Architectural Desktop 4 & 5 - Development Guide NORAMAION **PART 19** AEC DIMENSIONS AND DIMENSION LABELS Contents .1-19 AEC DIMENSIONS AND DIMENSION LABELS **Dimension - Access Dimension Toolbar** 19 - AEC Dimensions X How do I get this toolbar? You can also acquire access to some of these commands from the Alternate 011 11 01¥ Ω1 01¥ 0+ 0- 1+ T Document pull-down menu. From the Document pull-down menu, pick 💾 💘 璇 🚟 🕁 📑 AEC Dimension > and cascade to the Dimension commands. This toolbar is an optional tool and is not needed to use this guide but may help. Dimension pull-down menu Document Express CAD Manager Window Help Alt.Menu Document> AEC Dimension> Areas 🥶 🖤 AL Area Groups • Navigation X 😣 😻 🍪 B 加目的教題受之 ۲ Scheduling AEC Dimension Add AEC Dimension... Keyboard DimAdd Add Manual AEC Dimension Sections and Elevations 🕨 Sample Tool Catalog - Imperial or Metric > Document > AEC Dimension Properties Browser Annotation Mask Blocks AEC Dimension Styles... AEC Polygon Adjusting to the New Interface for AutoCAD and ADT Users- for ۲ Links how to activate the Design pull-down menu Hidden Line Projection Napkin Sketch Before you get going with the AEC Dimensions, you may want to read up on how to create AEC Dimension Styles so you will have a better understanding of the options that affect their behavior. Unlike regular And finally, you may want to consider if these tools will actually be a productive AutoCAD Dimensions, AEC Dimensions are not just a matter of Selecting contribution to your work or a hindrance. Though they offer useful new the Points that you want to string dimension lines between; they read features they also restrict you from working in a fashion that you may have Objects and attempt to create all of the points for you in an AEC Dimension become accustomed to with AutoCAD Dimensions. The two main features you get with the AEC Dimensions are rapid object recognition/behavior and Group. Display controls that fall in line with other ADT objects. The main features you lose are Grip editing flexibility, ease of use when running Continued strings and You will also need to brush up on your AutoCAD Dimension Styles because options for non-Linear dimension types; i.e., AEC Dimensions don't offer AEC Dimensions use them as the source for most of the physical settings Leaders, Angular or Radial types. while adding Architectural Desktop specific features such as Display Representations. Standard AutoCAD Dimension Toolbar Dimension 〒~ ☆ ○ ◎ △ ▼〒 田 * 🖬 ⊙ A ⊿ 戸 Aec-Arch-I-96 Styles: Because AEC Dimension Styles utilize AutoCAD Dimension Styles for most of the Leader ~ physical properties (such as Arrow Type and Arch_24 Illustrated above I show the standard AutoCAD Dimension toolbar. If you Height, Extension Lengths and Offsets, Angular downloaded our PowerSTRIP toolbar, you will find a modified version of this etc.), collect your favorite settings prior to Leader toolbar where we set many of the dimensions to Key to ADT's Layers. working on AEC Dimension Styles. Linear Arch_48 In AutoCAD 2002 we acquired a new type of Standard Dimension called True Illustrated to the left I show the AutoCAD Angular Associative Dimensions. This new type of Dimension is also known as a Dimension Style's pane with a couple of Leader Trans-spatial Dimension because it can read the true length of objects through example Dimension Styles. The "Arch_24" Linear a Viewport in Paperspace. In other words, you can dimension in Paperspace Dimension Style is identical to the Stairs I over a Viewport and snap to objects inside a Viewport to get the correct "Arch 48" Dimension Style with one Standard dimensions. And even if you change the Viewport Scale Factor, the exception: DimScale. Both Styles have Dimensions will read correctly, remain attached to the correct points and report "children" for each type of dimension but the correct dimension lengths. The variables to control this new True since AEC Dimensions only work as Linear types, you may not need to Associative dimensioning are DimAsso or Dimassoc (they both do the same consider "children". I think it is a good idea to have very complete Styles thing now). Though you can use regular AutoCAD dimensions on ADT because inevitably you will end up mixing regular AutoCAD Dimensions with Objects, you cannot use the newer "True Associative/Trans-spatial" feature AEC Dimensions.

AEC Dimensions Overview

Using AFC Dimension on Doors - Work-around 1 - for information on

which explains, in part, why we needed AEC Dimensions.

Links a common problem dimensioning ADT Doors. See also Workaround 2.

An **AEC Dimension is an AutoCAD Dimension Style wrapped inside an Architectural Desktop Object Style** where most of the dimension object's appearance is controlled by the AutoCAD Dimension Style while new display and behavior options are controlled within the ADT AEC Dimension Style.

The primary problem with this "hybrid" Dimension Object is that it does not offer the range (only linear) and flexibility (no real Grip Editing) available for regular AutoCAD Dimensions. AEC Dimensions work on Xref's but do not have the trans-spatial (through viewports) capabilities offered by AutoCAD Dimensions.

Since most of my dimensioning work, for example, is for Building Permits and Construction Documents, is it usually the product of careful communication more so than mechanical repetition. In other words, each extension line is placed with careful thought about what I want built and where I can afford to provide the contractor with some slack (often denoted with "+/-"). I may dimension from face of studs or finished material depending on the circumstances of the job and I may be more interested in interior values than exterior values. I may dimension to the centerline of one object but the edges of the next one. AEC Dimensions do not lend themselves easily to this method of dimensioning and thus do not represent one of the tools in ADT that I have adopted.

Below I will discuss the options and settings you can employ in an effort to make AEC Dimensions work for you. After examining the full range of options and settings, you too may decide to await more development on this tool.



Select Similar

Deselect All

Properties



2-19 AEC DIMENSIONS AND DIMENSION LABELS



When Adding AEC Dimensions, the most important thing to consider is the Selection Set. Though you can Select All Objects in a drawing, you will not find that the AEC Dimension are "intelligent" enough to spread out in multiple directions as they apply to Walls, Doors, Windows and so on. This means that you basically only use them for one "Group" or string at a time; like one length of Wall or side of building.

For the most part, I avoid Selecting internal Objects when I want to dimension the exterior Walls. You will probably want to Select interesting Walls and any Objects that need to be included, such as Columns. What you Select is really more about the settings available for AEC Dimensions than anything else and is thus often a game of trying the produce the results you seek knowing the limits of the Style.

AutoCAD Dimension Style drop-down list

can always change AEC Dimensions to a

and as with AutoCAD dimensions, you

different Style.

Add AEC Dimension Examples

For me, I have found that the easiest and most successful approach to adding AEC Dimensions is to work by Selecting only Wall Objects whenever possible. When you Select a Wall, Doors, Windows, Openings and Intersecting Walls are all automatically included.

Illustrated to the right I show an example of one horizontal Wall and one vertical Wall that were dimensioned in two separate operations using the same AEC Dimension Style. The AEC Dimension Style was configured to only use one Chain but uses all Wall Intersections as a source for extension lines. This is good in some cases but produces unwanted clutter in other cases and you will either need to create unique AEC Dimension Styles for resolving such issues or use Manual Editing.

Note:

When using AEC Dimensions, you may find that they will either run horizontally or vertically when you want the opposite result. You can use the Align option on the command line to Select a Wall or other Object to change the orientation. The Object you Select will represent a perpendicular direction for the extension lines (or parallel direction for the dimension string)

Add Manual AEC Dimension

Menu	Documentation> AEC Dimension> Add Manual AEC Dimension
•+	19 - AEC Dimensions
<u>.</u>	
Keyboard	DimManual
Toggle	DimPointMode [Transformable or Static] - the static option locks Manually Placed Points so you cannot Move the Dimension. This setting must be set prior to dimensioning.

Links

The Manual method of Adding AEC Dimensions is a rather misleading option that works and sounds great until you find out that this technique produces non-associated dimensions. In other words, manually placing AEC Dimension points is just like converting AutoCAD Dimension Objects to AEC Dimension Objects: there is no association with any Objects.



Command Line:

Command: dimadd Select geometry to dimension or [Style]: < Select Wall(s)> Select geometry to dimension or [Style]: Specify insert point or [Rotation/Align] A <Type "A" to force new orientation>

Select geometry to align dimension to: <Select Wall or Object to align with>



BEFORE

ADDING MANUAL AEC DIMENSION POINTS IS EASY BUT THEY ARE NOT ASSOCIATIVE AND EDITING IS NOT EASY.

The only advantage to using the manual method is that it comes close to working like you are using regular non-associated AutoCAD Dimensions while providing you with the Style benefits of AEC Dimensions. The problem for me is that adjusting extension line points after changes have occurred is so time consuming that it is basically easier to delete the dimension and start over.

Convert AutoCAD Dimension to AEC Dimension



Select one or more Dimension Groups, right-click, Select Mouse Properties

0

Elevation

0"

2 Chain

3 Chain

Standard

Arch_48_ARCHIdigm_Standa



Converting and Manually Adding Points, for example, may create AEC Dimension Objects but they are not associative and thus do not automatically adjust when the project is modified. You can actually create hybrid AEC Dimensions where portions of a Chain are associated but other portions are not. This is similar to using AutoCAD's True Associative (and Transpatial) Dimension but modifying a points with Grips to remove the associations.

misleading results that are not quite what you would expect.

Attach Objects to AEC Dimension

Alt.Menu N.A.



Keyboard DimAttach

Mouse Select one Dimension Group, right-click, Select Attach Objects on Context menu.

Attaching Objects to existing AEC Dimension Chains is fairly logical but the results may prove confusing.

Illustrated to the right I show examples of how one Wall has been Attached to an existing AEC Dimension Chain but only affects the Chain when positioned to the outside of the main Wall Object. The results of Attaching Objects has more to do with the current AEC Dimension Style than anything else so if you get undesirable or no results, check the Style settings.

Detach Objects from AEC Dimensions

Alt.Menu N.A.



Keyboard DimDetach

Mouse Select one Dimension Group, right-click, Select Detach Objects on Context menu.

Detaching Objects from existing AEC Dimension Chains should prove fairly easy to comprehend when you are working with Walls but once you attempt to Detach items in Walls, such as Doors, Windows and Assemblies, it becomes a different matter altogether.

The fact of the matter is that you cannot Detach Objects that are included in the AEC Dimension Style settings. In other words, if a Wall is in the Chain and you don't want to include items anchored in the Wall, you can only "detach" those items by Removing Points or changing the Style settings; which will affect the entire Style.





Add Dimension Points to AEC Dimensions

Alt.Menu N.A.

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Keyboard DimPointsAdd

Links

The Add Point to AEC Dimension tool appears to be extremely useful until you begin moving objects around and discover that Added points are not associated with the object(s) you Snapped to. Adding Points works in the same way as the Add Manual AEC Dimensions option and thus beckons the question of why you would use it. It can be rather useful in cases where you just can't pull extension lines out as you need to but once you start mixing manual points with associated points, it can get messy when changes occur.

Finding manually placed points is no easy matter since there are no display options to help you find them. This makes the use of this feature a bit dangerous because users may not notice incorrect extension lines and values if they are only off by small amounts or mixed up in a Group with where most of the Chain is associated.

Remove Dimension Points from AEC Dimensions Alt.Menu N.A.

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Keyboard DimPointsRemove

Toggle **DimImmedUpdate** - use this toggle to remove extension lines automatically or provide graphic cue first.

Links Display Properties - Component Layer - for information on how to see any points that may have been removed from past editing sessions.

To remove Points (Extension Lines) from an AEC Dimension Group, you simply Select on the Extension Lines and look for the change in Color. Once you have completed the Selection of one or more Extension Lines, hit <Enter> and you will find that not only do they disappear but the values of the dimensions are adjusted accordingly. If you have the "Removed Points Maker" Display Component **On**, you will see a circle with an "X" in it to indicate where the Extension Line was removed from.

Note:

Though there were tools in the past for restoring Removed Extension Lines those tools did not work in my tests.

Override Text and Lines...

Alt.Menu N.A.





Instead, I found that if you Manually Add a Point where you once had an Extension Line, and then Remove that Point, the old Extension Line will magically reappear. Despite the Alert dialog that periodically pops up about associations, I found that associations are restored.

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Keyboard DimTextOverride, DimRemoveOverrideTextOffsets

 Mouse
 Select one Dimension Group, right-click, Select Override Text and Lines..., Select specific Text or Dimension Line

 Display Properties - Component Layers - for information on how

Links you can activate the display of "Override Text and Lines Marker" Display Component to see modifications.

The **Override Text and Lines dialog box**, illustrated right, is like a handicapped version of the Mtext Editor for regular AutoCAD Dimensions but offers the option to Hide Text and Lines. If you are familiar with the options for overriding AutoCAD Dimensions, this may prove to be an irritating dialog but it is all that is offered at present. If you don't know your unicode for symbols such as the "+/-", jump out to the Mtext Editor, find your Symbol, Copy it and then return to Paste it in under the Suffix or Prefix fields.

Notice the Remove Override button which indicates that you cannot remove overrides all in one quick and convenient fashion; you must return to any single text and Remove Overrides one-at-a-time. If you activate the "Override Text and Lines Marker" Display Component, it will be much easier to see which lines have been overridden.

Underline Text - this option will not work as expected if the "**Override Display of Underlined Text**" setting is checked on the Options dialog, AEC Dimensions tab.



Keyboard DimMatch

Links

+

The DimMatch command is almost perplexing because of the nature of how most "MatchProperties" tools work in software programs. This tool is not for matching AEC Dimensions but for matching existing AutoCAD Dimensions to a Selected AEC Dimension. In other words, you Select an AEC Dimension Group to "paint" on to existing AutoCAD Dimensions Objects in your drawing. Since AEC Dimensions use an AutoCAD Dimension Style as the source of most settings, this tool saves you the trouble of hunting that style down.



Modifying AEC Dimensions with Edit in Place

Modifying AEC Dimensions with Edit in Place	YOU CAN
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Keyboard DimSetOverride	MODE
Links	
You can activate the Edit-in-Place mode for AEC Dimension Groups by using the Edit-in-Place option on the Context menu or by using the Edit-in- Place marker as illustrated to the right. During an Edit-in-Place session, you will find Grip points that resemble those for regular AutoCAD Dimensions but are more limited and restrictive. The Extension Line Offset Grip, for example, appears as the Origin Grip but only permits control over the length of the Extension Line; i.e., you cannot use this Grip point to set a new point of origin for the Extension Line. The most useful Grip is arguably the Text Position Grip and it works much like the one found for regular AutoCAD Dimensions except that you don't have any way to access the Dim Text Positions for options like "Move with Leader". Notice however, that the Context menu does offer a Reset Text to	Note: The Esc key will Exit any Edit-in-Place session so you don't have to use the Exit Edit in Place marker.
Original Position option so you can quickly cleanup a string that has been overly modified.	When Moving Text, it is best to turn Off Osnaps as they tend to catch odd points. I also recommend keeping Ortho On to Move text with more control.
4 AEC Dimension Styles	4-19 AEC DIMENSIONS AND DIMENSION LABELS
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Style Manager - AEC Dimensions Alt.Menu Documentation> AEC Dimension> AEC Dimension Styles Image: AEC Dimensions Image: AEC Dimension objects, you can use the Style Manager to load, modify, delete and create new AEC Dimension Styles. Illustrated to the right I show the process of creating a New AEC Dimension Style that I have Named ".My Office Standard". By double-clicking on this new style, you will invoke the AEC Dimension Style Properties dialog box. The General tab provides access to the Name and Description fields for a Style; plus access to the attachment of Notes.	Style Manager File Edit View Image: Comparison of the standard Image: Compari
Style Manager - AEC Dimensions Alt. Menu Documentation> AEC Dimension> AEC Dimension Styles Image: Style Dimensions Image: Style Dimensions Image: Style Dimension Style Links For AEC Dimension objects, you can use the Style Manager to load, modify, delete and create new AEC Dimension Styles. Illustrated to the right I show the process of creating a New AEC Dimension Style that I have Named ".My Office Standard". By double-clicking on this new style, you will invoke the AEC Dimension Style Properties dialog box. The General tab provides access to the Name and Description fields for a Style; plus access to the attachment of Notes. When you create an AEC Dimension Style, think of it more as a technique than a single Style for one particular look or scale as you would with regular AutoCAD Dimension Styles; i.e., think of this as a full group or string of dimension objects that read your drawing for you. You might, for example, have an office standard for commercial jobs, residential jobs, design/schematic or other tasks.	Style Manager File Edit View AEC Dimensions.dwg Architectural Objects Documentation Objects AEC Dimension Styles AEC Dimension Style PropertiesMy Office Standard Standard Standard Mare: My Office Standard My Office Standard Description This example AEC Dimension Style will be used to depoint with these Objects] Notes Notes Motes Dock

On the **Chains** tab of the **AEC Dimension Style Properties** dialog box you can set the number of dimension chains you want for a typical string of dimensions. Each Chain will be given a number, starting from the closest outward, and you can set the action/behavior according to your own preference. The 1st Chain might call out Doors, Windows and Openings while the 2nd Chain calls out Walls and the 3rd Chain creates a total.

Because you can deactivate Chains under the Display Properties tab, you may want to think of this number as the maximum you ever expect to use for this particular Style. Be aware, however, that this approach creates problems when using the DimConvert command to convert regular AutoCAD Dimension Objects to AEC Dimension Objects; basically the conversion only works when the number of Chains is set to one (1).

Note:

Below I will discuss the need for multiple copies of the same AEC Dimension Style to accommodate different Chain Numbers in the same drawing file.

Style Properties - Classifications tab

Links Object Style Properties - Classifications Overview - for an expanded step-by-step explanation of Classifications

I have no idea what you would Classify Dimensions as or why so that's all I have to say on this subject. The tab is here for product consistency but you may find a reason to Classify your AEC Dimension Styles and I'd love to hear the reason and function.

Style Properties - Display Properties tab

Links	<u>Object Style Display Properties Overview</u> - for the full story on Display Properties for Style
	Object Display Property Overrides - Object and Style Based - for an explanation of the differences between using Display Properties via the Styles versus the Edit Object Display option.

The **Display Properties** tab of the **AEC Dimension Style Properties** dialog box provides access to some simple display options but a vast array of behavior options. For AEC Dimension Display Components you will find AEC Dimension Group, AEC Dimension Group Marker, Removed Points Marker and Override Text & Lines Maker.

The **AEC Dimension Group** Display Component must be On to see the Objects but the **AEC Dimension Group Marker** is basically archaic now that you can see this as a Grip Marker. It can be useful, however, when trying to discern between AEC Dimension Objects and regular AutoCAD Dimension Objects. The **Removed Points Marker** will display places where



Extension Lines were automatically placed but manually Removed. The **Override Text & Lines Marker** will display a horizontal line over dimension text that has been Override and can thus be a useful feature that I wish was available for regular AutoCAD Dimensions. By keeping this last Display Component on a non-printing Layer, like

DefPoints, you can have it On while not printing it.



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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 objectspecific 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.

Display Properties - Component Layers

Illustrated to the right and left I show the Layer/ Color/ Linetype tab on the Display Properties dialog for the default Plan Display Representation. I set unique Colors to each Display Component for clarity in the illustration



directly above for more information on the function of each Display Component.

The AEC Dimension Group Property Settings do not appear to work as you would expect. Setting Colors or Linetypes, for example, has no effect on the Setting Layers appears to work

fine with the end result of "BvLaver" Properties regardless of what the AutoCAD Dimension Style has been set to.

Display Properties - Contents tab

The Contents tab of the AEC Dimension Style's Display Properties dialog box provides access to what I like to think of as the behavior or technique for the AEC Dimensions. For each Chain you have a whole group of ADT object types or conditions that you can specify dimension behavior around. You can make detailed decisions about how to dimension a Door opening, or example, or more drastic decisions about including or excluding objects like Walls.



By Selecting a Chain number, you can set options for each of the Objects listed under the Apply to list. With three or more Chains, this process can become a bit lengthy and tedious.

EACH CHAIN HAS A WHOLE SET **OF PROPERTIES THAT CAN BE** COMPLETELY DIFFERENT.

Chains are numbered from the closest to the farthest so you will need to consider appropriate functionality relative

to proximity; i.e, Door, Window and Openings dimensioned first and then Walls and then totals.

Use the Checkmark in the boxes next to the Chain Numbers to activate or deactivate the number of Chains you want for the current AEC Dimension Style. If you create a Master AEC Dimension Style with the maximum number of Chains that you will ever use, you can Copy this Style later for permutations.

Display Properties - Contents tab - Wall

Example Configuration					
Wall	Chain 1	Chain 2	Chain 3		
Overall	No	No	Yes		
Length_of_Wall	Outer Boundaries	Wall Length	No		
Wall Width	No	No	No		
Wall Intersections	Yes (see comments)	No	No		

Illustrated to the right I show one possible Dimension structure for Walls in Chain number one (Chain 1). In a multiple Chain structure it would be unusual to include the Overall but you will most likely want sections of Wall along a string. Notice that there is no option for dimensioning to centerlines of Wall Intersections or, as I prefer, alternating outer edges. Regardless of the number of Components in Walls, AEC Dimensions typically pull Extension Lines from the outer most Component which is not a happy situation for architects who wish to refer to framing components.



👿 Display Properties (AEC Dimension Style Override - .My Office Standard) - AEC Dimension Pla... Layer/Color/Linetype Contents Other Apply to: Wall. Overal Wall Dpening in Wal Mass Element Curtain Wall Length of Wall Door/Window Assembly Outer Boundaries Structural Member Dpening/Door/Window WallWidth 3 🗸 Chain1 Wall Intersections Chain2 Chain3 Description (Chain 1) Walt Outer Boundaries + Wall Intersections Opening in Walt Opening Max Width Cancel OK Help

Note:

As you add settings for different Objects in the Apply to pane, you will see a growing tally of these settings under the "Description" section. By placing your cursor in this text area, you can use the arrow keys on your keyboard to scroll through it and read what you have set for each Object.



Overall - this should be an obvious option based upon the image tile. This is the option you would probably choose for the 2nd or 3rd Chain as the overall dimension. Be aware that Overall is literally the overall length of all Walls in the Selection Set as opposed to the Overall of individual Wall lengths (see option below).

Length of Wall - this option seems more like one that has to be decided upon by the individual user at the time of working on a job but I have found that I prefer the Outer Boundaries option to avoid clutter in my dimension strings.

Wall Length - full length of all Walls Selected. The string will be broken for every Wall length found.

Outer Boundaries - full length of Selected walls farthest out towards the dimension string; i.e., this option filters out interior Walls.

Display Properties - Contents tab - Opening in Wall Example Configuration Chain 2 Chain 3 Openings Chain 1 Chain 2 Chain 3 Max._Width Yes (see comments) No No

MinWidth No No	No	
Center No No	No	

Wall Openings, not to be confused with Opening Objects, can be a bit confusing and frustrating. In my tests I found that they apparently only read the openings created by Openings, Doors, Windows and Assemblies but don't read openings created with the Interference or Body Modifier tools.

What you have here are options for dimensioning Walls and depending on what you include in your Wall Selections, the dimension results may vary. If you only Select the Wall and not any Doors, Windows or Openings, the cuts these Objects make in the Wall will all be treated like Wall Openings (as discussed here). If you include Doors, Windows and Opening Objects in your Wall Selection then the settings under the Opening/Door/Window section will also apply. This means that you can actually combine settings to produce such results as dimensions from the "Opening Max. Width" (the edge) to the Center of a Door. If, on the other hand, you don't apply any of the settings offered here, a Door might be dimensioned from an adjacent Wall instead.

Note:

Be aware that when you use any of the settings in this section, the results you get when Selecting Walls may in fact not include the Openings, Doors or Windows Anchored in the Wall. In other words, you may be dimensioning the opening they cut in the Wall but not the Objects themselves. The difference may never prove to be a problem and it is certainly faster to Select a Wall than to Select a Wall and all of the Objects Anchored in it.

Display Properties - Contents tab - Mass Element

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Wall Width - this option seems appropriate for work with unusually wide Walls or when dimensioning at a high level of detail.

Wall Width - this is like outer boundaries for Wall ends.

Components - this pulls an extension line from every component, like where the brick meets vapor barrier which meets plywood which meets studs, etc. Good for details.

Wall Intersections - this option does just what the image tile illustrates: captures every intersection of Selected Walls. The only problem I have with this option is that in many cases I don't want to indicated rough or finished Wall widths because that's just getting too detailed. I prefer to dimension in alternating rhythms starting at the outside to outside and inside to inside or simply going from center to center. These are styles that vary from office to office and from type of architectural work (residential, commercial, etc.). If you want the alternating style, there is no option for that and the only solution I have come up with thus far, is to Add Points manually. For your custom office configuration, you should try with and with out for the 1st Chain and decide for yourself which is better.

Chain1 Opening in Wall		
Opening Max. Width		
	++	
🤲 Opening Min. Width		
Center of Opening		
Description (Chain 1) Wall: Outer Boundaries Desping in Wall: Opening May Width		

Opening Max. Width - this option should theoretically find the widest point along openings that produce unique cut or opening endcap profiles but none of my tests could produce conclusive evidence of this effect. I set it active for my example AEC Dimension Style but be aware that this will affect the settings under Opening/Door/Window as discussed to the left.

Opening Min. Width - I have yet to find any evidence that this option actually works.

Center of Opening - this option will place extension lines at the center of all wall openings regardless of any settings you have have set under the Opening/ Door/ Window section.

Example Configuration

Mass E.	Chain 1	Chain 2	Chain 3
Overall	No	No	Yes (optional)
Bounding_Box	No	Yes	No
Edges	Facing	No	No
Center	No	No	No

You can configure AEC Dimensions to include **Mass Elements** but the results can vary depending upon what you do with your Mass Elements. Mass Elements that use custom Profiles or are the product of Boolean operations tend to be limited to a single Overall Chain regardless of what you set. Mass Element Groups appear to work rather well producing results as indicated by the options and graphics illustrated to the right.

For information on the options listed to the right see discussion for Curtain Walls.

The example settings I show in the table above represent what I found useful when using Mass Element Groups to produce massing studies for early design-development work. Typically I only use two Chains.

Display Properties - Contents tab - Curtain Walls

Example Configuration					
C. Wall	Chain 1	Chain 2	Chain 3		
Overall	No	Yes	No		
Bounding_Box	Yes	No	No		
Edges	No	No	No		
Center	No (see comments)	No	No		

As with the other Objects and their respective settings, getting comprehensible results from the **Curtain Wall** settings has more to do with your Selection Set than anything else. Overall, like Walls for example, reads the entire length of All Curtain Walls in a single Selection Set (even if they are separated by large distances).

Overall - this option will dimension to the outer most edges of a single Curtain Wall Object but so will the Bounding Box. The exception to this rule occurs when there are Objects Attached as Infills, like Doors, and you include them in your Selection.

Bounding Box - this option will dimension to the Overall of the individual Objects in the Selection Set. In other words, if you have two discontinuous Curtain Walls in your Selection Set each one will receive an overall dimension

Edges

All Edges - this option will read all edges of Infills, Frames and Mullions so with custom Profiles this can produce quite a mess.

Facing - this option is supposed to limit the potential mess created by dimensioning All Edges by only reading the edges that face the dimension Object but my tests did not find that this option did anything different than the "All Edges" option.

Overall	00
Bounding Box	
Edges Facing	DER
Center	

🔲 Overall	
🕑 Bounding Box	
Edges	
Center	1 1111 1 8 - Ex

Center - this option will create extension lines from the Centers of Infills, Frames and Mullions but does not allow you to specify which of these components you want to include or exclude from centerline dimensioning. It makes sense to centerline dimension mullions, for example, but not the Infills. One exception to this rule is when Infills are Attached Objects, such as Doors. In order to include centerline dimension of Attached Objects, their dimension settings must be set to Center and they must be part of the Selection Set.

Display Properties - Contents tab - Door/Window Assemblies

Example Configuration			
Assembly	Chain 1	Chain 2	Chain 3
Overall	No	Yes	No
Bounding_Box	Yes	No	No
Edges	No	No	No
Center	No (see comments)	No	No

Because **Door/Window Assembly** dimension settings are identical to those for Curtain Walls, you may wish to employ the same logic for dealing with them. See comments under Curtain Walls for information on the various settings and options listed to the right.

Display Properties - Contents tab - Structural Member

S. Member	Chain 1	Chain 2	Chain 3
Overall	No	No	No
Bounding_Box	No	No	No
Edges	No	No	No
Center	Yes	No	No
	S. Member Overall Bounding_Box Edges Center	S. MemberChain 1OverallNoBounding_BoxNoEdgesNoCenterYes	S. MemberChain 1Chain 2OverallNoNoBounding_BoxNoNoEdgesNoNoCenterYesNo

AEC Dimensions will read **Structural Members** as part of one Selection Set. Be aware, however, that you can also use AEC Dimensions for Column <u>Grids</u> which can serve as Anchor points for Structural Members.

For my example AEC Dimension Style, I show in the table above that I have only used the **Center** option for **Chain 1** and no other options for any other Chains. You may need to adjust the example settings to meet your own personal uses and preferences for dimensioning Structural Members.

Note:

To produce an Overall AEC Dimension that is based on the centerline of two distant Structural Members, simply use the AEC Dimension again and only Select the two Members.

Display Properties - Contents tab - Opening/Door/Window					
Example Configuration					
Chain 1	Chain 2	Chain 3			
No	No	No			
Yes	No	No			
No	No	No			
No	No	No			
	rties <u>-Contents</u> figuration Chain 1 No Yes No No	rties - Contents tab - Opening/Do figuration Chain 1 Chain 2 No No Yes No No No No No	rties - Contents_tab - Opening/Door/WindowfigurationChain 1Chain 2Chain 3NoNoNoYesNoNoNoNoNoNoNoNoNoNoNo		

Openings, **Doors** and **Windows** can be dimensioned independently of the Walls they may reside in (Anchored to) and thus are not necessarily considered Openings in Walls. Having said that, I find it rather unusual to only dimension a Selection Set of these Objects without including the Wall(s) so it is probably more likely that you will be combining the settings for Walls, Openings in Walls and the set offered here.

If you are confused by the results of combining the **Opening in Wall** settings with those found here, I recommend that you deactivate all Opening in Wall settings and only focus on the ones offered here. When dimensioning Walls with no Opening in Wall settings, you will need to **include all Opening**, **Door** and **Window Objects** in your **Selection Set** - as you should do in all cases where you want these settings to affect the results.

Overall - this option will dimension to the outer most edges of all Openings,

Overall	
Bounding Box	
Edges	
Center	<u>+ +++++</u> + <u>≭ — ×</u> ∧

Wall: Outer Boundaries + Wall Intersections Opening in Wall: Opening Max Width

*



_hain I	
🔽 Overall	
Bounding Box	
Edges	
Center	
escription (Chain 1)	
/all: Outer Boundaries pening in Wall: Opening Max Width	

Edges

All Edges - this option creates extension lines from every conceivable edge on Opening, Door and Window Frames and can thus produce quite a mess if you have highly custom Frame Profiles.

Facing - this option attempts to reduce the potential clutter of dimension lines

Doors and Windows in one Selection Set. This effect is best observed when you only Select a set of Openings, Doors and/or Windows without selecting the Wall they are Anchored to. This can be a rather handy option for those who fake Assemblies by adding Doors and Windows manually to produce the look of a single Door/Window Assembly.

Bounding Box - this option will dimension to the Overall of the individual Objects in the Selection Set.

Display Properties - Contents tab - Grids

Example Configuration				
Grid	Chain 1	Chain 2	Chain 3	
Overall	No	No	No	
Outer_Grid_Lines	No	Yes	No	
All Grid Lines	Yes	No	No	

AEC Dimensions will read **Layout Grids**, **Ceiling Grids** and **Column Grids**. I think the three choices and the graphics are fairly self-explanatory. For my example AEC Dimension Style, I show that I have only used 2 Chains because I find it unlikely that you will be selecting multiple Grids at one time but you never know. For **Chain 1** I used the "**All Grid Lines**" option which can be quite useful with Column and Layout Grids but ridiculous for Ceiling Grids. For **Chain 2** I used the "**Outer Grid Lines**" option which will act like an "Overall" for any single Grid.

Display Properties - Contents tab - Linework

Example Configuration				
	Linework	Chain 1	Chain 2	Chain 3
	Extents	No	No	No
	Endpoints	Yes	No	No
	Midpoints	No	No	No
	Center	Yes	No	No
	Quadrant	No	No	No

AEC Dimensions will read most AutoCAD based Linework such as Lines, Arcs, Circles, Polylines and Blocks but not Ellipses and Splines. When it comes to regular AutoCAD Linework I find it rather difficult to avoid using regular AutoCAD dimension Objects and you may find the same is true for you. One of the problems with using AEC Dimensions is that you cannot use OSNAPs as you dimension (unless you use Manual Points which aren't associated) which leaved you to the preset points listed to the right. You don't dimension by picking points but by making a Selection Set so the points are automatically derived for you from the Objects in that Selection Set. As most good AutoCAD drafters know, linework is often drawn more for continuity than for reflecting the actual break points in objects like countertops.

How and if you use AEC Dimensions on Linework will be a matter for you to resolve by experimentation.

produced by All Edges and does so by eliminating edges that pass behind the exterior face (dimension side). The success of this option is questionable and you may have results that vary.

Center - this option will create extension lines from the center of all Openings, Doors and Windows in the Selection Set. Do not confuse this Center with that under the Opening in Wall which can produce identical results based on the width of the opening the Objects cut in the Wall.

Overall	
Outer Grid Lines	
🗹 All Grid Lines	
sscription (Chain 1) sening/Door/Window: Bounding Box id: All Grid Lines	

Extents	1-00
Endpoints	·····
Midpoints	+ - /20/
✓ Center	+++ ∕∍⊗(,
Quadrant	++++++ /_>0/
Description (Chain 1) Vall: Outer Boundaries + Wall Intersections Description Wall: Opening Max Width	

Display Properties - Contents tab - Other

Example Configuration			
Other	Chain 1	Chain 2	Chain 3
Overall	No	No	Yes (optional)
Bounding_Box	No	Yes (see note)	No
Edges	Facing	No	No
Center	No	No	No

The final Object in the **Apply to list** is named "**Other**" and is thus not really one Object but all of those "other" AEC Objects that are not covered by the main list. The problem is that we don't really know what those "other" Objects are. You can use "**Other**" settings for Objects like **Spaces**, **Slabs**, **Roofs** and **Roof Slabs** but not AEC Polygons (AEC Polygons are not recognized at all).

For my example AEC Dimension Style, I show in the table above that I have used the **"Edges"** option for **Chain 1** and **"Bounding Box"** for **Chain 2** with the option of using **"Overall"** for **Chain 3**. I have had fairly good success using two Chains but every now and again I come across an Object that works better with a single Chain; A single Stair Object, for example, will not work well with my example above because Chain 1 and 2 will simply produce the same results.

Display Properties - Other tab

On the **Other tab** of the **Display Properties dialog** you will find one of the most important settings you can make for AEC Dimension Styles: the AutoCAD Dimension Style.



Dimension Style - use the drop-down list to select an currently available AutoCAD Dimension Styles or substyles (a.k.a. children). Use the Edit... button to access any selected style with the AutoCAD Dimension Style Manager dialog.

Distance between Chains - use this value field to specify the

real distance you want between AEC Dimension Chains. Notice that this is the "real" distance and not the printed distance. It is not automatically scaled so the value needs to be different for every scale or Display Representation that is configured for different printing scales.

Layer... - use this button to assign the AEC Dimension Style to a unique Layer thus overriding the Keyed Layer. Setting this to Layer zero (0), something I recommend, allows the layer key to set the Layer.

Use Fixed Length Extension Line - this check box locks all of the Extension Lines to a specific length as set in the "Length of Extension Lines" value field.

Overall	
Bounding Box	
Z Edges Facing	
Center	

Note:

Opening in Wall: Opening Max Width

If the difference between Bounding Box and Edges (Facing) confuses you, don't look at the graphic tiles but create a working example instead. If you create a Slab with an "L" shape and use my two Chain example settings the picture will be clear. You see, Bounding Box is great for producing individual Object "Overall" dimensions.

Display Properties (AEC Dimension Style Overri Layer/Color/Linetype Contents Other AutoCAD Dimension Settings	ideMy Office Standard) - AEC Dimension Pla 🔀
Dimension Style: Arch_48 (Linear)	✓ <u>E</u> dit
AEC Dimension Settings	
Distance between <u>C</u> hains:	3'-0'' <u>L</u> ayer
Use Eixed Length Extension Line:	0
Length of Extension Lines:	1/8"
Show Height of Openings	
	OK Cancel Help

Length of Extension Lines - this value can only be set if the Use Fixed Length Extension Line check box has been checked. As with the Distance Between Chains value, you must use a "real" distance. It is not automatically scaled so the value needs to be different for every scale or Display Representation that is configured for different printing scales.

Show Height of Openings - checking this option adds another line to your under the standard dimension text with the height of Wall Openings. This option can be used to indicate the heights of Openings, Doors and Windows as long as the current AEC Dimension Style employs and of the Opening in Wall settings. The problem with this option is that a contractor could easily confuse the dimension distance with the opening height so I recommend that you look into using <u>AEC Dimension Labels</u> or Tags instead.

AEC Dimension Style - Permutations

In the discussion above I provided a scenario for creating a basic office standard AEC Dimension Style that used up to three Chains. If you followed along with the steps you will now have a single AEC Dimension Style ready for use but because we don't always use one, two or even three Chains, you will need to create permutations of this master Style.

Using the **Style Manager**, create two or more **Copies** of the **"My Office Standard**" AEC Dimension Style and **Rename** them something like **"My Office Standard 1 Chain**", **"My Office Standard 2 Chains**", etc.

For each of the Copied AEC Dimension Styles, return to the <u>Contents tab</u> on the Display Properties dialog and match the number of Chains to the Style Name by checking or un-checking Chains.

Remember that you will need to repeat your changes for each Display Representation.

Illustrated to the right I show an example of multiple AEC Dimension Styles based on one original master. I also show another Style, as an example of something I have been experimenting with, that combines the functionality of all three by using 1 Chain for Low Detail, 2 Chains for Medium and 3 Chains for High.



AEC_Dimension_Wizard_dialog_box

Menu Format> AEC Dimension Style Wizard...

11	1	115	SI	11	0+	0-	1+
----	---	-----	----	----	----	----	----

Keyboard **DimWizard**

Links

The **AEC Dimension Display Wizard** is erroneously labeled as a Style Wizard when, in fact, it really is a tool for modifying some specific AutoCAD Dimension Styles for predefined AEC Dimension Styles and related Display Representations. In other words, it is merely a tool to quickly run through some basic settings that you could also modify by working directly with the AutoCAD Dimension Styles.

Since AEC Dimension Styles can use different AutoCAD Dimension Styles with different settings for each Display Representation, it can prove to be a little confusing so this dialog helps guide you to the matching settings.

Illustrated to the right I show the first two pages of the Wizard and below I show the last two. On the **1st page** of the Wizard's dialog all you can do is Select one of any predefined AEC Dimension Styles. You see, it is not a tool to create AEC Dimension Styles but a tool to help modify existing ones.

On the **2nd page** of the Wizard's dialog box, you can Select any of the corresponding Display Representations; such as Plan, Plan High Detail and Plan Low Detail. For each Display Representation you can alter five basic settings for the corresponding AutoCAD Dimension Style (see gray box listing the current Style Name). Taking this action is the same thing as going to the AutoCAD Dimension Style dialog and making the same changes there.



This Style can be useful for earlier Design Development where only exterior Wall dimensions are use but as projects become more refined, so too do the number of dimension Chains.

5-19 AEC DIMENSIONS AND DIMENSION LABELS



Note:

The **Distance Between Chains** value is not governed by the **DimScale** value of the current AutoCAD Dimension Style so you must set this value as it relates to the intended print scale of the drawing; i.e. large.

AEC Dimension Wizard - Text, Color and Layer

On the **3rd page** of the Wizard's dialog box, you have more options related to the corresponding AutoCAD Dimension Style. These can also be set by working directly with the AutoCAD Dimension Styles. Remember that most AutoCAD Dimension Style settings apply to real-world values so 1/8", for example, is really 1/8" and will be multiplied by the **DimScale** value as set under the current AutoCAD Dimension Style.

On the **4th** and final **page** of the Wizard's dialog box you have even more settings that relate to the current AutoCAD Dimension Style. Typically, **Colors** are controlled with the "**ByBlock**" setting but some prefer to have different Colors (Lineweights on .CTB based plots) and thus you can set those Colors here.

For the **Layer...** zero option, I recommend that you keep the Layer set to zero so your AEC Dimension Style will use the current Layer Key to automatically go to the correct layer.



6-19 AEC DIMENSIONS AND DIMENSION LABELS

6 Dimension Labels - Overview

Dimension Labels Access

Menu N.A. - no access anywhere except by typing on the command line.

Accessing the Dimension Label command is as perplexing as their overall intent and design. At this point in time I am convinced that these have been relegated to a forgotten past and probably will not see any further development because you can use Tags or even Fields for similar results. At present, there is no way to access these tools without prior knowledge of the commands that I will list below. **They do not work on Xrefs**.

For me, a basic Label tool has it's merits and I would have appreciated further development on this set. One of the interesting aspects of using the Door and Window Labels is that they are independent of Door and Window Tags and they don't rely on Property Set Data for the information they present; they go straight to the Object's Dimensions.

lame:	Standard Door Label		✓ Scale
	Rotation Angle		<u>×</u> 1"
	Label to Object:	0.00	<u>Y</u> : 1"
	Object	0.00	<u>z</u> : 1"

Illustrated above is the "Create Multiview Block for Dimension Labels" dialog that you will activate for each of the label commands discussed below.

Dimension Labels Anatomy

As far as I know, there are only four built-in Label tools in Architectural Desktop: DoorLabelAdd, WindowLabelAdd, OpeningLabelAdd and StairLabelAdd. Each command activates the same "Create Multiview Block for Dimension Labels" dialog which allows you to Select any loaded MvBlock Name as a Dimension Label. Upon first use of any of these commands, an MvBlock Definition is imported along with corresponding Blocks whose Attributes do the actual work of reporting Object data.

These Labels are not Tags and thus do not use or import Property Set Data. Labels use the current AutoCAD Dimension Style for numeric Formatting but come with an embedded Text Style named "Standard Label". The scale or height of the text is fixed within the Attributes and does not scale according to any unit changes in the drawing; the small text is about 4" (100mm) and the large text is about 7-7/8" (200mm).

The default Labels have been configured to only display under the Low and High Detail Display Configurations. You may need to make modifications to these MvBlocks in order to see them in your drawings or to make use of them for the Medium (or other) Display Configurations.

It appears that the source of the MvBlocks for these Labels is hard-coded. Assuming I am correct, the only option for permanent modifications to the default Labels is to keep your modified versions of these MvBlocks in your template files. For users advanced enough to work with Registry Keys, you may want know that you that there are keys for Imperial and Metric Text Heights, Offsets and Positions.

\HKEY CURRENT USER\SOFTWARE\Autodesk\

ObjectDBX\R16.1\AEC\4.5\AecArchDACHBase40\ObjectDefaults\Dimension

to a former release of Architectural Desktop where these numbers referred to

Display Representations (1:50 and 1:100).



👤 Standard Door Label

Display Representations	View Blocks	View Directions	
Model Plan Plan High Detail Plan Low Detail Reflected	DeorLabertu	V Fop V Bottom V Front V Back V Left	
Set Interference Block	Add R	iemove Other	
Block: DoorLabel100 Tag: HEADHEIGHT Attribute Test Options F	roperties	Select block 🔣 I	Help
Tag	Prompt	Value	1.
HEADHEIGHT HEADHEIGHT:MM Value: HEADHI	HEADHEIGHT HEADHEIGHT:MM	HEADHEIGHT HEADHEIGHT:MM	
		cel Help	

Add Window Label

Menu N.A.



Keyboard WindowLabelAdd

Links

The **WindowLabelAdd** command uses the default "**Standard Window Label**" Multi-View Block. See comments for "Door Label Add" for more information.

The Blocks are named "WindowLabel50" and "WindowLabel100". The "WindowLabel50" Block utilizes two attributes to report the Head Height and the Sill Height, while the "WindowLabel100 Block" only has one attribute for Sill Height.



Head 7'-0"

HIGH DETAIL

ADHEIGI

SILL HEIG

3' - 0

HEADHEIGHT:MM

SILLHEIGHT:MM

WindowLabel50

,,

SILLHEIGHT:MM

THIS MVBLOCK USES TWO SLIGHTLY DIFFERENT

THE SILL HEIGHT WHILE THE OTHER REPORTS HEAD

BLOCKS; TWO SIZES WITH ATTRIBUTES. ONE ONLY REPORTS

LOW DETAIL

WindowLabel100

AND SILL HEIGHTS.

Modify AEC Dimension Label Properties Palette

Alt.Menu N.A.

Keyboard N.A.

Mouse Select a Dimension Label Object, right-click and Select Properties



The **Properties Palette** for modifying AEC Dimension Labels will not offer much of anything for you to change unless you wish to the change the MvBlock. You can change the Scale but you cannot change the Orientation (Rotation Angle) as you can when Adding one of these Objects (to Rotate simply use

the Rotate command). You can see the Attribute data, as illustrated to the right but you cannot add or modify the values as long as they are associated with an Object.

AEC Dimension Labels have one **Grip point** which provides you with the ability to change the Location and put the label in more suitable positions. As long as the automatic anchoring has not been Released, the Label will remain associated with the Object and will move with it as well.

AEC Dimension Label - Prefixes

Menu Format > Options...

Keyboard OP

On the **AEC Dimension tab** of the **Options dialog** you will find the **Dimension Label Prefixes** section where you can Change or Remove the default prefixes for the Door, Window, Opening and Stair Labels.

Many of the prefix options, such as those listed for the Door Object Type to the right, are for Attributes that are not used in the default Blocks but could be added with some custom modifications.

With custom Door, Window and Opening Labels, discussed below, I typically Remove the Prefixes for the values that I have the Attributes report because they make the statements too long and somewhat redundant.

Note:

Notice that the Label Prefix settings are drawing specific and thus have to be set in your template files for consistency.

Design BASIC General Description A-Anno-Dims Laver Definition 🛒 Standard Door Label Scale ~ Х 1.00000 Extended Data γ 1.00000 PROPERTIES Ζ 1.00000 Insertion offsets Attributes • Basic prope Multi-view Block Attributes X 目 Edit the attributes for each view block of this multi-view block: Value Prompt DoorLabel100 HEADHEIGHT Head 4'-0" HEADHEIGHT:MM DoorLabel50 HEADHEIGHT Head 4'-0' HEADHEIGHT:MM OK Cancel Help Dotions Architectural... - ARCHIdigm Current drawing: AEC Dimensions.dwg Current profile: User Preferences Drating Selection Profiles AEC Editor AEC Content AEC Object Settings AEC Dimension AE **Dimension Label Prefixes** General Update Added / Removed ; Door v Select Object Type: 📴 🔲 Override Display of Underlin Door Underine AI 🐨 📃 Display Door Label in Centimeter Window Dpening Sill Height: Threshold F 🗃 Stair Dimension in: Inches Head Height: Head Use Superscript mm ✓ Trailing Zero Suppres Height Height: + Di Automatic Scale of AutoCAD Di Width: Aec-Arch-I-192 + Width Aec-Arch-I-192 (Leader)

Rough Height:

Rough Width:

🏦 🐴 🍞

Multi-View Block Referer 🗸

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R.O. Height

R.O. Width

+.

-+-

AEC Dimensions - Customizing and Tricks

Aec-Arch-I-48

Aec-Arch-1-48 (Leader) Aec-Arch-1-96 Aec-Arch-1-96 (Leader)

Custom AEC Dimension Labels for Doors and Windows

Menu Format > Blocks > Define Attributes... Keyboard AttDef

Links

AEC Dimension Labels - Lost but not Forgotten - for a whole article on this subject.

For simple residential remodel projects and early design development presentation drawings, I have found that the Door and Window Labels can be rather useful if configured properly. Illustrated to the left I show an



the Height, I set the Width text to **Left Justified** and the Height text to **Right Justified**. I also added a lower case "x" between these two attributes just for clarity.

You can use any **Text Style** you wish for these Attributes but just consider how you want to deal with that text at a later date. Since these are not Tags, they won't use the current Text Style when you use "Standard". I just decided to use the default "Standard Label" Text Style Name that the default Labels use.

Creating the AEC Dimension Label Multi-View Block

If you have already inserted the default Door and/or Window Labels, you will find that you have a "Standard Door Label" and a "Standard Window Label" Multi-View Block.

Illustrated to the right I show two possible approaches you may take to create your own custom MvBlocks for Door and Window Labels. You can create your own custom MvBlock Name or use the default MvBlock Name. The advantage of modifying the existing MvBlock Name is that the "Create Multiview Block for Dimension Labels dialog always defaults to the "Standard ..." MvBlock Names and thus if you modify those names, it's just a little faster to use them.

Also illustrated to the right I show the process of modifying the existing default "Standard Door Label" MvBlock Definition Properties. You will most likely want to have your custom Blocks display under Plan, Plan High Detail or Plan Low Detail and you can simply Remove any existing reference and replace them with the Add... button. If you created Blocks for different Scales, you will most likely want to match the Blocks with the Display Representations; i.e., large Block for Plan Low Detail and smaller Block for Plan High Detail.

Once you have completed this task, use the **DoorLabelAdd** or **WindowLabelAdd** commands to test your MvBlock work. Don't forget that you can remove the default Label Prefixes on the <u>Options dialog under</u> the AEC Dimensions tab.



The Height of the Text can be problematic because these Objects don't automatically Scale to the drawing Scale. What I decided to do was to create two versions that match the Print Scales I regularly use: 1:48 and 1:96. As such, I used 6" text for the 1:48 scale and 12" text for the 1:96 scale. You can use 4" and 8" if you prefer smaller Labels for these scales but I wouldn't go any smaller.

For the **Blocks**, use **Names** that are easy to interpret at a later stage in this process and use a Base Point right in the middle of the space between the "Width x Height" attributes; i.e, in the middle of the "x".



Using AEC <u>Dimension on Doors - Work-around 1</u>	DEFAULT ADT DOOR SETTINGS		
Links Styles and Properties - for how to change Frame settings			
Most firms that I have worked with in the United States dimensions doors by the actual door size and not the frame opening. Because of how AEC Dimensions read Objects using Doors with Frames makes it almost impossible to dimension in this fashion. Illustrated to the right I show how a common 3'-0" wide door will produce a dimension value of 3'-4" when the Frames are 2" Wide. If you set AEC Dimensions to Edges for the Opening\Door\Window category, you will get better results but you will also get Frame Widths in the dimension Chain and that is usually not done for common Construction Documents. Below I will discuss two work-around options that I can offer for this problem but be aware that I personally am not very pleased with either. Illustrated to the right I show that by setting a Door Style's Frame dimensions to zero (0), you can produce a classic architectural Door Symbol that will dimension as illustrated. The drawback to this work-around is that Frame dimensions will now be listed as zero in Schedules.	$9'-0''$ $3'-4''4'-1$ $3'-4''4'-1$ $4'-1$ $4 \cdot \text{Width: 0''}$ $B \cdot \text{Depth: 0''}$		
	1 1 1 <u>E</u> · Door Thickness: 2'1		
Using AEC Dimensions on Doors - Work-around 2	📷 Display Properties (Wall Style - Typical Exterior Stud with Stucco) - Wall Plan Display Represe 🔀		
Links accessing this dialog and more on Wall Display Properties.	Layer/Color/Linetype Hatching Cut Plane Other Display Inner Lines Above Draw Miter For Components:		
Illustrated to the right I show that you can use the Display Properties of Walls for one or more of the Plan based Display Representations to create another work-around solution for the AEC Dimension problem at Doors.	 Display Inner Lines Below Hide Lines Below Openings at Cut Plane Hide Lines Below Openings Above Cut Plane Component 3 Component 4 Component 5 Component 6 Component 7 Component 9 		
PUTS THE FRAME Frames" checkbox; which is	Do True Cut		
INSIDE THE WALL usually checked. By un- checking this option, Walls will cut to the actual Door Width	OK Cancel Help		
and not the Frame Width as illustrated to the left. The drawback is probably obvious from my example image where you can see that the linework of the frame resides inside the heavier linework of the Wall.	The other thing to watch for is that if you don't make this same Display Property change for all Plan based Display Representations, the AEC Dimension will actually change when you change the current Display Configuration. I think that's rather fascinating and may be useful for some but it could be disastrous for others.		
	Note: If you are attempting to reproduce the results that I show to the left, be sure to avoid Selecting any Doors when you use the AEC Dimensions. What you want is for the AEC Dimension to only read the actual Wall Opening.		

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