



# PART 25

## AEC BLOCKS - PROFILES

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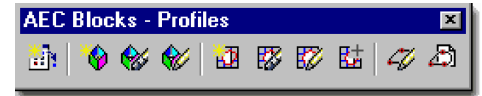
### 1 Blocks - Profiles - Access

.1-25 BLOCKS - PROFILES

**AEC Blocks - Profiles Toolbar**

[How do I get this toolbar?](#)

Access to these commands is scattered all over the place. You can, for example, find access to the **Multi-View Block** management tools under the **Format** pull-down but you must use the Insert pull-down menu to insert Multi-View Blocks; unless you have our toolbar, use the DesignCenter or use the Tool Palette. For Profiles, use the **Format** pull-down menu, select **Profiles** and cascade to their respective commands. For Mask Blocks, you can use **Alternate Document** pull-down menu. From the **Document** pull-down menu, pick **Mask Blocks>** and cascade to their respective command options .

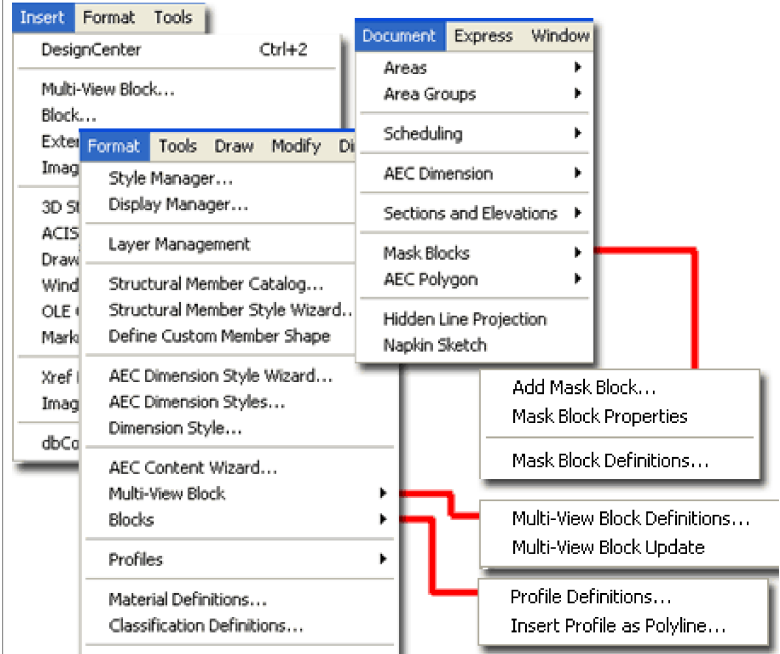


**AEC Blocks - Profiles pull-down menus**

AEC Content Wizard, Multi-View Blocks, Mask Blocks and Profiles

As you can see from the pull-down menus illustrated to the right, access to the various tools discussed in this chapter is primarily through the Format pull-down menu where you will find the **AEC Content Wizard, Multi-View Block** and **Profiles** menu items. Unfortunately, you will need to load the Alternate Document pull-down menu if you want access to the Mask Blocks which probably should have been included on the Format menu under Multi-View Blocks. In some respects you can think of Mask Blocks as a subset of MvBlocks since they are often combined to produce an MvBlock that is able to Mask other ADT Objects much like a **Wipeout** can be used to mask out regular linework.

**Profiles** are pretty much becoming a ubiquitous aspect of most of the Object Styles in ADT and should definitely master this tool. **Multi-View Blocks** are incredibly time consuming to create, on average I spend about 2 hours just to create something like a Chair, so you may find that creating them is something better suited for those with a lot of extra free time. **Mask Blocks** are self-evident in their importance and are fairly easy to create but due to the fact that they only Mask through Attachment to other ADT Objects, you may quickly find them too limited to be a part of regular drafting ( I see them more as useful in a pinch ). And finally, the **AEC Content Wizard** is a subject that I have serious doubts about elaborating on given that the DesignCenter is obviously on its way to retirement. By using the Tool Palette Icon Tools you can now program default Properties into numerous ADT Objects that provides more flexibility than what the AEC Content Wizard provided so you may just want to skip this subject altogether.



### 2 Adding Multi-View Blocks

2-25 BLOCKS - PROFILES

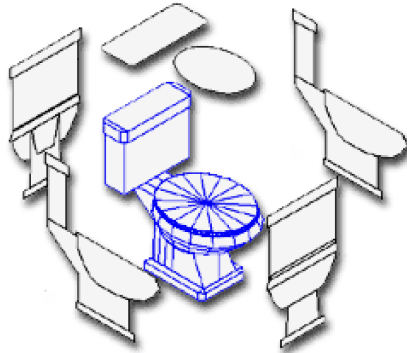
## Add Multi-View Block Properties Palette

Alt.Menu **Insert> Multi-View Blocks...**



Keyboard **MvBlockAdd**

Links [Multi-View Block Styles](#) - for how to load other MvBlocks  
[Design Content - Multi-View Blocks](#) - for an example of what a Multi-View block is and how it works.

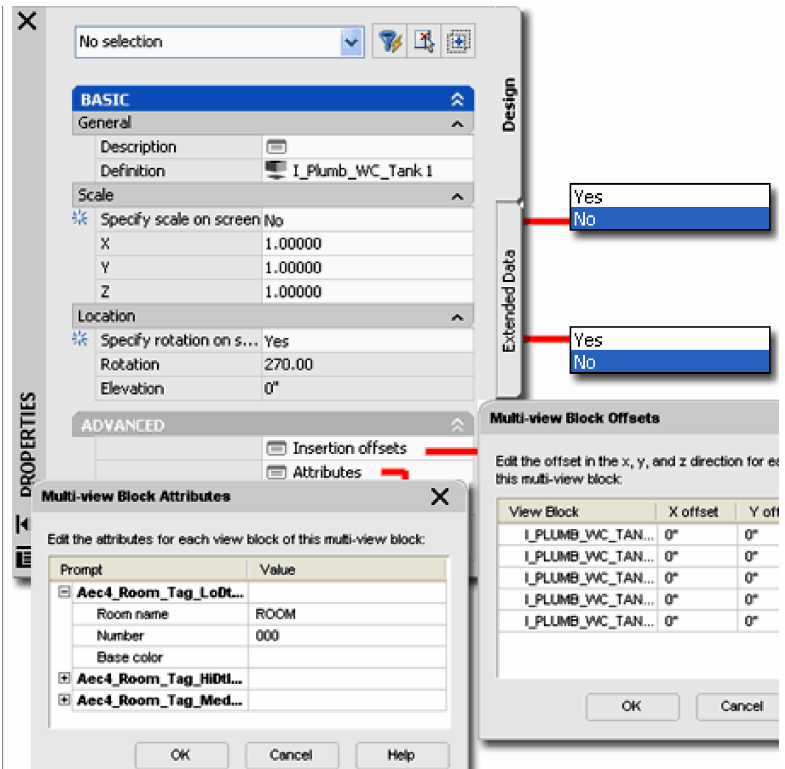


The **Add Multi-View Block Properties Palette** may be one that you will never use since most Multi-View Blocks come in through other means, like the **DesignCenter** and **Tool Palette**. If you do Add Multi-View Blocks with the Add Multi-View Block Properties Palette, you risk missing out on a lot of features brought about when you drag-n-drop items from the DesignCenter and

Tool Palette. These features, such as auto-layering and auto-scaling are programmed into the Multi-View Blocks via the Aec Content Wizard (for the DesignCenter) or part of the default Properties via the Tool Palette.

No matter how you insert an MvBlock, however, it is always an MvBlock which is basically a View Specific bundle of nested Blocks. In the illustration to the left I show six different Blocks (two are identical) that represent the contents of a common MvBlock. When you change the View in your drawing, only one of these Blocks should appear and hopefully it is the one that matches your current orientation; i.e, Front when viewed from Front.

Read the section on Modifying Multi-View Blocks for more information on the options illustrated to the right.



Illustrated above I show the Properties Palette as it appears when you use the MvBlockAdd command. Since an MvBlock is really a fancy ADT version of a regular AutoCAD Block, you should find that the types of options are very similar. One rather interesting option is the [Insert Offsets](#) values that not only operate independently for the X,Y and Z coordinates but also for each of the individual Blocks that make up the MvBlock. This means that you can push a Sink to a height of 36", for example, while leaving the other Blocks at zero (you shouldn't need to do such things but it's an interesting feature).

## Add Multi-View Block - DesignCenter and Tool Palettes

Menu **Insert> Multi-View Block...**

Keyboard **MvBlockAdd**

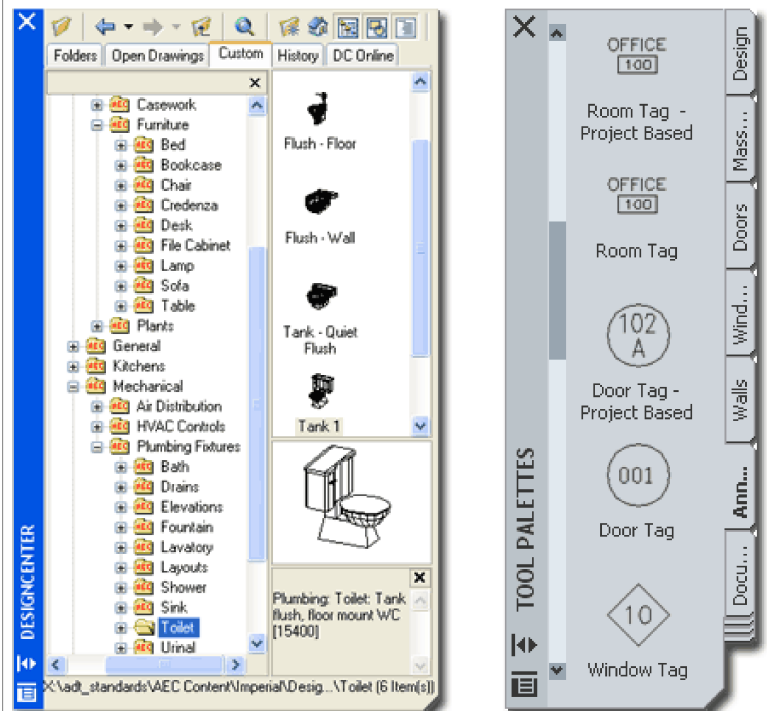
Links [Design Content - Multi-View Blocks](#) - for an example of what a Multi-View block is and how it works.

[Multi-View Blocks and Purging](#) - for information on how to remove unused MvBlocks and the regular AutoCAD Blocks that come with them.

The best and most common method for adding MvBlocks to drawings is through the **DesignCenter** or the **Tool Palettes** as illustrated to the right. When you drag object in through either of these tools, you not only get the MvBlock but you should also get auto-layering, auto-scaling and any number of other features that have been set as part of the Object's Insertion Properties.

Once you have inserted an MvBlock you may notice that it is listed under the **Multi-View Block Definitions** section of the **Multi-Purpose Objects** folder in the **Style Manager Window**. You may also notice that some MvBlocks tend to bring in a lot of regular AutoCAD Blocks so your list of blocks can expand dramatically as an ADT project grows. MvBlocks can also be incredibly memory consumptive because of all the detailed linework and the 3D Model included with them. For this reason, I have been experimenting with the use of Xref's to manage MvBlocks instead of Inserting them.

The special automatic reactions that occur when you drag-n-drop an



MvBlock from the DesignCenter are programmed into the MvBlock by using the [Aec Content Wizard](#) - see discussion below for more on this subject. The special automatic reactions that occur when you use the Tool Palettes to insert MvBlocks is programmed into them when they are dragged from the DesignCenter over to a Tool Palette or when a custom MvBlock tool is created for the [Tool Palette with default Properties](#) set to produce certain desired results.

### 3 Modifying Multi-View Blocks

#### Modify Multi-View Block Properties Palette

Menu **Desktop> Multi-View Blocks> Modify Multi-View Block...**



Keyboard **MvBlockModify**

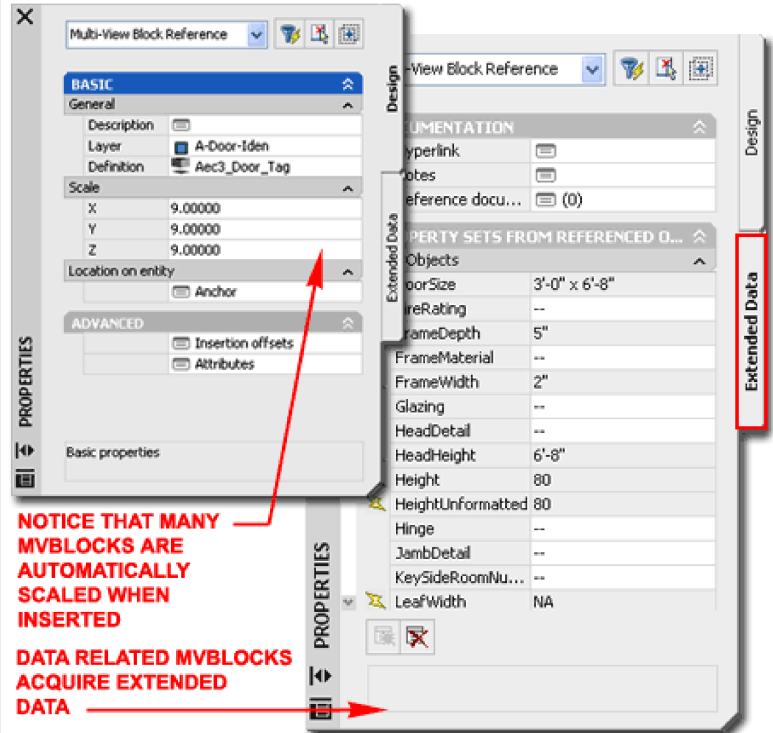
Mouse **Double-pick on Object** or Select Object, right-click, select **Properties**

Links [Modifying Design Content](#) - for more on the same subject

For **Modifying Multi-View Blocks** you can use the **Properties Palette** which offers nearly all of the same options as those found when Adding Multi-View Blocks with the Properties Palette. Since MvBlocks are much like regular Blocks, there really isn't much that you can modify unless you go deeper into the Multi-View Block Definition Style.

Illustrated to the right I show what the Properties Palette looks like when Modifying a common Door Tag Multi-View Block. Many MvBlocks are automatically scaled for the [Drawing Scale](#) and you may find these numbers on the value fields under the Scale section. Some Annotation MvBlocks offer Attribute fields that can be accessed and modified through the [Multi-view Block Attributes dialog](#). Other Annotation MvBlocks that are Anchored to Objects such as Doors and Windows, may offer access to Extended Data as illustrated to the right. You can learn more about Extended Data in [Part 18 - Schedules](#).

If you need an object to be a different dimension in Width, Depth or Height, you can change these values to match what you want. In some cases, however, this will create odd results; such as if you attempt to make a Range wider ( the burners will become ellipses ). **X** - width of object, **Y** - depth of object, **Z** - height of object.



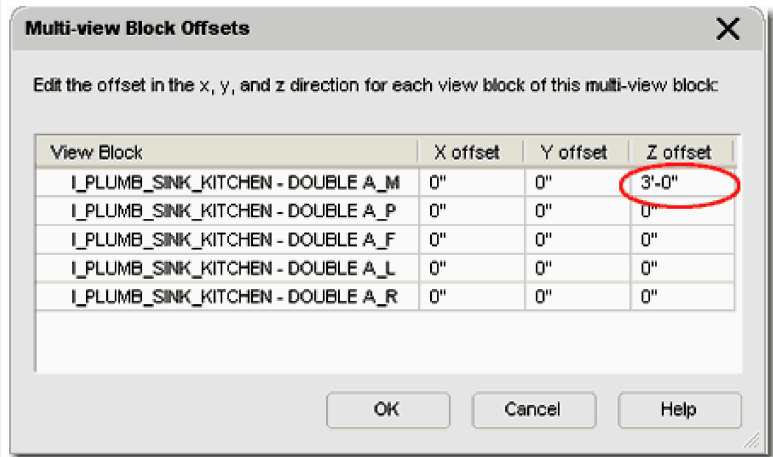
NOTICE THAT MANY MVBLOCKS ARE AUTOMATICALLY SCALED WHEN INSERTED

DATA RELATED MVBLOCKS ACQUIRE EXTENDED DATA

#### Multi-View Block Reference Properties - Offsets tab

On the **Multi-View Block Offsets** dialog box you will find all of the individual Blocks that make up the Multi-View Block you have selected. If you have selected a complicated MvBlock, like a Range ( Cooker ), you may see as many as five blocks. Each Block is used for a different View orientation so you might see letters used in their names that indicate what View they are used for; such as M (Model), P (Plan), F (Front), L (Left) and R (Right).

The **X, Y and Z Offset** value fields allow you to uniquely reposition each of the individual Blocks within a Multi-View Block. It would be a rare occasion where you would use this option but in the case of a Kitchen Sink, for example, you may decide that you want to leave most of the 2D Blocks at zero while pushing the Model Block up to the correct countertop height. Typically I put all my Sink MvBlocks at the right height since it doesn't appear to matter for the Plan Views but at least you have the option to do things like that.



**Multi-View Block Reference Properties - Attributes tab**



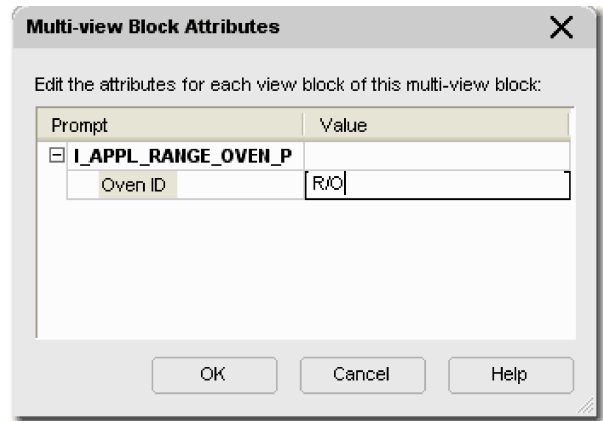
**ATTRIBUTES BEFORE** On the **Multi-View Block Attributes** dialog box you will find any value fields associated with Attributes within the MvBlock.



**ATTRIBUTES AFTER** These are very similar to the Attribute fields that you can edit with the AttEdit command on regular AutoCAD Blocks. MvBlock Attributes cannot be edited with the AttEdit command because the Attributes are buried one level deeper in a nested Block so you will need to use this dialog to get to them.

level deeper in a nested Block so you will need to use this dialog to get to them.

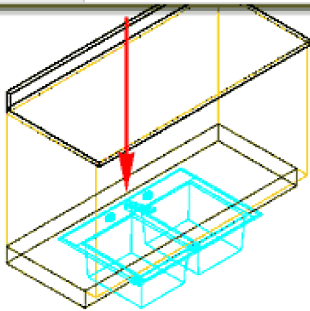
Illustrated to the left and right I show examples of how you can use the Multi-View Block Attributes dialog box to modify some of the Attribute fields within the default ADT MvBlocks. Though there are not that many default MvBlocks with Attribute fields in ADT, you may want to create your own - see more under Customizing and Tricks.



**Multi-View Block Reference Properties - Location tab**

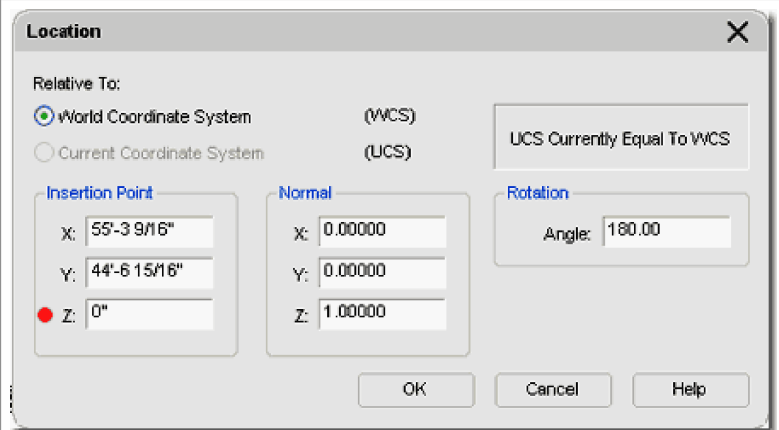


On the **Location** dialog box you will find Insertion Point value fields that you can use to adjust the position of a Multi-View block should its default Insertion Point prove to be undesirable; some 3D MvBlocks insert at Z=0, for example.



For many MvBlocks, you can Modify the Z-axis value directly without having to use the Location dialog. Illustrated to the left I show how the **Elevation** value field can be used to set a

new Z-axis value rather than using the Z Insertion Point value field on the Location tab illustrated to the right. I tend to use the Location dialog only as a quick checking tool for anomalies in X, Y or Z insertion values but for the most part I alter these values directly on the screen by moving the Objects in the X, Y or Z direction.



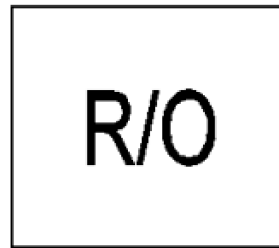
**Multi-View Blocks - Update**

This option is designed to update Attributed information in MvBlocks when it has been changed in one or more of the Blocks that define it. Because Attributes become buried inside Multi-View Block Definitions, they also become orphaned in a sense and do not automatically update when the Attributes of the Parent Block are changed.

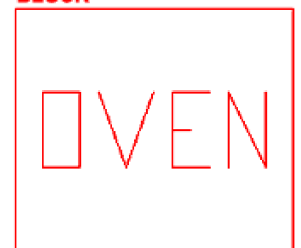
In the illustration to the right I show what a default MvBlock might look like when first inserted - far right. By inserting the Top or Plan View Block of this MvBlock Definition, I can use the Refedit routine to access the Attribute Properties and change them as illustrated by the new font and the letters "R/O". When this change is saved using the RefClose command, the Block will be saved and updated but the Block within existing MvBlocks do not automatically update. After running the MvBlock Update option, lower right, the font illustrates that it has updated.

If you insert another copy of the MvBlock, it will not only display the Font change but it will also display the new "R/O" default value.

**PLAN VIEW BLOCK ATTRIBUTE PROPERTIES MODIFIED**



**ORIGINAL MULTI-VIEW BLOCK**



**RESULTS AFTER MVBLOCK UPDATE OPTION**



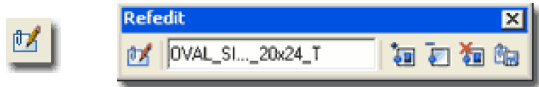
**ATTRIBUTE PROPERTY CHANGES ARE NOT AUTOMATICALLY UPDATED IN THE MVBLOCK. EVEN WITH THE UPDATE ROUTINE, SOME CHANGES CANNOT BE UPDATED; SUCH AS THE DEFAULT VALUE**

## Multi-View Blocks and Grips

For those familiar with the process of making Blocks, the process of making MvBlocks may be a bit confusing since there is never a query to Select Objects nor one for Specifying Insertion Point. When you Select an MvBlock, there is a Grip Point and it is at the Insertion Point but since you typically can only view on Block at a time within an MvBlock, the Grip is get is the one from that particular Block. This means that there can be different Insertion Points and you can end up with a Top View Block having a different Grip Position than the Elevation View Block. This is not an ideal situation and typically this indicates that the different Blocks within an MvBlock don't actually line up in space.

## Multi-View Blocks and Refedit

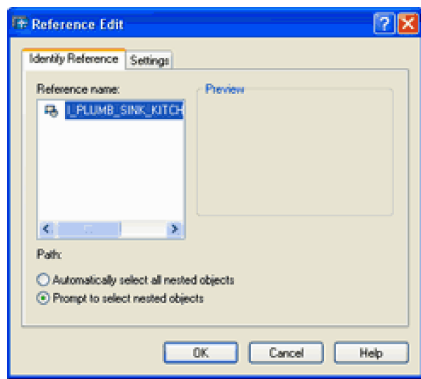
Menu **Modify> Xref and Block Editing> Edit Reference In-Place**



Keyboard **RefEdit**

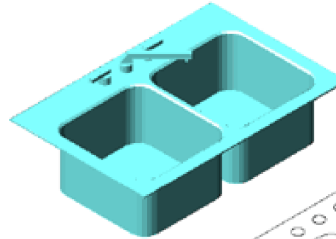
Mouse Double left-pick on Block Object.

Links [Modifying Design Content](#) - for more on the same subject

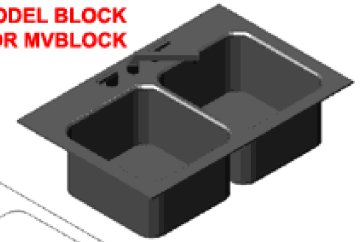


Though you cannot use the Refedit tool to Modify MvBlocks, you can use it to Modify the original Blocks within it. If a Plan View (Top) portion of an MvBlock is incorrect, for example, you can Insert that Block and use the RefEdit command to make changes to that Block which, when Saved, will automatically alter the Plan View for the MvBlock it is associated with.

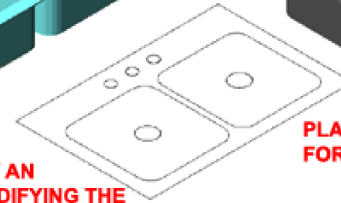
**MULTI-VIEW BLOCK**



**MODEL BLOCK FOR MVBLOCK**



**USING REFEDIT, YOU CAN MODIFY AN MVBLOCK BY MODIFYING THE INDIVIDUAL BLOCKS INSIDE IT.**



**PLAN VIEW BLOCK FOR MVBLOCK**

## Multi-View Blocks and Explode

Generally we all know the song and dance about NOT EXPLODING Blocks but there are times when it has to be done. Since MvBlocks are actually a series of Blocks nested within one MvBlock, the process of Exploding and the the results of that work is different than with regular Blocks.

The first thing you need to realize is that the View Orientation, such as Top Plan or Isometric, affect the results of Exploding an MvBlock. The current Display Configuration setting can also affect the result of Exploding so take these matters into consideration before doing this drastic act. Typically, if you Explode an MvBlock from a Top View with something like Medium Detail as the current Display Configuration, that is exactly what you will get: the top view Block as designed for the Medium Detail Display Configuration.

The first Explode action will result in the creation of an Anonymous Block that is basically useless. The second Explode will release the actual Block which you can Edit In Place if you wish. The third Explode will free the entities within the Block as would normally occur when Exploding a Block.

## Multi-View Blocks and Purging

Menu **Format> Multi-View Blocks> Multi-View Block Definitions...**



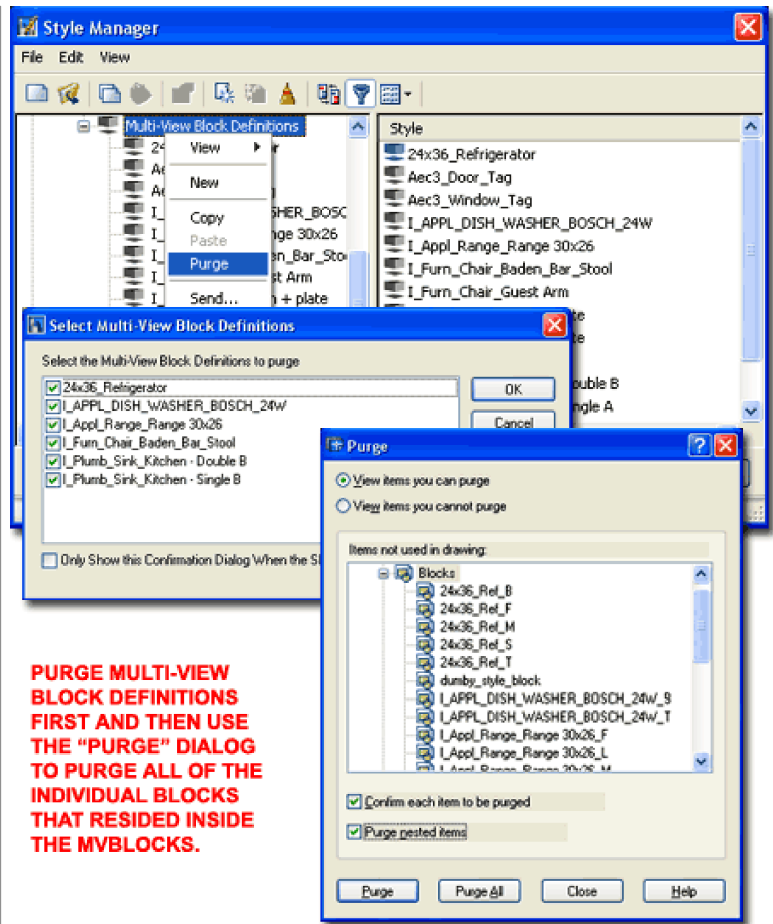
Keyboard **MvBlockDefine**

Keyboard **Purge** - to remove the Blocks

For **Multi-View Block Definition Styles** as with many ADT Object Styles, the process of **Purging** is not as straight forward as it is with regular AutoCAD Objects. Since many MvBlocks include regular AutoCAD Blocks, the process for purging requires the use of both ADT's Purging tools and AutoCAD's. To Purge all unused and unreferenced MvBlocks, go to the Multi-View Block Definition Style under the Multi-Purpose Objects folder of the Style Manager and use either the Purge button or the Purge option on the right-click pop-up menu as illustrated to the right.

You can **Purge** from the **Multi-View Block Definitions** title or by selecting **individual Style Names**. If you activate the Purge option from the title, as illustrated, you will invoke the "**Select Multi-View Block Definitions dialog**" for confirmation of the various MvBlocks that you can Purge. I find this option rather useful when attempting to clean up a file so I can read off the names of MvBlocks that I may want to keep. If you Select a specific MvBlock Style Name, it will be Purged directly if possible.

After MvBlocks have been Purged, you will need to use the **Purge command** to remove all of the Blocks that may have been part of the MvBlock Definition Styles.



**PURGE MULTI-VIEW BLOCK DEFINITIONS FIRST AND THEN USE THE "PURGE" DIALOG TO PURGE ALL OF THE INDIVIDUAL BLOCKS THAT RESIDED INSIDE THE MVBLOCKS.**

## 4 Multi-View Block Styles

### Multi-View Block Definitions - Style Manager

Menu **Format> Multi-View Blocks> Multi-View Block Definitions...**



Keyboard **MvBlockDefine**

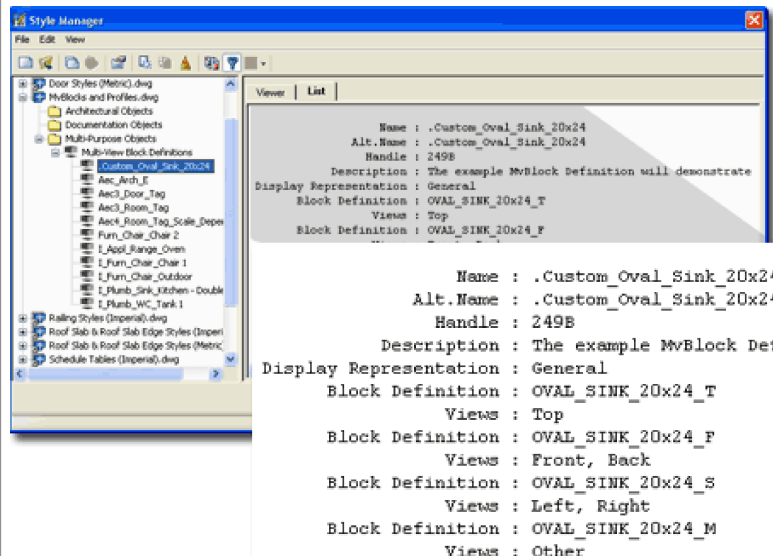
Links [Modifying Design Content](#) - for more on the same subject

**Multi-View Blocks** are managed by the **Style Manager** where, unlike most other ADT objects, you will find very little in terms of options. This is because there really isn't much to manage. The primary tool you will find for managing MvBlocks is the **View Blocks** tab on the Multi-View Blocks Definition Properties dialog - see discussion below.

Illustrated to the right, I show the **List** tab of a typical ADT Multi-View Block Object: a Sink and the various Blocks that reside within the Multi-View Block. In the List, you will see the View Direction listed next to each Block Definition Name.

Though MvBlocks often have Blocks for each View Orientation, many Annotation based MvBlocks, such as Section Bubbles and Room Labels only have one or two Blocks designed for Plan View only. One of the most useful features of carefully designed Annotation MvBlocks is automatic scaling for different Display Configurations. You can see a great example of this scaling option by working with the Scale Dependent Area Tags discussed in [Part 18 Schedules - Adding Area Tags](#)

### Multi-View Block Definitions dialog - General tab



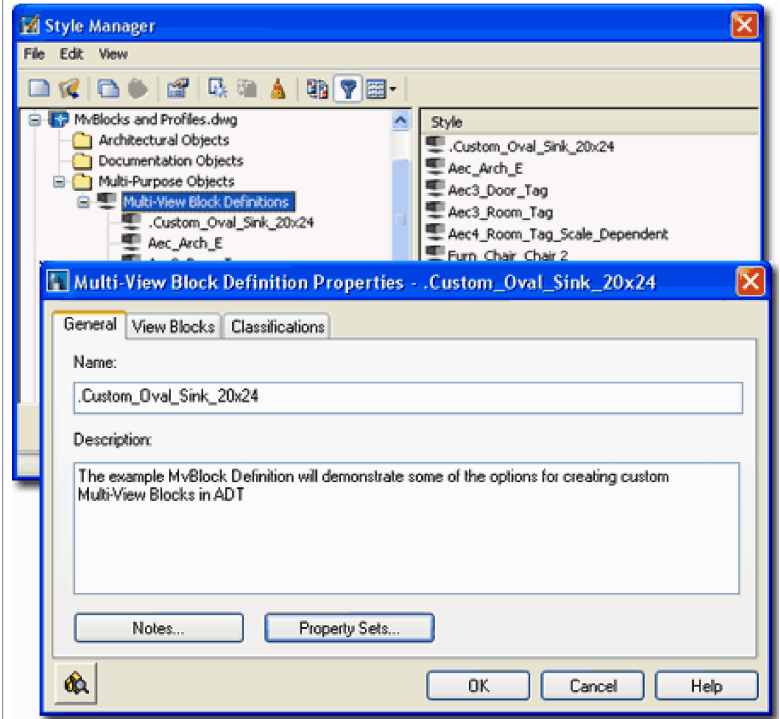
4-25 BLOCKS - PROFILES

For Multi-View Block Definition Styles, you can use the **Style Manager** to load, modify, delete and create new Multi-View Block Styles. Though ADT does not come with a default Style file full of MvBlock Definition Styles like those for Doors, Windows and numerous other Objects, you can create your own should you wish to. MvBlock Styles can also be acquired by Copying and Pasting between drawing files which is a very command way to exchange these Objects. The most common way to acquire MvBlocks is through the DesignCenter and Tool Palettes where you simply drag-n-drop or Insert these Object Styles without giving any thought to the fact that they are actually Styles. Because they are Styles, however, you can actually use the Style Manager to access other ADT drawing files to copy them as Styles without having to Open those drawing files.

When creating New MvBlocks, this is one of the few times where I recommend that you do not use an existing MvBlock Definition Style as the source for a new one but that you actually create it from Scratch. The reason for this recommendation is that you usually don't want the Blocks from another MvBlock but new ones that you have just created

Illustrated to the right I show the process of creating a **New Multi-View Block Definition Style** that I have Named **".Custom\_Oval\_Sink\_20x24"**. By **double-clicking** on this new style, I show that I have also activated the **Multi-View Block Definition Properties dialog box** where all of the custom settings can be made for the Block Associations to specific View Directions.

The **General** tab provides access to the **Name** and **Description** fields for a Style; plus access to the attachment of **Notes** and **Property Sets**. If you expect to extract data for Schedules or Spread sheets based on your MvBlock, you may want to consider using the Property Sets... option to pre-assign Property Data so you won't have to Tag the Object after Insertion into your drawing. If you use Tags for Objects like Furniture MvBlocks, this won't be necessary.



**Multi-View Block Definitions dialog - View Blocks tab**

On the **View Blocks** tab of the **Multi-view Block Definition Properties** dialog box, illustrated to the right, hopefully all of the mystery behind MvBlocks will reveal itself to you.

**Display Representations**

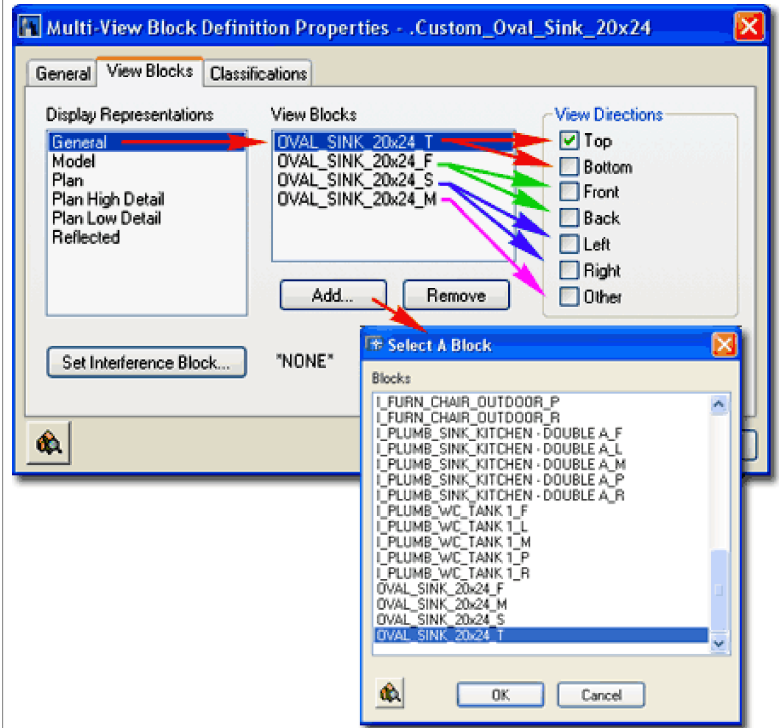
Under this category you will find all of the Display Representations that are currently available for MvBlocks in the current drawing file. You may find that you have more or less depending on the file you are using. The illustration to the right is based on one of the default template files that come with ADT. You can also create your own custom Display Representations for MvBlocks to expand on this feature. When you create your MvBlock Definition Style, you will need to highlight one Display Representation and Add... all of the Blocks you intend to use for each of the View Directions and associate them with their matching View Directions. This means that you may need to repeat a bit of work for each Display Representation and I often find this incredibly tedious. The General and Model Display Representations are the two most commonly used but depending on your MvBlock, you may also need to consider the Reflected Display Representation. The three Plan Display Representations will not produce any results unless you modify the settings on the Display Manager Window for all MvBlocks.

**View Blocks:**

Under this category you will need to use the Add.. button to access the Select A Block dialog which will display all of the Blocks you have in the current drawing file. From this list you will need to Select one Block at a time that you want to use in your MvBlock. You can Add each one and then match them to their View Directions or do it concurrently.

**View Directions**

Once you have a Block highlighted under the View Blocks category, you can check and uncheck any of the View Directions checkboxes. For most MvBlocks, you will want a Plan or Top View Block and thus you would check the Top View Direction checkbox but uncheck the rest. If you make a mistake on any of these checkboxes, the results will often be obvious as you use the View buttons to look at your ADT work from different directions. I have made many mistakes and found



**Note:**

If you like to show your Switch MvBlocks on your Reflected Ceiling Plans, as I do, you will need to make this modification to ADT's default Switch Multi-view blocks because they are set to not display in RCP's. By using the same block ADT uses for plan view on the General Display Representation, you can Add it to the Reflected Display Representation and orient it for Top View. The blocks for the various view directions will have names that are very similar with exception of the last letter which indicates view direction; such as "P" for Plan and "L" for Left and Right view and "M" for Model. In the case of the dimmer switch or regular switch you should see a

some very confusing linework later down the road so I recommend that you check your MvBlock from all directions as soon as you finish one. You can always come back and change these View Directions settings so fixing mistakes is easy.

block name such as "I\_ELEC\_SWITCH\_DIMMER\_P" or "I\_ELEC\_SWITCH\_SINGLE\_POLE\_P".

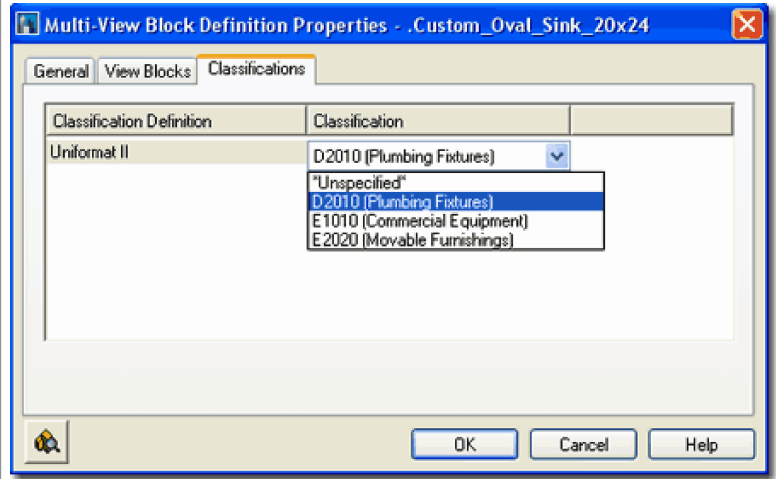
If you want to make this a permanent change for the DesignCenter, you can edit the source Multi-view block by opening it directly. It's just a drawing file residing in the folder you see in the DesignCenter. Once you have it opened, you can repeat this example and save the file. Another change you might want to make, is to Add... the 3D switch Block, from the same directory, on all your Switch Multi-view blocks.

### Multi-View Block Definitions dialog - Classifications tab

Links [Object Style Properties - Classifications Overview](#) - for an expanded step-by-step explanation of Classifications

**Classifications** offer another way to separate Object Styles into categories that can be used in **Schedules** and even in **Display Representation Sets** ( as " **Show**" or " **Hide**" ). Many of the default ADT MvBlocks use the Unifomat II Classification Definition Style as a source for classifying them by discipline as illustrated to the right.

This topic will be discussed further under Part 18 - Schedules. You can also read a bit more about how to create Classification Definitions in [Part 1 - Display](#).



## 5 Multi-View Block Display Properties

### 5-25 BLOCKS - PROFILES

### Multi-View Blocks - Display Properties

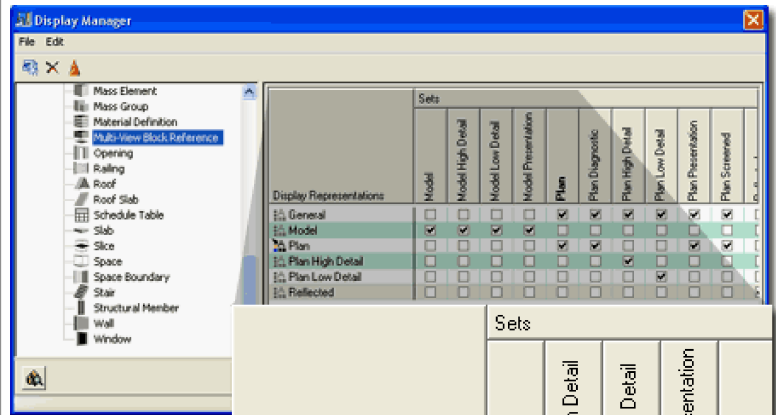
Menu **Format > Display Manager...**



Keyboard **DisplayManager**

Keyboard **DisplayProps [Drawing defaults]**

Links [Part 1 - Display - Object Display Properties Overview](#) - for more information on how to access the Display Properties of this Object.



Though you may find several **Display Representations** for Multi-View Block Definitions under the **Representation by Object** folder of the **Display Manager Window**, MvBlocks actually don't have Display Representations. As you may notice, all of the Display Representations are gray and you cannot access them for Modifications. What you can do with these false Display Representations is use them as an On or Off switch for the various Display Representation Sets, which in turn, are triggered by the Display Configurations you set for your drawing. In other words, you may want to use the Plan and Plan High Detail ( or create your own ) Display Representations to differentiate between a Small Scale version of one MvBlock and a Large Scale version.

### MvBlocks for multiple Printing Scales

Among the default set of false Display Representations for Multi-View Blocks, you should find " **Plan High Detail**" and " **Plan Low Detail**". These Display Representations can be used to manage MvBlocks that have graphics designed for different Printing Scales but you can also create your own custom Display Representations for such tasks.



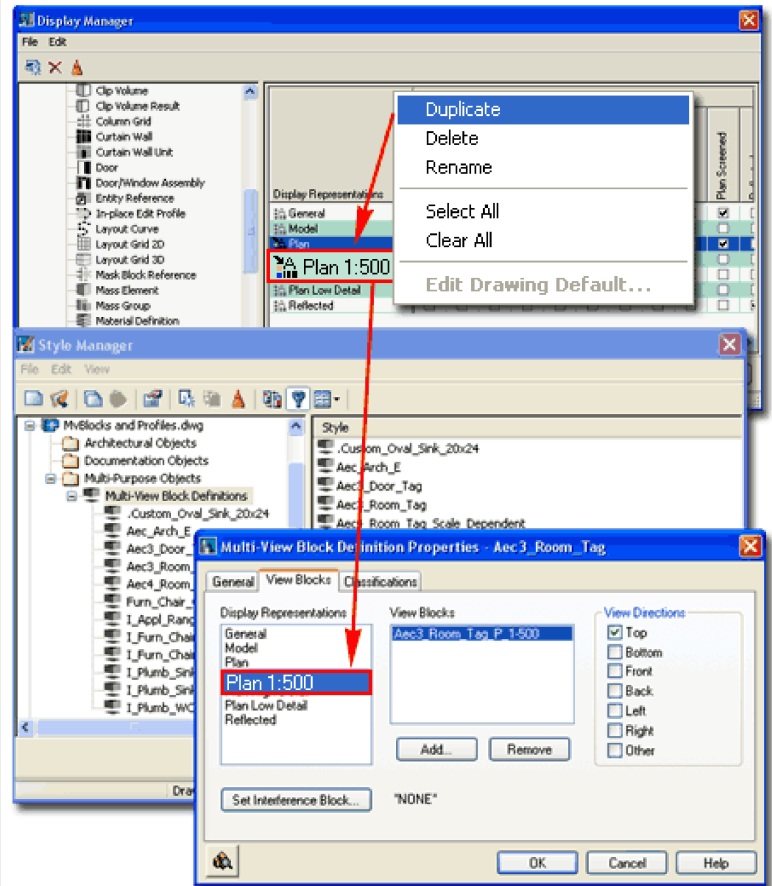
Illustrated to the right I show how you can **highlight** an **existing Display Representation**, like "Plan", right-click and use the **"Duplicate"** pop-up menu option to create a **Copy** of the highlighted Display Representation. Once you have created a Duplicate, you can **rename** it to anything you want but choosing a name that indicates the intended printing scale is quite useful. In the illustration to the right I show how I created a Plan for **"Plan 1:500"** printing scale.

Once you have created a custom Display Representation for your MvBlocks, you will see how this Display Representation is now available for all **Multi-View Block Definitions** on the **View Blocks** tab of the **Multi-View Block Definitions Properties dialog** - as illustrated to the lower right.

By having extra Display Representations for MvBlocks, you can use the **Add...** button to Add Blocks that have been designed to be used for those unique Display Representations. This might be something as simple as a copy of the original block but scaled up 500 times.

To use the new Display Representation you will, of course, need to create a Display Representation Set and Display Configuration that provides the means for switching to it. You can read up on this subject in [Part 1 - AEC - Setup - Display](#) but the basic solution goes as follows:

Under the **Display Sets** folder in the **Display Manager Window**, highlight a Display Set ( something like **Plan** ) and create a **New Set** based on the the highlighted one. Under the Objects category ( right pane ) find the **Multi-View Block Reference** row and make sure to only have **one Display Representation Checked** for this whole row. The Display Representation that you should have checked is the one created earlier specifically for the new scale (something like **Plan 1:500**). Now go to the **Display Configurations** folder in the Display Manager and repeat the process of creating a **New Display Configuration** based on the same logic used for creating a New Display Set ( highlight one that you like and create a new one based on it ). For this New Display Configuration (named something like **Medium 1:500**), use the Display Representation Set drop-down list in the right pane next to View Direction ( on the Configuration tab ) to set the new Display Representation Set (Plan 1:500) created earlier. If Plan is the place you want the Printing Scale to change, set the Plan View Direction to the New Display Representation. You are now done and should find that you can switch the Display Configuration to the New one and that any MvBlocks that have a Block set for the new Display Representation will automatically switch.



## 6 Creating Multi-View Blocks

### Comprehending the Process

Download [multi-view\\_block\\_example.dwg](#) - for all of the pieces in this example. Note: there are a few differences like the insertion points but it's very close.

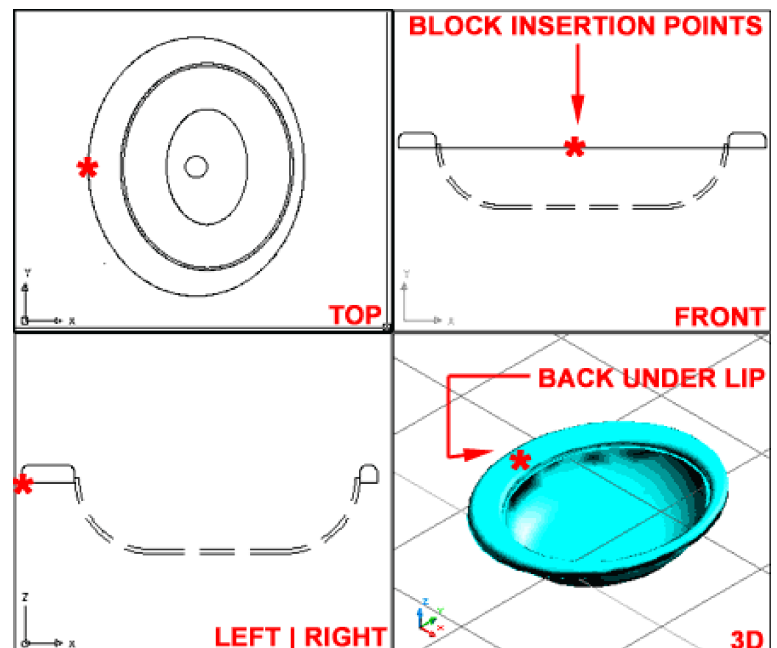
Now that you have read all about the basics behind Multi-View Blocks, it's time to create your own. ADT uses Multi-View Blocks in all sorts of places and not all MvBlocks are constructed the same way. Annotation MvBlocks, such as Detail Bubbles, obviously don't need 3D geometry or side views but other content such as Appliances do.

In the illustration to the right and in the following discussion, I will take you through the steps needed to create a simple but very useful MvBlock: a bathroom lavatory. You can use this process to create an endless supply of 3D Content for your library.

To make a Multi-View Block, you must first draw the various views of your object and then make regular AutoCAD Blocks out of them with the **Bmake** (Block Make) command. For this example I am going to use the Front View for the Back and the Right Side for the Left but if you need to add greater detail you will have to draw each one for each view that is actually different( including the Bottom if you happen to look from that direction ).

For the following steps, draw as you normally would in 2D AutoCAD

### 6-25 BLOCKS - PROFILES



mode. Use Polylines, Arc, Circles, Rectangles, Lines, Plines and other 2D objects. Draw everything on Layer 0 (zero). If you are creating an actual physical object and not an annotation symbol, draw it at a scale of 1:1 ( real size, unless you are one of those clever folks who uses one block for various sizes ). For Linetypes, select an appropriate Style that would work in the finished drawing; i.e., when inserted, the Ltscale of that drawing will govern the Linetype scaling.

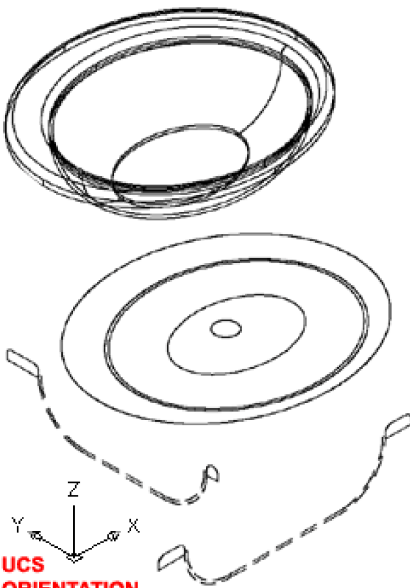
For the 3D Model, draw it on Layer 0 as well and consider which modeling tools to use before jumping in. ADT has 3 types of Modeling objects: Surfaces, Solids and ADT's native Facets ( also know as Masses ).

### Creating Blocks for each View

Menu **View> 3D Views>**



Keyboard **View**



**UCS ORIENTATION**

is Xref'd instead of Inserted. Set the UCS icon to World before making your Blocks.

### STEP 1

Set the **View** to **Top**, draw a **Top** view of your MvBlock and make a Block of it with a unique indicator in the name that refers to Top View; something like "**ObjectName\_ObjectSize\_T**". Use a very specific Insertion Point that will be the same in all of the other Blocks. If this is impossible to figure out, you can make Offset adjustments later.

### STEP 2

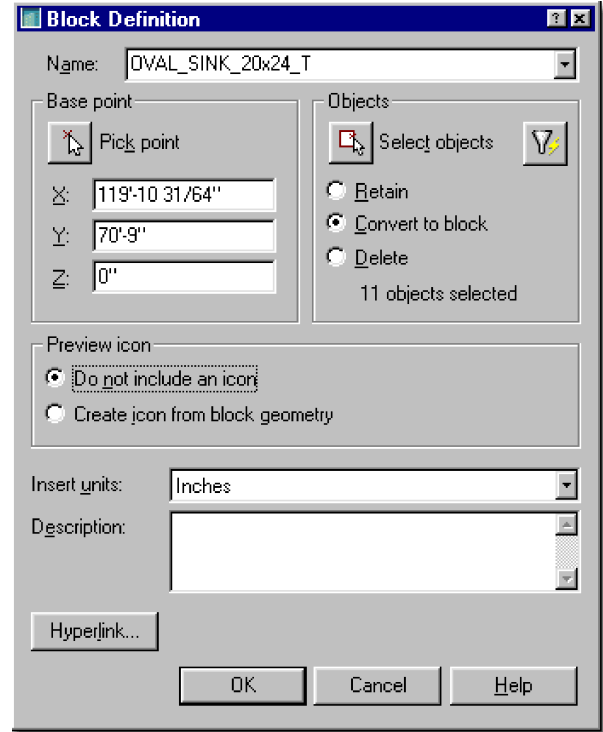
Set the **View** to **Front**, draw a **Front** view of your MvBlock and make a Block of it with a unique indicator in the name that refers to Front View; something like "**ObjectName\_ObjectSize\_F**". If you know that you will have different views for Front and Back, draw these and use something like "F" and "B" for Front and Back in the Block names. Try to use an Insertion Point similar to that selected for the Top view ( as seen from the Front ).

### STEP 3

Set the **View** to **Right**, draw a **Side** view of your MvBlock and make a Block of it with a unique indicator in the name that refers to the Side View; something like "**ObjectName\_ObjectSize\_S**". If you know that you will have different views for Left and Right, draw these and use something like "L" and "R" for Left and Right in the Block names. Try to use an Insertion Point similar to that selected for the Top view ( as seen from the Side ).

### Note:

When you draw the Side, Front and Back Views, you must create them in the same orientation as they will display relative to the World UCS. This means that when you draw the Right Elevation View, for example, you will need to draw that view in Right View Orientation with the UCS icon set to match.



### STEP 4

Set the View to Isometric, draw a **3D Model** view of your MvBlock and make a Block of it with a unique indicator in the name that refers to Model View; something like "**ObjectName\_ObjectSize\_M**". Try to use an Insertion Point similar to that selected for the Top view ( as seen from an Isometric ). We can get into a whole philosophical debate on how to best model these objects. If you want the smallest object size, use Surfaces. If you only know how to Mass Model ( Facet Model ), use them and if you are already a master of Solid Modeling, well, why not use that. These things tend to get big no matter what you do and for a Sink or Lavatory, the easiest thing is to use Solid Modeling tools.

## Creating a Multi-View Block Style

Menu Desktop> Multi-View Blocks> Multi-View Block Definitions...



Keyboard MvBlockDefine

After creating the various Blocks needed for each of the View Directions, proceed to the process of Creating a Multi-View Block.

### STEP 5

On the command line type "**MvBlockDefine**" or use the Format pull-down menu to access the Multi-View Block cascading menu and select "**Multi-View Block Definitions...**" On the **Style Manager** Window filtered for **Multi-View Block definitions**, use the **New** button to create a New MvBlock Definition.

### STEP 6

**Highlight** your new MvBlock Definition and use the **Edit...** button to access the **Multi-View Block Definition Properties** dialog box

On the **General** tab of the Multi-View Block Definition Properties dialogue box, provide a **description** of your cool new block.

### STEP 7

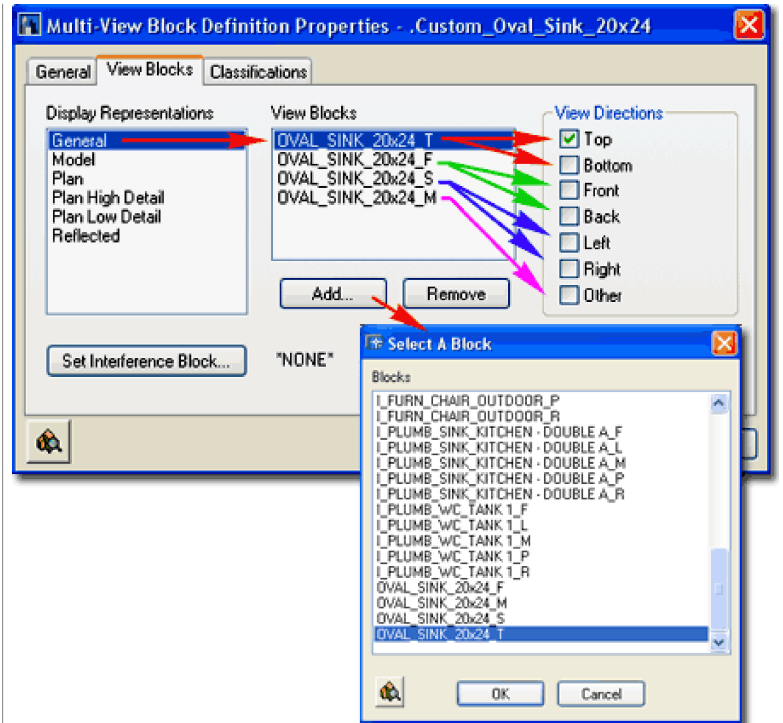
On the **View Blocks** tab of the **Multi-View Block Definition Properties** dialog box, select a Display Representation and use the **Add...** button to insert each of the Blocks created for the various views. You will need to add them one at a time, unfortunately.

Once you have Added all of the Blocks for the various views, **highlight one block** and **assign** it one or more **View Directions**.

Repeat this process for each Display Representation that you wish your MvBlock to display in. The most common Display Representation for general furniture and fixtures would be the **General**, **Model** and possibly **Reflected** Display Representations.

For the **General** Display Representation, **assign all View Blocks** to their respective **View Directions** and use your **Model** Block for the "**Other**" View Direction if appropriate.

For the **Model** Display Representation, use only the **3D Model Block** but set it for **all View Directions**.



For the **Reflected** Display Representation, use any View Blocks that you have created for Reflected views or use a plan view if you want it to display in Reflected plans. Set it to Top View Direction.

For other Display Representations, you might want to use them for advanced display control. This is where you might have a full set of MvBlocks for one scale or type of output and another whole set for details. As far as I know, none of the default ADT MvBlocks have this level of sophistication built in yet but you could do it. The problem is that the more you add the more memory each MvBlock consumes. Personally, I would love a library of symbols that could match my different printing scales and know the difference between a client presentation drawing and construction documents. How about you?

## Test your MvBlock

Menu Desktop> Multi-View Blocks> Add Multi-View Block...



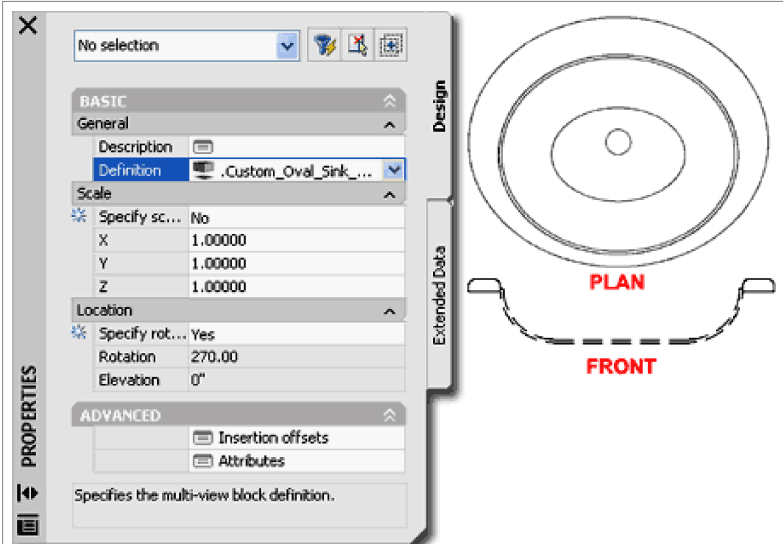
Keyboard MvBlockAdd

Menu View> 3D Views>



Keyboard View

Now that you have created your Multi-View Block, you will need to test it so that you can confirm that the right drawings pop up for the right View Directions. Use the **Add Multi-View Block** button and insert your new MvBlock in a blank drawing. Use the View button on the **View toolbar**, illustrated to the above and make sure that you see only the appropriate View Block for the various 2D viewing angles. For the Isometric Views, you should see only the 3D View Block.

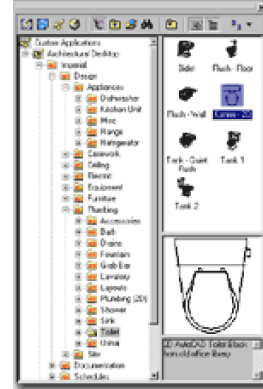


If there are errors, you can go back to the Style Manager and Edit... the Definition Properties. If there are errors in any of the individual blocks, you

can insert them and use the Refedit command to make the necessary corrections. If all you see in a particular View Direction is a Line, that either means the original orientation of the Block was incorrect or you accidentally chose the wrong Block within the MvBlock Definition.

### I Created an MvBlock but how do I get it into the DesignCenter?

The next step is probably inevitable. This is where you want your new MvBlock to be added to the DesignCenter Content Folders and behave just like all of ADT's MvBlocks. To achieve this, you will have to use the [Create AEC Content Wizard](#) and run it through a few basic steps so that it can adopt Scaling, Layer Keying, a Name, Location and an icon.



7-25 BLOCKS - PROFILES

## 7 Adding and Attaching Mask Blocks

### Add Mask Block Properties Palette

Menu Desktop> Mask Blocks> Add Mask Block...

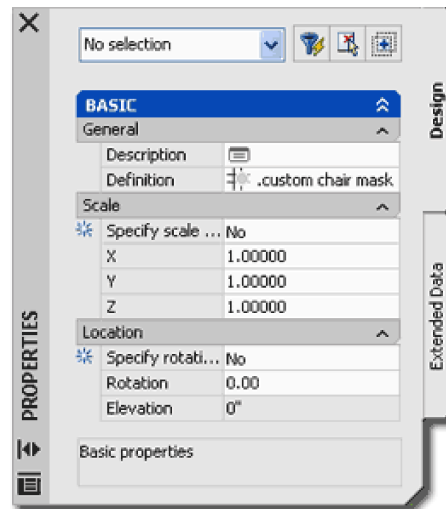


Keyboard MaskAdd

Links [Mask Block Styles](#) - for how to load other mask blocks

The **Add Mask Block** Properties Palette may be one that you will never use since most Mask Blocks come in through other means, like the DesignCenter. When you drag in Mask Blocks via the DesignCenter or Tool Palette, you will not notice that it is any different than other Blocks such as Multi-View Blocks. One thing that you need to be clear about is that a Mask Block is little more than Pline shape but it can include a multitude of other Object Types such as MvBlocks. The other Object Types are referred to as "**Additional Graphics**". Therefore, you might think of a Mask Block Definition as something similar to a special grouping tool with a unique ability to Mask out other graphics.

As with MvBlocks, Layer Keying, Scaling and other features are automated through the dragging action from the DesignCenter or Tool Palette and thus Adding Mask Blocks directly with the MaskAdd command may not be the best option because no automated actions will transpire.



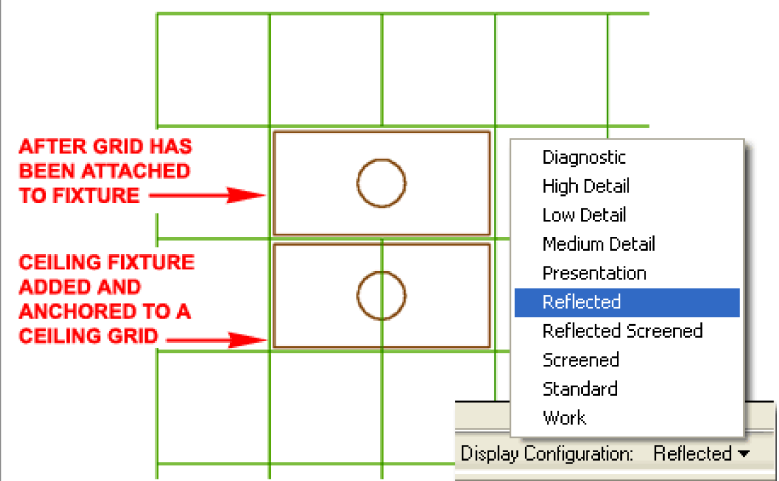
Having said that, there have been times when I have crated Mask Block Definitions out of Polyline shapes and added them directly as a solution for masking out things like chairs under a bar countertop. This is similar to using a Wipeout in AutoCAD but a bit more specific to ADT Objects and the current Display Configuration.

### Adding a Ceiling Fixture - Example

Links [Adding Ceiling Fixtures](#) - for information on how to add ceiling fixtures like Fans and Smoke Detectors.  
[Adding Electric Fixtures](#) - for information on how to add lights

One of the best examples of how a Mask Block offers fantastic results is with **Ceiling Fixtures** that have to work within a specific Ceiling Grid that doesn't accommodate the fixture properly. I usually come across this situation when doing "As-Built" surveys.

Illustrated to the right I show a common square T-bar ceiling grid with one of the default Fluorescent ceiling fixtures from ADT's library. To see these objects you must set the current Display Configuration to Reflected. By using the Mask Block, I show that I can have the ceiling fixture cover or "mask" the grid line that passes through it. Below I outline how this specific example was achieved.



Mask Blocks are designed for 2D use and will not "mask" in 3D Views

where Shading or Hiding would typically be used to achieve similar results. Mask Blocks only mask the Object they have been Attached to. Mask Blocks only mask one Display Representation at a time so, for example, if you mask for "High Detail" that may not mask for "Low Detail".

### Attach Mask Blocks to Objects

Menu Desktop> Mask Blocks> Attach Mask to Object

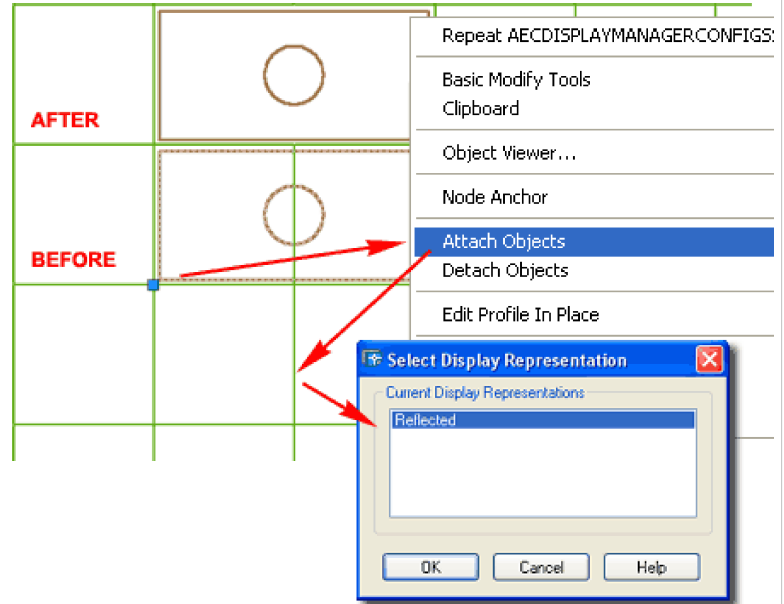


Keyboard MaskAttach

Links [Mask Block Styles](#) - for how to load other mask blocks

Mask Blocks don't automatically "mask" anything though you might think they should by the very nature of their structure; you actually have to set the Object they should mask by using the **MaskAttach** command. Mask Blocks can mask multiple Objects but each Attachment has to be done as a separate operation; i.e., you cannot select multiple objects to be masked at once.

Illustrated to the right I show how you can use the **Attach Objects** pop-up menu option to make a ceiling fixture cover any unwanted ceiling grid linework. To follow this example, select a mask block, right-click to invoke the object specific pop-up menu, select "Attach Objects", Select the target Object to be masked and then Select the appropriate Display Representation where you want the "masking" effect to occur.



## 8 Modifying Mask Blocks

### 8-25 BLOCKS - PROFILES

### Modify Mask Block Properties\_Palette

Menu Desktop> Mask Blocks> Modify Mask Block...



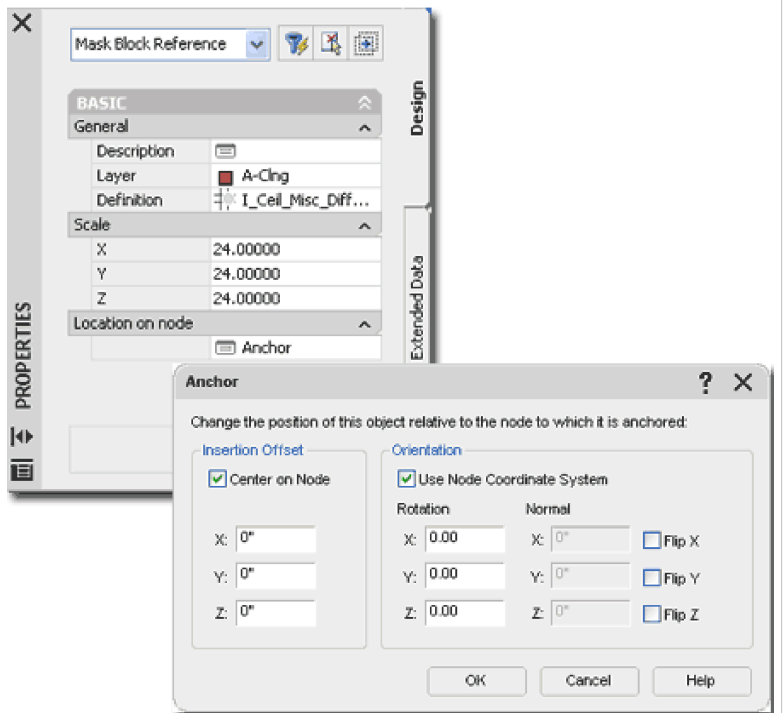
Keyboard MaskModify

Links [Modifying Design Content](#) - for more on the same subject

The **Modify Mask Block** Properties Palette is basically identical to the Add Mask Properties Palette and thus also the same as the Modify Multi-View Properties Palette. See [Modify Multi-View Block Properties Palette](#) for more.

Other than the **Attach** and **Detach** tools, there really isn't much more that can be Modified on Mask Blocks. Since Mask Blocks, at the simplest level are nothing more than polylines and at the most complicated, nothing more than polylines tied together with other ADT objects, Editing falls to either the Mask Block Definition Styles or the other objects.

Illustrated to the right I show the Properties Palette for an Anchored Ceiling Fixture and the Anchor dialog box that you can access from this Palette. The Anchor dialog box will allow you to reposition an Anchored Object while keeping it Anchored and thus provides the means for shifting the position for unusual circumstances.



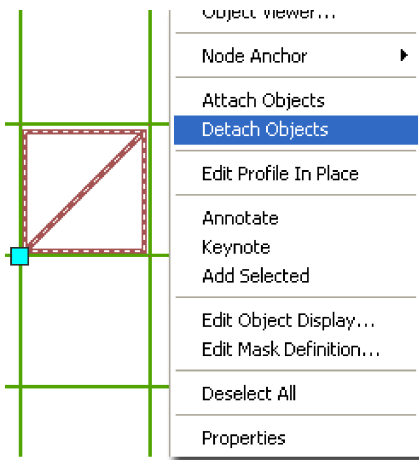
### Modify Mask - Object Specific Pop-up Menu Options

Menu Desktop> Mask Blocks> Modify Mask Block...



Keyboard MaskModify

Links [Modifying Design Content](#) - for more on the same subject



Because Mask Block Definitions are rather basic in nature, there is a fairly limited set of Modification options. Though Mask Blocks can appear complex, remember that the complexity usually is the result of the "Additional Graphics" associated with the Mask itself and thus the Modification you may want to make is actually on this "Additional Graphics" (typically MvBlocks).

Illustrated to the left I show the options you will find on the Object Specific pop-up

menu for a Mask Block. As discussed above, the **Attach** and **Detach** options are what make a mask Block actually mask another object; Detach releases the masking effect. the **Edit Profile In Place** provide access to the Polyline shape used to define the Mask shape and works much like any of the Edit Profile In Place options - see discussion on [Profiles](#) below. For [Edit Object Display](#)..., see discussion below.

## 9 Mask Block Styles

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### Mask Block Definition - Style Manager

Menu **Desktop> Mask Blocks> Mask Block Definitions...**



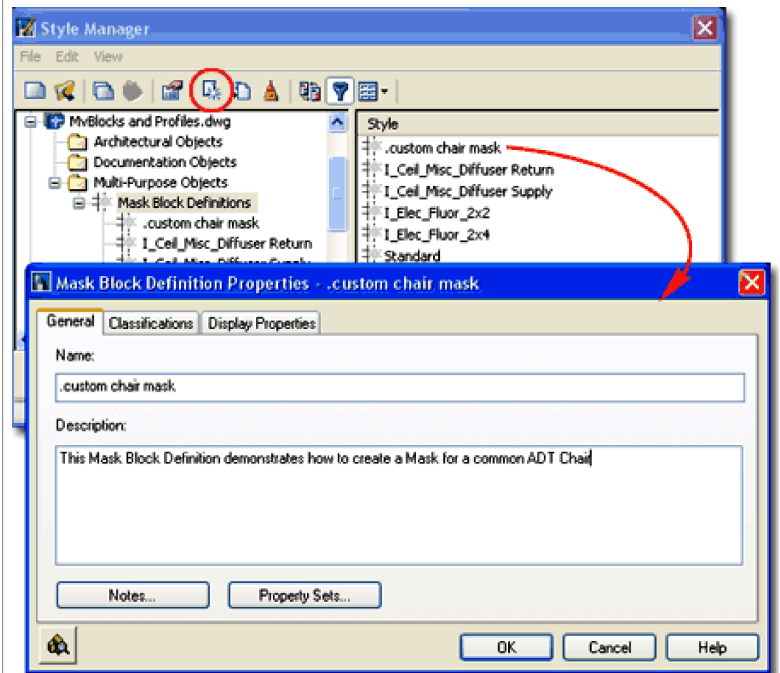
Keyboard **MaskDefine**

Links

For **Mask Block Definition Styles**, you can use the **Style Manager** to load, modify, delete and create new Mask Block Styles. Though ADT does not come with a default Style file full of Mask Block Definition Styles like those for Doors, Windows and numerous other Objects, you can create your own should you wish to. Mask Block Styles can also be acquired by Copying and Pasting between drawing files which is a very common way to exchange these Objects. The most common way to acquire Mask Blocks is through the DesignCenter and Tool Palettes where you simply drag-n-drop or Insert these Object Styles without giving any thought to the fact that they are actually Styles. Because they are Styles, however, you can actually use the Style Manager to access other ADT drawing files to copy them as Styles without having to Open those drawing files.

When creating New Mask Blocks, this is one of the few times where I recommend that you do not use an existing Mask Block Definition Style as the source for a new one but that you actually create it from Scratch. The reason for this recommendation is that you Mask Blocks are created by using the Set From tool to Select specific Objects on the screen and you might accidentally end up with the wrong graphics if you copy a Style.

Illustrated to the right I show the process of creating a **New** Mask Block Definition Style that I have Named "**.custom chair mask**". By **double-clicking** on this new style, I show that I have also activated the **Mask Block Definition Properties dialog box** where a few basic settings can be made for these Object Styles. The Primary work is achieved through the "Set From" tool as discussed below.

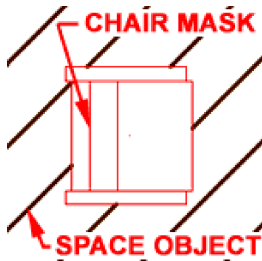


The **General** tab provides access to the **Name** and **Description** fields for a Style; plus access to the attachment of **Notes** and [Property Sets](#). If you expect to extract data for Schedules or Spread sheets based on your Mask Block, you may want to consider using the Property Sets... option to pre-assign Property Data so you won't have to Tag the Object after Insertion into your drawing. If you use Tags for Objects like Furniture Mask Blocks, this won't be necessary.

### Mask Block Definition Style- Set From

Once you have created a Mask Block Definition Name, you will have to

use the **Set From** button on the Style Manager Window to define the shape that the Mask will have. For the shape, you have to use a Closed Polyline drawn prior to getting to this point.



Illustrated to the right, I show a common ADT object ( a Chair ) with a Polyline traced around the exterior edge. By using the Set From tool, I selected the Polyline around the chair to define the Mask Block and then Selected the Chair MvBlock as "Additional Graphics".

After picking the **Set From** button, **Select the Polyline**, **Do not Add Another Ring**, Set the **Insertion Base Point** to match that of the object to be included ( the Chair ) and then **Select the "Additional Graphics"** ( the Chair ).

**Note:**  
Adding Rings provides you with the option to make a Mask that has a hole or alternating Masked and unMasked sections ( like a ring ).

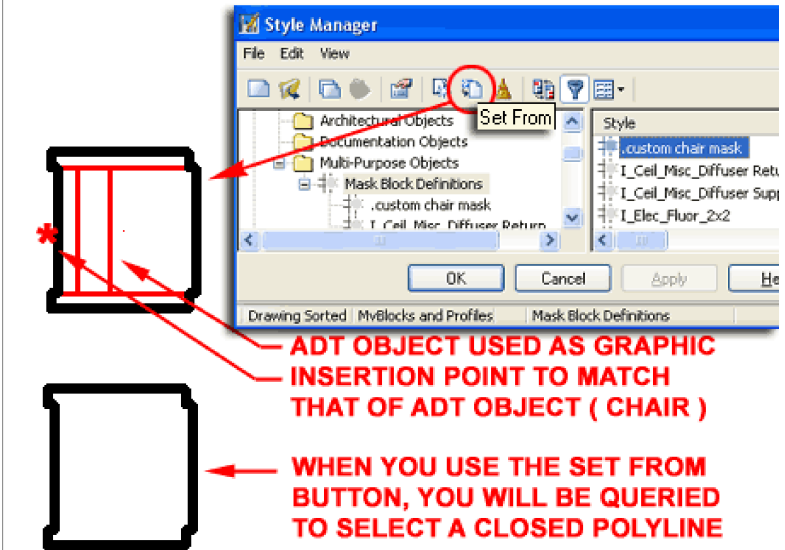
Adding Additional Graphics is not necessary but most likely the way you will use Masks. All of the Ceiling Lights that have Masks, were created this way. Adding Additional Graphics simply means that you want your Mask outline with something in the place of the Mask; lines, blocks or other ADT objects.

### Mask Block Definition Style - Classifications tab

Links [Object Style Properties - Classifications Overview](#) - for an expanded step-by-step explanation of Classifications

**Classifications** offer another way to separate Object Styles into categories that can be used in **Schedules** and even in **Display Representation Sets** ( as "Show" or "Hide" ). Many of the default ADT Mask Blocks use the Unifomat II Classification Definition Style as a source for classifying them by discipline as illustrated to the right.

This topic will be discussed further under Part 18 - Schedules. You can also read a bit more about how to create Classification Definitions in [Part 1 - Display](#).



**ADT OBJECT USED AS GRAPHIC INSERTION POINT TO MATCH THAT OF ADT OBJECT ( CHAIR )**

**WHEN YOU USE THE SET FROM BUTTON, YOU WILL BE QUERIED TO SELECT A CLOSED POLYLINE**

### Mask Block Definition Style - Display Properties

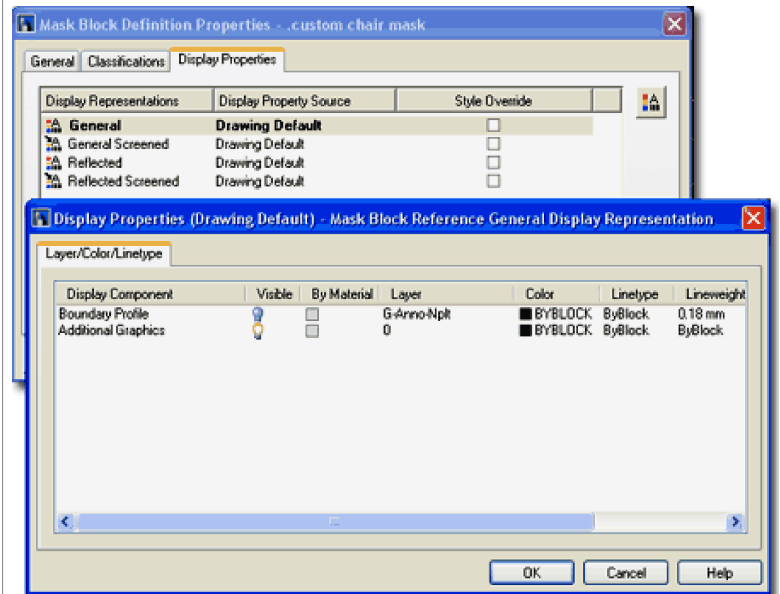
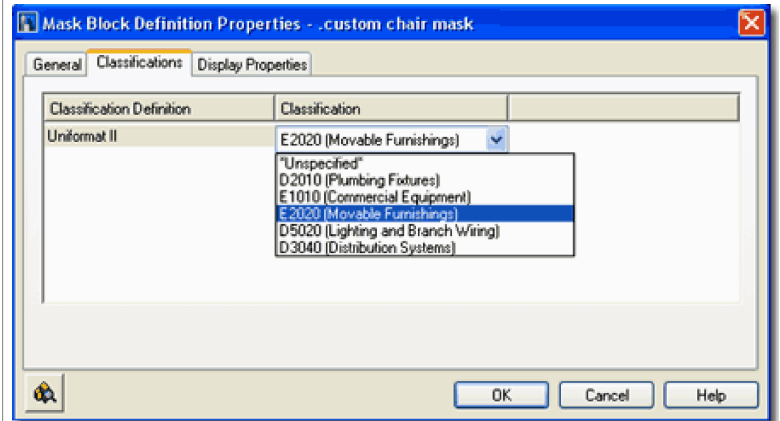
The **Display Properties** tab on the **Mask Block Definition Style** dialog box, illustrated to the right, provides access to a very limited list of Display Representations. For any Display Representation, Mask Blocks only offer two Display Components: Boundary Profile and Additional Graphics. As with the [Multi-View Block](#), discussed above, you can use the **Display Manager** to quickly turn on or off all Mask Blocks for General or Reflected Display Representations.

**YOU CAN ALSO ACCESS DISPLAY PROPERTIES BY SELECTING AN OBJECT, RIGHT-CLICKING ON YOUR MOUSE AND USE THIS POP-UP MENU OPTION**



Illustrated to the left, is another way to access the **Display Properties** tab; **select the specific object, right click** on your mouse to invoke the object-specific pop-up menu and select **Edit Object Display...** Just be aware that when you use this approach, you can actually set an Object

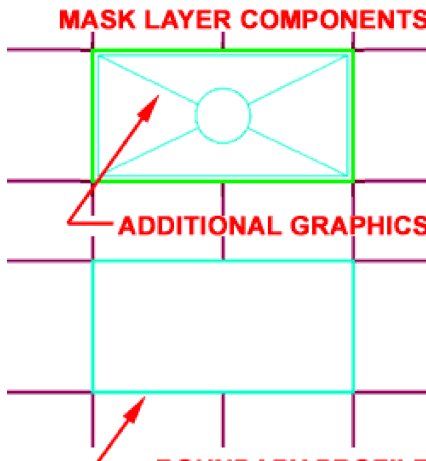
Override as opposed to a Style Override. Object Overrides can be extremely useful because they allow you to turn Off things like Boundary Profiles on any single object within a Style Family but they can also be problematic because they lock you out from more centralized, Style level, controls.



### Mask Block Definitions Style - Display Properties - Components

On the **Layer / Color / Linetype** tab of the **Display Properties** dialog box you should find that there are only two Components to a Mask object: **Boundary Profile** and **Additional Graphics**.

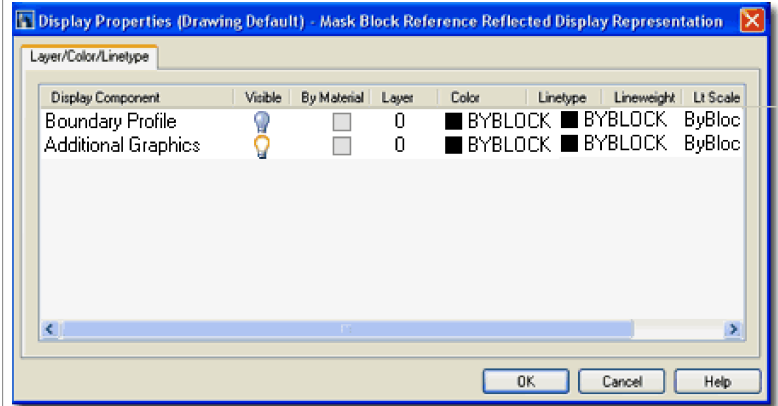
**MASK LAYER COMPONENTS**



**Boundary Profile** - this is the actual Mask edge or edges if you Added Rings. Generally, you don't want the Boundaries if you are using Graphics with your Mask but if you are using the Mask alone as an object in itself, you will probably want that outline so you can work with it. For the ADT Ceiling Fixtures, they use the Mask outline as part of the fixture graphics so this is another case where you will want it on.

**ADDITIONAL GRAPHICS**

**Additional Graphics** - this option is only valid if you selected additional graphics when you created your Mask. The option is interesting because on objects, like some of the ceiling fixtures, you can turn off the symbolism leaving only the Mask outline.

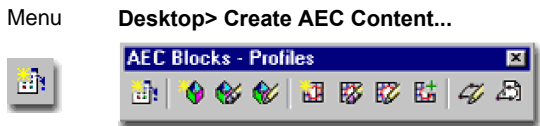


# 10 Create AEC Content Wizard

10-25 BLOCKS - PROFILES

This Section on the AEC Wizard may be updated at a later date but due to the capabilities of the Tool Palettes, this feature has far less of a role and purpose.

## Create AEC Content Wizard dialogue box



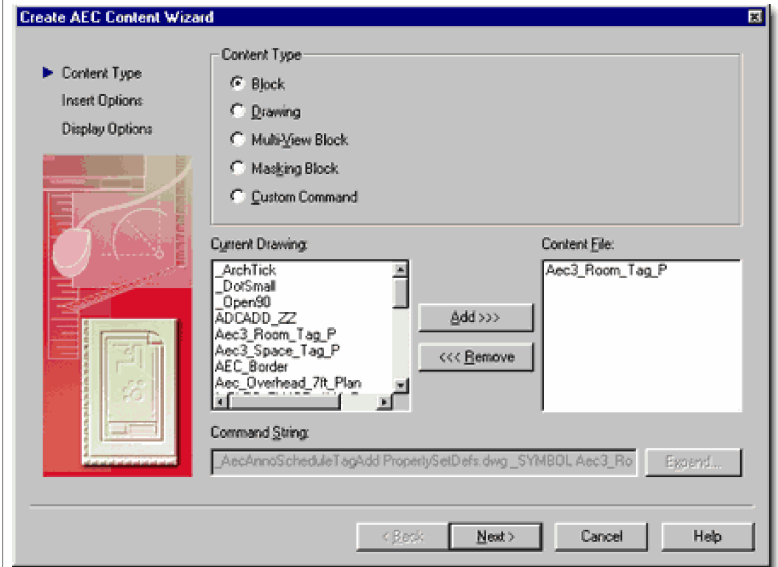
Keyboard **CreateContent**

Links

The **Create AEC Content Wizard** is probably the most significant tool in all of ADT for creating custom content. This is where you get to make Blocks, Multi-View Blocks, Masking Blocks and Custom Command sequences all follow certain ADT based guidelines like Layer Keying and Drawing Scale sizing.

Every time you drag-n-drop an ADT object from the DesignCenter that object has certain rules that it abides by which are all controlled through the Content Wizard. If you highlight an ADT object in the DesignCenter, right-click and Select Edit... from the pop-up menu, you will get this Wizard as your tool to Edit that object.

Though it may appear as a complex set of steps, once you run one object through this Wizard you should find that it is basically the same routine for all content you want to make. To become familiar with all of the options, let's start by looking at running a typical AutoCAD Block through the Create AEC Content Wizard and see what a smart ADT Block we can make of it.





## Adding a Block

### STEP 1

There are basically **3 steps** required to run any Content Type through the AEC Content Wizard. Illustrated to the right and immediately below, we will go through the 3 steps required to run an old 2D block from an old office library through the AEC Content Wizard so that we can update it with Layer Keying and add it to the DesignCenter's Content Library.

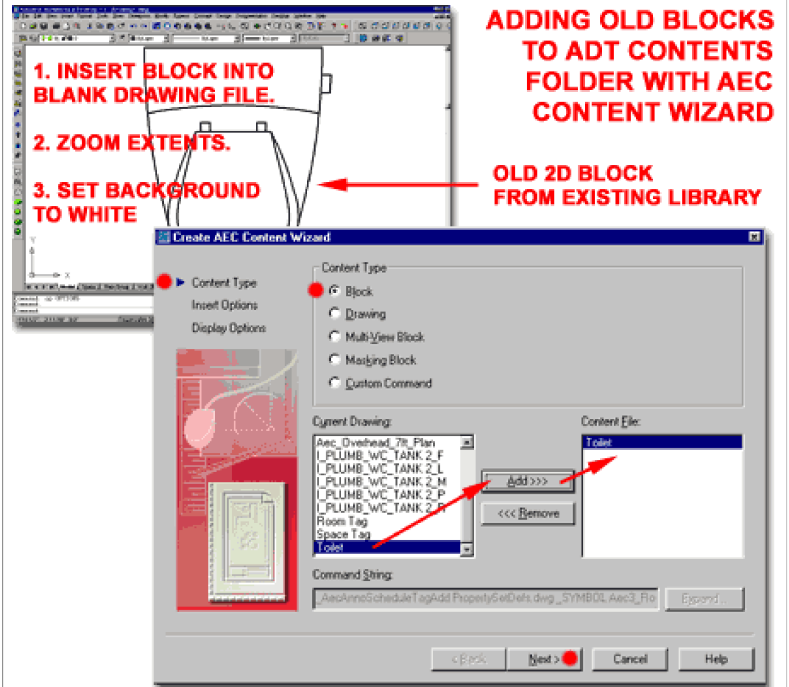
In the first phase of converting an old block to an ADT Block, you will need to **Start a New Drawing from scratch and insert the old Block**. Then, you should use the **Zoom** command to maximize ( **Extents** ) the Block on the screen and center it ( **Pan** ) as illustrated to the right.

In order to get a nice clean image in the DesignCenter, it seems to work best to set the **background color to White**. This can be done by using the **Options** ( type "OP" ) dialogue box, go to the **Display** tab and use the **Colors** button.

Activate the **Create AEC Content Wizard** and set the **Content Type** to **Block**.

On the **Current Drawing** list, select the **Block Name** you just inserted and use the **Add>>>** button to bring it over to the **Content File** list.

Use the **Next>** button to proceed to Step 2.



## Setting Block Behavior

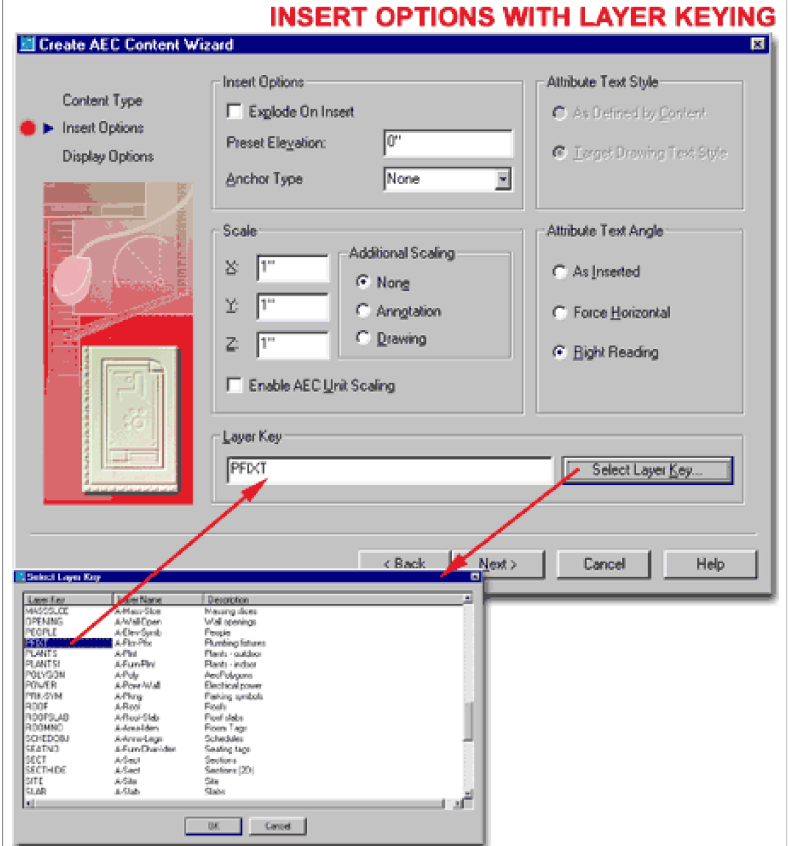
### STEP 2

In the second phase of converting an old block to an ADT Block, you will need to look over all of the Insert Options and decide on how you want your ADT Block to behave once it is inserted ( or drag-n-dropped ). For this example, it is really simple because we basically want all of the default settings:

**Explode on Insert** unchecked  
**Preset Elevation** set to **0**  
**Anchor Type** set to **None**  
**Scale** for X,Y and Z set to **1**  
**Additional Scaling** set to **None**  
**Enable AEC Unit Scaling** unchecked  
**Attributes** are **Not Applicable** here

**Layer Key** is the real reason we are on this dialogue box and going through most of this work. Use the **Select Layer Key...** button to access the **Select Layer Key** dialogue box and select an appropriate Layer Key to assign to your ADT Block. In the case of this Toilet example, I will have ADT place it on the same layer as with other similar blocks; the **PFIKT** Layer Key which is the default AIA Layer for A-Flor-Pfif.

If you don't see any Layer Keys, exit the AEC Content Wizard and [Set A Layer Standard](#). Then load the AEC Content Wizard again and go through these steps once more.



## Setting Block Name, Icon and Location

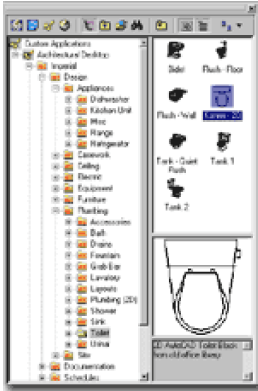
## STEP 3

In the final phase of converting an old block to an ADT Block, you will need to use the **Browse...** button to **Locate** and **Name** your new ADT Block. Though you do not have to use any of the ADT Folders, it helps to add content within the existing structure so that is why I show the example Toilet block being added to the Toilet Folder.

See [Part 16 - Design Content](#) for a listing of all the ADT Content Folder locations.

C:\Program Files\AutoCAD Architectural Desktop 3\Content\Imperial\  
C:\Program Files\AutoCAD Architectural Desktop 3\Content\Metric\

Once you have Located and Named your ADT Block, you can use the **Default Icon...** button to reset the Icon to match your current Screen Display. This is why we started this process with the Block set to a Zoom Extents and with a White Background.

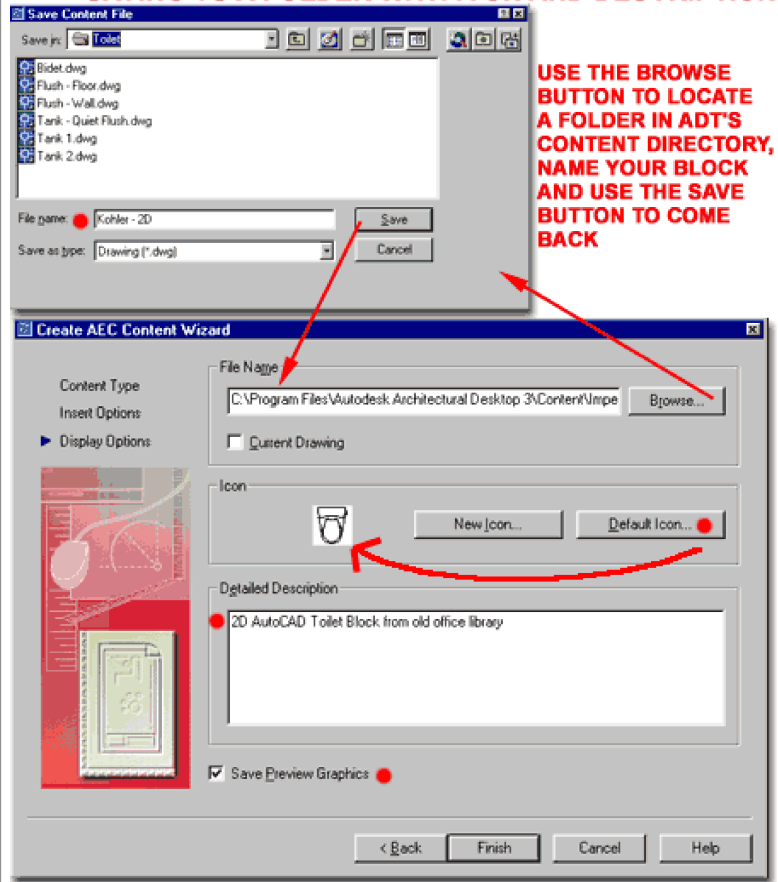


For the **Detailed Description**, you can add information that will be seen in the DesignCenter in the Description Pane.

**Save Preview Graphics** should be checked so that you have this image for your DesignCenter.

When you have **Finished** all of these steps, you should be able to see and use your new ADT Block from the **DesignCenter** as illustrated to the left. When you **drag-n-drop** the new block, it should automatically Key to the correct Layer as with all other ADT content.

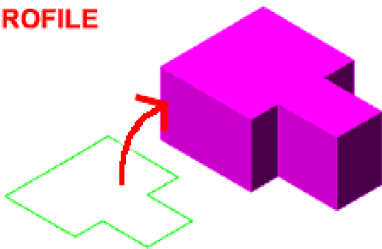
## SAVING TO A FOLDER WITH ICON AND DESCRIPTION



## 11 Applying Profiles

### Profiles - Using on an Add [Object] Properties Palette

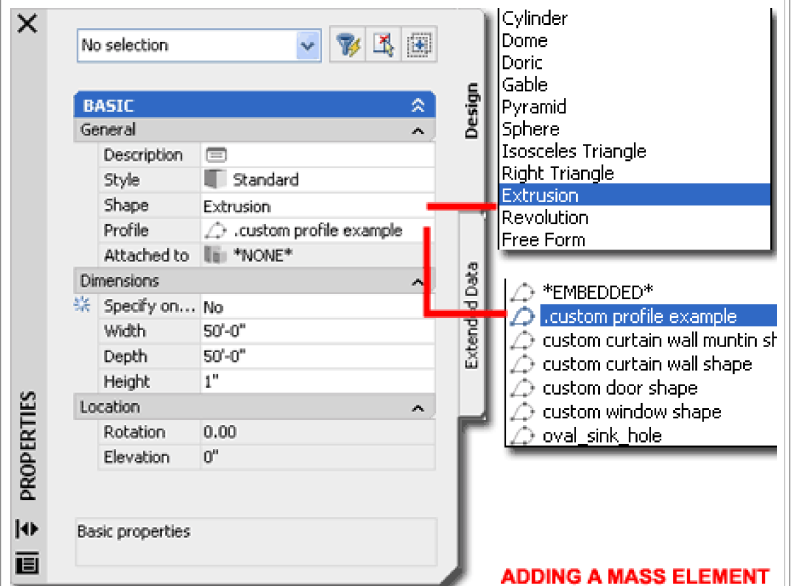
#### PROFILE



It doesn't take a genius to realize that at some fundamental point within ADT there has to be an Object that defines the shape in section or profile for almost every other object. This shape defining object is called a "Profile". As the name suggests, a Profile is a closed shape that represents a cross-sectional cut through an object.

For some objects the Profile represents a Plan View cross-section but for other objects, such as Frames in Door-Window Assemblies or Curtain Walls, it may also represent an Elevation View cross-section. This means that for some cases the orientation and insertion point is very important and for other objects, such as Mass Elements, it is not particularly important. For most Objects that utilize a Profile shape, you should find you can utilize the "Edit-In-Place" option to change the Profile shape directly on the object in the place it is being used.

Some Objects, such as Doors and Windows have yet to offer the option to use Profiles for the Frame, Jamb and Sill but you can use them to control the shape of the Door or Window as a whole.



Illustrated above, I show the **Add Mass Element** Properties Palette with the **Shape** set to **Extrusion**. By using a Shape of either **Extrusion** or **Revolution**, you are allowed to select a unique **Profile Style Name** - as illustrated.

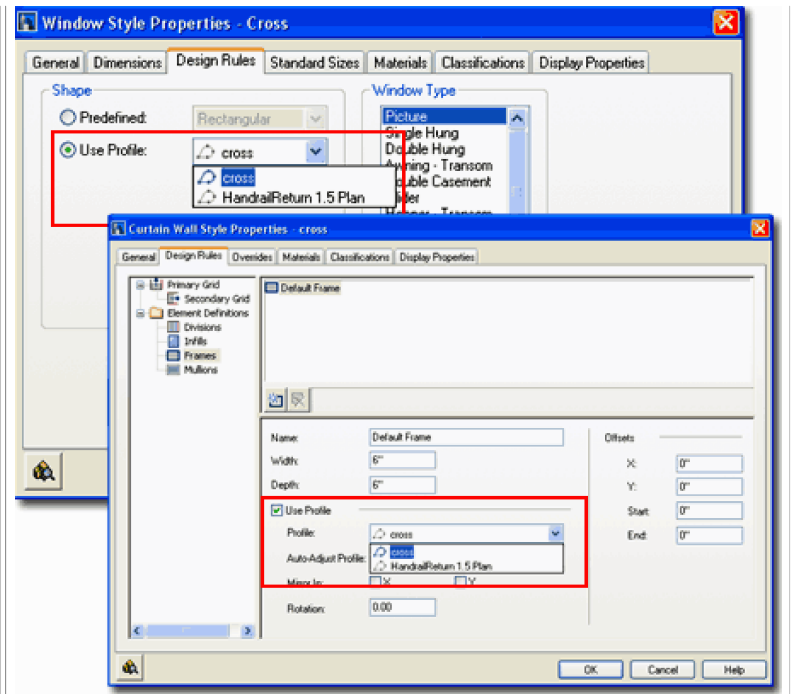
Once a unique Profile Style Name has been set, you can use any available size fields to control the proportions of your object or simply use the Specify on Screen option.

## Profiles - Using as part of an Object Style

Links [Creating a Custom Door Shape - Creating a Custom Window Shape](#) - for more examples of using Profiles to create custom shapes for these two Object Types.

The majority of Objects that provide the option for using a Profile within their structure do so at the Style level so you can predefine an Object Style to produce unique results and save the whole configuration a library item. Illustrated to the right I show how a Window Style offers the "Use Profile" option on the Design Rules tab and how the Curtain Wall Style offers a similar option for the Frame under the Frames section.

The variety of places you can use Profiles within Object Styles continues to surprise me as I delve in deeper and deeper so you should find plenty of places to employ them. Recently I discovered that you need to create a Profile if you want to add custom detailing to the Plan View of a Railing Style as part of the Display Properties while most objects allow you to use a Block.



# 12

## Modifying Profiles

12-25 BLOCKS - PROFILES

## Profiles - Insert as Pline

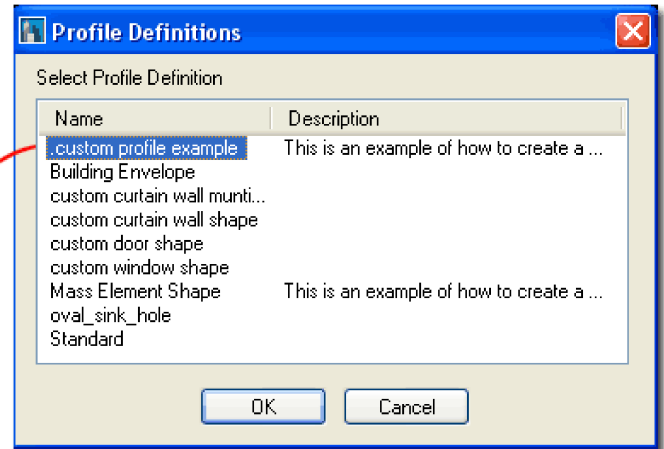
Menu **Format> Profiles> Insert Profile as Polyline...**



Keyboard **ProfileAsPolyline**

Links

Once a Profile Style has been defined, the shape used to define it can always be Inserted as a Polyline Object with the **ProfileAsPolyline** command allowing you to use it for whatever purpose you may see fit. In many cases you will want to Insert it to Modify it and reset the original Profile Style while in other case you may want to use it as the base for creating a New Profile Style.



When you insert a Profile as a Polyline there is no connection to the original Profile shape or Name so in order to save any modifications to this Polyline, you must use the **Set From...** option on the Style Manager Window to reset the current Profile Name to the new shape.

At times you may discover that your Profile is not in the right orientation for the object that you wish to use it on and in situations like that, inserting the Profile as a Polyline and rotating it before resetting the Profile Definition Name is a fast way to solve this problem

## Profiles - Edit In Place

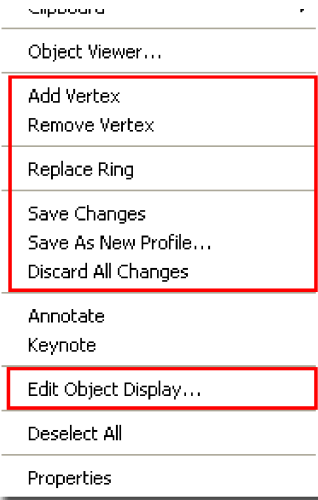
Menu **Format> Profiles> Insert Profile as Polyline...**



Keyboard Each Profile has a unique name like **OpeningProfileEdit**

Mouse Select Object, right-click and look for Edit Profile In Place. For some objects this option is on a sub-menu off a feature like Frame/Mullion>

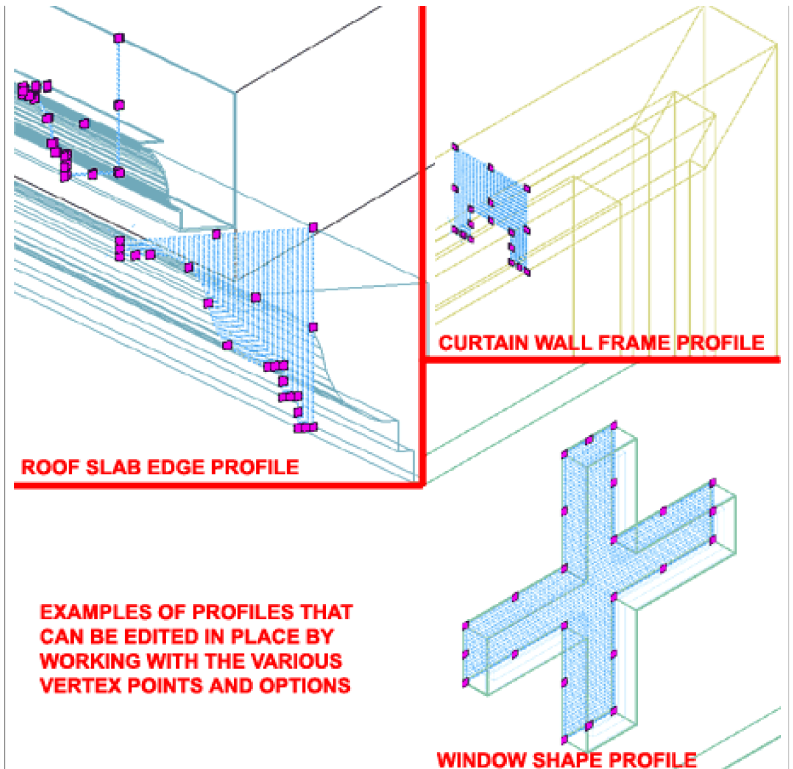
Links



Most Objects in ADT that utilize a Profile shape offer the option to have that Profile shape edited right on the Object itself as illustrated to the right. For many Objects such as Doors, Windows, Openings and Slab Edges you will find the option to "**Edit Profile In Place**" directly on the Object Specific Pop-up Menu but for other Objects such as Window Assemblies and Curtain Walls, where the Profile may be a part of an internal component, you will need to look for the "Edit Profile In Place" option off one of the numerous cascading menus.

Editing a Profile In Place is much like Editing a Block or Xref In Place and you will find that there

are limitations to what commands and actions can be performed during an Edit In Place session; Profiles cannot be Rotated, Mirrored or Scaled, for example.



Once an Edit In Place session for a Profile is active, you should see a distinctive outline that has a crosshatch pattern through it and **Grip points** along the perimeter edge ( in some cases along an internal ring as well ). By **Stretching** these **Vertex Points** or by using the options on the Edit In Place pop-up menu, illustrated to the left, you can make some pretty significant alterations to the shape of a Profile.

Changes are not saved unless you use the "**Save All Changes**" button on the In-Place Edit toolbar or the "**Save Changes**" pop-up menu option.

If you find the appearance of the Profile shape during an Edit In Place session difficult to see, you can actually make Display Property changes to this temporary Object - see discussion below.

## Profiles - Edit In Place - Display Properties

Menu **Format> Display Manager...**

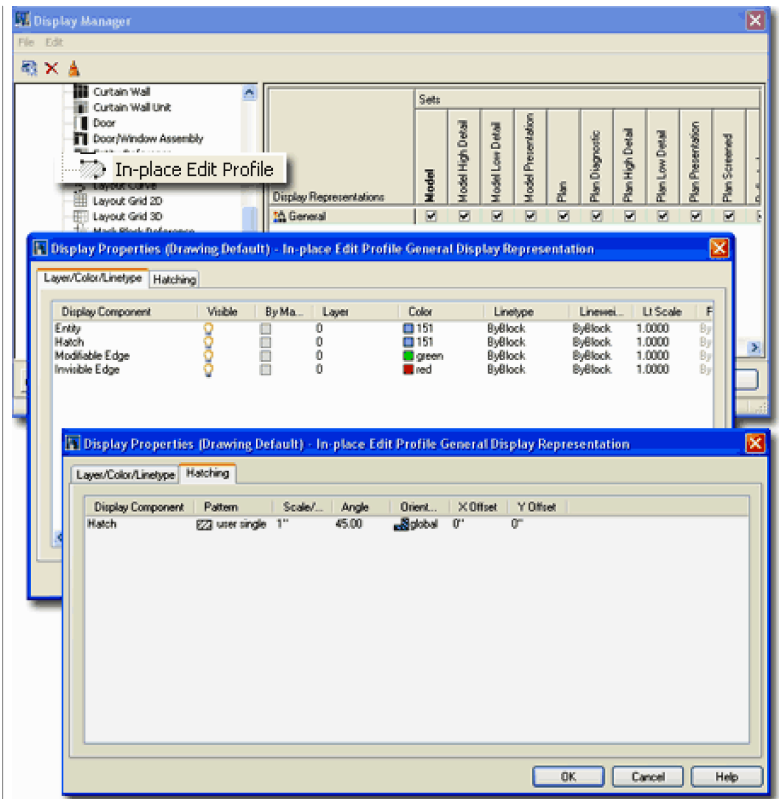


Keyboard **DISPLAYMANAGER**

Links [Display Sets](#) - for direct link to the Display Manager

When you activate an Edit In Place session for a Profile, the appearance of the temporary Profile Object can be altered by using the **Edit Object Display...** pop-up menu option ( see above left ) or by modifying the **General Display Representation** for the **In-Place Edit Profile** item under the **Representations by Object** folder in the **Display Manager** as illustrated to the right.

As incredible as it may seem, you have four Display Components and one Hatch Component to work with. The Display Components are: **Entity**, **Hatch**, **Modifiable Edge** and **Invisible Edge**.



# 13 Profiles Styles

## Style Manager - Profiles

Menu **Format> Profiles> Profile Definitions...**



Keyboard **ProfileDefine**

Links [Profiling your own Mass Shapes](#) - for more examples on how to use a Profile on the Add Mass Element dialogue box.

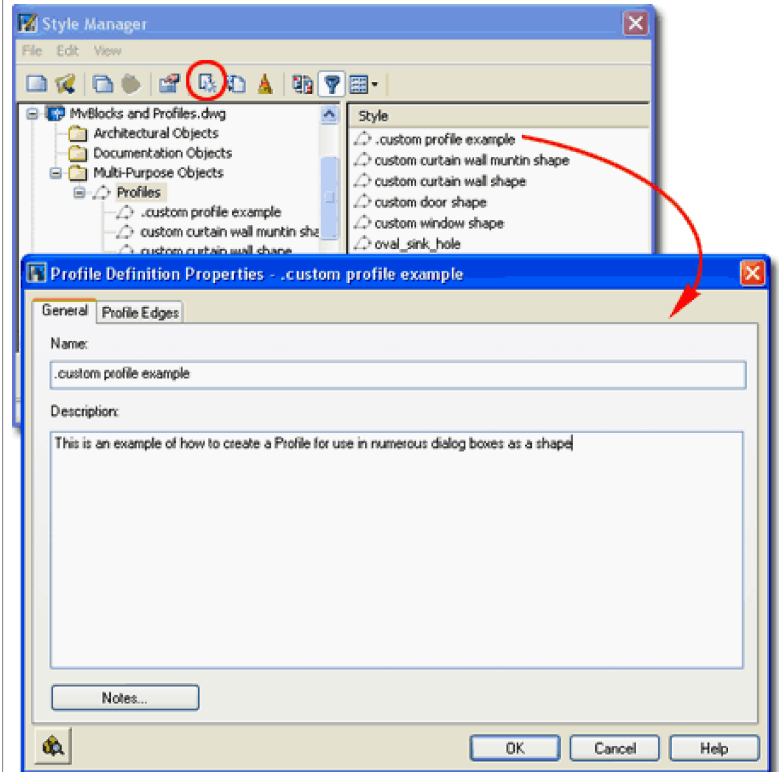
For **Profile Styles**, you can use the **Style Manager** to load, modify, delete and create new Profile Styles. ADT comes with a short list of predefined Profile Definition Styles that you can access through the Profiles (Imperial).dwg or Profiles(Metric).dwg. You can use this file or create a new one to act as a container of the various Profiles that you may want to share among many projects. You may find that many of the Objects in ADT come with their own Profiles as you load them from the library. When you Copy and Paste Objects that use custom Profile Styles, you will also acquire the Profile Style. Because they are Styles you can actually use the Style Manager to access other ADT drawing files to copy them as Styles without having to Open those drawing files.

When creating a **New** Profile Definition Style there is really very little to set so creating one from Scratch is the obvious choice. The primary task will be to use the **Set From...** button or pop-up menu option to Select the closed Polyline shape(s) that you want to use as the Profile.

Illustrated to the right, I show the process of creating a **New** Profile Style that I have Named " **Custom Profile Example**". By **double-clicking** on this new style, you will invoke the **Profile Definition Properties** dialog box - as illustrated.

The **General** tab provides access to the **Name** and **Description** fields for a Style; plus access to the attachment of Notes.

13-25 BLOCKS - PROFILES



## Style Manager - Profiles - Set From

The key to creating a Profile Style is using the **Set From** button on the Style Manager window. You can also access this option from the right-click pop-up menu, as illustrated to the right.

Once you have selected the **Set From** option, you will need to **select a Closed Polyline** shape somewhere in your drawing. Once you have selected a Closed Polyline Object, you will be prompted, on the command line, to "**Add another ring? [Yes/No]**"; which refers to internal holes. For this query, you would answer Yes and Select yet another Closed Polyline Object to define a ring of solid with an internal void. You can have multiple rings that alternate between solid and void.

The last question will be about "**Insertion Point or <Centroid>**", which allows you to OSNAP to an insertion point or allow the default option to calculate an absolute middle. Insertion point is really a matter of how you want your object that uses this profile to behave. With Mass Elements, for example, many of the pre-defined shapes have an insertion point based upon their Centroid. You can actually OSNAP to this Centroid using the NODE OSNAP, so it can be handy to use Centroid.

### Command: **profile**

Profile [as Pline/Definitions]: d

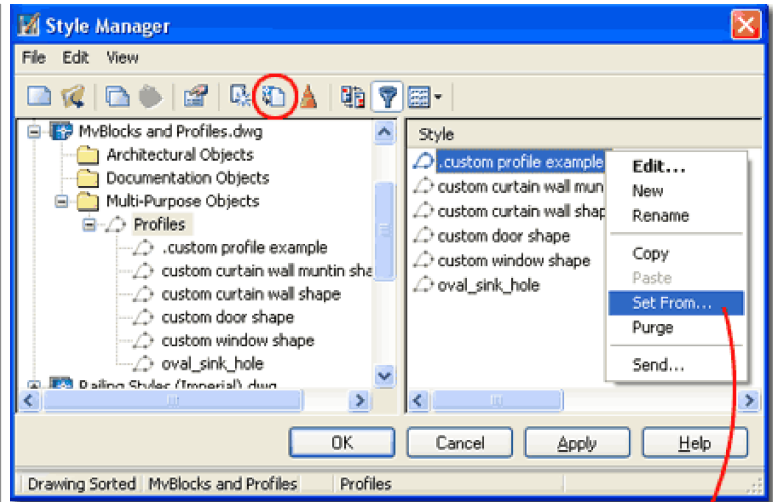
Select a closed polyline:

Add another ring? [Yes/No] <N>:

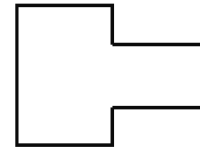
Insertion Point or <Centroid>:

Profile [as Pline/Definitions]:

Command:



**CLOSED POLYLINE OBJECT**



### Note:

In most cases, the layer and the size of the closed Pline object does not matter when you create it since most ADT objects are automatically keyed to a layer and offer options for controlling the actual dimensional proportions of your profile. In other words, if you are in a hurry, you can be pretty sloppy; just get the dimensional proportions/ratios right.

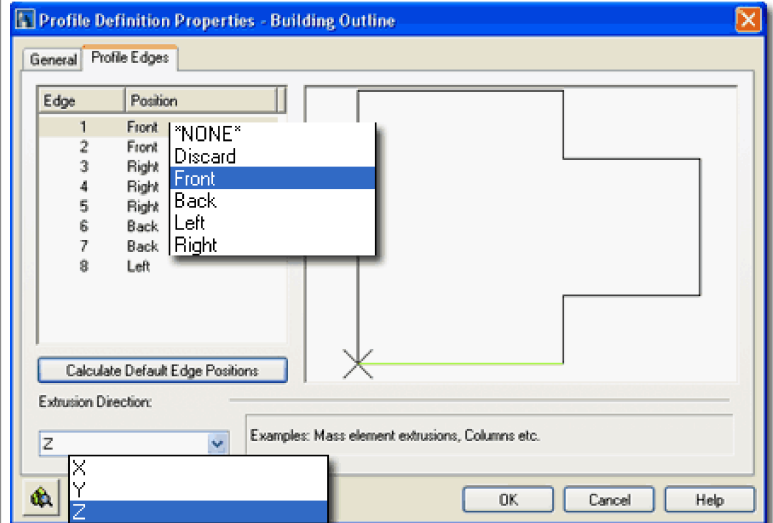
You can change a Profile any time by using the Set From option and selecting another Closed Polyline Object. Doing this will change all objects, in the current drawing, that are using this Profile Definition.

## Profile Definition Properties Dialog - Profile Edges tab

The **Profile Edges** tab of the **Profile Definition Properties** dialog **box** provides access to a feature that I am not entirely convinced actually works at the time of this writing. For each of the three primary axis directions set under the Extrusion Directions drop-down list, you can manipulate the Position settings of each edge. The ability to modify the Edge Positions as they apply to different Objects that use them as X, Y or Z extrusion outlines is incredibly powerful but all of my tests resulted in no change. Using the Discard option worked and provided the option to remove one or more faces resulting in hollow looking extrusions.

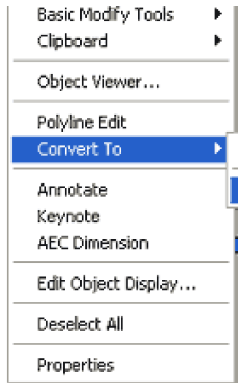
As I understand this tool, the intent is to allow you to rotate your Profile here rather than having to Insert it, Rotate it and Redefine it. It also provides the means to define how it will be applied for different Objects so you don't need to create three different Profile Definitions of the same shape should you actually use the same shape for three different Object Styles.

I will report back on this set of options in a future update when I get updated information or a patch that fixes the problems I found.



## Convert Linework to Profile Definition

Menu	N.A.
Keyboard	N.A.
Keyboard	<b>ConvertLineworkToProfileDef</b>
Mouse	Select Object, right-click, select Convert To> and cascade over to Profile Definition...
Objects	Closed Polylines, Splines, Ellipses and Circles can all be used
Links	



The **Convert Linework to Profile Definition** tool is basically a short-cut for using the **Style Manager** to achieve the same results - as illustrated to the right. You should find that the object-specific pop-up menu provides quick access to this option whenever you Select an Object that can be converted into a Profile: Polylines, Circles and Splines.

**Command line sequence:**  
Command:

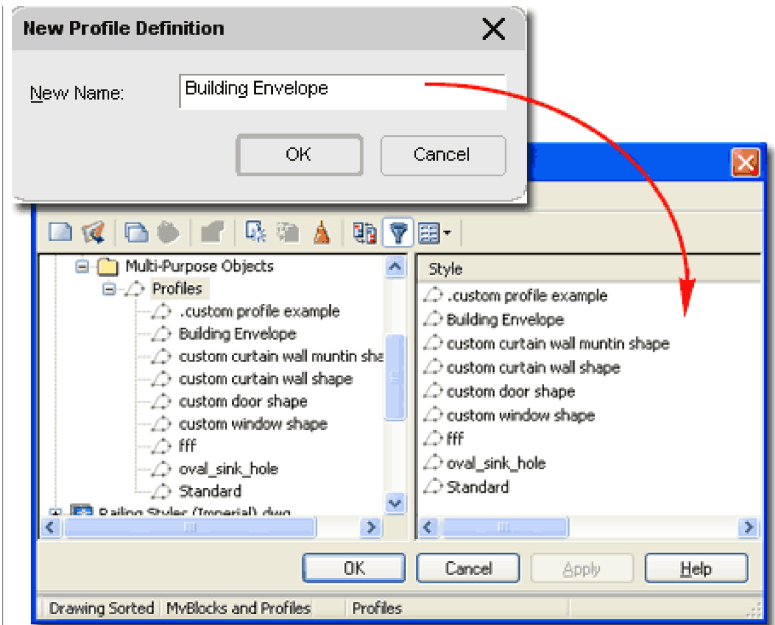
ConvertLineworkToProfileDef

Insertion point or [Add ring/Centroid]: <specify insertion point or type "A" to Add voids>

Select a closed polyline: <select a closed Pline to become a Void (by default) >

Insertion point or [Add ring/Centroid]: <continue the process of Adding Voids or specify an insertion point>

Profile Definition [New/Existing] <New>: < type "N" to create a New Profile Definition Style Name or "E" to select from a list of existing Profile Definition Style Names >



### Note:

Read up on the whole Profile story, above, for information on how to use Profiles, how to edit them and so forth.

# 14

## Customizing and Tricks

14-25 BLOCKS - PROFILES

### Using Xref's to Manage Multi-View Blocks

As MvBlocks become more and more fundamental to the process of creating Construction Documents and Presentation drawings, I started to notice the bloating of my files. It occurred to me that when you work with large entities such as MvBlocks that can be up to 500K, why not Xref them; especially if you are using multiple copies of them. High quality conference room chairs are a great example of where Xref'ing MvBlocks can really pay off in file size management. This may all seem logical but there is one frustrating problem in the design of MvBlocks and that has to do with how you create the internal Block Properties. For the majority of users, "By Block" has been the defacto standard because it provided the greatest flexibility to change the Properties of Blocks after insertion but with MvBlocks, this Property doesn't not work correctly when it is Xref'd. In other words, in order to get an MvBlocks to respond correctly to Property Changes in a target, when Xref'd, you have to use "By Layer" for the Property Settings of the original Blocks.

The work-around solution for dealing with the problem of "By Layer" vs. "By Block" in Xref'd MvBlocks is to create a template file with as little junk data in it as possible and then insert your MvBlock into this file. Save this file as part of your working project files and use it as the source Xref object instead of trying to Xref Attach an original MvBlock from the Content Library folder.

### Creating Attributed MvBlocks

Links [Multi-View Blocks - Update](#) - for more on modifying Attributes inside MvBlocks.

Creating an Attributed MvBlock simply involves the process of creating a regular Block with Attributes and then Adding that Block to a Multi-View Block Definition. The problem is that by burying an Attributed Block inside a Multi-View Block Definition, you lose the ability to edit it directly with the ATE command. You can, however, edit Attributes within MvBlocks by using the [Multi-View Block Attributes dialog via the Properties Palettes](#).

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