a listed item to launch the associated command.



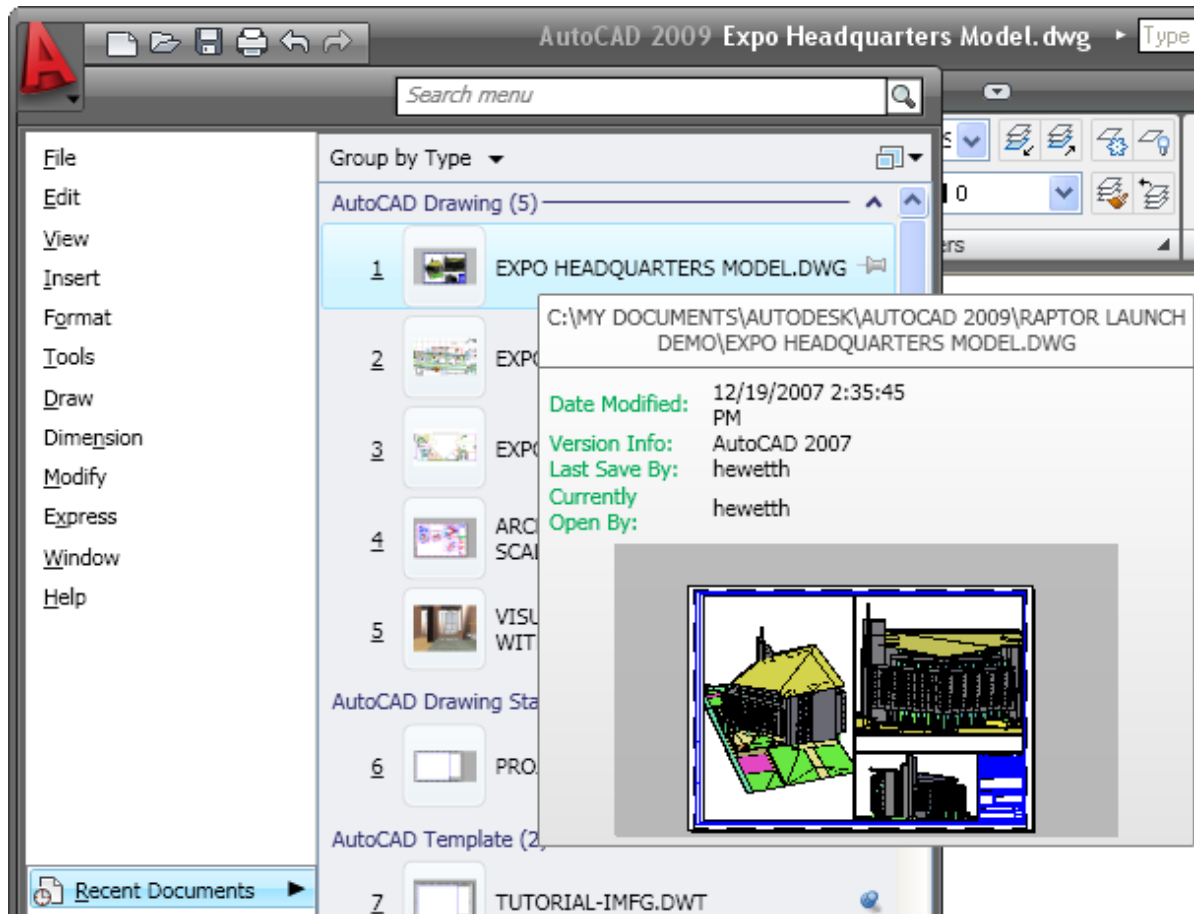
**Figure 4. Menu Browser search tool**

In addition to command access, the Menu Browser enables you to view and access recently used or open documents. You can display the document names with icons or with small, medium, or large preview images, making them easy to identify.



**Figure 5. Menu Browser document preview images**

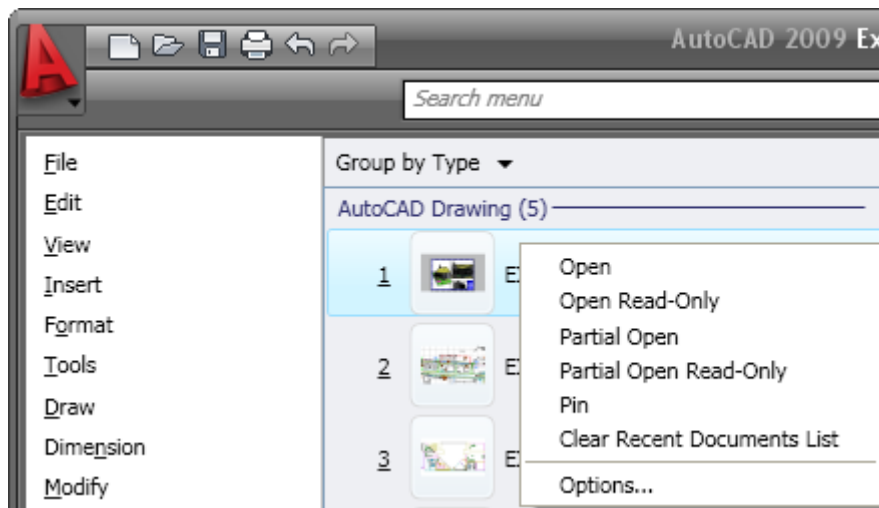
When viewing recent documents in the Menu Browser, you can display them in an ordered list or group them by date or file type. Hovering the cursor over a document name automatically displays a preview image and other document information.



**Figure 6. Recent documents preview**

In addition to recently used documents, the Menu Browser offers easy access to recent actions. You can view a list of the actions you have recently selected and then select one to repeat it.

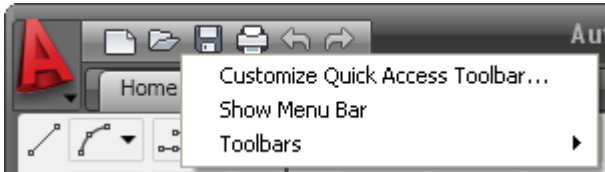
Right-click menus within the Menu Browser offer additional controls, including the ability to pin a recent document or action so that it remains on the list and the ability to clear the Recent Documents or Recent Actions lists.



**Figure 7. Right-click menu options**

## Quick Access Toolbar

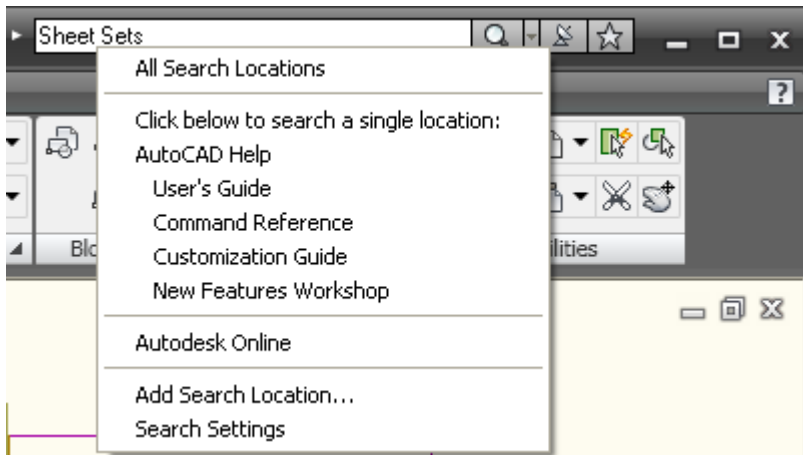
The Quick Access toolbar is displayed at the top of the AutoCAD window, next to the Menu Browser. It includes the most commonly used tools, such as New, Open, Save, Plot, Undo, and Redo. You can add and remove tools with the Customize User Interface dialog box, which is accessible from the right-click menu. You can also drag commands from the Command list onto the Quick Access toolbar. The Quick Access tools, which are saved on a per-workspace basis, can be reorganized or removed by expanding the Quick Access Toolbar node under each workspace. In addition to the option to customize the Quick Access toolbar, the right-click menu contains options that enable you to control the display of the menu bar and toolbars.



**Figure 8. Quick Access toolbar**

## InfoCenter

The InfoCenter has been enhanced in AutoCAD 2009 to provide more flexibility when searching for help. You can expand the search field or collapse it to save space on the title bar. And when searching the AutoCAD help system for a topic, you can specify which document to search, decreasing the amount of time you spend trying to locate a topic.

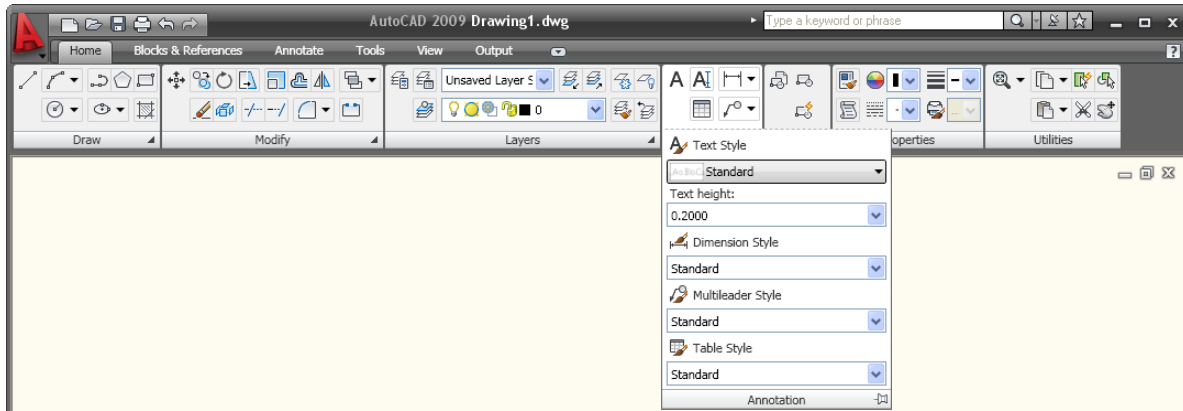


**Figure 9. InfoCenter**

## Ribbon

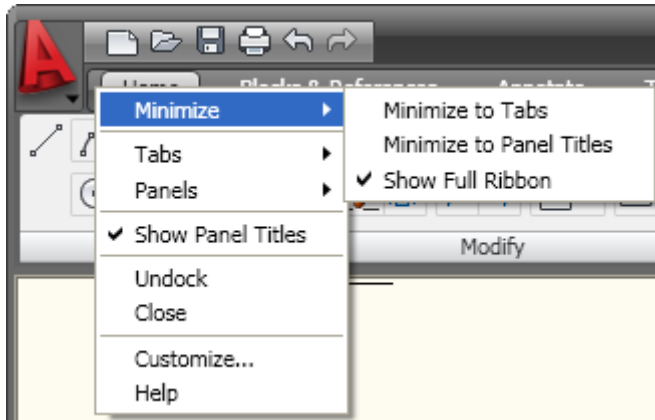
The Ribbon, displayed near the top of the AutoCAD window, provides easy access to AutoCAD tools through a collection of tabs and panels. Each tab contains multiple panels, and each panel contains multiple tools. Some panels can be expanded to access additional tools.



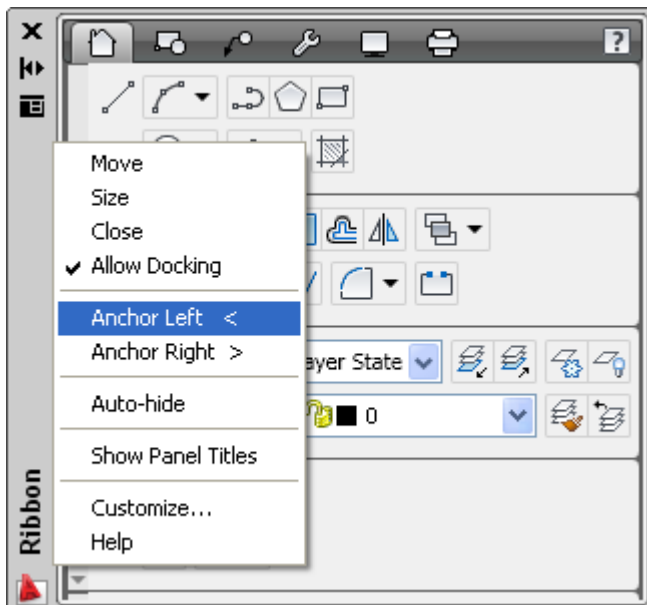


**Figure 10. Ribbon**

By default, the Ribbon is docked at the top of the AutoCAD window. However, a right-click menu enables you to control the display and behavior of the Ribbon. You can close the Ribbon and reopen it later using the Ribbon command. Reduce the amount of space the Ribbon requires by disabling the Show Panel Titles option or by minimizing the tabs or panel titles.

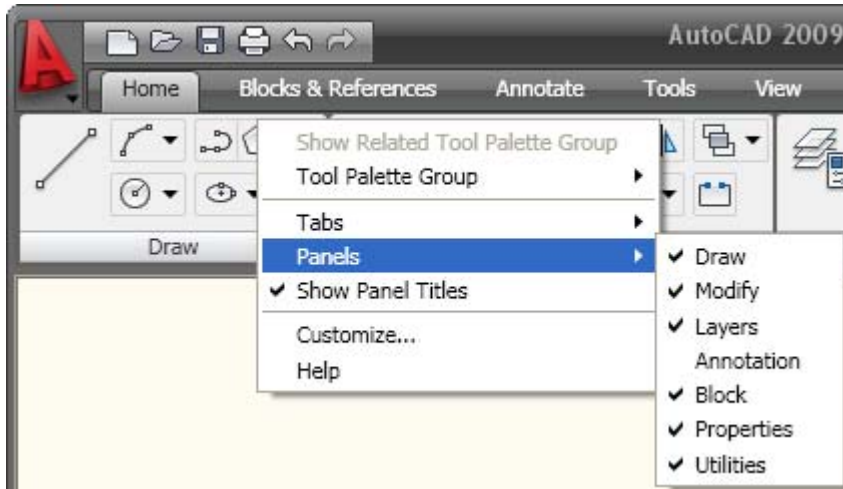


You can also emulate Dashboard behavior by undocking the Ribbon and anchoring it to the left or right.



**Figure 11. Ribbon title bar right-click menu**

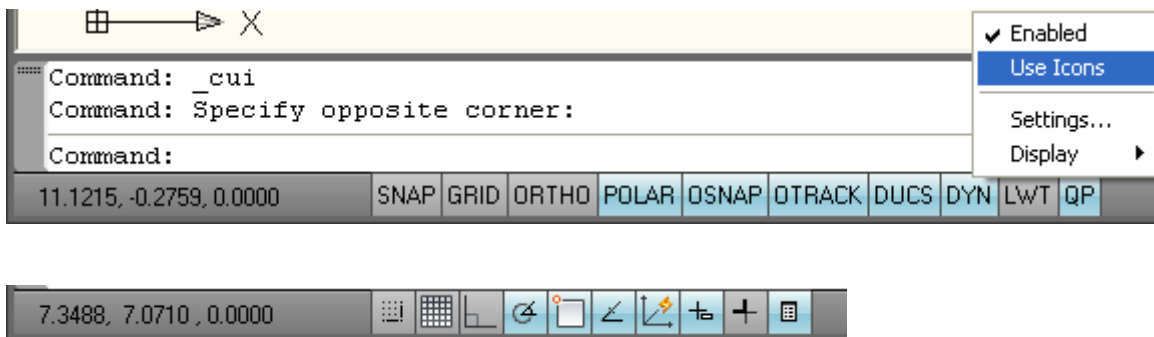
You can control the display of content within the Ribbon's tabs and panels; just right-click to display the context-sensitive menu and turn tabs or panels on and off. Easily reorganize ribbon tabs, or panels within the tabs, by dragging them to new locations. You can even drag panels off the ribbon to create separate, floating panels. And to customize the Ribbon still further, you can access the new Ribbon nodes in the Customize User Interface dialog box.



**Figure 12. Ribbon content right-click menu**

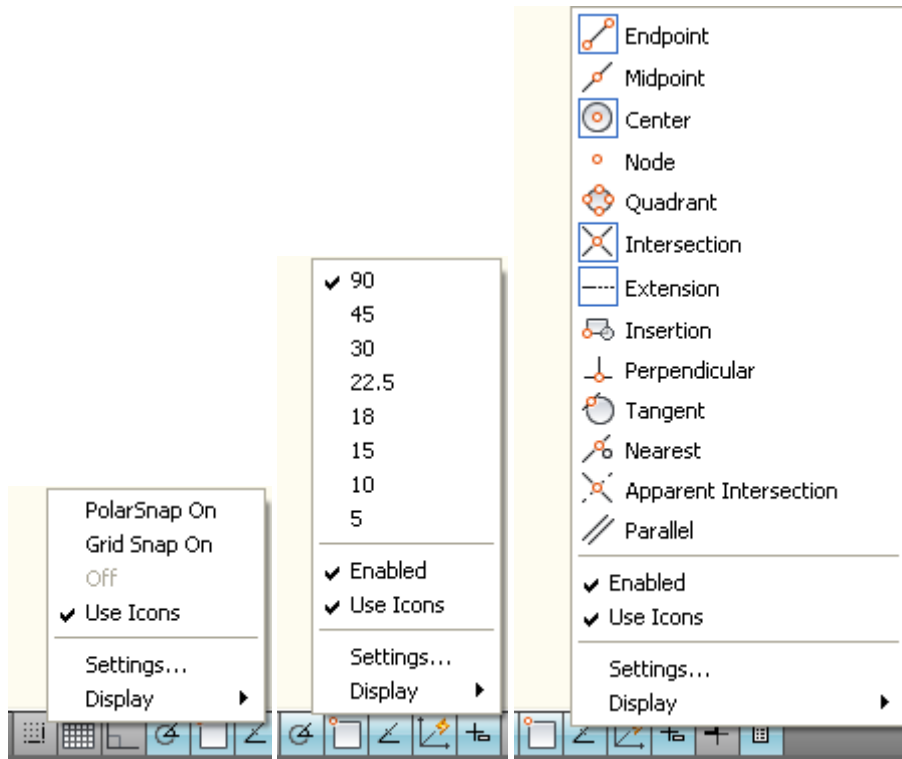
## Status Bar

The AutoCAD status bar has been updated with new tools and icons. The left side of the Status bar includes button toggles for familiar functions such as Osnap, Grid, and Dynamic Input. A right-click menu enables you to easily switch the Status bar display from icons to traditional text labels and back. The Quick Properties (QP) toggle is a new addition to the Status bar.



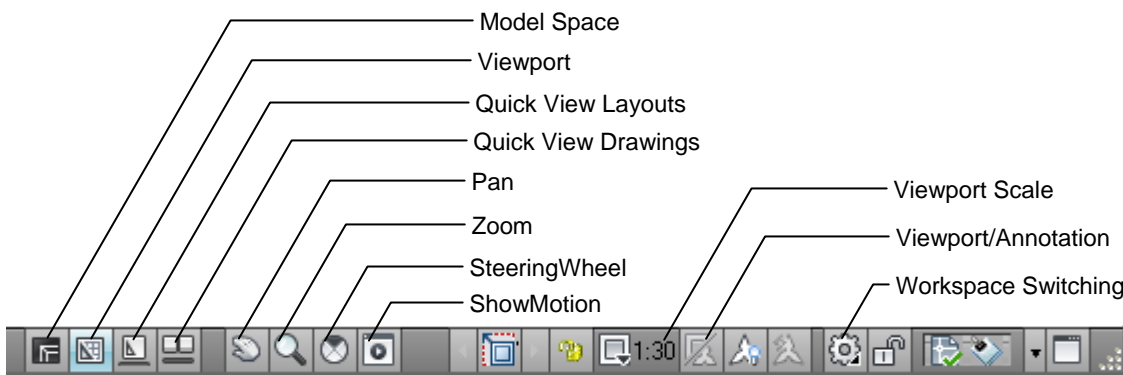
**Figure 13. Status bar toggles**

The right-click menus for some status bar toggles include additional controls that are relevant for that particular toggle. Easy access to these controls minimizes the need for you to access them in the Settings dialog box.



**Figure 14. Right-click menus for Snap, Polar, and Osnap**

The Model and Layout buttons have been moved to the right side of the Status bar, where several new tools have also been added. The Layout flyout has been replaced by the Quick View Layouts button, which is accompanied by the Quick View Drawings button. The Status bar provides easy access to navigation and viewing tools, including Pan and Zoom, as well as the new SteeringWheels™ and ShowMotion™ functionality. The Annotation Scale has been replaced with a Viewport/Annotation toggle that links the annotation scale to the viewport scale, helping to ensure that they stay in sync. A new Workspace Switching button replaces the Workspaces toolbar, providing the same functionality in considerably less space.

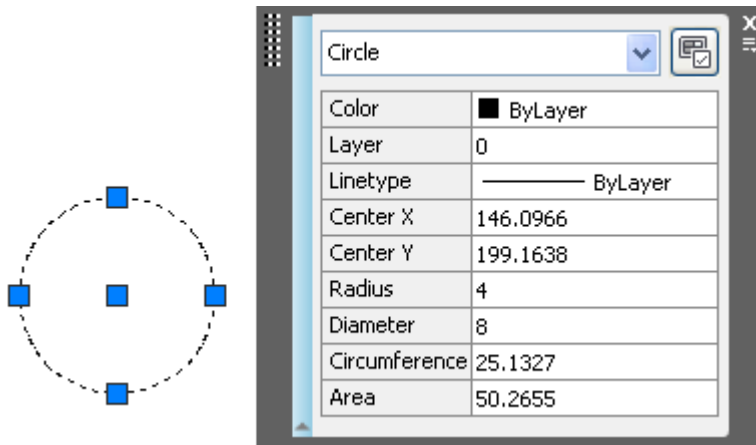


**Figure 15. Status bar tools**

## Quick Properties

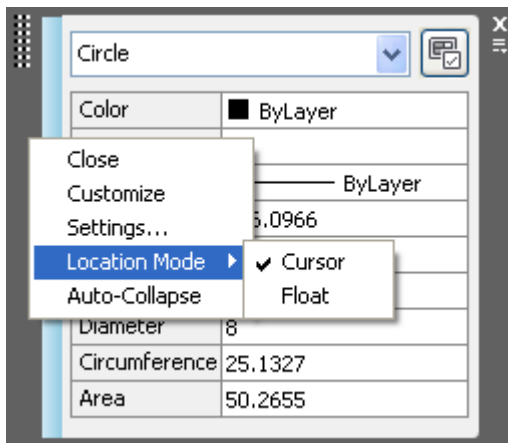
The Quick Properties panel enables you to view and modify object properties when you need them, without sacrificing screen real estate. You can turn on quick properties with the QP toggle on the Status bar. When

turned on, the Quick Properties window automatically displays an editable list of properties when you select an object. If the list of object properties exceeds the length of the Quick Properties window, passing your cursor over the Quick Properties window automatically expands the window to display all the properties.



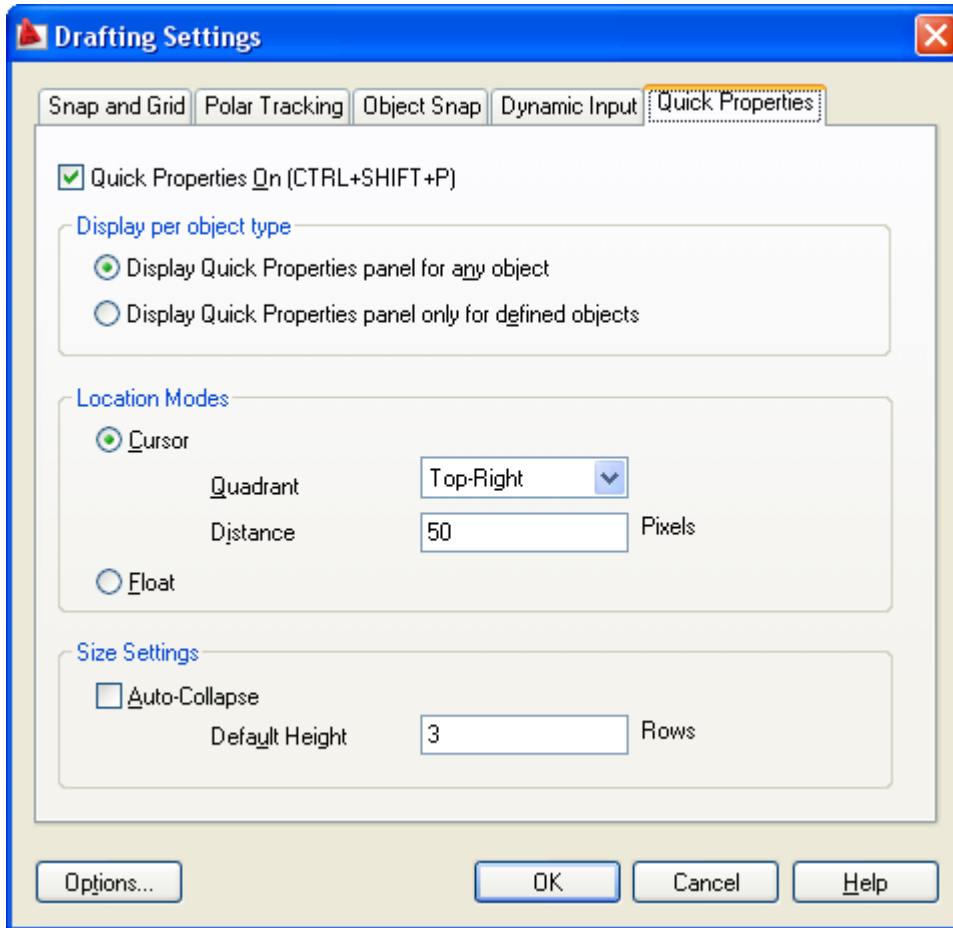
**Figure 16. Quick Properties window**

A right-click menu enables you to control the behavior and display of the Quick Properties window. If the Auto-Collapse option is disabled, the Quick Properties window maintains its full size. The Location Mode option allows you to specify where to display the Quick Properties window. Selecting Cursor displays it relative to the point you picked when selecting the object. The Float option displays it as a floating window in the last place you positioned it. The Docked option displays it as a panel in the Ribbon.



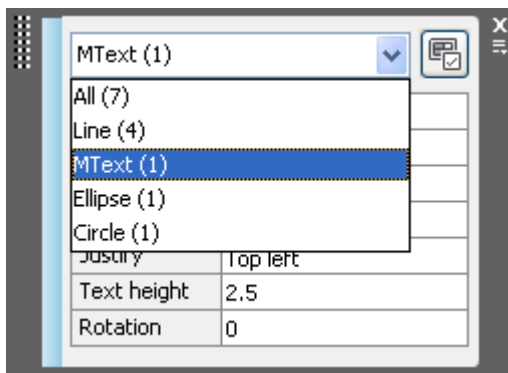
**Figure 17. Quick Properties location modes**

The Settings option provides additional controls for the Quick Properties window through a new Quick Properties tab in the Drafting Settings dialog box. On the Quick Properties tab, you can specify whether Quick Properties is enabled and whether the Quick Properties window displays when any object is selected or only when those with defined quick properties are selected. This option provides an alternate method for setting the location mode and enables you to specify direction and distance of the Quick Properties window relative to the cursor when Cursor mode is active. Finally, using the Quick Properties tab, you can specify the default number of rows that will be visible in a collapsed Quick Properties window.



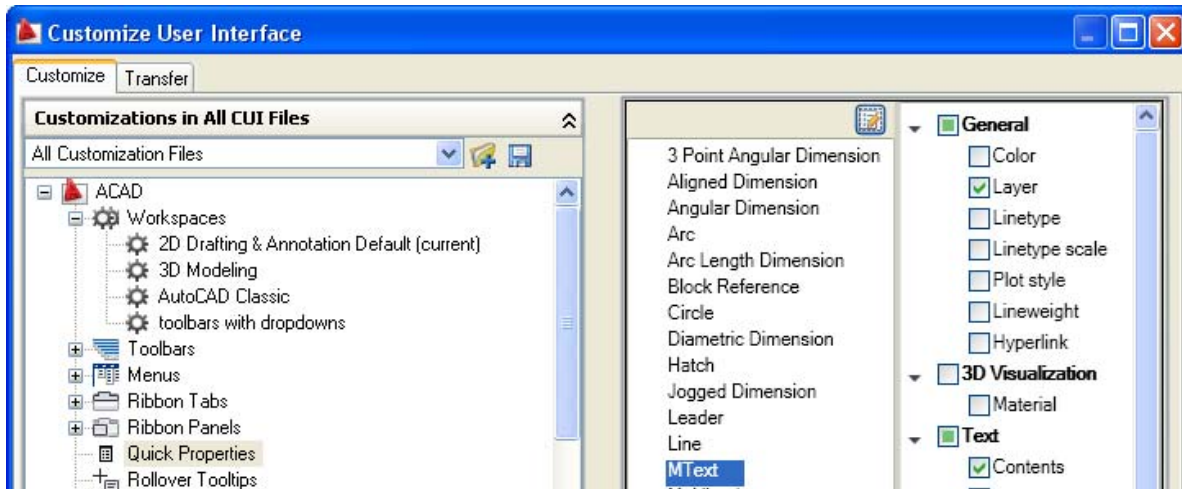
**Figure 18. Quick Properties tab of the Drafting Settings dialog box**

If multiple objects are selected, the Quick Properties window behaves similarly to the familiar Properties window, displaying only the properties that are common to all selected objects. A drop-down list enables you to select a specific type of object in order to display all quick properties for that particular object type.



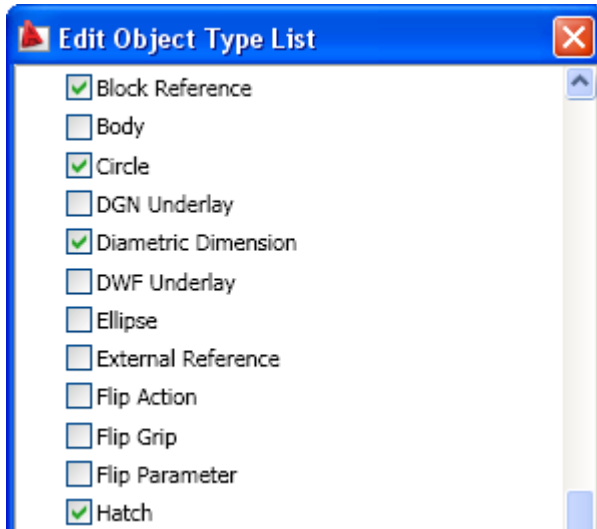
**Figure 19. Quick Properties window with multiple object types selected**

You can customize what properties are displayed for each object type in the Customize User Interface (CUI) dialog box, which is accessed using the Customize button in the upper-right corner of the Quick Properties window. Clicking the Customize button displays the CUI dialog box with the new Quick Properties node already selected. The right side of the dialog box displays two lists: the defined object types and the available object properties for a specified object type.



**Figure 20. Defining quick properties**

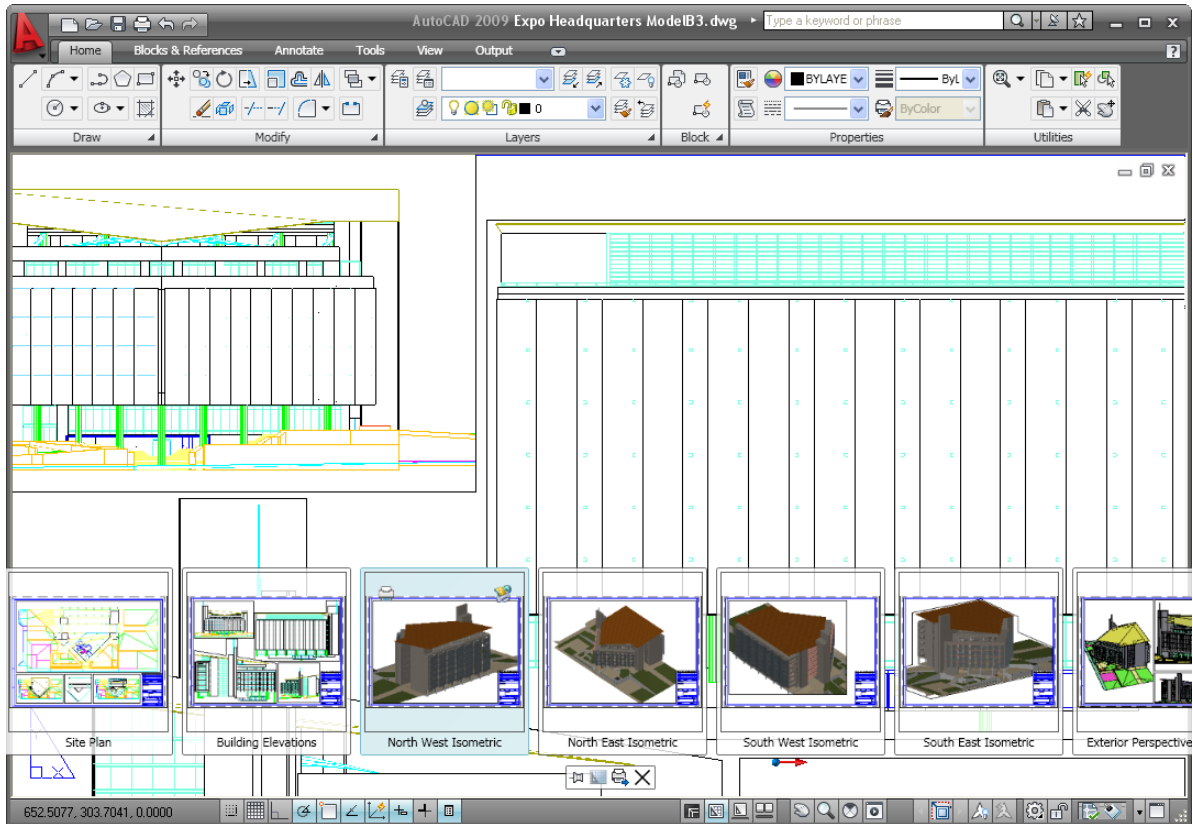
You can add or remove object types from the object type list using the Edit Object Type button at the top of the list.



**Figure 21. Edit Object Type list**

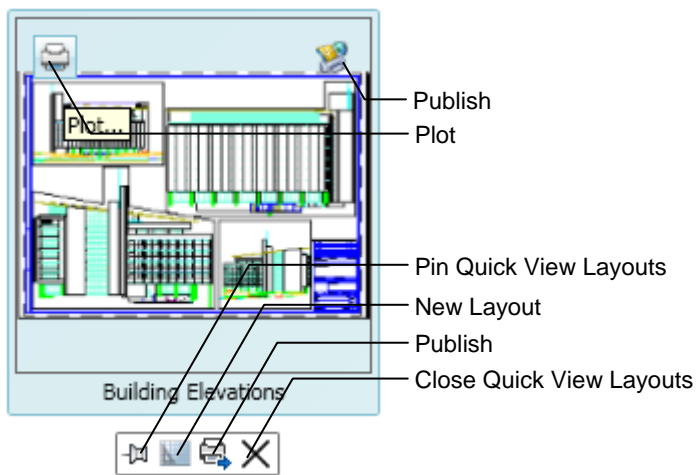
## Quick View Layouts

The Quick View Layouts button on the status bar displays a horizontal row of Quick View Layout images. This new functionality provides a faster and more visual alternative to using the traditional Model and Layout tabs to switch between layouts within the current drawing. You can identify and select layouts, not only by name but by appearance. Move the mouse past the edge of the image strip to view layouts that extend beyond the screen. You can increase or decrease the size of the layout preview images by holding down the Ctrl key while rolling the mouse wheel up or down.



**Figure 22. Quick View layouts**

Passing the cursor over a layout preview displays Plot and Publish buttons in the upper corners of the image. Additional tools are available in the Quick View control panel, which is automatically displayed below the Quick View images. Using these tools you can pin Quick View open so that it remains visible while you work in the drawing editor. Then use the Close tool to turn off Quick View when you no longer want it displayed. The New Layout button creates a new layout in the current drawing and displays the preview at the end of the row of images. You can easily publish all the layouts in the drawing using the Publish tool.



**Figure 23. Quick View Layouts control panel**

You can right-click a layout preview to display the familiar Layout menu options, including access to the Page Setup Manager. A new option in the right-click menu enables you to export layout geometry to model space in a new drawing.

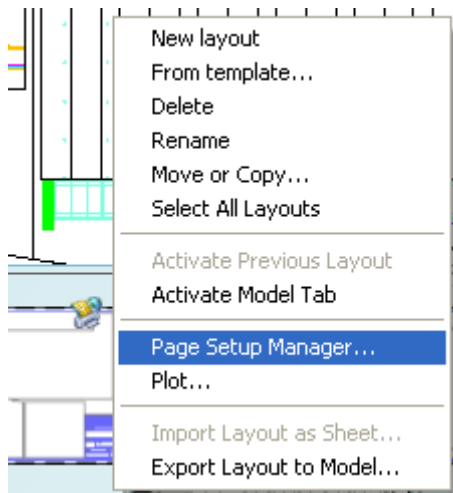
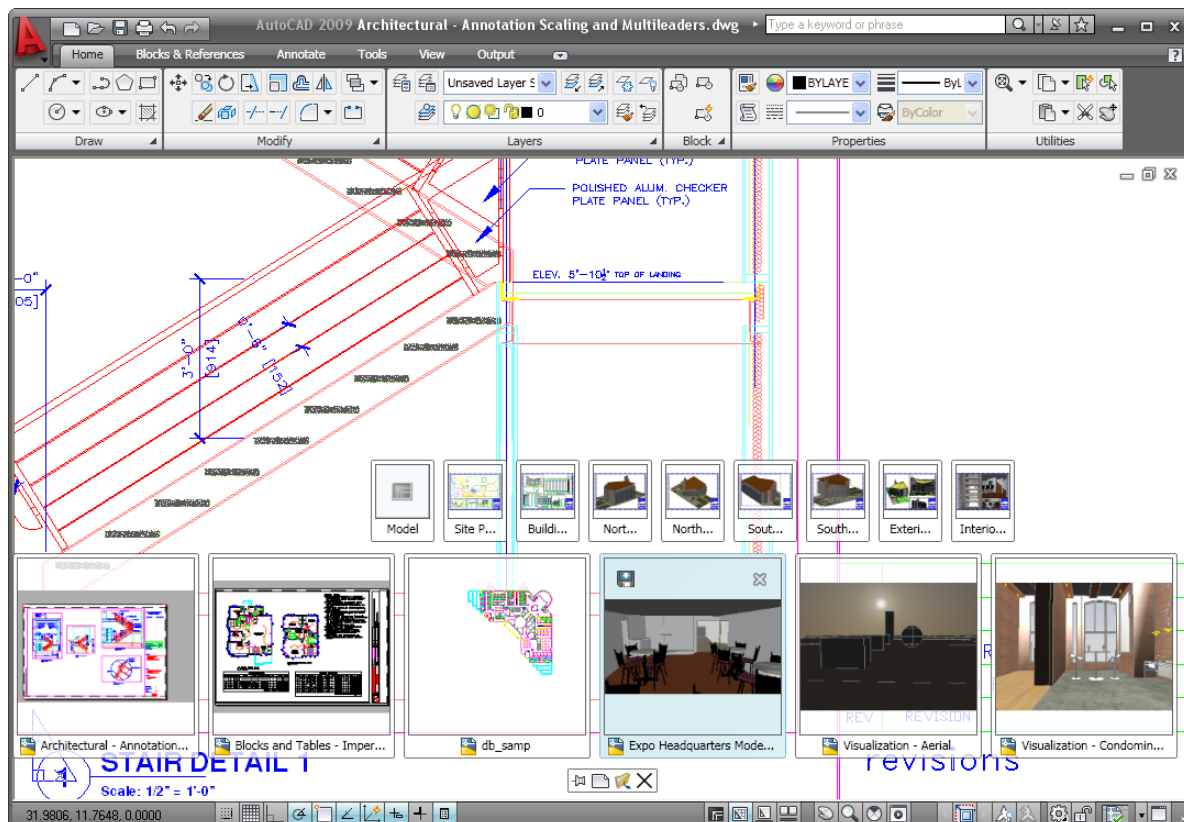


Figure 24. Quick View Layouts right-click menu

## Quick View Drawings

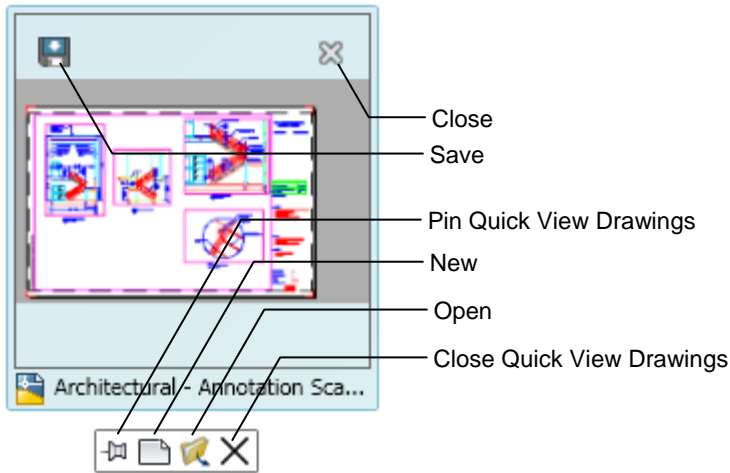
The Quick View Drawings button, on the Status bar, displays a horizontal row of Quick View drawing images. This new functionality is a faster and more visual alternative to using the Ctrl+Tab key combination or the Window menu for switching between open drawings. As with Quick View Layouts, you can move the mouse past the edge of the image strip to view images that extend beyond the screen. You can increase or decrease the size of the drawing preview images by holding down the Ctrl key while rolling the mouse wheel up or down.





**Figure 25. Quick View Drawings**

Passing the cursor over a drawing preview displays Save and Close buttons in the upper corners of the image, enabling you to quickly save or close any open drawing, not just the current one. Additional tools are available in the Quick View Drawings control panel, which is automatically displayed below the Quick View images. Using these tools you can pin Quick View Drawings open so that it remains visible while you work in the drawing editor. You can use the Close tool to turn off Quick View Drawings when you no longer want it displayed. The New button creates a new drawing and displays the preview at the end of the Quick View bar. You can easily open existing drawings using the Open tool.



**Figure 26. Quick View Drawings control panel**

When you hover the cursor over a Quick View Drawing image, preview images of all the layouts in that drawing, including model space, are displayed above the drawing images in a separate image bar. You can easily view and activate any layout within any open drawing directly from the Quick View Drawing bar. To see a larger view of the layout images, simply pass the cursor over a layout preview image. AutoCAD automatically enlarges the layout images and reduces the size of the drawing images. Moving the cursor back over a drawing image returns the Quick View Drawing images to the larger size and the Quick View Layouts images to the smaller size.

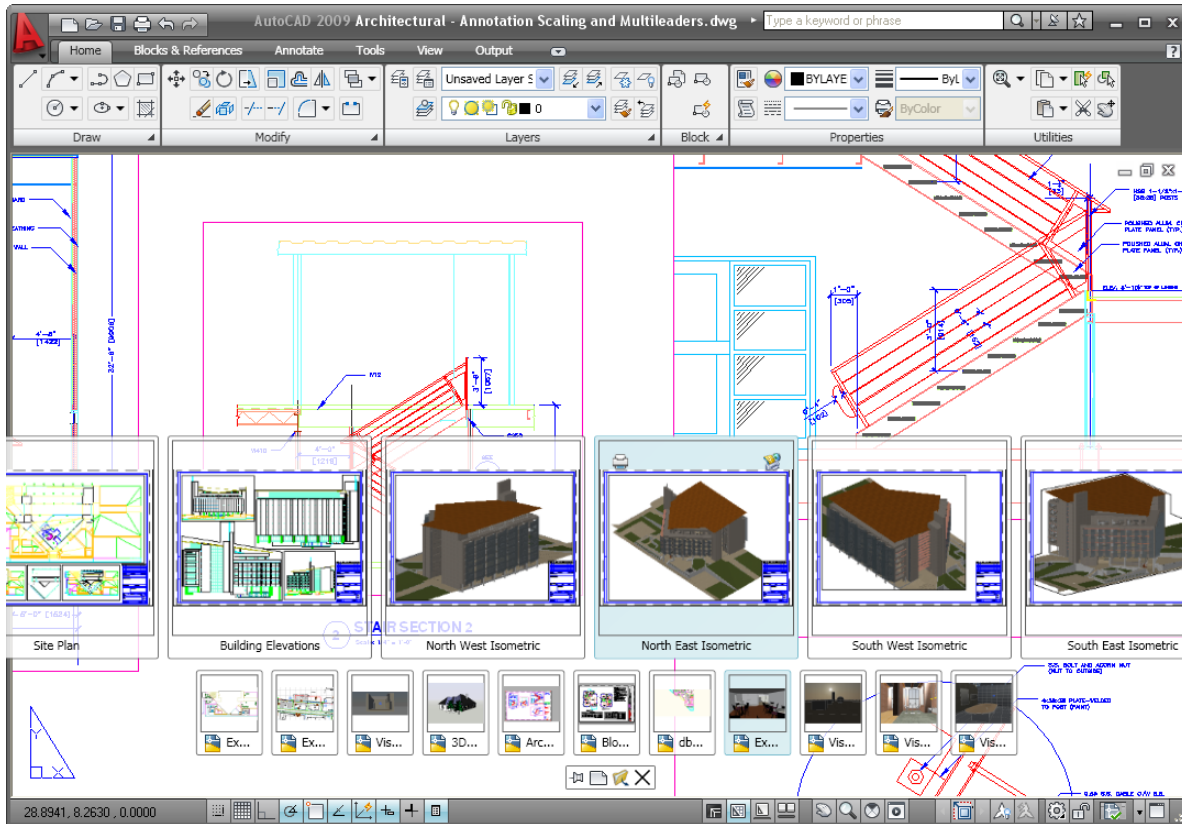
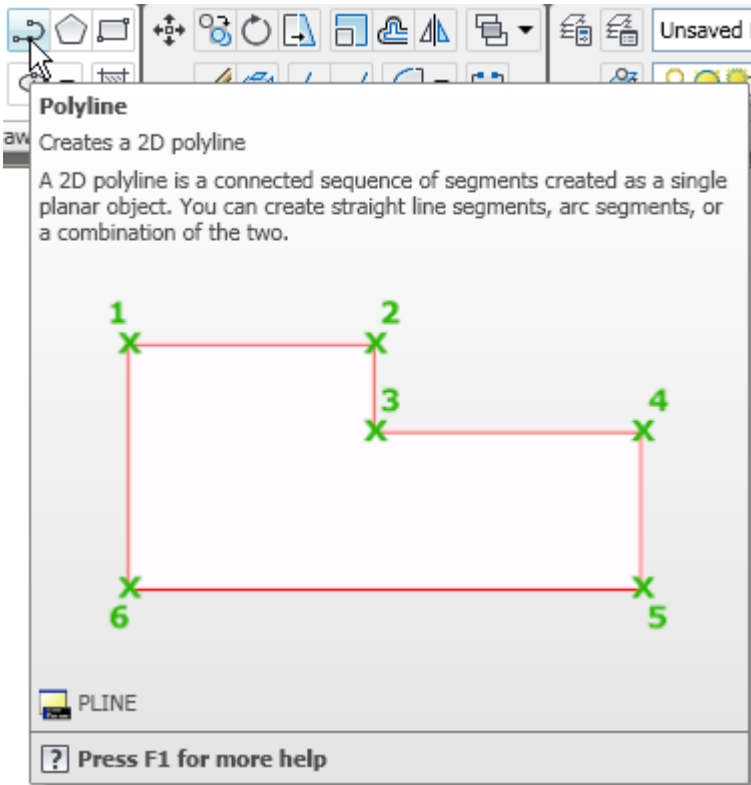


Figure 27. Quick View Layouts images in Quick View Drawings

## Tooltips

Improved tooltips in AutoCAD 2009 provide more information as you need it. Tooltips are automatically displayed when you pass the cursor over various tools. The improved tooltips not only display the name of the tool but provide additional information, and even graphics, directly from the help system.



**Figure 28. ToolTip help**

In addition to using command tools, you can control the content displayed in the tooltips for the External References palette and the Sheet Set Manager: right-click the border of either palette, select the Tooltip Style option, and then choose to display a preview, details, or both preview and details. When displaying a preview, you can specify a small, medium, or large image.

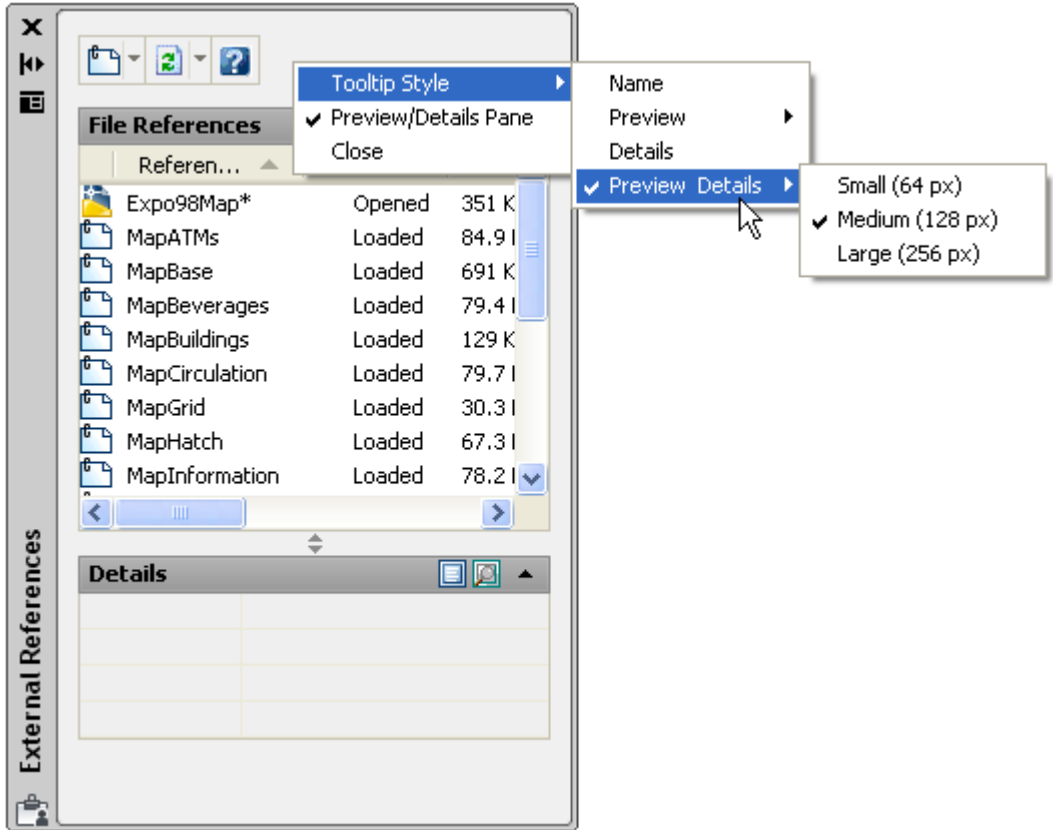
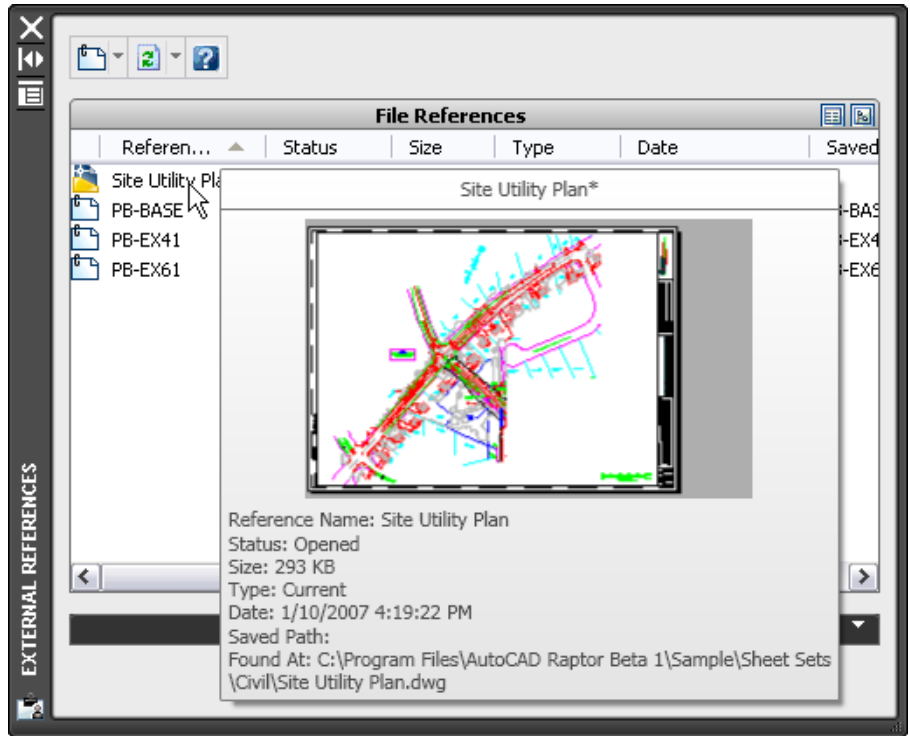


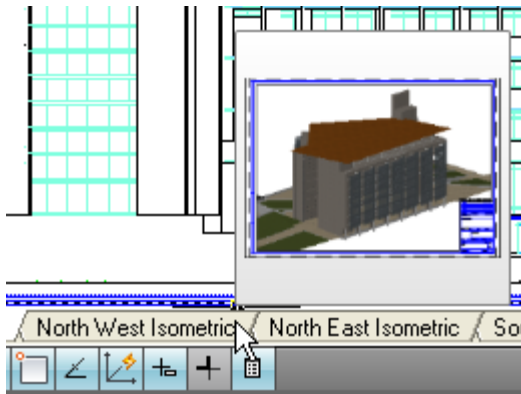
Figure 29.Tooltip styles

If you pass the cursor over an item in the Sheet Set Manager or the External References palette, you can quickly preview the drawing geometry and detail information without selecting the item.



**Figure 30. Preview and Details tooltip**

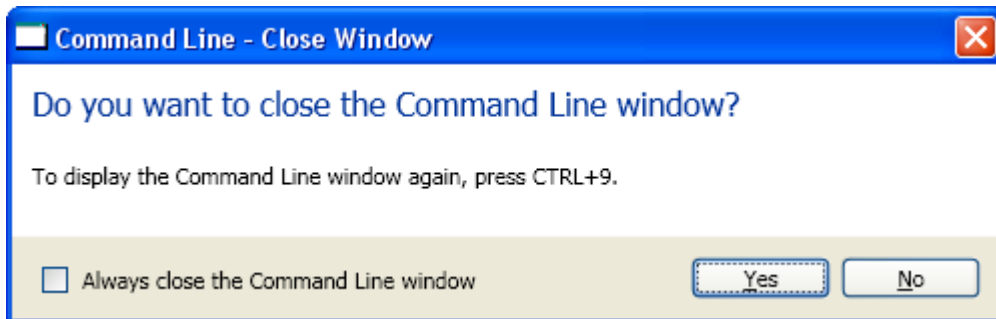
Preview images display as tooltips for layout tabs, helping you locate the layout you want to use.



**Figure 31. Layout preview images**

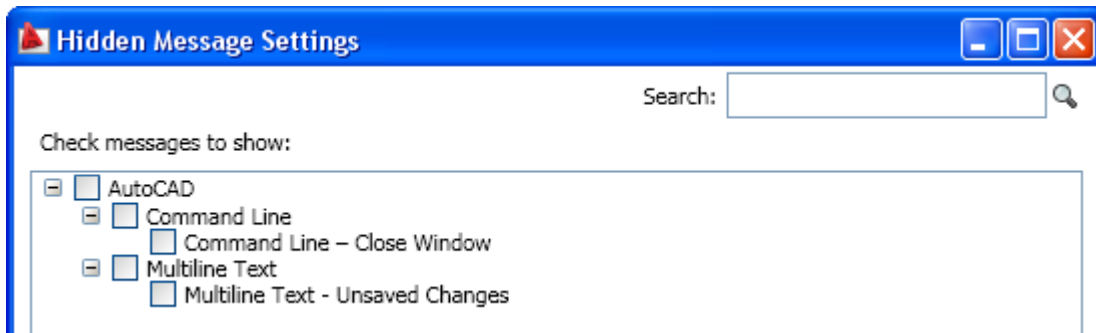
### Hidden Message Settings

Warning messages have been updated in AutoCAD 2009 software to provide more consistent messaging and interaction throughout the application. You can control the display of individual warning messages, unlike in previous versions of AutoCAD. In the past, if you chose the option Don't Show Me This Again when a warning message was displayed, for example when closing the Command window, you couldn't restore that warning message without all previously hidden messages also being restored. In AutoCAD 2009, when you select an option that hides a particular message, for example, Always Close the Command Line Window, AutoCAD stores it in a list of hidden messages.



**Figure 32. Command Line Close Window message box**

You can selectively restore hidden messages using a new option on the Systems tab of the Options dialog boxes.



**Figure 33. Hidden message settings**

# Design and Drafting

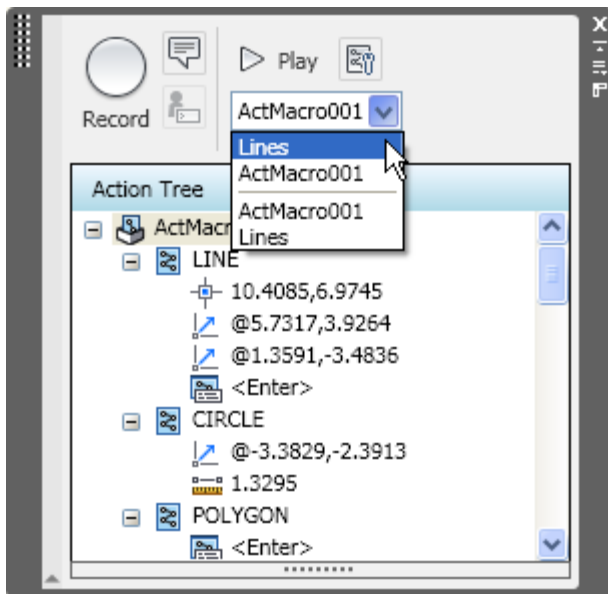
New and enhanced tools in AutoCAD 2009 help you work more efficiently by minimizing repetitive tasks.

## Action Recorder

A new Action Recorder can significantly increase productivity by automating repetitive tasks. Easily record actions and save them to a named macro. Then replay the macro to repeat the procedure with minimal effort.

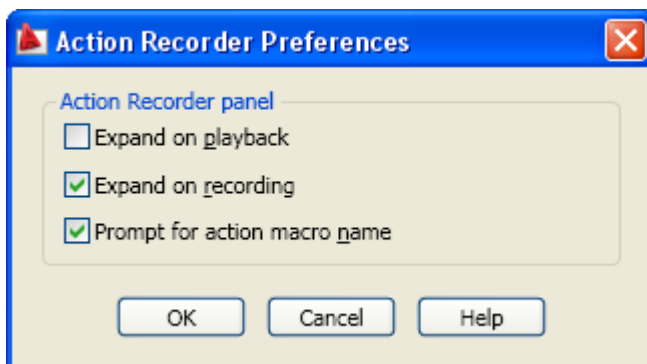
You access the tool from the Action Recorder panel on the Tools tab of the Ribbon or by using the ACTRECORD command. Use the Record button in the Action Recorder to begin creating an action macro. While it is recording, you can launch commands, enter values, and select objects using familiar AutoCAD functionality. The Action Recorder can record routine actions from the command line as well as from toolbars, ribbon panels, menus, the Properties window, the Layer Properties Manager, and the Tool palette. You can even create more robust and interactive macros by including text messages and requests for user input.

When you are finished performing a repetitive operation, click the Stop button in the Action Recorder and enter an appropriate name for the action macro. To replay a macro, simply select it from the macro list and click the Play button.



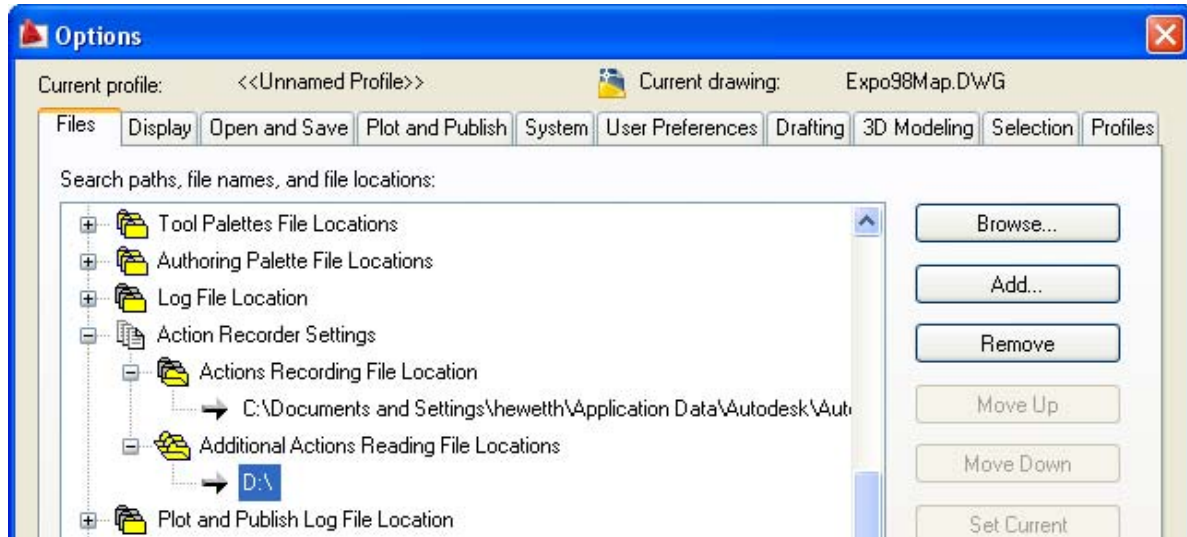
**Figure 34. Action Recorder panel**

You can control the behavior of the Action Recorder panel using the various options in the Action Recorder Preferences dialog box.



**Figure 35. Action Recorder preferences**

Each action macro that you create is saved as an individual file and stored in the location specified by the Action Recording File Location option on the Files tab of the Options dialog box. You can easily share your action recordings or use those created by others by including the shared path in the Additional Actions Reading File Locations list.



**Figure 36. Action Recorder settings**

Action recordings behave much the same as other AutoCAD commands: you can call one macro from another or assign shortcut aliases using the *acad.pgp* file.

## Layer Management

The Layer Properties Manager includes many enhancements to help increase productivity. It has been converted to a modeless dialog box, enabling you to keep it displayed while using other commands. The changes you make within the Layer Properties Manager are instantly applied to the drawing, so you don't need to click an Apply button. You can freeze and unfreeze columns to display key information, such as the layer name, while accessing layer properties at the opposite side of the dialog box. Right-click menu options have been updated for clarity and additional functionality. You can optimize one or all columns to ensure no content is truncated, as well as maximize one or all columns to ensure that no content or column headers are truncated. And more descriptive tooltips are displayed for the column headers. To free up space in the Layer Properties Manager, you can collapse the Filters pane.

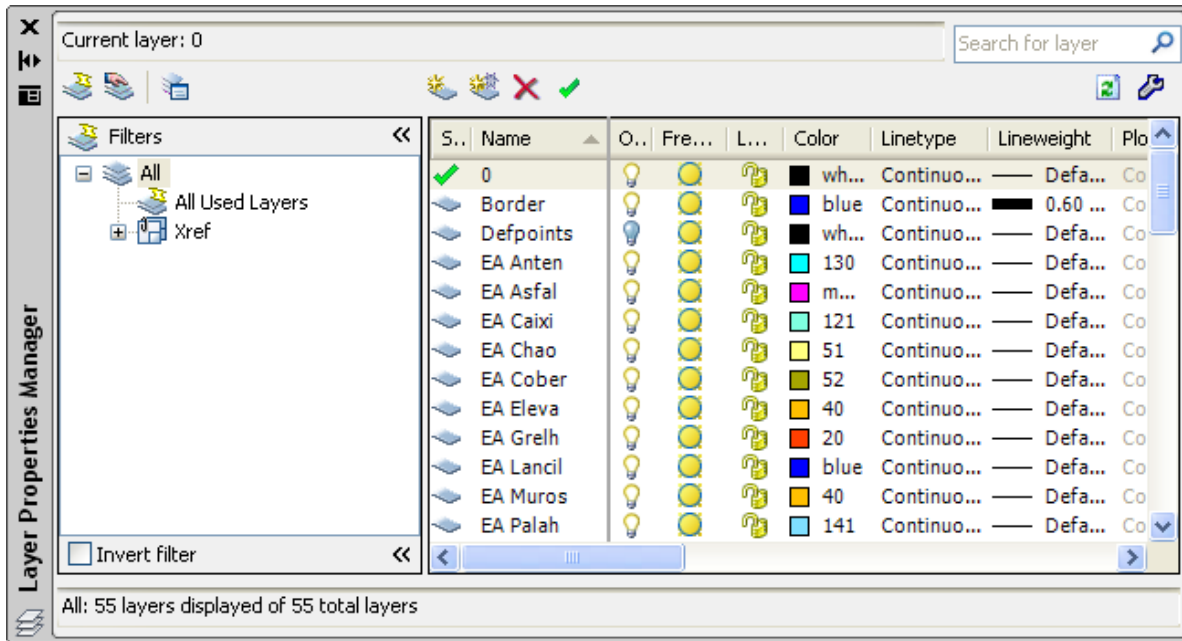


Figure 37. Layer Properties Manager

Layer Isolate controls have been added to the Layer Settings dialog box, and a new option for combining layer property changes for Undo and Redo operations is accessible from the User Preferences tab of the Options dialog box.

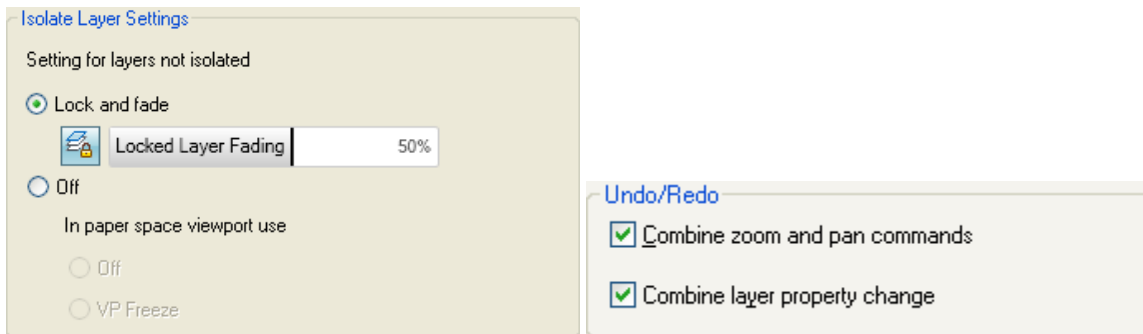
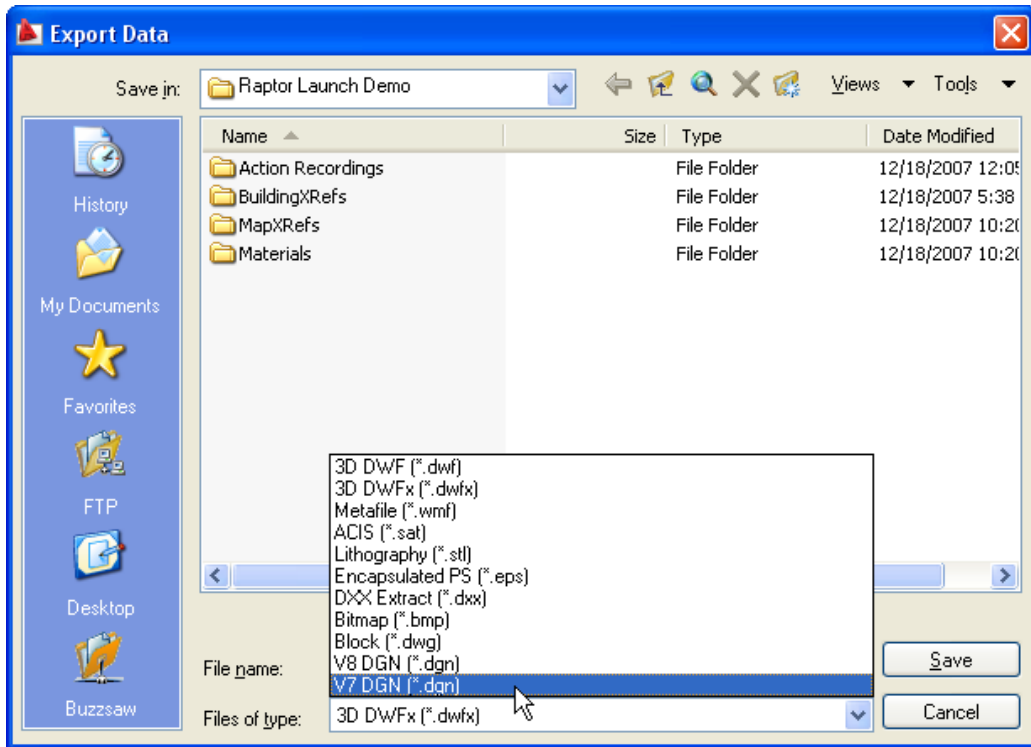


Figure 38. Layer controls

## Working with DGN files

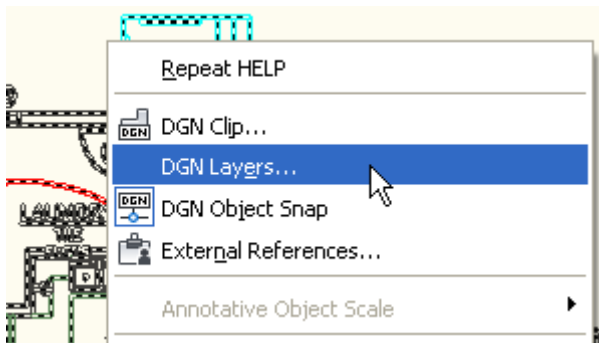
AutoCAD 2009 includes support for exporting your AutoCAD DWG files to Bentley Systems' MicroStation® V7 DGN format (in addition to the V8 DGN support that was added in AutoCAD 2008). You will find the new V7 DGN option in the Files of Type list when you use the EXPORT or DGNEXPORT command.





**Figure 39. DGN export**

You can now control the layer visibility of attached DGN files by selecting the DGN Layer option from the right-click menu when a DGN attachment is selected.



**Figure 40. DGN layer control**

A new DGN mapping tool enables you to map DGN levels, linetypes, lineweights, and colors to AutoCAD layers, linetypes, lineweight, and colors, and vice versa. Save and access named DGN mappings for increased control during the import and export of DGN files. You can access the DGN Mappings using the new DGNMAPPING command and specify the location for DGN Mapping Setups from the Files tab of the Options dialog box.

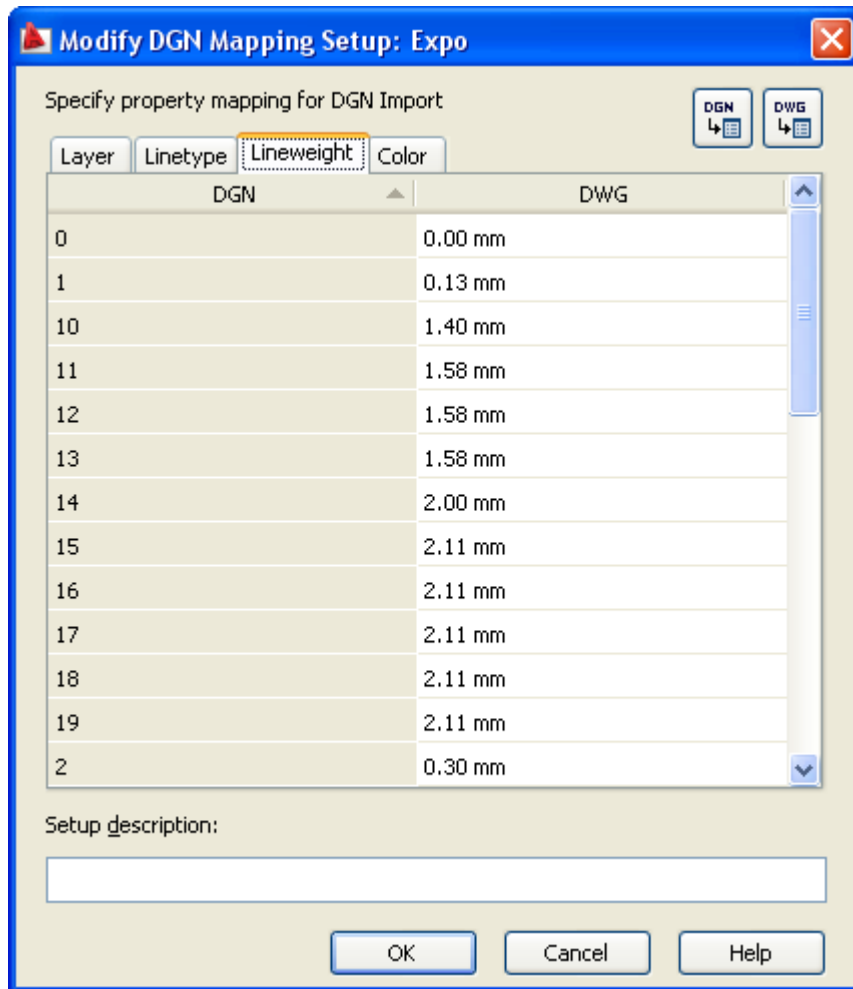


Figure 41. DGN mappings

## DWFx Support

AutoCAD 2009 includes support for DWFx, which is a DWF format that is compliant with Microsoft's XML Paper Specification (XPS) format. DWFx files are easily distributable on the Windows Vista<sup>®</sup> platform, as this format is supported by the XPS Viewer. You will find DWFx listed along with DWF in all DWF-related functionality, including Markup, External References (DWFATTACH), Publish, and Plot.

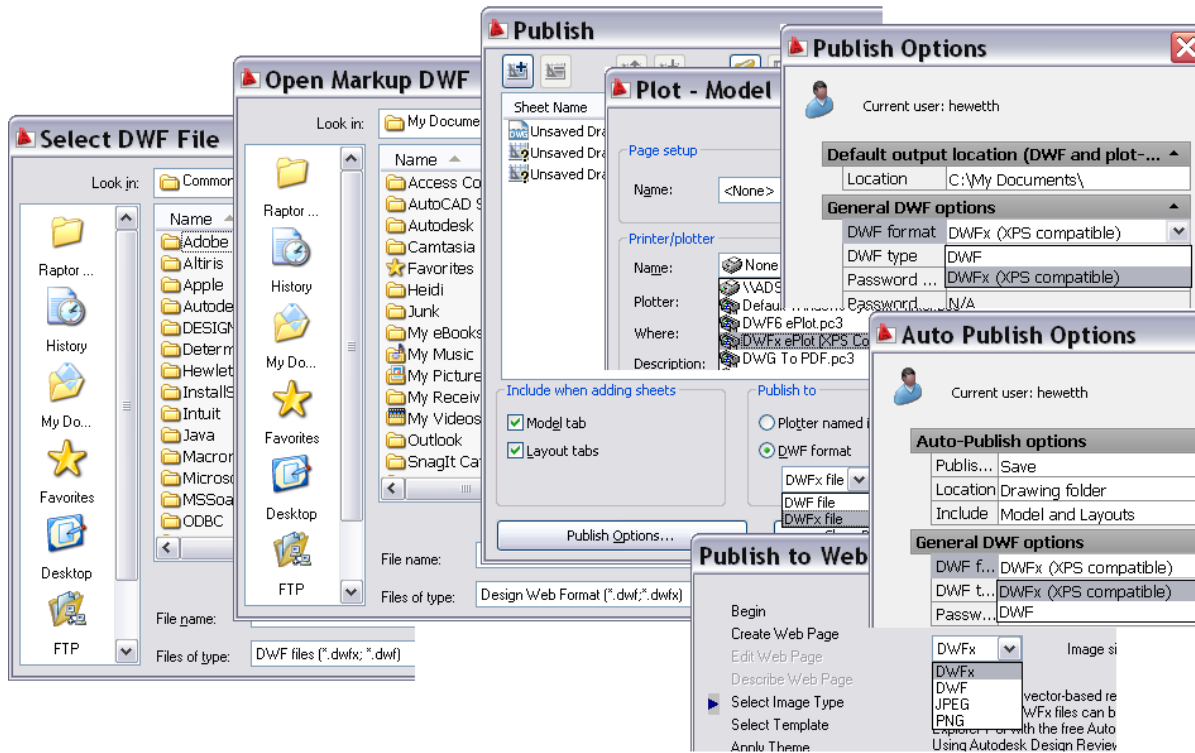


Figure 42. DWFx file format

## Xref Clipping

You can now use grips to edit the boundary of a clipped external reference. Ensure the XCLIPFRAME system variable is set to 1, and then select the clipped xref and grab a grip. In addition to using grips to edit the clip boundaries, a new grip enables you to quickly invert the clipping area.

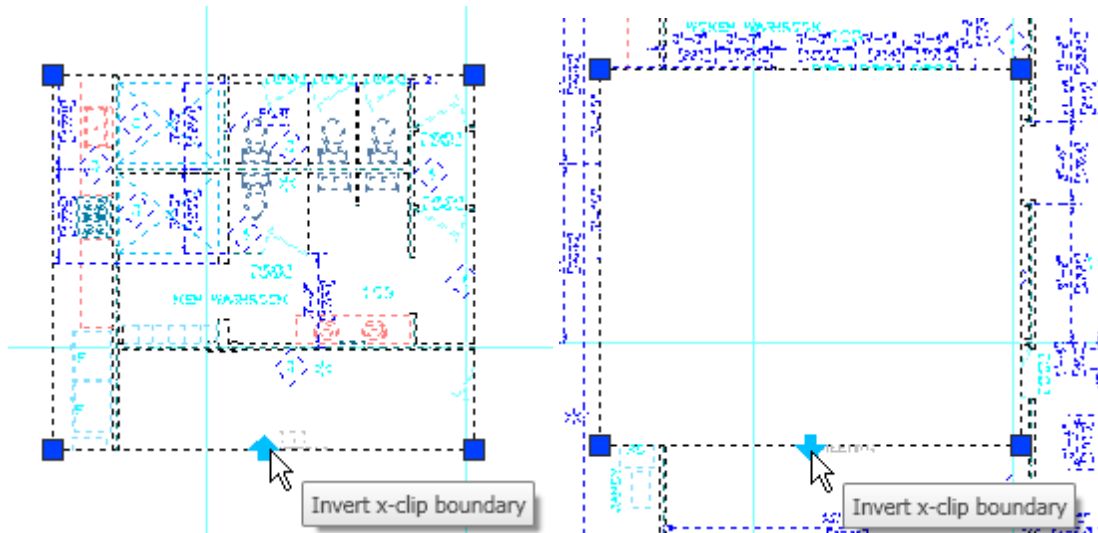


Figure 43. Xref clipping grips

## Interactive Array Preview

When you preview an array of objects from the Array command, you can pan, zoom, and navigate the model before accepting the newly arrayed objects. Click anywhere or press the Esc key to return to the Array dialog box, or right-click to accept the new array.

## Find and Replace

The Find and Replace functionality has been updated to include an expandable dialog box and more options. Use the Find command to access the Find and Replace dialog box, and then select the More Options icon in the lower-left corner to view and modify the search options and text types. The display automatically zooms in on the text as it is found.

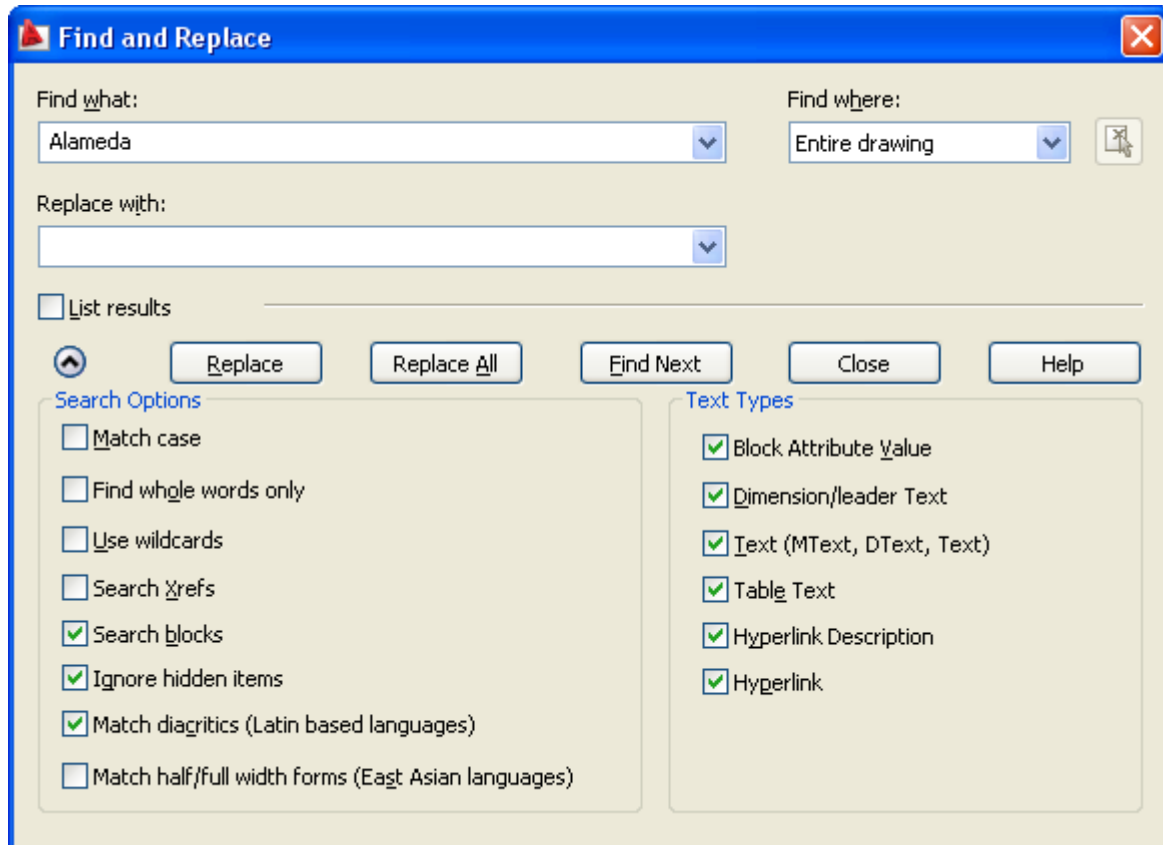
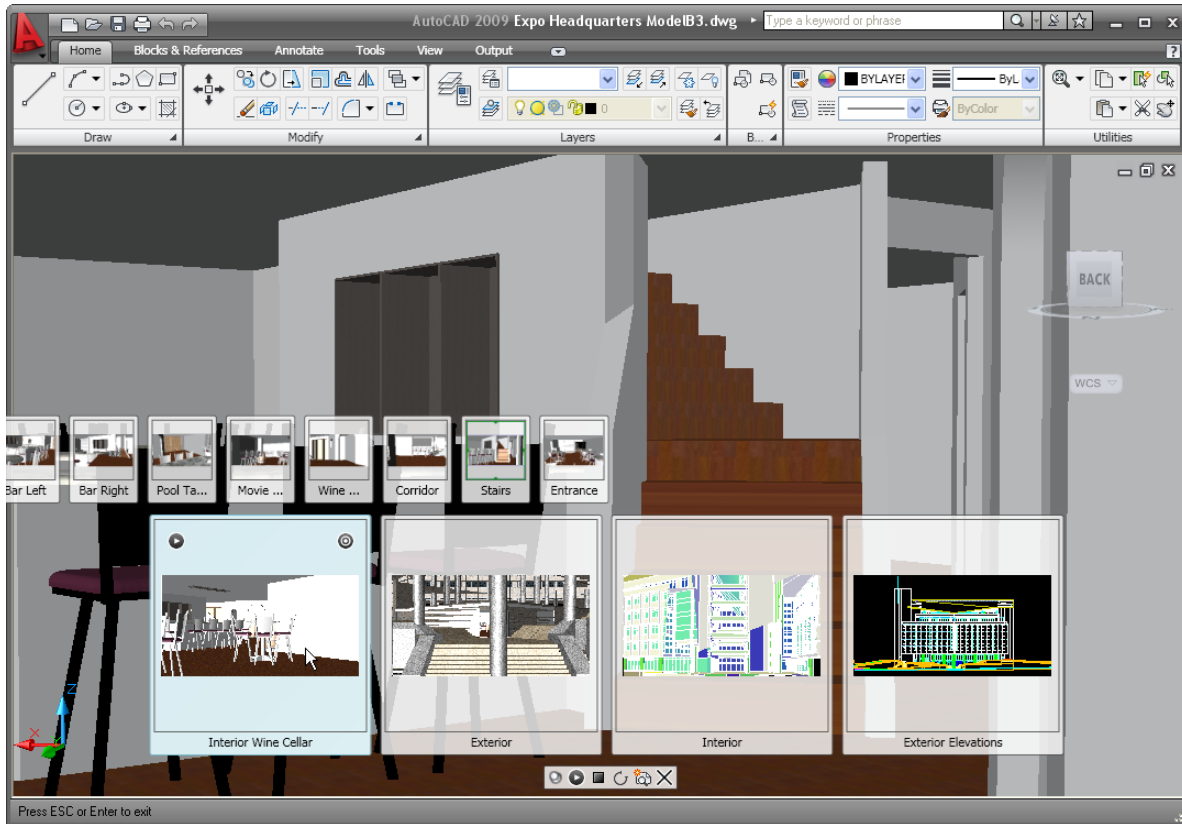


Figure 44. Find and Replace

## Visualization

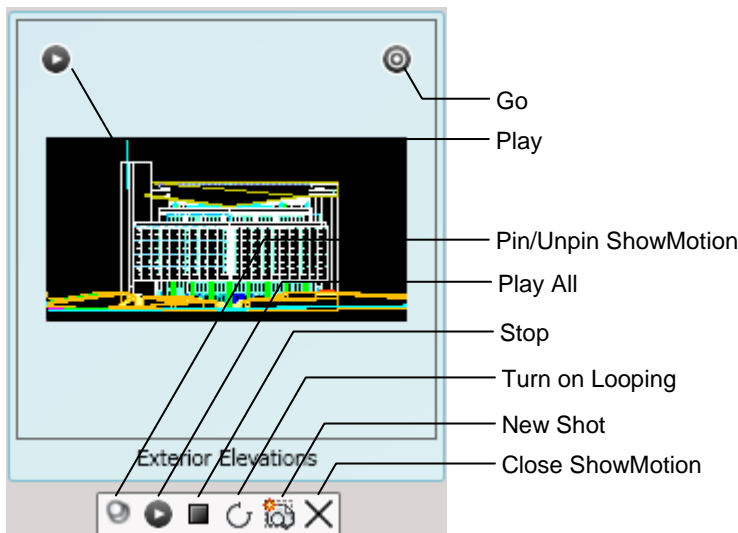
### ShowMotion

The new ShowMotion functionality enables you to create and play camera animations for presentation purposes or navigate through your design. The ShowMotion button, available on the Status bar, turns on the ShowMotion control panel and displays thumbnail images of the view categories and view shots saved in the drawing. As in Quick View Layouts and Quick View Drawings, you can move the mouse past the edge of the image strip to see drawing images that extend beyond the screen. And you can increase or decrease the size of the drawing preview images by holding down the Ctrl key while rolling the mouse wheel up or down.



**Figure 45. ShowMotion**

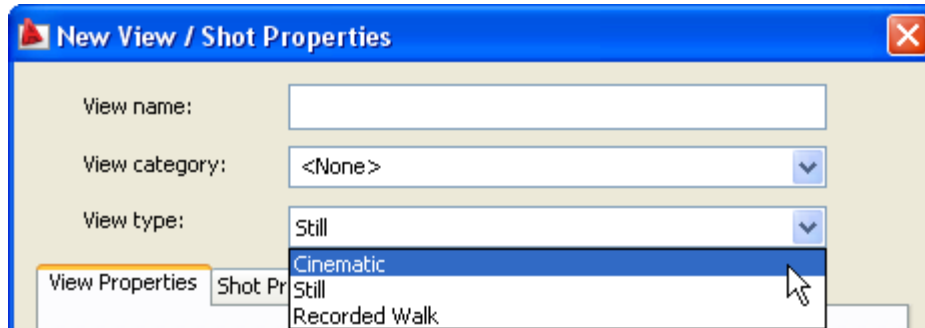
Passing the cursor over a preview image displays the Play and View Go tools in the upper corners of the image. You can play an animation that automatically cycles through all the shots in that category, pausing the animation if necessary, or go to a particular shot by restoring it as the current view. Additional tools in the ShowMotion control panel enable you to pin the ShowMotion bar open so that it remains visible while you work in the drawing editor, play all animations in each category, stop playing the animations, loop through the animations, create new shots, and close the ShowMotion control panel.



**Figure 46. ShowMotion tools**

## New View/Shot Properties

The New View dialog box, for creating named views, has been updated and renamed to support the new ShowMotion functionality. The New View/Shot Properties dialog box includes a new View Type property as well as a new Shot Properties tab. View types include Cinematic, Still, or Recorded Walk.



**Figure 47. View Type options**

The Shot Properties tab enables you to specify the duration and type of transition for named views. In addition to Transitions, cinematic view types can include motion, such as zooming in or out, tracking left or right, and orbiting.

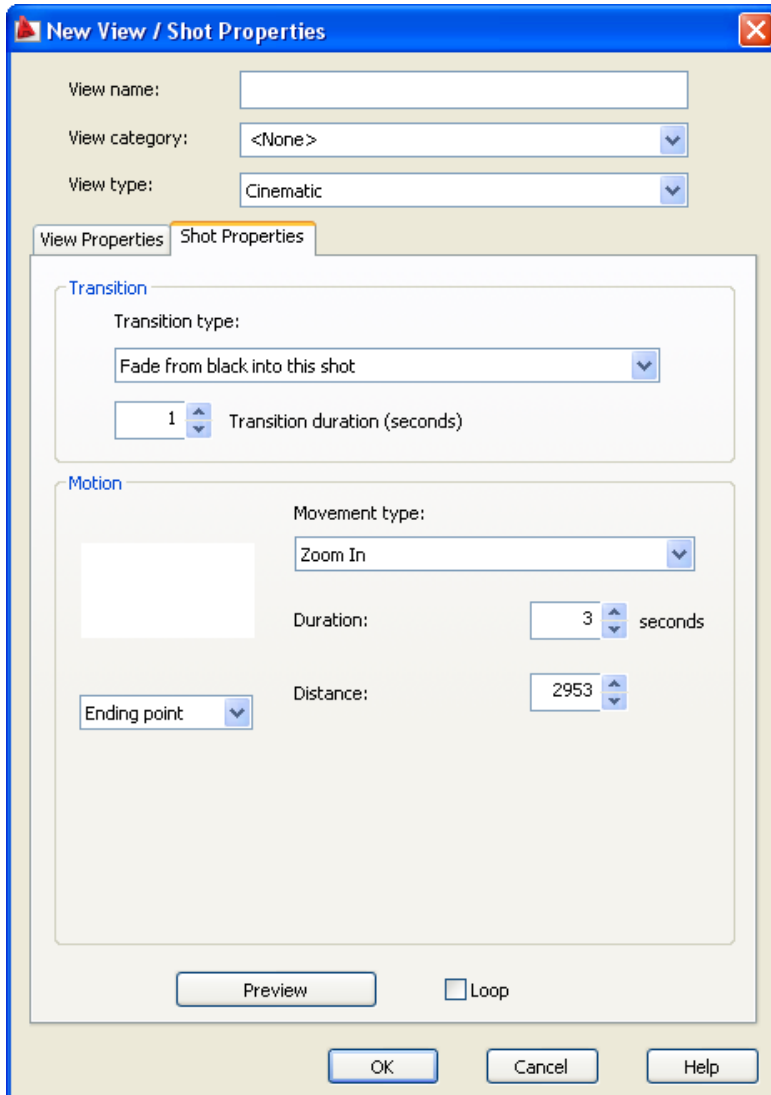


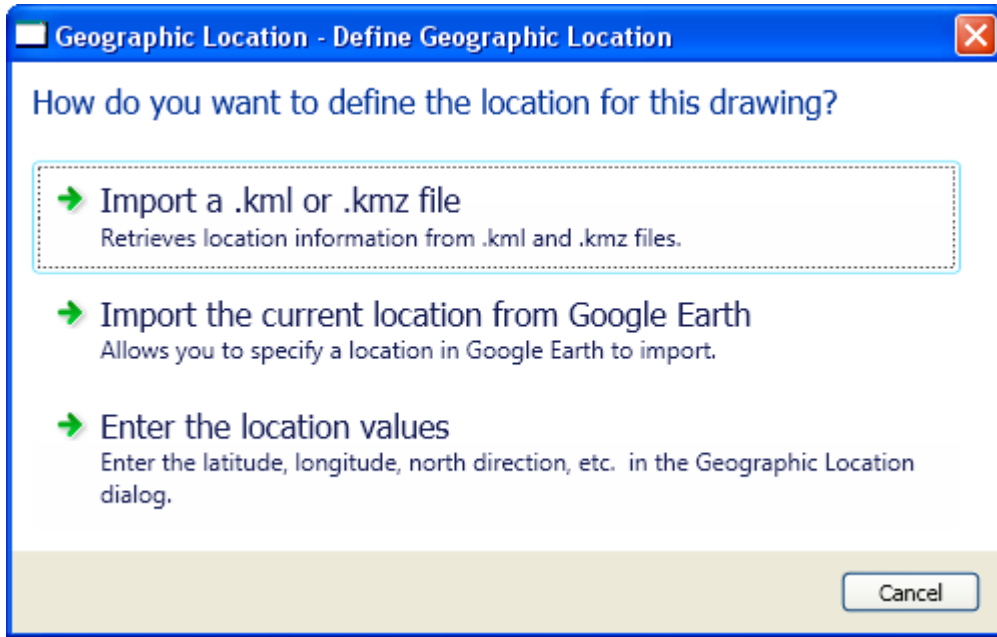
Figure 48. Shot Properties tab

## Lighting

A new value in the VSLIGHTINGQUALITY system variable offers more control over the lighting quality in the current viewport. You can now set the value to 2 for per-pixel lighting.

## Geographic Location

AutoCAD 2009 software provides more options for defining the geographic location of a drawing using the Geographic Location command. In addition to the previous methods for specifying the geographic location—entering latitude and longitude information or selecting the location from a map—you can now import location information from a KML- or KMZ-format file or from the Google Earth™ application.



**Figure 49. Geographic Location options**

The new GEOLATLONGFORMAT system variable enables you to specify the format of the latitude and longitude values in the Geographic Location dialog box and the Coordinate Status bar in Geographic mode. You can control the visibility of the geographic marker using the new GEOMARKERVISIBILITY system variable.

### 3D Navigation Tools

AutoCAD 2009 includes two new tools to help you navigate 3D models with ease.

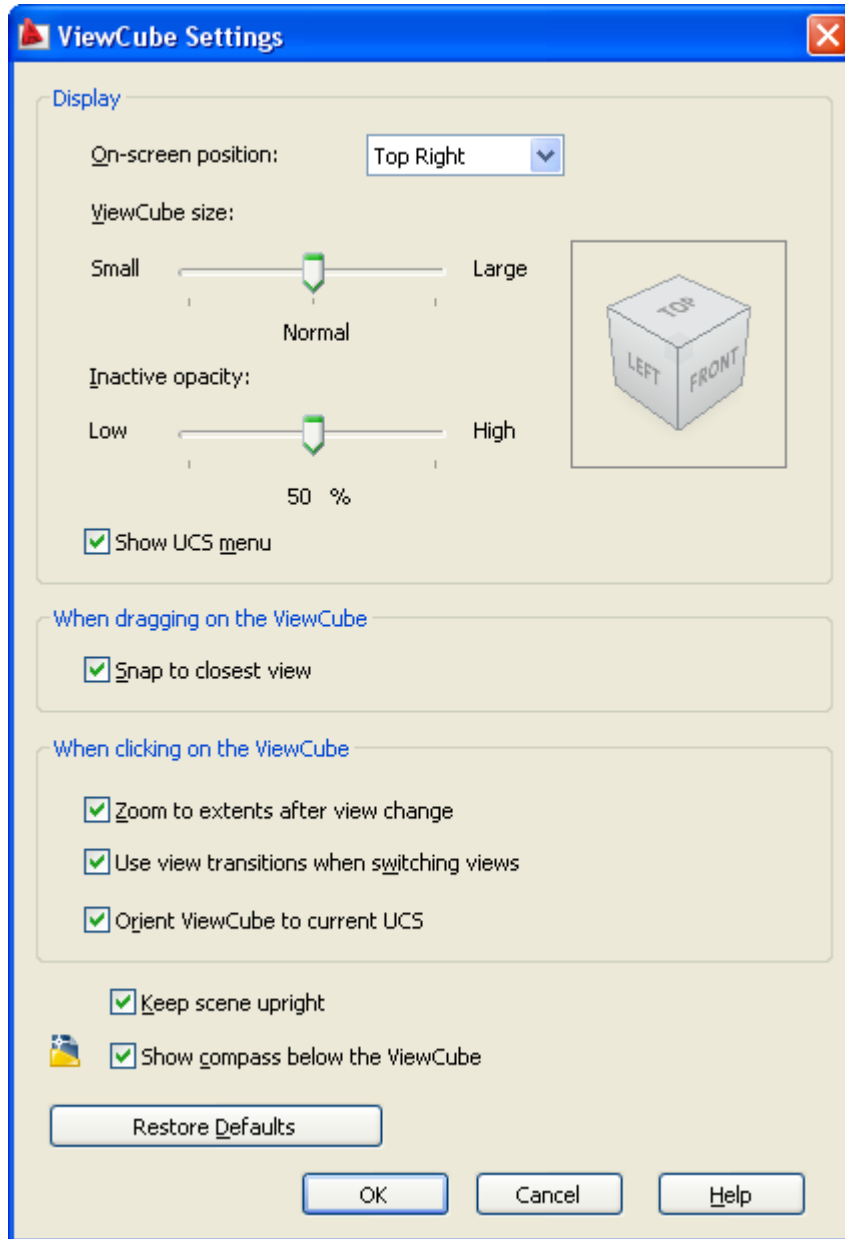
The new navigation tool, called the ViewCube™, provides an intuitive interface for viewing your model from standard viewpoints. It includes hot spots that highlight as you pass your cursor over different parts of the cube. When you click a hot spot, AutoCAD instantly restores the associated viewpoint. In addition to the predefined viewpoints, you can click the cube and move the cursor to orbit the model freely. Regardless of how you change the viewpoint of your model, the ViewCube tool automatically displays the current view orientation.





**Figure 50. ViewCube tool**

To control the display and behavior of the ViewCube tool, right-click on it and select ViewCube Settings. In the ViewCube Settings dialog box, you can specify the default location, size, and opacity of the ViewCube.



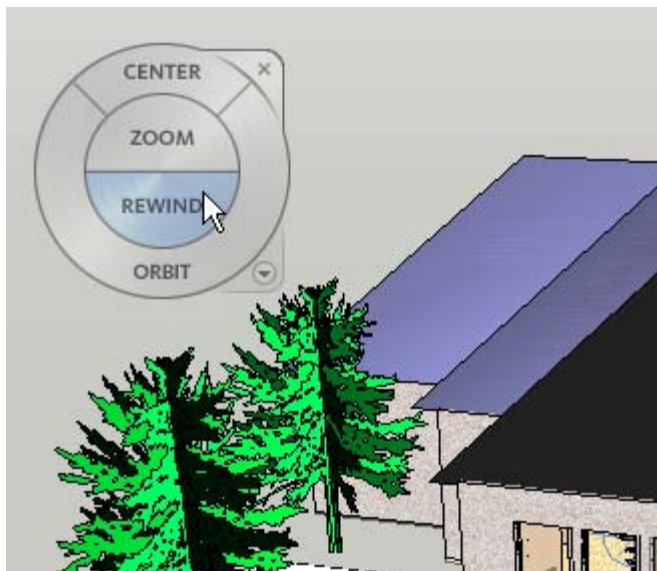
**Figure 51. ViewCube settings**

The new SteeringWheel tool displays a navigation wheel at the cursor for quick access to a variety of navigation tools. A right-click menu provides options for different wheel sizes and modes.



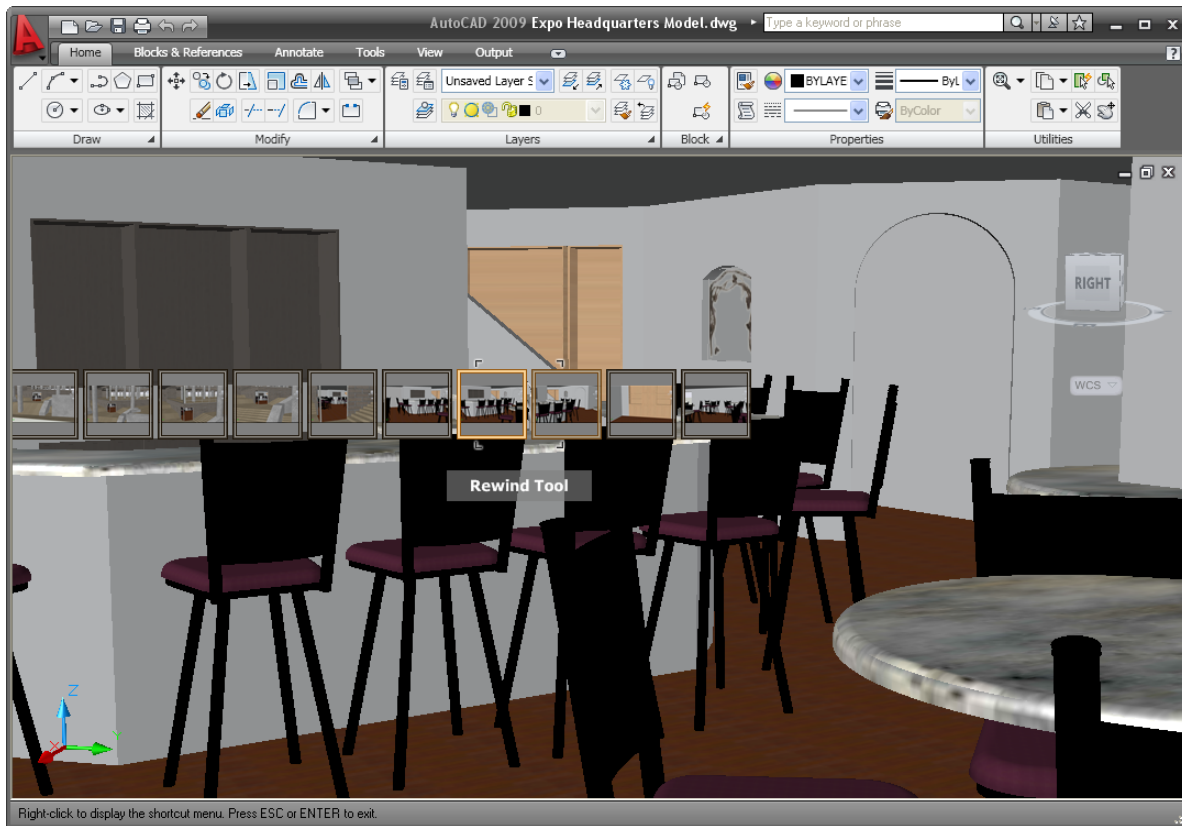
**Figure 52. SteeringWheel**

The View Object wheel is ideal for navigating around a model. It includes common navigation tools such as Zoom and Orbit as well as an option to move the center of the display window in the indicated location.



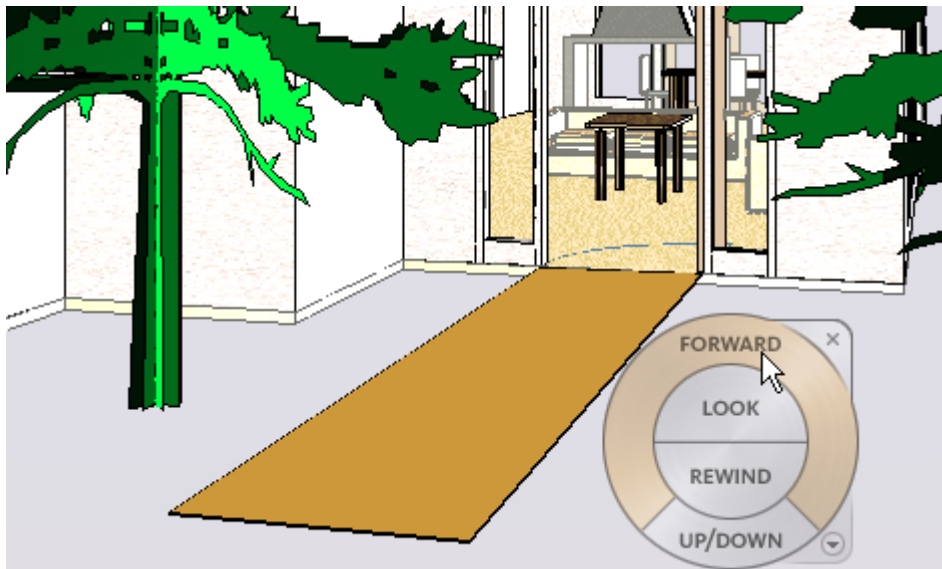
**Figure 53. View Object wheel**

The Rewind tool displays frames from previous view orientations, enabling you to quickly restore a previous view.



**Figure 54. Rewind tool**

The Tour Building wheel is ideal for navigating the inside of a building. It includes tools such as Forward, Look, and Up/Down in addition to the Rewind tool.



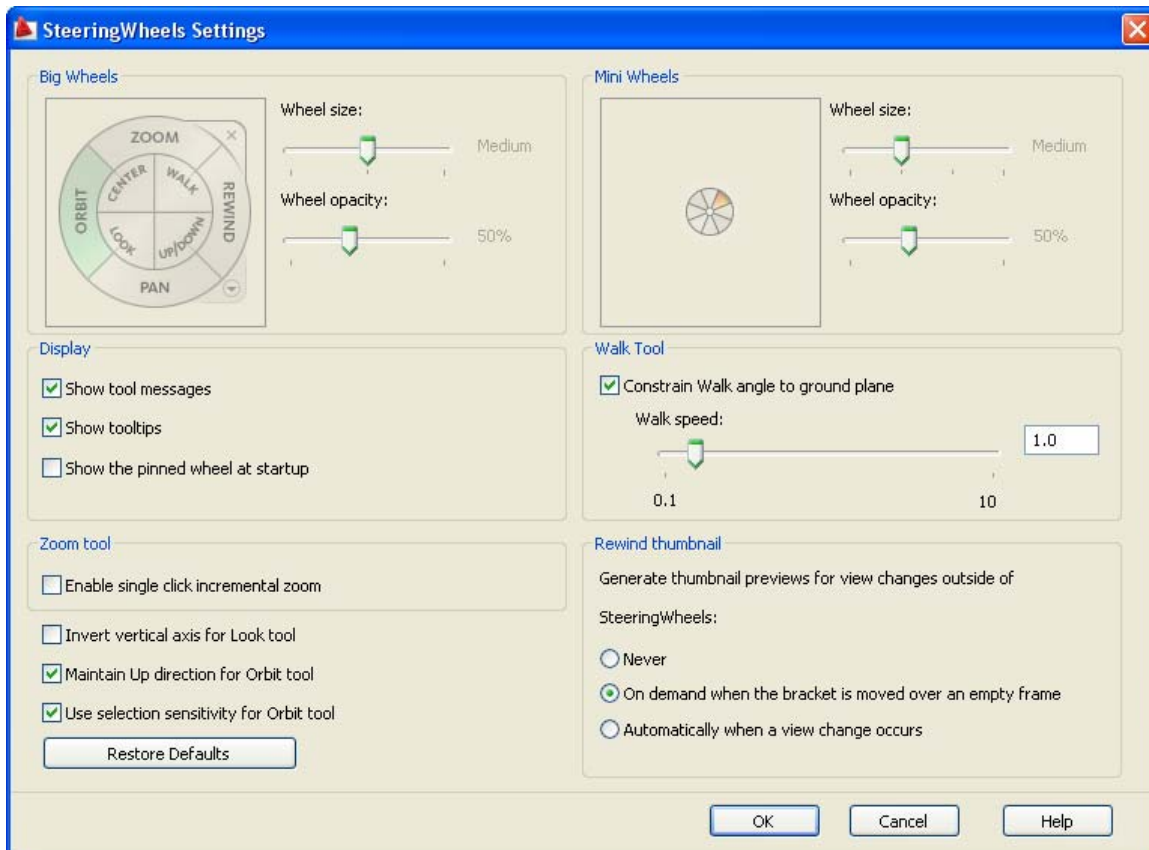
**Figure 55. Tour Building wheel**

The Full Navigation wheel includes tools from both the View Object wheel and the Tour Building wheel, enabling you to select from a variety of tools on a single wheel.



**Figure 56. Full Navigation wheel**

You can customize the appearance and behavior of the navigation wheel using the SteeringWheels Settings dialog box, which is accessible from the right-click menu.



**Figure 57. SteeringWheels settings**

## Summary

AutoCAD 2009 software includes a wide range of improvements to increase your day-to-day design and drafting productivity. The sleek new interface includes easy access to frequently used tools while offering the customizability and extensibility that you expect in AutoCAD. Preview and select layouts, drawings, and named views with ease and confidence using the Quick View and ShowMotion tools. Automate repetitive tasks without knowledge of programming languages. And easily view and navigate through your 3D models using the ViewCube and SteeringWheels.

Cover image courtesy of Hobart, Yañez, Ramos, Maguey, and Martínez

Autodesk, AutoCAD, DWF, DWG, ShowMotion, SteeringWheels, and ViewCube are registered trademarks or trademarks of Autodesk, Inc., in the USA and/or other countries. All other brand names, product names, or trademarks belong to their respective holders. Autodesk reserves the right to alter product offerings and specifications at any time without notice, and is not responsible for typographical or graphical errors that may appear in this document.

© 2008 Autodesk, Inc. All rights reserved.