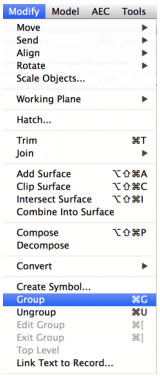
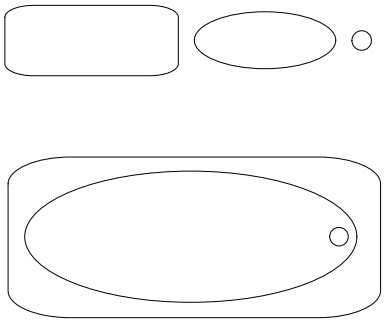
BIM – ARCHITECTUAL
SYMBOL TYPES

INTRODUCTION

Before we talk about symbol types, lets discuss the point and uses of symbols. Think of an object you will be using several times in your project. For this example, we are using a bathtub.

If I want to create a simple representation of a tub, I could use three separate geometric surface shapes (objects) to represent the tub in Top/Plan view.





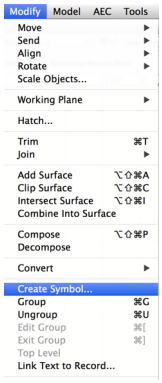
How can I make those three separate objects move as one object?
You could group these objects. [Select All, Modify>Group]

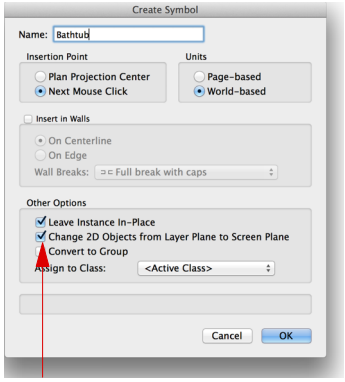
This is fine if you are only using this object once in your current project and you do not need easy access to the object for future projects.

For all other scenarios, symbols would be the better option. There are three main types of symbols: black, blue, and red. Black is the most common type of symbol.

When you create a black symbol, [Select All, Modify>Create Symbol], each placed instance does not add any additional file size.

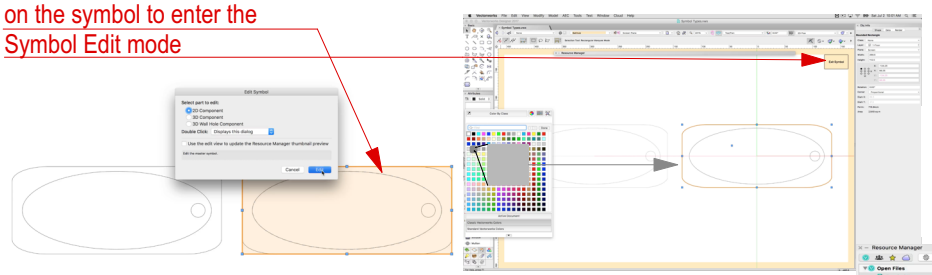
For instance, if the bathtub object takes up 25 kb:
Four Bathtub Groups will take up 100 kb.
Four Bathtub Symbols will take up 25 kb.





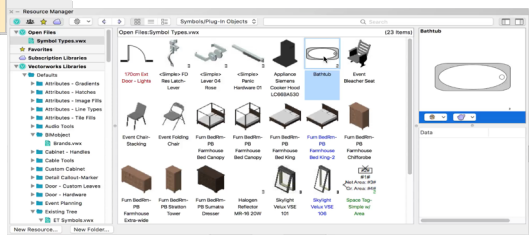
Another useful piece about information regarding black symbols is that if you make a change to said symbols, that change is applied to all placed instances of a given symbol and each future instance will take on those attributes when placed.

Double click or right click on the symbol to enter the Symbol Edit mode

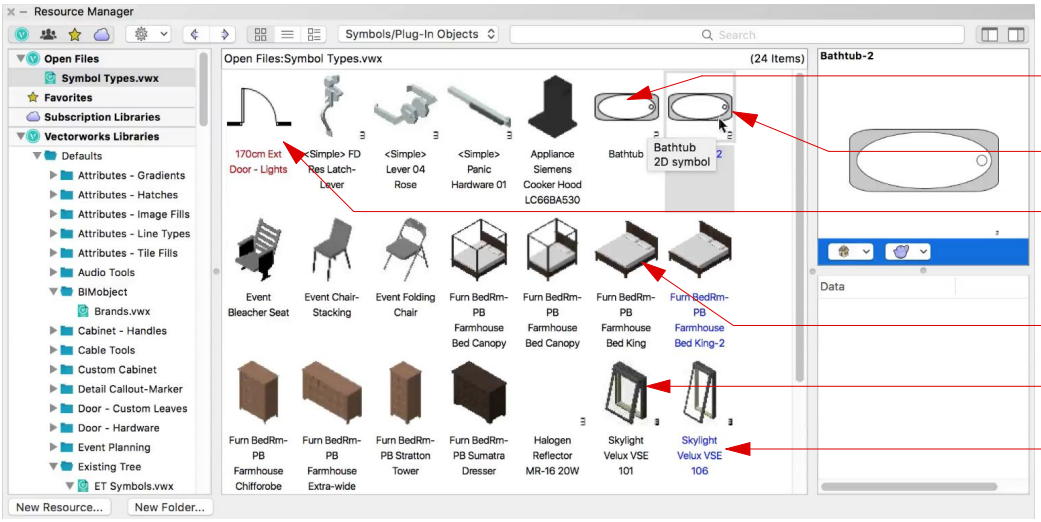


Uncheck "Convert to Group"
More on why later...

When you create a symbol (of any type) it becomes accessible through the Resource Manager. The Resource Manager allows you to manage resources, such as symbols, in the current file and allows access to resources, such as symbols, in other files.



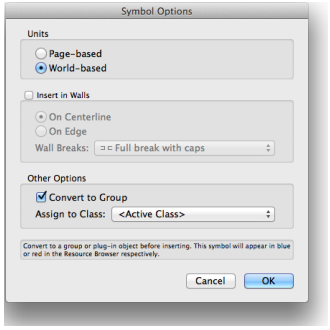
Resource Manager



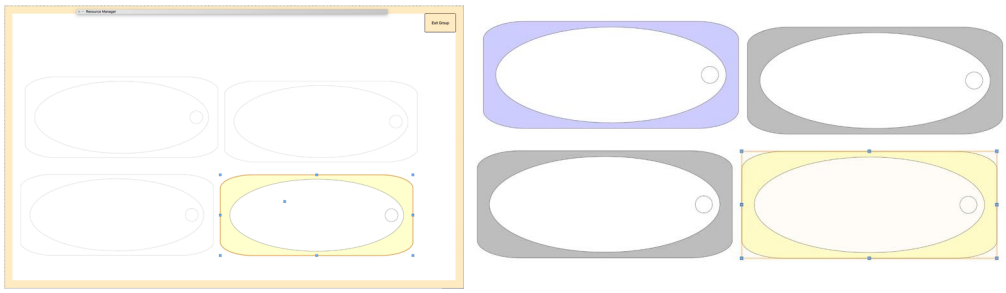
The color of the text representing the symbol name designates the symbol type as a black symbol (usually referred to as "symbol"), a blue symbol, or a red symbol. Symbols of each type can be 2D only, 3D only, or Hybrid. The bathtub we created from three surface objects is currently a 2D only symbol as we did not add any 3D information. A symbol with a small “2” in the bottom right corner is a 2D symbol. A symbol with only 3D information has a small “3” in the bottom right corner. If there is no number in the bottom right hand corner, that means the symbol is a hybrid symbol, a symbol that has a simultaneous 2D and 3D representation.

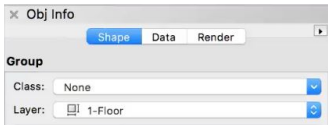
If we duplicate our bathtub symbol, we can edit the symbol type and change it to a blue symbol by changing the symbol options [right click on the duplicate>Edit Symbol Options].

If we check "Convert to Group," this changes the symbol to a blue symbol. When instances of the blue symbol are placed, they are placed as groups, not as "2D symbols." This can be confirmed in the Object Info palette by looking at the object type after insertion.



Blue symbols allow us to edit the attributes of objects in the group without modifying other instances.

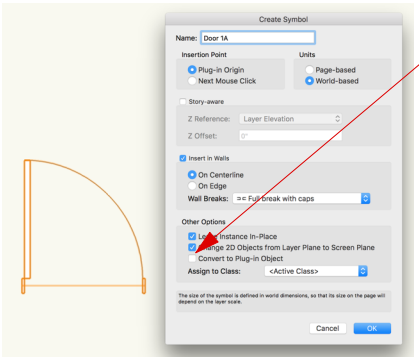


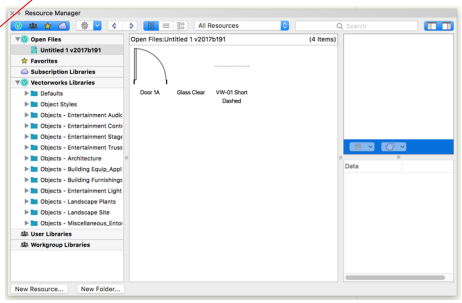


Enter the Group Edit mode to make changes to any blue symbol after placement.

Four blue (bathtub) symbols placed in a document take up the same file size as four (bathtub) groups. This is because when a blue symbol is placed it is "Convert[ed] to a Group." The advantage of using blue symbols over groups is that they are accessible through the Resource Manager for future use in current or other projects.

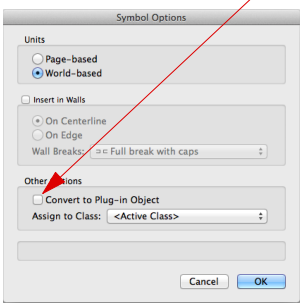
Let's talk about Red Symbols. We are now abandoning our bathtub because red symbols involve plug-in objects. Take a door, created with the door tool — we can select the door then go to [Modify>Create Symbol]. Leave Convert to Plug-in-Object unchecked. (08 PIO to Black) This creates a black symbol.

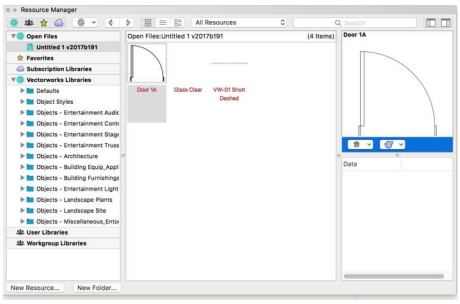




A symbol inserted into a wall reacts differently than a plug-in object inserted into a wall, so let's convert this into a red symbol by modifying the symbol options [Right click>Edit symbol options].

When you check "Convert to Plug-in-Object", the black symbol becomes a red symbol.





How do red symbols behave? Each instance is a plug-in object and behaves as any other plug-in object that is not a symbol.

Each red symbol that is placed takes on of all of the properties that were set when the symbol was created. If you make a change to your red symbol, only instances placed after the change was made will be affected.

Each symbol type, black, red and blue, have different advantages. Vectorworks software provides maximum flexibility so that you can choose the options that best fit your workflow.