

# LARGE AREA LIGHTING INNOVATION ON THE LEADING EDGE

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As ports continue to look for ways to boost productivity and efficiently use energy, LED lighting continues to be the right solution. Most ports use lights for more than 4,300 hours per year, so there is an increasing need for a well-designed system that reduces light pollution on the surrounding area, while providing the needed reliability and efficiency to positively affect budgets and not create maintenance headaches. That's what Musco Lighting continues to provide.

For 40 years, Musco has delivered sustainable and energy-efficient permanent and temporary lighting solutions for sports and large area venues around the world. Investing more than 35 years of research and testing in lighting technology, we have made dramatic improvements in energy efficiency and affordable ways to control light. And this is just the beginning.

Over the past decade we have continued our dedication to innovation, continuously improving our systems around the LED light source. We have been able to provide LED systems that feature advanced custom optics, providing unmatched light control to dramatically reduce off-site spill and glare, while offering instant on/off/dimming capabilities that maximise energy efficiency.

Since completing our first LED project in 2008 after lighting the White House, the majority of our industrial and large area lighting projects have shifted towards using our LED system. The improvements in cost and performance continue to make LED a more viable option for large area and port operations, especially considering the long hours of usage in a large area project and the efficient operation of the LED light source.

Take for instance our LED lighting solution at DP World Jebel Ali Port Terminal 2 in Dubai, UAE. The existing lighting had caused massive energy consumption, excessive spill light and glare, and expensive maintenance

costs. After choosing Musco's Green Generation Lighting® LED system, DP World reduced energy consumption by 66% and will be able to pay off its initial investment in less than four years.

DP World isn't alone. In 2015, Musco continued providing the port and terminal market with lighting solutions to fit the specific needs of operations. Some of the large area projects included:

- Global Container Terminal Deltaport Raiyard
- Dubai Dry Docks World
- Jaxport Wharf Reconstruction
- Huaneng Caofeidian Port
- Hebei Huadian Caofeidian Coal Port Phase 3
- Asian Marine Services PCL- Floating Dock (ASIMAR 1)

Around the world, Musco offers affordable, sustainable solutions complete from foundation to poletop, or by retrofitting onto an existing pole. Our system can usually reduce the number of fixtures needed to achieve the same light levels, and install a remote electronic component enclosure for easier maintenance access. Whether it's lighting the White House, the Olympics, the San Francisco Bay Bridge, Emirates Stadium, or the DP World Jebel Ali Port, our lighting solutions all have one thing in common: our commitment to delivering customised lighting solutions that meet the unique needs of our customers. Backed by our industry leading warranty, Musco has a global team of technicians to ensure uninterrupted operations.

## ABP NEWPORT

As the Associated British Ports' (ABP) largest facility in South Wales, Newport Docks services the United Kingdom's industrial and commercial regions. Port officials had made the decision to upgrade the facility's

lighting system because maintenance of the outdated HPS (high-pressure sodium) lighting was costly and time-consuming. ABP wanted a lighting solution that minimised maintenance expenses, reduced operating costs, and supported the organisation's sustainability efforts. They also wanted to partner with a company that would provide them with a long-term warranty on parts and labour, and have a team knowledgeable about port operations. That's why port officials determined Musco's Green Generation Lighting® system with an LED light source was ideal for ABP's needs.

Newport Docks is one of ABP's first large scale upgrades to LED lighting, which is why ABP called on Musco to rely on its extensive knowledge and expertise in understanding the LED light source. The new system provides a more uniform and better quality of a clean, white light, and significantly increased overall illumination levels, while reducing glare for vessel operators.

With the installation of fixed mounting brackets, and the removal of the existing raise and lowering rings, ABP is able to save significant costs by eliminating annual health safety inspections required for mobile rings. Additionally, Musco's system approach to lighting includes remote electrical enclosures mounted on the lower part of the pole for improved reliability and serviceability. Operating costs are also reduced with the long life of the LED light source and a 10-year parts and labor warranty.

The system is equipped with Musco's Control-Link® controls and monitoring system allowing for remote on/off and dimming functions. ABP officials are pleased with the dimming capabilities because, while the port will often operate 24/7, it only requires higher light levels for one hour each night for operations.



## YUCATAN CONTAINER TERMINAL

After starting its operations in 2005, the Yucatan Container Terminal (TCY) has become a key maritime terminal in the high seaport of Progreso in Mexico. Spanning an area of 11.5 hectares, the terminal moves incoming and outgoing containers, which is why the expansive facility prioritises safety and visibility to ensure the efficiency of its operations. But after the lowering rings on its existing light poles stopped functioning properly, excessive glare for their workers and inadequate lighting became a concern. Terminal officials determined it needed a new energy-efficient lighting solution, and that's where Musco stepped in.

TCY officials had spoken to suppliers that wanted to re-use the lowering rings, instead of providing a solution on how to remove them to improve light quality. Musco took out the lowering rings and provided a custom solution, installing its Green Generation Lighting® system with an HID light source onto existing poles, meeting the unique needs of TCY and introducing a variety of added benefits.

Musco's custom system has allowed the facility to utilise the full height of the pole to cover the entire area of the facility and improve visibility. The lighting system also features enhanced light control to precisely focus light where it's needed, reducing glare into the eyesight of operators and dramatically reducing off-site spill light.

In addition to that, the lighting solution has reduced energy consumption by 30% and provided consistent, uniform lighting across the large facility. The lighting system also includes a 10-year comprehensive parts and labour warranty backed by a team of technicians that eliminates maintenance costs, helping TCY realise a total savings of more than US\$150,000 over the next decade.

## PORT TAMPA BAY - EASTPORT DEVELOPMENT

Port Tampa Bay is the biggest port in Florida, handling more than 34 million tons of cargo per year. In 2014, officials began

a major expansion and upgrade in its port, starting the Eastport Development project. In doing so, Port Tampa Bay wanted to ensure the project featured a reliable and energy-efficient lighting solution.

Having already partnered on several lighting projects at Port Tampa Bay, port officials turned to Musco to install its Green Generation Lighting® system with an HID light source. Musco's complete solution, including its precast concrete foundation, facilitated installation and provided several benefits.

The system features advanced custom optics that offer precise light control, allowing port officials to cut off and direct light where they need it, maximising energy efficiency and reducing spill light and glare, which was key considering the port is located near a main highway. The glare reduction also improved visibility in the facility, helping Port Tampa Bay in its goal to maintain safer and more efficient operations. The customised lighting solution provided by Musco also met the operational needs of the facility. The lighting system maintains a lighting average of three footcandles throughout the facility, and also provides five footcandles on the berth area of Port Tampa Bay, which is where the ships are docked, to account for the higher activity and visibility required in that area.

The lighting solution will also reduce energy consumption by 33% and eliminate maintenance costs for Port Tampa Bay over the next decade thanks to Musco's comprehensive parts and labour warranty backed by our team of technicians.

## CUSTOM SOLUTIONS AND INNOVATION

Musco is committed to providing energy efficient lighting solutions that not only meet the needs of our customers, but also offer the latest advancements in lighting technology. Our goal is to provide reliable, trouble-free systems for a safer work environment for workers, reduced operating costs, and custom designed systems to complement the operations of the port.

## ABOUT THE AUTHOR

Tom Morrison is a 10-year member of Musco Lighting's team and has worked on numerous Large Area and Sports Lighting projects around the world, including in the U.S., Canada, Europe, Middle East, India, China, and Australia. As Global Account Manager, Tom focuses on developing proper lighting applications and reducing energy consumption for large facilities. Tom and his team work closely with terminal operators, engineers, and maintenance personnel to enhance lighting practices for port, rail, intermodal, and other transportation facilities.

## ABOUT THE ORGANISATION

Using LED and metal halide light sources, Musco delivers customised lighting solutions for sports and large-area venues around the world. Musco has invested more than 35 years researching and testing lighting technology, and the precise science of light control. The results are affordable, energy-efficient solutions that provide the highest quality of light, while minimising spill light and glare. Our trouble-free lighting systems carry an industry leading warranty complete from foundation to poletop.

## ENQUIRIES

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