Lighting Design and Pre-Visualization Software

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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 that is theoretically a virtual world to see how your area will be laid out spatially 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 beforehand 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 for all of their other software packages and pricings. ETCnomad is a computer version of the software used on the ETC lines of consoles, such as the Ion or the Gibo8, 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 have with one of their conventional lighting consoles. To truly have it replace the lighting console, however, you would need to purchase the ETCnomad Puck to actually send the light 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 cues and have that programming capability offline. Essentially, through ETCnomad you can program but you are not able to bring lights up or run 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 an artist see their show before it is in a performance space. Because I am not as versed in this software, I did not look at any of the programs on a technical level, even though I did know how to do a certain action or pull up a specific programming screen in ETCnomad.

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 outlets called dimmers because they are able to be controlled by a lighting console and range from intensities from zero 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 or set by the designer. Color is controlled by what gel is put over the opening of lighting fixtures. 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 characteristic to show how transparent the gel is and what percentage of each wavelength of visible light has been 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 acts as 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 a gel that attunes with, the primary colors of light (red, green, and blue), white light will be made where they all intersect. Direction can be controlled by pointing 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 see. For conventional lights hung in a static position it mainly falls under the first category of lighting the stage for the actor’s eyes. With intelligent moving lights, they are able to direct light in any direction at any time and can move to light other things, as well. Movement has similar qualities as direction since for conventional fixtures it mainly falls under the first category. 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 gob 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 moved and programmed to move with the actors.

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 1933 and the method is still greatly popular and in wide use by lighting designers to this day. It uses three areas will also work with pre-

2018 Software Logo

ETCnomadSoftware Logo

Capture Sweden Software Logo

For specific lighting techniques, I used a combination of dance and the traditional theatre because of how the virtual space was set up. I also listened to the song repeatedly until I was familiar with the notes and timing of the song, so I could understand the different emotional moments of the song. I then listened to the song while watching a performance of the song to get a better understanding of the lighting moments and how they should be interpreted. For specific moments the lighting should change or what color would best portray the mood at a particular moment. I could not just rely on listening to the song just two times; I repeated it multiple times until I was confident with what I had planned. All of these notes and ideas were written in a small notebook and had the timcode 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 programming. For the movement of the lighting, some lights that are stranded in a specific lighting area will be laid out spatially 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 beforehand 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 for all of their other software packages and pricings. ETCnomad is a computer version of the software used on the ETC lines of consoles, such as the Ion or the Gibo8, 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 have with one of their conventional lighting consoles. To truly have it replace the lighting console, however, you would need to purchase the ETCnomad Puck to actually send the light 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 cues and have that programming capability offline. Essentially, through ETCnomad you can program but you are not able to bring lights up or run 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 an artist see their show before it is in a performance space. Because I am not as versed in this software, I did not look at any of the programs on a technical level, even though I did know how to do a certain action or pull up a specific programming screen in ETCnomad.

For this project, I was using a desktop Windows PC with two external monitors so I was able to manipulate and see both programs simultaneously. This helped to streamline my work so I could efficiently work toward my end goal of a fully designed set. I used ETCnomad on the bottom monitor and Capture on the top monitor to emulate how I see the stage while in program in real life in the light board below the stage in my sightline. I also had a webpage pulled up in the background so I could look at any of the programming software on the side, so if I did not know how to do a certain action or pull up a specific programming screen in ETCnomad.