Photos: Main Street Studios

The Silver Lining

In Cedar Rapids, rebuilding a flooded library deliberately —instead of quickly—helped foster community

BY SAMANTHA SCHWIRCK

There's no way to understate the impact: the Iowa Flood of 2008 took a devastating toll on the entire state, including major metropolitan areas such as Cedar Rapids and Iowa City. In Cedar Rapids alone, more than 5,000 homes and nearly 1,000 businesses were damaged. Prominent public buildings such as the courthouse were ruined, and cultural centers including the Paramount Theatre were completely destroyed—the venue's organ console was allegedly found afloat, and unusable, somewhere near the stage.

Approximately 200,000 items from the Cedar Rapids Public Library, including entire col-

Occupancy sensors within exterior LED panels are controlled collectively based on time of day, or individually via a DMX interface.

lections of books and public computers, met a similar fate when the interior of the 85,000-sq ft facility was essentially wiped away by flood waters. A glimpse of a silver lining, however, could be found in the community's reaction.

A team of volunteers, as well as the library's Board of Trustees, came together to envision how the new library should function within the community, as well as where it should be relocated. The group faced the typical challenges associated with acquiring public funding following a natural disaster; however, the goal wasn't to rebuild the structure quickly. Instead, the goal was to rebuild the library *deliberately*. Ultimately, resources from FEMA, the city, the library's foundation and various fund-raising campaigns enabled staff and volunteers to work with Design Engineers (DE) and OPN Architects (both Cedar Rapids-based firms) on the design and construction of a new building located a few blocks away from the original site.

The new Cedar Rapids Public Library is situated in front of Greene Square Park and adjacent to the Cedar Rapids Museum of Art—the three public entities form a large urban plaza that is consistent with the overall design objective of creating a multi-purpose community space.

A custom fluorescent pendant in the entry reinforces design themes of vibrancy and fluidity.

FORGING CONNECTIONS

The goal when designing the 95,000-sq ft building was to "provide the community with an open, transparent space that was active and vibrant," says Marc Foster, associate principal and senior electrical engineer for Design Engineers, the consulting firm that worked on the mechanical and electrical systems. As such, one of the building's most prominent features is its large glass walls, which connect the streetscape with the interior and foster public engagement.

Inside, the library is laid out in a hub-and-spoke formation for easy navigation. Adult fiction, young-adult, and children's collections, as well as a café and gathering spaces, are accessible from the entrance lobby and central service area. Non-fiction adult collections, large conference spaces, and staff and administrative offices are located on the second level, connected via open bridge-like structures. Finally, a 200-seat auditorium, replete with a glass curtain wall that affords full views of Greene Park, is located on the second level, though it vaults over the first level, and extends onto the third, where its entry lobby also provides access to a 24,000-sq ft green roof. Here, a large clerestory enhances continuity between interior and exterior spaces.

A DELICATE BALANCE

Foster worked alongside DE associate and electrical projects manager Eric Bruxvoort and OPN interior designer Mindy Sorg to conceptualize the lighting for the space. Collaboration with Sorg was integral, Foster says, as the objective was "to provide proper illumination for each task area while keeping in mind the aesthetic con-

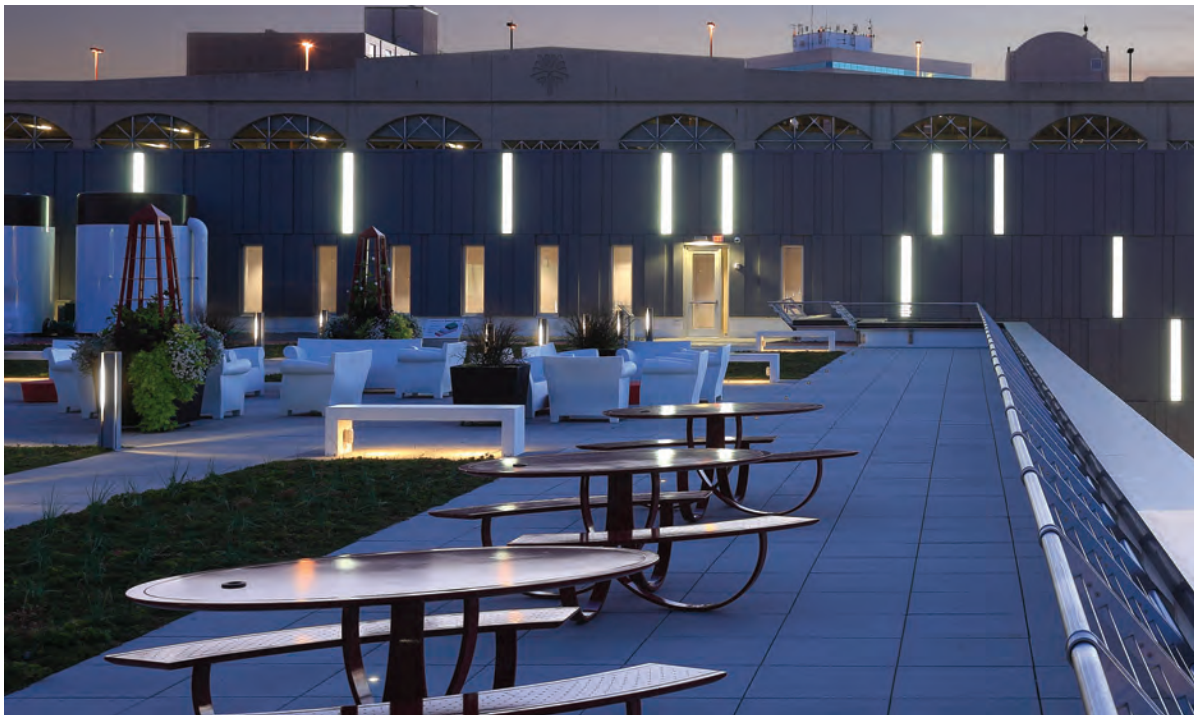
Suspended decorative pendants draw attention to the clerestory.

cerns of the interior design palette."

The theme of openness—and subsequently, continuity between the building and the public—sets the stage for an environmentally friendly solution that came in 49 percent below the ASHRAE 90.1-2007 standard and earned Design Engineers a 2014 IES Illumination Award. Eco-friendly design elements begin outside, where LED panels are integrated into the contemporary façade in a grid pattern, creating a striking view of the building from afar. The panels feature occupancy sensors and can also be individually controlled via a DMX system. LEDs were also used in 12-ft high light columns at the main entry, within the underside of the entry canopy, in walkway lights and in floodlights that illuminate an 18-ft high sculpture by artist Albert Paley, which was commissioned by the library's art committee.

Exterior details carry over into the entrance lobby, where the same light boxes used in the façade also compose an LED wall flanking the main staircase. Here, occupancy sensors trigger preset patterned scenes as patrons walk by. To offset the grid-like aesthetic, teardrop shaped pendants hang in the adjacent media space, which leads into the children's area where round recessed fixtures (Focal Point) mimic gel-filled floor mats below them. Meanwhile, clusters of round pendants (Delta Light) draw attention to seat-

120,000
New library cards issued since the building opened



The 24,000-sq ft rooftop is illuminated by the façade's LED panels, LED bench and marker lights, and decorative bollards.

ing areas. When viewed from outside, the playful fixtures not only juxtapose the grid of the light blocks, but also the views of stacks throughout. On the first level, stacks are lighted by recessed linear fluorescents (Focal Point) integrated into sloped wooden ceiling planks that comprise the underbelly of the auditorium above. The width of the fixtures matches the width of the planks, so the lights do not detract from the open views.

Tying the various first-level spaces together is a custom fluorescent pendant suspended above the central entry space. The pendant, created in collaboration with the city's Visual Arts Commission, is large and bold, but, once again, the aesthetic is balanced by curved, organic edges. "The fixture was intended not only to provide illumination, but also become part of the vibrancy, as well as provide a fluidness to the space," Foster says. "It draws the eye of the patron upstairs to the main collection areas."

On the second level, stacks are lighted by direct/indirect linear fluorescents (Focal Point) suspended along the perimeter of collection areas. The fixtures feature 0-10-V dimming ballasts and work in conjunction with the upper-level clerestory for daylight harvesting. Cloud-like decorative pendants, suspended below the clerestory, utilize the same photo-cell technology to provide diffuse illumination, while drawing attention to the clerestory itself. Nearby conference rooms also benefit from daylight, via Solatube devices that work in tandem with LED downlights and recessed linear fluorescent fixtures. "The tubes are able to introduce sunlight directly into the space, and are also controlled with a dimmer," Foster explains. Adjacent offices are illuminated by 8-ft long recessed linear fluorescent fixtures, while scattered LED downlights throughout round out the design.

UP TOP

A third-floor entryway ushers patrons into the auditorium and onto the public roof. In the auditorium, a glass wall allows daylight to enter, while cylinder downlights on a mobile track and pocketed linear fixtures within the walls' acoustical treatments provide general lighting. Focused light bars illuminate the stage during events.

The rooftop garden area, located on top of the

Interior light panels, which match those on the façade, enhance continuity.

second level, might be best compared to the icing on the cake. The backdrop is part cityscape, part building façade, as one section of the third floor's paneled envelope provides a pseudo-wall, which also helps tie various design elements back together. "One of the biggest challenges was integrating the lighting design into the multitude of exterior and interior design elements," Foster says. "But there were many unique opportunities for this, like the interior wall panels matching the size of the exterior wall panels." Additional rooftop illumination comes from decorative bollards, LED bench lights and marker lights.

The roof is the first publicly accessible "green roof" in Cedar Rapids—defined as such partly because of its water management system that harvests rainwater for irrigation. Similarly, the library's parking lot was constructed with pervious pavement that features storm-water collection chambers, and is lighted by round LED heads on a custom pole (Valmont).

In addition to enhancing the library's curb appeal, the building façade also saves energy. Exterior glazing—composed of 1-in., argon-filled insulating glass and framed by thermally broken aluminum—covers 37 percent of the envelope. Combined with a geothermal HVAC system, the new building utilizes one-third the amount of energy of the previous library, while spanning 10,000 additional sq ft. The library is LEED Platinum Certified, and exceeds Iowa's state energy code by 55 percent.

Since the library's grand opening, Foster says, the community spirit has persisted. "The library has seen more than 700,000 visitors, issued more than 120,000 additional library cards and hosted more than 125,000 special events." ☐

FAST FACTS

- The LEED Platinum Certified building exceeds Iowa's energy code by 55%, with a footprint of .67 watts per sq ft.
- A glass façade connects the library with the surrounding community.
- Tubular devices, a clerestory and dimming ballasts on fixtures enhance daylight.

THE DESIGNERS

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