Lighting Design and Pre-Visualization Software
Mia Lindemann

Lighting Technology

I used two programs to complete this project. Capture 2018 and ETCnomad. Capture is a pre-visualization software created by Capture Sweden and allows one to create a scaled-down version of a set, either in 2D or 3D. It is a virtual world to see how light will be cast out digitally and with pieces of furniture, extrusions from the floor or ceiling, and other such objects. This is useful in the entertainment and performing arts industry because it allows designers to see the space before hand and, for lighting designers, to see how the lights will look in the space beforehand to make sure that everything is being lit properly and even see how the colored lights will affect the set and costumes, but only if you have created those features in the Capture software. More information is available on the Capture Sweden website www.capture-sverige.com for all of their other software packages and pricings. ETCnomad is a computer version of the software used on the ETC line of consoles, such as the Ion or the Gio65, and can be used on both PC and Mac. It is a programming software that allows you to have the same amount of control over programming a show as you would with one of their conventional lighting consoles. To truly have it replace the console, however, you would need to purchase the ETCnomad Puck to actually send the lighting information from your ETCnomad software to the lights you are trying to control. ETCnomad on its own is a free software used in both the educational and professional world since you are still able to write custom cues and have that programming capability offline. Essentially, through ETCnomad you can program but you are not able to bring lights up on the show without the ETCnomad Puck. ETCnomad will also work with pre-visualization software, such as Capture Sweden. These two programs work together to let someone see their show before it is in a performance space. The song I chose to design was “Let it Rain,” by Grayscale. To start my design process, I listened to the song once casually just to get the sound in my brain. Then I listened to the song in an analytical sense where I was pinpointing moments where the lighting should change or what color would best portray the mood at a particular moment. I could not get all the information I needed by listening to the song just two times, so I repeated it multiple times until I was 100% confident with what I had planned. All of these notes and ideas were written in a small notebook and had the timeline for the specific moment in the song written out next to them. I used these notes to make more efficient work of my time spent on the design. For McCandless lighting, you usually use only two fixtures from in front of the object being lit pointing toward it at a forty five degree angle, which are called angled front lights, and one light above the object to light it from the top, which is called top light. This setup method allows them to be a strong tool of light to make sure the actors are well lit and visible on the stage. Generally, the color of each light is also changed to evoke whatever mood or create any atmosphere the designer wants. I decided to color all of my lights and for McCandless lighting I chose to color the standard incandescent light emitted from the lighting fixture into a soft blue for a subtle hint of color ranging all the way to a deep blue, a light blue for any cool tones and a white, an orange, or gold hue, and the other to be a cooler color, such as a green, violet, or most commonly a blue hue. For McCandless lighting, the standard mix of colors is to have one of the two angled front lights a warmer color, which would be a red, amber, or yellow hue, and the other to be a cooler color, such as a green, violet, or most commonly a blue hue. For top light, it is either a deeper, more saturated cool color or it is left as no color, which means to not put gel in the top lighting instrument so it retains the standard incandescent tungsten. For other types of performance, such as dance for example, the lighting method would be a different one from McCandless lighting, where the performers are not to face from the front as in McCandless but their sides. This is because seeing the silhouette and movements of the dancer are considered more important than seeing their face, as in acting, since they are not speaking.

Lighting Design

There are four controllable properties of light that we can manipulate, intensity, color, direction, and movement. We can control the intensity by controlling how bright a light is. Most conventional fixtures, those that do not move or change color on their own and are placed in a completely static position, are plugged into outlet called dimmers because they are able to be controlled by a lighting console and range from sixteen to one-hundred. A dimmer circuit is a coil of wires wound in a circle and electricity runs through this coil based on what the intensity is set at. Color is controlled by what gel is put over the opening of lighting fixture. A gel is a thin piece of plastic that is one of a multitude of different colors across the entire spectrum of visible light and each gel has a specific transmission chart that shows how transparent the gel is and what percentage of each wavelength of visible light will be seen through the gel when used on a lighting fixture that has a light at the color temperature for tungsten light (3200 Kelvin), which we see as white light or natural sunlight in the middle of the day. The less transparent gels are more saturated colors and vice versa. The gel is a form of subtractive color mixing, because they block a lot of the wavelengths of light to show only one piece of the white light. When the colored lights reach the stage, however, they can be used in additive color mixing, so if you were to point three lights, each one with gel that corresponds, with the primary colors of light (red, green, and blue), white light will be made where they all intersect. Direction can be controlled by placing a lighting instrument at whatever it needs to light, whether that be toward the stage so the actors can move through it, on specific pieces of scenery on stage, or on anything else the designer may want to. For conventional lights hung in a static position it mainly falls under the first category of lighting the stage for the actors, however when you use moving fixtures they are able to be directed to light anything at any time and can move to light other things, as well. Movement has similarities as direction since for conventional fixtures it mainly falls under the first category, however, the actors move through the light or the pattern put into the fixture to break up the light being moved through, this pattern or texture is called a gobos and come in a multitude of sizes for any lighting instrument and can be made of either glass or plastic. For moving lights, however, it is a physical property of the light as opposed to a more abstract one since these lights can be modified and programmed to move with the act. In theatrical stage lighting, the standard lighting technique is called McCandless lighting or the McCandless method, and is named after Stanley McCandless who first proposed this setup to light the stage in his book A Method of Lighting the Stage in 1932 and the method is still greatly popular and in wide use by lighting designers to this day. It uses three lighting fixtures to light a specific area, two fixtures from in front of the object being lit pointing toward it at a forty five degree angle, which are called angled front lights, and one light above the object to light it from the top, which is called top light. This setup method allows them to be a strong tool of light to make sure the actors are well lit and visible on the stage. Generally, the color of each light is also changed to evoke whatever mood or create any atmosphere the designer wants. I decided to color all of my lights and for McCandless lighting I chose to color the standard incandescent light emitted from the lighting fixture into a soft blue for a subtle hint of color ranging all the way to a deep blue, a light blue for any cool tones and a white, an orange, or gold hue, and the other to be a cooler color, such as a green, violet, or most commonly a blue hue. For McCandless lighting, the standard mix of colors is to have one of the two angled front lights a warmer color, which would be a red, amber, or yellow hue, and the other to be a cooler color, such as a green, violet, or most commonly a blue hue. For top light, it is either a deeper, more saturated cool color or it is left as no color, which means to not put gel in the top lighting instrument so it retains the standard incandescent tungsten. For other types of performance, such as dance for example, the lighting method would be a different one from McCandless lighting, where the performers are not to face from the front as in McCandless but their sides. This is because seeing the silhouette and movements of the dancer are considered more important than seeing their face, as in acting, since they are not speaking.

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