

Collaborating with AutoCAD® and Autodesk® Design Review

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Evaluation Forms

**Please remember to fill out
your evaluation form**

(In Hall B or via an email you receive. Complete by 8pm to be eligible for prizes)

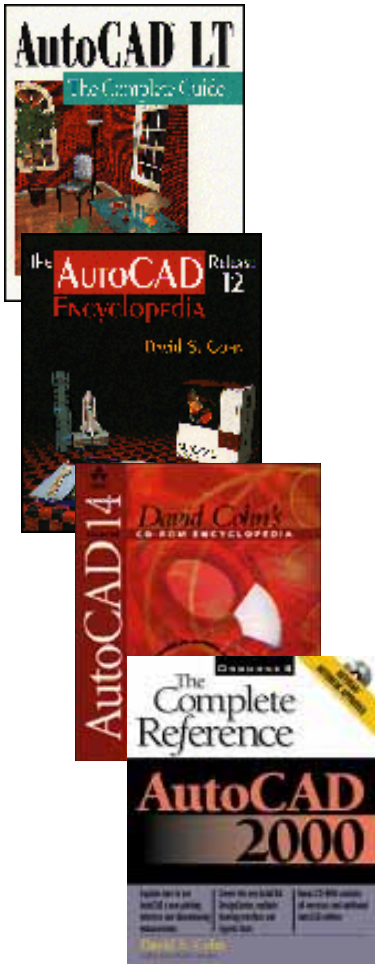
This is session GD405-1



And, please silence your cell phone.

David S. Cohn

- Independent consultant
- Contributing editor *Desktop Engineering*
contributing editor
- Former editor of *CADalyst*, *Engineering Automation Report* and *CADCAMNet*
- Frequent contributor to *Computer Graphics World*, *PC Magazine*, and others
- Registered architect—25+ years experience
- AutoCAD experience—20+ years
- Author of numerous books & articles
- President of Eclipse Software



COMPUTER GRAPHICS WORLD

DE



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Learning Objectives

- Publish DWF files
- Mark up DWF files
- View marked up DWF files in relation to original CAD files
- Use DWF to create hyperlinked sets of drawings
- Use markup status and properties to track and coordinate revisions
- Use DWF to better understand design projects
- Use DWF to facilitate communication between all stakeholders

New beginning in AutoCAD 2005

- Can publish multi-sheet DWF files
- Includes a new Markup Set Manager

What is DWF?

Design **W**eb **F**ormat

- A format to securely share 2D and 3D designs electronically with anyone who needs them
- In some ways similar to PDF, except:
 - Smaller
 - Smarter
 - Free

DWF files are smaller

- DWF files are highly compressed:
 - 1/20th the size of AutoCAD DWG files
 - 1/25th the size of Autodesk Inventor files
 - As much as 50X smaller than original Revit .RVT files

DWF files are smarter

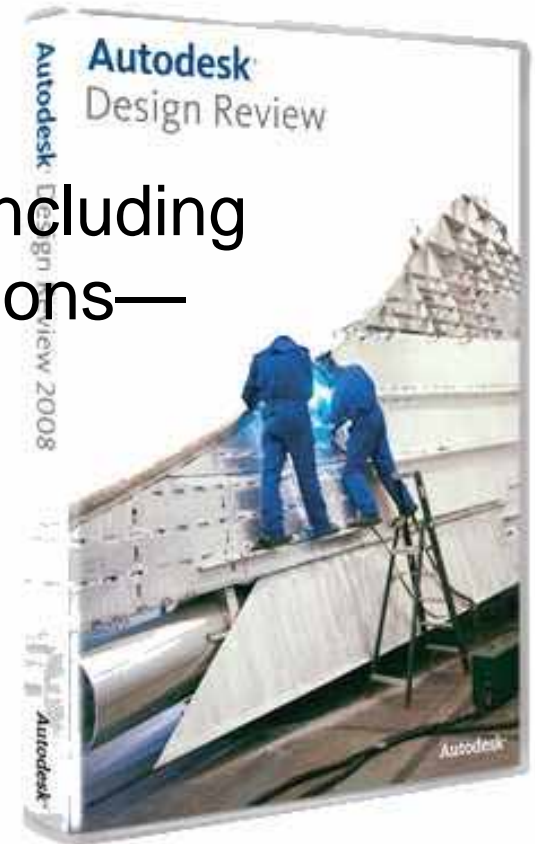
- They retain the fidelity of the original design:
 - Layers
 - Measurements and coordinates
 - Can be either 2D or 3D
- Can include multisheet sets of drawings
- Secure:
 - You don't have to supply the actual DWG file

DWF files are free

- You can publish a DWF file from any AutoCAD 2004 or newer product
- You can plot a DWF file from any AutoCAD 2002 product
- You can publish a DWF from Inventor
- You can export 2D or 3D DWF from Revit
- You can use the free DWF Writer to create a DWF file from any other Windows program

DWF files are free (cont.)

- You can view/markup/print DWF files—including “round-tripping” of markups and annotations—using Autodesk Design Review
- Other tools
 - Autodesk Freewheel (<http://freewheel.autodesk.com>)
 - Batch Print Plug-in with HP Instant Printing
 - Autodesk DWF Writer
 - JT Plug-in for Autodesk Design Review
 - DGN Plug-in for Autodesk Design Review



3D DWF?

- Most Autodesk products produce 2D DWF files. Think of 2D DWF files as an electronic version of a sheet of paper (similar to PDF).
- Most recent Autodesk products can publish 3D DWF files, which can be viewed using the latest version of Autodesk Design Review or Freewheel.

What's in a 2D DWF file?

- Only what's visible in the plot preview:
 - Paper size
 - Rotation
 - Scale
 - Pen Assignments
 - **ONLY** the layers that actually get plotted
 - Raster images
 - Named views

What's in a 2D DWF file (cont.)

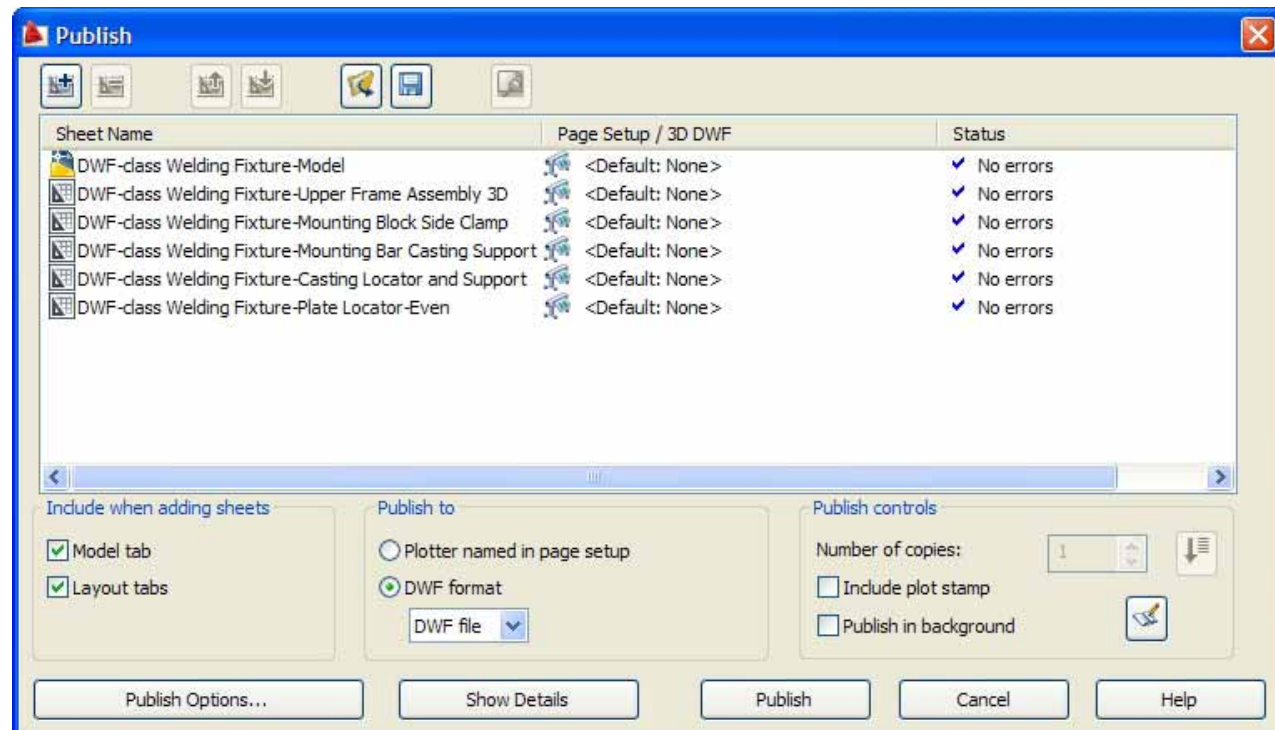
- **Blocks**
 - Beginning with AutoCAD 2006, individual blocks and attribute data can be saved to the DWF file
 - Even if blocks aren't saved, visible geometry is saved with the layer on which the block was inserted
- **Fonts**
 - SHX fonts are converted to simple vectors that mimic the original text
 - TrueType fonts are recorded to the DWF
 - You can control whether fonts are included in the DWF file

Creating DWF files from AutoCAD

- Use the PUBLISH command to create single or multi-sheet DWF files
- Use the EXPORT command to create a 3D DWF file
- (You can also PLOT, but that produces only single-sheet DWF files)

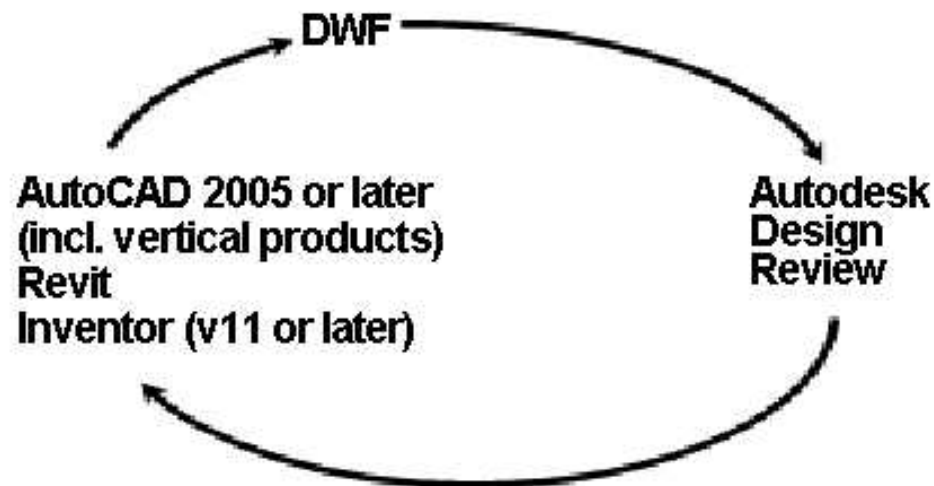
Publishing a DWF file

- Use the PUBLISH command
- Select the sheets you want to include
- Add/remove/reorder sheets
- Save/load sheet lists
- Include plot stamps
- Password protect

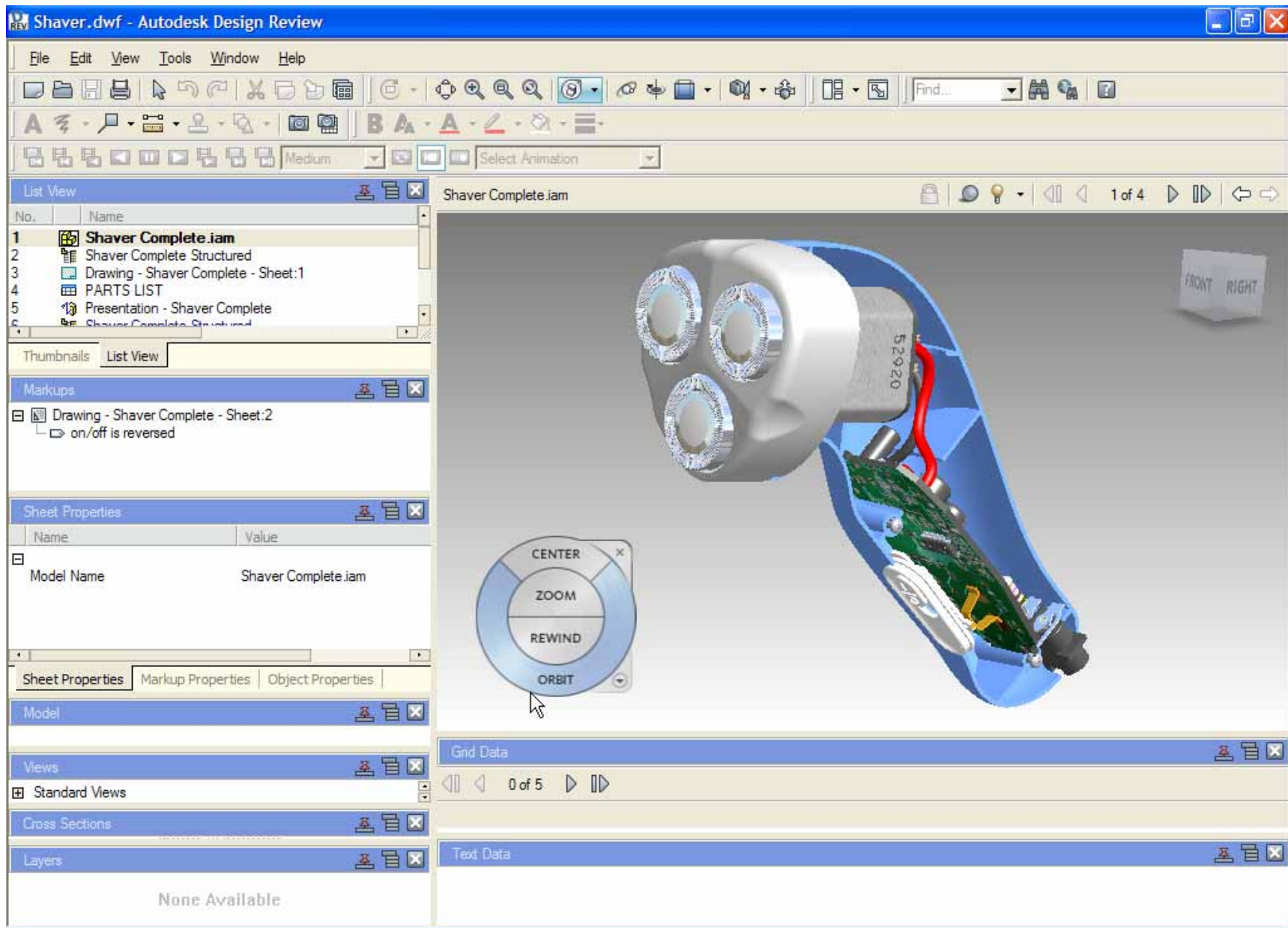


Now the fun starts...

- Use Autodesk Design Review to view, measure, and markup DWF files.
- Save the marked-up DWF files.
- Use AutoCAD's Markup Set Manager to view and respond to those markups in AutoCAD.



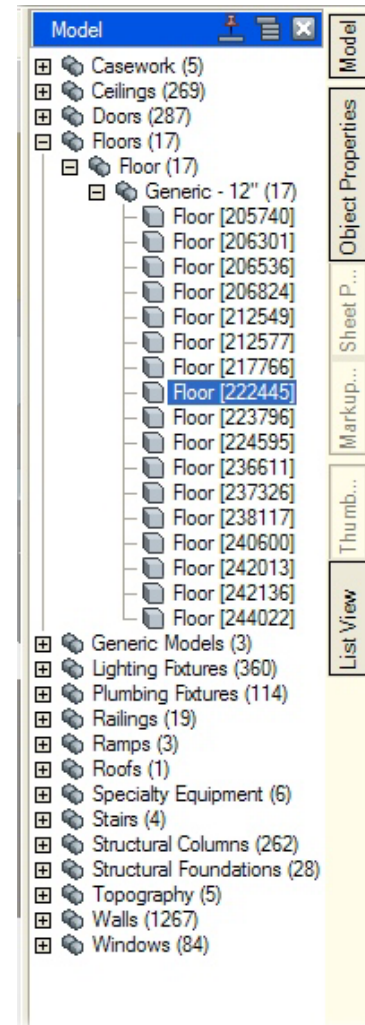
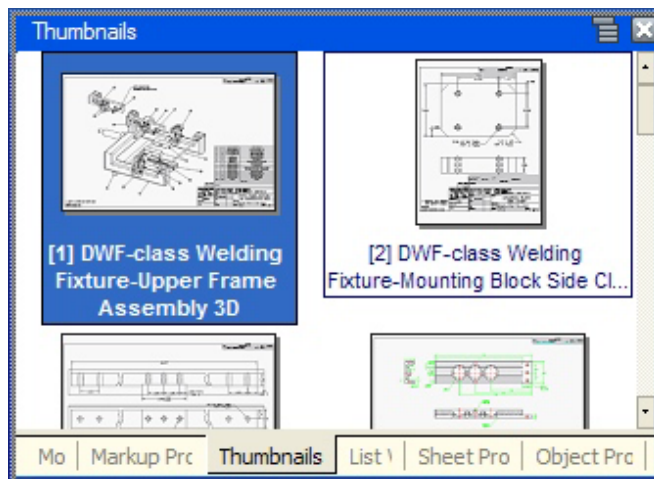
Autodesk Design Review



Design Review Palettes

A group of related features that helps you find and display information about the content of a DWF file.

- Palettes can be grouped (multiple palettes in same window)
- Palettes can be docked (along edge of canvas)
- Docked palettes can be pinned (reduces to a tab along the edge of the canvas)



Design Review Palettes

There are now 10 individual palettes:

▪ Contents

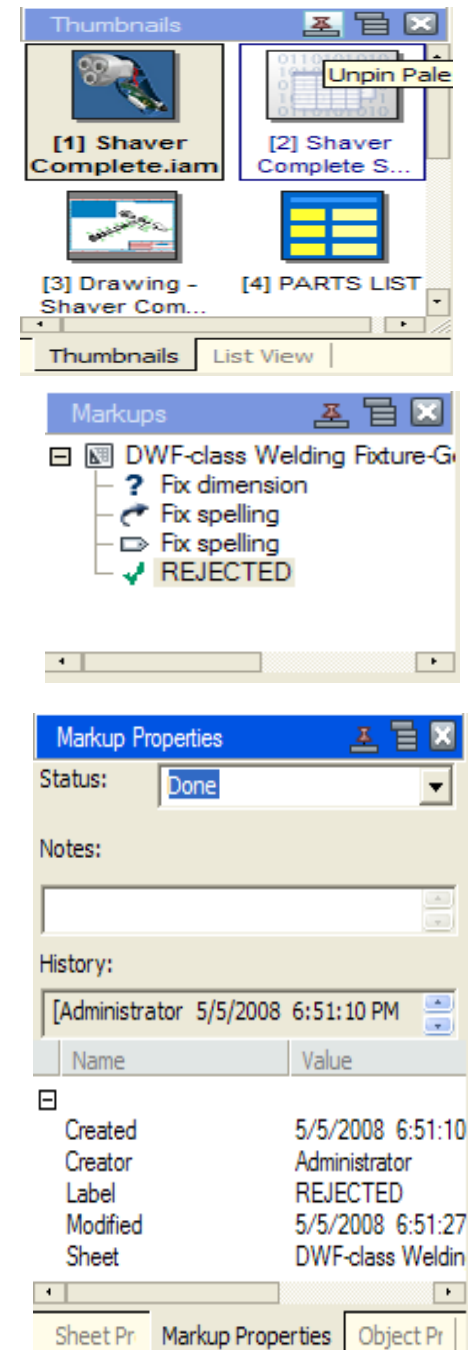
- List View: Shows sheets, tables, etc. in a list
- Thumbnails: large or small

▪ Markup

Displays any markups that have been added

▪ Properties

- Sheet Properties
- Markup Properties
- Object Properties



Design Review Palettes (cont.)

▪ Layers

Displays list of layer names
You can turn layers on and off

▪ Cross Sections

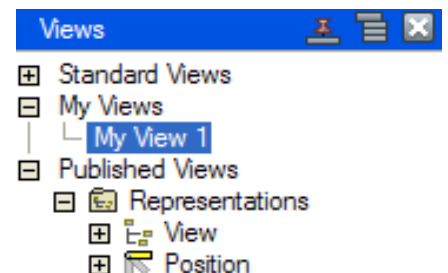
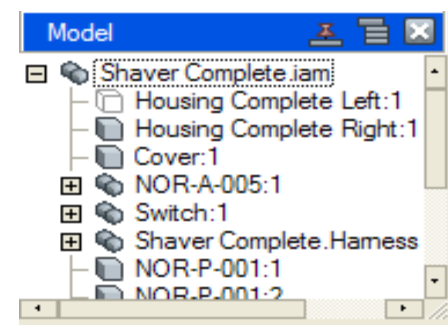
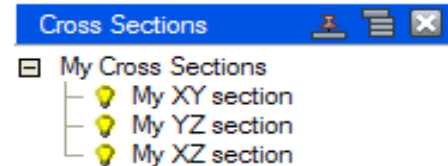
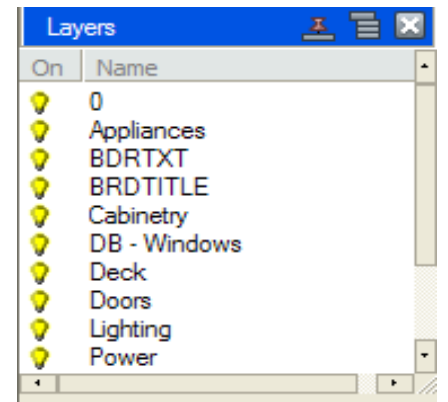
Displays list of cross sections for 3D models
Right-click to perform various functions

▪ Model

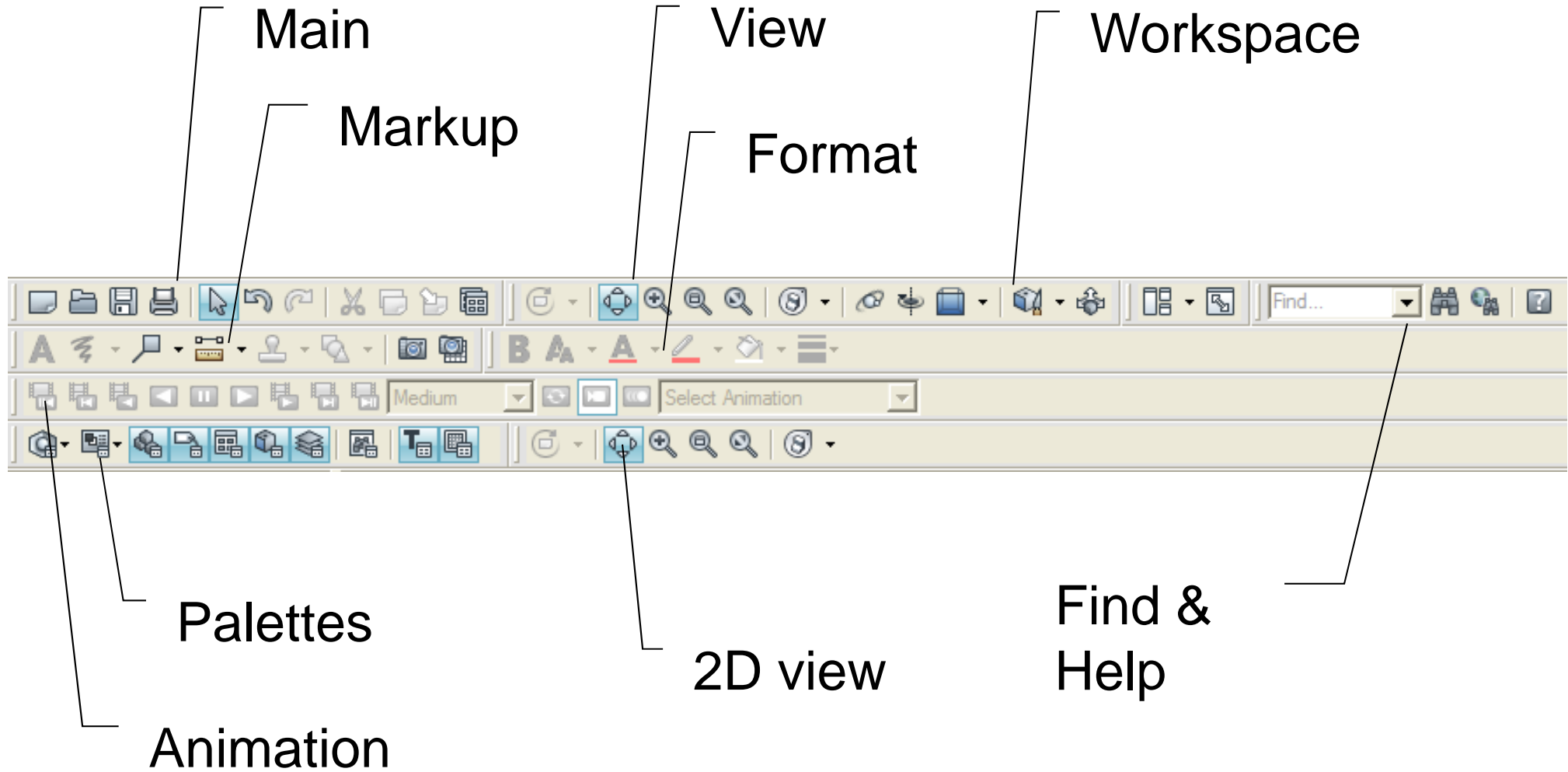
Lists objects and sub-objects in 3D model in a hierarchical tree indicating how they were assembled

▪ Views

Lists standard views, My Views (created in Design Review), Named Views (created in AutoCAD), Published Views (created in Inventor), and Bookmarks (created in Revit)

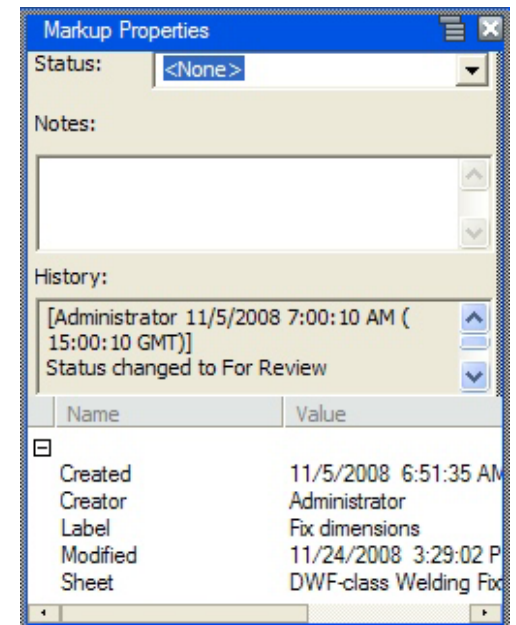
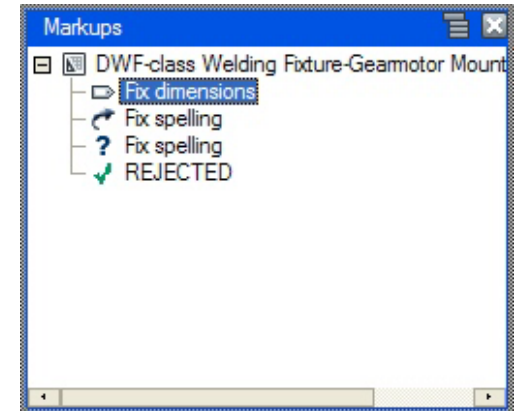


Design Review Toolbars



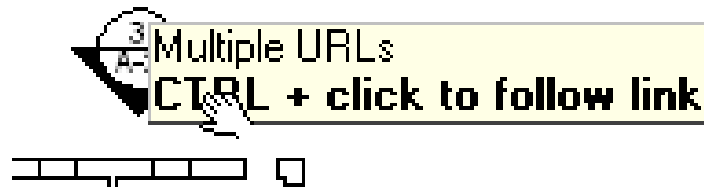
Adding Markups

- Markups are added to the DWF file
- History is tracked for each markup:
 - Who created it
 - When
 - Status
- Saved as part of the DWF file
- Color coded and icons specific to status



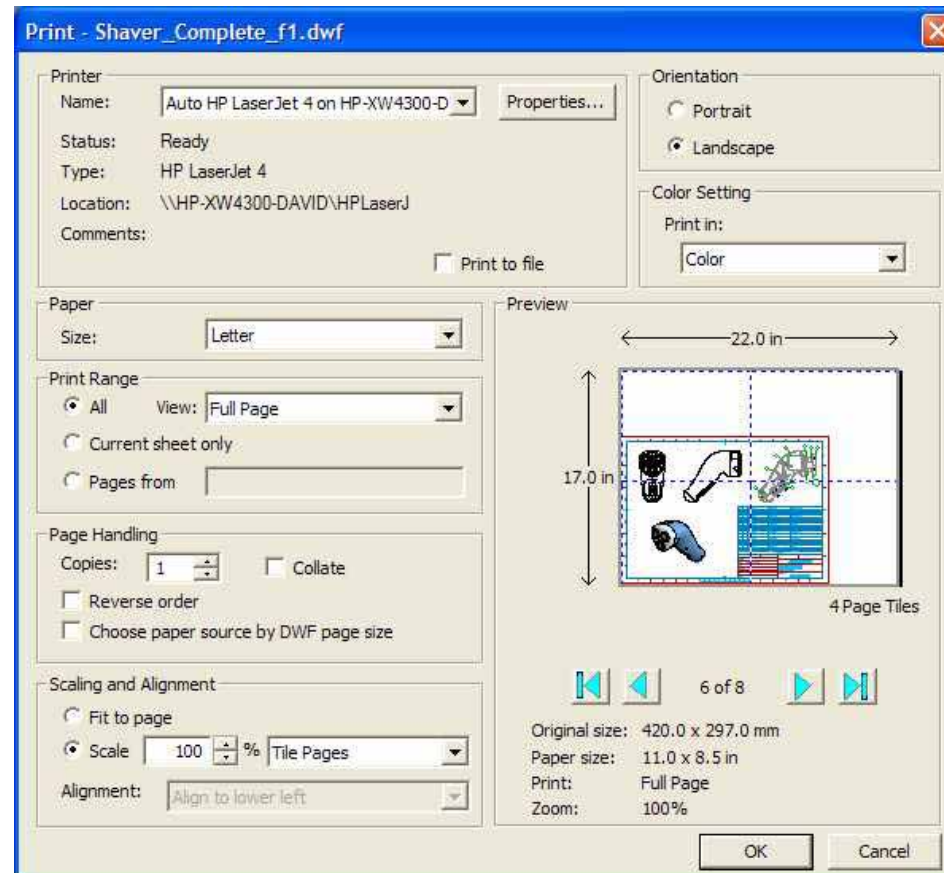
Using Hyperlinks

- If the DWF file includes hyperlinks, you can navigate to those links
 - You can control how this works (Ctrl+click or single click)



Printing from Design Review

- You can print to any Windows system printer
 - Scale to fit the sheet
 - Print to scale (tiled across multiple sheets)
 - Batch print



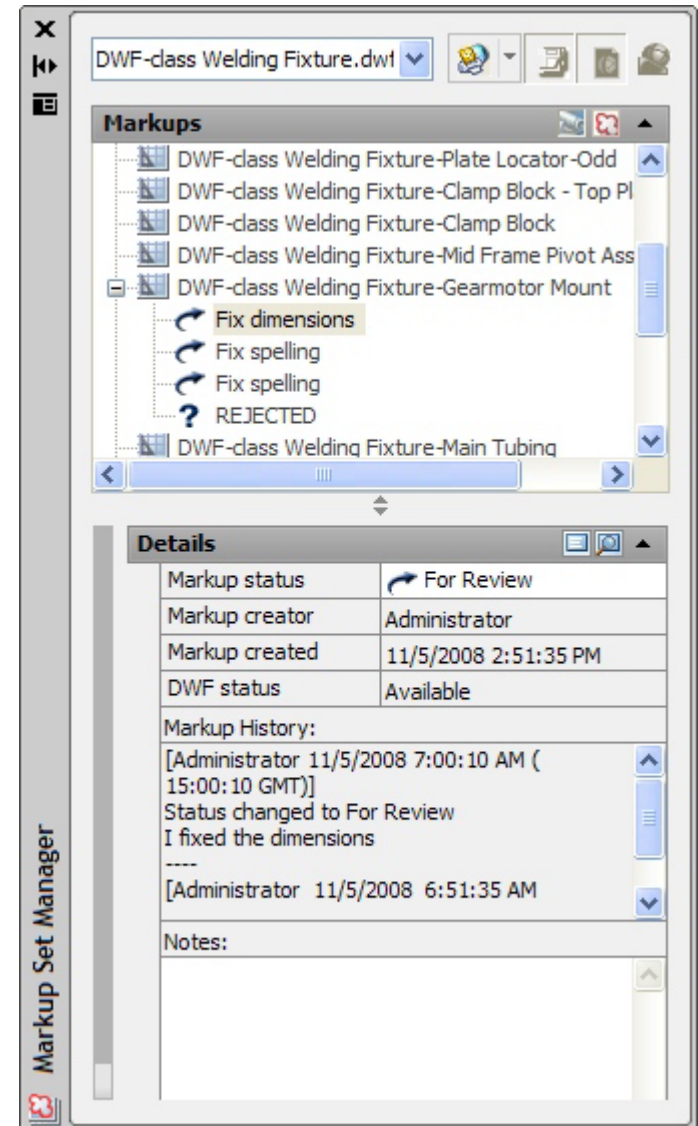
Modifying DWF File Content

- You can change the order of sheets in the Contents palette
- You can drag-and-drop (or copy and paste) between multiple instances of Design Review
 - If you use the free DWF Writer to create DWF files of other types of content, you can use this method to add that content to your DWF file
- When you save the DWF file, all changes, additions, and markups become part of the file

Markup Set Manager

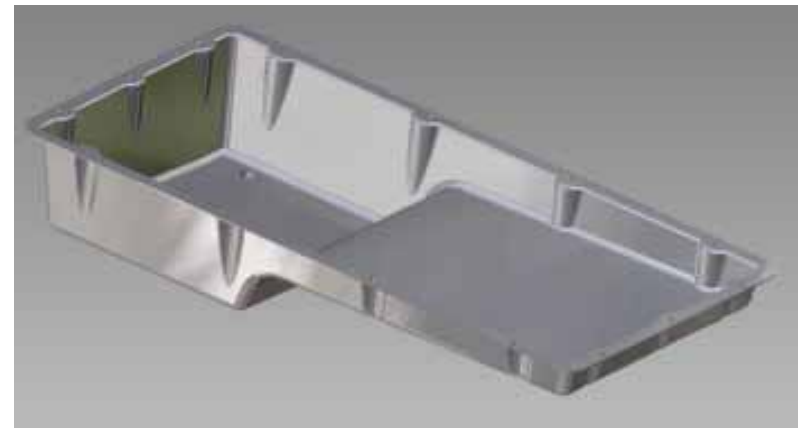
View DWF markups in AutoCAD
(similar tools in Revit & Inventor)

- Shows the sheets that contain markups
- Open DWG used to create DWF
- Toggle markups on/off
- Toggle between DWF and DWG
- Change status & add notes
- Republish all sheets or only those containing markups



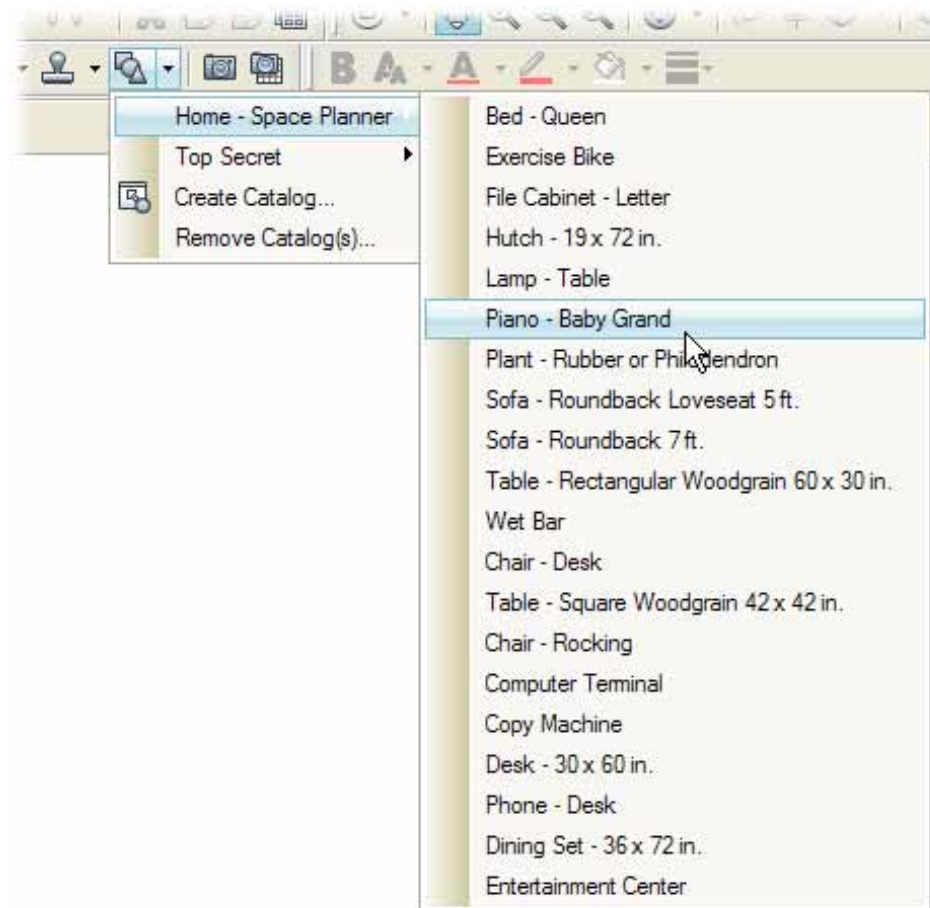
Advanced Design Review Functionality

- Creating Custom Stamps
- Measurement and Persistent 3D Markup
- Snapshot Tool
- Moving and Rotating 3D Parts
- Creating Cross Sections
- Drawing Version Compare
- New Navigation and Visualization Tools
- Animations and Bills of Materials



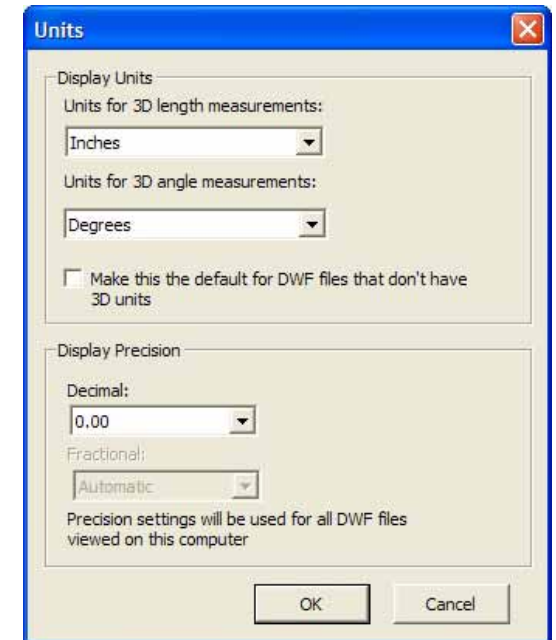
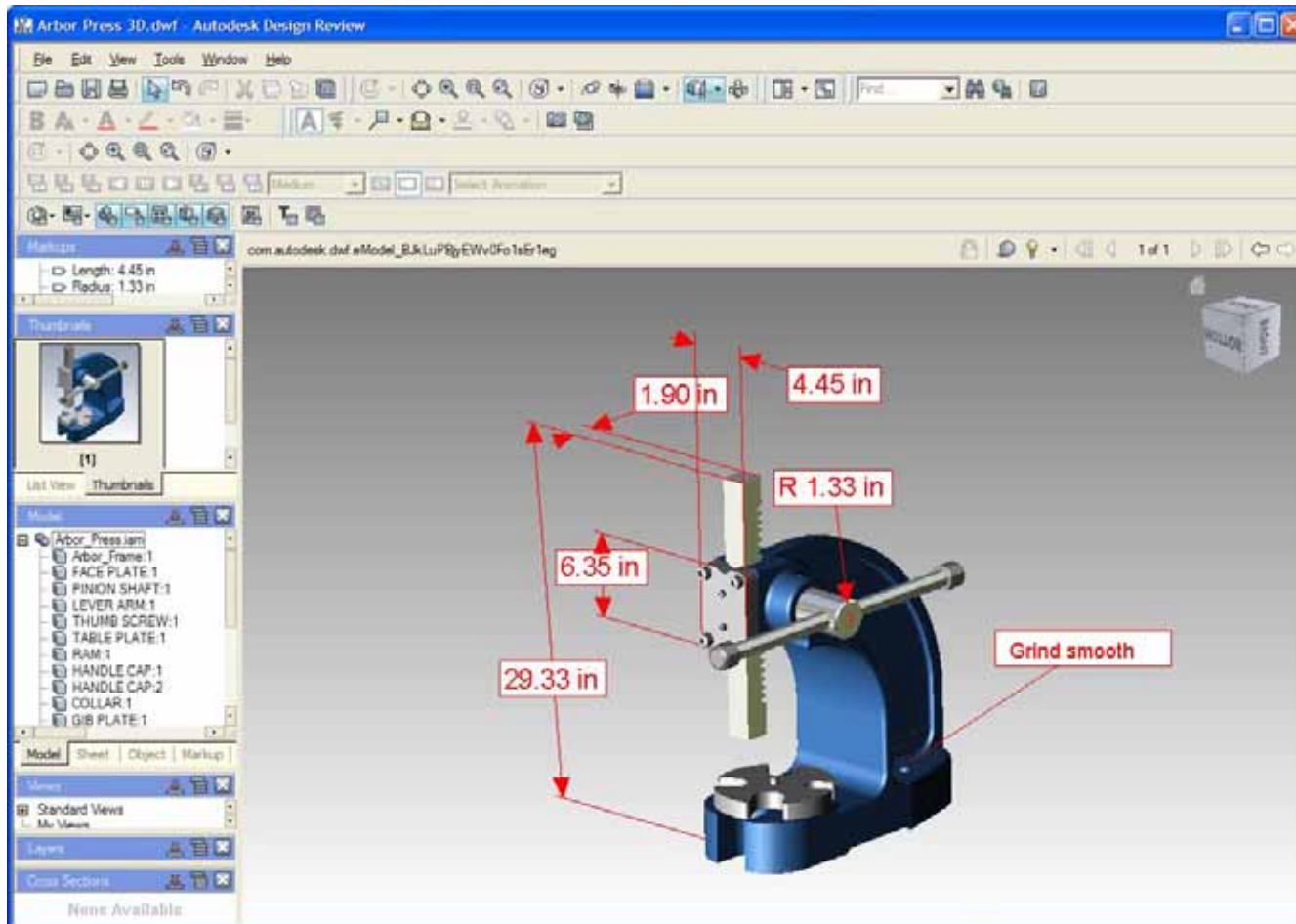
Creating Custom Stamps

- Import any DWF file as a custom symbol
- Import Individual blocks within DWF file as a catalog of separate symbols



Measurement and Persistent 3D Markup

- You can add dimensions and markups which remain visible when you reorient the 3D model
- Set units in Units dialog (Tools>Units...)



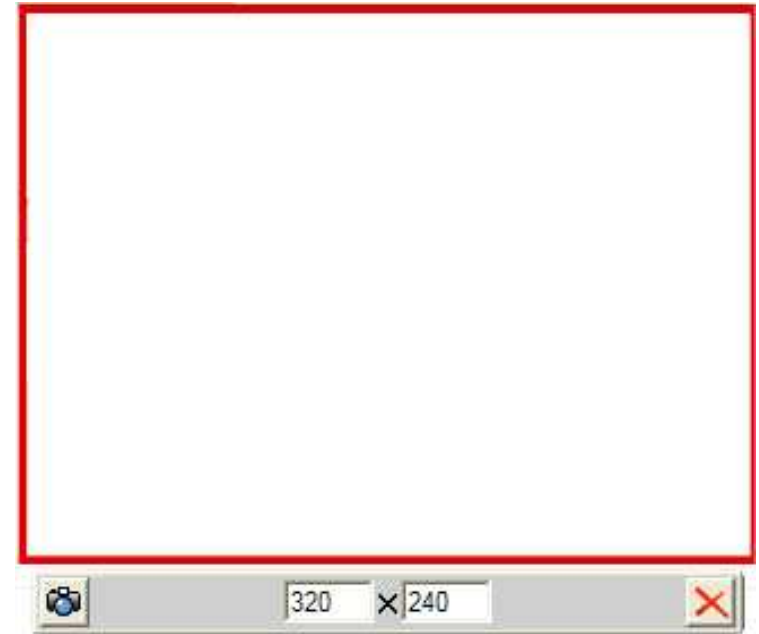
Snapshot Tools (on Markup toolbar)



Create New Sheet from Snapshot

Displays a special capture window

- Move and resize
- Click its snapshot button
- New image added to the contents of the current DWF file
- Screen capture anything

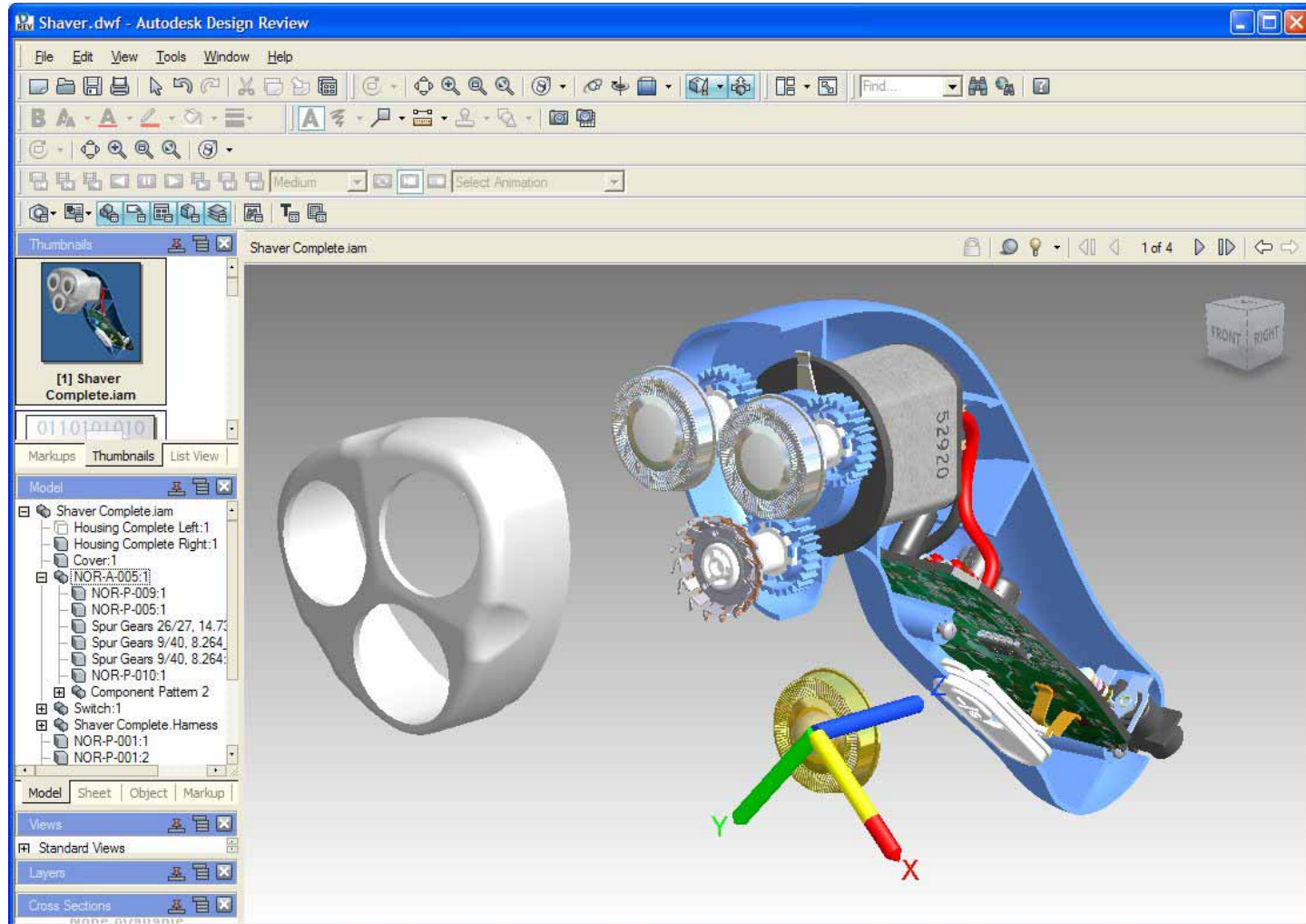


Create New Sheet from Data

- Captures contents of Data palette as an image and adds it to the contents of the current DWF file

Moving and Rotating 3D Parts

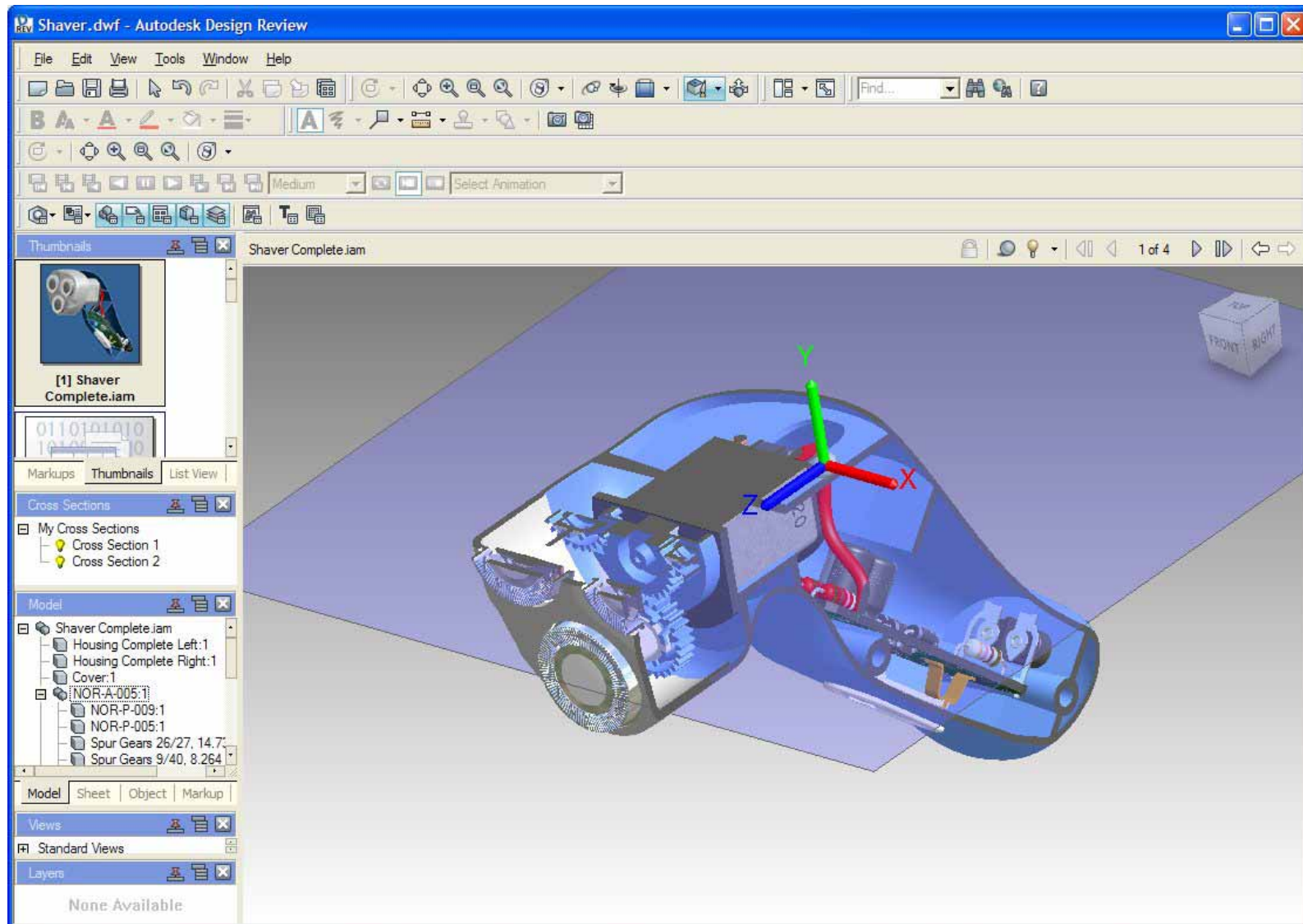
- You can move and rotate individual 3D parts
- Can easily return part to original position



Creating Cross Sections

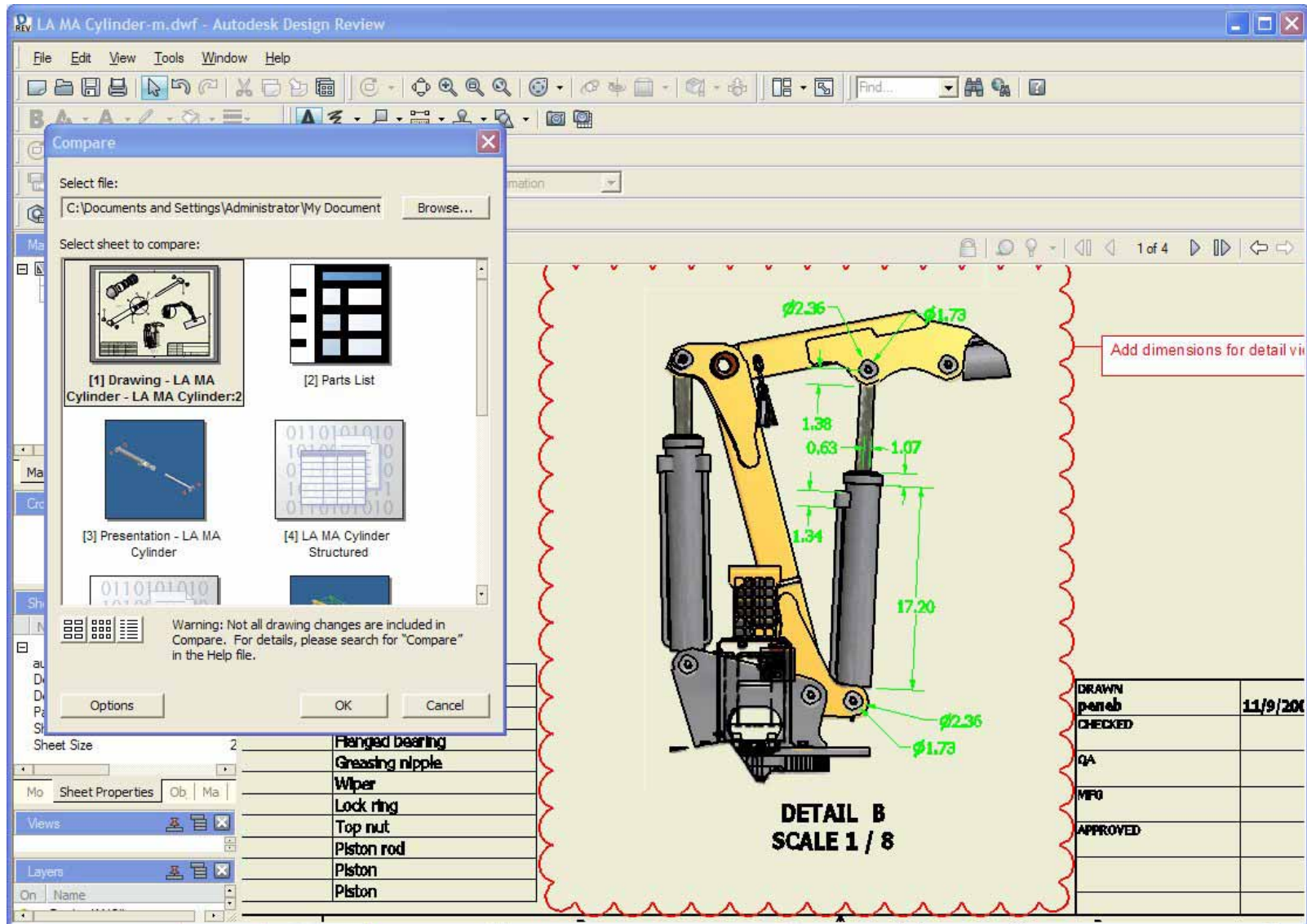


- You can place cross section planes that cut through the model



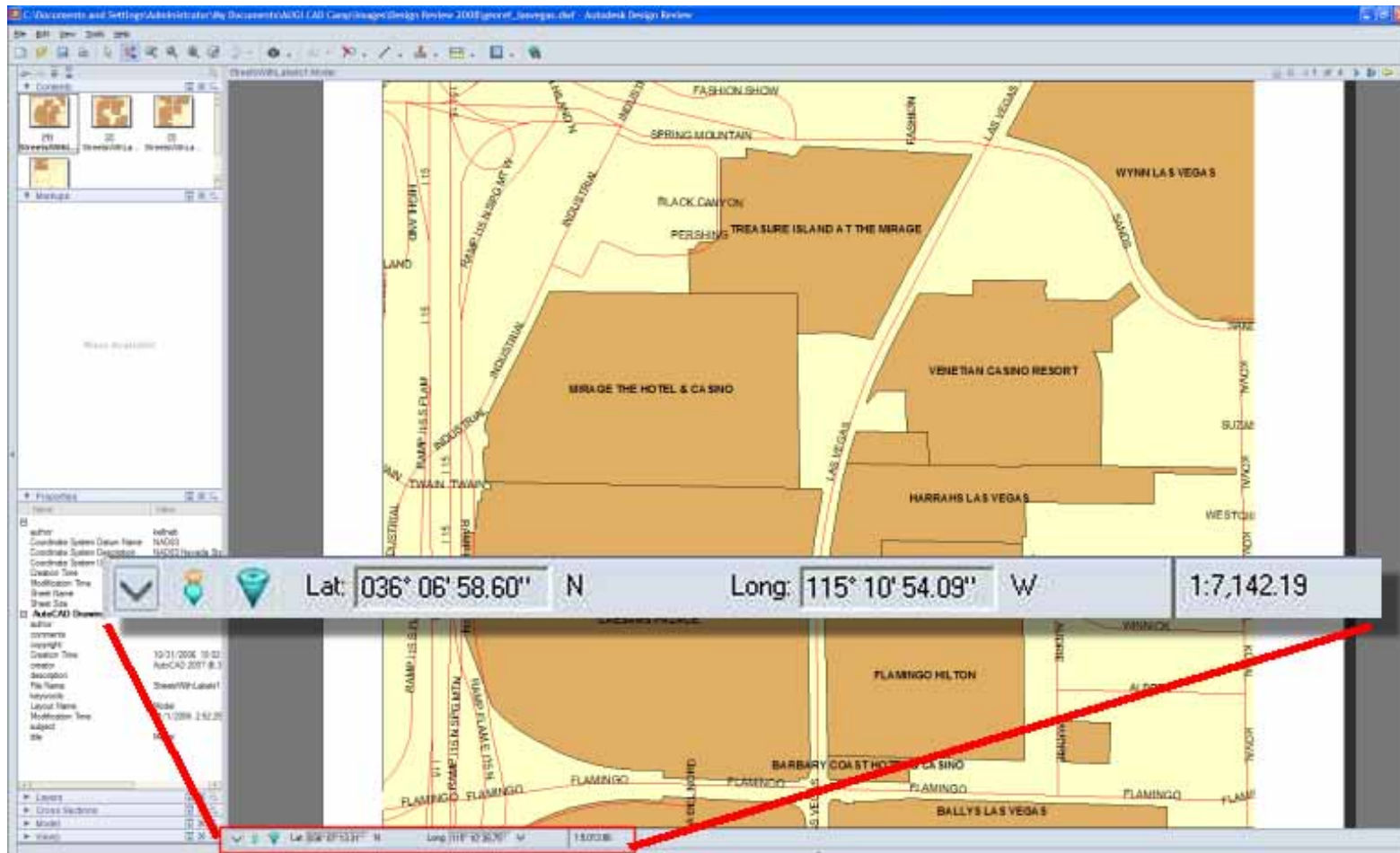
Drawing Version Compare

- You can compare a 2D DWF sheet to another selected 2D DWF sheet



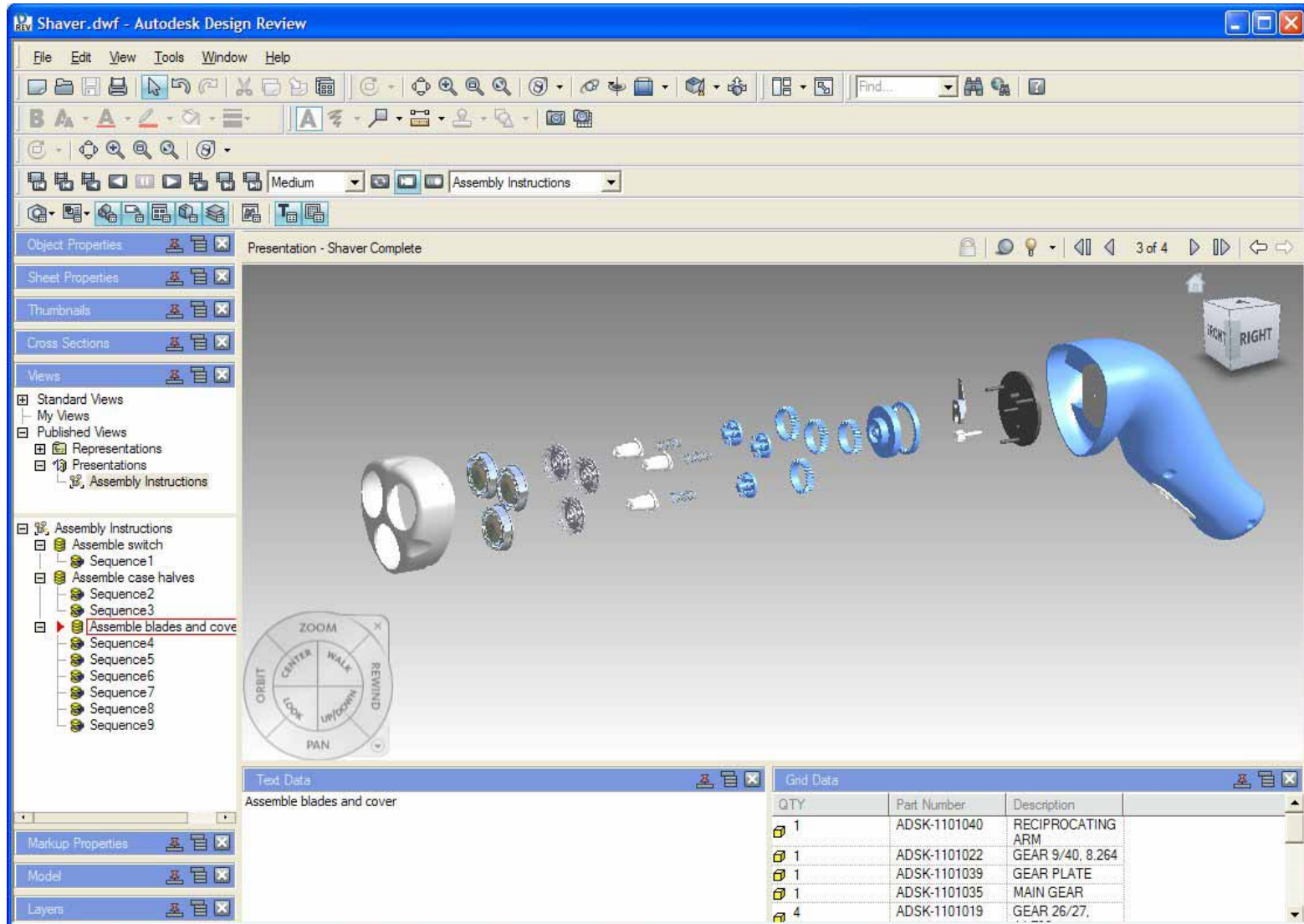
Georeferenced Maps

- Show latitude and longitude and interact with supported GPS devices



Special features for Inventor users

- Bills of Materials and Animations



Conclusions

DWF is much more than just a file format for exchanging drawings:

- Facilitate communication between all stakeholders
- Retain an electronic paper trail
- Reduce dependence on paper
- Offer capabilities not possible using traditional delivery methods

Evaluation Forms

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Questions & Answers

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