AWNING COMPOSER

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Introduction

The Awning Composer team is pleased to announce the latest release of Awning Composer featuring an extensive set of customizable dynamic objects. This is part of a continuing development effort incorporating ideas and feedback from fabricators to add functionality that will help them grow their business. To see a complete list of changes and additions to the software, please visit the Development Log page at www.awningcomposer.com.

Please note that Awning Composer 5 was designed to use the graphics hardware that is installed in your computer. However, if your computer is old, has outdated graphics hardware or graphics drivers that are not up to date or not functioning, **then Awning Composer 5 may not work on your system**. You may need to update your computer or use version 4 instead. For more information, please visit the System Requirements page on the website.

Awning Composer 5 is also compatible with a variety of Windows-based tablets. This provides a whole new way for you to interact with your customer using your fingers instead of a mouse to create a rendering. Please contact Awning Composer Support for recommendations before purchasing a tablet.

We encourage you to continue to provide us with your feedback on Awning Composer. We welcome your input and suggestions as we can continue the development process to build Awning Composer into the ultimate tool to support your business needs. ***You can send us your feedback using the convenient feedback form built into Awning Composer. To do this, click the Send Feedback button on the Help page of the File tab.***

Notes for Users of Previous Versions

Awning Composer 5 features significant improvements as well as many new features. However, some features from previous versions are not available in version 5:

- 3D text
- Curved text
- Backdrop editor

If you find yourself needing any of these features, we encourage you to either use image editing software (see our Software Recommendations page on the website) along with Awning Composer 5, or use Awning Composer 4 on an as-needed basis. Versions 4 and 5 can both be installed at the same time and do not conflict with each other.

Please also note that the software license for Awning Composer has been changed to a company-wide license. This means you can install Awning Composer on all of the computers within your organization at no extra charge. Just use the same company name and serial number on each computer.

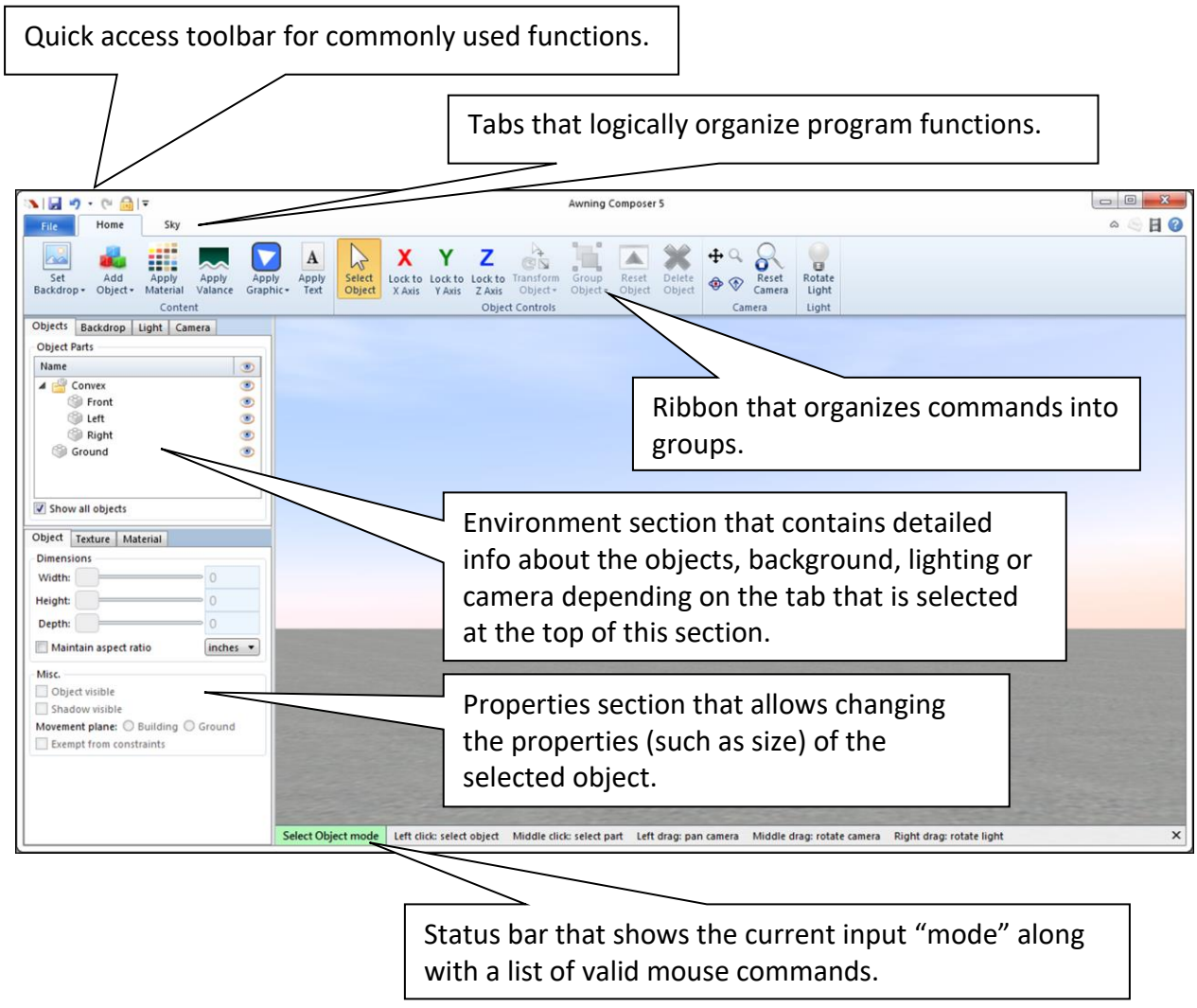
User Interface Overview

Compatible with widescreen displays and tablets and has a scaled work environment

Awning Composer 5 incorporates ideas and feedback collected from hundreds of fabricators over the years.

All program functions support the entry of actual dimensions, which allows fabricators to work in a realistic environment so awnings and fabric patterns can be shown on a building to scale.

The window layout was specifically designed for widescreen displays and the large buttons make it easy to use on touch-screen tablets. Here's an overview of the different sections of the main program window:



Graphics Overview

Provides support for high quality output and advanced features such as shadows

Awning Composer uses a new graphics engine that utilizes the graphics hardware built into all modern computers to provide high quality output and faster rendering. Please note that results may vary based on your computer graphics hardware.

In addition, awnings can cast shadows that can be adjusted based on the position of the light (i.e. sun). In the picture below, the light was set to be shining down from the upper left hand corner of the scene:

Awning Composer can also calculate the sunlight angle based on the building location, the direction the building is facing, time of year and time of day. For more information, please see the section titled "Sky and Automatic Lighting".

Note: Awning Composer 5 was designed to use the graphics hardware that is installed in your computer system. However, if your system is old, has outdated graphics hardware or graphics drivers that are not up to date, then version 5 may not work on your system. In this case, you may need to update your system or use version 4 instead.

Backdrops

Working with backdrop photos

Angled Backdrop

The first step in creating a new scene is setting the backdrop. You can use any photo of a building, but your options will vary depending on how the photo was taken. When taking photos at an angle, it's best to use a close-up shot at a moderate angle to allow the front and sides of the awnings to be visible, giving the awnings a 3D appearance:

In addition to angled backdrops, Awning Composer also has special support for photos taken from a distance with a straight-on view. These **straight-on** backdrops have several advantages over angled backdrops:

1) The backdrop can be scaled using the distance between two points in the picture with **known dimensions** such as the height of a door or a window.

2) The distance between any two points on the backdrop can be **measured** using a built-in electronic tape measure and the backdrop can be viewed from **any angle or distance**.

3) "Invisible 3D ground" can be added so it accurately **projects the shadow** cast by the awning on the "actual ground" shown in the picture.

4) The awning, valance and fabric can be **designed to scale** on the backdrop using actual frame dimensions and actual fabric repeat values.

5) The backdrop can be cropped to remove the sky and a **computer generated sky can be added** that reflects the actual sky conditions at any specified time of day.

Straight-on Backdrop

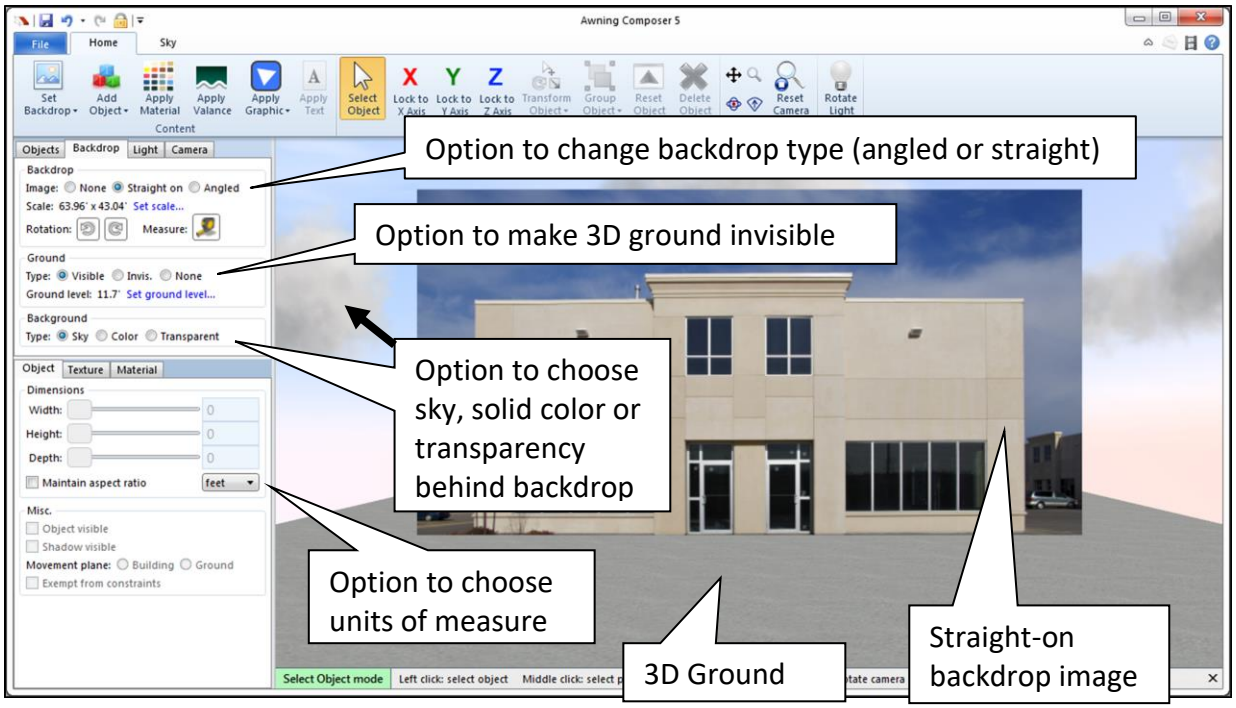
When a new backdrop image is brought into the program, Awning Composer will allow you specify if it is an angled or straight-on view.

If **angled view** is selected, the backdrop will be brought into the program where awnings can be superimposed on it, but **the camera angle is fixed and the backdrop cannot be scaled**.

If **straight-on view** is selected, the program walks you through the process of specifying the **scale** of the image the size of an item in the picture. IMPORTANT: Be sure to use the size of an item **that is on the same plane** where you are placing your awnings. If you use the height of a door that is set into an alcove to measure window awnings, your measurements could be wrong. In this case, it would be better to measure one of the windows to set the scale.

The program also gives you the option to add **three dimensional ground** and adjust the 3D ground position so it matches the actual ground in the image. 3D ground is shown as a flat grey plane that intersects the backdrop picture at a 90-degree angle to create the illusion of ground in the scene. Once the ground is adjusted, it can be made **"invisible"** by selecting "Invisible (shadows only)" in the drop down box in the Background tab. Even though the ground is invisible, it will still **reflect shadows** from any objects in the scene, making the shadows look more realistic. The background behind the backdrop can be set as **sky**, a **solid color** or **transparent**.

Note: Once the user has defined an image as angled or straight, Awning Composer "remembers" that designation and scale whenever the backdrop is opened, even if it is not part of a scene. However, these settings can be changed at any time using the Backdrop tab.



3D Angled Backdrop

Even though straight-on backdrops offer many advantages over angled backdrops, sometimes it's just not feasible to use a straight-on photo. One common example is a building that requires a corner awning. To work with this kind of photo, you can set the backdrop to be an angled backdrop and be subject to the limitations of angled backdrops as described in the previous sections, or you can set the backdrop to be a 3D angled backdrop.

3D angled backdrops work like a middle ground between straight-on and angled backdrops. The photo is positioned on a flat plane in 3D space, similar to a straight-on backdrop, but 3D objects can pass through it into the distance without disappearing behind the building, similar to an angled backdrop.

To set a backdrop as 3D angled, first open the photo as a straight-on backdrop. Then go to the Backdrop tab and change the backdrop type to 3D angled.

You can set the scale of the scene using the camera distance and FOV controls, the "Set Scale" command typically used for straight-on backdrops, or some combination of those two methods. However, note that with the "Set Scale" command, as you get further away from the object in the photo that you used for scaling, the less accurate your measurements will become. To achieve a convincing look, you may need to set the object dimensions to somewhat unrealistic values. Avoid using production-oriented functionality such as the Parts List in such cases.

Before adding awnings to the scene, be sure to set the camera angle and distance to what you would like them to be when you do your final rendering. Once you add awnings to the scene and adjust their size, you will not be able to change the camera angle or distance because it will change the perspective and perceived size of the awnings.

Here's an example rendering created using a 3D angled backdrop:

Original picture:

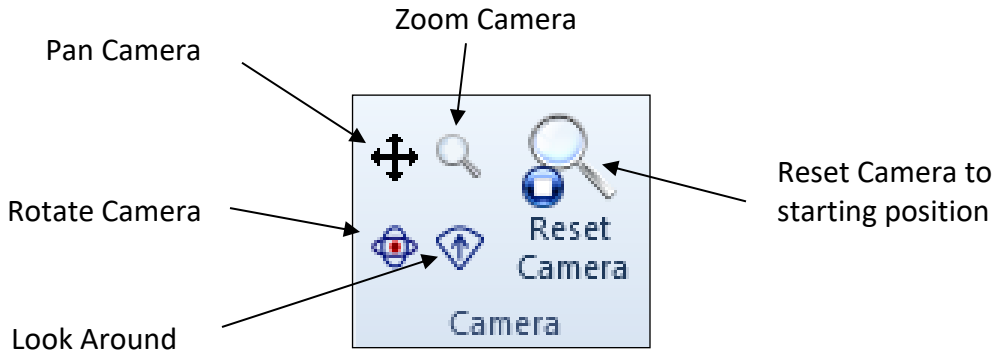
Rendered picture:

Basic Camera Controls

Zoom, pan and rotate features allow objects to be seen from any angle

One of the most powerful new features of Awning Composer is the ability to adjust the camera angle and position. ***These camera controls are only available for straight-on backdrops or when there is no backdrop.***

Think of these camera controls as the ability for you to "fly" around the scene and view it from any angle; above, below, from the side or even from behind. With practice, controlling the camera can be done in any mode using various mouse buttons. But sometimes it's easier to use the camera controls on the ribbon as shown below:



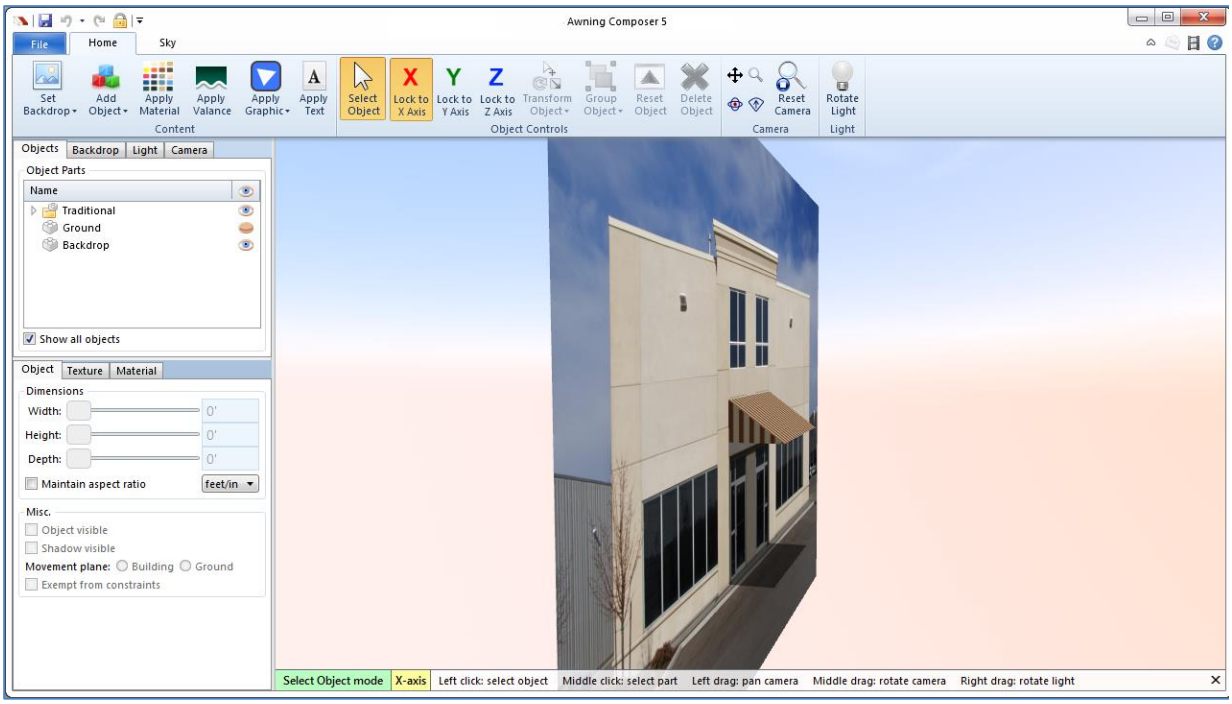
By clicking on one of these icons, the program is put into a specific camera mode, making the camera easier to control by using the left mouse button (or touch):

Pan Camera Mode	Hold down the left mouse button and move the mouse to pan the camera, moving it left, right, up, or down within the scene. The contents of the scene will appear to shift in the opposite direction of the camera movement.
Rotate Camera Mode	Left click on an object to center the camera on that object or middle click anywhere in the 3D view. A green ball appears and represents the center point that the camera rotates around. Hold down the left mouse button and move the mouse to rotate around the center. You can also use the arrow keys to rotate around the center point.
Look Around Mode	The camera rotates around its current position allowing you to look around from a fixed location. Hold down the left mouse button and drag to rotate the camera. Use the mouse wheel to move the camera forward or back, or use the WSAD keys.
Zoom Camera Mode	Hold down the left mouse button and move the mouse up or down to move the camera closer to or further away from the contents of the scene. Shortcut: You can also press the "C" key to zoom in and out.
Reset Camera	Resets the camera to a default position and orientation suitable for viewing the entire contents of the scene.

Helpful keyboard command: You can use the "/" key to center the camera on any object part that has been highlighted in the Environment Section or in the 3D view.

Example of Camera Rotation

The screen shot below shows an extreme example of camera re-positioning. The camera has been rotated so it is looking at the backdrop from the left side. The awning is shown "attached" to the backdrop and the shadow from the awning is being reflected by the "invisible" ground.



Using the camera controls, you can zoom in and out and view the scene from any angle. To produce a convincing rendering, start by viewing the building (and awnings) straight-on. Then rotate the camera slightly to the side and zoom in enough so that the sky (behind the backdrop) is not visible, or is only slightly visible.

The camera controls also allow you to show your customers multiple views of the scene from close in or far away perspectives and from various angles.

Note: To get the best results, we recommend taking a high-resolution photo of your customers building straight-on with some sky above the building and some of the parking or street area in front of the building.

Shadow and Scene Lighting

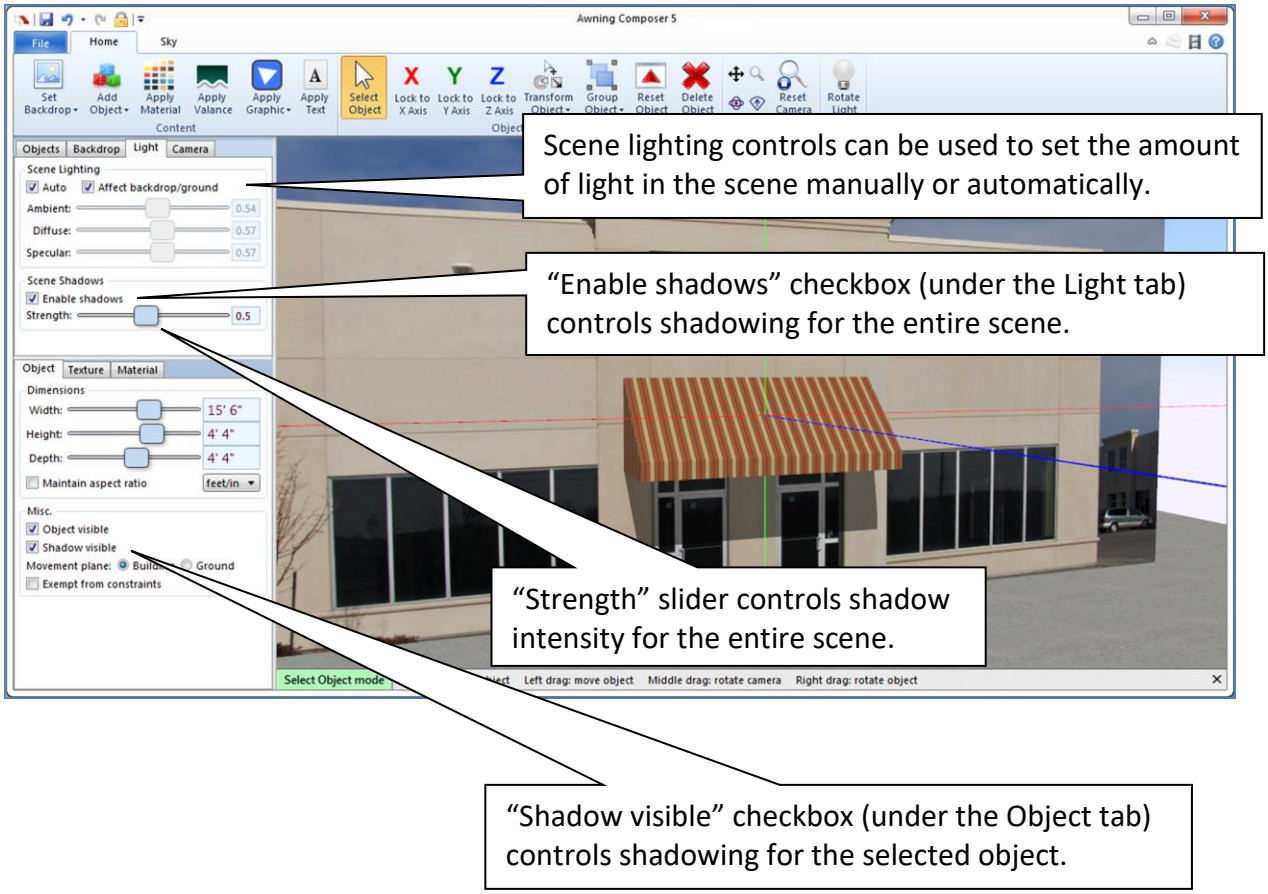
Controls shadows and amount of light in the scene

The **shadow option** can be turned on/off for an entire scene or for an individual object (i.e. awning). For any shadows to be cast in the scene, the "Enable Shadows" checkbox under the Lighting tab must be checked. Un-checking this box will turn off the shadow option for all objects, regardless of their individual shadow settings.

In addition to the shadow option for the scene as a whole, each object has its own control for shadowing. Select an object in the scene and then click on the "Object" tab. If the "Shadow Visible" checkbox is checked, then this object will cast a shadow, otherwise it will not.

Shadow intensity is controlled at the scene level through a "Strength" slider.

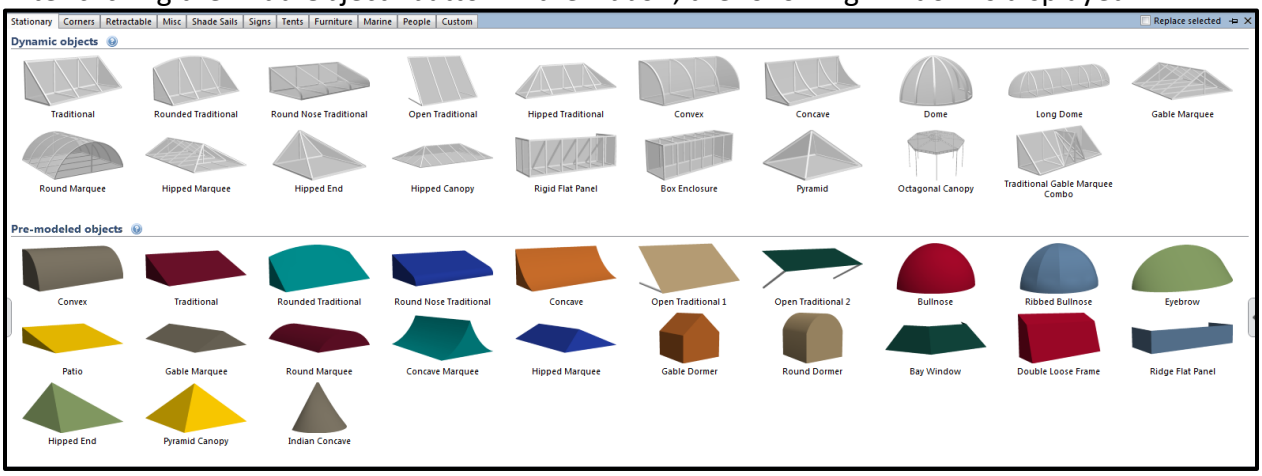
Scene Lighting: The amount of light in the scene can be controlled manually or automatically. If the "Auto" option is enabled, the objects in the scene will get lighter as the sun rises and darker as the sun sets. If the "Affect backdrop/ground" option is enabled, the backdrop and ground will be affected by the scene lighting levels. The first time you use any of the controls in the Sky tab, these two switches will automatically be turned on. If you turn them off, then you must manually turn them back on.



Adding Objects

Categories are displayed horizontally, drag and drop feature

After clicking the “Add Object” button in the ribbon, the following window is displayed:



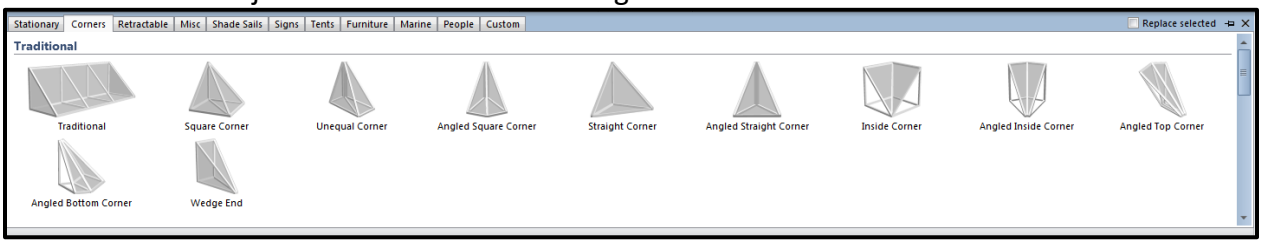
Objects are organized by category using tabs across the top. Some categories contain additional grouping using headings. The Stationary tab shown above contains two types of objects: dynamic objects and pre-modeled objects. Dynamic objects (gray and white objects) are fully customizable and include frame components while pre-modeled objects (color objects) have no frame and only allow adjustments to width, height and depth.

To add an object to the scene, double-click on the object. The object will appear in the center of the 3D view and the “Add Objects” window will disappear.

Objects can also be added to the scene by left clicking and holding on the desired object and dragging the object directly into position within the scene. To replace an object, be sure the target object to be replaced is selected, then click the “Replace Selected” box in the upper right hand corner and then add the new object to the scene.

To keep the “Add Objects” window from disappearing, click on the small “push-pin” located next to the “X” in the upper right hand corner. When the push-pin is shown vertically, then the window stays visible (or pinned) until the window is closed by clicking “X” or “Add Object”.

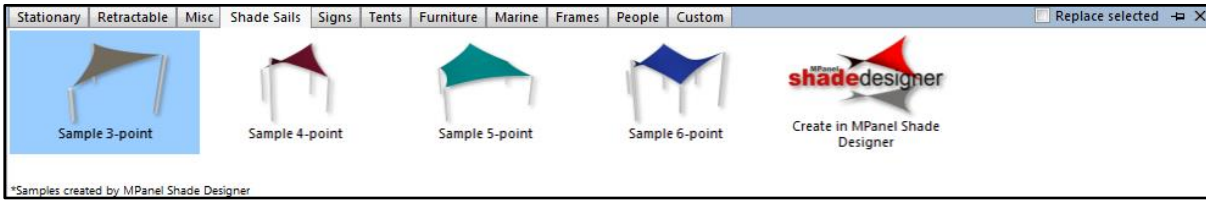
The Corners tab contains corner objects for several awning styles. Shown below are all the available corner objects for a Traditional awning:



While one object is selected in the scene, add another object to automatically connect the two. For more information on how to use these objects to create compound awnings that fit around corners or over walkways, refer to “Corners and Connected Objects” in the “Dynamic Objects” section.

Shade Sails

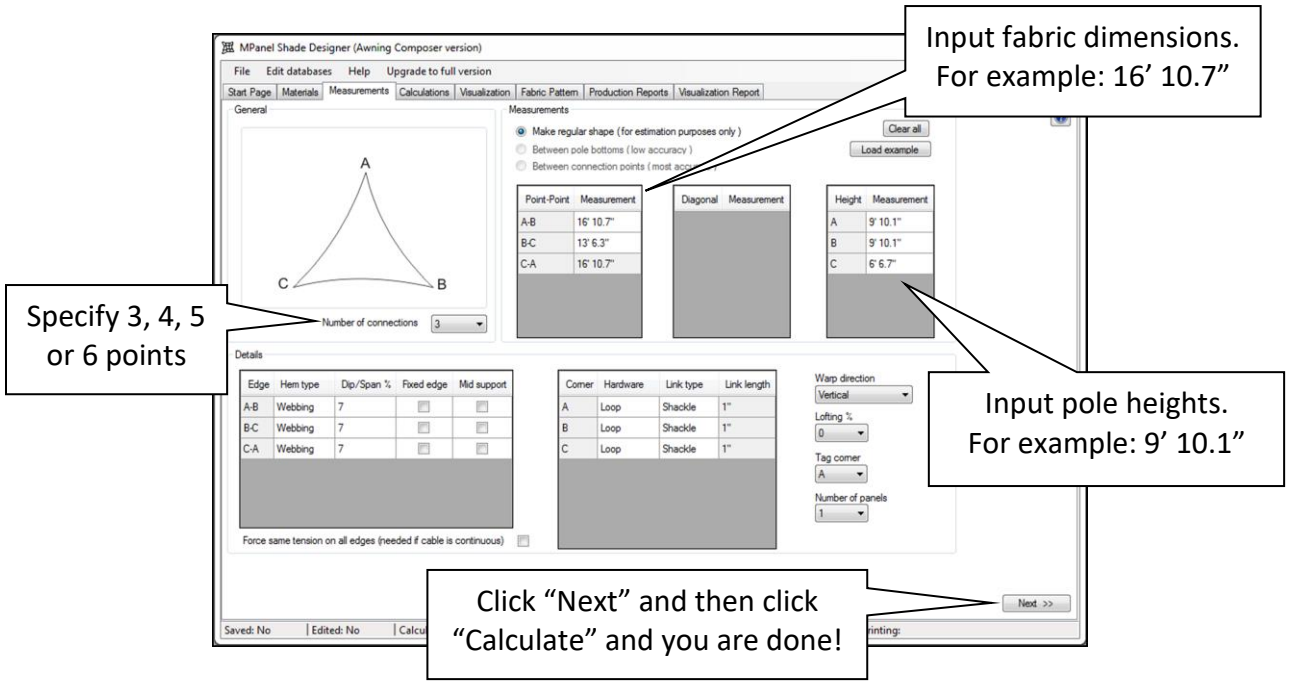
The “Shade Sails” tab contains some sample shade sail designs. These objects are brought into the scene as a single object with fabric and poles making it easy to position it within the scene. If adjustments to an individual pole are needed, you can use the “Split” command to separate that pole into its own standalone object, make the adjustments, then “Recombine” the pole back into the shade sail object. (See Splitting Object Parts and Grouping and Combining Objects for details.)



In addition to the pre-built sample shade sails, there is also an interface to MPanel Shade Designer, a separate application. This interface provides an easy way to create a custom shade sail with up to six points. The main advantage over the sample shade sails is the ability to specify the exact dimensions for a job so the shade sail fits the topography of the job site.

A special version of MPanel Shade Designer is available at no charge to licensed Awning Composer V5 customers. To get it, simply sign into your account at www.awningcomposer.com and click on the “Download MPanel Shade Designer” link. Once MPanel Shade Designer is installed, start Awning Composer and double-click on the “Create in MPanel Shade Designer” icon in the Shade Sails tab. This will open MPanel Shade Designer.

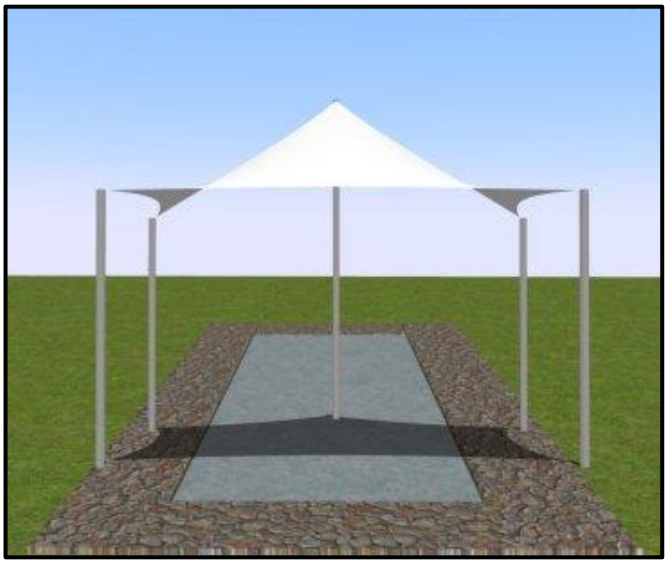
Once you’ve entered information into the various tabs of MPanel Shade Designer, go to its Calculate tab and press the Calculate button. After a successful calculation, click on the “Return to Awning Composer” button to bring your custom shade sail back into Awning Composer.



Shade Sail Shadows

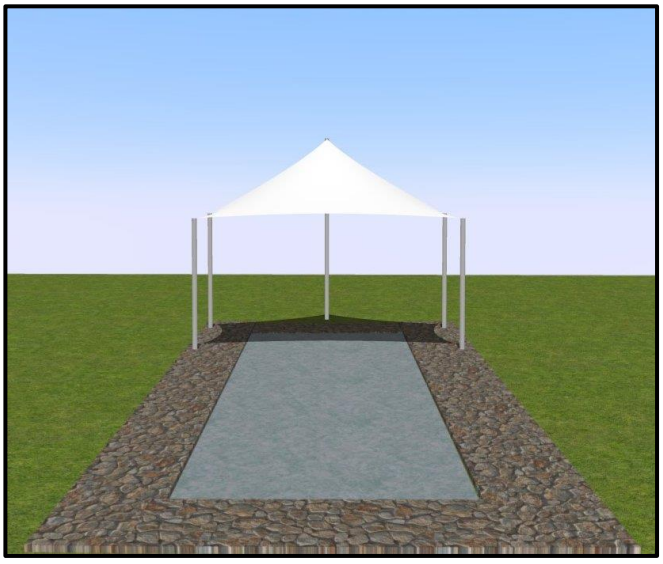
Unlike awnings which normally cast shadows on buildings, most shade sail applications will be casting a shadow on the ground. In this case it is best to use an angled backdrop. Since Awning Composer does not know the angle that the picture was taken, it will draw the shadow on a plane that is aligned with the bottom of the object in the scene. For a shade sail, the shadow will be lined up with the bottoms of the poles that are holding up the shade sail.

To make the shadow look more realistic, rotate the shade sail so it matches the angle of the picture. This can be done by locking the X, Y or Z axes and using the arrow keys to rotate the object. Once the bottom of the poles are lined up at the same angle as the picture, use the "Rotate Light" or "Sky" features to match the sun angle in the picture.



This image shows a 5-point shade sail just after it was added to the scene.

Note that the bottoms of the poles are not aligned with the angle of the picture. In this case, the back of the shade sail needs to be rotated up.



This image shows the same shade sail after it was rotated on the X-axis to match the angle of the picture.

The shade sail was also moved back along the Z-axis so it is covering the far end of the pool.

In the "Sky" tab, the shadow from the shade sail was adjusted to match the shadows in the picture by setting the time of day to 3:00pm on July 1st and setting the compass direction that the photo was taken to "N".

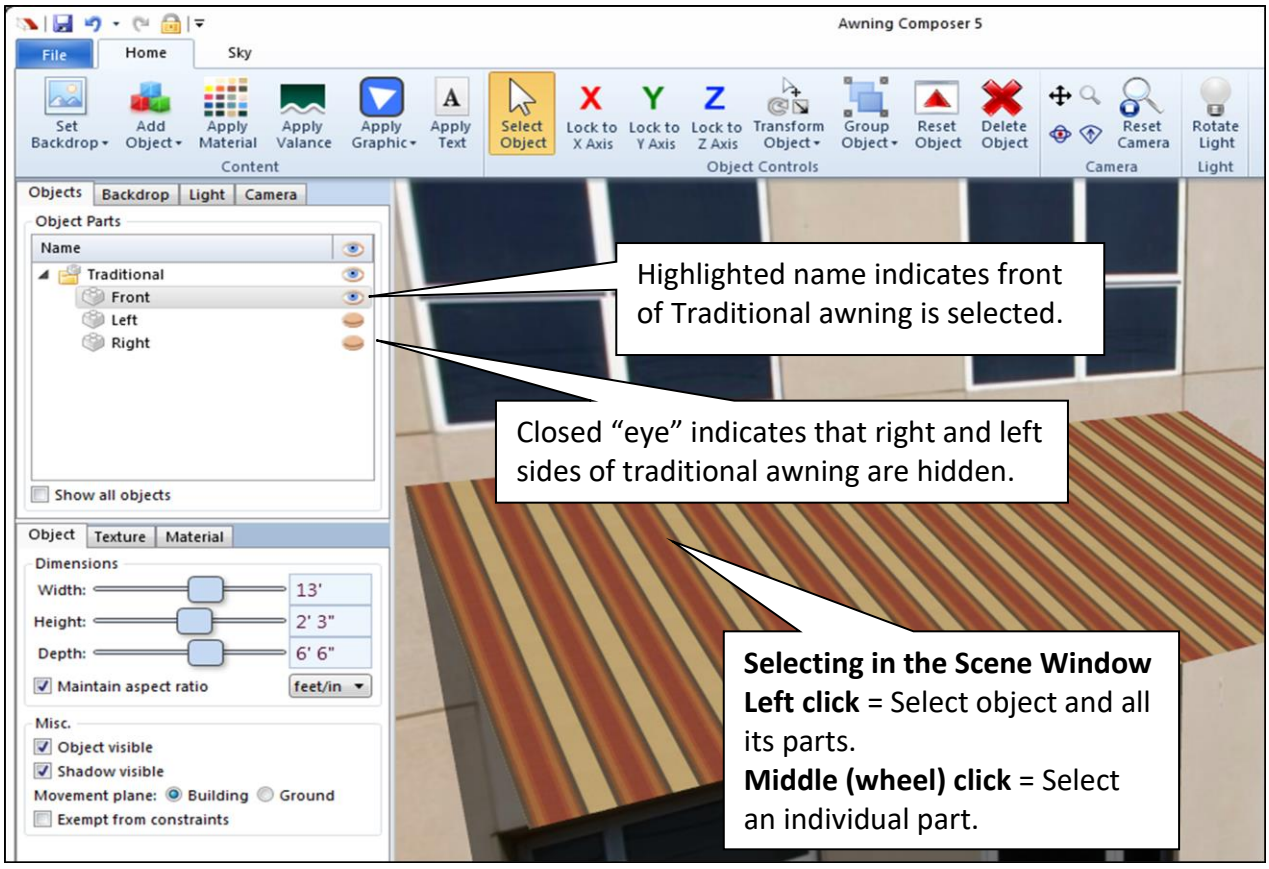
Selecting and Hiding Objects in the Scene

Using two point-and-click features and visibility controls

To select an object (i.e. awning), simply **left click** on the object and the X, Y and Z axes will appear from the center of the object. Also, the name of the selected object is **highlighted** on the left side of the screen in the **"Objects"** tab.

To select an individual part of an object (e.g. top, left side, right side, valance, text, etc.), point to the specific part and click the **middle** mouse button. Or, click on the part's name. Next to each item listed in the objects tab is an "eye" that determines if that item is visible. If the eye is open, then the item is visible. If the eye is closed, then the object is hidden.

In the example below, the sides of the traditional awning are hidden as indicated by the closed eye next to the part names "Left" and "Right":



Moving Objects

Using the mouse, arrow keys, numeric amounts, axis locks and movement plane

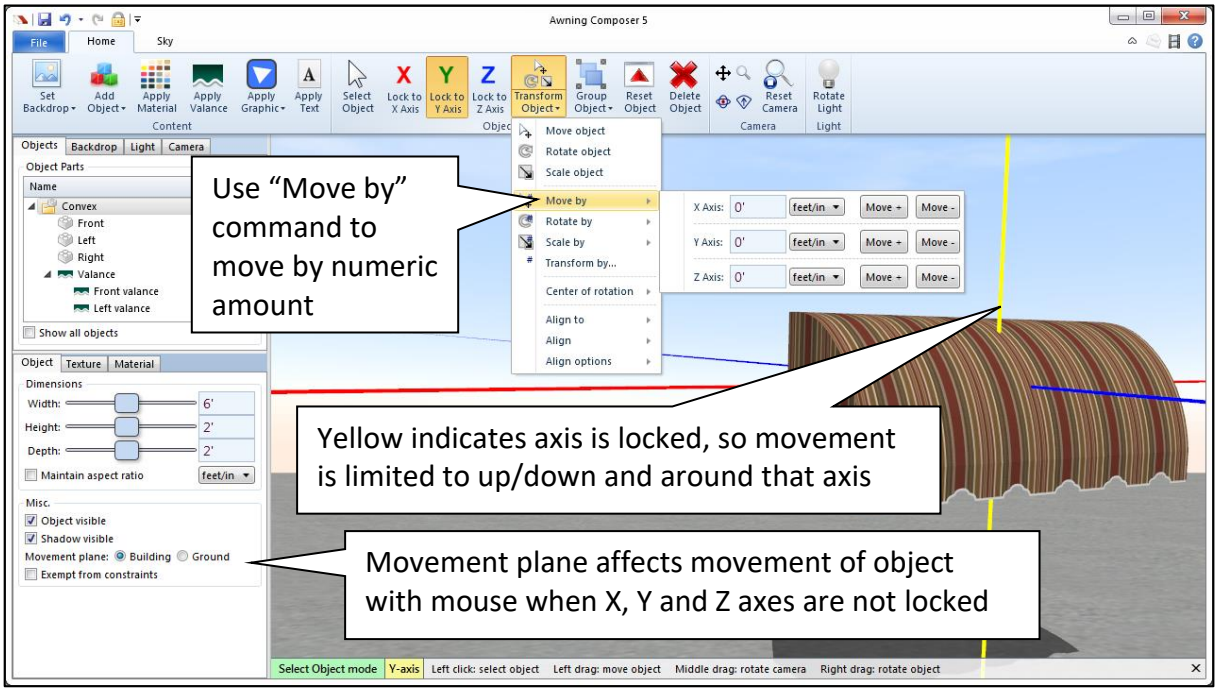
There are three ways to move an object within the scene: using the mouse, using the arrow keys or by entering numeric amounts. Object motion can be limited to certain directions using the X, Y and Z axis lock controls. There is also a movement plane setting that controls whether objects move along the surface of the building or the ground when no axis is locked.

Movement Plane

The movement plane setting is located in the object properties. For awning objects, the default setting is "Building". This means the object will move along the front of the building when moving the object with the mouse. For other objects such as furniture or poles, the default setting is "Ground". This means the object will move along the ground when moving the object with the mouse. You can change this setting any time as needed.

Locking the X, Y and Z Axes

When precise positioning is needed, using the arrow keys in conjunction with locking the X, Y or Z axis can yield the best results. When an object is selected, three colored axes run through the object. These axes are color coded to the match the color of the X, Y, and Z letters in the ribbon. Clicking on one of the X, Y or Z buttons will lock (i.e. freeze movement to) that axis and the axis line will turn yellow. The object's motion and rotation will be limited to that axis. Using the arrow keys, it is very easy to make precise adjustments. Holding the shift key while using an arrow key makes adjustments in very small increments.

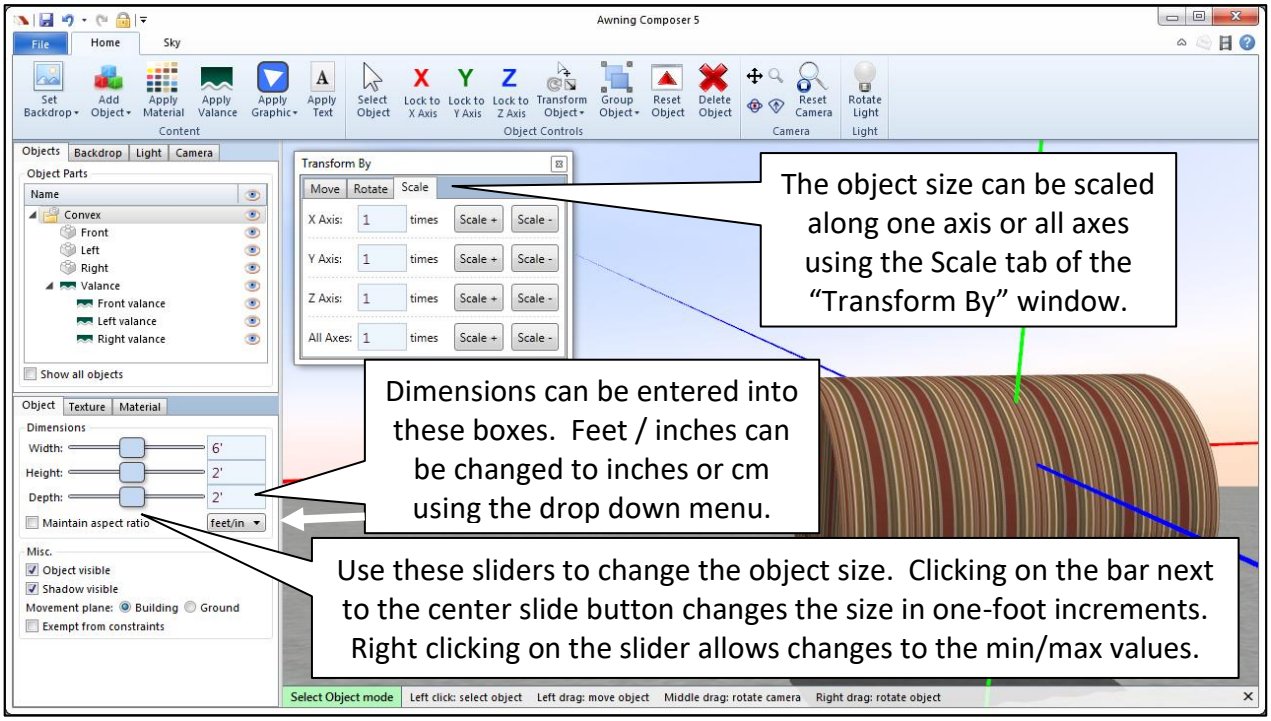


The "Move by" command under the Transform Object menu on the ribbon allows precise movement along the X, Y and Z axes using numeric measurements.

Resizing Objects

Using dimension sliders, boxes, and scale controls

There are three different ways to resize objects. First, there are the width, height and depth sliders in the object properties tab. Second, there are boxes to the right of each slider where exact dimensions can be entered. Finally there are scaling controls under the Transform Object menu on the ribbon.

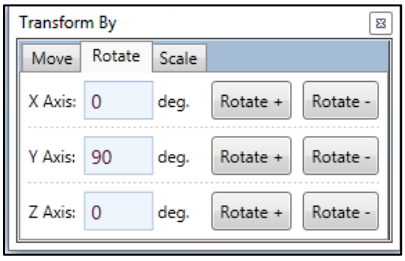


Rotating Objects

Using special keystrokes and rotate controls

In addition to the axis lock controls described previously, Awning Composer also provides two other methods to rotate objects. After an object has been selected in the 3D view, press the "9" key on the keyboard to rotate it by 90 degrees.

You can also use the Rotate controls under the Transform Object menu on the ribbon. As an example, entering "90" in the box next to "Y Axis" and clicking on "Rotate +" will rotate the object to the right by 90 degrees, the same as pressing the "9" key as described above.

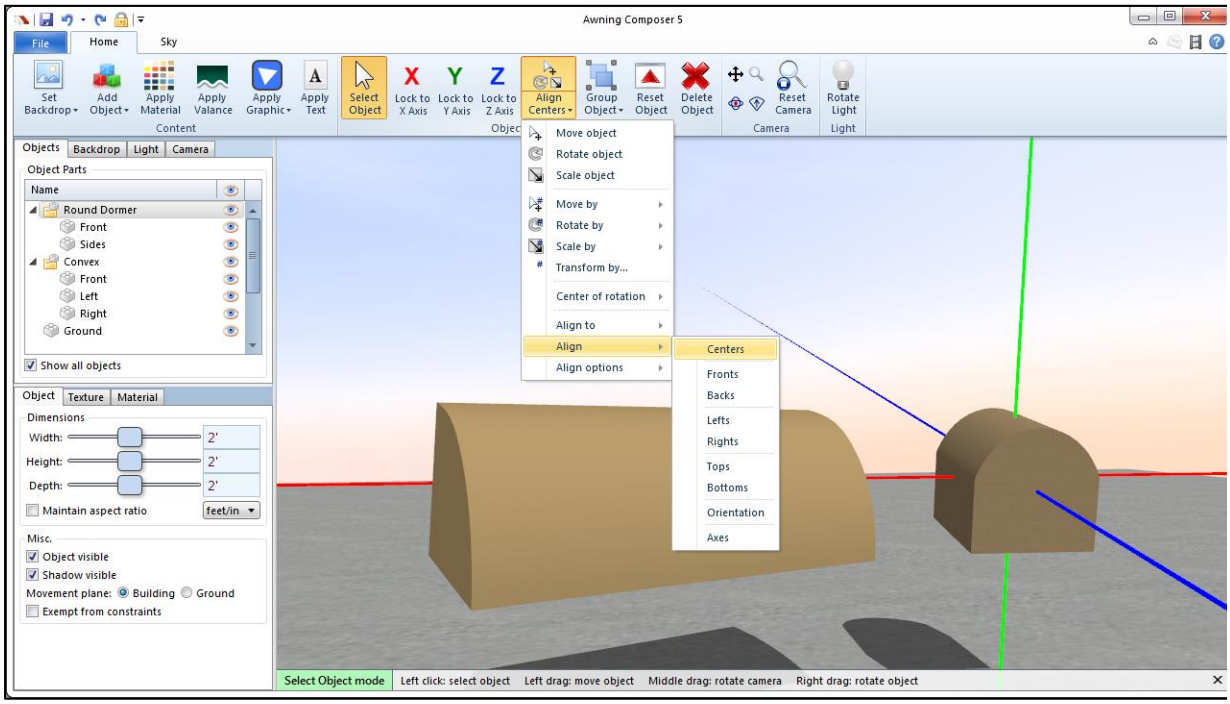


Aligning Objects

Using alignment tools

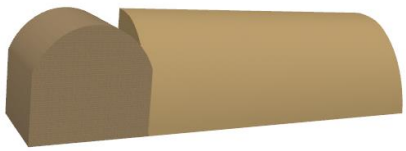
There are two methods available for aligning objects that are both under the Transform Object menu on the ribbon. The "Align to" command is used to align an object to a specified part of a target object. An example would be lining Object B up with the left side of Object A. To perform this command, select Object B, then select "Align To", then select "Left" and click on Object A.

The "Align" command is used to align the same parts in two different objects. In the example below, the goal is to create a combo awning from a convex and round dormer awning. To accomplish this, select the Round Dormer awning, then select "Align", then select "Centers" and click on the Convex awning as shown here:

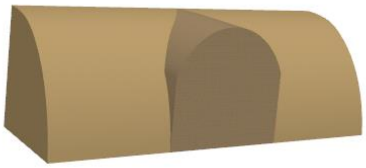


Here are the results of these two examples:

Results of Align to Left command:



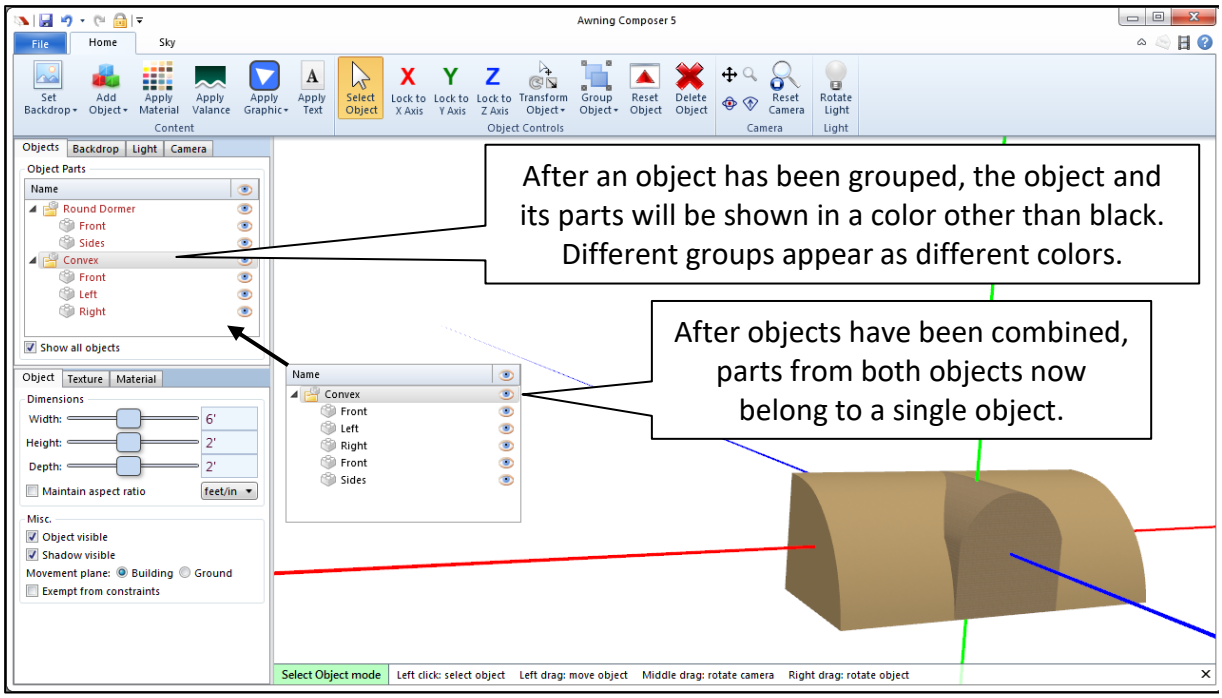
Results of Align Centers command:



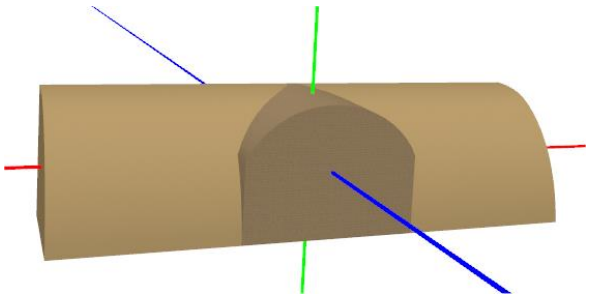
Note: The "Align Axes" command is an advanced command that is only used when it is necessary to shift the local axes of an object to match the orientation of another object. This can be useful sometimes when working with imported 3D models.

Grouping and Combining Objects

There are two methods available for joining multiple objects together and they each have their own set of advantages. Using the "Group Object" button on the ribbon (or "Group" command) groups the selected object with another object or group of objects. More objects can be added to a group by using the command over and over again. Grouped objects can be moved and rotated together, affecting the group as a whole. However, the grouped object cannot be scaled as a group so each object must be sized individually.



The "Combine Grouped Objects" command under the Group Object menu creates a single object made up of the parts from all of the members of the group. This object can be moved just like a grouped object, but it can also be scaled using the width, height or depth slider bars, dimensions or scale commands. This can be an advantage or disadvantage depending on the situation. As an example, scaling the object shown above using the width slider will create an object that looks distorted:

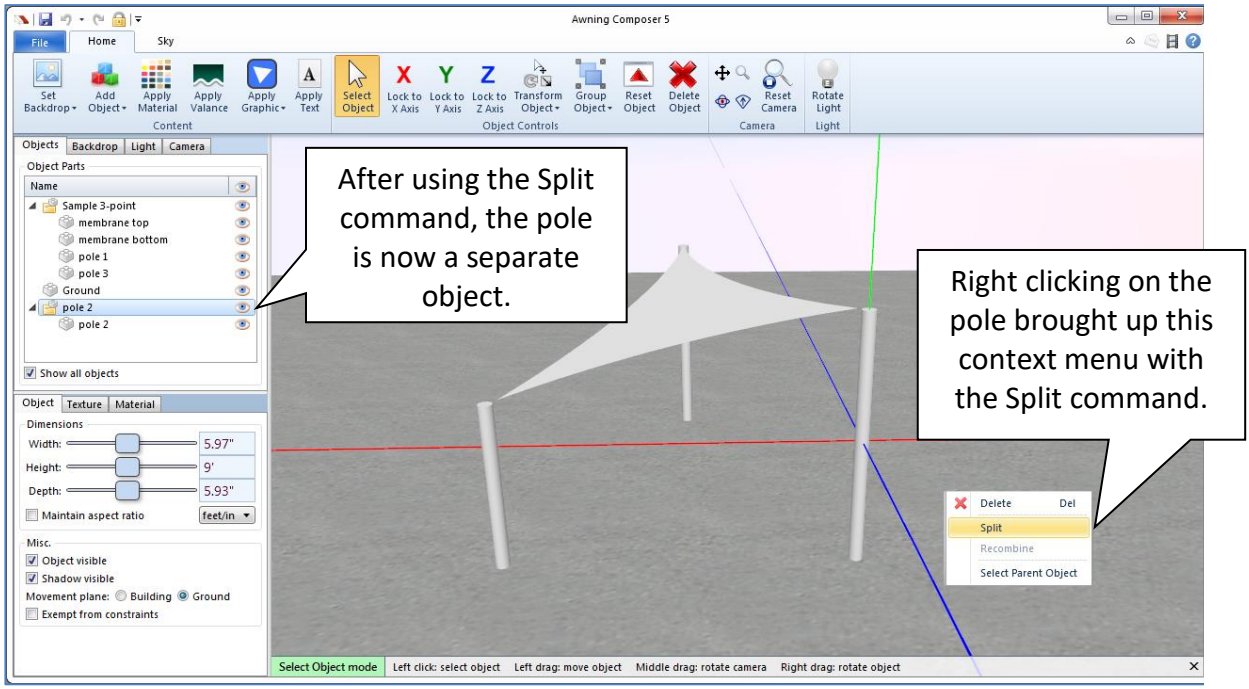


So in this case it might have been better to leave the object as a group and adjust the dimensions of each member of the group individually to prevent the Round Dormer from becoming distorted.

Splitting Object Parts

A part of an object can be separated into its own object using the “Split” command. To use the Split command, first select the part to be split. Make sure it’s highlighted in the Object Parts tree. Then right click on it in the 3D view or in the Object Parts tree and choose “Split” from the context menu.

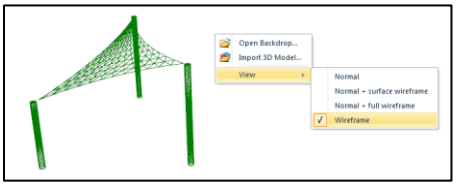
This command can be useful when size or position adjustments need to be made to an individual part. As an example, assume that one of the poles on a 3-point shade sail needs to be tilted. The three poles and shade sail are part of a combined object. Before the pole can be adjusted, it needs to be split from the main object as shown below:



After the Split command was executed, the pole is a separate object that can be resized or repositioned independently of the rest of the shade sail object. After adjustments have been made to the pole, right click on the pole and use the “Recombine” command to make it a member of the shade sail object again.

Wireframe Display Mode

It can sometimes be useful to work with objects in wireframe mode. Right click anywhere in the 3D view with no objects selected to bring up the context menu, select “View” and then “Wireframe”.

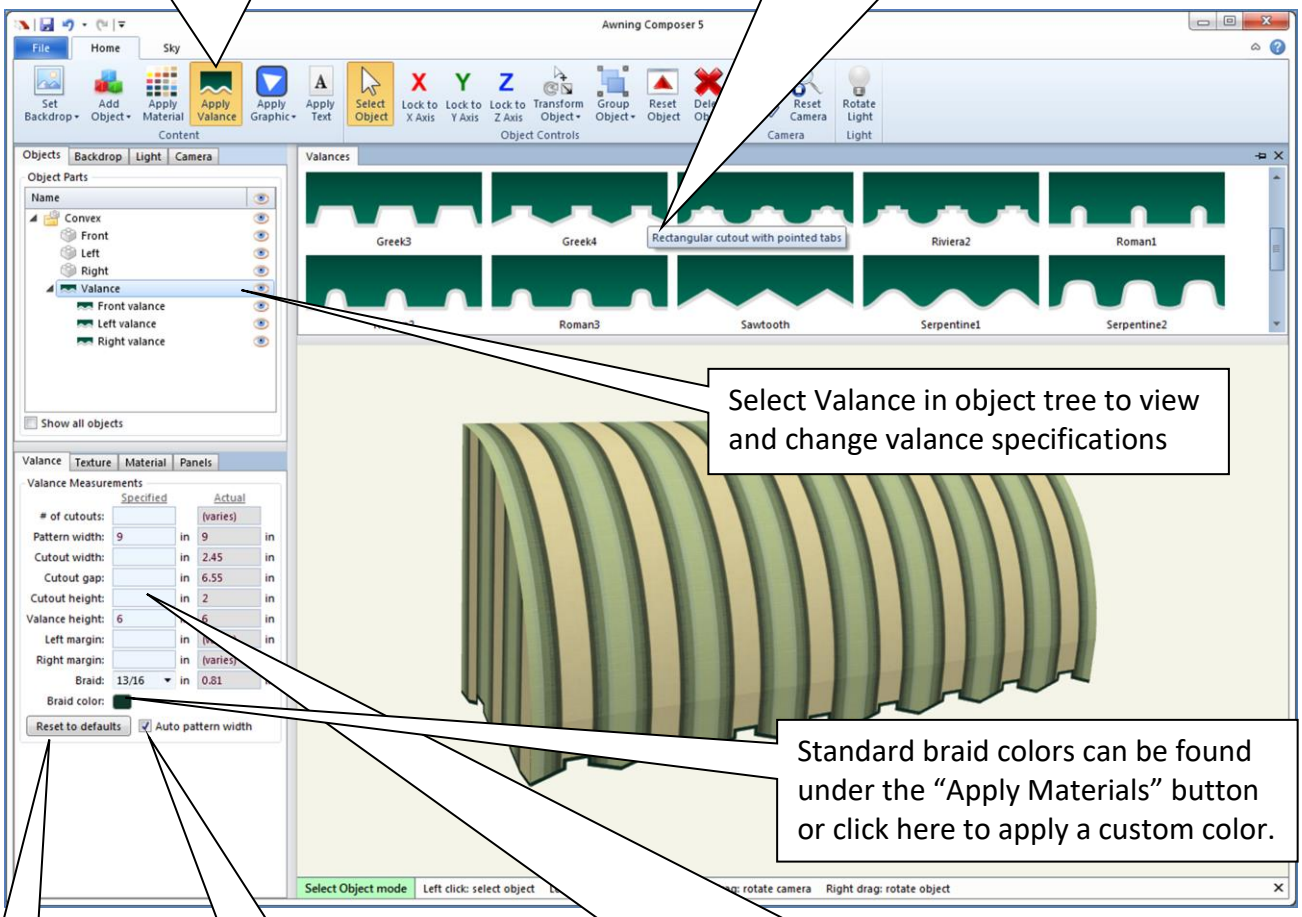


Applying Valances to Objects

Includes expanded selection of valances, dimensions and auto sizing based on pattern repeat

Awning Composer includes the ability to add customizable valances to awnings. There are many different valance styles supported, and various parameters can be adjusted to customize the appearance of the valance beyond just the basic shape.

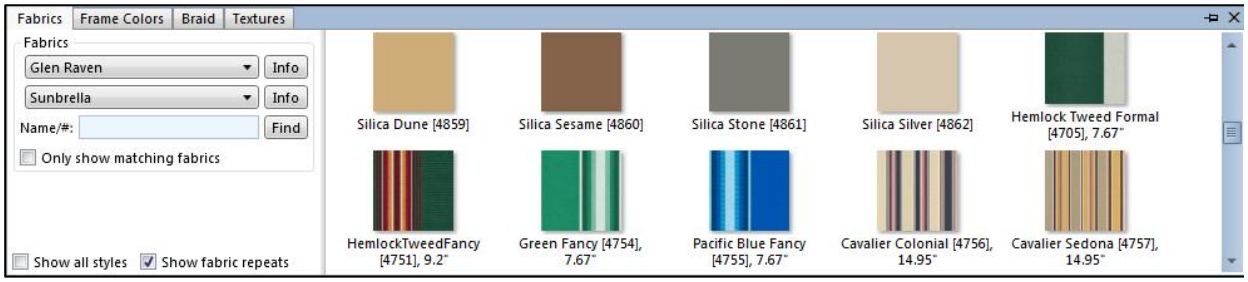
Valances are built to scale using physical dimensions. It's also possible to automatically space the valance cutouts based on the fabric repeat. Below is an overview of the new valance controls and their location in the program:



Applying Materials

Includes selection by manufacturer, fabric name or pattern number search and tree view

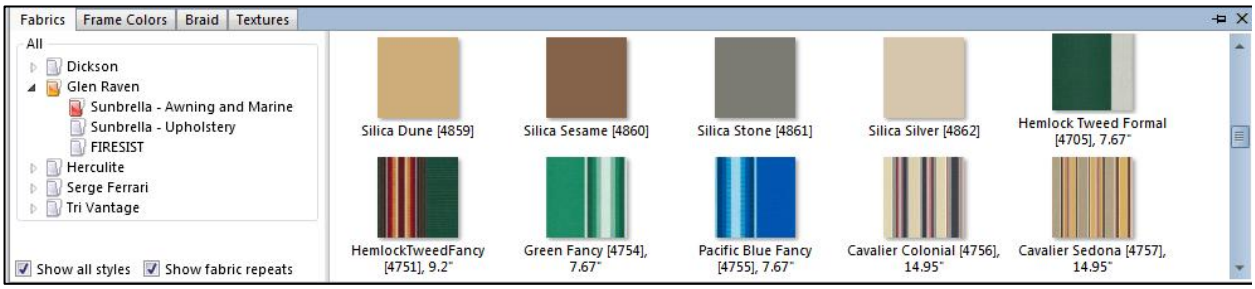
The “Apply Materials” window allows fabric, frame and braid colors or other textures to be applied to a selected object. You can also search by name or pattern number. For fabrics, a checkbox at the bottom left controls the display of the fabric repeats as shown below:



Click on the desired material to apply that material to the selected object (or part of an object). Double-click on a material to apply it to the selected object and automatically close the window.

For fabrics, there are “Info” buttons next to manufacturer and fabric line. Clicking these buttons will open PDF files that can be printed out on your color printer, providing a professional looking attachment for proposals.

In addition to the familiar drop-down boxes for selecting fabrics, a tree view that shows all manufacturers and fabric lines is also available. Click on the “Show all styles” check box to see the tree view (as shown in the example below on the left side):



The small arrows next to each manufacturer control the amount of detail that is shown. In the example shown above, the arrow next to Glen Raven was clicked to reveal three fabric lines. Clicking the arrow next to an item will show or hide its contents.

Note: Not all controls are available when the tree view is displayed. Uncheck the “Show all styles” checkbox if you need to print manufacturer or fabric info or to do a fabric search.

Applying Fabric Colors to Frame Parts

After an object is added to the scene, usually the next step is to apply a fabric and/or frame color. When using the Apply Material button, clicking on a fabric will apply it to only the fabric parts. Clicking on a frame color will apply it to only the frame parts.

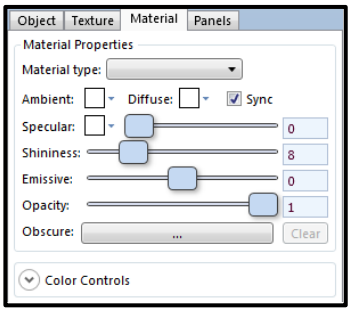
But what if the customer wants the fabric color applied to both the fabric and the frame? Awning Composer supports this but it must be done on a part-by-part basis. This means you must first select the individual frame part from the Object Parts list in the upper left corner and then apply the fabric to that part.

To understand why the system works this way, we need to dig deeper into how each of these parts are classified. Start by selecting each individual object part, go to the Material tab in the lower left, and look at the Material Type for that part. For a Traditional awning, the fabric parts have a material type of "Fabric" and the frame parts have a material type of "Frame".

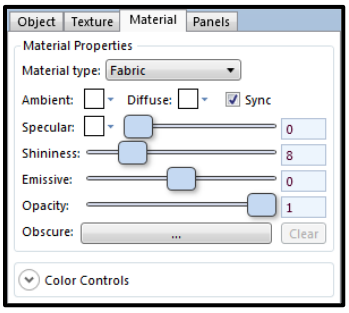
When a fabric is applied to the object, all of the parts classified with a material type of "Fabric" will have the fabric applied to them. The same thing occurs when a frame color is applied; the frame color will be applied to all parts with a material type of "Frame". However, when an individual part is selected (instead of selecting the entire object at the top level), it overrides this classification system and allows any type of material (fabric, frame, etc.) to be applied to any part regardless of its material type.

Below are three examples of the Material tab with various parts selected. Note that when the object is selected at the top level, there is no Material Type shown, which indicates that the object has multiple material types.

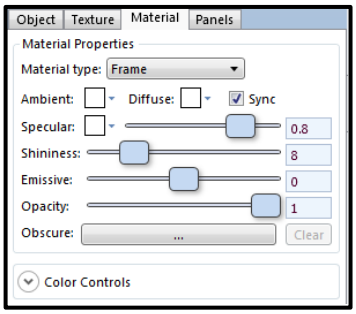
Object Selected



Fabric Part Selected



Frame Part Selected



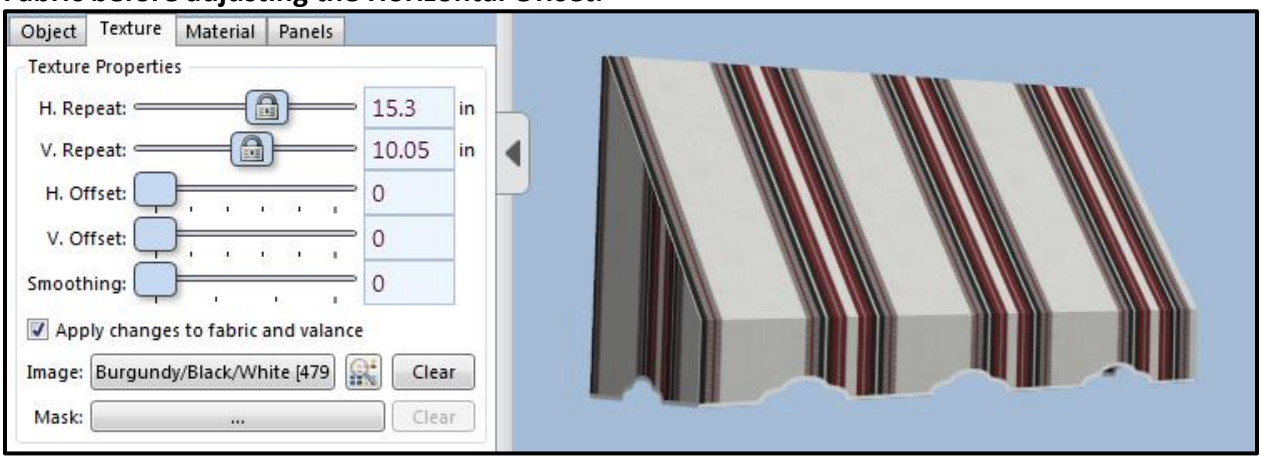
Changing Fabric Repeat and Offset

When a fabric is added to an object, Awning Composer uses the repeat width of that fabric to determine how many times the pattern will be displayed across the object. This repeat width can be changed using the H. Repeat (Horizontal Repeat) slider located in the Texture tab. Note that H. Repeat is linked to V. Repeat by default. Right click on the lock icon on either slider to unlink the two controls.

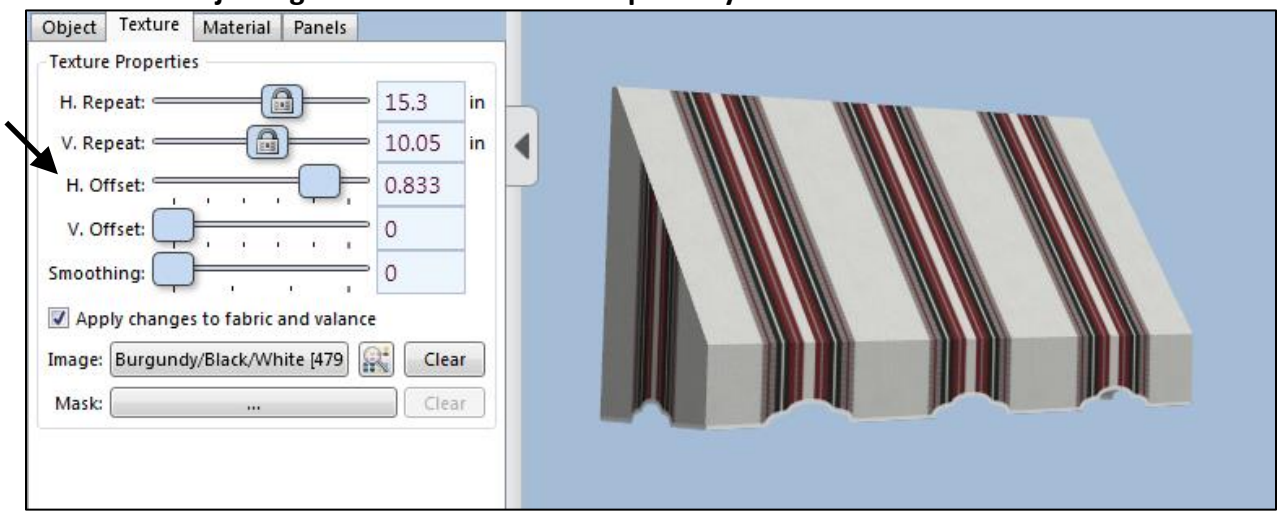
The location where the pattern starts can be changed using the H. Offset (Horizontal Offset) slider. This is most often used to make the pattern look symmetrical on the awning. If a valance has been applied to the awning, this slider can also be used to line up the fabric pattern with the valance cutouts.

The controls in the Texture tab can be used to adjust the fabric for the entire awning or for just one part. If the top level awning object is selected in the Object Parts list, the controls will affect all parts of the awning. If an individual part is selected (e.g. Left fabric), the controls will affect only that part.

Fabric before adjusting the Horizontal Offset:



Fabric after adjusting the Horizontal Offset separately on the front and on the left sides:



Creating Custom Fabric Panels

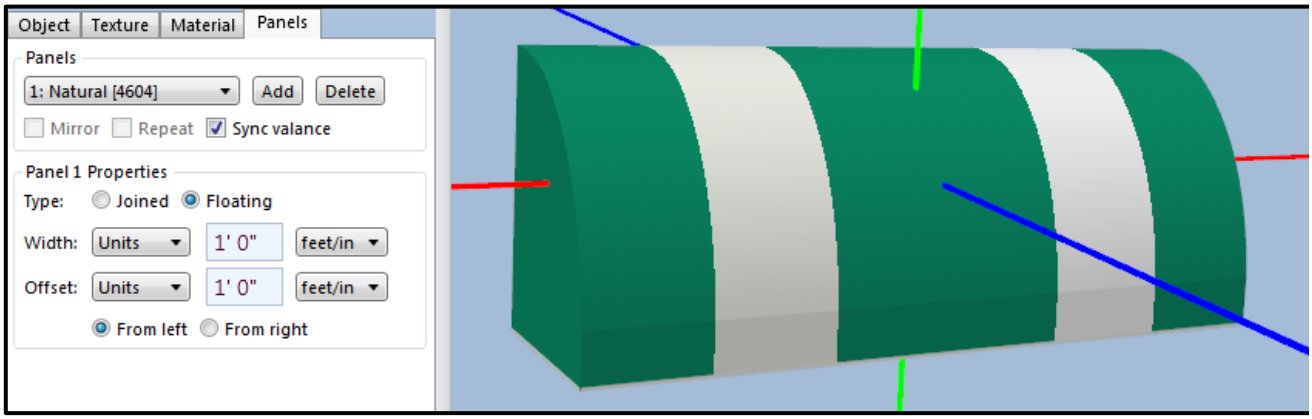
Panels can be used to mix and match different fabrics to create a custom design. Panels are most often used for creating a custom design on the front face of an awning, but they can also be used on the sides of the awning or on the valance. Before adding any panels, be sure to select the face of the awning by clicking on it in the 3D view or in the Object Parts window. After adding a panel, you can apply a material to it the same way you'd apply a material to an object. You can also set the panel's properties to specify its positioning and sizing.

There are two types of panels:

- **Joined** panels are joined together one after another along the object's surface. By default, the panel width is automatically calculated to evenly fill the available space. For example, when three panels are added to the front of an awning, each panel will be automatically sized to take up one third of the awning width. The width of a panel can also be specified in units (e.g. feet/inches/cm) or as a percentage of the available space.
- **Floating** panels can be positioned anywhere along the object's surface. They must have a width specified in units or percentage.

The following properties apply to an entire collection of panels:

- **Mirror** – (Joined panels only) – This option creates a mirror image of the panels. For example, assume we have specified three panels that are red, white and blue. The Mirror option will produce 5 panels on the awning: red, white, blue, white, red.
- **Repeat** – (Joined panels only, no Auto widths) – This option repeats panels along the entire object's surface. For example, assume we have specified three 1-foot wide panels that are red, white and blue. On a 6-foot wide awning, the Repeat option will produce 6 panels on the awning: red, white, blue, red, white, blue.
- **Sync valance** – This option keeps all of the panels the same on both the fabric and valance, which is typical. By disabling this option, you can make the valance appear differently with a single material (no panels), or its own unique set of panels.



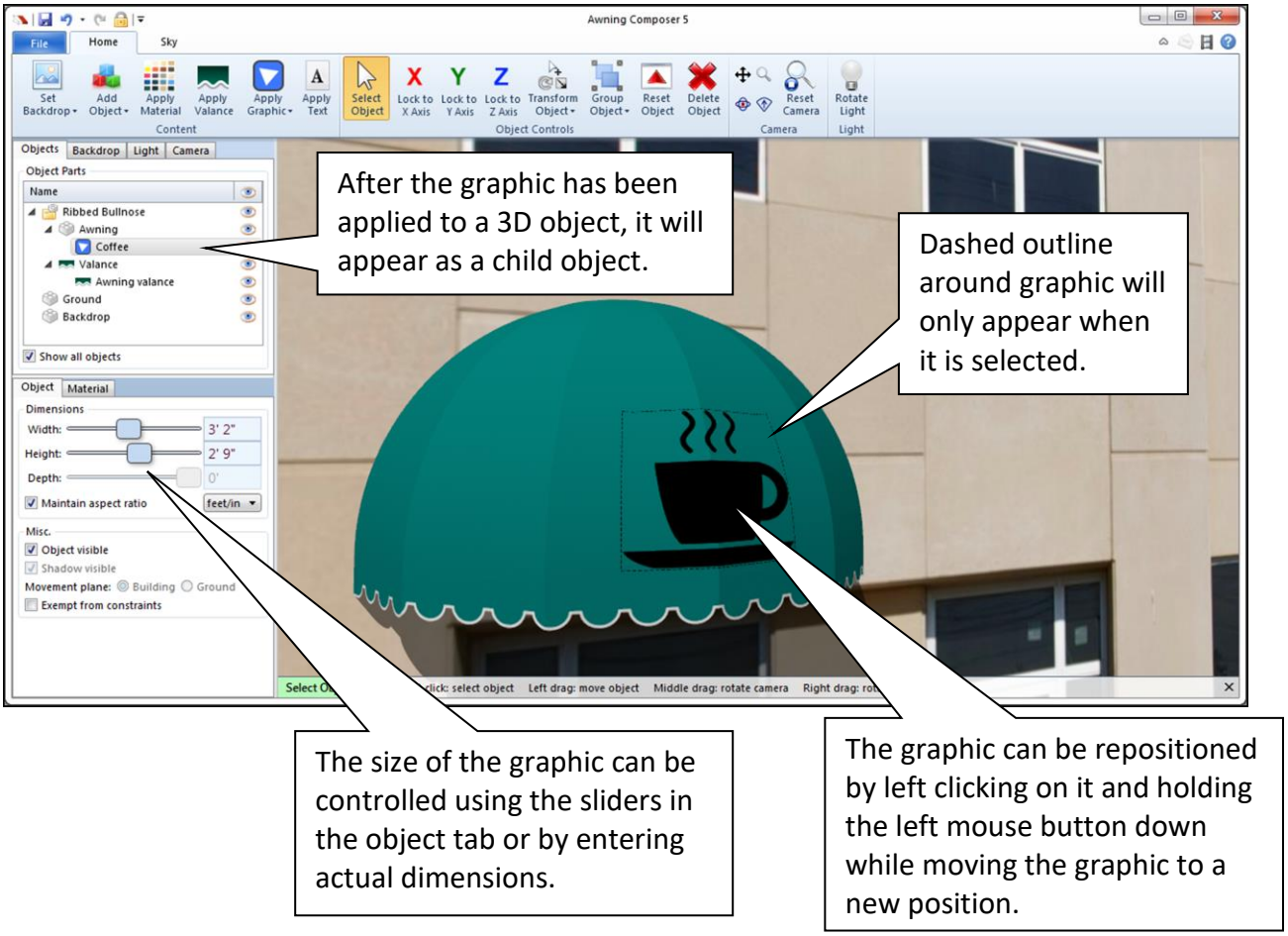
In the example above, a green awning was used as a starting point. Floating panels were used to define two 1-foot wide white panels set in 1 foot from each side of the awning.

Applying Graphics to Objects

Images (such as logos) can be applied to the surface of any object or backdrop

The Apply Graphic command allows logos or any image to be applied to the surface of an object.

The graphic will follow the shape of the surface it is being applied to. In the example below, a coffee cup logo has been applied to a ribbed bullnose awning and you can clearly see how the cup has taken the shape of the underlying fabric:



Transparent regions within a graphic (such as the space inside of the coffee cup handle in the above example), must be specified as "transparent" within the image file itself. To find out more about how this can be done, please see the section titled "Making Parts of Graphics Transparent".

Adding Graphics to Backdrops

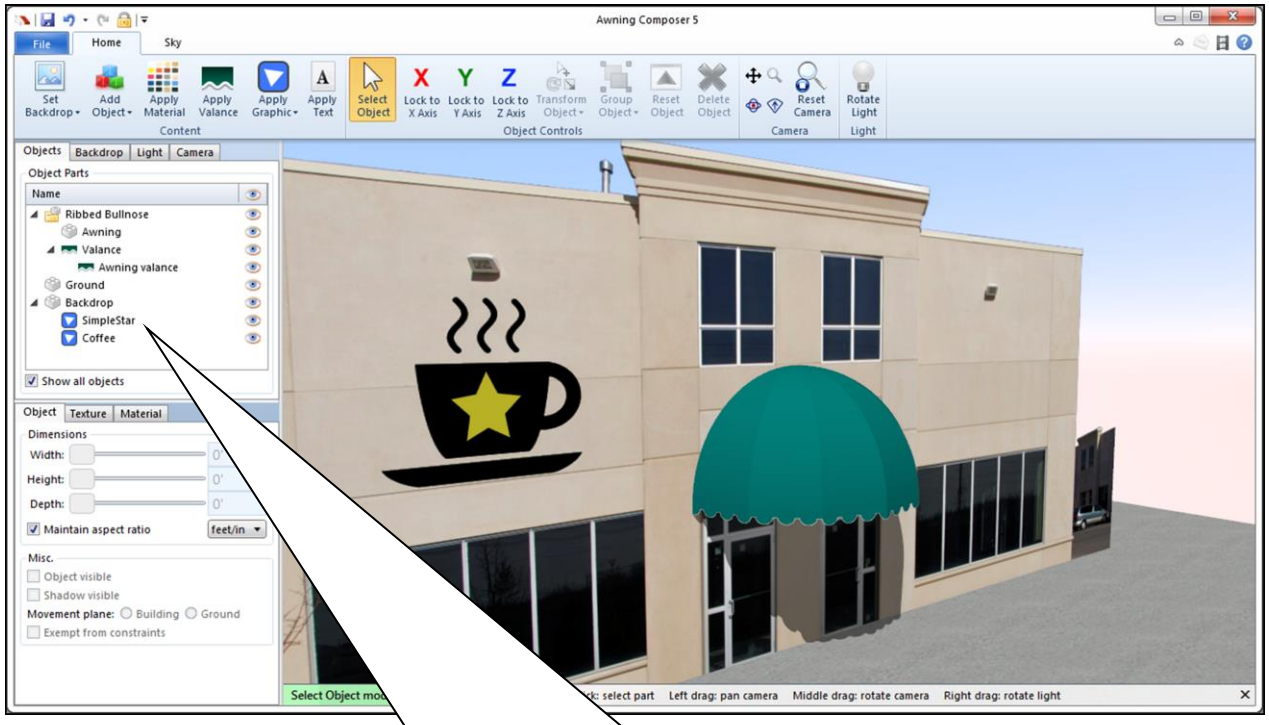
Graphics can also be added to backdrops. First select the backdrop by highlighting it in the Scene Objects tree. Then use the "Apply Graphic" button on the ribbon to bring the graphic into the scene. Adjust the size and position of the graphic using the sliders in the Graphic tab in the lower left hand corner.

Layering of Graphics

Awning Composer allows multiple graphics to be displayed over each other. In the scene below, the graphic of a coffee cup was added to the front of the backdrop. Then a graphic of a star was added to the front of the coffee cup.

The order of these layers is controlled by the order in which they are listed in the Scene Objects tree. In this example, the star (SimpleStar) is listed first so that is the top layer. The coffee cup (Coffee) is listed next so that is shown behind the star.

To change the order in which graphics are displayed, right click on the graphic you want to move and use the "Move Up in List" or "Move Down in List" commands.



Right clicking on the graphic name in the Scene Objects tab allows you to move that graphic up or down in the list controlling the order in which it is displayed. Graphics at the top of the list are displayed on top of the graphics listed below them. In this example, "SimpleStar" is shown first so it displays **after** the graphic of the coffee cup, essentially showing the star on top of the cup.

Making Sections of Graphics Transparent

Using image editing software such as Paint.NET

Awning Composer supports transparency for a graphic using the transparent area defined within the image file. **If transparency is needed, the image file type must be PNG.** This is because other common image formats such as JPEG or BMP don't store transparency information.

If you don't have the graphic available in PNG format with transparency defined, you'll need to use separate image editing software to prepare the graphic before loading it into Awning Composer. One example of such software is a free application called Paint.NET, which we've provided instructions for below. To get Paint.NET and other software recommendations, visit the Awning Composer web site and go to the Recommended Software page in the Support section.

	Example: Assume that your customer has sent you a copy of their logo in JPEG format as shown on the left. The black regions represent the transparent sections that should not be visible when the logo is brought into the Version 5 scene. You can define these black regions as transparent using the steps below.
	Open the logo in Paint.NET. Select the Magic Wand tool in the Tools window. Left click anywhere on the black area to select it. Note that you can control the sensitivity of what is being selected using the Tolerance level in the toolbar at the top. Go to the Edit menu and choose Cut. The black area is deleted and replaced with the checkerboard pattern which indicates transparency.
	Now use the Magic Wand and Cut command to remove the black from inside the letters "A", "O", "P" and "R". Go to the File menu and choose Save As. Next to "Save as type", select PNG and then save the image. The regions showing a checkerboard pattern will be transparent when using this logo with Awning Composer's Apply Graphic command.

The picture below shows an awning after the modified logo in PNG format was added using the Apply Graphic command:

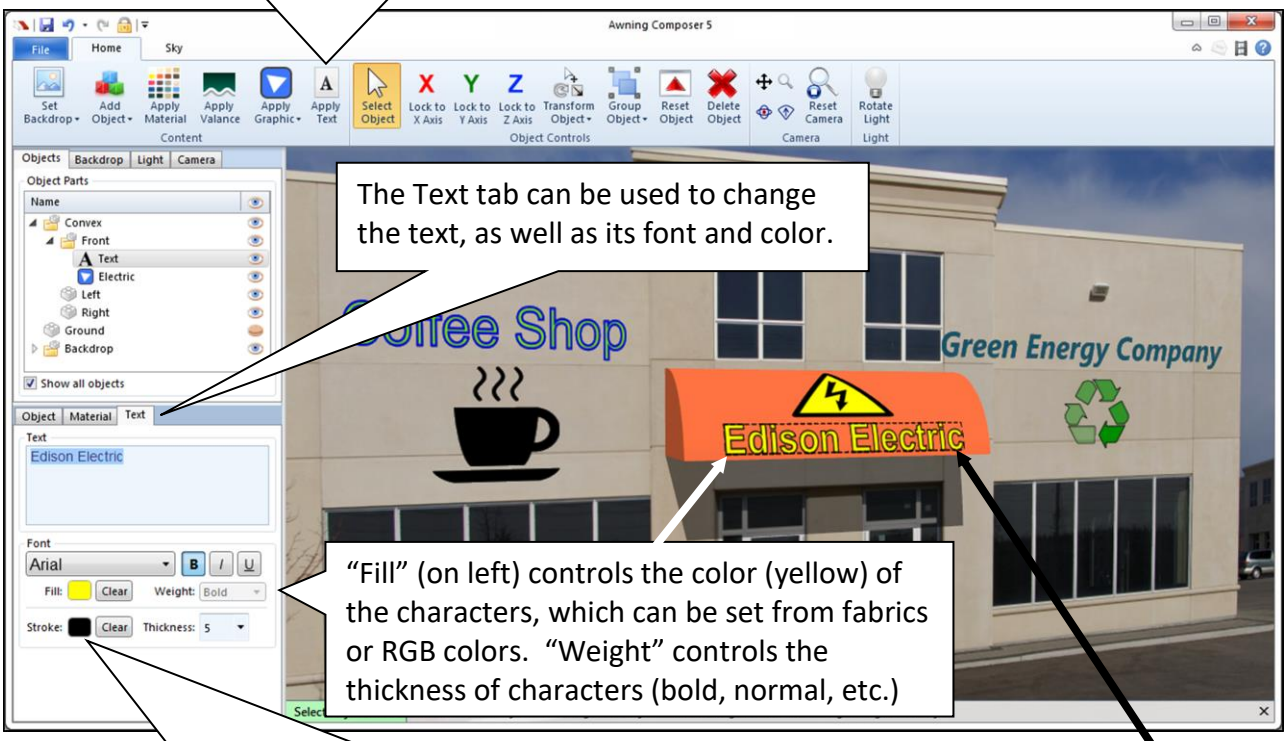
Applying Text to Objects

Includes bold, underline and italic fonts plus text outlining (stroke control)

Adding text is very similar to adding graphics. First an object must be selected. Then the program applies text to that object so that it follows the surface shape of the object.

The "Apply Text" command can use any fonts that are installed on your computer. To add an additional font, simply install the font in Windows and then restart Awning Composer. The new font will be available in the font selection drop down box in the Text tab.

Below is an overview of the text controls and their location in the program:

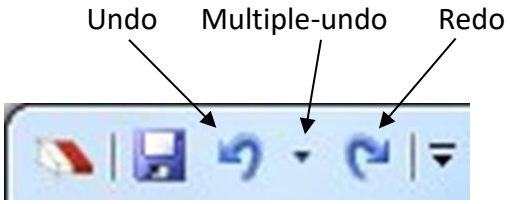


Note that you can also add text or graphics to the backdrop or the ground. Make sure the "Show all objects" checkbox at the bottom of the Objects Parts list is checked. Click on "Backdrop" or "Ground" in the Object Parts list to select either of these objects. Then apply your text or graphics just like any other object.

Undo / Redo

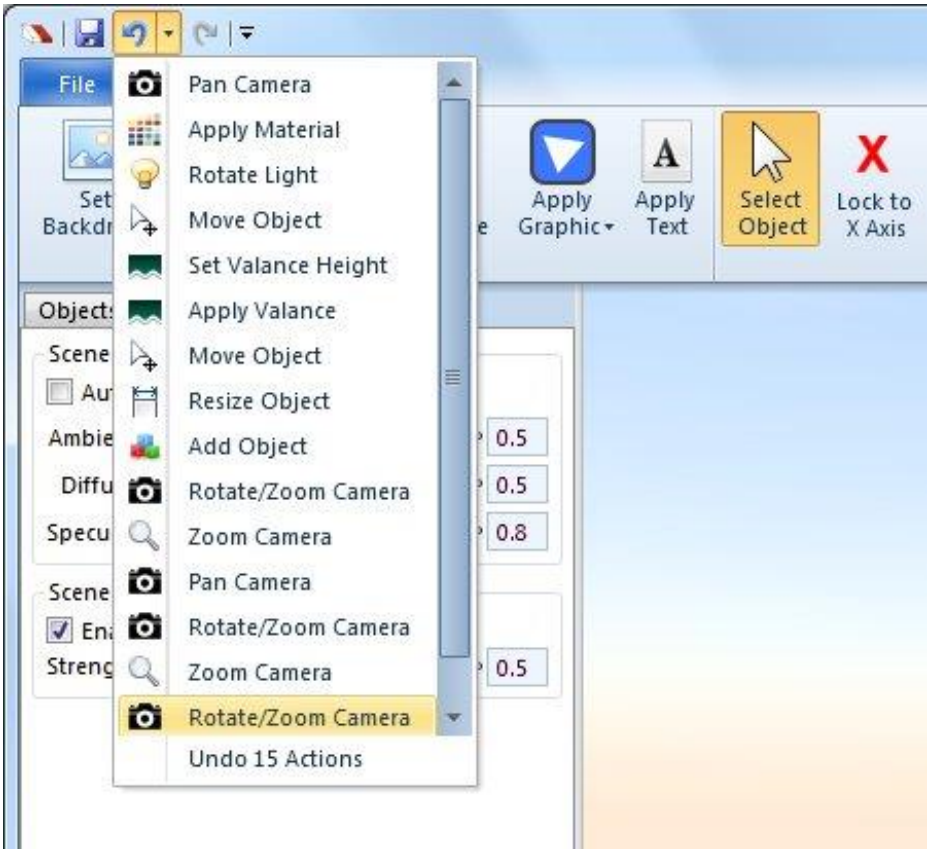
Undo last action or multiple actions, or redo

Awning Composer offers undo and redo commands similar to other applications to make it easy to quickly undo unwanted changes. The buttons for these commands are located in the quick access toolbar at the top of the program window:



Clicking the Undo icon steps **back** one action and clicking the Redo icon steps **forward** one action. Hovering over each of these icons will display a tool tip for the action about to be done.

A **Multiple-undo** command is also available. By clicking on the down-arrow next to the Undo button, you can scroll down the list of previous actions and highlight the last action in a series of actions to be undone. At the bottom of the list of actions, Awning Composer will display the message "Undo x Actions", where "x" is the number of actions to be undone. To complete the multiple-undo, left click on the highlighted action.



Sky and Automatic Lighting

Create realistic shadows based on building location, orientation, time of year and time of day

Awning Composer can automatically set the light levels, direction of sunlight, and shadows in response to various input parameters. This feature can be used with any type of backdrop.

In addition, Awning Composer can show a computer-generated sky behind the backdrop (when the background is set to "Sky"). This is most useful when the backdrop image has been edited to remove the original sky and the ground by making them transparent. This can be done using image editing software such as Paint.NET. To get Paint.NET and other software recommendations, visit the Awning Composer web site and go to the Recommended Software page in the Support section.

Making Parts of Your Backdrop Transparent

In the image editing software, use the selection tool to crop the picture at the bottom of the building to remove the ground. Then use the selection and erase tools to cut away all of the sky above and around the sides of the building. Areas that have been cut away become transparent and are designated by a checkerboard pattern. The goal is to end up with just the building and no sky.

Original backdrop image

Image after sky and ground have been cut away

Open the modified backdrop image using the "Open from file" command under the "Set Backdrop" icon. During the backdrop loading process, specify the backdrop type as "Straight-on", set the scale of the backdrop using a known point of reference (such as a doorway), set the ground to "Visible" and set the level of the ground so it aligns to the bottom of the building.

After adding awnings to the building, click on the "Sky" tab to access sky controls which simulate actual sky and shadow conditions for your rendering. The following information is required to calculate accurate shadows:

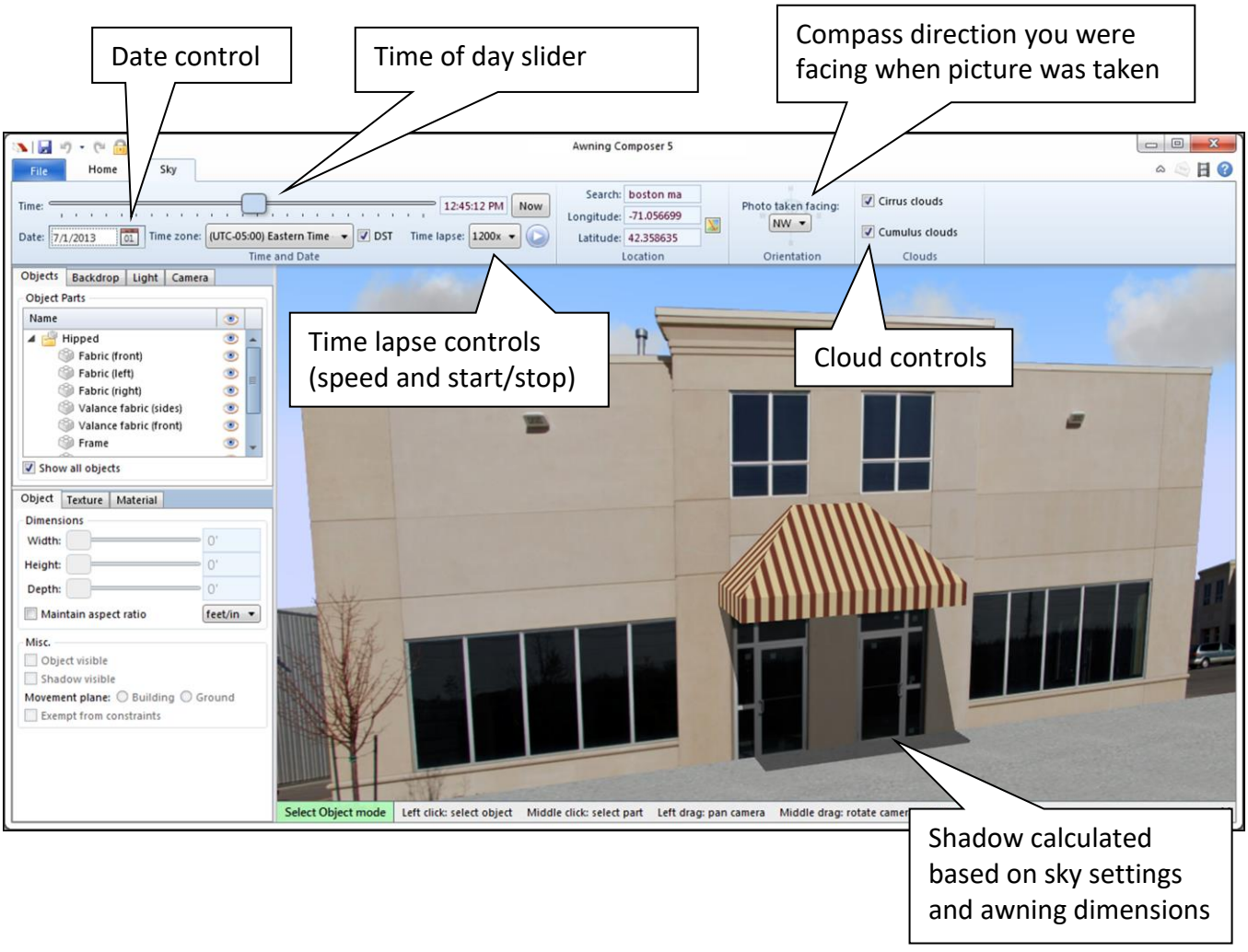
1) Date and time of day
2) Building location (city/town or LAT/LON)
3) Compass direction that photo was taken

Based on this information, Awning Composer will calculate the exact sun angle and cast an accurate shadow based on the dimensions of the awnings in the scene.

There is also a “Time Lapse” feature that allows you to view the shadow as the sun rises, shines through the day and sets. The speed of this time lapse can be controlled to create a very fast or very slow rate of sun travel.

Sky Controls

Here’s an overview of the main controls available in the Sky tab:



Helpful Hint: If you want to see the angle that the sun is hitting the awning, turn on the “Rotate Light” feature on the Home tab before accessing the Sky tab. As the sun crosses through the sky, the “spotlight” will be pointing at the awning in line with the sun angle so that you can visualize the position of the sun in the sky at any time of the day.

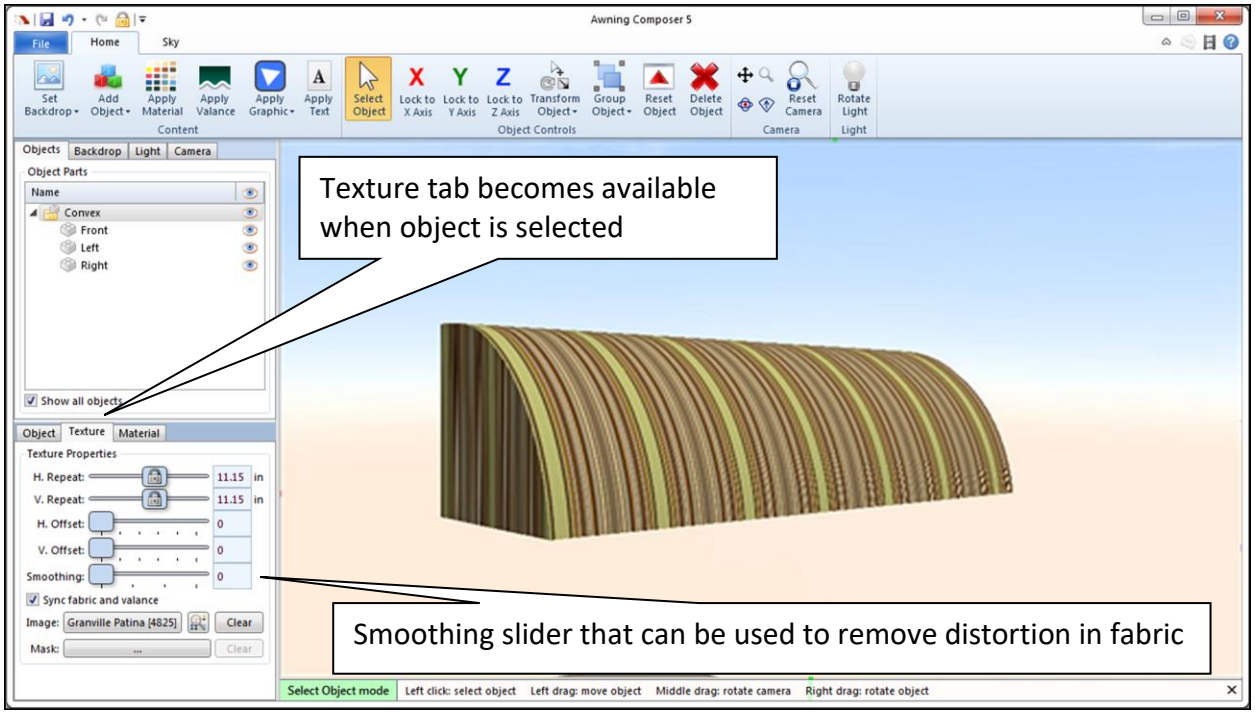
Image Quality Hints

For screen display, printed or saved renderings

When applying striped or jacquard fabrics to objects, sometimes distortion appears across the object. This occurs much less frequently than in older versions of Awning Composer, but when it does occur, it can be reduced or eliminated by using the **smoothing** control. This control is located under the "Texture" tab in the object properties box in the lower left corner of the program window.

Smoothing

Smoothing works by smoothing the image of the fabric to eliminate distortion. If too much smoothing is used, the fabric may look blurry.

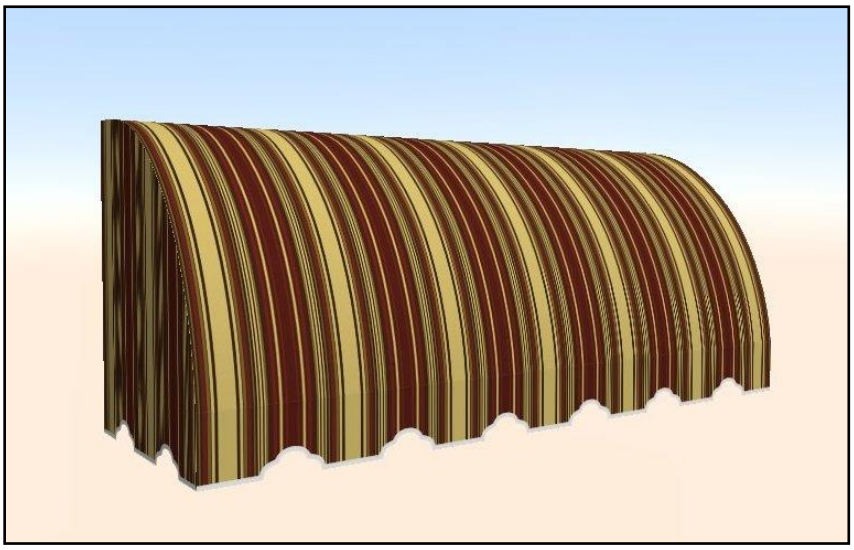


Printer Resolution vs. Screen Resolution

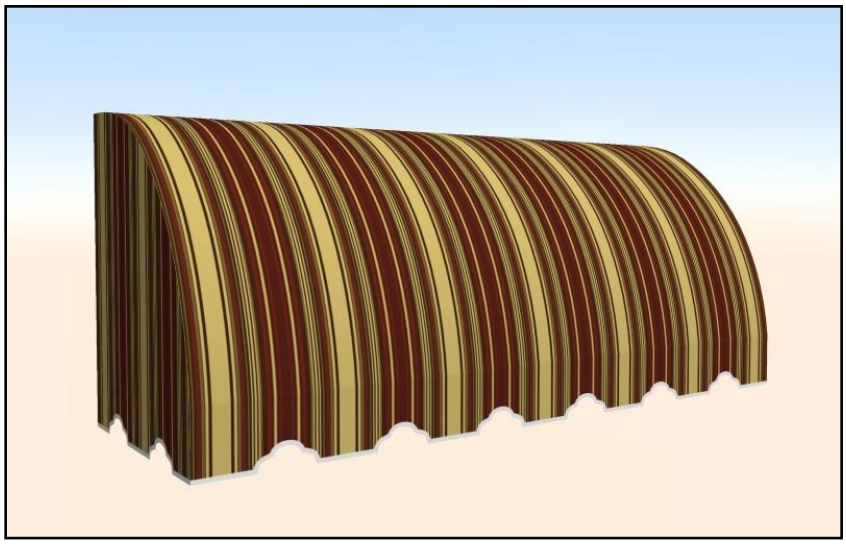
In most cases, even low end color printers are capable of producing more detailed images than your computer screen can display. Most printers are capable of a minimum of 300 dots-per-inch (DPI) output versus a computer screen that displays images at about 100 DPI.

Saving your scene as an image can also be done at a much higher resolution than your computer screen can display. So even if you do not adjust smoothing at all, images with distortion in the fabric may print out (or be saved) just fine due to the higher resolution available for these functions. As an example compare the following two pictures:

Awning shown on computer screen with no smoothing:



Same awning as above printed out, **also with no smoothing**:



So before trying smoothing, be sure to check the printed or saved rendering, because smoothing may not be needed at all depending on the capabilities of your printer. And remember that too much smoothing can induce blurriness into your rendering.

Object Brightness and Specular Lighting

Lighting is the key to making a rendering appear realistic. After getting the sun angle correct using the Sky controls or manual direction adjustment, lighting level adjustments can be made using the Emissive (object brightness) and Specular lighting slide controls, which are located on the Materials tab in the properties section in the lower left hand side of the screen.

The Emissive slider is used for adjusting the brightness of an object. For example, assume a rendering includes a backlit awning depicted in early evening. The scene would be shown in low light conditions so the awning would be darkened. Select the awning and then slide the Emissive slider to the right to increase the light coming from the object, making it look like a backlit awning. (Note: Emissive lighting for both awning and text objects was increased here.)

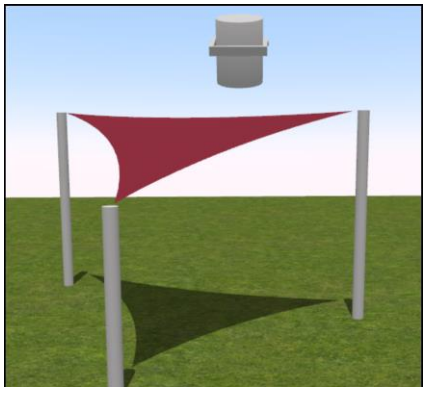
Normal Lighting

Increased Emissive Lighting

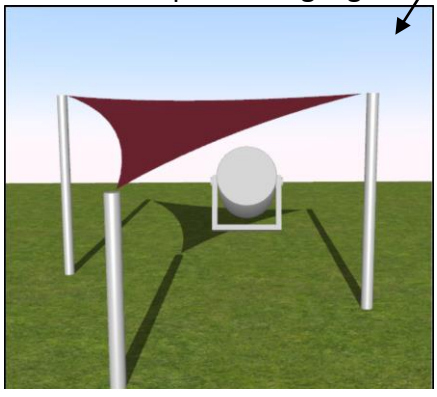
Specular lighting is used to control the reflection off a shiny object. When you look at the chrome accents on your car on a sunny day, you see a bright spot of sun being reflected. The Specular slide control is used to increase or decrease the intensity of that type of reflection.

However there are more factors other than intensity needed to create the Specular lighting effect. The angle of the sunlight in the scene, the curvature of the object, and the direction the object is being viewed from are also important factors.

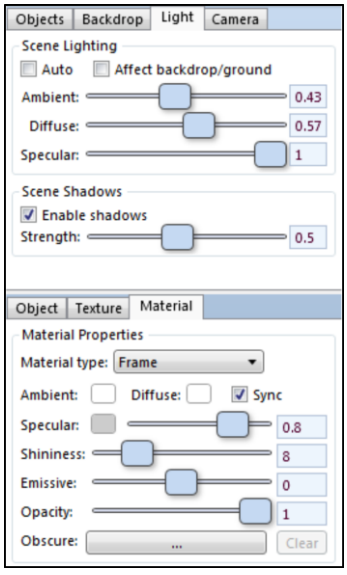
Sunlight overhead –
no specular highlights on poles



Sunlight low in the sky –
increased specular highlights



Settings used to achieve specular effect on poles



Color Controls

Advanced controls for special lighting situations

In certain cases, none of the previous lighting adjustments will give you the results you are looking for in your scene. For these special cases, there is a set of color controls on the Materials tab. ***Warning! Using these color controls can drastically change the color of the awning material and therefore they should be used sparingly!***

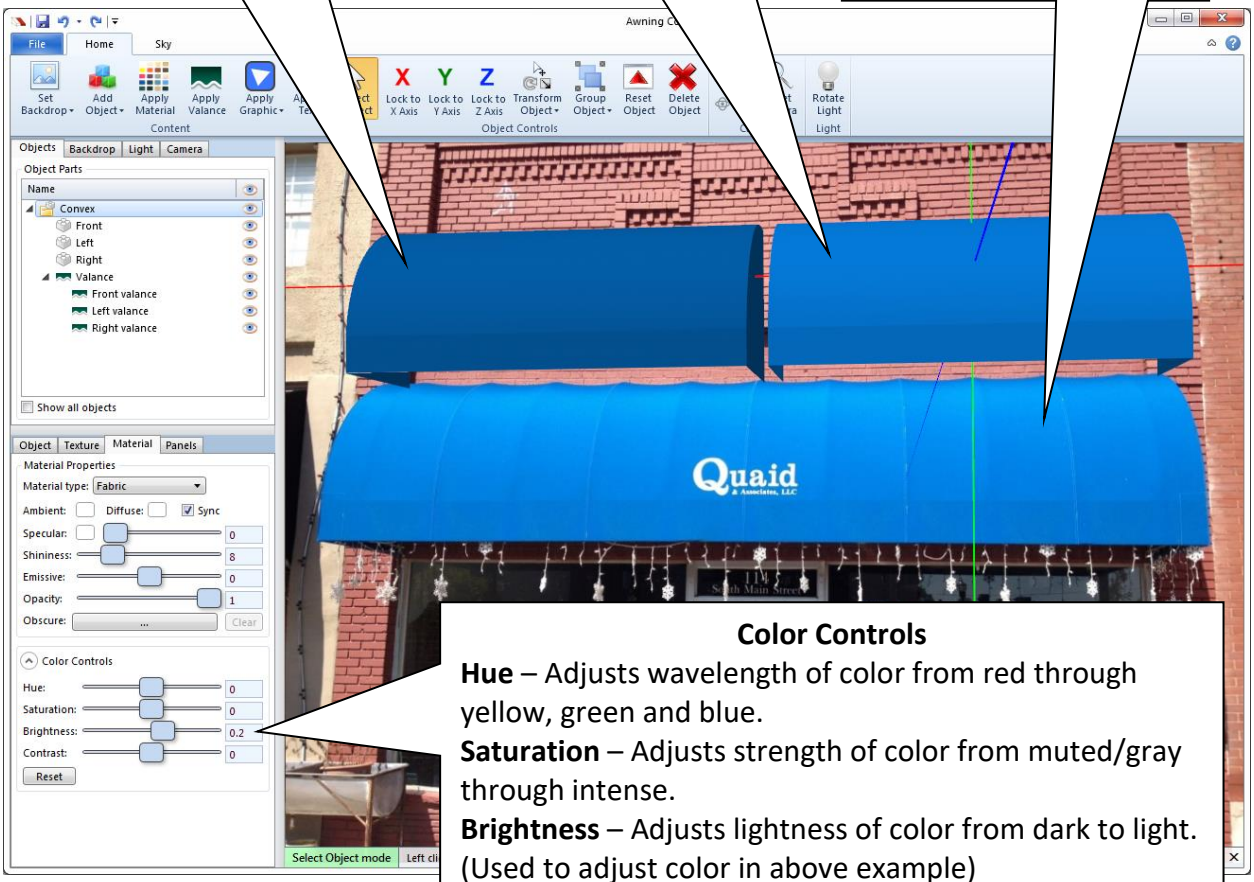
In the example scene below, the fabricator was trying to show a customer what his building would look like with a new Sunbrella Pacific Blue awning. But the picture was taken in very bright conditions and the camera overexposed the picture causing it to look even brighter. (Note that the color of the bricks in the picture looks more pink than red.)

Adjusting the sun angle or changing the object brightness will not change the fabric color enough to match the backdrop picture in this scene. By using the "Brightness" color control, we were able to lighten the fabric color to match the picture and provide a more realistic rendering.

New Pacific Blue awning with no adjustment

New Pacific Blue awning with brightness adjusted

Existing Pacific Blue awning looks lighter due to over-exposed picture



Color Controls

Hue – Adjusts wavelength of color from red through yellow, green and blue.

Saturation – Adjusts strength of color from muted/gray through intense.

Brightness – Adjusts lightness of color from dark to light. (Used to adjust color in above example)

Contrast – Enhances or reduces the contrast between different colors located close to each other.

Obscuring Objects

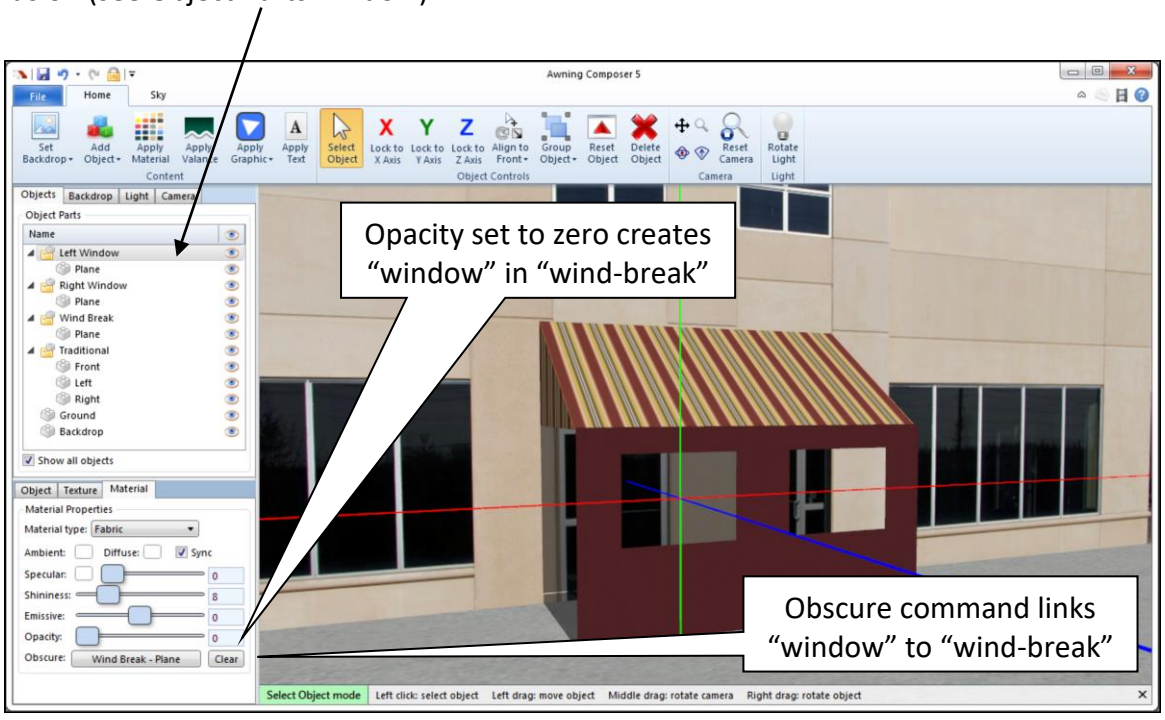
A way to put "windows" into canvas enclosures

There are times when you need to cut a hole into a canvas partition to make it look realistic. A common example would be adding a window to a canvas enclosure. To support this capability, there is a property called "Obscure" in the Materials tab in the properties section in the lower left hand side of the screen. This property allows one object to obscure another one – that is, prevent the second object from being visible where the two overlap. This produces the appearance of a window when a transparent object is used to obscure a solid object.

The process involves three steps:

1) Choose an object to be aligned with surface of the canvas – this is the **obscuring object**.
2) Set the obscuring object to obscure the canvas surface by setting its Obscure property.
3) Set the opacity of the obscuring object to zero, effectively creating a hole in the canvas that is the same as the size of the obscuring object.

In the following example, we used a Vertical Plane from the Misc. Objects tab to create a wind-break in front of this building that is attached to the front edge of the awning. We then used another Vertical Plane as the obscuring object to create a "window" and we used the "Align to Front" command to align the "window" with the front of the wind-break. Finally we used the Obscure command to link the window to the wind-break and set the opacity of the window to zero. Since all of these parts were called "Vertical Plane", we renamed them to prevent confusion (see Object Parts window).



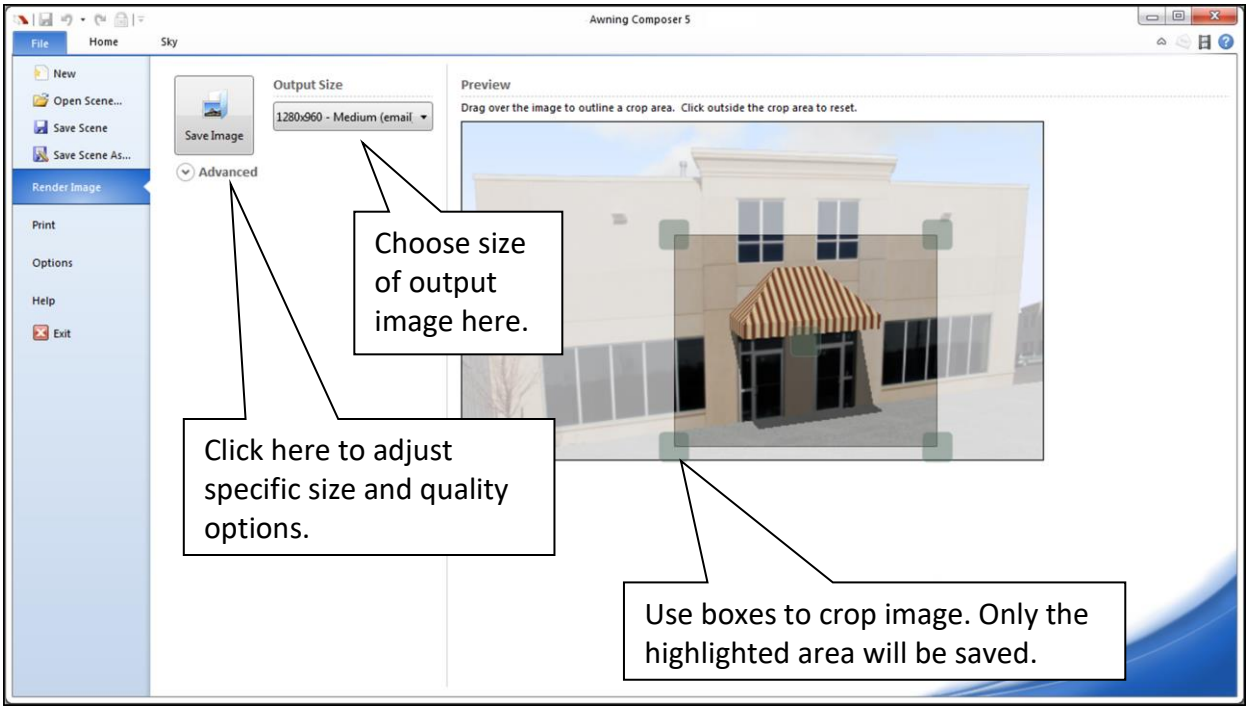
Shortcut: Once the left window was created, it was duplicated (right click then choose duplicate command from menu), the X-axis was locked and the duplicated window was slid across into the right window position.

Rendering and Saving Images

Producing images that can be emailed to customers

You've finished setting up your scene and now you want to share the result electronically with someone who doesn't have Awning Composer. Maybe it's by email, maybe copying it to a flash drive, or posting it on a web site. Or maybe you want to open it in another program. In all of these cases, the next step is to save the scene as an image file.

Click the "Render Image" button on the File tab and the following interface will be shown:



First choose the desired size of the output image. This will vary depending on whether you want to display the image on a small screen, a large screen, or eventually have it printed. The size of the image affects the size of the file and the amount of time it takes to render the image.

Next choose the area of the image you want to save. On the right side, you'll see a preview of the scene where you can choose the area to keep. This is called **cropping** the image. When you place the mouse cursor over the scene image, you'll see five boxes show up. You can drag these boxes to create an outline around the area you want to save.

Note: In the Advanced options, there's a setting for anti-aliasing. Using a higher setting for anti-aliasing will improve the smoothness of **edges of 3D objects** in the scene, but it will take longer to render the image. This setting has no effect on the final output size of the file.

Printing and Page Layout

Flexible interface allows you to quickly create professional looking renderings for your proposals

Awning Composer includes printing support and a flexible page layout interface located on the Print page of the File tab. Like most programs, you can choose the printer, paper size, orientation and other common printer settings. However, the page layout interface goes much further by allowing you to create a completely customized page that includes one or more 3D renderings, free-format text, and imported images such as logos and graphics. Once your page design is complete, you can save it as a template and use it for future jobs. Eventually you can build up a library of templates, each one targeted to a specific market segment.

Page Layout Toolbar

The key to unlocking the power of the page layout feature is getting to know the Page Layout Toolbar located next to the page layout area. This toolbar contains the following functions:

New Layout (Ctrl+N) – Clears the current layout and all formatting so you can start designing a new layout from scratch.

Open Layout (Ctrl+O) – Opens an existing layout. The rendering from the current scene will automatically be substituted into the layout that you open.

Save Layout (Ctrl+S) – Saves the current layout. Try to use descriptive filenames like “Engineering style with side info panel” or “Rendering with watermark”, etc.

Set Current Layout as Default (Ctrl+D) – Makes the current layout the default. The default layout is loaded when you start the program or create a new scene.

Cut (Ctrl+X) – Removes the currently selected object (text, image, etc.) from the page and places it on the clipboard. Note that you cannot delete the rendering of the current scene.

Copy (Ctrl+C) – Copies the currently selected object to the clipboard. This can be a text box, image or the rendering. By hiding the awnings in your scene and “copying” the rendering, you can easily insert a “before” image into your layout.

Paste (Ctrl+V) – Pastes content from the clipboard onto the page. If an object is selected when you paste, its content can be overwritten.

Undo (Ctrl+Z) – Undoes the last page layout operation performed.

Redo (Ctrl+Y) – Redoes the last page layout operation that was undone.

Add object to page – Displays a context menu that contains these options:

Add Text Box (Ctrl+T) – Creates a new text box on the page. Right click in text box to add fabrics and font colors from context menu. After entering text, you can use the text controls at the bottom of the window to change options such as the font size, font, text alignment, text color or background color.

Add object to page – continued:

Add Rich Text Box (Ctrl+H) – Creates a new rich text box on the page. This works the same as a regular text box except that it supports mixed fonts, different font sizes and multiple colors. The regular text box can only have one type of font, one font size, one text color and one background color for the entire text box.

Add Image (Ctrl+M) – Adds an image from an image file to the page. This can be handy for adding your logo, an engineering stamp, pictures of brackets, etc.

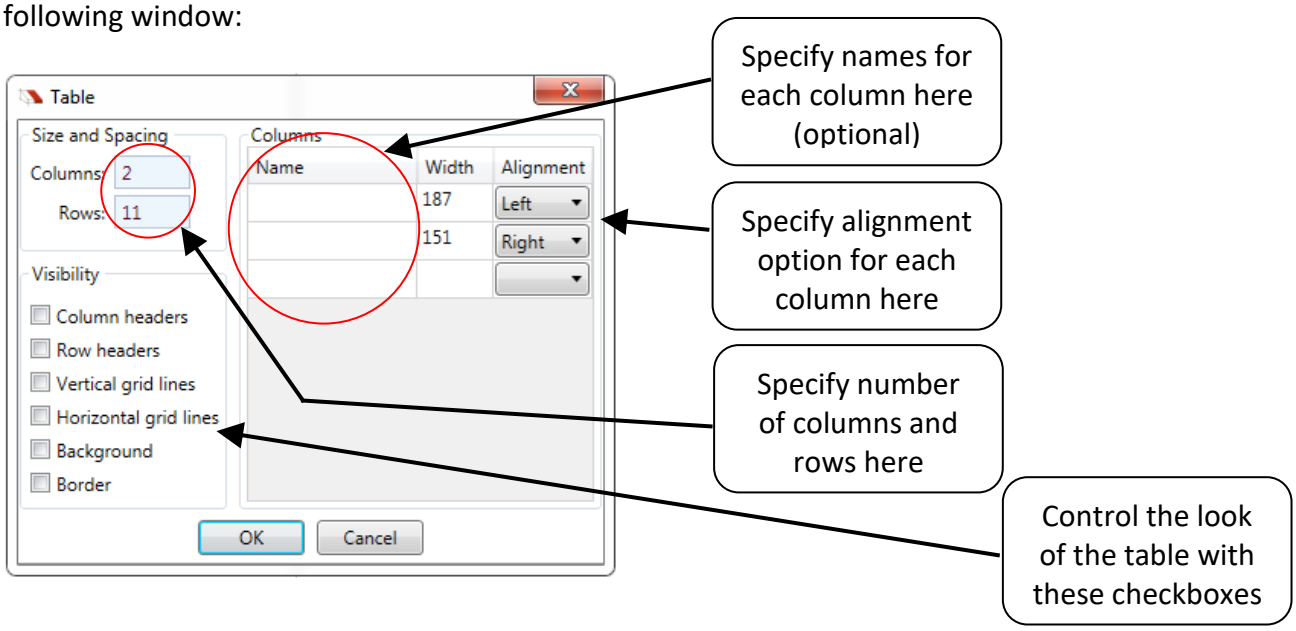
Add Table – Creates a table object on the page with controls for specifying multiple rows, multiple columns and controlling the look of the table. The table has a special ability to dynamically adjust rows based on the number of awning objects that are in the scene. (See below for more details on how to adjust tables.)

Add Parts List – Adds a frame parts list from the Frame tab in the Estimation panel. Uses the same table interface as the Add Table command.

Add 3D View – Adds a window which shows the current awnings in the scene. The size of the view that is shown in the 3D view window can be adjusted using the cropping controls under the Render Image function on the File menu. The size of the window can be controlled using the adjustment blocks in each corner of the window.

Adjusting Page Layout Tables

The key to creating a professional looking quote is to use the table feature contained in the page layout system. Tables provide an easy way to line up columns and rows of text or pricing information. Clicking on the Table Properties icon after adding a table will bring up the following window:



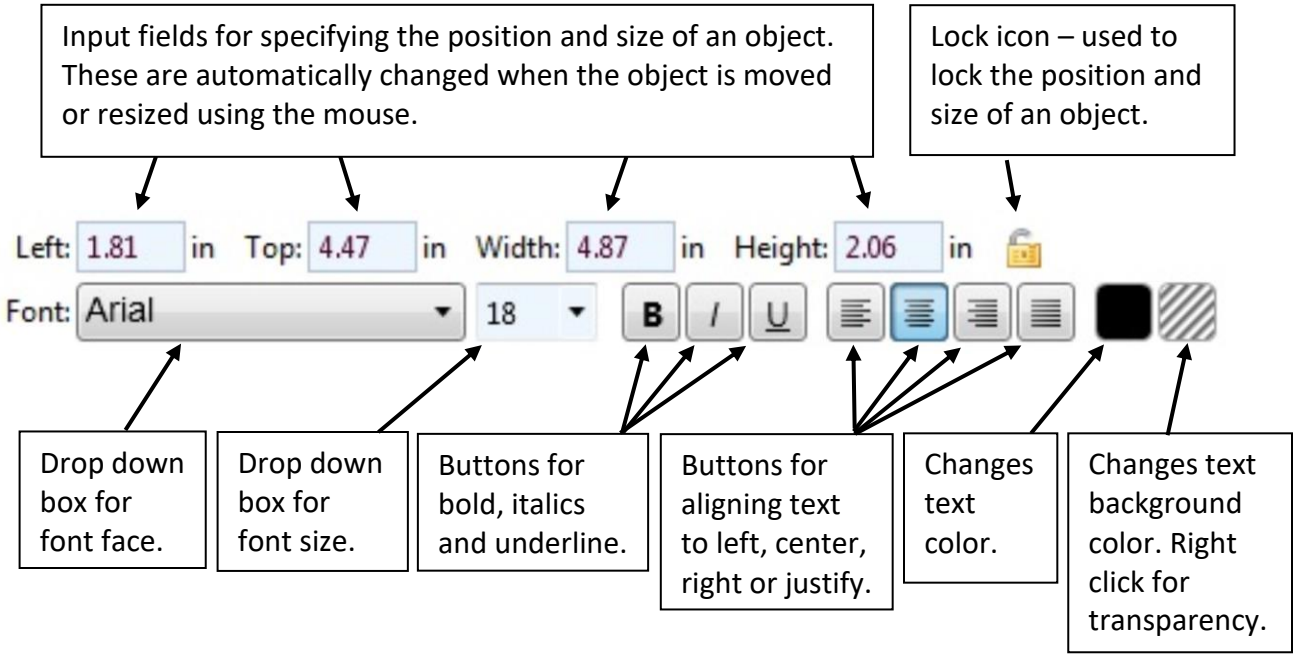
The widths of the columns can be adjusted in two ways. In the Table Properties window, you can enter a number for the width. A width of 0 will automatically size the column to fit its contents. You can also turn on the "Column headers" option and adjust the column widths by dragging the vertical dividing lines between column headers.

Note 1: Only the vertical dividing lines between the column headers can be used to change the column widths - not the lines present on other rows of the table.
Note 2: You can't click inside the column headers to enter text. Column header text must be specified in the Table Properties window shown above.
Note 3: All cells within a table must have the same font color, font size and background color. To make column headers look different than the rows below them, use a separate table.
Note 4: To move a table, drag it by its gray background area below the table cells. Be sure the Background option in the Table Properties window is enabled. Alternatively, you can move a table by dragging the resizing boxes at the corners of the table.

Positioning Tools and Text Box Toolbars

At the bottom of the print page are two rows of toolbars. The upper row allows you to position and size the selected object (rendering, image, text box, etc.) using unit specifications. These specifications will also change if you resize or reposition the object using the mouse. This row also includes a lock command that allows you to lock an object's position and size on the page. Locking prevents unintentional movement of an object after you have completed work on it.

The lower row provides a complete set of text controls. Please note these controls work on a text box basis and not a word or letter basis. As an example, assume that you have one word highlighted in the text box and you change the text color, then all of the words in the text box will be changed to that color.



Also note the handy magnification tools in the lower right corner. → 

Page Layout Context Menus

Right clicking in the page layout or over an object on the page will bring up a context menu. These menus allow you to execute some of the functions on the toolbars, but they also have several commands that are not available in the toolbars. Toolbar commands that are available on the context menus include **Cut, Copy, Paste,** and **Lock**.

Commands that are **only available** on the context menus are:

Delete – Deletes the selected object from the page.
Align – Centers the object or aligns it to the top, bottom, right or left side of the page.
Bring to Front – Position an object on top of other objects on the page.
Send to Back – Position an object under other objects on the page.
Opacity – Changes the visibility of an object so it fades into the background (watermark).

Including Multiple Renderings in the Page Layout

By default, the page layout contains a single rendering showing the current contents of the scene as displayed in the 3D view when the Home tab is selected. However, it's possible to include multiple renderings on the page to show different views of an awning, different awning styles, the same awning with different fabrics, a before and after comparison, etc.

Important: Whenever you make changes to the scene in the 3D view, the rendering on the page will change as well. This object on the page is called the **active rendering** because it's actively updated to reflect the latest contents of the scene. When you have the active rendering selected, the resizing handles at its corners will appear with a **green tint**.

To add additional renderings to the page, select the active rendering, choose Copy, and then choose Paste. Reposition the copy to a different location on the page. Now you will see two images showing the same scene. Go back to the Home tab and make a change to the scene. Then go back to the File tab to return to the page. You will see that the active rendering has changed, and you now have two different renderings on the page.

You can repeat the copy and paste process as many times as you like to include any number of renderings on the page.

Note that when you select the active rendering and choose Copy, the 3D scene is rendered as an image at that point in time. The size and quality of the rendered image depend on the size of the active rendering on the page and the quality settings (such as resolution and anti-aliasing) currently selected. For the best results, make sure the active rendering is sized to the final desired size for the copy, and the quality settings are set as needed before choosing Copy. For example, if you set a small size and low quality for your active rendering and then resize a copy of that rendering to be much larger, the image could appear blurry or pixelated.

All images on the page are stored in scene and layout files. This ensures that the layout will appear intact when you save the scene or layout and open it later. If you want to re-use the same layout with multiple renderings for many projects, you can prepare a layout with placeholder images pre-arranged in their desired locations, then copy and paste the active rendering over each placeholder image.

To do this, use the Add Image command to create a layout containing some placeholder images. (Use any image you like as the placeholder.) Then save this layout with your company contact info.

You can then open this saved layout and replace the placeholder images with images from the current job. To do this select the active rendering, choose Copy, then select a placeholder image, and choose Paste. The placeholder image will be replaced by the copy from your current job.

Printing and Other Output Options

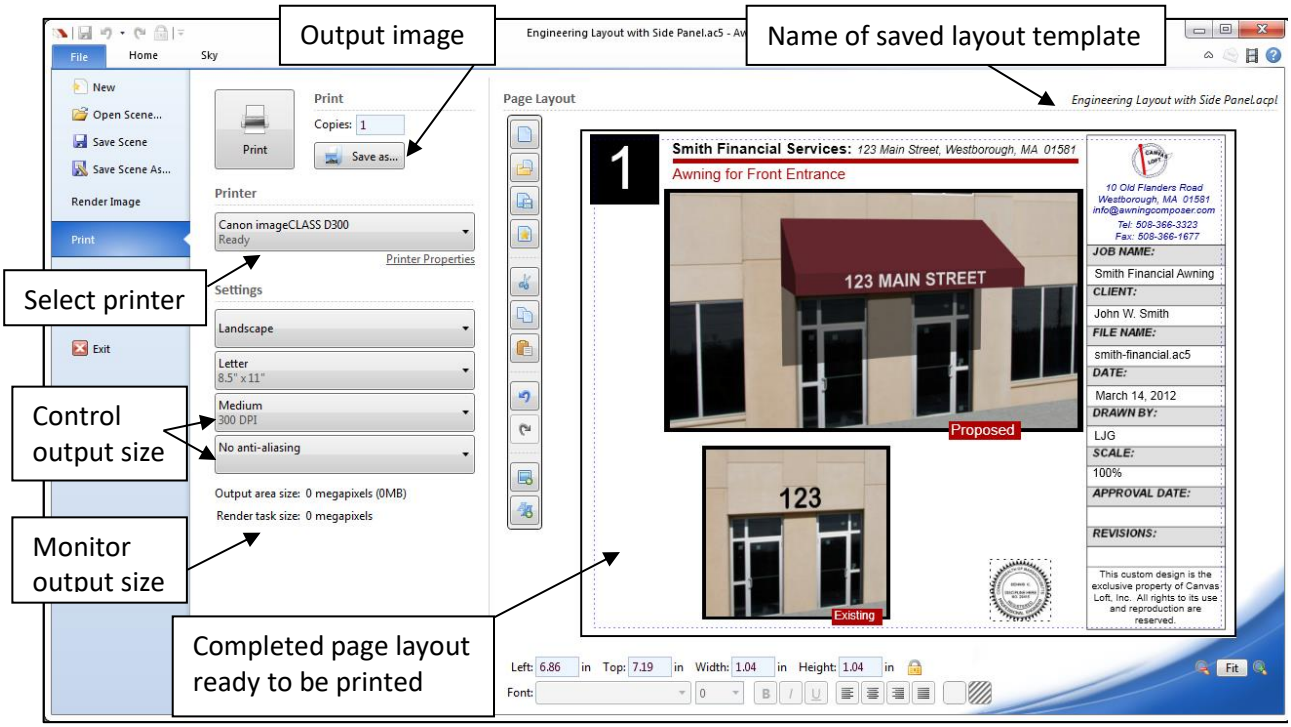
Output can be printed or saved as a PDF document (by selecting a PDF printer)

Once your page layout is complete, you can print it on any printer installed on your system by selecting a printer in the printer selection drop down box and choosing Print.

Before printing, you may want to save the page layout that you just finished for future reference using the "Save Layout" command described in the previous "Page Layout" section.

You can also save your output as an image or print the page in PDF format so it can be emailed as an attachment to your customer. Use the "Save As" command to save your output as an image. To create output in PDF format, you will need to install a PDF printer if you don't already have one. Visit the Awning Composer website and go the Recommended Software page in the Support section.

Once installed on your system, the PDF printer driver will appear in the printer selection drop-down box and function like other printers – except its output will be a PDF file.



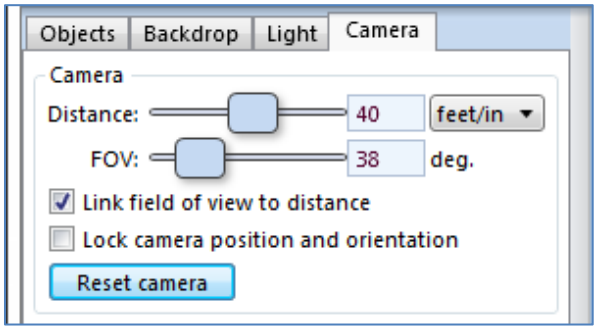
Note: Awning Composer is capable of printing at very high resolutions, large sizes, and at high quality. However, depending on the size of the print job and the speed of your computer, the printing process may take a long time – especially when printing over a network. If printing is taking too long, first try lowering or disabling anti-aliasing. If it still takes too long, try lowering the resolution to 300 DPI or lower. Finally, you can try making the images smaller on the page.

Camera Distance and Field of View

How Distance and Field of View (FOV) settings can be used to match a physical camera

When you take a picture of a building with a camera, the camera is located a certain distance from the building and its lens has a specific focal length which determines magnification and field of view. When you bring that image into Awning Composer, the program does not know these values. You may need to adjust them in order to get the perspective of 3D objects in the scene to match up with the building perspective in the backdrop image. This is especially true for pictures taken where the building is shown at an extreme angle, such as photographs taken down a constricted alley or a narrow roadway.

You can change these settings in Awning Composer in the Camera tab which is located under the left side of the ribbon:



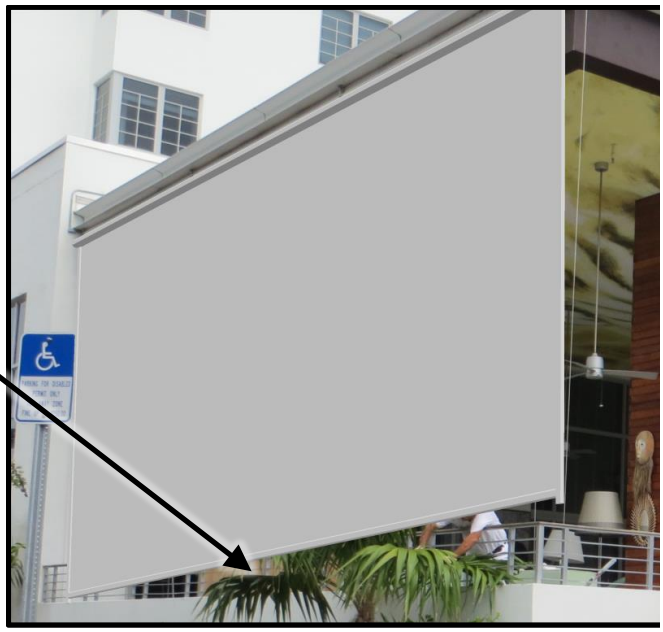
Distance	Controls the distance from the camera to the objects that you add to the scene. As the distance is increased, objects in the scene will look like they are smaller since you are further away from them.
Field of View (FOV)	Controls the angle of the viewing area through which 3D objects are seen. As the field of view is increased, objects will appear to be more tapered, especially when they are viewed at an angle. A high FOV setting is like using a fisheye lens.
Link field of view to distance	This option is normally on (checked) and will help to keep objects in the scene in their current locations while the camera distance or FOV is being adjusted. This switch can be turned off (unchecked), which allows the distance and FOV settings to be adjusted individually.
Lock camera position and orientation	This option is normally off (unchecked). Turning this option on (checked) disables all of the basic camera controls (Zoom, Pan, Rotate) plus the distance control. The FOV control remains enabled but the camera distance is fixed, so changing the FOV will act like changing the zoom level of the camera.
Reset Camera	Resets the distance and FOV settings to their default values. Note: The check boxes are not changed by the Reset Camera button and must manually be set back to their original settings.

Example of Customized Camera Settings

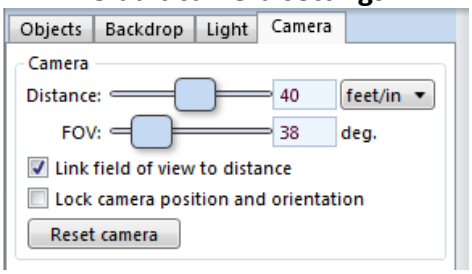
The illustration below shows a backdrop image of a building with an outdoor deck. This photo was taken at a sharp angle. The customer wanted to install some exterior screens for weather protection.

When the Exterior Screen object was added to the scene, its perspective did not match the backdrop image using the default settings in the Camera tab.

(Observe how the angle at the bottom of the screen does not match the angle of the deck in the picture.)

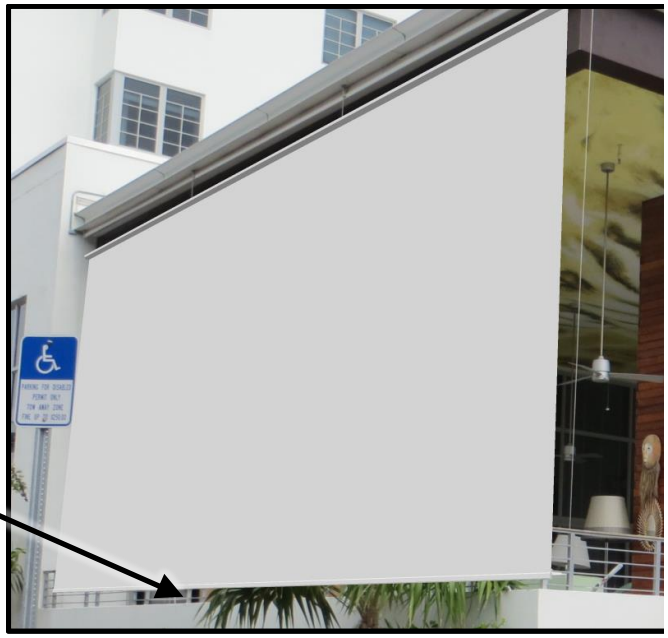


Default camera settings:

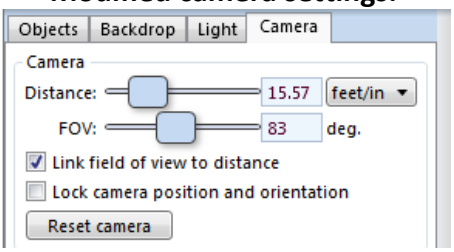


By doing some experimentation with the FOV setting, we were able to match up the angle at the bottom of the screen with the deck by increasing the FOV from 38 to 83. As a result of this change, the Distance was automatically reduced to 15.57 feet.

The length, height and location of the screen object were then adjusted to compensate for the change in distance which resulted in a perfect match between the perspective of the exterior screen and backdrop image. (Note alignment of deck and screen.)



Modified camera settings:



With a little practice, FOV adjustments can be used to match 3D object perspectives on almost any angled backdrop image.
However, we still recommend taking backdrop pictures straight-on whenever possible since those pictures can be scaled and positioning 3D objects on straight-on backdrops is a simpler process.

Dynamic Objects

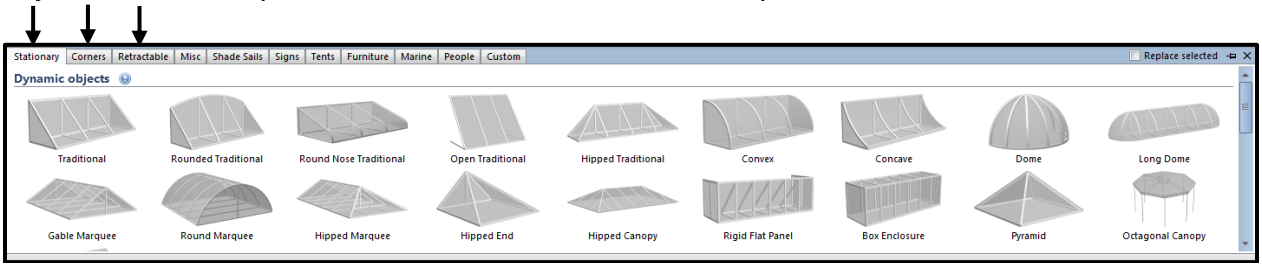
3D objects with fabric and frame components built to your specifications

Awning Composer has two types of objects: pre-modeled and dynamic. Pre-modeled objects can only have their structure changed by scaling (stretching) their width, height and depth, as well as hiding individual parts. Aside from these simple controls, the structure of a pre-modeled object is pre-determined cannot be changed.

Dynamic objects are generated on-the-fly based on the parameters you provide. These parameters include the basic dimensions such as width, height, and depth as well as rafter spacing, internal support spacing, sign band height, and various options.

Adding a Dynamic Object to the Scene

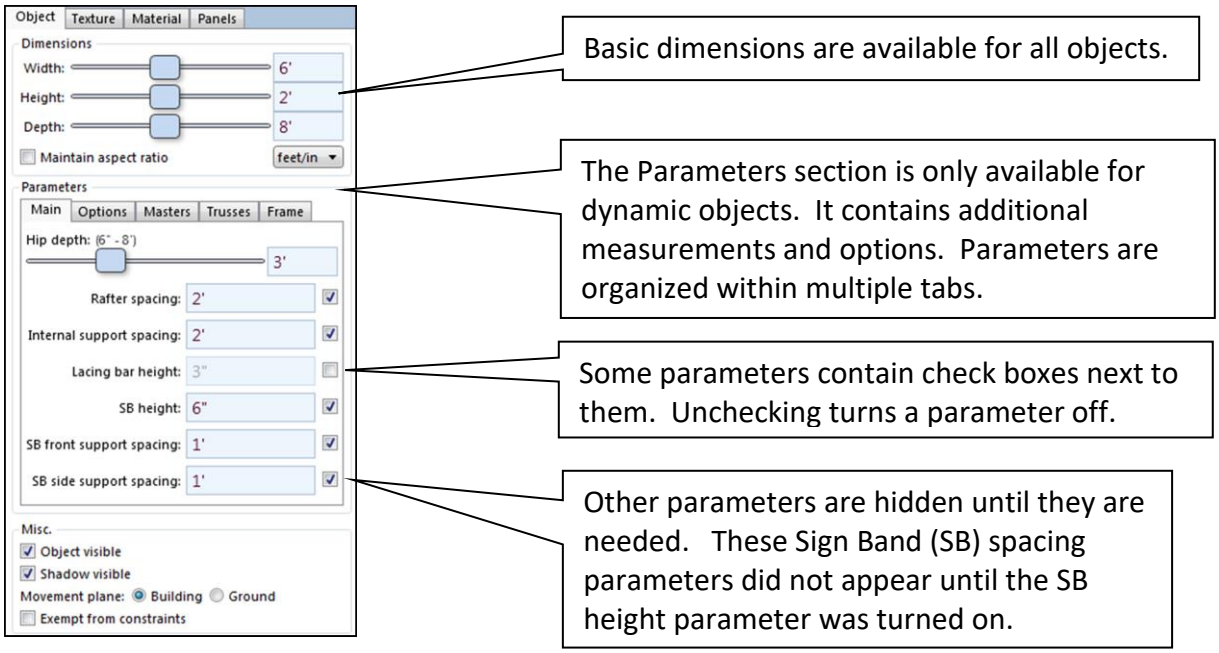
Use the "Add Object" button in the ribbon to add a dynamic object to the scene. Dynamic objects are currently located in three tabs called Stationary, Corners, and Retractable:



Dynamic objects appear in the list with translucent fabric in order to illustrate the underlying frame structure. However, when the object is added to the scene, the fabric will be opaque.

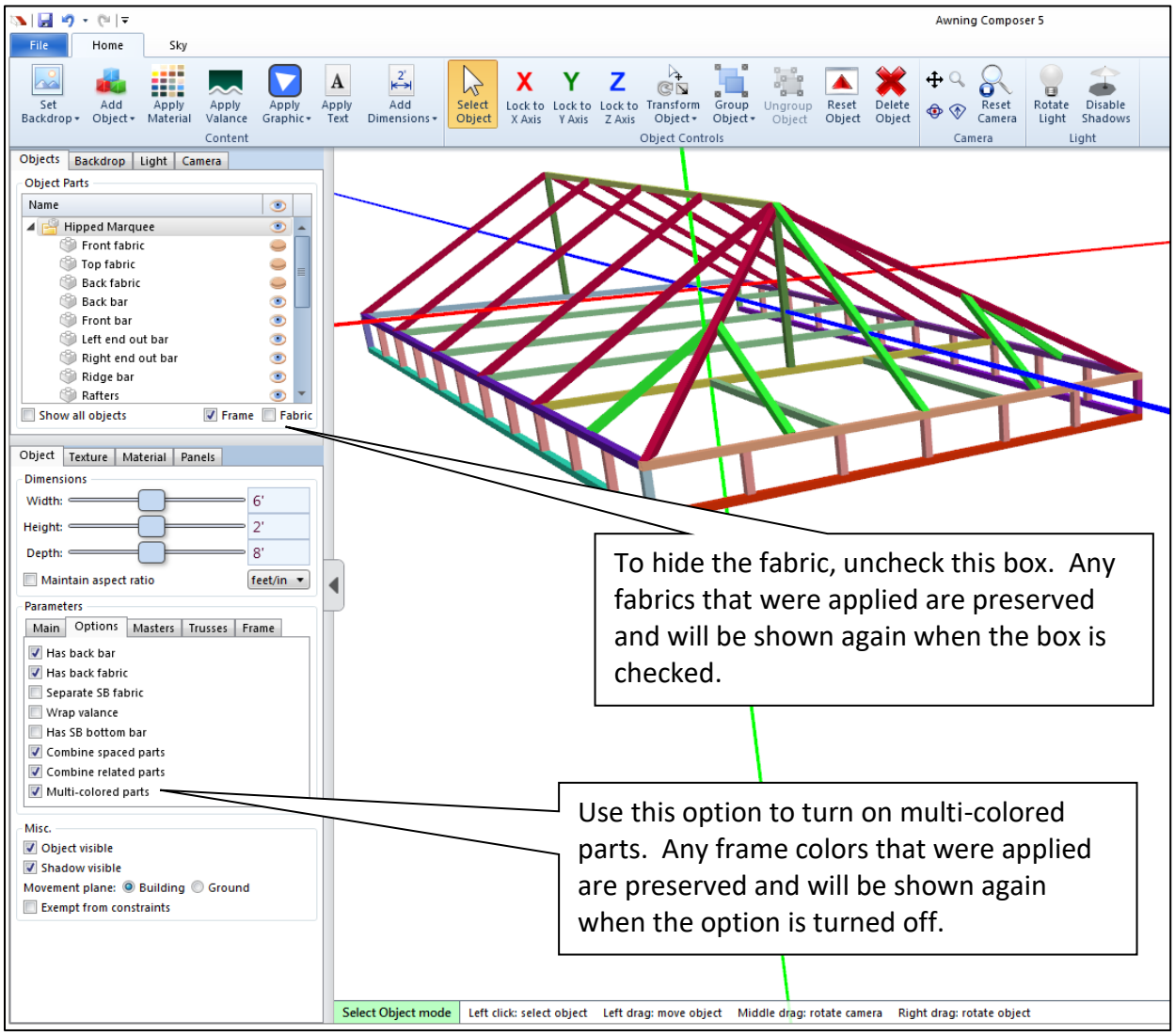
Customizing a Dynamic Object

After a dynamic object has been added to the scene, an additional set of parameters will be shown under the width, height and depth dimensions. The quantity and type of parameters will vary with each object. The parameters below are for a Hipped Marquee awning:



Dynamic Object Viewing Tips

Dynamic objects include both fabric and frame parts. There are two options that can make it easier to view the frame: an option to hide the fabric, and an option to display the frame parts in different colors.



Master Bars

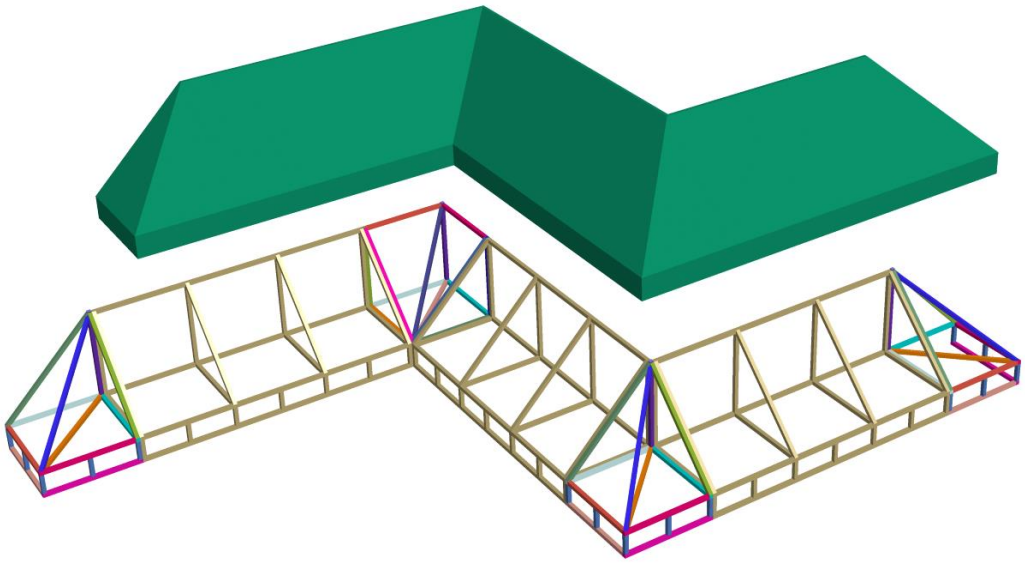
The ability to view various frame parts in different colors is very useful especially when setting up master bars. At certain joints in the frame (where two or three frame components come together), Awning Composer has the capability to set one of these bars to be the master and the other bars to be subordinates.

The master bar goes all the way to the corner of the awning and the subordinate bars are attached to the master. This is easier to see when the frame is shown with multiple colors.

The master bar option also has a 45-degree miter option available. Awning Composer will automatically provide options for each possible pair of components that can be mitered together at 45 degree angles.

Corners and Connected Objects

One of the more powerful features of dynamic objects is the ability to join objects together to create a group of connected objects. This happens automatically when you have an object selected in the scene and add a new object that is compatible with it. For example, if you have a Traditional awning selected and you add a Traditional Square Corner, Awning Composer will recognize that these two objects are compatible and automatically connect them together.



This awning was created using three Traditional Square Corner objects on the outside corners, one Traditional Inside Corner, and three Traditional awnings. In the above example, one of the Traditional awnings was added to the scene first. Then a Traditional Square Corner was added to the scene and the following prompt was shown at the top of the scene window:

This prompt allows you to choose where the new object should be connected or if it should be brought in as a new stand-alone object (using the “Don’t connect” option). Awning Composer will not display this prompt if it can automatically infer the most logical place to connect the new object. In addition to the automatic grouping and connecting of objects that occurs when adding a new object to a selected object, you can also use the Group and Ungroup commands to manually connect and disconnect objects at any time.

When dynamic objects are connected together in the same group, certain adjustments made to one object in the group will affect other objects in the group (when appropriate). Examples of parameters that can be automatically adjusted within a group are height, depth, sign band height and lacing band height. When you apply fabrics, frame colors, and valances to a group of objects, they will be applied to the entire group. You can change this behavior and other group related options by clicking on the lower part of the Group icon in the ribbon to open the Group menu.

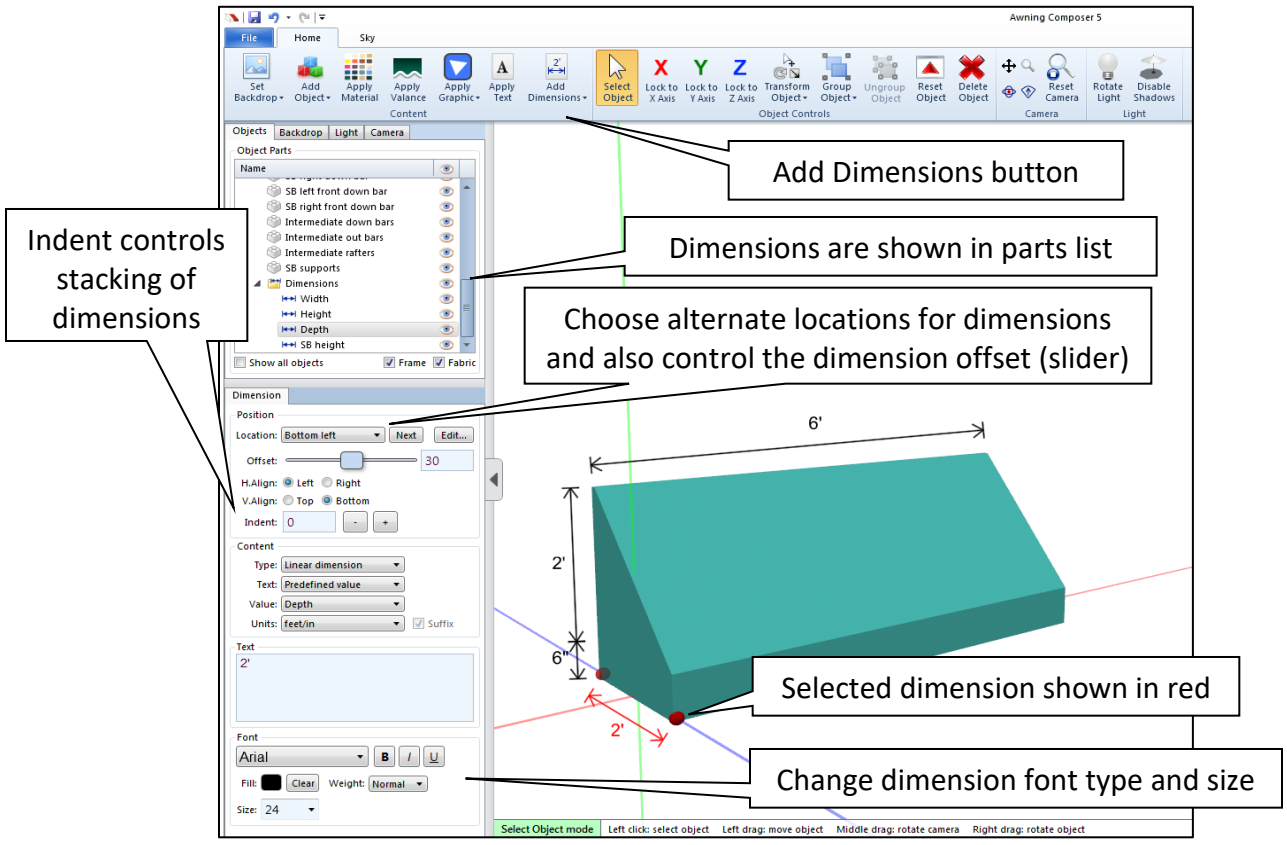
Dimensioning Objects

Add dimensions with automatic positioning and ability to change location

Basic dimensions can be added to any object by clicking on the top half of the Add Dimensions button on the ribbon. Clicking on the bottom half of this button provides a list of options:

- Add basic dimensions – adds the most commonly used dimensions describing the outer size of the object like height, width, depth and sign band height.
- Add all dimensions – adds all of the dimensions that are available for this object.
- Add select dimensions – brings up a list of dimensions that you have not yet added and allows you to choose which ones to add.
- Add custom dimension – allows you to add a dimension based on the locations of two points on the object (or on separate objects).

Once a dimension has been added, its location, size and other properties can be changed using the Dimensions tab in the lower left. For each dimension, there can be one or more alternate locations where this dimension can be shown. In the example below, the depth dimension (shown in red on the bottom left side of the awning) has 3 alternate locations available (bottom right, top right and top left). You can also change the offset distance (how far the arrow and dimension text is away from the endpoints of the dimension), the type, size, color, and units of the text, and indent level (used to stack multiple layers of dimensions above each other).



Relocating Dimensions

Depending on the camera angle, some of the dimensions may not be visible or in a convenient location when they are first added to the object. To help with this problem, most dimensions have one or more alternate locations. To quickly run through all possible locations for a dimension, click on that dimension (it will show in red) and then click the "Next" button to the right of the Location setting in the Dimension tab on the left side of the screen. You can also use the "]" key to move to the next location and "[" key to move to the previous location.

There are three main ways to move a dimension outward from the object: changing the offset, changing the indent or by moving the dimension.

Offset

Offset allows you to specify how far away from its endpoints a dimension's line and text should be. This gives you a simple way to fine tune how close a dimension should be to an object. To adjust the offset for ***all dimensions***, select the "Dimensions" part in the Object Parts list and then adjust the offset. This can also be done for ***individual dimensions*** by selecting the dimension name in the Object Parts list or by clicking on a dimension in the 3D view.

Indent

Each dimension has an indent setting. An indent of zero means the dimension is located away from its endpoints by a distance that is equal to its offset. An indent of 1 means the dimension is located a distance equal to its offset plus enough space for another dimension to fit below it. The indent setting provides a simple way to stack multiple dimensions on top of each other.

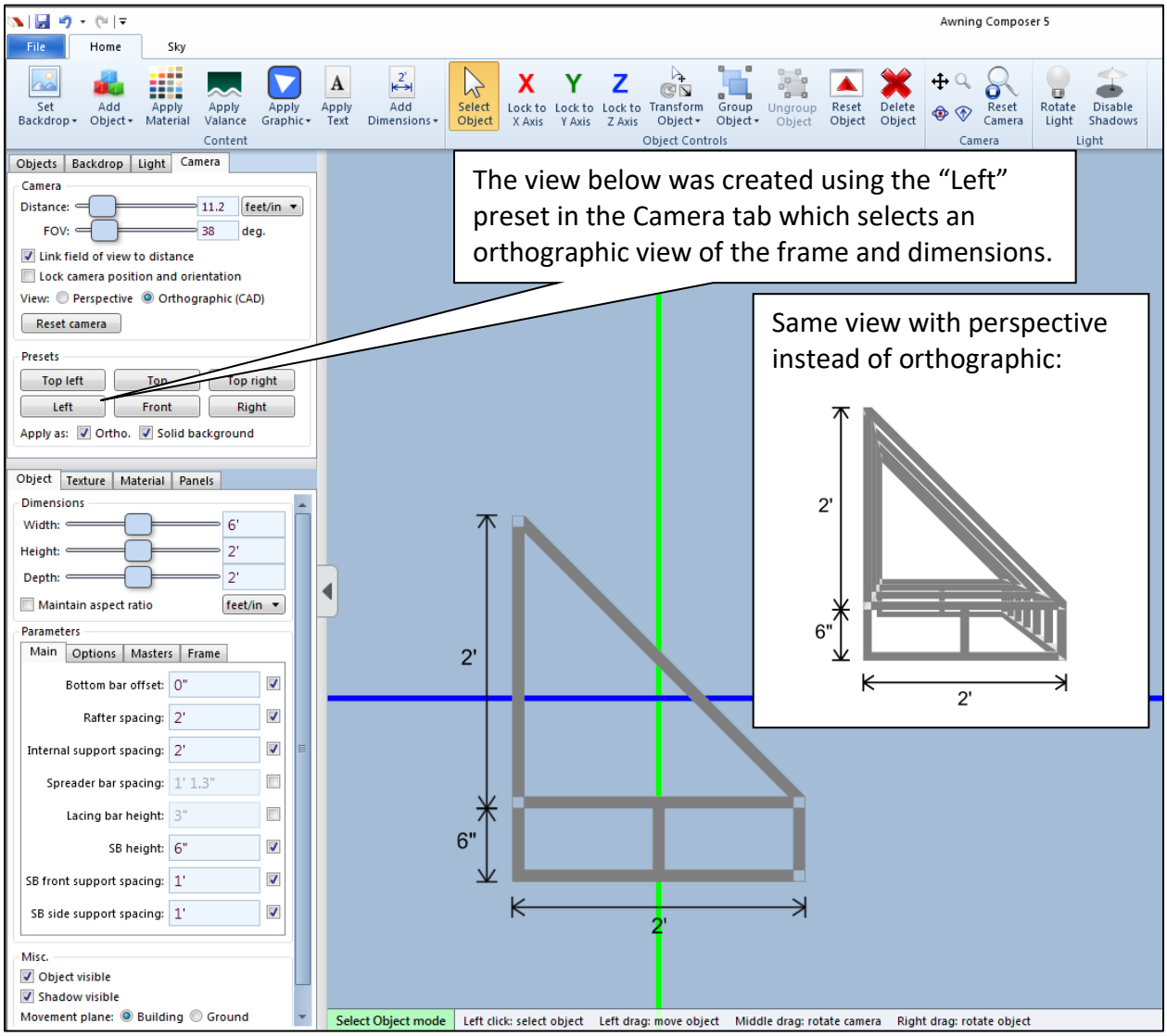
Moving the dimension

If the offset and indent still do not offer an appropriate place for the dimension, you can click on the dimension, lock the X, Y or Z axis and move the dimension to a new location. Note that moving the dimension will move its endpoints as well as the dimension arrow and text. Ideally it is better to relocate a dimension using the offset or indent settings since this keeps the dimension's endpoints in their original locations.

Orthographic View vs. Perspective View

Most of the time when you are adding or changing objects in a scene, you are working in a perspective view. As you look at an object, the end that is farthest away from you appears smaller than the end that is closest to you. This works well when you are looking at the object from an angle (such as from one of the corners), but if you try to look at an object from the side, the front or the top, then certain parts are shown that normally would not appear on a CAD drawing.

The solution to this problem is to choose Orthographic view on the Camera tab, which uses a straight projection of a three-dimensional object onto two dimensions. Awning Composer makes this even easier by providing several preset views such as top, side, front, etc. Clicking on these view buttons will automatically select Orthographic view mode and position the camera at the optimum angle so the dimensions are shown like they would be in a CAD-style drawing. To switch to an isometric view, select the "top left" or "top right" preset.



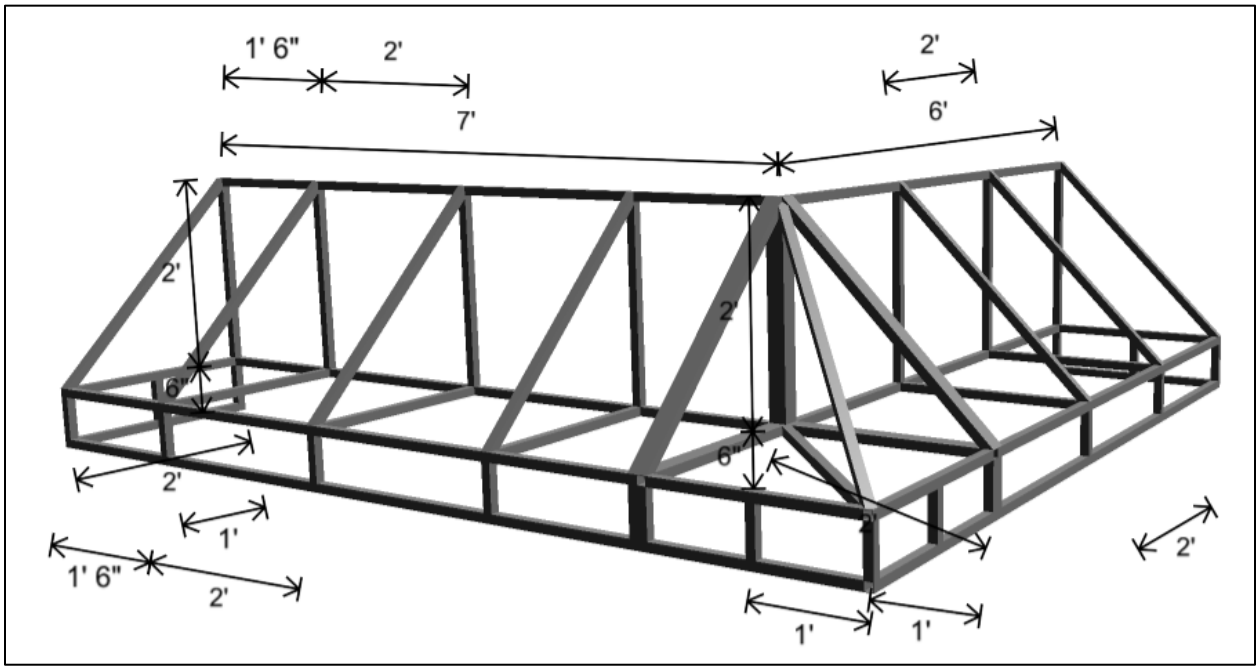
Dimensioning Multiple Objects

Alternate locations plus indent setting provides flexibility for relocating dimensions

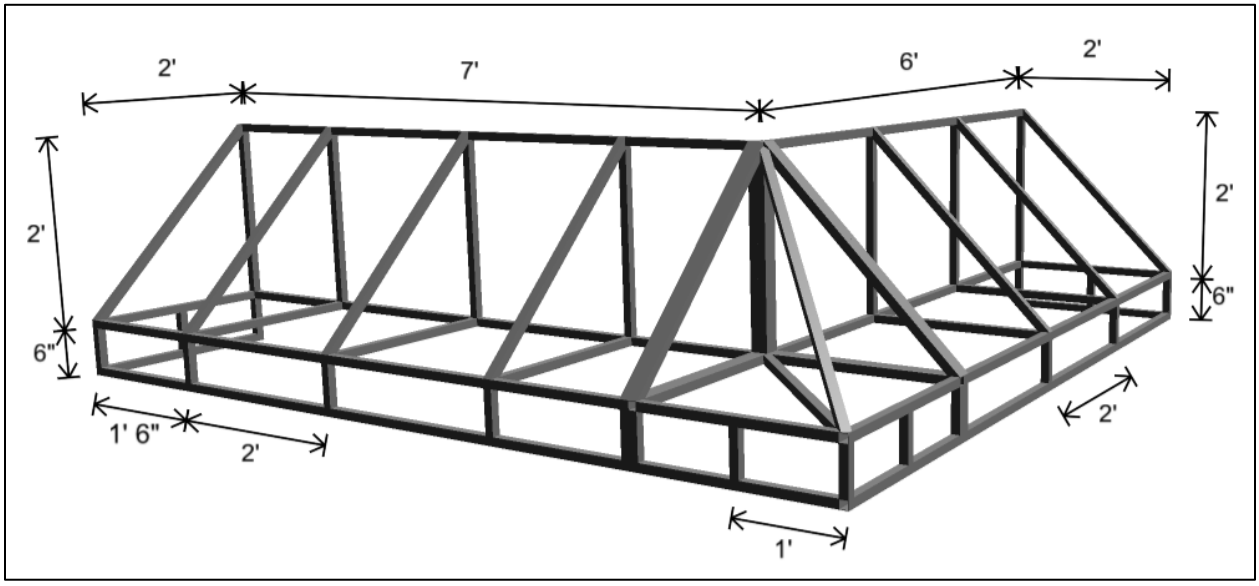
When creating a project that has multiple awnings (such as a corner awning), it can be difficult to show some of the dimensions because they may be hidden behind some of the awning components.

By using alternate locations and the indent setting, it is possible to reposition dimensions so they are shown without being obstructed. In the example below, the height and depth dimensions were repositioned using alternate locations (shortcut: "[" and "]" keys). The sign-band/rafter spacing was repositioned using the indent setting to bring those dimensions closer to the frame. Other dimensions that were redundant were simply turned off using the visibility control in the Object Parts list.

Before dimensions were repositioned:



After dimensions were repositioned and the visibility of some dimensions turned off:



Custom Dimensions

Custom dimensions between any two points can be added to the drawing by clicking on the lower part of the Add Dimensions button. Awning Composer will prompt for the location of the first point and then the location of the second point. Custom dimensions can be adjusted using offset and indent settings just like any of the standard dimensions.

Creating a CAD-Style Frame Drawing

Using the Page Layout feature in combination with orthographic views, it is possible to produce a CAD-style frame drawing with dimensions and views from multiple angles.

The first step is to think about the views that are needed for the project. For most single awning projects, a front view, side view and an angled view from the top left or top right will be sufficient. In the following example, we will demonstrate how to create a CAD-style drawing using these three views.

Adjusting the Background and the Light

For best results, the frame should be shown as a dark color on a light background. Click on the Backdrop tab and click the "Solid color" button under Presets. Optionally, set the background color to white, but note that this step is not strictly necessary when using page layout as white will automatically be used as the background color for renderings included in a page layout. Finally, click on the Light tab and lower the ambient light level to "0.1". The frame should now look like it is dark gray with a solid background.

Creating the Front Orthographic View

The following steps will create a front view image that can be included in a page layout.

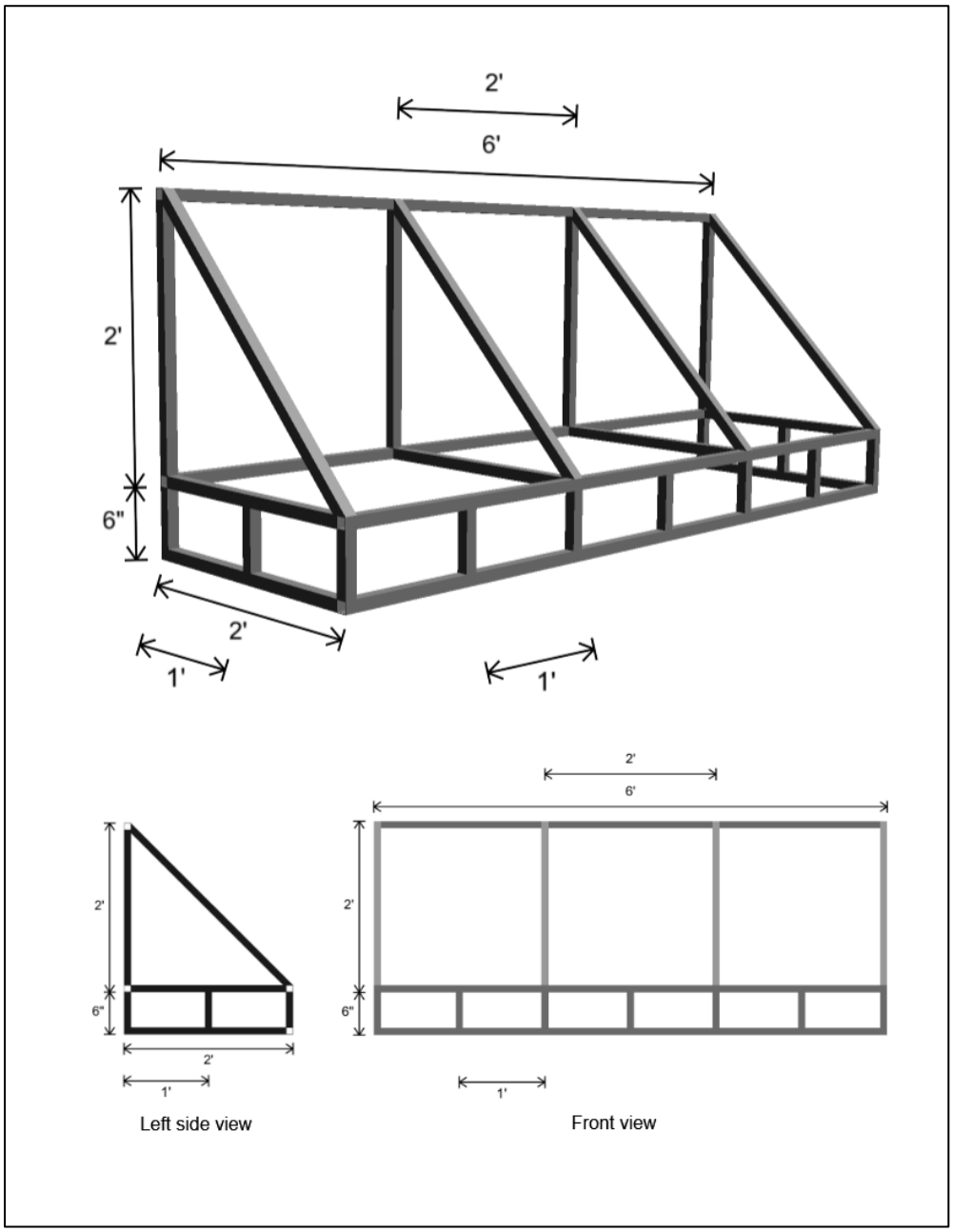
- Click on the Camera tab and choose "Front". The awning will be shown with a front orthographic view.
- Click on the lower part of the Add Dimensions button and choose "Add all dimensions". This will add dimensions for width, height, sign band height, rafter spacing, sign band spacing, etc.
- Click on the File tab and choose "Render Image". Use the resizing handles in the four corners to outline the awning and the dimensions.
- Select the Print page on the left and note that the cropped front view image is now stored at the top of the page. Resize this image down so it is only taking up the top ¼ of the page.
- Right click on the image and choose "Copy" from the menu. Then point to a blank spot on the layout page, right click and choose "Paste". Move the copy of the front view image to the bottom of the page.

Creating the Side Orthographic View

- Return to the Home tab, click on the Camera tab, and choose "Left". The awning will be shown with a left side orthographic view.
- Click on the File tab and choose "Render Image". Use the resizing handles in the four corners to outline the awning and the dimensions.
- Select the Print page and note that the cropped left view image is now stored at the top of the page. Resize this image down so it can fit next to the front view image.
- Right click on the image and choose "Copy" from the menu. Then point to a blank spot on the layout page, right click and choose "Paste". Move the copy of the side view image so it is next to the front view image at the bottom of the page.

Creating the Angled View

- Return to the Home tab, click on the Camera tab, and choose “Top left”. The awning will be shown from the top left with an isometric view. To get a more 3D look, you can optionally change the view from “Orthographic” to “Perspective” at this point, as illustrated in the result below. If necessary, rotate the awning (by dragging it while holding down the right mouse button) so the dimensions are lined up with the frame.
- Click on the File tab and choose “Render Image”. Use the resizing handles in the four corners to outline the awning and the dimensions.
- Select the Print page and note that the cropped front view image is now stored at the top of the page. Resize and reposition this image as needed.
- As a final step, you can use the Add text tool on the Print page to add text boxes to describe which views are being shown (e.g. front view, left side view, etc.)



Controlling Awning Composer

Make the most of the input devices available to you

Beyond the Mouse

Many of the tasks in Awning Composer are best performed with a 3-button mouse. But what if you are using a tablet or have a laptop with a touchpad? As we will explore in this section, you can use other input devices to reduce or eliminate the need to use a mouse. And if you have a keyboard available, you can use it in combination with other devices to get things done faster.

Drag Lock

When using a laptop's touchpad, it can be difficult to perform a drag operation equivalent to moving a mouse while holding down its button. By pressing the space bar, you can enter Awning Composer's Drag Lock mode which is basically the same thing as holding down the left mouse button. (Note: the status bar will display [Drag lock enabled] when this mode is on.)

During this mode, you can simply drag your finger across the touchpad to change the position of objects, change the camera viewing angle, and perform a variety of other tasks as if you were holding down the left mouse button during the operation. When you are finished, press the space bar again to exit from Drag Lock mode.

Keyboard Shortcuts

Many of the commands in Awning Composer can be performed with keyboard shortcuts, cutting down on the amount of point and click operations needed to use the program. Below is a list of keys and the equivalent action(s) needed to take the same action with a mouse.

General commands

Key	Command	Equivalent mouse action(s)
ESC	Select none + enter Select Object mode	Click in scene but not on any object to clear the selection, and click on Select Object in ribbon (if another mode is selected)
Ctrl+N	New scene	Click on File tab, then New scene
Ctrl+O	Open scene	Click on File tab, then Open scene
Ctrl+S	Save scene	Click on File tab, then Save scene
Ctrl+Z	Undo	Click on Undo button above ribbon
Ctrl+Y	Redo	Click on Redo button above ribbon
Ctrl+D	Duplicate	Right click on object, the choose Duplicate from menu
Ctrl+G	Group	Click on Group object button in the ribbon then choose Group from menu
Ctrl+U	Ungroup	Click on Group object button in the ribbon then choose Ungroup from menu
Ctrl+F1	Toggle ribbon visibility	Click on up arrow symbol on the right side of the screen near blue question mark
.	Next part	Click on the next object part in the object parts list
,	Previous part	Click on the previous object part in the object parts list
Up Arrow	Object up	Click on the object, hold left mouse button, move object up

General commands

Key	Command	Equivalent mouse action(s)
Down Arrow	Object down	Click on the object, hold left mouse button, move object down
Left Arrow	Object left	Click on the object, hold left mouse button and move object left
Right Arrow	Object right	Click on the object, hold left mouse button and move object right
Ctrl+Page Up	Object further away	Click on the object, hold both mouse buttons down and push mouse away from you
Ctrl+Page Down	Object closer	Click on the object, hold both mouse buttons down and pull mouse towards you
B	Show backdrop browser	Click on Set Backdrop button in the ribbon (press again to hide backdrop browser)
O	Show object browser	Click on Add Object button in the ribbon (press again to hide object browser)
M	Show material browser	Click on Apply Material button in the ribbon (press again to hide material browser)
V	Show valance browser	Click on Apply Valance button in the ribbon (press again to hide valance browser)
G	Show graphics browser	Click on Apply Graphic button in the ribbon (press again to hide graphics browser)
T	Apply Text	Click on Apply Text button in the ribbon (applies text to the currently selected surface).
X	Lock X Axis	Click on X button in ribbon (press again to unlock X axis)
Y	Lock Y Axis	Click on Y button in ribbon (press again to unlock Y axis)
Z	Lock Z Axis	Click on Z button in ribbon (press again to unlock Z axis)
H	Toggle part visibility	Click on the visibility icon next to hide a currently selected part (press again to toggle visibility back on)
Backspace / Delete	Delete part	Right click on object part and choose Delete from menu
/	Center on object	Click on Rotate Camera button in the ribbon, then hold down the Ctrl key and click on the object to center on
C	Close-up view	Zoom in/out by scrolling the mouse wheel up/down
Numeric Keypad 5	Toggle view type	Click on Camera tab and select Perspective or Orthographic view
Home / Keypad 7	Top left view	Click on Camera tab and select Top left from presets
End / Keypad 1	Left view	Click on Camera tab and select Left from presets
Page Down / Keypad 3	Front view	Click on Camera tab and select Front from presets
Page Up / Keypad 9	Top view	Click on Camera tab and select Top from presets
]	Next dim. location	Click on dimension in scene, and then click the Next button to the right of the location setting in the Dimensions tab.

General commands

Key	Command	Equivalent mouse action(s)
[	Previous dim. location	Click on dimension in scene, and then use the drop down box or radio buttons to the right of the location setting in the Dimensions tab to select the previous dimension location.

Modes and Touch Commands

To simplify some tasks, Awning Composer offers several modes focused on specific tasks. The status bar at the bottom of the screen shows which mode the program is currently in. This area also lists the most common commands that can be used during the selected mode.

The table below lists the keyboard shortcuts to get into each of these modes, as well as the most common keyboard and touch commands that can be used when the program is in that mode.

Select Mode of Operation		Equivalent	Follow-up Keyboard	Follow-up Touch
Key	Command	mouse action	Actions	Actions
S (or Esc)	Select object mode	Click on the Select Object icon in ribbon.	Use . and , to select the previous/next object. Use arrow keys to move object left, right, up or down. Use Ctrl-Page Up/Down to move object further away or closer.	Tap an object to select it. Drag one finger to move an object. Open and close (pinch) two fingers to zoom in and out. Drag two fingers to rotate the camera.
R	Rotate camera mode	Click on the Rotate Camera icon in ribbon.	Use arrow keys to rotate the camera around its center point.	Drag one finger to rotate the camera.
P	Pan camera mode	Click on the Pan Camera icon in ribbon.	Use arrow keys to pan left, right, up or down.	Drag one finger to pan the camera.
D	Zoom camera mode	Click on the Zoom Camera icon in ribbon.	Use up and down arrow keys to zoom in and out.	Drag one finger up and down to zoom in and out.
L	Look around mode	Click on the Look Around icon in ribbon.	Look around the current camera position using the right and left arrow keys.	Drag one finger to look around the current camera position.
I	Rotate light mode	Click on the Rotate Light icon in ribbon.	Use arrow keys to rotate the light.	Drag one finger to rotate the light.

Default Values Overview

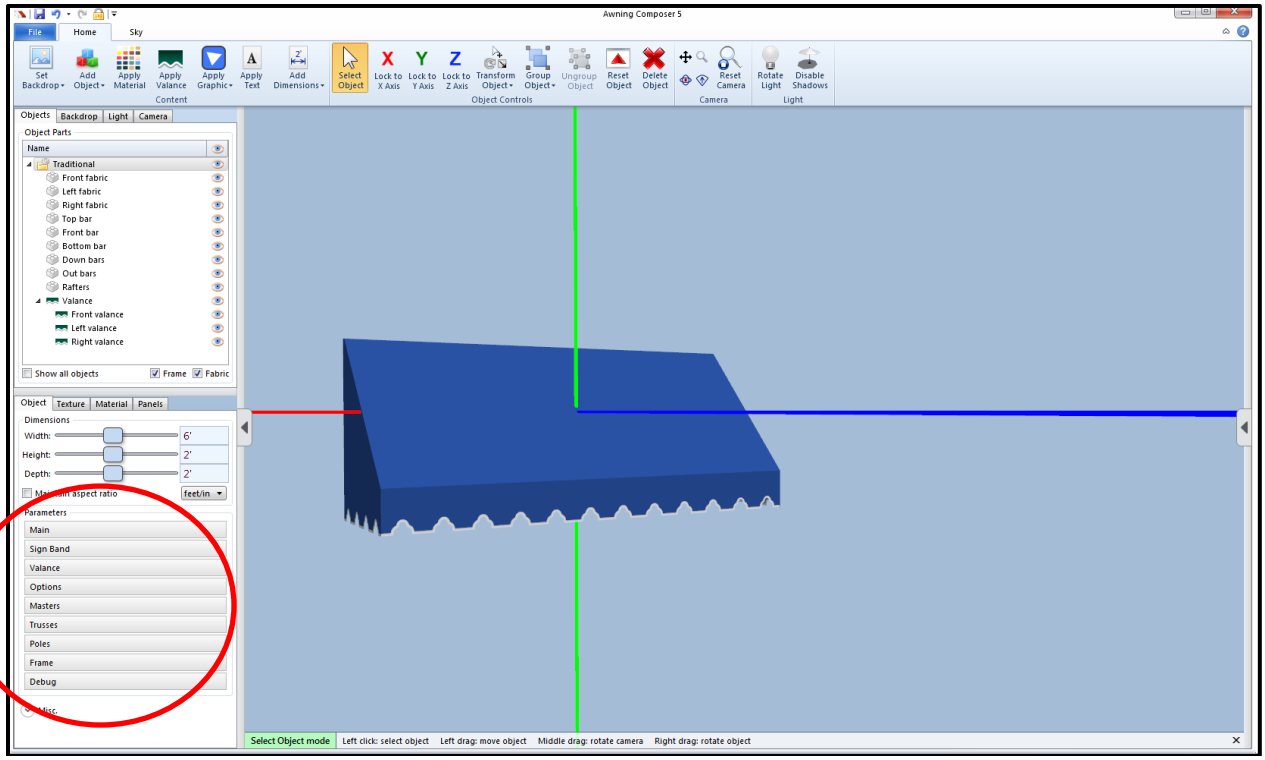
Objects can come into scene the way they are built in your shop

Awning Composer lets you set default values for all dynamic object parameters. Normally, dynamic objects come into the scene with a default rafter spacing of 24 inches. If your shop uses 30-inch rafter spacing, you can set this as a default value instead of having to change it from 24 to 30 every time.

You can set your own preferred default value for each dynamic object parameter and you can specify that your default value be used for all dynamic objects or an individual object. Once a default value has been set, the object will come into the scene with the updated default instead of the factory default whenever you add objects to the scene.

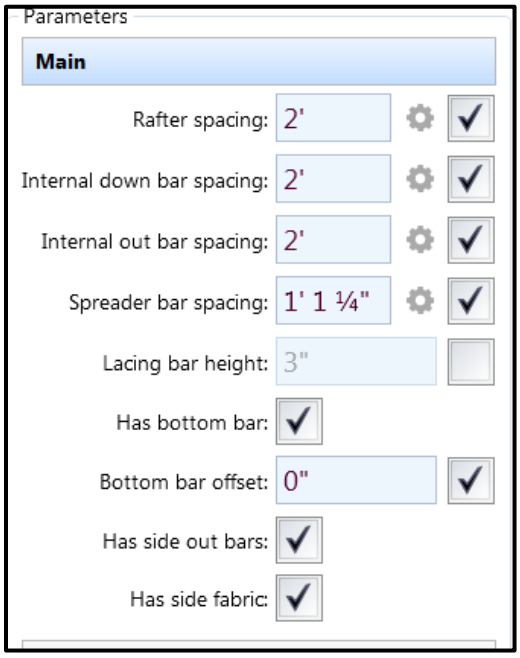
How to set a Default Value

When a dynamic object is added to the scene, groups of parameters are visible under the Width, Height, and Depth sliders in the lower left corner of the main window:

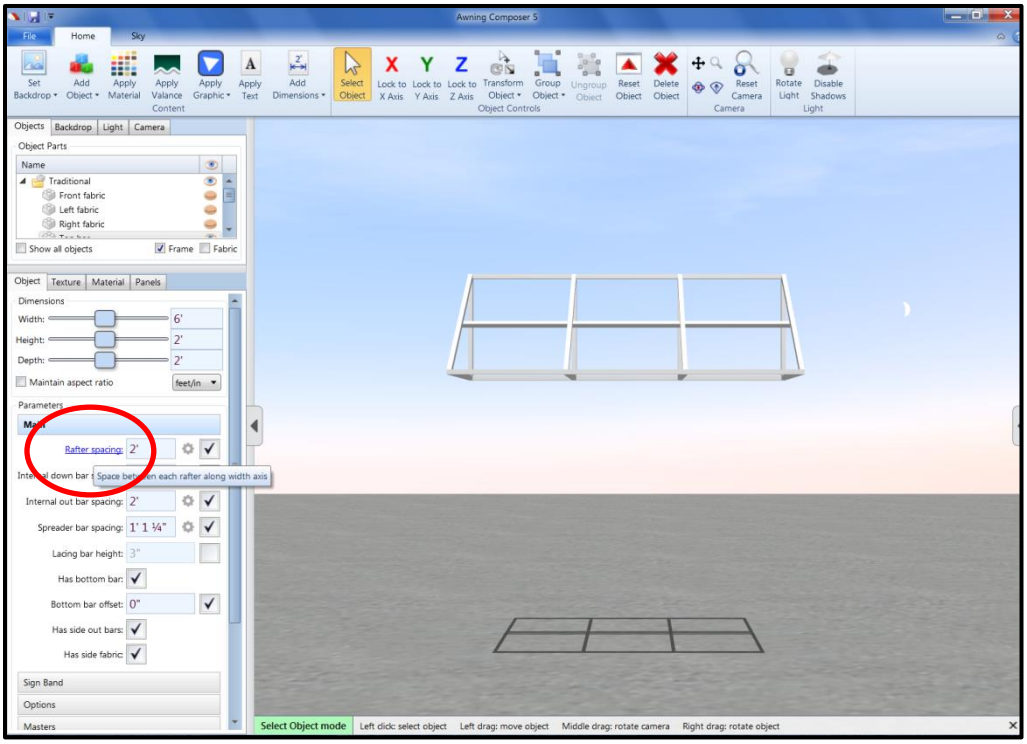


Clicking on a group name will open that group and show a list of parameters that can be used to modify the structure of the awning.

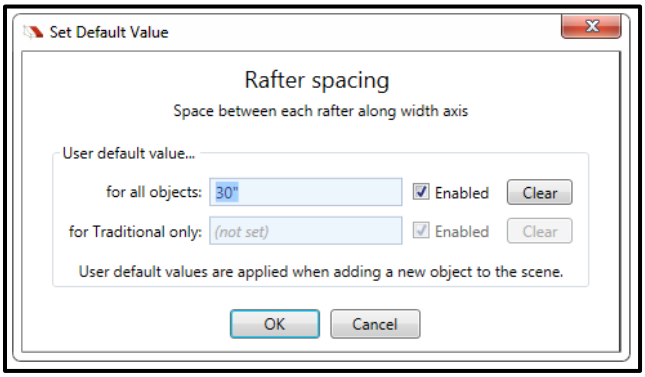
After clicking on the Main group the following parameters will be shown:



When the mouse is moved over the name of one of these parameters, it will turn blue and underlined indicating a link is available:



Click on the link (which is the name of the parameter) to open the Set Default Value window:



In this example, a value of 30 inches has been entered as the default rafter spacing value for all dynamic objects.

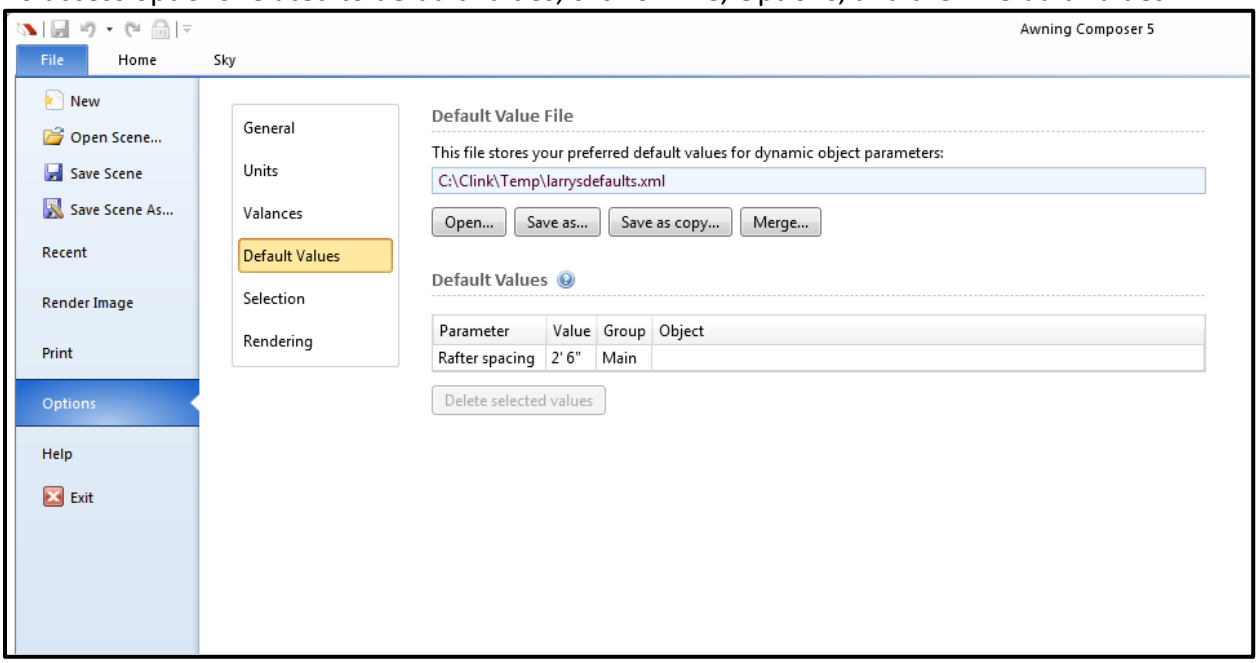
Instead, if the value of 30 inches was entered into the lower text box, then it would only be used when adding a Traditional awning to the scene and all other objects would still use the factory default of 24 inches.

By setting defaults for some or all parameter values, it's possible to pre-configure dynamic objects so they come into the scene matching the way your company builds awnings.

Saving and Sharing Default Values

When default values are set, they're stored in a file that can be shared with other people and computers. You can also have multiple sets of default values. For example, you can define one set of default values for lace-on awnings and another set for staple-on awnings.

To access options related to default values, click on File, Options, and then Default Values:



In this example, only one default value (Rafter spacing) has been set, and it's been set for all objects. This default value has been stored in a file called larrysdefaults.xml located in a folder called C:\Clink\Temp. This file can be copied to another computer over a network or transferred using a USB thumb drive. Once it's been copied to another computer, it can be opened using the Open button in Options, Default Values and all new objects added on that computer will have a default rafter spacing of 30 inches.

Advanced Sharing Techniques

One way to share default values with remote locations is to simply email the file as an attachment. A more advanced and powerful alternative is to use a cloud storage service such as Dropbox or OneDrive.

For example, if multiple users have access to the same shared folder on Dropbox, then the default values file can be stored in that folder. Every user who needs to share the same set of default values can open that file using the Open button in Options, Default Values. When one person updates the file with new default values, everyone who has configured Awning Composer to use that file will automatically be using the new default values. It's not even necessary to restart Awning Composer, as the default value file is checked for updates each time a new object is added to the scene.

When using a defaults file that's automatically shared between multiple users, it might be possible to have conflicts between users. If multiple people change the defaults at the same time, one person's changes could be lost. To avoid this, it's recommended that people coordinate before changing default values or decide on only one person who will update default values. Sharing tools can also help with this. For example, Dropbox can be configured to make the file read-only for some users but able to be modified by others.

Accessories Overview

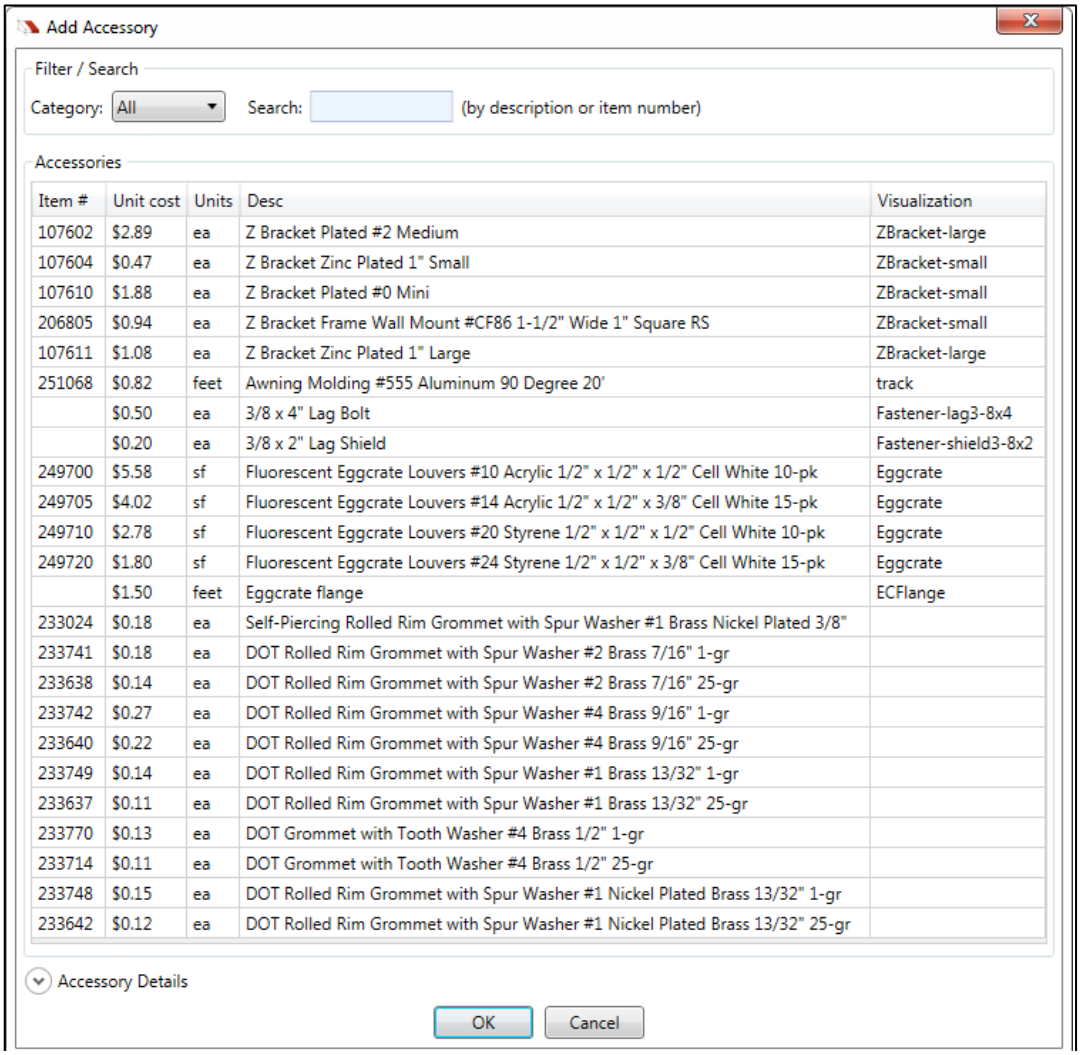
Add awning rail, Z-brackets, fasteners and other hardware to your awning

The accessories feature is a flexible tool that can add hardware items to a dynamic object. Currently all of the accessory items that are added will appear in the Bill of Materials. Eventually these items will also be included in the Estimation calculations.

Certain accessory items (such as Z-brackets and fasteners) will also be displayed in the 3D view along with the awning. You can adjust their placement and other settings via properties that will become available in the Accessories group of dynamic object properties after you add these accessories to an awning. The accessory system also allows a fabricator to add their own custom accessories in addition to the standard list of accessories provided with Awning Composer.

Adding a Standard Accessory

After adding a dynamic object to the scene, click on the Accessory group name in the lower left and you will see a Manage Accessories button. Click this button to open the Add Accessory window:



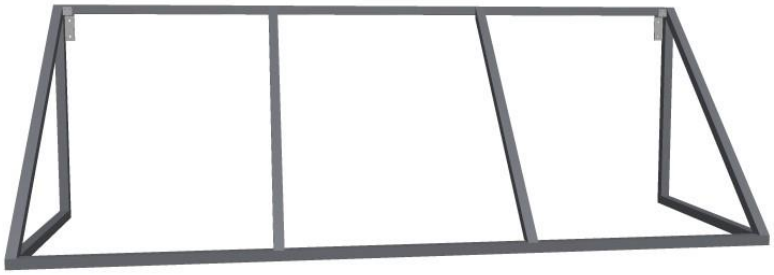
Item #	Unit cost	Units	Desc	Visualization
107602	$2.89	ea	Z Bracket Plated #2 Medium	ZBracket-large
107604	$0.47	ea	Z Bracket Zinc Plated 1" Small	ZBracket-small
107610	$1.88	ea	Z Bracket Plated #0 Mini	ZBracket-small
206805	$0.94	ea	Z Bracket Frame Wall Mount #CF86 1-1/2" Wide 1" Square RS	ZBracket-small
107611	$1.08	ea	Z Bracket Zinc Plated 1" Large	ZBracket-large
251068	$0.82	feet	Awning Molding #555 Aluminum 90 Degree 20'	track
	$0.50	ea	3/8 x 4" Lag Bolt	Fastener-lag3-8x4
	$0.20	ea	3/8 x 2" Lag Shield	Fastener-shield3-8x2
249700	$5.58	sf	Fluorescent Eggcrate Louvers #10 Acrylic 1/2" x 1/2" x 1/2" Cell White 10-pk	Eggcrate
249705	$4.02	sf	Fluorescent Eggcrate Louvers #14 Acrylic 1/2" x 1/2" x 3/8" Cell White 15-pk	Eggcrate
249710	$2.78	sf	Fluorescent Eggcrate Louvers #20 Styrene 1/2" x 1/2" x 1/2" Cell White 10-pk	Eggcrate
249720	$1.80	sf	Fluorescent Eggcrate Louvers #24 Styrene 1/2" x 1/2" x 3/8" Cell White 15-pk	Eggcrate
	$1.50	feet	Eggcrate flange	ECFlange
233024	$0.18	ea	Self-Piercing Rolled Rim Grommet with Spur Washer #1 Brass Nickel Plated 3/8"	
233741	$0.18	ea	DOT Rolled Rim Grommet with Spur Washer #2 Brass 7/16" 1-gr	
233638	$0.14	ea	DOT Rolled Rim Grommet with Spur Washer #2 Brass 7/16" 25-gr	
233742	$0.27	ea	DOT Rolled Rim Grommet with Spur Washer #4 Brass 9/16" 1-gr	
233640	$0.22	ea	DOT Rolled Rim Grommet with Spur Washer #4 Brass 9/16" 25-gr	
233749	$0.14	ea	DOT Rolled Rim Grommet with Spur Washer #1 Brass 13/32" 1-gr	
233637	$0.11	ea	DOT Rolled Rim Grommet with Spur Washer #1 Brass 13/32" 25-gr	
233770	$0.13	ea	DOT Grommet with Tooth Washer #4 Brass 1/2" 1-gr	
233714	$0.11	ea	DOT Grommet with Tooth Washer #4 Brass 1/2" 25-gr	
233748	$0.15	ea	DOT Rolled Rim Grommet with Spur Washer #1 Nickel Plated Brass 13/32" 1-gr	
233642	$0.12	ea	DOT Rolled Rim Grommet with Spur Washer #1 Nickel Plated Brass 13/32" 25-gr	

The Add Accessory window lists standard accessories included with Awning Composer that can be added to any dynamic object. If an accessory has something listed in the Visualization column, the accessory can be visualized, meaning that it will appear in the 3D view when added to a compatible object. Accessories that can't be visualized will only appear in the Bill of Materials.

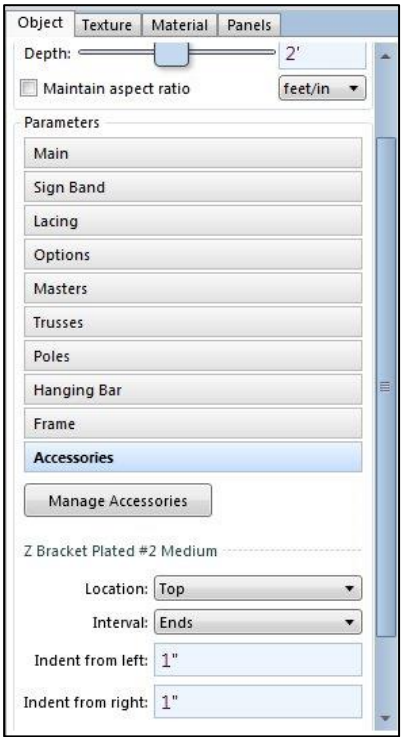
The Accessory Details section can be expanded to view and edit details for a particular accessory, or enter your own custom details to add a custom accessory not included with Awning Composer.

Adding a Standard Accessory with Visualization

For this example, we clicked on the first item in the Add Accessory window then clicked OK to add a medium Z-bracket to our Traditional awning frame. In the 3D scene window two Z-brackets are shown; one at each end of the top bar:



In the Accessories group, a set of parameters for the Z-brackets have been added:



Using these parameters, it's possible to make the following changes to the Z-Brackets:

Location: Z-brackets can be located along the top bar, bottom bar, or left/right down bars.
Interval: Z-brackets can be located at the ends or internally across the awning or both.
Indent: Z-brackets can be indented from the left, right, top or bottom depending on the location.

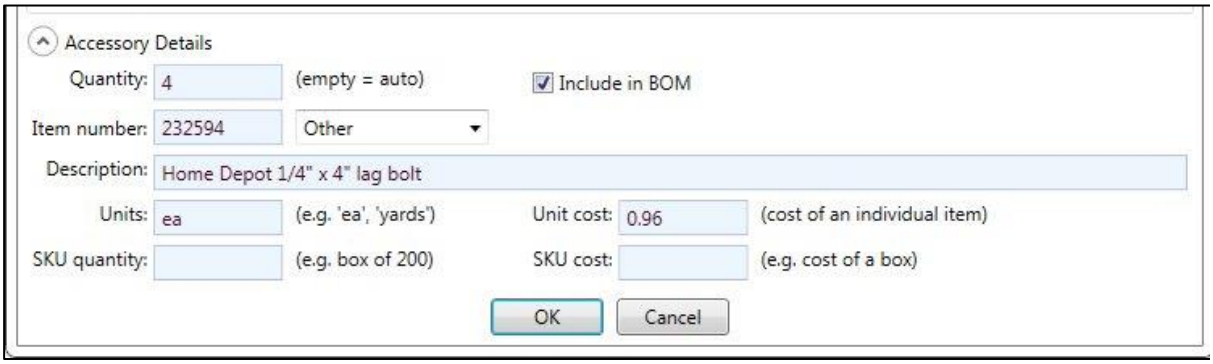
By adding two sets of Z-brackets and changing the location, interval and indent settings, we were able to add Z-brackets around all of the back frame members of the awning:

Adding a Custom Accessory

To add an accessory that is not in the list provided by Awning Composer, click on the Accessory Details arrow at the bottom of the Add Accessory window.

A list of fields will be shown at the bottom of the window. Note that quantity can be entered for individual items or for a box of items. Also note that only standard accessories can be displayed in the 3D view so these items are not shown on the awning frame.

In the following example, we used this feature to add (4) ¼" x 4" lag bolts from Home Depot which are listed on the Bill of Materials:



Estimation

Optional feature to calculate pricing as object is built

Estimation is an optional feature available for most dynamic object awning styles. To enable this feature, you need to register Awning Composer with a serial number that includes access to estimation. The serial number will be available in your account on www.awningcomposer.com providing your company has purchased this option.

This estimation feature provides instant quotes by determining material needed based on the current configuration of the dynamic objects in the scene window multiplied by your shop's material and labor costs plus a profit margin.

Estimation can be accessed by clicking on the inward facing arrow  along the right side of the 3D view. Once this button is clicked, an estimation panel will be displayed with various tabs containing estimation results and options.

Estimation results can be displayed for a single awning, multiple different awnings or multiple quantities of the same awning. The page layout system for printing has been enhanced to make it easier to create quotes and other documents that include estimation data. Objects in the page layout such as textboxes can reference individual estimation values, which are then automatically filled out based on the current project.

To make this process even easier, Awning Composer includes sample templates for customer quotes that can be customized as needed.

How Estimation Works

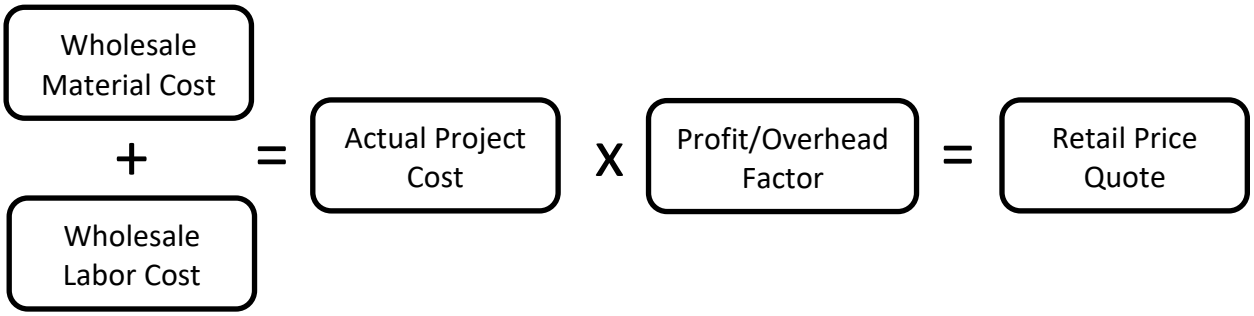
Estimation is based on the same dynamic object system used for visualization. This provides a what-you-see-is-what-you-get result that takes into account the customization of the awning structure. Changing the value of a part parameter (such as rafter spacing), will change the number of rafters on the object, which changes the amount of extrusion needed and also changes the amount of labor needed to install the rafters, which then changes the quote price.

Note 1: Making a part invisible does not affect the estimate. The preferred method for removing a part from an object is to use one of the object parameters in the Object tab in the lower left corner. If a parameter is not available to remove a part from the object, then the part can be manually deleted from the object. To do this, right-click on the part in the 3D view and choose Delete. Alternatively, select the part in the Object Parts list in the upper left corner, right-click on it, and choose Delete.

Note 2: If a part belongs to a group, then clicking on an individual part will highlight all of the parts within that group. To delete a part that is a member of a group, grouping needs to be turned off. To turn off grouping, go to the Options tab on the left side of the screen and turn off "Combine spaced parts" and "Combine related parts". This will result in more parts being shown in the Object Parts list with each part being identified individually instead of by its group name, making it possible to select and delete a single part.

Calculation Details

The estimation formulas uses wholesale material and labor costs to calculate the actual cost of the project. Wholesale material cost is defined as the price paid for the material including shipping. Wholesale labor cost is defined as the hourly cost of labor including benefits. The wholesale material and labor costs are added together to determine the actual project cost. To determine the retail price for the customer, the actual project cost is multiplied by a profit/overhead factor as shown below:



Labor Factors

The amount of labor to build the frame and fabric is based on several factors. Each of these factors was determined after doing a survey of companies across the country on how much time it took for them to build various kinds of lace-on/tech screw style awnings.

Therefore the amount of labor being calculated may be too high for companies that build staple-on style awnings. In all cases, we recommend that each company compare the amount of time being calculated to their actual shop build times over several jobs and carefully adjust these factors so they more accurately reflect reality in their shop. The labor factors are:

Mins per fabric panel	Number of minutes to acquire, lay out, mark & cut a panel of fabric
Mins per dome panel	Number of additional minutes to lay out each dome panel between two curved rafters
Seconds per inch/cm-seams	Number of seconds to sew or weld an inch or cm of panel, header or footer seams
Secs per inch/cm-separate SB/val	Number of seconds to acquire, lay out, mark and cut an inch or cm of separate sign band/valance material
Seconds per inch/cm-braid	Number of additional seconds (above normal seam time) to sew an inch/cm of braid onto bottom of valance
Mins per valance cutout	Number of minutes to lay out, mark and cut a single valance cutout
Seconds per grommet	Number of seconds to measure, mark, hole cut and press-in one grommet
Mins per tube/extrusion length	Number of minutes to acquire, measure, mark and course cut a length of pipe
Minutes per joint	Number of minutes to fine cut, weld and dress a joint
Seconds per inch/cm-curved	Number of seconds to bend an inch or cm of curved tube or extrusion
Minutes per pole	Number of minutes to acquire, measure, mark, cut and install a pole
Additional pole mins	Number of additional minutes of pole labor to install footings, etc.

Profit / Overhead Factor

Determining the correct profit/overhead factor is important to provide accurate quotes. Depending on the size and type of job you are quoting, there are several factors to consider. Based on a national survey, the range for this factor appears to be from 200% to 300% with an average value of 225%.

The default value is set at 225%. Fabricators should look at this default as a starting point and adjust it based on the size of the job, job difficulty, etc.

For example, a large job consisting of multiple awnings of the same style and size may allow for economies of scale which warrants a lower profit/overhead factor. A small job which requires the same amount of sales time and management overhead as a larger job can justify setting a higher profit/overhead factor.

Setting up Estimation Values

Each tab in the estimation panel includes an Options section which is used to specify the wholesale material cost and labor rates. Across all of the tabs, there are just over 40 options preloaded with average values based on a national survey. ***These critical values must be reviewed and adjusted prior to using estimation to make sure they are accurate for your company.***

You can also set default values for each of these options. (Please see the prior section titled “Default Values Overview” for more information.) These default values will be saved and used as a starting point for each new project. You can also export and import default values and share them so that all employees are using the same values and therefore will end up with consistent quotes.

When Options Are Used

Just because you have reviewed and set values for each option does not mean that option will be used in every estimate. As an example, "Seconds per inch/cm-curved" is only used when estimating an awning that has curved frame parts. The same is true for "Secs per inch/cm-separate SB/val" which will only be used for estimates on awnings that have a separate sign band or valance.

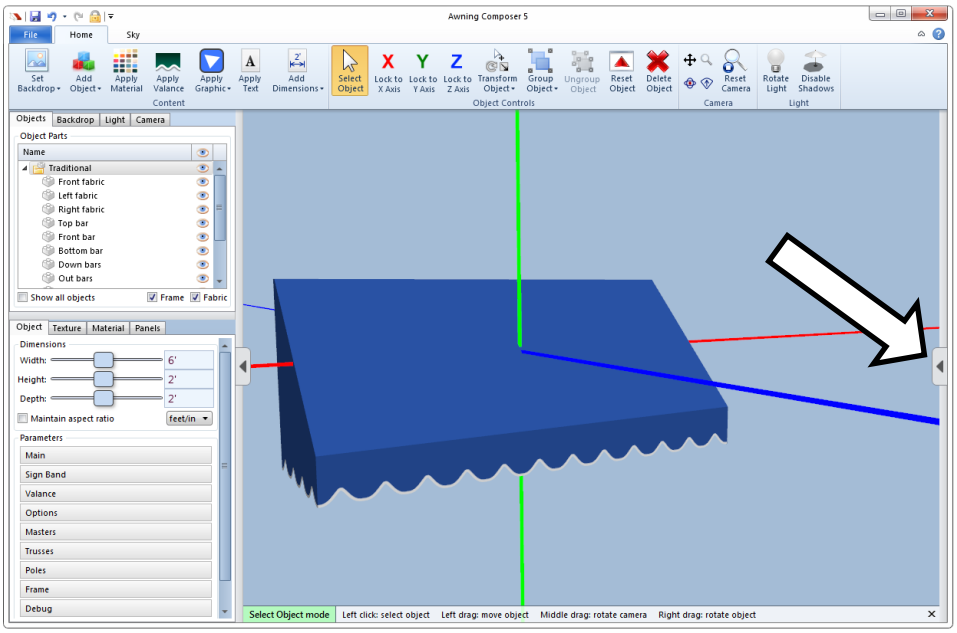
It is important to review all of the option values to make sure they are accurate in case they are needed. If a value of zero is entered for any option, then it will not contribute to the estimate even if it is required as part of an estimate.

Quoting Recovers or Frame Only Jobs

To quote a recover, turn off the “Include frame in estimate” option in the Frame tab. To quote just the frame, turn off the “Include fabric in estimate” option in the Fabric tab.

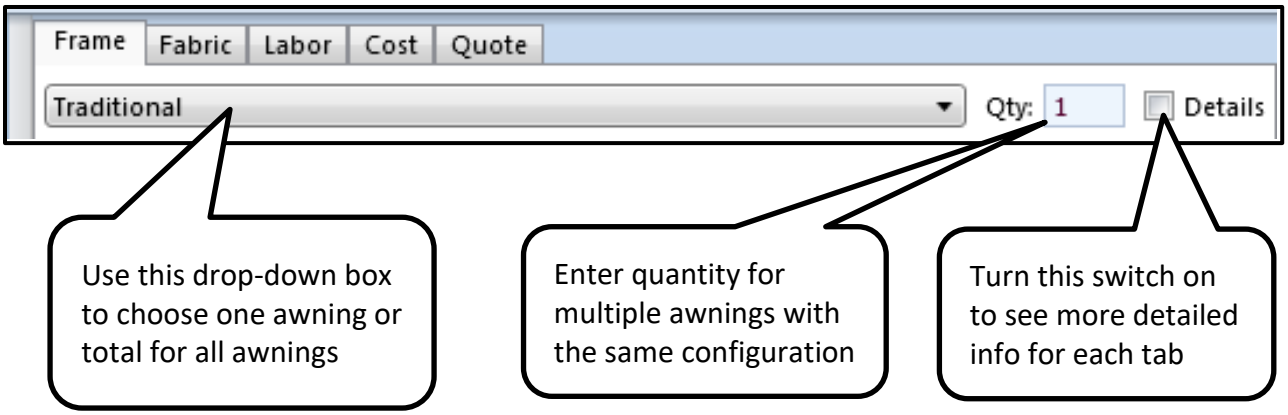
Accessing the Estimation Panel

To open the estimation panel, click on the black arrow located on the right side of the main window:



This will open a panel with tabs labeled Frame, Fabric, Labor, Cost and Quote. Each tab is divided into two sections: the top section displays estimation results and the bottom section displays options (e.g. labor rate) that you can set.

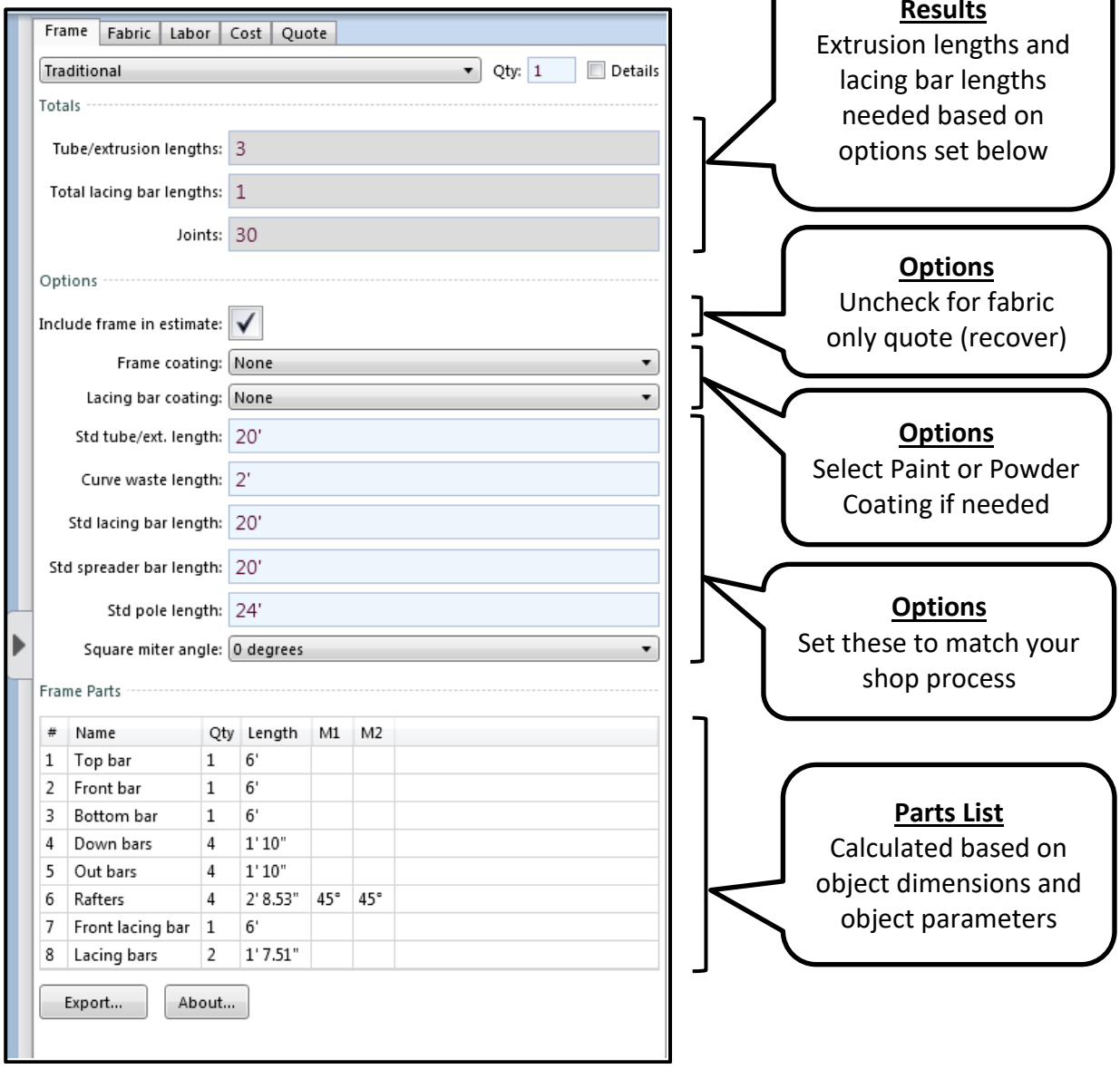
At the top of each tab, there's a drop down box which can be used to select an individual object or total for all objects. There's also a quantity field that can be used to easily estimate multiple awnings that are exactly the same. Finally there's a details check box that can be used to show a detailed breakdown of how estimation totals were calculated.



In the following pages, each of these estimation tabs will be shown along with information about the important areas within each tab.

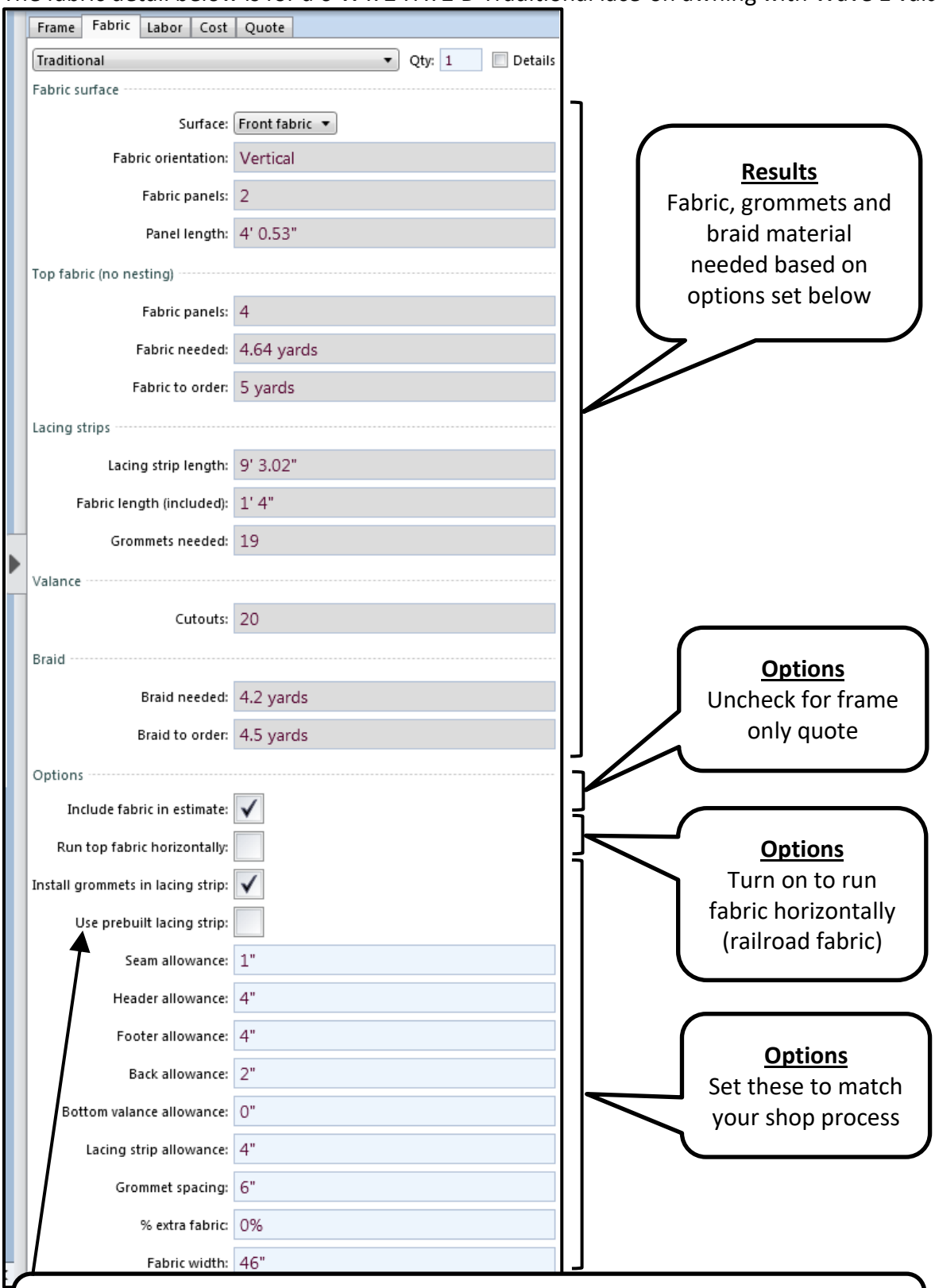
Frame Tab

The frame detail below is for a 6’W x 2’H x 2’D Traditional awning:



Fabric Tab

The fabric detail below is for a 6’W x 2’H x 2’D Traditional lace-on awning with Wave 1 valance:



Results
Fabric, grommets and braid material needed based on options set below

Options
Uncheck for frame only quote

Options
Turn on to run fabric horizontally (railroad fabric)

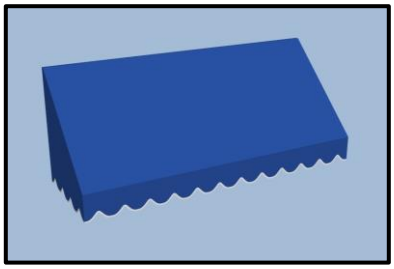
Options
Set these to match your shop process

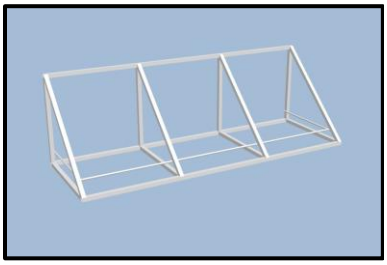
Hover your mouse over any of these option names for a detailed explanation:

Calculate the amount of prebuilt lacing strip needed

Labor Tab

The labor detail below is for a 6'W x 2'H x 2'D Traditional lace-on awning with Wave 1 valance:





Frame | Fabric | Labor | Cost | Quote

Traditional — Qty: 1 — Details

Fabric

Fabric panel:	1 hr
Cut out valance:	1 hr 40 min
Seam:	2 hr 53 min
Braid:	22 min 41 sec
Install grommets:	9 min 30 sec
Total fabric labor:	6 hr 5 min

Frame

Tube/extrusion:	40 min
Joints:	3 hr 30 min
Total frame labor:	4 hr 10 min

Total

Total labor:	10 hr 15 min

Fabric options

Mins per fabric panel:	15
Mins per dome panel:	10
Seconds per inch/cm-seams:	18
Secs per inch/cm-separate SB/val:	5
Seconds per inch/cm-braid:	9
Mins per valance cutout:	5
Seconds per grommet:	30

Frame options

Mins per tube/extrusion length:	10
Minutes per joint:	7
Seconds per inch/cm-curved:	6
Minutes per pole:	15
Additional pole mins:	0

Results
Frame and fabric labor calculated based on options set below

Options
Set these to typical average values for your process

Staple-on vs. Tech Screw and Lace-on Awnings

The factory default time values provided are based on average times for building lace-on and/or tech screw awnings. At some point in the future, additional support for staple-on awnings will be added. Until that support is added, fabricators who need to create estimates for staple-on awnings can make adjustments to the following fabric allowances and time factors as outlined below:

Allowances

The factory default allowances assume the awning is being sewn together and then laced-on or tech screwed to the frame. For staple-on awnings, each panel must have enough fabric around the outside edge so that it can be held in place while staples are installed to hold the fabric in place. Therefore we recommend changing the default allowances as follows:

- Seam Allowance: 3”
- Footer Allowance: 3”
- Top Bar Allowance: 3”
- Footer Allowance: 3”
- Down Bar Allowance: 3”
- End Rafter Allowance: 3”

The lacing strip and rafter lacing strip allowances do not need to be changed since these are only used when lacing bars are selected under the Lacing parameter tab.

Minutes per panel

The factory default for this time factor is 15 minutes per panel. This is the amount of time needed to roll out the fabric, measure and mark the outer cut lines, measure and mark the sewing lines (where the fabric will be faced, hemmed or sewn to adjoining fabric panels) and cut the fabric panel to its exact size.

For staple-on awnings, a fabric panel is cut a few inches larger than what is needed and then the panel is clamped to the frame, stapled into the frame and the excess fabric is cut off above the staples. The amount of time needed for staple-on panels is much less because the marking and cutting process does not have to be as exact. Therefore the Minutes per Panel should be reduced to between 5-7 minutes per panel for staple-on awnings.

To make sure this number is accurate, keep track of the time needed to cut panels before the stapling process begins. Compare the calculated Fabric Panel time to your actual panel time for several jobs before deciding what the correct Minutes per panel factor is for your shop.

Minutes per dome panel

The factory default for this time factor is set to 10 minutes per panel. This is very similar to the process described above except the fabric must be placed against the frame and marked down the rafters to create a banana-shaped fabric panel.

Again for staple-on awnings, this process does not have to be as exact so the amount of time can be reduced to 4-6 minutes per panel. But as above, we recommend comparing the calculated Dome Panel time to your actual panel time to determine the correct time factor.

Seconds per inch/cm-seams

The factory default for this time factor is set to 18 seconds per seam inch/centimeter. In general, the amount of time that it takes to staple in fabric vs. sewing fabric seams is usually about the same.

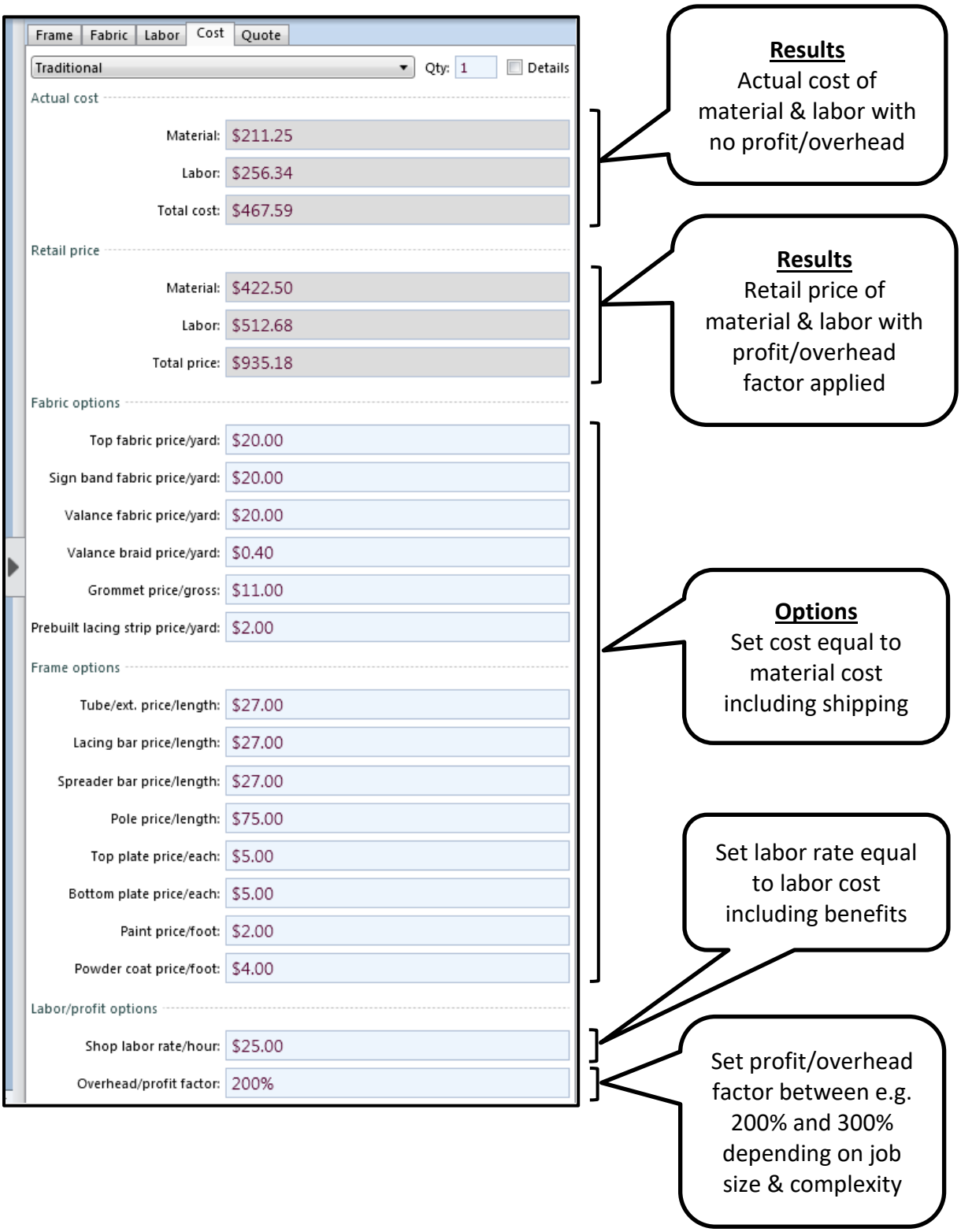
While stapling a seam may actually be a little faster than sewing that same length of seam, you have the additional steps of clamping the fabric in place and installing the inserts that must be accounted for. To determine if this factor should be adjusted, compare the Seam Labor calculated in Awning Composer to your actual staple time over the course of several jobs and then make adjustments if needed.

Thread per inch/cm

Enter a value of zero to prevent the calculation for thread from being added to the quote.

Cost Tab

The cost detail below is for a 6'W x 2'H x 2'D Traditional lace-on awning with Wave 1 valance:

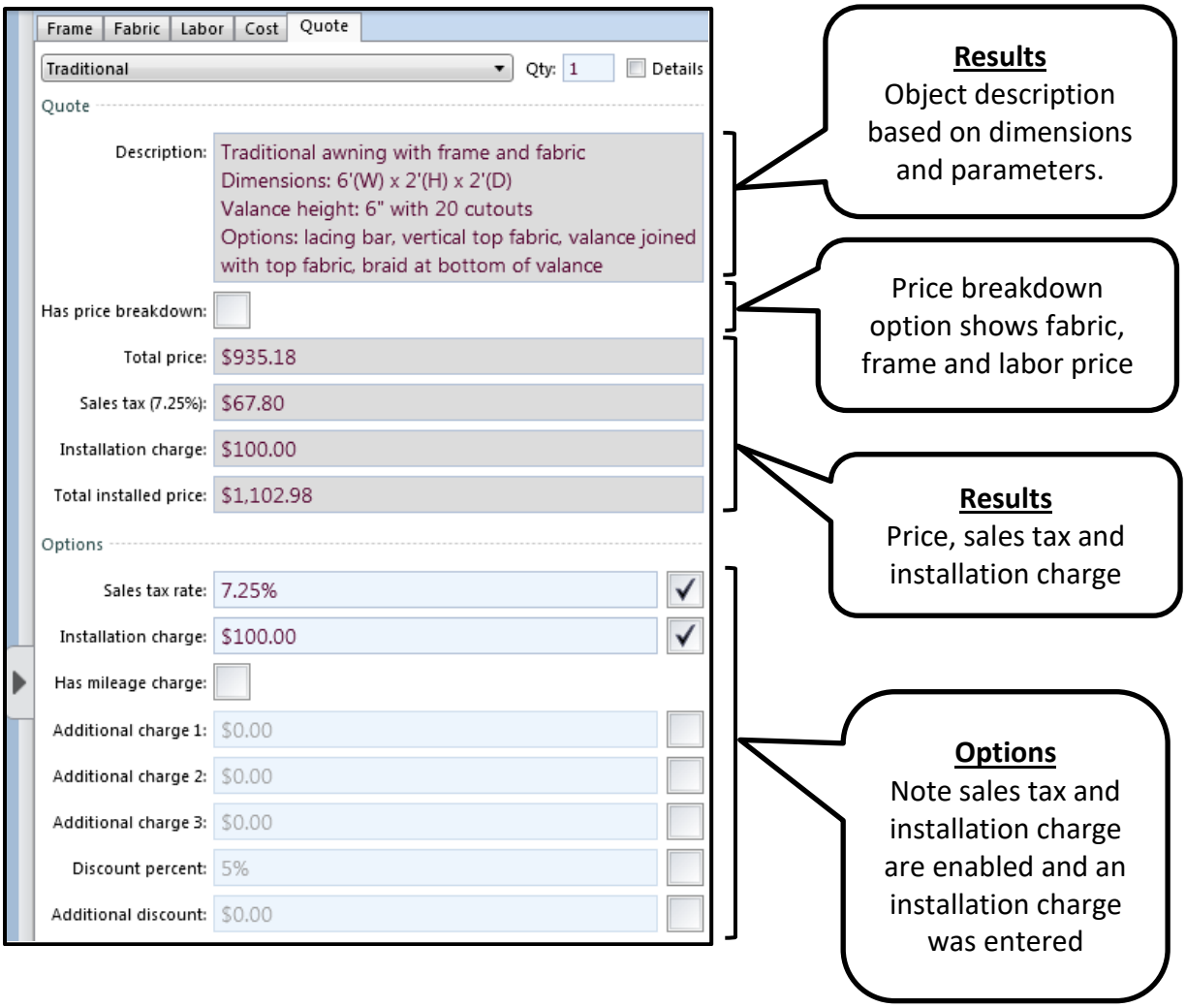


Quote Tab

The Quote tab is slightly different from the other tabs. There's an option for price breakdown shown in the results section. Enabling this option will show a price breakdown of fabric price, frame price and labor price. This can be useful in situations where the customer is comparing the additional cost of using a premium fabric (i.e. stripes) vs a standard fabric (i.e. solid color).

In the results section of the Quote tab, the retail price that was calculated in the Cost tab is shown. By turning on the check boxes next to various options, other common items such as sales tax, installation fees, discounts, etc. can be added to the quote. As these options are enabled, corresponding values for them will be displayed in the results section.

In the example below, the price breakdown was not enabled, but a 7.25% sales tax and $100 installation fee were added to the price of the awning:



Creating a Quote

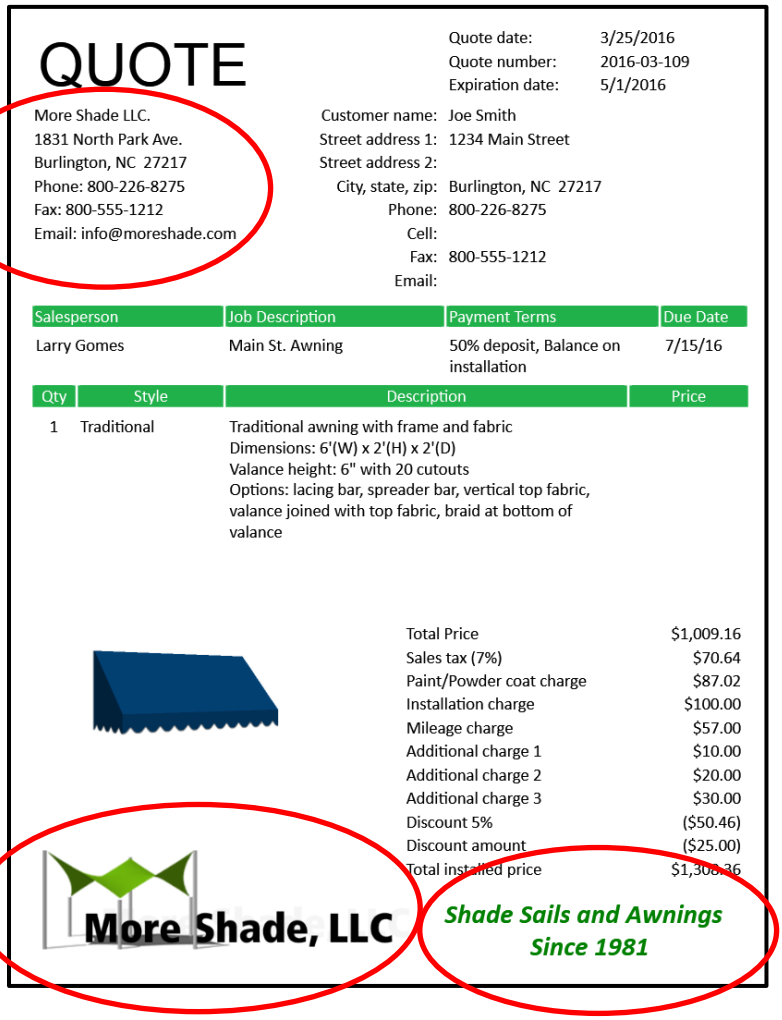
Using the Page Layout feature to quickly generate a quote

Awning Composer includes two sample quote templates which can be customized to look like your existing quote forms. In addition to adding renderings, simple text, and images to the page, you can also add estimation values that are automatically filled in based on the current awnings in the scene.

Estimation values are added to the quote by including some special text inside a text box that indicates which estimation values should be inserted. For example the text {QTotInstalledPrice} is used to reference the total installed price for an awning. Once the quote has been customized, it can be saved as a template (.acpl file) and then set as a default template that will be used as a starting point for each new project.

Modifying a Quote Template

Awning Composer includes a single object and multi-object quote template that are already set up to look like a standard quote. The single-object template can be used for scenes with one awning and the multi-object template can be used for scenes with two or more awnings.



QUOTE

Quote date: 3/25/2016
Quote number: 2016-03-109
Expiration date: 5/1/2016

More Shade LLC.
1831 North Park Ave.
Burlington, NC 27217
Phone: 800-226-8275
Fax: 800-555-1212
Email: info@moreshade.com

Customer name: Joe Smith
Street address 1: 1234 Main Street
Street address 2:
City, state, zip: Burlington, NC 27217
Phone: 800-226-8275
Cell:
Fax: 800-555-1212
Email:

Salesperson	Job Description	Payment Terms	Due Date
Larry Gomes	Main St. Awning	50% deposit, Balance on installation	7/15/16

Qty	Style	Description	Price
1	Traditional	Traditional awning with frame and fabric Dimensions: 6'(W) x 2'(H) x 2'(D) Valance height: 6" with 20 cutouts Options: lacing bar, spreader bar, vertical top fabric, valance joined with top fabric, braid at bottom of valance	

Total Price	$1,009.16
Sales tax (7%)	$70.64
Paint/Powder coat charge	$87.02
Installation charge	$100.00
Mileage charge	$57.00
Additional charge 1	$10.00
Additional charge 2	$20.00
Additional charge 3	$30.00
Discount 5%	($50.46)
Discount amount	($25.00)
Total installed price	$1,308.36

More Shade, LLC

Shade Sails and Awnings
Since 1981

Each of the sample layouts come with placeholder company info (see circled items above) which should be changed or deleted. To edit the layout:

1) Click on File and then Render Image and use the crop controls to highlight the area around the awning.
2) Click on Print and then click the Open Layout button. Choose “Open sample layout” from the context menu and choose the single or multi-object sample template.
3) Enter your company info in the upper left corner by clicking on the row to be changed and entering your data.
4) Change the logo by right clicking on the MoreShade logo and selecting “Delete”. Use the “Add image” button on the page layout tool bar to add your company logo.
5) Change the tag line by right clicking on the text box that contains “Shade Sails and Awnings Since 1981” and selecting “Unlock” from the context menu. Click in the text box to change the text to your company tag line. (Note: The multi-object sample layout does not have a tag line because that space was used to show quote totals.)
6) Click the Save Layout button to save these changes so they will be available the next time this template is opened.
7) Click the Set Current Layout as Default button to set the modified layout as the default layout.

Adding Estimation Values to a Template

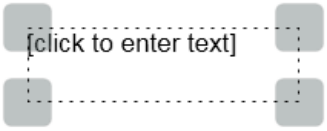
The sample quote template uses a combination of page layout objects to create a quote. Image objects are used for static images like logos. 3D view objects are used to display the contents of the 3D view (e.g. a rendering of an awning). A text box object is used to display the “Quote” text in the upper left hand corner. Table objects are used to display all of the other information on the quote.

Note that there are two types of text boxes that can be added. One is called "Text box" and the other is called "Rich text box".

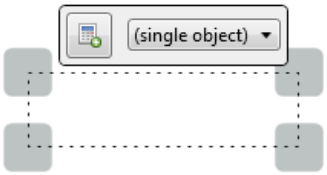
“Text boxes” can only have one font style, one font size and one font color. “Rich text boxes” can have mixed font styles, mixed font sizes and mixed font colors, and format text using paragraphs instead of lines. Other than these differences, both types of text boxes work basically the same but we recommend using regular text boxes whenever mixed font sizes and colors are not needed.

Table and text box object can also have dynamic content such as estimation values that are automatically filled in and kept up to date as the scene changes.

After adding a text box, the following will be shown:



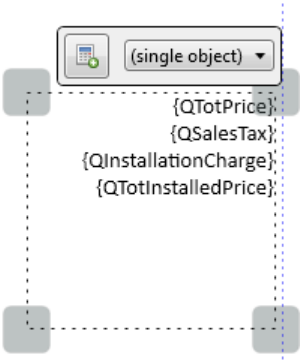
After clicking in the text box to start editing it, a small toolbar will appear above it:



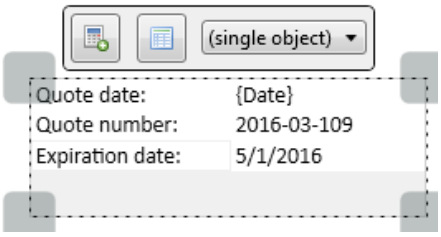
Clicking on the first button in the toolbar will open the Insert Value window. This window helps you insert dynamic values into the text box. The following types of values can be inserted:

- Basic values – Current date, current time, etc.
- Object values – Object name, object height, object width, etc.
- Estimator values – Quantity, quote description, total price, sales tax, etc.

Once the type of value to be inserted has been found, double-click on it to insert it into the text box. As an example, here are some of the value names for the Estimator values that were used on the sample quote: {QTotPrice}, {QSalesTax}, {QInstallationCharge}, {QTotInstalledPrice} and this is what it looks like after those values have been inserted into a text box:



After clicking in a table object, the tool bar will show three buttons. The first button opens the Insert Value window. The second button opens the Table Properties window which is described in the "Adjusting Page Layout Tables" section.



On the right side of the toolbar, there's a drop down box that lets you choose the source for dynamic values in this text box. That is, when dynamic values are filled in automatically, where should they come from? There are several possible choices:

- **(none)** – Used for text boxes with no dynamic values (i.e. just straight text)
- **(single object)** – Gets values for a single estimation-capable object in the scene, when the scene contains only one estimation-capable object.
- **(total for all objects)** – Gets values that are added up for all objects in the scene, used for e.g. total costs.
- **(repeat for each object)** – Cycles through each of the objects in the scene and gets values for each estimation-capable object.
- **[object name (e.g. Traditional)]** – Gets values for a specific object in the scene. This kind of option will be displayed as an individual object name like Traditional, Convex, etc. which you can select in order to get values for that specific object.

In the example above, "(single object)" was selected in the drop down box. This means that when there is a single object in the scene, then the values in the text box should be taken from that object.

If the scene contains multiple objects that support estimation, "(single object)" won't use values from any of those objects. You'll need to select each text box that you want to contain values for a single object and choose which object you want the values to come from.

For example, to quote a price for a Traditional awning and a price for a Convex awning together on one quote, use a table object to define the values to be displayed (e.g. quantity, description, price, etc.). Then in the drop down box, choose “repeat for each object”. The table will now show quantity, description and price for the Traditional awning and then for the Convex awning.

As you can see, the combination of using value names and selections in the drop down box provides a powerful tool for building custom quotes.

Quoting Multiple Objects

Awning Composer has the ability to quote multiple objects on a single quote. This can be done in one of three ways: 1) By entering a quantity greater than one for multiple objects that are exactly the same; or 2) By adding two or more different objects to the scene; or 3) A combination of 1 and 2 above.

When a quantity greater than one is entered for an object, estimation results will reflect this quantity. Assuming a single Traditional awning is added to the scene, the estimation results will

show a quantity of 24 joints on the Frame tab. If a quantity of 2 is entered for this awning, then the estimation results will show 24 x 2 = 48 joints in the Frame tab.

If two different objects are added to the scene, then the estimation results can show the individual quantities associated with each object or the combined total for both objects. As an example, assume a Traditional awning and an Open Traditional awning are added to the scene. With the Frame tab displayed, click on the Traditional object and then on the Open Traditional object and note that a quantity of 24 joints is shown for the Traditional awning and 12 joints is shown for the Open Traditional awning. In the drop down box at the top of the estimation panel, select "(total for all objects)" and it will show the combined total of 36 joints for both objects.

Multiple Object Material Savings

At this time, the estimation system cannot calculate material savings across multiple awnings. At some point in the future, a net calculation for like material across multiple awnings is envisioned. In the meantime, any material savings for multiple awnings must be calculated manually.

Putting it all Together

1) Before using doing your first estimate, be sure to look at the bottom of each estimation tab and review (and/or update) the default values for each of the options. Once this review has been completed, you can start using the estimation results.
2) Create an estimate by simply adding a dynamic object to the scene. Then apply fabric, add a sign band (or valance), and adjust your frame parameters (e.g. rafter spacing, sign band height, etc.)
3) Look at the estimation panel on the right side of the main window and review the results in each tab (shown at the top of the tab). Make any adjustments needed in the Options section (at the bottom of the tab). For example, in the Fabric tab, determine if you are going to run your fabric horizontally instead of vertically. Note: For multiple awnings in the same scene, options do not have to be the same. For example, a Traditional awning can have 46” fabric run vertically while a Convex awning can have 60” fabric run horizontally and the system will calculate the yardage correctly.
4) Look at the Quote tab and check off the options needed for this job. For example, do you need to charge sales tax? Is there a separate installation charge? Are there additional charges for graphics or equipment rental?
5) Once the review of the estimation tabs is complete, click on the File tab and then choose Print. Use one of the default quote forms to print your estimate.

Remember that the default quote forms can be modified. You can add your own logo, tag lines or vary the quote data that is shown using the Page Layout vertical toolbar to the right of the print settings. You can then save your layout and/or set it as the default.

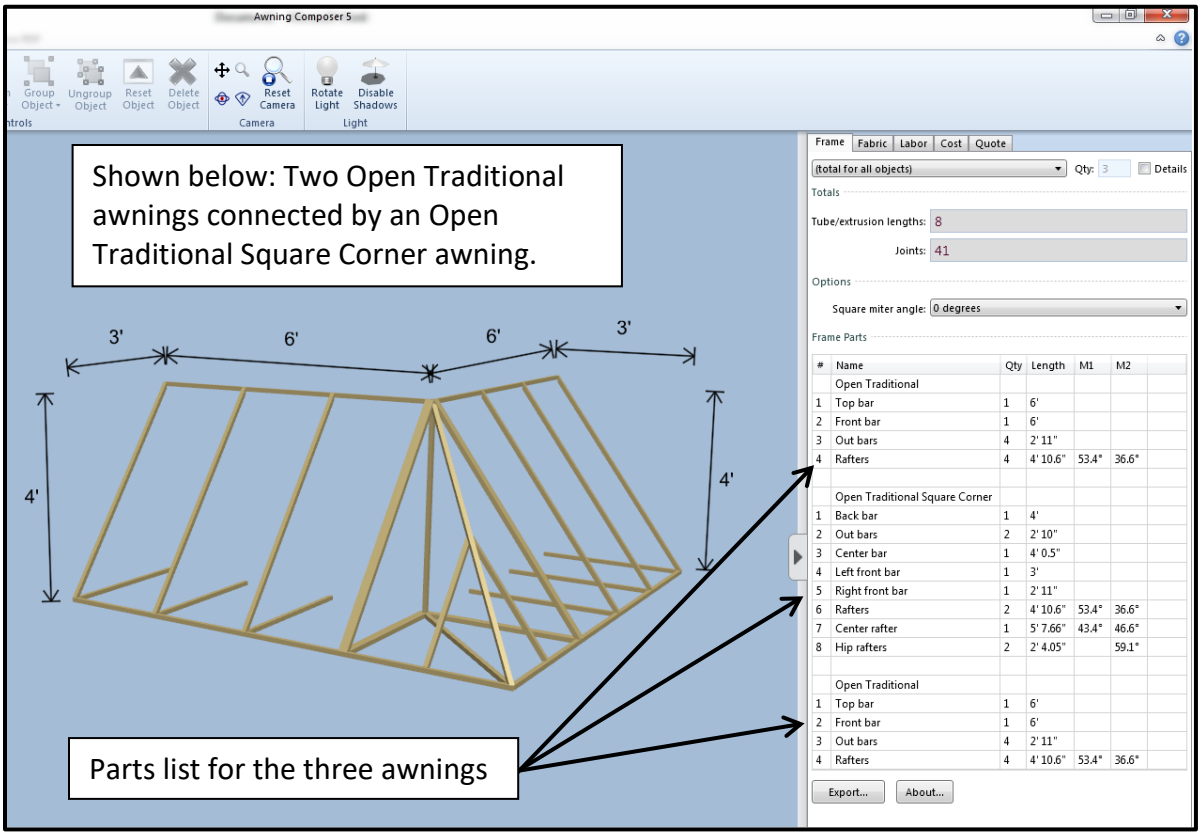
Creating a Parts List

Automatically generate a list of frame parts

For most dynamic objects, Awning Composer can generate a list of parts with lengths and miter angles. (Note: the parts list is now part of the estimation feature so estimation must be enabled for the parts list to be visible.) While this list could be used as a starting point to create a "cut-list" for production, there are several potential problem areas:

1) The awning in the scene must be configured the same way your shop normally builds awnings. Each joint must have the correct Master option selected or the resulting part lengths may not match up to your standard design.
2) Awning Composer does not yet support different sizes of extrusion within a single frame. So all frame members must be the same square size (i.e. 1" x 1", 2" x 2", etc.)
3) Awning Composer does not yet support birds-mouth joints so any components requiring these types of joints need to be calculated manually.
4) Miter angles are calculated based on the square miter angle drop down box located just above the parts list.

To see the parts list, open the estimation panel and look on the Frame tab. The parts list will be shown for the currently select object. If there are multiple objects in the scene and you want to see the parts lists for all of the objects, then select "(total for all objects)" in the drop down box at the top of the Frame tab.



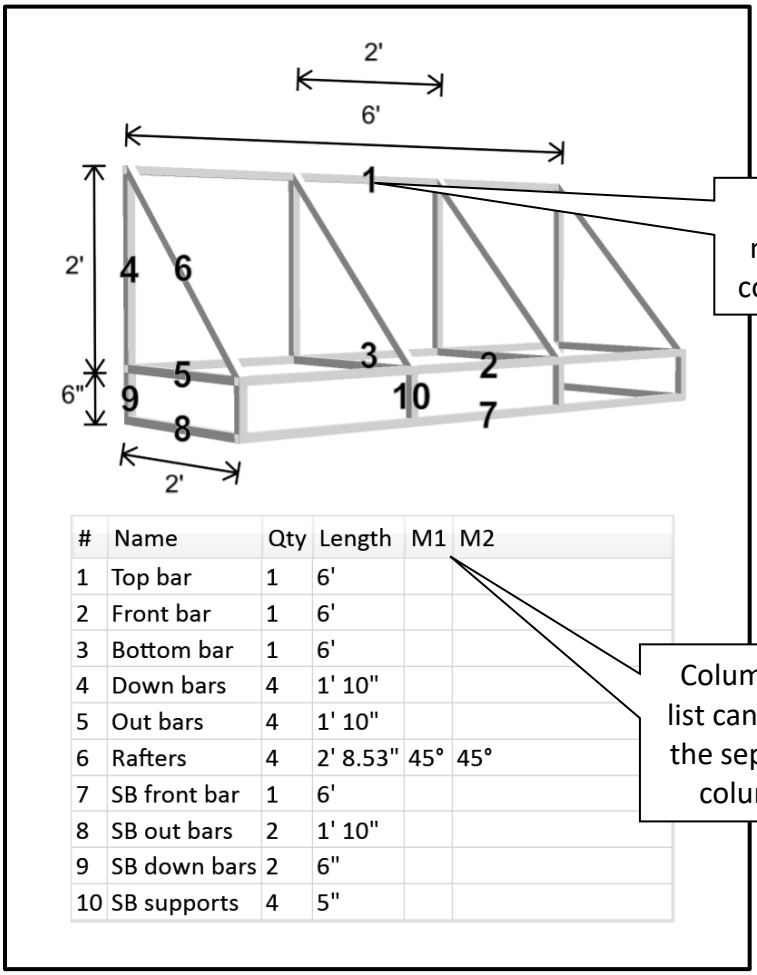
Creating a Shop Drawing

By using the page layout and parts list features, it's possible to produce a shop drawing that can be used for production. Be sure to address each of the potential problem areas listed in the "Parts List" section to ensure that the awning created in Awning Composer matches the way awnings are built in your shop.

Once your awning design has been completed, turn off the fabric visibility, add dimensions (optional), and then turn on "Show part numbering" in the Options section under Parameters in the Object tab. Note that the multi-colored parts option is not currently used by parts lists in the page layout so the part numbering option is the best option to use right now.

Click on the File tab and go to the "Render Image" page. Use the crop feature to outline the area containing the frame. Then go to the Print page and you will see the frame at the top of the page. Position and size it as needed.

Click on the "Add object to page" button at the bottom of the vertical Page Layout toolbar and then select Parts List from the context menu. Use the corner handles on the parts list table to adjust the size and location of the list. Adjust the column widths by dragging the vertical lines in between the column headings. Note that the lines in the rows **below** the column headers cannot be used to adjust column width.



#	Name	Qty	Length	M1	M2
1	Top bar	1	6'		
2	Front bar	1	6'		
3	Bottom bar	1	6'		
4	Down bars	4	1' 10"		
5	Out bars	4	1' 10"		
6	Rafters	4	2' 8.53"	45°	45°
7	SB front bar	1	6'		
8	SB out bars	2	1' 10"		
9	SB down bars	2	6"		
10	SB supports	4	5"		