THE OCULUS
World Trade Center – Lighting Upgrade

To learn more about the Clarté fixtures used at the Oculus and to see more pictures of the project, click through the links below.

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The New York Port Authority was committed to completing a lighting upgrade of 13,000+ existing CFL and CMH fixtures to LED solutions, but they could not find a solution small enough or optically capable of projecting light 300’+ from the ground level shelf to the apex of Oculus’s ceiling. The complex architectural space.

FSG, Facility Solutions Group, worked with Clarté Lighting to develop a solution that would fit into the existing fixture’s housing, and provide the needed center beam candle power (CBCP) to project light from the ground level shelf to the apex of Oculus with a RGBW LED solution.

Due to Clarté Lighting’s extensive modular offering of matching retrofit and new construction fixtures, an existing PAR38 scale RGBW retrofit kit and new PAR38 scale DMX RGBW PAR38 scale fixtures were configured with slight modifications to fit and mount into the existing housing easily and quickly.

No existing lighting controls existed in the space so ETC, a world leader in DMX controls and manufactures in Madison, WI. FSG worked with Clarté Lighting to develop a solution that would fit into the existing fixture’s housing which is one of the 10,000+ custom colors offered by Clarté for their fixture offering.

The NY Port Authority’s design plan is to have the uplighting in white 90% of the time and in amber 10% of the time. The only way to achieve this was by selecting a single color solution that could provide the needed CBCP. However, they discovered that a single color solution does not have the flexibility of changing colors in the light path to highlight Santiago Calatrava’s large scale dramatic architecture. To enhance the patron’s experience during the holidays, colors that feature the holiday will be projected to highlight Santiago Calatrava’s large scale dramatic architecture.

To highlight the vertical structure of the ribs, the New York Port Authority chose to have the PAR38 fixtures illuminate the vertical rib from the top 24 hours a day and 365 days a year for 8760 hours annually. The existing system utilized 100W PAR38 CMH 7 ½” recessed up light to each vertical column using a 150W T CMH asymmetrical center mounted fixture that provided fill light to the large open space. The lighting design utilized a custom 3 lamp recessed CMH fixture from Eliptipar with a 24” beam angle to provide a uniform light pattern across the large open space. The existing system utilized subterranean retail space and pedestrian passageways to the subway trains, path trains, and exits to multiple locations at ground level. The original lighting design was created by Fisher Marantz Stone NYC before LED lighting solutions were a viable technology for crafting unique solutions.

The key feature in the space are the 83 vertical rib shaped columns on each side that extend 300’+ into the air from the ground level to meet at the apex in the center. Below the ribs are 3 levels of subterranean retail space and pedestrian passageways to the subway trains, path trains, and exits to multiple locations at ground level. The original lighting design was created by Fisher Marantz Stone NYC before LED lighting solutions were a viable technology for crafting unique solutions.

The Oculus opened on March, 2016, and is the centerpiece of the World Trade Center Hub. Designed by world renowned architect Santiago Calatrava at a cost of 4+ billion dollars, the complex is a unique blend of rail station, pedestrian hub, and 75,000 square feet of enclosed shopping center space.