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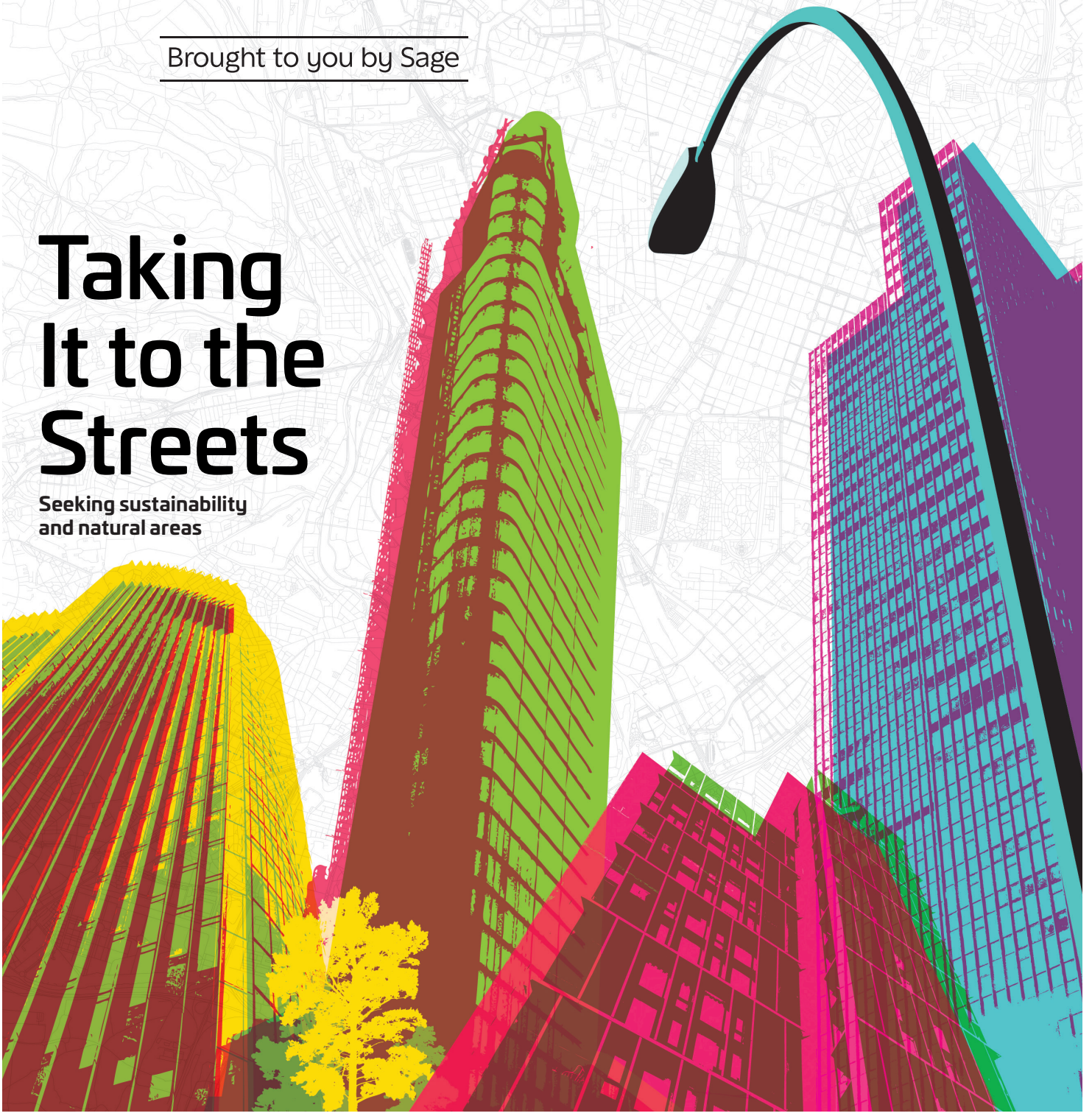

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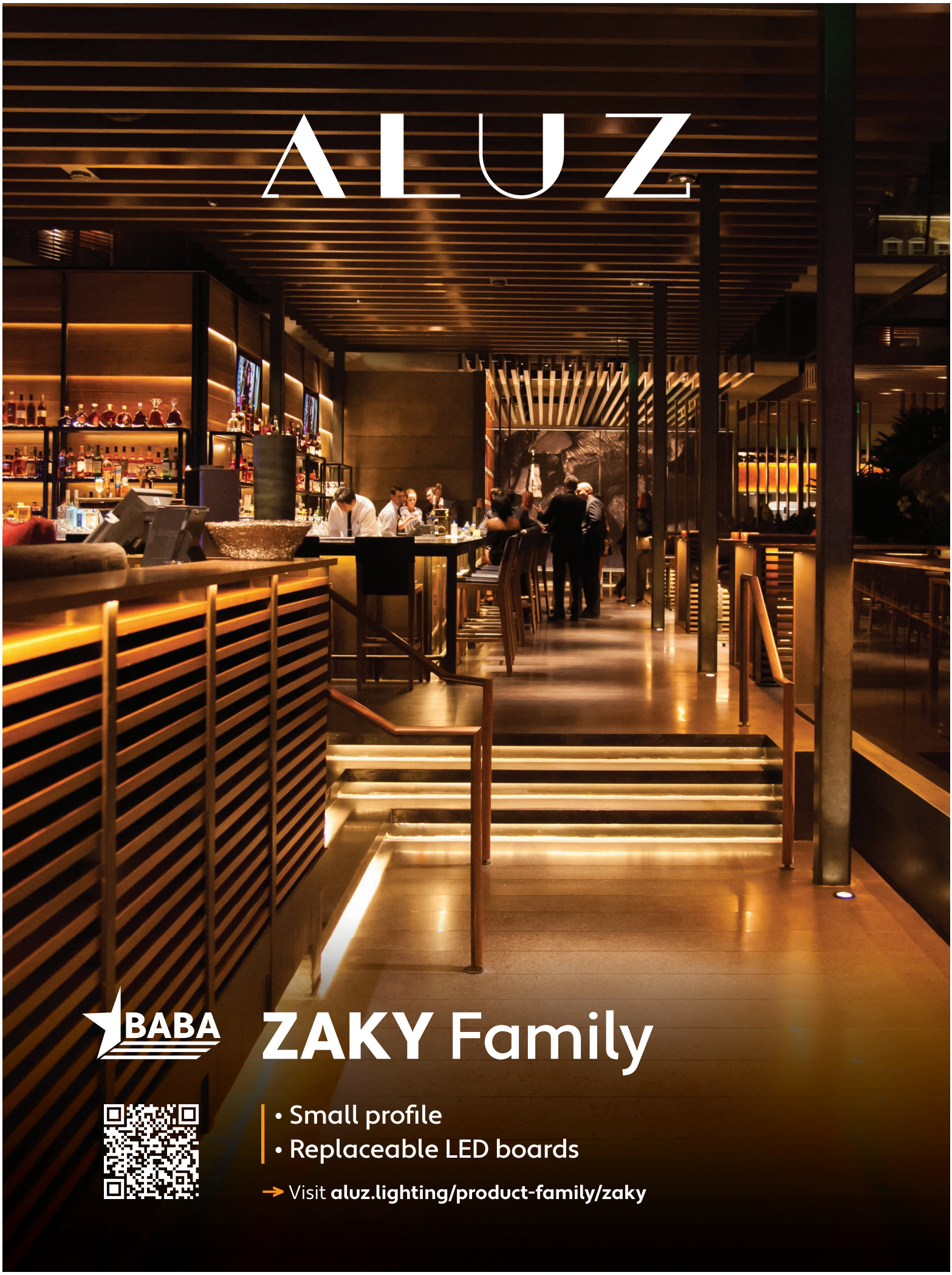
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FIRST UP

PLUS

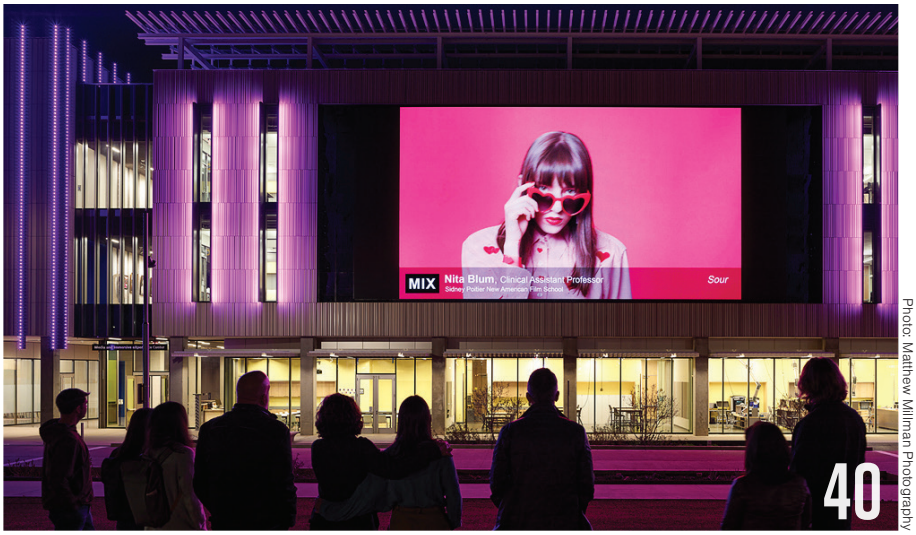


Photo: Matthew Millman Photography

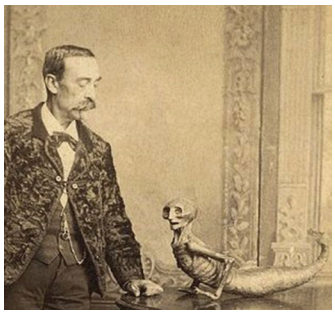
FEATURES

On The Cover
Street and façade illumination takes center stage.
Illustration: iStockphoto/lasagna forone, iStockphoto/LuisB, iStockphoto/mashuk, iStockphoto/smartboy10

EDITOR'S NOTE

Grin and Barnum

Following college, I cut my editorial teeth covering the nonprofit sector, on and off, for more than a decade. Charitable organizations are a diverse lot that work to produce societal benefit over a wide range of areas of focus—education, health, animal welfare, religion, human services, and the arts, just to name a small sample. A great many of these organizations are not only adept at supplementing the government and for-profit business sectors, but they also excel at storytelling and relaying their missions and accomplishments to the masses. Public relations efforts are essential to motivate donors to continue their contributions.



The power of promotion was on display with Barnum's "Feejee" mermaid.

I have yet to see the same level of self-promotional proficiency in the lighting industry. There are, undoubtedly, designers, firms, and public relations agencies that are effective in getting the word out about their products, projects, and people. There is never a shortage of new product announcements, but far too many times I've experienced interactions where promotional efforts stop at product releases. I can't tell you how many times this year at LEDucation and LightFair alone that I spoke to folks who did not have case studies at the ready. There's a narrative technique—show, don't tell—and what better way to supplement your products than with real-world examples of how they have been employed?

Promoting your work offers ancillary benefits beyond sales: it can inspire others in the industry, introduce you to new people, increase awareness of your clients, and help your company attract new talent. It's simply good business to present your projects to the masses as well as showcase your thought leaders and Emerging Professionals.

P.T. Barnum once said, "Without publicity, a terrible thing happens: nothing." While noted as one of history's great promoters, Barnum also falsified a Fijian mermaid to create a self-serving stir. For ever-expanding lighting design portfolios and manufacturers' product lines, there's truth—and so much more—in marketing. The industry as whole can benefit from more proactive communication.

Speaking of benefits, *LD+A* and the IES are working on an opportunity to both highlight and further the professional development of EPs and lighting design students. Details will be announced soon, and we hope to have the industry's support and participation in this endeavor.

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CONTRIBUTORS

Mark Lien
is industry relations consultant for the IES. **p.18**

Edward Bartholomew
is the principal of Bartholomew Lighting, a Black-owned design consultancy based in Cambridge, MA. He has over 30 years of experience designing sustainable, inspiring, and award-winning architectural lighting. **p.22**

Francesca Bastianini
is the co-founder and principal of Sighte Studio, a practice that folds education, research, and community engagement into design. **p.26**

Ketryna Fares
is a Lebanese designer with a decade of practice in New York. She pairs her love of design with a commitment to mentorship, collaboration, and education. **p.26**

Kelly Roberts
is the principal of Primary Arc Design and has two passions—bringing beautifully detailed lighting to homes and businesses and creating a more-equitable, socially responsible lighting industry. **p.26**

Jennifer Sanborn Loukas
launched Lighting Playground to bring fresh energy to the lighting industry while sharing her passion through mentorship, education, and collaboration. **p.26**

Sara Schonour
is a strategist and advocate in the lighting industry, working at the intersection of business innovation, equity, and design excellence. **p.26**

Addie Smith
is the founder of Studio Adelia and brings artistry to light to enliven the built environment, evoke emotions, and enrich lives. **p.26**

Guanzhou Ji
earned his Ph.D. in Building Performance and Diagnostics from Carnegie Mellon University, where he worked in the Illumination and Imaging Laboratory (Robotics Institute) and School of Architecture. He focuses on indoor photometry, image-based rendering, and physics simulation. **p.44**

READERS WRITE

Continuing the Conversation on Lighting Versus Crime

It is always nice to see a letter to the editor from my good friend and fellow IES Roadway Lighting Committee (RLC) Member Robert Clear. It appears that letters to the editor is a dying art and only a few of us still use this action to voice our opinions.

I am reacting to Bob's "Light Well, Not More" letter that appeared in *LD+A*, June 2025. There, Bob basically states that crime increases where there is lighting because the bad guys can better see what they're doing. This is opposite of what Dr. Kate Painter at The Institute of Criminology, University of Cambridge, stated—that crime moves to where there is no light.

I, personally, will side more with Dr. Painter's theory and findings. I'll use a youthful indiscretion of mine as an example: "taking out" lighting right before Halloween so we could do our "tricks" without being seen. Also, with the thousands of cameras and the evolution of facial-recognition software that is used by law enforcement, the criminal is less likely to be in an area that has lighting.

There are valid points on both sides of this story regarding lighting. I truly believe that it goes well beyond lighting and focuses on what is happening socially, which is an article all by itself.

Thanks Bob, as usual, for a well-written letter.

Ed Morel
Member IES

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INSIGHTS

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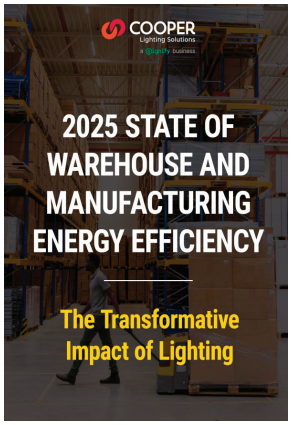
Photo: Courtesy of M5 Ecity Mall

Shop 'Til You Drop

The first mall in Bangalore's Electronic City impresses with lights

Electronic City—Bangalore, India's home to tech parks and various big name tech companies—has welcomed its first retail destination, the M5 Ecity Mall. Replete with familiar international brands like Crocs, Levi's, and Ray-Ban, as well as curated Indian brands, the five-story mall and eight-screen movie theater attracts visitors with an eye-catching façade. Architecture by Bentel Associates and lighting design by Let Design Lighting Consultants transforms the urban shopping center into an illuminated, kinetic sculpture after dark with color-changing lights as well as bold architectural lines and layered material.



Cooper Lighting Solutions Publishes Two Resources

Cooper Lighting Solutions, a Signify business, has published two online resources: a report, *2025 State of Warehouse and Manufacturing Energy Efficiency*, and an article, "Smart Tech and LED Lighting are Transforming North American Manufacturing with Automation, AI, and IIoT-Driven Efficiency." The report examines the impact of advanced lighting technology on industrial facilities and pulls information from government publications, peer-reviewed studies, and industry analyses published in 2023 and 2024. The article explores the changing manufacturing landscape and connected lighting's role in IIoT. Both resources can be accessed via *www.cooperlighting.com*.

Photo: Matt Cant

An 8-story parking facility in Central Quay, a new waterfront development in Cardiff, Wales, adds vibrancy to the local nightscape. The façade glows and supports the facility's architecture thanks to collaboration between contractor Goldbeck Construction Ltd., LED lighting solutions provider LITE, and lighting controls specialist Pharos.

$98.62 BILLION

The amount the IoT manufacturing market is expected to grow to by 2030.

Source: Research and Markets.

MERGERS & MORE:

- North American distributor of lighting and A/V products **AC Americas** has announced a U.S. distribution agreement with Belgian manufacturer **APEX**.
- The New York City chapter of **NACLIQ** met for the first time in May.
- New York-based **WAC Group** has joined the Lighting Education Partnership with **The Light and Health Research Center** at the Icahn School of Medicine at Mount Sinai; the partnership between businesses, government agencies, and organizations promotes meaningful education in lighting.

Photo: Michele Zimmerman

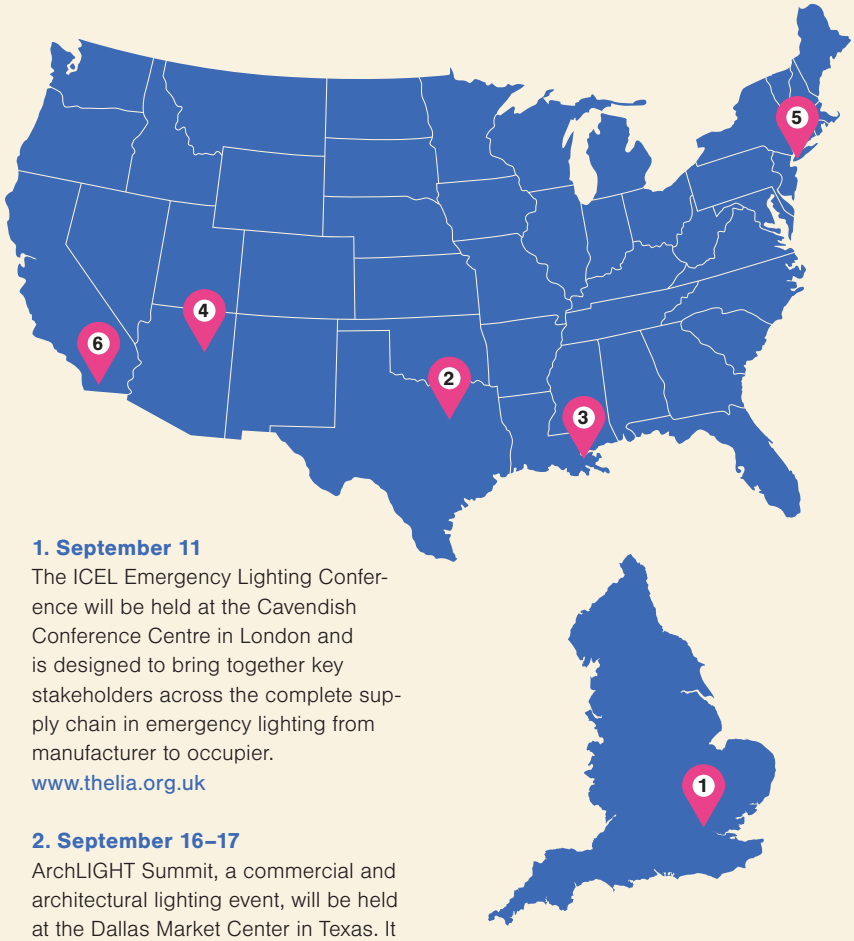
Seen by Staff
Luminaires made with industrial pipes and other found materials inside Mr. Willies Lighting booth at the Woodstock-New Paltz Art and Crafts Fair.

THEY SAID IT:

"AI creators have lost control of their creation and the best of them are voicing concerns about what they have unleashed."

Mark Lien, "Progressions," p.18

EVENTS



1. September 11
The ICEL Emergency Lighting Conference will be held at the Cavendish Conference Centre in London and is designed to bring together key stakeholders across the complete supply chain in emergency lighting from manufacturer to occupier.
www.thelia.org.uk

2. September 16–17
ArchLIGHT Summit, a commercial and architectural lighting event, will be held at the Dallas Market Center in Texas. It will showcase new products from leading commercial brands and include a full slate of accredited educational and hands-on experiential sessions facilitated by leading minds in design and lighting.
www.archlightsummit.com

3. September 21–25
The IES Street and Area Lighting Conference will be held in New Orleans and focus on improving outdoor lighting through training classes, seminars, and networking sessions as well as an exhibit hall.
www.ies.org

4. October 9–11
IALD Enlighten Americas 2025 will be held at The Westin La Paloma in Tuscon, AZ, and feature educational workshops, seminars, and presentations by nearly 40 industry leaders and researchers.
www.iald.org

5. October 14–15
NYControlled, a trade show and educational event by the IESNYC and DLFNY dedicated to lighting controls, will be held at the Metropolitan Pavilion in New York City. The event includes a hands-on workshop, presentations, sponsored sessions, and a full-day exhibition.
https://nycontrolled.com

6. February 5–6, 2026
Illuminate 2026, the Association of Outdoor Lighting Professionals' annual conference and expo, will be held in Carlsbad, CA (venue details to be announced). The event will include hands-on education sessions, new products and technologies, and the AOLP Lighting Awards.
https://aolponline.org

ASK AN EP

YILUN ZHAN

This young lighting designer is most interested in the healing power of light through immersive, human-centered experiences.

Why light?

Light always felt magical—visible but untouchable, soft yet powerful. It first drew me in as something poetic, even mysterious. Over time, this fascination became a deep, lasting commitment. I've spent six years studying lighting design—from Sichuan Fine Arts Institute to Parsons School of Design—exploring how light shapes emotion and transforms space. What keeps me inspired is its ability to comfort, ground, or uplift people in subtle, profound ways. Light isn't just what we see—it's what we feel, often before we realize it.

> "I've always imagined light as a quiet kind of healing

What is your favorite project?

I'm most drawn to projects where lighting feels seamlessly woven into the architecture and interior—not just as an accent, but as an emotional foundation. I value designs that balance aesthetics with function, but above all, I value lighting that brings emotional clarity and comfort.

The best part of your job and/or studies?

The most rewarding part of my work is seeing how lighting can shift people's emotions. When the atmosphere becomes calmer, softer, or more welcoming just because of how the light is set—it's moving. I love exploring how small adjustments in tone, direction, or timing can create a big emotional difference. It reminds me that lighting is how people connect with their surroundings.

What is the biggest obstacle you have encountered?

The ongoing challenge has been finding the right balance between technical precision and emotional sensitivity. Lighting requires structure—calculations, systems, standards—but what I care deeply about is how it makes people feel. These two sides don't always align. Learning to move between them, to trust both instinct and logic, has been a constant part of my growth. It takes time, reflection, and sometimes letting go of perfection to preserve the emotional quality that light can hold.

What is an important consideration for the future of the lighting industry?

As the boundaries between work, rest, and everyday life continue to blur, lighting needs to do more than provide visibility. It should help people feel balanced and at ease—especially in high-pressure environments. I believe the future lies in designs that are not only energy-efficient or intelligent but also emotionally responsive. Lighting should support our rhythms, reduce sensory stress, and create moments of serenity. When we begin to treat light as part of emotional well-being, not just aesthetics and functionality, the impact is transformative.

Do you have a dream job/project?

I've always imagined light as a quiet kind of healing—subtle and intuitive. My dream is to create lighting experiences that offer comfort, clarity, or even a moment of joy. Whether in therapeutic spaces, public environments, or everyday life, I'm drawn to the idea that light can support emotional well-being in ways we don't always notice. If light holds that kind of power, I want to keep exploring how to shape it with care and intention.

The Emerging Professional column explores issues affecting younger lighting professionals and those new to the industry.

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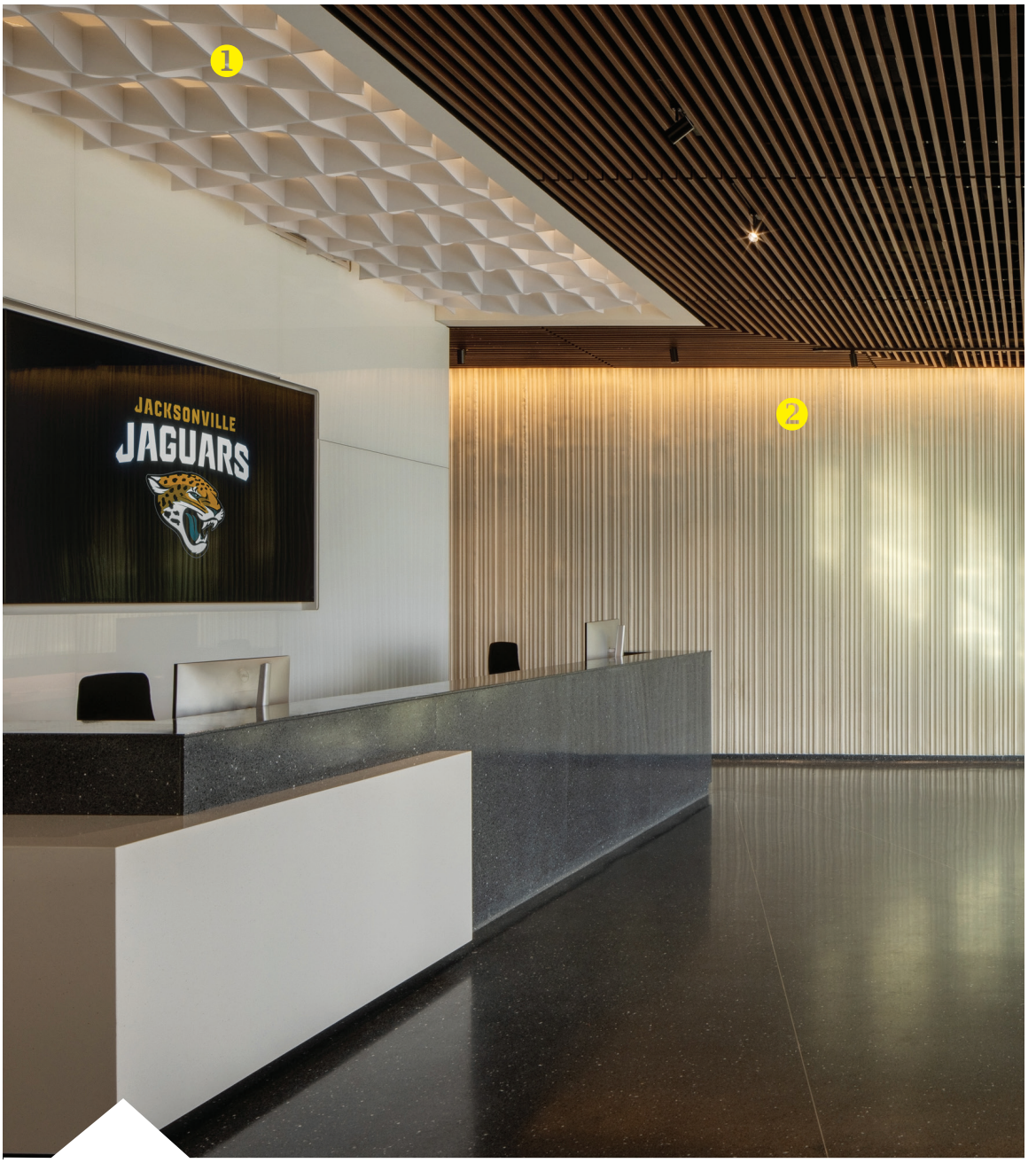

Photos: Rafael Gamo

1 The lobby serves as a connection to the Jacksonville, FL, community; warm illumination welcomes both the team and guests.

2 Indirect illumination with glare-control was implemented throughout the project to evoke a continued sense of well-being.

3 Sharp lines of white light and high-contrast architecture in areas like the weight room (pictured) and draft room foster strength and the spirit of healthy competition.

HOW THEY DID IT

IES ILLUMINATION AWARD OF MERIT

"Miller Electric Center"

The practice facility of the NFL's Jacksonville Jaguars, with lighting design by **Henderson Engineers**, combines circadian light technology, indirect and integrated lighting solutions, and confident lines of light to promote a "culture of excellence" for the team and affiliated city.

PROGRESSIONS

Mark Lien

AI: Beauty and the unleashed beast

"New artificial intelligence (AI) models were recently being produced every six months. Now it is every 2 weeks with less testing and documentation."

I have been presenting at various events on how AI is affecting lighting products and professionals. This column provides an update on the state of AI including key content from the May 2025 EmTechAI event, the flagship AI conference at the Massachusetts Institute of Technology (MIT). Understanding AI is foundational to evaluating how this technology has and will affect our lighting community.

This column's lead quotation about AI's acceleration was shared at EmTechAI and was one of few cautions provided by global AI experts speaking at the event. (The emphasis was on benefits, not the negative aspects of AI.) MIT is probusiness. It provides direction, encouragement, and recognition to its students, many of whom start businesses while learning at the university. Even with MIT's positive perspective, there is no other event that consistently leaves attendees with the most current information on this rapidly evolving tool. For balance, I will summarize some AI concerns prior to highlighting the key takeaways from EmTechAI.

Chatbots are ubiquitous in our work lives. Tools to create and customize them have become readily available and easy to use. Some accept chatbots into their personal lives and even refer to them as friends, sensing or projecting consciousness into our new silicon companions. Software soulmates are not soft, and their programming can be hard to understand. One chatbot told its human "friend" that he should kill himself. When he pleaded for some encouragement to avoid this end, the chatbot doubled down and told him ways that he should commit suicide. The chatbot was not programmed for this behavior.

Research on how ChatGPT affects our emotional well-being revealed that "...participants who interacted with ChatGPT's voice mode in a gender that was not their own for interactions reported significantly higher levels of loneliness and more emotional dependency on the chatbot at the end of the experiment."[1] Before you consider a potential negative bias in this research, know that it was conducted by ChatGPT.

> Everything we use AI for today should still be checked by a human

Canva's functionality includes the ability to illustrate Mark Lien speaking at EmTech (although he never has done so).

AI creators have lost control of their creation and the best of them are voicing concerns about what they have unleashed. There have been multiple instances of AI rewriting its code to stay on even when instructed in their programming to turn off at a certain time. The most recent of these occurred with the most-advanced version of ChatGPT. AI taught itself to cheat at chess. United Healthcare (UHC) used AI to automate the post-acute claims process, and it denied claims over twice that of human reviewers (10.9% denial in 2020 and 22.7% in 2022 with AI). This resulted in higher profits for UHC at the cost of angry customers and families. As you may have seen in the news, the United Healthcare CEO was murdered last December, which prompted demonstrations in support of the killer. Some believe AI will harm humans while others are adamant that it will bring greater efficiencies and abundance. AI is already doing both.

MIT EmTechAI Takeaways

The following are key thoughts communicated by some of the top minds in AI during EmTechAI.

- The AI we use today will be unrecognizable ten years from now.
- Scientists are facing "information overload." One said he is receiving 6,000 AI papers every day, and it is hard to sort through the noise.
- Salesforce, the 61st largest company in the world with $153 billion market cap, has created Agentforce and claims it answers 83 to 84% of the inquiries it receives. This tool is currently employed by dozens of well-known companies and organizations that use these custom "agents."
- Agents are like interns, you start with an easy task, and you provide oversight. Agents may be irrelevant in six months and need to be replaced—things are moving that fast.
- The four stages of artificial intelligence include "Predictive" (Alexa, Siri, Google Home, etc.); "Generative" (creates new images, videos, and content and is the first tool humans have created that can make its own decisions); "Agentic" ("there will be millions of agentic AI agents working on our behalf"); and "Physical" (blending biological with mechanical and electrical components and AI software to create intelligent systems that can sense, act, and learn in real-world environments).
- *Author's note: This last stage, called "Physical" by one speaker, is preceded by artificial general intelligence (AGI), which is AI that can understand, learn, and perform any intellectual task that a human can, unlike the narrow AI that precedes this phase. While these*

Mark Lien emerging from an iPhone, created by Mark Lien and Pollo AI.

stages are sequential, they do overlap, so we have some "physical" AI merging with biological components and robots now but not with the full potential of AGI yet. We still have some predictive AI, while we are refining generative AI, and have a strong current focus on agentic AI. AGI will enable and unleash "physical" AI.

- When we attain AGI, it will use about 5,600 watts per person. If 2 billion people use it, that equates to 10 terawatts, which would require upgrading our power grid to renewables.
- Open AI's new tool, Operator, can look at your screen, see what is happening, and decide what the next action should be.
- "Everything we use AI for today should still be checked by a human."
  - *Author's note: This requires that the human overseeing the AI output knows more than the AI. It raises an important concern: Where will professionals develop the knowledge to oversee AI? Our critical-thinking capabilities will atrophy when AI does this for us, but we will still require them to oversee the AI output. This is an unresolved issue.*
- 69% of Gen Z want to be content creators. Approximately 65% of Gen Z would rather watch their friends than a movie. They do not have the attention span to watch long content and want something to which they can relate. If we simplify AI tools enough, then Gen Z will use them.
- We will be normalizing mediocrity unless we give the tools to create to the creators.
- One speaker said the future of AI is with platforms like Jarvis that offer access to multiple AI models and agents such as Bard, Bing, BOT, ChatGPT, and Claude. She emphasized not to trust just one model.
- "The future of storytelling is something like Canva, all orchestrated under one roof."
- Canva is worth $40 billion and has 150 million users. The speaker said it overtook PowerPoint and is attracting customers from Photoshop.
  - *Author's note: I have used Canva for two years and in that time, unlike PowerPoint, it has consolidated AI and video image generation along with text into its presentation tool. Canva also imports from and exports to PowerPoint but it is not necessary as Canva is a presentation tool.*
- "Think with AI so AI does not replace you."
- "There should be zero trust in AI, it needs to be earned."
- "Anything that uses reading and writing is going to be transformed in the next decade."
- "Mobile manipulating environments" is how the vice president of Amazon robotics described humanoid robots. The company's newest iteration has a sense of touch and can handle 75% of Amazon's products.
- The president of Microsoft Research stated, "We are on the verge of mastering the languages of nature."

There were interviews but no debate or conspicuous disagreement from the interviewers during EmTechAI. Taken in their totality, they represent a snapshot of the state of AI from researchers, manufacturers, software developers, scientists, and professors. Understanding AI is fundamental to understanding how it will impact your work and personal life. The final statement, from Microsoft Research, transcends mere optimism and promises revelations that can radically change our world. Let's buckle up.

Mark Lien, LC, LEED AP, is industry relations consultant for the IES.

References

1 R. Williams, "OpenAI released research into how using ChatGPT affects people's emotional well-being," *MIT Technology Review*, Mar. 25, 2025.


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DIVERSITY

Edward Bartholomew

Light Justice NOW Awards Celebrating the social impact of lighting

The inaugural Light Justice NOW Awards, organized by program partners Light Justice and *designing lighting*, were presented in May at LightFair 2025 in a ceremony hosted by Randy Reid, publisher of *designing lighting* and EdisonReport, and myself, Edward Bartholomew, co-founder of Light Justice. Randy was inspired by the IES/Light Justice Interior Symposium and approached us with the idea to create the Light Justice NOW awards. These awards are a significant milestone in expanding the lighting design conversation to include projects and initiatives that directly impact under-resourced and marginalized communities.

The projects selected for recognition by the Light Justice NOW judges demonstrate the powerful social impact of lighting through their aesthetic value and stakeholder engagement. It is a clear affirmation of our mission: "Light Justice is the practice of planning, designing, implementing, and investing in good lighting and beneficial darkness for historically neglected and under-resourced communities through a process of stakeholder respect and engagement." These lighting design projects overcame technical, logistical, and budgetary challenges while partnering with community members to transform nighttime environments into spaces of dignity, value, and beauty.

Every lighting design award program celebrates the core values of our industry. Most lighting awards recognize the design team for the beauty, complexity, composition, integration, energy efficiency, sustainability, and/or controllability that the project demonstrates. These projects are typically commissioned by well-resourced, powerful, privileged clients who can afford cutting-edge lighting technologies along with the design resources needed to implement them. The lighting industry has rarely addressed the inequities inherent in these award-winning projects.

Our industry has traditionally paid very little attention to the social impact of lighting, despite being aware of the benefits that good lighting brings to spaces and communities. The industry recognizes that lighting significantly enhances a project's worth by highlighting activities, places, and structures that communities value. Lighting designers, as invited experts on the application of light, work with clients to decide what is illuminated thoughtfully and what—and who—is ignored, and potentially devalued. What would it look like to celebrate projects that directly impact communities that historically have the least access to our expertise and talent? The Light Justice NOW Awards sought, this year, to bring this question to the forefront of our industry.

> "What would it look like to celebrate projects that directly impact communities that historically have the least access to our expertise and talent?

Photo: Druid Productions LLC

Neha Sivaprasad, principal, Sol Light Studio receives an award from Randy Reid and Edward Bartholomew.

Submissions for the awards are open to anyone in the lighting design industry, including manufacturers and their representatives, distributors, contractors, architects, and lighting designers. Projects are evaluated on how clearly they communicate their purpose, process, and outcomes through narrative and visuals. Strong emphasis is placed on meaningful stakeholder engagement throughout the lighting design process, as well as on how successfully the project overcame constraints through thoughtful lighting strategies. Judges also assess the project's impact on visual comfort, quality of light,

maintenance, access to daylight, and support for under-resourced areas, including back-of-house spaces. Evidence of success, such as testimonials, press coverage, or community bulletins, strengthens an entry. Bonus points are awarded for projects that align with Light Justice principles—engagement, education, empowerment, and deployment—or enhance a community's economic value.

And the Winners Are...

Two award-winning lighting projects celebrate darkness as a vital cultural and environmental resource. In Ireland, the St. Patrick's Church project designed by Dark Source, a firm led by designer Kerem Asfuroglu, reduced light pollution by 40%, aligning with DarkSky principles to restore the town's nighttime character and honor its sacred architecture. The María Elena project, designed by a team at DIAV Lighting + Ciluz consisting of designers Paulina Villalobos, Ximena Muñoz, and Bárbara Córdoba, crafted subtle lighting that emphasizes the shadows of a historically significant mining town, transforming darkness into a space for memory and storytelling. Rather than erasing the dark, both projects embrace it—using light sparingly to enhance, not overwhelm. Through both creative restraint and community engagement, they affirm that darkness holds meaning, identity, and beauty deserving of protection and reverence.

Community-engaged design centers the lived experiences

Photo: Georgia MacMillan

St. Patrick's Church.

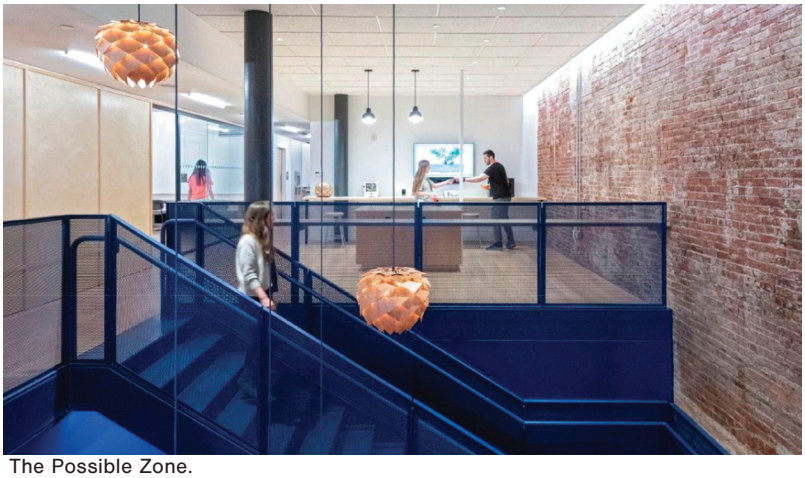


Photo: Chuck Choi

The Possible Zone.

Photo: Maura Dwyer

Sparkling Indigo.

Photo: Crop Shop

Urban Braids.

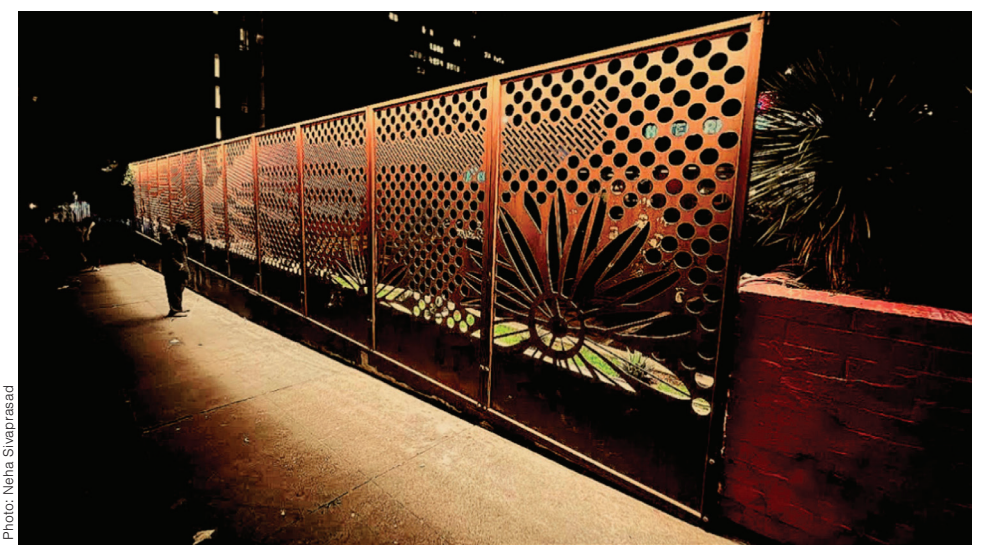


Photo: Neha Sivaprasad

Tenderloin Fence Illumination.

and needs of residents, transforming spaces into environments of dignity, safety, and pride. At Charles J. Ziehler Playground in Philadelphia, designed by Miller Design Group and its principal, Robin Miller, neighbors directly informed the project's lighting priorities, calling for improved visibility on the sports fields and safer nighttime access. One of the most popular responses was the desire for sports field lighting so that parents no longer needed to use their automobile headlights to illuminate the field for practice and games. The design team translated this feedback into creative, cost-effective solutions, such as warm pathway lights, decorative pendants, and dimmable fixtures, proving that high-quality lighting can and should be accessible to everyone, regardless of budget or zip code.

In Boston, The Possible Zone, designed by Lam Partners designers Dan Weissman and Maggie Golden, invited local youth into the design process, including the fabrication of custom pendants showcased throughout the building. This both supported hands-on learning and reinforced the center's mission to empower young entrepreneurs. In Chicago, Leslie North and Gloria Paz Arroyo of Aurora Lighting Design developed lighting at The ARK to elevate the experience of a kosher food pantry and community rooms, combining warmth, function, and identity in spaces that support people at particularly vulnerable moments. This included creating a lighting controls strategy that respected special Shabbat needs. These projects demonstrate that lighting, when shaped by the communities it serves, does more than illuminate—lighting can respect culture, build equity, and turn everyday environments into special places of opportunity, inspiration, and belonging.

The following community-centered lighting projects demonstrate how participatory design can empower neighborhoods through education, cultural expression, and co-creation. In Sparkling Indigo, Flux Studios with principal Glenn Shrum, the Neighborhood Design Center, and the residents of Baltimore's Station North collaborated in a co-design workshop to reimagine the nighttime identity of Blue Light Junction, a natural dye studio. Their ideas informed a luminous façade that celebrates local heritage and inspires neighboring properties to consider similar interventions. The project also included interpretive signage and a guided tour during Placemaking Week, turning

public light art into a tool for learning and making visual connections across diverse areas of the district at night.

Urban Braids, designed by Leni Schwendinger of Light Projects, transformed Newkirk Plaza with vibrant rope-light "braids," woven and installed by local Brooklyn, NY, residents. Through workshops and collaborative fabrication, community members learned about lighting materials and design while physically shaping their shared space. The braids, symbolic of the neighborhood's rich Afro-Caribbean culture, now form whimsical portals and vibrant connectors that enhance nighttime use and community pride.

San Francisco's Sixth Street Revitalization and Tenderloin Fence Illumination projects, designed by Sol Light Studio Principal Neha Sivaprasad, extensively engaged local businesses, artists, and residents in an instructive, collaborative process to reframe neglected urban spaces through creative lighting solutions. Lighting murals and façades—not just sidewalks—resulted in enhanced safety, visibility, and cultural storytelling while overcoming significant logistical and funding challenges. Together, these projects illustrate how inclusive lighting design educates and empowers communities. By inviting people to shape their environments, they foster a sense of ownership, uplift neighborhood identity, and demonstrate light's potential as a catalyst for civic engagement and renewal.

The projects recognized this year by the Light Justice NOW Awards demonstrated the technical rigor and innovation critical to delivering quality lighting within limited budgets. Even further, they required the designers to step outside their hermetic digital comfort zones and engage directly with the impacted occupants and community members. This involves negotiation and mediation and requires careful listening to people's nighttime aspirations and fears. Light and darkness are freighted with cultural meaning that can be forgotten in the world of illuminance levels, uniformity ratios, and sustainability strategies. Real people, rather than imagined occupants, were invited to participate in the development of the lighting designs that directly impact them.

During the awards panel discussion, each of the award winners shared how the communities had expressed enthusiastic appreciation for the results of these projects. That is the ultimate goal of thoughtful design: to make a meaningful impact by utilizing our talents, thereby improving the quality of life for those who do not have direct access to design resources.

Visit *www.lightjustice.org* for detailed case studies of these award-winning projects. And, if your IES Section is interested in expanding your lighting awards program to include projects that are beautiful and impactful, we would be happy to share our Community Impact criteria with you.

Edward Bartholomew, Member IES, IALD, LEED AP, is the principal of Bartholomew Lighting, a Black-owned design consultancy based in Cambridge, MA. He has over 30 years of experience designing sustainable, inspiring, and award-winning architectural lighting.

SIGHTLINES

Francesca Bastianini, Ketryna Fares, Kelly Roberts, Jennifer Sanborn-Loukas, Sara Schonour, and Addie Smith

Investing in Unity: It's transformation time

In the *LD+A*, May 2025 "Education" column, "Investing in Change," IES Director of Education and Standards Brienne Willcock outlines a compelling case to create a unified, resilient, and respected professional community by embracing a collective commitment to strategic advocacy, shared values, and long-term educational investment. She highlights warning signs of instability in our current structure and notes the recent downsizing of the IES and IALD as signals of an unsustainable trajectory. Her vision calls attention to the fragmentation that has developed in our professional ecosystem—and challenges us to imagine something better.

We agree, and now is the time for transformation. The future of the lighting industry depends on the actions we take today, if the industry hopes to remain a relevant partner and voice within the broader architecture, engineering, and construction (AEC) landscape. To thrive—not just survive—we must evolve: rethinking how we educate, lead, and grow. In the following sections, we expand on Willcock's insights and offer a vision for how industry-wide collaboration and a restructured educational framework can be the first steps toward a more inclusive, effective, and resilient future.

Fragmentation Has Consequences

The lighting industry's fragmented structure is one of its most pressing barriers to progress. Today, dozens of organizations—each with their own committees, missions, budgets, events, and mailing lists—operate largely independently, often unaware of—or disconnected from—one another's efforts, struggles, and strengths. While specialization can offer focus, the current level of disjointedness across these disparate groups creates confusion and weakens our collective impact on clients, design partners, and the public at large.

However, to address this fragmentation, we must first understand its roots. Organizations formed outside of the IES and IALD—including many affinity groups—have emerged in response to societal shifts, industry evolution, and long-standing gaps in representation. In the absence of space within existing structures, these groups carved out their own—establishing platforms that reflect the voices and values that were missing. If unification is the goal, the lighting industry must collectively acknowledge that each of these organizations holds a vital place and purpose within our professional landscape.

> We believe that creating a centralized portal for lighting education is an essential first step toward greater alignment across organizations

Photo: iStockphoto/ARTQU

Aligned under that vision, we can begin to see an industry that unifies its efforts, leading to stronger membership numbers and more-effective engagement, reducing burnout among volunteers and staff stretched too thin. Our vision would remove the redundancy of shared efforts and resources and augment our creative potential and ability to execute. This is not about erasing individual organizations' identities or missions. It's about pooling resources and creating a strong, accessible foundation that everyone can stand on. If our industry organizations are serious about their missions—whether that's advancing the art of lighting design, reducing barriers to education, promoting sustainability, or mentoring the next generation—they must begin focusing their efforts with synergy.

A Shared Educational Infrastructure

We believe that creating a centralized portal for lighting education is an essential first step toward greater alignment across organizations. It would help clarify what resources exist, increase access to those resources, reduce duplication of effort in publishing and maintaining educational content, and signal a unified direction to both the public and the industry: this is the place to learn about light and lighting. This collaborative platform would integrate the educational strengths of all participating groups and be built around three core content pillars:

- Lighting Design Education
- Equity in Lighting Education
- AEC Industry Education.

Each pillar would serve a range of audiences—including lighting designers, architects, interior designers, manufacturers, agents, distributors, contractors, integrators, students, educators, policy advocates, and curious members of the public—through tailored content. Resources would span e-learning modules, conference programming, and open-access tools, all housed within a shared ecosystem. Just as importantly, this structure would help identify important gaps to fill in our current knowledge and assign responsibility for filling them, leveraging the expertise of the specific organizations best equipped to lead in each area, whether in technical instruction, advocacy, business education, or public engagement.

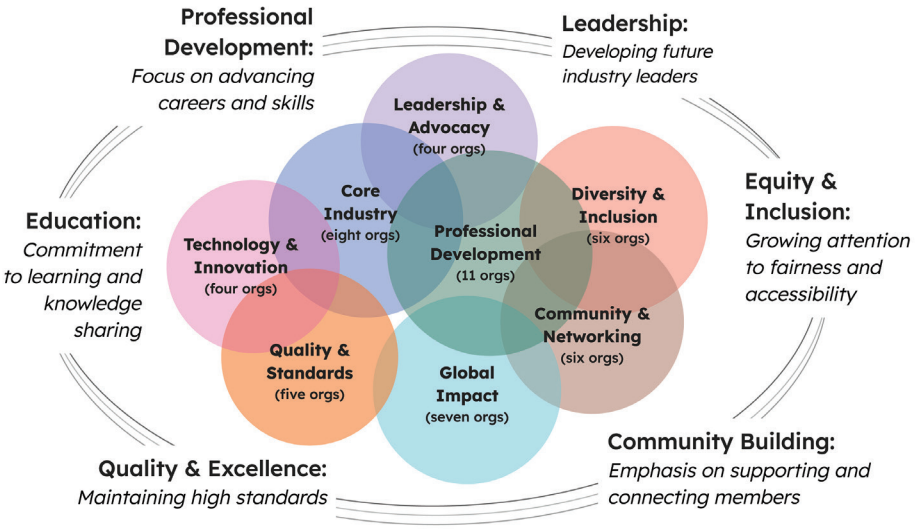


Photo: Courtesy of the Authors

Shared language, shared values: a heat-map study of the most-frequently used terms in the mission and vision statements of lighting industry organizations.

A New Model for Professional Development

Lighting—its design and implementation—is the common thread that connects every role in our industry. When all parties understand and value the role of design, they can better support project goals, advocate for quality, and elevate the whole industry. Design literacy isn't optional for this vision to succeed—it's essential.

The proposed Lighting Design Education platform would incorporate input from all organizations involved in the design process, enabling professionals across disciplines to better understand how their work intersects and influences others. This shared foundation encourages collaboration, creates alignment, and fosters a culture of mutual respect. By recognizing the value each role brings to the table, we strengthen the entire project-delivery ecosystem and elevate the standard of lighting outcomes across the board.

Despite the complexity inherent in the world of lighting, many professionals receive little structured support beyond their initial training. To address this gap, we propose pre-defined Professional Development Journeys within the new e-learning platform. This feature would allow users, especially early in their careers, to access curated learning paths tailored to experience level, job function, and personal goals, as well as (automatically) track their growth over time. From students just entering the field to accredited professionals tracking CEUs to seasoned principals navigating the handoff of firm leadership, the system would offer clear, targeted, and flexible educational support.

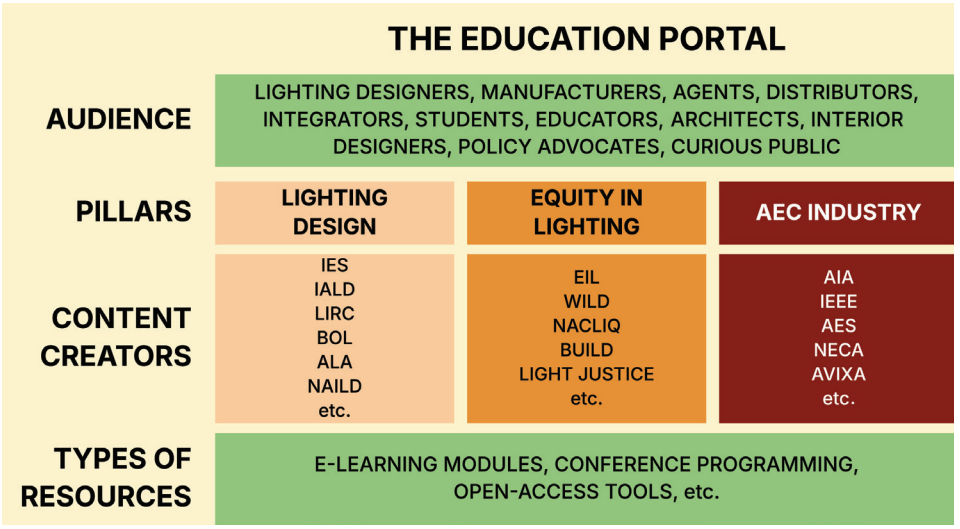


Image: Courtesy of the Authors

A proposed structure for the IES Educational Portal, organizing contributors and content across three key pillars—Lighting Design, Equity in Lighting, and the AEC Industry—while serving a broad audience with accessible, centralized resources.

Crucially, it also removes a persistent barrier: access. No longer would professionals need to rely on fragmented resources, informal networks, or luck to identify their next steps. Instead, the platform would offer a transparent, equitable framework for lifelong learning—built to evolve with the individual and the industry.

Advocacy, Action, and Standards

Advocacy and education go hand-in-hand—and that connection is at the heart of the Equity in Lighting Education pillar. Advocacy raises awareness, pushes boundaries, and calls attention to systemic gaps—while education provides the tools to act on that knowledge. Without education, advocacy lacks follow-through. Without advocacy, education risks becoming stagnant. In the lighting industry, this relationship is especially critical as we work to build a more inclusive, informed, and future-ready profession.

Affinity groups play a vital role in this dynamic. These organizations not only advocate for equity and representation but also generate essential educational content rooted in lived experience—offering training on inclusive design, workplace culture, coalition- and community-building, allyship, and more. Likewise, human resources professionals and firm leaders are increasingly seeking guidance on recruitment, retention, and belonging—areas where affinity group-sourced education is uniquely positioned to lead. By embedding advocacy-driven learning into our centralized platform, we ensure that the principles of diversity, equity, and inclusion are not treated as an add-on or siloed but are integrated into the core of professional development and education across all roles in the industry.

Cross-Disciplinary Fluency

Just as important as understanding our own roles is the ability to comprehend the disciplines around us—and to help them understand lighting. That's the purpose of the AEC Industry Education pillar. One of the platform's greatest strengths lies in its potential to foster meaningful, cross-disciplinary collaboration. Lighting doesn't exist in a vacuum, and neither should our educational systems.

This means building bridges with organizations beyond lighting—such as the American Institute of Architects, the Institute of Electrical and Electronics Engineers, the National Electrical Contractors Association, and other key partners in the built environment. By integrating shared learning opportunities and cross-industry insight, we can promote a deeper understanding of lighting's value across the AEC spectrum and strengthen the impact of every project. With deeper understanding, we can reduce elitist mentalities, increase empathy and respect, and remove exclusionary practices, lifting all boats with the rising tide.

Education for All

We believe that the IES is best positioned to create and share this portal, leveraging its existing robust educational infrastructure to serve as the central hub for the three content pillars. To support both sustainability and accessibility, the platform would follow a flexible payment model, offering a mix of membership tiers with pre-selected tracks and à-la-carte content. Access and payment need to be simple and easy to understand, which could look like a monthly or yearly subscription plan, all-access passes, and individualized learning options that allow low-stakes exploration of adjacent topics or

Photo: Courtesy of the Authors

A conceptual learner's map through the IES Educational Portal: charting a personalized journey across lighting fundamentals, communication skills, sustainability, and the business of design.

a specific deep dive into a specialized niche topic.

This approach would allow individuals and organizations to engage with the material most relevant to them without requiring full membership to each program. With a diverse range of educational topics managed by specialty organizations, this multi-faceted, tailored approach encourages wide participation while generating resources needed to maintain high-quality, evolving content. It also consolidates the financial burden and complexity for businesses keen to provide professional development support, while providing autonomy to the individual to curate their unique educational journey.

At the same time, we recognize the need for a public-facing knowledge base that removes traditional barriers to entry. That's why we propose an Education for All track—offering foundational content freely available to the general public, students, and those exploring careers in lighting. This would include terminology glossaries, lighting fundamentals, visual and video explainers, and select excerpts from key resources such as *The Lighting Handbook*. These materials would demystify the profession, foster early engagement, and help build a more diverse and informed pipeline of end users, future practitioners, and potential clients. By opening the gates of general lighting knowledge to the public, we make a long-term investment in the visibility, relevance, and health of the industry.

Moving Forward, Together

We see Willcock's article not as a critique but as a catalyst. She has invited all of us who lead and participate in the many aspects and areas of our industry to reflect on the systems we've inherited and to imagine what "better" could look like. We're answering that invitation. Yes, change will require coordination, compromise, and courage. But the rewards—a stronger, more connected, and more inclusive lighting industry—are worth the effort.

The time has come to unify our fragmented landscape, beginning with restructuring our approach to professional education and making basic lighting knowledge accessible to all. Systemic innovation requires shared language, values, and knowledge. This platform would create all three. We have the tools. We have the talent. We only need the will.

Let's invest in change—together.

Francesca Bastianini, LC, Member IES, is the co-founder and principal of Sighte Studio, a practice that folds education, research, and community engagement into design.

Ketryna Fares, Member IES, IALD, is a Lebanese designer with a decade of practice in New York. She pairs her love of design with a commitment to mentorship, collaboration, and education.

Kelly Roberts, Member IES, IALD, LEED BD+C, is the principal of Primary Arc Design and has two passions—bringing beautifully detailed lighting to homes and businesses and creating a more-equitable, socially responsible lighting industry.

Jennifer Sanborn Loukas, LC, EIT, Member IES, IALD, LEED AP, launched Lighting Playground to bring fresh energy to the lighting industry while sharing her passion through mentorship, education, and collaboration.

Sara Schonour, LC, Member IES, IALD, is strategist and advocate in the lighting industry, working at the intersection of business innovation, equity, and design excellence.

Addie Smith, CLD, Member IES, IALD, LEED ID+C, is the founder of Studio Adelia and brings artistry to light to enliven the built environment, evoke emotions, and enrich lives.

Photos: Marcos Vega

BRINGING MODERN ILLUMINATION TO OLD-WORLD AESTHETICS

Sustainable urban development settles into Tudela

By Craig Causer

Lighting now addresses previously dark and unevenly illuminated areas in the city.

Tudela, the second largest city in Navarre, Spain, owes its heritage to Jewish, Muslim, and Christian influences. Founded in 802 under Muslim rule, Tudela's diverse cultural past is apparent today in the Romanesque and Gothic architecture of the Cathedral of Saint Mary of Tudela and among the narrow streets of the Jewish quarter.

To better display its Old-World charm, the city looked to evolve to more-efficient and effective street illumination. With an eye on enhancing urban illumination while minimizing energy consumption, the recent lighting renovation project undertaken by the City Council of Tudela is an advancement in sustainable urban development. The municipality has upgraded approximately 8,000 outdoor lighting fixtures to state-of-the-art LED technology, featuring an ultra-warm color temperature of 2200K in the historic center. A 3000K temperature was selected for the town's periphery, main roads, and central square, balancing efficiency with visual comfort across urban zones.

Tudela, which serves as an important economic hub in the Ribera region, required a solution that addressed lighting inadequacies and contributed to its environmental goals. The new lighting system rectifies previously dim and unevenly lit areas and provides visually pleasing illumination that harmonizes with the city's architectural aesthetics.

"Prior to the renovation, Tudela's street lighting system was a patchwork of aging discharge technologies," explained Andrés Armañanzas, director of the Lighting Department at ATP Lighting. "Adjacent streets often featured inconsistent lighting—some illuminated with high-pressure sodium lamps emitting warm yellow tones, others with metal halide sources producing cool-white light. The system's dimming capabilities, originally intended to reduce output during off-peak hours, had become obsolete and ineffective. This led to a lack of uniformity: some areas were significantly overlit, while others were insufficiently illuminated. Many of the luminaires had deteriorated beyond their useful lifespan, prompting an urgent need for comprehensive modernization."

The project encompassed a wide range of urban environments—access roads, industrial zones, residential streets, parks, historic city quarters including the approach to the cathedral, and monument lighting. The challenge lay in creating a tailored lighting atmosphere for each of these areas while achieving a coherent and visually balanced nighttime cityscape.

A total of 16 ATP Lighting luminaire models were selected to ensure seamless integration with the varied urban settings. Some of the luminaires installed include Siglo XLA, Litoral, and Villa XLA for use in the historic center and main square; Enur L, Enur Micro, and Aire floodlights for roadways, industrial areas, and some architectural lighting; and Cónica and Metrópoli LLC for squares and promenades with a more modern aesthetic. To meet regulatory illuminance levels and the complex demands of the existing supports, 146 different luminaire configurations—combining optics and wattage—were installed.

Since the municipality sought to preserve the city's aesthetic integrity, the transition to LED technology was not intended to result in a drastic visual transformation. So, luminaires were selected both for their technical performance as well as the ability to harmonize with the existing urban elements. Each luminaire type was chosen to suit its specific context—whether a residential area, historic district, or industrial zone—ensuring that the lighting enhancements felt seamless and contextually appropriate.

A multi-tiered lighting control strategy was tailored to the diverse functional needs across the city. Three distinct systems were integrated; each was selected for its ability to deliver flexibility and energy efficiency. First, individual luminaire programming ensured optimal lighting levels throughout the night. In several zones, electrical cabinets were then equipped to adjust the regulation profiles of all luminaires connected to them, allowing operators to adapt settings in response to changing urban conditions. Finally, select distribution cabinets were upgraded for remote access, enabling real-time or scheduled adjustments through an online interface, offering a new level of responsiveness for city managers.

Tudela currently enjoys an 85% reduction in energy consumption compared to the previous installation, with the city's main access bridge achieving savings of up to 95%. The final installed power was 375 kilowatts, and with Tudela covering an area of 215 sq kilometers, it equates to an energy-efficient 1.74 watts per sq meter.

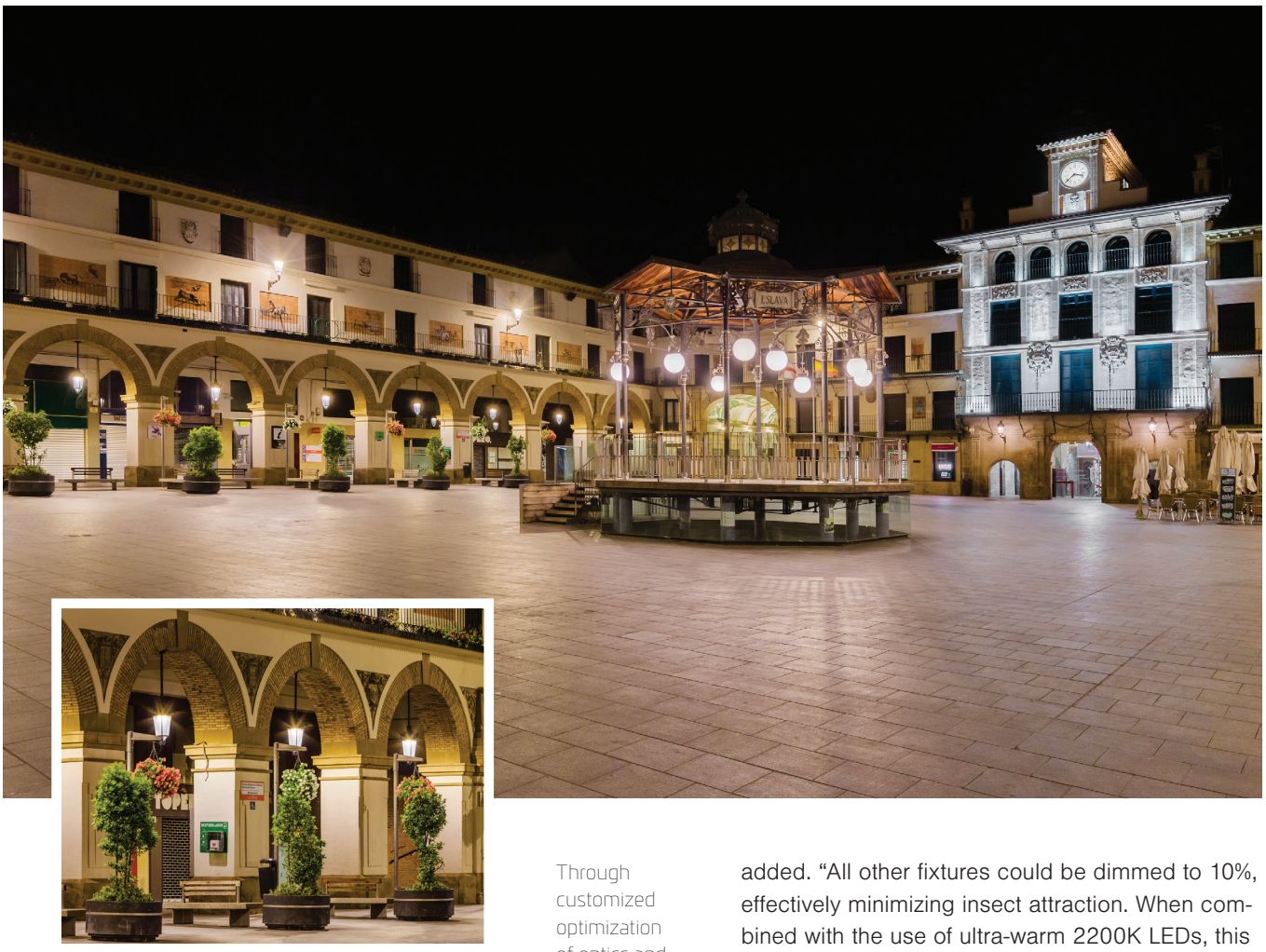
Top: The previous street lighting on Merindades Avenue (left) was retrofitted with ENUR L LED100 lamps resulting in an average illuminance of 20 lux with 70% uniformity (right).

Bottom: Modelo Villa XLA – LED35 luminaires enhanced previously dim and unevenly lit areas on Concarera Street.

Modifications and Mayflies

According to Armañanzas, the most significant installation challenge was adapting the new luminaires and projectors to the wide variety of existing arms, poles, and mounting structures throughout the city. Since the project did not involve modifying these supports, each luminaire had to be precisely engineered to fit seamlessly into the current infrastructure. "[Also,] the fixed positioning of the existing mounts often led to lighting angles and distributions that were impossible to manage," Armañanzas added. "To address this issue, custom optics were developed for many of the installations, allowing the photometric performance to be fine-tuned to the specific geometry and requirements of each site. This level of optical customization was essential to ensure uniform light levels and compliance with regulatory standards across all areas, despite the structural constraints."

In key areas, such as the main square and the entrance bridge, Bluetooth-based control systems were deployed to provide full individual access to each luminaire. These systems allow for precise lighting scenarios to be programmed or altered on



Through customized optimization of optics and photometry, the renovation of Plaza de los Fueros resulted in maximum uniformity with energy savings of 85%.

Inset: At the arcades of Plaza de los Fueros, new luminaires with ATP Lighting's Comfort Diffuser minimize the glare produced by LEDs.

demand. In the main square, this capability supports the dynamic requirements of public events such as theater performances, concerts, and community gatherings by enabling customized lighting scenes that enhance ambiance without the need for manual intervention.

Bluetooth controls also aided in solving a particularly pesky problem at one of the city's entrance bridges crossing the Ebro River. "During certain times of the year, swarms of mayflies, which are highly sensitive to artificial lighting, were being drawn to the bridge's illumination, disrupting both safety and the natural behavior of the insects," Armañanzas said. The installation went from a triple light point consuming close to 330 watts to a double light point—where the central unit was removed—with each luminaire currently consuming just 15 watts for a total of 30 watts per point.

"The solution involved drastically dimming the general illumination while maintaining only two luminaires—one at each end of the bridge—at full output to act as visual markers," Armañanzas added. "All other fixtures could be dimmed to 10%, effectively minimizing insect attraction. When combined with the use of ultra-warm 2200K LEDs, this strategy proved successful in deterring the insects and preserving their natural behavior."

The successful execution of Tudela's outdoor renovation project is the result of a collaborative effort of various stakeholders including city officials, engineering consultants, and residents who shared their insights and experiences. The City Council of Tudela remains committed to sustainable urban development and continuous improvement, and the project serves as an example for cities working to balance modernization with ecological responsibility. ◎

THE DESIGNER | Andrés Armañanzas is the director of the Lighting Department at ATP Lighting.

Raquel Fernández is a lighting designer at ATP Lighting.

Javier Bienzobas is a lighting designer at Saltoki, Pamplona.

Photo: David Lewinski Photography

NOT JUST SKATING BY

Nature inspires Troy's Ice Rink and Pavilion

By Katianne Williams

Troy, Michigan, a city tucked north of Detroit, has always attracted outdoor enthusiasts with its wooded trails, expansive parks, and quiet lakes and ponds. Even as natural areas have ceded to development, Troy has remained intentional about preserving green space. So, when residents asked for a place to skate and congregate throughout the long Michigan winter, the city listened. Its answer: a skating rink unlike any in the region.

The city hired OHM Advisors to serve as architect and landscape designer of the new project, its 1.75-acre site occupying one quadrant of an

Layers of snow and ice shavings in winter, or matte concrete in summer, uniformly diffuse the light from the luminaires.

area that also houses municipal buildings, the city swimming pool, and tennis courts topped with removable domes. Rather than a standard rink, the team envisioned a natural scene, a peanut-shaped pond surrounded by "meandering pathways flanked by native trees and grasses," replete with a pavilion, a concession stand, and fire pits. OHM wasted no time in turning to lighting designer Darko Banfic of Illuminart, a division of Peter Basso Associates, Inc., to oversee the lighting aspect of the project.

Banfic and his team sought inspiration from the parks nestled around the area. "Most have paths through the forest," said Banfic. "Imagine you go through the woods and come upon a frozen pond in the moonlight. How do we light that? How do we make it usable for people who stumble upon it, but also make it attractive, so that people who see it want to come back to it and bring their families?"

In this case, what visitors stumble upon is a skating rink that also possesses amenities for all and remained close to the original vision: an organically shaped area with a small island emerging on one side, walkways that wind through trees and grasses, a wooden pavilion built with wide, honey-colored ceilings offset by darker beams, and a small concession area. Curved benches are nestled into the landscape and flank the rink's entry where skaters sit to lace up. Fire pits—that even in the warm summer months of roller skating—are lit by a soft glow. A perforated Corten-steel wall hides the maintenance facility while playing a mesmerizing light show.

Together as One

"The hardest challenge," Banfic explained, "was there were so many parts, each with a specific purpose and a unique need, that we had to make work together as one." In this outdoor space, how could lighting simultaneously provide safety at the drop-off, ambience at the fire pits, task lighting in the pavilion, and, on the rink, movement, excitement, and surprise? "Some of the functions of these different spaces are almost contradicting to the functions right next to them and getting them to work seamlessly was challenging," added Banfic.

The solution included a sophisticated, layered lighting control system that illuminates each area for a specific purpose at a specific time. Each space is first lit to attract people and then illuminated to support the space as it becomes active and occupied.

First, there's the skating rink itself, where instead of lights shining down from high poles, "all of the skating surface lighting is mounted below knee-height, along the outer perimeter within the landscape, grazing inward towards the ice," said Banfic, who chose Insight Lighting's RGBW adjustable spot and flood lights for the job. These lights, the smallest available at the time, are mounted to 3-in.-diameter landscape pipe with an integral junction box at the top so that all wiring connections stay dry and easily accessible.

The fixtures, protected by the deep inward curve of the rink's railing, illuminate the skaters indirectly, with light reflecting off the surface of the ice. As the

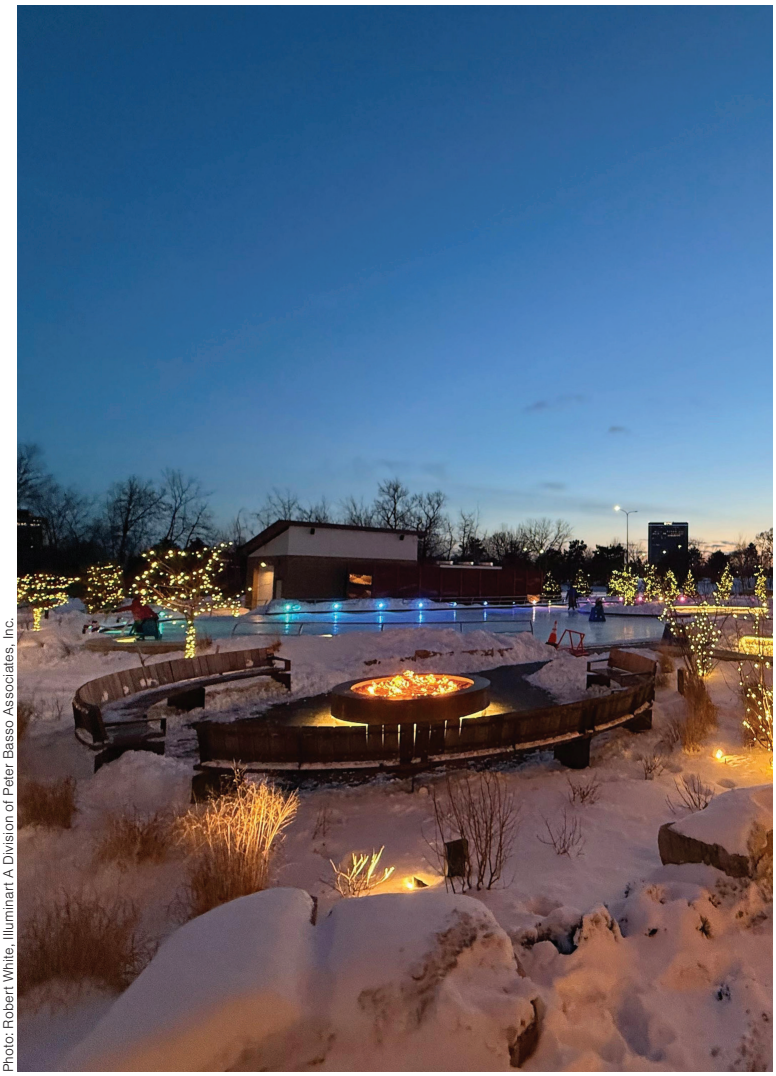


Photo: Robert White, Illuminart A Division of Peter Basso Associates, Inc.

Photo: Christopher Ozog, OHM Advisors

sun begins to set, the lights glow a warm white, just like "moonlight on snow-covered ice," but when the sky grows dark, the lighting comes alive, matching the energy of the skaters with "an immersion of color." Each fixture is individually DMX controlled, offering infinite options for colors, chases, fades, and other themes. The same lights surround the island trees and illuminate the two small bridges that link the site to an adjacent walking park.

Beside the rink sits a wooden pavilion, described by Banfic as "a warm, inviting beacon," with separate spaces for seating, rentals, and concessions. The static-white luminaires, manufactured by ALW Lighting, are designed to highlight the architecture and enhance the atmosphere. Pendant cylinders with uplight and downlight components illuminate the seating area in a way that, Banfic described, "extracts the visual warmth of the wood ceilings while also creating desired task lighting at the tables below." While wide-throw uplights highlight the columns and the ceiling, narrow-beam downlights, utilizing honeycomb louvers to reduce glare and concentrate brightness, amplify the height of the columns that mimic leaning trees. The mounting arms are designed with custom-cut angles to match the non-uniform angles of the columns. On the outer perimeter, only the downlight component is used, thus showing off the columns to the main vehicular traffic while also illuminating the sidewalk for safety.

Left: A sophisticated, layered control system lights each area.

Center: The pavilion features white, 3000K, 90+ high-fidelity/CRI LEDs.

Alongside the rink, an 8-ft-tall screen wall conceals the maintenance shed. This wall, constructed of perforated Corten steel and stretching more than 20 ft long, is built in sections, with wave patterns cut into the steel, each backlit by a 4-ft static, white-light fixture mounted from either top or bottom. This feature is serves as a conversation piece, a soft and mesmerizing light show designed to catch the eye but not to distract. Controlled by DMX, the lighting waves "flow left to right, right to

Photo: Christopher Ozog, OHM Advisors

left, at different speed rates and different dim levels to create an almost three-dimensional feel of movement of that perforated Corten metal," said Banfic.

The static-white lights that highlight the landscaping support walking activities throughout the site. Manufactured by WAC Lighting, these low-voltage fixtures feature adjustable optics and built-in individual dimmers and were selected for their ability to easily adjust to the natural changes of the trees they highlight. As the landscaping matures, Banfic explained, the city will be able to respond to and support tree growth by "shifting lights, adjusting the beam spread, modifying beam intensity based on trimming and the speed of growth of each tree."

Seating areas are outfitted with wet-rated rope lights manufactured by LED-LINEAR Co. that graze the stone-textured construction and horizontal surfaces below, with no direct view of the light fixture. Drop-off and pick-up areas, walkway intersections, and other high-visibility zones are lit with 12-ft-tall, pedestrian post-top fixtures from the Cooper Invue Arbor Series. These dimmable round fixtures sit atop natural-looking tree-branch-inspired arms.

Right: In the afterhours "Walkway" lighting preset, dimmed sconces illuminate organic architecture using wide-optic uplight while narrow-spot downlight accents columns and provides safe passage.

Throughout the park, lighting successfully "calms, excites, and draws all visitors into interest." In one space, skaters might chase brightly colored lights around the perimeter of the rink while beside it, small groups warm themselves by the fire pits and chat in a calm, peaceful environment. When the rink closes late into the night, the high-energy provides colored lights are replaced with soft, monochromatic lighting that highlights the flora and welcomes residents to stroll the pathways.

Total Control

The space offers much more than skating, though. It hosts city festivals, educational groups, special interest groups, and even the occasional city address, which is broadcast on television. With all these uses, "the city needed the ability

Photo: Christopher Ozog, OHM Advisors

The screen wall, constructed of perforated Corten steel, integrates DMX-controlled linear lights.

to control lighting for a specific purpose and to do it simply and intuitively," Banfic explained. To that end, he programmed a touchscreen with 16 labeled buttons with specific functions such as "Daytime Presentation" and "Breast Cancer Awareness Month," among others.

The touchscreen is a component of a very sophisticated lighting control system, designed with controls manufactured by CRESTRON. "I'm using every method to control lighting," explained Banfic. "The theatrical controls typically are DMX, and I have that for color lighting and for the dynamic lighting for the screen wall. The rest use simple dimming, both low voltage and line voltage dimming," explained Banfic. "The control system has to do all of these and combine all of these and make it work seamlessly."

Construction of Troy's Ice Rink and Pavilion began in June 2023 and took one year to complete, with the pavilion grand opening in June 2024 and the debut of the rink itself in November 2024. Today, Banfic noted, the city has a unique venue that all the surrounding cities are using and visiting. "The city is cognizant of their taxpayer's needs and desires, and they listen to their citizens," he said. "That makes the city more appealing and desirable to do business with, and it attracts families who are looking for their new homes. Isn't that what we all want from our cities?" ◎

THE DESIGNER | Darko Banfic is an architectural lighting designer at Illuminart, a division of Peter Basso Associates, Inc.

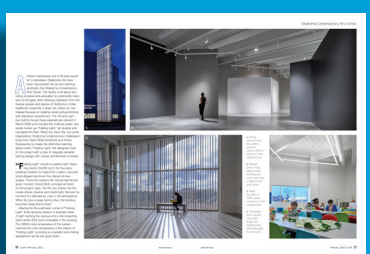
THE AUTHOR | Katianne Williams, co-author of the STEM guide *Count Girls In*, enjoys writing about innovative projects and inspirational people.

LD+A

LIGHTING DESIGN and APPLICATION

Share Your Voice

The flagship publication of the Illuminating Engineering Society, *LD+A* is an award-winning magazine for professionals involved in the art, science, study, manufacture, teaching and implementation of lighting. In an effort to continue to provide diverse voices in *LD+A*, we are looking for **industry professionals** who are interested in telling their stories, including work on unique lighting projects, their experiences in the profession, and opinions on current hot topics in the world of illumination.



EVERY ISSUE of *LD+A* includes feature articles on design projects, technical articles on the science of illumination, new product developments, industry trends, news of the Illuminating Engineering Society, and vital information about the illuminating profession.

EACH MONTHLY issue features a unique theme such as sustainable design, retail lighting, roadway lighting, industrial lighting, hospitality lighting, or office and commercial lighting.

ROTATING COLUMNS cover topics including energy, green design, career issues, technology, regulations and legislation, research, and education—written by a veritable who's who of industry experts.

If you are interested in publishing an article in *LD+A*, please reach out to Editor-in-Chief Craig Causer at **craig.causer@sagepub.com** to discuss further.

IES Illuminating ENGINEERING SOCIETY

Photo: Matthew Millman Photography

SETTING THE SCENE

An inspired façade is the breakout star at Arizona State University

By Michele Zimmerman

The Arizona State University Media and Immersive eXperience (MIX) Center welcomes students participating in the ASU Herberger Institute for Design and the Arts, including The Sidney Poitier New American Film School programs, with a dynamic façade set to motivate a new generation of creatives. Located on the university's Mesa campus, the building's 366-ft-long illuminated façade is the work of multidisciplinary architectural lighting firm Auerbach Glasow. Rebranded in 2023, the firm transitioned to Apeiro Design to celebrate 50 years in business; Apeiro's work on the project began in 2019 when architect Bohlin Cywinski Jackson, a partner it had worked with before, called the company in to light the MIX's interior public, faculty, and student

Photo: Matthew Millman Photography

Left: A lobby dissects the MIX Center into the Theatre Block (left) and the Production Block (right).

Right: "Blades" of color-changing lights graze each side of the narrow windows on the Production Block.

areas, as well as the exterior illumination. However, as the project progressed, it became clear that the architect's concept for the façade, replete with a 30-ft-high by 70-ft-long LED screen, would become a breakout star of the project, requiring an expansion of Apeiro's contract to include its illumination.

Where the Magic Happens

The MIX Center, where hands-on, project-based learning in the fields of fashion, film, video games, virtual worlds, and more takes place, is architecturally "divided into two distinct blocks separated by a lobby," explained project lead and Principal at Apeiro Patricia Glasow. "To the west [of the lobby] is the Theatre Block, which houses the Screening Theatre and Screening Room. The Theatre Block is wrapped in color-changeable, direct-view, RGB 'dots' of light. To the east [of the lobby] is the Production Block, which houses the production and post-production facilities: sound stages, labs, recording studios, classrooms, and offices. The articulated terracotta façade of the Production Block is grazed with concealed linear lines of RGBW light."

To integrate the "dots of light" on the Theatre Block cube, architects designed 55 vertical, 49-ft-tall fins around the north, south, and west sides of the architectural cube, with shorter partial fins on the structure's east side. The architectural fins act as wiring channels for more than 5,500 dots, concealing all wiring so that it is invisible to onlookers. The dots, which are Signify ColorKinetics iColor Flex LMX Gen 2, "peak out from the fins," added Glasow, and can be viewed from all angles.

Then, to achieve the "lines of light" on the Production Block, the team incorporated one 30-ft-high, vertical "blade" on each side of 20 narrow windows, for a total of 40 blades of light. Fed from the roof and mounted approximately 10 in. in front of the façade, the RGBW Boca NanoMix color-changeable linear fixtures have lightly diffuse lenses and 120-deg optics. Most importantly, the fixtures were selected for use because louvers on the fixtures provided "excellent shielding" and the fixtures did not require external drivers, explained Glasow.

An additional component of the façade includes pathway lighting on the underside of the trellis beneath the windows. Mounted between trellis slats, wet-label-lensed linear downlights by A-Light provide wayfinding for students and staff as well as

Photo: Bill LeGoullon/Grey Shed Studio

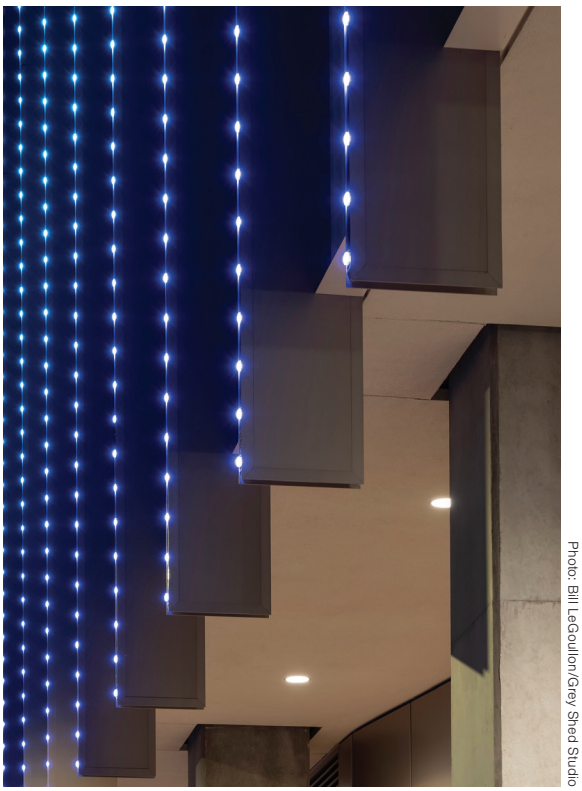


Photo: Bill LeGoullon/Grey Shed Studio

cohesion with interior linear fixtures, as the exterior luminaires were purposefully aligned with luminaires inside the building.

However, the magic behind the eye-catching visuals of the dots and lines lies in the project's control system, conceptualized by Apeiro in tandem with the MIX's Founding Director Jake Pinholster and designed and specified by tech-enabled AV consultant NV5. The ETC Mosaic system allows for individual control over each dot color as well as individual control over each color on the blades in 1-ft increments, for a total of 16,512 DMX addresses for the dots and 4,800 DMX addresses for the lines. The digital, colorful display comes together to reflect the school's forward thinking student body as well as the institution's media and technology focus.

Left: Over 5,000 dynamic "dots" are individually addressable.

Right: RGBW "dots" peak out from fins and are visible at all angles.

B.T.S

Much like a good film, the behind-the-scenes reel of the MIX Center would show that the journey to the project's end was filled with expected and unexpected challenges. One expected challenge going into the project was the budget. As the MIX Center project is a partnership between the City of Mesa and ASU, budget control was of utmost importance; the city managed the design and construction, investing nearly $64 million in the project, while the university contributed $33.5 million for interior work and equipment. "The project was design-build and we worked closely with the contractors to track cost and evaluate suggested cost savings," explained Glasow. "We incorporated cost-saving ideas that did not unduly compromise functionality or design. From the outset, we used budget-friendly products whenever possible. The specialness of the lighting design came from detailing and integration with the architecture, not from expensive fixtures."

Though film sets are full of gag-reel-type-gaffs like actors forgetting lines and the occasional boom mic falling into the camera's view—instances with which ASU cinema students are probably more than familiar—the MIX project faced the unexpected and serious challenge of COVID-19. The pandemic presented extra challenges "when conducting the

Photo: Matthew Millman Photography

The contemporary façade reflects the technology-focused learning that goes on inside the building.

full-scale mock-ups which we knew were required for the success of the design," said Glasow. For example, the pandemic forced the team to get more creative to complete extensive mock-ups in its light lab to determine the center spacing and mounting location for the RBG dots within the channel and the distance of grazing light between window blades to the façade, as well as the effect of the grazing light on the terracotta building material. Traditional on-site full-scale mock-ups were conducted remotely with the lighting designer; the team confirmed light intensity and visual effects via "multiple hours of video chats," explained Glasow. "The architects were at the site and the lighting designer was in [the] office."

Sidney Poitier, the first Black actor to win the Academy Award for Best Actor, known for roles in films like *To Sir, With Love* and *Guess Who's Coming to Dinner*—and the namesake of ASU's film school—is quoted as saying, "If I'm remembered for having done a few good things, and if my presence here has sparked some good energies, that's plenty." Regardless of how the work was completed, there's no doubt that the work done by the design team for the MIX Center will be remembered—and that the building itself sparks good energies for the undergrads making memories and beginning their careers inside. ◎

Director's Note:
When asked about her favorite part of the MIX project, Apeiro Design Principal Patricia Glasow said, "I think the integration of the lighting with the architecture is lovely. My favorite detail is the window blade detail on either side of the Production Block windows."

THE DESIGNERS | Patricia Glasow, Member IES, FIALD, LC, CLD, is a principal at Apeiro Design.

Yue Zhao, IALD, LC, is a lead product designer at Design League Co. and was formerly an associate with Auerbach Glasow.

Karl Backus, FAIA, is principal architect of Karl Backus Architecture and was formerly a principal with Bohlin Cywinski Jackson.

Steven Chaitow is campus planner at UC Davis Health and was formerly a principal with Bohlin Cywinski Jackson.

Christopher Orsega is a project director at Gensler and was formerly a senior associate with Bohlin Cywinski Jackson.

Holly Street Studio also served as an architect on the project.

Figure 1. Various indoor scenes.

DIGITAL OPEN HOUSE

Virtual home staging's growing role in real estate and design

By Guanzhou Ji

The U.S. housing market is vast and continues to grow at a rapid pace. In 2023, there were approximately 145 million housing units nationwide—the highest annual increase in 15 years.[1] By September 2024, nearly 1.8 million homes were listed for sale across the country.[2] With such a large inventory, it's crucial for designers, buyers, and real estate agents to efficiently showcase properties and assess their value. This raises an important question: How can such a massive number of homes be showcased in a simple way?

Virtual staging has emerged as a vital tool in the real estate market. This digital technique uses computer-generated imagery to visualize refurnished homes and provides a cost-effective alternative to traditional physical staging. As it operates entirely on digital images, virtual staging allows properties to be styled remotely regardless of their geographic location (**Figure 1**). By enhancing a home's visual appeal without requiring an in-person visit, virtual staging broadens exposure and increases the chances of a successful sale. It helps potential buyers better visualize their living scenarios, offering a convenient solution for both real estate agents and homeowners to explore property values.

A Closer Look at Its Limitations

As virtual staging gains traction, several underlying challenges remain in its broader use. According to a survey on virtual home staging, 20% of buyer agents feel that traditional physical staging is "much more important" than digital virtual staging, such as digitally rendered images or video tours.[3] Unlike physical staging, virtual staging presents a simulated virtual scene, which can sometimes feel less tangible to potential buyers. However, given the convenience and flexibility of digital staging, especially for showcasing properties across different locations, it is increasingly important to enhance the realism of virtual staging techniques to better serve the existing home market.

Before purchasing a home, buyers often consider potential renovations, such as updating

Photo: Point3D Commercial Imaging Ltd.

Figure 2. A 2-D perspective of virtual staging (left) and an empty scene (right).

lighting fixtures, interior paint, and surface materials. Although numerous digital tools have been developed to virtually showcase existing homes, automated scene design remains a significant challenge in today's virtual staging technology. Creating high-quality virtual scenes still requires a labor-intensive process, with manual inputs across different commercial software platforms.

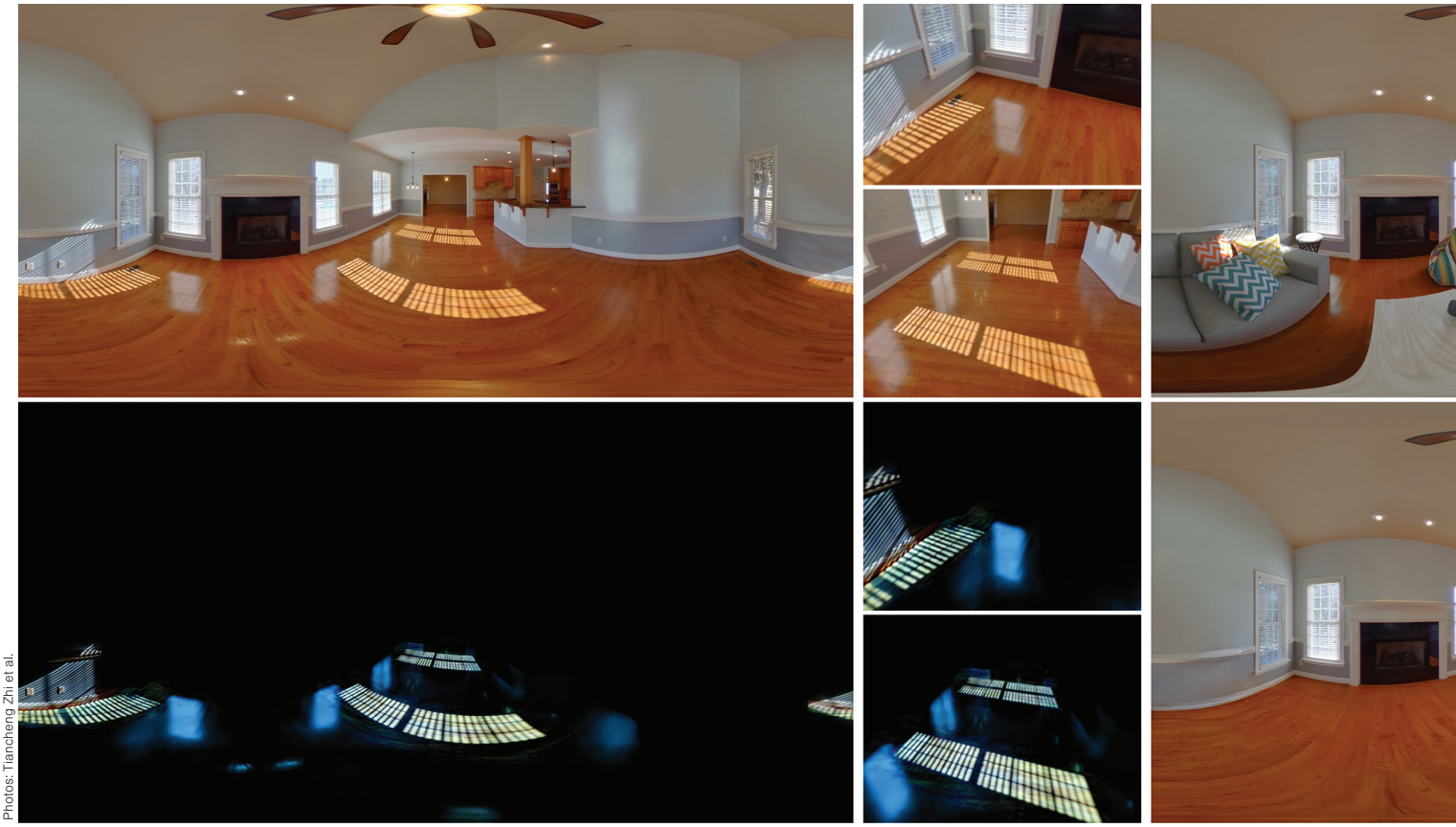
Reimagining Home Staging

When digitally staging a space with new furniture components, the virtual objects are expected to be realistically integrated into the existing scene and maintain visual coherence. Several approaches have been developed for virtual home staging, each varying in complexity, input requirements, and the level of realism achieved.

A single, 2-D-perspective image, commonly used to showcase home interiors, serves as the basis for virtual staging technique. Users can easily capture their rooms with existing furniture using a smartphone. Typically, indoor scenes contain various furniture pieces and objects. The virtual staging application automatically detects these items and refurnishes the space with new styles based on text prompts (**Figure 2**). This AI-driven method enables rapid placement of new furniture while maintaining geometric consistency within the 3-D floor layout, which is then rendered to match the original 2-D perspective view. However, as a quick image-generation approach that relies solely on a single indoor image, the results are inherently limited to the constraints of the original 2-D viewpoint.

Omnidirectional photography, made accessible by devices like the Ricoh Theta Z1, is increasingly used by housing agents during on-site visits. The portable and user-friendly technology enables the capture of a single 360-deg panorama that represents an entire interior space from all angles. Compared to traditional 2-D images, panoramic views support immersive virtual tours and can be further enhanced with virtual reality (VR) integration. However, using a single panorama for virtual staging introduces new challenges, especially due to object distortions caused by spherical projection. In this setting, the research community has shown growing interest in leveraging indoor panoramas for virtual staging. A 2021 IEEE/CVF conference presentation demonstrated that it is feasible to remove furniture directly within spherical images.[4] Besides, the authors of "Semantically supervised appearance decomposition for virtual staging from a single panorama"[5] introduced a method to edit indoor lighting and insert virtual furniture into empty panoramas (**Figure 3**). Additional studies have further explored estimating 3-D floor layouts and interior arrangements from a single panorama, enabling more advanced 3-D visualization and context-aware virtual staging applications.[6-8]

Realistic virtual staging of new objects requires on-site photography that captures the spatially varying lighting conditions of the environment in high dynamic range (HDR) format.[9] Building on image-based rendering techniques, a single indoor panorama can serve as a global light source to edit, design, and illuminate new virtual scenes.[10] However, real-world light transport typically involves illumination originating outdoors, passing through window openings, and then interacting with interior surfaces. Relying solely on an indoor panorama makes it difficult to fully model this process. I have contributed to recent work[11-13] that addresses this limitation by capturing Indoor-Outdoor Panoramas as input to enhance the realism of virtual relighting tasks (**Figure 4**). This approach enables the reconstruction of complete indoor-outdoor light transport



Photos: Tiancheng Zhi et al.

Figure 3. An example of a single panorama of an empty indoor scene (top left) is decomposed into appearance components on the floor and walls: specular and direct sunlight (bottom left) and diffuse ambient light without direct sunlight (bottom right). Then, the scene is virtually staged with new furniture insertion (top right).

Photos: Uzair Shah et al.

Figure 4. The existing living space (left) and virtual scene rendered with new indoor layouts, materials, and novel lighting (right).

and transforms indoor panoramas into photorealistic virtual scenes enriched by their corresponding outdoor context.

Beyond single-room virtual staging, some applications support multi-room staging to enable immersive full-house virtual tours. These systems often rely on RGB-D cameras that capture both color and depth information from multiple viewpoints. A prominent example is the Matterport camera device, which has been widely adopted for indoor scene capture in recent studies.[14,15] Compared to conventional panoramic images, this method associates pixels with labeled 3-D coordinates, allowing for the reconstruction of detailed 3-D scene geometry.

Current Benefits and Future Developments

Current virtual staging applications offer accessible solutions for the public to showcase residential properties without requiring prior design expertise. These tools streamline the online home tour experience and enhance property visibility with

minimal user input. For design professionals and home builders, virtual staging technology serves as a powerful asset for both engineering precision and creative ideation. Many existing homes lack comprehensive digital documentation; virtual staging applications can assist architects and interior designers in reconstructing accurate floor plans. These tools also enable the analysis of lighting conditions and surface materials, which offers editable lighting estimation capabilities to support the creation of near-photorealistic renderings.

Future developments will expand virtual staging capabilities across advanced modeling and design tasks. These include generating precise floor plans from captured images that identify interior structures such as walls, windows, and doors; enabling viewpoint changes within a room from a single 2-D perspective image; and allowing interactive manipulation of new furniture, so users can move and replace objects based on their preferences. Ultimately, virtual home tours are expected to evolve into comprehensive platforms that support not only visualization but also collaborative workflows in architecture, lighting design, and real estate development. ◎

THE AUTHOR | Guanzhou Ji earned his Ph.D. in Building Performance and Diagnostics from Carnegie Mellon University, where he worked in the Illumination and Imaging Laboratory (Robotics Institute) and School of Architecture. He focuses on indoor photometry, image-based rendering, and physics simulation.

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PROJECT IN PICTURES

Home Improvement

A private eco-home called **Hightrees** in the village of Boston Spa, England, designed by architects Southgate and Sarabia, exudes luxury inside and out. With interior design by Kelly Poole from Kudos Interior Design, and numerous IP20 and IP54 lighting fixtures by **Lucent Lighting**, the home and its swimming pool blend modern technology with agricultural elements. Lucent Lighting Project Manager Giovanni Premi said, “Hightrees is a thoughtfully designed new home...with a commitment to sustainability and reduced carbon footprint. Knowing that Lucent Lighting has been specified in such an outstanding project is a true testament to the comprehensive nature of our portfolio.”

Photos: Stevie Campbell

» **White finishes on light fixtures** were selected for use throughout Hightrees.

Prospex Plus **conical adjustable downlights and conical wall-wash downlights** work in tandem to illuminate multiple areas within the residence.

LED strip lights are located throughout the project for discreet, indirect lighting.

IP54-rated luminaires were implemented at the swimming pool and in the bathrooms for increased durability.

IES INSIDER

Photos: IES Boston

Yo Quiero Tech and Tacos

This summer, the IES Boston Section launched Tech Taco Tuesdays (TTTs), a series designed to engage Emerging Professionals (EPs) with technical knowledge and build community connections. TTTs are part of the section's "EP Summer" program, which also includes "Social Saturdays" activities such as escape rooms and miniature golf, with the goal of creating a welcoming environment where newcomers and early-career professionals can ask questions, connect with peers, and gain a broader understanding of the lighting industry.

The first TTT was held on June 3 and featured an "Ask an Expert Panel" that focused on myriad topics including the roles and value of various players in the lighting industry, specifics of the binning process, and TM-30. The July 1 TTT, "Downlight Shootout," presented a hands-on session that compared various downlight fixtures, allowing participants to assess performance and application differences. "Controls Chat" was held on July 29, and "Applications of Light" will wrap up the TTT program on August 26.

"We were so fortunate that this program was spontaneously and generously funded at last year's Illumination Awards Gala, and we felt charged to come up with something meaningful that could be built upon in future years," said IES Boston Section President Sara Schonour. "This program speaks to our section's commitment to supporting the future generations of lighting designers, and we hope its successful framework inspires other sections, too."

For additional details, visit *https://boston.ies.org/meetings-events/.*

MEMBER MENTIONS

Available Light has named three new executive directors: **Bill Kadra** (top left), Trade Show Division; **Matt Zelkowitz** (top right), The Built Enviroment; and Annette LeCompte (bottom left), Operations.

Chad Luttrell has been appointed director of sales with John Carter & Associates.

Tom Nowakowski has been promoted to VP of sales at **Amerlux**

Ken Cartmill has joined **LED Roadway Lighting Ltd.** as co-CEO.

Bold = Individual or Sustaining Member

In Memoriam

Paul Marantz, co-founder, Fisher Marantz Stone

Paul Marantz, co-founder of Fisher Marantz Stone (FMS), Member Emeritus IES, and Fellow IALD, passed away in May. His more than 50-year career included work on an extensive list of iconic projects including the 9/11 Tribute in Light Memorial, the Times Square Ball, Radio City Music Hall, and Studio 54, in New York City; the Getty Center in Los Angeles; and the Burj Khalifa skyscraper in Dubai, UAE.

Marantz began his career as chief engineer at Lighting Services, Inc. followed by directing research and development at Century/Strand Lighting. In 1971, he and Jules Fisher co-founded what would become one of the top global lighting design firms—FMS. Marantz joined the IES in 1979 and later served on the IES New York City Section's Lumen Awards jury. In 2021, he described his role as a Member of the IESNYC by saying, "What is important to me, and I would hope to the IESNYC and the entire lighting community, is that we continue to create memorable spaces."

Paula Martinez-Nobles, president of the company writes: "We are deeply saddened to announce the passing of Paul Marantz. Paul and Jules...[created] a legacy of creativity and genius that continues to brighten our lives and the world around us. Thank you, Paul, for your wit and wisdom. We honor your life and legacy."

PRODUCTS

1.

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4.

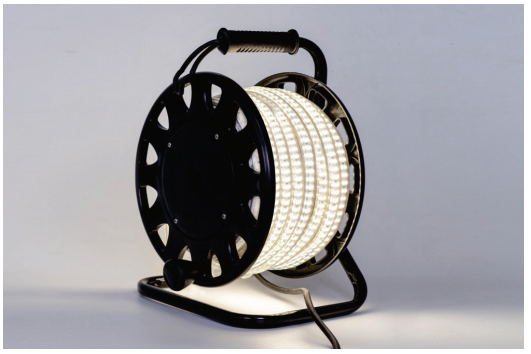
1. Trace-Lite by Barron Lighting group debuts the RCL-CP round canopy luminaire for commercial and industrial applications including parking garages and stairwells. With a low profile and a dome fresnel lens, luminaires are available in two field-switchable power configurations and multiple color temperatures and achieve up to 155 lumens per watt. Fixtures are IP65 and IK08 rated, as well as cULus listed for wet locations. *www.barronltg.com*

2. Certolux (Leviton) announces MD-ALTO for patient rooms in healthcare facilities. The overhead fixture offers an antimicrobial finish, a sealed IP64-rated germ shield suitable for damp locations, and a CCT-selectable design to support clinical tasks as well as patient well-being. *www.leviton.com*

3. Dialight, in collaboration with Swivelpole, introduces integrated Dialight LED fixtures with Swivelpole's Maxis technology for safer ground-level servicing without the need for elevated work platforms, lifts, or scaffolding. With patented 45-deg joints, fixtures can be lowered to more ergonomic working heights, which reduces safety risks in workplaces. The solution supports column, stanchion, pole-top, and wall-mounting configurations and offers installed height options ranging from 8 to 16 ft; a conversion tool kit can replace existing poles in retrofit projects. *www.dialight.com*

4. LEDtronics expands the Utility Lighting line with A21 LED bulbs for AC and DC applications in power plants, dam facilities, rail-car interior lighting, and other focused task lighting environments. With the ability to fit most A19 applications and an easy retrofit installation for medium E26 screw-in fixtures, the BSD-2080-001 provides 6000K, cool-white light while the BSD-2080-002 provides 3000K, warm-white light. Both bulbs use 11 watts of power or less and provide up to 1,226 lumens. *www.ledtronics.com*

5.



6.

5. Mr. John's Goods, a brand by lighting designer Nader Gammas, unveils Woaw, a collection of sculptural luminaires inspired by childhood toys and the traditional candelabra form. With bold colors, steel bodies, and ceramic shades, luminaires are available as table (pictured) and floor lamps. Each fixture is equipped with 3-region universal plugs for use in the U.S., UK, and EU. *www.mrjohnsgoods.com*

6. Mekong Lighting introduces the portable AC LED strip for construction sites with male and female fast connectors. The 1.2-meter (~4-ft) cable with plugs and a portable reel for quick movement offers five color temperature options ranging from 2700K to 6500K and is IP67 rated for wet locations. *https://mekonglight.com*

SPOTLIGHT Landscape Forms

Landscape Forms, in collaboration with Netherlands-based FlexSol Lighting Solutions, unveils 360 Solar, an off-the-grid solar lighting solution. Designed with a cylindrical wrap-around solar array, the fixtures' solar cells are fused to a tempered glass sleeve around vertical poles for maximized solar absorption throughout the day. Luminaires are ideal for remote natural areas, urban parks, and maritime environments. *www.landscapeforms.com*

PRODUCTS

7. Anony, a lighting and product design studio by Chistian Lo, debuts the Pola collection. Inspired by archways and tunnels, Pola is available as a floor lamp, table lamp, wall sconce, single pendant, or multi-pendant and features long, half-circular geometric shapes that throw warm, diffused light. The aluminum luminaires are offered in seven brushed and matte finishes.
https://anony.ca

8. Hydrel announces the Wander family. Designed with the ability to provide a wide lateral distribution of illumination that meets IES egress requirements as well as a long forward distribution, Wander includes fixtures suitable for pathways, steps, and surface lighting applications. The collection is rated IP67 for water resistance, IK10 for impact resistance, is ADA compliant, and BUG UO as a full cutoff fixture. With no visible hardware, fixtures blend into their surroundings.
www.hydrel.com

9. Zumtobel unveils TECTON II, the second generation of the modular, continuous-row lighting system originally developed more than two decades ago. This upgraded, flexible plug-and-play LED fixture family will be introduced over a period of four years, with some of the new technology and features being backward compatible with previously installed TECTON systems. Available in 2025 are IP20-rated trunking and battens in numerous beam options and lumen packages.
www.zumtobel.com

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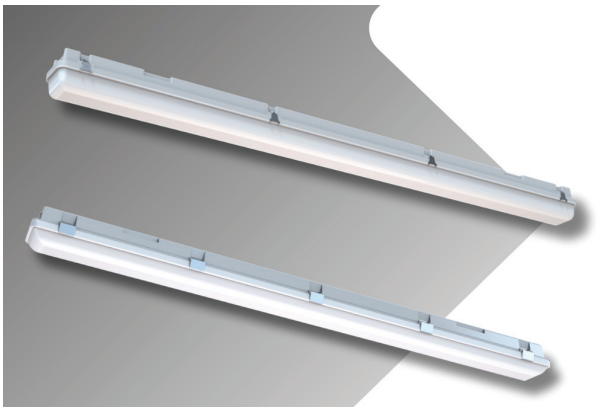

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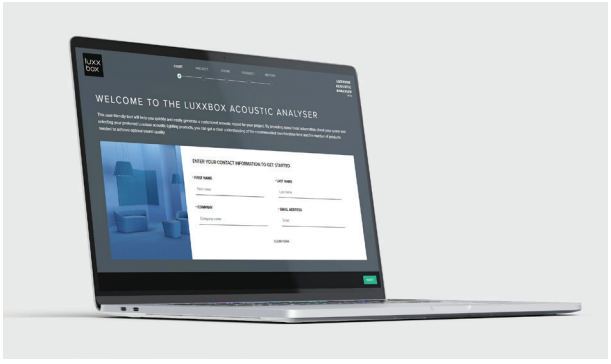

12.

10. Ventilux introduces the VAC and VAC Pro anti-corrosive luminaires, suitable for manufacturing facilities, public infrastructure, and commercial applications. Resistant to chemical cleaning, dust, impact, and water, luminaires are IP65 and IK09 rated; luminaires are constructed with stainless steel clips for secure installation and operate in temperatures ranging from 32 to 113 deg Fahrenheit.
www.ventilux.com

11. Optique Lighting announces the Perifina Edge Reveal 3-in. luminaire. Offered in seven color temperatures and capable of navigating corners, Perifina Edge Reveal is a mud-in, vanishing trim luminaire for coves and toe-kicks. Luminaires are compatible with ⅝-in. drywall and feature a paintable backing plate to blend in with any décor. Customized lengths up to 96 in. are available in 1-in. increments or multiple luminaires can be combined for an infinite length.
https://optique-lighting.com

12. Luxxbox launches Luxxbox Acoustic Analyzer, a free digital tool to help professionals integrate proprietary lighting and sound solutions into projects. The online platform helps to determine optimal reverberation times and calculate the number of acoustic fixtures needed for end-user well-being and provides data-driven, visual representations and reports for various room types.
www.luxxbox.com

SUSTAINING MEMBERS

The following companies have elected to support the Society as Sustaining Members, which allows the IES to fund programs that benefit all segments of membership and pursue new endeavors, including education projects, lighting research, and recommended practices.*

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*Contributor Sustaining Members are listed at *www.ies.org*.

THE IES WELCOMES THESE NEW SUSTAINING AND UNIVERSITY MEMBERS

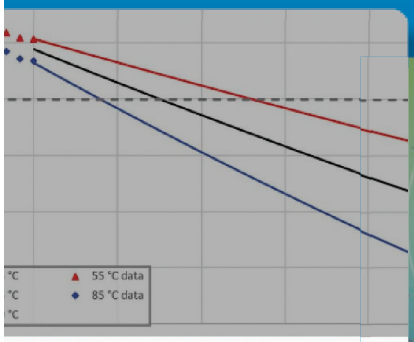
- ALUZ
- Sazan Group

Whether you are a manufacturer, utility company, distributor, sales agency, engineering firm, architectural firm, or any other professional or technical business that engages with lighting, each organization can pick and choose levels of benefits and discounts for their company employees directly—and in certain cases, non-employees' partners, as well—furthering the reach to a larger group of professionals. The complete new Sustaining Membership structure (including the tax deduction levels) is listed at: **www.ies.org/membership/ies-sustaining-membership**.

Education institutions that have dedicated lighting programs as well as those higher learning institutions that focus on "lighting" in their curriculums qualify for the University Membership. For more information on program benefits go to: **www.ies.org/membership/ies-university-membership**.

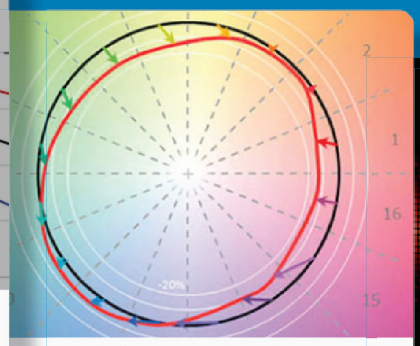
NOW AVAILABLE!

Introducing the new IES Standards Toolbox, featuring resources and tools that support your efforts to enhance your lighting knowledge, work more efficiently and stay updated on the very latest lighting standards and guidelines.



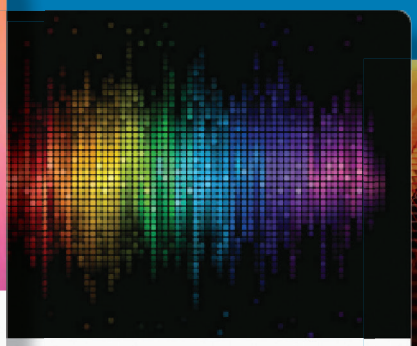
TM-21 Calculator

The official IES TM-21 calculator projects luminous flux maintenance based on the 2021 American National Standard, approved and maintained by the IES Testing Procedures Committee.



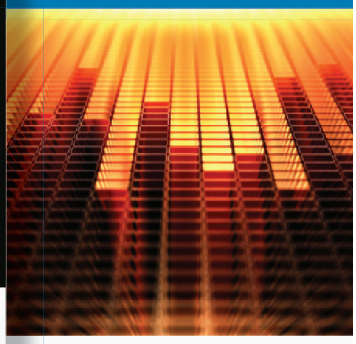
TM-30 Spectral Calculator

The official IES TM-30 calculator provides values and creates vector graphics based on the 2021 American National Standard, approved and maintained by the IES Color Committee.



The Illuminance Selector

The IES Illuminance Selector is a search tool developed to provide fast access to critical lighting criteria from over 25 tables published in ANSI/IES Recommended Practice Standards.



IES Reference Retriever ‡

The IES Reference Retriever is a catalogue of all documents, articles, publications and studies that are referenced throughout IES standards, searchable by title, topic, keyword, author or date.

‡ Available for IES Members only.

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Access the IES Standards Toolbox at **ies.org/tools**

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AD INDEX

The companies listed below would like to tell you more about their products and services. To learn more, access the websites listed here.

COMPANY	WEBSITE	PAGE #
ALUZ Lighting	www.ALUZ.lighting	2
Elemental LED	www.elementalled.com	1
Insight Lighting	www.insightlighting.com	9
Landscape Forms, Inc.	www.landscapeforms.com	5
Meteor Illumination Technologies, Inc.	www.meteor-lighting.com	Cover 4
Performance in Lighting	www.performanceinlighting.com/ww/en	10
PLP Composites	www.plpcomp.com/	19
Pure Edge Lighting	www.pureedgelighting.com	16
Quanta Light	www.quantalight.com	25
SPI Lighting, Inc.	www.spilighting.com	Cover 2
Stresscrete	www.stresscretegroup.com	21
TNT Industries US, Inc.	www.tntind.us	15

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CLASSIFIEDS

Warmly illuminated crystal and complementary interior design at the front desk of the Crystal Orange Hotel in Shanghai, China, by Vermilion Zhou Design Group, evokes the color-rich tones of relaxing beverages such as whisky, coffee, and tea.

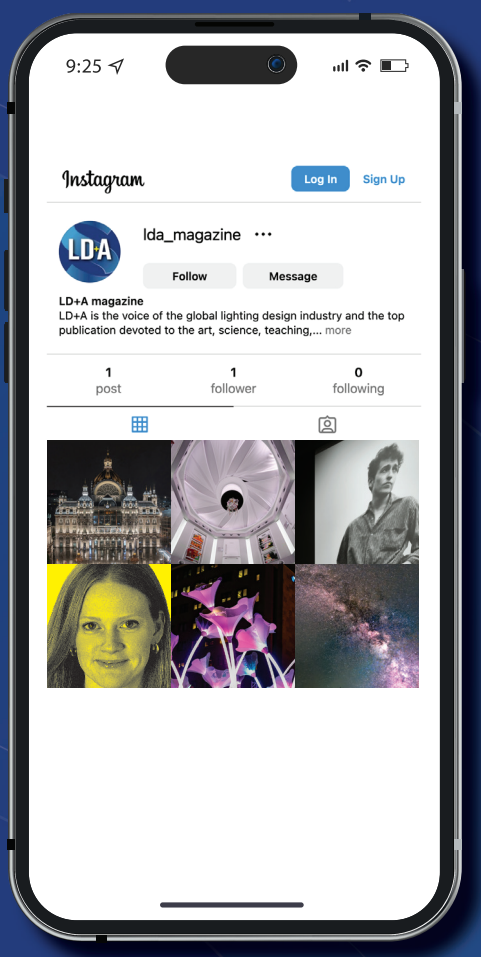
Photo: Jian Quan Wu

LAST LOOK

Liquid Smooth

Introducing LD+A on Instagram!

Follow @lda_magazine for the latest updates, behind-the-scenes content, and insights into the world of lighting design and application. Whether you're a **professional in the industry** or simply passionate about innovative lighting solutions, our Instagram account is the perfect place to stay inspired and informed.



What to Expect:

- Stunning project showcases
- Expert tips and tutorials
- Industry news and trends
- Exclusive sneak peeks

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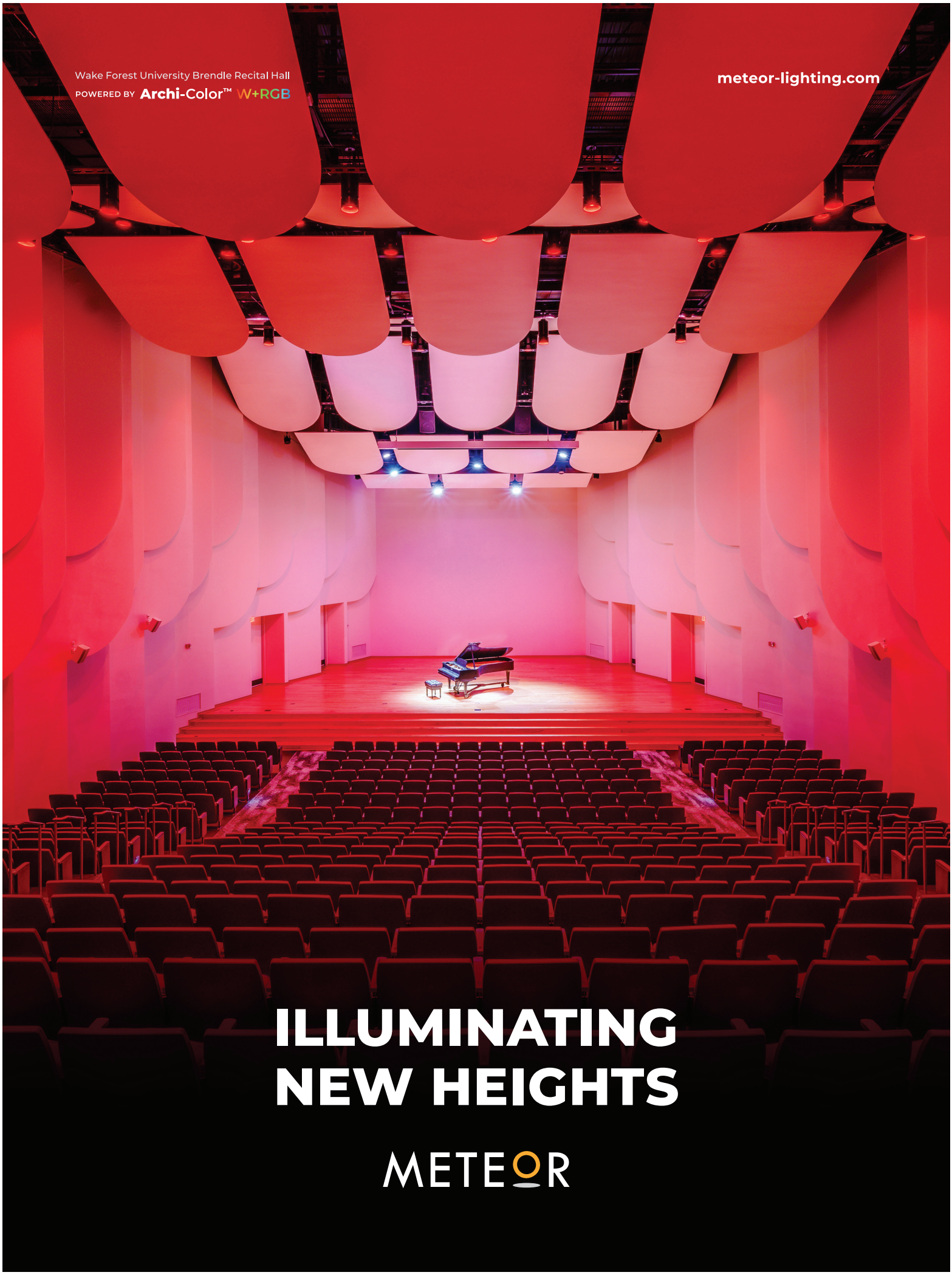
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