

OzCAD Tech. Note 001 — Maximising Compatibility when Exporting to DWG from VectorWorks 12

VectorWorks (VW) and AutoCAD (AC) can work in similar way or very different ways – they are completely different and unique applications after all. Each will work best within its own environment by utilising the workflows intended by the developers.

For example, VW has a wall tool that creates intelligent walls. AC has a wall line style that has no intelligence (with regard to adding doors and windows). It is much more efficient to use walls in VW than lines. There isn't the option of walls in AC.

Another example is that VW can have multiple design layers at different scales. AC can only have a single model space at a single scale. Speaking of layers, I will digress for a moment to discuss these.

From version 11 onwards, VW has had *Design Layers* and *Sheet Layers*. These are equivalent to *Model Space* and *Paper Space* in AC.

Design Layer (VW) = Model Space (AC)

Sheet Layer (VW) = Paper Space (AC)

In both VW and AC, *Viewports* are used to transfer information from the *Design Layer* (model space) to the *Sheet Layer* (paper space). This mechanism provides a way to show different scales on the same drawing and is the only way it can be done in AC without physically scaling things in model space to simulate a different view scale. They also allow a drawing to be cropped, so you could have two side by *Viewports* linked to the same *Design Layer*, one displaying at 1:100 and the other showing a small detail from the same design at say 1:10.

VW can have multiple *Sheet Layers*. AC can have multiple *Paper Spaces* which appear as tabs. VW 12 can export multiple *Sheet Layers* so they come out as tabbed *Paper Space* layouts in AC. Earlier versions of VW require you to do a separate export for each drawing, whether it be on a *Sheet Layer* or *Design Layer*.

You'll notice I haven't mentioned AC *Layers* or VW *Classes* yet. These are essentially the same thing and allow objects in the drawing to be given a 'label' that identifies the object as say a dimension, electrical fitting, plant, piece of furniture, text, etc. You can also expand the use of *Classes* (or AC *Layers*) to define the look of an object. For example, you might want all your dimensions to be 0.25mm thick with a blue line colour. If you set this up in the *Classes* tab of the *Organization* dialogue, any objects in the dimension class will then take on these settings, regardless of the settings you might have given them using the *Attributes* palette. This feature is optional in both VW and AC.

Getting back on track then, when you prepare a drawing that you know will be exported to DXF/DWG, you need to ascertain what level of compatibility is required. If it is just going to a consultant who is overlaying their information, you probably don't need to alter your work flow in VW too much. If however, the file is going to someone who you are collaborating with and or need to fit in with their CAD standards, then you may have to compromise your use of VW for the sake of compatibility. Bear in mind

what I said previously. These are two completely different programs and each has its advantages.

A few more points to note:

- *Symbols* in VW are called *Blocks* in AC.
- *Groups* in VW are called *Anonymous Blocks* in AC.
- AC doesn't have an equivalent to many objects in VW. For example doors, windows, callouts, plants, drawing labels. These objects can contain geometry and text and when exported will become *Anonymous Blocks*.
- Generally objects are drawn at 1:1 in AC *Model Space*. You do NOT have to draw this way in VW as it has the disadvantage of not being able to correctly set line weights, text size, hatch spacing, etc., so that what you see on the screen matches what will appear in a print. Accept that VW and AC handle this differently.

Pulling all this together then, if you want maximum compatibility with AC, you need to work with the following guidelines.

1. Use only one *Design Layer* and set it to the most widely used scale in the drawing. Usually this will be within the range of 1:50 to 1:200. Alternatively you can use multiple *Design Layers* but they all need to be at the same scale. When you export, these will get merged into a single *Model Space* in AC, so it is not a good idea to position objects so they overlap. For example two floor plans would appear on top of each other and not be easily separable.
2. Setup a *Sheet Layer* for each drawing that is going to be produced from the file.
3. Use *Viewports* to transfer information from the *Design Layer/s* to your *Sheet Layers*. If necessary, change the scale of the *Viewport* and or apply a *Crop* to get the desired result.
4. If you change the scale of the viewport so it is different from the Design Layer, use the *Advanced Properties* button in the *Obj Info* palette to adjust things like line weight, hatch scale, arrow head size and so on. You may have to experiment in this area as AC might interpret one or more *Advanced Properties* differently.
5. Don't necessarily assume that the AC operator is experienced or knowledgeable. If you are asked to compromise on some way you are organising a VW drawing, try to establish if this is a valid point or just something that will make a lazy person's day a little easier. Of course the need to please such a recipient depends a lot on your business relationship.
6. Always compress email attachments. This means creating a Zip file (the most compatible) from the folder VW creates when you export a file.

There will always be issues when exchanging CAD files between different systems. For the hundreds of thousands of VW users around the world, it happens fairly seamlessly on a daily basis, but requires discipline and knowledge. Hopefully this tech note will help.