Doug's Quik Tips for AutoCAD® Architecture

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AB222-3   Doug's Quik Tips is a regular and popular part of the AU Quarterly Newsletter. In this session, Doug will cover many different quick topics on various functions available in AutoCAD Architecture. There are a lot of little nuggets of information inside the software that can make a user more productive, if the user just learns of them. This fast-paced class is focused on covering so many different quick tips that every user should be able to pick up something to help them in their job. While this class is focused on AutoCAD Architecture, many of the tips are also applicable to AutoCAD and AutoCAD MEP.

About the Speaker:
Doug is a design software consultant to the AEC community, a Certified AutoCAD Architecture Professional, a Certified Revit Architecture Professional, and the AEC Technical Editor for the AU Quarterly Newsletter. He was formerly a VAR Senior Consultant, providing education and implementation services for AutoCAD® Architecture, Revit® and AutoCAD®. He is a repeat speaker at Autodesk University, AUGI CAD Camps, and an ATC instructor. For over 20 years, he has been managing and/or consulting with Autodesk products, including over seven years as the Director of CAD Technologies for a 240-seat architectural firm. He has also been a Cadence magazine Top Dog winner and an AUGI CAD Camp Top Dawg.

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1. **Mtext Default Text Display**
    You can change the default text in the Mtext editor to be something other than "abc". Type **MTJIGSTRING** to change the text string displayed in Mtext. Limit is 10 characters and it is a system variable so it will stay that way for you on that computer until you change it.
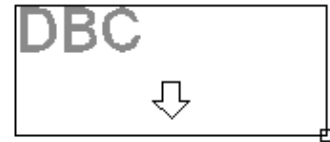
2. **Eliminating Problems with Different Z Values**
    If you are getting the "*Lines are non coplanar*" message when filleting lines or having other issues associated with the "Z" elevations of entities, there is a way to help prevent the problem. Set the **OSNAPZ** variable to "1" and the "Z" value for any point entered thereafter will default to the current elevation shown in the drawing status bar. This variable can also be toggled by picking the Z icon in the drawing status bar or going to the **Drafting** tab in **Options** and placing a checkmark next to "*Replace Z value with current elevation*".

3. **Annoying Tracking Vectors with Otrack**
    Are you like me and get annoyed with all of those dotted tracking vector lines that start appearing all over the drawing when having the **OTRACK** feature turned on? (That is the Otrack button on the status bar.) If so, you probably ended up just turning Otrack off and then forget to turn it on when it is handy to use. A better option is to go into the *Options* dialog box, go to the **Drafting** tab, and set the **Alignment Point Acquisition** setting to "**Shift to Acquire**" instead of the default "Automatic" setting. Now you can have Otrack turned on all of the time and you won't get those tracking lines except when you want them. When you want them, just hold your cursor over the desired tracking point (such as an endpoint) and tap the Shift key. You will then see the tracking line for just that one point that you select.
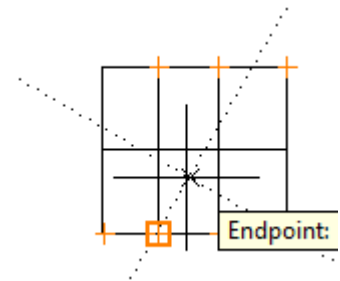
4. **Alternate between Trim and Extend**
    Pressing the Shift key temporarily changes the **Trim** command to be **Extend** and vice versa. This is handy when you want to modify several entities and don't want to reselect the entities in between the commands. Just start either of the 2 commands and hold down the Shift key to make it do the other function without exiting the command.

5. **Fillet with Zero Radius**
    Do you find yourself bouncing back and forth between a fillet radius of zero and another value? You can hold down on the **Shift** key when using the **Fillet** (and Chamfer) command to get a temporary radius of zero. This allows you to have your desired non-zero setting and use the **Shift** key at any time to get a zero radius.

6. **Closed Polyline Around Interior of Entities**
    The little known Boundary (or Bpoly) command (default keyboard shortcut of BO) is great for creating a closed polyline around the interior edge of entities. If you have an area that is fully enclosed, this command will give you a polyline around the perimeter of the space and on top of whatever entities enclose the area.
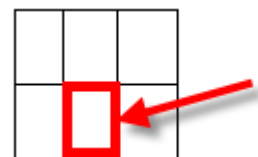
7. **Quick Polyline Around Building**
    We often want to get a boundary polyline around the exterior of a building to get a footprint for area takeoff or other reasons. Go to the **Basics** palette of the **Detailing** Palette Group and pick on the **Shrinkwrap** tool at the bottom of the palette. You can then select the entities in the drawing that you want a polyline around. If you switch to a **Reflected** display configuration first, you won't have the exterior door swings or window sills affect the polyline.
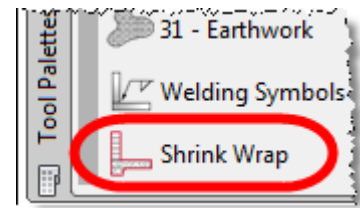
8. **Dashed Polylines with Vertices**
    Do you want dashed type lines to be continuous through (and seem to ignore) the vertices of a new polyline? Type **PLINEGEN** and set the drawing specific variable to 1. To change existing polylines, highlight the polyline, go to the **Properties** palette and change the **Linetype Generation** option under the **Misc** section from **Disabled** to **Enabled**.
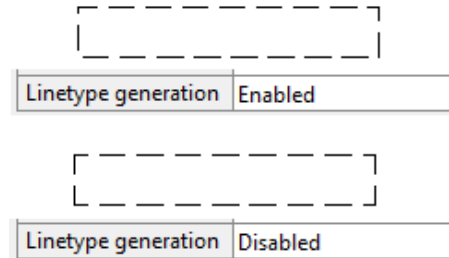
9. **Polyline Conversion Question**
    When you use the **PEDIT** command to convert a line to a polyline, do you get tired of answering "Yes" to the "Do you want to turn it into one" question? If so, type **PEDITACCEPT** at the command line and change the variable setting to **1**. This will eliminate this question and since it is a system setting, it will stay set this way until the user changes it.

10. **Adding Folder to Places**
    When you are in the **Open** dialog box, you can add your favorite folders to the Places list on the left side of the dialog box. Simply select the desired folder and drag it over to the Places list. Right-click on that new icon and choose the **Properties…** option to change the name of the shortcut. Remove it when you are done with it.

11. **Frame Around Images**
    Images that are brought into AutoCAD must have the rectangular frame around it be displayed if you want to modify the image. Since you usually do not want the rectangle to print, you turn it off. The **IMAGEFRAME** variable that controls image frame visibility now has 3 options. A setting of 0 turns off the rectangle so that it does not print. A setting of 1 displays the rectangle and prints it. A great new setting of 2 displays the rectangle so you can manipulate the image, but does NOT print the rectangle. This is also on the **Reference** panel of the **Insert** menu.

12. **See Layers for Only a Specific Xref**
    It can occasionally be helpful to see just the layers for a specific xref in the Layer Manager. Open the **Layer Manager** and in the left **Filters** pane expand the **All** filter, expand the filter named **Xref**, then select the name of the xref for which layers you desire to see.
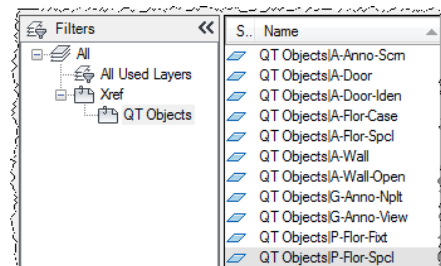
13. <u>Highlight Layers in Layer Manager that have Viewport Color Overrides</u>

Since it is not readily evident as to what layers have their color overridden in individual viewports, you can set a background color to be shown in the Layer Manager for each layer that has the color overridden. In **the Layer Manager**, select the **Settings…** button at the bottom. At the bottom of the **Layer Settings** dialog box, change the color as desired in the *Viewport override background* color box.
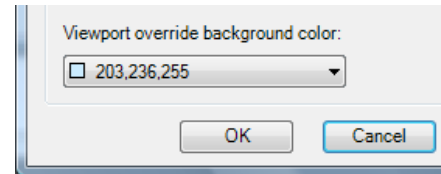

14. <u>No Xref Layers in Layer Manager</u>

When working with drawings with many xrefs or xrefs with many layers, the Layer Manager can be difficult to locate your desired layer due to so many layers being displayed. You can make your **Layer Manager** display only layers that exist in the host drawing. Open the **Layer Manager** and in the left **Filters** pane expand the **All** filter, then select the filter named **Xref**. Now place a checkmark next to the **Invert Filter** option at the bottom of the Layer Manager.
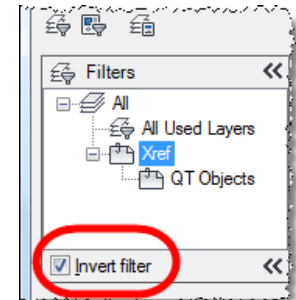
15. <u>No Xref Layers in Layer Dropdown List</u>

When working with drawings with a lot of xref layers, the host drawing layer you desire to use may be difficult to locate in the layer dropdown box. You can make your layer dropdown box display only layers that exist in the host drawing. Open the **Layer Manager** and in the left **Filters** pane expand the **All** filter, then select the filter named **Xref**. Place a checkmark next to the **Invert Filter** option at the bottom of the Layer Manager and pick the **Settings…** button. In the *Layer Settings* dialog box, go toward the bottom and place a checkmark next to the "**Apply layer filter to layer toolbar**".
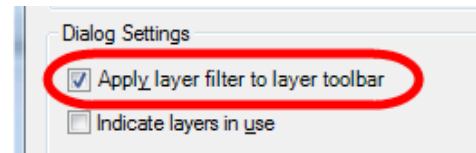
16. <u>Dim a Locked Layer</u>

It is often nice to have it be very obvious when a layer in the drawing is locked so you know what will or will not be modified with commands. You can have all <u>locked</u> layers display as a faded version of their assigned color. Open the **Layer Manager** and select the **Settings…** button at the bottom. Go to the middle of the *Layer Settings* dialog box and pick the **Lock and fade** radio button option.
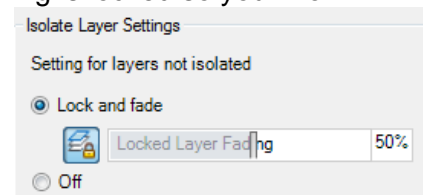
Pick on the **Locked Layer** button below that radio button to make sure that the "*Locked Layer Fading*" text is darker and then move the slider bar to the desired percentage of fading.

**17. <u>Getting the Layer Listing to Alphabetize</u>**

Occasionally your layers do not display in alphabetical order in your Layer Manager or layer dropdown list. This can be corrected by issuing the **MAXSORT** command and setting the number to a value higher than the number of combined layers in the drawing. The default value is 1000.

18. **Control Layers Separately for Multiple Copies of Same Xref in Drawing**

When working with a host drawing that has multiple copies of the same xref (such as a hotel or apartment building), it is sometimes desirable to be able to control the layer visibility of individual instances of xrefs. This can be done by xreferencing the file into the host multiple times and giving each instance its own name in the **Reference Name** box at the box of the **External References** palette. The **Reference Name** must be changed after xreferencing it in and before the next drawing is xreferenced.

19. **Clip the Inside Portion of an Xref**

Many times it is desirable to make a blank area or hole inside the displayed xref, and you can use the clip command to do this. Highlight the desired xref to clip, right-click, and select **Clip Xref** from the context menu. At the "*Enter clipping option:*" prompt, select **New**. At the "*Specify clipping boundary or select invert option:*" prompt, type "**I**" for the Invert option. At the "*Specify clipping boundary or select invert option:*", choose your desired method of specifying the boundary.
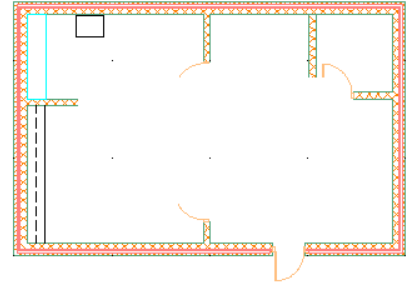
20. **Xref Display Configuration Different than Host**

Sometimes it is beneficial to have the Display Configuration of an xref be different than the Display Configuration that is set in the host drawing. Highlight the xref, right-click, and select **Edit Object Display** from the context menu. Go to the **Xref Display** tab and place a check next to the "Override the display configuration set in the host drawing" option. Select the desired Display Configuration from the list.
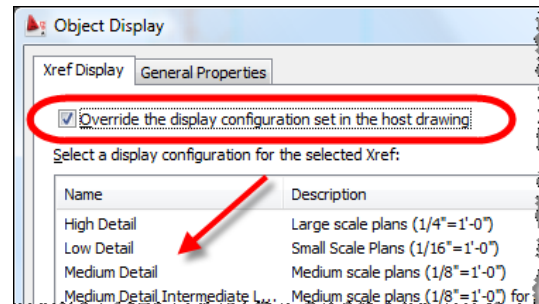
21. **Draw Curved Walls**

Placing curved walls in ACA can be a bit of a pain sometimes to get them just like you want. I find it to draw circles or arcs to get the desired radius, center point, etc that I want for the wall and then convert those to the actual wall. After drawing the linework, go to a palette containing the desired wall style (or a similar wall style), right-click on the wall tool, then select "**Apply Tool Properties to -> Linework**". This will create a wall with the justification line of the wall at the location of the arc or circle.

22. **Quickly Draw Remaining Two Walls of Building**

When drawing a building with several sides, there is an easy way to finish off that last corner of the building and make sure that it is a 90 degree corner and lines up with the start point of the first wall drawn. When ready to draw those last 2 walls, right-click and select **Ortho close** from the context menu. Point your cursor in the general direction of the remaining building corner and pick. Your last 2 walls will be drawn with a 90 degree corner.
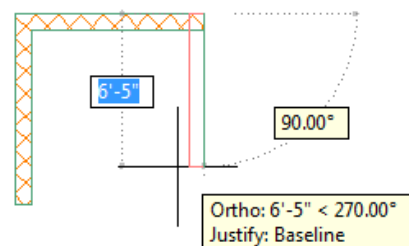
23. **See Wall Graph Lines to Aid Wall Cleanups**

    AutoCAD Architecture walls clean up with each other based upon the graph line of each wall. Those wall graph lines are turned off by default and it is easier to know how to get walls to clean up when the graph lines are displayed. To turn on all wall graph lines in a drawing, highlight a wall, right-click, and select **Cleanups**, then select **Toggle Wall Justification Display**.
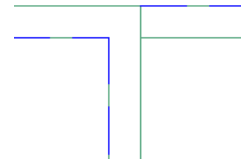
24. **Create Keyboard Shortcut for Toggle Wall Graph Display**

    Since wall graph lines control the wall clean up, it is handy to have an easy way to toggle the display of the graph lines. Add a keyboard shortcut, such as **WT**, as use the command **WallJustificationDisplayToggle**.

25. **Graphically Set Cleanup Radius for Walls**

    Walls that have the graph lines at locations that don't allow them to clean up automatically usually need to have the cleanup radius adjusted. This is easiest done by toggling on the graph line display, then selecting the arrow grip which is at a 45 degree angle to the end of the wall needing the cleanup radius modified. Move the arrow grip so that the displayed cleanup circle overlaps the graph line of the adjacent wall.
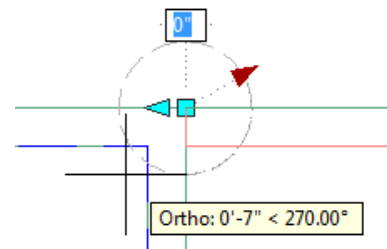
26. **Wall Automatically Snaps to Another Wall**

    Walls can automatically snap to the graphline of another wall when you pick a point near that wall. This feature aids in the cleanup of walls when using a cleanup radius set to zero. Go into the *Options* dialog box, go to the **AEC Object Settings** tab, then look in the **Wall Settings** area. The "**Autosnap New Wall Baselines**" option affects only new walls that you are placing. The "**Autosnap Grip Edited Wall Baselines**" option affects walls that you are grip-editing to move the wall endpoint. (I like to not have this option selected so that I can extend a wall out for stub wall situations.) The "**Autosnap Radius**" setting is the maximum distance for snapping to the wall and works with either of the above settings. For example, if the setting is set to 6", any time you pick a point within 6" of the adjacent wall's graphline, the wall you are working with will automatically snap to the graphline of the other wall. Note that the wall's graphline is the key and not just any wall edge. This is a drawing-specific setting, so you may want to set this in your template drawings.

27. **Lengthen Wall at Constant Angle**

    When lengthening a wall at an angle, it is easy to grab the square grip at the end of the wall to adjust the length, but then the wall usually ends up at a different angle. This is easily resolved by adjusting the length of the wall by using the arrow grip at the end of the wall as it only adjusts the wall endpoint along the same angle.
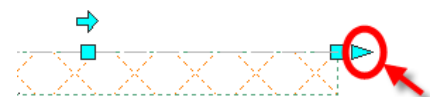
28. Snap to Wall Components

Are you having trouble snapping to any part of a Wall object except the justification line? If so, go into **Drafting Settings**, go to the **Object Snap** tab, and remove the checkmark next to "*Allow general object snap settings to act upon wall justification line*".
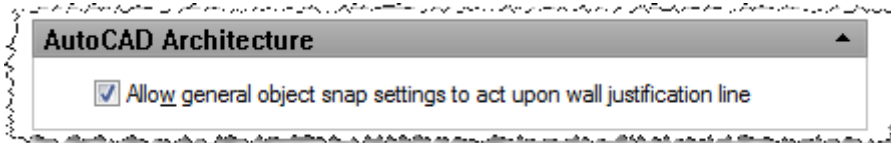

29. Snap to Block Components

Are you having trouble snapping to locations within a block? If so, go into the **Options** dialog box and go to the **AEC Editor** tab. Remove the checkmark next to the option labeled "Object Snap" under "Optimize for Speed".
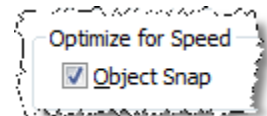

30. Visual Check for AutoCAD Entities on Plans

Do you desire to look at a floor plan developed in AutoCAD Architecture and be able to quickly discern what are actual AEC objects and what are just basic AutoCAD entities? You can go to the **Home** tab, then **Inquiry** panel and select the **Show AutoCAD Entities** command. This command will temporarily <u>hide</u> all of the AEC objects.
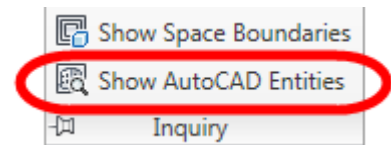

31. Visual Check for Tag Attachment

There are times when "intelligent" door, window, and other tags get copied around a drawing instead of ACA objects being tagged individually. This can make tags contain erroneous information as it might be displaying information for an object other than the one adjacent to the tag. To visually check to see what tag is connected to what object, select the **Diagnostic** display configuration in the drawing status bar.
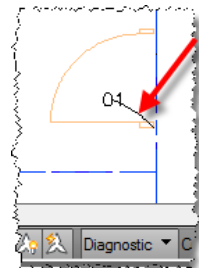
32. Content Browser Number of Rows

You can have the Content Browser display more than 5 rows of information per page which allows you to see more than 10 items per page. On the first page of the Content Browser, pick the icon in the far lower left corner that says "Click to modify Content Browser preferences" when you place your mouse over it. Change the default number of "5" to any number from "5" to "100" then select the **OK** button.
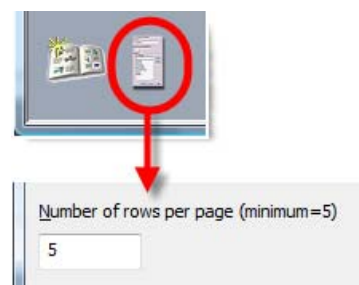

33. Change Display Configuration with Scale

It is very typical to have specific Display Configurations used for specific drawing scales. This is now possible on the **Scale** tab of the ***Drawing Setup*** dialog box. Select the scale, then select the desired Display Configuration to use for that scale. This can be done for each scale.

34. <u>Show Clerestory Windows</u>

To show clerestory or other windows higher than the cut plane in a floor plan, change the cut plane of the wall which contains the windows. Highlight the wall and go to the **Display** tab on the **Properties** palette. In the **Object Display Properties** section, change the "*Override cut plane*" option from **No** to **Yes** and change your cut plane height to go through the window. You may need to break the wall into sections if you have other windows in the same wall.
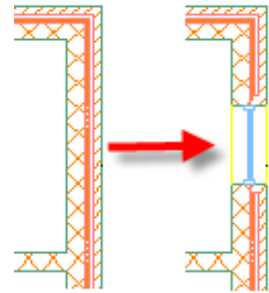
35. <u>Mass Insertion of Door Tags</u>

When placing door tags (or other ACA object tags), it is possible to place tags for all doors in the drawing file in one operation. Select the desired door tag from a palette or Content Browser. At the "*Select object to tag:*" prompt, select a door to receive the tag. At the "*Specify location of tag <Centered>:*" prompt, pick a location for the tag at that door. The location chosen for this tag relative to the door is important as the remaining tags placed during this operation will use this relationship for their placement. At the "*Select object to tag [Multiple]:*" prompt, type "**M**" for **Multiple**. At the "*Select objects to tag:*" prompt, select the remaining doors in the drawing file.

36. <u>Mass Rotation of Door Tags</u>

You can rotate many tags at one time without using the Rotate command. Highlight the desired tags, then go to the **Properties** palette. Select the **Anchor** option on the **Design** tab. In the **Rotation Angle** box, enter the new angle for the tags.

**37. <u>Place Option Door Without Cutting Wall</u>**

There are times when an optional door needs to be shown, but you don't want to cut an opening out of the wall. Select the desired door from a palette, or initiate the **DoorAdd** command and select the desired door from the **Properties** palette. At the "*Select wall, grid assembly or Enter:*" prompt, press the **Enter** key instead of actually selecting a wall. At the "*Insert point:*" prompt, pick an insertion point and then the rotation for the door. Note that the door is not actually associated with the wall.

38. <u>Set Door to Automatically be Placed on Demo Layer</u>

When placing a demolished door in the drawing, it is nice to have it automatically go to the A-Door-Demo layer (other any other layer name). Place the desired door style on a custom palette as a tool. Right-click on the door tool and select Properties… from the context menu. Pick inside the box to the right of Layer Overrides. In the **Select Layer Overrides** dialog box, remove the checkmark next to "*Do not specify Layer Overrides*". Pick inside the box to the right of **Minor 1** and below **Override**, and type **Demo**. Pick OK to exit the dialog boxes.

39. Set the 3D View for Palette Tools Images

If you add tools to your tool palette, you can specify the desired view direction for a tool image. Highlight the tool on the palette, right-click, and select **Properties** from the context menu. In the *Tool Properties* dialog box, scroll down to the **Viewer** section. Either use the Viewcube or pan the view to see the item in the direction that you desire. Right-click over the image icon above the viewer and select the **Refresh Image** option from the context menu. Pick the **OK** button.
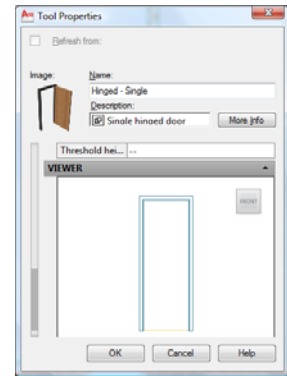
40. Add commands to a palette with the CUI

AutoCAD Architecture commands can quickly be added to a tool palette. Right-click on the tool palette's title bar and select **Customize Commands** from the context menu. Select the desired command and drag it to a palette.

### 41. Create Schedule that Ignores Demolished Doors

When creating a door schedule, demolished doors are typically not desired in the door schedules. To exclude demo doors from the schedule, highlight the schedule, right-click and select **Properties**. In the box to the right of **Layer wildcard**, type **~*Demo**. (That is tilde, then asterisk, then Demo). This is based upon doors being placed on a layer with a Demo suffix.

42. Add All Property Sets to Doors at Once

When door schedules show question marks in the schedule, it means that doors do not have all of their property sets attached to the doors. Highlight the schedule, right-click and select **Add All Property Sets** from the context menu. This will add all property sets to the doors at once.

43. Break Multiple Walls with One Door

One door can break multiple adjacent walls. Highlight the wall(s) adjacent to the wall with the door, right-click, and select **Interference Condition**, then **Add** from the pop-up menu (as shown below). When prompted to *Select AEC objects to add*:, pick the desired door (or other allowable object) and press the ENTER key. When prompted to *Enter shrinkwrap plan effect [Additive/Subtractive/Ignore]*:, type **S** for **Subtractive**.
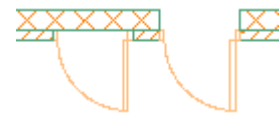
44. Reposition Door Along a Wall

After a door (or window, opening, or assembly) is placed in a wall, it is often desirable to reposition that door to be a specific distance from a corner or other point. Highlight the door, right-click, and select **Reposition Along Wall** from the context menu. At the "*Select position on the opening*:" prompt, pick any point toward the right jamb, center, or left jamb of the door. At the "*Select a reference point*" prompt, pick the point from which you desire to set the distance to the door. At the "*Enter the new distance between the selected points*:" prompt, type in the desired distance from the two points you just selected. *(Note that if Dynamic Input is turned off, you must pick 2 points to specify the distance instead of typing the distance.)*
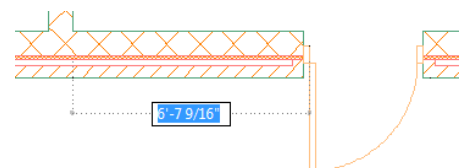
45. <u>Reposition Door Within a Wall</u>

When a door (or window, opening, or assembly) is placed in a wall, it is automatically centered in the wall so it is often desirable to reposition that door within the wall. Highlight the door, right-click, and select **Reposition Within Wall** from the context menu. At the "*Select position on the opening*:" prompt, pick any point toward the interior face, center, or exterior face of the door frame. At the "*Select a reference point*" prompt, pick the point from which you desire to set the distance to the door frame. At the "*Enter the new distance between the selected points:*" prompt, type in the desired distance from the two points you just selected. *(Note that if Dynamic Input is turned off, you must pick 2 points to specify the distance instead of typing the distance.)*
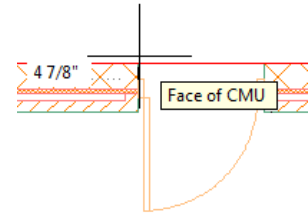
46. <u>Don't Copy an AEC Object Anymore</u>

The reason I say not to copy is that there is a better way. If you highlight an AEC object and right-click on your mouse, you get a context menu that has an option 2/3 down entitled "**Add Selected**". This option allows you to start adding items exactly like what you have selected. This is better than copy as it allows you to do more than just copy. If you copy a wall, you need to rotate and resize the wall, whereas the **Add Selected** option takes you into the **WallAdd** command which allows you to continuously draw walls using the same parameters as the selected wall. Using this command on a door or window allows you to get the dynamic input dimensions on either side of the door or window to accurately place the object in the wall, which the Copy command does not do. Using it on a door or window also keeps the same offset settings of the object's position <u>within</u> the wall.

47. <u>Change Standard Door Sizes Listed in Properties</u>

When you highlight a door and go to the **Properties** palette to change the size of the door, there are some standard door sizes listed from which you can choose. This list may not be consistent with the typical door sizes which you use, but the list can be modified to reflect the typical sizes which you use for that particular door style. Highlight the door, right-click and select **Edit Door Style** from the context menu. In the **Door Style Properties** dialog box, go to the **Standard Sizes** tab and remove or add sizes to display the desired sizes that will appear in the **Properties** palette. If you have a width or height highlighted when picking the "*Add new standard size*" button, the new door will have that highlighted size shown as a default for the new door.
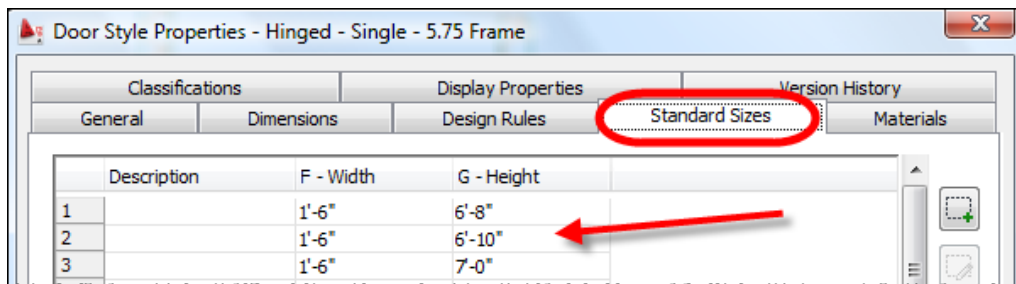
48. Multiple Cleanup Groups to Assist with Wall Cleanups

Placing walls in Cleanup Groups based upon usage will keep walls from attempting to clean up with walls of other usages and help alleviate some problems with wall cleanup, in addition to speeding up ACA. Create separate cleanup groups for usages such as typical walls, cabinets, counters, shelving, and low walls. To create additional Cleanup Groups, go to **Manage** and select **Style Manager**. Expand **Architectural Objects** and select **Wall Cleanup Group Definitions** in the left pane. In the right pane, right-click and select **New** from the context menu, then enter the desired group name.
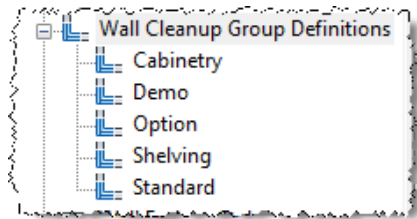
49. Wall Cleanup between Xrefs

Walls can clean up together when they are in different drawing files and xreferenced together. In each drawing, go to the **Manage** tab (in 2010) and select **Style Manager**. Expand the **Architectural Options** in the left pane, then select **Wall Cleanup Group Definitions**. In the right pane, double-click on a cleanup group to edit it and go to the **Design Rules** tab. Place a checkmark next to the "Allow cleanup between host and xref drawings" option.
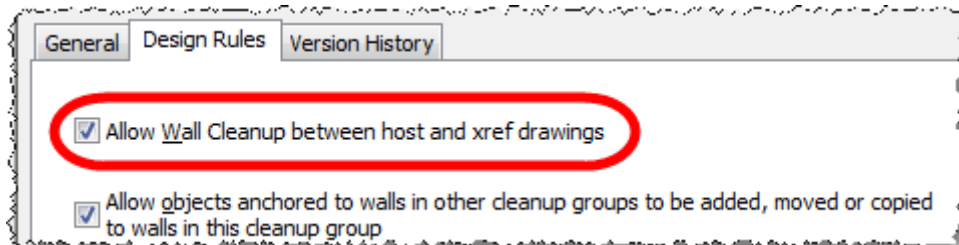
50. Move Toilet with Adjacent Wall

It is desirable to have a toilet or other object move automatically when the adjacent wall moves. Type **ObjectAnchorAttach** at the command line. At the "*Select objects to be anchored:*" prompt, select all of the AEC objects that you want to move with another AEC object and press Enter. At the "*Select an object to anchor to:*" prompt, select the AEC object that will be the controlling object. Whenever the controlling object is moved, any anchored objects will move with it. This command can be found as the **Object Anchor** tool in the **Parametric Layout & Anchoring Tools** category in the **Stock Tool Catalog** in the Content Browser.

51. Visual Check of AEC Object Attachments

When toilets and other AEC objects have been attached to other AEC objects, it is nice to know what might be attached. To visually check to see what AEC object is connected to another AEC object, select the objects in question and any connected objects will show a dashed line between the objects.