20-20 CAP STUDIO

The design professional's choice
for AutoCAD®-based space planning
and specification software

User Guide

Version 2009

DESIGN

STRATEGIC TECHNOLOGY FOR INTERIOR DESIGN INDUSTRIES

20 20 TECHNOLOGIES

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About CAP Designer

20-20 CAP Designer is a suite of labor-saving applications that help you visually search through thousands of furniture products, then place those products into AutoCAD drawings. You can output those drawings in Plan View or 3D.

Use 20-20 CAP Designer to:

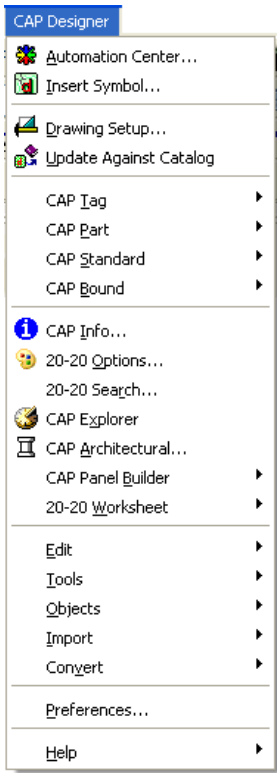
- Create large-scale project drawings directly within AutoCAD
- Accurately space plan with complex furniture lines using accurate Design Automation tools
- Rapidly draw walls, doors, windows, curved walls, reflected ceiling plans, custom windows and doors directly within AutoCAD
- Create Standards — are groups of product that are combined to represent complete assemblies like workstations
- Export drawings into 20-20 Worksheet for product optioning and pricing

20-20 CAP Designer is an AutoCAD-based design tool. For first-time start-up, launch AutoCAD, then start CAP Designer as described on the following page.

Start CAP Designer

1. Launch **AutoCAD**.
2. On the command line, type `CAP`.

Notice that CAP Designer does not override AutoCAD menus. The **CAP Designer** menu at the top right contains all CAP Designer functions. This menu will always display when AutoCAD starts, whether or not you have launched CAP Designer.



Drawing Setup Wizard

Use the Drawing Setup Wizard to create a new drawing under a project folder and to set up the plot size and scale of a new, current or existing drawing.

1. From the **CAP Designer** menu select **Drawing Setup**.

   Or, click the **Drawing Setup Wizard** icon on the CAP Designer toolbar.

   The **Drawing Setup Wizard** opens with three options:

   New Drawing — to create a new drawing and apply setup. This drawing will be saved under a project folder. For more information about this option see Create a new drawing under a project in the Projects section.
   Current Drawing — to modify setup of a drawing that is already open
   Existing Drawing — to open a drawing and modify setup

   If you opened a blank drawing then select **Current Drawing**.
2. Select the **Plot Size and Scale** you think you might use. If you use a different size or scale when you actually plot it doesn't matter. This is simply setting up your beginning paper size.
3. Click **Finish**.

Projects

Project Support is a way of setting up and maintaining your drawings and worksheets. Users and administrators can easily organize their worksheets, drawings, and associated data under a **Project** folder. In addition, Project Support has the ability to set defaults for all of your Worksheets to be the same or set defaults on a per project basis.

To use projects in CAP Designer, see Create a new drawing under a project below.

For more information about how Projects are used in 20-20 Worksheet, see the Projects section in the 20-20 Worksheet help.

Create a new drawing under a project

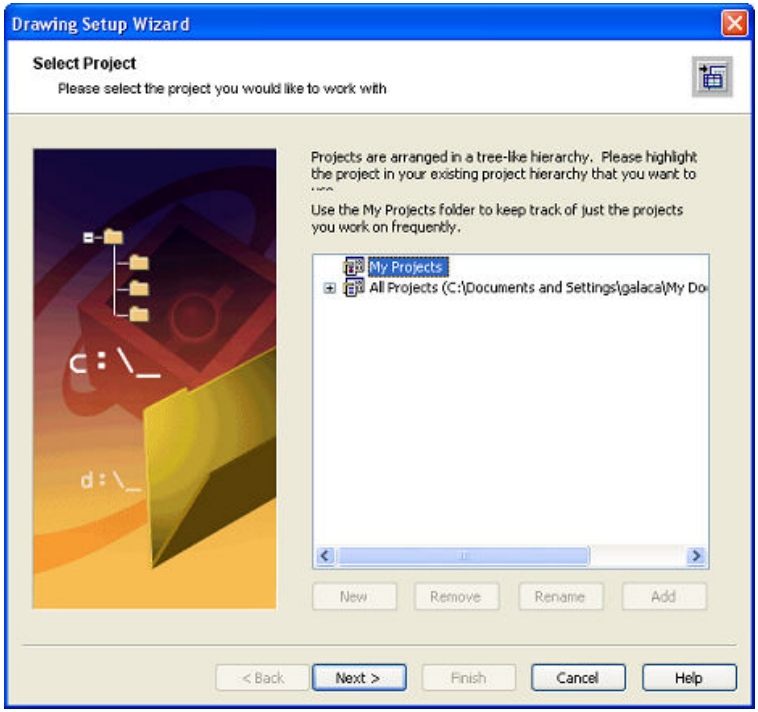
After opening AutoCAD launch the Drawing Setup Wizard.

1. From the **CAP Designer** menu, select **Drawing Setup**. Or, click the **Drawing Setup Wizard** icon on the CAP Designer toolbar.

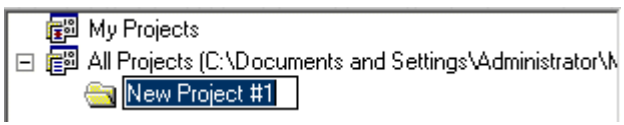
   The Drawing Setup Wizard opens.
2. Click **New Drawing**. This launches the **Drawing Setup Wizard**.
3. In the **Select Project** screen, decide where to store the new drawing. The Wizard creates a default folder called **My Projects**.

   The purpose of **My Projects** is to create a shortcut to project folders that you are working in. The benefit is that you don't have to go through several layers of sub-folders to get to your project folder. Project folders removed from this list are not deleted.

4. To create a new project folder, click **All Projects**, then click the **New** button.



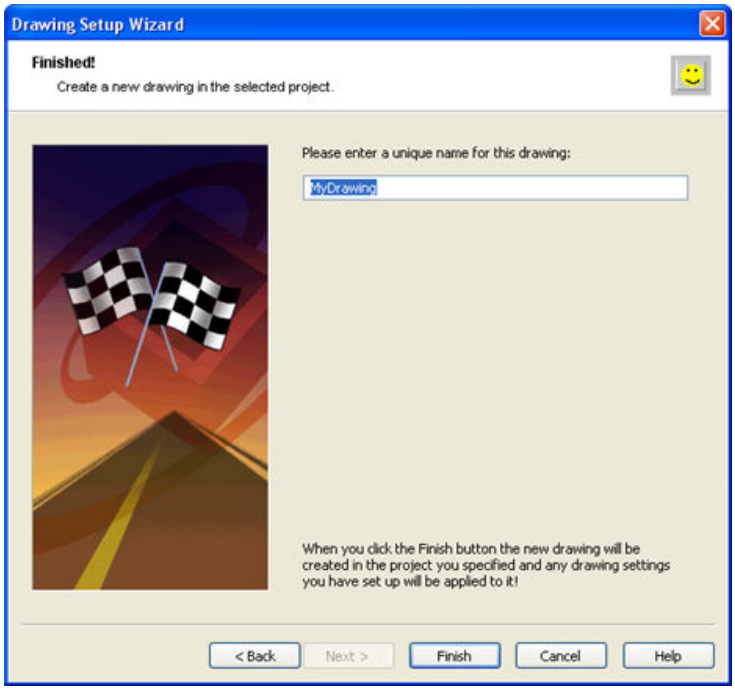
4. A new project folder appears. Type the name for this project.



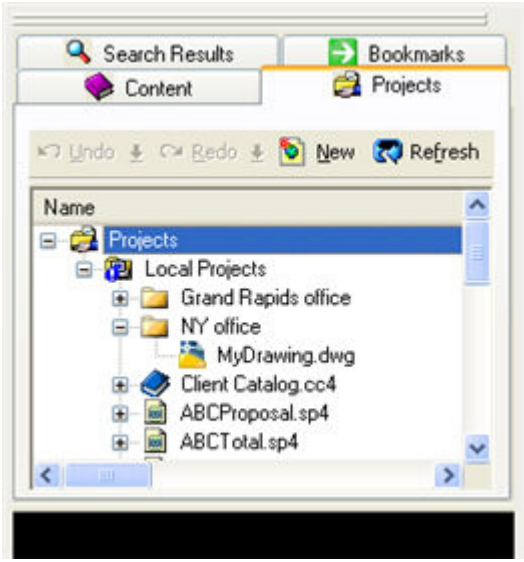
5. Click **Next** to continue.

6. Use the **Drawing Setup** screen to setup the drawing **Plot Size** and **Plot Scale**.

7. Click **Next** to continue.
8. This screen appears if you are creating a new drawing. Enter a unique file name then click **Finish** to close the Wizard and open the new drawing in CAP Designer.



You can access the drawing from the **Projects** tab of the Explorer bar. Simply double-click on the drawing to open it.

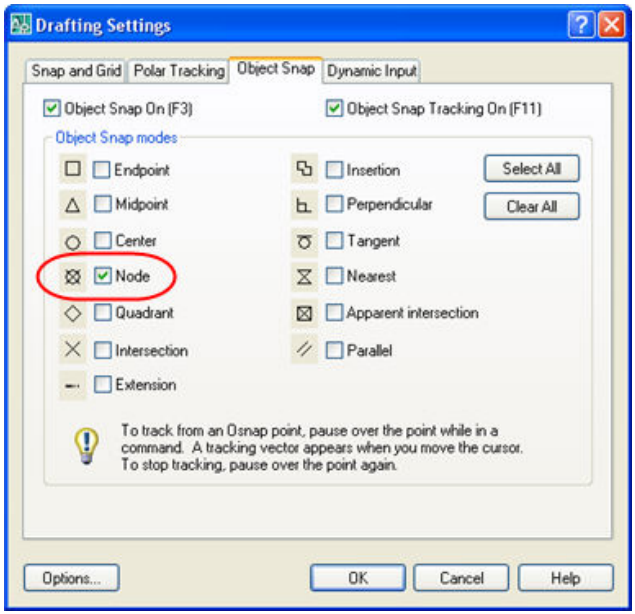

Search Results
Bookmarks
Content
Projects
Undo
Redo
New
Refresh
Name
Projects
Local Projects
Grand Rapids office
NY office
MyDrawing.dwg
Client Catalog.cc4
ABCProposal.sp4
ABCTotal.sp4

AutoCAD settings

Before using CAP Designer, make sure to set AutoCAD **OSNAP** settings to **Node** and to toggle **ORTHO** on.

1. Right-click on the **OSNAP** button at the bottom of the AutoCAD window and select **Settings**.

2. Make sure that the ONLY object snap mode is checked is **Node**. CAP is designed to utilize Node snapping. While occasionally other types of snapping are required to complete a layout, you can turn on those other snap nodes only as needed. By limiting your snap node to node only, you limit the possibility of incorrectly snapping parts together.



3. Make sure that **ORTHO** is also turned on. In **ORTHO** mode, cursor movement is constrained to the horizontal or vertical axis. Note that in some instances you might need to turn **ORTHO** off.

More information about **OSNAP** and **ORTHO** is available within AutoCAD's help system.

Toolbars

As in standard Windows applications, toolbars in 20-20 CAP Designer allow you to perform frequent operations quickly with icons (images representing an action or a command).

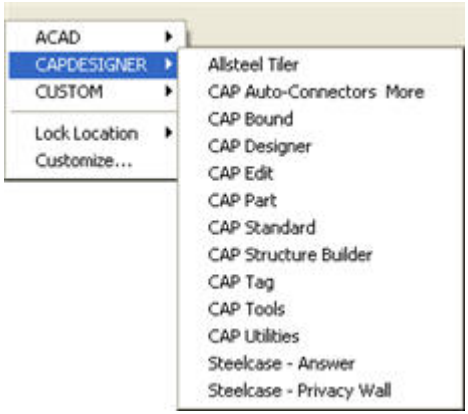
You can easily customize toolbars.

There are several built-in toolbars in 20-20 CAP Designer, each representing a category of commands. You may change their position to suit your needs.

- Allsteel Tiler toolbar - see Manufacturer-specific information.
- CAP Auto-Connectors & More toolbar
- CAP Bound toolbar
- CAP Designer toolbar
- CAP Edit toolbar
- CAP Part toolbar
- CAP Standard toolbar
- CAP Structure Builder toolbar - for Kimball's Xsite product line only. See Manufacturer-specific information.
- CAP Tag toolbar
- CAP Tools toolbar
- CAP Utilities toolbar - for Knoll Currents and Equity products only. See Manufacturer-specific information.
- Steelcase - Answer toolbar - see Manufacturer-specific information.
- Steelcase - Privacy Wall toolbar - see Manufacturer-specific information.

Show or hide a toolbar

1. Right-click in empty area of the AutoCAD toolbar area then select **CAPDESIGNER**.



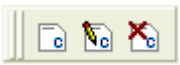
2. Select the toolbar name to toggle the toolbar on and off.

   If it is off (no checkmark next to the name), click it and the toolbar will appear on your screen (a checkmark will also appear next to its name). Selecting it again will turn it off.

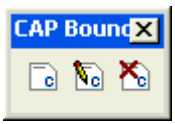
Move a toolbar

A toolbar can be docked or floating. It is docked when no title bar appears and a move handle is available on the left side or on top of the toolbar.

Example of a docked toolbar:



Example of a floating toolbar:



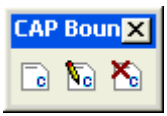
- To undock a toolbar and leave it floating, click and hold the left mouse button on the move handle on the left side of the toolbar , then move the toolbar anywhere you want and release the mouse button.
- To dock a floating toolbar, click and hold the left mouse button on the title bar, then move the toolbar to the desired spot and release the mouse button.
- To remove a floating toolbar from the screen, click the x in the title bar; to remove a docked one, right-click on the toolbar then select the toolbar name.

CAP Auto-Connectors & More toolbar

Icon	Name	Description	Topic
	UFO Toggle	Toggle for UFO automatic placement	Unidentified Furniture Objects (UFO)
	UFO	Add a UFO to a selected frame.	Unidentified Furniture Objects (UFO)
	User Preferences	Select the product style, material, and top cap type.	User Preferences
AC	AutoConnectors and More	Place Autoconnectors.	Apply CAP AutoConnectors
CT	CAPtile	Opens the **CAPtile** dialog box where you can create frame configurations.	Put tiles on a frame
	Generate Tile Schedule	Insert a list of tiles used in the drawing.	Create a tile schedule in your drawing
	Update to Elevation System	Processes through all the Tile Configurations and corrects missing or damaged Tile Configurations.	Correct missing or damaged tile configurations

Icon	Name	Description	Topic
	Refresh Tile Configurations	Switch between Tile Tag Mode and Elevation Mode	Switch between elevation and tag mode
	Finish Service Wall End.	For Knoll Currents and Equity products only.	See the help file on Manufacturer-specific information
	CAP Frame Validation Tool	Show or correct problems with frames before or after running AutoConnectors.	CAP Frame Validation Tool
	AutoBracket	Place worksurface brackets automatically on Kimball products	See the Manufacturer-specific information

CAP Bound toolbar



Icon	Name	Description	Topic
	Make Bound	Create a CAP bound	Make a bound
	Edit Bound	Edit the CAP bound title and text placement	Edit Bound title and text placement
	Undo	Remove a CAP bound	Remove a CAP bound

Icon	Name	Description	Topic
	Bound		

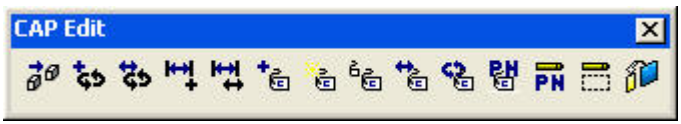
CAP Designer toolbar

Icon	Name	Description	Topic
	Automation Center	Set of manufacturer-specific automation tools	See Manufacturer-specific information
	Insert Symbol	Place a product in the drawing using the **Insert Symbol** dialog	Place a product using Insert Symbol
	Drawing Setup Wizard	Create a new drawing under a project folder or set up the plot size and scale of a new, current or existing drawing.	Drawing Setup Wizard
	Tag flyout	These commands are no longer used.	See the Tags section for information about creating or modifying tags.
	Part flyout	Click and hold to access the **Make Part**, **Edit Part** or **Undo Part** commands.	Custom items

Icon	Name	Description	Topic
	Standard flyout	Click and hold to access the **Make Standard**, **Edit Standard** or **Undo Standard** commands.	Standard (Typicals)
	Bound flyout	Click and hold to access the **Make Bound**, **Edit Bound** or **Undo Bound** commands.	Bounds
	CAP Info	View an item's information and options.	View item information
	20-20 Options	Add finishes or options to parts in the drawing .	Specify options
	CAP Explorer	Show or hide the Explorer bar.	Explorer Bar
	CAP Architectural	Opens the CAP Architectural module, an application for drawing walls, windows and doors.	CAP Architectural
	CAP Panel Builder	Construct and manage configurations of stack panel products.	Panel Builder
	Create Worksheet	Create a worksheet file based on the current drawing.	Create a worksheet Create an associated worksheet
	Update with Associated	Update the current drawing against its associated worksheet or update an	Update with associated

Icon	Name	Description	Topic
	Worksheet	associated worksheet against the current drawing.	worksheet
	Show Associated Worksheet	Show the worksheet associated to the current drawing.	Create an associated worksheet
	Draw Schedule	Insert a list of parts into the drawing.	Draw a schedule from the drawing
	Update against Catalog	Updates the information of parts in the drawing against manufacturer catalogs.	Update Against a Catalog

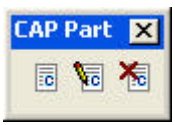
CAP Edit toolbar



Icon	Name	Description	Topic
	Change 3D Height	Place an item needs at a different 'Z' height.	Change 3D Height
	Copy Rotate	Combines the AutoCAD Copy and Rotate commands in a single step.	Copy Rotate
	Move Rotate	Combines the AutoCAD Move and Rotate commands in a single step.	Move Rotate
	Offset Copy	Combines the AutoCAD Offset and Copy commands in a single step.	Offset Copy
	Offset Move	Combines the AutoCAD Offset and Move commands in a single step.	Offset Move
	Append Tag	Adds text to the end of a tag.	Append Tag
	New Tag	Change a tag.	New Tag
	Change Tag Size	Modify the text height of a tag.	Change Tag Size

Icon	Name	Description	Topic
	Move Tag	Change a tag's position.	Move Tag
	Rotate Tag	Rotate a tag.	Rotate Tag
	Show Part Number/Tag	Toggle the attribute display between Tag and Part Number.	Show Part Number/Tag
	Highlight by Part Number	Marks occurrences of a part number and reports the number of symbols found in the drawing.	Highlight by Part Number
	Highlight by Select	Marks occurrences of a part number when you select one of the symbols in the drawings.	Highlight by Select
	Block Replace	Replace a part number with another within all or a selected area of the drawing.	Search and Replace

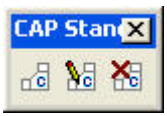
CAP Part toolbar



Icon	Name	Description	Topic
	Make Part	Create a custom part that can be stored in a custom catalog.	Create a new CAP Part

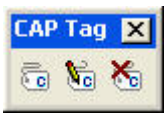
Icon	Name	Description	Topic
	Edit Part	Edit the part info of a custom part.	Edit a CAP Part
	Undo Part	Breaks up a CAP part - similar to the AutoCAD Explode command.	Undo a CAP Part

CAP Standard toolbar



Icon	Name	Description	Topic
	Make Standard	Create a Standard.	Create a CAP Standard (Typical)
	Edit Standard	Edit a Standard's name, description or Alias values.	Edit a standard's information
	Undo Standard	Break up a Standard.	Redefine a CAP Standard Replace a CAP Standard Edit a standard's information

CAP Tag toolbar



These commands are no longer used. See the Tags section for information about creating or modifying tags.

CAP Tools toolbar

Icon	Name	Description	Topic
	Layer Profiles	Helps you manage layers by allowing you to save layer settings in layer profiles.	Layer Profiles
	Assign	Assign values to the **Alias 1**, **Alias 2**, and **Alias 3** columns.	Assign Alias values
	Mirror Last Block - X	Mirrors the last part placed along a vertical line (||).	Mirror Last Block x
	Mirror Last Block - Y	Mirrors the last part placed along a horizontal line (=).	Mirror Last Block y

Icon	Name	Description	Topic
	Insert by Part Number	Insert a part into a drawing by typing in the part number.	Insert by Part Number
	Convert Plan to 3D	Converts the symbols on the drawing from plan view to 3D view.	Convert Plan to 3D
	Convert 3D to Plan	Converts the symbols on the drawing from 3D view to plan view.	Convert 3D to Plan
	Copy Plan to 3D	Copies the symbols on the drawing then converts them to 3D.	Copy Plan to 3D
	Layer On	Turns previously turned off layers back on.	Layer On
	Layer Off	Allows you to turn off layers by selecting symbols on the drawing	Layer Off
	Ghost/Unghost 3D	Click once to change solid CAP 3D symbols so that they display as an outline or ghost of the product. Click again to unghost a product.	Ghost 3D / UnGhost 3D
	Strip Options	Remove the options from one or many parts	Strip Options
	Send to Custom Catalog	Add a symbol to a Custom Catalog	Add to a custom catalog
	Area Tag	Automatically or manually put sequential letters or numbers to the **Alias** values of items on the	Assign sequential Alias

Icon	Name	Description	Topic
		drawing.	values
	Set Displayed Tags	Change the visibility of existing Alias values.	Change visibility of Alias values
	Show Non-Plan Item List	Display the Non-Plan Item List, a list that contains parts that do not have symbols on the drawing.	Show Non-Plan Item List

Explorer bar

The **Explorer** bar is a powerful navigation utility that lets you browse multiple furniture catalogs at one time, as well as find all the files that you will use and create.

The **Explorer** bar consists of four tabs: **Content**, **Projects**, **Search** and **Bookmarks**.

See the topics below in the **20-20 Worksheet** help or User Guide for details on using each tab.

- Content tab: displays manufacturer catalogs
- Projects tab: navigates to all project folders containing worksheet files and CAP Designer drawings
- Search tab: allows you to search for products and displays products found after a search.
- Bookmarks tab: shows the bookmarks saved on your system

See the following topics to display, hide or move the **Explorer** bar and its tabs:

- Display the Explorer bar

- Move the Explorer bar
- Auto-hide feature
- Show or hide Explorer bar tabs

See also: Place a product using the Explorer

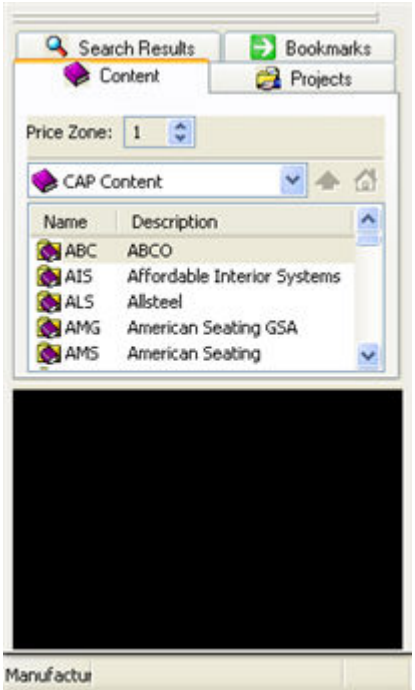
Display or hide the Explorer bar

When you start CAP Designer, the **Explorer** bar is automatically displayed.

To display or hide the **Explorer** bar:

Click the **CAP Explorer** icon  on the CAP Designer toolbar.

Or, from the **CAP Designer** menu select **CAP Explorer**.

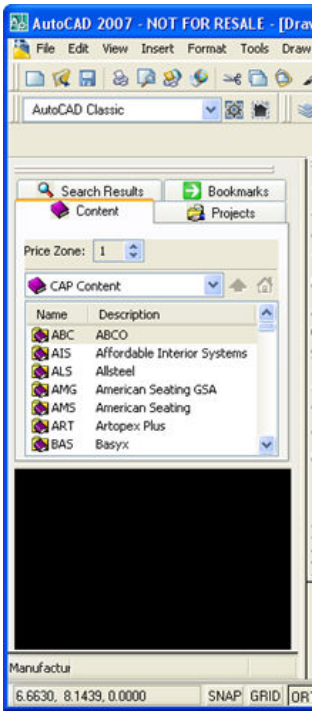


If you do not want the **Explorer** bar displayed automatically when you start CAP Designer, access the **Preferences** dialog from the **CAP Designer** menu then clear the **Show Explorer palette on CAP Designer start-up** checkbox in the **General** tab.

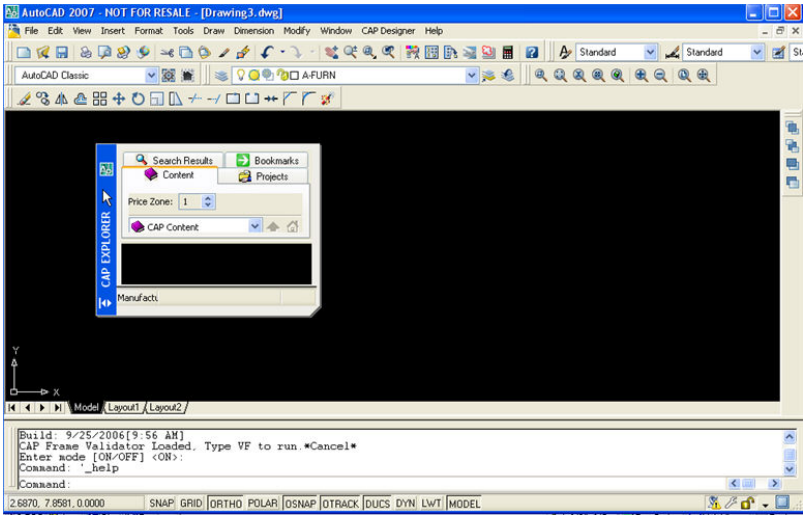
Move the Explorer bar

The **Explorer** bar can be moved and configured to meet your preferences.

Explorer is normally *docked* at left of the screen but you can undock it and drag it elsewhere for convenience.



1. To move **Explorer**, click and drag on the title bar at the top.
2. Drag the **Explorer** window to the location you prefer. The window can float above the AutoCAD screen or dock. In the image below, the **Explorer** bar is floating above the AutoCAD screen.



When **Explorer** is docked you can resize the window by dragging on the vertical bar between it and the AutoCAD drawing.

When **Explorer** is floating you can use the **Auto-hide** feature. See Auto-hide feature.

Show or hide Explorer bar tabs

By default, all of the **Explorer** bar tabs are visible when you display it.

To turn the **Search** and **Bookmarks** tabs off:

1. From the **CAP Designer** menu select **Preferences.**
2. Click the **Explorer** tab.
3. Clear the **Search** and/or **Bookmarks** checkbox in the **General** tab.

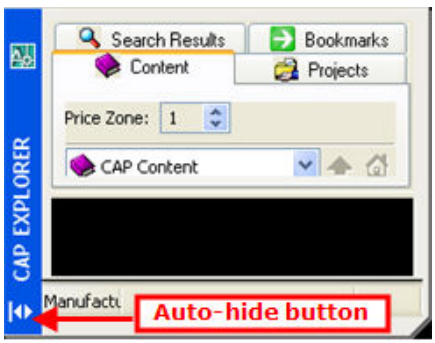
Instead of hiding each **Explorer** bar tab this way, a more efficient way to work with the **Explorer** bar is to set it to auto hide.

For more information about **Explorer** bar **Preferences** that you can set, see Preferences.

Auto-hide feature

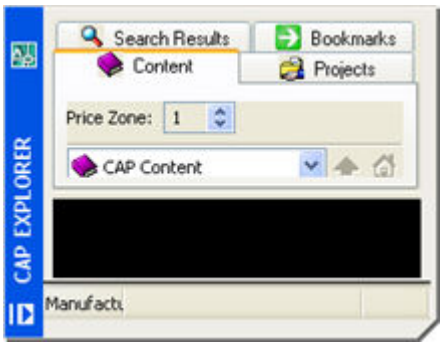
When the **Explorer** bar is floating, you can put it on auto-hide to see more of your AutoCAD screen.

1. The auto-hide feature is activated by clicking the **Auto-hide** button .



The **Explorer** bar will collapse and only the blue bar will be visible.

2. To access any of the **Explorer** bar tabs, hover over the blue bar.



Preferences

Some CAP Designer preferences are linked to 20-20 Worksheet preferences. The Common, Explorer, QuickSearch, Content, Folders+Files and User tabs are the same as in 20-20 Worksheet. If you make changes to these tabs in CAP Designer, the changes will be applied to 20-20 Worksheet as well.

- General preferences
- Advanced preferences
- Automation preferences

For the other tabs, see the following topics in the **20-20 Worksheet** help:

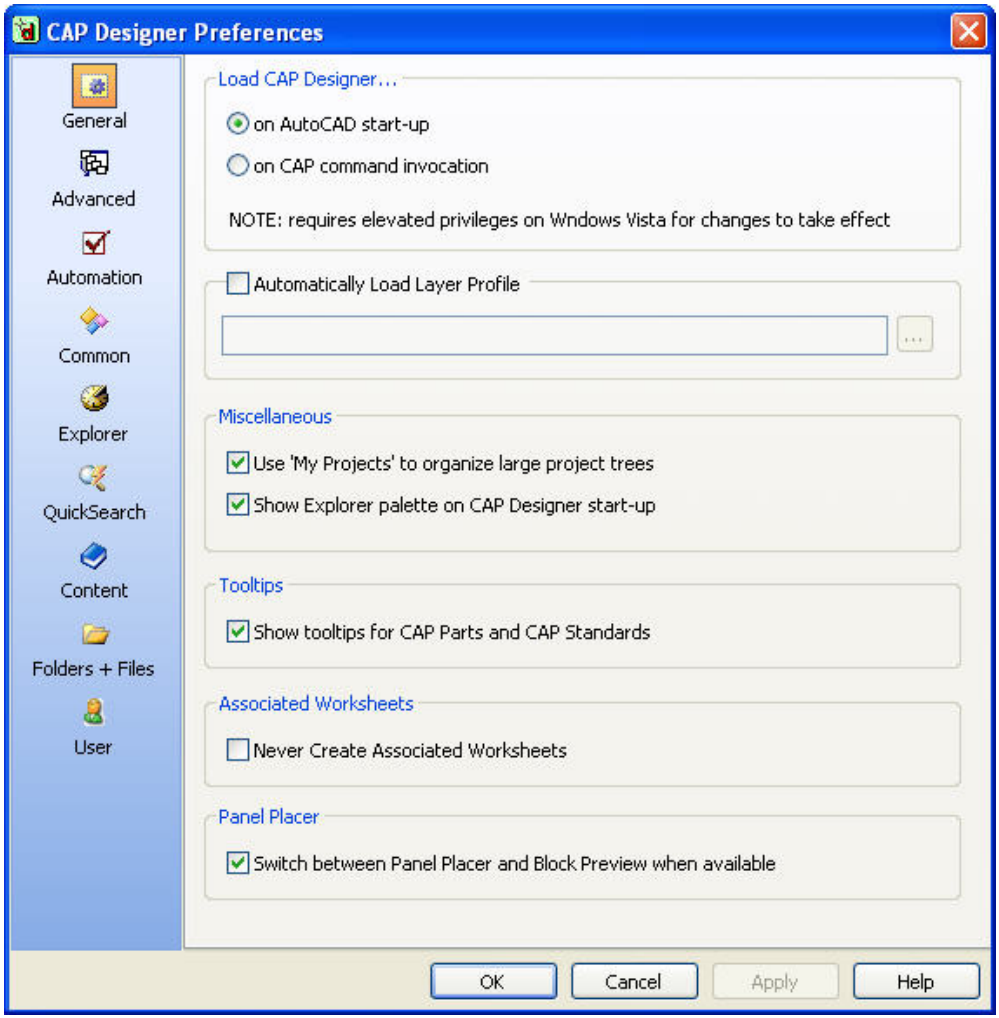
- Common preferences
- Explorer preferences
- QuickSearch preferences
- Content preferences
- Folders and files preferences
- User preferences

To see other tabs, click the **Navigation buttons** located on the top right of the **Preferences** dialog.

General preferences

1. From the **CAP Designer** menu select **Preferences**.

   By default, **Preferences** opens to the **General** tab.



2. Change any of the following settings:

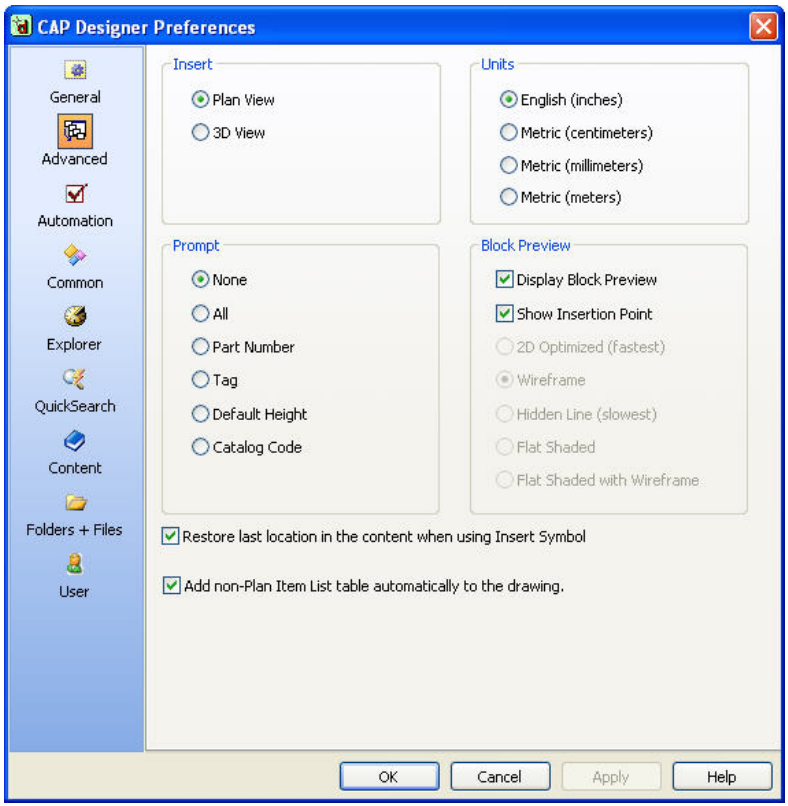
Setting	Description
Load CAP Designer	Select how you want CAP Designer to launch automatically. ❖ **on AutoCAD start-up**: Check if you want CAP Designer to launch whenever you start AutoCAD. ❖ **on CAP command invocation**: This is the default setting. CAP Designer starts when you use any CAP Designer function such as a command from the **CAP Designer** menu, any of the CAP Toolbar buttons, or typing `CAP` in the command line.
Automatically Load Layer Profile	You can set CAP Designer to load a Layer Profile group upon launch. Use the **Browse** button ... to search for the layer profile (*.prf) document.
Miscellaneous	❖ Use "My Projects" to organize large project trees - obsolete function ❖ **Show Explorer palette on CAP Designer start-up** - automatically open the Explorer bar when CAP Designer is launched
Tooltips	If **Show tooltips for CAP Parts and CAP Standards is checked**, you will see a tooltip indicating the Part Number, Mfg and Cat whenever your mouse pointer hovers over the CAP part. If the mouse pointer is over a Standard you will see the standard name and description.
Associated Worksheets	If you never want to create associated worksheets check the **Never Create Associated Worksheets** box.
Panel Placer	If the setting **Switch between Panel Placer...** is checked, when you insert a panel that belongs to a panel line supported by Panel Placer, the Block Preview will switch to the Panel Placer tab.

3. Click **Apply**.

Advanced preferences

Use the **Advanced Preferences** tab to control how products are previewed and inserted into a drawing from the Explorer bar.

1. From the **CAP Designer** menu select **Preferences**.
2. Click **Advanced**.



3. Change any of the following settings:

Setting	Description
Insert	This controls how products appear in the Preview Pane and how they are inserted into the drawing. You may choose to preview products in 3D or Plan View.
Units	Check your preference of measurement units.
Prompt	Check **None**, or check for prompts you want to appear when you drag and drop parts from Explorer into the drawing. For example, you may have Designer automatically prompt you to change the **Tag** of the item you are inserting into your drawing.
Block Preview	**Display Block Preview**: Toggle the Explorer preview feature ON or OFF. If ON, Explorer displays a Preview of the part you have selected, in Plan View or 3D. **Show Insertion Point**: Toggles the Insertion Point feature ON or OFF. If ON, the preview window shows the Insertion Point as a yellow X (on lower left in drawings above) **2D Optimized (fastest)**, **Wireframe**, **Hidden Line (slowest)**, **Flat Shaded**, **Flat Shaded with Wireframe** - these options are functional only if you have checked 3D View. They control appearance of the 3D preview in Explorer.
Restore the last location in the Content when using Insert Symbol	Checked by default. Check this so that the Insert Symbol dialog box will remember the last selection made so you will not have to always start selecting from the manufacturer level.

Setting	Description
Add non-Plan Item List table automatically to the drawing	When at least one part exists in the Non-Plan Item list, display the NPIL table on the drawing.

3. Click **Apply**.

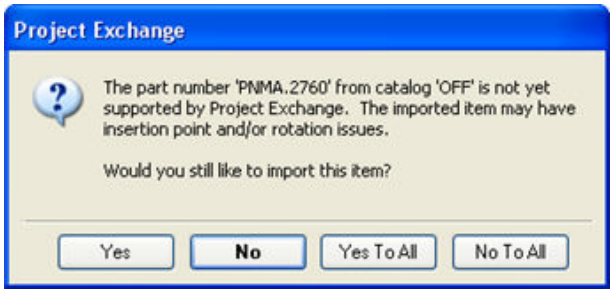
Automation preferences

These settings allow you to control the behavior of Kimball Xsite tools. For more information, see the CAP Designer Manufacturer-Specific information.

Import Giza or Office Sales files

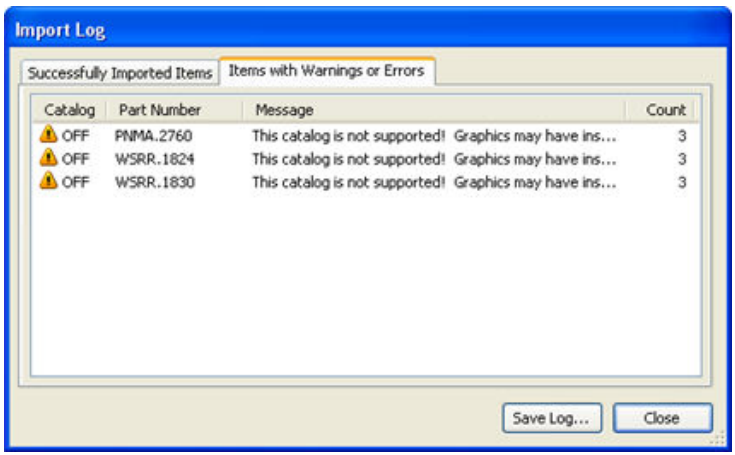
If you have an existing Giza (.cdb) or Office Sales (.ofd) file, instead of redoing a drawing, you can simply import it into AutoCAD through CAP Designer.

1. Create a blank design.
2. From the **CAP Designer** menu select **Import**, then **Giza** or **Office Sales**.
3. In the **Open** dialog, select the file you want to import then click **Open**.
4. If there are parts that are not present in the CAP Designer catalogs, you will see the following message:



Click **Yes** if you still want to import the item, **No** if not, **Yes To All** to import all the parts that are not yet supported, or **No To All** if you do not want to import all the parts that are not yet supported.

5. The Import Log appears. Click the **Successfully Imported Items** tab to see which items were imported and click **Items with Warnings or Errors** to view items with warnings or errors.



6. Click **Save Log** if you want to save this log as a text file for viewing later on.

   The **Save As** dialog appears. Type in the file name then click **Save**.

You will be prompted if you want to view the log. Click **Yes** or **No**.

7. Click **Close**.

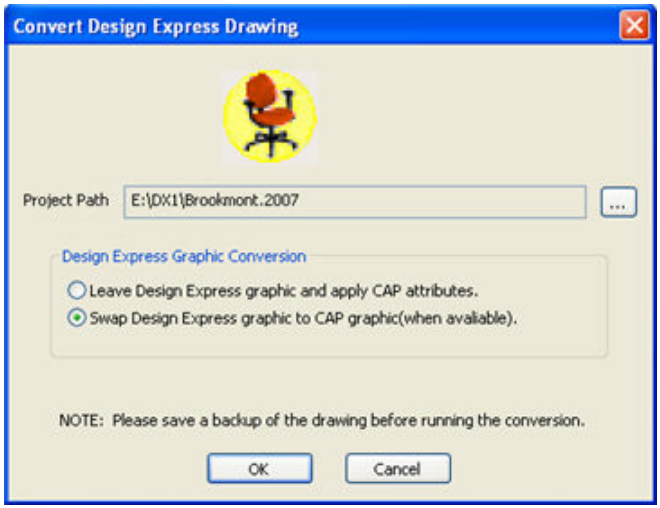
When you import an Office Sales file, items that were listed as non-plan in the Office Sales Item List are saved in the CAP Designer Non-Plan Item List. For details about this list see: Show Non-Plan Item List

Convert a Design Express drawing

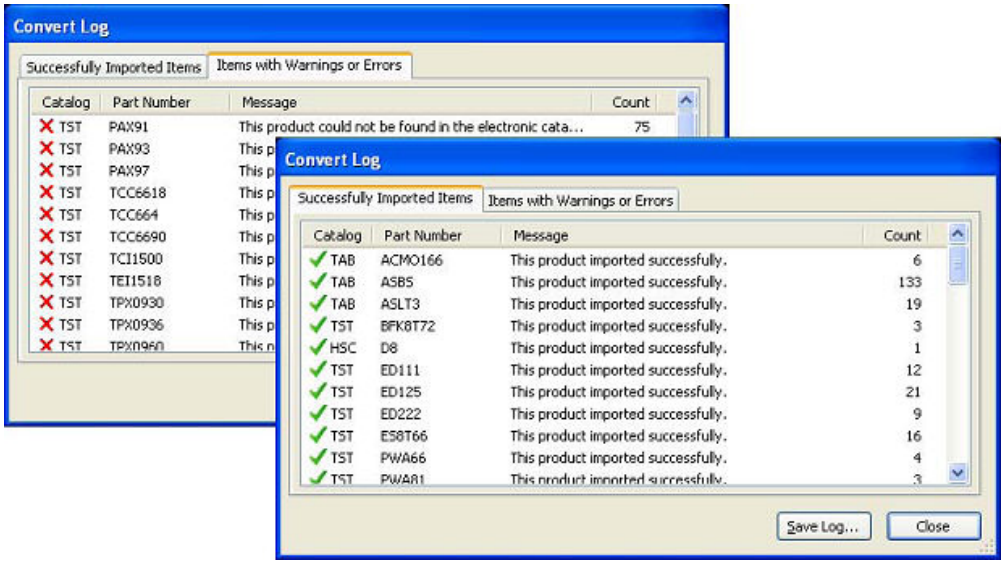
Make sure to save a backup of the Design Express drawing before converting it.

1. Locate and open your existing Design Express file in DWG format.
2. From **CAP Designer** menu select **Convert** then **Design Express**.
3. Ensure that the **Project Path** box is pointing to the folder that contains both your DWG file and the Design Express project files.
4. Select how you want to convert your drawing. Your options are:

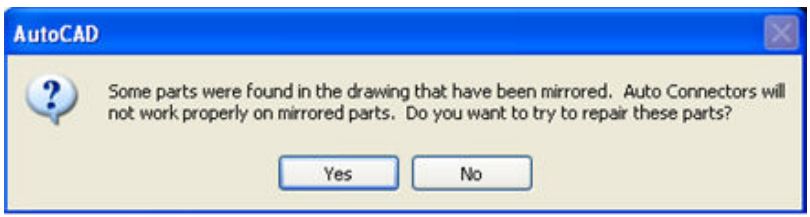
- **Leave Design Express graphics and apply CAP attributes** - This option will keep your existing Design Express planning symbols in your drawing. However, each symbol will be updated with the new CAP Studio symbol attributes so that you can perform a "takeoff" into 20-20 Worksheet for specification.
  It is recommended to choose this option if you no longer need to work on the design.
- **Swap Design Express graphics to CAP graphics (when available)** - This option will completely exchange each Design Express planning symbol with an equivalent CAP Studio planning symbol. The new CAP Studio symbol will have the new CAP attributes attached.
  It is recommended to choose this option if you still need to work on the design. Note that you may have to make some adjustments to the drawing because of the change in graphics.



5. Once the drawing file is completely converted, a log file will appear. This log file lists all the symbols that were converted successfully and which symbols contained errors or warnings.



6. If mirrored parts were found in the drawing, you will see the message below:



   Click **Yes** to repair these parts using the CAP Frame Validation tool.

7. Once the conversion is complete, you can modify the drawing or send it to 20-20 Worksheet for specification.

We recommend that you save this new, converted drawing in a new location on your computer with a new file name. Doing this will allow you to go back to your original Design Express file in the future, if necessary.

Remember the following when converting a Design Express drawing to a CAP Studio drawing:

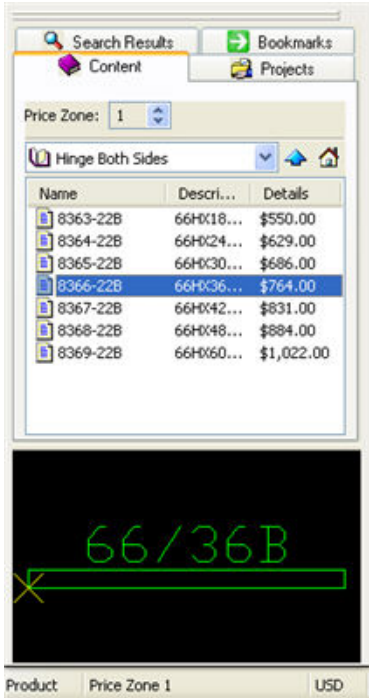
- Panel assemblies are converted into Standards.
- 3D graphics from Design Express are not converted. However, if you choose to swap/replace the Design Express symbols with CAP Studio symbols, the symbols can be converted to 3D. In this case some 3D components may need to be altered to set a new "Z" height.
- Groups are not removed so certain CAP commands such as Block Replace will not work unless PICKSTYLE is set to 0. Symbols from existing Design Express catalogs cannot be added to a converted drawing. The Design Express symbols are not available in CAP Studio. When adding new symbols to a drawing, only use CAP Studio catalog libraries.

Place products in a drawing

In this section, you will learn how to place products in a drawing using CAP Designer.

Place a product using the Explorer

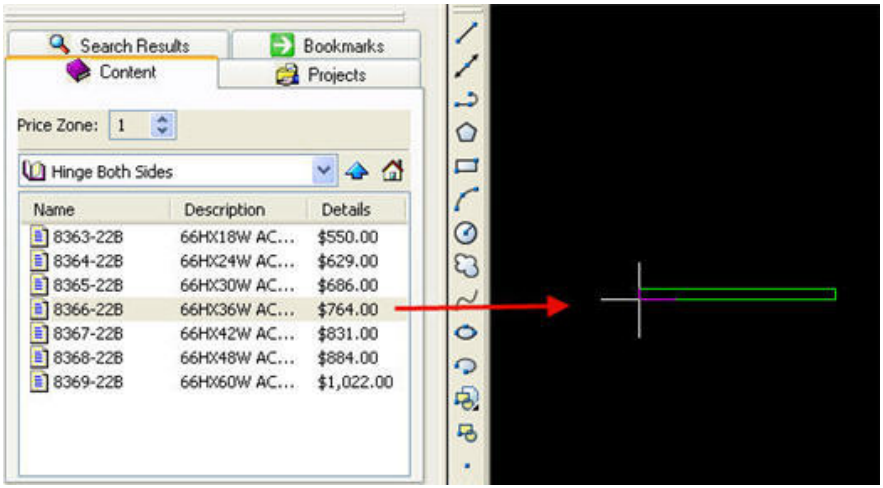
1. If the Explorer bar is not displayed, from the **CAP Designer** menu select **CAP Explorer**. Or, click the **Explorer** icon on the CAP Designer toolbar.
2. On the **Content** Tab, click the manufacturer you want. Keep selecting until you drill down to the product.
3. Hover your mouse over a single product and you will see its preview (if available) in the **Block Preview** pane.



Notice the X on one corner of the product — this is the Insertion Point around which the product will pivot when you place it in the drawing.

4. Click on the product name (not the Preview) and drag it to position in the drawing.

   Notice the Insertion Point.



5. Click once to place the product.
6. Rotate the product then click again.
7. To place the same product without choosing another command, right-click.

   Note that the right-click setting - repeat the last command must be set in AutoCAD User Preferences. For details see your AutoCAD help.

Notice how Explorer appears with a list. If you would prefer the tree view on the Content tab, you have that capability through CAP Designer Preferences - Explorer.

You can also use the **Projects**, **Search Results** or **Bookmarks** tab to place products on the drawing.

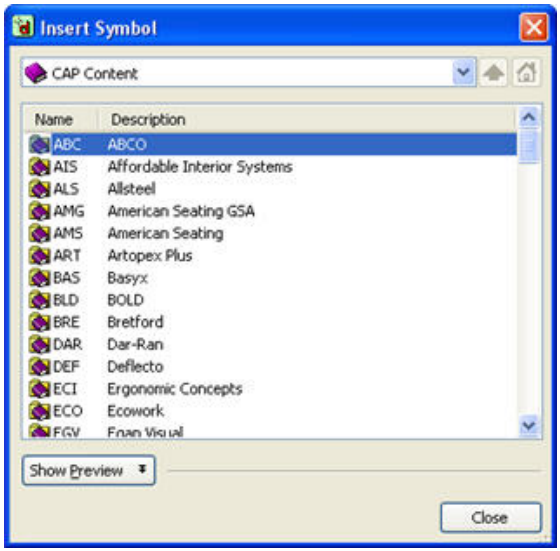
See Use QuickSearch from the Content tab for a quick way of finding a part number without having to drill down to the product.

Place a product using Insert Symbol

If you prefer to use a pop-up dialog box to insert symbols, this feature will provide you with that capability. This feature is helpful if you do not want Explorer to take up too much space on your screen.

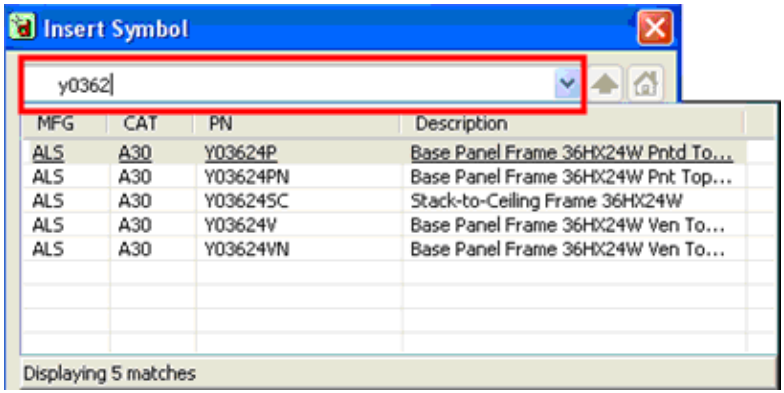
1. Go to the **CAP Designer** menu and select **Insert Symbo**l. Or click the Insert Symbol icon on the CAP Designer toolbar.

   The **Insert Symbol** dialog box will appear.

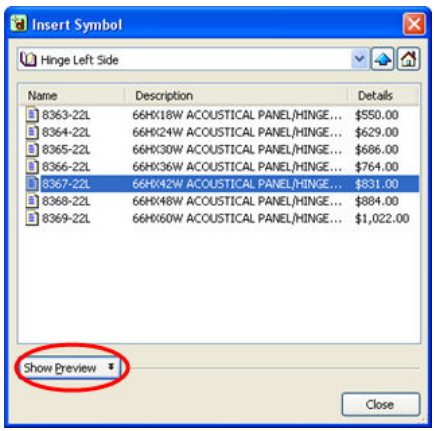


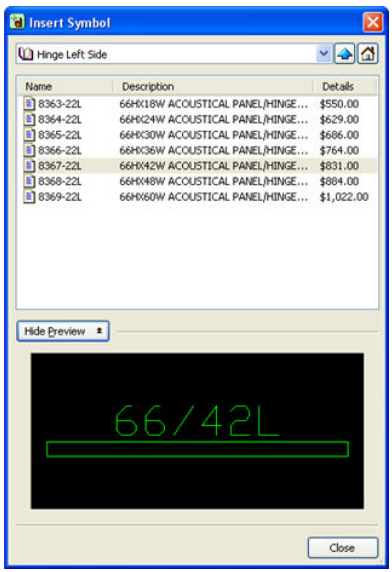
2. Click on the manufacturer. Keep clicking until you drill down to the product.

   If you know the beginning of the part number you can type it in and the QuickSearch feature will display a list of possible matches, up to a maximum of 50. This list will contract as you type in more of the part number. Select an item from the list by clicking on it.



3. Click **Show Preview** to show the block preview.





4. Click on the product to select it.

   The dialog box will disappear and the crosshairs in AutoCAD will appear with the symbol that you selected.
5. Click to place the symbol on your drawing.
6. Rotate the symbol then click again.

After placing a symbol into your drawing, right-click to immediately place the same symbol in your drawing.

By default, the dialog box will remember the last selection made so you will not have to always start selecting from the topmost level. If you want to change this setting, from the **CAP Designer** menu select **Preferences**, then click the **Advanced** tab. Clear the checkmark beside **Restore the last location in the Content when using Insert Symbol.**

If you disabled **QuickSearch** through **Preferences**, you will not see a list of matches as you type in the Part Number.

Place panels using the Panel Placer

The Panel Placer allows you to easily place panels at specific angles on your drawing. Panel Placer supports panel lines that have current connector automation. For a list of manufacturers, see the What's New file. The Panel Placer also allows you to place panel configurations created from Panel Builder.

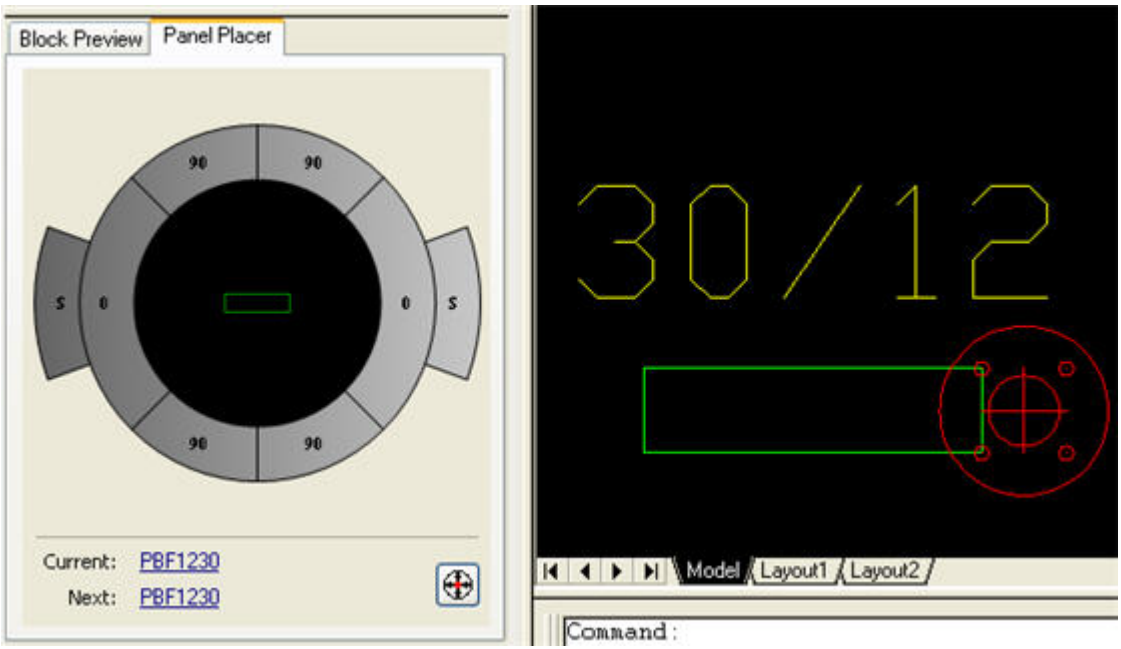
This tool is intelligent in that it restricts the angle at which panels will be placed, only displaying angles supported by the line. It also automatically leaves a gap in between panels if the line does not allow panels to connect corner to corner.

You can choose the panel that the tool will place, as well as choose a new starting point for the tool to begin placement.

1. Place a panel on the drawing using either the Explorer or the Insert Symbol command.

If the panel you selected belongs to a panel line supported by Panel Placer, the Block Preview will switch to the Panel Placer tab.

If you do not want the Block Preview to automatically switch to the Panel Placer tab, you can turn the option off in **CAP Designer Preferences**, **General** tab.

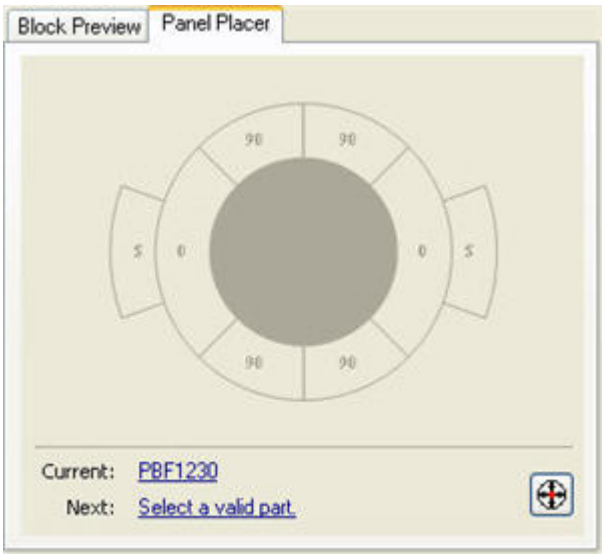


The Placer displays the part number of the current panel and the next panel (panel to be placed).

By default, the panel to be placed next is the same as the current panel.

2. If you want to change the next panel, hover your mouse over the part in Explorer. The Panel Placer validates whether a valid part is selected from the Explorer and *displays a message if the part is invalid*.

If the panel you want to place next is already somewhere in the drawing, click the hyperlink beside **Next** then select the panel from the drawing.



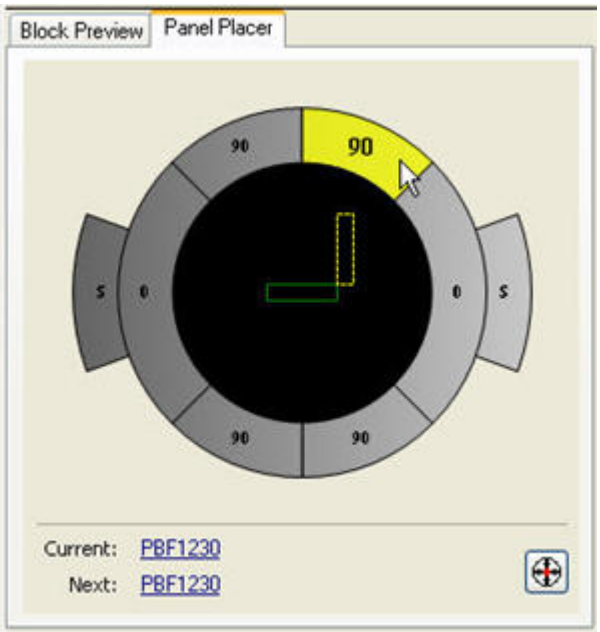
3. If you want to change the current panel, click the hyperlink beside **Current**. Select the panel on the drawing.

   The Panel Placer validates whether a valid part is selected in the drawing and displays a message if the part is invalid.

   Click the **Target** button if you want to center the AutoCAD window on the current panel in the drawing.

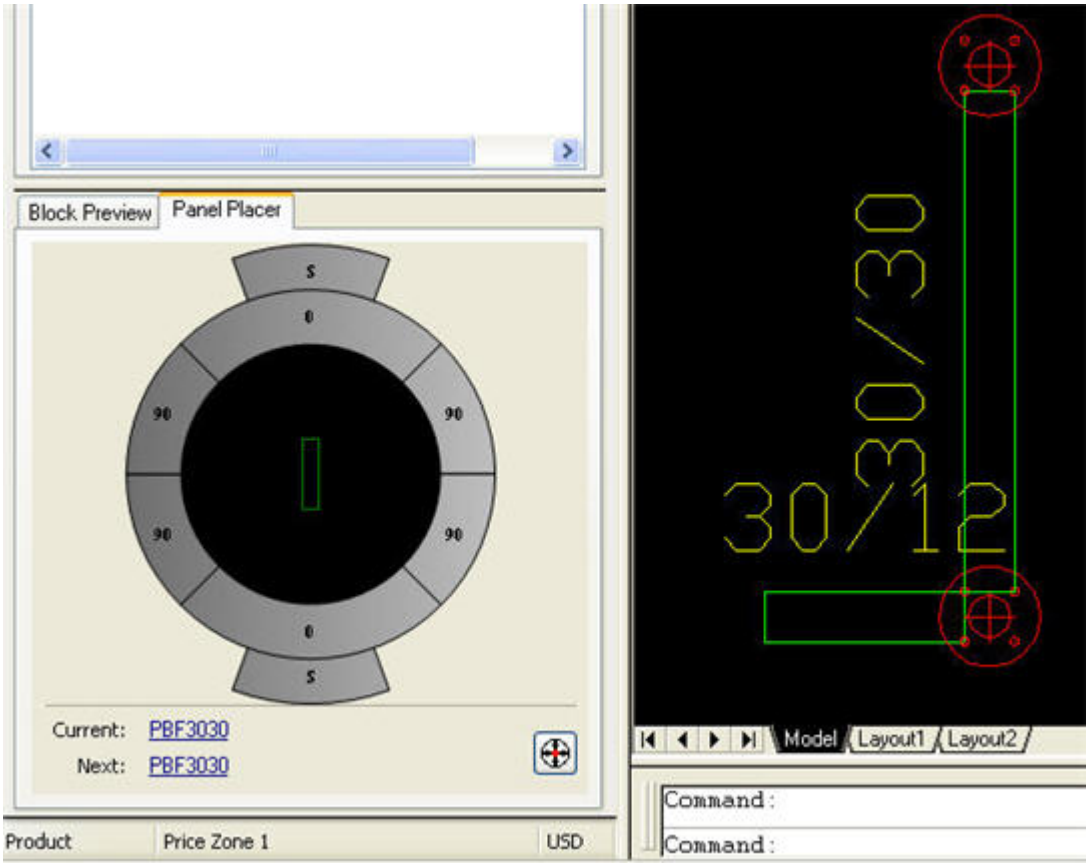
4. If you hover your mouse pointer over an angle button you will see where the next panel will be placed.

   The **S** buttons add a spacer between the current and next panel.



5. Click the angle.

   The buttons of the Panel Placer will rotate to align with the current panel, so subsequent panels you will place will be in reference to that angle.



Place products from an archived catalog

The steps for adding products from an archived catalog are the same as adding from the current catalog. See Use multiple versions of the same catalog in the 20-20 Worksheet help for instructions on archiving a catalog.

1. Add the product from the archived catalog. You can drag and drop from the Explorer bar or use Insert.
2. Click CAP Info to view the item's information. Notice that the **MFG** code appears as though the item came from the actual manufacturer, not the archived catalog's **MFG** code. This is normal. After you create a worksheet, display the **Alt MFG** column in the worksheet to view the **MFG** code of the archived catalog. This is how you can differentiate the archived catalog from the current one.

For more information, see Add products from an archived catalog in the Worksheet help.

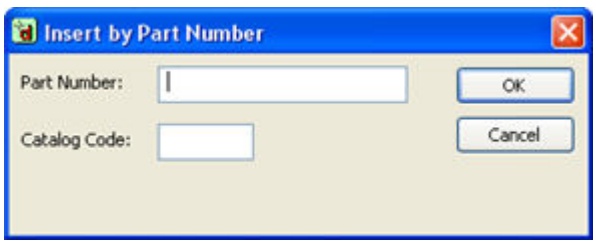
Insert by Part Number

Use this command to insert a part by typing in the part number.

1. Click the **Insert by Part Number** icon on the **CAP Tools toolbar**

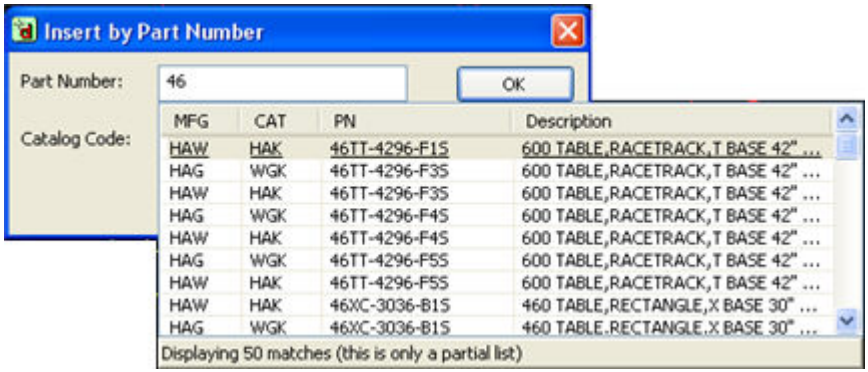
   Or, from the **CAP Designer** menu select **Tools, Insert by Part Number.**

   The **Insert by Part Number Dialog** box will appear.



2. In **Part Number**, start typing the part number.

   As you type in the part number, the QuickSearch feature will display a list of possible matches, up to a maximum of 50. This list will contract as you type in more of the part number.



If you want the program to show only matches from a specific catalog, type the **Catalog Code** first.

3. Select the product from the list.

   The **Part Number** and **Catalog Code** are filled out automatically.

4. Click **OK**.

5. Place the product on the drawing.

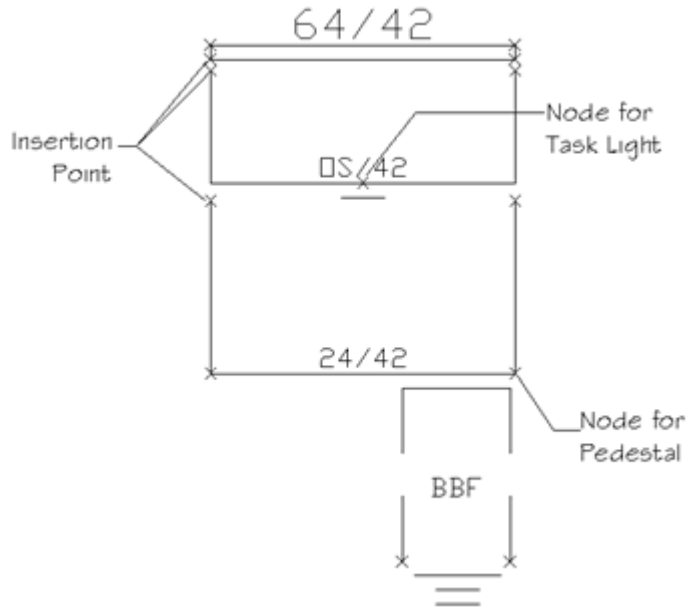
If you disabled **QuickSearch** through **Preferences**, you will not see a list of matches as you type in the Part Number.

How to place items properly

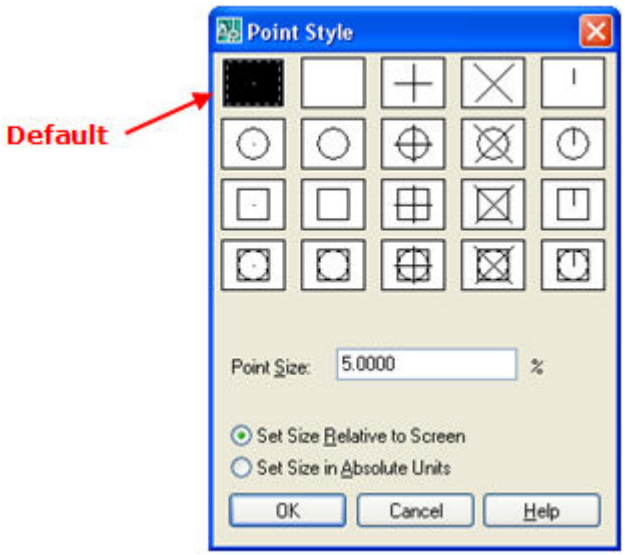
To properly place items in a drawing you need to know how to "snap" items together. Begin by selecting panels from the Explorer bar and "snapping" them together using their connection nodes. CAP Designer symbols have connection nodes in a variety of convenient locations.

- Panels have nodes on each corner.
- Worksurfaces have nodes on the rear to connect to the panels.
- Worksurfaces also have nodes on the front to connect to pedestals.
- Overhead storage units have node in the center for task lights.

Each Manufacturer provides symbols with different locations for nodes. The graphic is a general suggestion as to where nodes may be located. Each Manufacturer may vary slightly.



You can view the nodes by typing `DDPTYPE` at the command prompt and pressing Enter. Change the point type to an X or a circle.



You must type the REGEN at the command prompt to have the changes take affect.

Search for products

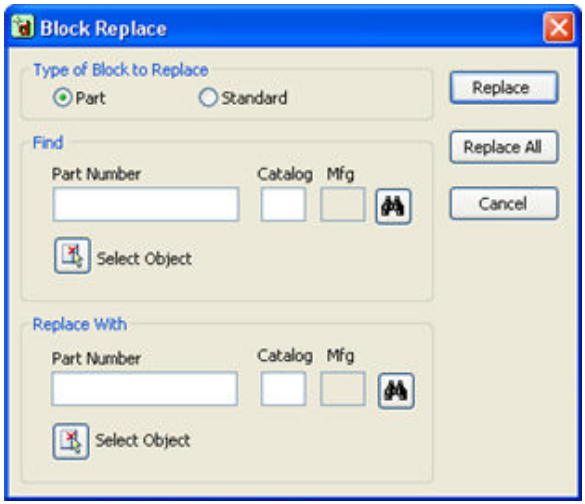
Search and replace

Use **Block Replace** to quickly replace a part number with another within all or a selected area of your drawing.

1. Click the **Block Replace** icon on the **CAP Edit** toolbar.

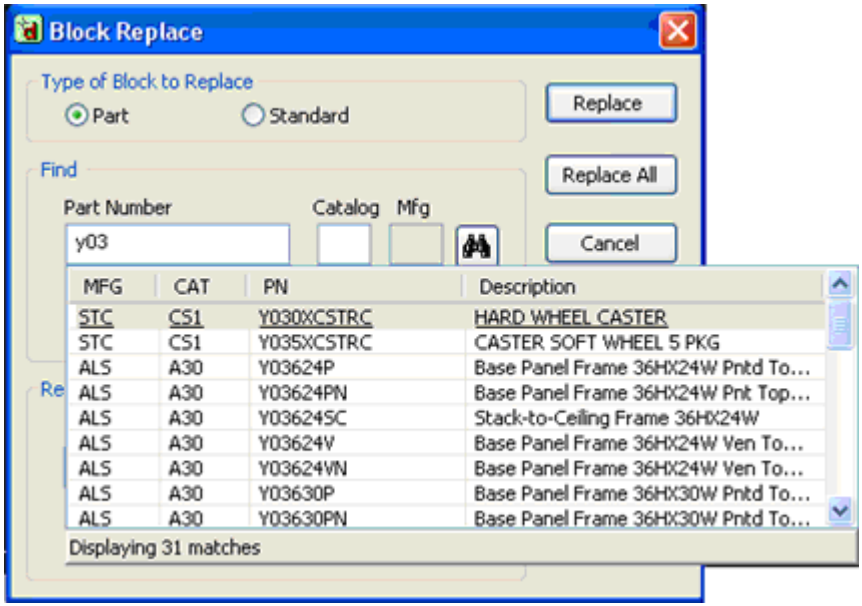
   Or, from the **CAP Designer** menu select **Edit, Block Replace.**

The **Block Replace** dialog appears.



2. Under **Find**, type in the **Part Number** and **Catalog** code of the part you want to replace in the drawing. As you type in the **Part Number**, the QuickSearch feature will display a list of possible matches, up to a maximum of 50. This list will contract as you type in more of the part number.

   If you want **QuickSearch** to look only in a certain catalog, type in the **Catalog** first before you type the **Part Number**.



Or, instead of typing, click **Browse** and browse the content catalogs, or click **Select Object** and select the items you want to replace in the drawing. This can be one part or a Standard.

3. Under **Replace With,** type in the replacement **Part Number** and **Catalog** code that you want to place in the drawing.

   Or, instead of typing, click **Browse** and browse the content catalogs, or click **Select Object** and select the part or Standard that you want to use as a replacement.

4. Click **Replace** to create a selected area to replace within your drawing. This allows you to replace in only certain areas in the drawing.

   Or, click **Replace All** to replace all items globally within the entire drawing.

If you disabled **QuickSearch** through **Preferences**, you will not see a list of matches as you type in the Part Number.

QuickSearch

CAP Designer's QuickSearch feature displays a list of possible matches as you type in a part number. This feature is available from the Explorer bar's **Content** tab, the **Insert Symbol** dialog, the **Insert by Part Number** dialog and the **Block Replace** dialog.

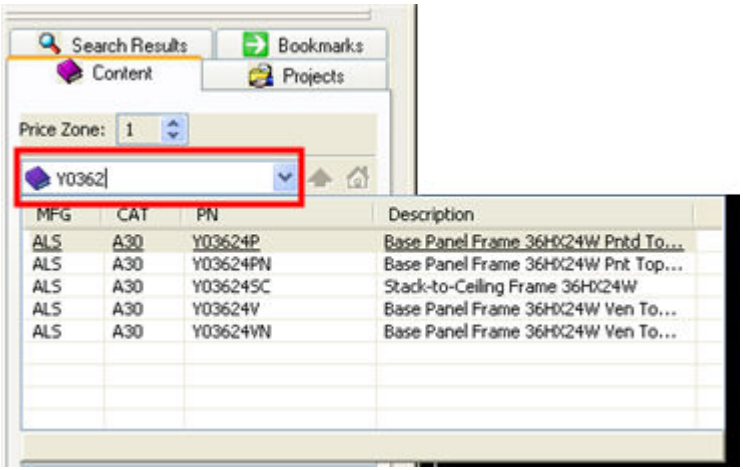
See Use QuickSearch from the Content tab

To change QuickSearch behavior, go to the **CAP Designer** menu, select **Preferences**, then click **QuickSearch**. For more information see QuickSearch preferences in the 20-20 Worksheet help or User Guide.

Use QuickSearch from the Content tab

1. In the Explorer bar's Content tab, begin typing in a part number in the **QuickSearch** field.

   As you type in the part number, the program will display a list of possible matches, up to a maximum of 50. This list will contract as you type in more of the part number.



2. Select an item from the list by **double-clicking** on it.

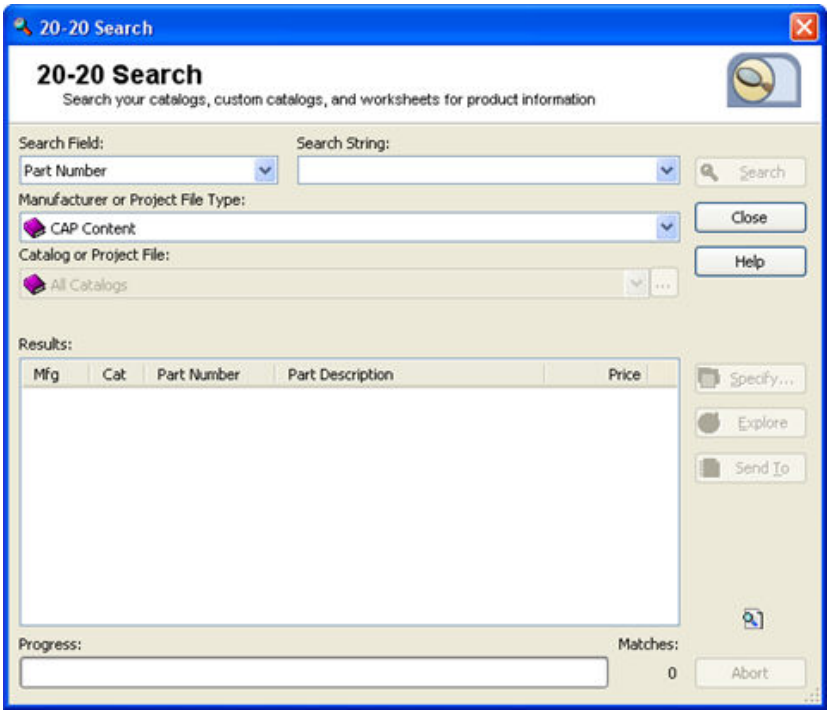
By default, QuickSearch displays a maximum of 50 matching parts. This number can be changed in the **Preferences** dialog. See QuickSearch preferences in the 20-20 Worksheet help for details.

20-20 Search

20-20 Search is a tool to search for products in: manufacturer's catalogs, custom catalogs, and 20-20 worksheets.

This tool is useful when searching multiple catalogs for products with a common element (panels, for example). **20-20 Search** displays the search results in the Explorer bar's **Search** tab.

To access **20-20 Search**, from the **CAP Designer** menu select **20-20 Search.**



See the following topics in the **20-20 Worksheet** help for the two types of criteria you can use to search:

- Search by part number
- Search by part description

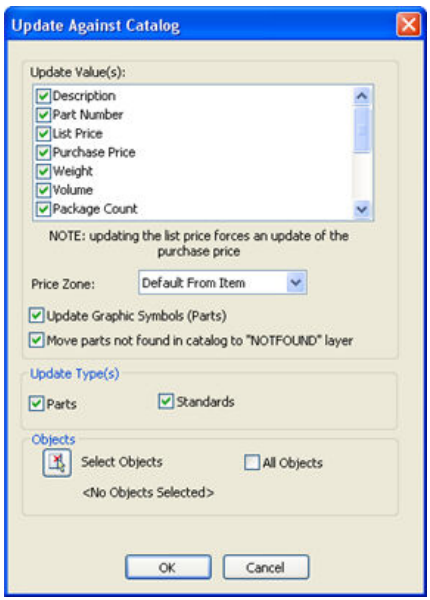
Update against a catalog

Updating against a catalog applies information from the manufacturer catalog to your drawing. Catalog information includes data such as part numbers, part descriptions, list prices, weights and volumes. The **Update Against Catalog** will also allow you to update against different price zones.

1. From the **CAP Designer** menu, click **Update Against Catalog**

   Or, click on **Update Against Catalog** in the CAP Designer toolbar.

   The **Update Against Catalog** dialog box appears.



2. Under **Update Values** select the data to update. By default, all fields are checked.

3. Select the **Prize Zone**.
4. Check if you want to **update graphic symbols**.
5. Check if you want to **move parts not found in catalog to the NOTFOUND layer**.
6. Under **Update Types**, check whether you want to update parts and/or standards.
7. Check **All Objects** to update all objects on the drawing.

   Or, click **Select Objects** then select objects on the drawing. Press Enter to confirm your selection.
8. Click **OK**.

Layers

CAP Designer provides the following tools to manage layers:

- Layer Profiles
- Layer On
- Layer Off

Layer Profiles

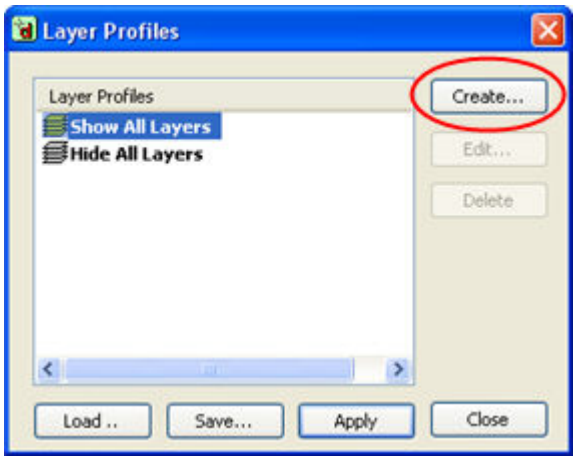
The Layer Profile Manager helps you manage layers by allowing you to save layer settings in layer profiles. With the help of this layer profile you can easily create installation plans, presentation plans and in-house documents with consistency.

1. Click the **Layer Profile** icon on the **CAP Tools toolbar**

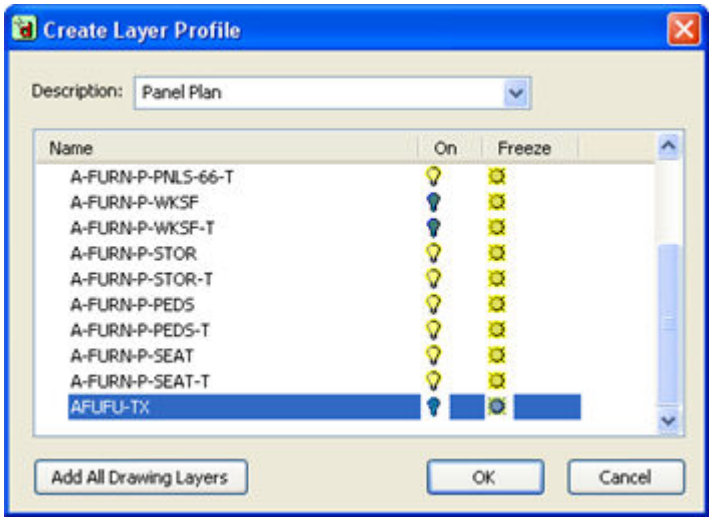
   Or, from the **CAP Designer** menu select **Tools, Layer Profiles.**

The **Layer Profile** dialog box will appear.

2. In order to create a layer profile, click **Create**.



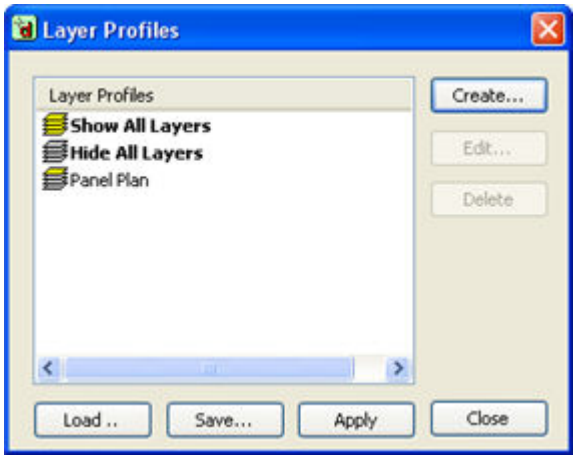
3. Give the layer profile a **Description**, and turn on and off the layers you want to appear.



You can use the **Layer On** and **Off** toolbar buttons to turn on and off layers quickly before calling **Layer Profiles**. Then, when you open **Layer Profiles** the settings you just made will come up when you create a profile.

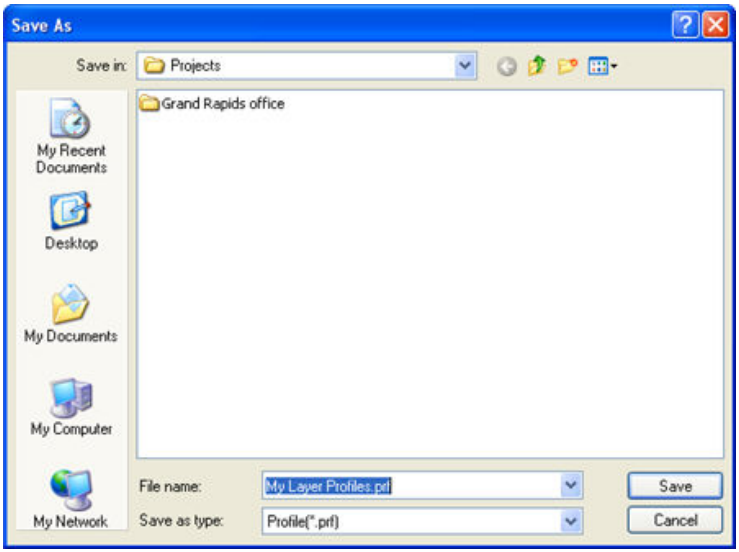
4. Click **OK**.

   Notice that the new profile you just created will appear under **Layer Profiles**.



5. Continue creating the layer profiles you would like to use in your drawing.
6. In order for you to see your layer settings take affect within your drawing, highlight the **Layer Profile** and click **Apply**. You will see the layers automatically turn on and off based on the layer profiles you established.
7. You must save your layer profile to reuse it the next time you open the drawing. Click the **Save** button. This will open up a *window* where you can save your layer profile.

   After saving your layer profile you can also use it on other drawings. All you have to do is open **Layer Profiles**, highlight the layer profile you would like to apply to your drawing and click **Apply**.



You can set CAP Designer to load a layer profile upon launch. From the **Preferences** dialog, on the **General** tab under **Automatically Load Layer Profile** browse to the layer profile you want to load. This could be a great way to create consistency within an office for establishing drawings. Everyone within an office could use a common layer profile.

Layer On

Layer On turns previously turned off layers back on.

Click the **Layer On** icon on the **CAP Tools toolbar**. Or, from the **CAP Designer** menu select **Tools, Layer On.**

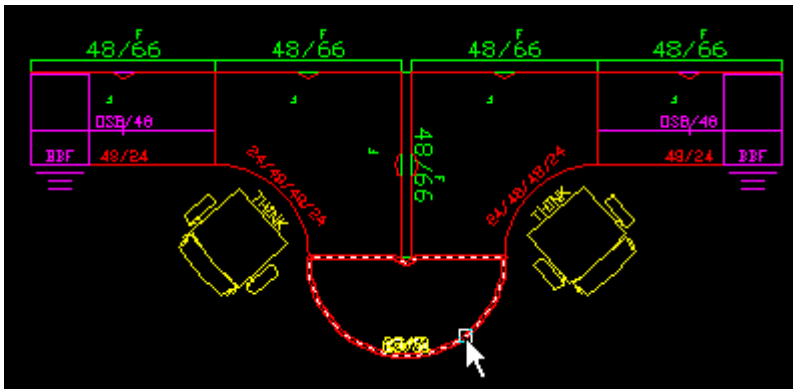
Layer Off

Use this command to turn layers off by simply selecting symbols on the drawing.

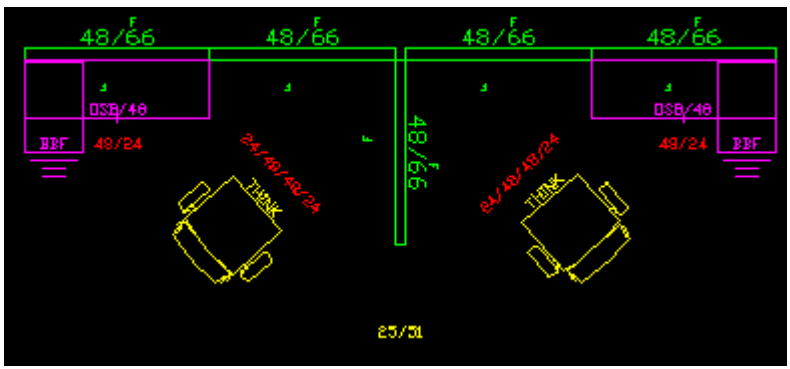
1. Click the **Layer Off** icon  on the **CAP Tools toolbar**.

   Or, from the **CAP Designer** menu select **Tools, Layer Off.**

2. Select a symbol on the drawing.



The layer is turned off.



You can keep selecting layers. Press Esc or Enter when done.

To turn all layers back on, click the **Layer On** icon .

Combine AutoCAD commands

The following CAP Designer commands combine AutoCAD commands in a single step:

- Copy Rotate
- Move Rotate
- Offset Copy
- Offset Move

Copy Rotate

Copy Rotate combines the AutoCAD Copy and Rotate commands in a single step.

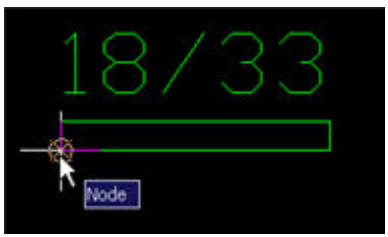
Before doing **Copy Rotate,** make sure that **Osnap** mode is on in AutoCAD, with the **Node** mode checked in **Object Snap Settings**. It is also recommended to turn on **Ortho** mode.

1. Click the **Copy Rotate** icon on the **CAP Edit** toolbar.

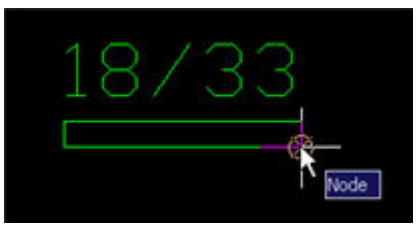
   Or, from the **CAP Designer** menu select **Edit, Copy Rotate.**

2. Select the object(s) on the drawing.

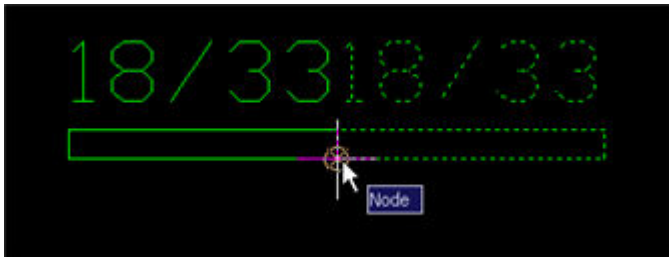
3. Press **Enter** or right-click to confirm your selection.
4. Specify the base point.

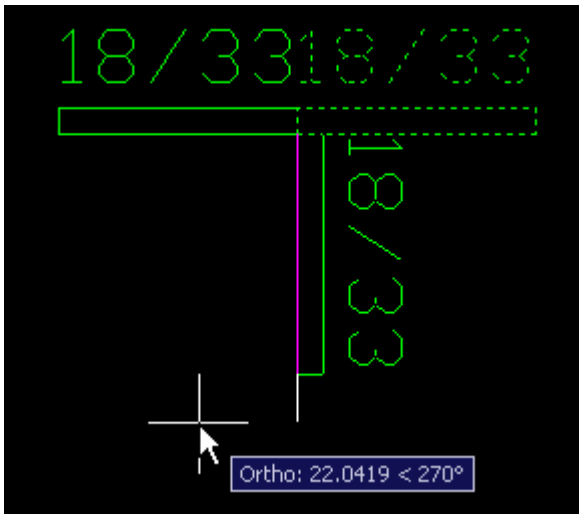


5. Specify the second point. This will be the point where the copied object will be inserted and rotated.

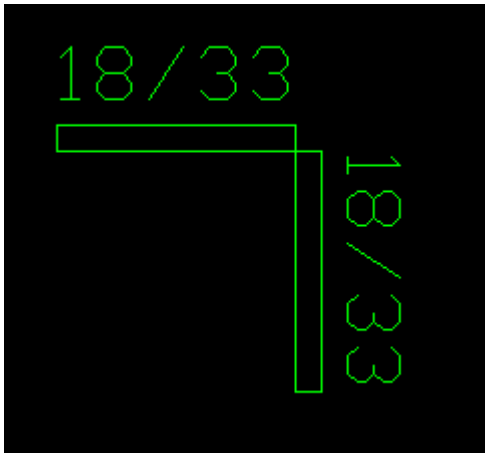


6. When the copied object appears, rotate it.





The object is now copied and rotated.



Move Rotate

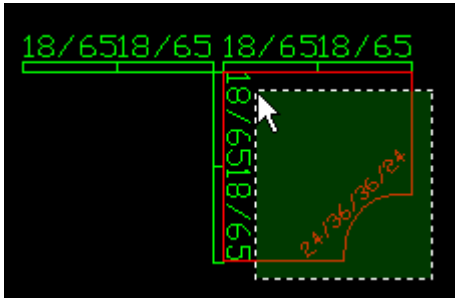
Move Rotate combines the AutoCAD Move and Rotate commands in a single step.

Before doing **Move Rotate,** make sure that **Osnap** mode is on in AutoCAD, with the **Node** mode checked in **Object Snap Settings**. It is also recommended to turn on **Ortho** mode.

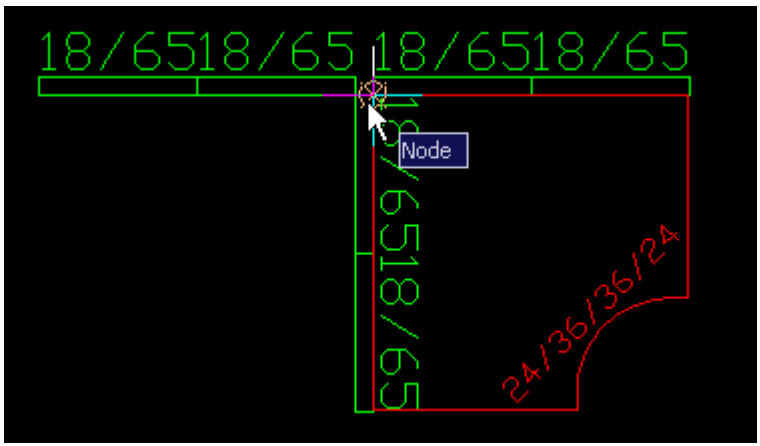
1. Click the **Move Rotate** icon  on the **CAP Edit** toolbar.

   Or, from the **CAP Designer** menu select **Edit, Move Rotate.**

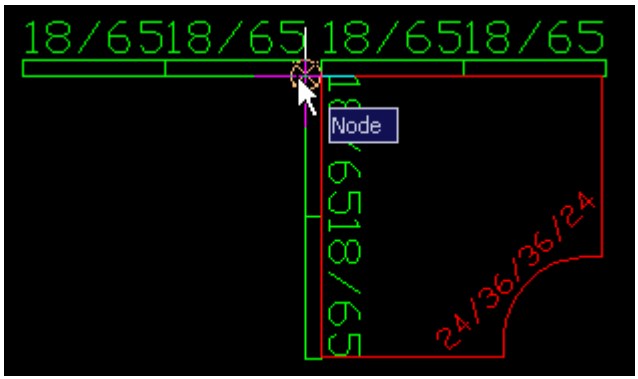
2. Select the object(s) on the drawing.



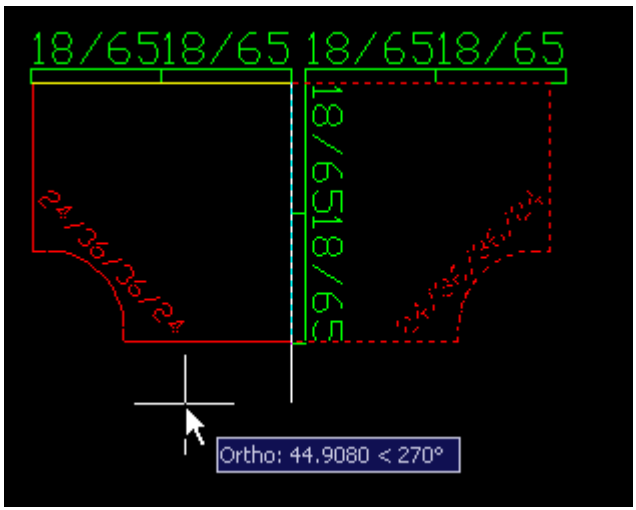
3. Press **Enter** or right-click to confirm your selection.
4. Specify the base point.



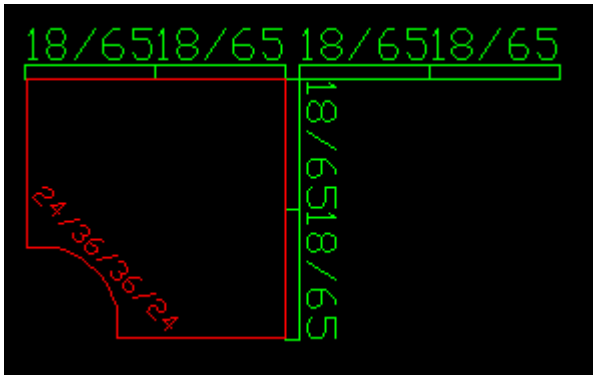
5. Specify the second point. This will be the point where the object will be moved and rotated.



6. When the object appears, rotate it.



The object is now moved and rotated.



Offset Copy

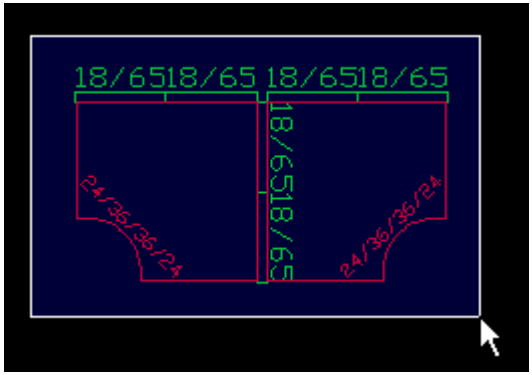
Offset Copy combines the AutoCAD Copy and Offset commands in a single step.

Before doing **Offset Copy,** make sure that **Osnap** mode is on in AutoCAD, with the **Node** mode checked in **Object Snap Settings**. It is also recommended to turn on **Ortho** mode.

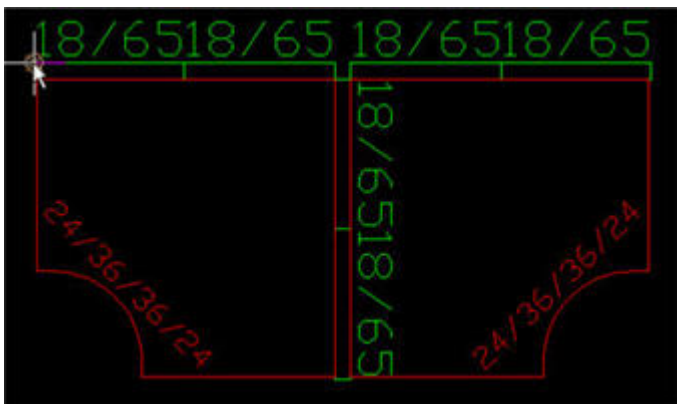
1. Click the **Offset Copy** icon on the **CAP Edit** toolbar.

   Or, from the **CAP Designer** menu select **Edit, Offset Copy.**

2. Select the object(s) on the drawing.



3. Press **Enter** or right-click to confirm your selection.
4. Specify the base point.



5. Specify the point to offset from. Note that this must be in line with the first point.

6. On the command line, enter the offset distance. Specify the distance in inches.

```
Select objects: Specify opposite corner: 8 found
Select objects:
Select base point.
Select point to OFFSET from:
Enter OFFSET (@X,Y): @60,0
```

The object is now copied and offset by the distance you specified.

Offset Move

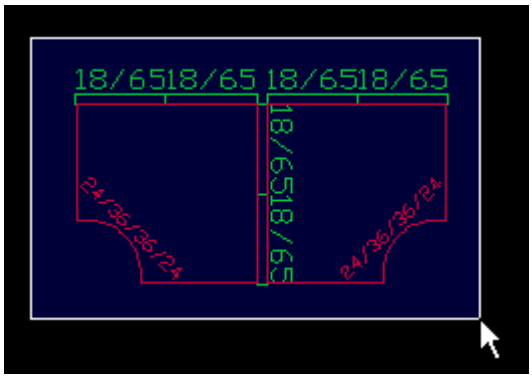
Offset Move combines the AutoCAD Move and Offset commands in a single step.

Before doing **Offset Move,** make sure that **Osnap** mode is on in AutoCAD, with the **Node** mode checked in **Object Snap Settings**. It is also recommended to turn on **Ortho** mode.

1. Click the **Offset Move** icon on the **CAP Edit** toolbar.

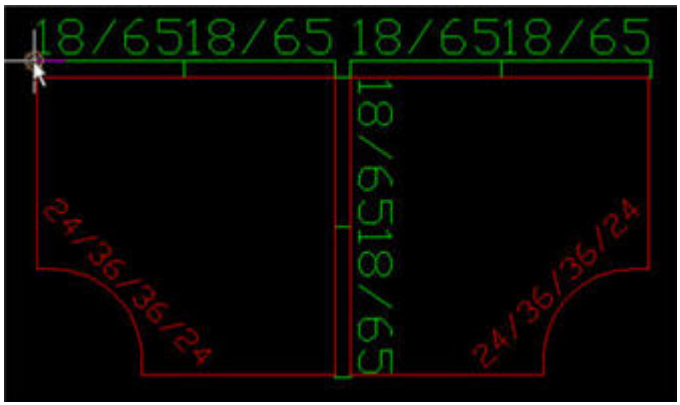
   Or, from the **CAP Designer** menu select **Edit, Offset Move.**

2. Select the object(s) on the drawing.



3. Press **Enter** or right-click to confirm your selection.

4. Specify the base point.



5. Specify the point to offset from. Note that this must be in line with the first point.

6. On the command line, enter the offset distance. Specify the distance in inches.

```
Select objects: Specify opposite corner: 8 found
Select objects:
Select base point.
Select point to OFFSET from:
Enter OFFSET (@X,Y): @60,0
```

The object is now moved and offset by the distance you specified.

Highlight parts in the drawing

CAP Designer provides two commands to help you locate and count parts in a drawing:

- Highlight by Part Number
- Highlight by Select

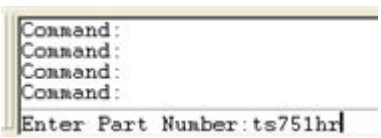
Highlight by Part Number

Highlight by Part Number locates and highlights all occurrences of a particular part number and reports the number of symbols found in the drawing.

1. Click the **Highlight by Part Number** icon on the **CAP Edit** toolbar.

   Or, from the **CAP Designer** menu select **Edit, Highlight by Part Number.**

2. Enter the part number on the command line.

   The parts are highlighted on the drawing and the number of symbols found are displayed on the command line.

Enter `Regen` on the command line to un-highlight.

Highlight by Select

Highlight by Select marks all occurrences of a symbol when you select one of the symbols in the drawings.

1. Click the **Highlight by Select** icon on the **CAP Edit** toolbar.

   Or, from the **CAP Designer** menu select **Edit, Highlight by Select.**
2. Select a symbol on the drawing.
3. Press **Enter** or right-click to confirm your selection.

   The parts are highlighted on the drawing and the number of symbols found are displayed on the command line.

Enter `Regen` on the command line to un-highlight.

Tags

A **Tag** is a label on the drawing that is used by clients or installers to determine what is on the plan or what is to be installed.

CAP Designer provides several useful tools for tagging CAP symbols:

- Append Tag
- New Tag
- Change Tag Size
- Move Tag
- Rotate Tag
- Show Part Number/Tag

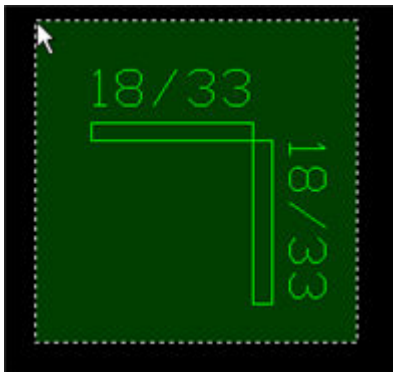
Append Tag

Append Tag adds text to the end of the selected object's tag. For example, you may want a certain object to be tagged differently from others in order to draw attention to it in the drawing.

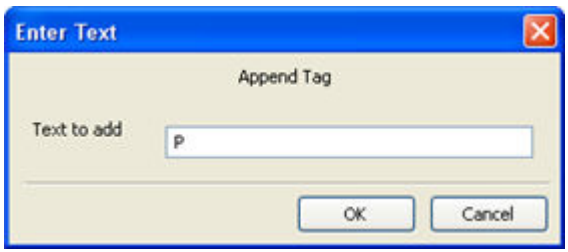
1. Click the **Append Tag** icon  on the **CAP Edit** toolbar.

   Or, from the **CAP Designer** menu select **Edit, Append Tag.**

2. Select the object(s) on the drawing.

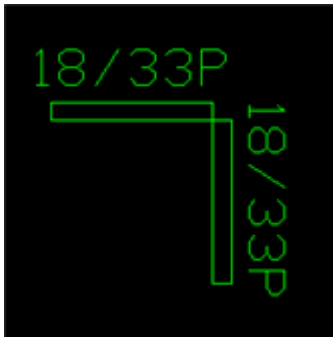


3. Press **Enter** or right-click to confirm your selection.
4. Type in the text you want added to the tag.



5. Click **OK**.

   The text is appended to the tag.



New Tag

Use the **New Tag** command to change an object's tag. For instance, you may want to print out a drawing for a client or an installer, so you will use **New Tag** to give more meaningful labels to objects on the drawing.

1. Click the **New Tag** icon on the **CAP Edit** toolbar.

   Or, from the **CAP Designer** menu select **Edit, New Tag.**
2. Select the object(s) on the drawing.
3. Press **Enter** or right-click to confirm your selection.
4. Type in the new tag.

5. Click **OK**.

Change Tag Size

In order to make tags more visible, use **Change Tag Size** to modify the text height.

1. Click the **Change Tag Size** icon on the **CAP Edit** toolbar.

   Or, from the **CAP Designer** menu select **Edit, Change Tag Size.**
2. Enter the text height of the tag on the command line.

   ```
   Enter new tag size: 6
   ```
3. Select the object(s) on the drawing.
4. Press **Enter** or right-click to confirm your selection.

   The text height of the selected object's tag is resized.

Move Tag

Use **Move Tag** to change a tag's position. You can use this command instead of clicking on the tag's grips, particularly on CAPtile elements.

1. Click the **Move Tag** icon on the **CAP Edit** toolbar.

   Or, from the **CAP Designer** menu select **Edit, Move Tag.**
2. Select the object(s) on the drawing.
3. Press **Enter** or right-click to confirm your selection.
4. Select the base point of the tag.

5. Move the tag.

Rotate Tag

Use **Rotate Tag** to rotate a selected object's tag.

1. Click the **Rotate Tag** icon on the **CAP Edit** toolbar.

   Or, from the **CAP Designer** menu select **Edit, Rotate Tag.**
2. Select the object(s) on the drawing.
3. Press **Enter** or right-click to confirm your selection.
4. Select the base point of the tag.
5. Rotate the tag.

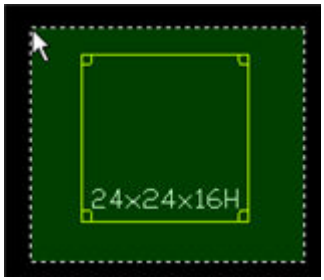
Show Part Number/Tag

Show Part Number/Tag switches the attribute display between **Tag** and **Part Number**.

1. Click the **Show Part Number/Tag** icon on the **CAP Edit** toolbar.

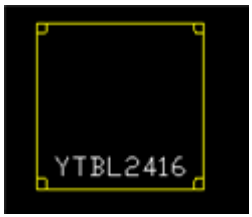
   Or, from the **CAP Designer** menu select **Edit, Show Part Number/Tag.**
2. Select the object(s) on the drawing.

   In the example below, the **Tag** is displayed.



3. Press **Enter** or right-click to confirm your selection.

   The **Part Number** is displayed.



   To switch back to Tag display, redo the **Show Part Number/Tag** command.

Mirror items

To quickly mirror and move the last item placed on the drawing, use the CAP Designer **Mirror** commands:

- Mirror Last Block x
- Mirror Last Block y

Mirror Last Block x

Mirror Last Block x mirrors then moves the last part placed along a vertical line (||).

1. Click the **Mirror Last Block x** icon on the **CAP Tools toolbar**.

   Or, from the **CAP Designer** menu select **Tools, Mirror Last Block x.**
2. Specify the point of displacement.

   Turn ORTHO on to limit cursor movement to the horizontal or vertical axis.

Mirror Last Block y

Mirror Last Block y mirrors then moves the last part placed along a horizontal line (=).

1. Click the **Mirror Last Block y** icon on the **CAP Tools toolbar**.

   Or, from the **CAP Designer** menu select **Tools, Mirror Last Block y.**
2. Specify the point of displacement.

   Turn ORTHO on to limit cursor movement to the horizontal or vertical axis.

Plan and 3D views

This section shows you how you can use CAP Designer to view your drawings in 3D.

Convert Plan to 3D

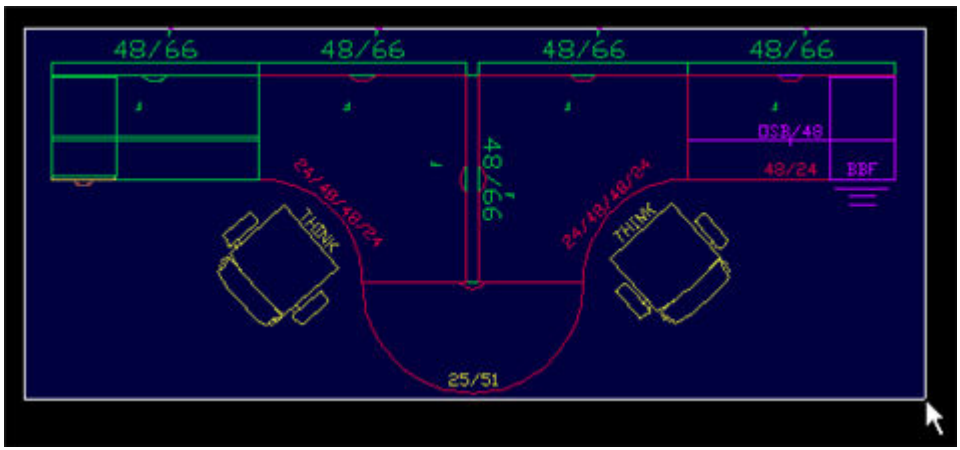
This command converts the symbols from plan view to 3D view.

Before following the steps below, build the workstation using Plan View symbols.

1. Click the **Convert Plan to 3D** icon on the **CAP Tools toolbar**

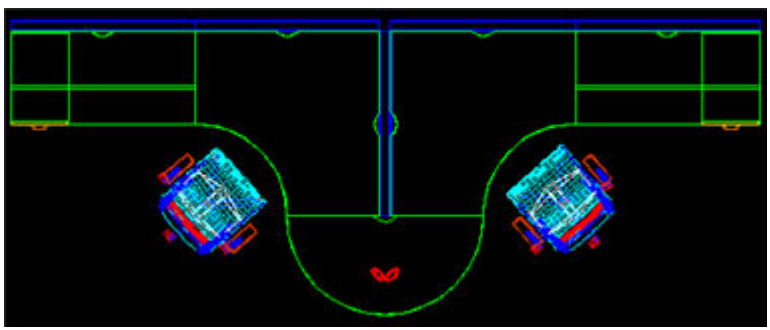
   Or, from the **CAP Designer** menu select **Tools, Convert Plan to 3D**.

2. Select the objects on the drawing.

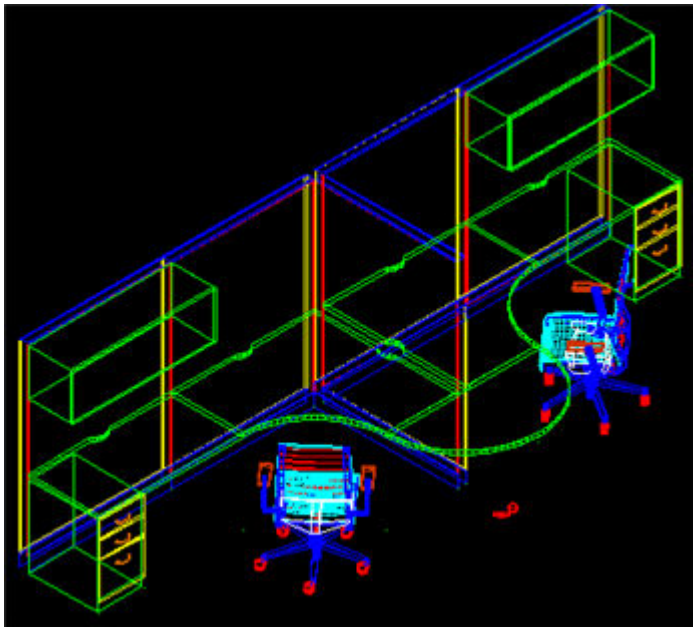


3. Press Enter or right-click to confirm your selection.

   The objects you selected are converted to 3D, top view. You will notice that the tags have disappeared.



To change the view, from the AutoCAD **View** menu select **3D Views.** Select the view — for example, **SW Isometric**.



4. To change to hidden lines, type `Hide` on the command line.

   Note that you cannot zoom in or out when Hidden lines is on.

5. Type `Regen`.

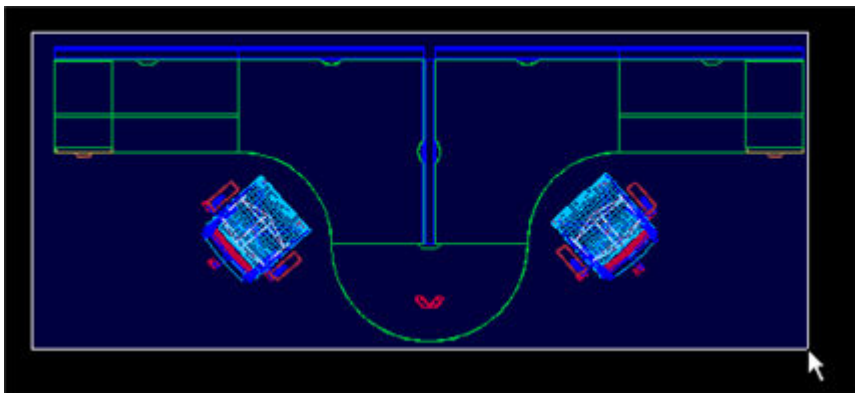
Convert 3D to Plan

This command converts the symbols from 3D view to Plan view.

For information about converting plan to 3D, see Convert Plan to 3D.

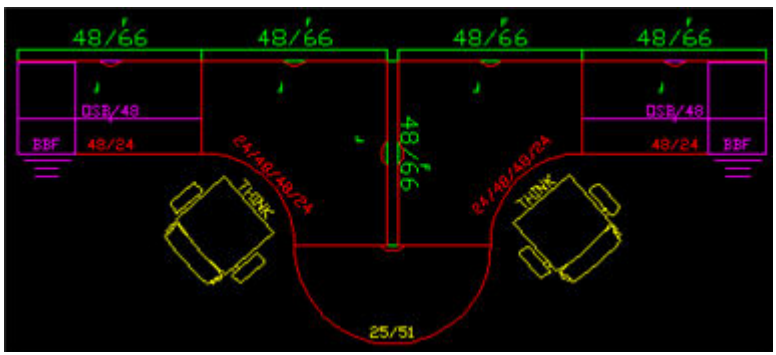
1. Type `Plan` and press Enter twice to return to top view.
2. Click the **Convert 3D to Plan** icon on the **CAP Tools toolbar**

   Or, from the **CAP Designer** menu select **Tools, Convert 3D to Plan.**
3. Select the objects on the drawing.



4. Press Enter or right-click to confirm your selection.

   The objects you selected are converted to Plan view. Notice that the tags have reappeared.



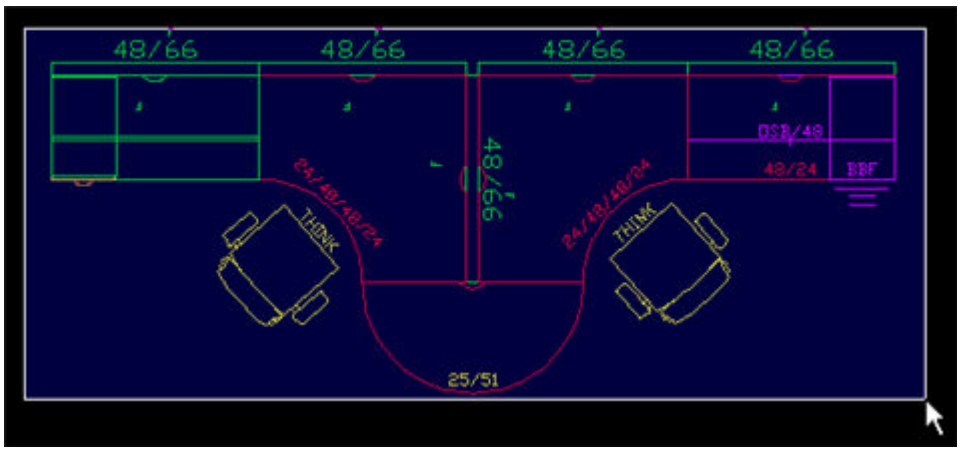
Copy Plan to 3D

This command copies the symbols on the drawing, then converts them to 3D.

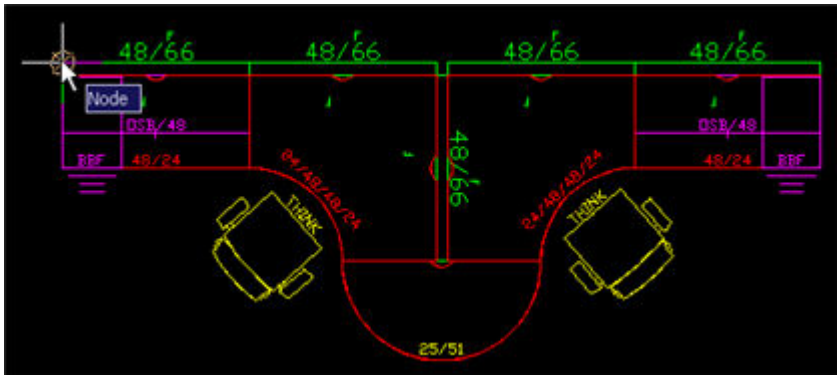
1. Click the **Copy Plan to 3D** icon on the **CAP Tools toolbar**

   Or, from the **CAP Designer** menu select **Tools, Copy Plan to 3D.**

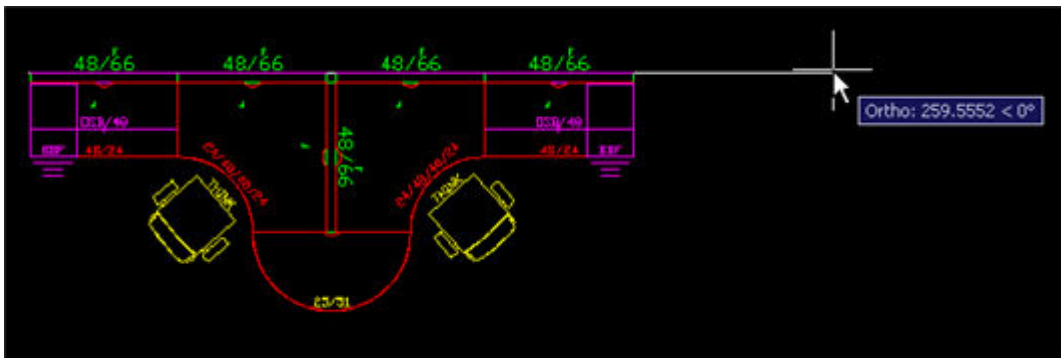
2. Select the objects on the drawing.



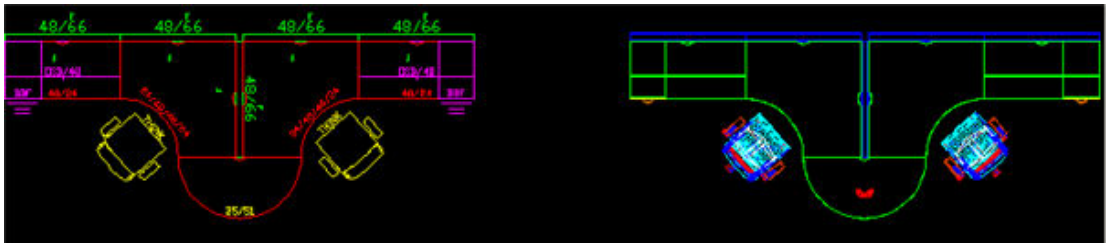
3. Press Enter or right-click to confirm.
4. Select the base point.



5. Select the second point.



The copied symbols are converted to 3D view.



To change the view, from the AutoCAD **View** menu select **3D Views.** Select the view — for example, **SW Isometric**.

If you cancelled the command after specifying the base point, a copy of your selection is still created, so you will have duplicate symbols on your drawing. To verify this, select an object and click CAP Info.

Change 3D Height

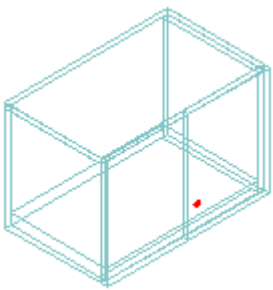
There are often times when an item needs to be placed at a different 'Z' height. For example, if you want to stack two overhead cabinets, place one at the default height, then place the second overhead and use change 3D height to move it up above the first.

Other ways you could use this command would be to put worksurfaces or connectors at a special height.

To place an overhead cabinet above another:

1. Put two overhead cabinets on the drawing so they overlap.
2. Convert from plan to 3D.

   The plan is converted to 3D, top view.
3. From the AutoCAD **View** menu select **3D Views**, **SW Isometric**.



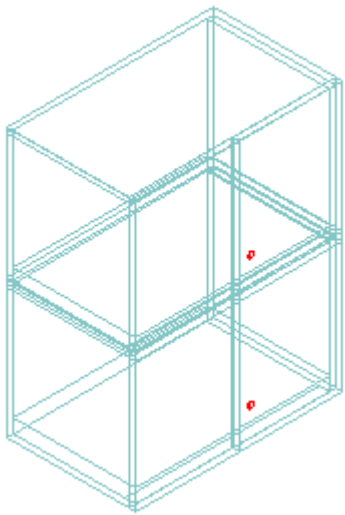
4. Click the **Change 3D Height** icon  on the **CAP Edit** toolbar.

   Or, from the **CAP Designer** menu select **Edit**, **Change 3D Height**.
5. Select one of the overhead cabinets then press Enter to confirm your selection.

6. In the **Edit Default Height** dialog, enter the new default height in inches:

7. Click **OK**.

   The overhead cabinet you selected is now placed at the height you specified:



For other applications of this command, see:

- CAP Frame Validation Tool
- Corrections to make when converting to 3D

Ghost 3D / UnGhost 3D

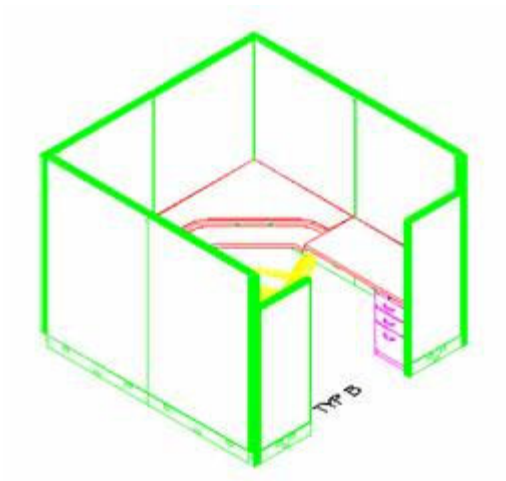
Ghost 3D / Unghost 3D changes solid CAP 3D symbols so that they display as an outline or ghost of the product. Using the Ghost button on an already ghosted symbol will return it to solid.

For example, if you are viewing a workstation in 3D using Hidden lines or Shaded views, you can ghost some panels in order to see through it.

Before following the steps below, build a workstation using Plan View symbols.

1. Convert the plan to 3D.

   The plan is converted to 3D, top view.
2. From the AutoCAD **View** menu select **3D Views**, **SW Isometric**.
3. Enter `Hide` on the command prompt to switch to hidden lines.



4. Click the **Ghost/Unghost 3D** icon on the CAP Tools toolbar.

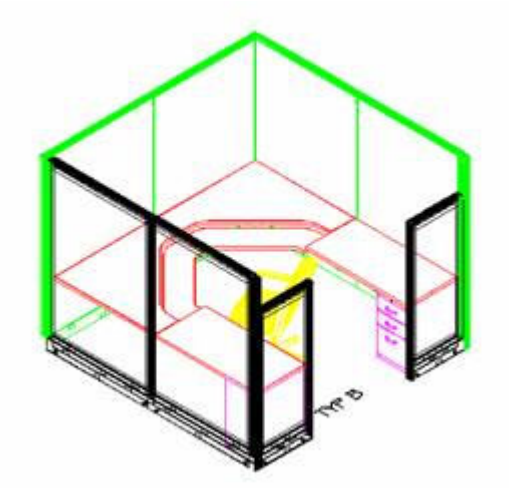
   Or, from the **CAP Designer** menu, select **Tools**, **Ghost/Unghost 3D.**

5. Click the panels you want to ghost.

   The panels are now displayed in white.

6. Enter `Hide` on the command prompt again.

   Notice that you can now see through the panels you selected.



Alias values

Alias values are additional information that you can assign to a CAP part. For example, you may want to assign a department name to the **Alias 1** value of a CAP part.

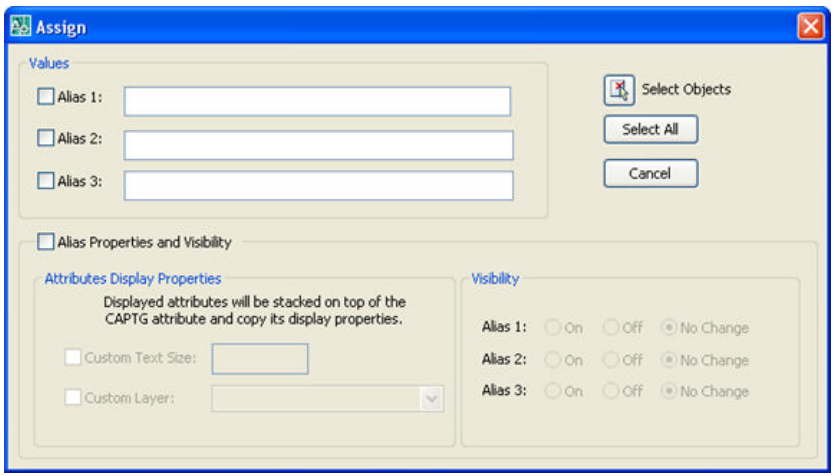
Assign Alias values

Use this command to assign values to the **Alias 1**, **Alias 2**, and **Alias 3** columns. This information can be viewed in CAP Info and carries over to 20-20 Worksheet.

1. Click the **Assign** icon on the **CAP Tools toolbar**

   Or, from the **CAP Designer** menu select **Tools, Assign.**

   The **Assign Dialog** box will appear.



   You can assign to the **Alias 1**, **Alias 2**, and **Alias 3** fields within the drawing.

2. To assign a value to an **Alias** column, check the **Alias** you would like to assign to and type in the information you would like to assign to that field.
3. If you want the **Alias** value to be visible on the drawing, check **Alias Properties and Visibility**. Under **Visibility**, click **On** beside the appropriate **Alias** column.

   If the Visibility status is set to "On", the Alias value will be made into a displayed attribute within AutoCAD.
4. Under **Attributes Display Properties**, enter the custom text size and layer in which the Alias values will be displayed.

   You will not be able to create a layer within this dialog. The layer that you wish to place the Alias value on must already exist within the drawing to appear in the dropdown list.

   If no selections are made under **Attributes Display Properties**, the chosen Alias values will assume the same characteristics as the item's normal tag (layer, color, height, font, etc.).
5. Click the **Select Objects** button to determine a specific area within a drawing you would like to apply to.

   Or, click **Select All.**

   This information will be visible through the **CAP Info** dialog box while in a drawing.

   When you do a worksheet take off, by turning on the **Alias** column within the worksheet you will see the information you assigned carry over to 20-20 Worksheet.

You can assign an **Alias 1, 2,** or **3** to a CAP Standard. Assign in CAP Designer is used for individual parts within the standard. **Alias 1, 2,** and **3** are not Attributes on the symbol, but rather AutoCAD extended data.

To change the visibility of Alias values that are already assigned, see Change Visibility of assigned Alias values.

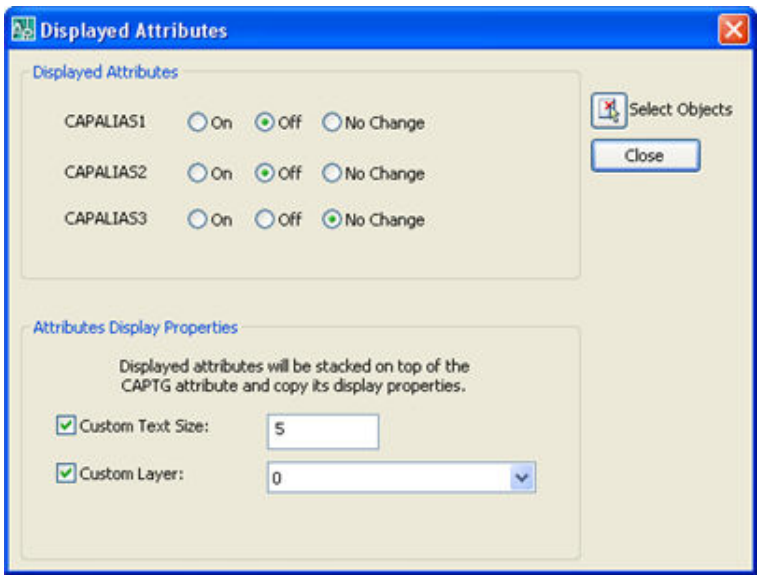
Change visibility of Alias values

To change the visibility of existing Alias values, use the **Set Displayed Tags** command.

1. Click the **Set Displayed Tags** icon on the CAP Tools toolbar.

   Or, from the CAP Designer menu select Tools, **Set Displayed Tags.**

   You will see the **Displayed Attributes** dialog:



2. Beside each **Alias** field, select **On** to display the value or **Off** to hide it.
3. Under **Attributes Display Properties**, check **Custom Text Size** and enter the text size to specify a text height for the Alias value.
4. Check **Custom Layer** then select the layer to place the **Alias** on a specific layer within the drawing.

You will not be able to create a layer within this dialog. The layer that you wish to place the Alias value on must already exist within the drawing to appear in the dropdown list.

If no selections are made under Attributes Display Properties, the chosen Alias values will assume the same characteristics as the item's normal tag (layer, color, height, font, etc.).

5. Click **Select Objects** and you will be returned to the drawing and prompted to select items in the drawing.
6. Select the items on the drawing then press Enter.

   Notice that the visibility of the Alias values of items you selected have been changed. The **Displayed Attributes** dialog will reappear for any further changes in **Alias** visibility you wish to make.
7. Click **Close**.

Assign sequential Alias values

The **Area Tag** command allows you to automatically or manually put sequential letters or numbers to the **Alias** values of items on the drawing. You can also add a prefix and suffix to the **Alias** value.

1. Click the **Area Tag** icon on the CAP Tools toolbar.

   Or from the **CAP Designer** menu, select **Tools**, **Area Tag.**

   The **Area Tagging** dialog appears.
2. Under **Area Tag Attribute**, select the **Alias** value you want to create or modify.
3. Check **Display Area Tag Attribute** to make the **Alias** value visible.
4. If necessary, check **Custom Text Size** and enter the text size to specify a custom text height for the **Alias** value.

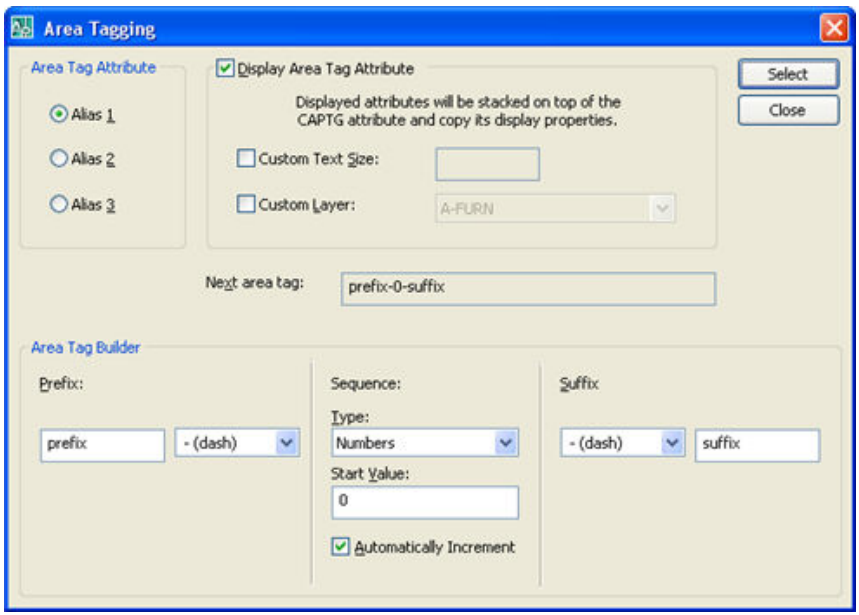
5. If necessary, check **Custom Layer** then select the layer to place the **Alias** on a specific layer within the drawing.

   You will not be able to create a layer within this dialog. The layer that you wish to place the **Alias** value on must already exist within the drawing to appear in the dropdown list.

   If no selections are made for **Custom Text Size** and **Custom Layer**, the chosen **Alias** values will assume the same characteristics as the item's normal tag (layer, color, height, font, etc.).

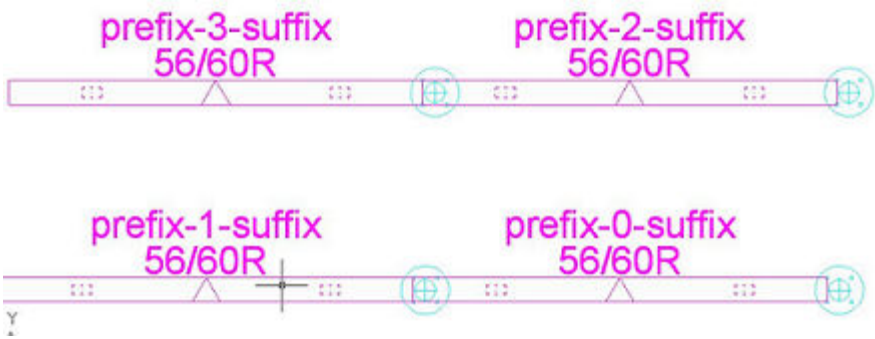
6. Under **Area Tag Builder**, type the prefix, along with its separator (a period, comma, dash or underscore), the type of sequence you wish to use (uppercase letter, lowercase letters, numbers or none), and the suffix, along with its separator (a period, comma, dash or underscore).

7. In the center of the dialog, the **Next Area Tag** field displays what the next assigned value will be according to what you selected under **Area Tag Builder**.



8. After all of the choices have been made within this dialog, click **Select** and you will be returned to the drawing and prompted to select items in the drawing.
9. Select the items on the drawing then press Enter.

   The **Alias** values are displayed on the drawing:



   The dialog will reappear for any further changes you wish to make.
10. If no further changes are desired, click the **Close** button to close the dialog.

If you choose items one at a time, the function will sequentially number each item as it is selected. If you select multiple items by actually clicking on each item individually, the items will be assigned values from lowest to highest in the order of selection. If you select multiple items by drawing a window around multiple items, the application of the Alias values is dependent on the order of placement of items into a drawing.

Custom catalogs

Custom catalogs are used to capture, store, and reuse items that you create in CAP Designer and CAP Worksheet in one file. Custom catalogs are project files that capture, manage, and reuse furniture specifications and typical workstations. They are flexible and powerful because you, the user, can define them.

As with standard catalogs, drill down to the custom catalog. The difference is that **you** can create these catalogs and select the products to be included.

Among the benefits of custom catalogs are:

- You can share the catalog with other users by saving it on a network drive, giving people access to specials and standards (typicals).
- You can add finishes to items in a Worksheet in custom catalog. When you place the symbols from the catalog they will be already optioned when you use them in your drawing.

Custom catalogs include three types of information.

- Individual product
- Groups of products or standards (typicals)
- Specials

The above information can be added and used either from Worksheet or from CAP Designer. In this section you will learn how to use CAP Designer with custom catalogs.

For more details about creating and managing custom catalogs, see the Custom catalogs section in the 20-20 Worksheet help.

Add to a custom catalog

If you want to add a symbol that you use frequently to a Custom Catalog you can from the Explorer bar or from the drawing.

Example - add a chair to a custom catalog

1. Place a chair in your drawing.
2. From the **CAP Designer** menu, select **Tools**, **Send to Custom Catalog.**

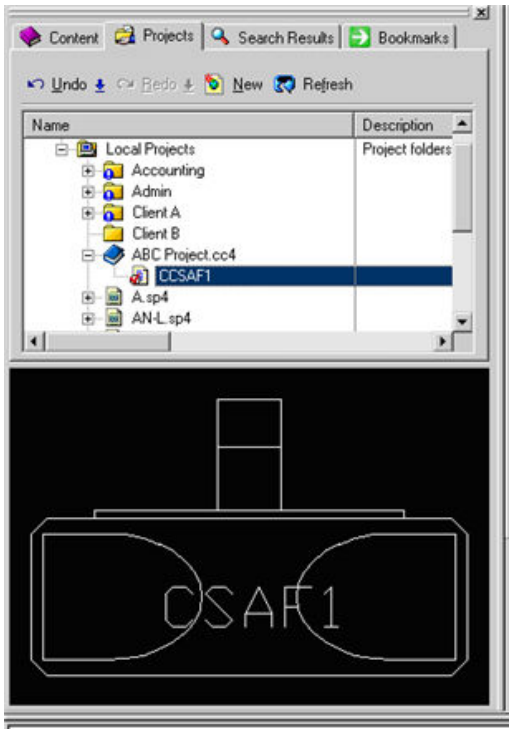
   Or click the **Send to Custom Catalog** button on the CAP Tools toolbar.
3. Select the chair.

   The **Add to Custom Catalog** dialog comes up.
4. Select a **Custom Catalog** (ending with .cc4).

   If you want to create a new Custom Catalog, right-click on **Local Projects** or a folder under **Local Projects** and select **New**, **Custom Catalog**.
5. Click **Add Part**.

   If you selected a standard instead of a part, click **Add Standard**.
6. In the **Explorer** bar's **Projects** tab, click **Refresh** to see the part listed under the **Custom Catalog**.

7. To place a symbol from the **Custom Catalog** select it and drag it into your drawing.



Specials can be added to the Custom Catalog as well. You are prompted to add the CAP Part to the Catalog during the creation and you can add it using the Add to Custom Catalog command.

Custom items

Many times you will have custom products that are not available in a manufacturers catalog. In order for the software to count these, you must turn them into Smart Parts by attributing them.

To make a smart symbol you have to:

1. Modify an existing symbol (Undo a CAP Part) or draw a new symbol.
2. Create a new CAP Part.

If you draw a new symbol, you must draw it on the correct layer. For example, a worksurface should be drawn on the **A-FURN-P-WKSF** layer.

Undo a CAP Part

1. Insert a symbol from the Explorer bar that is similar to the one you want to create.
2. Do any of the following:

Click the **Undo Part** icon on the CAP Part toolbar.
From the **CAP Designer** menu, select **CAP Part**, **Undo.**
From the CAP Designer toolbar, click and hold the **Part** flyout then select the **Undo Part** icon .

When you undo a CAP Part, it will strip all attributes but not the nodes from the object.

3. Select the part on the drawing.
4. Press Enter or right-click to confirm your selection.
5. Modify the symbol by using the AutoCAD Stretch command or erasing unwanted lines.

   Now, with the symbol drawn or modified, you must make it smart. See Create a new CAP Part.

Create a new CAP Part

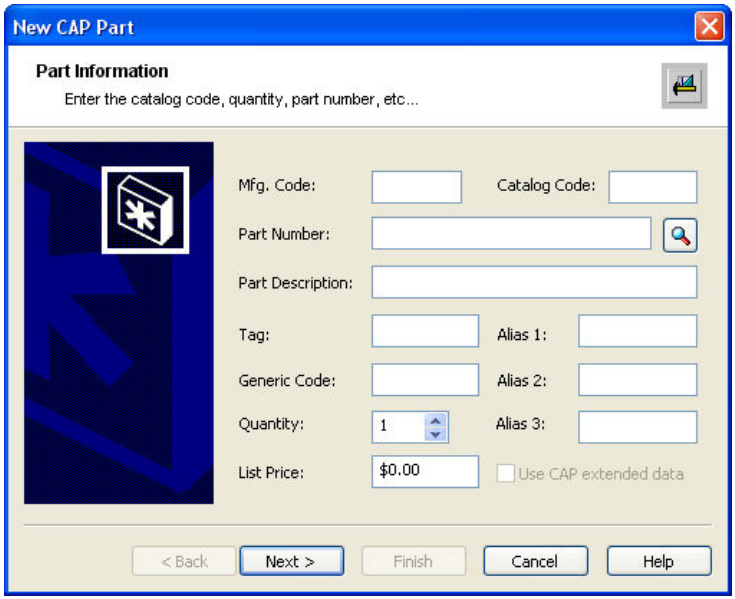
Before doing the steps below, you must draw a new symbol or modify an existing symbol (see Undo CAP Part).

1. Do any of the following:

Click the **Make Part** icon on the CAP Part toolbar.
From the **CAP Designer** menu, select **CAP Part**, **New.**
From the CAP Designer toolbar, click and hold the **Part** flyout then select the **Make Part** icon .

2. On the **Part Information** screen of the **New CAP Part** dialog, enter the part information. **Important**: if you are modifying an existing symbol, you must keep the identical **Mfg Code**, **Catalog Code** and **Part Number** if you want to keep 2D and 3D graphics.

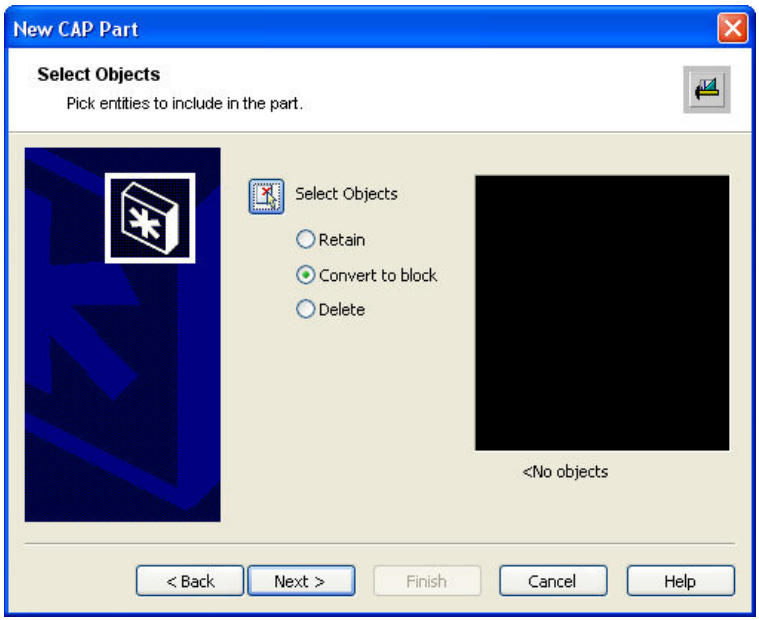
   If you know the **Catalog Code** and the **Part Number** of a similar item you can type them in and click the **Search** button to fill in the **Part Description** and **List Price**.



3. Click **Next** to continue. The **Select Objects** screen appears.

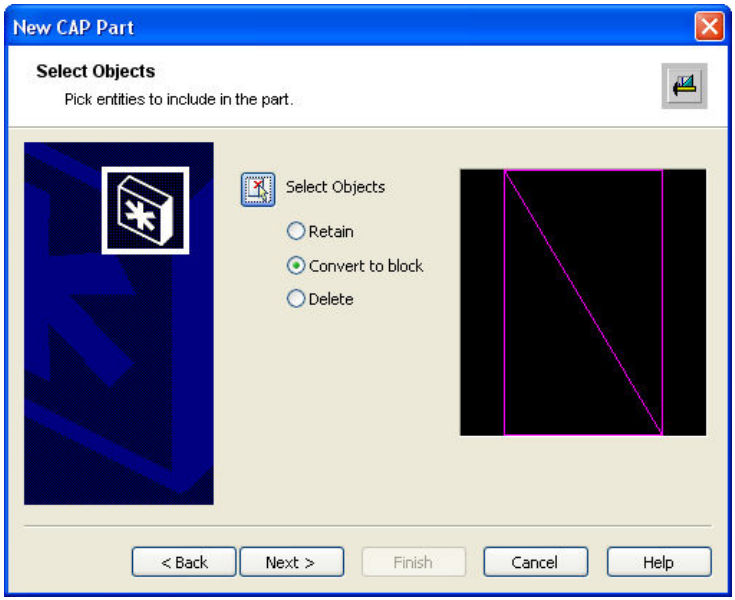
Select objects to include in CAP part

1. On the **Select Objects** screen, click the **Select Objects** button  . This sends you to the drawing.



2. Select the objects to include in the CAP Part. Make sure you use a crossing or a window to select everything including the nodes.
3. Press ENTER or right-click to confirm your selection.

   You will be brought back to the **Select Objects** screen where you will see a preview of the selected parts.



4. Click any of the following options:
5. **Retain**: Retains the selected objects as distinct objects in the drawing after you create the block.
6. **Convert to block**: This is the default selection. It converts the selected objects to a CAP Part.
7. **Delete**: Deletes the selected objects from the drawing after you create the block.

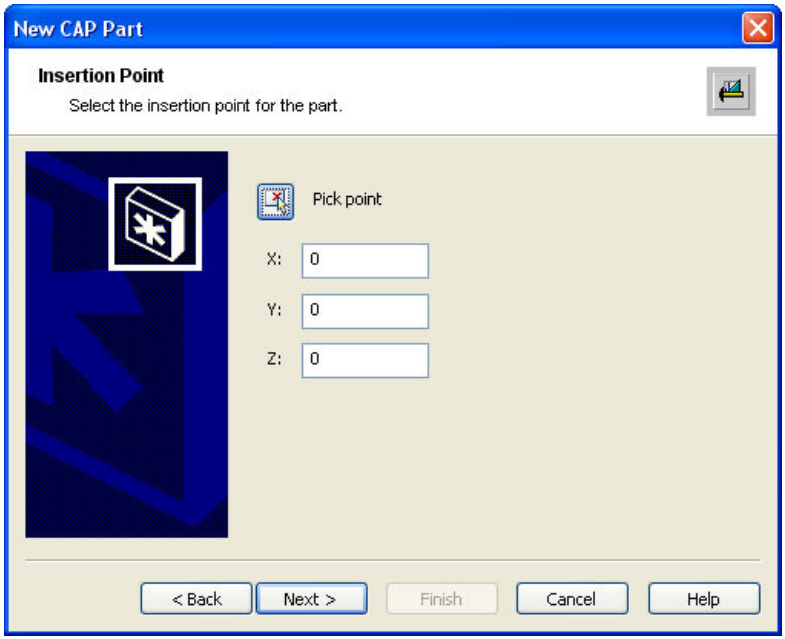
Normally we leave **Convert to Block** checked.

8. Click **Next**. The **Insertion Point** screen appears.

Select the Insertion Point

1. Click **Pick Point**. This sends you back to the drawing.

   You can also enter the coordinates manually.



2. In the drawing, click at the desired Insertion Point.

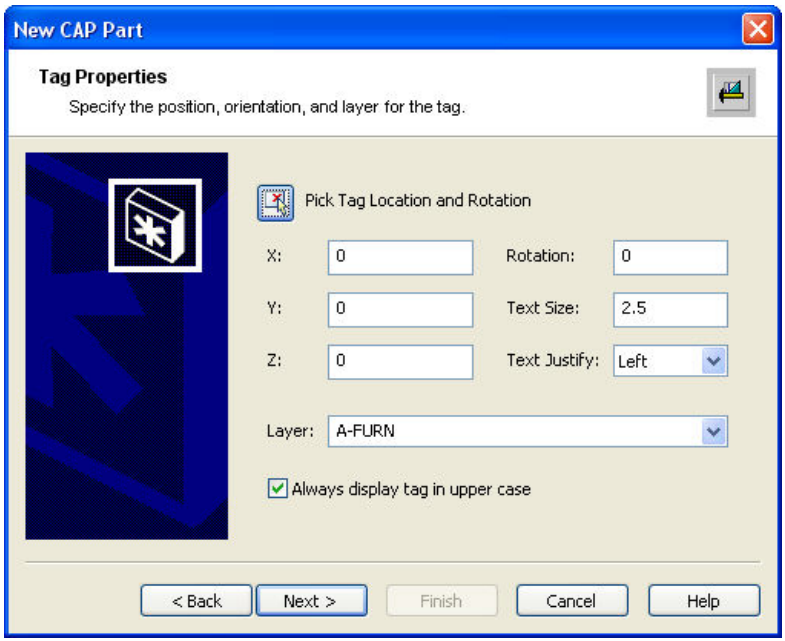
   You will be brought back to the **Insertion Point** screen and the selected coordinates appear.

3. Click **Next**. The **Tag Properties** screen appears.

Specify the Tag Properties

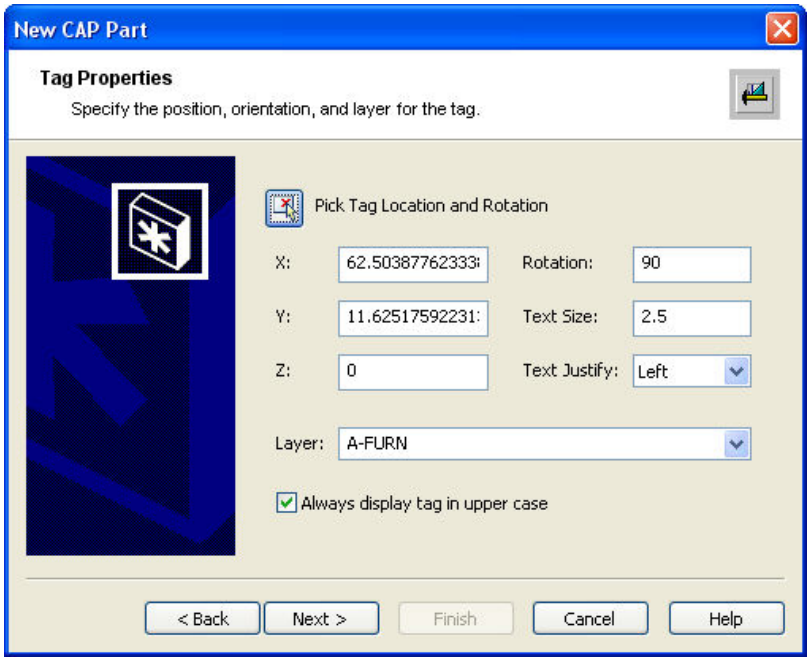
1. On the **Tag Properties** screen, click **Pick Tag Location and Rotation** to select where you want the Part's tag to appear. This sends you back to the drawing.

   You can also enter the coordinates manually.



2. In the drawing, click at the desired Text Location point.
3. Pick the tag rotation.

   You will return to the **Tag Properties** screen and the selected coordinates appear.



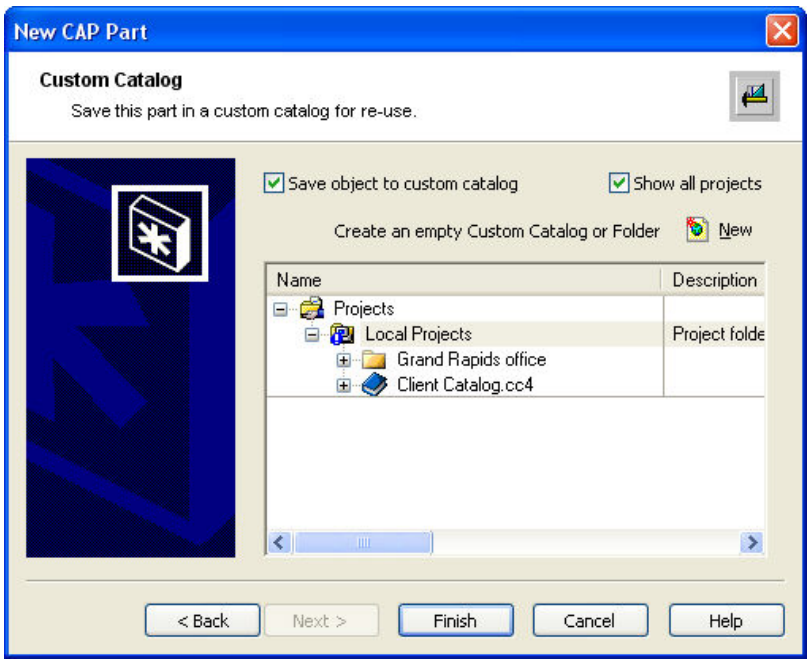
4. Modify any of the following:
5. Select **Text Size** to modify the text height. Panels typically have a height of 4"; interior components have a height of 2.5".
6. The **Rotation** field allows you to manually change the text angle, in degrees. 0 is horizontal, 90 is vertical.
7. Select the **Layer** you wish the tag to be on.
8. You can also check the box **Always display tag in upper case**.
9. Click **Next**. The **Custom Catalog** screen appears.

Save part in a custom catalog

For information about custom catalogs, see the Custom Catalogs section in the 20-20 Worksheet help.

1. If you check the **Save object to custom catalog** box, the Part will be saved as a CAP Part in a Custom Catalog. If you don't check this box, the CAP Part will be saved in this drawing only.

   Select the appropriate **Custom Catalog** to store the new CAP Part.



2. Click **Back** to review the information or **Finish** to complete.

Now this custom CAP Part will get counted when you create a worksheet. You can do this for any custom item including plants, computers, artwork, etc. See also **Edit a CAP Part** on the next page.

Edit a CAP Part

Use this command to modify the part information of a custom part.

If you need to modify the symbol, the insertion point or the tag location, you will need to undo the part then create it.

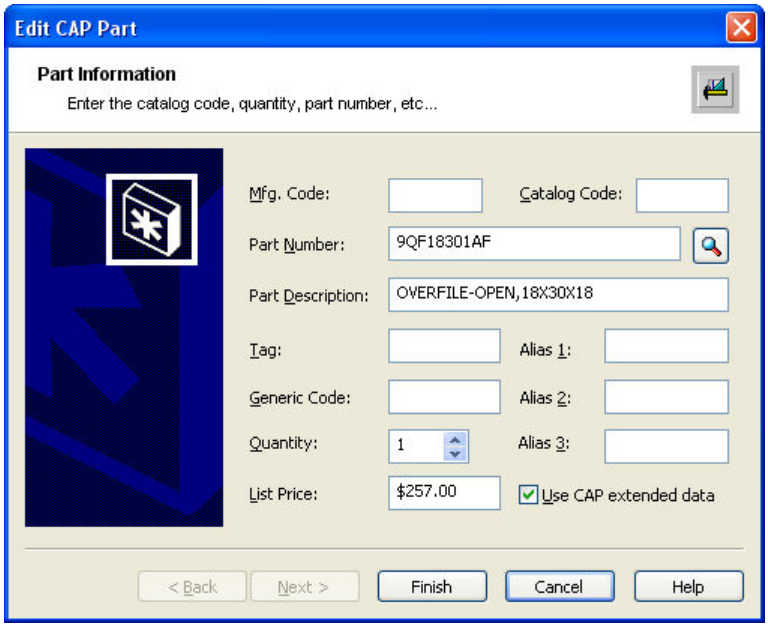
1. Do any of the following:

Click the **Edit Part** icon on the CAP Part toolbar.
Or, from the **CAP Designer** menu, select **CAP Part**, **Edit**.
From the CAP Designer toolbar, click and hold the **Part** flyout then select the **Edit Part** icon .

2. Select the part on the drawing.
3. Press Enter or right-click to confirm your selection.
4. On the **Edit CAP Part** dialog, modify the part information.

   Important: if you created the part by modifying an existing symbol, you must keep the identical **Mfg Code**, **Catalog Code** and **Part Number** if you want to keep 2D and 3D graphics.

   If you know the **Catalog Code** and the **Part Number** of a similar item you can type them in and click the **Search** button to fill in the **Part Description** and **List Price**.



5. Click **Finish**.

Specify options

You can add finishes or options to your furniture in the drawing either as you place the symbol or after you put it in the drawing. To do this you will use 20-20 Options, the same specification tool used in 20-20 Worksheet.

Adding options to the drawing is not necessary in most instances. If you have a certain product that has different finishes than other furniture with the same part number it will help when you finish the drawing then create a worksheet. However, adding the options to the drawing is much more time consuming than doing it in 20-20 Worksheet.

To specify options before placing the symbol:

1. From the Explorer bar's Content tab, drill down to the product you want to specify.
2. Instead of dragging it into the drawing, left-click on the individual product.

   The ***20-20 Options*** *dialog* opens.

To specify options in the drawing:

1. Select the object in the drawing.
2. From the **CAP Designer** menu, select **20-20 Options**.

   Or, click the **Options** icon on the CAP Designer toolbar and select the object to add your finishes to.

   The **20-20 Options** dialog opens.

See the **20-20 Options** help for instructions on specifying options.

Strip Options

You can remove the options from one or many parts very quickly using **Strip Options**.

1. Click the **Strip Options** icon on the **CAP Tools toolbar**.

   Or, from the **CAP Designer** menu select **Tools, Strip Options.**
2. Select the object(s) on the drawing.
3. Press **Enter** or right-click to confirm your selection.

   The options are removed from the selected CAP parts. To verify, select the part then click **CAP Info** on the CAP Designer toolbar.

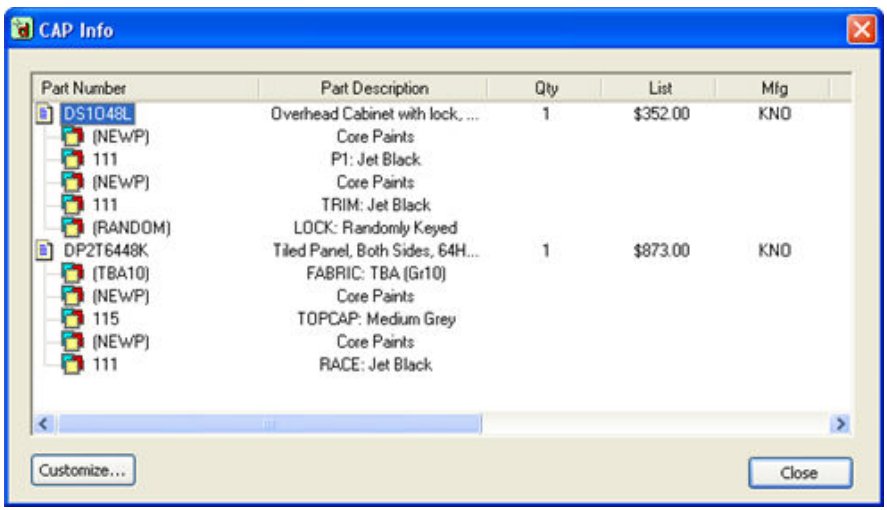
View item information

After adding finishes to an item you may need to check them or you may wish to confirm that you placed the right part in the drawing. An easy tool to use for this is **CAP Info**.

1. From the **CAP Designer** menu select **CAP Info.**

   Or click on the **CAP Info** button on the CAP Designer toolbar.

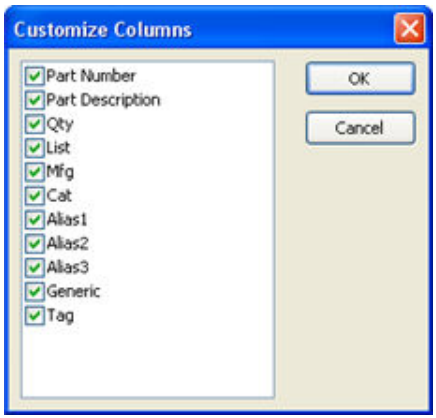
2. Select the symbol or symbols you want information on. A dialog box will give you the information about that furniture.



   This is simply an information box - you cannot edit anything here.

3. You can customize the view of the CAP Info dialog box by clicking the **Customize** button.

   The **Customize Columns** dialog will appear.



   You can turn a column on or off by checking or clearing its checkbox. Click **OK** when done.

   For new column settings to take effect, you must close the **CAP Info** dialog box and call it again.

Show Non-Plan Item List

If you want certain items to be priced but do not want them to appear on the drawing, use the CAP Designer **Non-Plan Item List** (NPIL). For example, you may not want to show electrical items such as outlets to clutter your design, so you will add them to the non-plan item list.

If there is at least one part in the Non-Plan Item List, a legend is displayed on the drawing.

To display the Non-Plan Item List, from the **CAP Designer** menu, select **Tools**, **Show Non-Plan Item List**. Or, click the **Show Non-Plan Item List** icon on the CAP Tools toolbar.

The **Non-Plan Item List** pane appears.

When you import an Office Sales file, items that were listed as non-plan in the Office Sales Item List are saved in the CAP Designer Non-Plan Item List.

When you update a drawing with its associated worksheet, items that were added in the worksheet are placed in the Non-Plan Item List.

Add a part to the Non-Plan Item List

1. Click **Move Drawing Item to** List on the NPIL toolbar.
2. In the drawing, select the products that you want to add to the Non-Plan Item List.

   Notice that the products disappear from the drawing and the part information is displayed in the NPIL.

3. Specify the insertion point and the rotation angle for the Non-Plan Item List legend on the drawing.

Non Plan Item List

Part No.	Mfg	Qty	Description
EXHB	EXP	1	Executive High-Back Chair
DPDABBF3672	EXP	1	Double Pedestal Desk Arc Front B//B/F 72L x 36W
EXMB	EXP	1	Executive Mid-Back Chair

If you do not see the Non-Plan Item List table, you will need to check the preference **Add non-plan item list table automatically to the drawing** in Advanced Preferences. You can also add the table by clicking the **Add NPIL table** button.

Add NPIL table to drawing

If there is at least one part in the Non-Plan Item List, the NPIL table is displayed on the drawing. If it is not displayed, do the following:

1. Click **Add Table To Drawing** on the NPIL toolbar.
2. Specify the insertion point and the rotation angle for the Non-Plan Item List legend on the drawing.

Non Plan Item List

Part No.	Mfg	Qty	Description
EXHB	EXP	1	Executive High-Back Chair
DPDABBF3672	EXP	1	Double Pedestal Desk Arc Front B//B/F 72L x 36W
EXMB	EXP	1	Executive Mid-Back Chair

To always display the NPIL table on the drawing if there is at least one part in the NPIL, you will need to check the preference **Add non-plan item list table automatically to the drawing** in Advanced Preferences.

Edit a non-plan item

1. Click on the item line in the Non Plan Item List.

2. Click **Edit Item** on the NPIL toolbar.

   The Edit CAP Part dialog appears.

3. Modify the part information.

   Important: You must keep the identical **Mfg Code**, **Catalog Code** and **Part Number** if you want to keep 2D and 3D graphics. For instance, you may want to send the part back to the drawing later on.

   If you know the **Catalog Code** and the **Part Number** of a similar item you can type them in and click the **Search** button to fill in the **Part Description** and **List Price**.

4. Click **Finish**.

Specify a NPI part

1. Click on the item line in the Non Plan Item List.
2. Click **Specify Item** on the NPIL toolbar.

   The 20-20 Options dialog appears.
3. Specify the item then click **OK**.

See the **20-20 Options** help for instructions on specifying options

Send a NPI Part to the drawing

1. Click on the item line in the Non Plan Item List.
2. Click **Send Item To Drawing** on the NPIL toolbar.
3. Specify the insertion point and the rotation angle of the part on the drawing.

Notice that the part is no longer in the NPIL. The NPIL legend on the drawing is also updated.

Refresh the Non-Plan Item List

If the Non-Plan Item List and the NPIL legend on the drawing do not seem to have the same information, click **Refresh NPIL** to synchronize the information.

Delete a NPI part

Warning! There is no confirmation message when you click **Remove Item** so make sure you really want to delete the selected part.

1. Click on the item line in the Non Plan Item List.

2. Click **Remove Item** on the NPIL toolbar.

Notice that the part is no longer in the NPIL. The NPIL legend on the drawing is also updated.

Delete all non plan items

Click **Delete All NPI Part** on the NPIL toolbar.

Notice the NPIL legend on the drawing is also removed.

Worksheets

One of the most useful features of CAP Designer is the ability to generate a bill of materials or worksheet from a drawing. A worksheet is also known as a “take off”.

CAP Designer furniture symbols are “smart” in that they have special attributes that can be translated into a worksheet. Those attributes are Mfg Code, Catalog Code, Part Number, Default Height, Quantity, Generic Code and Tag.

Create a worksheet

When you create a worksheet, you can choose whether to associate the new worksheet to the drawing or not. An associated worksheet is linked to a drawing so that when you make changes to the drawing, you can update the worksheet associated to it. Likewise, if you make changes to the worksheet, you can synchronize the drawing associated to it.

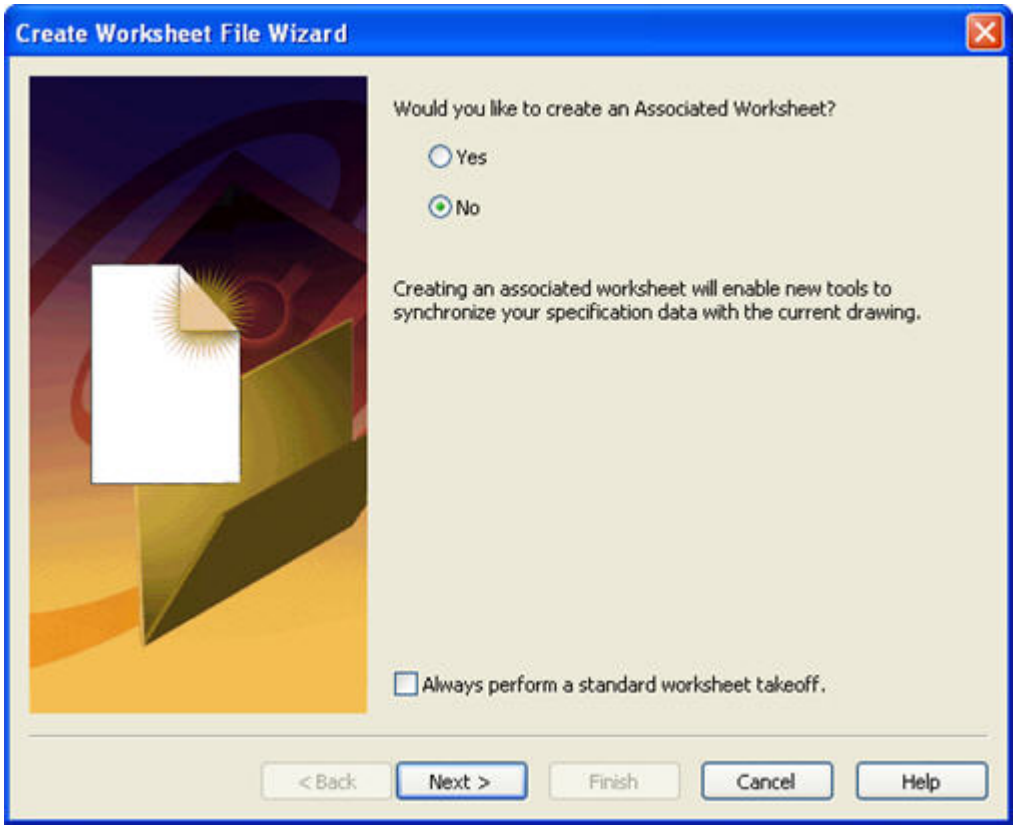
The procedure below is for creating a **non-associated** worksheet. For creating an associated worksheet, see Create an associated worksheet.

1. In AutoCAD, open an existing drawing.
2. From the **CAP Designer** menu, select **20-20 Worksheet**, then **Create Worksheet**.

   Or click the **Create Worksheet** button  on the CAP Designer toolbar.

   This launches the **Create Worksheet File** wizard.
3. Choose **No** on this screen then click **Next**.

   If you never want to create associated worksheets, check the box **Always perform a standard worksheet takeoff**. If you ever want to change this setting later on you can do so in General Preferences.



If you see a different dialog warning you that an associated worksheet exists, click **Next** to continue creating a non-associated worksheet.

4. In the next screen, by default, all **Take Off** options are selected. This means that all the following information is pulled into the worksheet:

   CAP Bounds (Outline Levels): These are products grouped by certain designations such as

departments, sections, or floors.

CAP Standards: A single group of items that make up a typical unit, such as a workstation. This is often called a "Typical." Instead of selecting individual products and specifying each one of them, you can create a Typical, save it as a CAP Standard, then insert that CAP Standard into a drawing or worksheet.

CAP Parts: Any product from the Mfg Catalog, custom parts created using the **CAP Part**, **New** command or symbols brought from a Custom Catalog.

CAP Tags: A custom made symbol with less information than a Part.

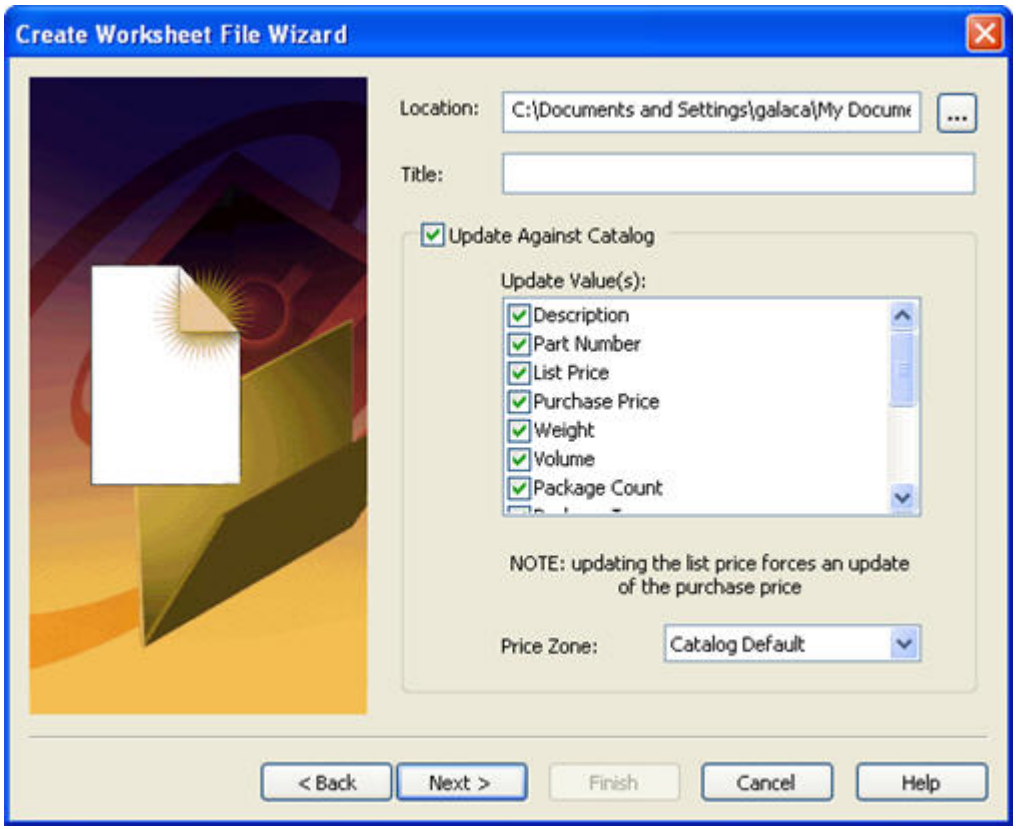
Accelerate Entities: - Furniture placed using the Accelerate program.

Non-Plan Item List (NPIL) - List containing items that are not shown in the drawing

5. You may check **All Objects** to pull all items from the drawing.

   Or, to select only certain items, click the **Select Objects** button  . This returns you to the drawing. In the drawing, select the items you want to include in the worksheet takeoff. Press Enter to confirm your selection and return to the Wizard.

6. Click **Next** to continue. The worksheet information screen appears.



7. Click the **Browse** button ... to open a **Save Dialog** where you can select the folder to store this worksheet.

   Enter a **File Name** in the **Save Dialog** then click **Save**.

8. Enter an optional **Title**. This will appear in Worksheet Properties as the worksheet title.

9. Leave **Update Against Catalog** checked.
10. Check the values you want updated when performing the takeoff to worksheet.
11. Click **Back** to review information or click **Next**.

    The Processing screen appears.
12. Once the button **Finish** is enabled, click it and the Worksheet you just created will open automatically.

    If you don't wish to open the worksheet clear the **Open Worksheet file** checkbox before clicking **Finish**.

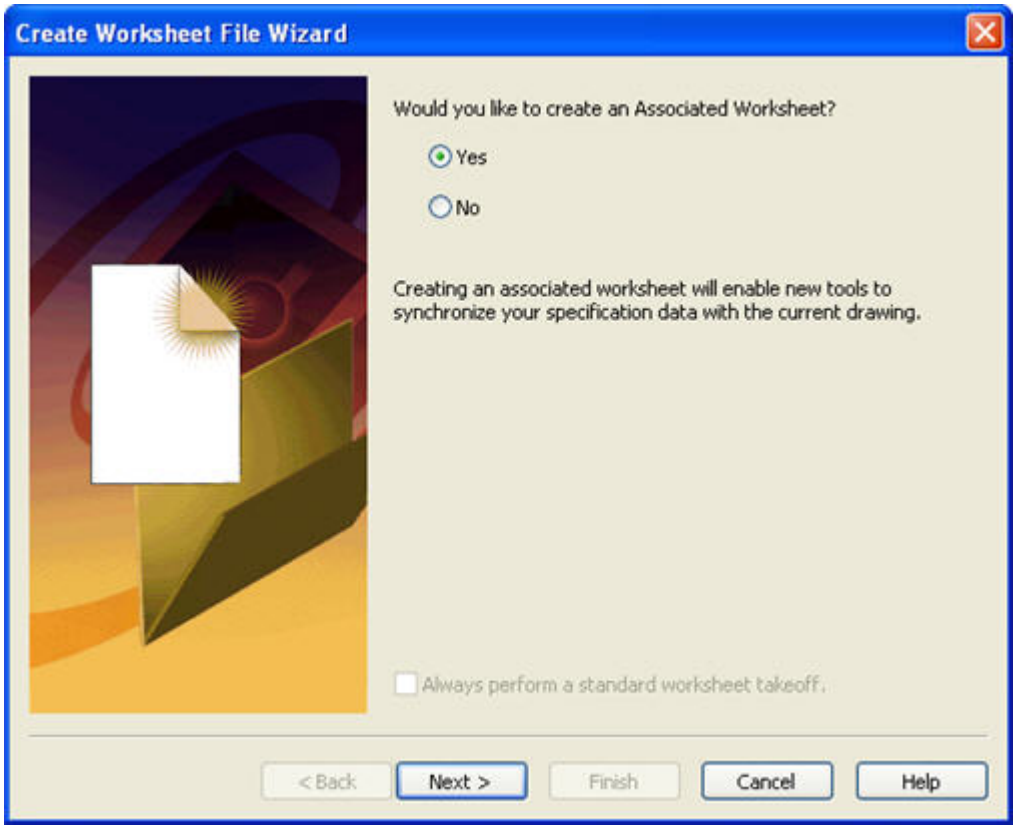
Create an associated worksheet

An associated worksheet is linked to a drawing so that when you make changes to the drawing, you can update the worksheet associated to it. Likewise, if you make changes to the worksheet, you can update the drawing to which it is associated.

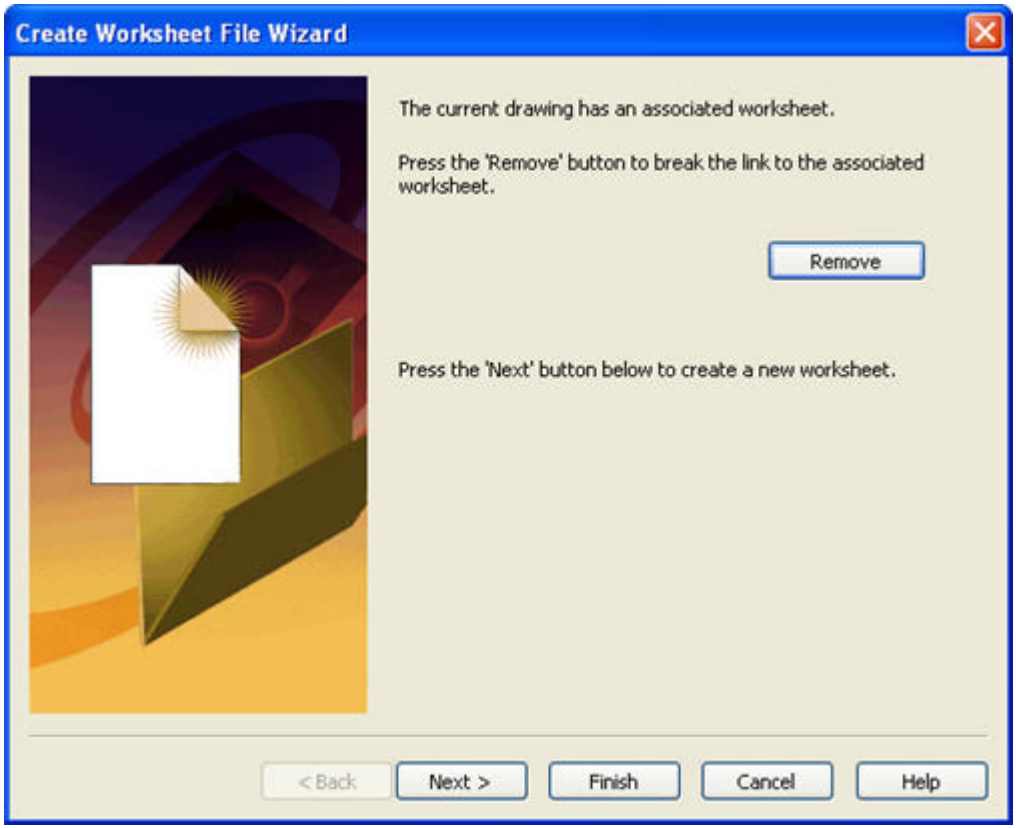
1. In AutoCAD, open an existing drawing.
2. From the **CAP Designer** menu, select **20-20 Worksheet**, then **Create Worksheet File**.

   Or click the **Create Worksheet** button on the CAP Designer toolbar.

   This launches the **Create Worksheet File** wizard.
3. Choose **Yes** on this screen then click **Next**.



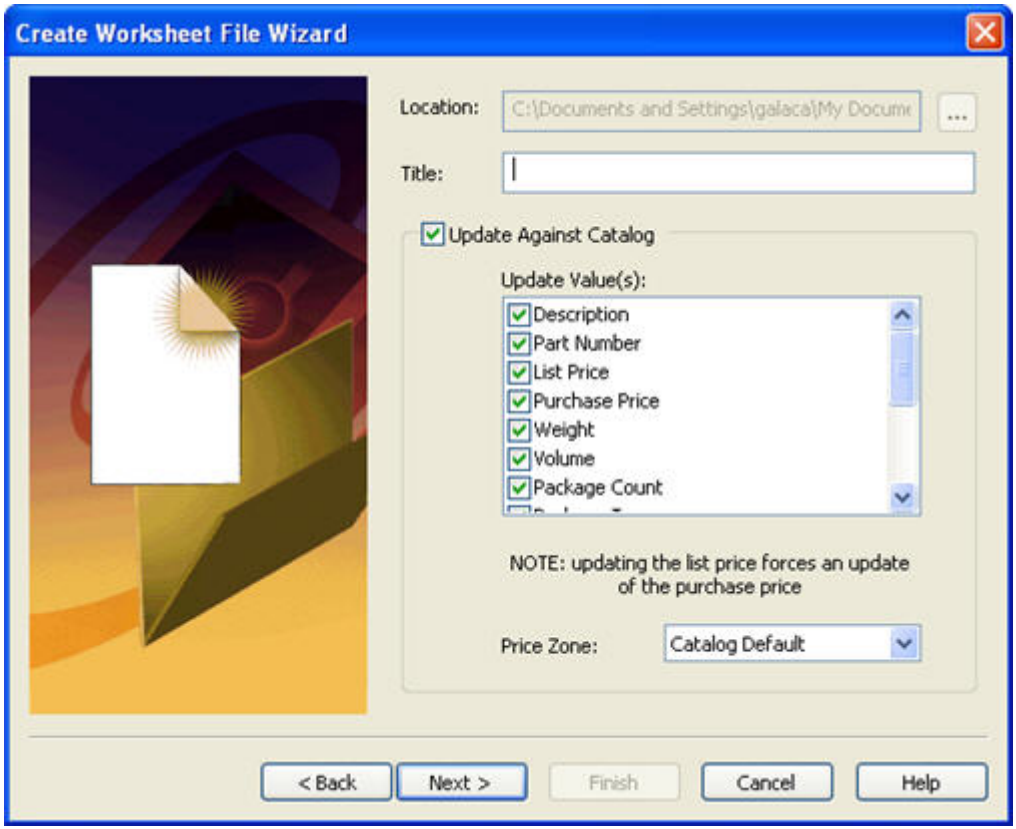
If there is already a worksheet associated to this drawing, you will see this dialog instead:



If you click **Next**, the Wizard will create a **non-associated** worksheet.

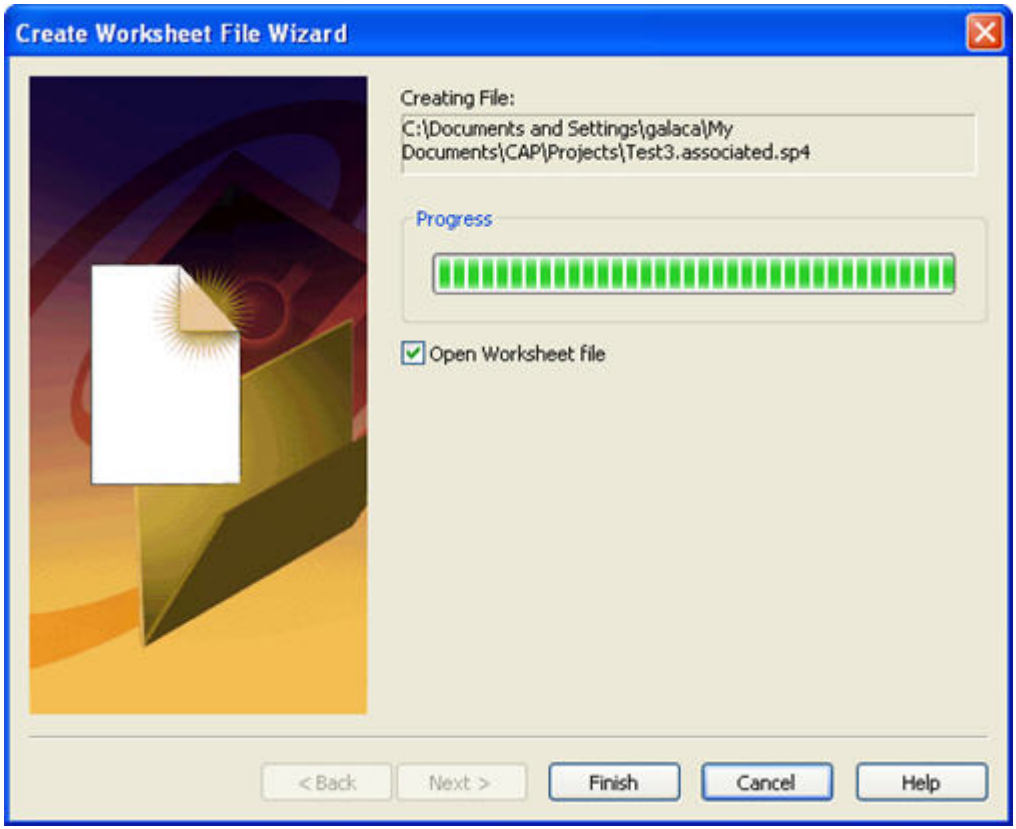
If you click **Remove**, the Wizard will ask you to confirm whether you want to remove the link between the current drawing and its associated worksheet. Click **OK** to continue. The Wizard will transform the current associated worksheet to a non-associated worksheet. For example, if the current drawing's associated worksheet is called *Drawing1.associated.sp4*, the transformed worksheet will be called *Drawing1.sp4*. You will then need to re-launch the Create Worksheet File wizard to create a new associated worksheet.

4. On the second screen, enter an optional **Title**. This will appear in Worksheet Properties as the worksheet title. All items in the drawing will be selected.



5. Leave **Update Against Catalog** checked.
6. Check the values you want updated when performing the takeoff to worksheet.
7. Click **Back** to review information or click **Next**.

The Processing screen appears. The worksheet will be saved in the same location as the drawing and will have the name *DrawingName*.associated.sp4.



8. Once the button **Finish** is enabled, click it and the Worksheet you just created will open automatically.

   If you don't wish to open the worksheet clear the **Open Worksheet file** checkbox before clicking **Finish**.

You can open the associated worksheet at any time by clicking **Show Associated Worksheet** on the CAP Designer toolbar or by going to the **CAP Designer menu**, **20-20 Worksheet**, **Show Associated Worksheet.**

If you make changes to the drawing or the worksheet later on, make sure they are both are up-to-date by calling the Update with associated worksheet command.

Update with associated worksheet

If you created an associated worksheet for the drawing, you can:

- update the drawing if you made changes to the worksheet
- update the worksheet if you made changes to the drawing

1. Click **Update with Associated Worksheet** on the CAP Designer toolbar.

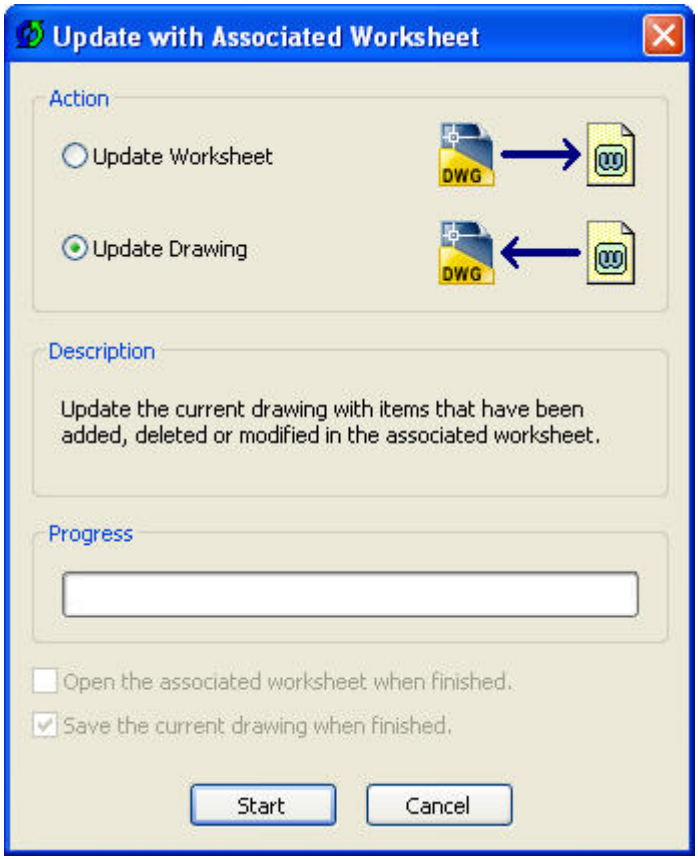
   Or from the **CAP Designer** menu select **20-20 Worksheet**, **Update with Associated Worksheet**.

2. Select whether you want to update the associated worksheet based on the current drawing, or update the current drawing based on the associated worksheet. CAP Designer determines which file is newer and automatically selects the appropriate action.

   If you want to open the associated worksheet after updating it, check **Open the associated worksheet when finished**.

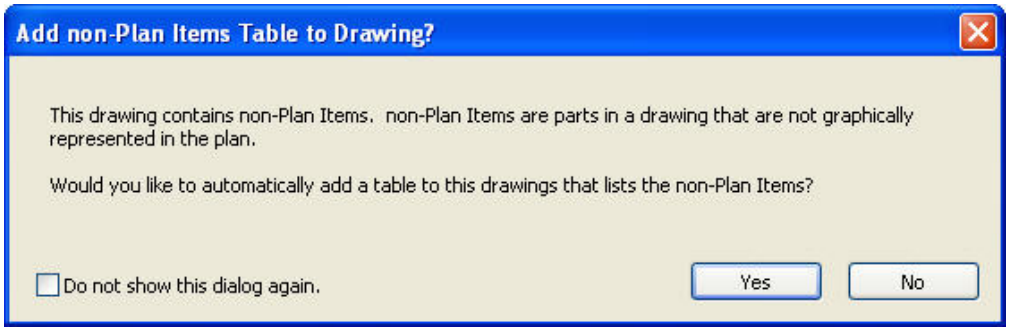
   If you choose to update the worksheet but the worksheet is newer than the drawing, you will see a warning. If you decide to proceed anyway, the update cannot proceed if the worksheet is open.

   If you choose to update the drawing but the drawing is newer than the worksheet, you will see a warning. You will also see a warning if there were no changes done to the worksheet.



3. Click **Start**.

   If there were items added to the worksheet before you updated the drawing, you will see the following dialog:



Click **Yes** if you want to place the NPIL table to the drawing. Display the non-plan item list in order to send non-plan items to the drawing.

If items were deleted in the worksheet before you updated the drawing, these items will also be removed from the drawing.

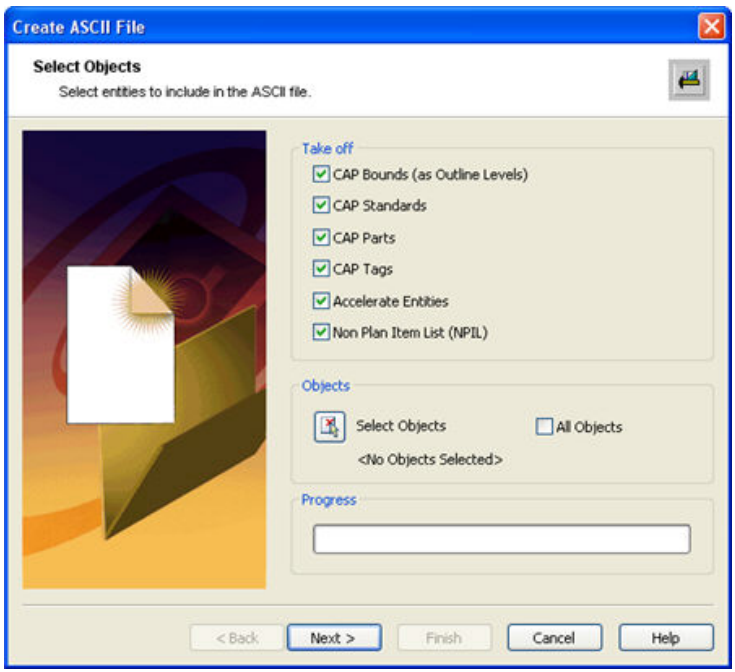
Standards created in Worksheet are considered as non-planned. When you update the drawing against the associated worksheet, the Standard will be listed in the Non-plan item list.

Create an ASCII file

This command creates a parts list and saves it in a .txt file.

1. In AutoCAD, open an existing drawing.
2. From the **CAP Designer** menu, select **20-20 Worksheet**, then **Create ASCII File**.

   This launches the **Create ASCII File** wizard.



3. By default, all **Take Off** options are selected. This means that all the following information is pulled into the ASCII file:

   CAP Bounds (Outline Levels): These are products grouped by certain designations such as

departments, sections, or floors.

CAP Standards: A single group of items that make up a typical unit, such as a workstation. This is often called a "Typical." Instead of selecting individual products and specifying each one of them, you can create a Typical, save it as a CAP Standard, then insert that CAP Standard into a drawing or worksheet.

CAP Parts: Any product from the Mfg Catalog, custom parts created using the **CAP Part, New** command or symbols brought from a Custom Catalog.

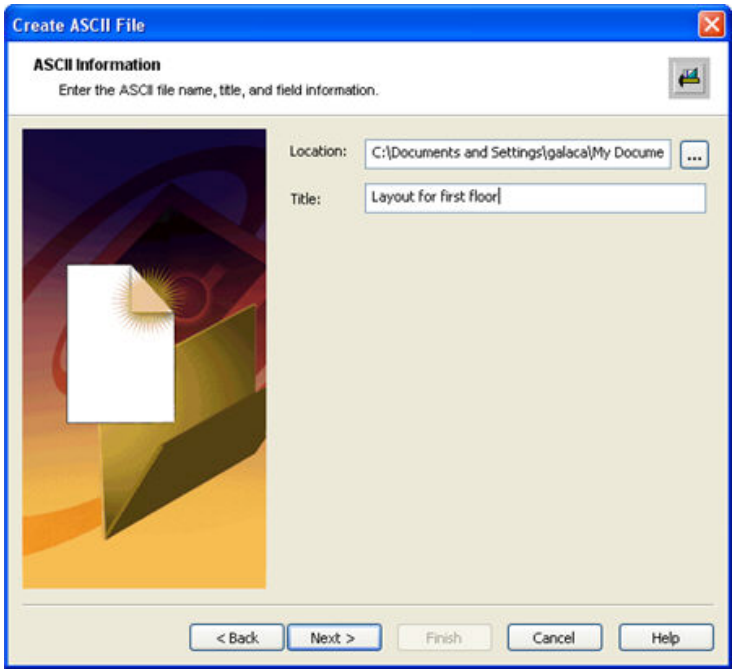
CAP Tags: A custom made symbol with less information than a Part.

Accelerate Entities: - Furniture placed using the Accelerate program.

Non-Plan Item List (NPIL) - List containing items that are not shown in the drawing

4. You may check **All Objects** to pull all items from the drawing. To select only certain items, click the **Select Objects** button  . This returns you to the drawing.
5. In the drawing, select the items you want to include in the ASCII file.
6. Press Enter to confirm your selection and return to the Wizard.
7. Click **Next** to continue.

   The **ASCII Information** screen appears.



8. Click the **Browse** button ... to open a **Save Dialog** where you can select the folder to store this ASCII file.

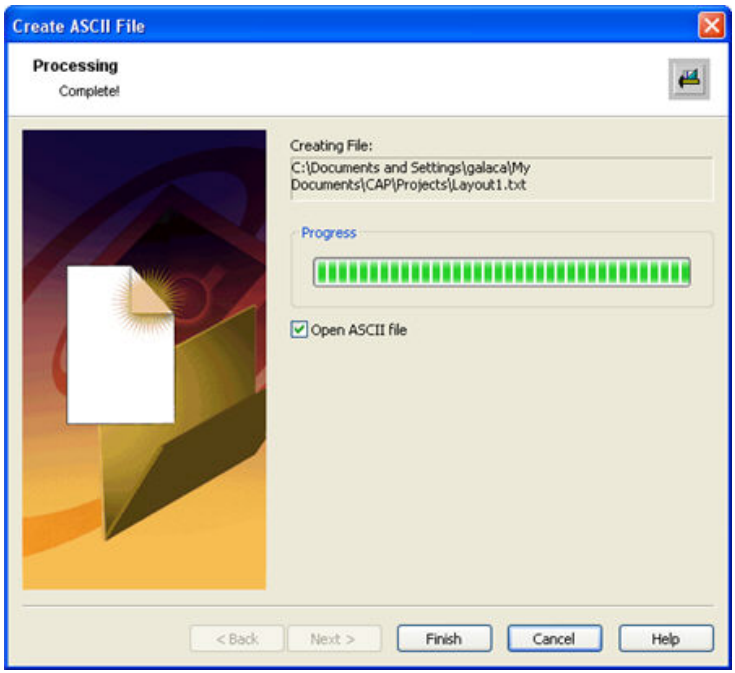
   Enter a **File Name** in the **Save Dialog** then click **Save**.

9. Enter an optional **Title**.
10. Click **Back** to review information or click **Next**.

    The **Processing screen** opens, with a message saying "Please wait".

11. Once the message changes to "Complete!", click **Finish** and the ASCII file you just created will open automatically.

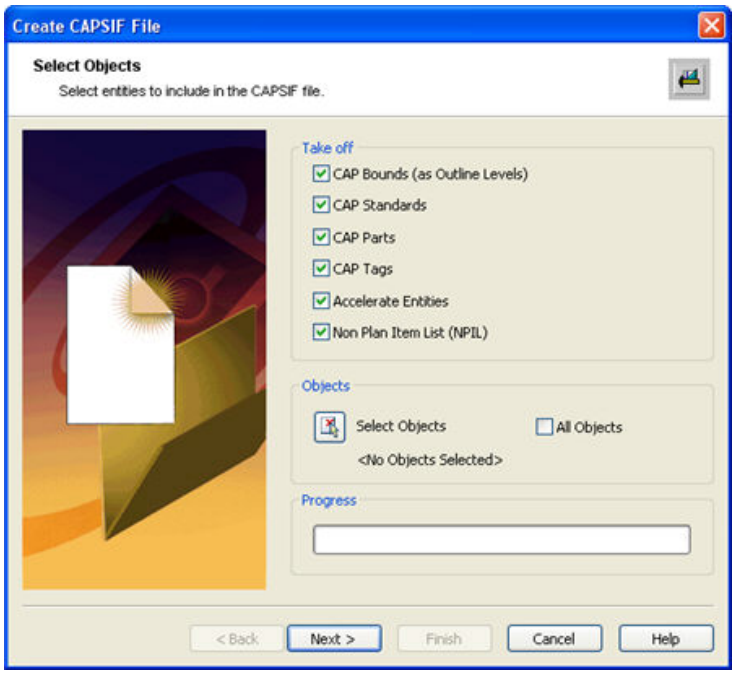
If you don't wish to open the ASCII file clear the **Open ASCII file** checkbox before clicking **Finish**.



Create a CAPSIF file

1. In AutoCAD, open an existing drawing.
2. From the **CAP Designer** menu, select **20-20 Worksheet**, then **Create CAPSIF File**.

   This launches the **Create CAPSIF File** wizard.



3. By default, all **Take Off** options are selected. This means that all the following information is pulled into the CAPSIF file:

   CAP Bounds (Outline Levels): These are products grouped by certain designations such as departments, sections, or floors.

CAP Standards: A single group of items that make up a typical unit, such as a workstation. This is often called a "Typical." Instead of selecting individual products and specifying each one of them, you can create a Typical, save it as a CAP Standard, then insert that CAP Standard into a drawing or worksheet.

CAP Parts: Any product from the Mfg Catalog, custom parts created using the **CAP Part, New** command or symbols brought from a Custom Catalog.

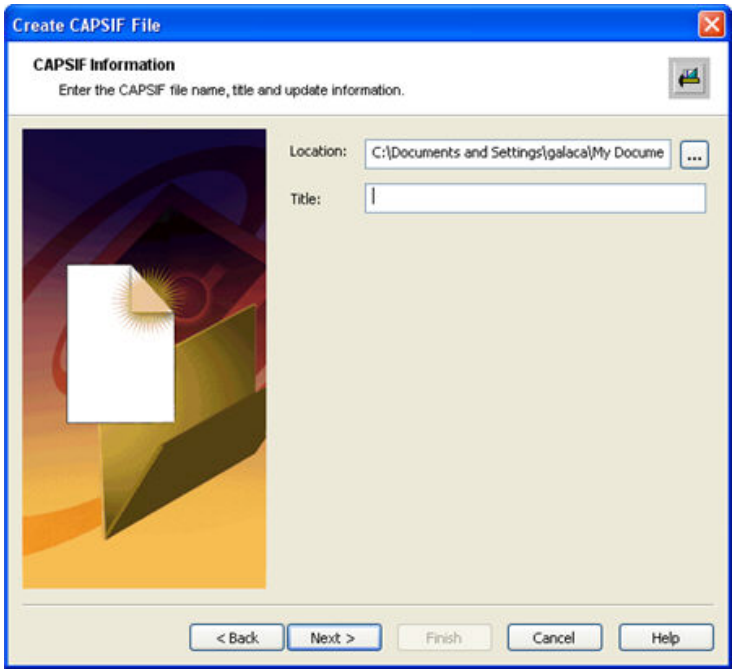
CAP Tags: A custom made symbol with less information than a Part.

Accelerate Entities: - Furniture placed using the Accelerate program.

Non-Plan Item List (NPIL) - List containing items that are not shown in the drawing

4. You may check **All Objects** to pull all items from the drawing. To select only certain items, click the **Select Objects** button . This returns you to the drawing.
5. In the drawing, select the items you want to include in the CAPSIF file.
6. Press Enter to confirm your selection and return to the Wizard.
7. Click **Next** to continue.

   The **CAPSIF Information** screen appears.



8. Click the **Browse** button ... to open a **Save Dialog** where you can select the folder to store this CAPSIF file.

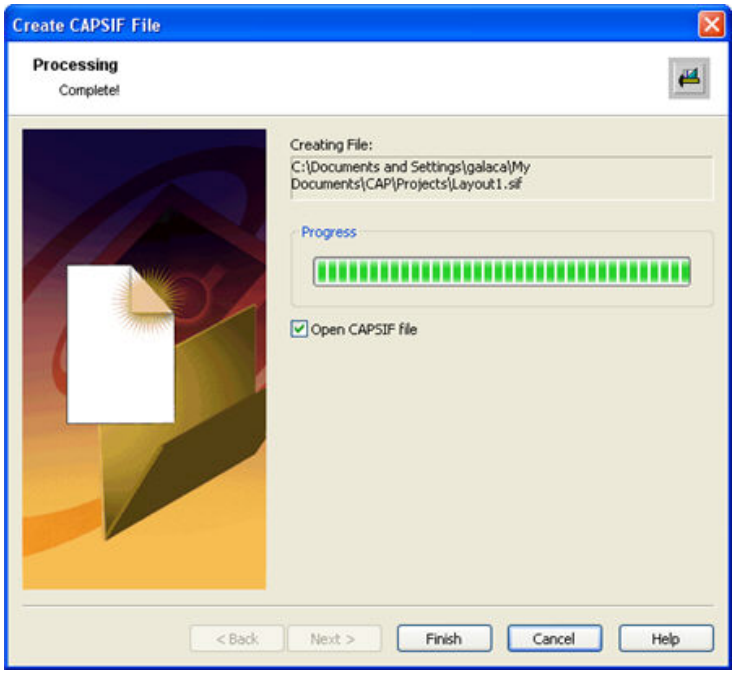
   Enter a **File Name** in the **Save Dialog** then click **Save**.

9. Enter an optional **Title**.
10. Click **Back** to review information or click **Next**.

    The **Processing screen** opens, with a message saying "Please wait".

11. Once the message changes to "Complete!", click **Finish** and the CAPSIF file you just created will open automatically.

If you don't wish to open the CAPSIF file clear the **Open CAPSIF file** checkbox before clicking **Finish**.



Compare a drawing to a worksheet

The **Compare** feature cross-references existing components (parts and pieces) in the drawing against the worksheet that was created from that drawing. This allows you to ensure that the drawing and worksheet are alike. **Compare** indicates if there are any discrepancies between these two pieces of information. The resulting compare will produce 3 new worksheets. It can also create a report that can be printed or saved as a document.

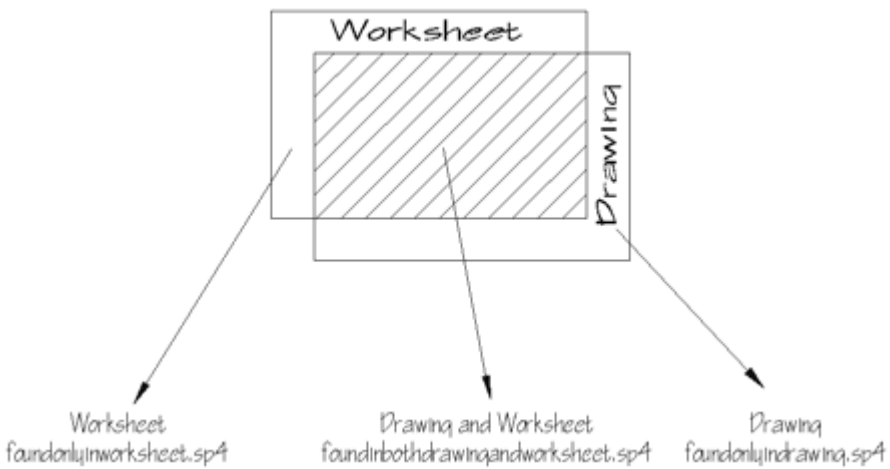
In this section, you will learn how to compare the drawing with the corresponding worksheet. Below is a listing of worksheets created, as well as an illustration of the comparison process.

- Parts found only in Drawing (foundonlyindrawing.sp4)
- Parts found only in Worksheet (foundonlyinworksheet.sp4)
- Parts found both in Drawing and Worksheet (foundinbothdrawingandworksheet.sp4)

Before you begin the Compare:

- Open your existing drawing that contains CAP symbols.
- Know the location of the worksheet file associated with that drawing.

The worksheet file being compared must be closed while using Compare.



Example - compare a drawing to a worksheet

1. From the **CAP Designer** menu, select **20-20 Worksheet**, **Compare**.

   The **Compare Drawing with Worksheet** dialog box displays on your screen.

2. Under **Worksheet**, select the existing worksheet file by clicking the **Browse** button and locating the file.
3. Under **Outputs**, leave the boxes checked so that the worksheets **FoundOnlyInDrawing**, **FoundOnlyInWorksheet** and **FoundInBothDrawingAndWorksheet** are created.

   To change the location and/or name of each worksheet, click the appropriate **Browse** button .
4. Check **Print Report** if you want to print a summary sheet of the three output worksheets.
5. Under **Comparison Criteria**, check the boxes for **Mfg Code**, **Catalog Code**, **Product Number**, **Product Description**, **Option Number** and **Option Description**.
6. Click **OK**.

Once the **Compare** is done, the next step is to review the 3 output files that were created during the **Compare**.

Open any of the output files and review the information. You will be able to conclude if anything in the drawing is not found in the worksheet, if there is any product in the worksheet that is not in the drawing and lastly, which parts are found in both the drawing and the worksheet.

You could then revise either the drawing or the worksheet as necessary.

Standards (Typicals)

A CAP Standard, also known as a Typical, is a tool to select multiple furniture parts and group them so you can store, edit, and re-use the parts within a Standard as one block, or as individual parts if needed.

There are many reasons to use CAP Standards:

- **Increased Efficiency**: Using CAP Standards in AutoCAD adds efficiency because the single name of the Standard represents an entire group of furniture (a Worksheet file).

- **Increased Accuracy**: Copying and inserting a single block that represents multiple components will prevent errors of omission or duplication.
- **Installation Drawings**: Plotting drawings without component tags makes a more legible installation drawing (a single name represents numerous parts).
- **Globally Replaceable**: Another important benefit is that CAP Standards are globally replaceable.

Other considerations when creating CAP Standards:

- Panels should not be included in the CAP Standards because the standards may be attached back-to-back. Including panels could result in double the panel count.
- Each standard has a base point by which you drag the standard just before it is inserted in a drawing. When picking the insertion point, select a node on the innermost corner of the station (opposite the "door"), often in the back of a corner worksurface.
- Create the **A-STDTAGS** layer to put the tags on. Do this because a standard tag appears when you insert the standards, and you will be able to turn the tag off if it is on a separate layer.

Create a CAP Standard

1. From the **Explorer** bar's **Content** tab, select any furniture line and create a typical workstation.

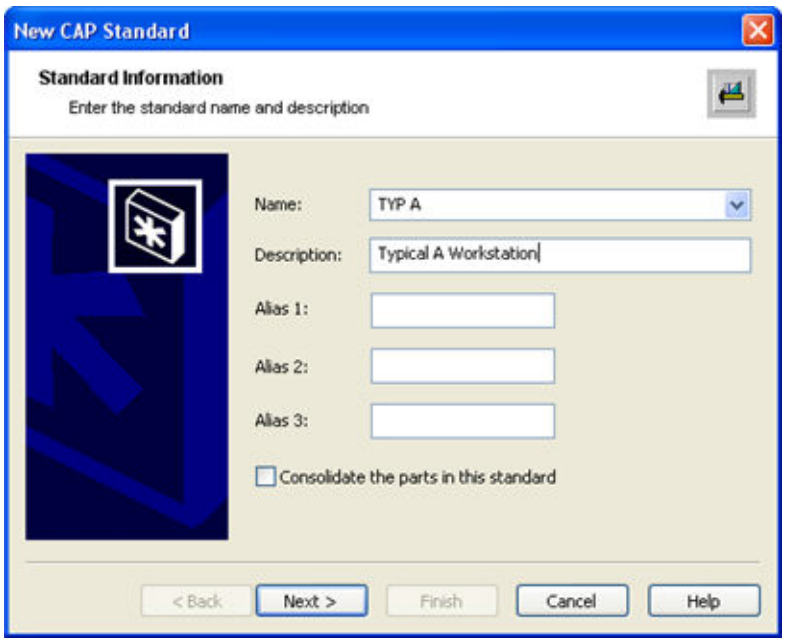
   Include worksurfaces, pedestals, and overhead storage you would specify in a typical workstation.

3. Create the **A-STDTAGS** layer. This layer will be used for tags, giving you more control of what you see when you plot.
4. Do any of the following:

From the CAP Designer menu, select CAP Standard, New.
Click the Make Standard icon on the CAP Standard toolbar.

From the CAP Designer toolbar click and hold the Standard flyout then select the Make Standard icon .

5. Enter the Standard **Name** and **Description**.



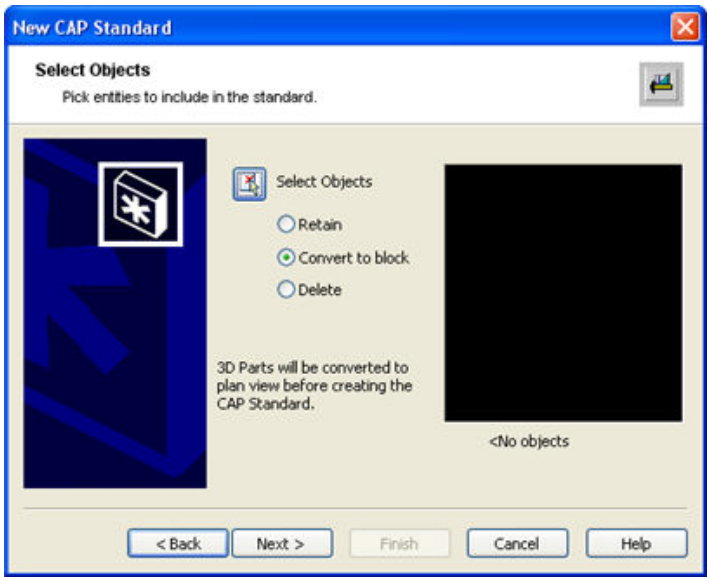
6. If you want to assign an Alias at this time to all the components of the Standard you can.
7. Check **Consolidate the parts in this standard** so that identical items are combined into one line item.

   For more information about consolidating parts, see Consolidate identical items in the 20-20 Worksheet help.

8. Click **Next**. This sends you to the Select Objects screen.

Select objects to include in the Standard

1. After entering the standard information, click **Select Objects** to select the objects you want to include. This brings you back to the drawing.

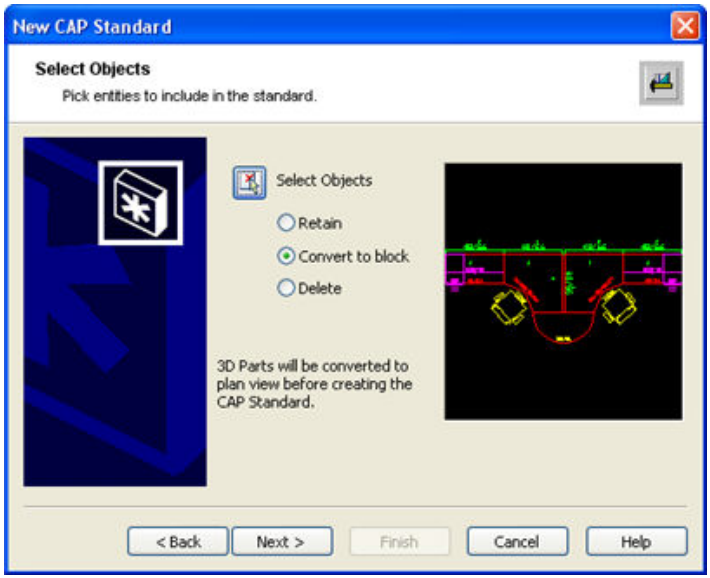


2. Select the components of the workstation using a crossing window.

   Panels should not normally be included in CAP Standards because the typical workstations may be attached back-to-back. Including panels could create double the panel count. If this is a standalone workstation, then you may want to select the panels.

3. Press ENTER or right-click to return to the Wizard.

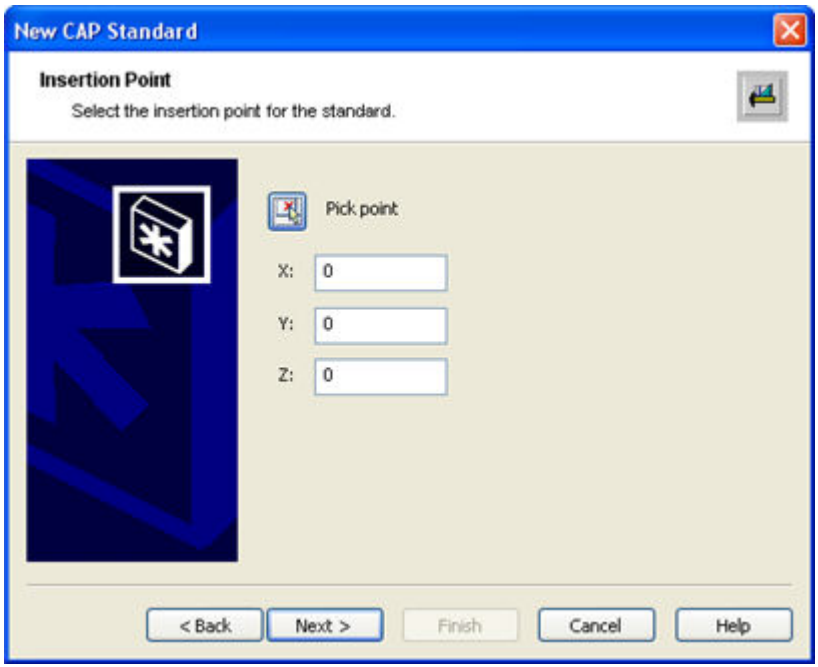
You will see a preview of the selected parts. If the selection is not correct, then click **Select Objects** again.



4. Choose an option to control the selection:
5. **Retain**: Retains the selected objects as distinct objects in the drawing after you create the Standard
6. **Convert to block**: This is the default selection. It converts the selected objects to a CAP Standard
7. **Delete**: Deletes the selected objects from the drawing after you create the CAP Standard.
5. Click **Next**. The **Insertion Point** screen appears.

Pick the insertion point

1. After selecting the objects to include in the standard, enter the coordinates manually or click the **Pick Point** button  . This sends you back to the drawing.



   Each Standard has a insertion point by which you can drag the Standard just before it is inserted in a drawing. When picking the base point, select a node on the innermost corner of the station (opposite the "door"), often in the back of a corner worksurface.

2. In the drawing, click at the desired Insertion Point.

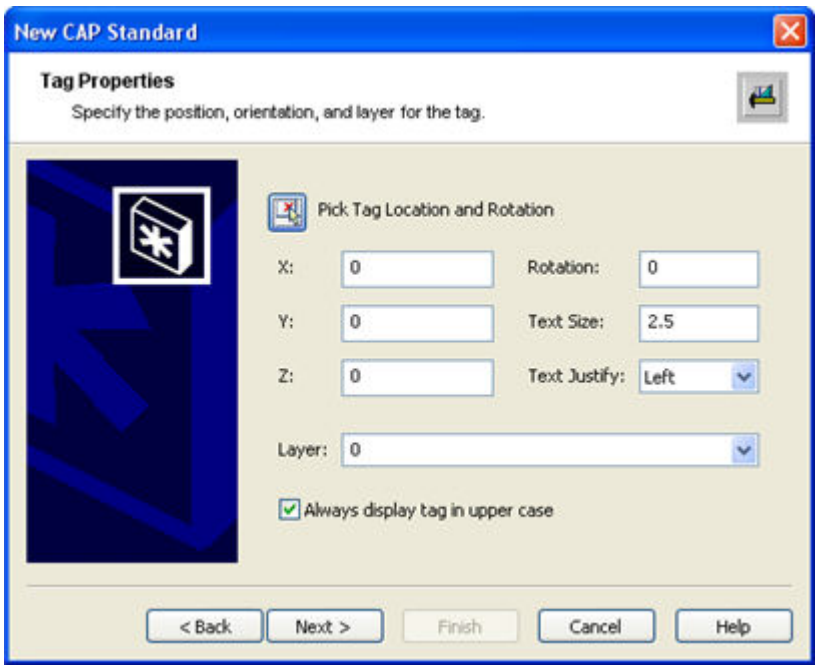
   You will return to the **Insertion Point** screen and the selected coordinates appear.

3. Click **Next**. The Tag Properties screen appears.

Specify tag properties

1. After picking the insertion point, select where you want the Standard's tag to appear.

   Enter the coordinates manually or click the **Pick Tag Location and Rotation** button  . This sends you back to the Designer drawing.



2. In the drawing, click at the desired Tag location point and pick the rotation.

   You will return to the **Tag Properties** screen and the selected coordinates appear.

3. Enter the **Text Size**. A height of 3 or 4 is typical.

4. In the **Rotation** field, you can manually change the text angle, in degrees. 0 is horizontal, 90 is vertical.
5. Select the **Layer** you want the tag to be on (for example, A-STDTAGS).
6. Click **Next**.

   This launches the Custom Catalog screen.

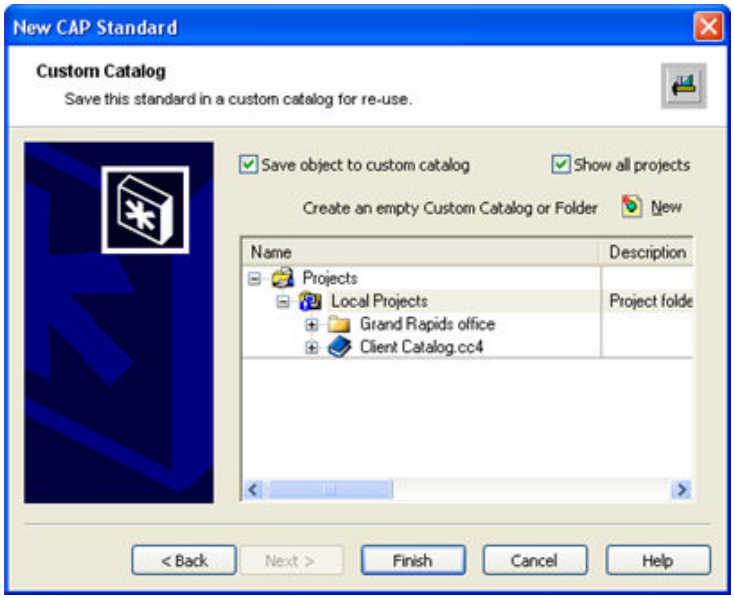
Save the standard in a custom catalog

If you do not save the standard in a Custom Catalog, this CAP Standard will remain in this drawing only and will not be updated in your worksheet take-off.

If you do save the CAP Standard into your Custom Catalog, you can:

1. Store the standard in a project folder.
2. Search for this CAP Standard (and others) in Explorer.
3. See a preview in Explorer.
4. Drag and drop this CAP Standard into other drawings. You can use this Standard later as a resource for later projects.
5. Switch to 20-20 Worksheet and drop this CAP Standard into a Worksheet.
6. After specifying tag properties, you can save the standard.

   Check the **Save object to custom catalog** box.



7. Select the custom catalog (ending with .cc4) to store the CAP Standard.

   If you want to create a new Custom Catalog, right-click on **Local Projects** or a folder under **Local Projects** and select **New**, **Custom Catalog**. For more information about custom catalogs, see the Custom Catalogs section in the 20-20 Worksheet help.

8. Click **Finish**.

Redefine a CAP Standard

We all know that many times in dealing with clients it becomes necessary to make revisions to our furniture plans to meet the customer needs. Because we have used CAP Standards, the capability of globally replacing a CAP Standard within a drawing becomes very quick and easy, saving precious time within the revision process.

There are two ways to redefine a Standard:

- Redefine using the same name.
- Redefine using a new name, then use **Block Replace** to switch some of the original Standards with the new one. See Replace a CAP Standard for details.

In order to make revisions to an existing CAP Standard within a drawing, follow the steps below:

1. Undo the Standard by doing any of the following:

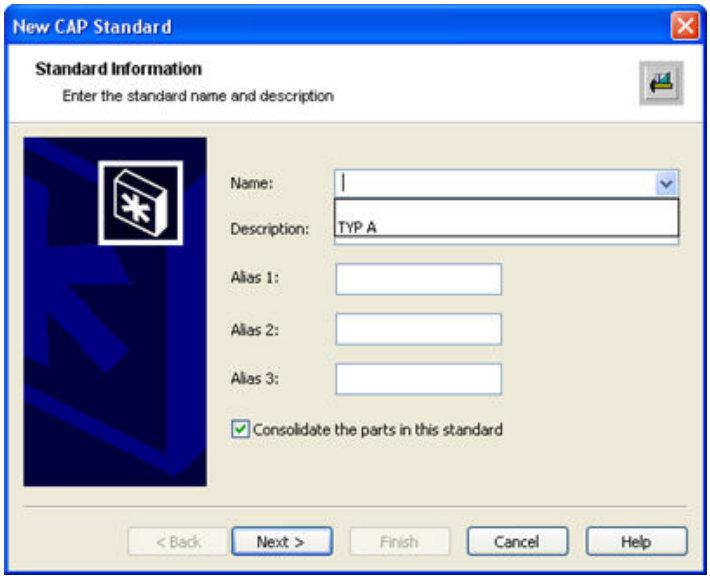
From the CAP Designer menu, select CAP Standard, Undo.
Click the Undo Standard icon on the **CAP Standard** toolbar.
From the CAP Designer toolbar click and hold the Standard flyout then select the Undo Standard icon .

Warning! Do not use the AutoCAD **Explode** command.

2. Select the CAP Standard you need to revise within your drawing. Press Enter or right-click to confirm your selection.

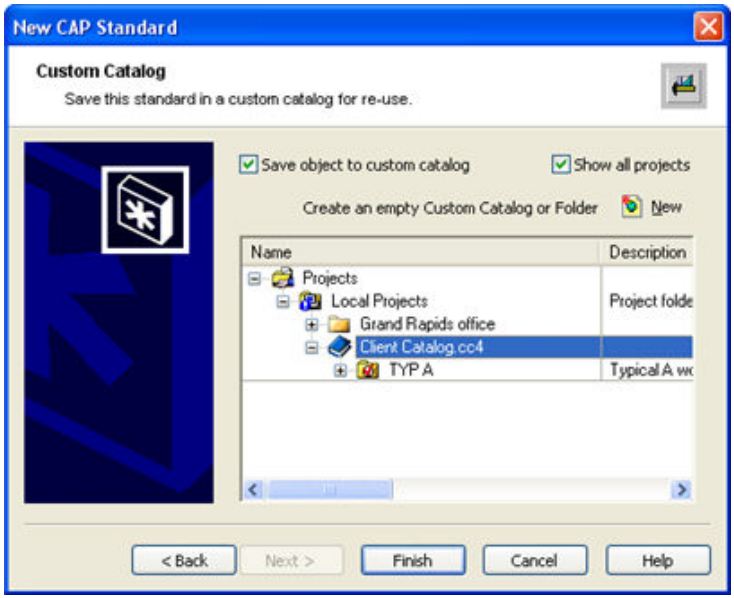
   Notice that the tag disappears, and if you hover over the parts in the workstation they can now be selected individually.
3. Change the workstation.
4. Go through the steps of creating a new CAP Standard.

   Name the new Standard with the same name as the existing Standard. Use the down arrow to the right of the name to pick the same name.



Make sure when you create this new Standard that you give it the same insertion point that the previous Standard had. That way we you redefine the block it will remain at the same insertion point when redefining it.

5. When you are at the point where you save the standard to a Custom Catalog, pick the Catalog that has the standard in it. Do not select the standard itself.



6. Click **Finish**.

   You will get two confirmation dialogs. One to replace the standard in the Custom Catalog the other to replace the standard in the drawing.

7. Click **Yes** on both of them.

   Notice in your drawing that all of the CAP Standards with the same name have been revised.

Replace a CAP Standard

Another method for redefining a station would be not redefine the standard but create a new name such as `TYP-A REV` for the revised workstation. Then if you needed to go back to the original later you could.

1. Place a Standard on the drawing in the 0 rotation.
2. Undo the Standard by doing any of the following:

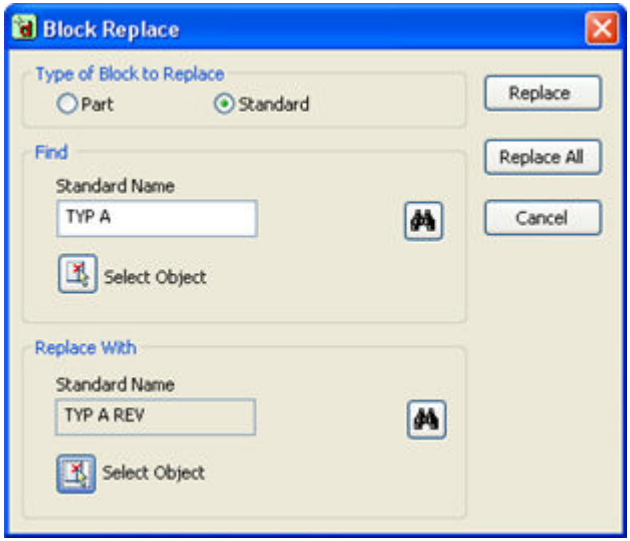
From the CAP Designer menu, select CAP Standard, Undo.
Click the Undo Standard icon on the **CAP Standard** toolbar.
From the CAP Designer toolbar click and hold the Standard flyout then select the Undo Standard icon .

Warning! Do not use the AutoCAD **Explode** command.

3. Select the CAP Standard you need to revise within your drawing. Press Enter or right-click to confirm your selection.

   Notice that the tag disappears, and if you hover over the parts in the workstation they can now be selected individually.
4. Change the workstation.
5. Create new Standard with the **Name** `TYP-A REV`.
6. Once you create the new standard, use the **CAP Designer**, **Edit**, **Block Replace** command.
7. In the **Block Replace** dialog, under **Type of Block to Replace** select **Standard.**
8. Under **Find**, select the original standard.

9. Under **Replace With** select the new standard.



For more information about the **Block Replace** command see Search and replace.

Edit a Standard's information

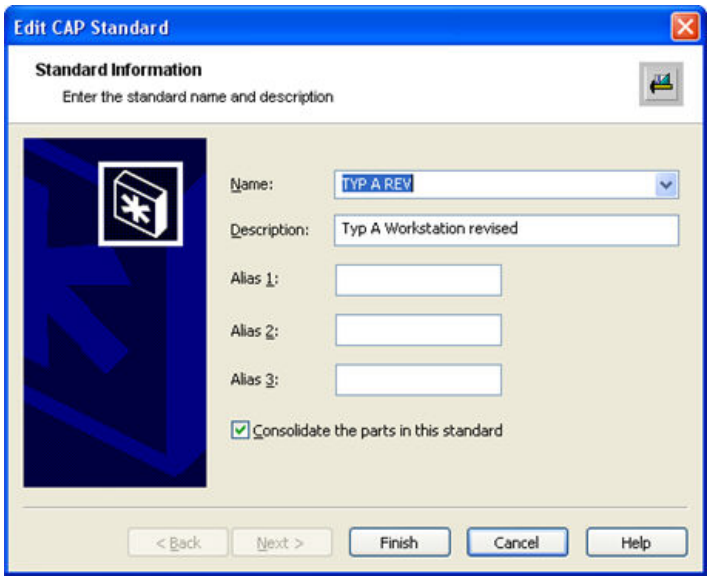
To edit a Standard's name, description or Alias values:

1. Do any of the following:

From the CAP Designer menu, select CAP Standard, Edit.
Click the Edit Standard icon on the **CAP Standard** toolbar.
From the CAP Designer toolbar click and hold the Standard flyout then select the Edit Standard icon .

2. Select the Standard on the drawing.
3. Press ENTER or right-click to confirm your selection.

4. In the **Edit CAP Standard** dialog, change the **Name**, **Description** or **Alias** fields.



5. Check or clear **Consolidate the parts in this standard**.

   For more details about consolidating, see the topic Consolidate identical item in the 20-20 Worksheet help or User Guide.

6. Click **Finish**.

Custom workstation

If a non-standard workstation is required, you can use an existing CAP standard as a base or you can place new components from the library, directly on the plan.

1. Place a CAP Standard in the area where you need it.
2. Undo the Standard by doing any of the following:

From the CAP Designer menu, select CAP Standard, Undo.
Click the Undo Standard icon on the **CAP Standard** toolbar.
From the CAP Designer toolbar click and hold the Standard flyout then select the Undo Standard icon .

Warning! Do not use the AutoCAD **Explode** command.

3. Select the CAP Standard you need to revise within your drawing. Press Enter or right-click to confirm your selection.

   Notice that the tag disappears, and if you hover over the parts in the workstation they can now be selected individually.
4. Erase the components that need to be changed and insert new components to complete the workstation.

   The furniture in this workstation will be counted along with the panels and other miscellaneous furniture. It will not be considered a CAP Standard any more.

Large Project/Take Offs

Using CAP Standards makes placing furniture in your drawing much easier and more accurate. Once your layout is complete you will want to make a final count from the drawing. There are three ways to count a drawing using CAP Standards and CAP Parts:

- Simple Take Off - disable the standards and boundaries to create a total list of products using Worksheet.
- Standards Take Off - include CAP Standards in the Worksheet.
- Bounds Take Off - divide the layout into areas or departments called CAP Bounds. This is often useful if the client needs to order the furniture in phases or wants to charge a department for the furniture expense. See the topic Bounds Take Off in the **Bounds** section.

Simple Take off

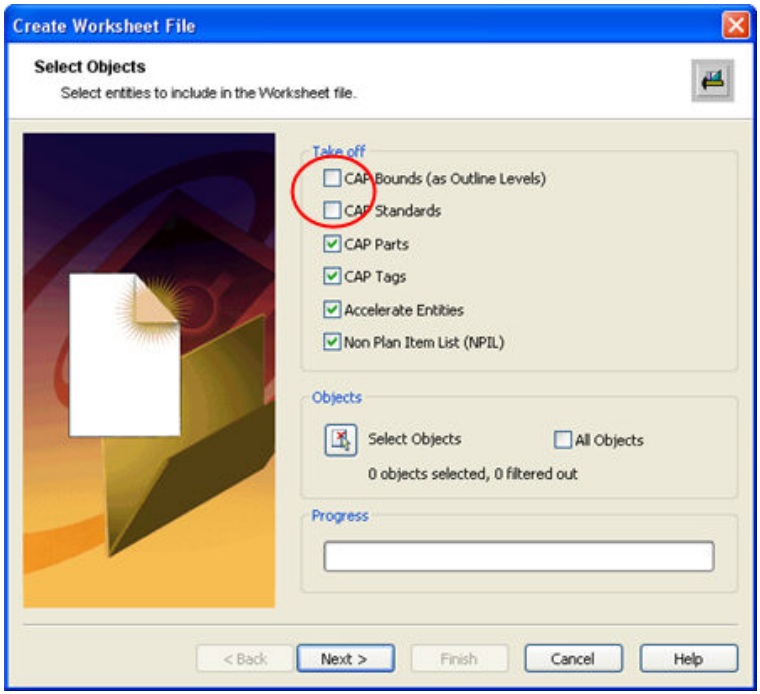
The simple take off method creates a worksheet of the entire project.

1. From the **CAP Designer** menu, select **20-20 Worksheet**, then **Create Worksheet File**.

   Or click the **Create Worksheet** button on the CAP Designer toolbar.

   This launches the **Create Worksheet File** wizard.
2. Clear the checkmark the **CAP Bounds** and **CAP Standards.**

   This does not mean that the worksheet will not count the CAP Standards, it will simply count the components that make up the standards as CAP parts.



3. Follow the rest of the steps as described in Create a worksheet.

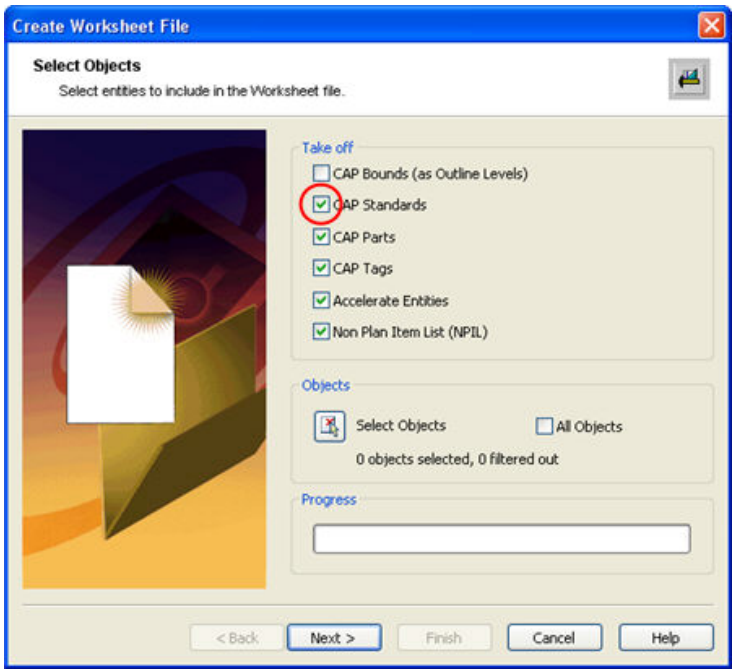
Standards Take Off

1. From the **CAP Designer** menu, select **20-20 Worksheet**, then **Create Worksheet File**.

   Or click the **Create Worksheet** button on the CAP Designer toolbar.

   This launches the **Create Worksheet File** wizard.

2. Check **CAP Standards** so that standards are listed as parts in the worksheet**.**



3. Follow the rest of the steps as described in Create a worksheet.

CAP Standards are represented in a worksheet as pink lines. See Standards in the 20-20 Worksheet help or User Guide for details.

Bounds

A CAP Bound is used to define an area to be counted. For example, a CAP bound could represent a building floor or a department.

Make a bound

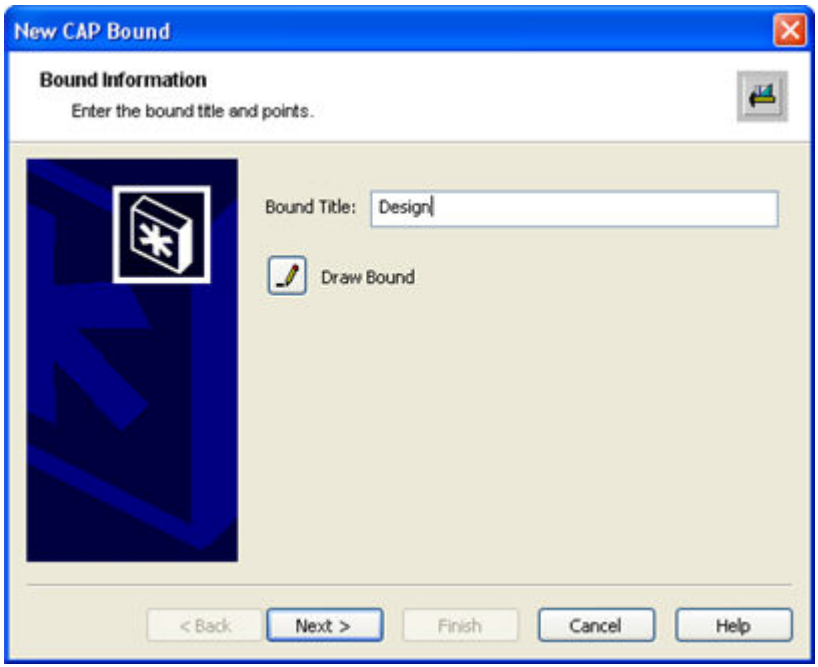
In the example below, we will create bounds on a unique layer so they can be turned off separately.

1. Change to the A-BOUNDS layer. Create it if is not already present.
2. Do any of the following:

From the **CAP Designer** menu, select **CAP Bound**, **New**.
Click the **Make Bound** icon on the CAP Bound toolbar.
From the CAP Designer toolbar click and hold the **Bound** flyout then select the **Make Bound** icon .

The **New CAP Bound** dialog will come up.

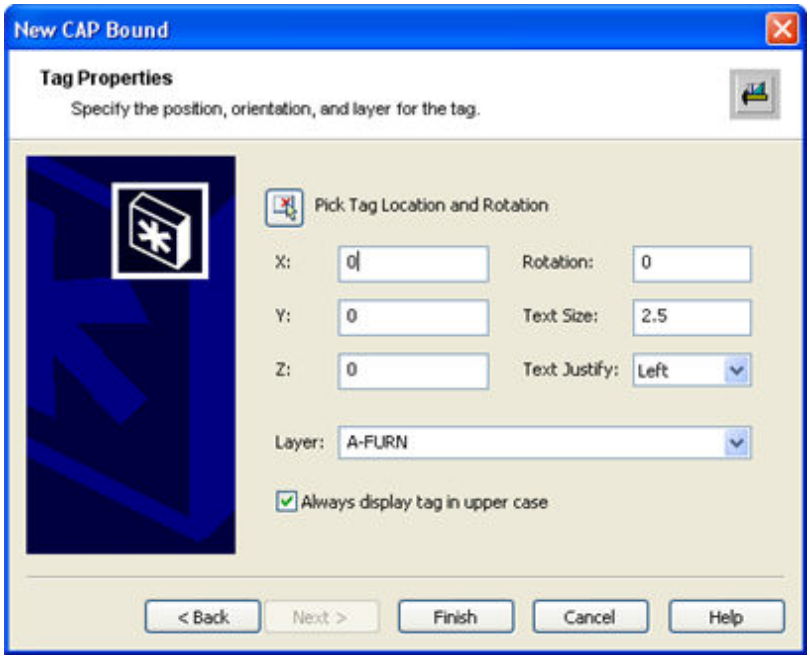
3. Type in the name of the area you wish to define.



4. Click the **Draw Bound** button  .
5. This will take you back to your drawing. Select a start point then draw the lines around the area. The bound does not have to be rectangular. Take care to include all the panels and standards you want to include in the area. If part of a symbol is outside the boundary it may not be counted with that area.
6. Once you have completed it press Enter to close the bound.
7. Click **Next**.

   The **Tag Properties** screen will come up.

8. Click **Pick Tag Location and Rotation** to place the tag in the drawing. Place it somewhere in the boundary area.

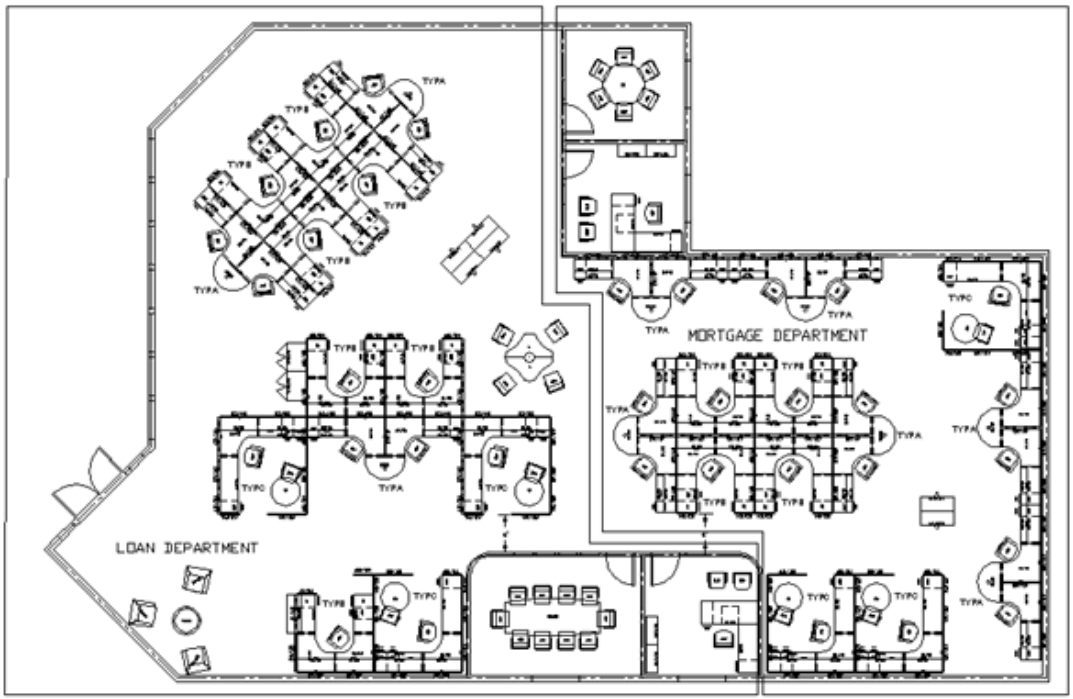


9. When you are brought back to the dialog, set the **Text Size** to 6.
10. Select the **Layer** A-BOUNDS.
11. Click **Finish**.

For information on creating a worksheet using the boundaries you created, see Bounds Take Off.

To redefine a CAP bound, you must remove it first then create a new one.

Once you are done creating bounds for other areas, the bounds could look similar to the image below:



Bounds Take Off

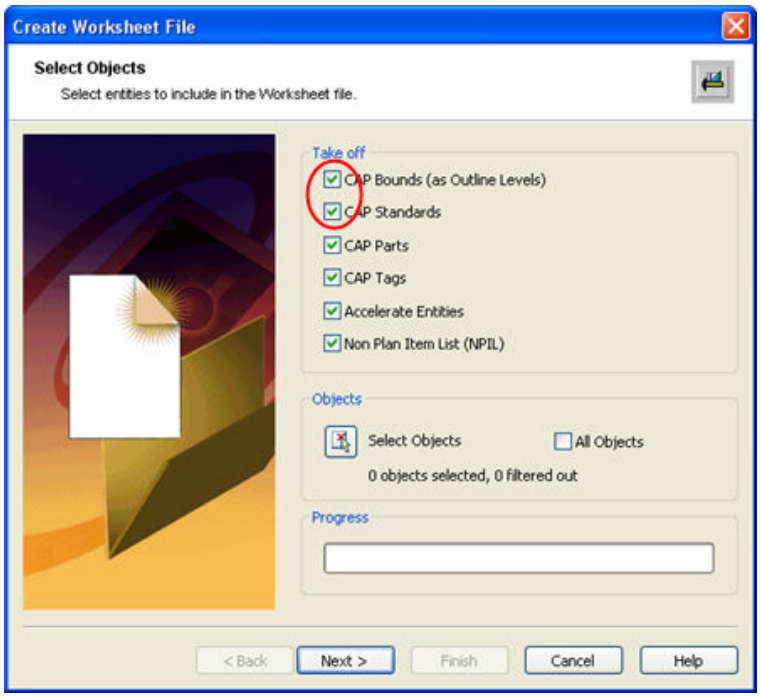
After creating CAP bounds, you can create the worksheet.

1. From the **CAP Designer** menu, select **20-20 Worksheet**, then **Create Worksheet File**.

   Or click the **Create Worksheet** button on the CAP Designer toolbar.

This launches the **Create Worksheet File** wizard.

2. Make sure that the **CAP Bounds** and **CAP Standards** checkboxes are selected.



3. Follow the rest of the steps as described in Create a worksheet.

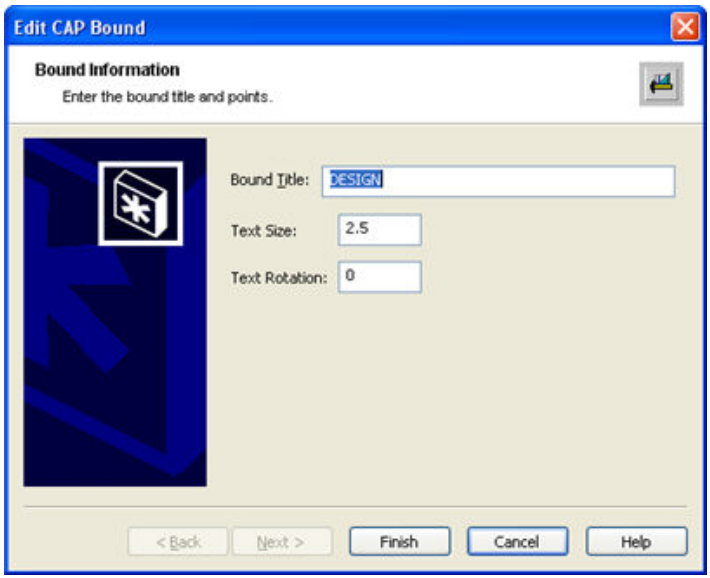
CAP bounds are represented in worksheet as outline levels (green lines). See Outline levels in the 20-20 Worksheet help for details.

Edit bound title and text placement

1. Do any of the following:

From the **CAP Designer** menu, select **CAP Bound**, **Edit**.
Click the **Edit Bound** icon on the CAP Bound toolbar.
From the CAP Designer toolbar click and hold the **Bound** flyout then select the **Edit Bound icon** .

2. Select the CAP bound on the drawing.
3. Press Enter to confirm your selection.
4. Edit the title, text size and text rotation.



5. Click **Finish**.

Remove a CAP bound

1. Do any of the following:

From the **CAP Designer** menu, select **CAP Bound**, **Undo**.
Click the **Undo Bound** icon on the CAP Bound toolbar.
From the CAP Designer toolbar click and hold the **Bound** flyout then select the **Undo Bound icon** .

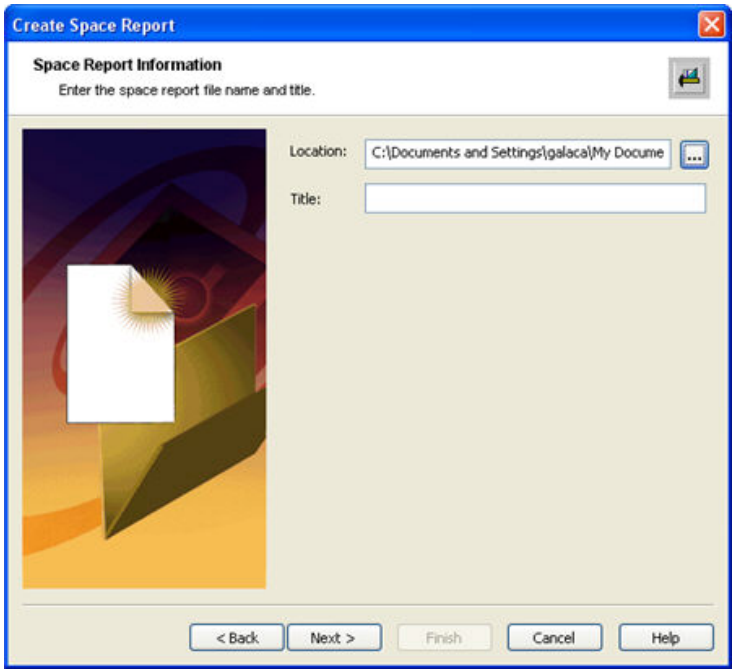
2. Select the CAP bound on the drawing.
3. Press Enter to confirm your selection.

Create a space report

This command creates report showing the number of square feet defined by a CAP bound. For example, if you defined a bound for each department, you may want to know the area occupied by each department.

1. In AutoCAD, open an existing drawing.
2. From the **CAP Designer** menu, select **20-20 Worksheet**, then **Create Space Report**.

   This launches the **Create Space Report** wizard.



3. Click the **Browse** button ... to open a **Save Dialog** where you can select the folder to store this Space Report.

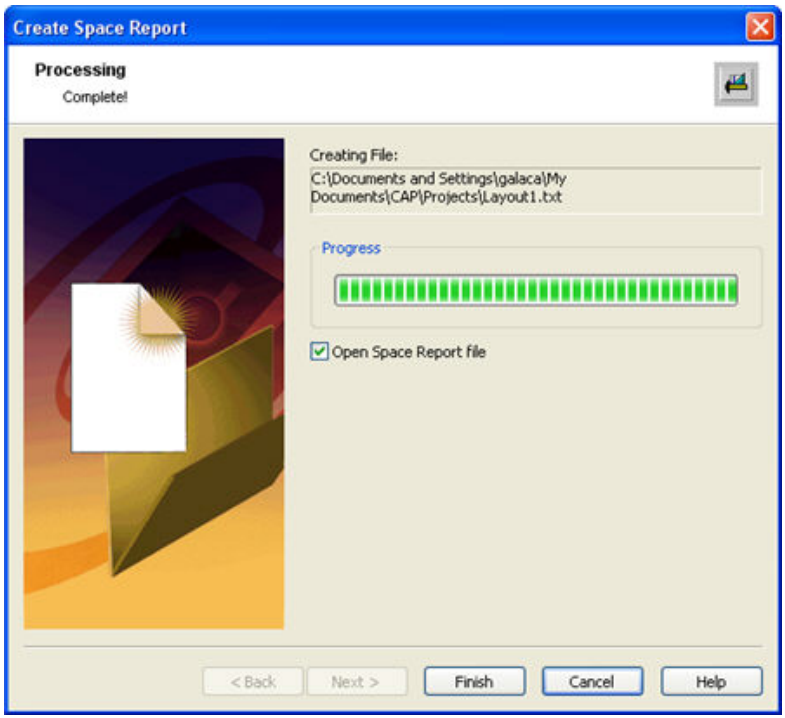
   Enter a **File Name** in the **Save Dialog** then click **Save**.

4. Enter an optional **Title**.
5. Click **Back** to review information or click **Next**.

   The **Processing screen** opens, with a message saying "Please wait".

6. Once the message changes to "Complete!", click **Finish** and the Space Report you just created will open automatically in text format.

If you don't wish to open the Space Report clear the **Open Space Report** file checkbox before clicking **Finish**.



Schedules

A Schedule is a list of parts, which includes the Item, Tag, Mfg, Qty, Part No., Part Description, Price and Extended Price information.

You can insert a schedule in your drawing by selecting a worksheet or by selecting symbols in your drawing.

Once you have learned how to draw schedules, you can use them along with the plan view and 3D view to create a presentation document.

Draw a schedule from the drawing

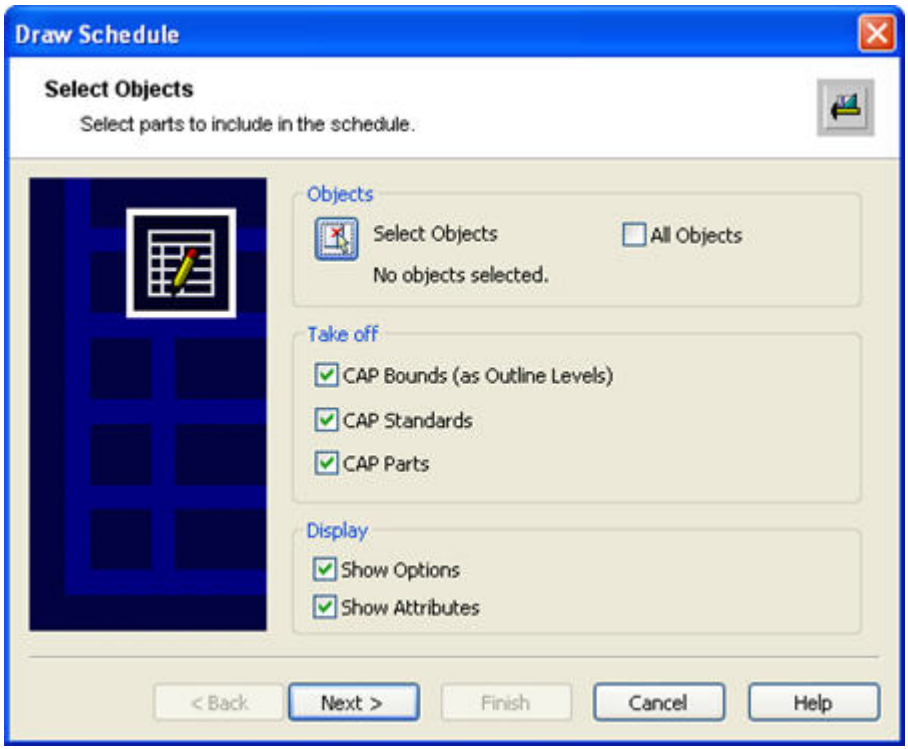
You can add a schedule to the drawing using the **Draw Schedule** command. The resulting schedule will be an AutoCAD table entity, so you will able to perform any AutoCAD table editing commands such as resizing columns and rows, moving the table, and manually editing any text in the table.

Note that the schedule is not linked to the drawing in any way. If you make changes to the drawing, you will need to regenerate the schedule.

1. From the **CAP Designer** menu, select **20-20 Worksheet**, then **Draw Schedule**.

   Or, click the **Draw Schedule** button  on the CAP Designer toolbar.

   The **Draw Schedule** dialog will come up.



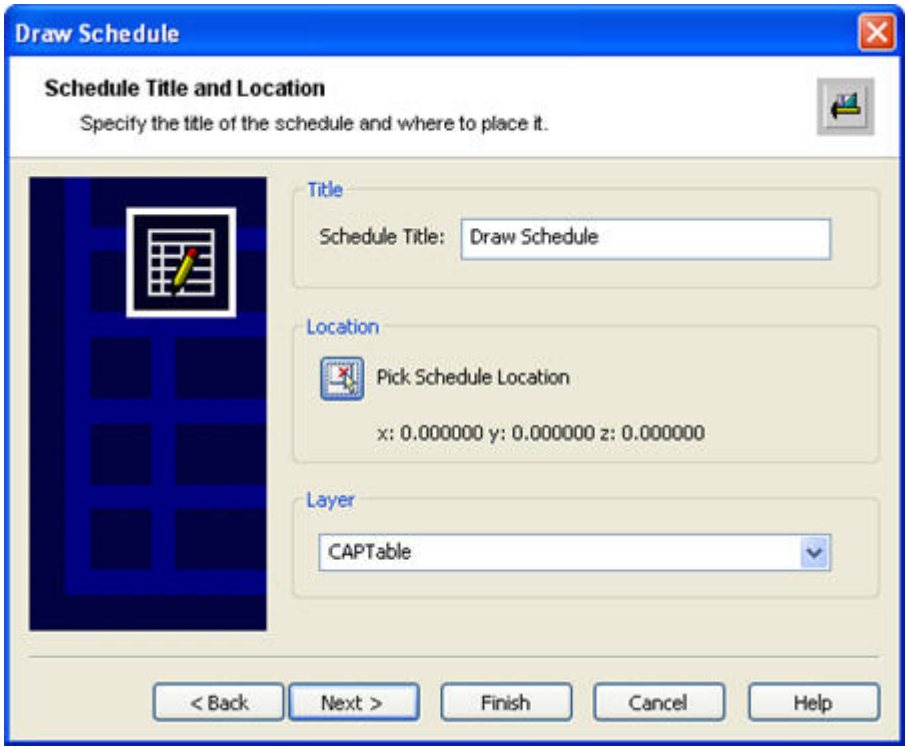
2. Check **All Objects** or click **Select Objects** and use a window or a crossing to select the objects and press Enter.

   Under **Take Off**, select whether you want the schedule to list by outline level, by standard level or by parts. To view examples of each one, see Examples - draw schedule.

   Under **Display**, choose whether you want to show options and/or attributes in the schedule.

   Click **Next**.

The **Schedule Title and Location** screen appears.



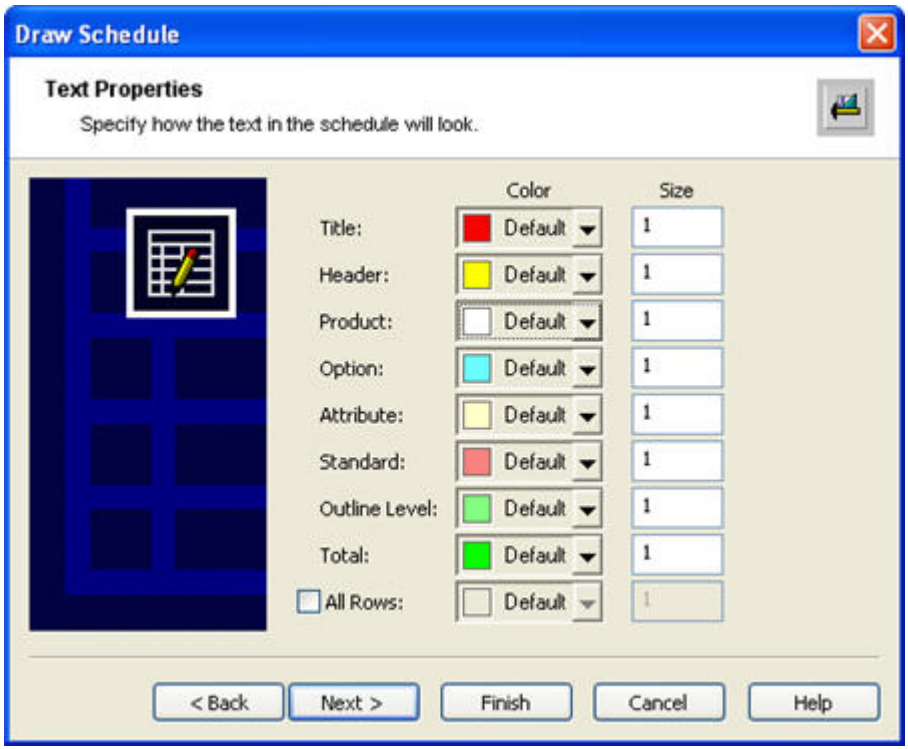
3. Type in the **Schedule Title**.

   Click the **Pick Schedule Location** button  and select a point on the drawing. You will be brought back to the dialog box.

   Choose the **Layer**.

Click **Next**.

The **Text Properties** screen appears.

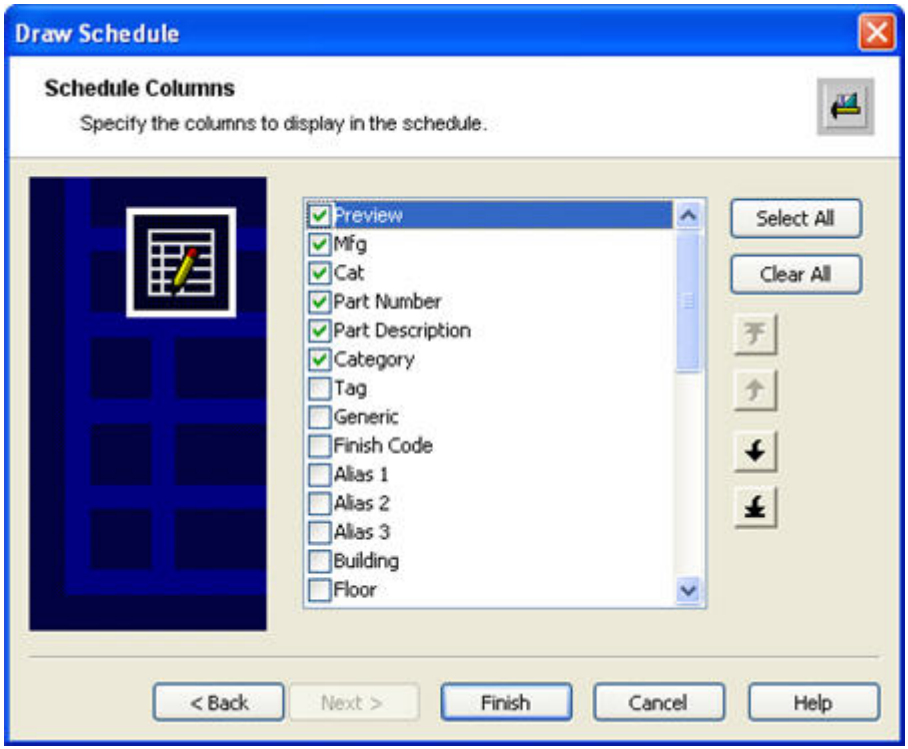


4. If you want the schedule components' text to be one color and size, simply check **All Rows** then set the color and size**.**

   Otherwise, select the text color and size for each component. It is recommended to change the **Text Size** to 5.

   Click **Next**.

The **Schedule Columns** screen appears.



5. Check the columns you want displayed in the schedule.

   You can use the **Select All** or **Clear All** button to select or clear your selections at once.
   You can also change the column order by dragging and dropping the column names or by using the **Move to Top**, **Move Up**, **Move Down** or **Move to Bottom** button.

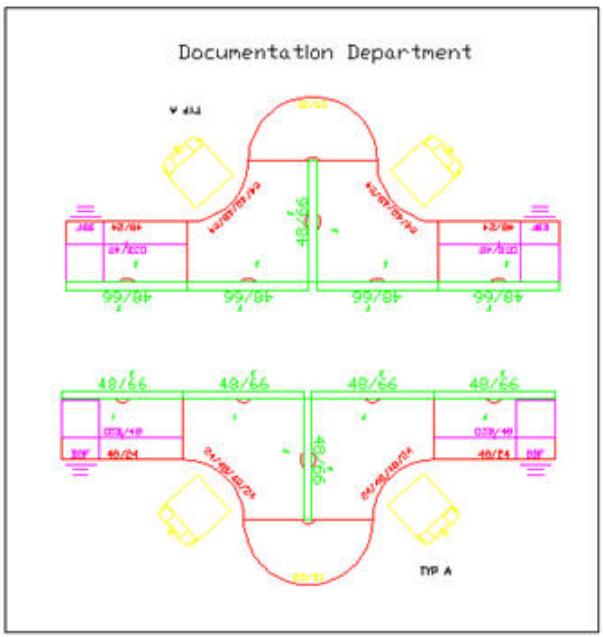
   Click **Finish**.

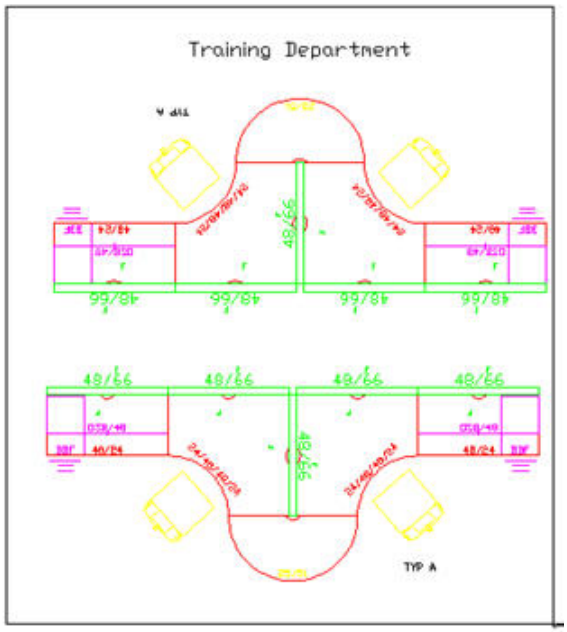
Your schedule now appears within your drawing.

The selections you made on each screen of the Draw Schedule Wizard will be saved so that they are automatically selected the next time you run Draw schedule.

Examples – draw schedule from the drawing

In this example, there are two CAP bounds in the drawing. Within each bound there are two instances of a standard called TYP A.





Here is the draw schedule with outlines:

Draw Schedule									
#	Preview	Mfg	Cat	Part Number	Part Description	Category	Qty	List	Ext List
1				Documentation Department					17212.00
2				Training Department					17212.00
					Grand Total				34424.00

Here is the draw schedule with standards:

Draw Schedule									
#	Preview	Mfg	Cat	Part Number	Part Description	Category	Qty	List	Ext List
1				TYP A	Typical A workstation		4	8606.00	34424.00
					Grand Total				34424.00

Here is the draw schedule with parts (options and attributes not shown):

Draw Schedule									
#	Preview	Mfg	Cat	Part Number	Part Description	Category	Qty	List	Ext List
1		STC	SCN	46512010	CHAIR-THINK,NO ARM,3D KNIT, SEWN SEAT,HEAD REST,ASSEM	SEATING	8	927.00	7416.00
2		STC	TSA	TS7048BL	OVERHEAD STORAGE BIN-48W	STORAGE	8	476.00	3808.00
3		STC	TSA	TS72448CC	WORKSURFACE-CURVED CORNER, 24X48	WORKSURFACE	8	455.00	3640.00
4		STC	TSA	TS72448S	WORKSURFACE-STRAIGHT,24X48	WORKSURFACE	8	216.00	1728.00
5		STC	TSA	TS751HR	WORKSURFACE-HALF ROUND,SPNR, 25 1/2X51	WORKSURFACE	4	646.00	2584.00
6		STC	TSA	TS7664BTF	PANEL-FULL TACKABLE ACOUSTICAL,66X48	PANEL	20	564.00	11280.00
7		STC	TSA	TU720BBFL	PEDESTAL-2 BOX/1 FILE DWR, 23-1/2D	FILING	8	496.00	3968.00
					Grand Total				34424.00

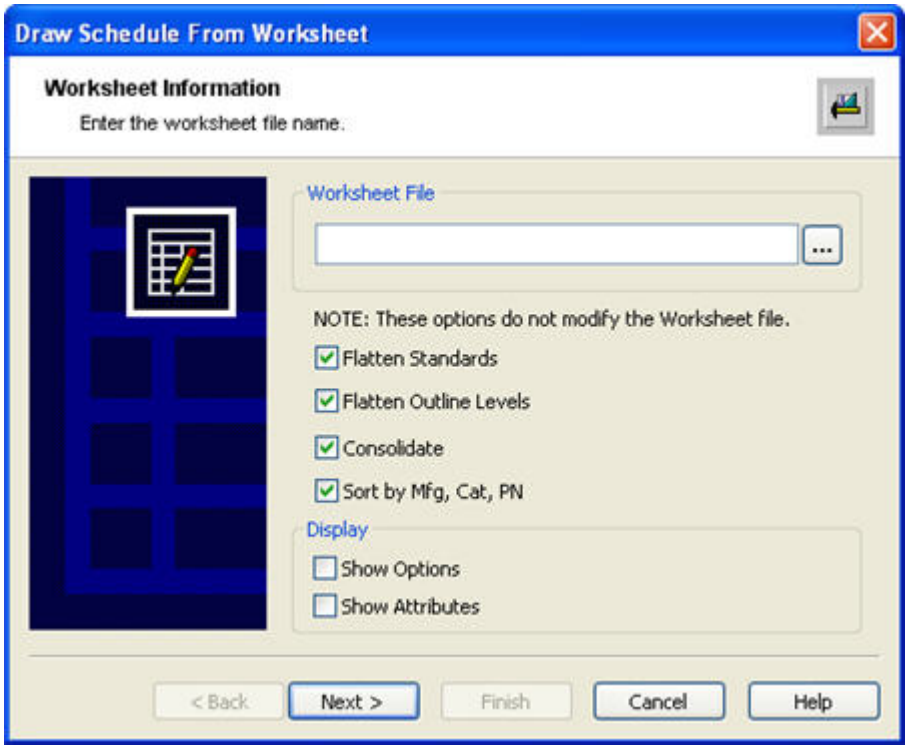
Draw a schedule from a worksheet

After you have created a worksheet and specified options in the worksheet, you can bring it into your drawing as a Schedule. The resulting schedule will be an AutoCAD table entity, so you will able to perform any AutoCAD table editing commands such as resizing columns and rows, moving the table, and manually editing any text in the table.

Note that the schedule is not linked to the worksheet in any way. If you make changes to the worksheet, you will need to regenerate the schedule.

1. From the **CAP Designer** menu, select **20-20 Worksheet**, then **Draw Schedule from Worksheet**.

   The **Draw Schedule From Worksheet** dialog will come up.



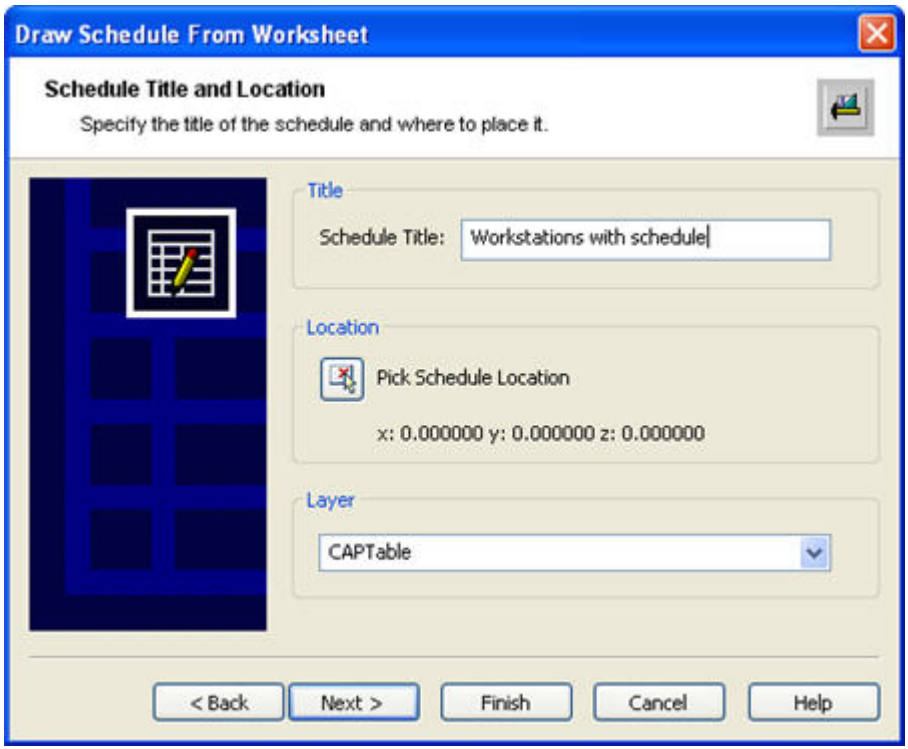
2. Either type in the worksheet name or click the **Browse** button ... to find the worksheet.

   Check whether you want to flatten standards, flatten outline levels, consolidate items, and/or sort by manufacturer, category and part number.

   Check whether you want to show options and/or attributes.

   Click **Next**.

The **Schedule Title Location** screen appears.



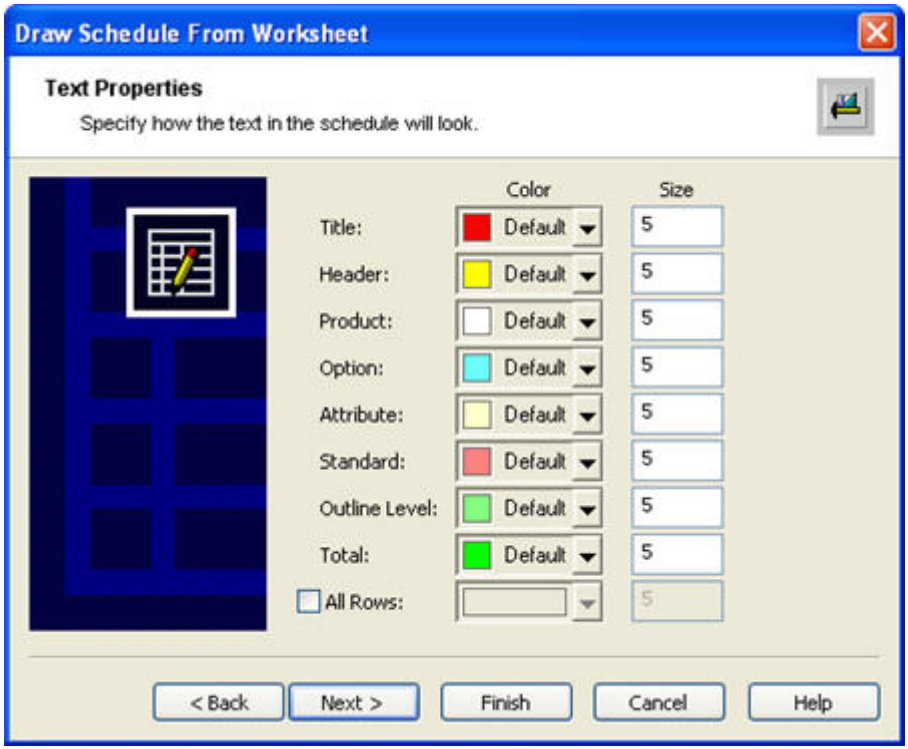
3. Type in the **Schedule Title**. By default, has the same name as the worksheet.

   Click the **Pick Schedule Location** button and select a point in the drawing. You will be brought back to the dialog box.

   Select the **Layer**.

   Click **Next**.

The **Text Properties** screen appears.

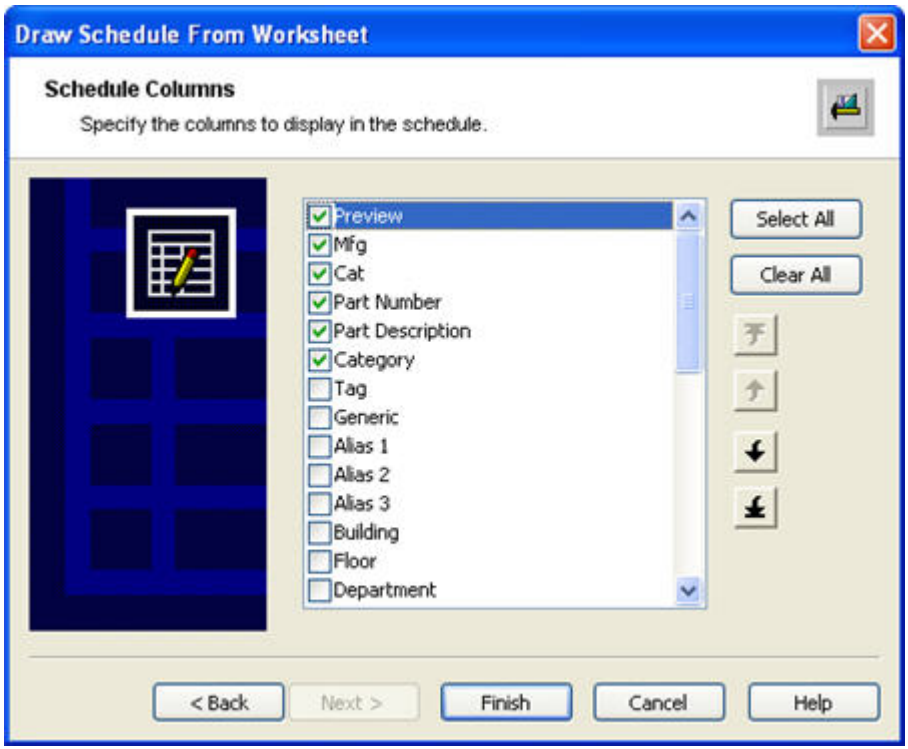


4. If you want the schedule components' text to be one color and size, simply check **All Rows** then set the color and size**.**

   Otherwise, select the text color and size for each component. It is recommended to change the **Text Size** to 5.

   Click **Next**.

The **Schedule Columns** screen appears.

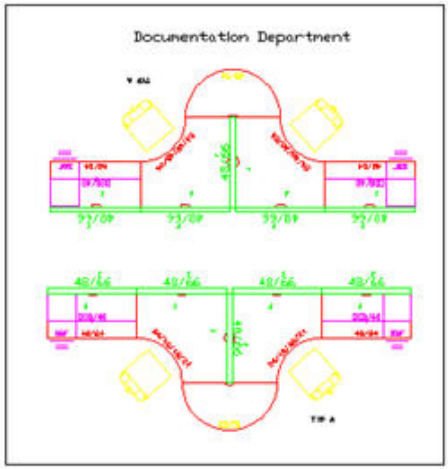


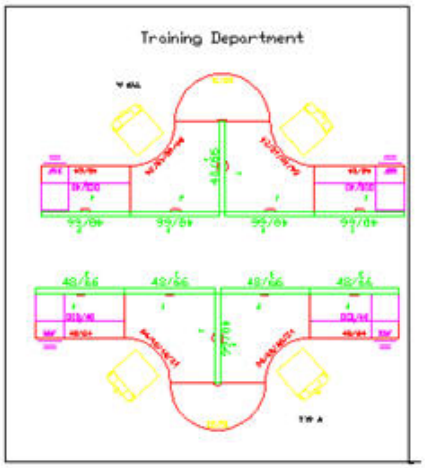
5. Check the columns you want displayed in the schedule. The columns checked and the column order are driven by the column configuration in the selected worksheet.

   You can use the **Select All** or **Clear All** button to select or clear your selections at once.
   You can also change the column order by dragging and dropping the column names or by using the **Move to Top**, **Move Up**, **Move Down** or **Move to Bottom** button.

   Click **Finish**.

Your schedule now appears within your drawing. In the example below, outlines and standards were flattened and parts were consolidated.





Schedule from Worksheet									
#	Preview	Mfg	Cat	Part Number	Part Description	Category	Qty	List	Ext List
1		STC	SCN	46512010	CHAIR-THINK,NO ARM,3D KNIT, SEWN SEAT,HEAD REST,ASSEM	SEATING	8	927.00	7416.00
2		STC	TSA	TS7048BL	OVERHEAD STORAGE BIN-48W	STORAGE	8	476.00	3808.00
3		STC	TSA	TS72448CC	WORKSURFACE-CURVED CORNER, 24X48	WORKSURFACE	8	455.00	3640.00
4		STC	TSA	TS72448S	WORKSURFACE-STRAIGHT,24X48	WORKSURFACE	8	216.00	1728.00
5		STC	TSA	TS751HR	WORKSURFACE-HALF ROUND,SPNR, 25 1/2X51	WORKSURFACE	4	646.00	2584.00
6		STC	TSA	TS76648TF	PANEL-FULL TACKABLE ACOUSTICAL,66X48	PANEL	20	564.00	11280.00
7		STC	TSA	TU720BBFL	PEDESTAL-2 BOX/1 FILE DWR, 23-1/2D	FILING	8	496.00	3968.00
					Grand Total				34424.00

The selections you made on each screen of the Draw Schedule from Worksheet Wizard will be saved so that they are automatically selected the next time you run it.

Create a presentation document using Plan view and 3D

In this exercise, you will create a presentation document that includes a workstation in Plan view and in 3D. In the same drawing you will also use **CAP Objects** to dress up the 3D station. At the end you will add a list of products, called a schedule.

Before proceeding, build a workstation using Plan View symbols.

Copy the plan to 3D:

1. From the **CAP Designer** menu, select **Tools**, **Copy Plan to 3D**.
2. Select all the symbols for the plan view workstation.
3. Select a base point on the plan view workstation.
4. Select a second point off to the right. Watch the conversion take place. (The best indication is that tags disappear.)

Before viewing this 3D station in an isometric view, dress it up by adding Cap Objects to the 3D station:

1. From the **CAP Designer** menu, select **Objects**, then **Select Object** to display the **CAP Objects** dialog box of 3D objects.
2. Select an object by double-clicking it.
3. Place it on the 3D workstation (the one without tags) and rotate it with your cursor to the desired position. You can also type the rotation angle at the command prompt.
4. At the command prompt, type `VP`.
5. Click an angle that would be best for the workstation.
6. Now position your drawing so you are able to see both the Plan View and 3D workstations — leave room below your two workstations to place your list of products.

Create the worksheet file:

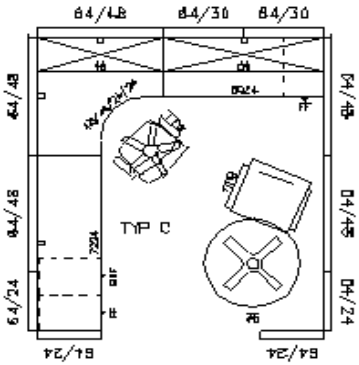
1. From the **CAP Designer** menu, select **20-20 Worksheet**, **Create Worksheet File**.

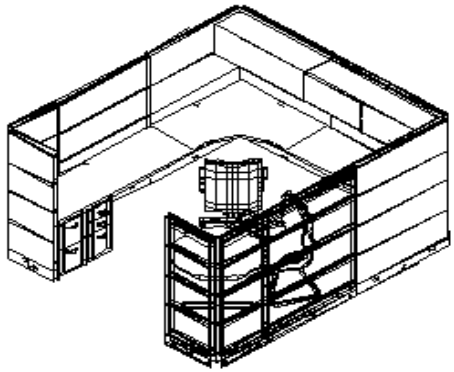
2. Select the plan view workstation. Click **Next**.
3. Give the worksheet a name and a title. Click **Next**.
4. Clear the checkbox beside **Open Worksheet File** check box. Click **Finish**.

Create the schedule:

1. From the **CAP Designer** menu, select **20-20 Worksheet**, **Draw Schedule From Worksheet**.
2. Select the worksheet you just made and click **Next**.
3. Do not check **Include Options** or **Include Attribute**.
4. Select a point under the standard for the location of the schedule.
5. Enter a **Text Size** of 4”.
6. Click **Finish**.

Put all three parts together using the AutoCAD Layout function. Your layout should look similar to the image below.





Item #	Tag	Mfg	Qty	Part No.	Part Description	Price	Extended
1	48/48/24/24	KDM	1	D1L4848SG	Workaurface, Curv Corner "L" 4 8x48x24x24, w/grommet	435.00	435.00
2	6024	KDM	1	D1R6024G	Workaurface, Rectangular 60Wx2 4D, w/grommet	246.00	246.00
3	7224	KDM	1	D1R7224G	Workaurface, Rectangular 72Wx2 4D, w/grommet	276.00	276.00
4	64/24	KDM	4	DP2T6424K	Tiled Panel, Both Sides, SmTex 64-1/16Hx24W, w/knockouts	554.00	2216.00
5	64/30	KDM	2	DP2T6430K	Tiled Panel, Both Sides, SmTex 64-1/16Hx30W, w/knockouts	598.00	1196.00
6	64/48	KDM	5	DP2T6448K	Tiled Panel, Both Sides, SmTex 64-1/16Hx48W, w/knockouts	710.00	3550.00
7	48	KDM	1	DS1O48L	*Overhead Cabinet w/Lock 47-7/8Wx14-1/8Dx15H	297.00	297.00
8	60	KDM	1	DS1O60L	*Overhead Cabinet w/Lock 59-7/8Wx14-1/8Dx15H	438.00	438.00
9	BBF	KDM	1	DS1PFL24A	*Freestanding Pedestal, 6/8/12 15Wx24D, w/Lock	450.00	450.00
10	FF	KDM	2	DS1PFL24B	*Freestanding Pedestal, 12/12 15Wx24D, w/Lock	439.00	884.00
11	36	KIS	1	ITR3600N	Round Table Four-Star Base 36 D, Fixed Hgt w/Casters	590.00	590.00
12	BULL	KSS	1	7A3-3-A50-H	Bulldog Exec Armchair, Mid Grey, Advanced, H Gas	1171.00	1171.00
13	BULL	KSS	1	7A8-1-SL	*Bulldog Side Armchair, Dark Grey	520.00	520.00
						TOTAL	12287.00

AutoConnectors

CAP AutoConnectors automatically places a variety of connections and other parts based on a users layout of frames and panels. This can include panel connectors, finished end, top caps, change of height brackets, etc.

> To find out if a line uses AutoConnectors, consult the What's New help window, click **MFR Monthly Updates**, then **20-20 CAP/Worksheet Data Changes**.

Unidentified Furniture Objects (UFO)

In this exercise, you will learn how CAP Automatic Place Holders or Unidentified Furniture Objects (UFO) automatically appear as you place frames.

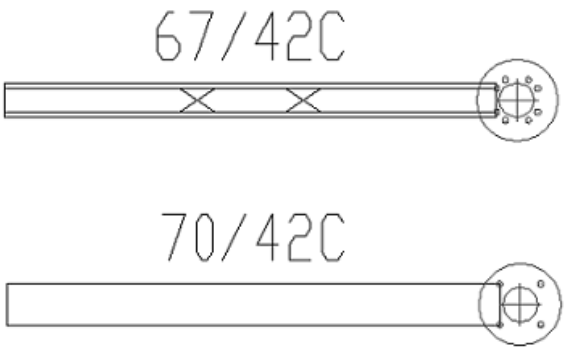
When you run CAP AutoConnectors later on, it will replace each UFO with the proper connectors, finished ends and other connection components.

1. Show the **CAP AutoConnectors & More** toolbar.

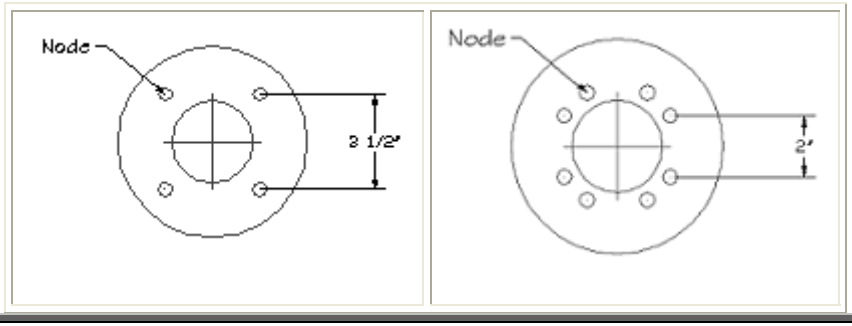
2. Click the **UFO Toggle** icon  on the **CAP Auto-Connectors and More** toolbar and make sure it's on.

3. On the Explorer bar, click the Content tab and select the manufacturer you wish to use.
4. Select and place the first panel or frame.

   Notice that an Unidentified Furniture Object (UFO) is attached to the frame end.

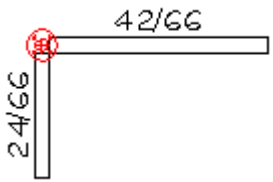


   The UFO provides a node used to snap to the next frame.



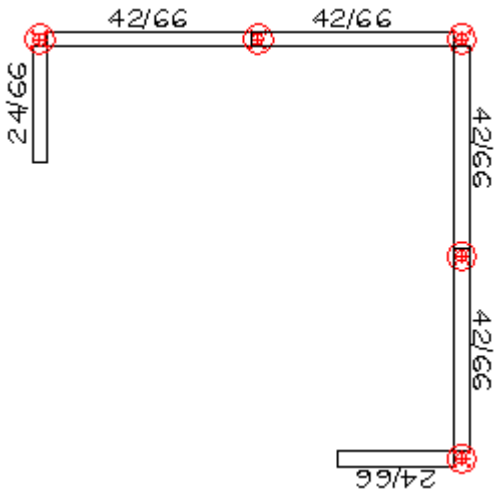
Each furniture line that uses AutoConnectors will have a specific UFO for placing panels or frames. In some instances, you will have four nodes on the UFO; in others there will be eight. It will depend on the way the panels or frames connect to one another.

5. Place another frame to the right (in clockwise direction) and **Node snap** (connect) to the UFO.



To turn **Node snap** on, enter `OS` in the command prompt.

6. Lay out your panel configuration as normal. An example is shown below.



Do not mirror any frames. This will eliminate all integrity of the CAP AutoConnectors function.

Using UFO's is optional; if you don't need them you can turn them off by clicking the **UFO Toggle** icon  on the CAP Auto-Connectors and More toolbar. They are also not required to run AutoConnectors. They are simply holding the panels apart so you do not have to place the connectors manually to get the correct spacing. When you run AutoConnectors UFO's will all be removed, so you don't need to erase them if you aren't using them.

If you have the UFO toggle turned off but need to place an individual one click the UFO icon  on the CAP Auto-Connectors and More toolbar. Click on the end of the frame where you want to place a UFO.

User preferences

For each product line that uses AutoConnectors there may be different types of connectors to choose from. Here you will learn how to select the appropriate finishes and product styles by setting user preferences.

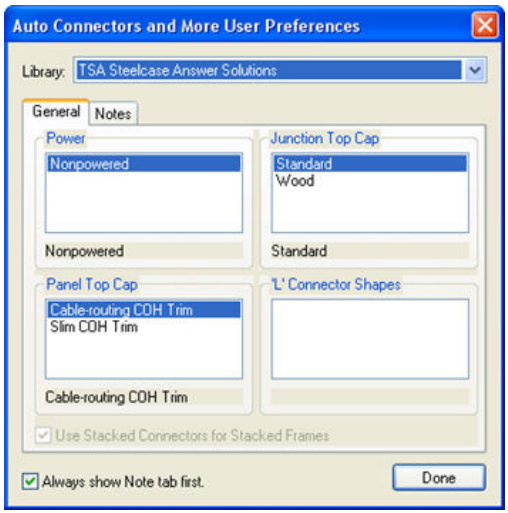
1. Click the **User Preferences** button on the CAP Auto-Connectors and More toolbar.

   The **Auto Connectors and More User Preferences** dialog appears.

2. The **Notes** tab is selected by default and **Library** is set to the last catalog you selected to add a panel.

   You can read these notes periodically to check important information about using Auto-Connectors.

3. Click the **General** tab to set your preferences for the selected **Library**.



4. Change of these preferences:
5. **Power**: This selection will determine the type of connector to attach to the frames.
6. **Material**: This selection will determine the surface material for the connectors. If the connector material is wood, the connector top cap is also wood. Plus CAP AutoConnectors & More sets the frame top cap to Wood when the material is wood.
7. **Profile**: This selection will determine the profile of the frame top cap, connector top cap, finished end, and finished end - change of height.
8. **'L' Connector Shapes**: This selection will determine the shape of the 2-way connector.
9. **Use Stacked Connectors for Stacked Frames**: This checkbox should be checked anytime that you have stacked frames in your layout when you run **AutoConnectors**. See Use stacking frames with CAP Tile for more information about Stacked Frames.

Each Catalog will have different options in the **Preferences** dialog.

10. Click **Done** when finished.

Standard Frame and Connector Top Caps are part of the base product and will not result in additional product being placed. Crown and Wood Top Caps will result in additional product placed in your drawing and provide realistic 3D representation.

Three common types of finished ends exist: Standard, Crown, and Wood. CAP AutoConnectors & More does not support the Crown/Standard mixed. Place those products the "old way", through menu selections and manual placement.

Each line uses different parts in this dialog. You may not always have to pick everything.
When using stacking frames, be sure to place a check in the selection box to **Use Stacked Connectors for Stacked Frames**. Before you click **Done,** verify that you are in the correct library.

Apply CAP AutoConnectors

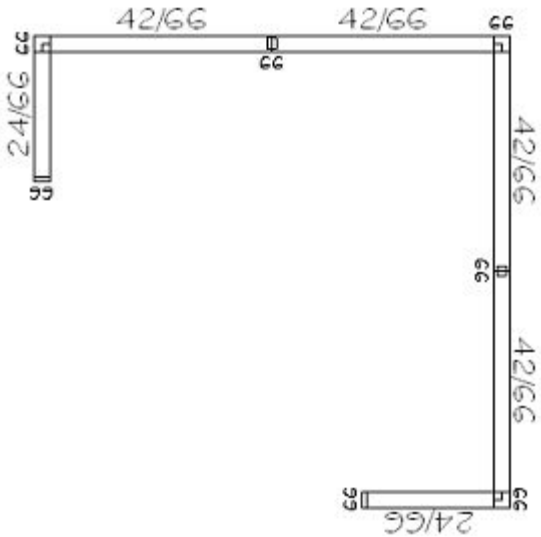
The placement of connectors can be controlled by a standard AutoCAD select objects crossing or window. This allows certain user preferences to be applied to particular areas of the furniture plan. To apply different products, change your user preferences and select different areas of the plan.

1. Click the **CAP AutoConnectors** button  on the CAP Auto-Connectors and More toolbar,
2. Select the area where you want to apply auto connectors by using a window or crossing.

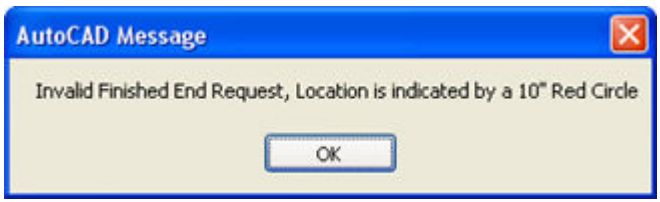
   Always completely select all the frames in a run when running AC. Failure to do so will result in incorrect parts being placed.
3. Press Enter to confirm your selection.

   You will see a brief message stating that AutoConnectors is working.

   Your drawing should look similar to the following.



If there was a problem applying autoconnectors, you will see the message below:



Problem areas will be encircled in red. Fix the errors, then run AutoConnectors again.

CAP Frame Validation Tool

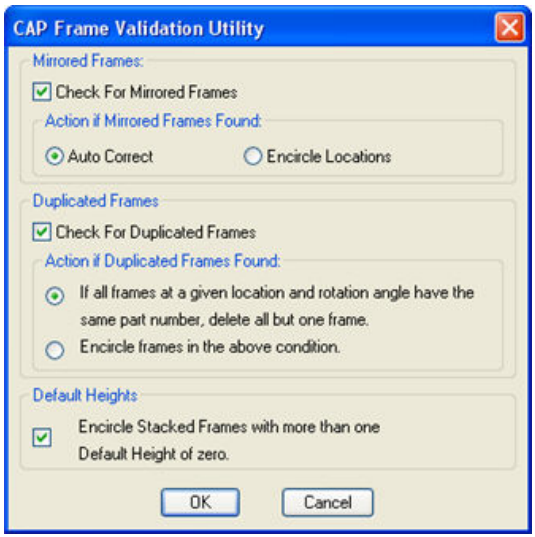
Have you ever run AutoConnectors and it didn't quite work the way it should have? Then, you find out later it was because of a mirrored frame or a stacker that had the wrong 3D height or even duplicate

frames on top of each other? In this topic, you will learn to use a validation tool that can flag or correct these very same problems.

After you have drawn your station, check your work using this tool.

1. On the CAP Auto-Connectors and More toolbar, click the **Frame Validation Tool** .

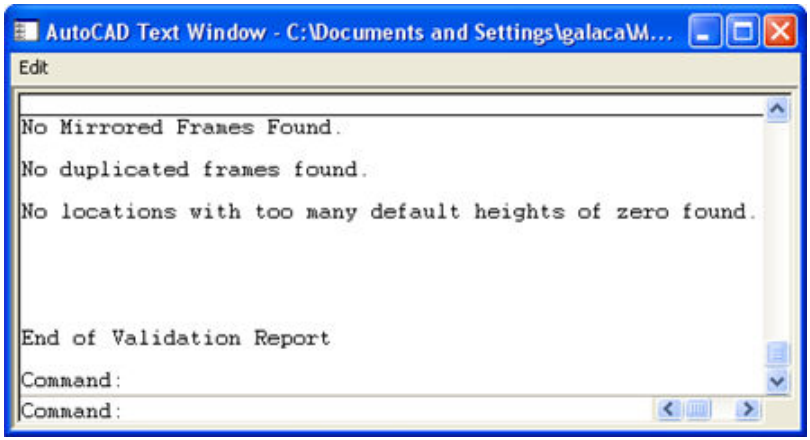
   This will bring up the **CAP Frame Validation Utility**.



2. In the **CAP Frame Validation Utility** dialog**,** make sure that **Check For Mirrored Frames**, **Check For Duplicated Frames** and **Encircle Stacked Frames with more than one Default Height of zero** are checked.
3. Next, you will need to decide if you want the problem automatically fixed or just flagged for now. The "flags" will be red circles that you will have to erase manually. Flag any problems first by selecting the **Encircle Locations** and **Encircle frames in the above condition** options.
4. Click **OK**.

5. Select the frames on the drawing then press Enter to confirm your selection.

   The AutoCAD text window opens with the validation report.



6. Read the report then close it. If problems exist in the drawing, they will be encircled in red.
7. After looking at the problems that exist in the drawing, you can rerun the **CAP Frame Validation Utility** to automatically correct them.

Don't forget to erase the red circles. Stackers with a default height of zero will still need to be manually corrected by using the Change 3D Height command found in the CAP Edit toolbar.

CAPtile

CAP Tile generates tile configurations and facilitates efficient installation drawings, using automatic elevations and accurate 3D views.

After you put all the frames and all the connectors in place, you can add some tiles to the frames.

To find out if a line uses CAPtile, consult the What's New help window, click **MFR Monthly Updates**, then **20-20 CAP/Worksheet Data Changes**.

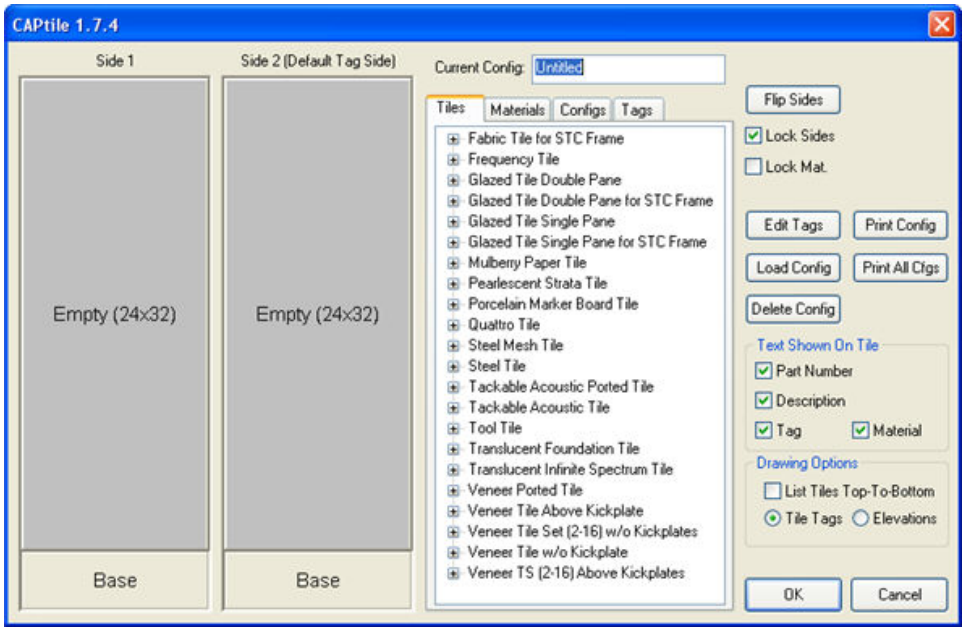
Put tiles on a frame

1. Click the **CAPtile** button CT on the CAP Auto-Connectors & More toolbar.
2. Select the frame or tag of the frame you want to work with. You only need to select one frame.

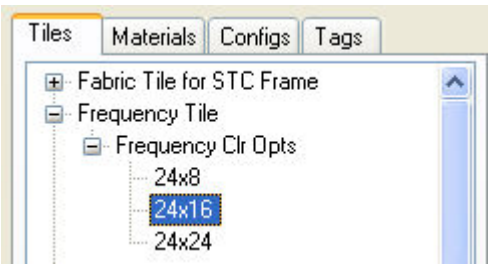
   This selected frame is called the **Parent frame**. Using the **Parent frame**, the configuration you build will only apply to frames matching the height of the parent.

   CAP Tile is only concerned with the height of a frame. The width is not important. Your configurations will be able to be applied to the same height frame regardless of width.
3. Press Enter and the ***CAPtile*** *dialog box* appears.

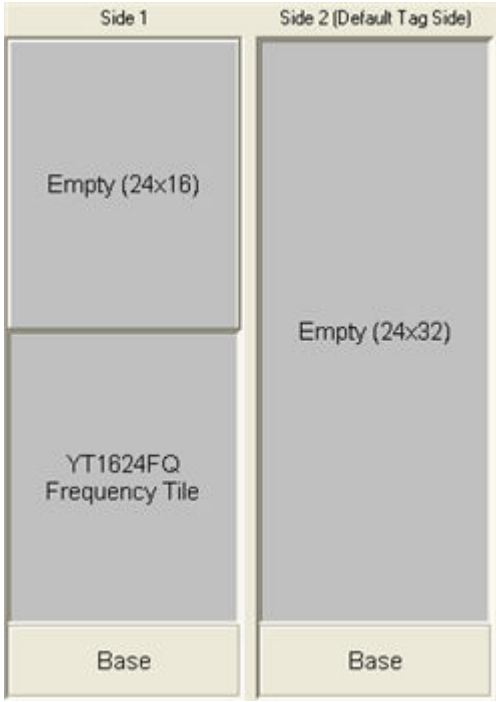
   Notice that on the left, **Side 1** and **Side 2** represent the two sides of the Parent frame. The right frame (**Side 2**) refers to the side of the frame that displays the tag.



4. From the **Tiles** tab, select the type of tile you want to place.



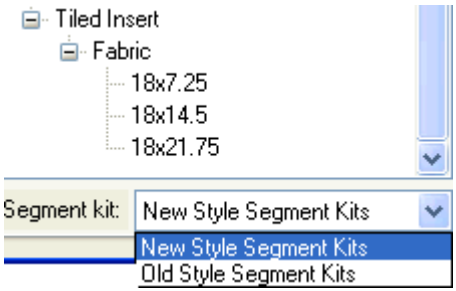
5. Drag and drop the tile to **Side 1** or **Side 2**.



Notice that the **Part Number** and **Description** of the tile are displayed. If you want to display the **Tag** and/or **Material**, check the boxes under **Text Shown on Tile**.

If you place a glazed tile, CAPtile automatically places a glazed tile on the other side.
If you have applied the tiles to the wrong side, click the **Flip Sides** button.

6. Some product lines require support, or segment kits, to be placed between tiles. If this is the case for the frame that you chose, you can select the segment kit type (if allowed by the manufacturer) after dragging the tile.



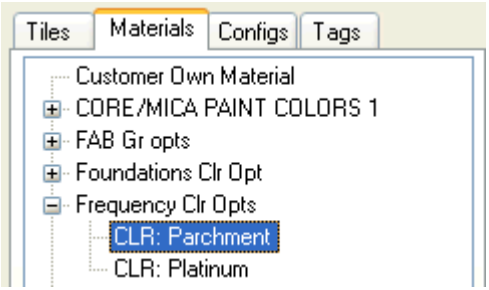
7. Continue selecting tile types until both frames are no longer empty. You will have to build the configuration from the bottom up.

   To delete a tile, drag it out of the frame. Or, right-click on it then select **Delete**.
   To change the color of the tile, right-click on it then select **Change Color**. Note that this simply changes the way it looks in the dialog, not the actual tile color.

   To save time, you can apply tiles to both sides of the frame simultaneously by checking **Lock Sides**.

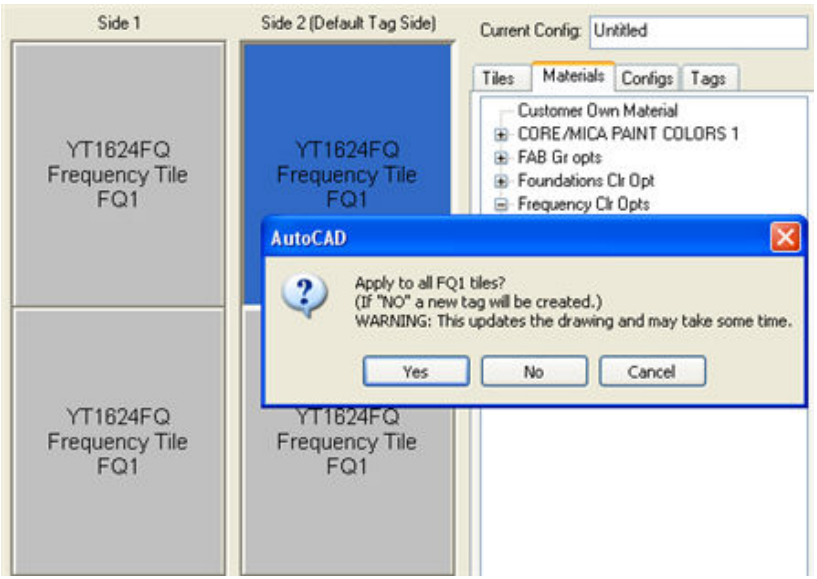
8. Click the **Materials** tab to apply the finishes or COM (**Customer Own Material**) to the frame.

9. Scroll through the list of finishes and select the finish you wish to apply.



10. Drag and drop the finish to the correct tile.

    If you have more than one tile of the same size, you will see a confirmation message when you apply the material. In the example below, there are four 24" high tiles. CAPtile can automatically apply the material to all tiles that match this height. For the purpose of this example, click **Yes**.



11. Continue applying all of the finishes to all of the tiles in the frame by using the drag and drop method.

    To save time, you can apply the same materials to both sides by checking **Lock Mat.**

12. Type a name for this tile configuration in the **Current Config** field.

    By saving this frame and tile configuration, you will be able to apply it at a later time. You must give it a unique name in order to continue.

13. Under **Drawing Options** select if you are want the frames displayed with **Tile tags** or **Elevations.**

    For this example, check **Tile tags**. See Create elevations for information about **Elevations**.

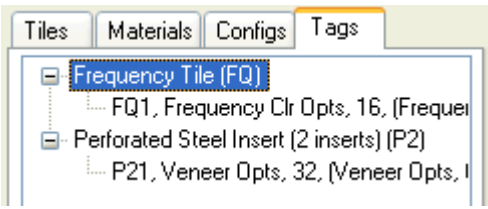
14. Leave **List Tiles Top to Bottom** unchecked. For information about this option and changing the appearance of Tile tags on the drawing, see Tile tags.

15. When you have fully applied the tiles and finishes to your frame, click **OK**.

16. Select the frames you want to apply this configuration to. Press Enter to confirm your selection.

17. Continue by making another Config.

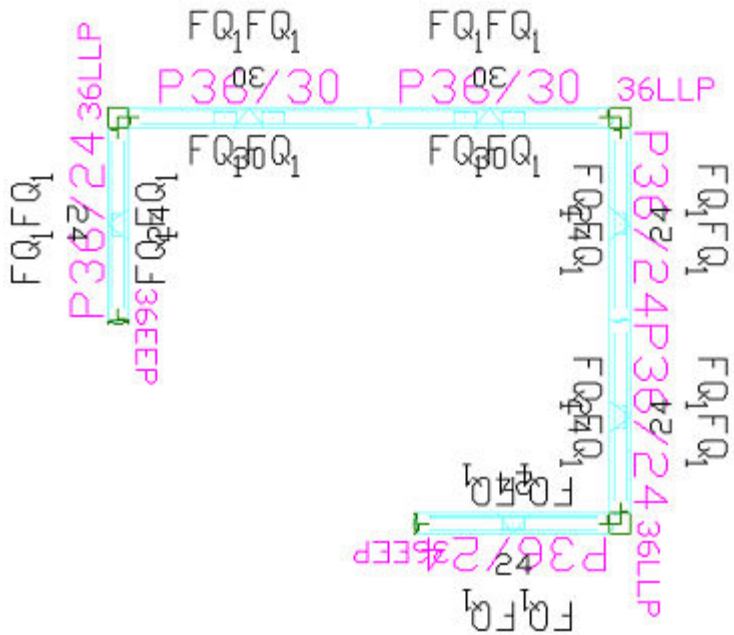
    To view information about tiles and materials used in other configurations, click the **Tags** tab. Single-click the tile you wish to view and the information will appear below.



If you plan to use the same tile with a material assigned to it in another configuration you **MUST** select that tile from the **Tags** tab instead of the **Tiles** tab. If you continue to pull identical tiles

from the **Tiles** tab you will create identical tiles with different tags that will not consolidate on the worksheet. Use the **Tiles** tab only when you are going to start placing a brand new type of tile or if you haven't applied any materials.

18. Your drawing should look similar to the image below:



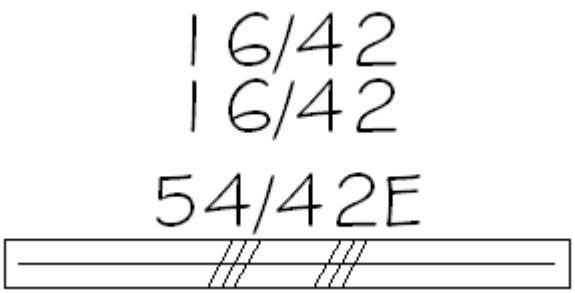
Move or copy frames

If you move or copy a frame, the tiles will move or copy with it. They are grouped together using the AutoCAD command GROUP. If they do not move with the frame then the AutoCAD setting Pickstyle is set to 0. You need to have it set to 1.

1. Type `Pickstyle` in the command prompt.
2. Enter `1`.
3. If you need to move individual tile tags on the frames use the **CAP Edit** command **Move Tag**.

Stacking frames

A feature incorporated into **Auto-Connector** enabled furniture lines is **Auto Stacking**. When you place a stacking frame on top of a base frame it reads the height of the base frame. It then changes the default height of the stacker to that height. This makes tiling and 3D conversions much easier. If you double stack, the second frame will read the frames below it and adjust its height accordingly. Then it will adjust the tag to be above the first stacker.



Here are a few things to remember when using the **Auto Stacking** feature:

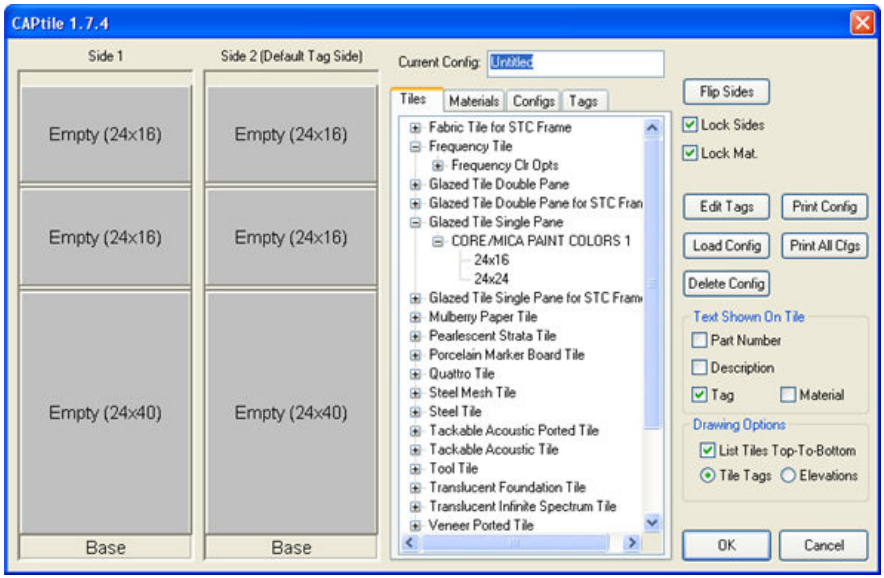
- Place panels from the bottom stacking up.
- Copying stackers onto frames does not change the default height or tag location.

- **Auto Stack** only works upon insertion from the catalog.
- If you place a base frame on a stacker it will change the default height of the base frame, which is probably not what you want.
- The insertion point and rotation of the stacker must be the same as the base frame it is being placed on.
- When running AutoConnectors with stacking frames present

Apply tiles to stacked frames

After you have finished placing stackers, save your work before you assign tiles to them.

1. Click the **CAP Tile** button  on the CAP Auto-Connectors & More toolbar.
2. Select the frame and the stacker using a crossing or window. Clicking on the tag is not sufficient, because you must select both the frame and the stacker. The CAP Tile window should look like the example below.

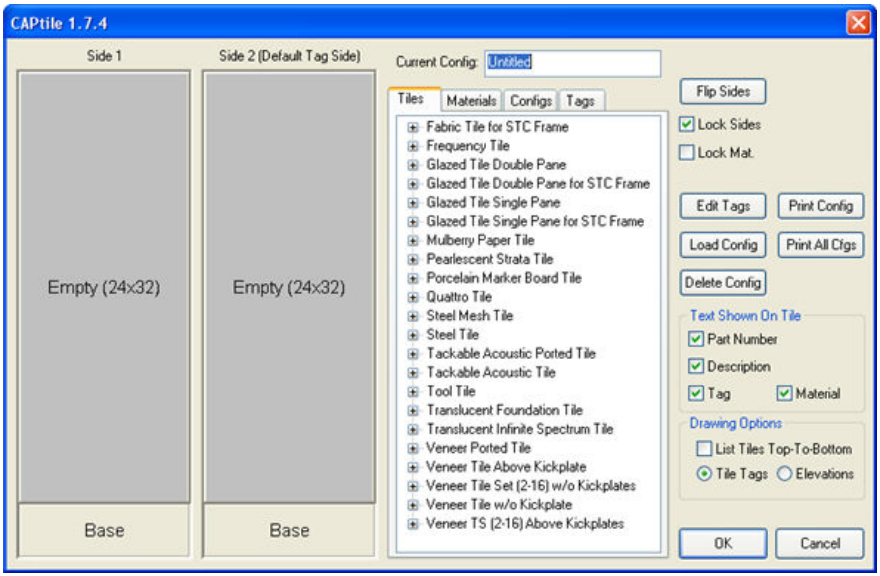


3. Apply the tiles following the steps outlined in the topic Put tiles on a frame.

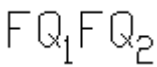
Tile tags

To change the order of tile tags on the drawing:

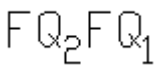
If you checked Tile Tags in the ***CAP Tile*** dialog, by default they are listed on the drawing from left to right, representing the tiles from the bottom to the top.



In the example below, the tag FQ1 corresponds to the bottom tile and the tag FQ2 corresponds to the top tile.



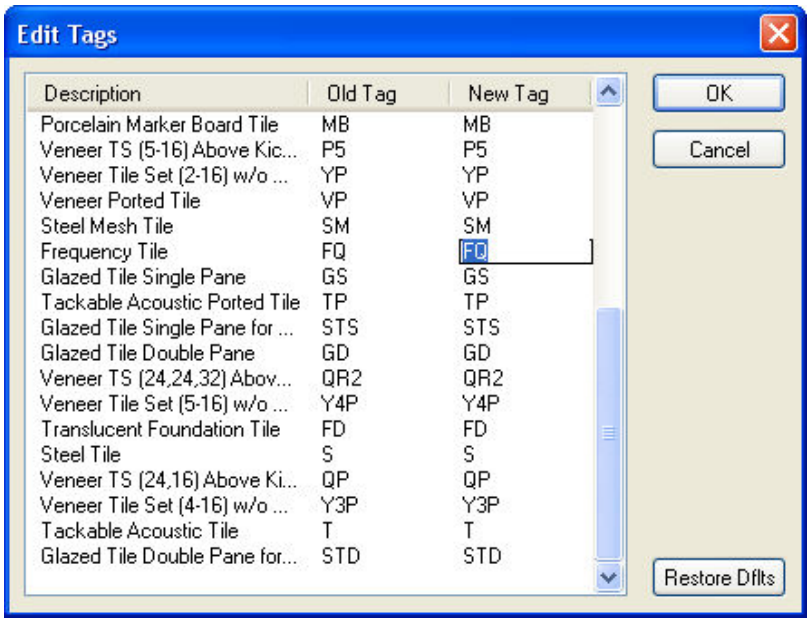
If you want the top tile to be listed first, check **List Tiles Top-to-Bottom:**



If you change the **Top-To-Bottom** setting on one frame it will update all the occurrences of that frame and default to be checked on all subsequent frames.

To change the Tag text that appears on the drawing:

1. Click **Edit** tags.
2. Double-click on the new tag field and type in the tag code.



3. Click **OK**.

   If you want to restore the default tags later, simply open the **Edit Tags** dialog again then click **Restore Dflts**.

Create elevations

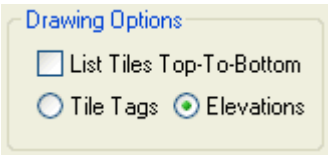
There are two ways to view frames with CAP Tile, one is listed by tags on the plan, the other is the CAP Tile Elevations System. This will improve checking and installation drawings.

To create elevations from the **CAPtile** dialog:

1. Select the tiles, materials and type in the Configuration name.

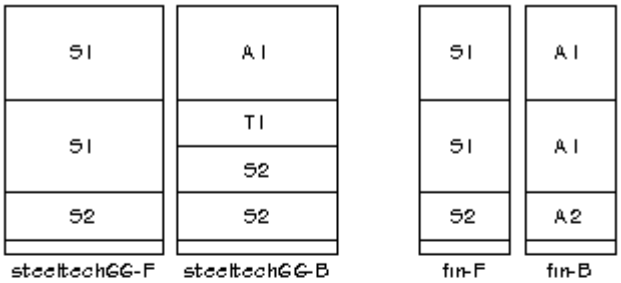
   To review the steps, see Put tiles on a frame.

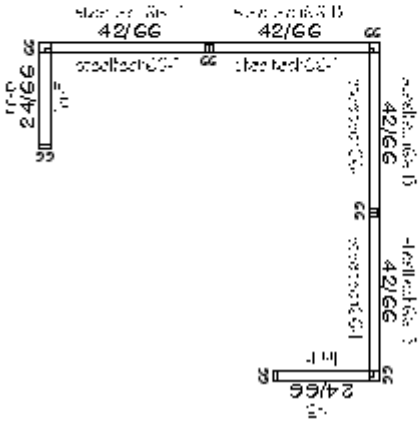
2. Instead of selecting **Tile Tags**, select **Elevations** before you click **OK**.



3. Select the frames you want to apply this configuration to. Press Enter to confirm your selection.
4. AutoCAD will prompt you to pick the locations for the elevations. Pick a point away from your layout.

   The configurations will have "-F" or "-B" appended to the name to indicate the Front Elevation and the Back Elevation respectively. For an example, see the image below.





The elevations are AutoCAD blocks that are generated from the frames.

Switch between elevation and tag mode

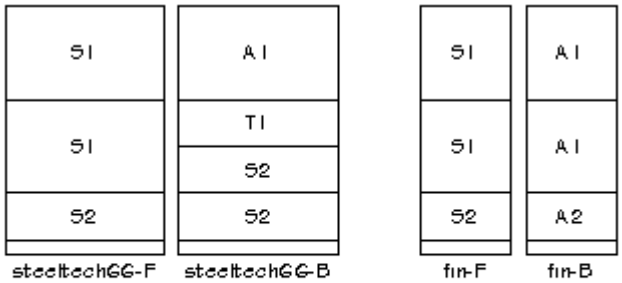
If you already created your configuration using the **Tile tags** option, you can change to elevation mode by following the steps below:

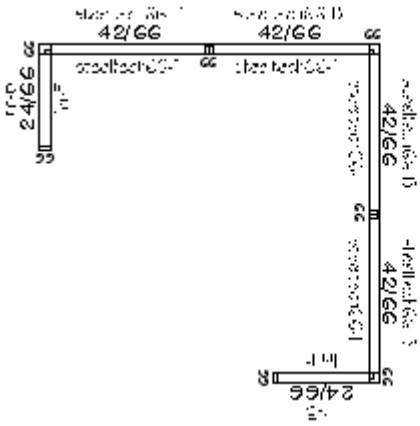
1. Click the **Refresh Tile Configurations** button on the CAP Auto-Connectors & More toolbar.
2. Select **Show Elevations** and click **OK**.

3. Select your frames. Press Enter to confirm your selection.

   The tile tags will be changed to the configuration names.
4. AutoCAD will prompt you to pick the locations for the elevations. Pick a point away from your layout.

   The configurations will have "-F" or "-B" appended to the name to indicate the Front Elevation and the Back Elevation respectively.





When you make changes to the configurations, the elevations will automatically be updated.

You can switch from **Elevation** mode to **Tag** mode by selecting **Show Tags** in the **Refresh Config Options** dialog. Check **Delete Existing Elevations** to delete the elevations on the drawing.

Delete tiles from a frame

You may have a frame that you want to delete the configuration from.

1. Type **Cleanframe** at the Command prompt and press Enter.
2. Select the frame you wish to change. Press Enter to confirm your selection.

   The tiles are deleted from the frame.

Configurations

Redefine a configuration

From time to time the client may decide to change a part of the design. A benefit to a frame and tile panel system is the flexibility of design. There are specific rules that must be followed to maintain the integrity of your named configurations.

To change a configuration throughout the entire drawing:

1. Click the **CAP Tile** button CT on the CAP Auto-Connectors & More toolbar.
2. Select a frame that contains the configuration you want to change.
3. In the **CAP Tile** window drag off the tiles you do not want and replace them with the new tiles.
4. Click **OK** in the **CAP Tile** window. The name of the configuration remains the same, but the tiles have changed.

   All the frames with that configuration will be updated to the new configuration, and will maintain the original name.

Do not edit the configured frames outside of CAP Tile, doing so results in mismatches between Tile Configurations, Tags, Names and what appears in the drawing.

Rename a configuration

To rename the configuration **without** changing any tiles or materials:

1. Click the **CAP Tile** button CT on the CAP Auto-Connectors & More toolbar.
2. Select a frame with the configuration that you want to rename.
3. In the **CAPtile** dialog, type the new name beside **Current Config.**
4. Click **OK.**

   All the frames with that configuration will be updated with the new name.

Change one configuration

You may have one frame with a configuration already applied to it and you want to change the configuration for that frame only, but not the other frames with the same configuration.

1. Click the **CAP Tile** button CT on the CAP Auto-Connectors & More toolbar.
2. Select the frame you wish to change.
3. In the **CAP Tile** window drag off the tiles you do not want and replace them with the new tiles.
4. Type in a **new** configuration name.
5. Click **OK** in the **CAP Tile** window.
6. Select the frame or frames you wish to change.

   This will create a new configuration and leave the original configuration alone.

Create a configuration based on an existing one

There are a few frames of one configuration that need to be changed. You want to maintain most of the original configuration but change a few tiles. In this situation is that you will be creating a new configuration, you can either use an empty frame or an existing one. We will walk through both methods.

1. Click the **CAP Tile** button CT on the CAP Auto-Connectors & More toolbar.
2. Select an empty frame of the proper height.
3. In the CAP Tile window click the **Configs** tab.
4. In the **Configs** list, find the configuration you wish to base this new configuration on.
5. Drag that Config name over to the empty frames.
6. When the message "Are you sure you wish to overwrite the current tiles?" comes up, click **Yes**. Remember that you have no tiles on this frame, so it will not overwrite anything.
7. Drag off the tiles you want to change and drag on the new tiles.

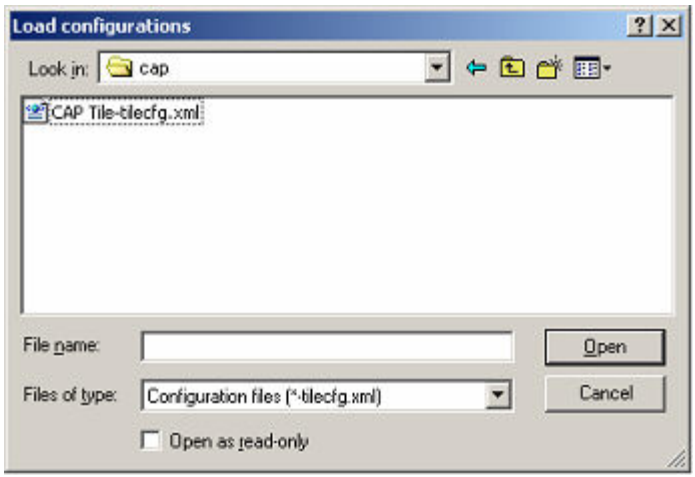
   You **must** change the configuration, otherwise you will get a message stating that the configuration already exists.
8. Give this configuration a **new** name.
9. Click **OK**.
10. In the drawing select the empty frame you started with. Press Enter to confirm your selection.

Import tile configurations

Tile configurations can be reused in other drawings. As you create them in one drawing they are being saved to a file in the same location as the drawing. The file will have the same name as the drawing with

"-tileconfig.xml" appended to it. So, for example, you may have a **test.dwg** and a **test-tileconfig.xml** in the directory. Once the file is there you can import it into other drawings.

1. Click the **CAP Tile** button CT on the CAP Auto-Connectors & More toolbar.
2. Select a frame.
3. In the **CAPtile** dialog, click the **Load Config** button.
4. From the dialog box select the .xml file you want to import, then click **Open**.



5. In the **Select Config** dialog, the available configurations are displayed. Select one or several configurations then click **OK**.

   The configurations will now be available in the **Configs** tab of the **CAPtile** dialog.

Only the configurations that are appropriate for the tile size will appear in the list.

Apply a tile configuration to frames

Once you have created tile configurations, it is easy to apply them to frames.

1. Click the **CAP Tile** button CT on the CAP Auto-Connectors & More toolbar.
2. Select a frame.
3. In the **CAPtile** dialog, click the **Configs** tab.
4. Double-click on the Configuration you want to apply.
5. When you see the prompt to immediately use the Config in the drawing, click **Yes**.
6. Select the frames then press Enter to confirm your selection.

Print configurations

1. Click the **CAP Tile** button CT on the CAP Auto-Connectors & More toolbar.
2. Select a frame.
3. In the **CAPtile** dialog, click either:

   - **Print Config** to print the **Current Configuration**
   - **Print All Cfgs** to print some or all configurations in the drawing. If you click this button, select the configs to print from the **Print which configs** dialog, then click **Print**.
4. When the **Print** dialog appears, select your printer then click **OK**.

Delete configurations

While you are making changes to an existing configuration or creating a new one, you can choose to delete unused configurations.

1. Click the **CAP Tile** button on the CAP Auto-Connectors & More toolbar.
2. Select a frame.
3. In the **CAPtile** dialog, click **Delete Config.**
4. In the **Delete which configs** dialog, select the configuration then click **Delete**.

   You can delete a configuration only if it is not used in the drawing.
5. On the confirmation message click **Yes**.

Find all configurations with the same name

To locate frames that contain a specific tile configuration in the drawing:

1. Type **Locateconfig** at the Command prompt and press Enter.
2. At the Command prompt enter the configuration name you wish to find and press Enter.
3. Press Enter to select a color for the Circle that will be placed, indicating the placement of each configuration.

   A circle will be placed around each panel that has that configuration name applied to it. You can erase these circles once they are no longer needed.

Correct missing or damaged tile configurations

Running this command processes through every tile configuration in the drawing, checking and validating configuration names and tags.

This command is capable of constructing, from tile data in the drawing, a missing or damaged Tile Configuration XML file (drawingname-Tilcfg.xml).

1. Click the **Update to Elevation System** button .
2. Press Enter when you see the following prompt:

   Enter prefix for Automatic configuration naming or Enter to be prompted:
3. Enter Y or N when you see the following prompt:

   All Configurations have been updated! Continue with Refresh? Y/N <Y>:

   It is highly recommended to reply 'Y'. This launches the Refresh Configurations System, providing a convenient means to update configurations in the drawing, as well as controlling which display mode is desired.

Create a tile schedule in your drawing

In this topic, you will learn how to create a Tile Schedule. The Tile Schedule will automatically place a schedule, similar to a legend, in your drawing. The schedule lists the Tag, Type of tile, Finish and the height of that tile.

1. Click the **Generate Tile Schedule** button on the CAP Auto-Connectors & More toolbar.
2. For the text height, enter 4.
3. For the insertion point, click below your workstation.

   Your schedule should appear similar to the following.

Tag	Type	Finish	Height
A_1	Acoustical Tile	Fabric, Crosscurrents, Chinook	16.0000
F_1	Face Tile	Fabric, Crosscurrents, Kara Sea	16.0000
G_1	Glazed Window Tile, Middle/Bottom	Painted, Black Umber	16.0000

* Tiles are Listed Top to Bottom

   The schedule is not a block and can be edited.

4. If you make changes to the tiles used or use new ones in your configurations, simply click the **Generate Tile Schedule** button again. The schedule will be updated with the new information.

Corrections to make when converting to 3D

When you convert frames with CAPtile to 3D there are a few tricks you need to use to get the drawing to be correct.

Usually the tiles will automatically go to the right height, however some tiles may not be at the height you wish. Also, if you did not put your stackers at the correct height you will need to adjust them.

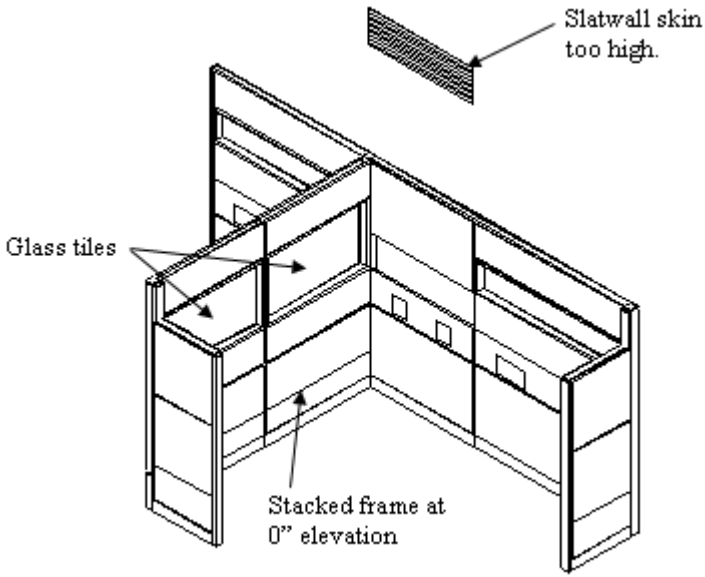
Warning! Do the following on a copy of the configuration. Modifying the **pickstyle** and changing the 3D height of a symbol can **break** your CAPtile configuration.

---

1. Type `pickstyle` at the command prompt, then enter `0` for the new value. This way you can select the tile separately from the frame.

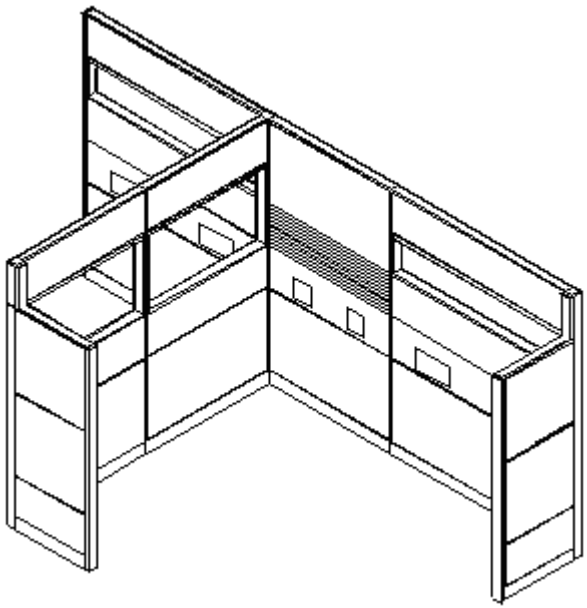
   You do not need to change the pickstyle if you need to change the height of top caps.

2. Use the **Change 3D Height** button  on the CAP Edit toolbar to change the elevation of the frames or tiles.



3. When viewing in hidden lines, you need to freeze the actual layer for glass (A-FURN-3-PNLS-WINDOW) for glass tiles to appear transparent and reflective.

   The image below displays the corrected drawing:



Panel Builder

About Panel Builder

The CAP Panel Builder technology is designed to construct and manage panel configurations. These configurations often include frames, stacking frames, and tiles. However, depending on the catalog in use, Panel Builder can also be used to create field cut panels of custom width, floor-to-ceiling configurations with optioned heights and other manufacturer-specific design needs.

Panel Builder allows designers to easily and accurately specify panels, space plan with those panels, and apply changes to some or all of the panels placed within a drawing. It does all of this in a part number independent environment. Panel Builder allows designers to space plan naturally, all the while maintaining an accurate Bill of Materials behind the scenes.

Panel Builder eliminates the need to navigate complex catalog hierarchies to find a desired base panel and (when needed) stacking panel. Based on user selections of panel properties, Panel Builder validates and constructs the required style numbers and options as panel configurations. You save finished configurations under a user-defined name in a custom catalog, much like a CAP Standard. These configurations then behave as one finished assembly rather than many individual elements.

Since all available widths of the stack configuration are automatically generated in the custom catalog, you can use these configurations to drag and drop stacked panels from the CAP Designer Explorer bar into the drawing. Or, use your stored configuration to replace or update any set of panel configurations already placed in the drawing.

> Since Panel Builder is an application shared across shared across multiple manufacturer product lines, there will be some functionality that will not apply to every manufacturer.

Launch Panel Builder

In CAP Designer, you can launch Panel Builder from the Automation Center (available only for manufacturers with installed content that has new generation CAP automation) or directly from the CAP Designer toolbar.

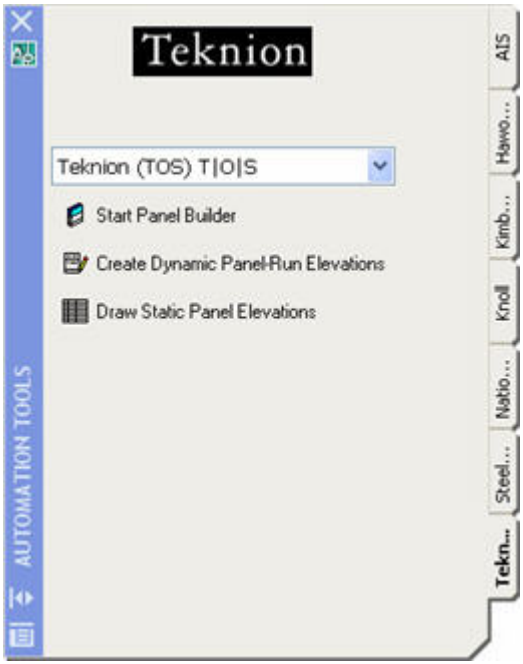
From the Automation Center:

1. Click the **Automation Center** button on the **CAP Designer** toolbar.

   Or from the **CAP Designer** menu, select **Automation Center**.

   The **Automation Tools** dialog opens.



2. Click the desired manufacturer's tab on the side of the dialog.
3. Select the product line you would like to work with from the dropdown list in the Automation Tools dialog.
4. Click **Start Panel Builder**. Panel Builder opens with the product line automatically selected.

From the CAP Designer toolbar :

1. Click the **CAP Panel Builder** button  on the **CAP Designer** toolbar.

Or from the **CAP Designer** menu select **CAP Panel Builder**, **Launch Panel Builder**.

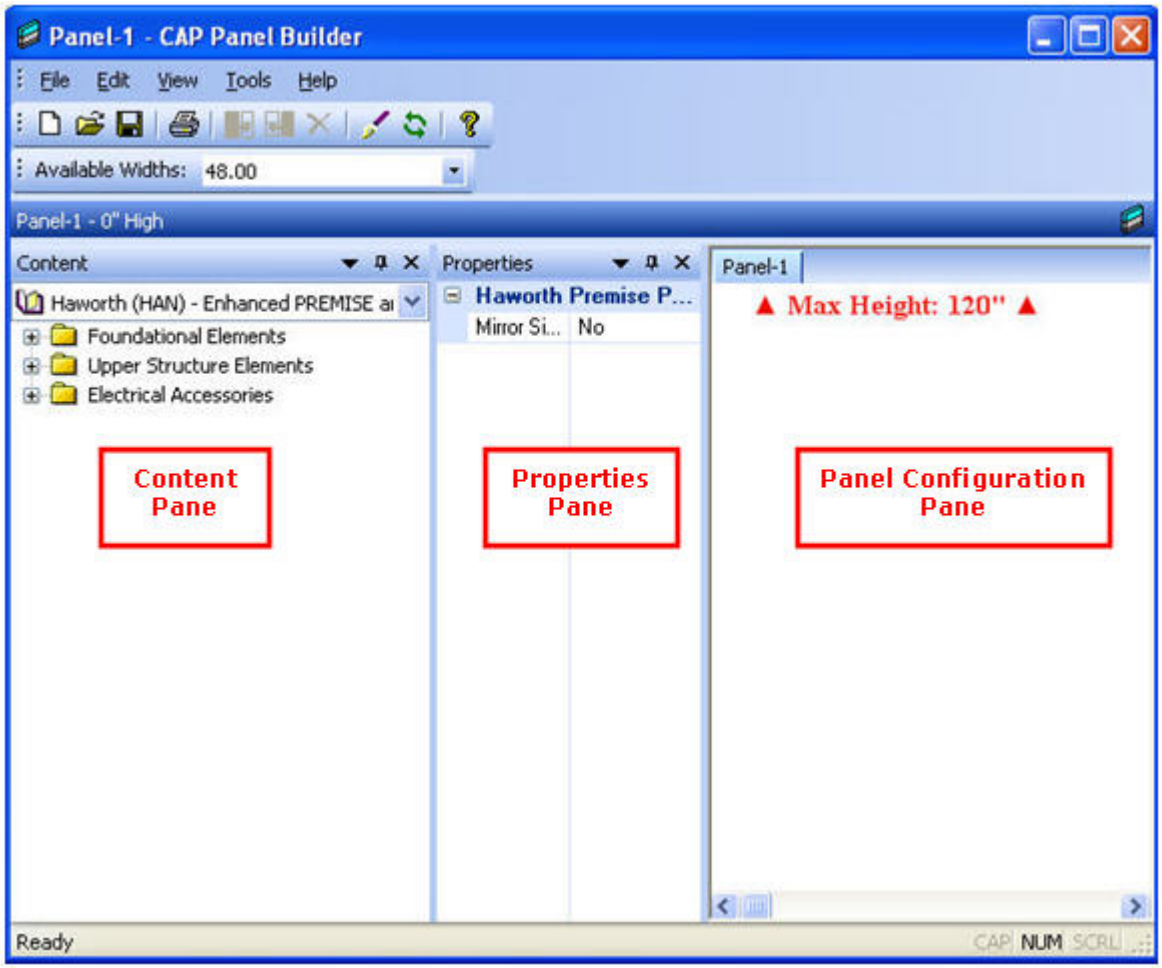
The **Panel Builder** dialog opens.

2. Once you are in Panel Builder, you can create a panel configuration.

   Before you do so, we recommend that you become familiar with the Panel Builder interface first.

While Panel Builder is usually run from CAP Designer or Worksheet, it is a standalone application and does not require any other software to be running.

Panel Builder interface



Upon first launch, Panel Builder appears as shown above and consists of:

- Content pane - provides access to the components that can be placed in the panel configuration
- Properties pane - allows changes to the characteristics of each component
- Panel Configuration pane - area where you build the panel configuration
- Menu bar - lists the tasks you can do in 20-20 CAP Panel Builder
- Toolbar - allows you to perform frequent operations quickly with icons
- Caption bar - displays the total height of the stack assembly
- Status bar - shows a description when you hover the mouse pointer over a toolbar icon or a menu command

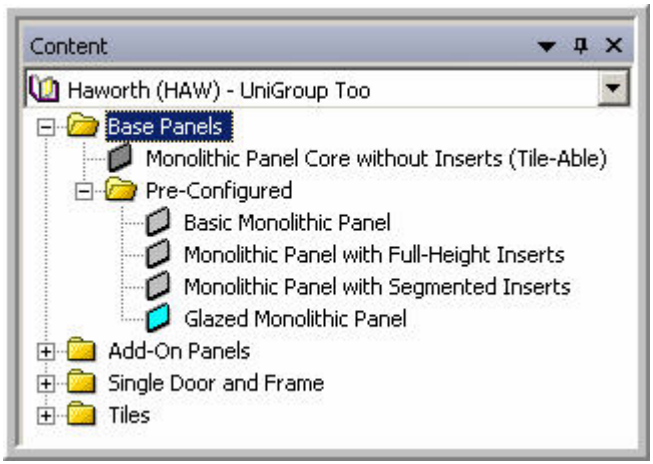
The Content and Properties panes are moveable and can be docked in different locations. You can also auto-hide them.

Content pane

The Content Pane is where you select elements to build a panel configuration. Element is the term for any item found in the Content pane. Depending on the catalog, elements include base panels, stacking panels, tiles, doors, base raceway covers and other parts needed to completely specify a Panel Builder configuration.

Much of the layout of the Content Pane depends on the nature of the catalog; a catalog that does not have doors naturally would not have a folder for doors. A Panel Builder catalog can have as many or as few folders and folder levels as the manufacturer decides.

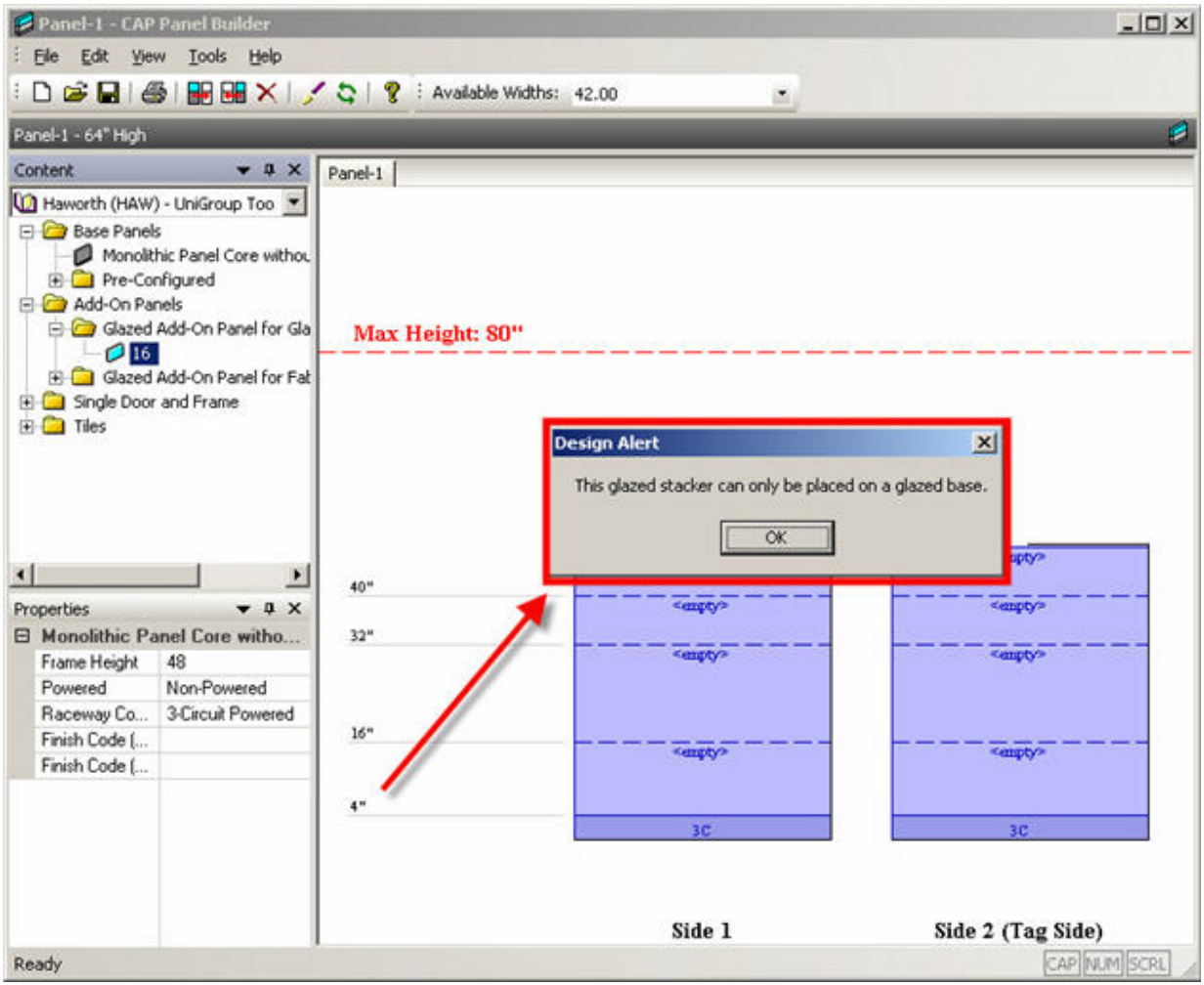
The Content Pane in Panel Builder is separate from the Content tab in CAP Explorer. It is designed to present the available elements in a logical and intuitive manner. At the bottom level of the navigation path of the Content Pane are the actual class instances (elements) that can be placed into the Panel Configuration Pane.



Panel configuration pane

Once you select an element in the Content Pane, you place (drag and drop) it into the Panel Configuration Pane. If the class instance is a panel, that panel is placed. If it is a tile, it is placed at the location on the panel it is dropped on.

For each Panel Builder catalog, rules exist to prevent illegal configurations. In the example below, a base panel has been placed and the user is attempting to place an illegal stacking panel above it. Panel Builder issues a Design Alert (highlighted in red below) to prevent the illegal configuration.



The Configuration Pane can have underlying rules that prevent almost any illegal configuration:

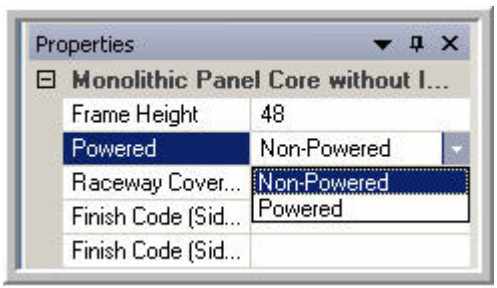
- ❖ Rules that control the location, type, or number of tiles allowed on panel.

- Rules to prevent certain tiles in certain locations based on the type of stacking panel in the configuration.
- Rules that control the number or type of stacking frames.

In addition to the catalog specific rules exampled above, the Configuration Pane has some fundamental rules built into its user interface. Rules like "tiles cannot overlap or extend beyond the top of the frame" and "stackers cannot be placed inside base frames" are built-in.

Properties pane

Once you place an item into the Panel Configuration pane, all of its available properties are displayed in the Properties Pane. In the example below, a power property has been defined for a panel.



Notice that you need to know nothing about the underlying structure of the electronic catalog. If changing this panel from Non-Powered to Powered changes the part number of the panel, Panel Builder does it automatically behind the scenes. If the change requires a change to the options of the panel, Panel Builder handles that as well. In either case, it is transparent; you simply select the property you wish to apply, without the need for searching though the table of contents for a different part or diving into the details of option trails.

In addition to being able to change part numbers and options, a property can also add additional parts to the configuration. In the above example, if the various raceway covers were separate part numbers, Panel Builder would be configured to add them.

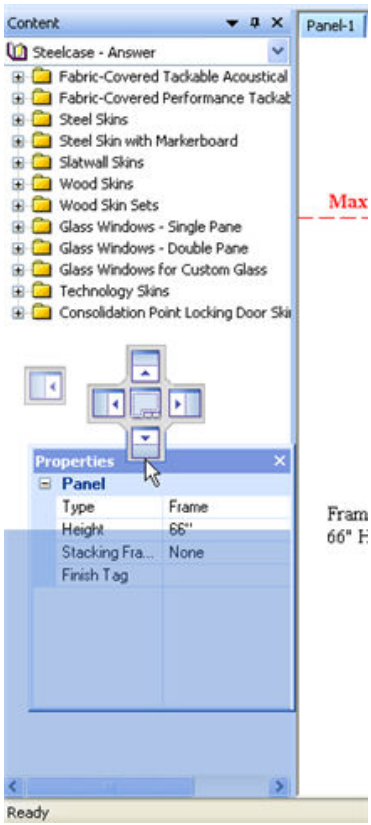
Properties can be dependent on other property choices. For example, if a panel only has three Raceway Cover options when it is Non-Powered but has nine when it is powered, Panel Builder will correctly support this.

Move or dock the Content or Properties pane

To customize the Panel Builder screen, you can drag the **Content** or **Properties** pane to various locations.

Example - move the Properties pane:

1. Hold down the left mouse button while the cursor is positioned over the **Properties** pane's title bar.
2. Drag the **Properties** pane so that it is hovering over the **Content** pane area, then hover over the docking arrows that appear as shown below:



3. As displayed above, hovering over the arrows displays a shaded area where the pane will dock. Release the mouse button when the desired area is shaded to re-dock the pane at the new location:

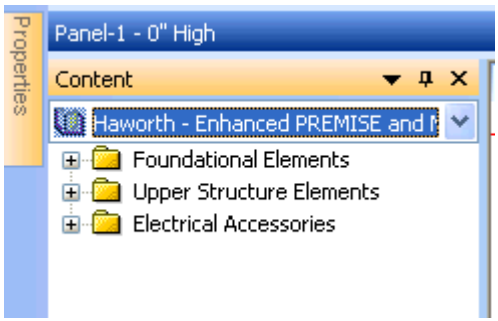
Auto-hide the Content or Properties pane

Another way to customize the Panel Builder screen is to auto-hide the **Content** or **Properties** pane so that is only displayed when you need to use it.

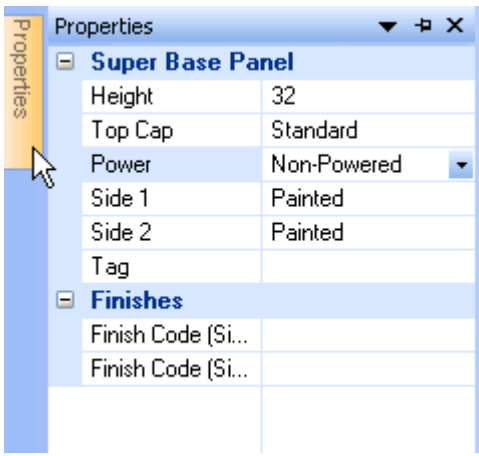
Example- hide the Properties pane:

1. Click the **Auto Hide** icon on the toolbar.

Notice that the **Properties** pane is hidden, but you can still see its title bar beside the **Content** pane:

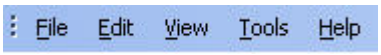


2. If you want to access the **Properties** pane simply hover over its title bar to display it.



Menu bar

Located on top of the 20-20 CAP Panel Builder screen are menu names (from File to Help). They list the tasks you can do in 20-20 CAP Panel Builder.



Click a menu to open it.

Underlined letters in menu and command names indicate they can be accessed through a shortcut.

For example, to quickly open the **File** menu:

1. Press ALT+F to open the **File** menu.
2. Type in a letter corresponding to the underlined letter of the command you need. For instance, type the letter “S” to save.

   Some commands have even quicker shortcuts. Instead of opening menus, you can directly access a command by pressing CTRL plus a letter. For example, CTRL + letter “O” displays the **Open** dialog.

To quickly find the help topics and shortcuts that correspond to each menu item, see the following under Command reference:

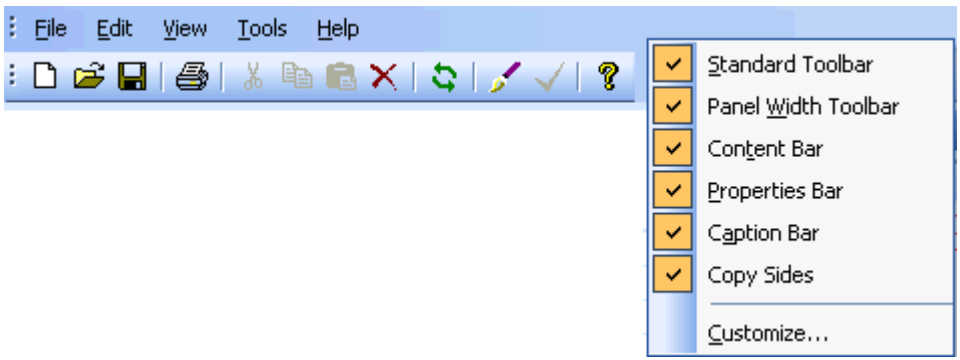
- File menu
- Edit menu
- View menu
- Tools menu
- Help menu

Toolbars

Show or hide a toolbar

1. From the **View** menu, select **Toolbars**.

   Or, right-click in the toolbar area.



2. Select the toolbar name to toggle the toolbar on and off.

   If it is off (no ☑ next to the name), click it and the toolbar will appear on your screen (a ☑ will also appear next to its name). Selecting it again will turn it off.

Move a toolbar

A toolbar can be docked or floating. It is docked when no title bar appears and a move handle is available on the left side or on top of the toolbar.

Example of a docked toolbar:

Example of a floating toolbar:

- To undock a toolbar and leave it floating, click and hold the left mouse button on the move handle on the left side of the toolbar , then move the toolbar anywhere you want and release the mouse button.
- To dock a floating toolbar, click and hold the left mouse button on the title bar, then move the toolbar to the desired spot and release the mouse button.
- To remove a floating toolbar from the screen, click the x in the title bar; to remove a docked one, use **View, Toolbars**.

Add and remove buttons

Customizing a toolbar consists of adding buttons to a built-in toolbar.

1. Click on **View**, **Toolbars**, **Customize**.
2. Click the **Commands** tab in the Customize dialog.
3. To remove a button from a toolbar, click the button then drop it anywhere off the toolbar.

To add a button to a toolbar, under Categories, highlight the toolbar you want to choose icons from. Click on a button then drag it to the desired toolbar.

4. Click **Close** when done adding/removing buttons.

To reset a modified built-in toolbar:

If you added or removed buttons to a built-in toolbar, here is how you can retrieve the original toolbar:

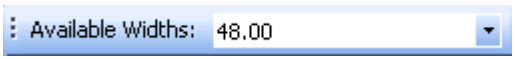
1. Choose **View**, **Toolbars**, **Customize**.
2. Click the **Toolbars** tab.
3. Click the modified built-in toolbar.
4. Click **Reset**.
5. Click **Close**.

Standard toolbar

Icon	Name	Shorcut	Function
	New	Ctrl+N	Create a new panel configuration
	Open	Ctrl+O	Open a panel configuration
	Save	Ctrl+S	Save the current panel configuration

Icon	Name	Shorcut	Function
	Print	Ctrl+P	Print the current panel configuration
	Copy Side 1 to Side 2		Copy tiles or skins from side 1 to side 2
	Copy Side 2 to Side 1		Copy tiles or skins from side 2 to side 1
	Delete	Delete	Delete the selected item from the panel configuration
	Refresh		Refresh the panel configuration
	Apply Finish Code		Apply a finish code to the panel configuration
	About		Displays the software version

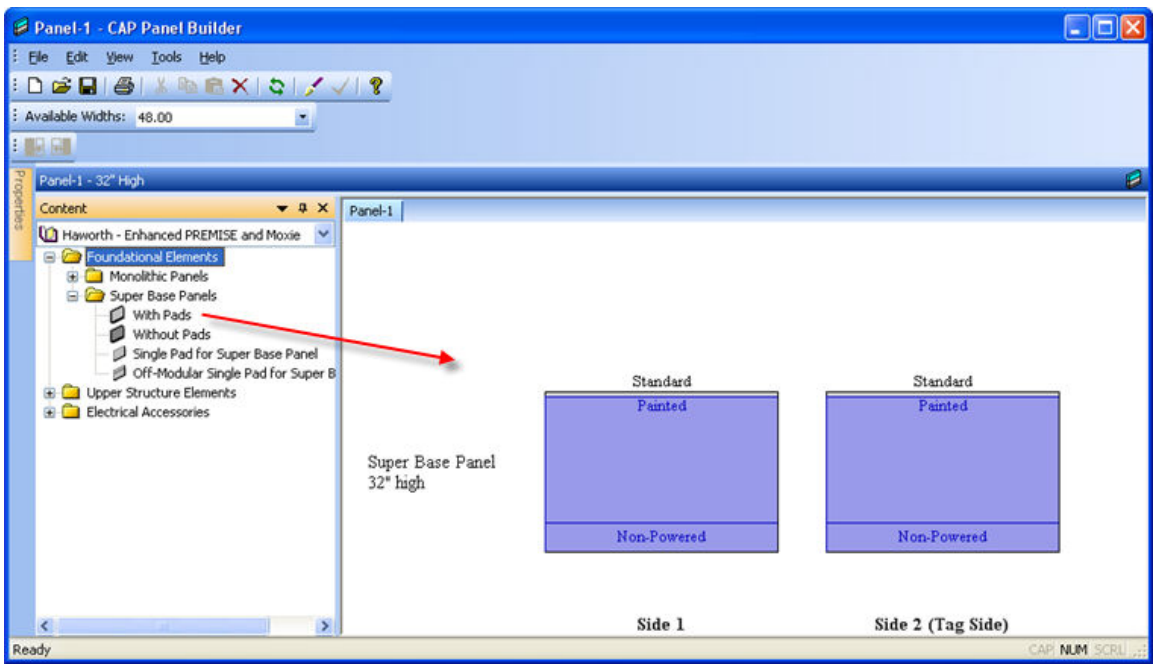
Panel Width toolbar



Create a panel configuration

The procedure for creating configurations varies between manufacturers and even between catalogs for some manufacturers. The basic design flow remains the same.

1. Launch Panel Builder.
2. You can dock the **Properties** pane under the **Content** pane or auto-hide it.
3. If the appropriate catalog is not yet selected, click on the dropdown arrow in the **Content** pane.
4. Select the product from the **Content** pane and drag it to the into the configuration window on the right, where it snaps into place.



First place the base frame, then any stacking frames, and finally apply any tiles. Note that nomenclature varies between manufacturers. This step might require that you place panels and then add elements to those panels. Panel Builder follows each manufacturer's nomenclature.

If you are configuring Knoll Dividends Horizon open position panel frames, you will be prompted to select structural options. For more information about 20-20 Options, see 20-20 Options help.

As you put your panel configuration together, keep in mind that Panel Builder has many fundamental and catalog-specific rules set in place. Go to Configuration Design Rules for more information about this.

The caption bar at the top displays the total height of the stack assembly.

If you want to remove a panel from the configuration, click on it then press Delete or right-click and select **Delete**.

5. You can now set the properties (such as top cap type, power features, materials, etc.) of each element in the configuration.

Note: When building a configuration in Panel Builder, if the tiles on one side are the same as the other, you can use the **Copy Side** buttons to quickly duplicate the tiling. After copying tiles, be sure to update the Finish Codes as required.

Warning: The copy side commands bypass the rules for tile placement. Use it only when you are certain that the configuration can support the same tiles on both sides.

Set Element Properties

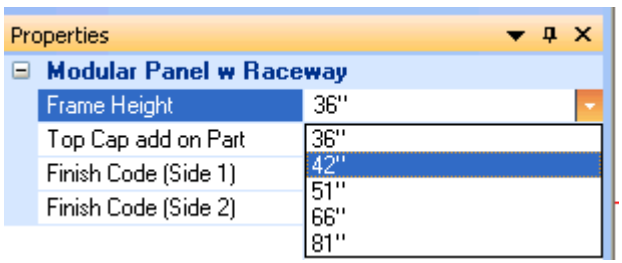
Once you have placed the elements in the Panel Configuration Pane, you may start assigning specific properties to those elements.

1. Select the element in the Panel Configuration Pane to which you would like to assign properties.

   Note: If you have a panel configuration in the Panel Configuration Pane that already has both panel frames and tiles in it, you would click one time to set the properties for the tile or else click a second time to select the properties for the frame instead.

   The properties associated to the selected element appear in the Properties Pane. Properties are catalog-specific and vary.

2. Click in the field to the right of the property name to make a different selection for that specific property's drop-down list (For example, change a frame height from 36" to 42").



   The new selection is now displayed in that property's field and, if necessary, the element's display is changed in the Panel Configuration Pane.

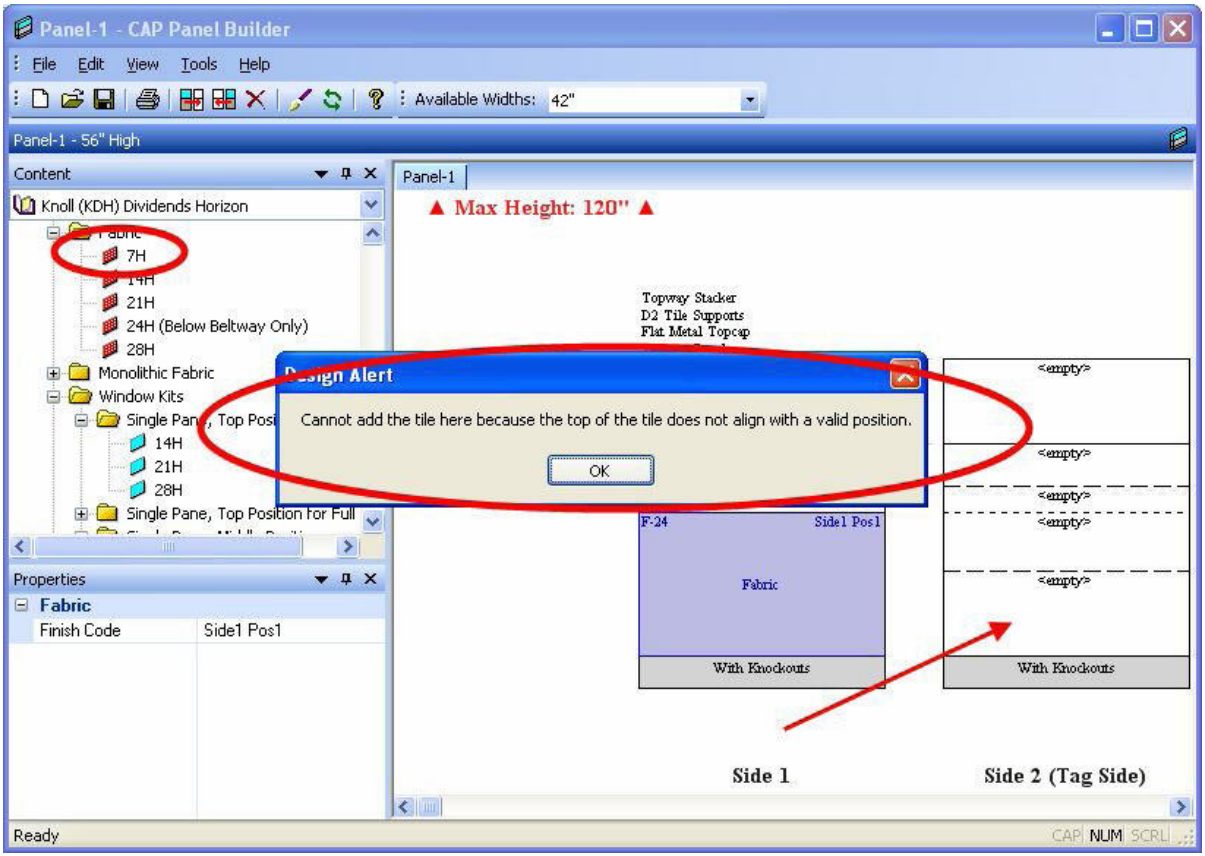
Note: Changing properties can change the part number of the underlying element, or it may change the options of the element or possibly add parts to the configuration. You simply have to select the properties. Panel Builder takes care of making the correct underlying changes.

Design rules

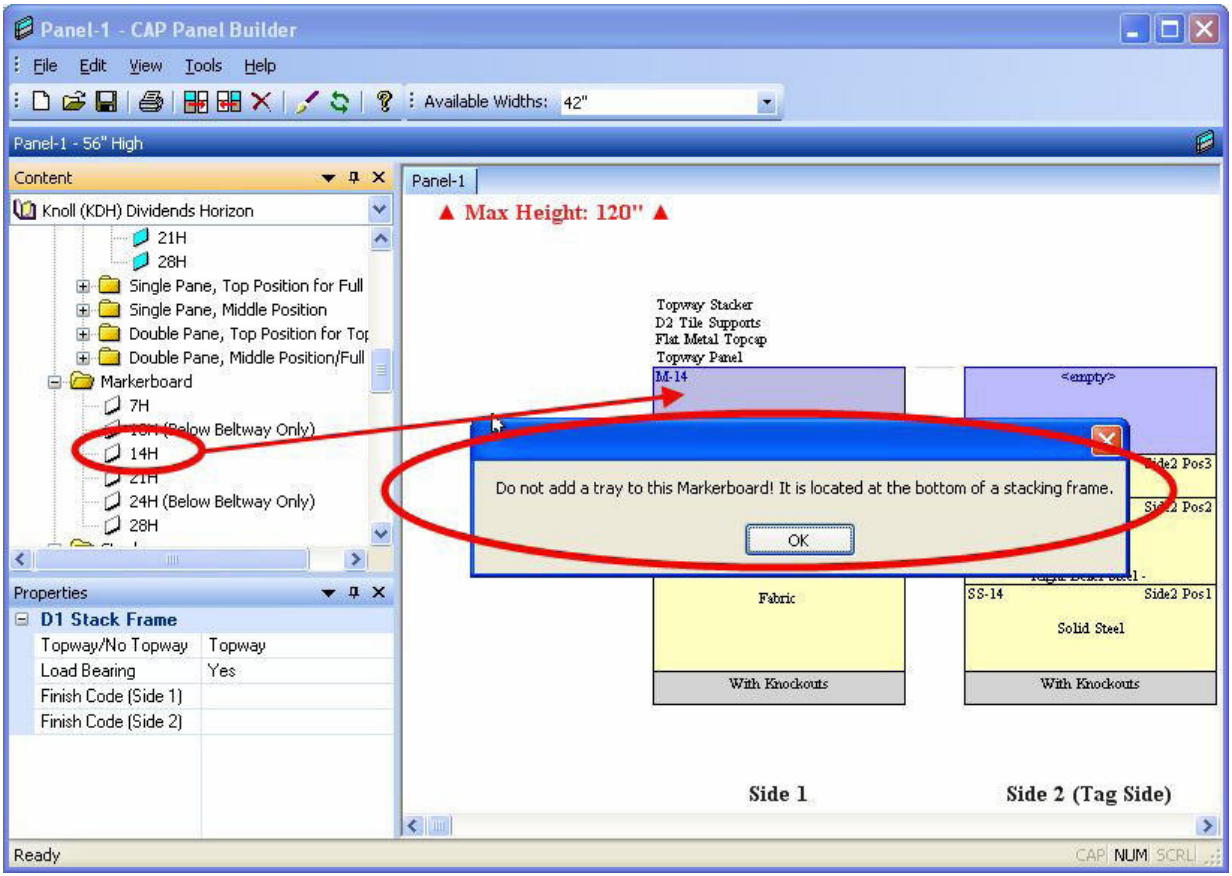
20-20 and the manufacturers have added many rules to prevent many illegal configurations. While these rules are extensive and well-tested, they are not a substitute for product knowledge. Ultimately the designer is responsible for building legal configurations. Panel Builder is a tool for this process, but it is not infallible.

Both fundamental and catalog-specific construction rules are enforced (such as no stacking on top of 10" element, total stack height restriction, etc.). If, for example, you place an element that exceeds that maximum panel configuration height, you will see an Alert dialog appear. If you do not wish to see this type of dialog, you can disable it through the **View** menu, **Design Alerts**.

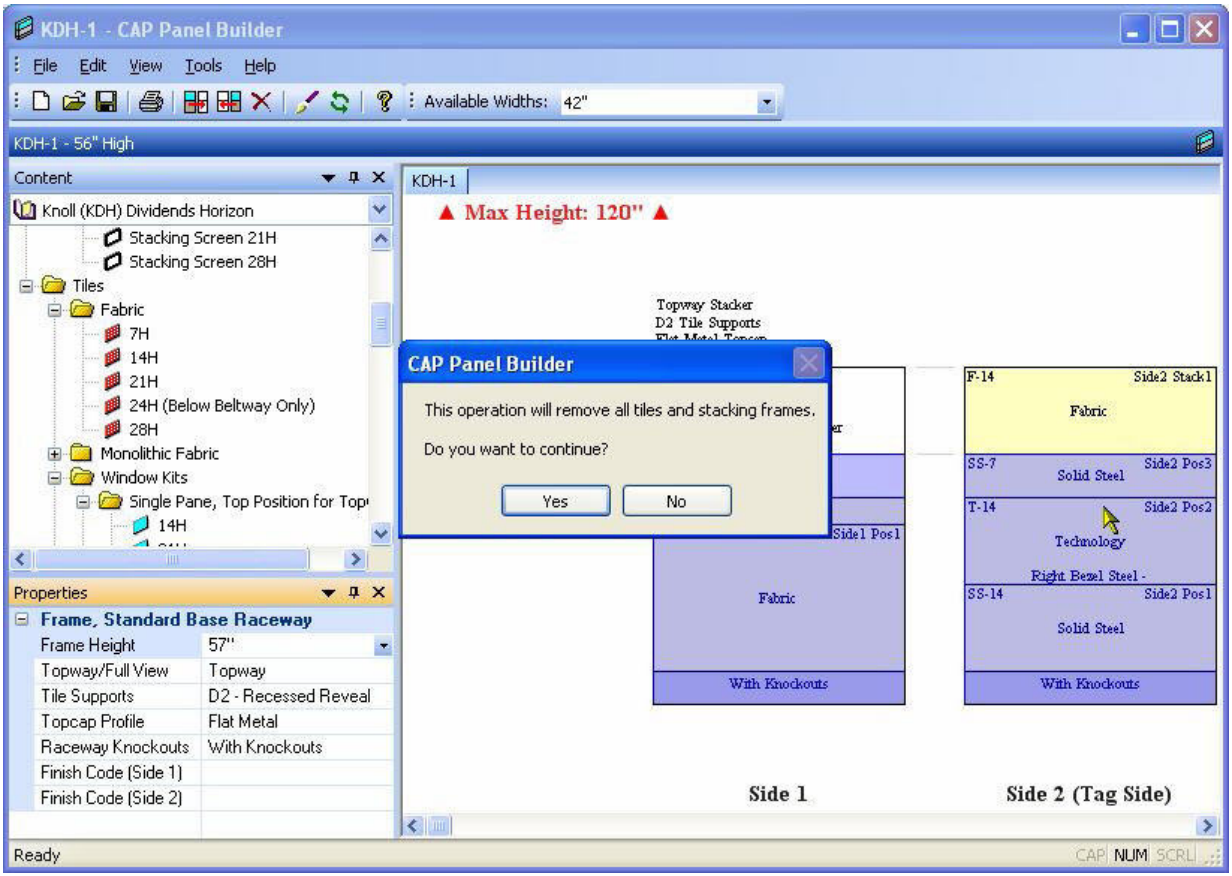
A fundamental Panel Builder rule is that tile elements must begin and end at tile seams. If a 7” high tile is placed at the bottom of Side 2, a Design Alert appears. This is because the base frame is defined with a 14” high tile seam. So a 14” high tile can be placed at the base, or as was done with the fabric tile on Side 1, another tile that aligns with another higher tile seam.



In addition to Design Alerts, Panel Builder sometimes displays a warning message when an element is placed. In the example below, a Markerboard tile has been added to the Side 1 stacking frame. This is a legal operation; however, since adding a tray to the markerboard tile would collide with the stacking seam, a warning message is displayed. Ignoring such messages will result in invalid configurations.



Some property changes reset the entire configuration. In the example below, changing the height of the base frame causes all the tiles and stacking frames to be removed. This assures that all element placement rules are run.



Apply finish codes to a panel configuration

Like all elements, when a tile element is selected in the Layout Pane, its properties display in the Properties Pane. One of the properties displayed here is called a finish code.

All elements have the Finish Code property. This is a freeform field into which you can enter any text you wish. The finish code is designed to uniquely identify the selected element. This field is used so that

downstream in the workflow, elements can have the correct finishes assigned. In the current version, the finish code maps to the Alias 1 field in 20-20 Worksheet by default. If you would like this property to appear in a different Worksheet column, you can go to the **Tools** menu and select **Options**.

There are two ways to apply finish codes: from the Properties pane and from the Apply Finish code dialog.

From the Properties pane:

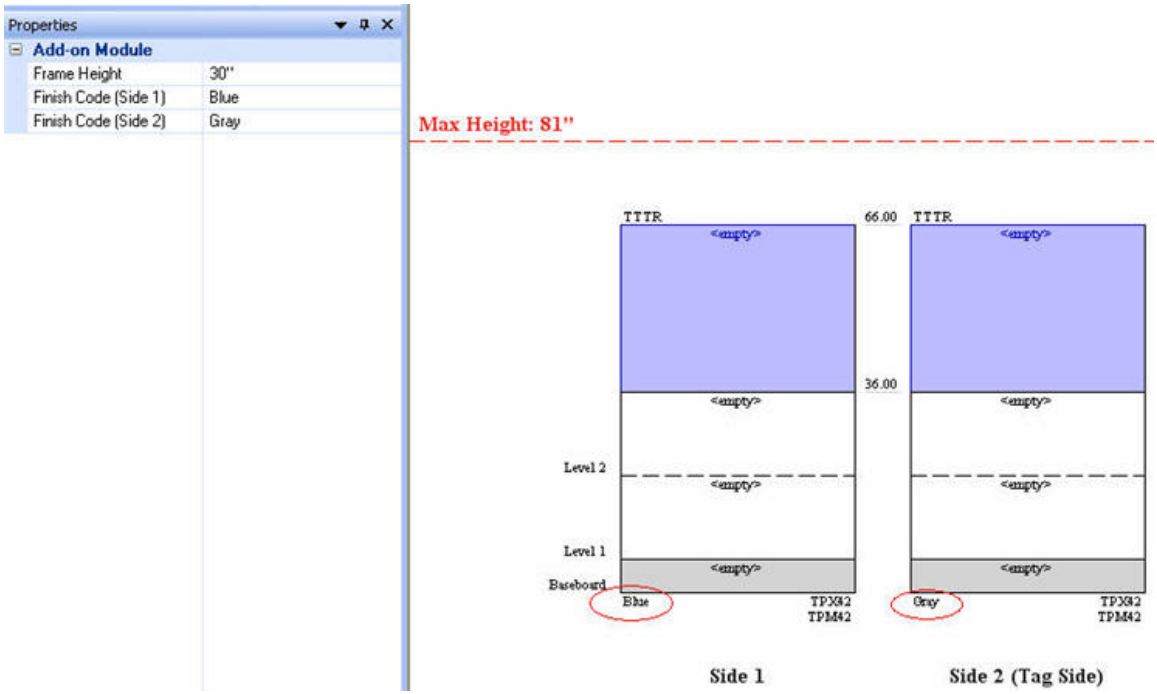
1. Click on an element on the configuration side to which you would like to assign a finish code in the Panel Configuration window.

   If you have a panel configuration in the Panel Configuration Pane that already has both panel frames and tiles in it, you would click one time to set the finish code for the tile or else click a second time to select the finish code for the frame.

2. Place your cursor in the corresponding side's Finish Code field in the Properties Pane and type the desired finish code.

   You can name your finish codes in whatever way will help you recognize how you want to specify that panel configuration's finish once you bring the configuration over into a Worksheet file.

   The finish code is displayed on that side of the configuration over in the Panel Configuration Pane.



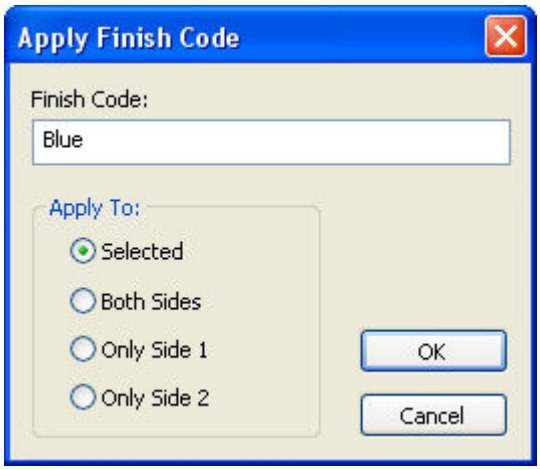
From the Apply Finish code dialog:

To quickly apply a finish code to the whole panel configuration:

1. Click the **Apply Finish code** icon on the Standard toolbar.

   Or from the **Tools** menu, select **Apply Finish Code**  .

2. Type in the finish code.



3. Under **Apply To**, choose whether to apply the finish code to the selected panel only, to both sides of the panel configuration, to only side 1 or to only side 2.

4. Click **OK**.

The finish code will be saved in the Property fields once you save the panel configuration.

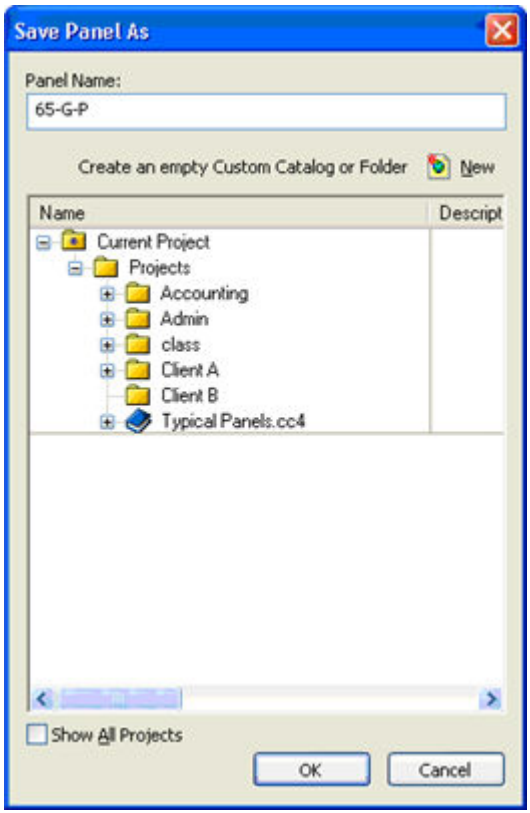
Save the configuration

Once the configuration is complete, you will save it for use in your drawing. Configurations are saved under a user-defined name in a Custom Catalog, much like a CAP Standard. Under that configuration name, all valid widths of the configuration are automatically created and made available for use. Cross-checks are performed to ensure that the panel configuration is complete, and all desired style numbers are valid and available in the current electronic catalog.

1. From the **File** menu select **Save**.

   If you would like to save your configuration to a custom catalog found in the network location, check **Show All Projects**.

2. Select an existing Custom Catalog or create a new one by clicking **New**.



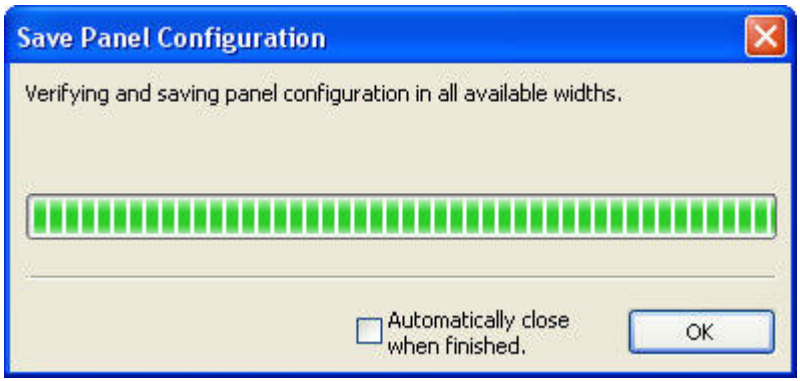
3. Change the **Panel name** for the configuration.

   Since the name appears as a tag on each occurrence of the panel configuration, a short name is

recommended. Including the height of the panel as part of the configuration name is not recommended, since the configuration can easily be edited to another height and then its name would not match its makeup. Similarly, a name that describes the tiling will limit later editing of the configuration.

4. Click **OK**.

   Panel Builder automatically creates all valid widths of the panel configuration. When this process is complete, you will see the **Save Panel Configuration** window below open.



5. Click **OK** to close the **Save Panel Configuration** window.

   You can make this window close automatically when the application is finished creating all valid widths by checking **Automatically close when finished**.

6. To add this saved configuration to a drawing, see Add a panel configuration to the drawing.

Maintaining a good one-to-one catalog/drawing relationship is important. Keep this in mind as you save your configurations.

Configurations in custom catalogs and their counterparts that have been inserted into drawings are forever linked. When you change a configuration and save it (to its custom catalog), as soon as a drawing with that configuration is opened and updated, all occurrences of that configuration are updated. If you use a

configuration in more than one drawing, this will lead to undesired results.

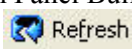
The best practice is to establish a one-to-one relationship between a project and the custom catalog which contains its Panel Builder configurations. If you wish to reuse a configuration in a different project, open the configuration in Panel Builder and use the **Save As** command to save it into another custom catalog. This way, changing the configuration in one drawing will not impact it in the other.

Since a one-to-one relationship should exist between the drawing and the custom catalog, an additional best practice is to keep the drawing and the custom catalog in the same folder.

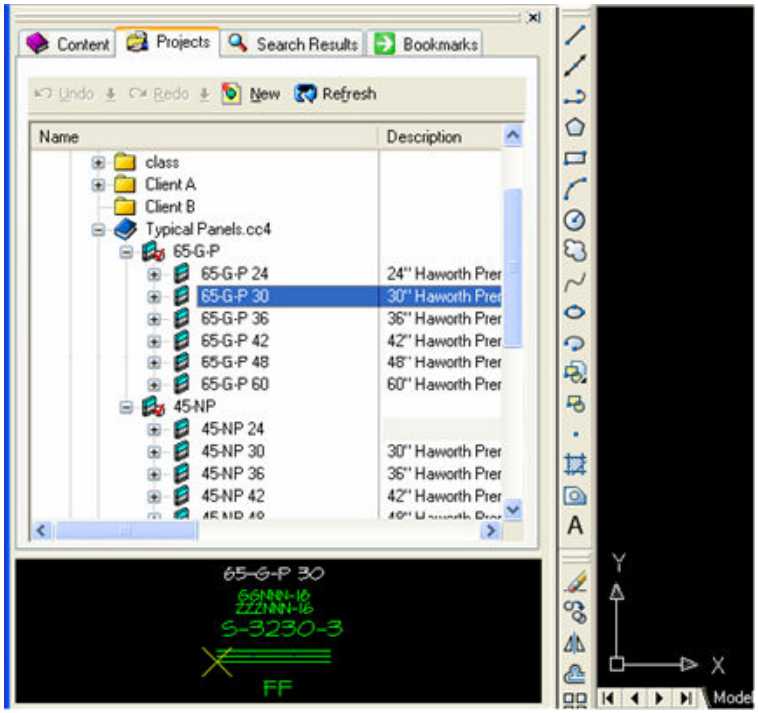
Add a panel configuration to the drawing

Once you have saved a panel configuration, you can add it to a drawing. Note that:

- For each valid width of a stack assembly, the width is appended to the master configuration name.
- The Master Configuration (for example 65-G-P) represents all valid widths.
- The individual width configurations represent the actual elements which make up that particular width assembly.

1. Return to your drawing.
2. If you just saved a configuration in Panel Builder, it may not be listed in the Custom Catalog until you click the **Refresh** button 

.
3. From the Projects tab in CAP Explorer, select the size you wish to use, wait for the preview image to appear, and drag and drop it into the drawing.



While you should drag and drop the width-specific configuration into the drawing to place it in the layout, you can expand a width-specific configuration to see the components that are contained within the configuration without opening Panel Builder.

4. Snap panel structures together using Node snapping points.

As is true with all CAP Parts, do NOT use AutoCAD Mirror on Panel Builder configurations.Do NOT explode Panel Builder configurations.

Edit a panel configuration

Two methods exist for opening an existing panel configuration in Panel Builder:

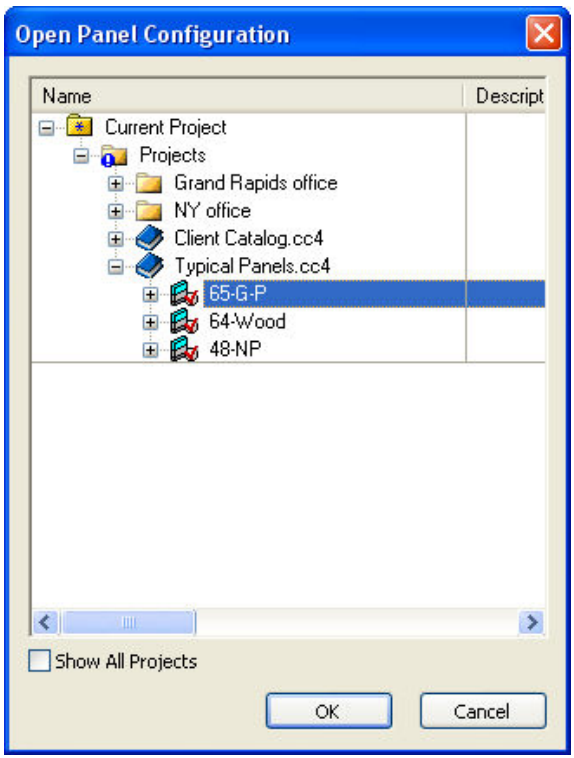
- Open a configuration from Panel Builder
- Edit a panel configuration from the drawing

Open a configuration from Panel Builder

1. From the **File** menu, select **Open**.

   Or, click the **Open** button on the Standard toolbar.

2. In the **Open Panel Configuration** dialog select the desired panel configuration, then click **OK**.



3. Edit/change the configuration.

   To review the steps, see Launch Panel Builder.

4. From the **Panel Builder** window select **File**, **Save**. This will update the Custom Catalog items.

If an edited configuration is used in other drawings, each of those drawings must be opened and the configurations manually updated. See Update panel configurations for details.

Edit a panel configuration from the drawing

1. Select a panel configuration in the drawing.
2. Click the **Panel Builder** icon on the **CAP Designer** toolbar. Panel Builder will open the selected configuration.
3. Edit/change the configuration.

   To review the steps, see Launch Panel Builder.

4. From the **Panel Builder** window select **File**, **Save**. This will update the Custom Catalog items, and update all widths of that configuration in the drawing.

To globally update the drawing, CAP Panel Builder **MUST** be launched from CAP Designer. If CAP Panel Builder was launched independently of CAP Designer, use **Update Panel Configurations** from the **CAP Designer**, **CAP Panel Builder** menu to update all panel configurations in the drawing. For details see Update panel configurations.

Create a configuration from an existing one

The **Save As** command provides an easy means to build new configurations out of an existing configuration. It works like **Save**, but allows a new configuration to be created without altering the original version. You can use a configuration as a template to quickly construct a similar but different configuration.

1. Select a panel configuration in the drawing.
2. Click the **Panel Builder** icon on the **CAP Designer** toolbar. Panel Builder will open the selected configuration.
3. Edit/change the configuration.

   To review the steps, see Launch Panel Builder.
4. From the **File** menu select **Save As.**

   You will be prompted for new name; should that name already exist in the drawing, a warning message will appear.
5. Save the panel configuration in a Custom Catalog with a new configuration name.

Save As constructs a new panel configuration in a Custom Catalog, which can then be used in CAP Designer. **Save** not only saves a configuration, but also automatically updates all occurrences of that named configuration in the current drawing from which Panel Builder was launched.

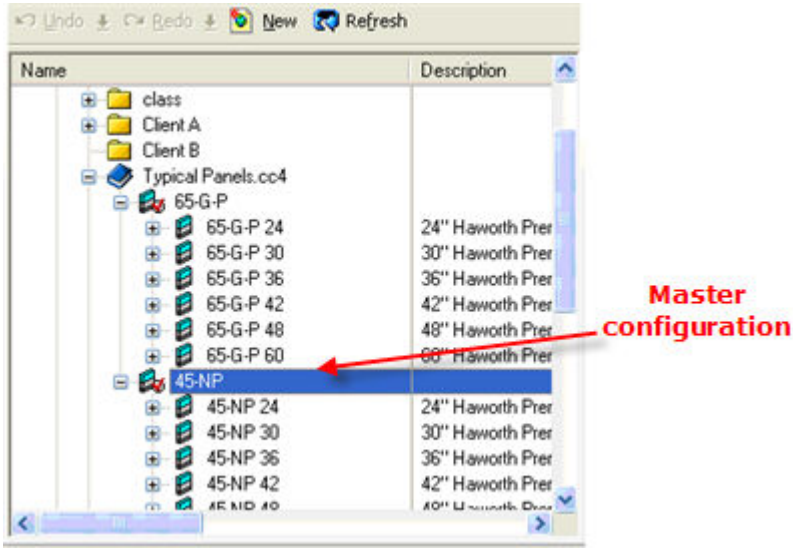
If you want to create a new empty configuration, simply click the **New** icon on the **Standard** toolbar. Or, from the **File** menu select **New**.

Change existing configurations in the drawing

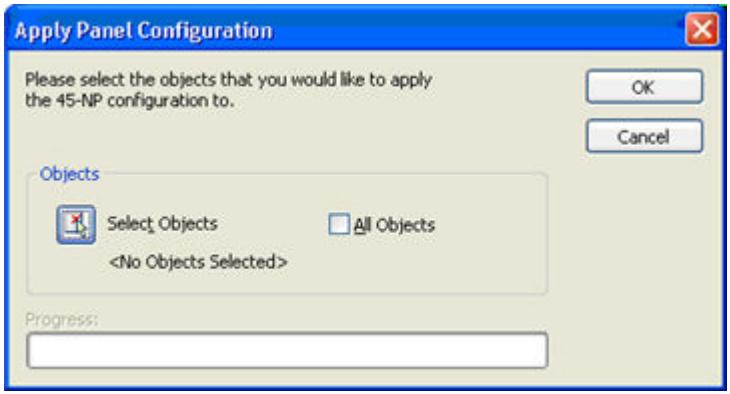
Changes can be made quickly to a layout by replacing configurations in the drawing. The "master" configuration can be applied to any number of panel configurations already in the drawing. The appropriate width configuration will then replace the selected target configuration(s). This allows generic space planning, which can then be populated with finalized Stack configurations.

If you know that you would eventually like to place a certain configuration in a drawing but that configuration has not been created yet, you can place a "blank" configuration in your drawing to serve as a placeholder for the configuration you will eventually create and bring into that drawing. You can do this by following the steps listed below.

1. Place multiple configurations in the drawing.
2. Create new configurations and save them to the Custom Catalog.
3. Select the Master Configuration and drag it into the drawing.



4. From the **Apply Panel Configuration** dialog box click the **Select Objects** button. This will take you to your drawing where you can select the configurations you wish to replace.



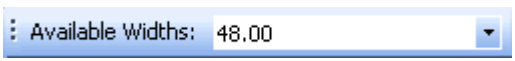
5. Press Enter and the **Apply Panel Configuration** dialog will return.
6. Click **OK.**

   You will see the configurations you have selected change to the new configurations. If a new configuration is not valid for a selected configuration's frame it is not replaced and the original configuration remains in place.

If you have already run AutoConnectors you should do so again because the automation that you ran for the previous configuration may not be valid for the new configuration.

View available widths

The **Available Widths** toolbar allows the user to select the width of panel or door to be used in the Panel Configuration Pane for building a configuration. This width selection will default to 48".



It is important to note that any width can be selected and used for building configurations. This is strictly a visual representation Panel Builder uses to allow configurations to be built. When a configuration is

saved, Panel Builder will automatically create all widths appropriate to the configuration type. Exceptions to this include when using Power Builder for Steelcase - Answer and when setting a custom width or field cut property. See Use Power Configurations - Steelcase Answer.

Power configurations

Access Power Builder

There are three ways of accessing panel builder:

- With a panel visible in Panel Builder, click on the **Power** tab to construct Power Configurations based on the type of panel currently loaded in Panel Builder.
- Click the **Power Builder** icon in the **Steelcase Answer** toolbar or in the **Steelcase Privacy Wall** toolbar and then select a configuration in the drawing, at which time Power Builder opens with that configuration's **Power** tab active.
- Open the **Automation Center** for **Steelcase Answer** or **Steelcase Privacy Wall** then click the **Power Builder** icon .Select a configuration in the drawing, at which time Power Builder opens with that configuration's **Power** tab active.

Use Power Configurations - Steelcase Answer

Power configurations are constructed and behave very much like Panel configurations.

An important difference concerning Power Configurations is that **there is a width dependency**. Answer panels are organized into Width Groups according to their ability to accept Pass-Through Power Kits, Power Kits and Communication. When a Power Configuration is created Power Kits are automatically inserted in the Width Groups where appropriate. The Width Group determines the type, number and location of Power blocks and Communication blocks. For a given Power Configuration each Width Group must be individually configured for Pass-Through, Power, Communication, and Receptacles.

Power Configurations (including all their Width Group configurations) are stored in the Custom Catalog along with the Panel Configurations, and can be applied to any Panel Configurations in the drawing which can support the applied Power configuration. Power Configurations are checked against the Panels to which they are being applied in the drawing to ensure that they are compatible. For example, a Power configuration containing power cannot be applied to a panel containing a glass skin at that location.

Power zones and properties are presented which are valid for the panel type and width currently loaded in Panel Builder. Additional panels widths can be accessed using the **Available Widths** toolbar dropdown.

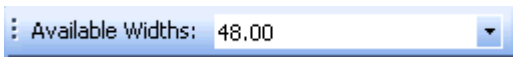
Use the 'default' panel without skins to create power configurations without limitations.

Build a power configuration

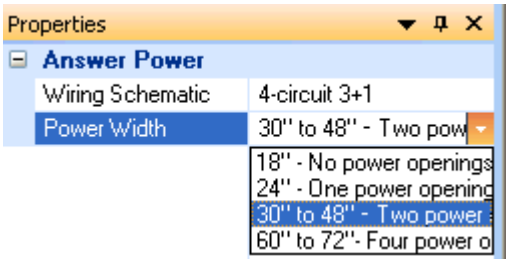
Within each power zone small boxes appear indicating the availability of a Power Kit for configuration. If the boxes within a zone are grayed out, it indicates that Power Kit is unavailable for configuration due to the skin being used at that location.

1. Each Width Group must be independently configured for power and/or communications to ensure that all panel widths are accounted for and available for space planning purposes within CAP Designer.

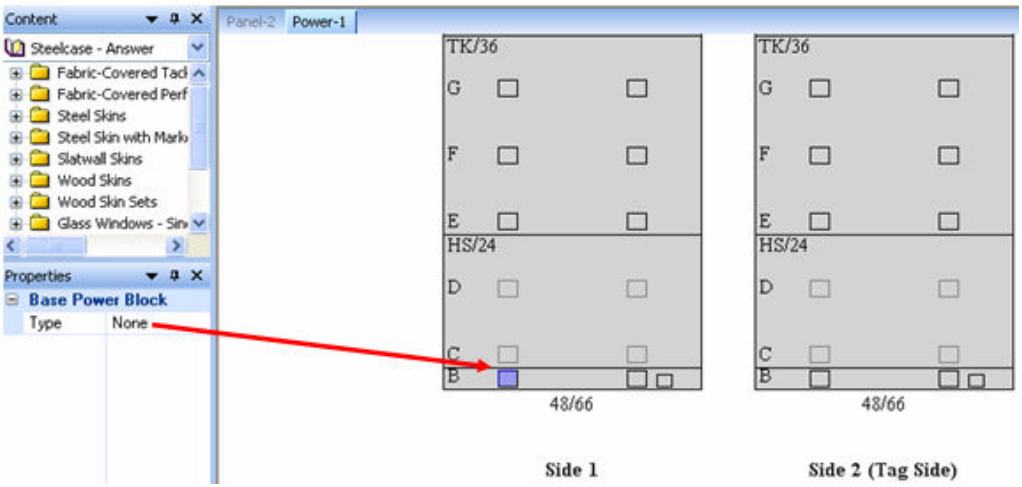
   Use the **Available Widths** toolbar dropdown to select a representative panel width from each group.

   The list of **Width Groups** can be viewed in the Property Pane under the Power Width property. The Power Width property is available when no power zone boxes are selected (focus is on the panel image or the background) in the configuration.



2. Click on a power zone box.



3. Choose a **Type** property.

   Doing this provides deeper content information available for that location. The selected properties are displayed graphically in the selected power zone.

   Depending on the **Type** you selected, different properties are displayed in the Properties pane. The Properties available for each selection are governed by the product rules and by the panel type currently being displayed.

Properties	
Base Power Block	
Type	Power
Receptacle	Receptacle
Line	1
Ground	System
Amp	15
Tag	

4. Set the value for each property.
5. Repeat steps 2 to 4 until you are done configuring each zone and each panel side for the width group.

Note: Panel widths cannot be changed using the Power Width property.

Use power configurations - Steelcase Privacy Wall

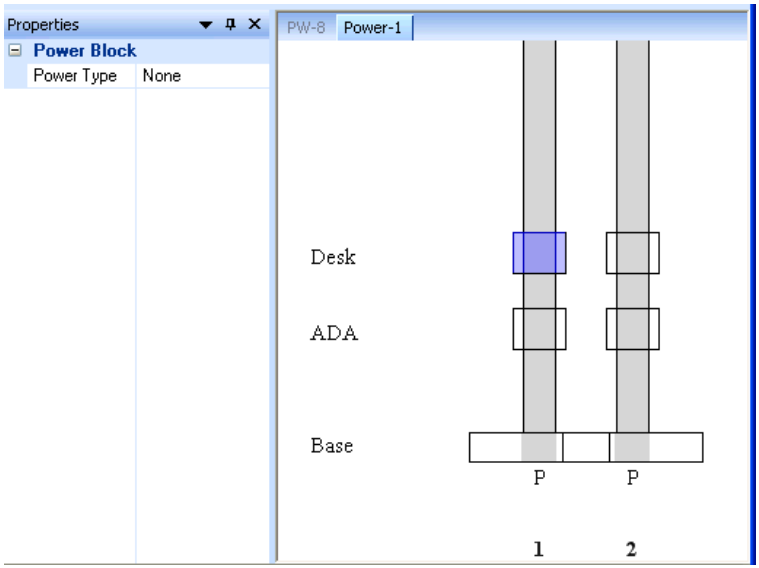
Create a power configuration

1. Click the **Power tab.**
2. Select the desired **Wiring Schematic** and **Infeed Location** (if needed) in the **Properties Pane**.

Properties	
Privacy Wall Power	
Wiring Schematic	4-circuit 3+1
Infeed Location	None
Power Locations	1

3. In the **Panel Configuration** pane click the location on the elevation at which power and/or communication is desired

Three receptacle locations are available: Base, ADA and Desk.



4. Change the **Power Type** as necessary in the **Properties** pane.
5. Change the **Left** and **Right** receptacles as necessary.
6. Add additional power and/or communication to both elevations as required.

As with creating panel configurations, the power configuration is not limited to the width of the elevation used in Panel Builder. It is merely a visual aid in the configuration process.

Save a power configuration

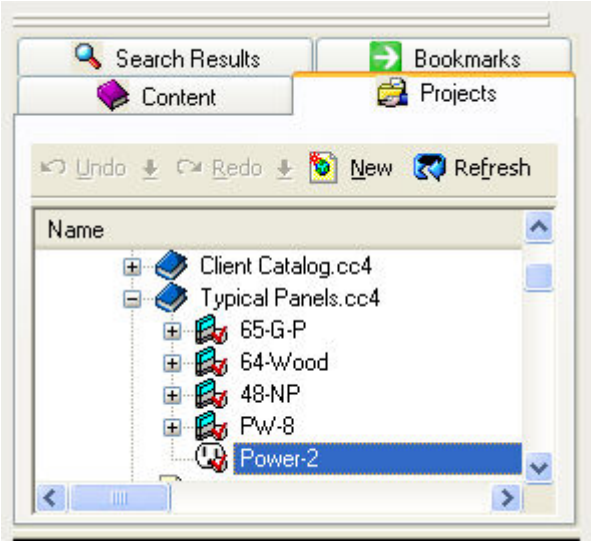
1. Click the **Save** button , or from the **File** menu select **Save**.
2. In the dialog that opens, give the configuration a name.
   Keep the name short since this name will appear on all instances of this configuration in the drawing
3. Select a **Custom Catalog** in which to save the configuration.

   If a Custom Catalog is not available, create one by clicking **New**.

   Configurations are stored in Custom Catalogs to enable them to be reused across all projects
4. Click **OK**.

Apply a power configuration

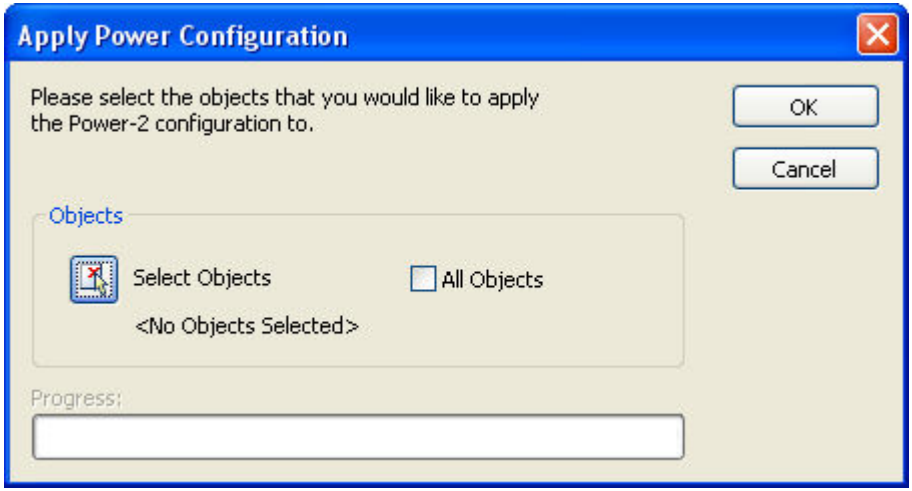
1. Locate the power configuration in the Custom Catalog.



2. Drag it into the drawing.

   The **Apply Panel Configuration** dialog appears.

3. Click the **Select Objects** button .



4. Select the panels to apply the configuration to in the drawing.
5. You will be brought back to the **Apply Power Configuration** dialog. Click **OK**.

   The power configuration is only applied to panels that can validly receive the power configuration.

This validity check is performed only when using the Wizard to place power on panels. Copying power configurations to other panels is NOT recommended.

If want to remove a power configuration from a panel you can simply erase it from the drawing using the standard AutoCAD technique.

Update a panel's power configuration

If a power configuration needs to be changed throughout a drawing:

1. Click the **Power Builder** toolbar icon in the **Steelcase Privacy Wall** toolbar or in the **Steelcase Answer** toolbar.
2. Click on a panel in the drawing containing the power configuration to be updated.
3. Panel Builder opens with the selected panel's power configuration loaded.
4. Make the needed changes.
5. Click **Save** to save the updated configuration (not **Save As**).

   All instances of that configuration are automatically updated in the drawing.

This automatic updating can only occur automatically in the current drawing from which Panel Builder was launched. In order to update other drawings using this configuration, you will need to open each drawing and then run the Update Configurations utility (**CAP Designer** menu, **Panel Builder**, **Update Configurations).**

Save a power configuration under another name

Power Builder's **Save As** function provides an easy means to build new configurations out of an existing configuration. Save As works like a Save, but allows a new name to be assigned to a new version of an existing configuration without altering the original version. The new Power Configurations are then available in the Custom Catalog to apply to panels as desired.

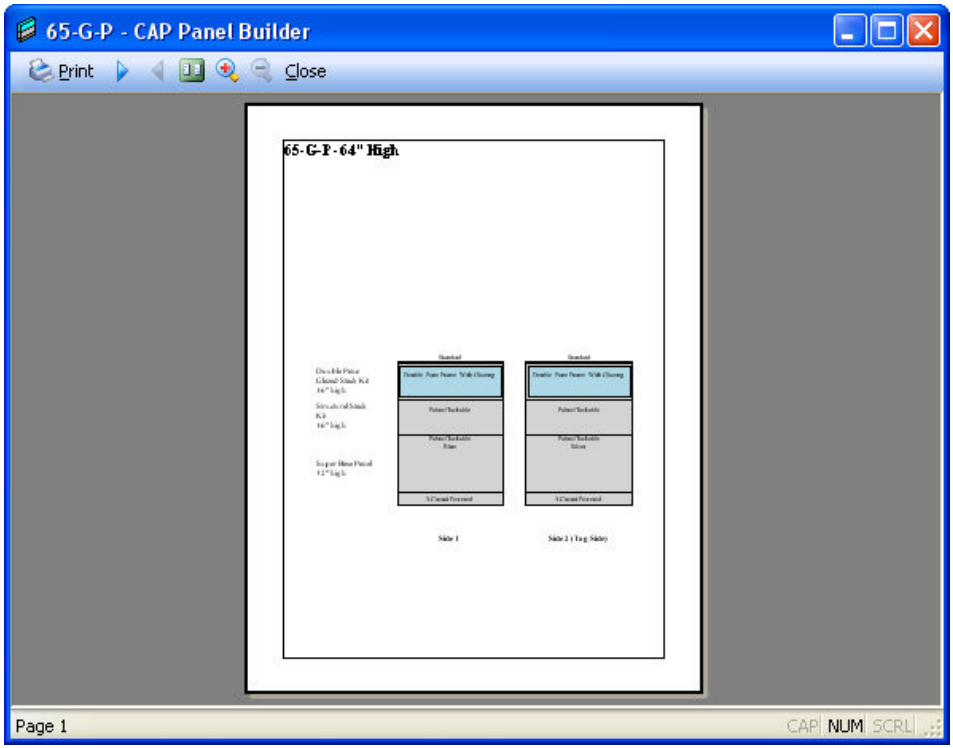
To access this command, from the **File** menu, select **Save As**.

The **Save As** command constructs a new power configuration in a Custom Catalog, which can then be utilized in CAP Designer. The **Save** command not only saves a configuration, but also automatically

updates all occurrences of that named configuration in the current drawing from which Panel Builder was launched.

Print a configuration

1. From the **File** menu, select **Print Preview**. Notice the name of the configuration at the top of the page. This can be a useful tool for installation documents.



2. Use the toolbar buttons to go to the next page, go to the previous page, toggle between one and two page display, or zoom in or out.

3. Click **Print** to print the configuration.

Find invalid or corrupted panel/power configurations

The **Check/Panel Power Configuration** command scans the drawing and marks invalid or corrupted configurations.

This function will check the following problems:

- Problem #1: A panel or power configuration exists in the drawing, but it cannot be found in the custom catalog.

  In this situation, we recommend that you use the CAP Designer Configuration Manager dialog to rebuild the configurations to the custom catalog.
- Problem #2: A panel configuration exists in the drawing but does not have the configuration data to rebuild the custom catalog.

  For every panel and power configuration used, the application stores a copy of the custom catalog data in the drawing. It uses this data to rebuild the custom catalog using the Configuration Manager dialog. If this information is missing, the application cannot rebuild the custom catalog. Panel and power configurations that refer to these non-existent data configurations are considered "corrupted." This typically occurs with a copy and paste between drawings, or by wblocking and inserting from one drawing to another.

  It is entirely possible to have a configuration that passes the Problem #1 check, but fails the Problem #2 check. In these cases, the configuration data is not "backed up" in the drawing.

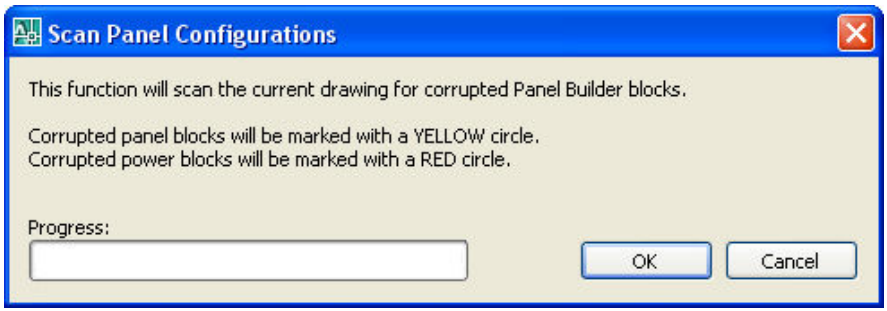
If a configuration is corrupted, it will have the following characteristics:

- Its configuration data is not in the drawing
- It cannot be opened in Panel Builder
- The Configuration Manager cannot rebuild it into a custom catalog
- It could be counted in a Worksheet takeoff ONLY if its custom catalog is present and found

To find invalid or corrupted panel/power configurations:

1. From the CAP Designer menu, select **CAP Panel Builder**, **Check Panel/Power Configuration**.

   The Scan Panel Configurations dialog appears.



2. Click **OK** to start scanning.

   Corrupted panel blocks will be marked with a yellow circle, while corrupted power blocks will be marked with a red circle.

   If the error circle says "Not Found," then it is Problem #1 listed above. If the error circle says "Corrupted," then it is Problem #2 listed above.

   If corrupted panel blocks are found, the best practice is to erase them from the drawing and replace them with a valid configuration.

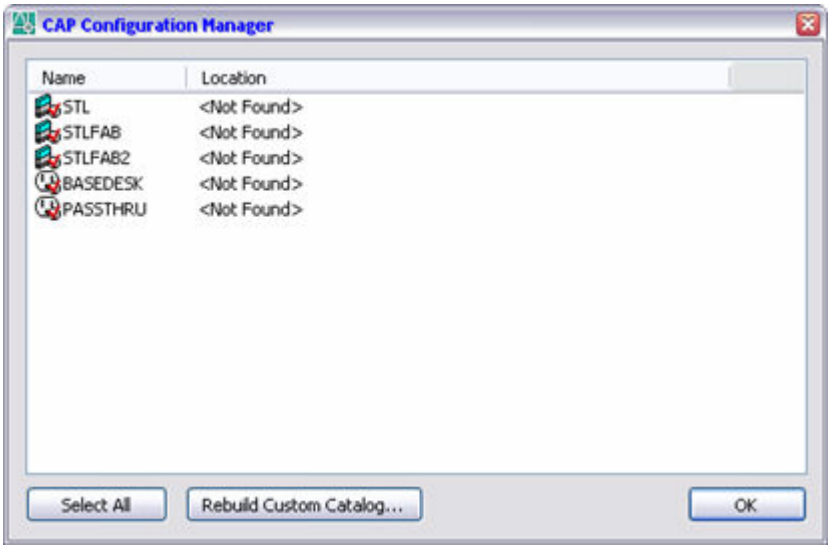
Rebuild configurations

The Configuration Manager provides a means to rebuild configurations that exist in a drawing when the Custom Catalog for those configurations is not available. The two primary scenarios when this tool is required are:

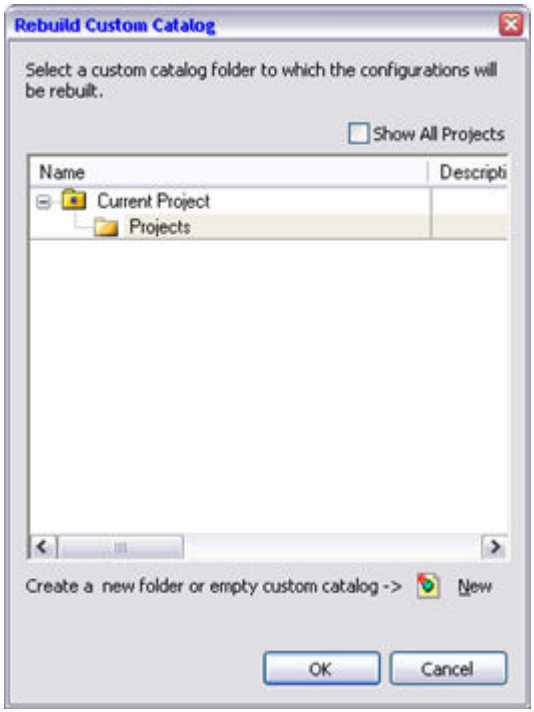
- File sharing: You need to open a drawing containing the panel configurations on a computer other than the one on which you originally created the drawing, and you want access to those configurations in a Custom Catalog.
- Data Recovery: A Custom Catalog containing the configurations has been inadvertently deleted.

1. From the **CAP Designer** menu select **Panel Builder, Configuration Manager**.

   The **Configuration Manager** dialog opens. All configurations that exist in the current drawing are listed, as well as the location of the Custom Catalog in which they are stored. For any configurations for which the Custom Catalog is not available the location reads <Not Found>.



2. Select all configurations listed as <Not Found> and click the **Rebuild Custom Catalog** button, which opens the **Rebuild Custom Catalog** dialog.



3. Either select an existing Custom Catalog in which to store the rebuilt configurations, or click the **New** button to create a new Custom Catalog.

   Rebuilding to a new custom catalog rebuilds all valid configurations into the new catalog.

   Rebuilding into an existing custom catalog redefines existing configurations in the catalog, defines any configurations in the drawing NOT in that custom catalog, and updates the links in the drawing to point to the rebuild custom catalog. You will receive a warning informing you that rebuilding configurations to the existing custom catalog will corrupt those configurations in OTHER drawings which use the same existing custom catalog. If you do not want this to happen, click No and rebuild to a new custom catalog instead. Note that if you had a single custom

catalog per drawing, this corruption will not be an issue. However, if other drawings use this configuration, you will have to rebuild the configuration in each of those drawings. Click **Yes** if you want to continue.

4. Click **OK** in the **Rebuild Custom Catalog** dialog.
   A **Configuration Rebuild Progress** dialog opens and displays the progress of configurations being rebuilt.

   When the process is complete, the **Configuration Manager** dialog returns.
5. Click **OK** to close the dialog.

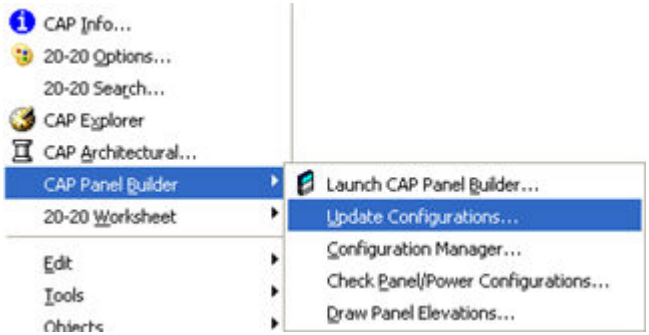
If you want to copy this drawing back to its original location, its configurations will be linked to the new location's catalog and not the original one. You must use the Configuration Manager again to rebuild the configurations in the original location.

Update panel configurations

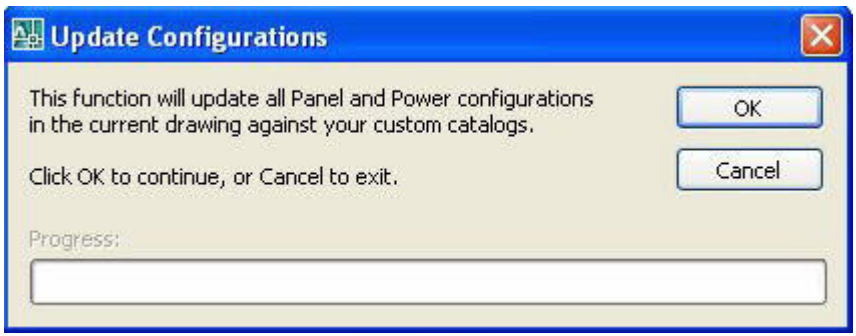
The best practice is to have a single custom catalog associated with a single drawing. However, sometimes you need to associate a custom catalog with a set of drawings, as is the case where the same project spans multiple floors and each floor is a different drawing. When this happens, it is possible to be in one drawing, make a change to a Panel Builder configuration, and then want that change to be reflected in all the other drawings in the project.

When you edit and save an existing panel configuration, **all** occurrences of that configuration in the Custom Catalog **and** in the **current** drawing from which Panel Builder was launched are automatically updated. However, if the configuration is in other drawings, you must open each of those drawings and use the **Update Panel Configurations** command.

1. From the **CAP Designer** menu, select **CAP Panel Builder, Update Panel Configurations**.



2. Click **OK** when the **Update Configuration** dialog opens.



After a drawing's existing configurations have been automatically updated, it is possible that invalid configurations may now be placed on the existing frames. For example, the configuration for an 18” wide panel in the drawing is changed to include a glass skin. Glass is not available in 18” width panels, therefore the updated configuration on the existing 18” panel is invalid. During the update process these invalid configuration assignments (also called "orphans") are detected and circled in yellow in the drawing. A tooltip is assigned to the circle which gives an explanation of the error for that specific instance.

Insert panel elevations in the drawing

Once your drawing is complete, you will need to create elevation views of all the configurations so that installers can determine how to build them. Panel Builder has two types of elevations: dynamic and static.

The best practice is to use static elevations, for the reasons outlined below:

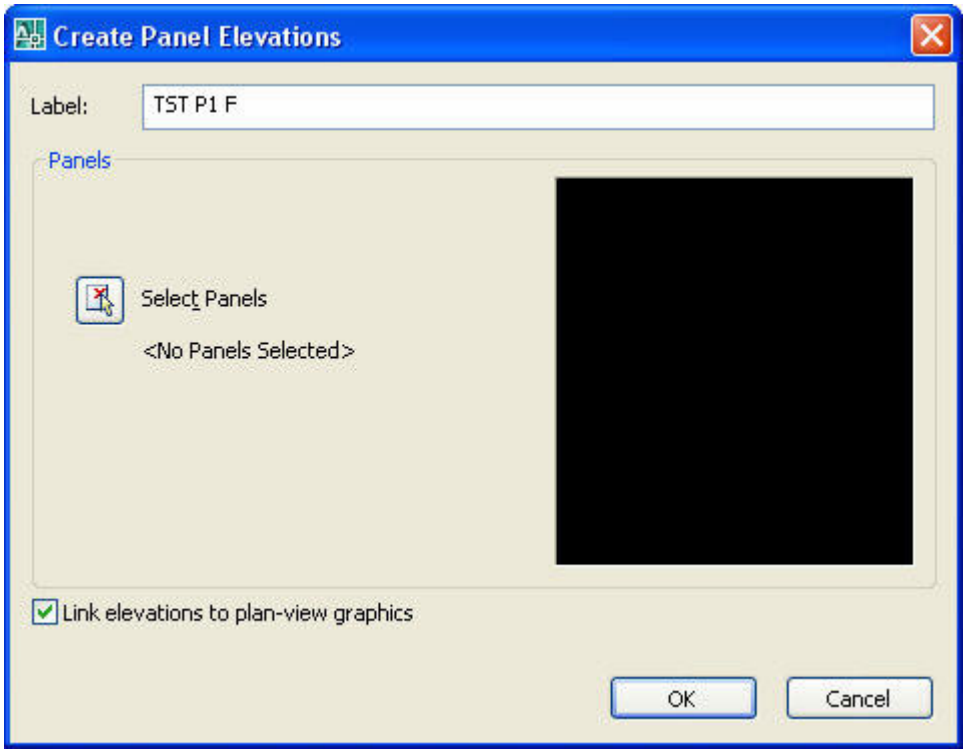
- Dynamic elevations are designed to support full height wall products. Instead of showing the front and back of each configuration, they show a view run of panels. In most drawings this would result in many more elevations, which is why they may not be the best practice for the product line that you are working with in Panel Builder.
- Since they are dynamic, there is a link between them and the configurations associated with them. While this link means that, unlike static elevations, they do not have to be updated when configurations change, it also means that they cannot be exploded and manually edited to add more information to.

Insert dynamic panel-run elevations

A dynamic panel-run elevation is logically "connected" to its plan-view parent so that if the parent configuration is modified, the elevation is also immediately modified to match the parent configuration. Linked elevations are a one-to-one relationship to their parent. Should the parent plan-view graphics of a linked elevation be erased, the elevation is also erased.

1. From the **Automation Center** dialog, click **Create Dynamic Panel-Run Elevations**.

   The **Create Panel Elevations** dialog opens.



2. Give your panel elevation a name in the Label field.

3. Click on the **Select Panels** button  .

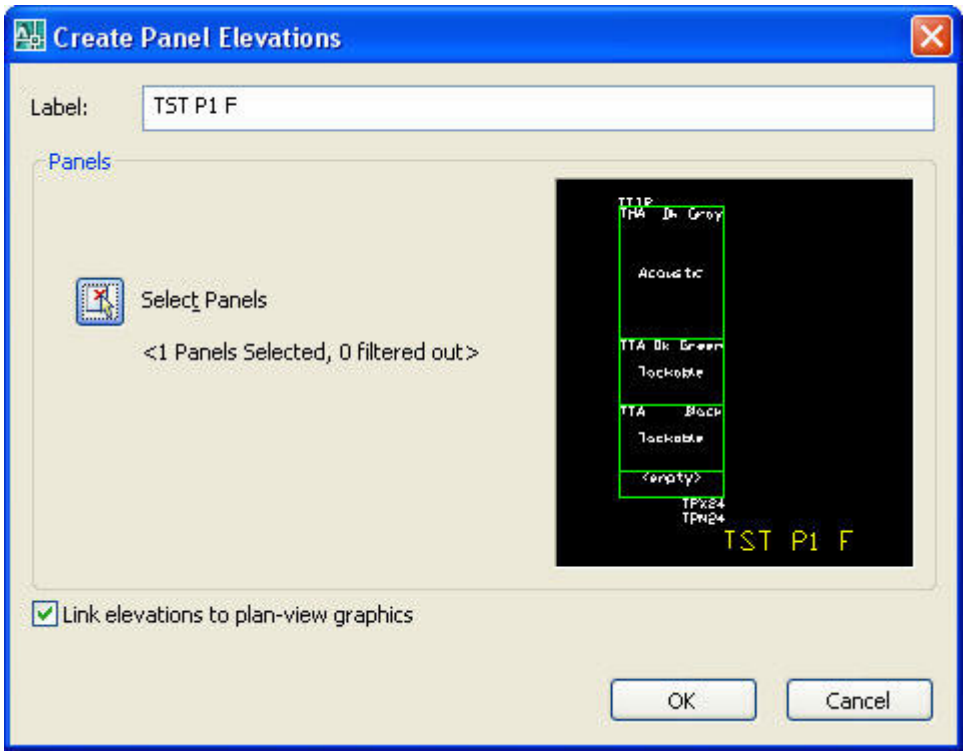
   The **Create Panel Elevations** dialog closes.

4. Select the panels for which you would like create a panel elevation.

5. Click to select the elevation view location to be used for your elevation. (For example, if you would like to get an elevation for a panel on the inside of a configuration, click inside the panel structure.)

6. Move the mouse toward the panel whose elevation you would like to capture and click.

   The **Create Panel Elevations** dialog window returns with the panel elevation displayed.



7. Click **OK**.

   The **Create Panel Elevations** dialog closes and your panel elevation is attached to your mouse.

8. Click at the location in your drawing where you would like to place your elevation.

9. Rotate your elevation if necessary and click to set the elevation in place.

Insert static panel elevations

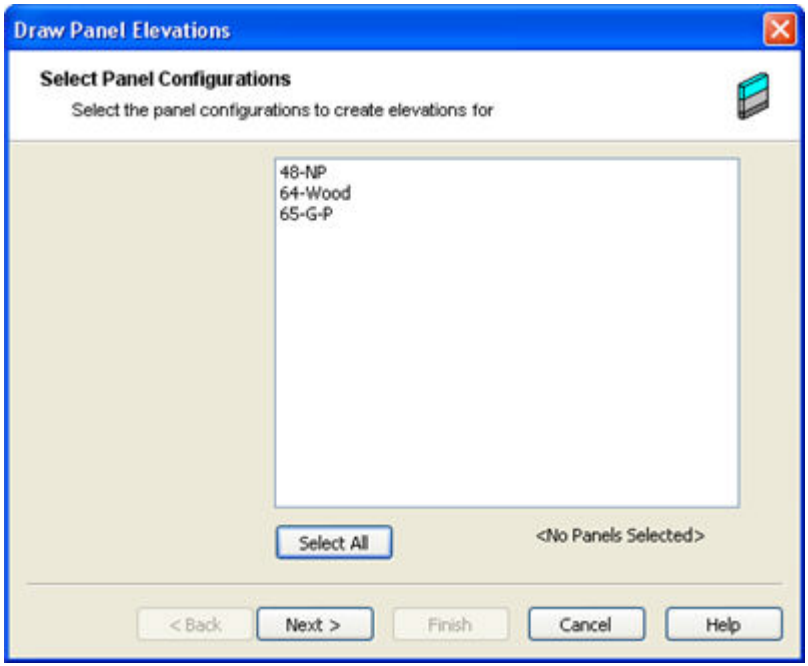
Static elevations are designed to look like the Panel Builder configurations as seen in the Panel configuration pane. Installation drawings are easily created using the Draw Static Panel Elevations command.

As their name implies, static elevations do not change. If you edit a Panel Builder configuration, you will need to create a new static elevation for that configuration. Because they are static, they are simple AutoCAD blocks. If they need additional information, you can explode and manipulate them.

1. From the **CAP Designer** menu, select **CAP Panel Builder, Draw Panel Elevations**.

   Or, from the **Automation Center** dialog, click **Draw Static Panel Elevations**.

   The **Draw Panel Elevations** dialog will appear. Only the panel configurations used in the drawing will be listed.

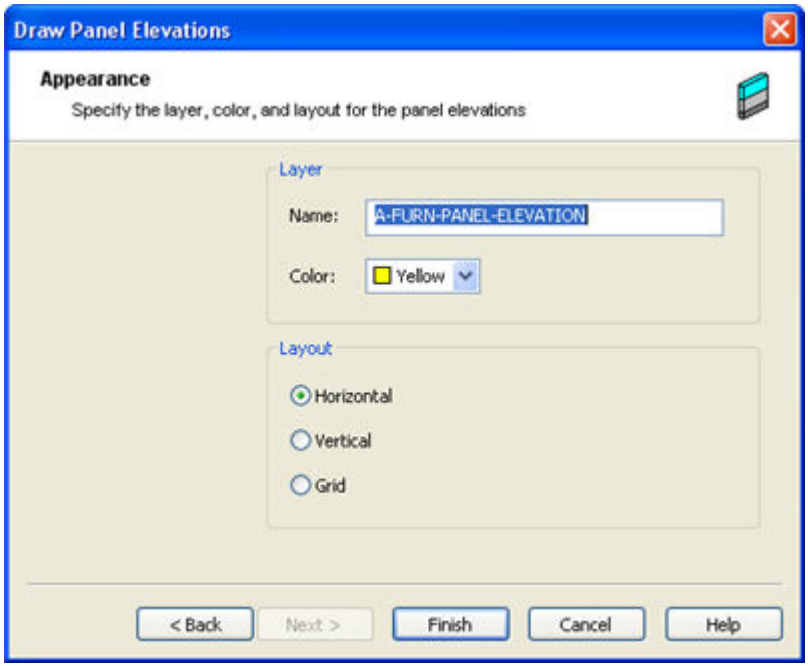


2. Click the **Select All** button or select the configurations you wish to have elevations for.

3. Click **Next**.

   The **Appearance** screen in the Draw Panel Elevations dialog opens.

4. You can change the layer and layer color that the elevations will be created on. Also select the layout you wish to have.



5. Click **Finish**.

6. Pick a point on the drawing; the upper left hand corner of the elevation layout will be inserted here.

   The elevations are blocks and can be moved as needed.

   When you edit or change your configurations, the elevations will be updated in the drawing. However, if you change the elevations when the drawing is not open, the elevation will not be updated. Erase and reinsert the elevations into the drawing.

Panel Builder Best Practices

Here are some best practices when working with Panel Builder:

- As much as possible, maintain one custom catalog per drawing.
- Keep the custom catalog and the drawing in the same folder.
- When sharing within an office, keep the drawing and custom catalog in the same folder on the network, mapped the same on each user machine.
- Do not use the AutoCAD Mirror, Explode or WBlock commands on Panel Builder configurations. Doing so will corrupt these configurations.
- Use the Panel Builder **Save As** command to copy configurations between drawings. Do not use WBlock or cut and paste.
- To maintain future flexibility when editing, give Panel Builder configurations short unique names. Do not include the height of the frame in the name.
- Use the Configuration Manager to rebuild configurations when sharing with a remote office or notebook computer.
- If you have multiple drawings sharing the same custom catalog, don't rebuild the custom catalog from one of the drawings. If you do so, each drawing will need to be rebuilt into its own unique custom catalog.
- Use Static Elevations for large drawings with many occurrences of the same configurations. Reserve Dynamic elevations for complicated configurations where an entire run of panels needs a single elevation.

Panel Builder command reference

This section lists commands available through the various menus. All commands are already referenced by their respective tasks in this help file. The following topics give you a brief description of menus and commands and provide links to corresponding topics.

File menu

Command	Shortcut	Description	Topic
New	Ctrl+N	Create a new panel configuration	Create a panel configuration
Open	Ctrl+O	Open a panel configuration	Open a configuration from Panel Builder
Save	Ctrl+S	Save the current panel configuration	Save the configuration
Save As		Save the current panel configuration under a different name	Create a configuration from an existing one
Page Setup		Select the paper size, orientation, and margins for the configuration printout.	
Print Preview		Preview the current panel configuration before printing	Print a configuration
Print	Ctrl+P	Print the current panel configuration	Print a configuration
Exit		Close the 20-20 CAP Panel Builder program. If an unsaved configuration is on the screen, the program will ask you to Save (**Yes** or **No**) or to **Cancel** the **Exit** command.	

Edit menu

Command	Shortcut	Description	Topic
Delete	Delete	Remove the selected element from the configuration	Create a panel configuration
Copy Side 1 to Side 2		Copy skins from side 1 to side 2.	Create a panel configuration
Copy Side 2 to Side 1		Copy skins from side 2 to side 1.	Create a panel configuration

View menu

Command	Description	Topic
Refresh	Redraw the panel configuration.	
Toolbar	Show or hide toolbars, the Content Bar, or the Properties bar. Also, customize existing toolbars.	Toolbars
Status Bar	Show or hide the Status bar.	
Design Alerts	Enable or disable the display of an Alert dialog whenever you place an element that does not follow design rules.	Design rules

Tools menu

Command	Description	Topic
Apply Finish Code	Apply a finish code to the panel configuration	Apply a finish code
Options	Show the Max Height line on the Panel configuration pane. Select the 20-20 Worksheet field that will store finish code or tag assigned in the Properties bar.	

Help menu

Command	Description	Topic
Topics	Open the 20-20 CAP Panel Builder online help	Topics
What's New	Open the **What's New** window where you can read about and download software and manufacturer catalog updates.	What's new
CAP on the Web	Access updates online	Online updates (CAP on the web)
Diagnostics	Troubleshoot and repair damaged files	Diagnostics
About CAP Studio	Displays the 20-20 CAP Panel Builder version number	Software version (About CAP Studio)

CAP Architectural

You can use CAP Architectural to insert architectural objects in a drawing, such as walls, windows, and doors. You can quickly and easily create a building shell to use for planning your design project.

To open CAP Architectural, do either of the following:

- From the CAP Designer menu, select CAP Architectural
- Click the CAP Architectural icon on the CAP Designer toolbar.

For help on any of the CAP Architectural commands, click the **Help** button available in the ArchPLUS dialog boxes.

Manufacturer-specific information

The following CAP Designer features/commands apply to certain manufacturer product lines only.

- Automation Center (Kimball, Knoll, National, Steelcase, Teknion)
- Allsteel Tiler
- CAP Structure Builder (Kimball)
- CAP Utilities (Knoll)
- Convert (Kimball, Steelcase, Inscape)
- Import Z-Axis (Herman Miller)
- Import Vary Easy Symbol (Herman Miller)
- Steelcase - Answer
- Steelcase - Privacy Wall

- Allsteel

See the following section for information about CAP Designer commands specific to Allsteel:

Place tiles on Allsteel Reach cabinets

Use the **Allsteel Tiler** toolbar to place tiles on Allsteel Reach cabinets.

To activate the Allsteel Tiler toolbar:

1. In AutoCAD, right-click on an empty space in the toolbar area.
2. Select **CAP Designer**, then **Allsteel Tiler**.

Place tiles on a cabinet

1. Click **Place Tiles**  .
2. Select the part on the drawing. You can only select one part at a time.

   The **Allsteel Reach Tile Tool** appears.

3. Select the appropriate tiles by clicking on the enabled dropdown arrows.

   If you are going to reuse the same parts, you can check **Create CAP Standard** to make a new CAP Standard. For details on creating Standards see the Standards (Typicals) section in the CAP Designer help file.

4. Click **Place Tiles**.

   Notice that the tile tag appears on the drawing, on top of the selected part.

Delete tiles from a cabinet

1. Click **Remove Tiles** .
2. Click on the tile tags in the drawing.

Herman Miller

Convert CADpack drawings

1. To use the Convert Herman Miller CAD Pack feature, the "CAD Pack to CAP Conversion" command must be run within CAD Pack.
2. From AutoCAD, open the CAD Pack drawing that needs to be converted.
3. From the **CAP Designer** menu, select **Convert**, **Herman Miller CADpack**.
4. AutoCAD will prompt for a selection of objects. Select the items using a window or type "All" to select the entire drawing.

   Once the selection process is complete, the conversion will be done.

Import Vary Easy symbols

1. From the **CAP Designer** menu, select **Import**, **Vary Easy Symbol**.

   The **Open** dialog appears.
2. Locate the .dwg file that is to be imported then click **Open**.
3. Place the part on the drawing.

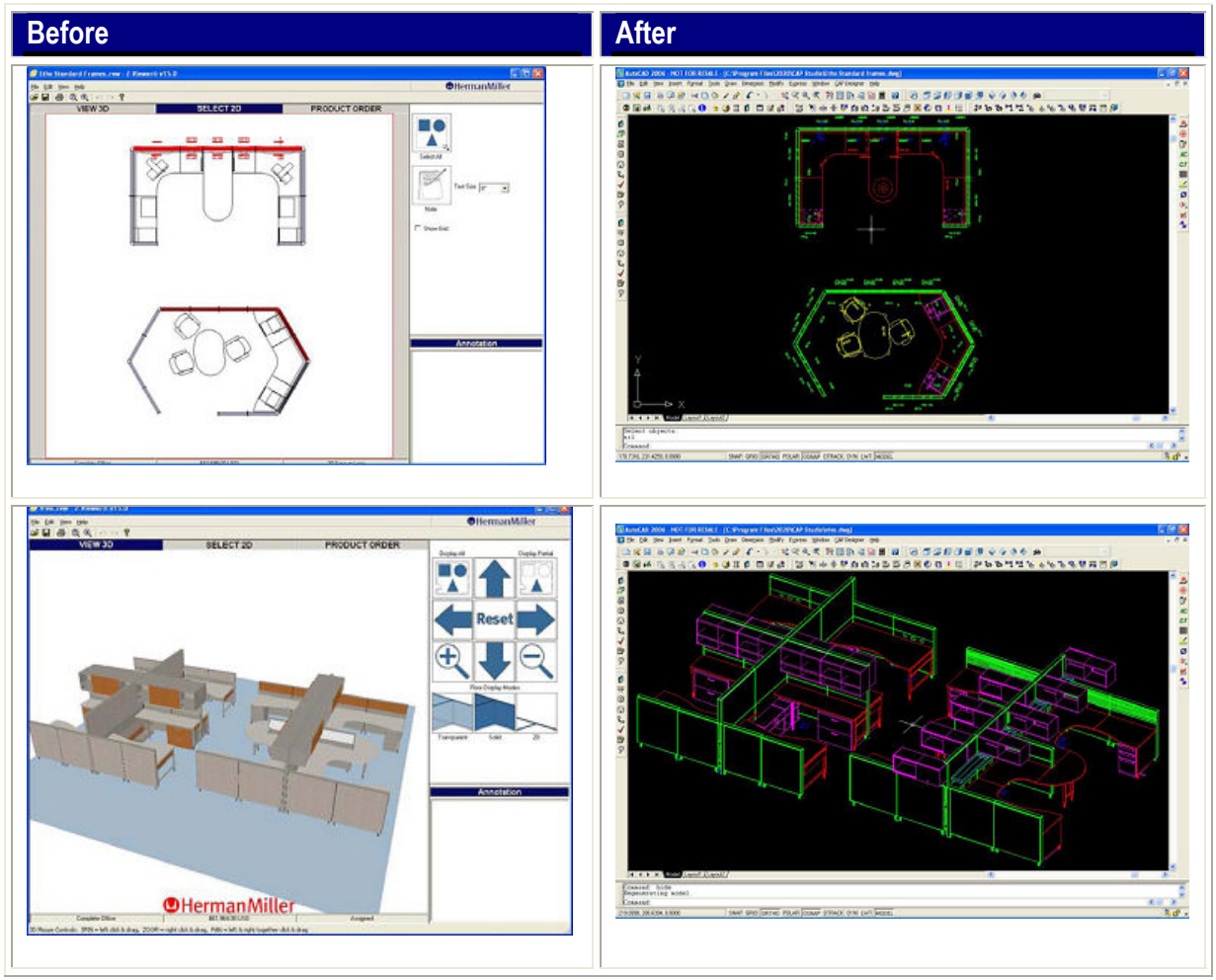
Import Z-Axis

To use the Z-Axis import feature:

1. From the **CAP Designer** menu, select **Import**, **Z-axis**.

   The **Open** dialog appears.
2. Locate the .ZXF file that is to be imported then click **Open**.

Here are some images showing the "before" in Z-Viewr and "after" in CAP Designer:



Kimball

See the following sections for information about CAP Designer commands specific to Kimball:

Auto-Brackets

This tool works in a similar fashion to CAP Auto-Connectors. The tool analyzes a selection set containing worksurfaces and Structure Runs, and inserts all required worksurface and overhead mounting bracketry into the drawing.

> Auto-Brackets for Xsite **DOES NOT** check for the presence of Xsite Traxx at the required locations. Be sure to check your Elevation designs to insure that horizontal tile seams and hence their accompanying Xsite Traxx are available for proper worksurface support.

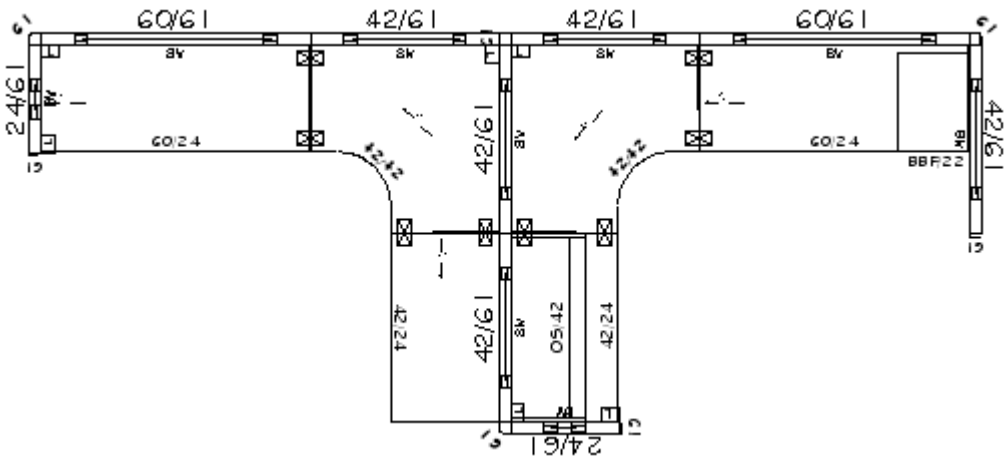
Use the Auto worksurfaces and overhead bracket generator

Once worksurfaces, overheads and panels or Structure Runs have been carefully and properly snapped together, or CAP Standard workstation typicals have been properly snapped into their associated panel runs, the Auto-Brackets tool can be invoked.

1. Click on the Auto Brackets icon on the **Auto-Connectors and More** toolbar.
2. CAP Designer will prompt, on the command line, **Select Objects:**

   Select all of the workstation(s) and their associated panels with a window or crossing window.

   All items in the selection set will be analyzed and brackets will be placed in the drawing as required.



Rules for Kimball bracket placement

- Worksurface brackets, cantilevers, flat brackets, and support legs (when required) will be placed.
- Overhead Mounting Brackets and Ganging Brackets will be placed where needed.
- A standard Column Leg will be inserted for all worksurfaces, which require a leg.
- Any manually placed bracketry will be considered as an "override" to the automatic placement logic. This may be required in some circumstances containing situations where this tool cannot account for "Design-decisions".
- Pedestals and support panels will be identified. Proposed bracketry locations that coincide with a pedestal or support panel location will not be placed.
- Any manually placed bracketry will be crosschecked against the required bracketry and marked if not located correctly according to the automatic placement logic. The marks will be placed on a

special layer exclusively for the marks. Manually placed bracketry components will not be removed by subsequent runs of the bracket generation tool.

- For CAP Standard parts, the worksurface, overhead, pedestal, and support panel data will be extracted from the nested block along with the location of any brackets contained within the CAP Standard. This information will then be used as described above to identify required bracket locations. If new brackets are required, they will be placed outside of the CAP Standard.
- Re-running Auto Bracketry will replace any previously placed brackets that were placed by Auto Brackets.

Auto-Brackets exceptions

- Freestanding worksurface applications are not supported.
- Automatically placed components will be placed at 0” Elevation (the worksurface and bracketry 3D symbology is drawn at a prescribed height above the 0”-Z insertion point)
- The drop bracket required to connect adjoining worksurfaces of differing heights will not be placed. (since users do not prescribe worksurface heights, any height-differential is not recognizable)
- End Support, Mid Support, and Modesty panels will not be automatically placed (the style number requires user intervention regarding desired height and width; i.e. Design-decisions)
- Mirrored worksurfaces and overheads are not supported, due to the “handedness” requirements of bracketry and many worksurface or overhead part numbers.
- Validation analysis for Xsite Traxx is not performed. Auto-Brackets assumes Xsite Structure Runs have the required Xsite Traxx in place.

Kimball Xsite

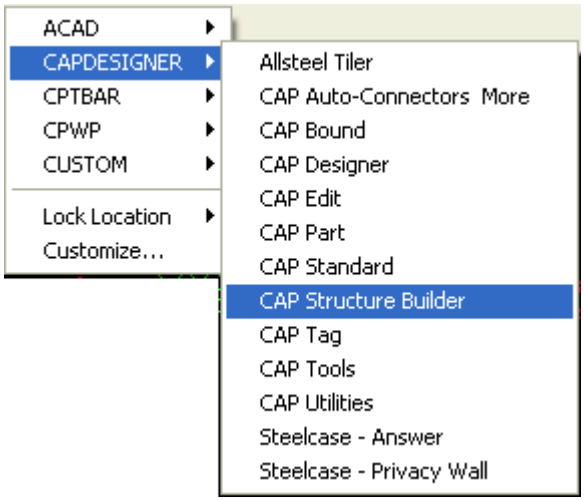
Kimball Office’s Xsite is a wall system product line has many unique characteristics, which require customized CAP Designer capabilities. For example, Xsite is not a typical "frame and tile" wall system.

It is an assembly of parts that provide high levels of flexibility, where a wall's length and tile design dictate the structural frame components.

The lack of defined "frames" or "panels" represents a departure from more common space planning and design automation tools. Therefore CAP Designer provides tools and methodologies for planning and specifying Xsite projects.

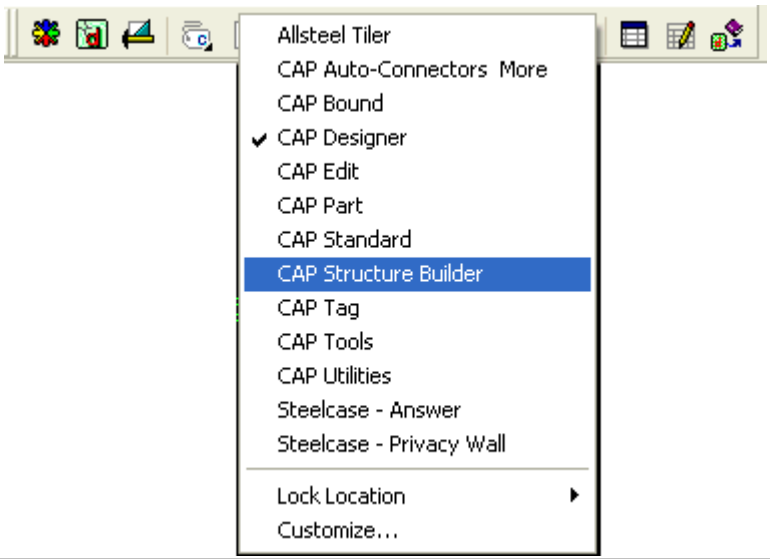
Access the CAP Structure Builder

1. In AutoCAD, right-click on an empty space in the toolbar area.
2. Select **CAP Designer**, then **CAP Structure Builder**.

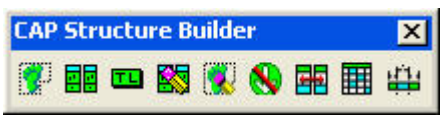


The **CAP Structure Builder** toolbar will appear. For information on each icon, see CAP Structure Builder toolbar.

If there are **CAP Designer** toolbars in the toolbar area, you can simply click on any one of them and then select **CAP Structure Builder** right away.



CAP Structure Builder toolbar



Icon	Name	Description
	Structure Run Tool	Creates the structure runs in plan view.

Icon	Name	Description
	Assign Elevation	Creates and allows the user to Assign Elevations to structure run(s).
	Tile Tool	Places Elevation Tile symbols on the elevations in the drawing.
	Elevation Properties	Allows user to change properties of an Elevation.
	Structure Edit	Allows users to modify properties of a structure run.
	Break Elevation Link	Allows users to break the link between an Elevation and a Structure run.
	Copy Elevation Side	Copies all of the tiles from the selected Elevation side to the other side, i.e. Front to Back, or Back to Front, not from Elevation to Elevation.
	Tile Schedule	Creates a block entity in the drawing, listing all of the tiles in the drawing and includes a list of identifiers for spanners.
	Plan View Structure	Creates a layout of the vertical structures used in each selected structure run on the plan view drawing, including dimensions and structure identifiers.

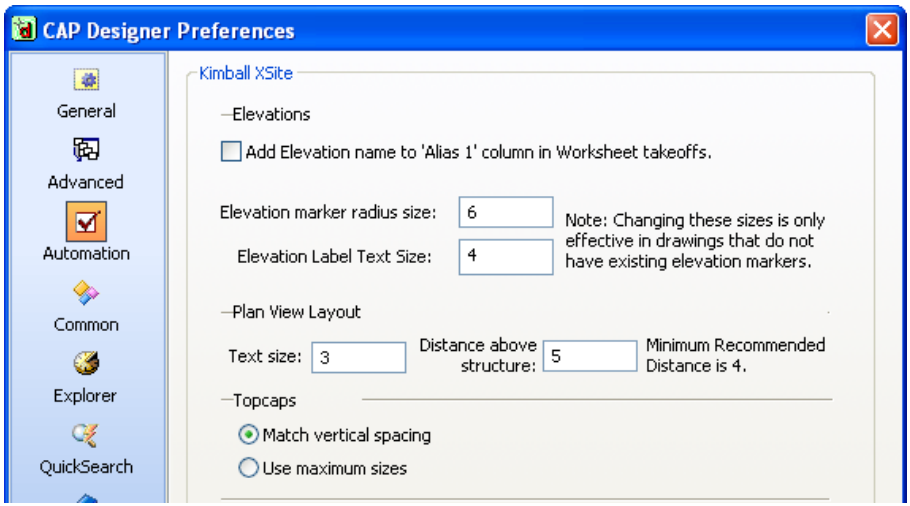
Automation Preferences

You can set preferences to adjust the behavior of Xsite tools.

1. Select the **CAP Designer** menu and click on **Preferences**.

   Or at the **Command:** prompt type `CAPPREF`. Be sure that CAP is running.

2. Click **Automation**.



3. Change any of the following settings:

❖ **Add Elevation name in 'Alias 1' column**, when checked, will place the Elevation name in the Alias 1 column for every Xsite Part associated with the Elevation. This will allow identical parts to be listed separately for each Elevation they are associated with.

   When generating an order list for Xsite this should be unchecked to allow consolidation of like part numbers.

- The **Elevation marker** radius size will control the size of the link arrow symbol used in new drawings. This should only be changed before any Elevations have been created in a drawing file otherwise the markers will be placed in incorrect locations and the size will not change.

  If you need to change the size of the arrow after creating an elevation use the scale command to change the size of an elevation marker in an existing drawing.
- **Plan View Layout -** enter the plan view layout's text size and distance above structure. See Plan view structure**.**
- The **Topcap** controls can be used to select the desired default size when Elevations are created. This default can be changed after the elevation is created — see Modify an elevation.

4. Click **OK**.

Create structure runs

To create an Xsite structure run these are the basic steps to follow:

1. Draw structure runs (Structure Run Tool)
2. If necessary, edit structure runs
3. Create an elevation of a structure run (Assign Elevation Tool)
4. Modify an elevation's structural components or behavior (Elevation Properties Tool)
5. Place tiles on an elevation (Tile Tool)

See also:

- Xsite tile rules
- Construct like tiles on both sides of an elevation
- Modify vertical structure spacing

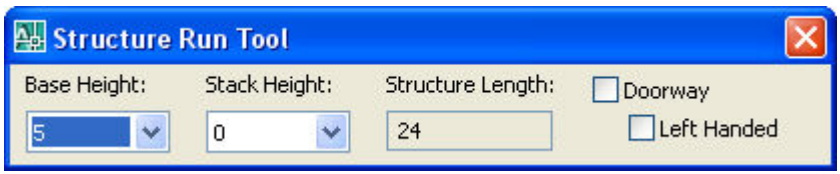
Draw structure runs

A footprint will be created for the Xsite Structure. The base height and stack height will be determined at this time. The C and I spacing will be determined in a later step.

1. Click the **Structure Run** button on the CAP Structure Builder toolbar.

   Or type `createstructure` at the Command prompt.

   The **Structure Run Tool** dialog box will open.

   This box can be dragged to any convenient location, and will disappear after a Structure Run is drawn. Restarting the tool will again display the dialog in the last location it was used.
2. Set the **Base Height** and **Stack Height** using the list boxes provided.
3. Pick a structure run starting point.
4. Drag the cursor to control the length and direction of the structure run. The actual length is displayed in the **Structure Length** box of the **Structure Run tool** dialog box in 3" increments.

The minimum length of an Xsite Structure Run is 24”. The Structure Run tool will not allow a Structure Run less then 24” to be drawn.

You can also use Polar keyboard input, such as “@48<0” or after selecting a starting point and rotation for the structure run, the length of the Structure Run can be entered at the AutoCAD command line.

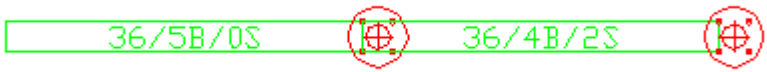
5. Select the end point of the Structure Run. This will draw the structure, tag the structure, and provide a UFO for ease of snapping the next Structure Run into location. The tag for Xsite structures is shown below:

This example describes a 48” long Structure , made up of a four-high base component, without a stacking component.

The following example describes a 48” long Structure, made up of a four-high base component, and a single stacking component.

Create Structure Runs with differing heights or configurations by using the Structure Run Tool multiple times and linking the runs together. They will be treated as a single Structure Run by the Assign Elevation tool in the next step.

This example shows two Structures, one 36" long with a 5-high base and another 36" long with a 4-high base and a 2-high stacker.



Edit an existing structure run

A structure run's base height and/or stacking segments can be edited once it is already in the drawing.

1. Click the **Structure Edit** button on the CAP Structure Builder toolbar.

   Or type `structedit` at the **Command :prompt** and press Enter.
2. Select the structure to edit and press Enter. The **Structure Run Tool** dialog will open.
3. Make the necessary changes to the structure using the drop down menus.
4. Click **OK**.

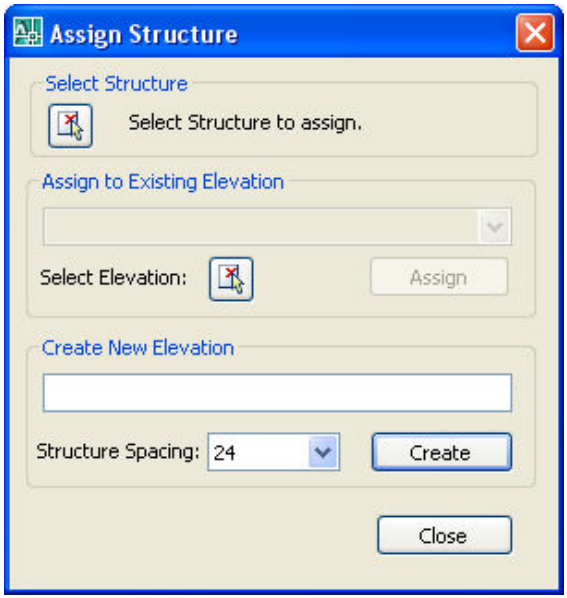
Create elevations for a structure run

Creating elevations will allow the user to add tiles in elevation view as well as view the C and I structures. The Structure Run for an elevation is defined as any number of continuous Structures between Xsite Turns that connect Structure Runs.

1. Click the **Assign Elevation tool** button on the CAP Structure Builder toolbar.

   Or type `elevassign` at the Command prompt and press Enter.

   The **Assign Structure** dialog will open.



2. Enter an elevation name in the **Create New Elevation** box.

   Since this is the first Elevation created in this drawing, the "Assign to Existing Elevation" box is empty. If present, existing Elevations can be picked and assigned to a Structure run.

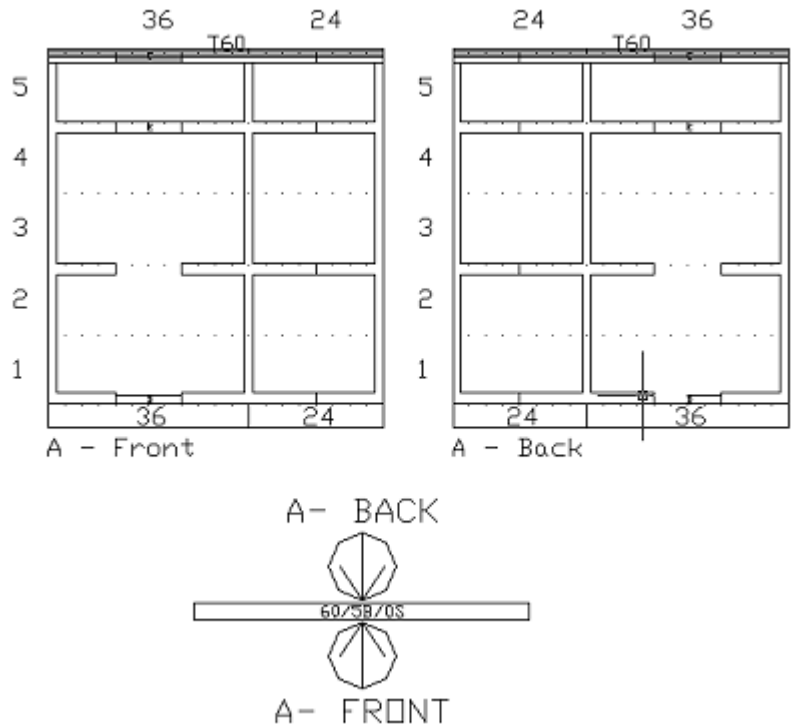
3. Click the **Select Structure** button and select the desired Structure run(s) on the AutoCAD drawing screen.

   If selecting multiple runs, the configurations must be the same base height, stack height and length.

4. Adjust the Structure Spacing using the list box. This will set the default spacing for the C and I structures in the Elevation to be created.

This setting can only be adjusted before the Elevation is created. Otherwise grips on the elevation can be used to change the spacing to different widths.

5. Click the **Create** button.
6. You will be prompted to specify where to place the Front Elevation. Place it, set the rotation, and proceed to place the Back Elevation.



The Elevation Symbols can be scaled as desired, using the AutoCAD SCALE command.

To maintain integrity of structure runs and their linked Elevations, certain commands require special considerations (reactors). CAP Designer and Xsite tools **MUST** be loaded to enable these reactors. Editing structure runs or Elevations without CAP Designer and Xsite tools loaded can result in improper or damaged Elevations. See Xsite tile rules in this section.

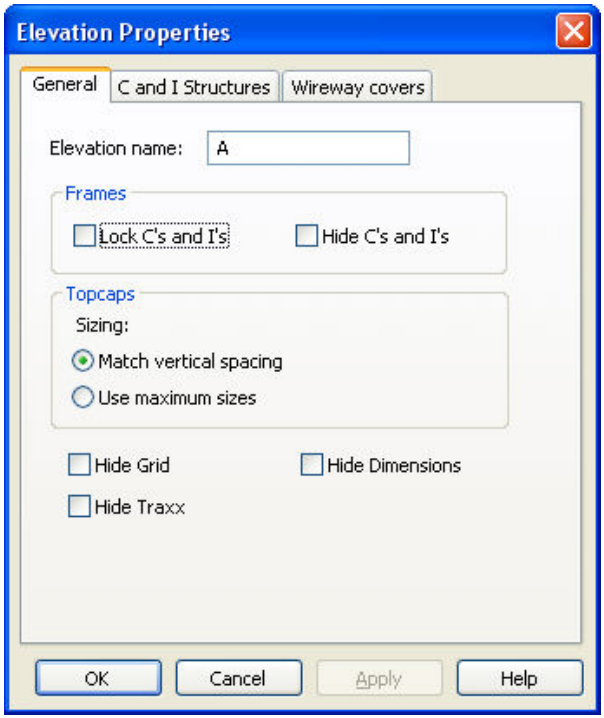
Modify an elevation

Properties that can be modified include the Elevation name, Topcap sizing, C and I Structures, and Wireway Covers.

1. Click the **Elevation Properties** tool on the CAP Structure Builder toolbar.

   Or type `elevprop` at the Command: prompt and press Enter.

   The **Elevation Properties** dialog box will open.



2. Select an elevation to modify on the drawing.
3. Modify any of the following information in the **Elevation Properties – General Tab:**

- Elevation name
- **Lock C's and I's** - prevents tile placement from automatically moving vertical structure components to fit tile configurations.
- **Hide C's and I's** - removes those components from view.
- Topcap sizing
- **Hide Grid** and **Hide Dimensions** removes those components from view.

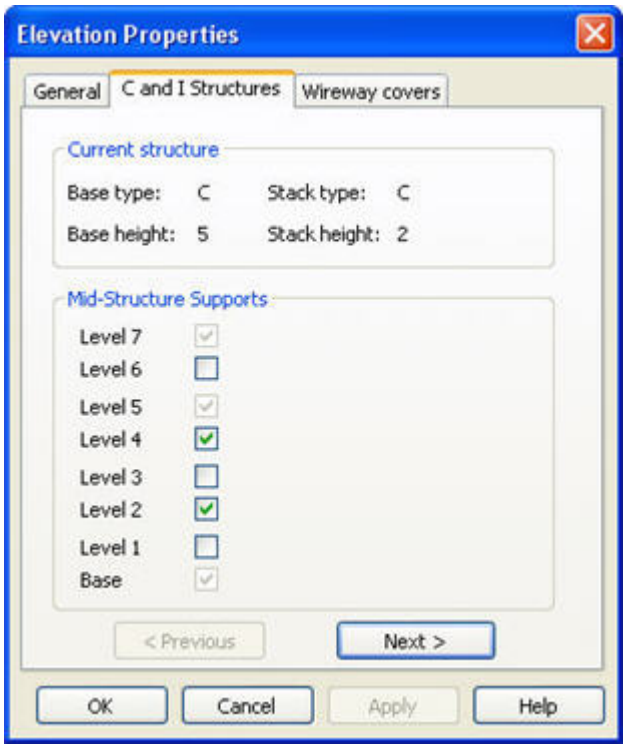
❖ **Hide Traxx** removes the Xsite Traxx from the elevation but leaves the dimensions visible.

Use **Hide Dimensions** to remove Traxx dimensions from the elevation.

4. See Change C and I structures.

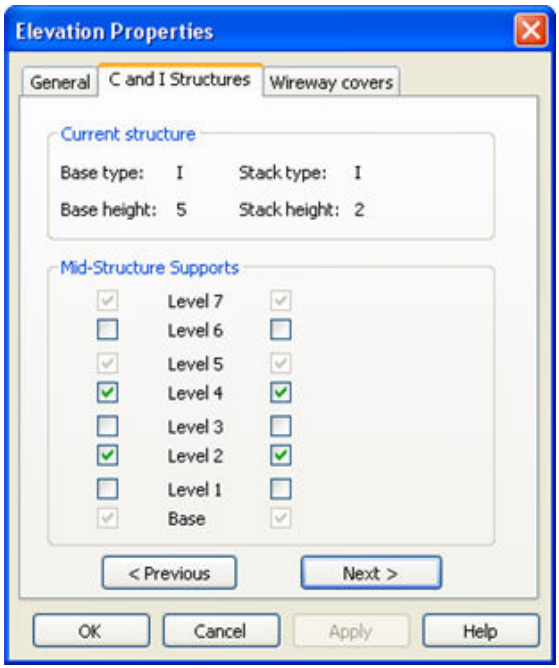
Change C and I structures

1. In the **Elevation Properties** dialog, click the **C and I Structures** tab.



2. The C and I structure that is being modified is displayed as a dashed line on the drawing. Mid-Structure Supports can be added or subtracted by placing or removing the checks in the white boxes.
3. Click **Apply** to view these changes.

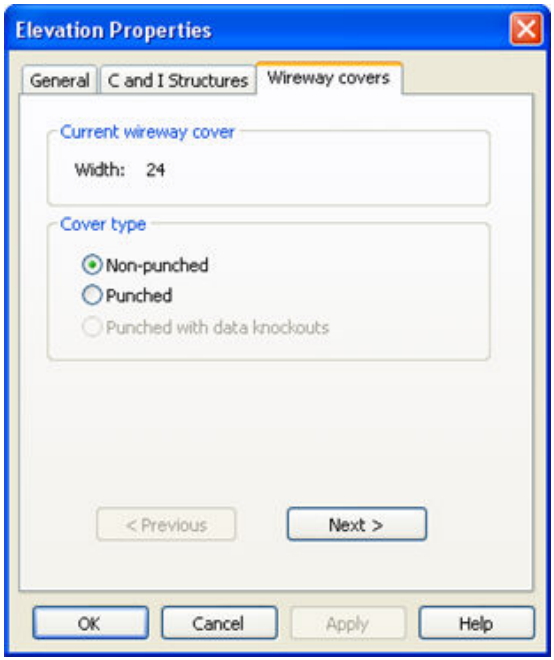
   Mid-Structure supports with grey boxes cannot be modified.
4. Click **Next** to display the next structure and its information as shown below.



5. Continue clicking **Next** until all structures have been modified.

Modify wire covers

1. In the **Elevation Properties** dialog, click the **Wireway covers** tab.



2. The Wireway cover that is being modified is displayed as a dashed line on the drawing. You can change the cover type to non-punched, punched, or punched with data knockouts.
3. Click **Apply** to view these changes.
4. Click **Next** to display the next structure and its information.

   By default all elevations are created with Non-Punched Wireway covers. Wireway covers can be changed individually in the Elevation Properties.

Add tiles to Xsite

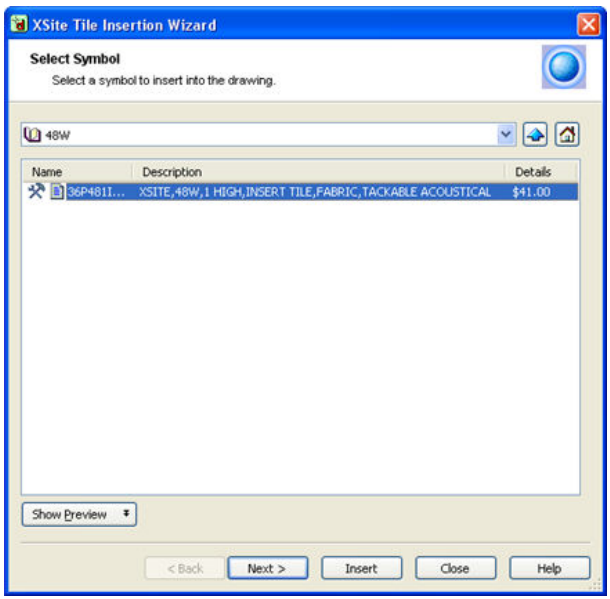
Tiles are added to the Elevations rather than the plan view. When a Worksheet take-off is done only the structure's plan view needs to be selected as a link is created between the elevation and the structure.

1. Click the **Tile Tool** button on the CAP Structure Builder toolbar.

   Or type `inserttile` at the Command prompt and press Enter.

   The XSite Tile Insertion Wizard appears.

2. Navigate down to the product level.



3. Hover (do not click) over the desired tile then click the **Insert** button to insert the selected tile.

   Clicking on a tile in the will bring up the **Tile Options** dialog.

4. Snap the tile into place by selecting an insertion point and a rotation angle.

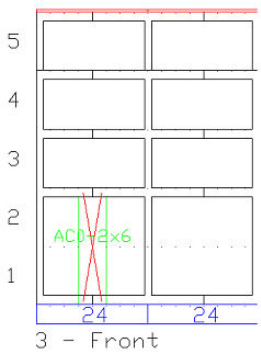
For easier placement of elevation tiles, turn the AutoCAD **OSNAP** on. Make sure that only the **Node** snap mode is checked. Snap points are provided in appropriate locations on the Elevation grid to allow precise tile placement.

When placing tiles or furniture, toggling-off the UFO Toggle  will disable the warning message: "Item selected is not a frame or door".

Some tiles, such as glass, require the same tile to be placed on the other side of the elevation. This will be done automatically by the elevation.

Xsite tile rules

Tiles are checked for correct fit upon placement into an elevation. Incorrectly placed tiles are marked with a large red X, as shown below:



- In the above example we had a 48” wide structure run. We tried to place a 2 high 6” wide on the elevation, which is not allowed.
- To move or erase a tile select the tile or the tile text (not the red X marking).
- Each time a tile is placed, either from the **Tile** tool, or by copying an existing elevation tile, the validation check is performed.
- Unless **Lock C’s & I’s** is checked in Automation Preferences, vertical structures may be moved automatically in order to allow a tile to have a valid placement.
- Tiles can be copied from one elevation to another, individually or in groups.
- Two-sided tiles, such as glass, automatically fill both sides of the elevation.
- Overlapped tiles are checked and marked if invalid.

  Tiles which **overhang** an elevation grid are not part of an elevation, and therefore DO NOT get checked for validity.
- Overhanging tiles must be identified and manually removed.
- **Only** elevation tiles associated with an elevation are counted in a takeoff. Should individual tiles be desired in a drawing, but not associated with an elevation, they must be inserted as plan view symbols from the CAP Explorer.
- To easily determine if any parts are **not** associated with an elevation, select the elevation and move it. **Non**-associated tiles will not move with the elevation and its associated tiles.

Construct like tiles on both sides of an elevation

In some cases, both sides of an elevation may require the same, or nearly the same tile patterning configurations. The copyside command is available to quickly and easily tile one side of an elevation just like the other side.

1. Tile one side of the elevation.

2. Click on the **Copy Elevation Side** button on the CAP Structure Builder toolbar.,

   Or type `copyside` at the Command: prompt and press Enter.

3. Select the tiled side of the elevation. Click on the elevation or its name, not on a tile.

   Both sides of the elevation will then contain the same tiles. Either side can be further modified as desired.

Depending on the complexity of the tile design, some tiles that are copied may be invalid because the structure elements are not able to adjust automatically to meet the required rules for tile placement and support.

Modify vertical structure spacing

When elevations are created with more than 24" between vertical structures, structures can be moved to create varying sized spacing between the vertical structures.

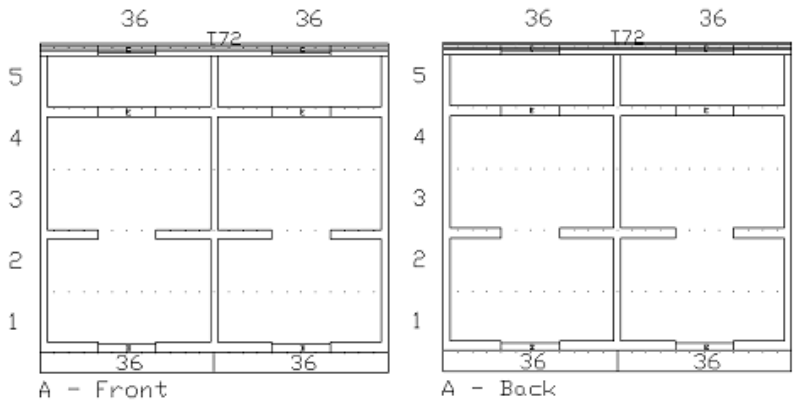
There are two methods to manage this vertical spacing movement.

- Auto-mode
- Grip-drag mode

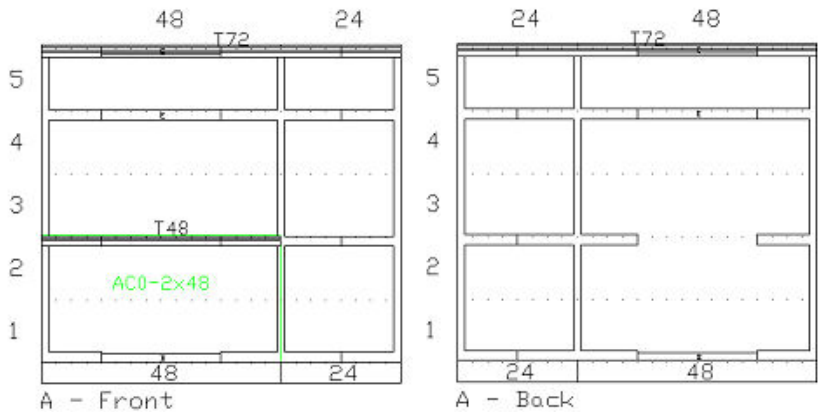
Auto-mode

The first method, Auto-mode, occurs automatically while placing tiles. The elevation will move vertical structural components to "fit" the tile being placed.

The example shown below is an elevation with 36" spacing between vertical structures.



Placing a 48" wide tile results in the vertical structures moving to accommodate the tile placement, as shown below:



See Grip-drag mode for the other way of moving vertical structures.

Enabling **Lock C's and I's** on the **General** tab of the Elevation Properties Tool can turn off this behavior.

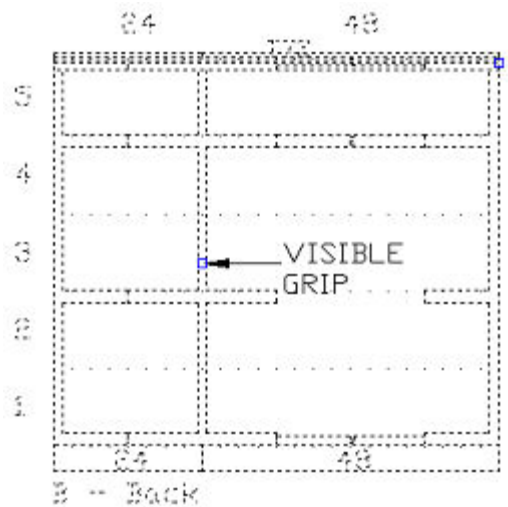
Grip-drag mode

Besides Auto-mode, the other method to adjust the spacing between vertical structure components is the manual "grip and drag" mode. The user can manually adjust the spacing using the grips located on the C and I structures.

In the example below we have 24" and 48" spacing.

1. Select an elevation.

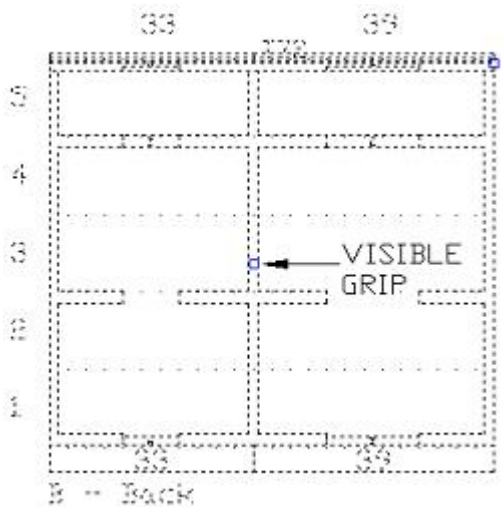
   A visible grip, normally displayed as a small blue rectangle, will appear. This is shown below on the vertical "I" structure of the selected elevation.



2. Click and hold the mouse button on the blue grip.

3. Drag the structure to the new position and release the mouse button. The structure will lock into the closest legal position.

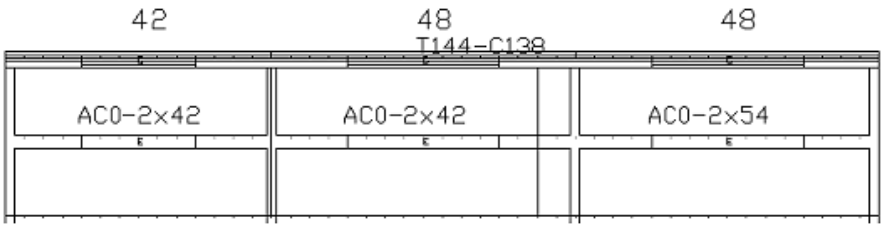
   In this example the I structure was moved to the right 9".



After moving a vertical structure, the new spacing dimensions will be visible on the wireway cover. The elevation can be easily de-selected by pressing the Esc key or starting another command.

Adjust Traxx Lengths

As tiles are placed on an elevation, Traxx symbols will be automatically created and drawn on the elevation. Once all of the tiles have been placed on an elevation, the designer can choose to adjust the lengths of Traxx being used. This can be done to avoid the need to cut Traxx to fit the current tile layout, or to complement the tile pattern that the designer has chosen. The only restriction on Traxx lengths, is that they must begin and end within 6" of a vertical structure. This is similar to the restriction placed on tiles.

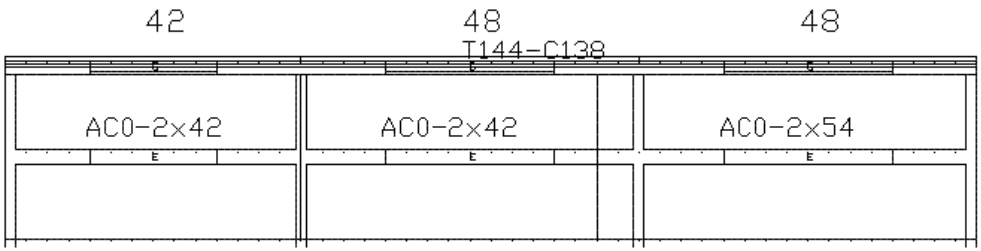


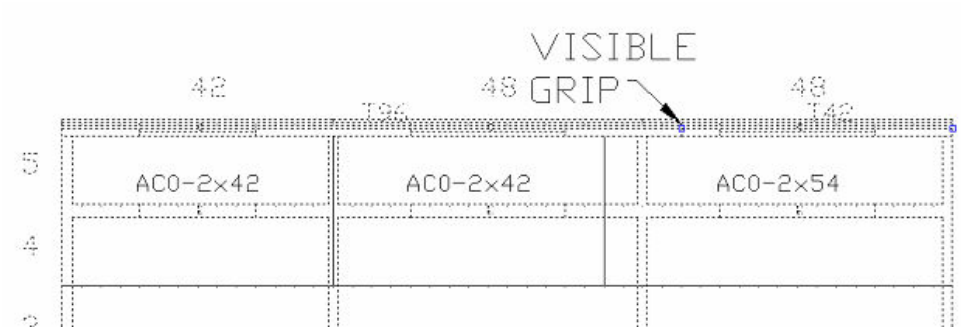
In the example above, three tiles have been inserted on an elevation which has caused the elevation to generate a section of Traxx for them. Along with the Traxx symbol is a tag indicating the length of the Traxx and the dimension to which it should be cut. The tag for this example is "T144-C138". This is read as a section of Traxx 144" long (T144), cut to a length of 138" (C138).

Adjusting the length of Traxx is very similar to adjusting the placement of the I-Structure members.

1. Select the elevation. This will display the grips on the Traxx.
2. Drag the grip to any allowable location.

In the example below a 144" Traxx was automatically placed. By selecting on the grip and dragging it to the left two new sections of Traxx were created — a 96" and a 42".





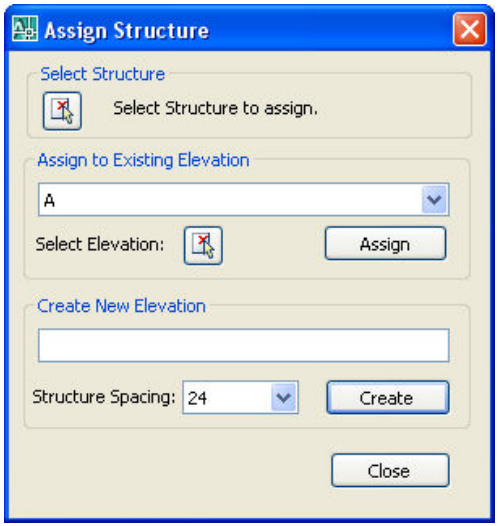
Nodes are provided to snap the grip point to as you move it. If the selected location is invalid, the validation routine in the elevation will move the grip point to the next valid location. This could be the original starting location in some instances.

Assign existing elevation

Once an elevation has been created, it can be assigned to multiple structure runs.

1. Click the **Assign Elevation** button  .

   The **Assign Structure** dialog will open.



2. Click the **Select Structure** button and select the structure to assign. More than one structure can be selected.
3. Under the **Assign to Existing Elevation**, select the existing configuration you want to use.
4. Click the **Assign** button. The elevation markers will automatically be placed on the structure run.

When an existing elevation is assigned to a structure run, the run and elevation will be checked to ensure that they possess the exact same geometry. A warning is provided should the elevation and the structure run not match.

Break elevation link

To break the link between an elevation and a structure run:

1. Click the **Break Elevation** link icon .
2. Select the structure run.

   Notice that the elevation markers have now disappeared from the structure run.

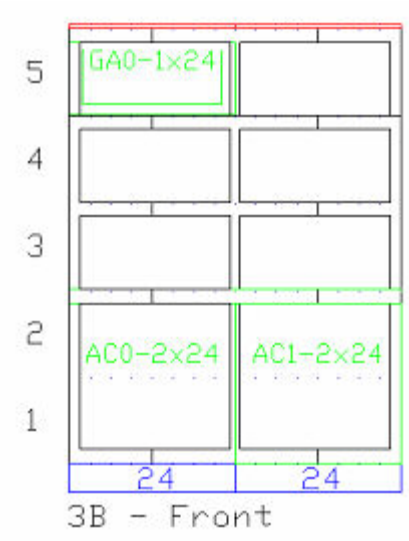
Select tile options

Tiles can be optioned, either before or after they have been placed on an elevation. The Tile Tag Manager allows optioned tiles to be tagged differently, similar to the standard CAPtile system. The tags are shown on the tiles, in the Xsite Tile Schedule as well as the Worksheet takeoff file (Bill of Materials).

1. Click the **Tile tool** button .
2. In the **Select Symbol** screen of the **XSite Tile Insertion Wizard**, click on the tile to be optioned.
3. In the **Option the Symbol** screen, select the desired options for the tile. Note that you can resize this window.

   For step-by-step instructions on optioning, see Select options in the 20-20 Options help.
4. Click **Insert**.

   A unique tile tag will be automatically assigned in sequential order. The example below shows an un-optioned tile on the left, with a tag of "AC0-2x24". The optioned tile, on the right, shows a tag of "AC1-2x24".



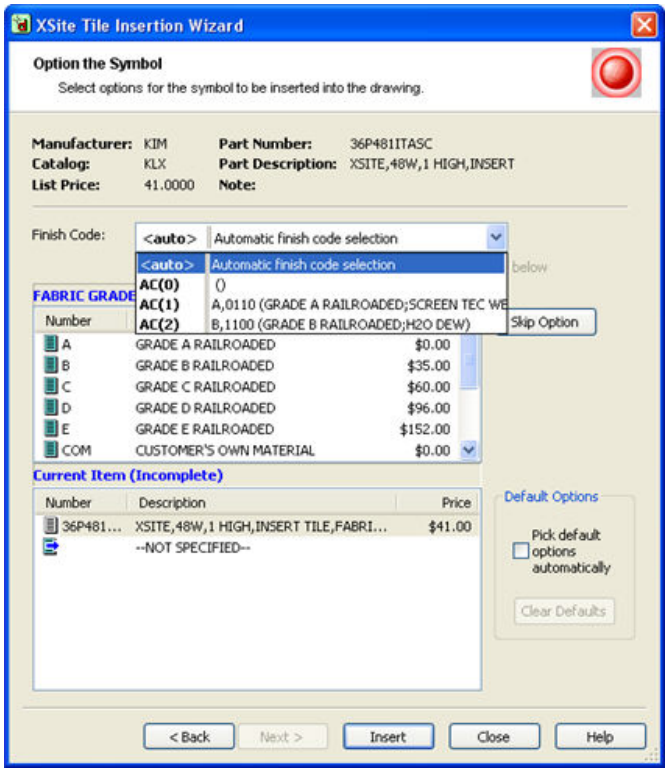
Once a tile has been optioned, its tag is added to the **Finish Code** list box so that it can be reused.

The same process can be used on tiles already inserted onto an elevation, by selecting **20-20 Options** from the **CAP Designer** menu then selecting the tile to apply options to.

Reuse an optioned tile

Once a tile has been optioned its tag is added to the **Finish Code** list box. Any previously optioned tile of a matching tile type is listed and can be selected for re-use.

1. Click the **Tile** tool button  .
2. In the **Select Symbol** screen of the **XSite Tile Insertion Wizard**, click on the tile to be optioned.
3. In the **Option the Symbol** screen, from the drop down menu next to **Finish Code** choose the appropriate pre-assigned finish code.



4. Click **Insert**.

Xsite tile schedule

The Xsite tile schedule will automatically place a schedule, similar to a legend, in your drawing. The schedule lists the code, type of tile, finish and a legend of codes for the spanners.

1. Click the **Tile Schedule** button .

   Or type `tilesched` at the Command: prompt.
2. Enter the text height at the Command: prompt.
3. Select the insertion point and rotation of the schedule (top left corner of the schedule).

INSERTION POINT

KL3 Kimball XSite System

Code	Description
AC0	ACOUSTICAL FABRIC, CLASS C FIRE RATED
AC1	ACOUSTICAL FABRIC, CLASS C FIRE RATED GRADE B RAILROADED H2O DEW
AC2	ACOUSTICAL FABRIC, CLASS C FIRE RATED GRADE A RAILROADED SCREEN TEC DUNE
A	STRUCTURE SPANNER, 24W-36W
B	STRUCTURE BOTTOM SPANNER, 36W-48W
C	STRUCTURE TOP SPANNER, 36W-48W
D	MID-STRUCTURE SUPPORT BRACE, 24W-36W
E	MID-STRUCTURE SUPPORT BRACE, 36W-48W

To update a tile schedule, simply click the **Tile Schedule** button again, enter the text height at the Command: prompt, and the existing schedule will be updated.

Plan view structure

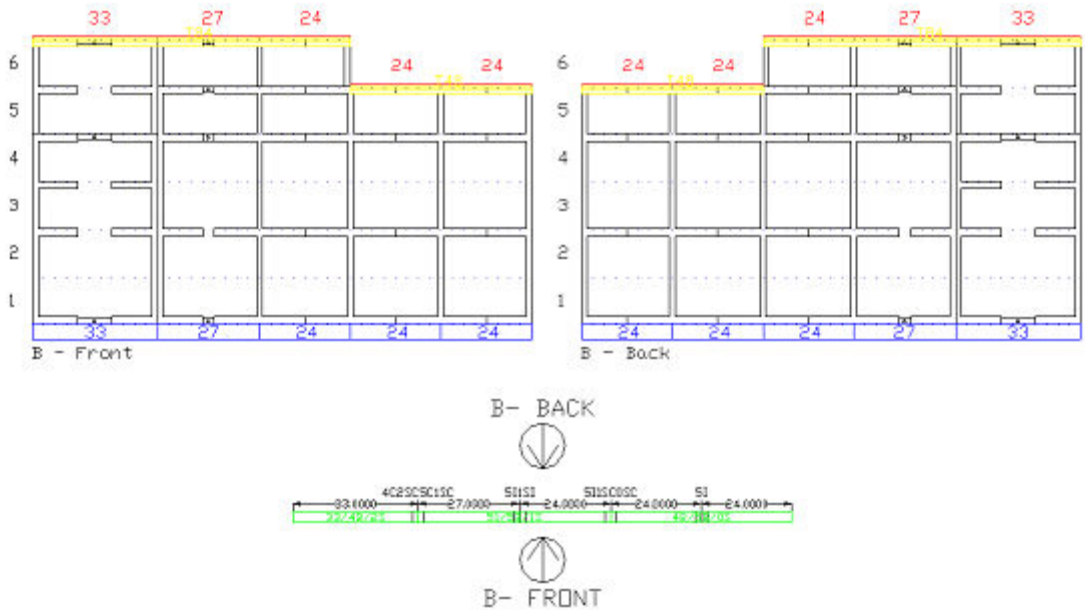
The Plan View Structure tool creates a layout map of the vertical structure members for the selected structure runs. This layout can then be viewed and printed in a layout for installation documentation. The Plan View Structure (PVS) tool will place a square to indicate locations of vertical structure members. At the same time, the PVS will place dimensions for the center to center distances between

structure members. Also, included by this tool are structure labels. These labels indicate the height and type of each structure member. This PVS tool does not include the Turns placed by Auto Connectors. The PVS for each structure run is blocked together. The PVS is on its own layer to allow hiding, moving and color changes as desired.

1. Click the **Plan View Structure** button .

   Or type `planviewstruct` at the Command: prompt.

2. Select the structures and press Enter.



Examples of structure labels:

- 4C2SC5C1SC – This structure member is a 4-high base C with 2-high stack C and 5-high base C with 1-high stacking C.
- 5I1SI – This structure member is a 5-high base I with a 1-high stacking I.
- 5I1SC0SC – This structure member is a 5-high base I with a left facing 1-high stacking C and no right facing C structures.
- 5I – This structure member is a simple 5-high base I with no stacking structures at all.

Worksheet takeoff (BOM) rules

Selecting the structure run or an elevation symbol adds the elevation items to the take off (structural parts, wireway covers, top caps, tiles, Traxx).

Anything else for the takeoff **must** be in the worksheet takeoff selection set (electrical, directional connectors finished ends, hi/lo trim,etc.)

AutoConnector Preference Settings

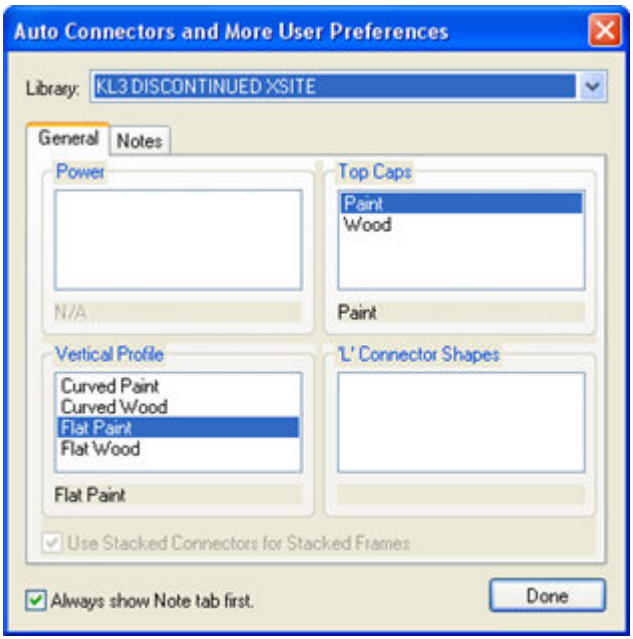
Setting AutoConnector preferences is similar to setting preferences for any other automated line. To set Auto-Hardware Preferences for KLX, access it from the from the Automation Center for Kimball.

The following notes are specific to KL3 Discontinued Xsite.

Access these Preference Settings from the CAP Auto-Connectors & More toolbar or from the Automation Center for Kimball.

Top Caps: controls material choice for structure, turn, and vertical trim Top Cap components.

Vertical Profile: controls profile and material of vertical trim components.



If Autoconnectors has not yet been run, and an elevation is created, the Top Cap Material in the elevation will default to Paint. Running AutoConnectors after elevations have been created will reset existing Elevation Top Cap Material selection.

AutoConnectors will not function properly on mirrored structure runs. Frame Validation Tools do not detect or correct Mirrored Structure Runs.

Special considerations for elevations and structure runs

Copy / Paste:

DO NOT copy/paste an elevation into a drawing which already contains an elevation of the SAME NAME.

Copy/paste a Structure Run and its elevation symbols into a drawing that doesn't have the elevation in it, will give the break link message.

Copy/paste both front and back elevations, and their structure run and both elevation symbols together is recommended.

Copy/Paste both front and back elevations, and then copy/paste their structure run and both symbols is also a recommended procedure.

Copy/Paste DOES NOT carry Tile Tag Management information into the new drawing. It is best to Copy/Paste elevations that do not contain optioned tiles.

Insert:

DO NOT Insert an elevation into a drawing that already contains an elevation of the SAME NAME.

Insert DOES NOT carry Tile Tag Management information into the new drawing. It is best to Insert elevations that do not contain optioned tiles.

Move:

Elevation symbols can be moved independently at will.

Erase:

Must have all structure segments of the run and both elevation symbols in the erase selection set to complete the erase. If all components are not erased together, a warning message appears.

3D Elevations:

3D elevations are not dynamic, meaning if an elevation has been converted to 3D, and then the elevation is modified, the 3D image will not show the new modification until it is recreated.

Custom Catalog Items:

Elevations and structure runs can be made into CAP Standards and then Custom Catalog entities.

Elevation and structure run CAP Standards in a drawing are NOT FUNCTIONAL in CAP Structure Builder until they have been undone, using the CAP Standard / Undo command in the CAP Designer pull down menu.

Automation Center for Kimball

1. From **CAP Designer**, select **Automation Center**.

   Or, click the **Automation Center** icon on the **CAP Designer** toolbar.
2. Notice the tabs for different manufacturers on the side (available only if these manufacturer catalogs were installed). Click the **Kimball** tab.
3. Click the dropdown arrow to select the appropriate **Kimball** catalog.

See the topics below for information on commands available for each Kimball catalog:

- Automation Center - Xsite KLX
- Automation Center - Interworks EQ
- Automation Center - Xsite KL3

Automation Center - Xsite KLX

See the table below to find the corresponding help topic for each icon or command:

Icon	Name	Topic
	Create Structure Run	Create structure runs
	Auto Hardware	Auto-hardware
	Create/Assign Elevation	Create elevations for a structure run
	Insert Elevation Tiles	Add tiles to Xsite
	Elevation Properties	Modify an elevation
	Edit the Structure Run	Edit an existing structure run
	Break Elevation Link	Break elevation link
	Copy Elevation Side	Construct like tiles on both sides of an elevation
	Create/Update Tile Schedule	Xsite tile schedule
	Create/Update Plan View Layout	Plan view structure

Icon	Name	Topic
	Auto Hardware User Preferences	Auto-hardware
	Auto Bracketry	Auto-Brackets
	Convert Plan to 3D	See Convert Plan to 3D in the 20-20 CAP Designer help.
	Convert 3D to Plan	See Convert 3D to Plan in the 20-20 CAP Designer help.
	Convert XSite I to XSite II	Convert Xsite I to XSite II

Automation Center - Interworks EQ

See the table below to find the corresponding help topic for each icon or command:

Icon	Name	Topic
	Auto Hardware	Auto-hardware
	Auto Hardware User Preferences	Auto-hardware
CT	CAP Tile	See the CAPtile section in the CAP Designer help.

Icon	Name	Topic
	Generate Tile Schedule	See Create a tile schedule in your drawing in the CAP Designer help.
	Update to Elevation System	See Correct missing or damaged tile configurations in the CAP Designer help.
	Refresh Tile Configurations	See Switch between elevation and tag mode in the CAP Designer help.
	Bracket Gen	Auto-Brackets
	Convert KL6 to KLE	Convert KL6 to KLE

Automation Center - Xsite KL3

See the table below to find the corresponding help topic for each icon or command:

Icon	Name	Topic
	Create Structure Run	Create structure runs
	Create/Assign Elevation	Create elevations for a structure run
	Insert Elevation Tiles	Add tiles to Xsite
	Elevation Properties	Modify an elevation
	Edit the Structure Run	Edit an existing structure run
	Break Elevation Link	Break elevation link
	Copy Elevation Side	Construct like tiles on both sides of an elevation
	Create/Update Tile Schedule	Xsite tile schedule
	Create/Update Plan View Layout	Plan view structure
AC	Auto Connectors	See Apply CAP AutoConnectors in the 20-20

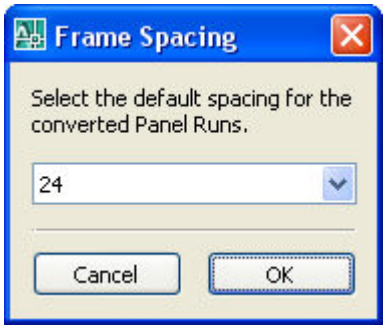
Icon	Name	Topic
		CAP Designer help.
	Auto Connectors User Preferences	AutoConnector Preference Settings
	Auto Bracketry	Auto-Brackets
	Convert Plan to 3D	See Convert Plan to 3D in the 20-20 CAP Designer help.
	Convert 3D to Plan	See Convert 3D to Plan in the 20-20 CAP Designer help.

Convert Xsite I to XSite II

Convert Xsite I to XSite II converts existing Xsite I structure runs and elevations to the new XSite II structure runs and elevations. It also converts some part numbers from 23P* to 36P*.

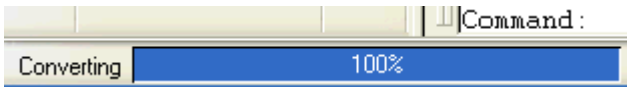
After running this command, you must run the Auto-Brackets tool to complete the conversion.

1. Open the drawing that has Xsite I parts (from KL3 catalog).
2. From the Automation Center, click **Convert XSite I to XSite II**.
3. Select the elevation(s) to convert.
4. Select the default frame spacing for the converted panel runs then click **OK**.



The conversion tool reads the elevation information and builds a new Xsite II Elevation using the dimensions and tile placement. It deletes the old Xsite Elevation, but not the tiles. It finds all the structure runs assigned to the selected elevation and converts them to the new format.

The conversion is done once you see "Converting" set to 100% in the AutoCAD status bar.



The conversion tool inserts the New Xsite II Elevation in the same location as the previous version so that the tiles will line up correctly. You may need to do a refresh so that the elevation will recognize the tiles.

5. You MUST run Auto-Brackets after the conversion to complete the conversion process. Because of the structural changes to the product line, the turns and other frame members cannot simply have a part number change. By running Auto-Brackets the old Turns and Trims are removed and replaced with the correct connectors and trim as required.

Convert KL6 to KLE

Use this command to convert parts from the Discontinued Interworks catalog (KL6) to the Interworks EQ catalog (KLE).

1. Open the drawing that has parts from the Kimball KL6 catalog.
2. From the **CAP Designer** menu, select **Convert**, **Kimball Interworks Part Number Conversion Wizard**.

   Or, click the **Conversion KL6 to KLE** button on the Automation Center for Kimball (make sure to select Kimball Interworks EQ from the dropdown).
3. The Import Log appears.

   Click **Items with Warnings or Errors** to see if any items were not converted or were converted with warnings.
4. Click **Close**.

Knoll

See the following sections for information about CAP Designer commands specific to Knoll:

Knoll Currents

The Currents product line is Knoll's next generation of office furniture. It recognizes that organizations rely increasingly on computers and other technologies, but they need to change and reconfigure their work environment more rapidly then ever before. Currents is designed to address these needs.

Currents service walls connect to form spines that define the center of a cluster of workstations. They provide ready access at any point to power, data, and communications. Service walls also integrate easily with Knoll Morrison, Equity, and Reff systems. Vertical panels and furniture may be attached to the Currents service walls anywhere along their length.

Service walls are composed of studwall-like structural frames and removable covers or tiles. Covers attach to the studs at any 12-inch increment. The covers may be painted, upholstered or tackable upholstered, slatwall, or cable tray.

Given all these options, keeping track of the covers and their placement is a major task. Elevation Template solves this problem by placing and tracking the covers for any configuration you create.

Use the **CAP Utilities** toolbar or the **CAP AutoConnectors & More** toolbar to access commands for placing Currents service walls.

CAP Utilities toolbar

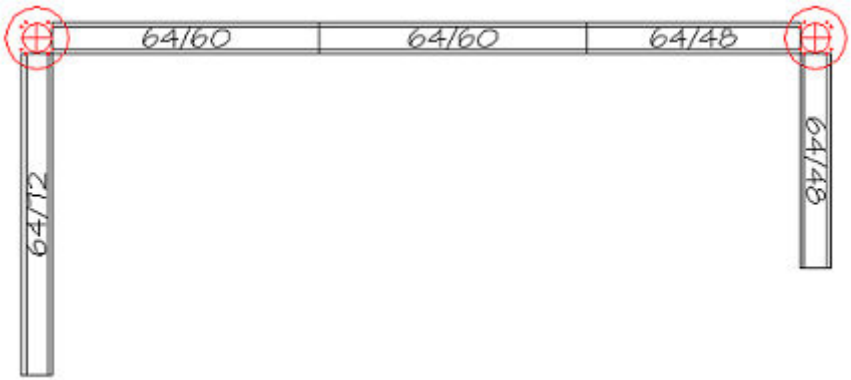
To activate the CAP Utilities toolbar, right-click on any CAP Designer toolbar then select CAP Utilities.

Icon	Name	Description
	Finish Service Wall End	Place ends on service walls
	Mark Wall Start Components	Mark or unmark a wall start post
	Push Frame Away From Service Wall	Push frame away from service wall
	Clear Currents Run	Remove a wall configuration from a drawing

Place service walls

Begin by placing the service wall frames or panels as you normally would, keeping the following in mind:

- Currents wall frames and panels use ***Unidentified Furniture Objects (UFO)*** to assist with placement and connection. After placing wall frames, use AutoConnectors to remove the UFOs and place the connectors.



- CAP Designer provides a **Finish Service Wall** button that applies the correct ends to the service wall. Ends include T connectors for panels, stabilizer end cabinets, flat ends, and more.
- Service walls may also include add-up panels on top of the panel frames for privacy and light control.
- Service walls are designed for the attachment of a variety of components anywhere along their length.
- CAP Designer divides service walls into **runs** for the purpose of applying wall covers. A run is any straight section of a service wall.

If you wish to copy a service wall, do so while CAP is loaded. CAPtile uses the drawing location as part of its stored data. Copying a service wall run without having CAP loaded may cause corruption in the drawing and produces unexpected results.

Place ends on service walls

Currents service walls require the additional step of placing wall ends. There are a variety of end types and complex rules for placing the proper ends. The Finish Service Wall feature, also known as Finished End Assembly Placer (FEAP), knows these rules and assists you by offering only the wall ends that are applicable.

Before doing the example below, place at least one 48" high standard crown service wall frame from the Knoll Currents catalog.

Example - place ends on service walls:

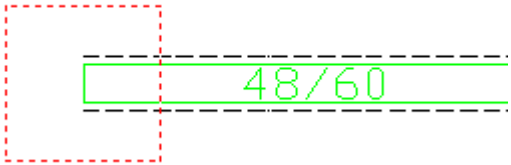
1. Click the **Finish Service Wall** icon on the **CAP Utilities toolbar**.

   Or, click the **Finish Service Wall** flyout on the **CAP AutoConnectors & More** toolbar. You may need to click and hold to select.

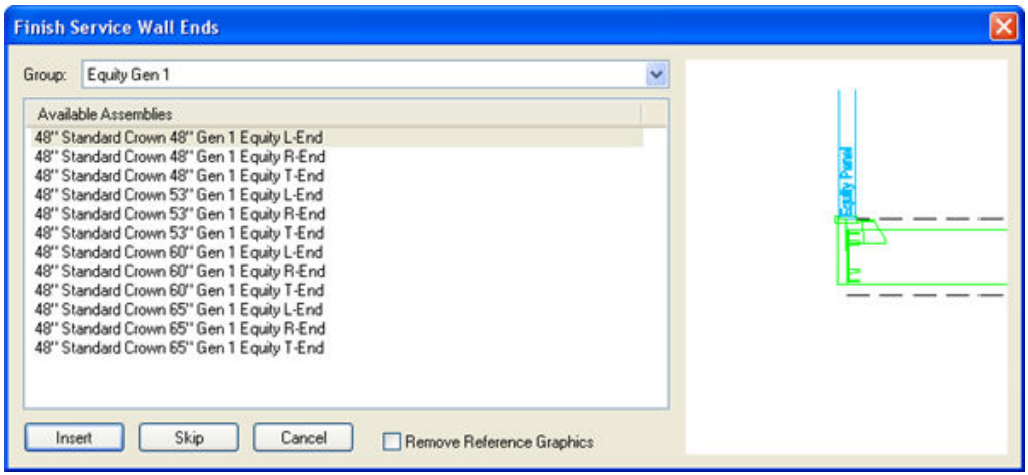
2. Click on any service wall frame or component.

   If you have not been working in a Library prior to clicking the Finish Service Wall button, the command line may display an error message. Select the **Currents** Library to resolve this problem.

   The **Service Wall Finisher** dialog box displays. It lists the options for the first end. It also highlights the first service wall end in the drawing. This end will be zoomed into on the drawing and a dotted red bounding square will be placed around it.



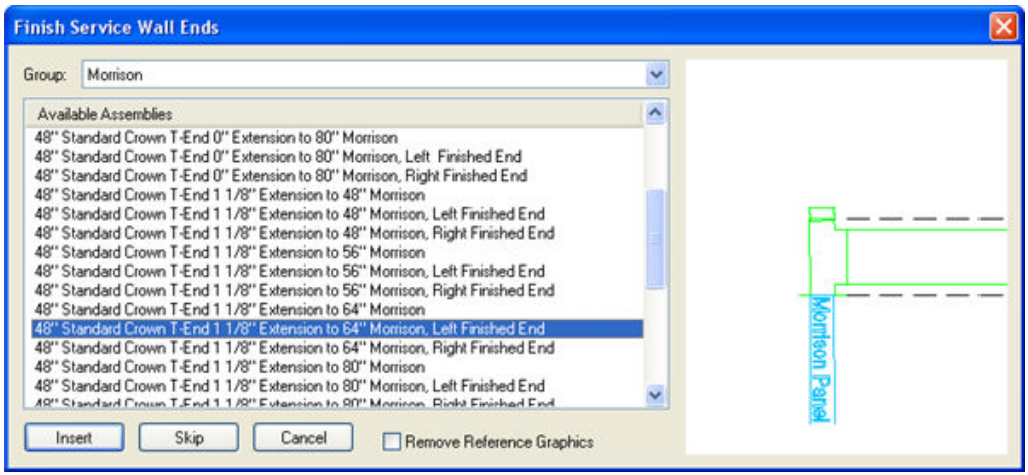
The **Service Wall Finisher** dialog box has a drop down box at the top called **Group**. This drop down allows you to select the group (or type) of end you want to place. The group selected determines what is listed in the window below, called the **Available Assemblies** window. In the example below, the window lists all the **Generation 1 Equity** ends. The window to the right shows a preview of the assembly selected in the **Available Assemblies** window.



3. Click on the **Group** drop down and select **Morrison**.
4. Under **Available Assemblies**, scroll down and click on the '48" Standard Crown T-End 1 1/8" Extension to 64" Morrison, Left Finished End'.

   Notice that the preview window has a blue reference graphic entitled **Morrison Panel**. This

reference graphic is present to give you a visual indication of where the Morrison panel should be placed once this end is inserted into the drawing. The reference graphic is like a UFO and does not show up in take-offs. If you do not want the reference graphic included when you insert this assembly into your drawing you can check the **Remove Reference Graphics** box at the bottom of the dialog. Since the reference graphics will be helpful when placing the Morrison panels, we will not remove them.



5. Click **Insert** to place the selected end component and move on to the next end component.

   Or, click **Skip** to move on to the next end without making changes, allowing you to apply the end later.

6. Repeat steps 3 to 5 for each service wall end.

Warning! If you make a mistake placing the finished ends assembly, be sure to erase all the parts of the assembly before running **Finish Service Wall** again. If you fail to do this, since the command places new parts each time it is run, unneeded parts will be placed.

Place add-up panels

Currents service walls also include add-up panels. You may place the add-up panels on top of the service walls at any time. The add-up panels are ignored by CAPtile.

A feature incorporated into **Auto-Connector** enabled furniture lines is Auto Stacking. When you place a stacking frame on top of a base frame it reads the height of the base frame. It then changes the default height of the stacker to that height. This makes tiling and 3D conversions much easier. If you double stack, the second frame will read the frames below it and adjust its height accordingly. Then it will adjust the tag to be above the first stacker.

Here are a few things to remember with using the Auto Stacking feature.

- Place panels from the bottom stacking up.
- Copying stackers onto frames does not change the default height or tag location.
- **Auto Stack** only works upon insertion from the catalog.
- If you place a base frame on a stacker it will change the default height of the base frame, probably not what you want.
- The insertion point and rotation of the stacker must be the same as the base frame it is being placed on.

Push frame away from service wall

If you placed a finish wall too close to a service wall, use this command to push it away.

1. Click the **Push Frame Away From Service Wall** icon on the **CAP Utilities toolbar**.

Or, click and hold the **Finish Service Wall** flyout on the **CAP AutoConnectors & More** toolbar then select **Push Frame Away From Service Wall** .

2. Select the frame.

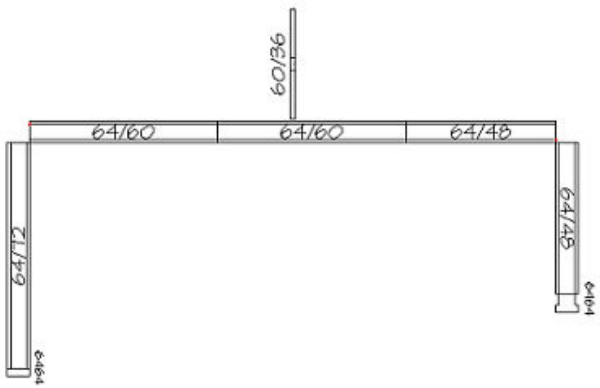
   The frame will be pushed away from the service wall.

Add items along the length of the service wall

Currents integrates easily with Knoll Morrison, Equity, and Reff systems as well as other Currents components. Vertical panels and furniture may be attached to the Currents service wall anywhere along its length.

In CAP designer, connection nodes are available every 12 inches along the length of the service wall. These serve as convenient attachment points. After attaching a panel to a wall, you may move the panel to any point along the wall using the AutoCAD **Move** command.

In the example below is a Currents run with Equity attached to it.

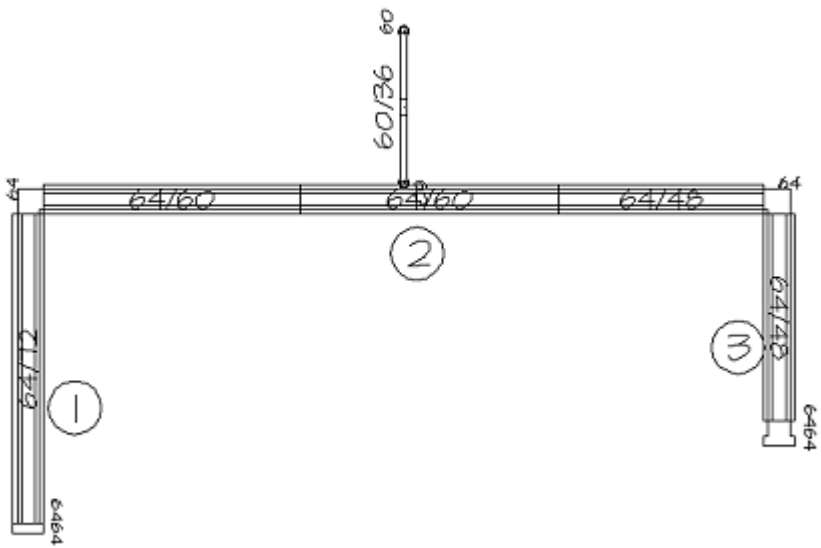


What is a service wall run?

CAP Designer divides service walls into runs for the purpose of applying wall covers. A service wall may be very complex. Dividing the wall into runs simplifies the cover application process.

A run is any straight section of a service wall. A run may be a stand-alone wall or any straight section of multiple in-line walls separated by a corner or intersection. A single service wall may consist of several runs.

The following Currents example consists of three separate runs:



Elevation Template

The Elevation Template tool is located within the Automation Center. It is the replacement for the existing CAPtile for Currents tool and includes support for AutoStrada Service Wall frames and AutoStrada Applied Wall frames.

CAPtile for Currents remains available, giving users the opportunity to use both systems until all existing drawings can be converted to Elevation Template. For information on when CAPtile for Currents will no longer be available, contact 20-20 Technologies.

As part of the ET tool Knoll has created two new catalogs: **KE1: Knoll AutoStrada (Elevation Only)** and **KE2: Knoll Currents (Elevation Only)**. These catalogs are designed specifically for use with the Elevation Template and are named appropriately.

While these catalogs are visible in Explorer they should never be used to place products from there. These special catalogs contain only the parts that can be placed on an elevation template. KE1 is a subset of the KAS catalog and contains all the parts that have elevation symbols that can be placed into an elevation template. KE2 has the same relationship with the KCU catalog. These catalogs were created so that users would not have to search through their parent catalog for parts that could be placed by the ET tool.

1. From **CAP Designer**, select **Automation Center**.

   Or, click the **Automation Center** icon  on the **CAP Designer** toolbar.
2. Notice the tabs for different manufacturers on the side (available only if these manufacturer catalogs were installed). Click the **Knoll** tab.

3. Click the dropdown arrow to select the appropriate **Knoll** catalog.

The buttons are laid out in workflow order. Read the following topics in the order that they appear to learn how to use the Elevation Template:

1. Create or apply an elevation template
2. Apply coverings
3. Push template to opposite
4. Copy Plan to 3D
5. Bind covers
6. Validate elevations
7. Break link
8. Settings

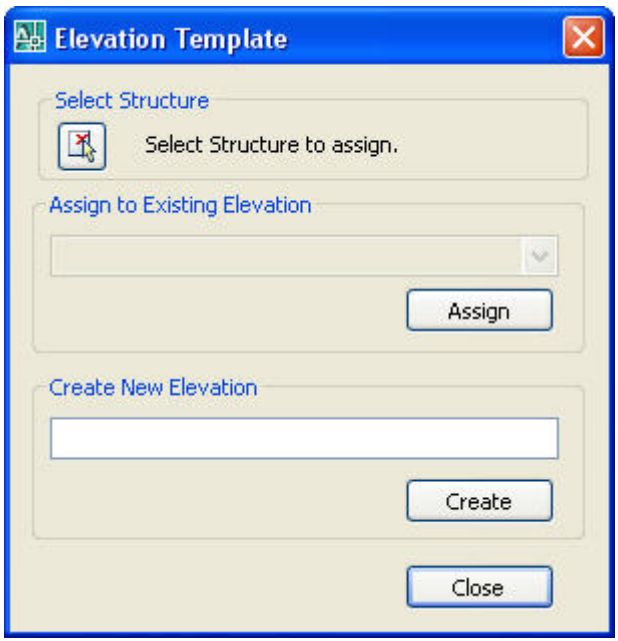
Create or apply an elevation template

Before doing the exercise below, place **three** service walls from the Knoll Currents catalog on your drawing.

1. Make sure you have selected the appropriate catalog in the Automation Tools dropdown box.

2. Press the **Create/Apply Elevation Template** button.

   This will bring up the **Elevation Template** dialog.



   If a frame was selected before the command is run, that "pre-selected" frame and its associated

run would automatically be selected when this window appears. There would be no need to click on the **Select Structure** button.

3. Click the **Select Structure** button and click on any of the Service Spine Walls in the run. The command will find all of the Service Wall frames in the run and report how many "structures" it selected.

   Once you make your selection, the dialog indicates the number of frames found in a "run". A "run" is some number of frames connected together inline. Frames that branch off at an L or T connection are a separate run and require their own elevation template.

   If one or more elevation templates with the same frames in the same order already exist in the drawing, those templates are listed in the **Assign to Existing Elevation** box of the dialog.

4. To create a new configuration, type the name under **Create New Elevation** . For this exercise type `Training-1`.
5. Press **Create**.
6. The front elevation template will be attached to your cursor for placement. Select the insertion point and rotation angle on the drawing.
7. The back elevation template will be attached to your cursor for placement. Select the insertion point and rotation angle on the drawing.
8. The next step in the workflow is to start placing covers on the elevation templates. See Apply coverings.

The Service Wall frames placed in plan view have been converted into a CAP Standard. All selected frames are now in a single block. This is one of the fundamental paradigms of the Elevation Template, it converts a series of frames into a run and then treats that run as a single big frame. This is required to support the ability of covers to span between frames. If covers did not span between frames, there would be no need for this tool and CAPtile or Panel Builder would be used instead.

The CAP Standards created by the Elevation Template tool should not be exploded or otherwise manipulated. The contents of the Standard are designed to be maintained by the Elevation Template (ET)

tool. If you manually manipulate the Standards created by ET you will break them and you will get unexpected parts on your take-off. Note that only the frames are part of the Standard — the connectors generated by AC and the ends placed by FEAP are not part of it. When you copy/move/erase a run, make sure to include these ancillary parts.

Apply coverings

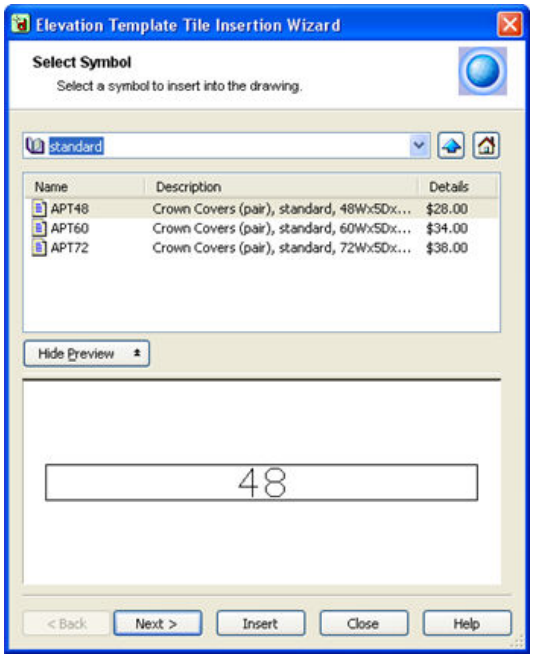
In the exercise below, you will place coverings on the elevation templates you created in the topic Create or apply an elevation template.

Do only the **front** side of the elevation template.

1. Make sure you have selected the appropriate catalog in the Automation Tools dropdown box.
2. Click the **Apply Coverings** button.

   This will bring up the Elevation Template Tile Insertion Wizard.
3. *Navigate your way into the catalog* to select the appropriate cover. For this exercise, select a crown cover.

   For details about the Select Symbol dialog, see Place a product using Insert Symbol in the CAP Designer help.



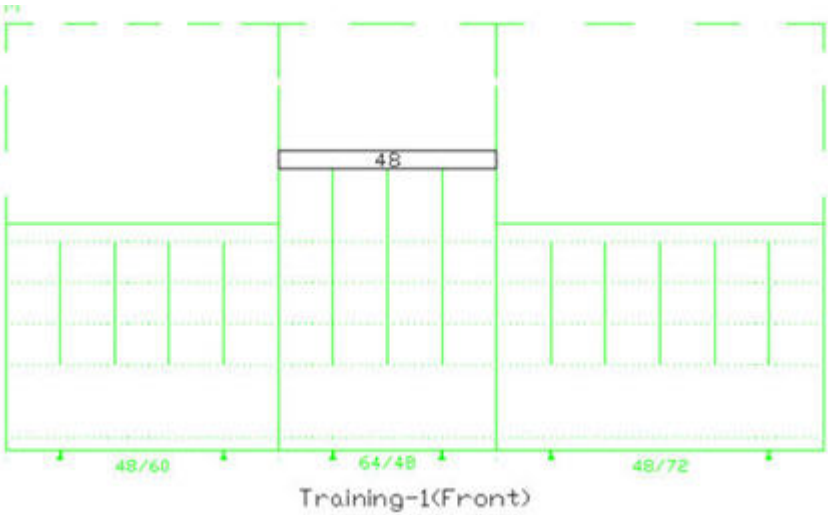
4. Hover your mouse over a part in the top level to highlight and select it.

   Do not click on the part, as this will bring up the **20-20 Options** dialog.

5. Click on the **Insert** button.

   This will place the selected item on you cursor for placement.

6. Once on your cursor the part acts just as if it were being brought in from the Explorer bar. Since it is an elevation view of the part the only place you would ever want to snap it to is onto an elevation template. Snap this cover as shown below.



Notice when snapping there are nodes in all the places where covers can be placed. The elevation template does not represent the physical structure of the frame; it is a visual representation of where covers can go. The section at the top of the frame is the right size for crown cover to be placed. All the other lines on the template represent locations where covers can go. The dotted line section above the frames is a visual indication of how high above the frame a stacked panel can go.

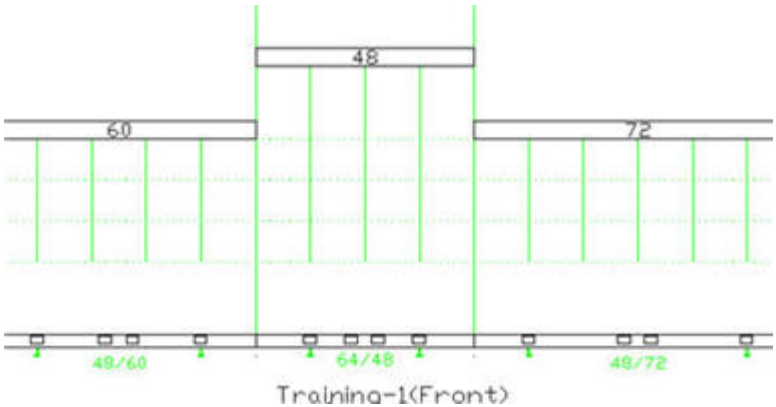
7. Place the other crown covers.

   If you place the wrong cover or snap a cover into the wrong place, simply use AutoCAD move or erase to fix the problem.

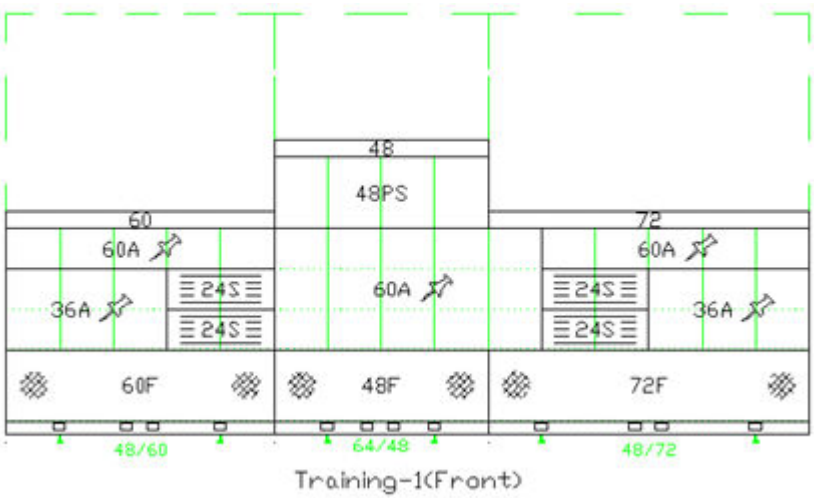
   This ability to manipulate covers with AutoCAD commands is one of the most powerful features of ET. It means that you can copy covers, not only within a template, but between templates, even if those template are in different drawings.

   Currents and AutoStrada covers are compatible. AutoStrada covers can be placed on Currents Service Walls and visa versa.

8. Once the crown covers are placed, navigate up two levels and then into “Raceway covers” > “four outlets, each side”.
9. *Place four outlet raceway covers on each frame*. Notice that the raceways snap to the bottom of the elevation template but are placed in the correct location.

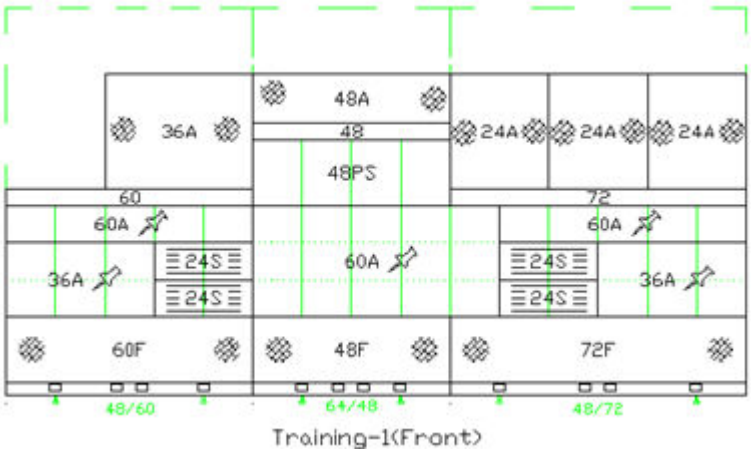


10. *Place other covers on the template*, such as slatwall covers and tackable upholstered wall covers.



11. Select stacking panels by navigating to the add-up panels section of the catalog, then *place the covers*.

    UFOs are shown because these panels are supported by AC for legacy purposes. In a future release they will no longer appear. For now, simply erase the UFOs.



12. See [Push template to opposite](#) for the next step.

Push template to opposite

Once you have completed the front elevation template, you can simply use the **Push Template to Opposite** button to do the other side.

Before doing the exercise below make sure you have completed the previous step, [Apply coverings](#).

1. Click the **Push Template to Opposite**  button.

   This will bring up the **Push Covers** dialog.

2. You can either push only the double-sided covers or all of the covers. For this exercise, click on **Double Sided Onl**y.

   At a minimum, the double-sided covers should always be pushed. These are parts where a single part number brings in a pair of covers. Examples are parts like the add-up panels (while a single part are visible on both sides of the template), crown, raceway and structural base covers. Since our layout does not require that we copy all the covers, we will only push the Doubled Sided covers.

3. At the command prompt AutoCAD will say **Select the side to push from:**. Select the elevation template that has the covers (the front). The command prompt will detail how many covers were pushed.

   Warning! If you select the empty elevation template, this command will push those empty covers to the other side, erasing all of your work. If this happens, undo will get you back to the original state.

4. After the command has been run, the double sided cover will be pushed from the front template to the back template.

   Notice that covers are correctly pushed to their correct mirrored locations on the opposite template.

5. Use Apply coverings to complete the back template. Place some marker boards.

6. Save your drawing.

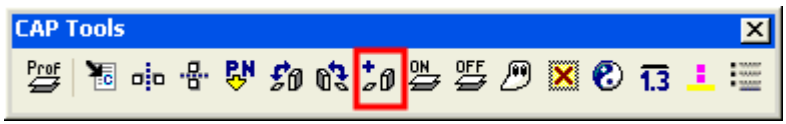
   Both the front and back elevation templates are now completed. Yet, if we were to make a takeoff of this drawing now, none of our covers will be counted. **This is because parts drawn in elevation do not show up on take-offs**. 2D and 3D parts are counted, but parts in elevation are not. This is done because this one elevation template we have created could be pointing at multiple occurrences in the drawing. If there were 500 identical workstations in this drawing, this one elevation template could be pointing at all 500. If you want parts to be part of the take-off, you must attach the parts in the elevation template to their associated CAP standards in the drawing by using the Bind covers command.

7. Before running Bind Covers, see Copy Plan to 3D to look at what happens if you do not run Bind Covers.

Copy Plan to 3D

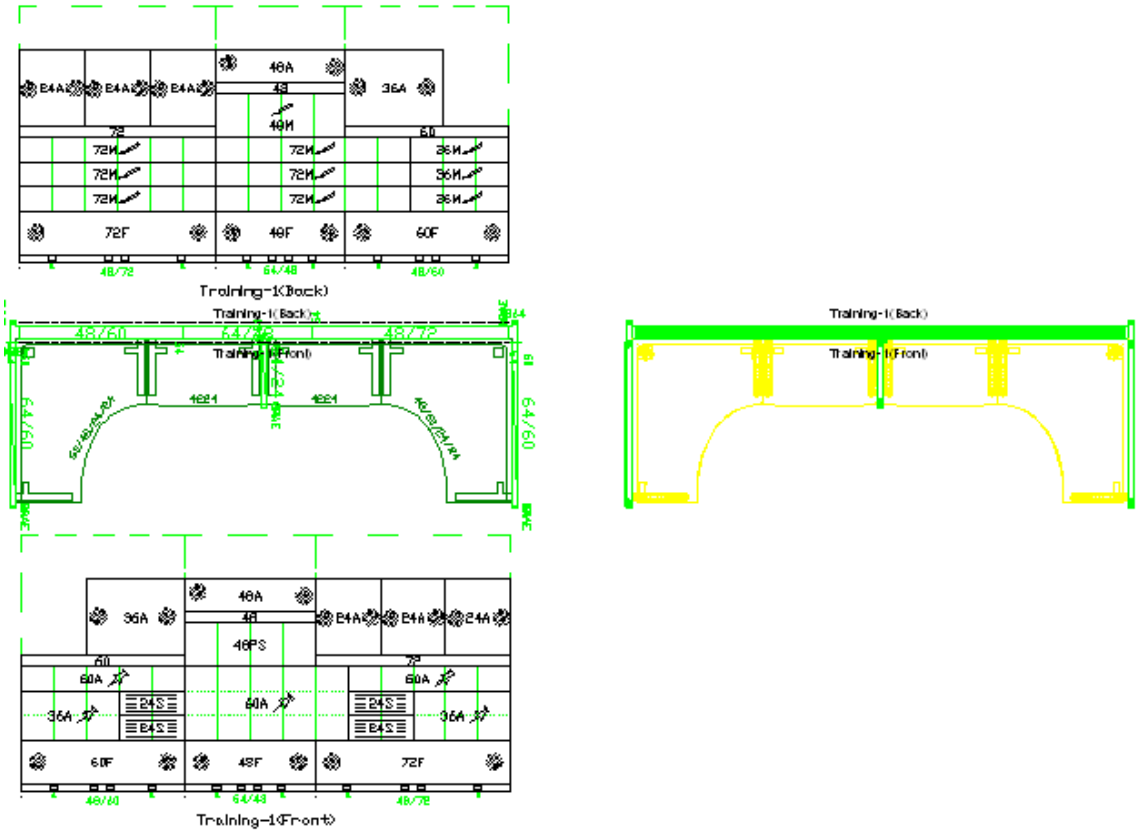
Before you run **Bind covers** let's take a look at an example of what happens when bind is not run.

1. Click on the Copy Plan to 3D button on the CAP Tools toolbar.

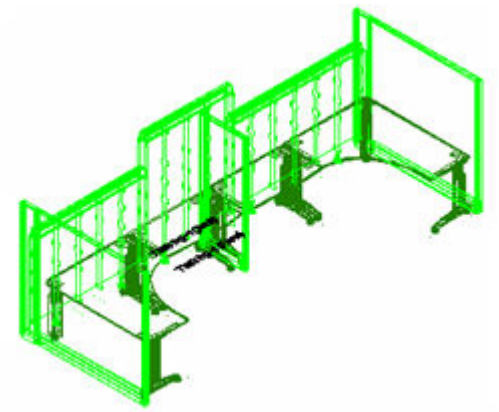


   The command will prompt you to select objects.

2. Select all the plan view (2D) parts you have built. Draw the selection window from right to left to make sure to include all the parts.
3. Press Enter to accept the selection.
4. This will bring up a prompt asking for the **Base point or displacement:**. Select a point in the middle of the selected parts by clicking on it.
5. This will bring up the command prompt request for the **Second point of displacement:**. Pick a point off to the right side and place the 3D as shown below.



6. From the **AutoCAD View** menu, select **3D Views**, **SW Isometric**.



Notice that there are no covers on the 3D representation. This is because the Bind Covers command has not been run. Until Bind is run, the covers we placed on the elevation templates will not be placed on the 2D or 3D representations.

Bind covers

Before doing the exercise below make sure you have completed the previous step, Push template to opposite. Also, try to do Copy Plan to 3D so that you can visualize what happens if Bind Covers is not run.

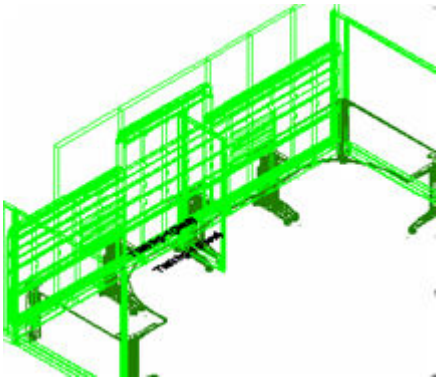
1. Click the **Bind Covers**  button.

   AutoCAD will prompt you to Select Objects:.
2. Type all and press Enter.
3. AutoCAD will report how many parts were found. Press Enter again to accept the selection.

   In order for a bind to be performed on an elevation template, either the front or the back template

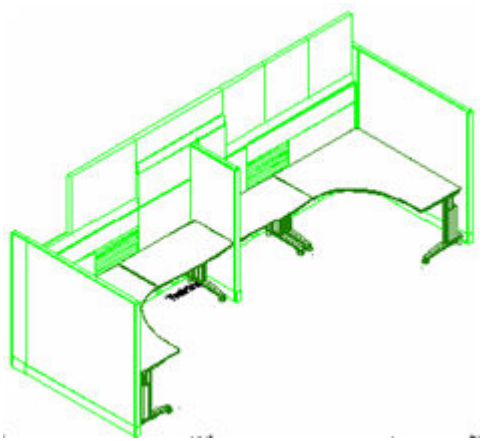
must be selected, or the Cap Standard that the elevation template is linked to, or both. In order to bind all the elevation template in a drawing, you need to type “all” for the selection set.

Notice that the covers are now displayed on the 3D representation.



Behind the scenes, the Bind Covers command has copied all the parts in the elevation template to all of the 2D and 3D CAP standards linked to the elevation template. All the parts on the 2D and 3D CAP Standards will show up on a take-off.

4. Type Hide at the command line to see the 3D more clearly.



5. See Validate elevations for the next step.

All the point parts placed by bind onto the 2D Cap Standard are located at their correct locations so that when that standard is copied to 3D after a bind has been run all the covers were correctly placed. If you make a change to the elevation template and bind it again, those changes will be reflected inthe CAP standard. If there were 500 copies of this CAP Standard, making a change and running bind would change all 500.

Bind is a very important feature in ensuring that all the parts placed onto a service wall are configured to that elevation design and counted for Bill of Material purposes.

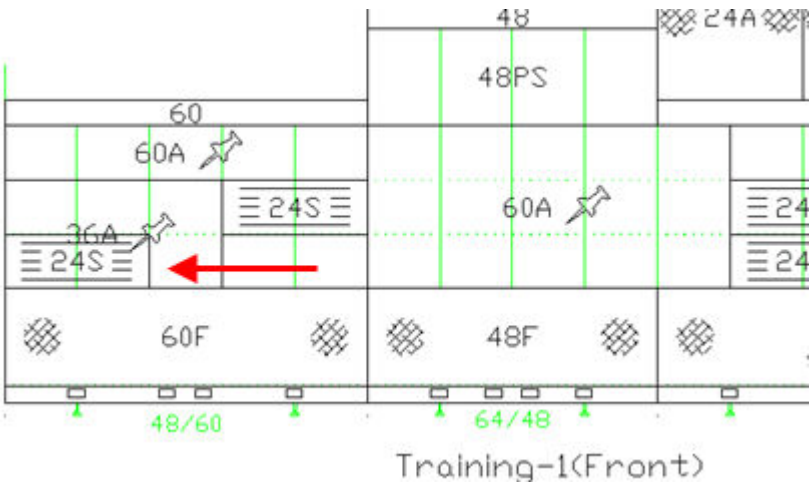
Validate elevations

Validation is run to check for any errors in the elevation template. Validation does not correct any errors, rather it marks errors so that you can correct them. If the item marked with a validation error is a valid part, it will be bound to the template and therefore show up on the BOM when the takeoff is run.

See Errors checked by Validate elevations for a list of errors checked by this command.

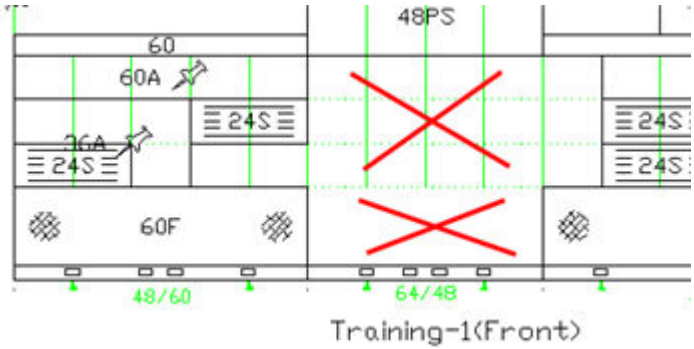
To see validation in action:

1. If you copied the plan to 3D, change your view back to plan view by typing `plan` at the command prompt.
2. Press Enter to accept the current model.
3. Zoom in on the front elevation template and move one of the slatwall frames (or another type) as shown below.



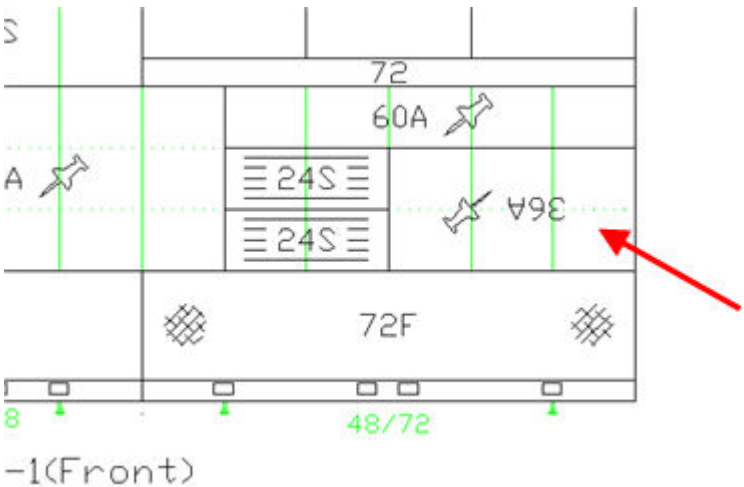
This will result in an empty space and in an overlap condition.

4. Erase one of the structural base covers and a tackable cover as shown below.



This results in a double-sided cover mismatch and another empty section.

5. Rotate a cover 180° as shown below.



This will result in a rotation error.

6. Click on **Validation Elevations** ✓.

This will bring up a command prompt asking you to "Select elevations to validate.". The selection set for validation is the same as for bind, that is, you can select a 2D or 3D CAP standard or either the front or back elevation template to validate a given template.

7. To validate the entire drawing type `all` and press Enter.
8. Press Enter again to accept the selection set. Red error X's will appear on your drawing.
9. Move your mouse over each red X. The nature of the error will appear on the hyperlink field. There is no link, CAP simply is utilizing the hyperlink functionality built into AutoCAD to display the error.
10. In order to fix errors, make the changes required to fix the error.
11. Run Bind and Validate until all the errors are gone. There is no need to erase the error X's, they are erased automatically when Validation is run after the error has been fixed.
12. For the next step, you will copy covers between templates. See Break link.

Notice that there is no visual indication of whether bind and or validation has been run. This is a tradeoff in functionality. Elevation Template was designed to be robust and support the use of AutoCAD command like move and copy. If validation marked covers as "bound and validated" we would have to prevent those covers from being moved or copied, since moving a marked cover to another location would give the illusion that it had been bound and validated when it had not.

If the you intentionally create a double-sided cover mismatch, for example wood structural covers on the aisle side and painted on the interior, validation will mark this as an error (double sided mismatch). Since all the covers placed on a template are included in the take-off (regardless of whether they have been marked with and error) you can simply ignore that error and delete the error X.

Errors checked by Validate elevations

The Validate Elevations command checks for the following errors:

- Check for overlapping tiles: if one cover completely or partially overlaps another, validation will mark the overlapping tiles.

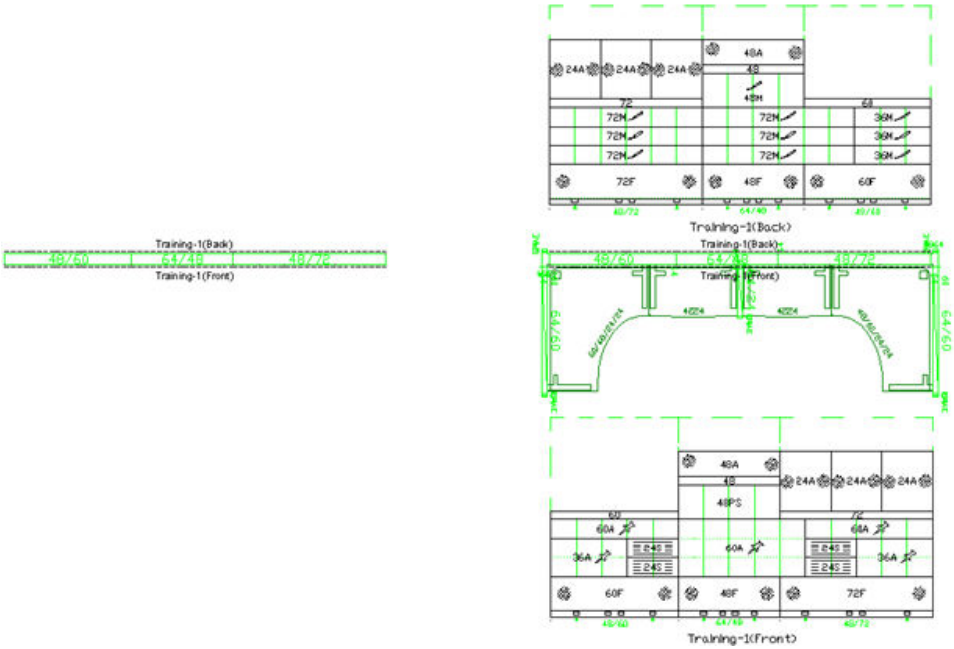
- Check for mismatched double sided tiles: if a double sided cover placed on one side of an elevation template does not have a matching double sided cover on the other side, validation will mark it as an error.
- Check if elevations match standards: if parts on the elevation template do not match the parts on the associated 2D and 3D CAP Standards an error is generated. This is an indication that bind must be run.
- Check if tile rotation matches elevation rotation: elevation templates and the covers placed on them must have the same rotation. If they do not they will be marked as incorrect.
- Check for empty spaces on elevation: since we are placing rectangles onto a rectangular template it is easy to surround an area with covers and leave a section uncovered. Validation will mark all uncovered areas on the template.
- Check for orphaned standards: if a template associated with a CAP Standard is somehow deleted that standard is an orphan. This is an error and will be marked. If an elevation template is inadvertently copied (so that there are two of the same) this validation will erase the extra parent.
- Check for missing automation: all the parts in the special elevation catalogs (KE1 and KE2) should have entries in the automation database. If they do not, this error is generated.

To change the errors checked by Validate Elevations, see Settings.

Break link

In the exercise below you will create a new template called Training-2 then copy the covers from the existing template Training-1.

1. Copy the 2D Training-1 CAP Standard to the left of the existing configuration as shown in *this image*.

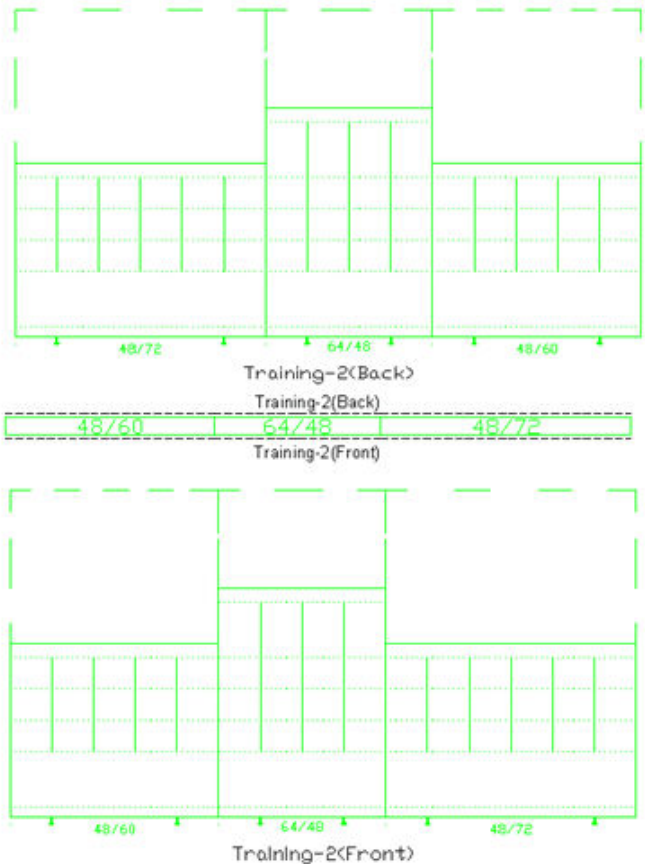


2. If you were to do a worksheet takeoff now, all the parts contained in that copied CAP Standard would show up. In order to prevent that you need to break the link between the CAP Standard and its associated Elevation Template. Click on **Break Link** . This will bring up a "Select objects:" command prompt.
3. Select the 2D Training-1 CAP Standard you just copied and press Enter to accept the selection set. The command runs and the CAP Standard is removed and the link is broken. The three frames left are simply three frames, just as if they had been brought in from the Explorer bar.
4. Run Create or apply an elevatio template on those new frames now. This will bring up the **Elevation Template** dialog listing Training-1 as an available elevation to assign.

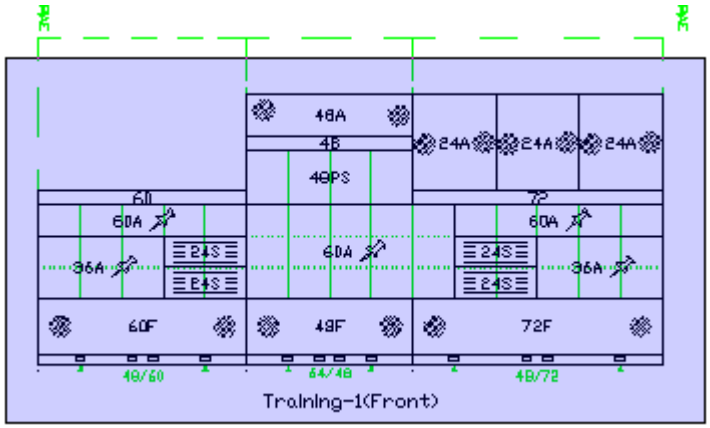
   This is because when structures are selected the tool looks through the entire drawing and shows all the elevation templates that match the frames selected and offers them as possible choices.

Any matching template can be assigned to a new run. Of course, if a new configuration is desired, it can be created.

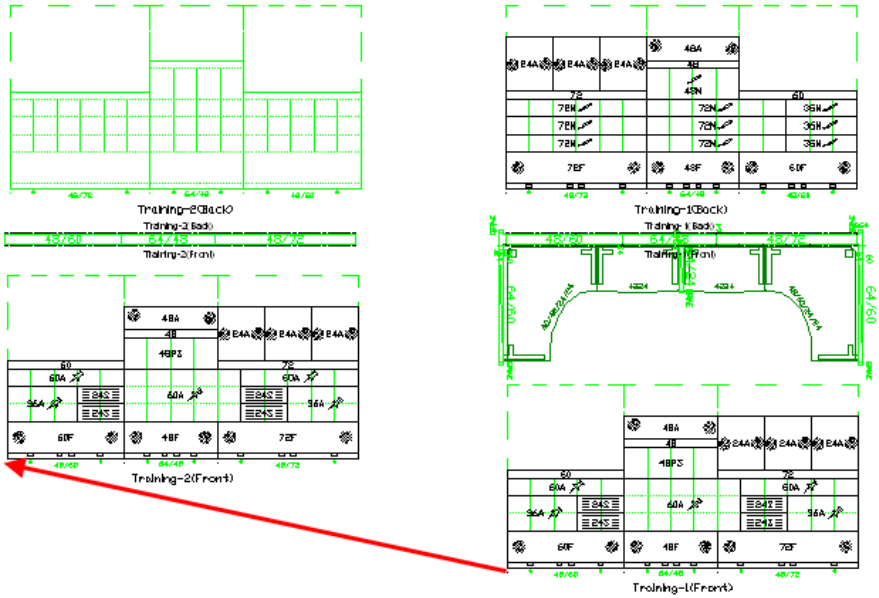
5. Give the new configuration the name `Training-2`, press **Create** and apply the front and back templates as shown *here*.



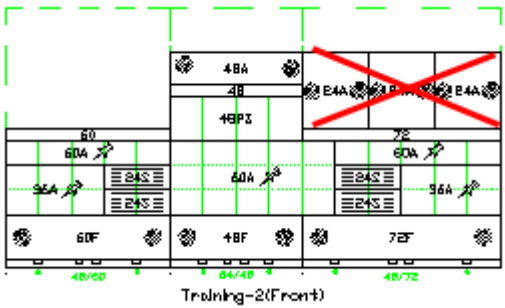
6. Copy all the covers from the front of Training-1 to the front of Training-2. Be careful to use a selection set that copies the covers but not the elevation template.



7. Make sure to pick displacement points on a node of the templates so that the covers are placed correctly.



8. Erase all the stacking panels on the front template of Training-2.



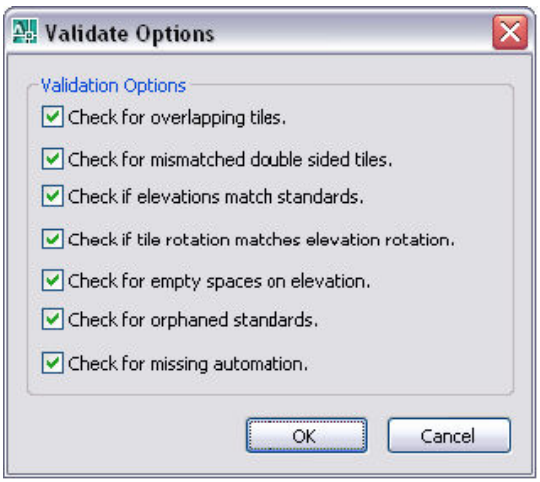
9. Click on the **Push Template to Opposite** button and push all the covers to the other side.

10. Run Bind covers and validate the new configuration.
11. See Settings for the next step.

Settings

To verify or change the errors checked by the Validation command:

Click on the **Settings** button. This will bring up the **Validate Options** dialog.



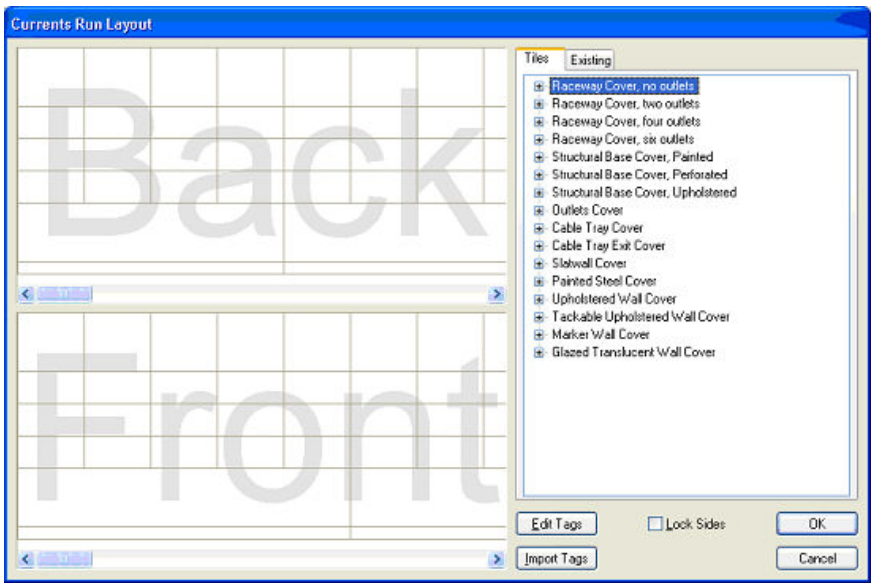
This dialog contains all of the errors that validation checks for. Usually there is no reason to clear any of these validation checks. However, if you do not want to utilize a validate checking routine, it can be disabled here.

CAPtile for Currents

Warnin! CAPtile for Currents will eventually be replaced by Elevation Template. For now it remains available, giving users the opportunity to use both systems until all existing drawings can be converted to Elevation Template.

1. Click the **Captile** icon CT on the **CAP AutoConnectors and More** toolbar.
2. Click on any frame in the panel run. Clicking any frame selects the entire run of Currents panels. By selecting a single panel, you are selecting the entire run.
3. Selecting a run opens the **Currents Run Layout** dialog box. This dialog box is distinctly different from the CAPtile dialog box used by other products.

   CAPtile applies covers to a run of Currents panels. A run is any straight string of panels not separated by a corner or intersection.



The **Currents Run Layout** dialog box presents both sides of the service run as if you are facing each.

The Back window area presents the "North" side and the "East" end of the run in the left side of the window.

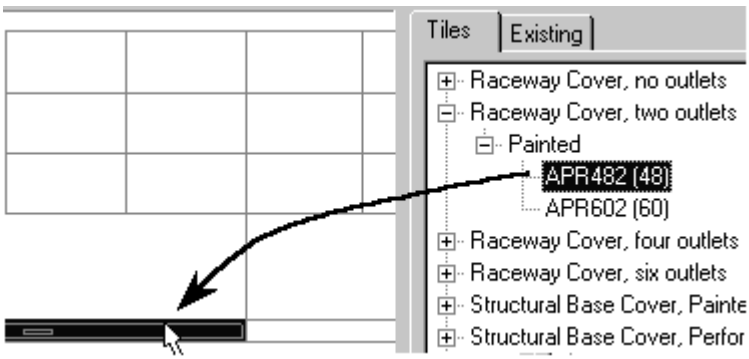
The Front window area presents the "South" side and the "West" end of the run in the left side of the window.

Scroll bars along the bottom of each window allow you to move back and forth along the service run.

Fill the service wall frames with covers

There are three types of Currents service wall covers. From bottom to top there are: raceways, structural base covers, and panel covers (normally referred to as tiles in CAPtile).

1. In the **Currents Run Layout** dialog box, click the plus sign next to the type of cover you wish to place. This opens the next set of criteria for that cover.
2. Place a cover by clicking and dragging it from the list to the appropriate area on the frame.



Currents frame covers may be placed in any combination of widths within the available length of the frame run. They may even span from one frame to the next.

3. Begin by placing the raceways and structural base covers.

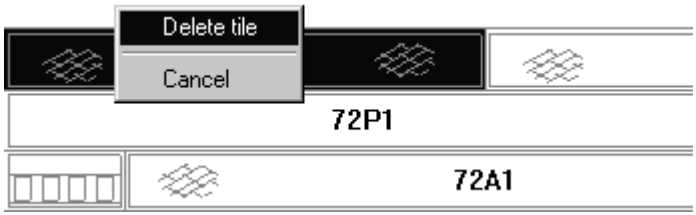
   Raceways and structural base covers must be the same width as the panel; they cannot overlap from one frame to the next.

   Raceways and structural base covers must be the same on both sides of the frame. After placing a raceway or structural base cover on one side, it automatically appears on the opposite side.

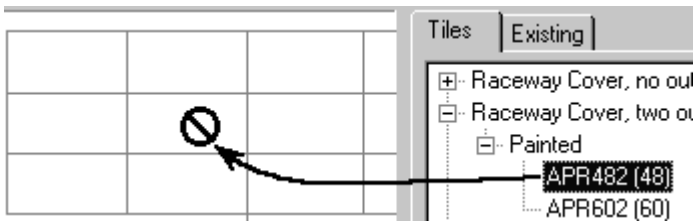
4. Place covers across the top of the service wall panel.

- Currents covers may be placed in any combination of widths and finishes within the available area of the run.
- Currents covers are available in variable lengths from 12 inch to 72 inch and may cross service wall frames.
- Covers are placed by their left edge. Drag the cover to the left edge of the area you wish to cover to fit it correctly.
- If you wish, you may lock the sides and place the same cover on both sides for the service wall automatically.

5. If you place the wrong cover, remove the cover by clicking on it with the right mouse button. Select Delete Tile from the pop-up menu.



If the cover is an incorrect size or cannot be placed in a particular location, the NO symbol displays.

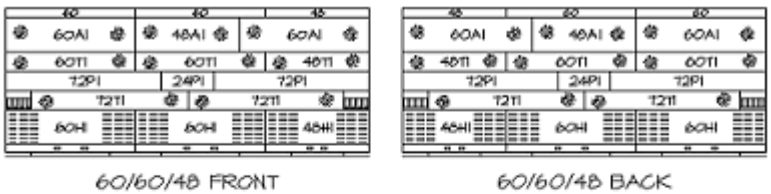


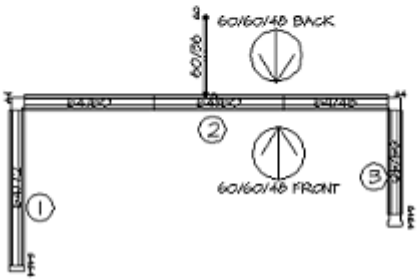
If you feel the panel is of the correct size and type but it still does not fit, make sure you are placing the panel correctly.

6. When you drag a cover to the panel window, you are placing the left end of the cover. Drag the cover to the left edge of the area you wish to cover.
7. After placing all covers, click the **OK** button.
8. The command line asks for a Configuration Name. Type a short name for this cover configuration and press Enter. This name displays on the drawing so it is best to keep it short.
9. Place the panel run markers and position the elevation views for the configuration at a convenient location within the drawing. If necessary, press the F8 key to turn Ortho off.

   Warning! Do not cancel the placement process while positioning the markers or the elevation view drawings. Complete the placement of markers and the elevation views to avoid problems with the software.

If necessary, you may move the markers or elevation views after they are in place. You may even delete the configuration and start over. **Do not cancel during the placement process**.





Edit CAPtile configurations

After creating a service wall cover configuration, there are several ways of adding, editing, or removing the configuration. You may also customize tags, transfer tags to other drawings, or apply materials to covers for use in installation schedules.

Apply a configuration to another service wall run

If two service wall runs are identical (same frame, heights, and length) you may apply the cover tile configuration from one run to another.

1. Click the **Captile** icon CT on the **CAP AutoConnectors and More** toolbar.
2. Click on the elevation view, arrow or frame run of the configuration you wish to apply to the other run. This displays the **Currents Run Layout** dialog box.

   You could also click on a run that already has the configuration you wish to copy. This is described later.
3. Click the **OK** button WITHOUT making any changes.

   The command line then asks: **Apply the configuration to other runs? Y/N.**
4. Type **Y** for yes and press Enter.

   The command line then asks: **Select frame run or X to eXit?**
5. Click on the service wall run to receive the configuration. After selecting the run, you must place the run markers as described at the end of the topic Fill the service wall frames with covers.

   If the frame run is not the same size or shape, a warning message displays.
6. To exit without applying a configuration, type **X** and press Enter.

Blocking, Wblocking, or inserting one configured drawing into another is not permitted, nor is copying configurations from one drawing to another. This will corrupt the drawing.

Copy a configured Currents run

When you have a configured structure run that will be used again in the same drawing you may copy that run using the Copy or Copy Multiple commands.

1. CAP must be loaded in the current drawing.
2. Type **Copy** at the Command: prompt and press Enter.
3. Select the structure you wish to copy and press Enter
4. Select a **base point** to copy from.

5. Select a **placement point** for the new structure run.

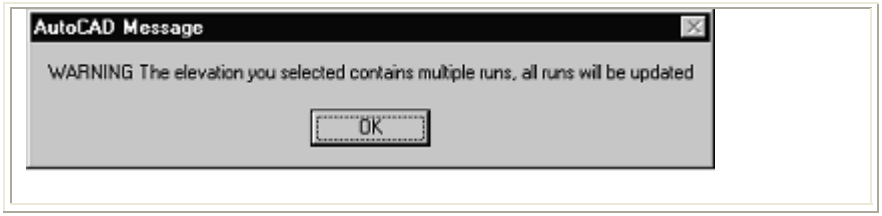
When you place the copied run it will also copy the elevation symbols. This is showing the link between the run and elevation has been established. The commands Copy/Cut/Paste to Clipboard are not supported with Currents

Edit a configuration

When you change a service wall cover configuration, the changes apply to all service wall runs that are assigned the configuration or you may choose to create a new configuration by assigning a different name.

1. Click the **Captile** icon CT on the **CAP AutoConnectors and More** toolbar.
2. Either:

Click on a run that already has the configuration you wish to change. When you click on a single run, you have the opportunity to apply the changes to all runs with that configuration or to create a new configuration and apply it to just that run.
Click on the elevation view of the configuration you wish to change. Warning! Clicking on an elevation will automatically assume you want to make a global change to all configurations with that name. When you select the elevation view, a warning box displays. It indicates that you will not have the option of applying the changes to just a single run. All runs are changed automatically.



3. Make changes in the **Currents Run Layout** dialog box. Click on a cover with the right mouse button to delete the cover. Add covers to empty areas by clicking and dragging covers to the Front or Back window.
4. Click **OK** to apply changes.

   If you selected an elevation, all runs change automatically.

   If you selected a single run, you may apply the changes to all runs or create a configuration as described in the next step.
5. If you selected a single run, the command line then asks:

   This Configuration applies to multiple locations, Update all locations? Y/N
6. Type Y for yes and press Enter to apply the configuration to all runs.

   Type N for no and press Enter to create a new configuration as described below.
7. If you type N for no and press Enter, the command line asks:

   Enter Configuration Name:
8. Type a name for the new configuration and press Enter.

   If the configuration is truly unique, you must place new elevation views in the drawing. The existing run markers for the panel run remain in place but are renamed.

   If the new configuration matches one that already exists elsewhere in the drawing, an information

box displays and the name of the existing configuration is added to the markers for the panel run.

Remove a wall configuration

Make sure that CAP is loaded before removing a configuration from the drawing.

1. Do any of the following:

Type **Clearrun** at the Command: prompt and press Enter.
Click the **Clear Currents Run** icon on the CAP Utilities toolbar.
Select the **Clear Currents Run** icon from the **Finish Service Wall End flyout** on the **CAP AutoConnectors & More** toolbar.

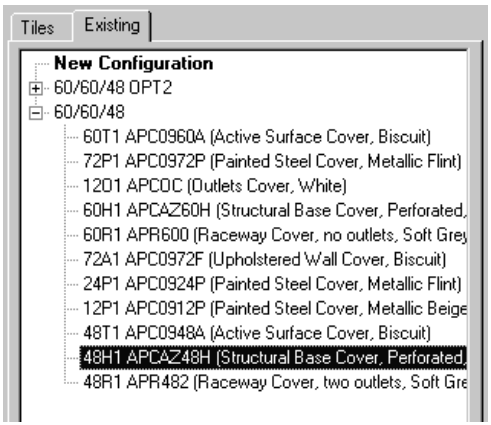
2. Select the run you wish to remove the configuration from and press Enter.

Use the Existing configuration tab

You cannot apply a configuration to a service wall run that is of a different size or layout. However, you may use components from one configuration on a different panel run via the Existing tab.

- Use the **Existing** tab in the same way you would use the Tiles tab. Select the raceway, base, or cover from the list and drag it onto the panel.
- Doing this will avoid duplicate covers with different tags.

- Using components from an existing configuration is simpler then sorting through the list of options.
- If you apply materials to components, they are also applied along with the cover to the new configuration.



Apply materials to panel covers

Applying materials to panel covers with CAP Tile allows you to generate a schedule within the drawing. Schedules that include finishes are particularly useful for installers. They allow installers to distinguish parts by fabric and finish.

Materials and finishes applied via CAPtile are **not** exported to 20-20 worksheets.

1. Click the **Captile** icon CT on the **CAP AutoConnectors and More** toolbar.
2. Click on the run to open the **Currents Run Layout** dialog box.
3. Click the **Existing** tab and select the current cover tile configuration. The current configuration title is in Bold type. You may only make changes to the current configuration.

4. Double-click on the cover to receive the material. The Select Materials dialog box displays.
5. Select the material for the cover. For example, if you choose **Paint**, click the plus sign in front of Paint to expand the list and show available colors.
6. Select the color or fabric and click **OK** to apply the finish to all similar covers.

   If the selected cover is also used in another configuration and has the same tag, the tag for the cover receiving the material changes automatically. For example, 72P1 becomes 72P2.

You may wish to have two covers of the same size and shape but with different materials within the same panel run. Do this by inserting and applying materials to each cover in sequence (or delete one cover and reinsert it later).

1. Insert the first cover and apply its material,
2. Insert the second cover and apply its material.
3. Fabrics and finishes are linked to the cover tag. This process generates a new tag for the second version of the cover. For example, 24P1 and 24P2.

Tag	Type	Finish
24P1	Painted Steel Cover	White
24P2	Painted Steel Cover	Metallic Flint

There is no method for removing a finish once it has been applied to a panel cover. Instead, remove and replace the cover.

Generate a tile cover schedule

Generate a tile schedule that lists all the covers, finishes, and tags. The CAP Tile cover schedule is different from the CAP Designer Draw Schedule menu command. The CAP Tile schedule is a single table that includes all covers for all runs within the drawing.

1. Click the **Generate Tile Schedule** icon on the **CAP AutoConnectors & More** toolbar.

   Do not use the **Draw Schedule** menu command.
2. The Command line asks you to enter **Text Height:**

   Type a text height (3, for example) and press Enter.
3. The Command line asks you to **Select Insertion Point:**

   The insertion point is the upper left corner of the schedule.

   Click with your mouse pointer to select a point in the drawing. CAPtile creates the tile cover schedule from that point.

While continuing to work on a project, you may add, revise or edit tile covers, finishes and tags. You may update the cover schedule after making these changes. It is not necessary to delete the existing tile cover schedule and create a new one.

1. Make changes to the materials in a cover configuration as described in the Edit a configuration topic.
2. Click the **Generate Tile Schedule** icon. CAP Tile updates the existing tile cover schedule automatically.

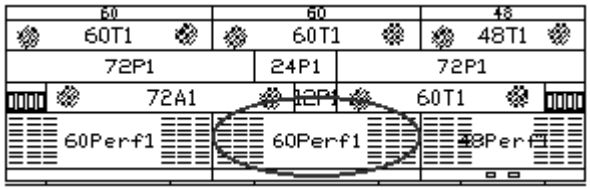
Change Captile tags

If your organization is already familiar with a particular tagging convention, you may rename the CAP Tile tags to match your conventions. You may even import tags from an existing drawing.

Change the code designations of your covers via the **Edit Tags** button in the **Currents Run Layout** dialog box.

1. Click the **Captile** icon CT on the **CAP AutoConnectors and More** toolbar.
2. Click on any run to open the **Currents Run Layout** dialog box.
3. Click the **Edit Tags** button to open the **Edit Custom Tags** dialog box.
4. Click on the tag you wish to change to highlight its line. Note that its tag also displays at the bottom of the dialog box.
5. Type in a new code in the text box at the bottom.

6. Click the **Update** button to apply the new tag.
7. After changing the tags, click **OK** to return to the **Currents Run Layout** dialog box. Note that the tags change.
8. Click the **OK** button in the **Currents Run Layout** dialog box to apply the new tags to the drawing.

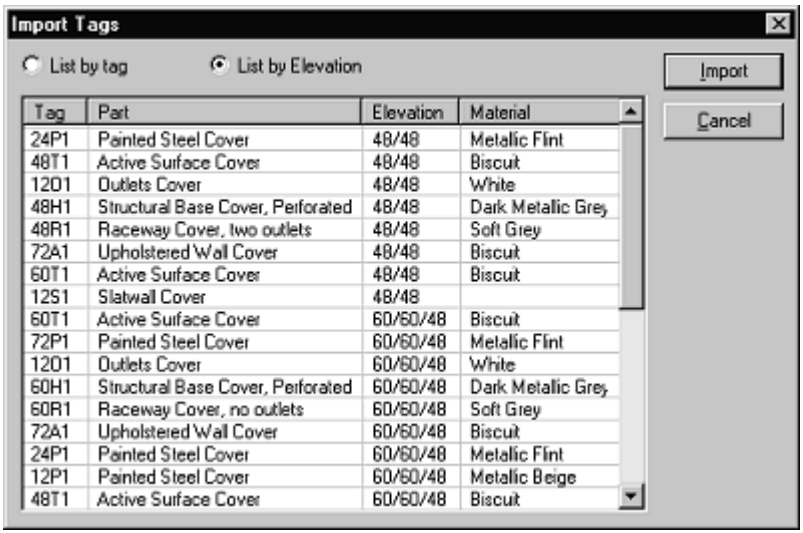


Import CAPtile tags

If there is a CAPtile tag configuration you prefer, you may import it from another drawing to the one you are working in.

1. Click the **Captile** icon CT on the **CAP AutoConnectors and More** toolbar.
2. Click on any run to open the **Currents Run Layout** dialog box.
3. Click the **Import Tags** button. **CAPtile** displays the **Open** dialog box. Select the drawing file that has the tags you wish to import.

4. Click the **Open** button to open the **Import Tags** dialog box.



Tag	Part	Elevation	Material
24P1	Painted Steel Cover	48/48	Metalic Flint
48T1	Active Surface Cover	48/48	Biscuit
12O1	Outlets Cover	48/48	White
48H1	Structural Base Cover, Perforated	48/48	Dark Metalic Grey
48R1	Raceway Cover, two outlets	48/48	Soft Grey
72A1	Upholstered Wall Cover	48/48	Biscuit
60T1	Active Surface Cover	48/48	Biscuit
12S1	Slatwall Cover	48/48	
60T1	Active Surface Cover	60/60/48	Biscuit
72P1	Painted Steel Cover	60/60/48	Metalic Flint
12O1	Outlets Cover	60/60/48	White
60H1	Structural Base Cover, Perforated	60/60/48	Dark Metalic Grey
60R1	Raceway Cover, no outlets	60/60/48	Soft Grey
72A1	Upholstered Wall Cover	60/60/48	Biscuit
24P1	Painted Steel Cover	60/60/48	Metalic Flint
12P1	Painted Steel Cover	60/60/48	Metalic Beige
48T1	Active Surface Cover	60/60/48	Biscuit

5. Click on the tag you wish to import. You may select more then one. Note that materials accompany the tags.
6. Click the **Import** button to import the selected tags.

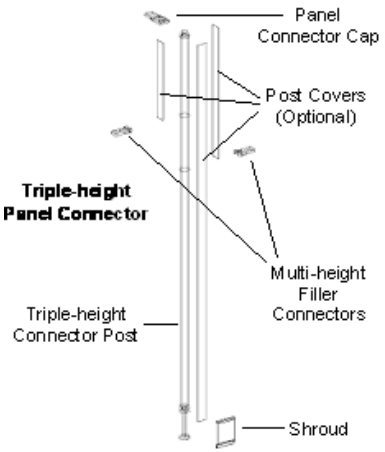
   The imported tags display on the **Existing** tab in a group called **Imported** Tags. Use the Imported Tags as you would a frame cover.

If a cover already in the drawing has the same tag but a different finish, the imported tag number increases by one. For example, 60R1 automatically increases to 60R2 upon import. If you change tags in a drawing that you have already exported to a worksheet, just export the drawing again to a new worksheet, then delete your old worksheet.

AutoConnectors and More with Knoll Equity

AutoConnectors & More places the proper panel connector automatically. The connectors are based on the software's analysis of the panels in the drawing and a set of installation rules.

Equity's panels and connectors are available in many heights and widths to provide design flexibility. Their unique panel connectors allow same-height and multi-height panel connections and two to four panels can be attached with a single panel connector.



Components include:

Connector Post - single, double, or triple height

Connector Cap - top connector

Multi-height Fillers - connector for multi height

Post Shroud - cover for post base

Post Covers - optional post covers

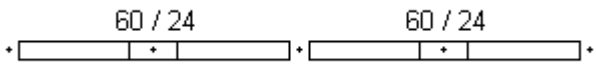
Additionally, single height connectors may be shipped as complete assemblies (kits) or as individual parts. Multi-height connectors are ordered by individual elements.

> AutoConnectors & More places the proper connectors and components for you. When a connector kit is available, the kit is placed in the drawing as a single part.
>
> For information on CAPtile, see the CAPtile topic in the CAP Designer help file.

Place Equity panels

AutoConnectors & More for Equity functions in much the same way as described earlier in this manual.

Begin by placing panels as you normally would. Select panels from the Library menu and snap them together using nodes.

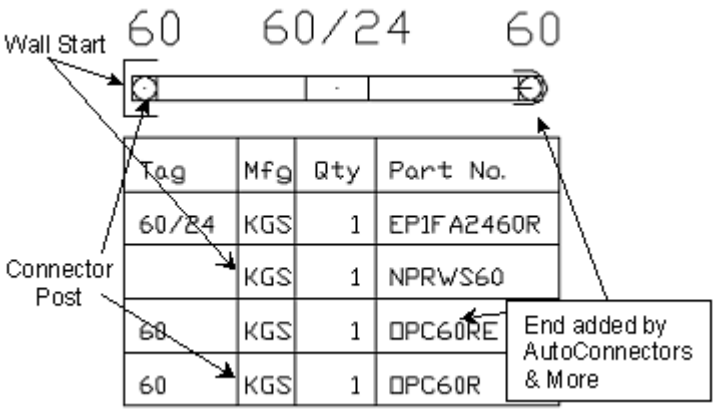


> Equity panels do not require UFO connectors as with Currents and other panel/frame systems.

Marking and unmarking

A connector post is required when attaching panels to a wall start. Manually place and mark the post in the drawing before running AutoConnectors.

AutoConnectors does not insert the connector post at the wall start. Avoid this by marking the connector post with the **Mark Wall Start Component** button.



1. To mark or unmark a wall start post, first place the wall start, the attached panel, and a post.
2. Click the **Mark Wall Start Components** toolbar button on the **CAP Utilities** toolbar.

   Or, click the **Finish Service Wall** flyout on the **CAP AutoConnectors & More** toolbar and select **Mark Wall Start Components** .
3. The command line prompts you for **Mark or Unmark <M>**:

   Type `M` to select the Mark option and press **Enter**.
4. The command line prompts you to Select objects. Click on the connector post and press **Enter**.
5. Now when you run AutoConnectors & More on the panel run, the post remains in place and the list of components is accurate.

You are not limited to using the Wall Mark feature on just Equity. Any part that you want AutoConnectors & More to ignore can be marked.

Place angled connectors

You must **manually** place any connectors that are between two panels set at an odd angle from each other (anything but 90 degrees). Also place raceway shrouds and post covers.

AutoConnectors & More places the standard 4-way, 3-way, 90-degree and straight-line connectors, even when these connectors are between different height panels.

Select connector preferences

For each product line that uses AutoConnectors there may be different types of connectors to choose from. Here you will learn how to select the appropriate finishes and product styles by setting user preferences.

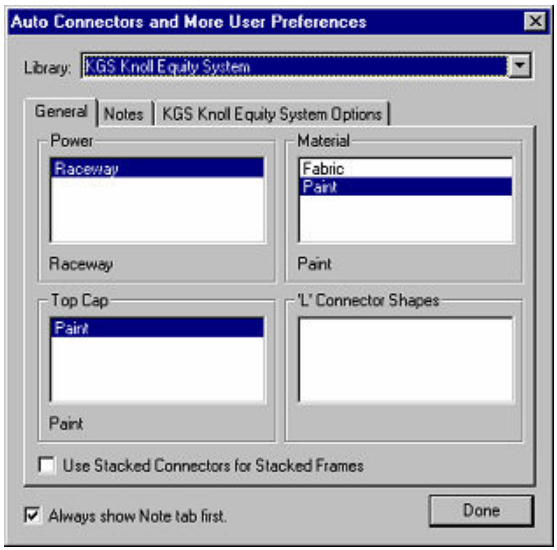
1. Click the **User Preferences** button on the **CAP Auto-Connectors and More** toolbar.

   This opens the **Preferences** dialog box that is specific to the Equity symbol library and the frames or panels you have selected. The **Notes** tab is selected by default. You can read these notes periodically to check important information about using Auto-Connectors.

   Before displaying the Equity connector preferences, AutoConnectors & More presents a reminder via an information box.

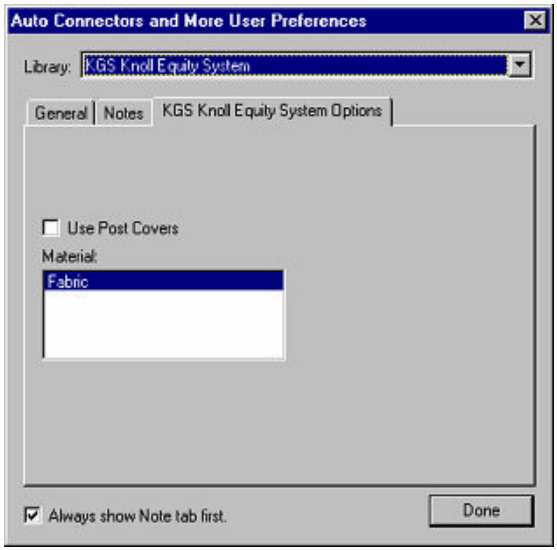
2. Make sure the Equity library is selected before setting preferences. You may assess other libraries through the drop down **Library** list.

3. Click the **General** tab then select **Power**, **Material**, and **Top Cap** options.



4. Click the **KGS Knoll Equity System Options** tab.

   If you selected **Fabric** as a **Material** in step 3, **Use Post Covers** is checked automatically. Post covers are required if fabric is selected.

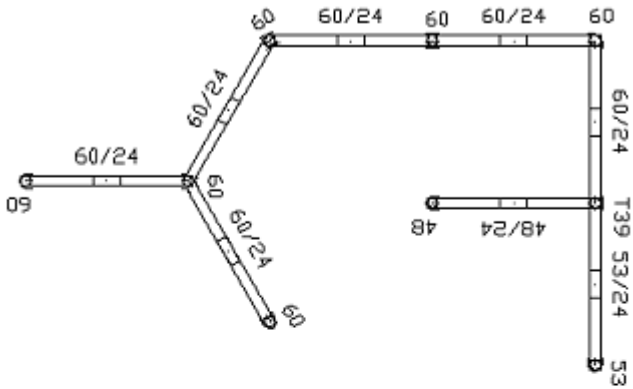


5. Click **Done** when finished.

Place connectors

CAP Designer's **AutoConnectors & More** inserts appropriate connectors between the panels just placed — straight line, 2-way, 3-way, and 4-way connectors, left and right corner connectors.

1. Click the **AC** button on the **AutoConnectors & More** toolbar.
2. Select the panels to receive the connectors. Window the entire drawing to place all the connectors or select only a section of the drawing.
3. **Right-click** anywhere in the drawing and **AutoConnectors & More** places the connectors between frames in your drawing. It also places change-of-height end trim where needed, as when a 70-inch frame is connected to a 54-inch frame.



Tag	Mfg	Qty	Part No.
48	KGS	1	OPC48RE
53	KGS	1	OPC53RE
60	KGS	1	OPC60RC
60	KGS	2	OPC60RE
60	KGS	2	OPC60RS
60	KGS	1	OPC60RY
T39	KGS	1	OPTC39R

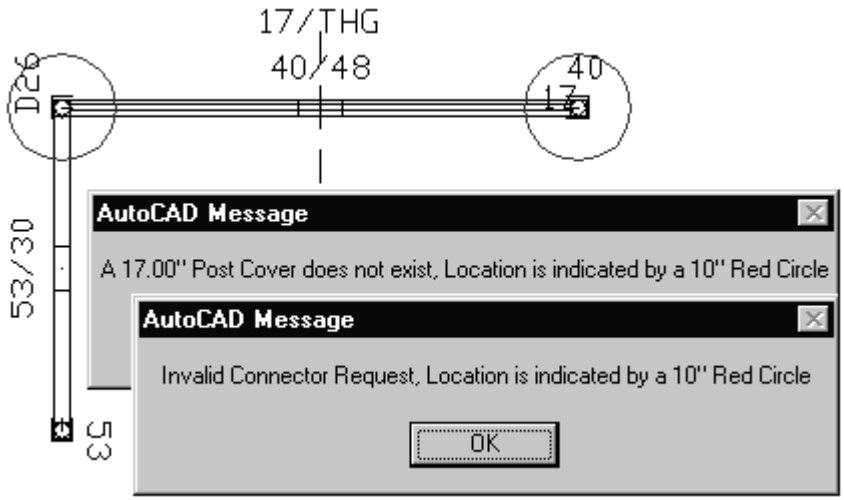
If you ran AutoConnectors and it didn't work properly, it may be because of a mirrored frame, a stacker at the wrong 3D height or duplicate frames on top of each other. Click the **Frame Validation Tool** on the **CAP AutoConnectors & More** toolbar to flag or correct these problems. For details on this command see the CAP Frame Validation Tool topic in the CAP Designer help file.

Equity connector rules

Not all panel configurations or size combinations are possible.

If you create a panel combination that cannot be supported by connectors, AutoConnectors presents an error message or a series of error messages. A red circle also marks the incorrect connection.

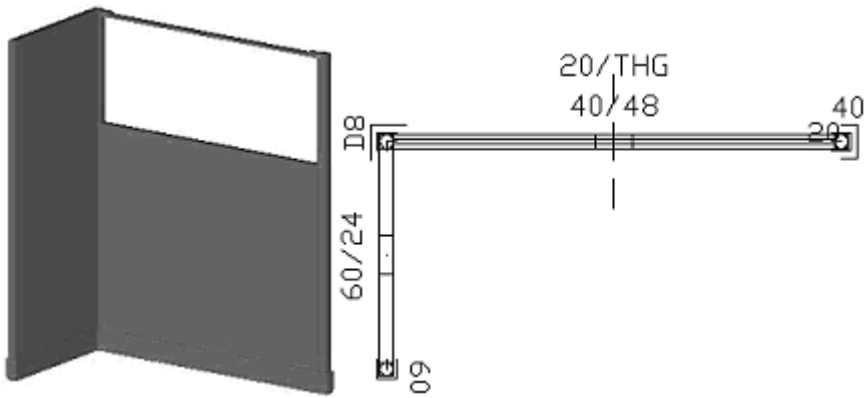
This allows you to identify and make the required changes to the panel layout. As shown below:



Note on Beltway connectors: Beltway panels are split panels that come as one unit with a power and communication raceway down the center as well as at the bottom. Beltway panels require different connectors and shrouds from those required by other Equity panels. AutoConnectors & More for Equity detects the Beltway panels and inserts the correct connectors.

Top-Hat panels and connectors

Before installing Top Hat add on panels, turn on the default height prompt. This allows you to change the default height of the Top Hat panel to match the top of the lower panel.



Activate the default height prompt by selecting the **CAP Designer** menu, then **Preferences**, go to the **Advanced Tab**. Under **Prompt** select **Default Height**.

National

To activate the Automation Center for National:

1. From **CAP Designer**, select **Automation Center**.

   Or, click the **Automation Center** icon on the **CAP Designer** toolbar.
2. Notice the tabs for different manufacturers on the side (available only if these manufacturer catalogs were installed). Click the **National** tab.

For details about **Run Auto-Hardware** and **Set Auto-Hardware Preferences**, see the Auto-hardware section.

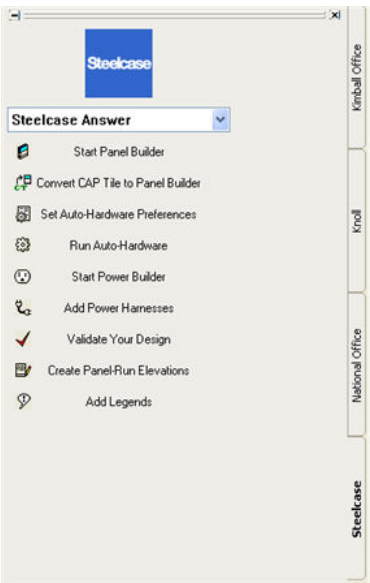
Steelcase

See the following sections for information about CAP Designer commands specific to Steelcase:

Automation Center for Steelcase

1. From **CAP Designer**, select **Automation Center**.

   Or, click the **Automation Center** icon on the **CAP Designer** toolbar.
2. Notice the tabs for different manufacturers on the side (available only if these manufacturer catalogs were installed). Click the **Steelcase** tab.
3. Click the dropdown arrow to select the appropriate Steelcase catalog.



4. For information on commands for Steelcase Answer, see the Steelcase Answer section.

   For information on commands for Steelcase Privacy Wall, see the Steelcase Privacy Wall section.

Steelcase Answer

Steelcase Answer toolbar

Icon	Name	Topic
	Panel Builder	See the 20-20 Panel Builder help for details on using Panel Builder.
	Convert CAPtile to Panel Builder	Convert a CAPtile configuration to Panel Builder
	Set Auto-Hardware Preferences	Auto-hardware - Steelcase Answer
	Run Auto-Hardware	Auto-hardware - Steelcase Answer
	Start Power Builder	Power configurations - Steelcase Answer
	Add Power Harnesses	Power routing - Steelcase Answer

Icon	Name	Topic
	Validate Your Design	Validate the design
	Create Panel-Run Elevations	Insert panel elevations in the drawing
	Add Details & Legends	Add details and legends - Steelcase Answer

Convert a CAPtile configuration to Panel Builder

Use this command to convert a tile configuration created using CAPtile to a Panel Builder panel configuration. Note that Panel Builder requires more information than CAPtile panels carry — the converted configuration in Panel Builder is a starting point. You will need to finish the panel configuration then save it.

1. Open the drawing that has tile configurations created using CAPtile.
2. Click **Convert CAPtile to Panel Builder** .
3. Select a frame with the existing tile configuration in the drawing.

   Panel Builder opens the panel configuration.
4. Make the changes to the panel configuration then **save it**.

   See the 20-20 Panel Builder help for details on using Panel Builder.

Power configurations - Steelcase Answer

Power Builder is the tool used to create power configurations for application to panels.

Power Configurations are stored in the Custom Catalog along with the Panel Configurations, and can be applied to any Panel Configurations in the drawing which can support the applied Power configuration. Power Configurations are checked against the Panels to which they are being applied in the drawing to ensure that they are compatible.

1. Click the **Power Builder** toolbar button on the Steelcase Answer toolbar.
2. Select an example panel on the drawing.
3. See the Power configurations section in the **Panel Builder** help for details.

An alternative method for accessing Power Builder is to click the Power tab in the **Panel Configuration Pane** in Panel Builder for any configuration.

Power routing - Steelcase Answer

Power Routing provides the designer the functionality to easily route power between power blocks in those instances where the power kit's power whip is not sufficient. The designer chooses the power blocks between which a harness connection is needed, and the software determines the correct modular harness for the application. The graphic drawn is a CAP Part containing an arc tagged to the style number. The arc shows which power block is connected to which power block.

The Power Routing Tool should be used when connecting a power block to:

- A power block in a different zone within the same panel.
- A power block in an adjacent panel and in a different zone.
- A power block in an adjacent panel connected in a 90º condition and in a different zone.

❖ A power block in an adjacent panel connected in a 90º condition and in the same zone and that zone is not “B” or “E”.

The Power Routing Tool does not span panels. To route power between non-adjacent panels a Pass Through Power Configuration must be created and applied to any non-electrified panels through which power must pass.

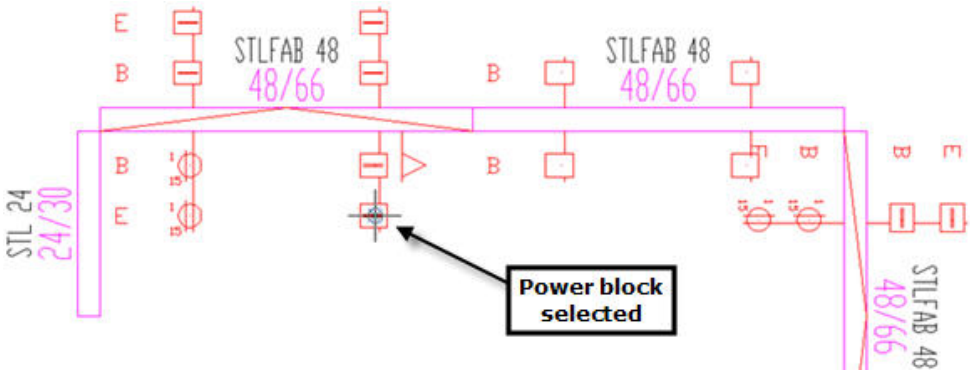
For conditions in which a harness must span panels, the harness length can be manually calculated and the required harness inserted from the Content tab as an alternative to the Power Routing Tool.

Use the Power routing tool

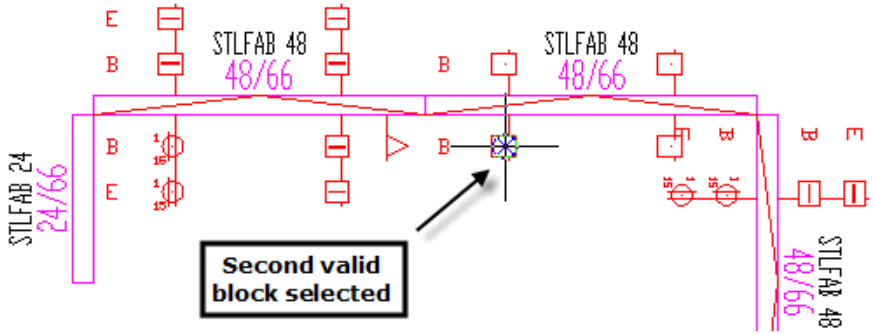
1. Click the **Add Harnesses** icon  on the Steelcase Answer toolbar.

   You will see instructions on the command line.

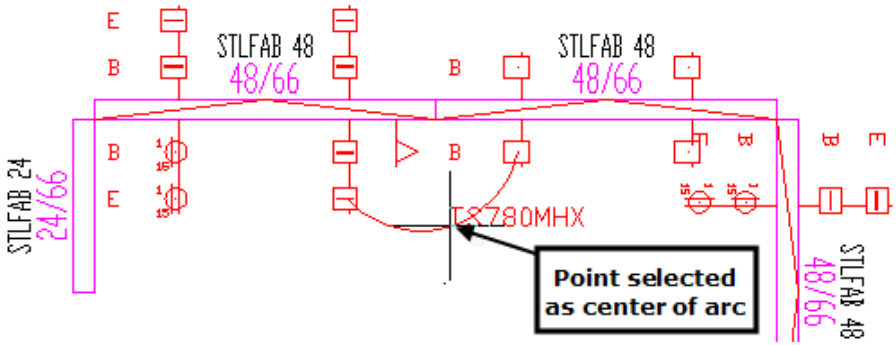
2. Select a power block as the starting point for the harness. (A receptacle does not have to be at that location.) Selecting a valid power block prompts that a receptacle was found and to select the next receptacle.



3. A valid second selection results in a prompt to pick where the center point of the harness arc should be drawn.

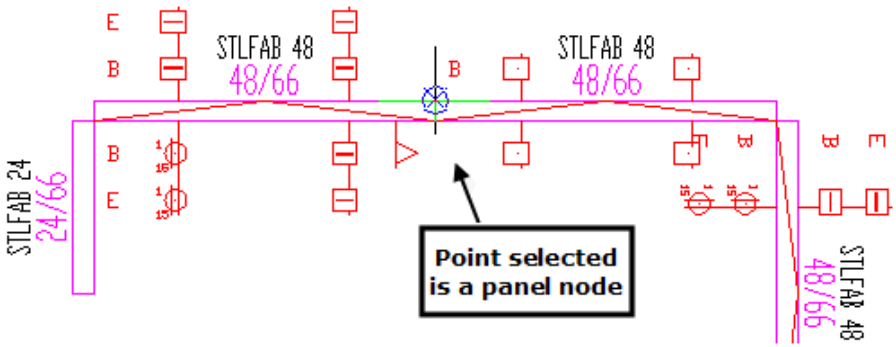


4. Once the center point is picked, the CAP Part representing the required harness is drawn. The harness is drawn as an arc with its start and end points at the power zone blocks selected, and passing **through** the point selected as the arc center point.

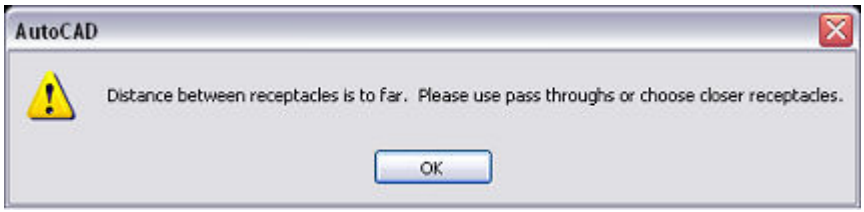


5. The command prompt returns to a request to select the first receptacle for another harness placement. To end power routing press Enter or Esc.

6. As points are selected to define the start and end points of a harness, a check is performed to insure the picked objects are power blocks. A warning message is provided on the Command Line to describe improper harness point selections.



Should a calculated harness length exceed the maximum length, a *warning dialog* is displayed.



If the two power zone blocks selected are in adjacent panels and do not require a harness, a *warning dialog* is displayed.

If the two power zone blocks selected are in the same panel and do not require a harness, a *warning dialog* is displayed.

Harnesses can be erased, and re-built at any time. It is suggested that the Power Routing Tool be used to create harnesses, rather than copying existing harnesses to other locations.

If a power configuration in a panel is moved or deleted, any routing that might have been done with that configuration needs to be erased and redone.

Auto-hardware - Steelcase Answer

Auto-Hardware analyzes panels within a selection set and adds the required trim and junctions. Panels must be properly snapped together for Auto-Hardware to work. Auto-Hardware detects manually placed connectors and marks them in the drawing, and does not place any of its own connectors at those locations. For example, Utility Poles must be manually placed, and Auto-Hardware does not place another junction at that location.

1. Click the **Auto-Hardware** icon  on the Steelcase Answer toolbar.

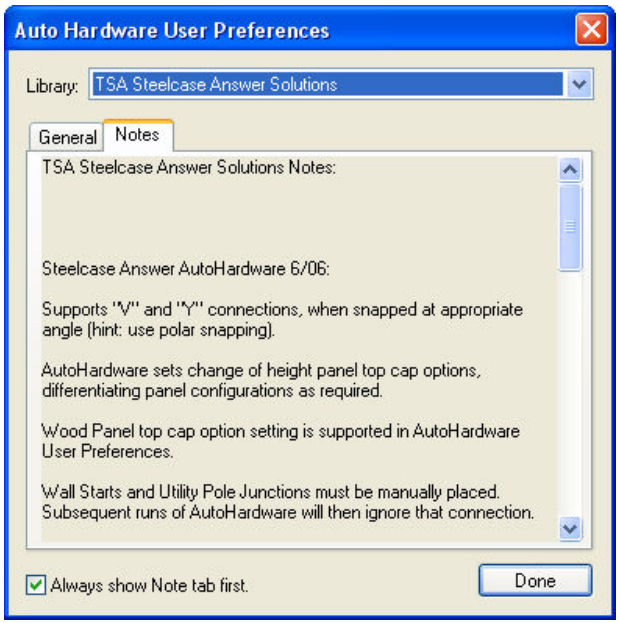
   This activates the tool and prompts on the command line to select objects.
2. Use a window or crossing selection to select everything to be analyzed.

   You must select everything that is connected together in one selection set, so that all parts that impact each other are considered. Failure to do so results in incorrect Trim and Junction placements.

Auto-Hardware places junctions in ‘V’ (135º) and ‘Y’ (120º) connection conditions provided the configurations have been properly snapped together at the correct angles.

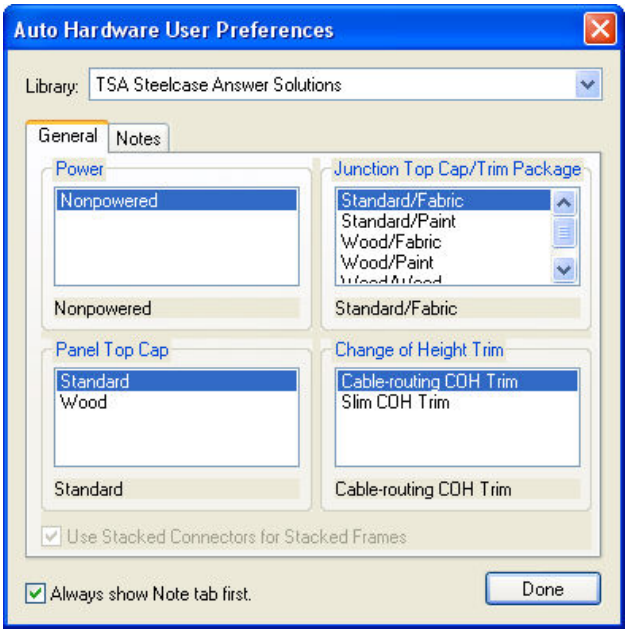
3. When the selection set is complete, right-click or press Enter.

   If this is the first time Auto-Hardware has been run for the drawing session, the Auto-Hardware User Preferences dialog then opens.



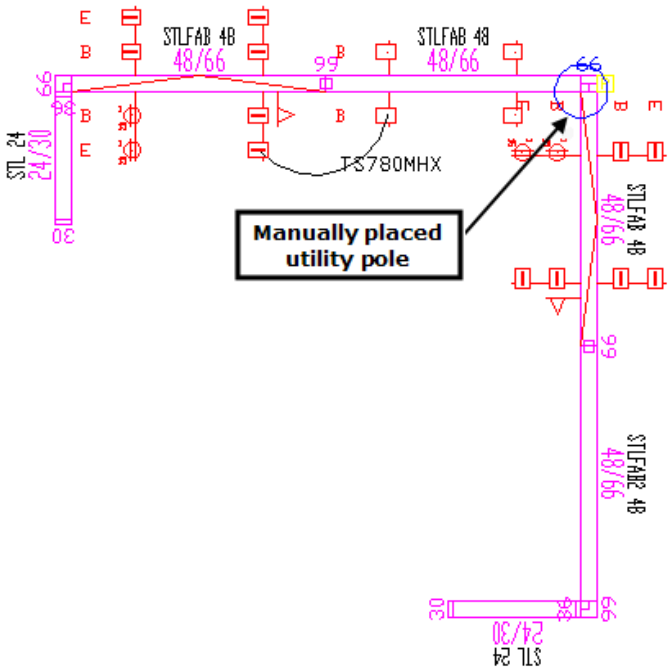
To access the Auto-Hardware User Preferences dialog ‘on demand’, click the Auto-Hardware Preferences button on the Steelcase Answer toolbar or tool palette.

This dialog consists of two tabs: one (Notes) containing important information regarding the Auto-Hardware function, and one (General) containing choices for Junction and Trim Top Cap Material, Panel Top Cap Material as well as type of Change of Height Trim to apply.



Once all necessary selections have been made, clicking Done dismisses the dialog and allows Auto-Hardware to start processing. A progress bar on the screen displays until the routine has finished, at which point the bar disappears and the drawing is displayed with the new connectors in place.

If any connectors have been placed manually prior to running Auto-Hardware, the routine finds those junctions and marks their locations with 10” yellow circles.



All connectors, whether manually placed or inserted by Auto-Hardware, appear in the Worksheet takeoff as standard connector line items.

Validate the design

Validation checks the layout to make sure it conforms to a list of rules and criteria built into the software.

1. Click the **Validate Your Design** icon  .
2. Select the objects on the design.

3. If errors are found, a message appears on the screen indicating that an error has been found and the location of the error will be marked on the layout with a 10” red circle. Click **OK** to close the message box.

4. After validation is completed, hover the mouse pointer on one of the red circles and a tooltip will appear displaying a description of the error.

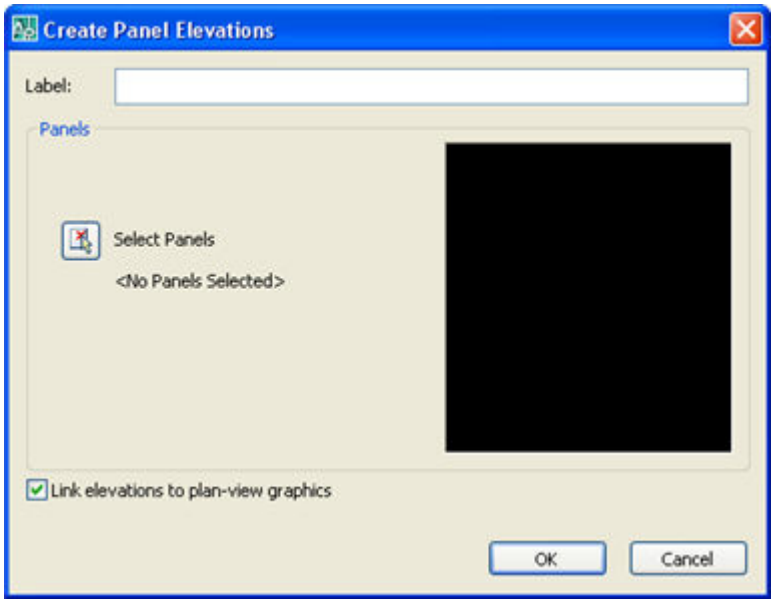
If multiple errors occur at a single location, multiple circles may be placed on top of each other so that only one circle is visible. In this case the circles will have to be moved slightly away from each other in order to read the tooltips for each error.

Insert panel elevations in the drawing

The Elevation Tool provides the ability to create an elevation view of a selected panel configuration or a run of contiguous panel configurations. Power configurations are a part of the panel elevation when present. By default these elevations are linked to the plan-view panel configuration from which it was created.

1. Click the **Create Panel-Run Elevations** icon  .

   The **Create Panel Elevations** dialog appears.



2. Type the **label** for the elevation.

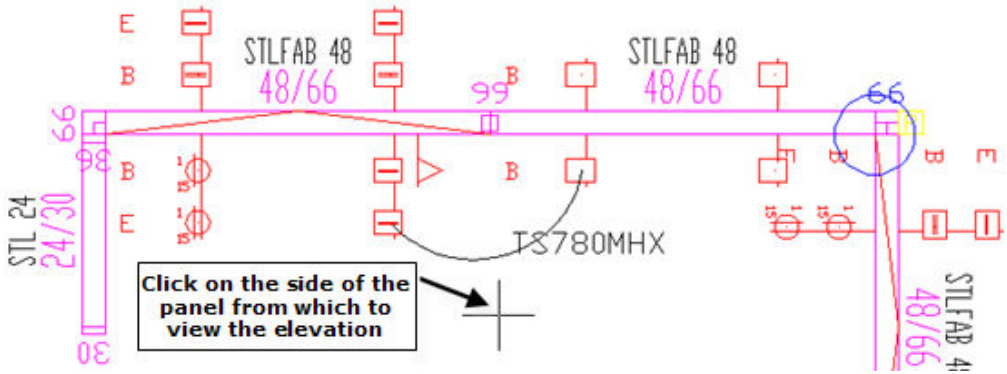
   A linked elevation is logically “connected” to its plan-view parent so that if the parent configuration is modified, the elevation is also immediately modified to match the parent configuration. Linked elevations are a one-to-one relationship to their parent. Should the parent plan-view graphics of a linked elevation be erased, the elevation is also erased.

   Elevations can be produced as “non-linked”. Non-linked elevations are an image of the panel configurations. The non-linked elevations still dynamically change to reflect any changes made to that named panel configurations. Being non-linked, when the parent configurations are erased or replaced, the elevations remain intact. Linked or un-linked elevations can be erased at will without affecting the plan-view parent.

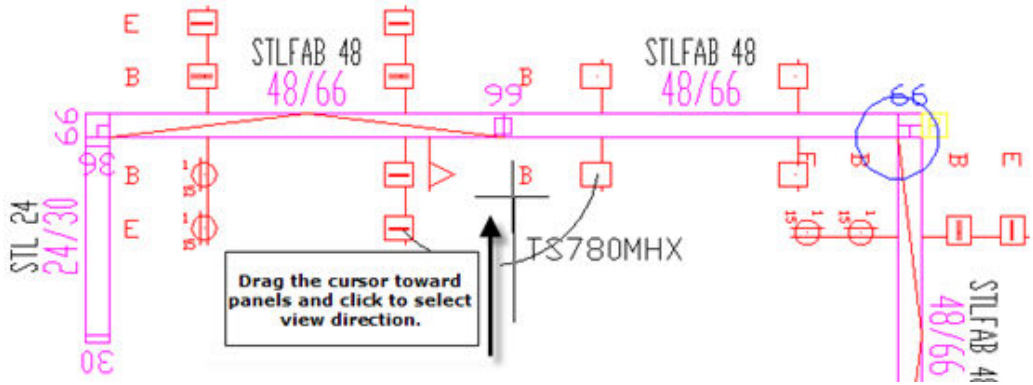
3. Click **Select Panels** to choose the configurations you wish to have elevations for.

   If a power configuration is present with that panel, it is automatically included in the elevation.

4. Select the panels in the drawing.
5. You will be prompted to **Select the View Location** in the drawing**.** Select anywhere on the side of the panel from which the elevation view is desired.



6. You will be prompted to **Select the View Direction** in the drawing. Move the cursor toward the panel (run) and click to accept.



You will be brought back to the **Create Panel Elevations** dialog, where you will see a preview of the elevation.

7. Click **OK**.
8. Pick the insertion point on the drawing.
9. Select the rotation angle.

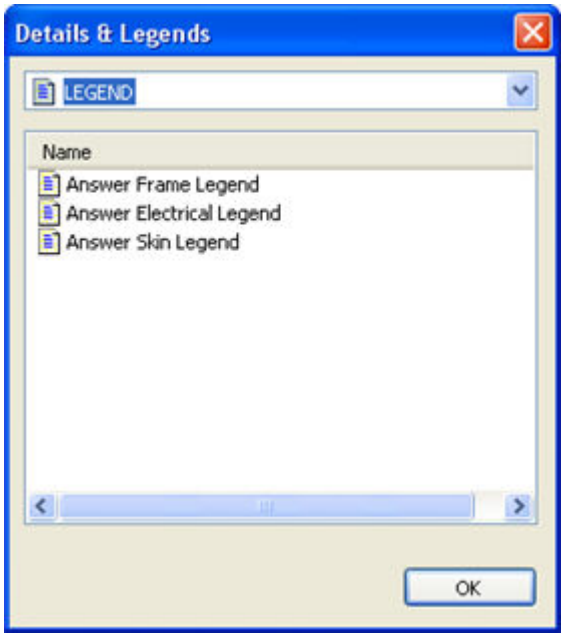
The elevations are linked to the configuration they come from, and are automatically updated when the source configuration is changed and saved. The elevation is inserted as a block entity in the drawing and can be easily moved using AutoCAD's standard Move command after placement if needed. It can also be copied using AutoCAD's standard Copy command to be used as an elevation marker-note as desired.

Add details and legends - Steelcase Answer

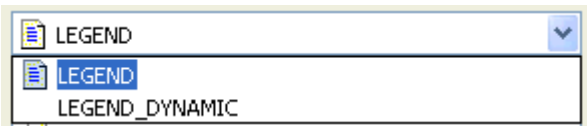
The Details and Legends tool provides a means to include either predefined Frame, Electrical and Skin legends, or dynamic Junction legends in a drawing.

1. Click the **Add Details & Legends** icon  on the Steelcase Answer toolbar.

   This brings up a dialog from which any of several legends can be selected.



2. Click the dropdown arrow to select **Legend**, **or Legend_Dynamic**.



Legend_Dynamic is created on demand and whose content is dependent on the selection of Answer junction symbols in a furniture layout.

3. Do either of the following:

If you selected **Legend** in the previous step, click on the legend you want to add to the

drawing in the list below the dropdown box.
If you selected **Legend_Dynamic** in the previous step, click on the **Answer Junction Legend**. A dialog opens in which the formatting and numbering of the legend and associated tags can be set. Before making any changes it is recommended to click the **Select Objects** button and select the area of the drawing for which a legend is required. This creates a preview in the Legend dialog so that changes can be reviewed before the legend is created. The **Legend** section of the dialog changes the format of the legend, while the **Tags** section sets the starting number and text height of the tags placed on the floor plan to designate junction locations. Once all changes have been made click **OK** to exit the dialog.

4. The legend is attached to the cursor for placement in the drawing. Specify the insertion point then the rotation angle in the drawing.

   If you selected the Answer Junction Legend, tags are placed at each junction location in the selection. A junction is considered the total of all connector and trim components located at panel connections and end of panel runs. Every duplicate instance of a junction within the selected area shares a common tag.

Legends are placed as block entities.

Steelcase Privacy Wall

See the following topics in this section:

Steelcase Privacy Wall toolbar

In order to assist with several aspects of Privacy Wall space planning, a series of specialized tools has been developed. These tools have been consolidated in the **Steelcase - Privacy Wall** toolbar.

To access the toolbar, right-click on any **CAP Designer** toolbar button and then select **Steelcase - Privacy Wall** from the list of **CAP Designer** toolbars.

Icon	Name	Topic
	Panel Builder	See the 20-20 Panel Builder help for details on using Panel builder.
	Insert Adapters, Posts, Wall Channels, etc.	Insert connectors
	Run Auto-Hardware	Auto-hardware
	Start Power Builder	Power configurations
	Add Power Harnesses	Power routing

Icon	Name	Topic
	Validate Your Design	See Validate the design under the Steelcase Answer section.
	Create Panel-Run Elevations	See Insert panel elevations in the drawing under the Steelcase Answer section.
	Add Details & Legends	Add details and legends

These tools are also available from the Automation Center for Steelcase.

Insert connectors

Every Privacy Wall layout requires connection hardware. The Connection Layout Tool makes the selection of the required connectors very easy.

1. Click the icon on the **Steelcase Privacy Wall** toolbar.

   This launches a separate **Posts & Adapters** toolbar.

2. Select the desired hardware type by using the drop down list.

   Beside posts and adapters, you can also select mini-ends and wall channels for placement.

3. The buttons on the toolbar update according to the choice you made in the drop down. Click a toolbar button to attach that connector to the cursor for placement.

In instances where 120° and 135° connectors are used, use Polar Tracking in lieu of Ortho mode to achieve the proper rotational angle of panels attached to these connectors. If either 120° or 135° planning is to be used exclusive of the other, set the Polar Tracking Increment angle to 30° for 120° planning, or 45° for 130° planning. If both 120° and 135° planning will be used concurrently, set the Polar Tracking Increment angle to 15°.

Connector hardware is placed without any height. When Auto-Hardware is run it will assign the proper height to each connector.

In order for Auto-Hardware to correctly determine the required height, all hardware must be properly attached to the panels, therefore it is critical that CAP's default Node snapping be used.

Power configurations - Steelcase Privacy Wall

Power Builder is the tool used to create power configurations for application to panels. These power configurations are saved independently from, but can be saved in the same Custom Catalog as, the panel configurations.

Although Panel Builder opens a specific Panel configuration upon selection of an example panel, the Power configuration created is saved independent of that Panel configuration. Panel Builder requires the example configuration so that appropriate power location options can be presented for that configuration. The Power configuration created can be used on any Panel configuration of the same type as the example configuration used as a basis for the design.

1. Click the **Power Builder** toolbar button on the Steelcase Privacy Wall toolbar.
2. Select an example panel on the drawing.
3. See the Power configurations section in the **Panel Builder** help for details.

An alternative method for accessing Power Builder is to click the Power tab in the **Panel Configuration Pane** in Panel Builder for any configuration.

Power routing - Steelcase Privacy Wall

Once Power configurations have been applied, proper harness calculation is required to route power between receptacles. The Power Routing tool accomplishes this.

Creating power routings involves selecting the panels in a panel run one at a time through which power harnesses must be run. The three scenarios for routing power are:

- Between two adjacent panels, each with Base power or one containing an infeed
- Between two panels separated only by a connector, each with Base power or one containing an infeed
- Between two non-adjacent panels, each with Base power or one containing an infeed

In all instances the procedure for using the Power Routing tool is the same, and is Command Line driven.

1. Click the **Add Power Harnesses** icon on the Steelcase Privacy Wall toolbar.
2. Select the first powered panel.
3. Select the next panel, powered or not.
4. If the second panel is powered, skip to Step 5.
5. If the second panel is non-powered, continue selecting panels in sequence until the next powered panel is selected.
6. Select a point on the screen through which an arc (with its first endpoint at the center of the first powered panel and its second endpoint at the center of the second powered panel) will pass.

7. If additional harnesses are to be placed in continuation from the first power routing created, follow the Command Line prompts and continue selecting panels until the next powered panel is selected.
8. If additional harnesses are to be placed that are not in continuation from the first power routing created, press the Esc key to finish the current routing command and click the Power Routing tool to begin another route.

   This must be done any time a powered panel is used as a branching point for two harnesses.

Auto-hardware - Steelcase Privacy Wall

Auto-Hardware calculates and places the required hardware to complete the panel layouts.

1. Click **Auto-Hardware** on the Steelcase Privacy Wall toolbar.
2. Select the objects on the drawing.

   The hardware placed is represented as 'checkmarks' (√) located at panel to panel, or panel to connector, junctions.

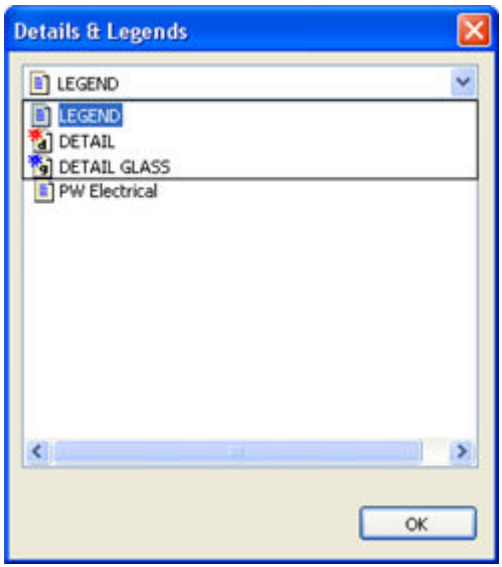
Because multiple pieces of hardware are required for each panel, multiple checkmarks will be placed at each location. The checkmarks will be placed one on top of another in the layout, so that only a single checkmark will be visible at each location. Using the CAP Info tool with a crossing selection around a checkmark will display a list of all hardware at that location.

Add details and legends - Steelcase Privacy Wall

1. Click the **Add Details & Legends** icon on the Steelcase Privacy Wall toolbar.

   This brings up a dialog from which any of several details or legends can be selected.

2. Click the dropdown arrow to select **Legend**, **Detail** or **Detail Glass**.



3. In the list below the dropdown box click on the detail or legend you want to add to the drawing.
4. Specify the insertion point then the rotation angle in the drawing.

Details or legends are placed as block entities.

Steelcase Style Number Conversion Wizard

In January 2004, many Steelcase products changed style numbers, catalog codes, or both. In some cases this realignment also resulted in changes to a parts option code sequences. The Steelcase Style Number Conversion Wizard converts drawings or worksheets with order information prepared using the OLD style catalogs and style numbers to their NEW catalog equivalents.

Converter capabilities

These Style Number Converters should not be considered as a "magic button" that miraculously converts Worksheets and drawings without human intervention. Unfortunately, it is not possible to completely translate all style numbers to the new format without human intervention. In places where the data is unclear, the user is asked to pick among valid choices.

The converters are based on a database supplied by Steelcase that maps old style numbers to their new style number equivalents. In some cases, old style numbers map directly to new style numbers and/or catalog codes. In other cases, a style number may be moved from a catalog code to several different catalog codes. When the converters encounter an item where it is ambiguous as to which catalog code to use as the new replacement, the user is prompted to choose between valid possible replacements.

Because of possible changes to the option trails, option data entered on the old style items may be lost. The converters provide the user the ability to navigate and select the new option trails during the conversion process. These choices are made easier by displaying any data (including descriptions and options) that the old item contained. In essence, the process can be much like re-optioning product line items.

Conversion results

The conversion process modifies CAPDesigner symbol attributes in the following manner:

- Style Number attributes are changed from old to their new equivalents.
- Catalog Code attributes are changed from old to their new equivalents.
- Items not found in the conversion database (such as unchanged styles, old discontinued styles, or custom style numbers) are not converted in any manner.
- A list of converted and non-converted Steelcase style numbers is provided for future reference

Note that:

- CAPStandards in the drawing: parts requiring conversion will get converted. If they are linked to Custom Catalog Items in a Custom Catalog, the link will be broken.

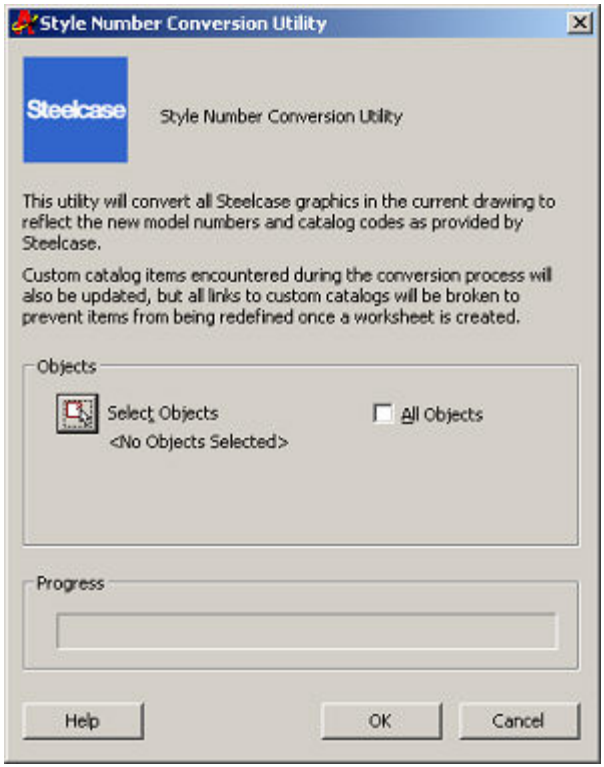
- Custom Catalog Items in the Custom Catalog will not get converted.
- Items in the Tile Configuration file (*.tilecfg.xml), if present, will get converted, so that the Tile Configurations remain valid.

Convert a CAP Designer drawing

Warning! It is highly recommended that a backup copy of drawings (and tileconfig.xml if present) be made before initiating the conversion process.

1. Load the drawing to be converted.
2. From the **CAP Designer** menu select **Convert**, **Steelcase Style Number Conversion Wizard**.

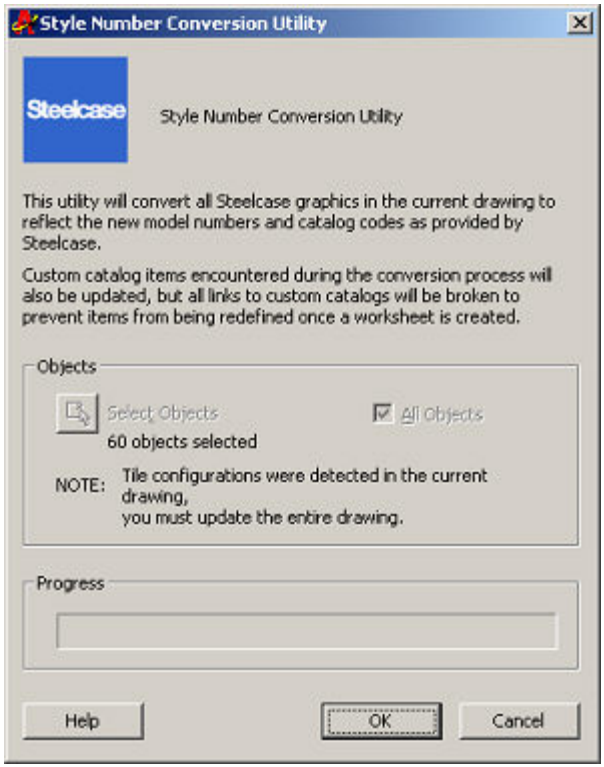
   The initial converter wizard dialog will appear, as shown below:



3. Click **Select Objects** to choose areas of the drawing for conversion. This would allow different choices for converted items in different areas of the drawing.

   Or, check **All Objects** to convert the entire drawing. All like items will be converted to the same new style number and/or catalog code.

   Drawings containing CAPTile configurations must be converted as a whole. In such drawings, the dialog changes slightly as shown below:



4. Click **OK** to start the conversion.

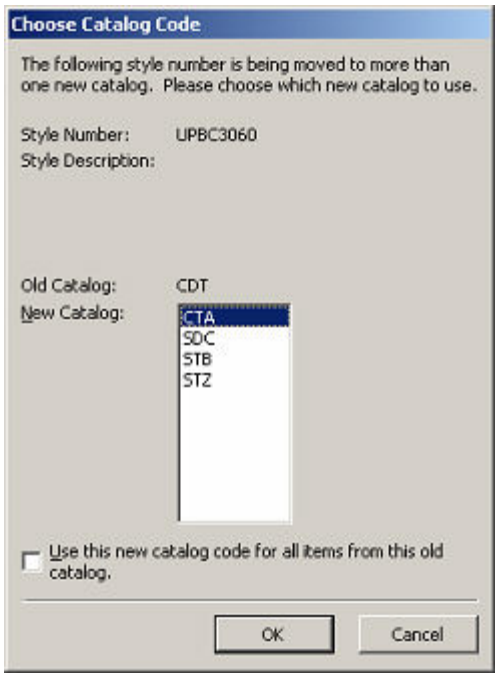
   The conversion process continues until an item requiring user intervention is encountered. Depending on the type of conversion required, different dialogs may appear.

❖ When a Catalog code requires a user selection, the dialog below appears.

   Select the desired new catalog code for the converted item.

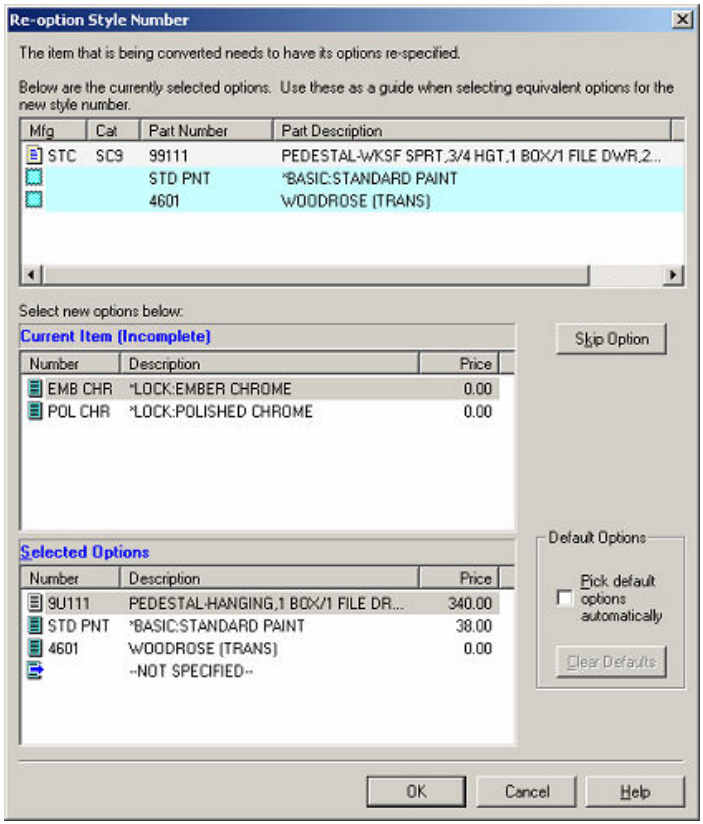
   Check the box at the bottom to speed up the conversion process. The selected new catalog code

will be used for any upcoming conversion item coming from the same old catalog.



❖ The example below shows an item that had options where the option trail has changed in the new style number. Note that original options will be retained wherever possible, up to the point that re-optioning is required.

The top window displays the worksheet item and its retained options. The middle window displays and allows selection of the next required option selection. The lower window displays the newly converted part and its selected options. Options can be selected or not.



5. Click **OK** to finish the conversion of this item and proceed on to the next item to be converted.

   When all items in the original drawing have been processed, a message box is displayed, as shown below:

A list of converted Steelcase parts is available in the AutoCAD text window. This list can be copied and saved for future reference, if desired.

Auto-hardware

Auto-Hardware analyzes panels within a selection set and adds the required trim and junctions. Panels must be properly snapped together for Auto-Hardware to work. Auto-Hardware detects manually placed connectors and marks them in the drawing, and does not place any of its own connectors at those locations. For example, Utility Poles must be manually placed, and Auto-Hardware does not place another junction at that location.

1. Click the **Auto-Hardware** icon on the Automation palette.

   This activates the tool and prompts on the command line to select objects.
2. Use a window or crossing selection to select everything to be analyzed.

   You must select everything that is connected together in one selection set, so that all parts that impact each other are considered. Failure to do so results in incorrect Trim and Junction placements.
3. When the selection set is complete, right-click or press Enter.

   If this is the first time Auto-Hardware has been run for the drawing session, the **Auto-Hardware User Preferences** dialog then opens.

   To access the Auto-Hardware User Preferences dialog ‘on demand’, click the **Auto-Hardware**

Preferences button on the Automation tool palette.

This dialog consists of two tabs: **Notes** contains important information regarding the Auto-Hardware function, and **General** contains choices for Junction and Trim Top Cap Material, Panel Top Cap Material as well as type of Change of Height Trim to apply.

4. Once all necessary selections have been made, clicking **Done** dismisses the dialog and allows Auto-Hardware to start processing. A progress bar on the screen displays until the routine has finished, at which point the bar disappears and the drawing is displayed with the new connectors in place.

   If any connectors have been placed manually prior to running Auto-Hardware, the routine finds those junctions and marks their locations with 10” yellow circles.

   All connectors, whether manually placed or inserted by Auto-Hardware, appear in the Worksheet takeoff as standard connector line items.

CAP Designer command reference

The table below displays the topics to read to get help on a specific command in the **CAP Designer** menu. Note that some command groups are available as toolbars, therefore you are referred to the corresponding toolbar topic.

Command	Topic
Automation Center	Manufacturer-specific information on page 290
Insert Symbol	Place a product using Insert Symbol on page 43
Drawing Setup	Drawing Setup Wizard on page 2
Update Against Catalog	Update against a catalog on page 60
CAP Tag	These commands are no longer used. See the Tags section on page 80 for information about creating or modifying tags.
CAP Part	CAP Part toolbar on page 19
Cap Standard	CAP Standard toolbar on page 20
CAP Bound	CAP Bound Toolbar on page 14
CAP Info	View item information on page 118
20-20 Options	Specify options on page 116

Command	Topic
20-20 Search	20-20 Search on page 58
CAP Explorer	Display or hide the Explorer bar on page 24
CAP Architectural	CAP Architectural on page 290
CAP Panel Builder	Panel Builder on page 227
20-20 Worksheet	Worksheets on page 125
Edit	CAP Edit toolbar on page 18
Tools	CAP Tools toolbar on page 21
Objects	Create a presentation document using Plan view and 3D on page 188
Import	Import Giza or Office Sales files on page 35
Convert	Manufacturer-specific information on page 290
Preferences	Preferences on page 30

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