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## Getting Horizontal with Walls in AutoCAD Architecture: Creating a Thickened Soffit

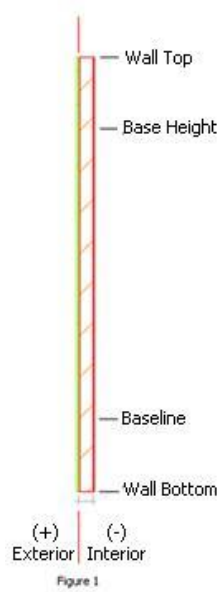
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Date Published: March 24, 2009



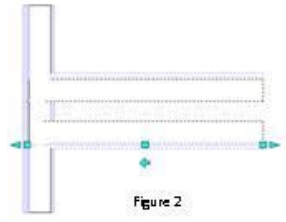
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Users at my firm have been using AutoCAD® Architecture (ACA) for about a year now. Most have never broached 3D concepts in AutoCAD outside of technical school or college courses, so I spend a lot of time devising ways to help their transition. In trying to encourage their use of Display Configurations (as opposed to layer management), inevitably I'll get the response, "Geez, all I need to show is a *line*! Does it have to be this complicated?!" Well, the answer is "yes and no." So I devised a few tools to make end-user Display life a little easier by manipulating wall styles in ways that might be seen as unusual.

This article assumes you've built a few wall styles of your own. You know that most wall components are vertically oriented, such as gypsum board plus stud material, plus an exterior finish, like brick, wood siding, or stucco system. In Style Manager, the typical wall preview window looks pretty normal, as seen in Figure 1.



For the wall styles presented here, the emphasis will be on *horizontal* components and worry-free display properties for end-users. The goal is to create a thickened wall representing varying height soffits. Typically, if a thickened wall was needed for aesthetics, most people would like to see the actual wall thicknesses and air gap that make up the thickened feature, as opposed to just one giant framed mystery entity. It is possible to create a double wall style, as shown in Figure 2.



My end-user-friendly solution comes in the form of a wall style built with vertical and horizontal components. If all you need is to extract sections and elevations, this wall style yields adequate results without dealing with opening end cap styles. While complicated to build initially, the benefit is all about the end users—all they have to do is set the soffit height by modifying the floor line.


Here's how it's constructed: Figures 3a and 3b show the Component tab of the Wall Style Edit dialog box.


Components 1, 2, and 3 are typical wall components as in the simplest of walls, with the exception of the wall bottom elevation. We'll come back to that in just a minute.

Marla's Blog  
[The Foolish CAD Manager](#)

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Components 8, 9 and 10 are the same components in reverse, so we have a wall sandwich—a double wall with stucco finishes to the outside. Notice that the edge offsets for components 8, 9 and 10 adjust per the base width (BW). Users can just type in the *framed* wall width (including sheathing) on the Properties Palette. You can adjust your preferred dimension point by manipulating the edge offsets.

Now for the horizontal part: Notice in Figure 3a that components 4, 5, and 6 adjust with the base width and their top and bottom elevations are fixed. This is how we accomplish horizontal components. I've added some adjustments based on the width of each component, to allow for how the components fit together. In Figure 4, the components show how the various components finish out. For instance, the vertical components (2 and 9) for sheathing stop short of the horizontal sheathing component (6). Looking at Figure 3b, the Bottom Elevation column shows that components 2 and 9 are designed to start at 1" from the wall bottom, allowing for 1/2" of sheathing and 1/2" of lath and plaster.

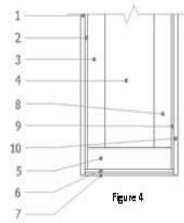
So how does the wall adjust for the various soffit heights? Because I used "wall bottom" as opposed to "baseline" to define my components, they will adjust to wherever the wall's Floor Line is set in the Properties Palette. To adjust the floor line, users can just click on the wall, right-click and then go to Roofline/Floor Line to offset the Floor Line to the desired height.

Index	Name	Priority	Width	Edge Offset	
1	Stucco	1100	7/8"	0"	
2	Sheathing	650	1/2"	-1/2"	
3	Stud	500	3 1/2"	-4"	
4	Air	505	1 3/4" + ... -7/8" + BW *	-1.00000	
5	Stud	500	-1" + BW	1/2" + BW *	-1.00000
6	Sheathing	660	BW	BW *	-1.00000
7	Stucco	1110	BW	BW *	-1.00000
8	Stud	500	3 1/2"	1/2" + BW *	-1.00000
9	Sheathing	650	1/2"	BW *	-1.00000
10	Stucco	1100	7/8"	-7/8" + BW *	-1.00000

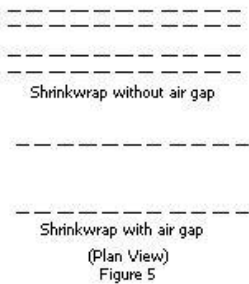
Figure 3a

Bottom Elevation		Top Elevation	
Offset	From	Offset	From
0"	Wall Bottom	0"	Wall Top
1"	Wall Bottom	0"	Wall Top
4 1/2"	Wall Bottom	0"	Wall Top
0"	Baseline	0"	Wall Top
1"	Wall Bottom	4 1/2"	Wall Bottom
1/2"	Wall Bottom	1"	Wall Bottom
0"	Wall Bottom	1/2"	Wall Bottom
4 1/2"	Wall Bottom	0"	Wall Top
1"	Wall Bottom	0"	Wall Top
0"	Wall Bottom	0"	Wall Top

Figure 3b



With one more look at Figure 3a, you'll notice one more component not yet discussed, and that's the air gap between the stud components. The only reason this component exists is so that the Shrinkwrap component will wrap the entire width of the wall, as opposed to just the named components. In Plan View, I typically only want to show two parallel lines to represent a soffit, so I'll use shrink wrap for this purpose, with an open-ended wall style defined. See Figure 5.



This is just one application of thinking of walls as more than just the sum of vertical parts. Putting the upfront effort into building these kinds of tools will pay off in the long run. Increased user activity is always a good reason, but if you're like me and have a group of users just getting comfortable with AutoCAD Architecture, this kind of padding goes a long way towards minimizing the grumblings and earning appreciation!

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