Autodesk®
Design Review

Getting Started
Guide

Autodesk®

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Design Review

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Contents

I.
Introducing Autodesk Design Review

This chapter will introduce you to team collaboration utilizing Autodesk Design Review to streamline the process.

Whether involved in manufacturing, AEC, or geospatial industries, design is a collaborative process that involves those who need to review and comment on designs, but are not familiar with CAD software. Autodesk® Design Review software helps accelerate projects from start to finish with all-digital tools to review, mark up, and track changes to 2D and 3D designs without the original creation software. Team members can accurately measure, redline, and annotate drawings, maps, and models, and communicate changes in the context of the design. Add comments, track status, and drag and drop information of any type—CAD documents, project timelines, or raster images—combining them into a single file. Then round-trip the DWF file to any Autodesk® design application, overlaying digital markups onto the original CAD file for fast revisions.

Regardless of what industry you're in, coordinating project reviews with Autodesk Design Review is easier, more efficient, and less costly than a paper-based system. Its benefits include:

- 3D viewing, measure and markup capabilities
- Data security
- Instant transmission of data anywhere in the world
- Powerful markup and tracking capabilities
- Compact file size for e-mail and archiving
- Integrated workflow with Autodesk design software, to speed revisions and ensure no information is lost.

Only Autodesk Design Review lets you round-trip markups directly into Autodesk design software, including AutoCAD, Revit®, Autodesk® Inventor™, AutoCAD® Map 3D, and AutoCAD® Civil 3D®. Through an intuitive review and approval process project managers and CAD drafters can navigate from comment to comment across sheet sets and systematically walk through a review set to complete the approval process. The CAD user can see all changes marked by the Design Review user, and incorporate changes into the original CAD

application. The comment navigation feature of Autodesk Design Review ensures that all redlines and markups are listed and can be easily tracked throughout the design review process. The result: lower costs, better communication, and shorter cycle times. See how manufacturing, AEC, and geospatial customers are using Autodesk Design Review in their workflows.

Shortening Manufacturing Development Cycles

Autodesk Design Review software can help you get your products to market quicker by shortening development cycles. Utilizing Design Review software, you can receive feedback earlier in the design process and communicate outward to extended team members who don't typically use computer-aided design (CAD) or 3D modeling software, such as customers, suppliers, and shop floor personnel.

Design Review supports working in multiple formats, whether DWF™, DWG, DXF™, JT, or DGN—so team members see exactly what is intended. Easy-to-use tools allow the review, measure, mark up, and tracking of changes to 3D models or drawing sheet sets, while dramatically reducing review cycles, cutting costs, and improving team communication.

With new support for securely sharing assembly instructions, bill of materials (BOM), and FEA results from Autodesk Inventor software, there's an added array of publishing options that can improve the way you work. Plus with the tight integration with Autodesk Inventor and AutoCAD-based products, including AutoCAD Mechanical and AutoCAD Electrical software, you can systematically respond to comments and help ensure that revisions are timely and comprehensive.

See why DWF and Autodesk Design Review are the perfect partners for manufacturing:

- **Get Reviews Done on Time**
  Connect customer, supplier, planner, and purchasing sooner and shorten the product development lifecycle with faster, more accurate design reviews.

- **Track Engineering Change Orders**
  Autodesk Design Review automatically tracks comments and their status, helping to ensure that no information is lost.

- **Accurately Communicate Design Information to the Entire Team**
  Autodesk Design Review enables those unfamiliar with complex CAD software to fully visualize designs from Autodesk Inventor and AutoCAD-based applications. Manufacturing design data such as BOM information, assembly animations, finite element analysis (FEA) results, model representations, along with 2D and 3D measurement, can all be accessed in Design Review.

- **Protect Your Intellectual Property**
  Protect your IP by sharing DWF files, providing complete accuracy and fidelity without sending the original CAD file. Password protection, encryption, and feature-disabling offer additional security.

- **Integrated Autodesk PLM Solution**
  Autodesk DWF technology and Design Review are fully integrated into Autodesk's market-leading manufacturing design tools and PLM solution, including Autodesk® Productstream™, Autodesk Streamline®, and Autodesk® Vault®.

Autodesk Design Review software streamlines your design review process with measure, markup and approval tools that help speed product development to completion. Securely enable team members to accurately review 2D and 3D designs digitally, offer feedback quickly and easily, and track and round-trip their changes while cutting days off the review cycle.

1 Product Design & Engineering
Gather customer, management, and product team feedback early. Review comments digitally in Autodesk Inventor, AutoCAD, AutoCAD Mechanical, and AutoCAD Electrical software, streamlining revisions. Autodesk DWF technology is built into Autodesk Productstream to help manage engineering design.

2 Manufacturing Engineering
Improve communication with suppliers and other departments by securely enabling digital reviews. Combine all project information like quotes, timelines, assembly information in Autodesk Design Review software. For release management, Autodesk Productstream connects and integrates product data management with the back-office systems.

3 Manufacturing Production
Move to paperless production, securely sharing 3D models with manufacturing, suppliers, and partners. Model representations and configurations, animations and assembly instructions can be viewed, measured, and marked up with Autodesk Design Review. Additionally, Autodesk Streamline provides collaborative project management.

4 Sales & Distribution
Accelerate marketing and sales ability to communicate with customers as soon as the product is released. Leverage the same 2D or 3D design data, post compact, secure DWF files on the Web, include within Microsoft® Office for sales materials or other communications.

5 Maintenance & Repair
Make use of rich data sets to understand maintenance and repair needs. Quickly understand design issues jumping from hyperlinks to product details, or interrogating the full 3D model and assembly instructions.
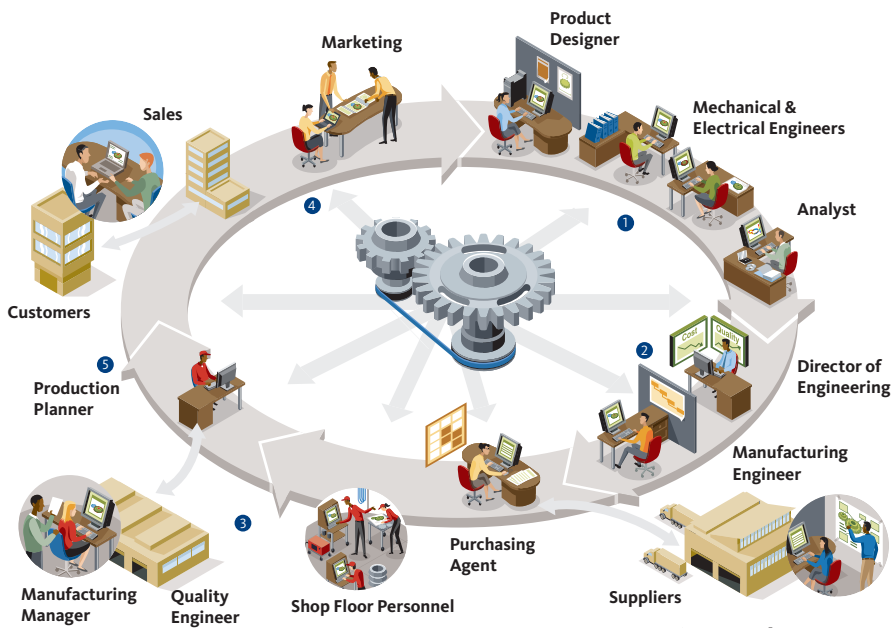
Marketing

Product Designer

Mechanical & Electrical Engineers

Sales

Analyst

Customers

Director of Engineering

Production Planner

Manufacturing Engineer

Manufacturing Manager

Quality Engineer

Shop Floor Personnel

Purchasing Agent

Suppliers

DIAGRAM: XPLANE®

Streamlining AEC Projects

Today, the architectural, engineering, and construction (AEC) process from design through construction, and later on into facility management, is more complex than ever. And the design review process is filled with team members who don't typically use computer-aided design (CAD) software, such as clients, contractors, and consultants, yet who are vital to the project workflow. Autodesk Design Review helps you overcome these challenges by accelerating the design review process and putting the design in the hands of the people who need it.

Easy-to-use tools help team members review, mark up, and track changes to sheet sets and building models, while dramatically reducing review cycles and costs and improving team communication. Tight integration with AutoCAD, AutoCAD® Architecture (formerly Architectural Desktop), AutoCAD® MEP (formerly Autodesk® Building Systems), Revit® Building, Revit® Structure, Revit® MEP, and AutoCAD® Civil 3D®provides a systematic method to respond to comments and help ensure that revisions are timely and comprehensive.

Here are some of the ways that Autodesk Design Review takes advantage of existing investments in established workflows to help building firms gain that elusive competitive advantage:

- **Accelerate Review Cycles**
  Cut two to three days per review cycle by using Autodesk Design Review software with Revit and AutoCAD-based products to electronically review, mark up, and revise designs.

- **Use Digital Back Checks**
  Reduce errors that cost time and money and affect your reputation by using Design Review for back checking. Enable team members to automatically track and review changes and their status without waiting for printouts.

- **Visualize Designs for Client Presentations**
  Autodesk Design Review enables team members unfamiliar with complex CAD software to fully visualize drawings and models, including tools to rotate and cross-section models without altering the original file. Include interactive drawings and models in Microsoft® PowerPoint® slide sets for more effective presentations.

- **Document Construction Change Orders**
  Use the markup and status tracking tools in Autodesk Design Review to track changes required throughout the construction process.

- **Reduce Printing and Shipping Costs**
  Save as much as $100 per job while enabling team members to fully participate in a digital design review process. Going digital means no more waiting for drawings to be printed and distributed and then faxed back to the designer.

Autodesk Design Review software streamlines your design review process with custom markup and approval tools that help speed the project to completion. Now team members can accurately review 2D and 3D designs digitally, offer feedback quickly and easily, and track and round-trip their changes while cutting days off the review cycle.

1 Preliminary Design
Speed designs to approval and improve communication utilizing Autodesk Design Review software's intuitive digital review, measure and markup tools for 2D and 3D designs. Gather client and management feedback early. Review comments digitally Revit-based products, AutoCAD Architecture, and AutoCAD MEP software, streamlining revisions.

2 Consultant Collaboration
Improve collaboration with Structural, MEP, Landscape and other engineers and cut review cycles by up to 2-3 days using Autodesk Design Review software for internal and external reviews.

3 Construction Validation
Gain insight early in the process, securely sending designs to GC for "constructability" reviews. Combine all project information such as construction cost estimates and project timelines in Design Review software. Additionally, Autodesk® Collaborative Project Management, with DWF technology built in, helps expedite processes with bidding and project management tools.

4 Building Permitting
Digitally automate the permitting processes with city planning departments or government agencies accepting DWF-based plans, reviewing them digitally, and communicating changes quickly. The result is faster permit granting processes, reduced paperwork, and improved data archiving.

5 Construction
Enable on-site markups and easy tracking and communication of construction changes back to the lead architect digitally. Speed access to any needed paper-based plans thanks to DWF technology integration with large-format printers. Once construction is completed, building inspections move quickly and can be signed-off digitally by government agencies using Design Review's markup and approval tools.

6 Facilities Management
Provide access to building plans and enable facility managers to communicate any asset updates or changes to building owner digitally. Design plans can be easily shared across an Intranet for easy access.

Owner/Developer

Lead
Architect
1

Project
Manager

Draftsperson

Structural
Engineer
2

Facilities
Management
6

MEP
Engineers

Government
Agency

4

3

Subcontractors
5

General
Contractor

Suppliers

Reprographer

DIAGRAM: XPLANE®

Keep Geospatial Data Up to Date

Ensure that you have the most up-to-date, accurate drawings, maps, and models in the office or out in the field, at all times. As teams extend and field forces increase, an easy-to-use electronic distribution system is crucial for distributing designs. But productivity is a two-way street. You also need to capture change requests, update the data, and then electronically send it back.

Utilizing DWF technology and Autodesk Design Review software, you can communicate digitally and receive feedback from extended team members who don't typically use computer-aided design (CAD) software, such as construction crews, field staff, or planners. Among other formats, Design Review supports standards for design, DWF and DWG, assuring team members see exactly what is intended. Easy-to-use tools allow the review, mark up, and tracking of changes to drawings, maps, and 3D models, while dramatically reducing review cycles, cutting costs, and improving team communication.

Team members can communicate changes in context, including object properties, geo-location, asset utilization, and job tickets. Add comments, track status, and drag information of any type—site photos, project timelines, or standards documents—combining them into a single file. Plus with the tight integration with AutoCAD®, and AutoCAD® Map® 3D, and Autodesk® MapGuide® you can systematically respond to comments and help ensure that revisions are timely and comprehensive.

See why Autodesk Design Review is the perfect partner for your teams:

- **Automate Information in the Field**
  Get the most from your existing investment in Autodesk MapGuide, AutoCAD Map 3D, AutoCAD Raster Design, or AutoCAD software by quickly distributing compact, highly accurate geospatial and system information to team members in the field. Field staff can easily review and mark up the files in Design Review and send them back to the designer. Field workers with GPS-enabled laptops can view and interact with assets on maps and identify their own current location and the locations of specific assets.

- **Distribute Compact Files**
  Share complex maps easily with DWF technology, typically 1/20 the size of a DWG file and 1/10 the size of a PDF file.

- **Reduce Paper Backlogs to Keep Mapping Information Up-to-Date**
  Use Autodesk Design Review software with AutoCAD Map 3D, Autodesk MapGuide, and AutoCAD software to reduce paper backlogs by getting changes made in Design Review back from the field electronically.

- **Document Construction Change Orders**
  Bring changes noted in Autodesk Design Review back into the original design. No longer do you need to create as-built plans from scratch—simply update the as-designed plans with markups from Design Review software.

Autodesk Design Review software streamlines design review processes with custom markup and approval tools that help ensure everyone has the most up-to-date drawings, maps or models. Now team members in the office or out in the field can accurately review 2D and 3D designs digitally, offer feedback quickly and easily, and track and round-trip their changes while cutting significant time off the review cycle.

Autodesk Design Review allows you to leverage existing technology investments in Autodesk design software and third-party systems such as geospatial data storage, work management, or ERP to automate processes.

1 Drafting & Design
Speed processes utilizing Autodesk Design Review to digitally share and review geospatial data within your organization or with external consultants. Review and integrate changes digitally in AutoCAD Map 3D, and AutoCAD software, streamlining revisions.

2 Construction
Reduce rework and paper-based backlogs. Automatically track construction change orders in Design Review, allowing reuse of as-designed plans for as-built plans.

3 Maintenance & Operations
Regularly deliver field staff up-to-date, highly accurate geospatial and system information that can be viewed in Autodesk Design Review. Redlines and annotations performed during inspection or service calls can be retrieved from the field and routed for updates.

4 Planning & Analysis
Flexible technology integrates into existing systems. Increased accuracy of infrastructure data improves planning and analysis, and ultimately service levels.

Customer

Planning Dept.

Planner

Project Manager

Drafting Technician

Base Team

Engineer

Project Supervisor

Project Analyst

Construction Contractors / Subs

Field Staff
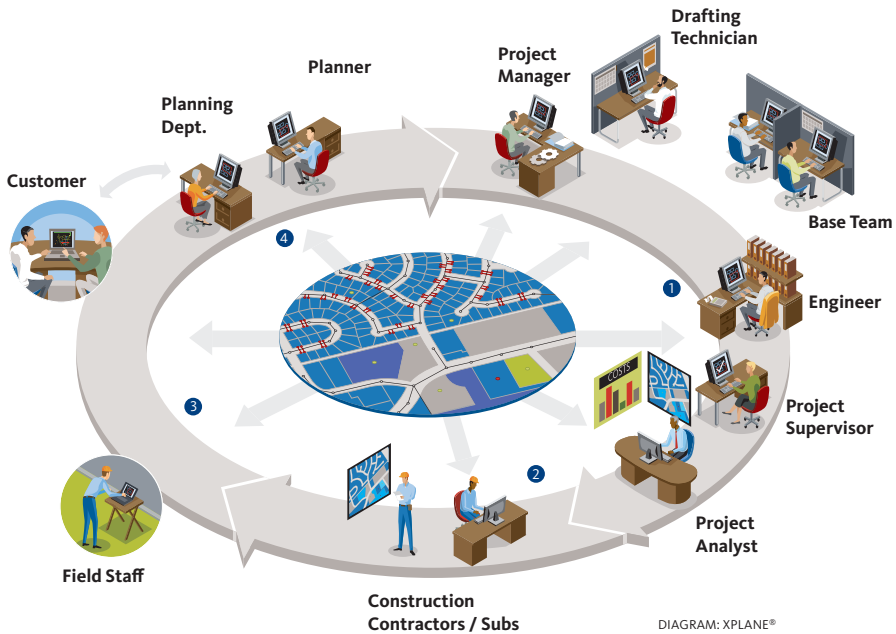
DIAGRAM: XPLANE®

II.
Getting Started with Autodesk Design Review

This chapter provides instructions on installing and using your Autodesk Design Review software.

Before You Install

System Requirements

Before installing the Autodesk Design Review ensure that your system meets the following requirements for each component of the software installation:

- 800 MHz 32-bit (x86) or 64-bit (x64) processor or faster

- Microsoft® Windows® Vista, XP Professional or Home Edition, or Windows 2000 (SP4)

- 512 MB RAM recommended (for Windows Vista users, 1 GB RAM or more recommended)

- 550 MB free disk space for installation

- 1024x768 VGA with true color (minimum)

- Microsoft Internet Explorer 6 or later

- Mouse, trackball, or compatible pointing device

- CD-ROM drive, DVD-ROM drive for 64-bit systems installing from CD

- Optional Hardware:

    - 3Dconnexion SpaceTraveler™ support for 2D and 3D navigation

    - GPS device set to communicate using NMEA 0183 standards, the standard 4800 baud rate, and a COM Port (COM1 to COM10). This includes: GPS device bundled with Microsoft Streets and Trips 2006, Panasonic Toughbook® with integrated GPS device, USB connected GPS device, Bluetooth connected GPS device set to use a COM port

To Install the Software when Downloaded from the Autodesk Website

1. Visit **www.autodesk.com/designreview-download**, and select to download Autodesk Design Review software.

2. Save the application to your computer.

3. Double click the Autodesk Design Review application icon.

4. Follow the installation instructions.

To Install the Software from a CD

1. Close all open applications.

2. Insert the CD into the CD-ROM drive. If the setup program does not start automatically, go to step 3.

3. Choose Run from the Start menu.

4. Type **d:\setup** (where *d* is the CD-ROM drive).

5. Press Enter.

6. Select the products you want and then click Install.

To Deploy Autodesk Design Review Across a Network

Autodesk Design Review can be installed silently via the following:

    msiexec /i SetupDesignReview.msi /qn

By installing Autodesk Design Review silently, the viewer can be included as part of a company-wide automated script. For example, this is particularly useful when installing software company-wide using SMS.

Companion Products to Install

When you install Autodesk Design Review 2008, there are several additional software components you may want to install on your system:

Through the File>Import command, Autodesk allows you to bring in different CAD file types. Design Review calls a command to publish the file to a DWF for easy integration into your sheet set. It is recommended that you install the following plug-ins if you work with the respective file formats:

- **DWG TrueView™**
  To view, plot, and publish DWG® and DXF™ files.

- **Autodesk® DWF Writer™**
  To create DWF files from any Windows application, including Microsoft Office applications, or to utilize the DWF Writer plug-ins for Solidworks, Pro/ENGINEER, and CATIA.

- **JT Plug-in for Autodesk Design Review**
  To import and publish JT files, a common UGS format, to DWF.

- **DGN Plug-in for Autodesk Design Review**
  To import and publish DGN files, a common MicroStation format, to DWF.

Additionally, the **Batch Print Plug-in with HP Instant Printing** helps increase productivity by automating the printing capabilities with the power of sending multiple DWF files at once to your printer. Simplify the printing process further when connected to an HP large-format printer, instantly printing from Autodesk Design Review single sheets or batches of DWF files.

You can download the plug-ins from the Autodesk website at **www.autodesk.com/dwf-plugins**

How to Register Your Software

Be sure to register your product over the web by completing the registration form at **www.autodesk.com/designreview-download**. By registering, you'll stay informed about product updates and special product offers from Autodesk.

Training and Support

Autodesk and its partners provide extensive training and support offerings.

To Get Online Help

Within Autodesk Design Review, choose **Help** from drop-down menu to access a rich library of information about the product.

Support Resources on the Web

Visit **www.autodesk.com/designreview-support** and find a knowledge base of commonly asked support questions as well as current issues. Also, you can ask questions and read information about the use of Autodesk products in the peer-to-peer discussion groups on **www.autodesk.com/designreview-discussion**; Autodesk hosts topical discussion groups about specific products, including Design Review, and general topics, such as drafting techniques and sharing designs with the DWF file format. Alternatively, Autodesk software manuals and documentation are a great source of answers to your support questions.

Training Resources on the Web

Visit **www.autodesk.com/designreview-training** for a complete list of training resources.

Autodesk Authorized Training Centers

The Autodesk Authorized Training Center (ATC®) network, Autodesk's premier training channel, offers short, industry-focused courses for beginning and advanced users. To find a training center near you, contact your local Autodesk country office or visit **www.autodesk.com/designreview-atc.**

A complete list of support options is available at **www.autodesk.com/designreview-support.**

III.
New Users to Autodesk Design Review

The following pages provide a tutorial overview on the basics of using Autodesk Design Review software.

The following pages provide a tutorial overview on the basics of using Autodesk Design Review software. The tutorial includes information on how to open a DWF file, navigate, measure, markup, annotate, change the status, and round-trip the designs to the designer for fast revisions. There is also a section on using Design Review for 3D reviews, along with information about our new version compare, online content search, and geo-referencing features.

Detailed product information is available in the product Help menu. To activate the product Help, select Help from the main menu.

The Workflow: Send, Review, Markup, Round-trip, Revise

Below is an overview of the design collaboration process between the "designer" using Autodesk software and the "reviewer" using Autodesk Design Review software.

For the purposes of this tutorial we will walk through the process with a sheet set from AutoCAD and a 3D model from Autodesk Inventor, but the same processes hold for working with any of the other Autodesk design software. Autodesk Design Review also supports review and markup of 3D DWF files published from any Autodesk design software or from any third-party design software with the free Autodesk® DWF™ Writer, available at **www.autodesk.com/dwfwriter.**

Designer

Reviewer

AutoCAD

- Send DWG or DWF File
- View, track & navigate mark ups
- Edit drawing
- Send back, until approved

Autodesk Design Review

- View and print
- Mark up, measure, annotate
- Combine project info
- Track changes

DIAGRAM: XPLANE®

Redline Mark Ups

Step 1: Open the Sheet Set and Review its Contents

You can review the contents of a sheet set or model by navigating to any sheet in a list or thumbnail view.

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

   Open the DWF file you want to work with by using the file open icon or File/Open command and navigating to the sample file provided.

   For the purposes of this tutorial we'll walk through the manufacturing project, but the same steps can be followed with an AEC or geospatial project.

2. If you have received a DWG, DXF, JT, or DGN file, rather than a DWF file, use the File/Import feature to automatically convert the DWG file to a DWF file for review. *(Note: You may need to install additional plug-ins to utilize this feature.)*

3. When the DWF file opens, you will see the Navigator window displaying the sheets and models in the DWF file. The first sheet is automatically displayed. **(Figure 1.1)**

4. Select the 6th item in the Content palette, titled "Drawing - Shaver Complete - Sheet:2"

Step 2: Zoom in

Zoom in to a section where you'll take a measurement and create a markup. The next person to open the markup will see it at the zoom in which you create it.

1. Select the Zoom Rectangle button from the main toolbar. **(Figure 2.1)**

2. Drag it across the shaver in the right corner of the drawing, allowing some extra space on the right for markup. The area will highlight. **(Figure 2.2)**

Figure 1.1

Navigator/Content palette displaying sheets and models
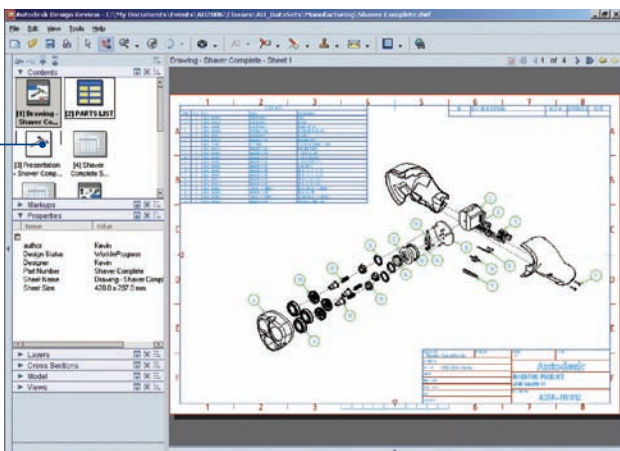
Figure 2.1
Select from
the Zoom drop
down menu.
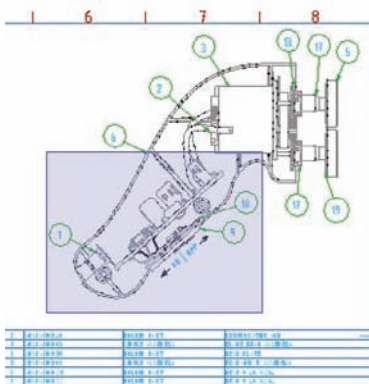
Figure 2.2 The Zoom Rectangle tool will zoom into the high-lighted area.

3. Use the Pan button 🖑 to move within the sheet and reposition your view.

    •   The Zoom button 🔍 allows you to zoom in or out of the sheet or model.

    •   The Fit to Window button ⊕ allows you to refit the sheet or model within the window, returning it to its original position.

    •   Use the "**Esc**" key to release the tool you are using.

Step 3: Print Sheets or Models

Autodesk Design Review provides flexible printing options, allowing reviewers to print to standard or large format printers with the same quality experienced from the original design software.

1. From the main menu, select **File** and then select **Print**, or select the Print button 🖨 from the main toolbar. The Print dialog box opens.

    •   To navigate the sheets, in the Print Range section click All. Then click the Left and Right Arrows below the preview area. **(Figure 3.1)**

Print Sheets or Models

Figure 3.1

| << | < | 1 of 11 | > | >> |
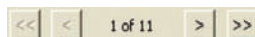
Figure 3.2 ›
Choose your preferred print settings including print in black & white, then select OK.
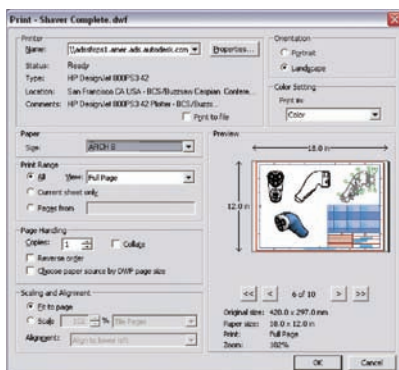
2. Select from the following print options: Printer, Paper, Print Range, Page Handling, Scaling and Alignment, Orientation, and Color Setting.

   These settings affect the preview display as well as the output.

3. Click OK once you are satisfied with your selections. **(Figure 3.2)**

4. **Select File > Batch Print Wizard…** to print multiple DWF files, customize print settings, and save batch printing configuration for later use.

   • Navigate your directory to locate the DWF files you want to print

   • Create and save custom lists for future use.

Note: If you have not installed the Batch Print Plug-in for Design Review you will be prompted to do so before this feature is available.

5. If your computer is connected to an HP printer with Instant Printing capabilities, you can take advantage of a partnership Autodesk has with HP to provide a one-click method of printing called **HP Instant Printing**™ (HPIP) from the standard or batch print options.

   To activate this option select the Instant Printing button 🖨 from your main toolbar. The button will automatically appear if you have an HP printer that supports this functionality installed on your system. For a list of printers that have HP Instant printing capabilities, see the HP Instant Printing Web site at http://www.hp.com/go/hp-instant-printing.

Step 4: Measure

DWF files are smart. They contain information about the drawing in the background. For example, you can find out the dimensions of an object without needing to calibrate the dimensions of the drawing.

1. Click on the measure button 📏 in the main toolbar. (If the length tool is not displayed as in the illustration, click on the

downward pointing arrow of the measure tool button and select it from the expanded list.) **(Figure 4.1)**

2. Hover the cursor over the switch until you see the red snap point with the white center $+\!\!\!^{\mathbf{O}}$.

3. Click and drag until you see the same snap point on the other side of the switch. A measurement should appear between the two end points. **(Figure 4.2)**

4. You can change the units display of the measurement by selecting, **Tools > Units and Scale**. The measurement above for example can be changed to centimeters or inches for example.

5. Once you've noted the measurement of the switch, select the measurement with the Select Objects tool ⓘ and hit your **"Delete"** key. You can delete any measurement or markup throughout your review in this way.

Step 5: Mark Up a Drawing Sheet

The Autodesk Design Review markup tools include revision clouds, text, shapes, and stamps allowing reviewers to comment on the 2D and 3D designs.

1. To create a revision cloud, click on the Markup tool ⓘ. If the rectangular markup cloud is not displayed, click on the downward pointing arrow of the Markup tools and select it from the expanded list. **(Figure 5.1)**

2. To create a revision cloud, click and drag the cursor diagonally across switch, release the mouse, and click again where you want to place the text tag. If you chose to markup with a unique shape, you will want to click at each corner on the shape.

3. Type the text: "Adjust switch terminal to extend on position by .10mm" and click outside the markup or hit "Esc" to finish. **(Figure 5.2)**

Figure 4.1 Select from three measure tools.
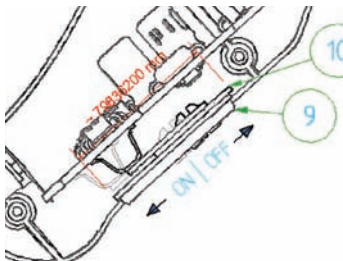
Figure 4.2 Select the line length tool. Then click, drag, and release from end point to end point.

Figure 5.1 Select from pre-defined markups.
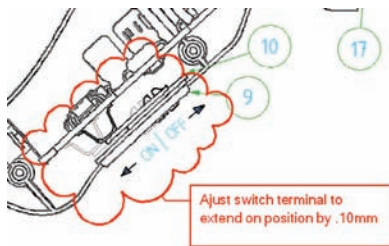
Figure 5.2 A rectangular target cloud with a markup comment.

Step 6: Change the Status of the Drawing

You can change the status of a drawing and write additional notes to others. All markups along with their status and notes are automatically tracked in Autodesk Design Review throughout the revision process.

1. With the Select Objects tool ⬉ click on the markup you just made. The markup will display yellow grips for the corners. **(Figure 6.1)**

2. In the Navigator Markup palette the markup will display along with a status of "none."

   You can also add a note in the Notes section if you want.

   Within the Properties palette, in the Status drop-down box, click on the downward pointing arrow and select For Review. **(Figure 6.2)**

   The markup palette and icon will change colors to visibly display the markup status for a quick visual check. **(Figure 6.3)**
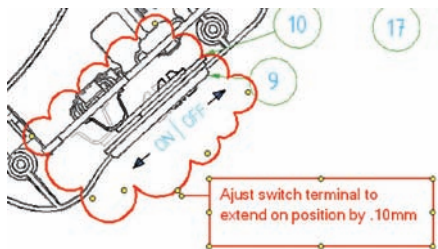
Figure 6.1 Markup displaying yellow grips when selected.

Figure 6.3 For visual reference, markup display color cross-selects with status change.

Figure 6.2 Status drop-down menu displayed.

Step 7: Stamp the Drawing and Add Objects

You can stamp a drawing with a status at any point along the way or add objects importing from virtually any catalog.

Design Review has seven preconfigured stamps. Once you stamp a drawing, you can change the text and appearance of the stamp. **(Figure 7.1)**

1. To stamp a drawing, click on the downward pointing arrow of the Create Stamp and Symbols tool 🔨 and select a stamp from the drop-down list.

2. Click where you want the lower, left corner of the stamp to appear. **(Figures 7.2)**

3. Change the text in the Stamp, by using the Select Objects tool 🔓 to select the Stamp. Double click to engage the text box. Change the text from "Preliminary" to "Draft 1". **(Figures 7.3)**

4. After selecting any Markup, Stamp, or Symbol you can rotate or resize it by grabbing and moving the object.

5. To import a symbol or object library, Click on the Stamps and Symbols button and select **Import DWF as Symbol Catalog**. Browse and find the DWF file you want to import.

   Any DWF file can be imported including AutoCAD object libraries published to DWF or other graphics files published using the Autodesk DWF Writer. Once imported, the symbols or objects act just like the Stamps.
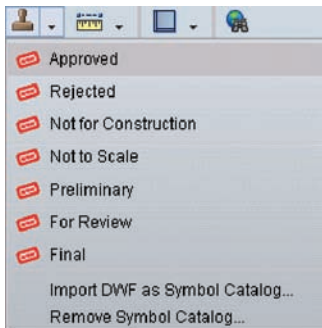
Figure 7.1 Use one of the stamps as-is, or change it to suit your needs.

Figure 7.2 The default appearance of a stamp.

Figure 7.3 Stamp with text changed.

Step 8: Combine Project Information

Autodesk Design Review allows you to aggregate project information into a single DWF file. 2D and 3D designs can be combined into one file. Timelines, images, bill of material data and much more can be combined. You can also reorder, name, or delete project information at any time.

1. Open your Windows Explorer menu and find any Raster image or DWF file to drag and drop into the Navigator/Content palette. A vertical line on the left indicates where the sheets will be placed in the Thumbnail tab. **(Figure 8.1)**

   You can now open any of the added sheets just like any other sheet in the DWF, by clicking on it. When you save the file, the added sheets will be incorporated into the DWF file, and anyone opening it in Autodesk Design Review.

   If you have an Excel, Word, or other file type you would like to drag into the file, use **Autodesk DWF Writer** to publish the file to DWF. You can then drag the DWF file into the Design Review Navigator/Content palette.

2. To capture and bring any onscreen information into your DWF file, select the Snapshot tool 📷 on your main toolbar.

   A new Snapshot window will appear. **(Figure 8.2)**

   • Select the onscreen window where you want to capture information.

   • Resize the Snapshot window.

   • Click on the Snapshot icon in the lower left.

   The image will appear at the end of your list of sheets and models.

3. Move the new sheet to any new position in the Navigator/Content list by simply dragging and moving it to its desired position. **(Figure 8.3)**

4. Rename the file by double clicking the name and typing a new name.
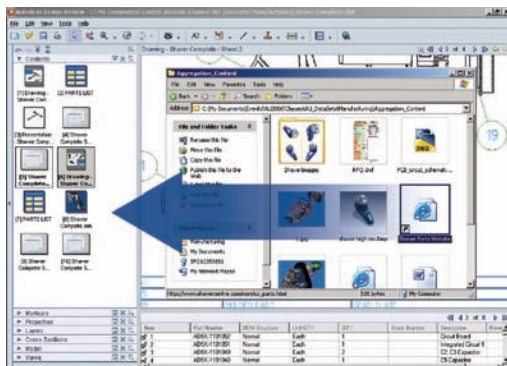
Figure 8.1 Drag and drop any DWF or Raster File directly into the Navigator/Content palette.

Figure 8.2 Capture and add any onscreen information with the Snapshot tool.
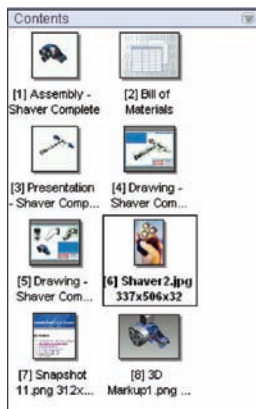
Figure 8.3 The Snapshot tool will add captured information to the Navigator/Content palette.

Step 9: Save the Sheet Set with Markups

Save the sheet set with your markups and the added sheets. You can then share it with other reviewers or send it back to the designer for revisions.

1. From the main menu, select **File** and then select **Save As…. (Figure 9.1)**

2. In the File Name window, highlight the current name, except for the .dwf extension.

3. Type in a new name, such as "*YourNameMarkup.*" **(Figure 9.2)**

4. Click the **Save** button.

5. Click the Close button ⊠ at the top, right of Design Review to close the software.

The drawing is ready to be sent back to the designer or on to another reviewer.

Save the Sheet Set with Markups
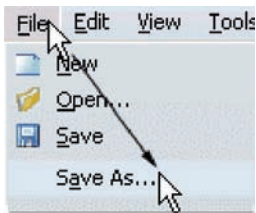
Figure 9.1
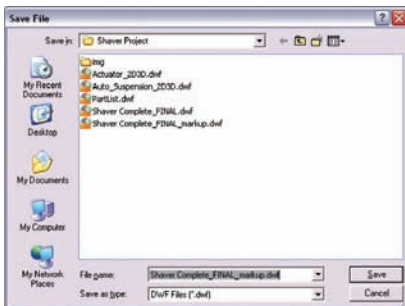
Figure 9.2

Step 10: Back to the Designer:
The Designer Revises the Drawing Sheets

Once you have saved the sheet set, you can send it back to the designer or on to others until all comments and changes are noted and communicated throughout the review process.

If the individuals to whom you send the marked DWF have Autodesk design software they can open the DWF file with markups directly using the Markup Set Manager feature in their design software. They can add notes and change the status of the sheet just as you can.

To access the Markup Set Manager feature, in AutoCAD select the red cloud button on the main toolbar, or **File** and then select **Markup Set Manager. (Figure 10.1)**

The Designer Revises the Drawing Sheets
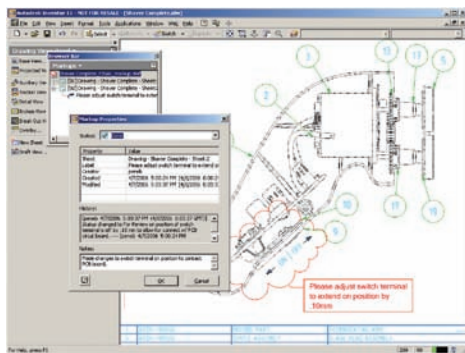
Figure 10.1 Display of Markup Set Manager feature in Autodesk Inventor.

The Markup Set Manager feature in Autodesk design applications has the same markup navigation view as that in Design Review, allowing 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 Autodesk design software.

If the designer does not use Autodesk design software, or is using an earlier version of Autodesk design software that does not have the Markup Set Manager feature, they can view your markups in Autodesk Design Review.

You can exchange the DWF indefinitely until all issues are resolved and the original drawing is revised.

IV.
Advanced Features in Autodesk Design Review

The following pages provide an overview on the new and more advanced features in Autodesk Design Review software.

Working with 3D DWF Files

Autodesk Design Review is built for review of sheet sets and 3D models in a single file. Reviewers can aggregate 2D and 3D files in a single DWF file as demonstrated in Step 8 of this tutorial, or the designer can publish both 2D and 3D together in a single DWF file for sharing. **(Figure A)**

1. The 3D toolbar is different, allowing you to navigate different 3D views.

   To **rotate the view** of the model:

   - On the main toolbar, use the **Orbit** button 🔵 to drag and rotate the model within the model itself. To rotate the object horizontally, vertically, or diagonally, click and drag the mouse pointer. Press and hold the Shift key and drag horizontally to prevent vertical movement. Press and hold the Ctrl key and drag vertically to prevent horizontal movement. Note: If you're working with a building model use the Turntable tool 🔵 .

   - Select a pre-defined view from the **Standard Views** button 🔵 . **(Figure B)**

   - Navigate from the **Navigator/Model** palette and select from within the tree view a particular part or assembly. The selection will be highlighted in the model window.

   - Navigate from the **Navigator/Views** palette to a predefined view or one you add yourself.

   - To **Save a View**, select the Views palette toolbar, click the Palette Options button 🔵 and choose, "Save View". The view will be added to your "My Views" selections. You can also use this same tool to **Reset to Published View**. **(Figure C)**

   - Use the **View Object Wheel** tool 🔵 to access many of these navigational capabilities from within one tool including Center, Orbit, Zoom, and Rewind. If you're working with a building model or want full access to the navigational features you'll want to use the **Tour Building Wheel** or **Full Navigation Wheel** mode, respectively.

- The **View Cube** also allows you to navigate to pre-defined views—whether Front, Back, Left, Right, Top, or Bottom.
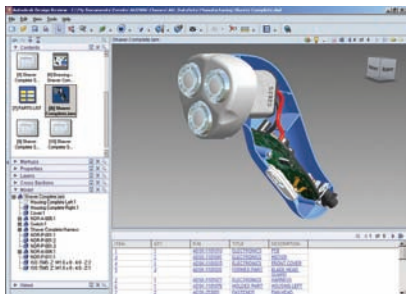
Working with 3D DWF Files

Figure A This DWF files has both sheets and models in one space.
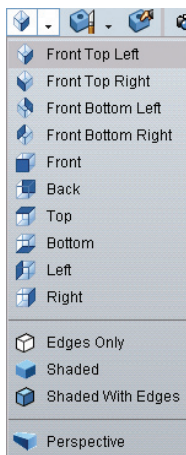

Figure B Toolbar, showing pre-defined 3D navigation in Autodesk Design Review.

Figure C Reset to Published View from the Views palette.

2. To more fully interrogate the model, you'll want to pull apart and cross section the model.

- To pull apart, select the **Move and Rotate** button , and then in the Model palette or on the canvas, click the object or objects that you would like to move or rotate. You can move the object along the corresponding plane.

- To cross section the model, select the **Cross Section** button and select a section plane.

- A transparent purple sheet (the section plane) and a tripod drop into the center of the model, cutting through the model to reveal a cross section. The section plane can be moved or rotated to reveal a different cross section each time. XY, YZ, and XZ each represent a plane defined by two of the three axes of the tripod that opens.

3. DWF files may be published with or without Animations, Assembly Instructions, or table data, such as parts lists or bills of materials. When a DWF file is published, the author can include any of this information to share with the product team.

- **Animations** allow reviewers to users to observe the details of assembly and/or component objects more closely and see how and in what order they fit together. The Animations palette lists the animation views, chapters, and sequences in an expanded tree view. The animations can be viewed by selecting the sequence and by using the animation tools, in the main toolbar to control the sequence. The same set of tools—measure, markup, annotate, and snapshot can all be used with the animation sequences to help coordinate design reviews. **(Figures D & E)**

- **Assembly Instructions** are attached to individual sequences in an animation by the designer. They explain, step by step, how to create the currently loaded assembly. They can include
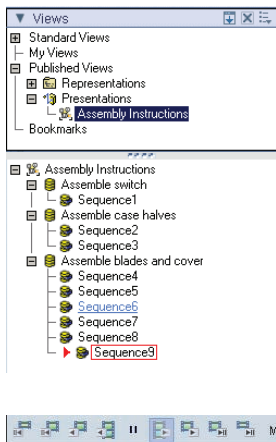
Figure D Animation palette in the Navigator window.

Figure E Animation toolbar used to control the playback of Autodesk Inventor animations.
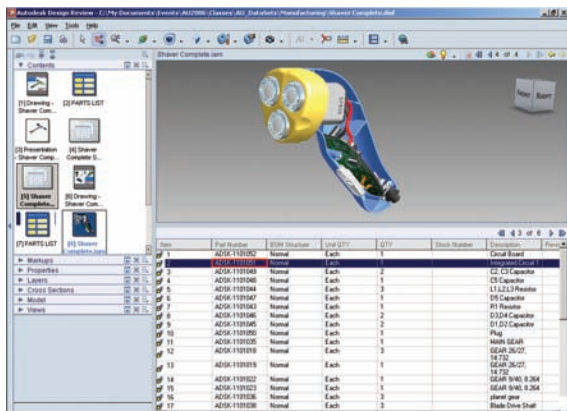

Figure F Bill of Materials information displayed in the Canvas pane.

text instructions and parts lists and are meant for use in a manufacturing setting to provide clear and concise instructions in conjunction with Design Review's View Animations feature.

- Design Review allows you to view **Bill of Materials** or other **Tabular Data**, in a published table, about individual parts that combine to create a component assembly or sub-assembly.

- Use the Arrange Display Areas tool ▭ to select your chosen layout to view the information shared by the designer.

- The Canvas Pane in the lower right section of the Design Review window displays assembly instructions and bill of materials information. **(Figure F)**

4. You can **Measure** 3D DWF files just as you measured DWF files in Step 4 of the tutorial. In 3D, you can measure:

- Length and relative distances between points, edges, center points, or any combination of these

- Angles between lines, planes, and edges.

- Length, radius of an arc, or the diameter or radius of a circle

- Point location relative to currently active coordinate system, or to a user-defined coordinate system.

The units of measurement can be Imperial (feet and inches) or metric, and they can be up to five decimal places in precision, depending on the precision set by the author of the DWF. **(Figure G)**

5. **Markups and Annotations** are made just as performed earlier
   in Steps 5 and 6 of the tutorial. New to Autodesk Design Review
   2008 is the support for persistent 3D markups.

   To mark up the 3D DWF file:

   - Click the Markup tool

   - Click on the model where you want the markup to appear
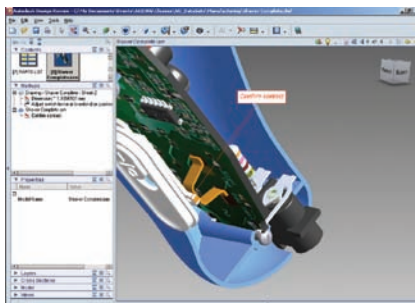
   - Type in your desired markup.

   When you move, orbit, or rotate the model, the markups will
   remain in position. **(Figure H)**

Measurement, Markups and Annotations

Figure G
3D measure tools provides
an expanded set of options.

Figure H ›
Markup on 3D model in
Autodesk Design Review.

Drawing Version Compare

Design Review can compare 2D DWF files and vector content to allow a reviewer to understand what has changed between versions.

1. From the main menu, select **Tools** and then select **Compare**. The Compare dialog box opens. **(Figure J)**

2. Select the Browse button, locate the DWF file you would like to compare, and click Open. A full list of the sheets in that file will appear.

3. Select the sheet you want to compare.

4. Click on Options to choose what color is used to define additions or deletions to the drawing between the versions.

5. Select OK. A visual comparison will be displayed in the content palette, along with a list of the additions and deletions between the versions in the Navigator/Markup palette.

Warning: Occasionally, comparing DWF files may produce some unexpected results. Design Review will identify all differences between two DWF 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 file is published from a 3D model space.

Online Content Search

Design Review 2008 enables you to search online for a selected part's description, title, or part number.

To search online for information not in the open DWF file:

1. Choose **Tools > Search Online**, or select the Search Online button from the main toolbar 🌐 . The search engine dialog is opened in a separate window. **(Figure K)**

2. In the "Search Online For" text box, type the desired search term or terms. (Warning: Double-byte characters are not supported.)

3. Click Search. Search results for the typed search terms are returned in the same window by the default search engine.

4. You can view search results from other search providers by clicking the other tab(s) on the Search page.

You can also search online for information on an object selected on the canvas, for selected properties, or for selected tabular data like a part number, by right clicking that data and selecting "Search Online…" Search results for the selected property value(s) are returned in a separate window by the default search engine.

Compare and Online Search

Figure J
Compare dialog box.

Figure K
Search Online is especially useful for procurement agents and purchasing specialists.

Georeferenced Maps

In Design Review 2008, sheets with defined latitude and longitude coordinates published from AutoCAD® Map 3D 2008 or AutoCAD® Civil 3D® 2008 can interact with GPS devices that use the NMEA 0183 protocol.

When a georeferenced map is displayed on the canvas, the Map Toolbar is displayed directly below the canvas.

1. To **view** published map coordinates, move the mouse pointer over the map. The current coordinates of the mouse pointer are shown on the Map Toolbar. **(Figure L)**

2. To **center** on coordinates, on the Map Toolbar, click the Center to Coordinates button 🔻 and click on the map. The map centers on the entered coordinates, and the Coordinate icon 🔻 is shown over the entered coordinates. You can also select the Map Menu button 🔽 and choose Enter Coordinates, then type or copy and paste the desired coordinates.

3. To identify your **current location**, you must also be connected to **a GPS Device**.

*   Configure you GPS device by choosing Tools > Options, and selecting the GPS tab. Then walk through the setup steps.

*   On the Map Toolbar, click the GPS Mode button 📍. The My Coordinates icon 📍 indicates your current location on the georeferenced map.
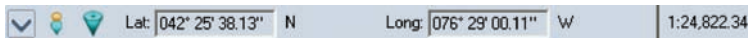
Georeferenced Maps

Figure L The Map toolbar displays the latitude and longitude.

Integrated with Microsoft Applications

Working with Autodesk Design Review and the DWF format also enables collaboration within familiar Microsoft® environments.

1. To embed in Microsoft Office applications, drag designs into Microsoft® PowerPoint®, Word, or Excel® programs and allow others to visualize designs in presentations and more. **(Figure M)**

2. Search in Microsoft Explorer to find relevant data using any text in the targeted DWF file. **(Figure N)**

3. To post DWF files on the Web embed Autodesk Design Review or the free Autodesk DWF Viewer in HTML utilizing the Design Review API and Active-X control. Information is available at **www.autodesk.com/dwf-developers**. **(Figure P)**

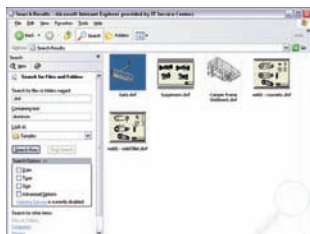**Integrated with Microsoft Applications**
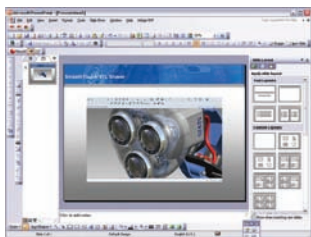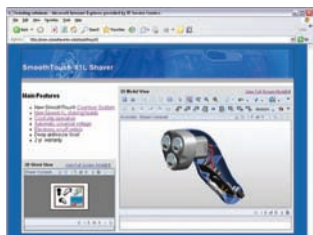
Figure M

Figure N

Figure P

You Could Get Used to This

The design is just the first step. It's what happens next that can make or break the project. Autodesk Design Review is the tool that helps you make your vision a reality in less time, and with less cost and effort. Never has your design review process been this efficient. Never has an idea been realized like this.

Learn More or Download
To learn more about Autodesk Design Review software, visit
www.autodesk.com/designreview

To download Design Review go to
www.autodesk.com/designreview-download
Information on DWF™ is available at **www.autodesk.com/dwf**

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