Collaboration

Designing a Website to Host AutoCAD® Content

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Autodesk

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Web-enabled capabilities in AutoCAD

- Launch your web browser from within AutoCAD

- Open and save files over the Internet

- Add hyperlinks to objects in a drawing

- Insert content (blocks, xrefs, etc.) from files located on the Internet

- Create and publish DWF files

Autodesk's Web Technologies

- **Autodesk DWF™ Viewer** – enables viewing and printing of 2D and 3D models and drawings saved in DWF format, including multi-sheet DWF files. Price: FREE

- **Autodesk® Design Review** – enables viewing, markup, measuring, and plotting of DWG and DWF files, including 3D DWF. Can round-trip DWF markup files with AutoCAD 2005+. Price: $199

- **i-drop®** – adds drag-and-drop capabilities to websites for AutoCAD, 3ds, VIZ, Inventor, and other programs.

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Opening and Saving Files

- All AutoCAD file commands—such as OPEN, SAVE, INSERT, and XREF—recognize any valid URL path to a file.

- You can use the Search the Web button.

Saving files to the web

If the Internet location to which you're saving the file requires a username and password, AutoCAD displays an information box, informing you that it couldn't access the site because you aren't logged in. You can click Yes to display a dialog box so that you can enter your valid username and password. As soon as you enter this information and click OK, AutoCAD copies the drawing file to the Internet location you specified.

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Working with Hyperlinks

- A hyperlink is a pointer to another document

- You can attach a hyperlink to any object in the drawing

- Hyperlinks can link to any type of document:

  - Excel spreadsheet

  - Word document

  - Internet web page

  - Another AutoCAD drawing

- Hyperlinks are active in DWG files

Linking to AutoCAD drawings

- You can link to other AutoCAD drawings
- You can specify a named view within the drawing

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Absolute vs. Relative Links

- Absolute links specify the complete URL path to an exact file location:

  D:\MYDRAWINGS\DRAWING1.DWG

- Relative links store a partial path which gets resolved relative to the location of the current file or the default base location:

  ..\DRAWING1.DWG

To create or modify hyperlinks:

- From the Insert menu, choose Hyperlink
- At the command line, type HYPERLINK

To jump to links in AutoCAD

Hyperlink cursor appears when you move over a hyperlink

1. Select the object to which the hyperlink is attached.

2. Right-click anywhere in the drawing to display the shortcut menu.

3. Choose **Hyperlink>Open "*name*"**

East Elevation

Creating **DWF** files from AutoCAD
Design **W**eb **F**ormat

- DWF files are like electronic plot files

- Use the PUBLISH command to create single or multi-sheet DWF files

- Use the 3DPUBLISH command (in AutoCAD 2006) to create a 3D DWF file

- You can also PLOT, but that produces only single-sheet DWF files

- DWF files can be opened, viewed, and printed by anyone using one of Autodesk's DWF viewing product (or any 3rd party product that supports DWF)

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Advantages of DWF

- **Smaller** – highly compressed

- **Smarter** – retain fidelity, multi-sheet, secure

- **Free** – can publish from any program, free viewer

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Steps to using DWF

1. Add links to your AutoCAD drawing

2. Configure layouts to control plot output

3. Create the DWF file

4. Publish the DWF file to the web

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To publish an electronic drawing set:

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

What's in a 2D DWF file?

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

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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 file

Controlling DWF Properties

- Controlled from the DWF Properties dialog box:

  1. Display Plotter Configuration Editor.

  2. Select Device and Document Settings tab.

  3. Select Custom Properties.

  4. Click Custom Properties button.

Controlling DWF Properties (cont.)

- **Resolution**

  - Higher resolution creates more precise DWF files but increases their file size (use when you need to zoom into a large drawing to see fine details)

- **DWF Format**

  - Compressed Binary – produces the smallest DWF file (default)

  - Zipped ASCII encoded 2D stream (advanced) – produces DWF files in zipped ASCII Encoded 2D Stream (plain text) format. You can use WinZip to unzip the files.

Controlling DWF Properties (cont.)

- **Fonts**

  - Capture None (All Viewer Supplied)

  - Capture Some (Recommended)

  - Capture All

Controlling DWF Properties (cont.)

- **Background Color Shown in Viewer** – match DWF background to web page (files meant for plotting should have white background)

- **Include Layer Information** – so viewers can turn layers on and off

- **Show Paper Boundaries** – do you want the layout paper boundary to be visible? (always selected)

- **Save Preview in DWF** –only select if using Buzzsaw

Designing a Website to Host AutoCAD Content

PART 2: Creating Your Website

Two Types of Content

- Creating web pages containing DWF files
- Creating web pages containing i-drop content

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Parts of a URL

- The most common protocol

http://www.company.com/pages/myfile.dwf?option=value

protocol   network location   path   filename   options

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Parts of a URL

- The address of the server

http://**www.company.com**/pages/myfile.dwf?option=value

protocol   **network location**   path   filename   options

Designation	Definition
com	Commercial site
edu	Educational site
gov	Non-military government site
mil	Military site
net	Network site
org	Organization site

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Parts of a URL

- Location of folder or directory

http://www.company.com/**pages**/myfile.dwf?option=value

protocol   network location   **path**   filename   options

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Parts of a URL

- The actual name of the requested file

http://www.company.com/pages/**myfile.dwf**?option=value

protocol   network   path   **filename**   options
                        location

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Parts of a URL

- Optional values that control the viewer

http://www.company.com/pages/myfile.dwf**?option=value**

protocol   network   path   filename   **options**
                        location

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Creating a Successful Website

- Goal is to attract visitors

- Provide them with useful information

- Well-organized format

- Appearance should make sense

There are lots of good books on Web Design.

Creating a Successful Website (cont.)

Your website should be designed to achieve a clear purpose:

- Why do you want to publish?

- Who is your audience?

- What do you want to accomplish?

- How should your site be structured?

- How can site design aid navigation?

Creating a Successful Website (cont.)

- Make use of web design tools:

  - Microsoft FrontPage

  - Allaire Homesite

  - Adobe GoLive

  - Macromedia Dreamweaver

Use these tools to design, proof, test, publish, and manage your site.

Publishing Drawings on the Web

- Create a link to the DWF file from an HTML document
- Embed the DWF file in an HTML document

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Linking DWF files to HTML

- Create a link by using the HREF tag

  <A HREF="*DWF-URL*">*text*</A>

  Example:

  <A HREF="myfile.dwf">Link to my drawing.</A>

  Appears on the web page as:

  Link to my drawing.

URL options

- **Target** – for use with Frame-based web pages
- **Namedview** – specifies a named view to display

http://www.myserver.com/embassy.dwf/?NamedView=STUDY

There are other tags that can be used. These are identical to the ones used when embedding DWF in HTML

Embedding DWF into HTML

- Displays the DWF file as part of the HTML document
- More complex than linking

Typical code to embed DWF in HTML

```
<object
 id="viewer"
 classid="clsid:A662DA7E-CCB7-4743-B71A-D817F6D575DF"
 codebase="http://www.autodesk.com/global/dwfviewer/installer/DwfViewerSetup.cab"
 width="800"
 height="600"
 border="2"
 bordercolor="#ff0000">
 <param name="src" value="embassy.dwf">
 <param name="LayersOff" value="TEXT,LIGHTS">
 <param name="LayersOn" value="WALLS,DOORS,WINDOWS">
 <param name="NamedView" value="STUDY">
 <param name="Page" value="8th Floor Power Plan">
 <param name="BackColor" value="12632256">
 <param name="PaperColor" value="14474460">
 <param name="PaperVisible" value="true">
 <param name="ToolBarVisible" value="true">
 <param name="UserInterfaceEnabled" value="true">
</object>
```

Windows XP Service Pack 2

In Windows XP SP2, a security alert is displayed each time you view an embedded DWF file using the DWF Viewer or DWF Composer. To eliminate this alert, download and install the latest build (521) of the DWF Viewer 5 and add the following HTML tag as the first line of any local HTML page that hoses DWF files:

`<!-- saved from url=(0014)about:internet -->`

This is only a factor with locally hosted pages. Pages viewed over the Web will not show the security alert.

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Understanding the Tags

The following tags are used:

- **id** – unique identifier (required)

- **classid** – specific to Autodesk DWF Viewer (required)

- **codebase** – URL for obtaining AVE (optional, recommended)

- **width/height** – size of window (in pixels or percent) for displaying DWF file inside HTML page (optional)

- **border** – size of border around AVE, in pixels (optional)

- **Border color** – color of AVE border, in HTML color code (optional)

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Understanding the Tags (cont.)
(src is required, all others are optional)

- **src** – path (absolute of relative) to DWF, DWG, or DXF file

- **LayersOff** – specifies names of layers set to Off, separate names w/commas

- **LayersOn** – specifies names of layers set to On, separate names w/commands

- **View** – specifies an initial named view or DWF coordinates (top, bottom, left, right). If named view, must be upper-case. (Note: Tag NamedView also works, but don't use both View and NamedView)

- **Markupsvisible** – specifies whether markups are visible (true) or not (false)

- **NotifyMissingFonts** – specifies whether a Missing Fonts dialog box displays to warn user of missing fonts (true) or not (false)

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Understanding the Tags (cont.)

- **ObjectHighlightColor –** specifies the dynamic highlight (mouseover) color

- **ObjectSelectedColor –** specifies the object highlight color

- **ZoomIncrement –** specifies the zoom increment in percent for shortcut and wheel mouse

- **Page –** specifies the page (sheet) that should display first

- **BackColor –** specifies the background color for the AVE, as an RGB value

- **PaperColor –** specifies the paper color for the DWF, as an RGB value

Understanding the Tags (cont.)

- PaperVisible – specifies whether the virtual paper is visible (true) or hidden (false)

- SingleClickHyperLink – specifies whether you jump to hyperlinks in the DWF file by using a single mouse click or by pressing Ctrl+click

- ToolBarVisible – specifies whether the AVE toolbar is visible (true) or hidden (false)

- UserInterfaceEnabled – specifies whther the right-click menu displays the AVE user interface (true) or does nothing (false)

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Understanding the Tags (cont.)

- **HighlightHyperlinks** – specifies whether hyperlink highlighting is turned on (true) or off (false)

- **HyperlinksEnabled** – specifies whether hyperlinks are enabled (true) or disabled (false)

- **HyperlinkColor** – specifies the hyperlink highlight color

- **HyperlinkTooltipVisible** – specifies whether hyperlink tooltips are visible (true) or disabled (false)

Freewheel

- Lets you view DWF files without having to install a viewer

- A technology preview (not complete or supported)

- Works with Microsoft Internet Explorer 6 and Mozilla Firefox 1.5 (Safari is not yet fully supported)

- For more information, visit **http://dwfit.com**

Freewheel (con't)

- The DWF file you want to view must have a public URL

- Does not support:

  - DWF files behind firewalls

  - DWF files that are password protected

  - 3D DWF

Freewheel (con't)

- Add the following HTML code in the appropriate location in your web page

<iframe scrolling="no" width="800" height="600" src="http://dwfit.com/dwf.aspx?dwf=http://dwfit.com/Hotel5.dwf"> </iframe>

Incorporating i-drop

- Enables web developers to add drag-and-drop capabilities to their websites

- First introduced with AutoCAD/AutoCAD LT 2000i

- Also works with products based on AutoCAD, 3ds max, VIZ, and Autodesk Inventor

Note: You must be using Microsoft Internet Explorer

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Incorporating i-drop (cont.)

- AutoCAD users can drag-and-drop files as blocks into open AutoCAD drawings

- Cannot use i-drop to open a drawing file from a Web site

- Cannot use i-drop to insert a drawing file containing external references

Incorporating i-drop (cont.)

- To insert a block using i-drop:

1. Open the AutoCAD drawing into which you want to insert the block.

2. Browse to page containing content.

3. Click and drag the content into the open drawing.

4. Complete the block insertion normally.

Alternate i-drop method

3. Right-click and drag (instead of left-click and drag)

4. On shortcut menu, click **Insert As>Block**

Dialog box shows associated files that can be transferred

Only selected files will be transferred

Incorporating i-drop (cont.)

Integrating i-drop takes a bit more coding than embedding a drawing in an HTML document:

- For each object you intend to publish on an HTML page, you must have:

  - The file or files you want to have transferred (such as DWG)

  - An image that serves as the trigger (JPG, GIF, etc.)

  - The XML (e**X**tensible **M**arkup **L**anguage) object file describing the embedded object

Incorporating i-drop (cont.)

Information and how it is presented is defined in the i-drop package file, a simple XML file (ASCII text file) that does two things:

- Describes what you see – the graphic representation displayed on the web page to represent the source or trigger

- Describes what you get – the data files that are to be downloaded when i-drop is performed

Incorporating i-drop (cont.)

Typical i-drop package file:

```
<?xml version="1.0"?>
    <package xmlns="x-schema:idrop-schema.xml">
        <proxy defaultsrc="chair.gif"></proxy>
        <dataset defaultsrc="chair.dwg"></datasrc>
     </package>
```

Incorporating i-drop (cont.)

Simplified i-drop package file:

```xml
<?xml version="1.0"?>
  <package>
      <proxy defaultsrc="chair.gif"/>
      <dataset defaultsrc="chair.dwg"/>
   </package>
```

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Incorporating i-drop (cont.)

Defining multiple formats:

```xml
<?xml version="1.0"?>
    <package>
    <proxy defaultsrc="chair.gif"/>
    <dataset>
        <datasrc clipformat="CF_IDROP.dwg">
            <datafile src="chair.dwg"/>
            <xreffile src="prices.xls"/>
            <xreffile src="catalog.pdf"/>
            <xreffile src="specs.doc"/>
        </datasrc>
        <datasrc clipformat="CF_IDROP.max">
            <datafile src="chair.max"/>
            <xreffile src="material.bmp"/>
        </datasrc>
    </dataset>
    </package>
```

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Incorporating i-drop (cont.)

In addition to the XML object file and related files for each object you want to publish, you also need an XML schema, a set of constraints that define the XML tags in the i-drop package file:

- Only one schema file for your entire website

- Always the same

- Download from

  http://www.autodesk.com/schema/idrop-schema.xml

Incorporating i-drop (cont.)

Also need HTML to embed i-drop in document:

```
<object
    name="idrop"
    classid="clsid:21E0CB95-1198-4945-A3D2-4BF804295F78"
    width="240"
    height="236">
    <param name="background" value="background.jpg">
    <param name="proxyrect" value="0,0, 240,236">
    <param name="griprect" value="0, 0, 240, 236">
    <param name="package" value="DATA/chair/chair.xml">
    <param name="validate" value="1">
</object>
```

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Incorporating i-drop (cont.)

- Similar to code for embedding DWF on web page

- Uses **\<object\>** tag for Internet Explorer

- Can include background.jpg or similar file to serve as a sking or frame around the graphic representation of the trigger object

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i-drop parameters

- **Package** – Required. Specifies the i-drop XML package file URL.

- **Background** – Optional. Specifies the background "skin" displayed by the i-drop control.

- **ProxyRect** – Optional. Specifies rectangle in which to display the proxy image.

- **GripRect** – Optional. Specifies area between i-drop control limits and ProxyRect, which should be smaller.

- **ValidateXml** – Optional. Specifies whether i-drop control performs validation.

Incorporating i-drop (cont.)

- Those visitors who do not yet have i-drop technology installed on their systems can download the i-drop indicator from the Autodesk website at:
  www.autodesk.com/idrop

To learn more about i-drop:

- Visit the Autodesk website at:
  www.autodesk.com/idrop

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Questions & Answers

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