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the past colors the future

This Ghanaian notion is the driving force behind Australian architecture firm Edwards Moore's reclaimed design philosophy, P. 46

One of this country's most spectacular lighting designers travels back in time to his music days to explain his 'entertainment strategy' and why he wants to transform the way we light our world

story
Scott Heskes

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Ron Harwood has spent the better part of his life in two worlds—one as an electrical engineer, in which he is president of Illuminating Concepts, and the other as the founder of the American Music Research Foundation (AMRF), a recording artist, and a producer. The influence music has had on his day job as a lighting designer has been far reaching. He says what distinguishes the Farmington Hills, Michigan, Illuminating Concepts from competitors is a process he calls an "entertainment strategy."

"It almost doesn't matter if it's a public library or MGM CityCenter casino. The notion of making people happy when they walk into a space is the entertainment strategy," he explains. "Sometimes it's light, sometimes it's sound and light, sometimes it's sound and moving light with water features, and other times it involves live entertainment—but it's a strategy that evolves from being in show production. It's like a three-act play or a Sting concert. You take people through a music and lighting journey. By coming out of the music industry we are very different lighting designers."

As executive lighting consultant for the MGM Grand CityCenter in Las Vegas, Illuminating Concepts has helped fuse the entertainment strategy on this high-profile, LEED Gold-certified development with sustainable lighting design. Testing dozens of LED lights, Illuminating Concepts was in a good position to break new ground in measuring quality along with energy efficiency. It was careful to make sure that the lighting was used appropriately and tested for human response.

"Is it acceptable, transparent? Do you know its LED? Does it matter because it looks good?" Harwood asked during the process. "Many of the LED companies didn't make it. We didn't use them. We have all been in spaces that had that old Jimmy Durante 'Goodnight Mrs. Calabash' look to it." Finding the right look at CityCenter was crucial to the success of the overall experience that the MGM Grand was trying to achieve. With a strong mandate from the owners to build green, Illuminating Concepts was able to ultimately find the highest-quality LED technologies and locate the best environments in which to use them.

Serving as Illuminating Concepts' project director for CityCenter, Kelly Stechshulte says MGM took sustainable design and energy efficiency to new levels in the retail, hospitality, and casino industries, far exceeding governmental standards as well as any other projects in the area. Stechshulte's work ultimately shifted a long-held paradigm that it is essential to use incandescent lighting for this type of development. "The casino was exempt from the LEED portion of the project," Stechshulte notes, so it became necessary to work with the surrounding spaces "all the while still maintaining a dramatic environment that is warm and welcoming. For cove lighting, we specified dimmable LED. Instead of using 13 watts per lineal foot ▸

we achieved 6 watts per lineal foot. With over a mile worth of cove lighting in public areas and restaurants, that had a big impact."

What a person experiences upon entering a space is crucial to the success of the design. "We worked on Comerica Park, the new stadium for the Detroit Tigers, and did the architectural lighting, theatrical lighting, water features, and sound effects," Harwood says, noting that the entire created environment becomes what he calls the immersion experience, which can't happen with just media and technology.

"There has to be people involved with architecture. People need to feel they are having an experience they can't have anywhere else. From the time you get out of the car, you know you are going to the ball game. You can smell the ball game. You can see the ball game. You can taste the ball game. And you walk into the building, and the field opens up in front of you. I have never been to a ball field that didn't take my breath away when I walked into it. The crowd's there, and some guy hits the ball, and there's a great play and memorable times," he describes.

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"The ultimate goal of an immersion experience in is to have people feel that they need to come back."

As Stechshulte explains, working at Illuminating Concepts goes beyond the creative experience of working on exciting projects; there is another immersion that happens at the company: the all-encompassing environment that Harwood creates there. "There is enough technical [work] here to keep you on the cutting edge and keep you interested. From software-code writing to photometry to reviewing building codes, it's a fully immersive experience in itself," she says. "I've been here 15 years and hit the ground running. You can learn as much as you want as fast as you want. [Harwood] is always there to educate and encourage."

"Sound and light are mirror images of each other"

Harwood's lighting design is informed by all his years in the music business. When he was 16 years old, hanging out at a record store where his friend worked, he discovered music in a way most people never do. "I had heard about Sippie Wallace and Ma Rainey, Bessie Smith, Clara and Trixie Smith and Sarah Martin...all these great Classic Blues singers," he recalls. "Folkways and other labels were just coming out with reissues. This was 1965. I read up a lot on Blues from the library so I knew about Sippie. My friend Sam, who worked at the record store, showed me an article that Sippie was alive and living in Detroit. I tried to reach Sippie through any number of ways, but no one wanted to give me her number. So I just looked her up in the phone book."

It wasn't easy, but eventually—after numerous calls over several months—Harwood was invited up to the house. When he got there, he found that Wallace led a very private life, but he noticed she was surprised that he had most her songs memorized. "And I could play guitar behind her. That was it," he says. "I became her manager at 17. I got her to the Newport Folk Festival and to the Philadelphia Folk Festival and then dozens of others." In 1967, he successfully piqued the interest of Reprise Records, and Wallace cut a record in 1968. She had two-and-a-half successful years but then became very ill. She suffered a massive stroke in 1969. "It was six months before she could walk or talk," Harwood recalls, "but the first thing she did was play the piano."

As Sippie was recuperating, Bonnie Raitt recorded two of Sippie's tunes on her first album. "Bonnie called me and said she'd like to meet Sippie," Harwood says. "The rest is pretty fantastic because from 1972 to 1986 we toured all over with Bonnie." Raitt recalls Sippie's album cover photograph she discovered in a London record store: "I saw the rhinestone glasses and the tiger-striped vest and said to myself, 'This woman really knows how to dress.'"

Human expression is a combination of what you think and what you say and what you do, Harwood says. "Music plays into all that. It's had an effect on Illuminating Concepts and a huge effect on me," he explains, mentioning that many of the people at Illuminating Concepts are musicians, music writers, or aficionados. A legacy of Harwood's early interests is the nonprofit AMRF. To keep his live-performance skills honed, Harwood produces a show every year that features legendary musicians. "Some folks working at Illuminating Concepts come from the road show business," he says. "The AMRF gives the opportunity for [them] to volunteer their time to produce these festivals."

The ultimate goal is to document and preserve American cultural and musical history for future generations. Harwood believes that the music festival provides an outlet for his Illuminating Concepts designers to stay sharp for projects requiring entertainment strategies. "Doing a lot of architectural lighting...like CityCenter, sometimes you will lose the opportunity to do live stuff," he says. "The music festival allows for that opportunity."

Drawing on the similarities between lighting design and music, Harwood shares an insight. "It's implicit in our lives that sound and light are mirror images of each other." He believes, as a student of the fine arts, that the work of great painters provides a good analogy for the how the two come together. "I have always told the folks working here, when asked what they can study to get better...to study the painting masters because I think everything you need to know about design is there. You can look at a Dutch Master and see their use of light. ... You see people crying after Jesus or the birds in flight at the Resurrection, you hear what is going on in that painting. Humans all have a rhythm. Animals have a rhythm and there is a heartbeat to spaces."

TOP, LEFT: As a testimony to his love of music, Ron Harwood (fourth from left) helps produce the annual Motor City Blues & Boogie Woogie Festival for the AMRF. The group is dedicated to promoting and preserving American music classics such as blues, ragtime, boogie woogie, jazz, and rhythm and blues.
RIGHT: Ron Harwood poses with Kenny Neal, son of legendary Louisiana blues singer Raful Neal, during the 2005 festival. The annual event, now in its 11th year, showcases American music industry's biggest names and most unforgettable sounds.

He says this was the most difficult job when putting CityCenter together. There were so many buildings, the team had to labor to find its true heartbeat. "There are places that work so beautifully that you are just arrested because there is too much to see and do at one time," he explains. "The team tried very hard at CityCenter to find that rhythm and heartbeat to create the immersion experience."

"All that glitters for LED is not gold"

One of Harwood's significant achievements is a product he has developed called Intellistreets, a wirelessly controlled streetlight, that combines a dimmable and programmable LED system with the ability to instantly display images or words along with music and audio messages. It operates on a network server, providing communication among all light poles within the network. "If you add Intellistreets, you can tell when the fixtures are not working, when they are consuming too much energy, or when they are getting too hot," he explains. "It's essentially like the computer in your car. It can make sure ►

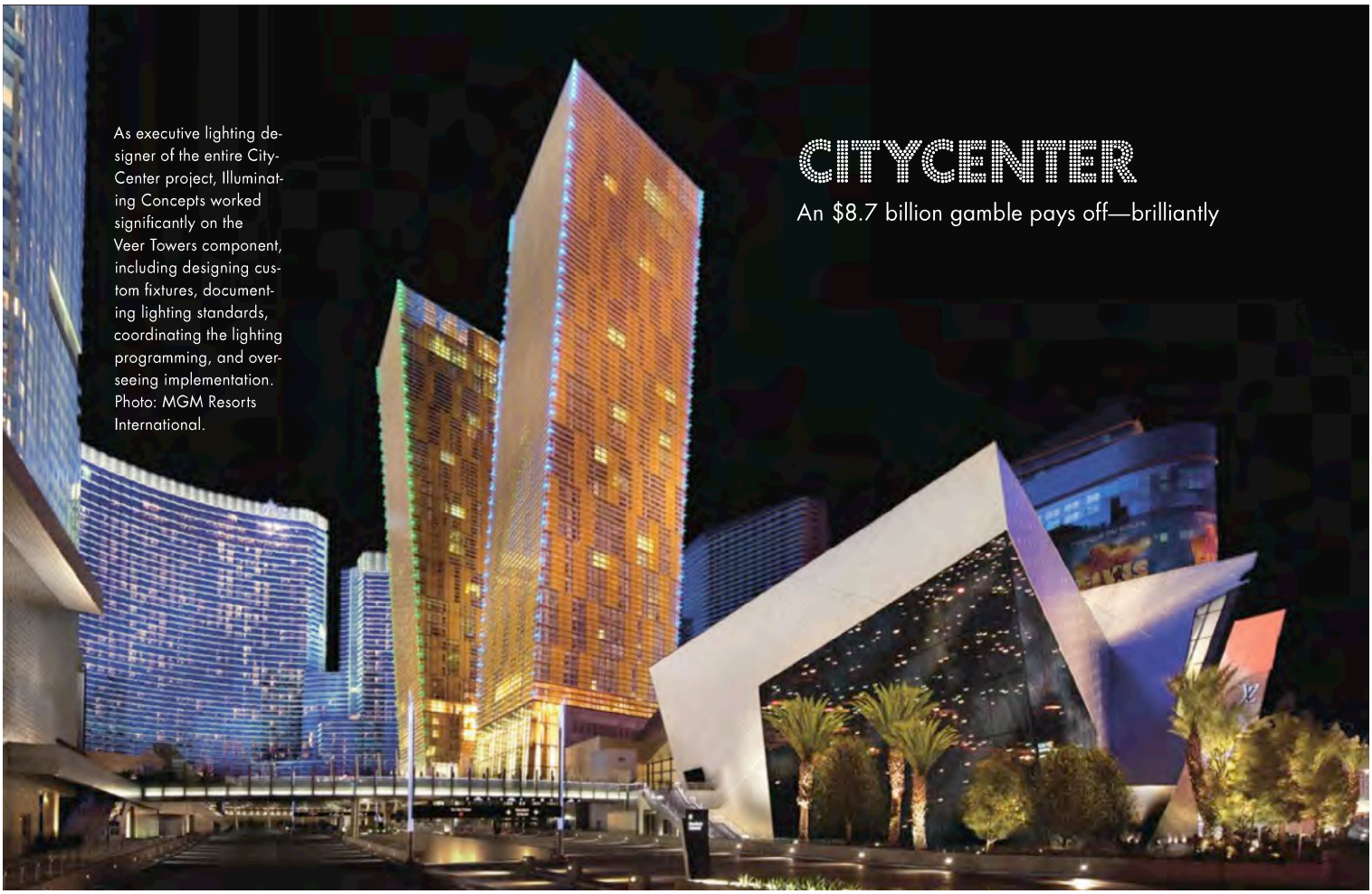
that the engine lasts as long as it possibly can." Intellistreets is an entertainment strategy, he says, inspired by the company's work in theme parks.

This new concept can transform a street, park, or district into a multimedia entertainment complex. "You look at Branson Landing in Branson, Missouri, playing music from the country act that you can't get close enough to see. ... Now you can hear and see from multiple streetlight locations." One of the Midwest's leading tourist destinations, Branson Landing is a mixed-use waterfront development that occupies 95 acres, including 1.5 miles of waterfront on Lake Taneycomo, and the first project to use Illuminating Concepts' Intellistreets. The application offers digital video signage in the form of an LED display that replaces vinyl banners and utilizes a wide variety of content for income generating advertising, as well as local public service announcements. Intellistreets can also be adapted for parking-meter capabilities and recharging stations for electric cars. For Branson Landing, Illuminating Concepts provided this entertainment strategy, all exterior architectural lighting, theatrical-lighting and show-lighting design, light-tower design, audio integration, control systems, implementation, project management, procurement and logistics.

"The ultimate goal of an 'immersion experience' is to have people feel they need to come back."

—Ron Harwood, Founder & President, Illuminating Concepts

Despite this project and the general success of LEDs, Harwood sees a problem with the current movement, which has been induced by the federal government, to retrofit streets with LED systems. The problem, he says, is that the federal inducement has come quickly, based solely on LED's ability to produce light economically and with little or no scrutiny on the longevity of these systems. "The real test for how LEDs are working is quite difficult right now, because if they are really meant to last 10 years or more, they need to be tested for 10 years to see how they do," he advises. "LEDs are cool light in the sense that they do not project heat, but they do get hot.



As executive lighting designer of the entire CityCenter project, Illuminating Concepts worked significantly on the Veer Towers component, including designing custom fixtures, documenting lighting standards, coordinating the lighting programming, and overseeing implementation. Photo: MGM Resorts International.

CITYCENTER

An $8.7 billion gamble pays off—brilliantly

Reducing the heat of the LED is a premier issue [concerning] efficacy." Intellistreets has a processor in every streetlight that allows the testing to be done in real time. "So at least from an energy-management point of view, it monitors the temperature of the LEDs and many other aspects to see how our street lighting systems are going to do," he explains.

Another question Harwood asks of the status quo: "Do we need all of our outdoor lighting running at 100-percent brightness all of the time?" He says Illuminating Concepts has looked at use-case scenarios and determined that Intellistreets can save up to 50 percent more than existing LEDs. A current metal-halide streetlight that uses 150 watts of energy is reduced to approximately 90 watts using LED technology, but even further reduction can be achieved—at points throughout the evening, lights do not need to remain as bright. Intellistreets will automatically dim or turn off the lights during such times. "That," Harwood says, "is the equivalent of extending the life of the lamp from 20 to 40 years."

Another problem is that the power supply or transformer is only rated for seven years. "All that glitters for LED is not gold, because the power supply would need to be replaced about three times anyway over the normal life of the LED," he explains. "Who's going to be around in 20 or 40 years to guarantee that a fixture is going to last that long? We are drilling very deeply into what these warranties really are, because major cities across the country want to know what the real benefit will be."

"The feds are doing it backwards"

Ron understands the need to create jobs, but he believes that more money should be spent on research. "I kind of think the feds are doing it backwards. What I am seeing is far less on research and far more on 'just do it,'" he says, citing his work to avoid such rash decision making. "For the past 20 years, clients have become aware that the quality of lighting is important, and the behavioral science of lighting has matured dramatically in that time. We have built paradigms to an acceptable level and quantified those in the Illuminating Engineers Society Handbook. It's been an evolutionary process and every year hundreds of people get together to decide how to improve the quality of light."

But as a result of the rush to do the work—or create work—Ron does not see the same level of due diligence ▸

backgrounder/

CityCenter, the urban community that is home to the 4,000-room ARIA Resort & Casino, Mandarin Oriental, Crystals retail and entertainment district, Vdara Hotel & Spa, The Harmon Hotel, and Veer Towers—all interwoven with plazas and common spaces alongside pools and vivid landscaping—is designed for high-tech meeting spaces, residences, spas, extraordinary dining, gaming, modern art, and live entertainment.

The project commenced in 2004 as a 67-acre blank canvas. Envisioned by a diverse group of professionals as an ambitious and innovative development in one of the world's entertainment capitals, the project began with a master plan developed by New York's Ehrenkrantz, Eckstut and Kuhn Architects for a high-density destination with engaging places and experiences, enhanced public circulation, and keen regard for its surroundings.

taking charge/

Illuminating Concepts was tapped to take on the groundbreaking role of executive lighting designer. CityCenter is the first project on record to have any firm serve in this capacity, underscoring the vital role Illuminating Concepts played in coordinating, managing, consulting, leading, and implementing a project-wide lighting package that spanned all 20 million square feet and totaled in excess of $170 million, a large chunk of the $8.7 billion development.

green angle/

The challenge for Illuminating Concepts was to approach the project with energy conservation and sustainability in mind without sacrificing the experience, energy, and ambience for the visitor—in essence, CityCenter needed to be the biggest new thing to hit the bustling Vegas Strip, and it needed to be sustainable. Six of the project's components earned LEED Gold ratings from the USGBC, the highest LEED achievement by any hotel, retail district, or residential development in Las Vegas. As a result, the 20 million-square-foot metropolis succeeded: it is one of the world's largest sustainable developments.

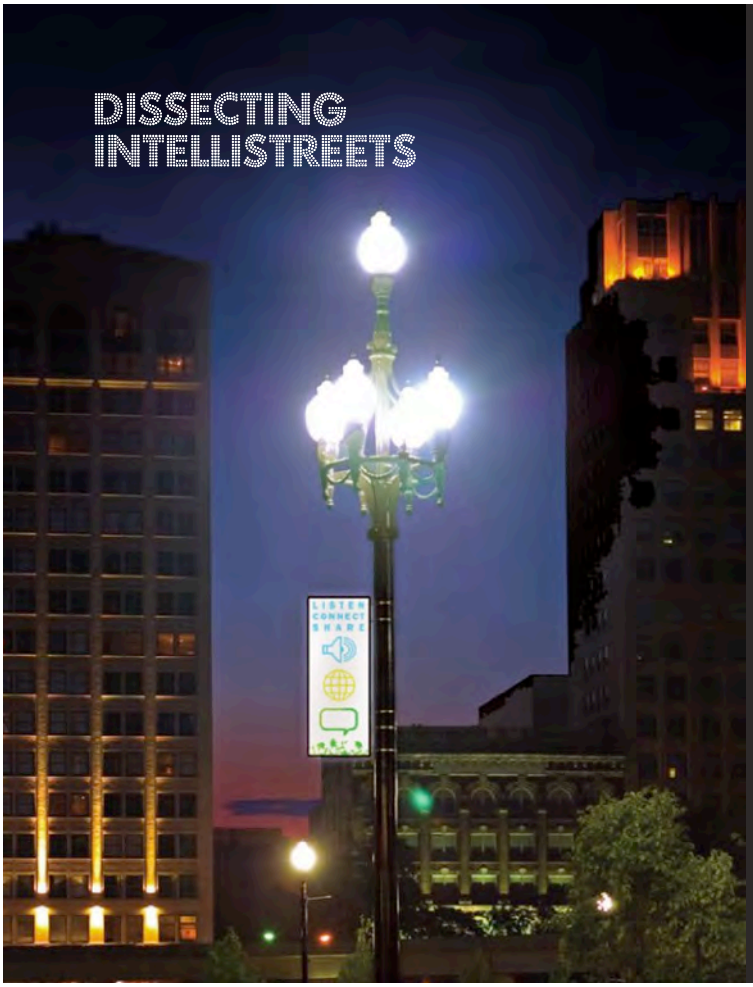
Serving as executive lighting designer and coordinating energy-consumption logistics with the project engineers, Illuminating Concepts managed the project's lighting and energy specifications to comply with local ASHRAE and LEED standards, tracked the applicable LEED requirements, and consulted with the various lighting designers to achieve them. During the course of the process, Illuminating Concepts developed a white paper that would serve as the project's standard-bearer for compliance codes and regulations methodology to maintain LEED-certification standards across all project components and collaborators.

for LED technology. “In the process of producing all of these LED components, manufacturers are not notifying us when they have product failures,” he notes worriedly. “We are not seeing the statistics we would normally get on products. That would never work in the auto industry, would it?”

LEDs have promise, however. Harwood says the actual lighting effects are incredibly versatile: “Some are great...for landscape lighting; they are wonderful as night lights in offices and some stores where we just need to see for safety; and they are surprisingly good for task lighting in office environments.” He says they are also a prime alternative to neon.

“LEDs may well be the great light source of the near future,” he admits. “The color and strength of the source will improve dramatically in the coming years. We simply need to use common sense in how we deploy LEDs with hard-to-come-by federal funds and our own hard-earned dollars. It is a concern that, in the years to come, our hasty and perhaps unschooled deployment of LED light sources will have us all in the new Dark Ages with little or no money left to use LEDs when they are mature.”

The wisdom Harwood shares in this simultaneous scrutiny and exaltation of LED technology is indicative of a man who understands the complexity of life, lighting, and design. “I am not trying to become my own super nova,” he muses. “And I don’t want to be accused of being a black hole, although I have been confused with one at times. But we are good at this interstitial piece between those that use light and those that make it.” From two worlds that are perhaps more symbiotic than at first glance, he successfully creates environments where the practical application of light merges with the heartbeat and the rhythm of architecture and the sounds of human experience. **gb&d**



lighting control/
With wireless technology allowing for communication between individual luminaires, streetlights are able to save valuable energy. The system provides unique flexibility in dimming and on-demand adjustability.

wireless mesh transceiver/
With a centralized or decentralized interface and wireless transceivers on each pole, the system allows for bi-directional communication between streetlights and other integral sensors. The unique nature of the mesh network resolves security issues such that if transceivers are damaged the system remains operational.

dynamic lighting/
Wireless control of color-changing light sources facilitates the transformation of an ordinary space for a special event without additional equipment.

digital signage/
The digital banner is a thin, double-sided LED display that can provide customizable graphics and text. Alerts and announcements can be displayed instantly and with clarity. Additionally, digital street signs allow for routing traffic during unique events.

proximity sensors/
Proximity sensors offer a unique method of gauging pedestrian traffic, providing accurate data by the minute, hour, or day. This is a powerful tool for tenants, landlords, and public safety officials.

alert indicator/
Visible 24 hours a day, the LED indicator provides customized indication of emergency egress routes, AMBER Alerts, security levels, and emergency traffic conditions.

environmental sensors/
Environmental sensors can detect and report the presence of water, wind, heat, lethal gas, VOCs, and radiation. With on-board intelligence, the system can measure directional attributes of these factors.

concealed placement speaker/
A fully integrated speaker within the base of each pole provides virtually any audio signal to the streets, from ambient music to emergency announcements.