Case Study
Sands Casino-Resort Bethlehem

Location	Bethlehem, Pennslyvania, USA
Philips Lighting	LED Lighting

PHILIPS

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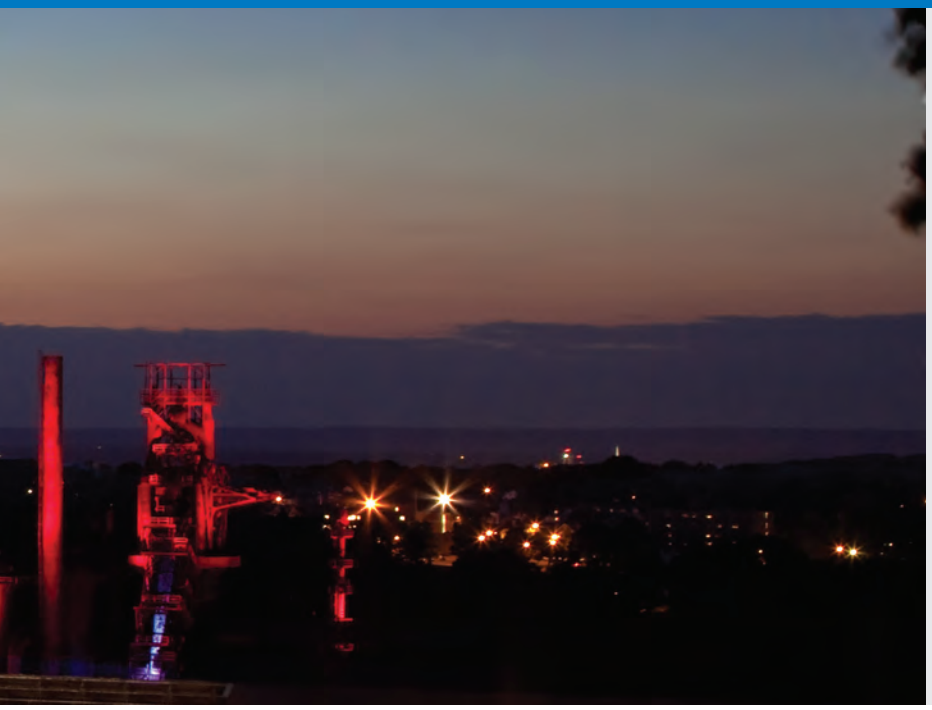
Light plays a role in linking the site to its industrial past — preserving the integrity of the steelworks and celebrating their place in American industrial history.



Fast Facts

Industry Sector
Exterior

Fixtures
ColorReach Powercore, ColorBlast Powercore

Lighting Design
Speirs + Major

Lighting Representative
Illuminations Inc.

Photo Credit
Alyssha Csük

When it opened in 1890, the Bethelehem Steel plant in Pennsylvania's Lehigh Valley was the world's largest industrial building. The plant was in continuous use until it ceased operations in 1995. Neglected for years, the plant and the 124-acre site on which it sits was listed in 2008 as one of America's 11 Most Endangered Historic Places by the National Trust for Historic Preservation.

Over the years, a number of national, state, and community organizations promoted various concepts for preserving and revitalizing the site. Bethlehem Works LLC, a development partnership which bought the site in 2004, eventually brought in casino operator Las Vegas Sands Corporation as a majority partner. Revenues from the slots casino, which opened adjacent to the abandoned blast furnace and ore crane in 2009, now provide funding for preservation and mixed-use redevelopment efforts.

Around the time the casino opened, Sands invited lighting designers Speirs + Major and lighting representatives Illuminations Inc. to light the abandoned blast furnace, high house, and ore crane, restoring Bethlehem Steel's prominence in the city's skyline.

The designers considered using a system of 1,000-watt HID narrow cutoff flood fixtures with gels to bathe the structures in brilliant reds and blues, but settled on a system consisting of approximately 250 ColorReach Powercore LED floodlights and over 100 ColorBlast Powercore LED wash lights from Philips Color Kinetics. While similar in initial cost to the HID fixtures, the LED system offered energy savings of more than 70%, as well as effectively maintenance-free operation over many years of daily use, dramatically reducing the total cost of the installation and achieving projected ROI in under two years.

The designers also liked the flexibility of the LED system, which can project color-changing light onto the massive steelworks without filters or gels. Gels that produce the desired shades of red and blue can block 80% or more of a fixture's light output. The LED fixtures, on the other hand, can natively produce millions of intensely saturated colors, dramatically reducing light loss and providing a level of flexibility that conventional lighting solutions simply cannot approach.

In response to the surrounding community's desire to commemorate the history of Bethlehem Steel, Speirs + Major created a lighting concept for the site that recall the steel production process. The furnaces glow red, alternately deepening and fading in color to represent periods of heating and cooling, while areas of blue light highlight the cool production phases. They also suggested brilliantly illuminating the blast furnaces to create a nighttime presence on the Bethlehem skyline, an approach that he had successfully used for a number of signature structures in Europe.

As Speirs + Major states in their project abstract, "Light plays a role in linking the site to its industrial past — preserving the integrity of the steelworks and celebrating their place in American industrial history."

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