

Lighting Tutorial for VectorWorks/RenderWorks/Spotlight:

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1. The very first thing to do before getting started is to go into your VectorWorks preferences. While here click on the Display tab and make sure that under Display Light Objects “Only in Wireframe” is checked. (**See Figure 1**) This is important because you don’t want your lights to show up in your renderings, but you do want the capability of manipulating your lights while you are in wireframe mode.

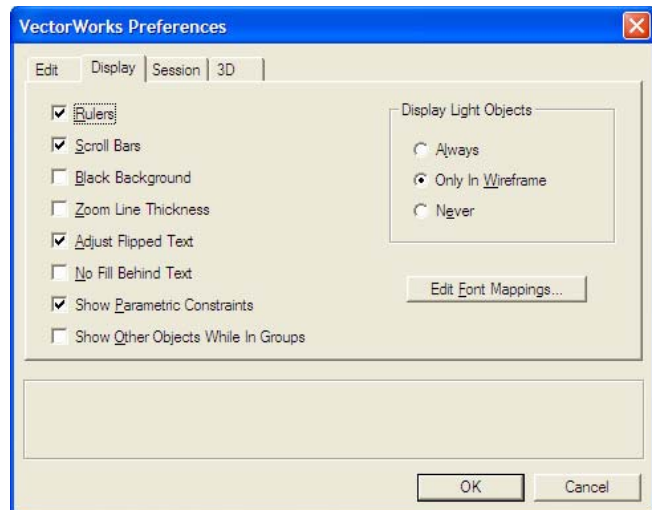


Figure 1.

2. After checking preferences, set up Linked Layer in the document. Create the Layer Link by going into “View>Create Layer Link”, and then select the layers that to link together — usually the scenic layers and the architectural layers (do not select ‘project 2d objects’). Name this layer “LL LTG”. Working in a linked layer is important because this is the layer that you drop your lights onto. By placing lights on the linked layer the lights physically light all of the layers that you have linked together. If you were to just drop lights onto the set layer, for example, the lights would only illuminate the set and they would not pass through to the architecture. Simply put, this lets you light all of the layers—being more realistic.

3. In the layers setup box, turn off the LL LTG layer. (See Figure 2) Make the “LL ALL” layer the to active only. If you do not set LL LTG to Active Only the other layers will be seen in the background.

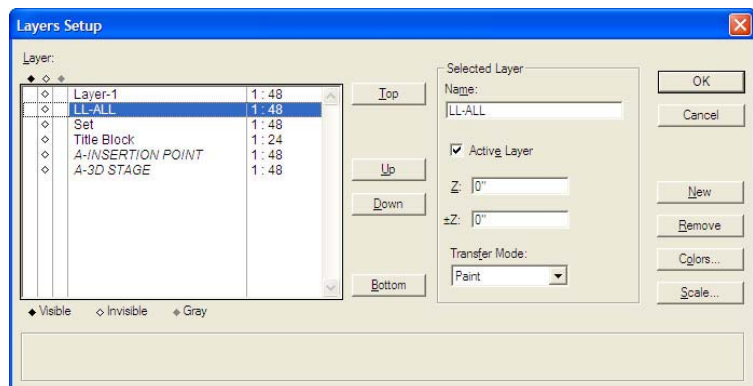


Figure 2.

4. The next step is to create classes for the lights to live on. Name these classes LTG-Cue #. (Ex. LTG-CUE 1, LTG-CUE 2, LTG CUE 3, etc.) Turn off all classes that you create. Exit the classes dialogue box and then set the class you want to work on active and start dropping lights.

5. The next step is to set up Saved Views to jump around in the file and render from. Start by figuring out which scenes you want to light. Turn on and off the necessary classes to see just the objects that you need in the set and the architecture. As stated below turn off all light cue classes and set 1 to active. (See Figure 4). Now save that view in groundplan. Duplicate this saved view in the resource browser for as many light cues as you need and number your saved views. After you have duplicated them, edit each view

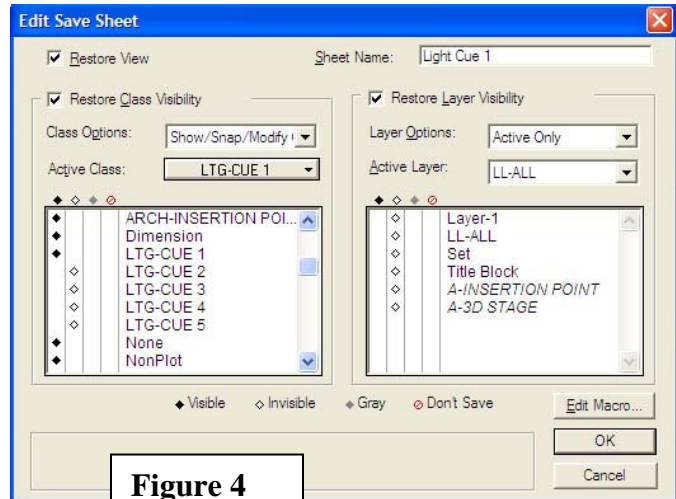


Figure 4

and change the active class to the next light cue and turn on that class. The classes need to be on to create light cue animation later. Once you have finished all of your Groundplan Saved Views, go to the 1st one and set a perspective (View>Set 3d Perspective) choose viewer height and look toward angle, and set perspective to normal. Resize the crop window till you get it to look the way you want. Save this as a Saved View named the same as its corresponding Groundplan View except with a different starting number. Now duplicate this saved view as many times as necessary to make all your light cues (it is important to duplicate this view to get the exact same perspective for each cue). Change the classes in each saved view by editing them. Now you are ready to drop lights in your Groundplan Views and look at the renderings in the perspective Saved Views.

6. To refresh:
 - a. Check VW preferences and make sure that you display lights “Only in Wireframe”
 - b. Set up a Linked Layer
 - c. Make the LL ALL layer the active layer that you are working in at all times.
 - d. Set up classes that correspond to the lighting cues that you want to render. I.e. LTG-CUE 1, LTG-CUE 2.....LTG-CUE 50
 - e. Create Saved Views for each lighting cue in groundplan and perspective.

7. Once the preliminary work is out of the way, you are ready to drop lights. Drop lights in the Top/View plan view (your GO Saved View). From there jump into a side view (#6 or 4 on the numeric keypad) and use the 2d Rotate tool to rotate the light to where I want it (do not use the Light Engine rotate handles). Move around to two or three different views to make sure that the light is focussed correctly. {Usually Right (4) and Front (2)}
8. Refer to the Object Info palette for almost everything when dropping lights. (**See Figure 5**) Once you have dropped a light, you can:
 - a. set the “Z” coordinate
 - b. turn the light “On” or “Off”
 - c. set the intensity (levels *over* 100% if necessary)
 - d. use “Cast Shadows” or not
 - e. change the kind of light instrument
 - f. you can adjust “pan” & “tilt” here, but these values can seem arbitrary at times. I usually rely on the rotate tool in the Editing Palette.
 - g. adjust the “Spread” and “Beam” (used for creating hard and soft edge lights)
 - h. adjust the “Distance Falloff” and “Angle Falloff”

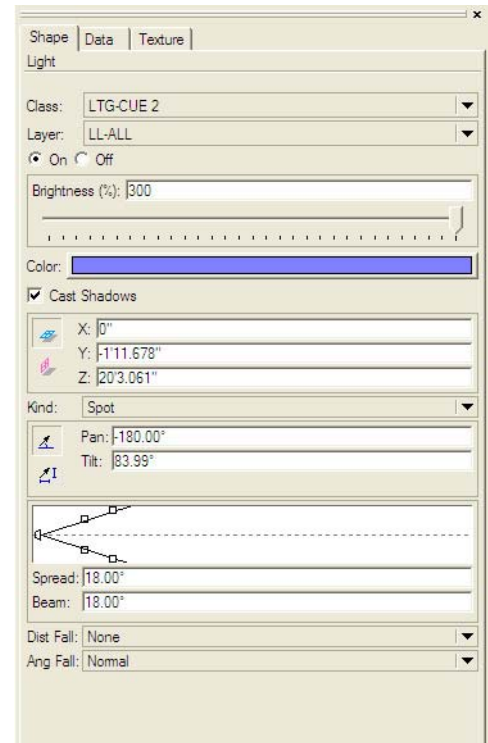
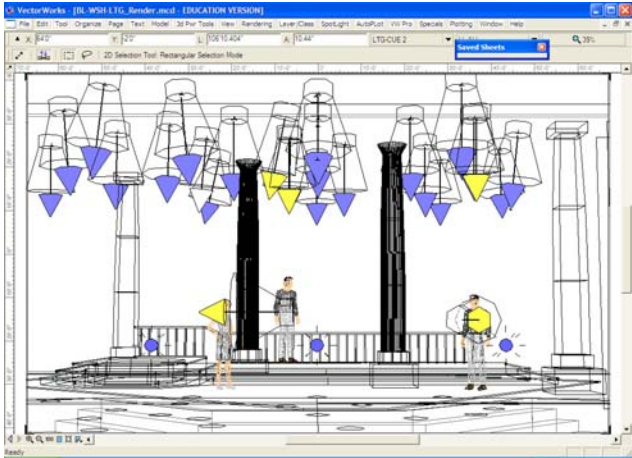


Figure 5.

9. Experiment with all of the different lights: Directional, Point Light, Spot Light, and the Gobo Projector (I will treat them as a separate “light” because you drop gobos independent of a light). And quite honestly, I usually drop a ton of lights into a drawing. (See **Figure 6 and Figure 7**)

Figure 7.



10. At this point you really are in the realm of design. You will set up a cue, render it, make changes, re-render and try again until it looks the way that you want it to.

Tip: For partial renders, use the Render Bitmap tool. Once you select the tool, choose the preferences from the mode bar to set it to the desired render mode and then draw a rectangle around the part of the rendering that you want to see. You

can then place these Bitmaps on a separate layer or off to the side of your rendering for comparisons.

11. Now for gobos. Note that once you learn this tool, you can use it without choosing a Gobo, and just as a focussing tool.
 - a. One frustrating part of rendering and using Gobo Projectors is that the Gobo Projector Boxes and the Focus Points used to focus the lights will show up when rendering. The gobo projector boxes usually are not a problem, as they are usually not part of your perspective view, as they are higher along the Z Coordinate than the top of the perspective crop. However, the focus points are in view and will render. The good news is that after you drop a Gobo on a focus point, the gobo projector no longer needs that Focus Point to work, so the focus point can be deleted. However, you may use the same focus points for multiple lights, so you may not want to delete it right away. If you want to temporarily leave the focus points but not render them, then just before you render go to ‘Spec>Focus Points>Hide Focus Points’ (this will turn them off temporarily for the render) then after the render go to ‘Spec>Focus Points>Show Focus Points’ (this will turn them back on). Before you batch render, or when you are sure you are done with focus points, you can turn on all your lighting cue classes and go to ‘Spec>Select Focus Points’ and then delete all of them, or move them to a class that is turned off. BEFORE RUNNING THE ‘SELECT FOCUS POINTS’ MAKE SURE EVERYTHING IS DESELECTED.
 - b. When dropping gobo projectors, drop the projector itself in the LL LTG layer and the LTG-CUE # class that you are working in. (See Figure 3.)
 - c. The next step is importing gobos. These are found in your Spotlight Textures folder from your Resource Browser (Browse a document). You can choose from Rosco, GAM, Apollo, and Lee. Just pick the gobo that you want to project and Import it. (View the textures in ‘Thumbnails’ to

get a better look at them before you bring them in). These gobos will import as textures. I have found that Rosco gobos work best. GAM gobos show a ring around them which makes blending next to impossible. (you can get rid of this line by dropping the template and then after it has been dropped, reducing the beam angle by 2 degrees. Also, Rosco gobos just seem to be more reliable when it comes to seeing them in the renderings. Also, Colorizers do in fact work. You should experiment with them. You can also create your own templates. Download a template image from one of the template manufacturers websites or create your own images. Make them 2"x2" with an entirely black background (the only white should be what you are projecting). You create this by going to Spotlight>Visualization>Ceate Gobo Texture". You can also create shutter cuts by creating your 2"x2" square in photoshop – fill it with black and then select a rectangular or square, or polygon portion of it and filling it with white, Light will only transmit in the white area.

- d. The next step is selecting the Gobo Projector tool. (You do not have to drop a regular spot light with the Light tool and then add a gobo to it—rather you can skip one step and simply drop a Gobo Projector, which is the physical light.) Once you have clicked on the spot that you want to drop the gobo and light, a window pops up that asks you a number of questions: (See **Figure 8.**)

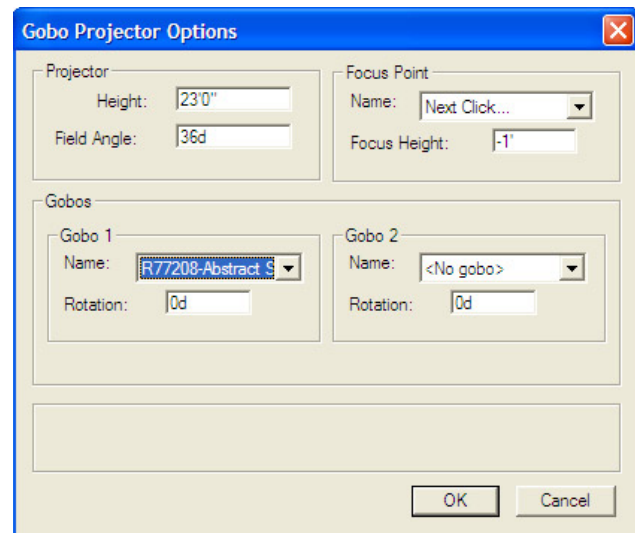


Figure 8.

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1. The height that you want the light.
 2. The Field angle
 3. The focus point that this projector will be hitting. You can leave this as Next Click (which I do ½ the time) or chose a focus point that you have already created. Both ways are useful, depending on what you are trying to do. It might be useful when creating a full pattern wash to drop the focus points first so that they can space them more evenly. (This does make choosing a focus point for a gobo projector more challenging though especially if you have many focus points

because you have to remember what focus point is where) If I am only dropping one or two projectors, however, I usually just use the Next Click option.

4. The focus height.
 5. Choose the gobo that you want to use. This is a drop down menu which lists all of the patterns that you have imported, and lets you choose which one you would like to insert. This list will be all textures in your file.
 6. The rotation of the gobo, if you want it rotated
 7. Finally you can choose to insert two gobos into one projector to create a static twinspace look.
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Useful Tips:

1. You can “edit” an existing gobo projector. Choose the Gobo Projection tool and click on the box over the light that contains the gobo info. It will ask you if you want to edit the existing gobo projector or do a new one by hitting no. **(See**

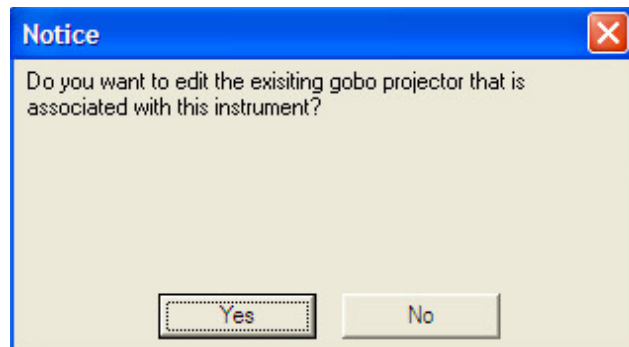


Figure 9.

- Figure 9)**
2. You can edit properties of the existing box by selecting it and going to the OI Palette and changing the projector (by typing in a new name of a texture), or the height, or some other attribute. This can be difficult at times if the space is tight.