NIGHT LIGHT

Office for Visual Interaction creates an exterior lighting scheme for a Chicago architectural landmark.

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Details

Project: Rookery façade lighting, Chicago
Client: John Buck Co., Chicago
Original Building Architect: Burnham & Root, Chicago
Lighting Designer: Office for Visual Interaction, New York
Structural Engineer: Klein and Hoffman, Chicago
Electrical Engineer: Environmental Systems Design, Chicago
Total façade area: 55,300 square feet
Lighting cost: $250,000 for lighting hardware only, ($4.52 per square foot)
Energy-code requirements: Compliance with Chicago Landmarks Commission
Watts: 2,304W (entire façade)
Manufacturer: Zumtobel provided all the exterior façade custom luminaires and mounting brackets

In 1888, Chicago welcomed a feat of architectural ingenuity to the Loop—a building constructed of hung masonry on a steel frame, the most advanced engineering technique of the day. The Rookery building, designed by architects Daniel Burnham and John Root, of the renowned architecture firm Burnham & Root, was 12 stories tall, making it one of the earliest commercial high-rises. Inside, a central light court flooded offices with sun, a critical element for such a tall building. As Erik Larson describes in the book *The Devil in the White City* (Crown Publishers, 2003), both Burnham and Root each oriented their offices south "to satisfy their craving for natural light, a universal hunger throughout Chicago, where gas jets, still the primary source of artificial illumination, did little to pierce the city's perpetual coal-smoke dusk."

Electric lamps were just beginning to be used to illuminate buildings, but the new technology was unreliable, and Burnham & Root opted not to illuminate the exterior. So every evening, the intricate façade of the Rookery faded with the sun. Over the years, the building underwent alterations (the most famous being a lobby redesign in 1905 by Frank Lloyd Wright). In 1970, the Rookery was added to the National Register of Historic Places; in 1972, it was designated a Chicago landmark. Yet still, that famous red exterior remained dark at night.

This past November, for the first time in its 123-year history, the Rookery finally saw the light, thanks to a design by New York–based Office for Visual Interaction (OVI). The exterior lighting was part of a restoration undertaken by the Rookery's current owners, the John Buck Co. Just as the building was a technical achievement for its time, the lighting scheme and the custom luminaire used are a triumph of today's best technical and artistic abilities. It takes a mere 2,304W to light the Rookery's 55,300-square-foot edifice through a series of LED fixtures, each the size of an index card.

"We thought long and hard about what would be appropriate for the building," says Jean Sundin, principal of OVI. The firm wanted to create a historically sensitive response, and not flood the Rookery's exterior with spotlights in a garish display, especially because of the building's complex detail. "Wherever you put light, that's where your eye goes, and you run the risk of creating something disjointed," Sundin says. Another challenge was that the building is in a dense urban area, so installing exterior floodlights on a busy sidewalk was a logistical impossibility.

The solution was the design of a custom luminaire that produces a flat beam of light and creates a glow around the window frames. But achieving that glow effect, even with the custom luminaire, turned out to be a complicated endeavor. "You think the building is symmetrical, but there is nothing symmetrical about it," Sundin says. "Even the window ledges have a different contour."

The existing elevations and other historic building drawings were of little help, so OVI first conducted an on-site field study, measuring every surface of the façade. From this study, they discovered that, in addition to random-sized window ledges, the building also had an uneven exterior wall. This was due in part to construction materials and processes of the 19th century. Capping stones were used to join pieces of the stone wall together, creating a raised rib (a design trick to keep water from entering the stone). These ribs pop up all over the exterior ledges, making symmetrical placement of light fixtures problematic.

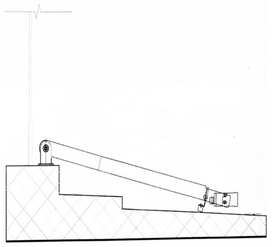
There were also constraints owing to the structure's status as a landmark, one of which was that nothing could be affixed to the terra-cotta surfaces. It soon became evident that an off-the-shelf solution was out of the question. "There were no standard products meeting our requirements, so a custom solution was required," Sundin explains.

OVI engaged lighting company Zumtobel to create a fixture in response to both the physical limitations on the historic façade and the firm's desire to create an appropriate lighting scheme. Zumtobel was "interested in modifying their platform in order to accommodate our needs, including specific optics and beam distribution, small overall size, and a special mounting device," Sundin says. OVI and Zumtobel developed a 1.5-inch LED luminaire with a custom telescoping arm capable of anchoring into the granite windowsills. The mounting bracket includes polyurethane feet to minimize contact with the ledges themselves. The assembly was then finished in "Rookery red" to match the color of the façade.

The resultant LEDs emit a soft glow with low-energy wattage—each luminaire uses just 14.4W—and the 3000K warm-white color temperature enhances the terra-cotta. "The biggest throw of light is three stories high," Sundin says. "This little fixture does a great job."

On Nov. 30, building tenants and guests gathered together at dusk inside the light court before stepping out onto South LaSalle Street to watch the building come to life at night for the first time. "I believe we did the building justice," Sundin says. "I think the architects would love that it [the Rookery] is finally being appreciated at night just as much as it has been during the day." •

Lighting-detail diagram at the fifth-floor ledge condition



The Rookery building in 1905