

# River of Light:

## A New Urban Lighting Project in South Bend

“You’re never really going to see the same thing twice,” says lighting designer Robert Shakespeare of his latest achievement, the interactive light sculpture known as River Lights, a new and permanent addition to downtown South Bend, Indiana.

Aaron Perri, executive director of Downtown South Bend Inc., commissioned the installation three years ago, seeking the talents of Shakespeare and his company, Shakespeare Lighting Design LLC. “It emerged in conversations with Downtown South Bend Inc. and my own wild creativity one evening,” says Shakespeare, who had previously designed a 72’-tall, 30”-square, freestanding light sculpture in front of the Indiana University Art Museum. “That sculpture transformed the center of the campus. It became the destination at nighttime—students created rituals around it, choirs performed at it, people were married in front of it. It became a real core to the center of the university.”

As laid out in the 2025 City Plan for Smart Growth, the project that came to be known as River Lights was part of an effort to brighten up St. Joseph River, which goes through the center of South Bend. “During the day, the area is very active; there are parks around the river, and a convention center,” says Shakespeare. “But during the nighttime it was dark and gloomy, maybe even dangerous to walk around the river.” Nevertheless, the river’s potential to shine immediately called out to the artist. “The white water cascades are 250’ wide, between 20’ and 25’ tall. It’s just this magnificent arc of white. As a lighting designer, I thought, ‘My goodness, it’s like a projection screen in the middle of the river!’ So that began the seeds of an idea which included lighting the white water cascades every 5°, so I could change colors, create a visual movement across it.”

In addition, Shakespeare designed two multi-colored, powder coated alu-

minum tower sculptures on either side of the river—Trio on the west bank and Forest on the east. “Trio is a more formal sculpture installation comprised of three brushed aluminum towers, while Forest is made up of five power-coated aluminum towers on steel trunks, and is more playful and child-friendly. The towers are self-illuminated so they mark the edges of the cascades. I designed Crescent, a 45’-wide curved brushed aluminum structure, mounted on three 17’ steel legs, to house all of the luminaires necessary to light the cascades.” Shakespeare worked very closely with James Thomas Engineering and Clark Reder Engineering to implement and structurally approve his tower designs.

But River Lights is more than just a dazzling water show. Shakespeare designed the towers to be an interactive game, powered by passers-by. When visitors make a throwing gesture toward one of the sculptures, sensors built into the light pillars detect the motion, causing the lights to become a solid color that then leaps across the river. “Then it arrives on the other side and people there move their arms backward as if they’re catching,” says Shakespeare. “Then they get their reward, which is a rainbow shooting

Photo: Matt Cashore





across the whole display. It's a very simple game and it adds another layer of fun to the event."

Completing the scene is the low-lying Jefferson Boulevard Bridge, made up of four elliptical arches, 120' wide by 20' tall. "The River Lights installation is downstream, so visitors can see the underside of the bridge, the water below, and the bridge's reflection in the flat water above the cascades." Shakespeare's experiments of bouncing light off the water resulted in a literally eye-catching reflection—"these giant oval-like, color eyes looking at you coming down the river."

The three manufacturers behind the project were Martin Professional, Lumenpulse Lighting, and Philips Color Kinetics. In searching for the right partners to help power and stylize River Lights, Shakespeare concentrated on "form factor, optometry, longevity, low maintenance, and the ability to produce the color ranges

which I sought." One half of the 82 project's Martin Exterior 400s served to highlight the bridge's curves and the other 41 units are aimed at the water surface, producing kinetic water reflections on the underside of the arches that express the mood of the river. "Half of the Martin product was custom-modified for this job," Shakespeare says. "Instead of being RGBW, which is pretty standard, I had half of them made in RG-blue-blue, so we could get that really vibrant color."

South Benders using the pedestrian walkway on the east end of the bridge are treated to rotating pastel colors courtesy of eight Martin Tripix Wash LED fixtures. Seven additional fixtures light the flanking bridge support columns. Shakespeare praises his "special relationship" with Martin. "It's a small package, high output; they are very easy to control in that they are more like a staggered stage lighting LED unit which has a separate DMX feed and power feed, and thus it does

not require specialized power supplies, needed by Color Kinetics and Lumenpulse luminaires, that impose distance restrictions."

Forest and Trio are lit from within by Lumenpulse's "robust" product line, specifically 68 LBL and eight LBM units. In addition, the two towers shine a LBG or LBX spotlight at fellow sculpture Keepers of the Fire, designed in 1980 by Mark di Suvero. The "incredible punch" of Color Kinetics includes 14 ColorReach Gen2s and five ColorBursts lighting Crescent and the cascades. Meanwhile, 19 Color Kinetics Archipoints and 16 ColorSpash units illuminate the face of the bridge.

Shakespeare says there's never a dim moment at River Lights. When residents aren't playing the game, they can simply view one of several built-in light sequence programs. "I call them lighting orchestrations," he says. "Nothing is a static picture at any time; moving and flowing and color patterns are happening. If somebody becomes interactive with the towers, then part of that system is overridden. It needed to be checked out from five or six primary vantage points so that all the audiences at all major locations are experiencing a beautiful visual show at all times." River Lights can also be customized to fit specific holidays and events, adding lightning under the bridge for Halloween or the Notre Dame colors streaming across the river, signaling victory at a sports event.

To streamline the programming process, River Lights' control system, designed by Mike Brubaker, of

Photo: Richard Chapman II



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Associated Controls + Design, can be operated remotely from Arizona by Shakespeare's programmer, Sean Smallman. "Sean's a brilliant programmer; he was actually one of my grad students about a decade ago in the MFA lighting design program at Indiana University, which I headed for almost 30 years," says Shakespeare. "When we make modifications to River Lights, I simply phone him up...So if somebody wants it to turn pink and we hadn't programmed it for that, we can do it remotely. We can check it through a video camera to make sure the choices we're making are viable."

But before this could be perfected, Shakespeare and his team were allotted a mere week on site at South Bend to observe how the "lighting orchestrations" would function with the normal ebb and flow of the river. "[Sean] has programmed several light sculptures of mine; we do have a short hand. So a week of programming would be like two or three weeks of programming with someone who I hadn't worked with before." During this process, lighting sequence concepts could be observed and appropriately fine-tuned. "We started off with 15 minutes of every hour, being very subtle, just showing the natural flow of the river in a very organic way. [However], people might come by during that period and not realize that in fact it comes to life every hour on the hour. So I shortened that natural period to about five minutes. I then added a show on the hour and on the half hour, and one that happens at sunset. When someone is visiting that environment for 25 minutes, they would indeed see the whole river come to life and then go back to sleep." Looking back, Shakespeare admits, "It was pretty intense programming, a year full of sequences only in one week. And that's why being able to modify some of these programs remotely proved very helpful."

River Lights also has a practical side—utilizing a light sequence to announce the time. "It seemed sort of



fun" the designer says. "I lived in Hong Kong for a year about 20 years ago and I remember one of their tall buildings had a tower on the top that told you the time every hour, I thought, Well gee, why can't these towers give a signal if someone wants to check their clock by it? It does what bells would do in Westminster [Abbey], but does them in light."

Despite River Lights' sparkling personality, Shakespeare is sensitive to questions of light pollution and saving energy. "There were dark sky concerns. This whole project is designed with really narrow beams of light. They're shrouded with visors and very tightly aimed to retain the dark sky," he says. "Environmentally, there's very little power used. The whole installation, 250 very powerful light sources, in full operation, consumes about 12kWh of energy. And when it's shut off, it's not consuming much at all." River Lights comes on half an hour before sunset, switching off at sunrise. The interactive game's bedtime is midnight, at which point it goes into a one-color sleep mode. "There's even a hydroelectric generator that's in the fish ladder, right beside the cascades, to offset that power very easily. Of course, some of these units are expected to last more than 100,000 burn hours, which is fan-

tastic. And they're all from major manufactures; the installation is absolutely site-specific to South Bend."

River Lights opened May 22, on South Bend's 150th anniversary. The community has begun to incorporate it into its everyday life. "We saw some young people playing with the sculptures and I think they actually figured it out pretty fast; it's like learning a video game," says Shakespeare. "We've had some of the downtown South Bend ambassadors, and Aaron Perri himself, go out there and show people how it works, so I think it's really becoming part of the culture."

Future plans for River Lights are entwined with the ever adaptable control system. "Our long-term plans are to continue to tweak it whenever there's a request, because it's very easy to do. I think River Lights is pretty robust the way it is right now, and there are sequences which the town hasn't seen yet, such as St. Patrick's Day. So it's still full of adventure whenever you show up down there. It's not 'I've been here, seen that, and that's it;' it's constantly transforming and morphing. And the community has said, 'We've really enjoyed what's been added to the center of our city!'"