

Yale Peabody Natural History Museum

Converting the museum's first and third floor to LED lighting to preserve color rendering while reducing energy costs



The Results

Full LED Conversion for 1st and 3rd Floor:

The museum successfully converted all lighting on the 1st and 3rd floors to LEDs, which will continue to provide huge energy savings and reduced maintenance costs.

Energy Savings:

Converting both the 1st and 3rd floors of the museum to LED lighting provided tremendous energy savings due to the efficiency of the new lamps. The museum was able to reduce their utilities costs by approximately 30%.

Reduced Maintenance Costs:

In addition to using less energy, LEDs also have a much longer life, which reduces the number of times new lamps must be purchased and replaced. The museum was able to reduce its maintenance labor costs by simply upgrading from the outdated lighting.

Since its initial LED conversion, the Yale Peabody Museum of Natural History has continued their energy-saving, LED conversion efforts through several other areas of the museum.

The Scenario

The museum had extensive standard halogen lighting throughout its building. With the impending July 2014 phase-out of PAR halogen bulbs, and several rebate and grant programs available, the museum was exploring the possibility of transitioning to LED lighting in several areas of the museum to reduce energy costs.

Bulbs.com provided a site visit from one of our certified Lighting Specialist at the Peabody Museum to assess the needs of the project and determined that converting to LED was in fact the best solution. It was also determined that the museum's high turnover for temporary exhibits would require a customizable lighting solution.



- **LED Conversion**



- **Utility Energy Savings**



- **Reduced Maintenance Costs**



- **Customizable Lighting Solutions**

The Solution

Adjustable Lighting Solutions for 1st Floor:

Because the 1st floor is home to the museum's rotating, temporary exhibits, it was important to find the right combination of lighting solutions that would allow the room to be adjusted to the needs of each new exhibit. This meant installing dimmers to adjust the brightness easily and identifying compatible LED bulbs for those dimmers.

Bulbs.com worked with Philips Lighting and museum maintenance staff to specify bulb recommendations that would meet all of these needs.

Customized Lighting Solutions for 3rd Floor:

Each exhibit on the 3rd floor required a customized lighting configuration because of the sensitivity and light exposure requirements of many of the artifacts.

These requirements needed to be met for the museum to move forward with the project. Bulbs.com, Philips Lighting, and museum maintenance staff determined the requirements and a customized lighting solution that would preserve the integrity of the exhibits.



About Bulbs.com

Bulbs.com, headquartered in Worcester, Mass., is a leading online lighting supplier. Established in August 1999, Bulbs.com provides lighting products to over 125,000 commercial customers operating across 300,000 locations in the hospitality, retail, property management, and education, healthcare, manufacturing and municipal sectors.

The Challenges

Maintaining Exhibit Clarity:

Lighting is critical to the success of the museum because so many of its exhibits are detailed- many involving small components. It is important that the visitor experiences a well-lit exhibit with excellent color rendering, sometimes from several feet away to protect the artifact. To achieve this, multiple options needed to be considered, making for a much more challenging project.

Need for Adjustable Lighting for Temporary Exhibits:

The LED conversion for the 1st floor was no easy task due to the need for lighting adjustments for each rotating exhibit. The temporary exhibits meant finding energy efficient lamps that also provided a wide variety of options.

The bulbs needed to include a range of color temperatures. The bulbs also needed to include a number of different beam spreads, which could be adjusted based on the needs of each exhibit.

Customization & Protection for Each Exhibit:

The 3rd floor houses locally-themed permanent exhibits that required specific illuminance, UV, CRI, and color temperature requirements. The exhibits contained artifacts that needed to be preserved and UV among other factors were a major consideration. A Bulbs.com Lighting Specialist was able to specify LED bulbs to meet the varied needs of the museum.

About the Company

The Peabody Museum of Natural History at Yale University is among the oldest, largest, and most prolific natural history museums in the world. It was founded by philanthropist George Peabody in 1866 at the behest of his nephew Charles Marsh, the early paleontologist. Most known to the public for its Great Hall of Dinosaurs, which includes a mounted juvenile Apatosaurus and the 110-foot long mural, The Age of Reptiles; it also has permanent exhibits dedicated to human and mammal evolution, wildlife dioramas, Egyptian artifacts and the birds, minerals, and Native Americans of Connecticut.

