

# LD+A

LIGHTING DESIGN and APPLICATION

Alternate Ending  
History Speaks  
Touchstones

Brought to you by Sage



Reimagined  
spaces honor  
historical places

## What's Old Is New

# NOVATO SQUARE WALL & CEILING



Brightens Horizontal & Vertical Planes | RGBW & Color Bands | ADA Compliant



**SPI**LIGHTING

[www.spilighting.com](http://www.spilighting.com)

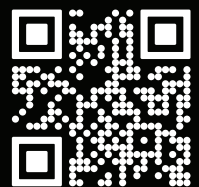
LEARN MORE

# LUCETTA<sup>®</sup>



Take the Next Step Towards Exceptional  
Linear Lighting.

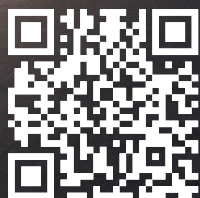
Lighting solutions purposefully crafted for architects,  
lighting designers, and interior designers.



[LucettaLighting.com](https://www.LucettaLighting.com)

# ALUZ

## Build America Buy America



**A4 SERIES  
INGRADE /GROUND**

→ Visit [aluz.lighting/a4-series-ingrade](https://aluz.lighting/a4-series-ingrade)

# LD+A

JANUARY 2025 • VOLUME 55 • NO. 1

## FIRST UP

Editor's Note	4
President's Perspective	8
Insights	9
Events	11
Ask an EP	12
Q+A Laura Walsh	14
How They Did It	15
History	16
Illuminating Achievements	

## PLUS

IES Insider	44
Products	46
Ad Index/Classifieds	51
Last Look	52



Photo: Kevin Gillmore

## FEATURES

22  
ALTERNATE ENDING  
Built from books, a glittering new “city” rises

26  
HISTORY SPEAKS  
Exposing challenges in historical renovations

30  
CHILL LUXURY  
The eatery at Ice House Hotel relies on adaptive reuse

34  
2025 LIGHTING JOBS OUTLOOK  
Soft skills are essential in an ever-evolving market

38  
TOUCHSTONES  
Why physical buttons are crucial to calm technology-based lighting systems

42  
PROJECT IN PICTURES: JAMES EARL JONES THEATRE  
A Broadway theater honoring one of the now “great kings of the past”

### On The Cover

Renovated spaces reinvigorate historical places. Illustration: iStockphoto



# EDITOR'S NOTE

In with the New

**A**s the calendar has flipped to 2025, I would like to ring in the year by welcoming IES' new president, Wilson Dau. He is an active

member of the Society, previously serving as a member of the IES Board of Directors as well as past chair of the Office Lighting Committee and the Computer Committee. I had the pleasure of spending some time with Wilson during a 2024 Board meeting in Santa Fe, NM, and the IES is in very capable hands. You can learn more about Wilson in this issue's "President's Perspective" column.

January also ushers in fresh content from familiar faces, starting with Paul Pompeo's annual Jobs Outlook feature. Paul, once again, invites insightful perspectives on the jobs and hiring market as well as the skills and technologies that will become more prevalent in the lighting, electrical, and controls industry.

During last year's IES24: The Lighting Conference in New York City, attendees remarked about how much they enjoyed Amber Case's keynote address on "Designing Calm Technology." This month, Amber graciously returns to explain why physical buttons are crucial to calm technology-based lighting systems. Her feature

article details why designers should focus on "tactility and ease."

Speaking of conferences, now that *LD+A* has settled nicely under the Sage



Now that *LD+A* has settled nicely under the Sage umbrella, we'll be hitting the road far more often this year.

umbrella, we'll be hitting the road far more often this year. LEDucation, LightFair, IES25: The Lighting Conference, and the IES Street & Area Lighting Conference are just some of the events where *LD+A* staff will be in attendance. Please feel free to reach out to me and/or Editor I, Michele Zimmerman, to set aside time at any of these events to chat about your work and/or thoughts on where the industry is headed—or to simply console me on yet another dreadful New York Giants football season. (I've been living

by the popular local adage: when life gives you Giants football—watch hockey!)

Best wishes to you and your family for a happy and healthy New Year, and I'm looking forward to seeing you all at many of the upcoming events in 2025.

**Craig Causer**  
Editor-in-Chief  
craig.causer@sagepub.com



**Editor-in-Chief**  
Craig Causer

**Editor I**  
Michele Zimmerman

**Creative Manager,  
Commercial Publishing**  
Samuel Fontanez

**Senior Account Specialist II**  
Leslie Prestia

Published by  
**Sage Publications, Inc.**  
2455 Teller Road  
Thousand Oaks, CA 91320  
Phone: 800-818-7243  
Website:  
www.journals.sagepub.com

*LD+A* is a magazine for professionals involved in the art, science, study, manufacture, teaching, and implementation of lighting. *LD+A* is designed to enhance and improve the practice of lighting. 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. Statements and opinions expressed in articles and editorials in *LD+A* are the expressions of contributors and do not necessarily represent the policies or opinions of the Illuminating Engineering Society. Advertisements appearing in this publication are the sole responsibility of the advertiser.

*LD+A* (ISSN 0360-6325) is published monthly in the United States of America by Sage Publications, 2455 Teller Road, Thousand Oaks, CA 91320, 800-818-7243. Copyright 2025 by Sage Publications. Periodicals postage paid at Thousand Oaks, CA, and additional mailing offices. Nonmember subscriptions: \$60 for individuals and \$600 for institutions. Additional \$24.00 postage for subscriptions outside the United States. Member subscriptions \$32.00 (not deductible from annual dues). Authorization to reproduce articles for internal or personal use by specific clients is granted by Sage Publications to libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, under the terms of the CCC license. This consent does not extend to other kinds of copying for purposes such as general distribution, advertising or promotion, creating new collective works, or resale.

**POSTMASTER:** Send address changes to *LD+A*, c/o Sage Publications, 2455 Teller Road, Thousand Oaks, CA 91320. Subscribers: For continuous service please notify *LD+A* of address changes at least six weeks in advance.  
Canada Post: Publications Mail Agreement #40612608  
Canada Returns to be sent to Bleuchip International, P.O. Box 25542, London, ON N6C 6B2.

This publication is indexed regularly by Engineering Index, Inc. and Applied Science & Technology Index. *LD+A* is available on microfilm from Proquest Information and Learning, 800-521-0600, Ann Arbor, MI



landscapeforms

**Pure in Design.**  
**Outstanding in Performance.**

A minimalist approach inspires  
brilliant illumination.

Designed by Yonoh Creative Studio

Landscape Forms I  
A Modern Craft Manufacturer

DESIGN. CULTURE. CRAFT.

# CONTRIBUTORS



## Muhammad Annum Khan

is a lighting control specialist, project manager, and team lead at Omnilumen Technical Products at Richmond Hill, Ontario, Canada. His expertise extends to programming, troubleshooting, and designing lighting control systems to create efficient and innovative lighting solutions. **p.16**

## Chrysanthi Stockwell

is an architectural lighting designer with a master's degree in architectural engineering and a passion for illuminating spaces in ways that blend art, function, and engineering precision. She is an NCQLP-certified Lighting Professional as well as a Professional Member of IALD. **p.26**



## Paul Pompeo

is president of The Pompeo Group ([www.pompeo.com](http://www.pompeo.com)), an executive recruiting firm in lighting, controls, electrical, and IoT. **p.34**

## Amber Case

is the founder of the Calm Tech Institute, which provides a set of checklists for digital and physical product makers who wish to make their stuff more pleasant to use. **p.38**



Looking for  
your next hire?

Visit the  
**IES Career  
Center**

- Quickly find highly qualified, targeted applicants
- Save time by tracking your applicants right through the career center
- Job postings start at just \$250

 [careercenter.ies.org](http://careercenter.ies.org)



## 2025 Board of Directors

**PRESIDENT**  
**Wilson Dau, LC, LEED AP**  
Symmetry

**PAST PRESIDENT**  
**Billy Tubb**  
Theatre Consultant

**VICE PRESIDENT**  
**Jared Smith**  
CBCL Limited

**TREASURER**  
**Jeremy Maxie, P.E., LC,**  
**RCDD, IAEI, BICSI**  
RSA Engineering, Inc.

**EXECUTIVE DIRECTOR**  
**Colleen Harper, MPA, CAE**

**DIRECTORS**  
**Carla Bukalski, MBA, P.E.,**  
**LC, LEED AP**  
Reed Burkett Lighting Design

**Amardeep Dugar, IALD,**  
**FISLE, FSLL**  
Lighting Research & Design

**Tanya T. Hernandez, P.E., LC**  
Acuity Brands Lighting

**Scotty Hutto, P.E.**  
SESCO Lighting

**Jim Levy, LC**  
Up-Light Electrical Engineering,  
Inc.

**Kelly O'Connor**  
SourceBlue-Turner Construction

**Ira Rothman**  
BR+A Consulting Engineers

**Cristian Suvagau, Ph.D.,**  
**P.Eng., LC, CEM, MCIE**  
BC Hydro

**Rebecca Stuart**  
District Lighting Group

**Javier Villaseñor**  
JVS Business Consultant &  
Counselor



As an industry leader, **StressCrete Group** is committed to delivering high-quality street lighting solutions that enhance and support communities.

Lighting the Way.®



**StressCrete**  
GROUP

[www.scgrp.com](http://www.scgrp.com)



# PRESIDENT'S PERSPECTIVE

Wilson Dau

With the Society having modified our fiscal year to align with the calendar year, I have the privilege of writing to you in *LD+A*'s first issue of 2025 to coincide with a new presidential term. Like my predecessors, I would like to take this opportunity to briefly introduce myself and my IES journey. If we have met, you probably know I'm "not from around here"; I was born and raised in Colombia, South America.

While attending university and with the hope of gaining international experience, I was given the opportunity to participate in an internship program at Cooper Lighting's Halo facility in Elk Grove Village, IL. During my time there, my boss realized I spoke Spanish and since we were in the early 1990s and NAFTA (the North American Free Trade Agreement) was getting started, I ended up in Mexicali, Mexico, for a month helping to set up a brand-new manufacturing facility. Then, a few years later, I had the opportunity to relocate to Canada. My 35-year career in lighting is definitely the product of being in the right place at the right time.

I'm sharing details of my career in lighting because to me, lighting and the IES are intrinsically intertwined. I firmly believe if one is part of the lighting industry, one must be involved with the IES. I've had three mentors in my career. The first, Duke Wildey, was director of Incandescent Operations at Cooper Lighting Solutions. It was Wildey who made that internship happen in 1990. Though he was a numbers guy and not an IES Member himself, he made sure I took all The Source educational courses (offered by Cooper Lighting Solutions, and of which I was the first participant to complete all the courses available at the time) and suggested I join "this organization that deals with lighting-related standards"—the IES.

At Wildey's insistence, I joined the Society. I attended my first annual conference in the mid-1990s in Cleveland, where I met Bill Brown. Brown was that guy who knew everyone and had a reputation for always remembering where a conversation last left off. He was always looking for ways to help me make new connections; realizing it was my first time at the conference, and that I didn't know much about how the Society worked, he took me with him

to the International Relations Committee meeting and had me join on the spot. Every year, for over two decades, every time I came back from LightFair or the IES Annual Conference, a week later I would receive a personal letter from Brown in the mail, not only recounting our conversation but also adding suggestions and commentary on our subject of discussion.

When the opportunity to move to Canada arose, I wrote to IES Members I had contact with there. Ian Ashdown not only offered to help, he actually arranged an interview for me at Ledalite, which ended up being my first job in The Great White North. Like Brown on the business side, or Wildey on the personal side, Ashdown was my first phone call whenever I had to deal with a technical issue beyond my grasp.

I could go on for hours about the impact these three gentlemen had on my life and my journey as an IES Member. All three of them passed recently, and I miss them dearly, which leads me to the point I want to convey here. As I reflect on the impact that mentors had on me, I ask myself a question: How can we help ensure the next generations have that ability to connect with people? At our local IES Vancouver Section, we have a speed-mentoring program that is always successful. At The Lighting Conference, we do something similar during the Emerging Professionals program. It consistently ranks among the best activities we do as a group. Does your local section have a program like this? If not, why? What can we (the Society) do to help facilitate this? Face-to-face interactions

*(continued on p. 50)*



As I reflect on the impact that mentors had on me, I ask myself a question: How can we help ensure the next generations have that ability to connect with people?

# INSIGHTS

Immersive Installation • Award Submission • Reader Photo



Photo: NLM Photography

## Pause. Look.

*Art to illuminate the senses*

*Intra-spectrum*, an immersive art installation by Experiential Creative Director and Artist Frankie Boyle and sponsored by Milan, Italy-based architectural lighting manufacturer formalighting, was on display at the LiGHT24 trade show in London in November. The artwork explored human consciousness, subconsciousness, memory, and emotion through light, color, refraction, and reflection. Boyle said, “I want[ed] people to immerse themselves within the light that we shine and the light that we hold within through an array of beautiful, invigorating colors. This installation [was] all about eliciting introspection and connection. For anyone [who experienced] this installation, I want[ed] them to connect to their inner selves and to have the opportunity to just be present—find that pause; to stop and stare and immerse.” formalighting’s Global Operations Director Sharon Maghnagi said, “As a company, we strive towards innovation in our product development with a specific focus on lighting art galleries and museum applications. Collaborating with [Boyle] as a light artist further helps us realize this vision, as it challeng[ed] us to research the best possible technical solutions to create the desired lit effect.”



# THEY SAID IT:

“Consulting historical preservationists and photo archives are great ways to learn more about a space”

Chrysanthi Stockwell, *History Speaks*,” p.26

## MERGERS AND MORE:



- The **California Energy Alliance**, a consortium of energy experts and stakeholders dedicated to advancing energy efficiency policy, standards, and practices in the state, has appointed Nica Tanaka as its new executive director.
- **Excelitas**, parent company of **Noblelight**, which designs and manufactures specialty light sources for scientific and medical applications, will be consolidating the four production facilities in the Rhine-Main region of Germany into one expanded site in the same area for a more unified brand.
- LED manufacturer and service provider **Forge Europa** has partnered with LED manufacturer **HongliTronic** to expand their range of products and explore new markets.
- Missouri-based **Reed Burket Lighting Design** has integrated with Illinois-based **Aurora Lighting Design** to form Aurora Lighting Design, an RBLD Studio, which will retain its Chicago office and leadership under Carla R. Bukalski.



Want to Lighten Up Your Design in Ways That Defy Gravity?

### KLUS Can Do That

KLUS transforms lighting into art with bendable and twistable LED profiles. Break free from straight lines and create dynamic, fluid designs that make a statement. Seamlessly mold light around architectural elements, bringing elegance to any space. With over 20 bendable and 3+ twistable options, KLUS turns your vision into captivating reality.



Visit [www.klusdesign.com](http://www.klusdesign.com)



**LD+A**  
BACK ISSUES ARE  
NOW ONLINE  
[www.ies.org](http://www.ies.org)

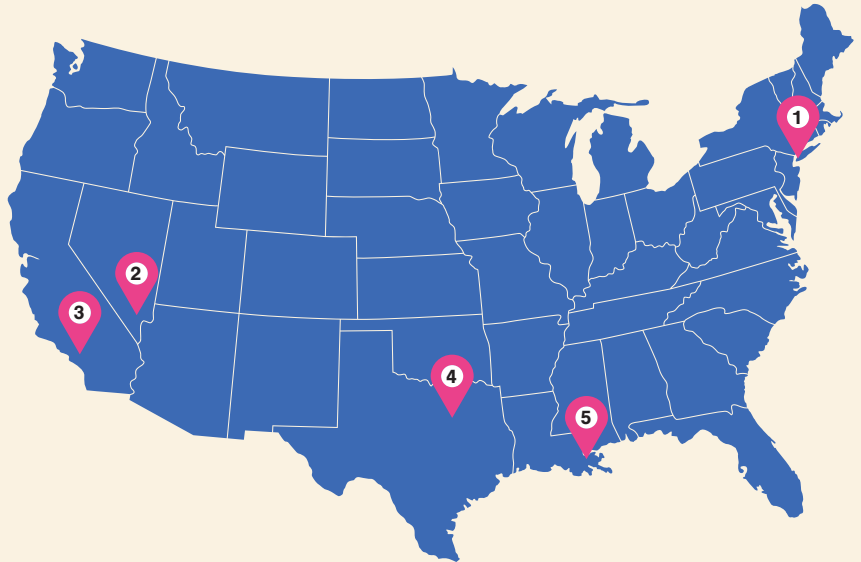
## Still Time to Submit: 2025 Tesla Awards

The National Lighting Bureau's call for entries for the 6<sup>th</sup>-annual Tesla Awards, recognizing excellence in lighting projects that illustrate the value of lighting via promotion of health and wellness, positive environmental impact, and other categories, continues through January 20. The program seeks projects that provide a guide for other industry professionals facing similar design challenges. New for this year, projects are eligible to receive a Special Citation Award for innovative lighting controls design and implementation, co-sponsored by the Lighting Controls Association (LIA). To learn more about the program and submit a project, visit [www.nlb.org](http://www.nlb.org).



A bonus reader photo submission from IES Member Rachel Kim: dappled sunlight over a "fairy forest" in Chuncheon, South Korea. Find more photo submissions in *LD+A* November 2024.

# EVENTS



### 1. March 18–19

LEducation will take place at the New York Hilton Midtown with virtual sessions being held March 13–14. A non-profit event organized by DLFNY with proceeds helping to stimulate future LED advancements through support to grants, scholarships, and lighting programs, LEducation is a marketplace for solid-state lighting innovations. Attendees such as lighting designers, architects, interior designers, and industry professionals can experience new technologies and participate in accredited seminars. [www.leducation.org](http://www.leducation.org)

### 2. May 4–8

LightFair 2025 will be held at the Las Vegas Convention Center. Presented by Light + Building, the event is the premier, biennial architectural and commercial lighting trade show and conference as well as a preferred marketplace, networking, and education destination. [www.lightfair.com](http://www.lightfair.com)

### 3. August 21–23

IES25: The Lighting Conference, IES' annual conference, will be held at the Anaheim Marriott in California. The event includes one day of hands-on workshops and two days of educational sessions, technical paper presenta-

tions, and manufacturers' exhibits as well as the Illumination Awards Gala. [www.ies.org](http://www.ies.org)

### 4. September 16–17

ArchLIGHT Summit, a commercial and architectural lighting event, will take place 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](http://www.archlightsummit.com)

### 5. 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](http://www.ies.org)



## ASK AN EP

---

FRENI SHAH

---

This passionate EP discusses the importance of involving young lighting designers in the schematic design phase.

### Why light?

I choose light because it symbolizes life itself. Our existence on this planet is illuminated by the Sun, the ultimate source of energy for all living beings. Understanding light is crucial for us to thrive in today's modern world, enabling us to design environments that enhance our lives.

### What is your favorite project?

My favorite project is the Bahá'í Temple of South America in Santiago, Chile, designed in part by Limari Lighting Design Ltda. The lighting design imbues the space with a meditative quality that breathes life into the architecture. It's a serene place where light and spirituality harmoniously intertwine, creating a transformative experience.

### What is the best part of your job?

The most rewarding aspect of my previous role in a lighting design firm in India was creating concept renders. I loved immersing myself in hypothetical worlds that would soon become reality. It felt like time traveling, visualizing spaces alongside clients, and then bringing those visions to life through my illustrations.

### The biggest obstacle you have encountered?

I wouldn't label it an obstacle; rather, it was a valuable learning experience. I encountered the diverse

communication styles people use in the professional realm. Understanding how to navigate these varying approaches throughout project stages has enriched my collaborative skills and deepened my professional relationships.

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

It's essential to empower young minds by involving them in the schematic design phase. Encouraging emerging designers to share their ideas early not only fuels creativity but also fosters a sense of ownership. This collaborative spirit is crucial for the evolution of our industry.

### Do you have a dream job/project?

Absolutely! My dream job is to create concept renders for Speirs Major in London. Their poetic approach to illustrating light in space deeply inspires me. Being part of their team would allow me to explore my passion for lighting design and contribute to projects that resonate with beauty and innovation.

“It felt like time traveling, visualizing spaces alongside clients, and then bringing those visions to life through my illustrations”

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

## IES ILLUMINATION AWARDS

# 2025 CALENDAR

### **JAN 2-24** | EARLY SUBMISSION

Deadline 11:59pm EST (Early bird submission fee: Members \$265 / Non-Members \$365)

### **JAN 25-FEB 21** | REGULAR SUBMISSION

Deadline 11:59pm EST (Regular submission fee: Members \$320 / Non-Members \$420)

### **FEB 24-MARCH 10** | SECTION IA CHAIR PROCESSING

- Section IA Chairs will review submissions for compliance of rules and guidelines
- Projects that comply with the rules of the program will move onto Merit Judging

### **MAR 24-APR 21** | ONLINE MERIT JUDGING

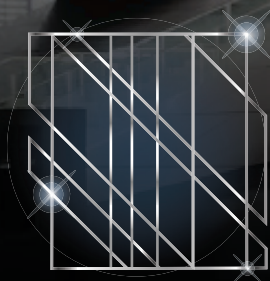
- Eligible projects receiving sufficient scores during online judging receive an Award of Merit
- Projects receiving exceptionally high scores will move to final, society level judging

### **EARLY MAY** | LIVE FINAL ROUND JUDGING

- Eligible projects passing the online phase are judged during live, society level final judging
- Final judging determines the highest level of Society awards including Special Citation, Award of Excellence, or Award of Distinction
- If projects do not score high enough at this level, they retain their Award of Merit

### **EARLY JUNE** | AWARD RECIPIENT NOTIFICATION

Local Section Judging will be conducted at the discretion of Section IA Chair timeline.



# ILLUMINATION AWARDS



# Q+A

LAURA WALSH

Laura Walsh, CEO of Lumens, talks about the brand in its 20<sup>th</sup> year of operation.

### What has the journey from local showroom to the “go-to home décor and online lighting store” for designers looked like?

When Lumens first launched a website in 2004, it was primarily to support the physical showroom. Almost immediately after adding a shopping cart to the site, Lumens sales grew exponentially. Once we discovered our e-commerce potential—coupled with our ability to support designers in projects of all sizes—we invested in those things to build the brand into the premiere destination for design, online. We went from a small office in the back of the showroom to having two offices in Northern California with over 150 employees. It’s been very rewarding to see the growth and work with such an innovative and design-savvy team.

### What is the key to keeping a business in the design landscape running for two decades?

Expertise, best-in-class support, and community. Our team travels the world to find the latest designs to add to our discerning edit of icons and emerging designs. We also have an ALA-certified service and sales team 100% based in the U.S. Additionally, we continue to build within the architecture and design community with VIP events, immersive experiences, and education courses that we offer for free throughout the year.

### Can you provide some insight into how products/brands are selected to be part of Lumens’ curated offerings?

We are always looking at what is new and ahead of the trends. For instance, well before the Federal ban on incandescent light bulbs went into effect, we had already committed to offering only LED. This put us in a position to best serve our customers and stay ahead of the curve. When

it comes to sourcing products, our team travels the world—to Milan, Italy, for Salone del Mobile; to Copenhagen, Denmark, for 3daysofdesign; and Paris for Maison et Object, as well as domestic shows.

### How does the changing industry landscape, i.e., the movement toward increased sustainability, influence the brand’s portfolio?

At Lumens, we take our role in promoting sustainable design seriously. In addition to our efforts to move our customers from incandescent bulbs to LED fixtures, we’ve also built assortments that meet various sustainability standards and certifications. Our goal is to help the architecture and design community as well as end users choose the sustainable option. We are proud to say Lumens has the largest assortment of sustainable design pieces online.

“We are always looking at what is new and ahead of the trends”

### Are there any lighting design projects Lumens has been a part of that you would like to highlight?

Back in our early years, a big highlight was sourcing lighting for Steve Jobs, CEO of Apple. Now, we are part of so many breathtaking projects for CEOs, large firms, small business owners, and world-renowned hotels, it’s impossible to choose just one.

### Where do you see Lumens 10 years from now?

In 10 years, Lumens will continue to lead the industry as the go-to-design destination for architects, designers, contractors, and consumers with a modern point of view. We will have an assortment that covers all categories and all corners of the globe. And, we will have a series of brick-and-mortar showrooms to complement our online marketplace.





Photos: Yingnan Chu

# HOW THEY DID IT

## “Zhuguanlong Tea Leaf Market”

A market space primarily constructed with bamboo in the countryside of Fujian Province in China, with lighting design by the **Architectural Design and Research Institute of Tsinghua University**, uses a hierarchy of illumination to allow for nighttime activity while preserving the dark sky and minimizing light spill.

### IES ILLUMINATION AWARD OF MERIT

1

Many fixtures are placed above guests' viewpoint to uphold the visual integrity of the structure; fixtures placed within view are concealed within bamboo shells.

2

Designers did not include decorative lighting around the outside perimeter to ensure nighttime sustainability.

3

Floodlights highlight the roof and arch for ambiance and shape as downlights provide functional lighting.



# HISTORY

Muhammad Annum Khan

## Illuminating Achievements Nobel Prize Winners and the lighting industry

The Nobel Prize, one of the most prestigious global awards, honors individuals and groups who have made significant contributions to humanity in the fields of physics, chemistry, medicine, literature, peace, and economic sciences. Over the years, several Nobel Prize winners have profoundly impacted the lighting industry. In this column, I will explore the history and contributions of Nobel laureates whose work has directly or indirectly influenced the development of lighting technologies and controls.

Nobel Prize-winning contributions that affected lighting date back to the early part of 20<sup>th</sup> century with Albert A. Michelson, who won a Nobel Prize in Physics in 1907. The award was in recognition of his work on precision optical instruments and the spectroscopic and metrological investigations that he performed with them. Even though Michelson's research did not focus directly on modern lighting controls, it formed a cornerstone for future development of such innovations based on his studies on the speed of light and optical measurements.

The Michelson Interferometer is a precision instrument that produces interference fringes by splitting a light beam into two parts and then recombining them after they have traveled

different optical paths. The use of Michelson's interferometer to measure the wavelength of spectral lines of the elements with accuracy has greatly advanced our understanding of atomic structures. This invention opened up new possibilities for scientists to explore light with greater accuracy than ever before and ultimately gave rise to sophisticated systems and controls used in current lighting technology.<sup>1,2</sup>

Lighting technologies have also been greatly affected by quantum mechanics, which is a branch of physics that focuses on the behavior of subatomic particles. In 1921, Albert Einstein was awarded the Nobel Prize in Physics for explaining what happens when light strikes a material and releases electrons. This discovery had major implications for many other light-based applications including photovoltaic



Einstein's research into photoelectric effect provided the groundwork for future lighting developments, specifically solid-state lighting including LEDs

cells and light sensors. Einstein's research into photoelectric effect provided the groundwork for future lighting developments, specifically solid-state lighting including LEDs. The study of light-matter interactions through quantum mechanics has led to better lighting systems that are efficient and flexible.<sup>3</sup>

The 2014 Nobel Prize in Physics was awarded to Isamu Akasaki, Hiroshi Amano, and Shuji Nakamura for their creation of efficient blue LEDs, which have transformed lighting. The introduction of blue LEDs enabled the production of white light either by combining blue with red and green LEDs or using phosphor materials to change blue into white light.<sup>4,5</sup>

Prior to the advent of blue LEDs, the world of lighting was limited to the hues of red and green LEDs. Their applications were vast, but without the presence of blue, the spectrum was incomplete, and the creation of the efficient white light remained a challenge. The introduction of blue LEDs was a game changer; it completed the color spectrum alongside red and green, paving the way for the production of white light. This breakthrough led to the development of LED bulbs that could replace traditional incandescent and fluorescent bulbs. Blue LEDs also boasted a longer lifespan, reducing the need for frequent replacements



Photo: Wikipedia

The front of a Nobel Prize medal awarded in 1950.

and further contributing to cost and environmental savings.

LED technology has created significant benefits compared to incandescent and fluorescent lights, such as lower energy consumption, longer lifespan, and higher reliability. Wide acceptance of LEDs has resulted in an overall global carbon-footprint reduction, aiding in energy conservation worldwide. According to the U.S. Department of Energy, widespread use of LED lighting has the potential to save hundreds of terawatt-hours of electricity annually, translating to billions of dollars in energy savings and reduced greenhouse gas emissions.<sup>6</sup>

### Advancements in Lighting Controls

While past Nobel Prizes have not directly highlighted lighting controls, the principles behind controlling light have been significantly influenced by Nobel-winning research. In 2009, the Nobel Prize in Physics was awarded to Charles K. Kao for his groundbreaking achievements concerning the transmission of light in fibers for optical communication. Kao's work has revolutionized not only telecommunications but also the way we control and use light in various environments. In architectural lighting, circadian lighting aligns with our natural sleep-wake cycle, and additive manufacturing allows us to create complex, customized light fixtures. There is also synesthetic light technologies that convert one sensation into another, making humans

aware of operations ingrained in their cognitive system.

In stage lighting, Kao's work has enabled the creation of dynamic lighting designs and automated lighting systems that can adjust lighting conditions in real time during performances. This has added a new dimension to the visual appeal of stage performances, providing greater control and flexibility. In the realm of smart lighting systems, Kao's influence is evident in daylighting techniques that use light sensors and automated controls to adjust artificial lighting levels. His impact has also been felt in façade lighting, dynamic glazing that uses smart glass with adjustable transparency, and daylight redirecting systems that can bring sunlight

deeper into buildings. These innovations have significantly improved the way we control and manipulate light, leading to more efficient, sustainable, and aesthetically pleasing lighting solutions.<sup>7</sup>

### The Role of Semiconductors, Transistors, and Lasers

The development of lighting controls has also been driven by advances in semiconductor technology. The 1956 Nobel Prize in Physics was awarded to John Bardeen, Walter Brattain, and William Shockley for their research on semiconductors and the invention of the transistor. Transistors, which amplify and switch electronic signals, are integral components of modern lighting control sys-



**Quality Products**  
**Quality Service**  
**Quick Availability**

**QuantaLight.com**<sup>TM</sup>

DOWNLIGHTS • CYLINDERS • PENDANTS • TRACK LIGHTING  
Selected Territories Open for Reps

tems. They enable the precise regulation of electrical currents, allowing for the development of dimmable and programmable lighting solutions.

Semiconductors are the foundation of modern electronics, including the microprocessors and sensors used in lighting control systems. The integration of semiconductor technology in lighting controls has paved the way for sophisticated systems that can adjust lighting based on occupancy, natural light availability, and user preferences. These advancements have led to the creation of more efficient and adaptive lighting solutions, enhancing both energy savings and user experience.

The 1964 Nobel Prize in Physics was awarded to Charles H. Townes, Nikolay Basov, and Aleksandr Prokhorov for their fundamental work in the field of quantum electronics, which led to the construction of oscillators and amplifiers based on the maser-laser principle. Lasers have since become integral to

various lighting technologies and applications, including optical communications, laser displays, and precise measurement systems.

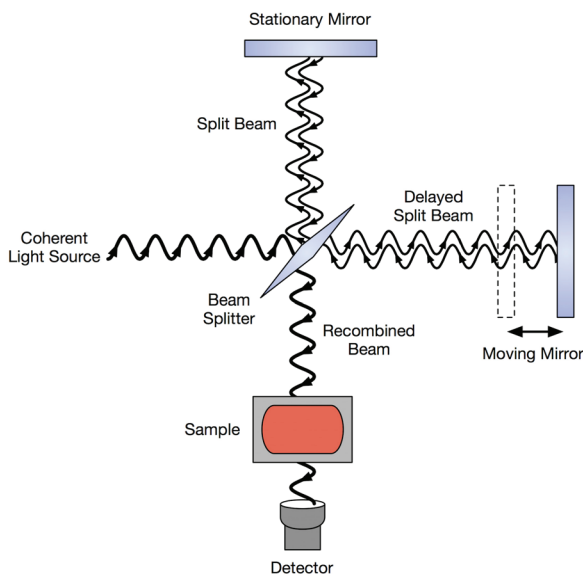
Lasers provide highly coherent and focused beams of light, making them ideal for applications that require precise control and high-intensity illumination. In the context of lighting, laser-based technologies are used in advanced lighting systems for events, entertainment, and specialized industrial applications. The principles of laser physics continue to influence the development of cutting-edge lighting technologies.

**Getting Smarter**

The evolution of lighting technology has increasingly focused on smart lighting systems, which leverage the Internet of Things (IoT) to enhance functionality and user experience. Smart lighting systems integrate advanced sensors, wireless communication, and automation to create adaptive and energy-

efficient lighting environments. While the Nobel Prize has not yet directly recognized contributions in this area, the underlying technologies draw heavily from Nobel-winning research. For example, the development of wireless communication technologies, recognized by the 2018 Nobel Prize in Physics awarded to Arthur Ashkin, Gérard Mourou, and Donna Strickland for their work on laser physics, has been instrumental in the proliferation of IoT-enabled lighting systems. Lasers and optical fibers enable high-speed data transmission, facilitating the communication between smart lighting devices and centralized control systems.

Smart lighting systems offer numerous benefits, including energy savings, enhanced comfort, and improved security. These systems can automatically adjust lighting based on occupancy, daylight levels, and user preferences, reducing energy consumption and providing optimal lighting conditions.



A schematic diagram of the Michelson Interferometer.

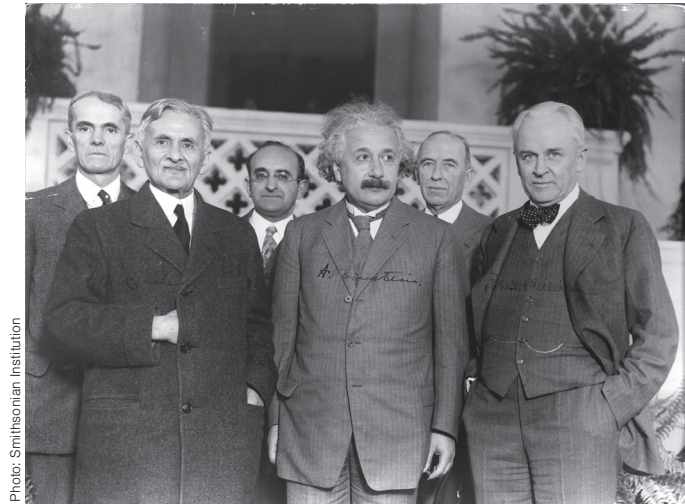


Photo: Smithsonian Institution

Three Nobel Laureates in Physics at California Institute of Technology in 1931: Front row, from left: Albert A. Michelson, Albert Einstein, and Robert A. Millikan.

Additionally, smart lighting can be integrated with other IoT devices, such as security cameras and climate control systems, to create cohesive and responsive environments.

### Getting the OLED Out

Another significant advancement in the lighting industry is the development of organic light-emitting diodes (OLEDs). OLEDs use organic compounds to produce light, offering the potential for flexible, thin, and energy-efficient lighting solutions. In 2000, the Nobel Prize in Chemistry was awarded to Alan Heeger, Alan MacDiarmid, and Hideki Shirakawa for their discovery of conductive polymers, which laid the foundation for OLED technology.

OLEDs provide several advantages over traditional lighting technologies, including higher efficiency, better color rendering, and the ability to produce ultra-thin and flexible lighting panels. These characteristics make OLEDs ideal for a wide range

of applications such as display screens as well as general lighting and architectural designs. The continued development of OLED technology looks to further enhance the versatility and efficiency of lighting solutions.

### Quantumania

Quantum dots—nanoscale semiconductor particles that emit light when exposed to electrical current or light—represent a promising technology in the lighting industry. The principles of quantum mechanics, recognized by multiple Nobel Prizes, have been instrumental in the development of quantum dot technology. In particular, the 2010 Nobel Prize in Physics was awarded to Andre Geim and Konstantin Novoselov for their groundbreaking experiments with graphene, a material that has potential applications in quantum dot technology.<sup>8</sup>

Quantum dots offer the ability to produce light of specific wavelengths, enabling the creation of high-quality, tunable

light sources. This technology has the potential to revolutionize displays, signage, and general lighting by providing vibrant, energy-efficient illumination. Quantum dot LEDs are already being used in high-end display technologies, and ongoing research aims to expand their applications to broader lighting markets.

### Sustainability Matters

The advancements in lighting and lighting controls recognized by the Nobel Prize have had significant implications for environmental sustainability. Traditional lighting sources, such as incandescent bulbs, are inefficient and contribute to high energy consumption and greenhouse gas emissions. In contrast, LED technology and smart lighting systems offer substantial energy savings and reduce the environmental impact of lighting.

The widespread adoption of LEDs, driven by its 2014 Nobel-winning invention, has been a major factor in global efforts

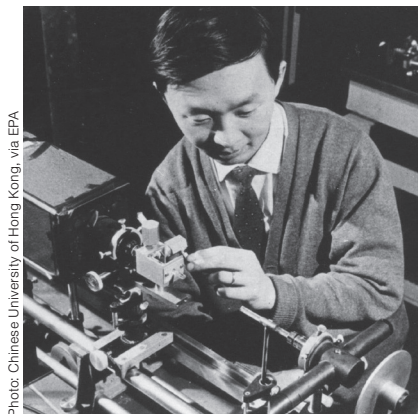
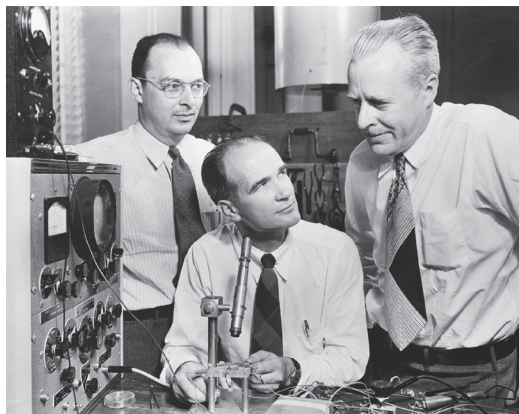


Photo: Chinese University of Hong Kong, via EPA

Charles K. Kao performing an early experiment on optical fiber at the Standard Telecommunications Laboratory in Harlow, England, in the 1960s.



From left: John Bardeen, William Shockley, and Walter Brattain in 1948.

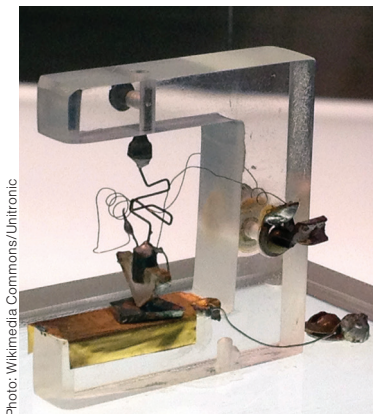
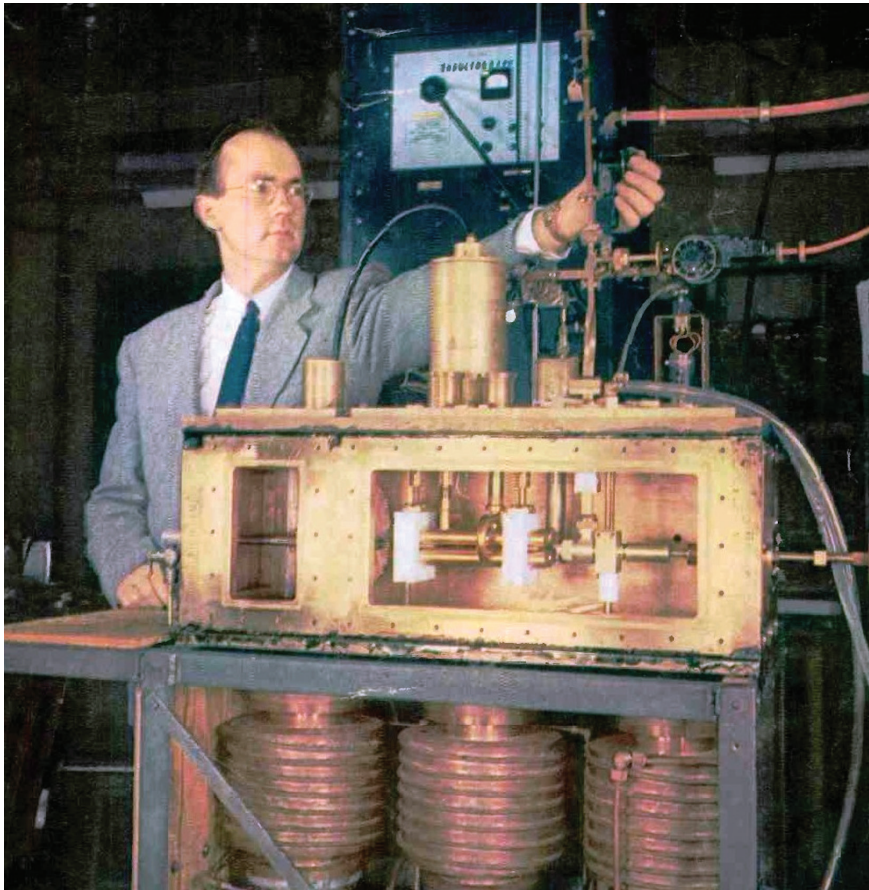


Photo: Wikimedia Commons/Unitronic

The first transistor was successfully demonstrated at Bell Laboratories in Murray Hill, NJ.



Charles H. Townes with the first maser (microwave amplification by stimulated emission of radiation) at Columbia University in 1953.

optimizing energy use based on real-time conditions and user behavior. By integrating sensors and automation, smart lighting can minimize unnecessary lighting, reduce peak demand, and improve overall energy efficiency. These systems also support renewable energy integration by providing more flexible and responsive lighting solutions that can adapt to variable energy supply.

**An Eye to the Future**

The intersection of Nobel Prize-winning research and lighting technology underscores the potential for future breakthroughs in this field. As we advance into an era of smart cities and connected environments, the demand for sophisticated lighting controls will continue to grow. Innovations in materials science, quantum computing, and artificial intelligence, areas frequently recognized by the Nobel committees, promise to drive the next generation of lighting solutions.

Materials science, which explores the properties and applications of new materials, has already contributed to the development of advanced lighting technologies. For example, OLEDs, which use organic compounds to produce light, offer the potential for flexible, thin, and energy-efficient lighting solutions. Research in this area, recognized by the 2000 Nobel Prize in Chemistry awarded to Heeger, MacDiarmid, and Shirakawa for their discovery of conductive polymers, continues to push the boundaries of what is possible in lighting design and functionality.

Quantum computing, which



Photos: Arthur Ashkin and Wikimedia Commons; © Ecole Polytechnique

From left: Arthur Ashkin, Gérard Mourou, and Donna Strickland were recognized for their work with lasers.

to reduce energy consumption. LEDs use up to 75% less energy than incandescent bulbs and last up to 25 times longer, resulting in significant reductions in energy use and waste. According to the International

Energy Agency, LED lighting could account for nearly 90% of all lighting sales by 2030, leading to substantial energy and cost savings.<sup>9</sup>

Smart lighting systems further enhance these benefits by



Photo: MacDiarmid Institute

The 2000 Nobel Prize in Chemistry was awarded to (from left) Alan Heeger, Alan MacDiarmid, and Hideki Shirakawa.



Photo: Wikimedia Commons/Holger Moltzau

The 2010 Nobel Prize in Physics was awarded to (from left) Konstantin Novoselov and Andre Geim for their work with graphene.

leverages the principles of quantum mechanics to perform complex computations, holds promise for optimizing lighting control algorithms and improving system efficiency. While still in its early stages, quantum computing could revolutionize the way we manage and control lighting systems, enabling more precise and adaptive solutions.

Artificial intelligence (AI) and machine learning are also

poised to play a significant role in the future of lighting controls. AI algorithms can analyze vast amounts of data from sensors and user interactions to optimize lighting conditions and predict maintenance needs. This capability can lead to more responsive and personalized lighting experiences, as well as improved system reliability and longevity.<sup>10</sup>

The history of the Nobel Prize is deeply intertwined with the

evolution of lighting and lighting controls, highlighting the profound impact of scientific discovery on everyday life. From the pioneering work of early physicists to the modern innovations in LED technology and intelligent lighting systems, Nobel laureates have significantly contributed to illuminating our world. Their contributions have not only advanced our understanding of light but also paved the way for more sustainable, efficient, and adaptive lighting solutions.

Muhammad Annum Khan is a lighting control specialist, project manager, and team lead at Omnilumen Technical Products at Richmond Hill, Ontario, Canada. His expertise extends to programming, troubleshooting, and designing lighting control systems to create efficient and innovative lighting solutions.

#### References:

- 1 Isaac Asimov, "A.A. Michelson," *Britannica*, May 9, 2024. Available: <https://www.britannica.com/biography/A-A-Michelson>
- 2 Doug Stewart, "Albert Abraham Michelson," *Famous Scientists*, June 6, 2024. Available: [www.famousscientists.org/albert-abraham-michelson/](http://www.famousscientists.org/albert-abraham-michelson/)
- 3 George Musser, "What Einstein Really Thought about Quantum Mechanics," *Scientific American*, Sept. 1, 2015.
- 4 Christina Nunez, "Nobel Prize Goes to Inventors of Blue LED: Why It Was Revolutionary," *National Geographic*, Oct. 7, 2014.
- 5 Elizabeth Donoff, "Nobel Prize for the Discovery of the Blue LED," *Architect*, Dec. 6, 2016.
- 6 U.S. Department of Energy, "LED Adoption Report." Available: <https://www.energy.gov/leere/ssl/led-adoption-report>
- 7 Erik Gregersen, "Charles Kao," *Britannica*, May 2, 2024. Available: <https://www.britannica.com/biography/Charles-Kao>
- 8 Katherine Bourzac, "Graphene Wins Nobel Prize," *MIT Technology Review*, Oct. 5, 2010.
- 9 International Energy Agency, "Global residential lighting sales share by technology in the Net Zero Scenario, 2010-2030," June 19, 2023. Available: <https://www.iea.org/data-and-statistics/charts/global-residential-lighting-sales-share-by-technology-in-the-net-zero-scenario-2010-2030>
- 10 California Institute of Technology, "Transforming materials with light: Study could lead to ultrafast light-based computers and more," *Phys Org*, Dec. 8, 2021.



Photos: © CreatAR Images

# ALTERNATE ENDING

Built from books, a glittering new “city” rises

By Craig Causer





China, not unlike most of the world, has gone digital. The time that its citizens spend online far exceeds that spent both reading print books and gathering in offline physical spaces, which spelled trouble for Shanghai Book City. Its Fuzhou Road store, which opened in 1998, was Shanghai's first super-sized comprehensive retail bookstore and was recognized as a local cultural landmark. As book jackets collected

Light strips were employed in the atrium, where bookshelves tower over visitors.

dust, and sales dropped to an unsustainable level, architecture studio Wutopia Lab flipped the script on the modern mantra that "print is dead."

"I reimagined the new Shanghai Book City with the concept of 'a city built from books,'" explained Yu Ting, co-founder and chief architect at Wutopia Lab. "We brought the horizontal walking route of Fuzhou Road from the outside to the inside of



the store, turning it from a horizontal path into a vertical one that extends from the second to the seventh floor. Using books as a medium, I designed the entire internal space of the bookstore to resemble a vertical, miniature city, presenting the vibrant life and spirit of this great era to the public.”

Following its renovation in 2023, this new “city” has transformed from a traditional store into a one-stop, integrated cultural space for readers and non-readers alike that includes various business and gathering places, all focused on the sharing of knowledge. Ting created a terrace-like square and erected an indoor platform dubbed “Book Mountain”—a 3-D structure within the building that serves as a platform to be used for an assortment of events, such as book launches and exhibitions. Here, visitors are encouraged to freely sit, stand, stroll, and even sing. Standing at the highest point provides an overlook of the buzzing action on Fuzhou Road.

To contrast the gray tones of the neighboring road, red was selected to illuminate Book Mountain and attract the attention of nearby pedestrians. The linear lighting system in this area is uniform and soft, with the ability to express different shades of red. At the same time, track spotlights were used to produce dramatic effects that express the significance of the mountain.

“Three overlapping, double-height atriums bring sunlight to the center of the red Book Mountain on the first floor through skylights and glass floors,”

Recessed downlights reside in the black equipment slot to provide basic lighting, while tracklights installed on the white track supply accent lighting.

said Chenlu Zhang, partner and chief lighting designer at Gradient Lighting Design. “When day lighting is poor on cloudy days, high-brightness artificial lighting can still make the space feel bright and transparent. But the most important thing about this space is the double-height bookshelf wall, which gives the feeling of infinite extension under the superposition of the reflection on the black ground.”

The interior space unfolds vertically from the second to the seventh floors. Sixteen “houses within houses” were constructed to include bookshelves, offices, a comedy theater, writers’ studios, wellness classrooms, an art gallery, and a café. Tall bookshelves in two atriums serve as showcases, where the illumination varied according to their heights. For bookshelves that are lower than eye level, a light strip was installed at the back of the shelf to illuminate downward. For shelves that are higher, the light strip is installed on top of the shelf to illuminate upward.

“This project does not use any special or advanced lighting system,” Zhang noted. “[It] just uses different combinations of linear lights, track spotlights, wall-washers, bookshelves, and light strips to present rich levels.”

Floor-to-ceiling windows were also employed to offer natural light and provide passersby a glimpse into the building’s internal activities, while those inside look out on the “theatrical scenery” of the street. At the fourth-floor Auditorium, two-story-high



glass windows allow for a scenic view of the city below.

**Book of Magic**

When author Stephen King said, “Books are a uniquely portable magic,” he was extolling their ability to take readers into entirely new worlds. Shanghai Book City worked its magic outside—for all to see—by utilizing a symbolic approach to its renovated façade, which was formed to appear like stacked book spines.

“The patterns inside the spines constitute a classic modern symbol that best represents Shanghai—

Top: A 9-meter (~30-ft), glass curtain welcomes natural light into the atrium of the Auditorium.

Bottom: Linear wall-washers shine through perforated aluminum panels to bring the façade to life.

‘thousands of lights,’” Ting said. “‘Readable architecture’ is an inevitable requirement in the era of the Internet. We need metaphors, symbols, and various signs....Therefore, in Shanghai Book City, I created a balanced abstract concreteness to provide various possibilities for reading and imagination.”

The previous façade of the bookstore was wrapped with perforated aluminum panels, which are lit by linear wall-washers to create an effect that citizens refer to as the “Crystal Palace.” To prevent the luminaires from being visible from the interior, white acrylic panels were added behind the perforated panels, and the wall-washers were placed between the perforated metal panels and the acrylic panels. Since the white acrylic is illuminated with reflected light coming through the perforations, the lighting effect appears even across the entire façade.

“The installation of lighting fixtures behind the façade’s perforated panels was complicated because it needed to be coordinated with the curtain-wall construction,” Zhang explained. “The wall-washers were installed on-site first, and then the perforated metal plates were added. But the workers disrupted the adjusted angles of the wall-washers, resulting in a very uneven final effect.”

When the façade illumination was complete, the construction team failed to adjust the angle of the wall-washers, Zhang added. Since some shined directly outward, their luminous surfaces could be seen through the perforations. Residents facing the building complained and, in coordination with the Huangpu District Lighting Department, the construction team adjusted the angle of the wall-washers to achieve the intended result—creating an eye-catching landmark on Fuzhou Road.

“I recalled someone calling [Shanghai Book City] a luxury goods store,” Ting said. “Interestingly, luxury goods stores have façade costs at least four times higher than the bookstore, yet they cannot achieve the bookstore’s texture. In this light, consumerism’s luxury is indeed an illusion. In comparison, the knowledge contained in books is the true luxury.” ©

**THE DESIGNERS** | Yu Ting is co-founder and chief architect at Wutopia Lab.

Chenlu Zhang is partner and chief lighting designer at Gradient Lighting Design.

Shiyu Wei is senior lighting designer at Gradient Lighting Design.



# HISTORY SPEAKS

Exposing challenges in historical renovations

Imagine peeling back wallpaper layer by layer, with each new layer revealing the past and releasing stories of the room’s inhabitants. This process of removing each layer is a discovery of patience, mystery, and determination. In historical renovations, the lighting designer is an active observer of this process. Each exposed challenge offers up the opportunity to pay homage to a time and people that came before.

Lighting design is never a linear process; however, working within the guidelines of historic or renovated structures presents an additional complication. Each unique condition and story demand careful attention. A balance between lighting impact and restraint requires a creative lens that is nimble, respectful, and curious.

**By  
Chrysanthi  
Stockwell**

The concept phase is where curiosity and research infuse strength into the design. A practice of collaborating with knowledgeable facilities staff and historic preservationists allows for a foundation for the design concept. Site visits can show the evolution of maintenance, modifications, and prioritization of existing light fixtures.

Surveying can uncover lighting in varying conditions. Luminaires often fall into the following categories: existing types to salvage and rewire, those in need of physical restoration, historical replicas, and functional lighting. When possible, designers should denote how each fixture was procured, its condition, the current light source and sockets, and its existing control. A careful salvage process can expose unexpected discoveries and help further uncover the history of a space.

Understanding what is missing may also help reinforce the historical nature of a renovation. Over time, deficiencies in light levels and changing program functions are hinted at by clamped-on display lights, retrofits, and floor lamps. Consulting historical preservationists and photo archives are great ways to learn more about a space. An archival photo may reveal gas piping that once fed crystal sconces flanking a fireplace are now papered over on a back wall. A conversation with a preservationist might trigger the realization that a donated feature chandelier in the entry isn’t relevant to the property and has no historic value. This practice of listening and surveying is essential to honoring a property’s history. Even if it is not desired to be replicated in the final design, the intention and knowledge of the story allows for an open vision of what the space can be for a new era.

Custom and historic restoration lighting manufacturers are qualified to ship, clean, re-lamp, certify, and store existing luminaires. The cost premiums of refurbishing light fixtures should be discussed with the stakeholders and contractors. The fabrication and Nationally Recognized Testing Laboratory process ensures safe and code-compliant luminaires, especially when incorporating newer controls and emergency sources into the design. Historic restoration of existing luminaires typically requires removal as well as shipment to and from the site, extending lead times, phasing, and logistics of installation. The belief that keeping existing historic lights and installing LED retrofit lamps will save money is rarely the case, particularly if you are serving multiple lighting design criteria. The focus on code compliance and longevity should remain

for the reuse of all luminaires, whether decorative or functional.

### A Landmark Example

On the recent American Swedish Institute (ASI) Carriage House renovation and mansion rehabilitation, the contrast of a modern workspace within a Twin Cities landmark offered the opportunity to employ this lens. While the Minneapolis, MN,-based carriage house itself is a historic landmark, the functionality and program of staff workspace was different than the original intent for the building. The appropriate treatment of a historical renovation is dependent on several factors, such as the property's significance, current physical condition, and available documentation, as well the organization's interpretative goals. The level at which alterations can be accommodated should set an agreed-upon expectation for both the design team and the reviewing historical authority early in the process. During this project, the level of acceptable modifications was discussed, documented, and shared with the team.

Incorporating modern functionality is imperative to the revenue flow and function for museum, government, and other historical institutions. Increased use of digital or interactive displays, educational programming, or video conferencing add new programs to a historic space and require alternative lighting systems and controls layered on top of ambient lighting preservation. Consider typical new-construction corporate office lighting as an example. Providing a uniform, even plane of illumination from the ceiling with recessed or indirect linear lighting would not be appropriate for historical accuracy nor respect the intricate finishes and materials of a historic structure. A compromise could be made to light from multiple angles in locations where light can be discreetly hidden in millwork and reveals. Non-traditional ambient sources such as track lights, washers, and luminous panels can provide task illumination without creating glare issues. Desk lamps add another component for flexibility and transitions of space use. Functionality and maintenance should conform to the required lighting quality metrics while considering the longevity of the surroundings and materials. All these elements can work together without distracting from the historic infrastructure.

When it comes to lighting selection and implementation, it really is all in the details. The incorporation of modern technology for lighting design



Adjustable LED covers span a structural opening, featuring the original clay tile discovered during demolition.

renovations has some very specific considerations when it comes to integration and respect for the surrounding conditions. Historic walls and ceilings may hold structural capacity, not allowing penetration through the structural clay tiles or brick, barrel vault ceilings. The exploration of custom driver housings that utilize shallow emergency drivers or finding remote low-voltage components can mitigate some limitations. Continuous communication and dedication from the electrical contractor for in-field coordination between the trades allow alternate channeling or concealment to happen as well. The substructure and pathways into a luminaire location are just as important as the resulting effect or luminaire selection.

On the ASI Carriage House, the routing of the exposed conduits and driver housings were heavily debated all the way into construction. Finding a discreet way to hide the driver housing and junction boxes for the installation was not feasible through the traditional method of routing through voids in walls and ceiling plenums. Meticulous detail was taken to trench new cable routing in



the existing plaster ceilings, and manufacturers assisted in custom remote driver components to realize minimal disturbance and code compliance.

Along with concealing the infrastructure, the detailing of the luminaires makes a significant impact on the installation. The selection of detail elements such as paint, wood, leather, and plaster within the luminaires can evoke nostalgia for specific time periods. The lighting design concept on the ASI Carriage House reinforces the Nordic domestic feel with warm, low-level illumination and uniquely detailed fixtures, capturing the simplicity and beauty of Scandinavian design; the detail and selection of each finish and trim was coordinated to reinforce this concept.

Non-standard thicknesses of panels or wood ceilings in a renovation can also trigger the need to develop custom trims and housings. However, catering to each of these unique detail customizations is a challenge in both design and procurement. A designer's collaboration with manufacturers enables the development of these elements with creative engineering, but it also demands modification when quantity efficiencies are not available.

Buy-in from all parties is the key to creative and successful solutions. Stakeholders must have a clear understanding of the additional time and resources needed to realize an integrated design

Daylight, metal-shade pendants with wood-stem accents, LED shelf lighting, and individual task lamps build up layers of light in the ASI Carriage House library.

that reinforces the concept. The lighting designer must recognize the limitations of existing conditions while balancing the need for a cohesive concept through the entirety of the project. The manufacturer and supply chain must allow for customization and flexibility where quantity efficiencies are not available. The electrical and general contractors should be willing to have an open and fluid dialogue on how conditions in the field may alter the installation. The best solutions are often generated from back-of-napkin sketches in the job trailer, with all parties huddled around voicing their intent, limitations, and expertise.

Historical renovations are a complex puzzle that can challenge the traditional lighting design process. Embrace the surprises mid-construction, provide nimble and creative responses, and respect the history of each revealed layer with curiosity and wonder. If you do, you'll find that this personal investment results in a beautiful legacy for the spaces we treasure. ©

---

**THE AUTHOR** | Chrysanthi Stockwell is an architectural lighting designer with a master's degree in architectural engineering and a passion for illuminating spaces in ways that blend art, function, and engineering precision. She is an NCQLP-certified Lighting Professional as well as a Professional Member of IALD.

# NEED TO EARN CEUs?

The Illuminating Engineering Society has what you need!

Visit [eLEARNING.IES.ORG](https://elearning.ies.org) to discover all of the CEUs available to the IES community.

Login to your existing eLearning account (or create a new one for free!), and you can:

- Track your IES continuing education units in one place on the My eLearning Dashboard
- Search over 300 course offerings\* by career level, profession or topic
- Earn free CEUs on live webinars as an IES member (new webinars offered each month)
- On-demand CEUs are available for \$15 for IES members and \$40 for nonmembers

## Some of our CEU-eligible courses include:

Codes, Controls, Compliance – Elements of Successful Lighting Control Designs



2022 PNNL Webinar Series: Taming Complexity (5 CEUs)



Color Outside the Lines: Unconventional Applications for Dynamic Lighting



Well-Lit for Well-Being in Hospitals: The Connection Between Quality Light and Enhanced Health Care Environments





Photos: Kelvin Gillmore

# CHILL LUXURY

The eatery at Ice House Hotel relies on adaptive reuse

By David Shiller

Perched on the banks of the River Moy in Ballina, County Mayo, Ireland, the Ice House Hotel is an adaptive reuse of 200-year-old architecture. Originally known as the “Iceland Cottage,” this historic structure has undergone a transformation from a functional ice-storage facility to a luxurious retreat. Positioned on the Moy Estuary, which became Ireland’s principal seaport in the late 18<sup>th</sup> and early 19<sup>th</sup> centuries, the building once served as





a storage site for wild salmon prior to the fish being shipped to markets in Dublin, Ireland, and Liverpool, England. Today, it stands reimagined, offering “cool” experiences to its guests.

The architectural metamorphosis of the Ice House Hotel carefully preserved its rich history while introducing contemporary comfort, thoughtfully juxtaposing old and new. This redesign philosophy extends throughout the property, from its luxury Chill Spa to its cozy and comfortable

Lighting the paintings is a track solution hidden above the stainless-steel floating ceiling.

bedrooms. The entire hotel has been meticulously crafted to create a calming and relaxing atmosphere as part of the guest experience.

Willie Duggan, managing director at Willie Duggan Lighting, took on the task of lighting the hotel's restaurant—highlighting unique architectural features while creating an inviting ambience. He stated, “Hidden lighting was a big part of the design approach, ensuring it was subtle, and put all the emphasis on the interior architecture. LED tape hidden at skirting level, at 2400K, was used to highlight the arched ice house element, with hidden spot lighting to the paintings behind a bespoke stainless-steel false ceiling enabling us to hide track lighting to the paintings, as well as LED uplighting to the barrel vault. The focus on concealed lighting was of key importance to ensure the textured surfaces and historic forms were the heroes of the space.”

The restaurant, with extensive glazing, presented the design firm with unique challenges. Duggan's solution was to carefully position light sources to minimize glare and reflections, especially during evening hours. This approach allows guests to enjoy the stunning views to the fullest, particularly during dusk. Duggan said, “We were careful to keep light sources either low glare or facing away from the glazed surfaces. This—the use of low glare and hidden lighting and management of dimming—ensured reduction of reflections late in the evening and keeping the views to the outside to a maximum during dusk hours.” Colored light also played a significant role in the design concept, with cooler blue and purple hues used to reference the building's icy history while simultaneously enhancing the atmosphere.

Respecting the project's heritage was paramount in the redesign process. The restaurant still features a visible hatch in the ceiling where ice was dropped. Duggan addressed the challenge of highlighting and respecting this heritage while creating a warm, relaxing ambience that also met modern functional needs. Previous guests had difficulty reading menus, so improving lighting functionality without compromising the historic aesthetic was crucial.

The project's retrofit nature required a delicate balance between preserving existing features and integrating new lighting elements. Circularity and efficient use of materials were key considerations, with great care taken to retain existing features and minimize interventions. As a result, many existing



fixtures were kept, with only their light engines replaced to improve efficiency and light quality.

Energy efficiency was a priority throughout the design. LED lighting was used extensively, maintaining over 90 lumens per watt for all white-light sources. Bluetooth lighting control was implemented to minimize impact on the existing structure and reduce cabling needs. Most fixtures operate at dimmed levels between 50% and 85% for much of the day, contributing to both an enhanced sustainable design and a more relaxed space.

In the modern glazed area, the long perspective and repeated timber beams presented an opportunity to create a subtle rhythm through the space.

The design process was highly hands-on, involving extensive on-site testing and mock-ups. This approach was crucial for articulating concepts to the client and testing various lighting effects in the space. Duggan stated, “In the more modern glazed area, we felt the long perspective and repeated timber beams presented an opportunity of creating a subtle rhythm down through the space. We used surface-mounted LED uplights to the vertical beams adjacent to the glazing. Narrow-beam downlights on the horizontal beams above then created pools of



light that added to the rhythm of the lighting on the vertical beams. Both added a layer of interest to this space while keeping reflections to a minimum in this area. We tested extensively and tried out a number of fittings, locations, and aiming angles to get the best configuration of lighting onto the timber elements—again minimizing any unwanted reflections from every viewpoint.”

One of the most innovative solutions came in addressing the need for intimate table lighting without compromising the historic arched space. Traditional pendants or spotlights were not viable options, as they would have created unwanted reflections and detracted from the key feature of the historic ice house barrel vault ceiling. Instead, Duggan opted for rechargeable table lamps, providing functional lighting at the table level while maintaining the clean aesthetic of the ceiling.

The resulting atmosphere in the space evolves as evening progresses; the use of warm color temperatures contrasts with the purple- and blue-colored uplighting. Incorporated dimming control creates a dramatic effect that intensifies throughout the night. This sympathetic lighting approach ensures that the barrel vault ceiling remains the undisputed focal point of the space.

Beyond aesthetics, the lighting design also improved functionality and flexibility. The quality

Rechargeable table lamps provide functional lighting while making the dining experience feel more intimate.

of lighting was substantially enhanced, with good efficiency and color rendering metrics. To accommodate the client’s passion for art, a flexible track lighting system was installed above the stainless-steel floating ceiling. These track fixtures, with a CRI above 95 and adjustable beam angles, allow for easy adaptation to changing art displays throughout the space.

By balancing the preservation of heritage elements with the introduction of modern amenities and innovative lighting solutions, the Ice House Hotel stands as an example of how historic buildings can be reimaged for modern use, creating a harmonious blend of past and present that delights and inspires visitors. ©

---

**THE DESIGNER** | Willie Duggan, CEng, is managing director at Willie Duggan Lighting.

---

**THE AUTHOR** | David Shiller is president of Lighting Solution Development, a leading business development consulting firm to the lighting industry. He is also publisher of *LightNOW*, an online lighting industry trade publication, as well as a 20-plus-year veteran of the lighting industry and a member of the American Lighting Association.

# 2025 LIGHTING JOBS OUTLOOK

Soft skills are essential in an ever-evolving market

By Paul Pompeo



Last year felt like a very eventful trip around the Sun (in ways both positive and negative), but 2025 seems like a blank slate in some ways. This is our 12<sup>th</sup> year examining the jobs and hiring market for lighting, electrical, and controls, and for better or worse, I remain a (guarded) optimist. I am very excited at our expert panel's thoughts about the job market as well as employee and hiring dynamics for the year ahead in lighting. Our panelists come from manufacturing, lighting design, and independent rep agencies: **Jenny Brust**, senior vice president of Sales and Marketing, H.E. Williams, Inc.; **Ted Chappell**, president, Inter-Lux; **Jill Cody**, IALD, CLD, LC, LEED AP, principal, Dark Light Design; **Archit Jain**, Member IES, IALD, LEED AP, principal, Oculus Light Studio; **Mark McClear**, CEO, Casambi Technologies; and **Tejal Thakur**, founder, Lightspek. I'm extremely grateful to the aforementioned panelists for their contributions and insights.



Jenny Brust



Ted Chapell



Jill Cody



Archit Jain



Mark McClear



Tejal Thakur

**Paul Pompeo: What positions will be in most demand and will any positions see a reduction in demand?**

**Ted Chappell:** We see expanded opportunities in tech/engineering positions due to the technical nature of LEDs and controls. In addition, we expect supply chain position demand to remain robust as companies continue to expand their sourcing outreach to reduce costs and lead times while trying to continually improve quality.

**Jenny Brust:** I also think we'll see a rise in demand for engineering expertise—specifically in technologies that facilitate product innovation.

**Jill Cody:** Lighting designers, especially mid-career professionals, will continue to be in high demand. For those who want to be on a path to leadership and/or ownership, there are definitely opportunities to move on to that path as principals and owners move closer to retirement. On the design side, I don't really see a reduction in demand for any particular position.

**Tejal Thakur:** I believe digital marketing specialists and content creators are essential sales roles of the future. Young professionals and designers consume technology in a different way than previous generations, and social media marketing professionals will continue to be in high demand.

**Archit Jain:** For our studio, we like people who can do it all. They may be specialists in certain aspects, but they do have the ability to assist on any part of a project as needed. This may be client interaction, design concepts, documentation, marketing, etc. Single-skill positions—CAD/3-D modelers, graphics roles—may be useful in a few firms, but most lighting design firms of our size want personnel with multiple skill sets.

**Mark McClear:** We'll continue to invest in software engineering and marketing at our headquarters in Finland to further enhance our product offerings and build stronger global brand recognition to align with our projected growth. I expect we will also open new sales positions across Europe, Asia, and North America as part of our strategy to further expand into key markets to capture growing demand and remove even better serve our customers globally.

**Thakur:** Roles facing reduced demand tend to involve routine tasks or roles that are, or will be, impacted by digital and automation advances.

**Pompeo: Which technical and soft skills are most beneficial for employees to possess in 2025?**

**Cody:** The technical skills that we all need—the understanding of the technology as well as the tools to produce our design work—haven't changed much. I think one of the most critical soft skills moving forward is adaptability. The pace of change isn't slowing down—not on the technology side or the process side. As our design tools evolve and schedules and fees continue to tighten, designers will have to adapt how they work to remain competitive.

**Jain:** Soft skills in terms of collaboration with clients and communication skills are always beneficial. While email, chat, and texts are important, it's always important to pick up the phone. Philosophically, in our studio, we stress humility, fearlessness, and respect. These are critical soft skills to have at any level and in any position.

**McClear:** Over half of our employees work outside of our three regional headquarters, making remote work an integral part of daily life for our company. For this to

run smoothly, we rely on our distributed team to take initiative, manage their time effectively, and communicate clearly, especially on key matters. These soft skills are essential to keeping everyone aligned and connected, regardless of location. Additionally, as we enter the AI age, critical thinking is such a crucial soft skill when it comes to interpreting data insights thoughtfully and making informed decisions.

**Thakur:** Soft skills such as emotional intelligence, communication, agility and flexibility, and a critical thinking/growth mindset are the most important factors that I have always looked for in employees.

**Chappell:** We always look for a positive attitude and a willingness to learn new skills and improve at all levels. We believe employees who operate with integrity and accountability will always rise to the top.

**Brust:** Contributing with an energy and desire to add value to the process is critical for career development.

“Single-skill positions—CAD/3-D modelers, graphics roles—may be useful in a few firms, but most lighting design firms of our size want personnel with multiple skill sets”

-Jain

Work ethic and attitude go such a long way in one’s career. As leaders, we should reward individuals who are coachable and curious because that drives growth. I think if you’re new to the workforce, it’s important to be mindful of colleagues’ positions within the organization, because those are the mentors that can help you advance your career.

**Pompeo: Have you increased your use of AI, and do you see AI replacing certain positions in 2025? If so, which roles?**

**McClellan:** We have no plans to replace any roles with AI. Over the last couple of years, we’ve provided AI training

and tools to all employees to ensure everyone gained a foundational understanding. For 2025, we aim to use AI more extensively in marketing and sales, particularly for language translation...we support six or seven languages. We will also use AI for analyzing sales performance, pipeline trends, and promotional impact. These AI enhancements won’t replace any team members or existing processes but will help us speed up and strengthen the work we’re already doing manually.

**Brust:** Currently, we really only use AI occasionally for alternate ways to articulate a message. I don’t see it fully replacing positions in 2025 for our firm but certainly see potential for its use in some business processes.

**Chappell:** We use AI mostly to support our marketing initiatives. We don’t see roles that AI would replace at the moment. It’s more a valuable tool for our teams to increase efficiency.

**Cody:** We’re being deliberate in our approach to which tasks we are using AI for, and it will obviously continue to evolve as the technology advances. I don’t see it replacing any positions at this point, but mostly driving increased efficiency.

**Jain:** We are experimenting with AI. In the next few years, we imagine that AI may be able to produce a low-level lighting design for basic spaces that can then be tweaked by the designers. This way, more time can be spent on high-value spaces. No positions are being replaced by AI. Even in the future, we are not imagining replacing any positions.

**Thakur:** I believe AI will radically transform our industry. Understanding this technology is critical to lasting success in any industry. However, I don’t believe AI can replace human empathy and compassion, which is an essential part of every successful business. I do think that it will transform the efficiency. The roles experiencing growth are often technology driven or require specialized knowledge that can’t be easily automated.

**Pompeo: Will virtual reality (VR) in lighting design create new roles in manufacturers and/or design firms, or transform the responsibilities for any current roles in your company?**

**Jain:** If virtual reality is defined as wearing VR goggles and looking at lighting in a model, that will take a while

until goggles start becoming lightweight and commonplace. If the intent is to dynamically see lighting in an architectural model on a screen, then that is something we are actively pursuing. No new roles are being envisioned immediately.

**Chappell:** I believe it can help us communicate product and application ideas by enhancing our rendering and 3-D modeling.

**Thakur:** Virtual reality is a tough one. I believe people still want and need human interaction and that is why this technology hasn't been fully accepted.

**Cody:** As the technology evolves, we will definitely need designers who are interested in implementing VR into our work. This would be a specialized work task that we would see just a few people taking on.

**Pompeo: Do you anticipate hiring more contract employees, fewer, or about the same as you did in 2024?**

**Brust:** Fewer. We typically look to hire local, full-time employees. We also work with nearby educational institutions on internship and apprenticeship programs to add talent. Our company culture plays a big role in how we operate and having a team that understands that is important to our success.

**McClear:** We rely on contract employees for a few niche roles within engineering. Some of these positions may become permanent in 2025, and we anticipate new specialized opportunities to emerge as well. Net should be about the same as 2024.

**Chappell:** We expect a similar dynamic to 2024.

**Thakur:** We expect about the same, too.

**Cody:** We aren't currently using any contract employees; I don't think that will change in 2025.

**Jain:** We only have a few contract roles, and those will remain the same in the next year.

**Pompeo: What is your current in-office/remote-work model and do you see that changing in the year ahead?**

**Thakur:** I believe more companies prefer to have employees back in their offices. I think that collaboration is key for success and for good design.

**Chappell:** Our model varies by job description and department. We expect a greater percentage of our workforce to gradually return to the office 100% of the time.

**Jain:** We recently went from a two-day a week schedule to three days, with Monday and Friday as work from home. We also work a 9-day/80-hr schedule with alternate Fridays off. This model gives us some focused time when working from home and collaboration time three days a week in the studio. We hope to carry this on indefinitely at this point.

**Cody:** We have some employees who are based in our offices and others who are fully remote. Our in-office teams are currently working on a hybrid model, and it seems to be working well. However, we are seeing many of our clients returning to a full-time, in-office model and that may drive a change for our teams.

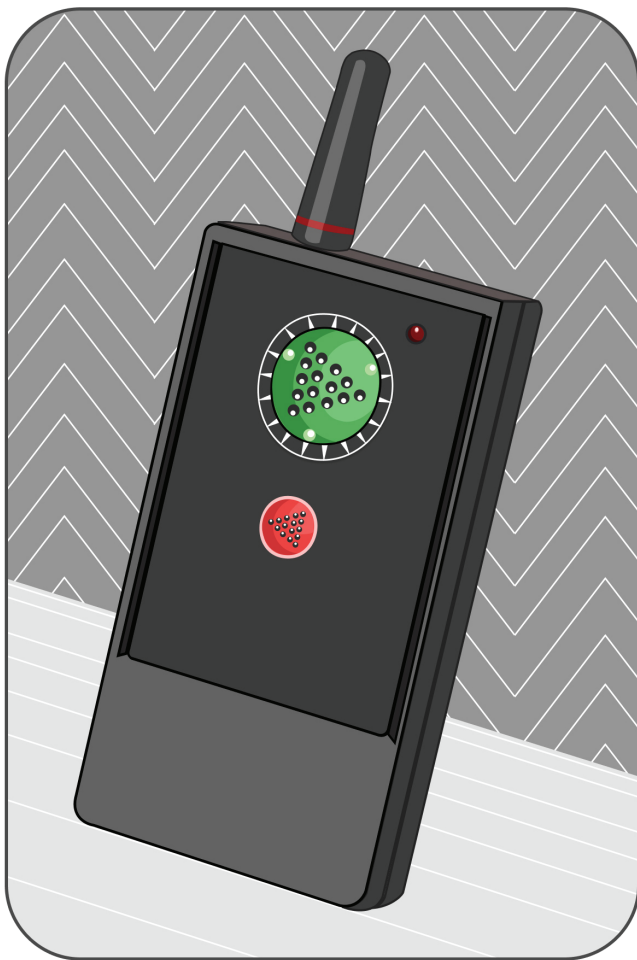
**McClear:** Our corporate headquarters is located in Helsinki, Finland, with regional headquarters in Atlanta and Singapore for North America and Asia, respectively. More than 50% of our employees work outside the cities where our headquarters are based and are strategically located where they can best serve our partners. As a result, we operate as a largely remote global company, with in-person meetings scheduled as needed to support collaboration and client engagement.

**Brust:** Today, fewer than 2% of our employees work remote, and I don't see that changing. In my opinion, being nimble and providing the level of service our customers deserve requires a knowledgeable, in-house team. This allows us to collaborate, solve problems, and answer questions in real time, benefiting our customers as well as the health of our business...and it hopefully helps us to have a little fun in the process. ☺

---

**THE AUTHOR** | Paul Pompeo is president of The Pompeo Group ([www.pompeo.com](http://www.pompeo.com)), an executive recruiting firm in lighting, controls, electrical, and IoT.

Photo: Amber Case



# TOUCHSTONES

Why physical buttons are crucial to calm technology-based lighting systems

I gave the keynote address at IES2024: The Lighting Conference in August. My talk was about Calm Technology, a framework about making technology that uses the least amount of attention and only when necessary. There are many applications to designing lighting systems. While changing my slides during the presentation, I was even able to appreciate another, under-valued design feature that made my talk so much easier: The presentation remote had three little raised dots on its buttons. I didn't have to look down at it once through the rest of my keynote, and could instead focus completely on what I was communicating.

**By Amber Case**

After giving over 500 speeches, running an underground music venue and its lighting system, running a photography studio, and growing up alongside automation systems hand-built by my inventor dad, I've come to highly value elements like those small, raised dots.

The difference between the materials that lasted in our home, in the music venue, and in the photography studio—regardless of whether they were physical or digital—became clear to me over time: tactility and ease. Or to put it in terms of a design principle: It's important to be able to use a tool while you're doing something else. The three little dots on my slide remote gave me a sense of peripheral attention and control. I could understand what I was doing, and I could focus on my task—engaging with the audience—without having to glance down at my control.

Designers of video-game controllers had to learn this principle early on. The point of gameplay is to be immersed in a game world, over a long period of time. Since game devices had to be designed to support full screen focus, almost all of them have tactile support—raised symbols and other physical features built into the individual buttons. Having to look at the controller while playing a video game takes you out of the game. Even a split-second distraction like that can end up causing you to lose. Outside video-game consoles, however, we deal with countless devices that often take us out of the game of life.

In the rush to flatten everything, whether for reasons of affordability to manufacture, the aesthetic of sleekness, or just the dominance of smartphone-like touchscreens, where physical buttons are nearly non-existent in the everyday experience, we've lost an important sensory aspect to our appliances. Unlike video-game controls, there's rarely any haptic feedback to tell you that you've successfully pressed a button. Which, again, means you have to take attention away from your local environment to study the interface.

## Where Touchscreens Have Taken Us

While physical controls continue to be digitized, people still need to be able to perform their task at hand and immediately understand what a control does—at a glance, and then through tactile reference, without having to stop what they're doing—or worse, have to shine their smartphone's flashlight on the controller to identify which function does what.

I suspect the lighting design community is



feeling pressure to completely digitize their interfaces. Before my IES keynote, I had some time to stroll around the conference's trade-show booths. There were so many great products and amazing people. While many of these lighting devices were impressive, I gradually noticed something was conspicuously missing: Very few of these appliances had ease or tactility.

At one booth, I received a hands-on demo of a new DMX control system. Like many apps, the controls had been digitized into something similar to an iPad. Also like most apps, the controls on the touchscreen completely resembled those of the original analog controls—a bit of a mixer board with up and down slides.

The problem is that making a digital system look like an analog one doesn't make it feel like an analog system. While the app looked like a mixer board, it couldn't be used like a mixer board. When you lose tactility, you have to make up for it in ease of use. I found myself touching one of the controls, but it didn't move. I eventually realized I had to focus on the device and really put my finger precisely onto the touch target before it moved. In other words, I could only control the device if I focused all of my attention on it. Furthermore, the satisfaction of pressing any of the buttons was lost. This made the whole interaction feel like the experience of rubbing on sandpaper when you're expecting a smooth finish.

Frustrated, I told one of the people at the booth: "You could fix this by making the touch target size 125% of the size of the indicator. That way, you don't need to click precisely on the controller, but it will still move, and you can start to kind of memorize where the controls are on the pad."

With enough spacing between the sliders, you can still click on something and not click the wrong slider—but you also don't need to be so precise when you click a slider. This creates a feeling of ease that's similar to a tactile sense. It's not perfect. It's not going to replace the true joy of memorizing where all of the sliders are, but it does partially make up for what's been lost by the rush to digital interfaces.

The need for tactility isn't just about the cognitive switching cost of having to put your thought process on pause or stop conversational flow with the person you're working with—it's that without it, there is a sense that the device you're using isn't truly designed with your use in mind.

### **What Lighting Loses Without Physical Buttons**

The loss of tactility is a huge issue with new light switches that don't "feel" like anything. I've seen people repeating their light adjusting behaviors or even smacking the wall because the switch on the touchscreen has given no feedback that it's done anything.

These phenomena frequently happen when travelers visit a place with lots of new, energy-efficient gear recently installed. End users stumble about, half-awake in the middle of the night, trying to find and activate a small hall light to reach the kitchen for a glass of water. The simple act of touching the control panel and trying to find the right icon probably wakes them up fully, ruining their sleep.

When a device is difficult for consumers to use, two things happen: Their time is wasted, and their joy at experiencing everyday life gets diluted just a little bit. With enough negative experiences like this, they get a net negative effect. Little daily activities that used to be pass-through events become the focus in themselves. We should always be focusing on the task, not the tool. The more we focus on tools, the less we live our lives.

### **Design Takeaways for Tactility**

You've probably experienced a lack of appliance tactility in your personal life, from kitchen stoves with no buttons to weird, "advanced" light switches. You might get irritated in the moment, but then dismiss that feeling because "This is just the way things are going." I disagree. There are ways to make things better, and all of us in industrial design have an opportunity to rally behind tactility and ease—and in doing so, advocate for our customers' ease and enjoyment. Not just designing how something looks, but in how it feels, and if we can use it with peripheral attention while we're doing something else.

With that in mind, here are several Calm Tech principles to consider when designing light interfaces:

- Primary actions can be done with partial attention, without requiring full attention. For instance, you shouldn't need to look at the product to be able to turn it on or off.
- Action buttons should protrude or be recessed. Primary action buttons should protrude or be recessed compared to the surface around it, providing a physical distinction that users can feel. As with my slide projector example, this enables



### Further Reading

I think about tactility a lot, and so do some other neat humans. “Tactile Controls In A Digital World” by Scott Jenson is fantastic and can be found here: <https://jenson.org/airpod/>. Additionally, some time ago, I wrote at length about touchscreens in cars and why that’s a bit of an issue. Find “The Hidden Cost of Touchscreens” here: <https://caseorganic.medium.com/why-do-we-keep-building-cars-with-touchscreens-alt-the-hidden-lives-of-touchscreens-55faf92799bf>.

us to interact with the interface even in the dark.

- The majority of interactions should be represented by clear iconography: All icons should follow an existing vernacular. Use clear icons well-known in the product vocabulary; don’t try to invent new ones.
- Tactile feedback for buttons: Button tactile feedback should have 100 to 200 grams of haptic actuation (or simulated actuation through tactile feedback) force for keyboards or 200 to 300 grams of actuation force with clear tactile point for physical buttons like on/off switches to ensure non-accidental presses.

In conclusion, bring back some tactility! It will help make things easier to use, and more enjoyable, at a quick touch. ☺

---

**THE AUTHOR** | Amber Case is the founder of the Calm Tech Institute, which provides a set of checklists for digital and physical product makers who wish to make their stuff more pleasant to use.

## Looking for your next hire?

### Visit the IES Career Center

- Quickly find highly qualified, targeted applicants
- Save time by tracking your applicants right through the career center
- Job posting start at just \$250

 [careercenter.ies.org](https://careercenter.ies.org)



# 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.

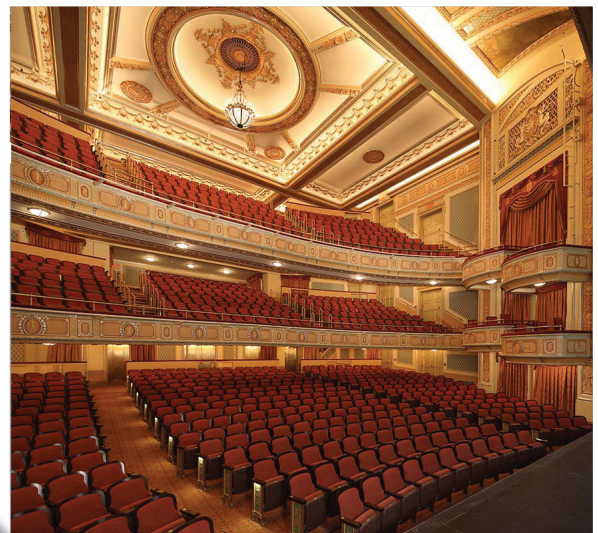
If you are interested in publishing an article in *LD+A*, please reach out to Editor-in-Chief Craig Causer at [craig.causer@sagepub.com](mailto:craig.causer@sagepub.com) to discuss further.



# PROJECT IN PICTURES

## James Earl Jones: A Theatrical Legacy

A Broadway theater honoring one of the now “great kings of the past,” as one of Jones’ iconic characters, Mufasa from Disney’s *The Lion King* says, has reopened after a \$47 million renovation. The **James Earl Jones Theatre** in New York City, with architecture by Thomas Lamb, now shines brighter than ever with an eco-friendly LED system by **Schuler Shook**. Replacement luminaires within historic decorative fixtures, fresh fixtures in a new five-floor annex, a massive custom chandelier, and a DMX control system have reduced the theater’s overall wattage load by 40% and earned the project a 2024 IES Illumination of Award of Merit.



»  
LED cove lighting accentuates  
architecture while **evoking  
the feeling of original warm  
incandescent lighting.**

Photo: T. Whitney Cox



The original **glass proscenium** was restored and **backlit**, bringing greater attention to the grandeur of the arch above the stage.

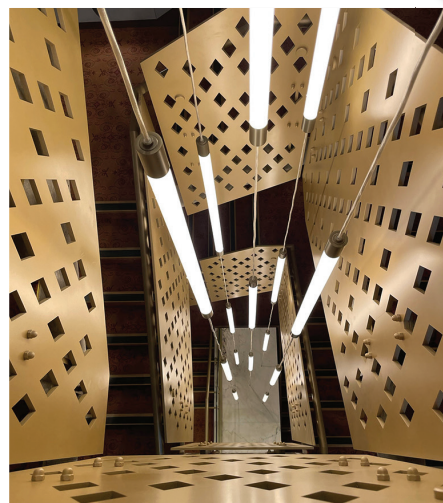


Photo: T. Whitney Cox



An example of some of the **original fixtures** that were refurbished and upgraded with LED lamps.

Photo: T. Whitney Cox



Photos: Lena Fan



The custom chandelier, tensioned between the basement and roof, comprises randomly spaced tubes and **illuminates the main stairwell**.

# IES INSIDER

## Showcasing Controls Innovation

NYControlled 2024, an educational trade show for lighting control systems and technology, brought together nearly 700 professionals on October 29<sup>th</sup> for a day of insights, innovation, and industry collaboration at the Metropolitan Pavilion in New York City. Presented by the Illuminating Engineering Society of New York City and the Designers Lighting Forum of New York, the event featured the latest advancements in lighting controls and provided a platform for experts and newcomers alike to explore the future of lighting controls technology. Below are some highlights of the event.



Photos: NYControlled



## MEMBER MENTIONS



**Rachel Gibney** has been promoted to principal at **Available Light**.



**Joshua Spitzig** has joined **Buro Happold** as New York Lighting Lead.



**Ethan Aberg** has been named Central Regional

sales manager at **Acclaim Lighting**.

Bold = Individual or Sustaining Member

## 2025 IESNYC Student Lighting Competition Seeks Entries

The IESNYC once again invites students from New York City art and design schools to participate in its annual Student lighting Competition, emphasizing the significance of lighting in shaping the built environment. The 2025 challenge, “A Sight for Sore Eyes,” asks students to share an eyesore experience and construct a three-dimensional study to solve the visual discomfort of viewers. Thoughtful design considers the comfort of the viewer while delivering the proper light for the application.

Students enrolled in design, engineering, or architecture programs at colleges or universities in the five boroughs of New York City—or the New York counties of the former Mid-Hudson Section (Columbia, Dutchess, Green, Orange, Putnam, Rockland, Sullivan, Ulster, and Westchester)—are eligible to submit, regardless of residency.

The 2025 Student Lighting Competition will be held at LEDucation, March 18 to 19, at the New York Hilton Midtown in New York City. Attendees will have the opportunity to review the students’ projects during the two-day event. The awards ceremony is scheduled for Tuesday, March 18, at 5 p.m. Please visit [https://iesnyc.org/Student\\_Competition](https://iesnyc.org/Student_Competition) for more information.



A full Lighting Library® subscription includes access to our five collections of standards, including over 100 ANSI-approved lighting standards combined. You also get access to the Standards Toolbox, which includes the Illuminance Selector and Reference Retriever.

**Only \$199/year for IES members** (Regularly \$499/year)

**Free for IES members:** Lighting Science Standards Collection (\$249 value)

[ies.org/library](https://ies.org/library)



# PRODUCTS



1.



2.



3.



4.

**1. EarthTronics** introduces the color-selectable hybrid UL Type A/B T8 U-Bend LED to replace fluorescent tubes. Functional with existing T8 ballast or line voltage, Type A fixtures are plug-and-play solutions while Type B can be wired as either single- or double-end direct wire without a need to change lamp holders. Luminaires offer a range of five color temperatures up to 6500K as well as over 50,000 hours of life. [www.earthtronics.com](http://www.earthtronics.com)

**2. iGuzzini** presents the Trick e™ series. Based on the Trick series designed by Dean Skira for architectural projects, the new e™ iteration stands for “emotion in

motion” and allows for effects like blades of light and radial light to move 360-deg, further capturing architectural details. Fixtures have three bases for tilt and horizontal rotation while a multi-projector beam allows for the visual of shifting light. [www.iguzzini.com](http://www.iguzzini.com)

**3. Luminaire Authentik** announces the Chrome Collection of wall sconces for hospitality and residential applications. Available in glossy Clear, Bronze, and Titanium as well as frosted Bronze and Titanium mirror finishes, fixtures are designed to create a play of shadow and light and capture surroundings. Offered in three rounded shapes, sconces are cUL

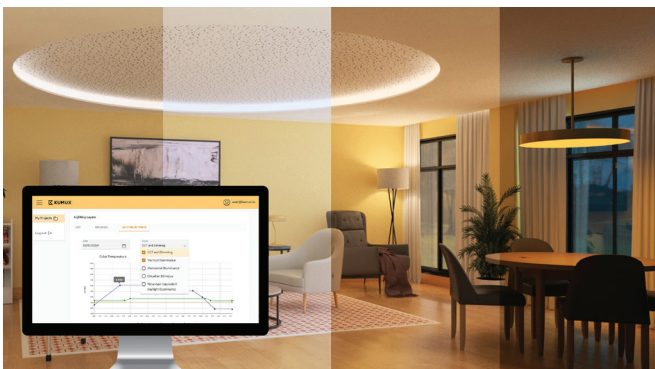
certified and ship internationally. [www.luminaireauthentik.com](http://www.luminaireauthentik.com)

**4. FX Luminaire** launches eight path and accent lights including multiple models of the Pinnacle (pictured), Modern, and Runa fixtures. Pinnacle, designed to meet IP67 standards, features a fully adjustable knuckle for light direction and is made with brass and copper for durability. All models are available with 2700K and 3000K color temperature options and are built to withstand the weather conditions of all four seasons. [www.fx.com](http://www.fx.com)





5.

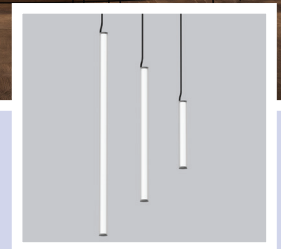


6.

**5. Luxxbox** unveils Kurtain, an acoustic pendant made from Camira Blazer wool suitable for commercial, healthcare, and hospitality applications. Inspired by the movement of drapery, circular edge-lit pendants with Casambi Bluetooth-dimmable LEDs or tunable-white light options are available in 77 colorways and three sizes. [www.luxxbox.com](http://www.luxxbox.com)

**6. KUMUX** announces the KUMUX Platform, a digital commissioning tool to enhance human well-being indoors by combining AI algorithms, lighting control systems, and LED technology. The platform incorporates solar data, science, and standards specific to the details of a project while simplifying the process of finding dynamic systems, with light-level and color-temperature automation, for design teams. <https://kumux.io>

## SPOTLIGHT Eureka



**Eureka** unveils the Velia tubular luminaire. Available in various colors, lengths, and textures including frost and prismatic options, fixtures in 20-, 40-, and 60-in. lengths can be suspended horizontally or vertically with one, three, or six slim, flat cables. Velia is offered in 36 pre-configured clusters suited for workplaces, hotels, and lounges. Optional anchor points are available if fixtures are to be used in floor-to-ceiling installations to prevent swaying from air currents. [www.eurekalighting.com](http://www.eurekalighting.com)

# PRODUCTS

**7. Canada-based studio Larose Guyon** unveils the Saule Collection. Inspired by willow trees and made with hand-formed brass leaves on metal “branches,” chandeliers emit a soft glow via a pink globe in the center of each fixture. Fixtures are available in multiple sizes and designed to gently sway in a breeze. [www.laroseguyon.com](http://www.laroseguyon.com)

**8. WAC** announces that Aeter Automatic recessed luminaires now feature dim-to-warm technology ranging from 1800K to 3000K. While fixtures continue to deliver 900 lumens at full brightness, they can now shift color temperatures to suit the changing needs of end users. Luminaires with dim-to-warm utilize TRIAC or Electronic Low Voltage Universal intuitive dimming protocol. [www.waclighting.com](http://www.waclighting.com)

**9. Landscape Forms** debuts Moment, a scalable and adaptable lighting collection made in collaboration with Spain-based Yonoh Creative Studios. Ideal for public squares, pedestrian walkways, and roadways, minimalist Moment is available with single, paired, and staggered, multiple luminaires on a singular pole (pictured left) options, as well as catenary (pictured right) and wall-mounted configurations. Fixtures offer up to 10,000 lumens with minimal glare. [www.landscapeforms.com](http://www.landscapeforms.com)

**10. Edison Price Lighting** announces Fluoraé, neon lighting that can be shaped into any custom form. With the ability to extend up to 66 ft long, neon is available in 1-, ½-, and ¾-in. widths as well as tunable-white, dim-to-warm, and RGBW light options.



7.



8.



9.



10.

Luminaires can be mounted freeform, dual-surface, and as horizontal and ring pendants. Fluoraé differentiates from the brand's Monopoint neon solution in length, mounting options, and other details.

[www.epl.com](http://www.epl.com)

**11. Acclaim** introduces Flex Tube HO SC, an exterior linear LED strip with a UV-, solvent-, and flame-resistant silicone body. With a low profile and two-way bending capabilities, the Flex tube is available in six color temperatures ranging from 2200K to 5700K and build-to-order lengths with section points every 2 in. Fixtures provide a 114-deg beam angle and 515 lumens per ft.

[www.acclaimlighting.com](http://www.acclaimlighting.com)



11.

**12. SCHONBEK** introduces four new designs to the Signature Collection, including CALLIOPE, PAVONA (pictured), TAHITIAN, and TEMPEST. The PAVONA design for high-end applications features the brand's Radiance Crystal drops along with handmade, feather-like metallic accents. The additional new designs similarly capture a romantic aura with features such as vertical chimes, Optic Crystal clusters, curved metallic arms, and other delicate details.

[www.schonbek.com](http://www.schonbek.com)



12.

# IES® 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.\*

## CHAMPION



## AMBASSADOR

Current

## BENEFACTOR

HLB Lighting Design  
LUMA Lighting Design/  
PAE Engineers  
Lutron Electronics  
Musco Lighting  
P2S Inc.  
Rosendin Electric, Inc.  
SOSEN USA, Inc.

## SUPPORTER

Affiniti Studios  
A.L.P.  
BK Lighting  
Cannon Design  
Cree Lighting  
DLR Group  
Duke Energy Co.  
Edison Opto Corporation

ETC, Inc.  
Evluma  
GE Lighting, a Savant Company  
H.E. Williams, Inc.  
Hapco  
HP Engineering  
iGuzzini Lighting USA  
IMEG Corp  
Integrated Design Solutions  
Kenall Mfg. Co.  
Kurtzon Lighting  
L Design Studio, LLC  
Landscape Forms  
Leotek Electronics, LLC  
Lighting Services, Inc.  
LMPG  
LSI Industries, Inc.  
LumenWerx, Inc.  
Ministère des Transports du  
Québec  
Pharos Architectural Controls  
RAB Lighting, Inc.

Radiant Vision Systems  
Reveal Design Group  
Spitzer Lighting  
Targetti USA, Inc.  
Tresco Lighting  
Visa Lighting  
Zumtobel Lighting

\*Contributor Sustaining Members are listed at [www.ies.org](http://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](http://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](http://www.ies.org/membership/ies-university-membership).

## President's Perspective

(continued from p. 8)

are the best way for us to share our experience with the younger generation and for that next generation to find their own Wildeys, Browns, and Ashdowns. In-person section meetings, The Lighting Conference, and LightFair are all opportunities

for connections to be made. I ask those of you who have been members for a while to plan to spend a couple of hours at your next gathering with the younger generation and offer them a helping hand; some of us are shy and find it difficult to make

that first move. So, when you see someone new at one of our events, introduce yourself, ask about their interests, and help them find “their people.”

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 #	ADVERTISING OFFICES
ALUZ Lighting	<a href="http://www.ALUZ.lighting">www.ALUZ.lighting</a>	2	<b>GENERAL OFFICES</b> LD+A Advertising Department  <b>Leslie Prestia</b> SAGE Publications 2455 Teller Road Thousand Oaks, CA 91320 Leslie.prestia@sagepub.com
Elemental LED	<a href="http://www.elementalled.com">www.elementalled.com</a>	1	
Klus North America	<a href="http://www.klusdesign.com">www.klusdesign.com</a>	10	<b>NORTHEAST/ MID-ATLANTIC/WEST</b>  <b>Amy Blackmore</b> SAGE Publications 2455 Teller Road Thousand Oaks, CA 91320 C 805.559.1065 Amy.blackmore@sagepub.com  States serviced: AK, AZ, CA, CO, CT, DE, HI, ID, MA, MD, ME, MT, NC, NH, NJ, NM, NV, NY, OR, PA, RI, UT, VA, VT, WA, WY, Washington, D.C. and Western Canada
Landscape Forms, Inc.	<a href="http://www.landscapeforms.com">www.landscapeforms.com</a>	5	
Meteor Illumination Technologies, Inc	<a href="http://www.meteor-lighting.com">www.meteor-lighting.com</a>	Cover 4	
Quanta Light	<a href="http://www.quantalight.com">www.quantalight.com</a>	17	<b>SOUTH/MIDWEST/ INTERNATIONAL (OUTSIDE U.S. &amp; CANADA)</b>  <b>Bill Middleton</b> Middleton Media 4513 Dartmoor Drive Marietta, GA 30067 T 770.973.9190 C 404.394.7026 midmedia@aol.com  States serviced: AL, AR, FL, GA, IA, IL, IN, KS, KY, LA, MI, MN, MO, MS, ND, NE, OH, OK, SC, SD, TN, TX, WI, WV and Eastern Canada
Stresscrete	<a href="http://www.scgrp.com">www.scgrp.com</a>	7	
SPI Lighting, Inc.	<a href="http://www.spilighting.com">www.spilighting.com</a>	Cover 2	

This index is provided as a service by the publisher, who assumes no liability for errors or omissions.

CLASSIFIEDS

Over 30 Years Recruiting Lighting's Best and Brightest.

[pompeo.com](http://pompeo.com) 505-821-5533

**FOR BACK ISSUES**  
 Visit [us.sagepub.com/en-us/nam/lighting-design-application/journal204006](http://us.sagepub.com/en-us/nam/lighting-design-application/journal204006)

**Brooke Ziolo**  
 Lighting Industry Recruiter

847.307.7127  
 bz@egretconsulting.com

[egretconsulting.com](http://egretconsulting.com)



At the four-star InterContinental San Antonio Riverwalk, an IHG Hotel, in Texas, creatives from Yellow Goat Design and Leo A Daly collaborated on a lighting fixture fit for the Gilded Age of Hollywood. The interior design takes inspiration from the mid-century, while the custom chandelier in the building's lobby uses tinted-glass elements to add cinematic pizzazz to surrounding dark woods, velvet furnishings, and brass accents.

Photo: Jasmine Arner

# LAST LOOK

## Tinseltown Recreated

# 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.



<sup>†</sup> Available for IES members only.



Access the IES Standards  
Toolbox at [ies.org/tools](https://www.ies.org/tools)

Wake Forest University Brendle Recital Hall  
POWERED BY **Archi-Color™ W+RGB**

[meteor-lighting.com](http://meteor-lighting.com)

# ILLUMINATING NEW HEIGHTS

METEOR