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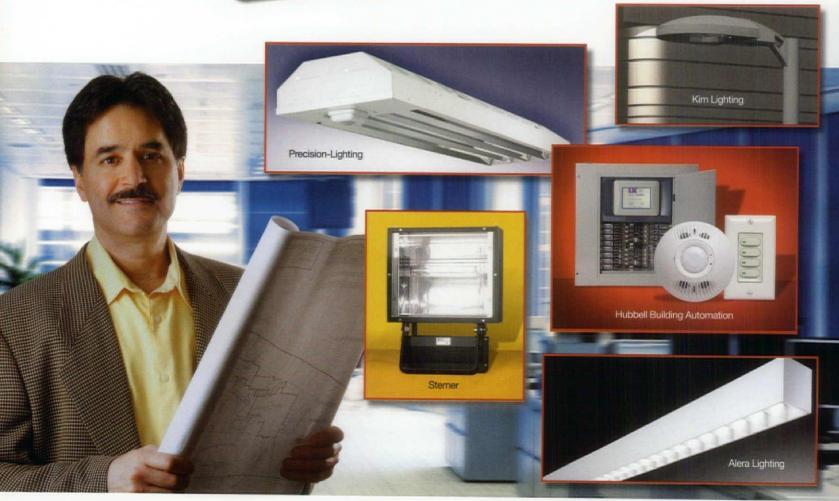
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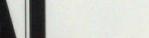
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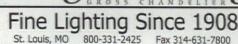
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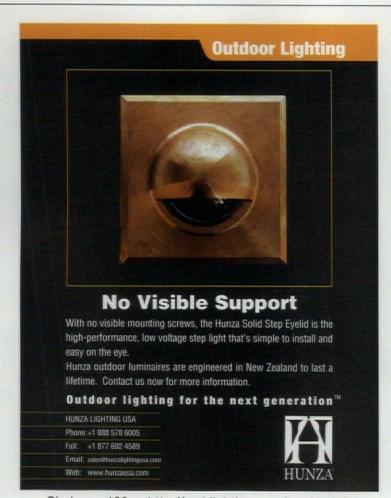
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# **PRODUCTION**

DIRECTOR OF PRODUCTION AND PRODUCTION TECHNOLOGIES

Cathy Underwood cunderwood@hanleywood.com 202.736.3317

PRODUCTION MANAGER Johanna Daproza

idaproza@hanleywood.com 202.736.3372

ASSISTANT PRODUCTION MANAGER

Trey Gossage tgossage@hanleywood.com 202.736.3335

PREPRESS MANAGER Fred Weisskopf

fweisskopf@hanleywood.com 202.736.3472

PREPRESS COORDINATOR Betty Kerwin

### EDITORIAL

EDITOR IN CHIEF

Ned Crame ncramer@hanlevwood.com

EDITOR

Elizabeth Donoff edonoff@hanleywood.com 202.729.3647

MANAGING EDITOR

Greig O'Brien gobrien@hanleywood.com

ASSOCIATE EDITOR Kimberly R. Griffin

kgriffin@hanleywood.com

EDITORS AT LARGE
James R. Benva, FIALD, FIESNA Howard Brandston, FIALD, FIESNA

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CONTRIBUTING EDITORS

Edward Keegan, Aaron Seward

### DESIGN

ART DIRECTOR

Christopher Byrne cbyrne@hanleywood.com

Katie DuBree kdubree@hanleywood.com

# ONLINE

SENIOR WEB PRODUCER

Richard Stirba rstirba@hanleywood.com 202.729.3564

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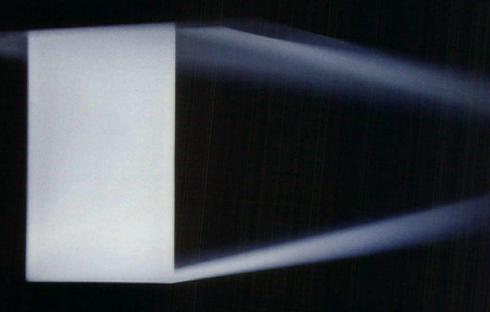
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# **ADVERTISING SALES**

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PRODUCT REVIEW AND CLASSIFIED SALES

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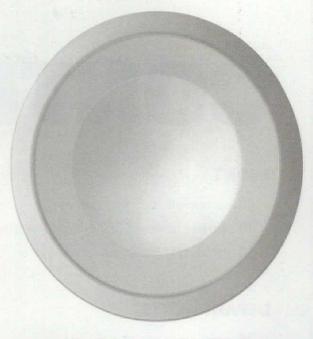
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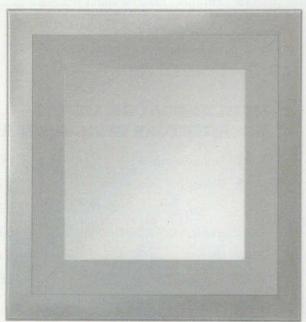




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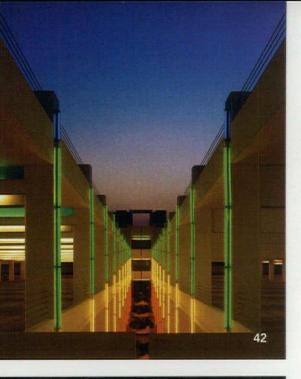




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Cover: The Sanctuary space at the Lumen United Reform Church and Community Center, London. PHOTOGRAPHER: NICK KANE



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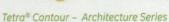
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# **Connection Points**

**Everything is a' Twitter.** And a' Facebook and a' LinkedIn. These social media platforms are changing the way we com-

municate and receive information. Editors are pressing to integrate social media into their repertoires. It's the new reality that defines the challenges of delivering an editorial product in a new media world.

The economic crunch and the decline of advertising revenue have been particularly devastating to traditional print media. Much has been written in the past few months about the demise of the printed word in an electronic age. Even the venerable New York Times is not safe. To save on printing and paper costs, the Times reduced the trim size (publishing lingo for dimensions) of its Sunday magazine as of the June 14 edition—the Architecture Issue, coincidentally. That is why the proposition of social media becomes even more enticing in a print media—challenged world. Everywhere you look people are talking about its impact. Even Time magazine—a flagship print portal—devoted its June 15 cover story to Twitter.

Twitter is my social media platform of choice (you can follow me at twitter.com/archlighting). I am also on LinkedIn, which I treat as a kind of electronic Rolodex and a way to monitor lighting discussion groups, but I've not yet explored Facebook. For the moment, I've chosen the social media platforms that I see others in the lighting community gravitating toward, and which I feel have the greatest ability to broaden ARCHITECTURAL LIGHTING'S reach.

I must admit I was skeptical at first about Twitter. Why would anyone want to know what I am doing throughout the day? But as I soon realized, the beauty of Twitter and the other social media platforms is to imagine uses for which they were not intended. Twitter provides a fantastic way to engage an entirely new audience that was not previously familiar with ARCHITECTURAL LIGHTING magazine or even with architectural lighting design in general. Twitter allows me to get news out quickly, drive traffic to content on A|L's website, and share items of interest in the overlapping worlds of architecture, lighting, and design. Twitter gives me a chance to offer quick commentary in 140 characters or less, and to connect to real time events.

Cumulatively, my "tweets" amount to an overview of the editorial process. In the design community there is an active group of editors, critics, and bloggers who are Tweeting away. And in this competitive market, there isn't an architecture or design magazine that I know of that isn't on Twitter. A|L, as far as I can tell, is the only lighting magazine actively using this platform.

At the root of all social media is a desire to connect. As it turns out, short exchanges can be just as meaningful as long debates. With the ability to post from my laptop or Blackberry, I can stay connected to the A|L Twitter community. (Since mid-June, when I started tweeting on a regular basis, A|L has accumulated 84 followers.) With tracking options, I can monitor the reach of my tweets—and I can tell you it's global. As an editor, this is an amazing resource in understanding how wide our net is cast and the type of content that is of interest to our readers—no matter the platform.

Anyone who might question the power or effectiveness of social media need not look that far to see how it has truly transformed our world. From U.S. presidential elections to riots in the streets of Tehran, social media have provided a form of communication and expression not seen before. It offers a voice to those in need of an outlet. In the lighting world, imagine what would have happened with Texas House Bill 2649 if it hadn't been for social media and e-mail? These platforms are powerful tools for practitioners, manufacturers, and organizations. A number of lighting companies along with the International Association of Lighting Designers (IALD) are using Twitter, and both the IALD and the Illuminating Engineering Society have LinkedIn groups.

At a Lightfair panel discussion of lighting magazine editors that ALL organized this past May, I was surprised by my colleagues' quick dismissal of the internet and social media. Analog vs. digital-each time the communication paradigm shifts, some embrace it, while others fear that the change will come at an intolerable price. The real issue is not whether one medium will replace another—the shift between print and online is already occurring. Rather, it's about maximizing the best features of each, in order to maintain the value for all. There will always be need for the printed page, just as the next generation can't imagine life without social media. The experience of reading the print version of a newspaper is fundamentally different than reading the news online. I would never give up the Sunday Times in print. It's central to my Sunday morning ritual, and I see things when I read the paper that I don't see when I look online. On the other hand, there are experiences that only the web can offer, such as slide shows, videos, and reader comments. A|L is committed to bringing its readers quality content across a diverse array of portals. The medium of delivery may change, but the core skills of communication will always remain.

ELIZABETH DONOFF EDITOR

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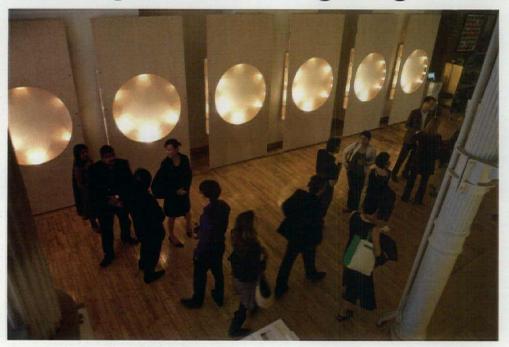


The Illuminating Engineering Society held award festivities on both coasts during the month of June.

New York City: A crowd of more than 600 gathered for the 41st Annual Lumen Gala at Chelsea Piers on June 10. The New York City Section of the Illuminating Engineering Society honored 12 projects. Some highlights include the Lumen Award of Excellence, which went to Fisher Marantz Stone for the interiors of the Museum of Islamic Arts in Doha, Qatar (above left),

and the Lumen Feltman Award of Excellence for retail merchandising lighting, which was awarded to Tillotson Design Associates for the Vera Wang New York Flagship store in Soho. For a full review of the award winners, visit iesnyc.org. Los Angeles: On June 29, more than 200 members of the West Coast lighting design community gathered at the Cathedral of our Lady of the Angels to celebrate 38 Lumen West award winners, representing both the IES Los Angeles (IESLA) and Orange County sections. Highlights included the Award of Excellence and Aileen Page Cutler Memorial Award for Residential Design, which went to Rosemarie Allaire Lighting Design for its project View to Avalon, and the Waterbury Award for Outdoor Lighting, which went to Lighting Design Alliance for its work at the George Stanley Fountain at the Hollywood Bowl (above right). Details can be found at the IESLA's website: iesla.org.

# **Jake Dyson's New Lighting Paradigm**



Combining illumination with movement, Motorlight, London-based Jake Dyson Studio's first foray into luminaire design, was on view this past May in New York City, during the International Contemporary Furniture Fair (ICFF). Billed as the "world's first variable angle uplight," the fixture is available

in both a floor and wall sconce model; it provides a fluid cycle of ambient to spot lighting due to the luminaire's motor function. "There have only been a few choices when it comes to how light can be directed—either linearly or as a focused beam," explains Dyson, son of inventor James Dyson. "I

wanted to create something that would offer variable lighting conditions in a single unit."

Motorlight Floor, the first incarnation of the Motorlight idea, stands approximately 14 inches tall (expanding to 17 inches), uses a 100W halogen source, and is manually operated with a pause option that allows the light to be fixed or dimmed. Measuring approximately 8-inches-tall by 4-inches-wide, Motorlight Wall, the second-generation iteration, is remote-controlled, fully DMX-programmable, and uses a 75W halogen lamp, but is outfitted to incorporate solid-state lighting as LED technology advances. A single remote can control up to 30 fixtures. Dyson and his team spent months working on an intricate motorized shutter for the fixture that allows the beam angle to change from 10 to 120 degrees during a 45 second cycle. A special gasket ensures fluid and uninterrupted movement so there is no "light shake."

As part of Motorlight's U.S. launch at the Pomegranate Gallery (left) during ICFF, Dyson teamed with interactive light artist Jason Bruges to create the installation *Focal Shift*, a series of six birch plywood wall panels approximately 3 feet wide and 10 feet high, housing six concealed Motorlight Wall fixtures. With only the light and beam angles visible across the wood surface, gallery visitors watched a dynamic play of light and shadow. Offering a different kind of illumination and user interface, Motorlight gives new meaning to interactive design. ED



















# **Nuckolls Fund Awards 2009 Grants**

In May, the Nuckolls Fund for Lighting Education announced its 2009 grant recipients. Grants of \$20,000 went to two introductory lighting design courses, at East Carolina University in Greenville, N.C., and the Massachusetts College of Art and Design in Boston. The \$5,000 Jonas Bellovin Schol-

ar Achievement Award was presented to Darlene Myrie, a student at Parsons The New School for Design. The Jules Horton International Student Achievement Award, another \$5,000 prize, was given to Alriah Pereira of Texas Christian University. The \$10,000 Edison Price Fellowship Grant was

awarded to Conor Sampson of McGill University, who will collaborate with Christoph Reinhart, associate professor of architectural technology at Harvard, in developing guidelines for daylighting and daylight controls. Applications for 2010 are due Feb. 5, 2010. For details, go to nuckollsfund.org.



# International Lighting Research Database

Research, no matter the discipline, is one of the most important areas of development. Without it, there would be no chance for the discovery of new materials and processes. Investigations into applications and technologies for lighting have made significant contributions in shaping architectural lighting design as the practice exists today. And yet getting funding and support for research is one of the hardest fought battles.

In order to increase awareness of lighting research efforts and reinforce their connection to real-world practice, the Illuminating Engineering Society (IES) has commissioned the nonprofit Electric Power Research Institute (EPRI) and the EPRI Lighting Research Office to conduct a survey and establish an international database of current lighting research initiatives. According to EPRI, the goal of the project is to "define the scope of current lighting research, to identify gaps in lighting research that need to

to match researchers with funding EPEI RESEARCH INSTITUTE

sources, and to aid in the creation of an international research agenda." The IES Research Committee will use the database results to develop a long-term strategy for the future of lighting research.

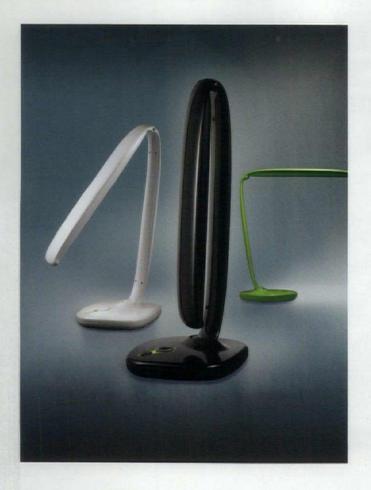
Individuals and organizations are encouraged to take the 20-question survey and register their lighting research projects online at lightingresearch.epri.com/lightsurveystart.asp?dsy14. Researchers who have more than one project may access the link as many times as needed to enter information about each of their projects.

The project database collection period will run through Aug. 31, 2009. To encourage participation, which is voluntary, contributors will receive online access to the database once it is completed and will have their projects (with their permission) made available to sources that are looking to invest in research projects. Questions about this initiative and survey access key requests should be addressed to Philip Keebler at the EPRI Lighting Research Office at PKeebler@epri.com. ED

# **EXCITING** INNOVATIONS

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The Ribbon Lamp tasklight from ECCO Design uses cold cathode fluorescent lighting (CCFL), which offers both dimming and color-changing capabilities. It incorporates DynamicLux CCFL technology, normally used to backlight flat-screen TVs, to increase the lamp life to approximately 15,000 hours. The luminaire's arm extends and folds to offer direct light or soft ambient light, while a four-way control pad on the base adjusts lighting by brightness and by color warmth. • eccoid.com • CIRCLE 125



## LIGHTING SCIENCE GROUP

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Lighting Science Group's latest offering will be the first LED lamp available in the popular A19 shape, according to the manufacturer. Using only 7.5W, the LED replacement lamp provides light output sufficient for everyday tasks, and can be used in standard incandescent and compact fluorescent lamp (CFL) sockets. The dimmable A19 LED is approximately 20 percent more efficient than comparable CFL lamps, and reportedly lasts 20 times longer than incandescent lamps (and six times longer than CFLs). This lamp is the first in a series of LED replacement A-lamps due to market by Q3 2009. • lsgc.com • CIRCLE 126

### LITECONTROL VC1 LENS

The VC1 lens, the first VC Optic offering from Litecontrol, is available in the company's new Arcos M-5, Latitude-L, and Latitude-C pendant fixtures. The lens pairs optical film, which uses tiny microlens structures to direct and shape transmitted light, with a clear grooved lens. According to the company, this diffusion produces uniform brightness with controlled luminances, obscured lamp images, and a controlled intensity distribution. The grooved lines simply offer refined visual interest. Diffusing light throughout the bulk of the material, the film itself can be handled without protective equipment. • litecontrol .com • CIRCLE 127







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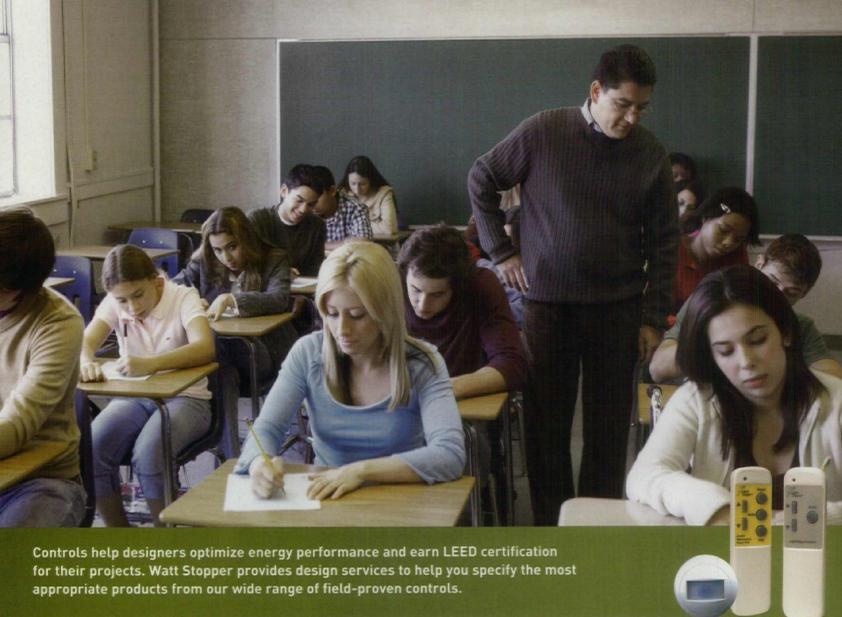
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Targetti's new Magma directional projectors offer supertight beam focus. Principally used for tracklighting (120V two-circuit), a canopy mount is also available. Lamp options include 39W or 70W T6 ceramic metal halide, 39W or 70W MR111 ceramic discharge with reflector, or 100W AR111 halogen. Available with four different specular reflector options-15-, 30-, 60-, or 100-degrees—the twist-and-lock mechanism enables toolless relamping. Three finishes are available: white, black, and gray. • targettiusa.com • CIRCLE 129

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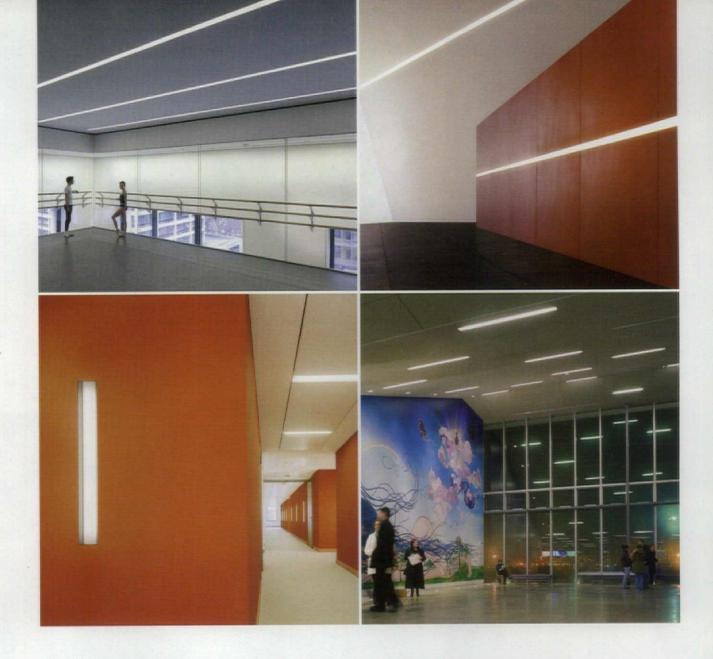
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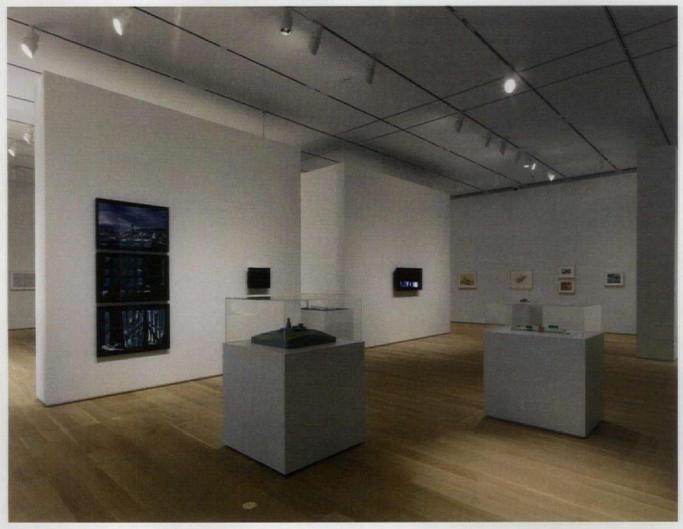
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RENZO PIANO'S MODERN WING AT THE ART INSTITUTE OF CHICAGO PROVIDES A LUMINOUS



Recessed tracklighting in the Art Institute of Chicago's new Modern Wing, shown here in the Architecture and Design Gallery, reinforces the orthogonal grid of the new addition and is architect Renzo Piano's reference to Chicago's urban and architectural development since the Great Fire of 1871.

Since the opening of Houston's de Menil Collection in 1987, Renzo Piano has produced project after project around the globe that reinforces his reputation as a poet of light. With the opening of the Art Institute of Chicago's Modern Wing in May, the Italian-born architect and his lighting collaborators from Arup are once again riffing on the theme of fins, baffles, and wings that capture and modulate light. Piano fits the new 264,000-square-foot museum addition into Grant Park on the corner of Monroe Street and Columbus Drive, where the site is constricted by a disturbingly awkward 1970s museum addition and an active railroad right-of-way. The Modern Wing provides the Art Institute with a much-needed new entrance from the north with its adjacency to Millennium Park, and a 620-foot-long bridge, also designed by Piano, beckons visitors.

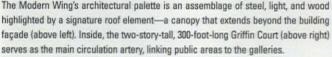
The main artery of the new addition is the two-story-tall, 300-footlong Griffin Court, which links the new entrance to the older complex of buildings that the Art Institute has built over the past 116 years.

This atrium functions as a Great Street. All of the galleries, as well as reception desk, coat check, and gift shop, can be accessed from this dazzlingly bright and airy space. An extensive ground floor education center and the principal new galleries are to the east of Griffin Court, Smaller exhibition areas, for temporary shows and the architecture and design collections, are to the west. Whereas all the art-serving spaces within the new wing provide some elaborately subtle light reflecting and deflecting systems, Griffin Court's simpler roof shades give it a crisp bright light on sunny days that make it a sensory palette cleanser for the visitor who experiences it when transitioning between the different types of galleries in the wing. In the exhibition areas, light is manipulated in the service of art. Within Griffin Court, light simply is. Abundant, bright, clear, and present; the space gives the museum visitor an immediate sense that this is a sanctuary built for light, and it becomes a reference point for both space and light.

In the main portion of the building, the second floor galleries house

# CRITIQUE





contemporary art in loft-like spaces that are 16 feet 9 inches tall. They are alternately illuminated by floor-to-ceiling north-facing windows, a small slice of shaded southern light, or ubiquitous tracklighting. All of this is fine, but hardly stellar, given what Piano achieves in the third-floor galleries above.



"Chicago invented modernity in this country," Piano says. "Steel made the miracle of lightness." Piano contrasts heaviness and lightness in the volumetric development of the building. The spaces are defined by north-to-south limestone walls that match the material of the Art Institute's iconic Michigan Avenue buildings. But in contrast to the existing masonry material palette, Piano's new icon—the Modern Wing's roof structure—is supported on the thinnest of white steel columns. "This building is solid, but it's also very fragile," he says. "It's echoing Chicago, not copying."

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third-floor galleries that house the Art Institute's extensive collection of 20th century art from the turn of the century through the Second World War. These 15-foot-5-inch-tall galleries provide ample volume for paintings and sculptures of varying sizes. The vellum-lined glass ceiling is a diaphanous layer that is translucent enough to allow views of the roof structure's sculpted wings and fins that reflect Chicago's changing light in a daylong play of light and shadow.

The rooftop sunscreen has become almost a cliché in Renzo Piano's work, but Chicago's Grant Park is an exceptional setting for it. The nearby high-rise buildings contain the homes and offices for thousands of Chicagoans who view the roof as a primary building façade. At 216 feet by 216 feet, the roof overhangs the main body of the Modern Wing by a considerable margin, but Piano dimensions it as a perfect square in order to make a point about the importance of the An aerial view of the Art Institute's campus with the new 264,000-square-foot Modern Wing (lower left building in photo), which sits in Grant Park at the Corner of Monroe Street and Columbus Drive, adjacent to Millennium Park.

grid in Chicago's urban and architectural development since the seminal Fire of 1871. "The geography of the place is very important," says Piano, noting that Chicago's gridiron plan was laid out by a military topographer who held exactly to the orthogonal directions of north, south, east, and west. This precision allowed the architect to plan his building with crisp rectilinear details that work with the symmetrical movement of the sun.

Piano's elaborate light-celebrating roofs tend to get most of the attention in his museums and, at the Modern Wing, the master's handiwork is as compelling as ever. But the one note that was not quite worked out at the building's opening involves another, more traditional, light source-namely windows. The second and third floor galleries feature a double-skinned glass north wall with mechanized shades that permit modulation of light during the late spring and summer months when it is necessary to avoid some direct light from the east and west. Piano intended these windows to provide both light and views, which includes Frank Gehry's Pritzker Pavilion band shell directly across the street and Chicago's stunning skyline beyond. In the early weeks of the building's public debut, the shades were generally found closed to blunt any competition with the museum's art. This is an unfortunate development that will hopefully be remedied in the future. Light in the service of art should not be a simple visual phenomenon; it should engage all the opportunities available to delight and enhance our experience. EDWARD KEEGAN

# Culoid asiest Way to Find your Room

design Laurinda Spear (Arquitectonica Studio), 2009

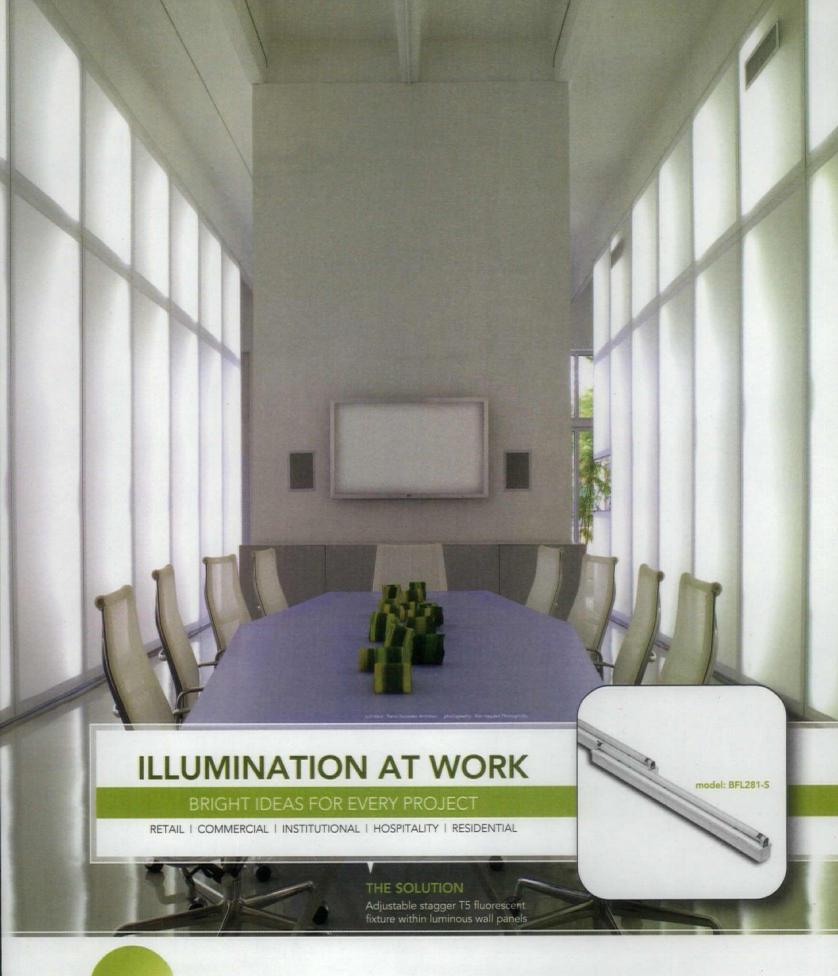
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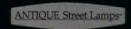
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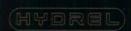








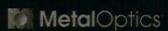


























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# **Economic Roundtable**

DESIGNERS AND MANUFACTURERS DISCUSS HOW THE ECONOMY IS IMPACTING THE DESIGN PROFESSION



A group of architects, lighting designers, and manufacturers gathered during the AIA National Convention in San Francisco this past April to participate in the 2009 A|L Roundtable. Participants included: Peter Pfau, Ken Lewis, Kami Kinkaid, Primo Orpilla, Alice Prussin, Jim Young, Patty Glasow, and Reed Powers (left to right, top to bottom).

Continuing the publication's tradition of dialogue, ARCHITECTURAL LIGHTING magazine held its 2009 roundtable discussion during the American Institute of Architects (AIA) National Convention in San Francisco this past April. With the economy central to everyone's concerns, AIL gathered a group of highly respected members of the architecture and lighting communities, representing both design and manufacturing, to discuss the economy's impact and strategies for emerging from the downturn. Moderated by ARCHITECTURAL LIGHTING editor Elizabeth Donoff, participants included:

Patty Glasow, principal, Auerbach Glasow French, San Francisco
Kami Kinkaid, project manager, Pfau Long Architecture, San Francisco
Ken Lewis, principal, AC Martin, Los Angeles
Primo Orpilla, principal, Studio O+A, San Francisco
Peter Pfau, principal, Pfau Long Architecture, San Francisco
Reed Powers, executive vice president, Insight Lighting, Rio Rancho, N.M.
Alice Prussin, principal, Alice Prussin Lighting Design, San Francisco
Jim Young, director of sales & marketing, Peerless Lighting, Berkeley, Calif.

What is the biggest impact of the downturn on your businesses and on the profession?

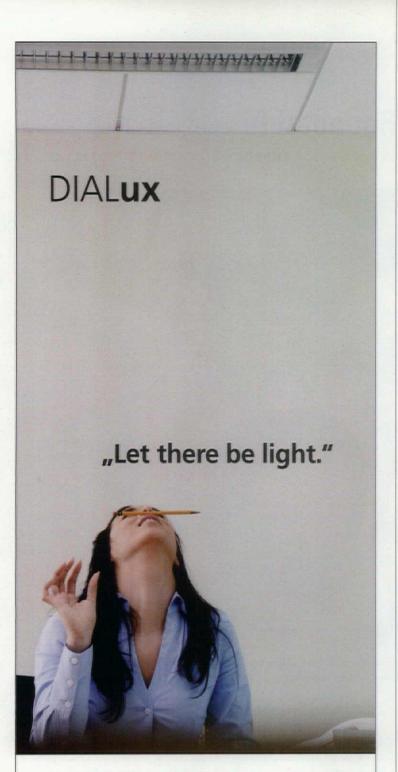
Peter Pfau: I'm kind of sick of hearing about [the downturn]. But the silver

lining is that we all have to return to the essentials of good practices, purge the unnecessary. I also think it is a driver for green technologies. Suddenly people are realizing, "Hey, green technologies save money." In the realm of lighting, there is a tremendous amount of technological innovation going on right now. Interestingly enough, the economic downturn is a driver for innovation.

Patty Glasow: People in our profession are not good business people; we have to learn how to be good business people. It means not expending into credit, it means keeping cash in our companies. Collections have been a problem; it is hard to get people to pay. This is my fourth recession, and it is certainly the worst I have experienced, but it reinforces what we already knew as important: relationships, diversification of project types, and, if you can, diversification of geography. This is going to shake out a lot of practitioners.

**Alice Prussin:** I actually chose to grow. I hired another person and had to live through some panicky feelings afterwards, but it was the right thing to do. It has pushed me into learning a lot more about running a business.

**Ken Lewis:** For us, so far, it has not been as severe as the 1990 recession, which hit Los Angeles hard. We had much better prediction and control systems in place this time and saw it coming. We set aside a good amount of



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# REPORT

money from last year toward this year, and we were fortunate in having some big commissions. But at the same time, it is a lot of belt tightening. We had to lay people off. One of the mistakes of the early '90s was that we held people for a month, and we dug a huge hole.

# How long do you think your businesses will be affected?

**Peter Pfau:** We create predictive models and the minute we create them, they are out of date.

**Patty Glasow:** It is much more fractured. Lack of new work is one of the biggest impacts, and the kind of work that is coming in is smaller. We had a period of time when no one called. We usually send out multiple proposals a week. For two months, we sent out nothing.

Alice Prussin: January and February?

Patty Glasow: Exactly right.

Reed Powers: That is the reaction in the markets; it was stymied.

**Patty Glasow:** And then it started again at the end of February; we started getting calls from manufacturers.

**Peter Pfau:** How do you encourage it from the manufacturing end? You are so far down the stream from us that I would guess that what you get are more people are asking for bids but not delivered, right?

**Reed Powers:** We are really fortunate because we are privately owned, and we have always been product-driven; you do not have to worry about satisfying stockholders. We are a fiscally conservative, market-aggressive company, and we made a decision almost five years ago to study the digital side of the business. That has helped our business the past two years, and we can see it helping us in the future.

Jim Young: In January and February everybody was shocked at how fast it happened. As you look at these forecasts, you can see your backlog, you know what is going to happen in the next three months. It is getting harder to predict the releases; six weeks can have a pretty big impact. We have the benefit of having a presence in North America, so some parts of the country are significant, and in some parts nothing is happening. It gives us a little bit of balance.

Patty Glasow: It seems like everybody has narrowed his or her window. Three months is what used to be the equivalent of six months to a year.

**Peter Pfau:** It is not really whether the downturn is ending but whether we feel like there is enough flow of business beginning to come in that we can project work flow. That is what everyone is facing now. I think things are better. We have new work; I know other people have new work.

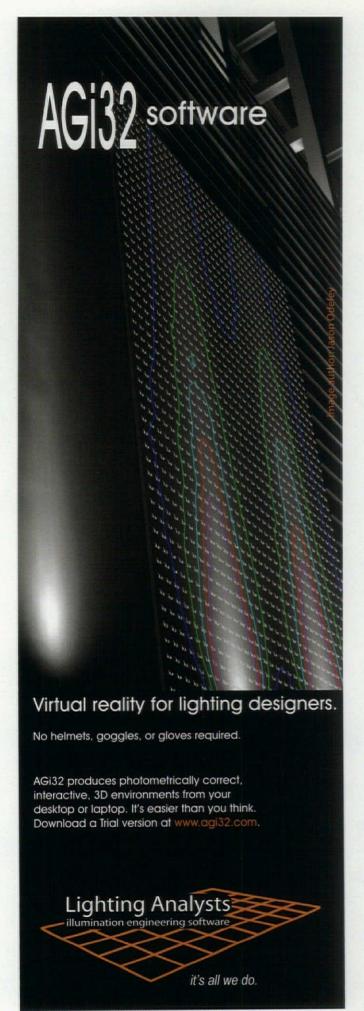
**Ken Lewis:** A lot of [clients] are saying, "It's a rough time. What kind of discounts are you going to offer?" We have been happy to have that conversation, where we know a project can go ahead if we are willing to consider some adjustment to our fees. The trick is recovering from that in the long term.

Does this mean then that the business model for design has to fundamentally change to adapt to these conditions?

**Ken Lewis:** I do not think that the way we do architecture has changed, but we are seeing a change in the delivery method and seeing a lot more design, which is front-loaded without the appropriate stipend. We have had to create a very different paradigm for the go or no-go decision.







# REPORT

**Jim Young:** We quickly are getting in an uncomfortable position of becoming a designer on projects rather than just providing the applications to the designer. We have the expertise to do it, but there is a fine line.

**Patty Glasow:** Everyone is trying to find ways to cut corners, to make their fee stretch: How do I do the coordination I need to do, the design, the oversight? But I cannot do it like I used to because now my fee is at stake. So how do you push all of those services into that fee, and one way is to lower profit but you can only do that so much.

**Reed Powers:** I hate to see this trend, because it sounds to me a bit like the healthcare business, where you practice medicine from a defensive posture.

Primo Orpilla: You've got to document.

Patty Glasow: Our firm has never had a lawsuit against it, for 39 years. Since mid last year, we have seen four lawsuits against projects that we were involved with. That is what happens in these economic times. What saved us is being able to pull all our documents and say, "This is what we did." Then being able to step back and say, "Now, you guys go at it, but it has nothing to do with us."

**Alice Prussin:** I have heard this concern from lighting designers too. Everything is moving so fast—the lack of coordination. It puts additional pressure on the designer, the manufacturer, everyone.

**Kami Kinkaid:** We need senior people reviewing these projects. Junior and mid-level people have not been through this before. You need experienced eyes to look at drawings and documents.

# How do you maintain a positive attitude and boost morale?

**Ken Lewis:** A big part of it is communicating with employees. We talk openly, in a practical, straightforward manner. When it comes to layoffs, everybody used to hide. Now we get together and talk about staffing in the broader sense. The dynamic is much more participatory, because everyone knows what you are doing is rational—its a pragmatic process and not an emotional one.

**Patty Glasow:** You surround yourself with people you enjoy working with, and not taking things too personally.

Kami Kinkaid: Its important to hear from the firm principals. It helps the office understand what is going on in terms of the big picture.

**Peter Pfau:** Communication is big. Firm leaders need to have a perspective that "this too shall pass."

Alice Prussin: It winds up being an opportunity to connect with your colleagues and find out what they are doing.

**Primo Orpilla:** Your first reaction is to go bury yourself and not talk about it, but I think you have to talk about what is going on. Tenants are looking to a whole new set of criteria—LEED and sustainability.

Jim Young: The marketplace is demanding it.

Primo Orpilla: It's the difference between someone hiring you.

**Reed Powers:** It certainly makes it a more competitive environment out there. You need to be out there marketing at all times. If you don't someone else will.

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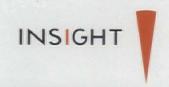


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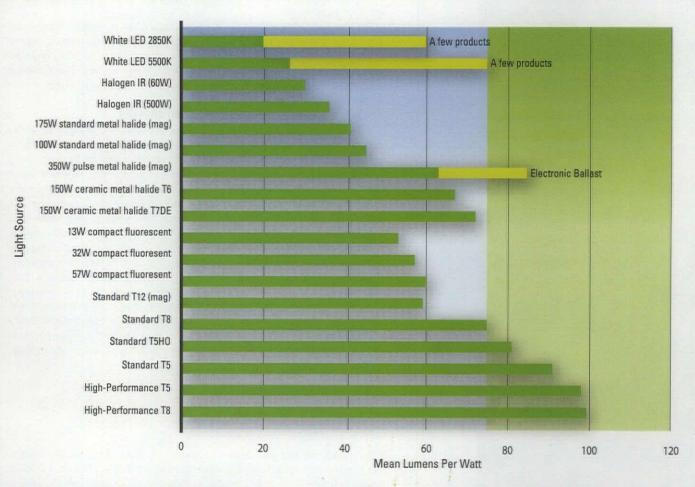
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# Lighting's Workhorses

# JIM BENYA LOOKS AT THE LATEST IN LAMPS AND BALLASTS



Jim Benya diagrams lamp ballast efficacy—the efficiency based on mean lumens per watt—using current market product offerings.

Based on the innovations in lamps and ballasts since our last report ("Lighting's Latest Nuts and Bolts," March 2008), the economy has not slowed the push to develop new products in these categories. Of course, new LED offerings are being introduced with greater frequency as they become serious product contenders, but there are a bounty of developments in regular lamps that still deserve attention.

### TUNGSTEN

The good ol' incandescent lamp is on its last legs. Despite rumors of a high-efficacy version, the only way to significantly improve the efficiency of an incandescent is to use relatively expensive technology such as the halogen cycle (a complex chemical interaction between tungsten, oxygen, and a halide), infrared reflecting coatings, and rare backfill gas. Tungsten may be nearing the end of the line unless a breakthrough is achieved. The worldwide movement to ban the bulb has abated slightly, but don't plan on being able to buy them 10 years from now.

But there are a few applications where tungsten lamps are still king and new products are still emerging. The principal developments are mostly in halogen and halogen IR projector lamps, where reflector design allows lower wattage while maintaining beam candlepower. Across manufacturers, the 45W to 48W PAR30, the 45W to 55W PAR38, and the aluminum-reflector 300W PAR56 and 1000W PAR64 are all examples of meaningful improvements.

### COMPACT FLUORESCENT

While we wait for sound LED options for incandescent replacement lamps, compact fluorescent lamps (CFLs) are still the cost-effective, energy-efficient alternative for many traditional incandescent applications. A steady flow of innovations continues, with new state-of-theart products including:

- Spring-shaped lamps available in both medium screw and GU24 bases that are dimmable and smaller than ever, allowing more lumens in more places;
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# **TECHNOLOGY**

- · GU24 lamps in more sizes, shapes, and wattages; and
- Colored screw-based CFLs for use as party lights, bug lights, black lights, and other playful applications.

There is a special family of CFL lamps that uses cold cathode technology. Cold cathode is a type of fluorescent lamp with significantly increased lamp life; the lamps are rated at 25,000 hours. Use them when the design requires sources that last longer and can be easily dimmed or frequently switched, such as in flashing and chasing marquees.

Pin-based CFL systems have not enjoyed nearly as much innovation, since this market is already established. The most important new products appear to be additions to ballast choices, particularly universal voltage dimming types for both analog and digital control systems. Other improvements include some lamps being rated up to 20,000 hours, including some new triple tube products.

### COMMERCIAL AND INDUSTRIAL FLUORESCENT SOURCES

Fluorescent lighting is still the most efficient and cost-effective lighting option on the market, and you can bet it will remain this way for a while. As a result, ongoing lamp and ballast improvements have resulted in some important new products.

One trend is lamps with superior life. Most companies offer T8 lamps with a rated life of up to 46,000 hours, equal to or better than the 70 percent lumen maintenance rated life of many LED products. Others have reduced mercury content and/or a number of reduced wattage variations. The most significant new lamp is the reduced wattage T5HO, the latest version needing only 49W to 50W to produce light levels similar to the original 54W lamp. At least one manufacturer now claims their low-mercury T8 lamps need no burn-in time for dimming operation.

Ballasts also continue to evolve and improve. A wide variety of universal voltage ballasts for T5 and T8 lamps are now available, including high-efficiency versions of instant-start and program-start types for one, two, three, and four lamps at high, normal, or low ballast factors. There are high-efficiency ballasts for F86T8HO and other less-popular lamps. A new generation of low-cost, multilevel ballasts use two switches to select off (both switches off), low (one switch off), medium

# "New LED offerings are being introduced with greater frequency, but there are a bounty of developments in regular lamps that still deserve attention."

(other switch off), and high (both switches on). Another uses a single switch to toggle between low and high light levels (to meet the EPACT 2005 tax deduction requirement in existing buildings with single switches). Among dimming ballasts, the latest include "high-efficiency" dimming ballasts that save several watts compared to standard dimming ballasts, and dimming ballasts with both "high-light output" and "low-light output" as well as standard versions. DALI and other digital ballast families also now include more lamp types and operate on all voltages.

# **INDUCTION LAMPS**

Now that costs for lamps and exciters are more competitive, there is a minor renaissance in fluorescent induction lamps. Also called electrodeless fluorescent, these lamps use the same principle of mercury discharge and phosphor emission of visible light as other fluorescent lamps, but are excited by radio waves from a transmitter instead of by the electrodes of a ballast. Low-wattage screw-based induction lamps last two to three times longer than regular CFLs, and the higher wattage sources—lamp life of up to 100,000 hours—make these appealing for locations that are hard to maintain. Their primary limitation is large source size, which forces larger luminaires, but nonetheless there are quite a few choices as manufacturers have recently introduced downlights, high-bay area lights, and outdoor luminaires, just to name a few.

### HIGH INTENSITY DISCHARGE (HID)

Ongoing improvements and product line expansions of ceramic metal halide lamps are probably the most important HID developments. Ranging from 20W

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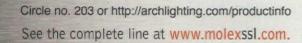
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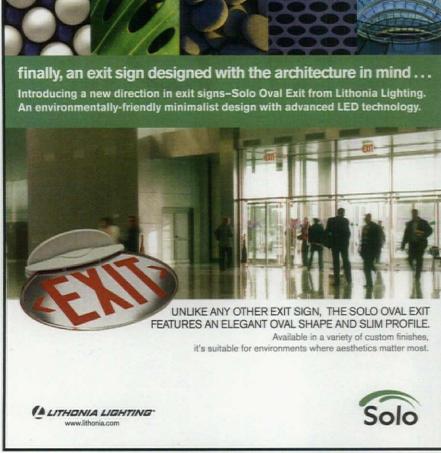
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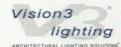
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MR16 to 400W E28 and E37 lamps, the superior color and high efficacy of ceramic lamps continues to impress. The latest products include compact lamps at 210W and 315W that have high lumen maintenance and dimming, making them ideal for new indoor and exterior luminaires where point sources are needed.

An important innovation is the self-ballasted low-wattage metal halide PAR lamp. These lamps, which fit directly into medium base sockets in tracklighting gear, replace tungsten lamps and can reduce display lighting power by 50 to 67 percent.

Among metal halide ballasts, three major developments stand out:

- Multi-lamp low-wattage ballasts, with a switch on the ballast to match the lamp watts (39W, 50W, and 70W);
- · Dimmable low-wattage ballasts; and
- Battery backup devices that permit metal halide lamps to ride through brief power outages and generator startup, making it possible to use metal halide lamps in emergency lighting applications.

In another exciting development, plasma HID lamps have been introduced that achieve 20,000 lumens or more from a source that is about the size of a large LED. These are induction lamps that use microwaves to excite metal halide chemicals inside of a compact vessel, with the potential for creating an incredibly small luminaire with superior efficiency. There is also the promise of very low cost. Perhaps this source will become the perfect companion to LED sources when large lumen packages are needed. These sources have already moved into professional video projectors and theatrical lighting, so architectural lighting is imminent. Limitations are similar to other metal halide lamps, such as limited dimming range, warm-up and restrike time, and minor color issues.

### LED

Let's face it, this is where most of R&D funding goes, so it should be no surprise that LED products are now being introduced at about 10 times the rate of all other light sources combined. The promise of solid-state lighting—both LED and OLED—remains outstanding. But with solid-state lighting changing so rapidly, constant attention to new developments is essential. For this reason, a separate LED discussion will appear in the next issue of A|L LED, in conjunction with the Sept./Oct. 2009 issue.

### SUMMARY

While solid-state systems now add to the lighting designer's choices, developments in conventional lighting are decreasing rapidly. However, solid-state lighting must be carefully evaluated on a case-by-case basis, as the cost per lumen-hour is still three to five times that of fluorescent lighting. In other words, don't throw away those lamp catalogs just yet. JAMES R. BENYA

IUNN LIGHTING UNITO UVAH:

INSTALLATIONS



S14 DecorLED™Lamps Palace Theatre, Albany, NY







Round, Flexible RopeLED Tortilla Jo's, Anaheim, CA





Custom-Built LED Lamps Vincent Thomas Bridge, San Pedro, CA





S14-Styled DecorLED Lamps Bardavon Theater, Poughkeepsie, NY





4-LED, 9mm Miniature Wedge-Based Lam Hillsboro Arch, Hillsboro, OR





7-LED, S6 Candelabra-Based Lamps Hyatt Regency, Long Beach, CA



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## Sixth Annual

In the six short years since their inauguration, the ALL Light & Architecture Design Awards have emerged as a contender on the lighting award and competition circuit. This year was as competitive as ever. The program attracted top-notch work from around the globe and received its greatest-ever number of entries—just shy of 100. Factor in the category structure, in which some projects were submitted in more than one category, and there were actually 115 individual project reviews.

From this pool of sophisticated work, the jury selected 16 projects: four Outstanding Achievement, eight Commendable Achievement, and four Special Citations for specific project elements that resonated with the jury. The winners represent a diverse array of architectural and lighting challenges. Encompassing all scales, from the intimate to the grand, the work celebrates both the everyday and the heroic. In fact, an interesting theme emerged this year: The jury was drawn to project types—industrial facilities, garages, and warehouses—that are often given little design consideration and often take shape without any aesthetic focus. But the architects and lighting designers behind the wining projects celebrated their pragmatic programs, and the projects realized full potential as illuminated spaces.

Another theme to emerge was the way in which each project, no matter the typology, illustrates a refined elegance. Worship space, building façade, industrial facility, healthcare setting, exhibit, streetscape, office, or hospitality venue—all of the winning entries showcase a complete integration of light and architecture, in which one could not exist without the other. Masterfully executed, all of the work reflects years or practice and experience.

Over the course of the two-day deliberations, design considerations were not the only criteria on the minds of the jury of esteemed lighting and architecture professionals (see bios, right). The jury did not feel that any of the projects submitted under Budget, Color, and Daylighting lived up to the criteria of these categories, and so the jury did not make any awards. And the jury strongly felt that energy compliance should rank just as high as design intent, execution, and clarity of fixture selection. As a result, the jury did not make awards to several projects that, while beautiful from a design perspective, fell short in meeting the responsibility of energy code requirements—no matter the "special circumstances."

In a first for the Light & Architecture Design Awards, we went beyond the review of supplied materials. During the course of the jury discussion, we sought supplemental information and clarifications from the entrants in order to give every project the fairest evaluation. Watts per square foot numbers are requested as part of the entry submission process, as it is assumed that the relevant energy issues will be discussed in the project description. However, as the supporting materials brought to light, not every entrant provided the data. Our challenge as the Design Award program continues to evolve will be to express the necessity of this information as absolute criteria for project review.

Design is not just about place making or setting a tone, it's about accomplishing creative intentions while meeting the realities of codes and budgets. The 16 projects on the pages ahead appear effortless but are really the result of hard work and careful study. The Class of 2009 continues a legacy of excellence and innovation—set forth by past winning projects—which has become the signature of the Light & Architecture Design Awards. ELIZABETH DONOFF

#### **Jury Members**



Jim Baney, IALD Firm: Schuler Shook Lighting Designers, Chicago Title: Principal

A partner in Schuler Shook's Chicago office, Baney is responsible for ensuring high-quality design standards for the firm's award-winning projects. The office's portfolio includes museums, houses of worship, retail, hospitality, building façades, streetscapes, transportation facilities, and corporate offices. Baney has presented at design conferences such as the AIA Convention, Lightfair, and Neocon, and he has been a guest lecturer at the Illinois Institute of Technology, the University of Illinois, Chicago, and Andrews University.

# architecture design awards



Denise Fong, IALD Firm: Candela Lighting Design and Consulting, Seattle Title: Principal

With more than 25 years of experience developing award-winning lighting design strategies for both public and private clients, Fong is a sought-after speaker at national and international conferences, lecturing on topics such as sustainable lighting design, the design process, and lighting for healthcare environments. She has published articles in a wide variety of lighting and architectural journals. The firm's portfolio includes designs for museums, theaters, retail, healthcare facilities, offices, and exterior building lighting.



Michael Gehring, FAIA, IALD Firm: Kaplan Gehring McCarroll (KGM) Architectural Lighting, Los Angeles Title: Principal

A licensed architect, Gehring holds a BArch from the USC School of Architecture and an MBA from the UCLA Anderson Graduate School of Management. A co-founder of KGM, Gehring has worked on a diverse body of international projects including the Bellagio Hotel and DreamWorks Animation. Gehring served as president of the USC Architectural Guild from 2004 to 2005, and has lectured at several architecture schools on lighting design and its merits as a specialized career within architecture.



Randy Sabedra, IALD, IES Firm: RS Lighting Design, Brooklyn, N.Y. Title: Principal

An award-winning lighting designer with more than 20 years of design experience, Sabedra served as the president of the Illuminating Engineering Society New York City Section from 2005 to 2007. An active member of the Section, he has also served as its vice president and co-chair of the IESNY Education Committee. He currently holds the chair for the NYC Public Outreach Committee. Sabedra is also an instructor at several architecture programs, including Parsons the New School for Design, the Art Institute of New York, and the School of Visual Arts.



Sandra Stashik, PE, FIES, IALD Firm: Grenald Waldron Associates, Narberth, Pa. Title: Principal

With Grenald Waldron since 1985,
Stashik has been active in the planning,
design, and project management of
major transportation, roadway, bridge,
and campus master planning projects
around the world, as well as interior
public spaces and offices. She leads
the firm's "Green and Sustainable
Design" efforts, staff development, and
marketing. She has served as a lighting
judge for the Dept. of Energy's Solar
Decathlon, and this September will be
speaking at the Illuminating Engineering
Society's Street and Area Lighting
conference in Philadelphia.

## **Private House**

g Design International



Jim Baney: Not your everyday kind of a project. The lighting designers have really explored the interaction between light, material, and reflection.

Denise Fong: The space has a magical quality about it. It appears simple, but it's very complex.

Randy Sabedra: Simple, yet a very intellectual design.

#### Details

London Lighting Designer: Lighting Design International, London Photographer: Christian Richters, Munster, Germany Project Size: 5.000 square feet

Watts Per Square Foot: 2.25

Architect: Carmody Groarke,



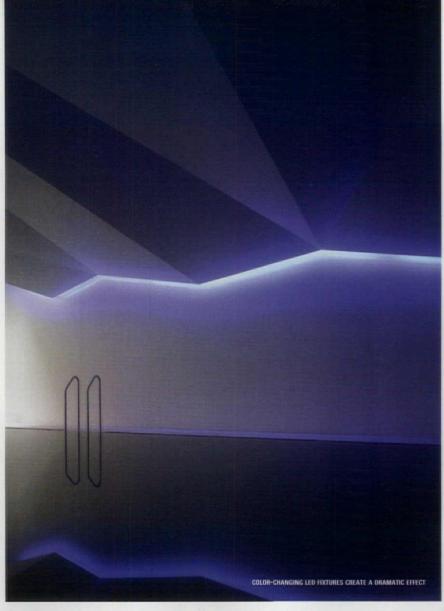
Otherworldly and ethereal might be the best way to describe this spa, an addition to a European 19th century country estate. The contemporary spa stands in sharp contrast to the traditionally styled existing residence, melding luxurious materials and finishes—fumed-oak and Black Sicilian Basaltina—with light. The project brief called for the creation of "a series of calming, coherent, and relaxing spaces." The 5,000-square-foot below-grade space, which includes a swimming pool, Jacuzzi, sauna, steam room, and a gymnasium, is just that. By carefully positioning lighting elements, Lighting Design International created a unique environment. The London firm had a leg up thanks to the dynamic ceiling—a series of folded planes fabricated from glass-reinforced gypsum (GRG) that architects Carmody Groarke designed as a sculptural counterpoint to the smooth surfaces of water.

Although underground, the spa is connected to the outside via a skylight, tucked-up out of view at the far end of the pool. The opening provides a wash of natural light during the day, while at night, electric sources cast light across the pool. The size of the pool, which is approximately 57 feet long by 26 feet wide, enabled the lighting designers to make a significant statement: A gap separates the folded ceiling plane from the side walls, and the slot emits a haze of fluid light from two concealed indirect sources—3500K cold cathode by day and color-changing LEDs by night. The light accentuates the upper portion of the wall while defining the angular edges of the GRG ceiling, all without ever having to directly illuminate the ceiling itself. The atmosphere is further enhanced by the reflection of the ceiling and its edge lighting on the water's surface.

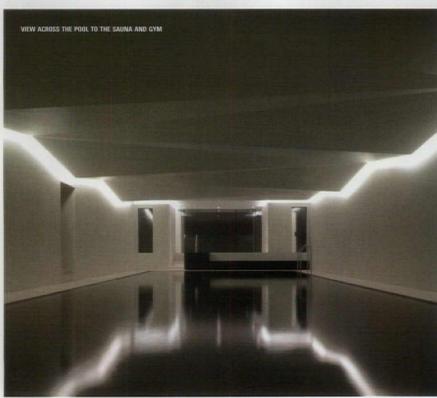
Banks of narrow-beam cool-white LEDs light the edge of the pool, enhancing the blue tint of the water. As the light from the luminaires stretches across the pool perimeter, the effect reminds one of a series of searchlights, aiding the swimmer who is navigating the mysterious liquid terrain. The lighting fittings were installed in the overflow channel because the pool cover had already been installed and the pool itself already had been cast prior to the lighting designer's involvement in the project.

The sensuous atmosphere continues in the sauna and steam room, where dark finishes and lighting pulled back to the corners emphasize the room's edges. Louvered downlights complement the vertical light slots and provide a sense of drama. The gym uses both cold cathode and low-wattage halogen sources, which family members can select depending on workout needs. Finally, fiber optic steplights illuminate the Jacuzzi.

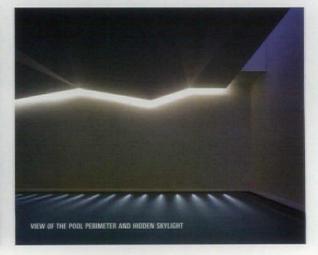
In order to create a sleek and sophisticated appearance, the client requested that the luminaires be "invisible," so the lighting team developed a series of custom detailing solutions. The result is an architecture where light is visible, but not the source. Suggesting the hint of a line which unfolds into a volume, lighting is deftly used in this project of carefully considered strokes. ELIZABETH DONOFF











Car Park One

Elliott + Associates Architects



#### **Jury Comments**

Mike Gehring: We can all learn from the attention paid to the lighting experience in this parking garage. The next step in our evolution will be to "raise the bar" with less money and less wattage.

Denise Fong: Too often some building types are given short thrift on design because of their utilitarian nature. This project is an exception to that rule.

Sandra Stashik: The lighting, integrated with the design and the graphics of the parking deck, creates a fresh and fun solution to an otherwise mundane environment.

#### Details

Location: Oklahoma City Client: Chesapeake Energy Corp., Oklahoma City Architect and Lighting Designer: Elliott + Associates Architects, Oklahoma City Photographer: Scott McDonald, Hedrich Blessing, Chicago Project Size: 298,907 square feet Watts Per Square Foot: 1.6









This is not your average parking garage. Commissioned by Chesapeake Energy for its corporate campus in Oklahoma City, Okla., the architects infused light and color into the structure, making it a destination as significant as any other building in the complex. In fact, the design has been so successful that the garage has become a marketing tool in the company's recruiting arsenal.

Each of the four levels is assigned a primary color—red, green, yellow, or blue—which helps drivers navigate their way through the 791-parking-spot facility and provides an easy, fun way for them to remember where they parked. The color is applied as paint to the columns, wall partitions, and transfer beams of the concrete structure. To accentuate the colors and to provide illumination, architectural firm Elliott + Associates installed T5 linear fluorescent strips end-to-end on each column, creating vertical bands of light. The linear fixtures are also positioned in a cove element incorporated into the cross beams where they uplight the ceiling plane with a colored wash of light. The result is a parking facility that is well illuminated, but not overly lit, imparting a sense of security no matter the time of day.

Although Oklahoma City has no energy code requirement, Elliott + Associ-

ates and the engineer were mindful of energy conservation issues (after all, the client for this facility is an energy company). The project team employed a lighting control system that automatically turns on all fixtures during peak morning and afternoon rush hours. During off-peak hours, the system turns off every fourth row of luminaires to save energy.

In keeping with the client's request to design a parking garage that does not look and feel like a garage, the architects wrapped the building's exterior in a stainless steel mesh. This mesh not only allowed the architects to conceal the cars from view, but also provided an environmental benefit. The density of the mesh is 20 percent open, complying with code requirements for airflow which require carbon dioxide to be cycled out of parking areas. Attached horizontally to the mesh panels are rods, or "outriggers," that provide an additional element of visual interest and act as mini sundials during the day, casting shadow lines across the façade.

At night, the interior illumination highlights the outriggers, and on the whole, the garage takes on a different look and feel. It glows from within, which creates a shimmering effect on the metal exterior. A luminous, colorful facility, Car Park One casts automobiles in a whole new light. ED

#### L2 Lounge



#### **Jury Comments**

Jim Baney: Less is more ... more painstaking detailing ... more "sweating the small stuff" ... and it all paid off.

Denise Fong: The lighting is ethereal. It moves the design to a whole other level.

Randy Sabedra: It's like walking into a Rothko painting-mysterious, hypnotic, and sensual.

#### Details

Location: Washington, D.C. Architect: Lehman Smith McLeish, Washington, D.C. Lighting Designer: MCLA, Washington, D.C. Electrical Engineer: Tolk Engineers, Fairfax, Va. Photographer: Prakash Patel, Washington, D.C. Project Size: 4,450 square feet Watts Per Square Foot: 3.24 (filed under IECC using decorative lighting allowance and space by space calculation)





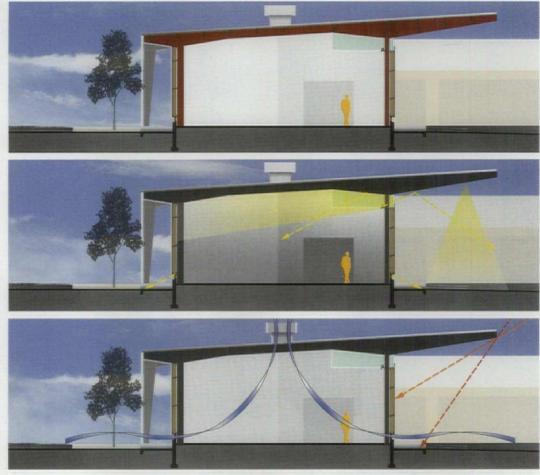


Quietly tucked away in a mixed-use complex of historic townhouses and warehouses in Georgetown, Washington, D.C., this membership-only lounge is an architectural study in contrasts. Located in a basement space with exposed brick walls, the design team was tasked with creating a space that would be warm and inviting, but also refined. Layering light with material finishes provided the solution to create a sophisticated and understated environment. The abundance of white surfaces was particularly challenging for the lighting team at MCLA as they employed lighting strategies to minimize issues of reflectance and to maintain lower light levels in what is typically a dim setting.

Arriving at L2 Lounge, one is greeted by intense color in the narrow entry vestibule, which is lined with glass walls backlit with 1W RGB color-changing LED modules. But the heart of the space is a suite of six seating and bar areas called "salons." The defining characteristic of these spaces is a series of gypsum frames backlit with warm white linear 3000K 1W LED fixtures. The lighting makes the frames appear to float in front of the exposed brick walls. The light also provides an illuminated outline for video art projections in the center of each frame.

To maintain a clean ceiling plane, 50W PAR30 halogen track spots are tucked between the edge of the walls and the acoustic stretch fabric ceilings in each lounge. The smooth white finishes of ceiling and frame provide an effective contrast to the rough texture of the brick. As an accent in the salons, the front face of the two bars are backlit with color-changing LEDs, similar to the treatment of the entryway. Color is also used to playful effect in the unisex restrooms, where gender is noted by a symbol on each stall and lit in either pink or blue. Throughout, lighting is integrated into the architecture creating a sleek and elegant space for entertaining. ED

#### Cox Communications



DIAGRAMS ILLUSTRATING THE BUILDING STRUCTURE, THE LIGHTING, AND CONVECTION COOLING STRATEGIES

#### **Jury Comments**

Mike Gehring: This project is the argument against those who say that their building type or budget does not merit good lighting design.

Denise Fong: The use of light and material reinforces the architecture.

Sandra Stashik: The combination of architectural form and light create a wonderful nighttime appearance to this simple structure.

#### Details

Location: Topeka, Kan. Client: Henderson Development, Topeka, Kan. Architect and Lighting Designer: El Dorado, Kansas City, Mo. Photographer: Mike Sinclair, Kansas City, Mo. Project Size: 8,500 square feet Watts Per Square Foot: 0.8

Light and architecture become one in this new distribution center for Cox Communications, the anchor tenant of a light industrial park in Topeka, Kan. The owner, looking to build something other than the stereotypical warehouse, called on Kansas City, Mo.based architecture firm El Dorado.

The client had only three requirements for the new facility: that the building be durable, energy efficient, and be built within a budget of \$80 per square foot. El Dorado chose a pre-engineered metal building system made from Galvalume-steel with a protective coating of zinc and aluminum-to envelop the 8,500-squarefoot structure.

The warehouse is organized into repetitive 30-foot bays, and the façade is a clean and contemporary composition of horizontal swaths of material in varying heights, including a concrete base, metal siding, clerestory windows, and a cantilevered roof. A band of light from 3500K T5HO fluorescent lamps in 4-foot lengths. located along the concrete foundation, provides pedestrian lighting for the sidewalks that run along the north and south faces of the building and the parking lot.

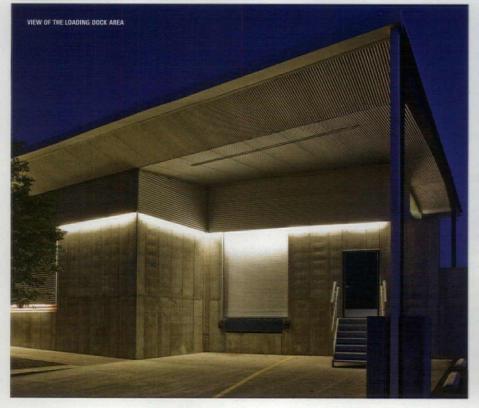
A second linear accent of light is just above the clerestory windows, where the same 4-foot T5HO fluorescent fixture is used, but staggered and recessed into the underside of the roof's overhang, uplighting

the Galvalume. The reflection on the metal surface directs a balanced ambient light onto the asphalt parking lot, providing a secondary level of illumination. On the building's south side, linear fluorescent strips in an overhead exterior soffit provide task lighting for vehicle loading and unloading. Indirect lighting above the clerestories is provided by 4-foot T5HO fluorescent lamps with reflectors, staggered 4 inches below the base of the 2-foot-by-6-foot windows. This practical approach was key to creating efficient expanses of indirect site illumination, eliminating the need for stand-alone fixtures, while highlighting the details of the steel skin.

Inside, the lighting is equally as minimal. The majority of illumination is supplied by a single run of industrial fluorescent fixtures that illuminate shelving on the north and south sides of the warehouse. Indirect natural light fills the warehouse during the day; enough so that no electric light is needed to illuminate the southern shelving aisle.

With its controlled material palette, including steel, concrete, and glass, the building's design is a pragmatic response to its function. The lighting design is no exception. Fully integrated into the building, the lighting is unobtrusive, yet, as a result of its thoughtful placement, becomes more than just another element of the design. ED







#### Newtown Creek Wastewater Treatment Plant



Mike Gehring: I love the way that something so huge and mundane has been transformed into something magical at night. I yearn for the day when every utilitarian project will have great lighting.

Randy Sabedra: Kudos for transforming a potential eyesore into a work of art.

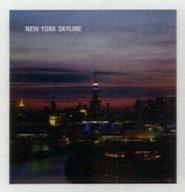
Sandra Stashik: This saturation of colored light creates an otherworldly nighttime landmark.

#### Details

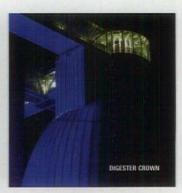
Location: Greenpoint,

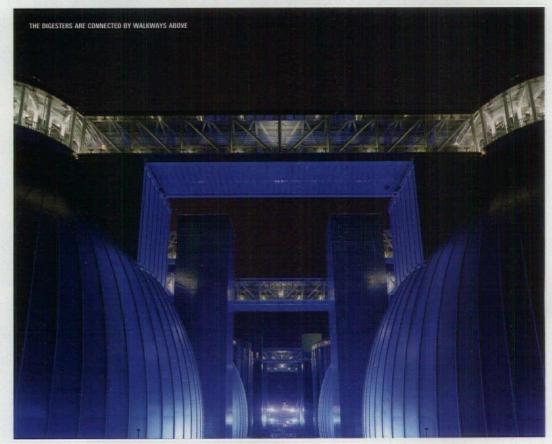
Brooklyn, N.Y. Client: NYC Department of Environmental Protection, Bureau of Clean Water, Newtown Creek Architect: Polshek Partnership Architects, New York Lighting Designer: L'Observatoire International New York Photographer: Walter Dufresne, Brooklyn, N.Y.

Project Size: 54-acre industrial site that includes a visitor center and nature walk









Standing 145 feet tall, the complex of eight futuristic-looking egg-shaped digesters at the Newtown Creek Wastewater Treatment Plant in Greenpoint, a neighborhood in Brooklyn, N.Y., is visible for miles. During the day, sunlight glints off of the bulbous forms' stainless steel cladding. At night, they come alive in a more unearthly way, steeped in a halo of blue light courtesy of Manhattan-based lighting design firm L'Observatoire International.

Lit in June 2008, the eggs' lighting scheme is only one part of a 20-year master plan-initiated in 1998 and headed by Polshek Partnership Architects—to modernize the 54-acre treatment plant, which services a 25-squaremile area of New York City. L'Observatoire provided exterior lighting design services for the entire plant. Much of the job involved using metal halide worklights to meet the bare bones technical requirements of night shift work. But the team at L'Observatoire, ever the artists, sprinkled the expansive industrial landscape with accents of blue. The result is a diaphanous veil of colored light that defines the boundaries of the plant. "The color is a symbol for calm, cleanliness, and purity, but it also serves to contrast the light of the city, which is predominately amber or bright white." says Hervé Descottes, L'Observatoire's founder.

The eggs themselves—each capable of processing 1.5 million gallons of sludge every day—are backlit by four batteries of four 1,500W metal halide lamps, each with a blue filter. When turned on, the luminaires take several minutes to warm up, during which the intensity of the light steadily grows, creating the impression that you are not just looking at a piece of industrial architecture, but rather watching an alien life form slowly awaken. AARON SEWARD









The Lumen United Reform Church in London is not your typical place of worship. Serving a diverse neighborhood, Lumen invites people of all faiths to come together for prayer and community activities. With the recent modernization of their 1960s-era facility, the church asked Theis and Khan Architects to add a new chapel, rooms for classes and events, and a new streetfront café. George Sexton Associates' (GSA) simple, yet versatile, lighting scheme was integral in setting distinct atmospheres for these disparate functions and spaces.

Most of GSA's design is powered by custom directindirect linear fluorescent luminaires. Outfitted with 45W and 80W T5 lamps tuned to a color temperature of 3500K, the fixtures are applied in different ways to meet the needs of the given spaces. The choice of fluorescent met the project brief of providing functional lighting on a tight budget while meeting low energy usage goals. GSA's careful integration of the lighting into the architecture and clever use of switching assured that the solution wanted for nothing in terms of elegance.

The main worship space and café, which share the same volume, were set on separate controls. The direct and indirect uplight components of the luminaires can be switched separately to give the space three distinct lighting scenes. The fixtures were also integrated into the café's concrete columns, elevating the path from the entrance to the worship space into a procession. The community rooms—which will see a diversity of uses such as yoga, day care, and salsa classes—were outfitted with cove and recessed lights. GSA also applied this indirect lighting concept in the garden, discretely placing fixtures in alcoves and benches. As

Commendable Achievemen

## Lumen United Reform Church and Community Center

George Sexton Associates

#### **Jury Comments**

Jim Baney: Light is used as a building material and reveals the form of the architecture.

Denise Fong: Humble in its approach, the lighting design emphasizes the structure without calling attention to itself. The lighting is elegantly integrated.

Mike Gehring: A simple, clean, elegant space.

#### Details

Location: London
Client: Lumen United Reform
Church and Community Center
Architect: Theis and Khan
Architects, London
Lighting Designer: George Sexton
Associates, Washington, D.C.
Photographer: Nick Kane,
Kingston, Surrey, U.K., and
Richard Davies, London
Project Size: 890 square meters
(approximately 9,580 square feet)
Watts Per Square Meter: 19

#### Terminus 100

Cline Bettridge Bernstein

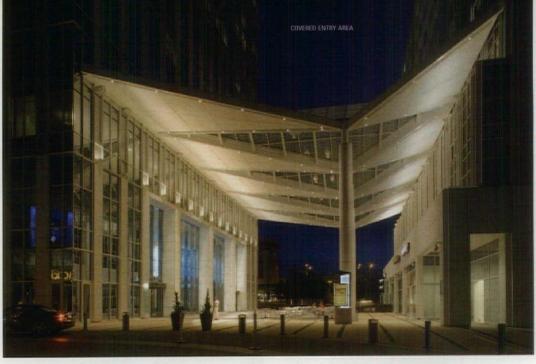


Mike Gehring: A lot of challenges here and a particularly nice solution to the outdoor covered entryway. You really get the sense that people want to gather here.

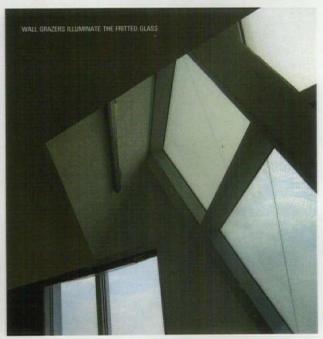
Jim Baney: The well-integrated lighting is the unifying element between the Terminus buildings It helps to tie inside to outside and creates an "outdoor room" for people to gather,

Location: Atlanta Architect: Duda/Paine Architects with HKS Architects, Atlanta Lighting Designer: Cline Bettridge Bernstein Lighting Design,

Photographer: Joe Aker, Houston Project Size: 600,000 square feet Watts Per Square Foot: Met Georgia and IECC requirements







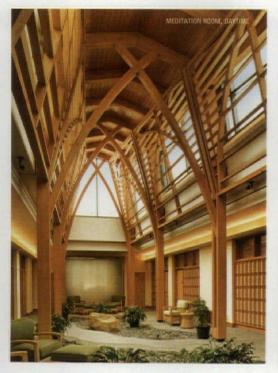
Terminus 100, a 27-story office tower, is distinguished on the Atlanta skyline by a bold, diagonally cut roofline broken by the building's core, which juts out to create a vivid V form. By day, the sculptural gesture is eyecatching in and of itself. At night, a scheme by Cline Bettridge Bernstein Lighting Design (CBBLD) transforms the roofline into an iconic lantern.

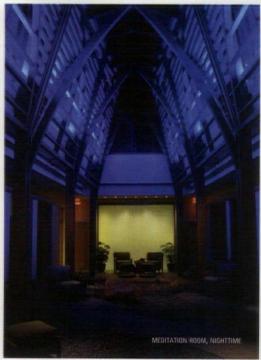
The most challenging aspect in creating this effect was to maintain an even degree of illumination between the V form, which covers tenant spaces, and the mechanical enclosure above it. In addition to the scale difference between the two elements, the glass surfaces also vary, complicating the execution of consistent color and brightness. CBBLD was able to achieve the effect through a careful coordination of varying sources and wattages appropriate for each space.

The mechanical penthouse is lit by three 400W metal halide fixtures with 3000K lamps mounted 8 feet from the floor. The designers used varying beams-including vertical flood, horizontal spot, and narrow spot-to

evenly light the 110-foot slope. The fixtures were also carefully placed to avoid creating shadows from the steel structure. A very different solution was used to light the V form from inside the office spaces. There, 3000K narrow-beam LED wall-grazing fixtures illuminate the translucent fritted glass of the curtain wall. The top of the protruding core was also lit with 3000K linear fluorescent uplights, heightening the volume's effect of pushing through the roofline and creating a smooth transition between the V and the crown.

The V motif also appears in the entrance canopy between the tower and an adjacent parking garage. The canopy's triangular panels of metal and fritted glass are uplit with 3000K 150W T6 metal halide fixtures. CBBLD's studies determined that point sources would minimize the reflection of the fixtures on the glass. The floor is illuminated by surface-mounted 3000K 100W PAR38 downlights integrated into the canopy panels. The same fixtures light the lobby, creating a seamless transition between inside and outside. As



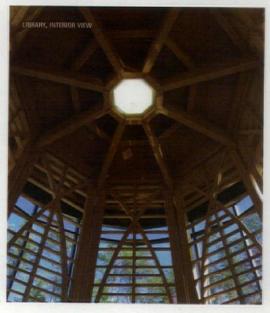


As the first healthcare facility in the U.S. built specifically for the combined practice of alternative and conventional medicine, Duke Integrative Medicine aims for an inviting, nonclinical environment. Duda/Paine Architects' design takes its cues from the peaceful forested setting. Their timber-framed structure, with its cathedral-in-the-woods-style spaces, gently curving exterior entry sequence, and circular library, became the focus of Cline Bettridge Bernstein Lighting Design's (CBBLD) scheme.

On the exterior, CBBLD casts light against the natural materials, creating a warm glow and articulating the architectural composition. The domed entry canopy, with its crisscrossing wooden beams, is illuminated by 70W 3000K metal halide uplights. Installed at grade, the fixtures' integral baffles reduce glare from the source. Exterior corridors leading off of the dome are lit by 3000K metal halide sconces mounted on the building.

The meditation room, a covered garden courtyard at the center of the facility, has the most involved lighting scheme, capable of being tuned to the time of day and user needs. By day, dimmable 3000K fluorescent covelights placed above the perimeter doors give the space an uplifting feel. An upper cove, located just beneath the clerestory, conceals a dual switched fluorescent asymmetric linear strip outfitted with one row of white lamps and one row of blue lamps. At night, the blue lights create a dramatically different mood, with a lower light level. Low-voltage monopoints with violettinted lenses accent the garden's rock features, and a water wall at the end of the room sparkles in the light of flanking MR16 wall washers. These theatrical touches imbue the garden with calm. As





Commendable Achievement

#### Duke Integrative Medicine

Cline Bettridge Bernstein Lighting Design

#### **Jury Comments**

Mike Gehring: Lighting is essential to the healing process for patients and their loved ones. This project masterfully capitalizes on the power of light.

Randy Sabedra: The lighting is thoughtfully transitioned from exterior to interior.

Sandra Stashik: Light filters through this majestic wood structure, strengthening the architectural concept and inviting you inside with it's warmth.

#### Details Location: Durham, N.C.

Durham, N.C.
Lighting Designer: Cline Bettridge
Bernstein Lighting Design,
New York
Photographer: Robert Benson
Photography, Hartford, Conn.,
and Duda/Paine Architects,
Durham, N.C.

Architect: Duda/Paine Architects.

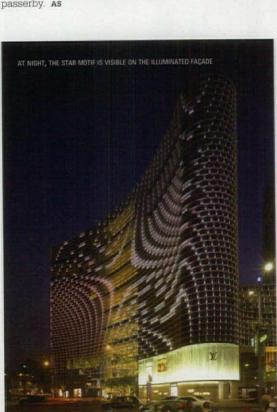
Project Size: 29,000 square feet Watts Per Square Foot: 1.2

Star Place Arup Lighting, Amsterdam

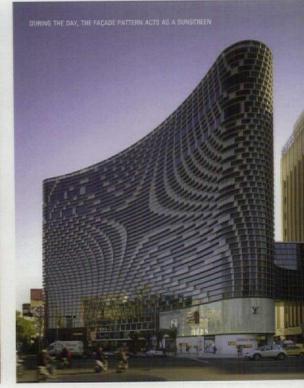
The owners of Star Place, a luxury shopping center in Taiwan, were in search of a gimmick to attract customers. The architects at UNStudio responded by designing the center's curtain wall with protruding glass fins that, in addition to providing sun shading, form a fluid pattern in the shape of a star. UNStudio called on the Amsterdam office of Arup Lighting, with whom they have worked with before, to develop an illumination scheme for the façade that would preserve the transparency of the glass during the day, but keep the star motif visible at night.

Arup's solution was a fully integrated custom LED edge lighting system, which offered the twin virtues of cost effectiveness and hardware small enough to be visually discreet. Advanced optics focus the light of the LEDs in a narrow beam capable of distributing light evenly across the glass panels. One crucial factor in keeping cost down was devising an efficient assembly method. The designers worked closely with the curtain wall manufacturer to develop a clipping system that joins fixture to glass with a minimum of difficulty. The clipping system also provided the added benefit of creating very low tolerances, which is extremely important for optical performance.

Finally, the designers developed a complex control system that allows each of the fins in the 164-foot-high curtain wall to be illuminated individually. In this way, each fin can become a pixel in a giant screen. The control system allows them to be programmed to animate the façade with movement and flows of color, creating a kaleidoscopic array that catches the eye of every passerby. As







#### **Jury Comments**

Jim Baney: A sophisticated way to incorporate pattern.

Randy Sabedra: A perfect example of working with the skin of a building as seen by day and creating a memorable night experience.

Sandra Stashik: This changeable building façade lighting is ingenious in its integration with the architectural skin of the building.

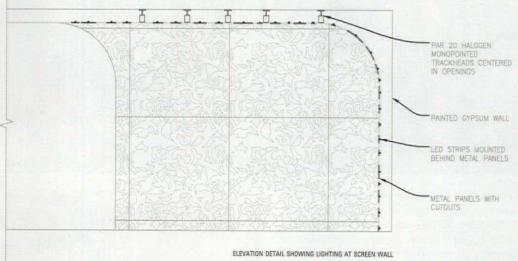
#### Details

Location: Kaohsiung, Taiwan Architect: UNStudio, Amsterdam Lighting Designer: Arup Lighting, Amsterdam

Photographer: Christian Richters, Munster, Germany

Project Size: 50,000 square feet Watts Per Square Foot: 1.4





Las Vegas is well-known for its interiors. Thrillseekers and business people alike travel to this city in the desert to be dazzled and delighted, and Beijing Noodle Company No. 9, a new dining experience at Harrah's Casino, does not disappoint. The restaurant, designed by Bergman Walls and Associates, wraps visitors in a dense cocoon of busy patterns and swirling fish tanks. The lighting scheme by Lighting Design Alliance plays an important role in reinforcing the interior's nearly all-white color palette while at the same time calling out points of color.

The restaurant's dizzying spectacle is achieved through layers of light. Metal screens cut in a custom pattern stand off of the walls and ceiling, both concealing and revealing a similar pattern painted on the surfaces behind. Warm white LED tapelights on the back of the screens emit an even luminescence that seeps into the dining room, providing 15 footcandles of ambient light. Set on a zero-to-10V dimmer, the LEDs can be adjusted for lunch and dinner settings. PAR20 halogen trackheads carefully located between the openings in

the screen spotlight the tables and the fish tanks with an additional 50 footcandles, bringing out the vibrant orange-hue colors of the fish and table settings. Surface-mounted linear fluorescent striplights with 3000K T5 lamps also play a part in the design, uplighting the bar face at the back of the restaurant and food in the entry display kitchen, adding another layer of complexity to the giddy array of light and pattern. As



## Beijing Noodle Company No. 9

#### **Jury Comments**

Jim Baney: The space literally wraps you in light; over-the-top and around the sides.

Mike Gehring: A real challenge to light such a wild space.

Sandra Stashik: Light filtering in through the lacy lattice produces a surreal environment for dining.

#### Details

Location: Las Vegas Architect: Bergman Walls and Associates, Las Vegas Lighting Designer: Lighting Design Alliance, Los Angeles Photographer: KSG Photography, Henderson, Nev.

Project Size: 3,500 square feet Watts Per Square Foot: 4.3

## Hodgdon Powder Facility

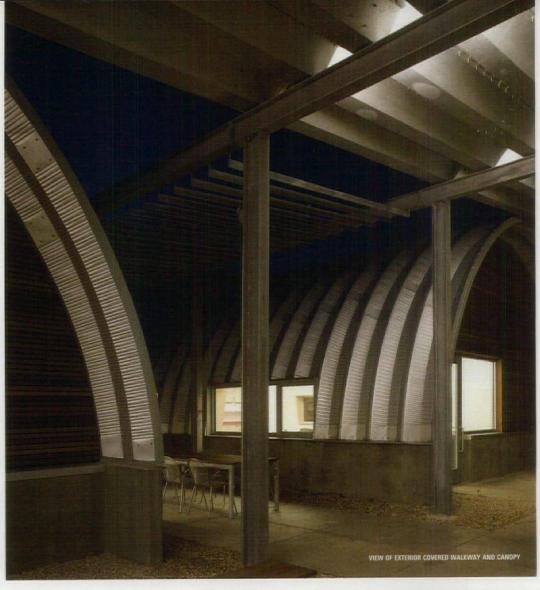


Denise Fong: Materials and light really come together in this project.

Mike Gehring: It's refreshing to see how an elegant lighting solution can play such an important role in the overall design of a common building use.

Sandra Stashik: The designers showed us how simple luminaires can enhance any architecture.

Location: Herrington, Kan. Architect: El Dorado, Kansas City, Mo. Lighting Designer: Derek Porter Studio, Kansas City, Mo. Photographer: Mike Sinclair, Kansas City, Mo. Project Size: 6,600 square feet



During much of its 50-plus-year history, Hodgdon, a gunpowder manufacturer, has operated out of three World War II-era Quonset huts in Herrington, Kan. The versatility of these column-free vaulted structures fits the company's needs nicely, but the facilities nonetheless were in dire need of an upgrade. The renovation by Kansas City, Mo.-based architectural firm El Dorado, with the lighting design overseen by Derek Porter Studio, takes a simple and clean approach, using light and color to accentuate the industrial purity of these prefabricated building systems.

On the interior, the designers integrated lighting and mechanical systems. Linear fluorescent T5HO striplights were positioned atop HVAC ducts running through the center of the space. From this perch, out of view from Hodgdon's employees, the fixtures cast light against the white-painted corrugated iron ceiling, creating a luminous canopy above the workstations that delivers an even distribution of light, free of shadow lines. T5 lamps equipped with custom translucent acrylic diffusers were also mounted to vertical surfaces in corridors, private offices, bathrooms, and conference areas. The designers paid special attention to the fixture placement to emphasize the compositional relationships of color, shifting planes, and texture.

A similar cost-effective solution was applied to the exterior canopy, which forms a covered circulation area between the three huts. Here, T5s are located within custom break-metal shields, uplighting the canopy's



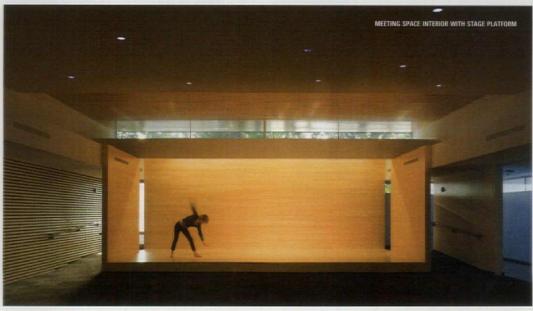
ceiling, providing diffuse illumination. Low-voltage halogen stake-mounted fixtures light spaces between the huts, maintaining a welcoming atmosphere for social gatherings during break periods at this 24-hour manufacturing facility. As

The Unitarian Fellowship of Lawrence occupies an 1880s schoolhouse set among a century-old hedge grove. The tranquility of the bucolic setting, complete with old growth trees and rolling farmlands, set the tone for a recent lobby and meeting space addition by the Kansas City, Mo., architecture firm El Dorado. The 4,000-square-foot expansion that provided the 150-member congregation with extra room for meetings and community activities, and challenged Derek Porter Studio with developing a lighting scheme that would reinforce the fluid indooroutdoor relationship established by the architecture.

The designers developed the electric lighting scheme in relation to the project's ample daylight. In the lobby, which also features a kitchen alcove, fluorescent covelights incorporated within architectural folds provide general illumination while concealing the sources. Similar fluorescent strips placed above the kitchen cabinetry work in tandem with an adjacent clerestory window, and fluorescent strips in a coat closet render the sheer curtain that conceals it luminous when closed. Dimmable MR16 flush-mounted downlights provide additional illumination for special functions.

In the meeting space, daylight and electric light were again employed, this time to frame a blond wood "box" that serves as a stage. The room's ambient light comes from flush-mounted MR16s, installed in an irregular pattern across the ceiling plane. The stage itself is illuminated by a combination of PAR38 tracklights concealed above the ceiling and linear fluorescent coves that wash the back wall. All light sources can be controlled from a simple wall-mounted switch box, giving the congregation the power to light their space as the need demands. As





Unitarian Fellowship of Lawrence

#### **Jury Comments**

Denise Fong: An elegant integration of the lighting.

Mike Gehring: The architecture is spectacular.

Sandra Stashik: A little gem of a project.

#### Details

Location: Lawrence, Kan.
Architect: El Dorado,
Kansas City, Mo.
Lighting Designer: Derek Porter
Studio, Kansas City, Mo.
Photographer: Mike Sinclair,
Kansas City, Mo.
Project Size: 4,000 square feet

www.archlighting.com ARCHITECTURAL LIGHTING 55

#### **Peltz Theater** Museum of Tolerance

#### Details

Location: Los Angeles Client: Simon Wiesenthal Center, Architect: Yazdani Studio of Cannon Design, Los Angeles Lighting Designer: Horton Lees Brogden Lighting Design, Los Angeles Photographer: Benny Chan/ Fotoworks, Los Angeles



Cited for its exquisite uniform illumination and the sensitive use of color in a lighting scheme, the Museum of Tolerance's Peltz Theater made an impression with this year's jury. As the primary event space, the lighting must set the tone for each event. To achieve this, colorchanging LED covelights graze the side walls, PAR38 tungsten halogen downlights in architectural slotsfitted into "raise/lower" battens for easy relamping-

provide general illumination, and a combination of PAR38 and MR17 lamps provide accent lighting.

To address acoustics, a 3D lighting effect was married with interior finishes—a coil drape metal scrim on the side walls creates a moiré effect. Casting a soft shimmer in the space, the intensity can be altered through coordination with the control system to create a "visually stimulating luminous environment." ED

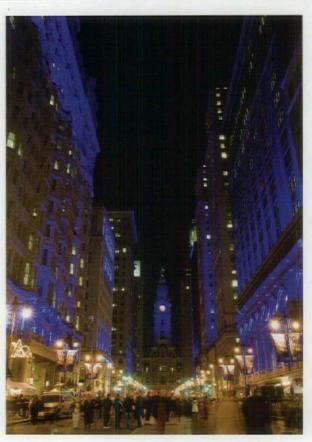
#### Avenue of the Arts

#### Details

Client: Center City District, Philadelphia Preservation Consultant: Vitetta, Philadelphia Lighting Designer: The Lighting Practice, Philadelphia Photographer: Dutch Huff/Vitetta, Philadelphia

Location: Philadelphia

Project Size: Six-block area Watts Per Square Foot: 0.16



Noted by the jury for its ability to erase the often drawn line between public and private cooperation, Philadelphia's Avenue of the Arts facade lighting infuses the city's performing arts district with new life. Initiated by Center City District (CCD), a business improvement district, and inspired by the City of Lyon lighting festival in France, the façades along a sixblock area from City Hall to Pine Street are now illuminated each night with light shows of seasonal colors that run from dusk to midnight. Lighting serves as both an "economic and cultural stimulant," encouraging people to reacquaint themselves with the city's downtown.

The directive faced numerous challenges, from convincing building owners to participate, to testing new LED technologies, to the review and approval process for working within a National Historic District. The initiative by all accounts can be considered a success, serving as a model for other U.S. cities looking to breathe new life into their urban cores. ED

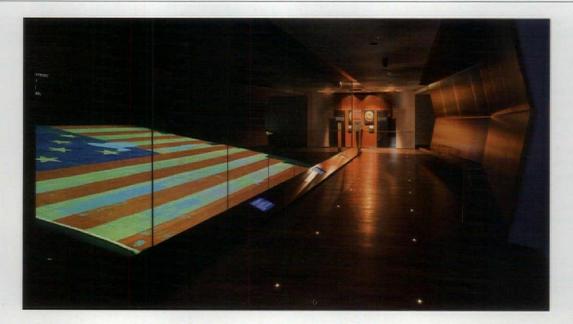
Whimsical, humorous, fun. All ways in which the jury described the upside-down table lamps turned pendants at this popular Los Angeles nightspot. The concept, by legendary designer Philippe Starck, tasked lighting firm Lighting Design Alliance with implementing the design while adhering to California's Title 24 requirements. Each decorative luminaire is outfitted with three 7W candelabra lamps for an atmospheric glow. A single 20W MR16 spotlight casts fully functional light on the tabletops below. To meet Title 24, each pendant does not exceed a total of 41W. A custom lowering device allows the height of the fixtures to be lowered for intimate gatherings or raised for private events. Set on a single dimming circuit, the pendants are zoned to layer light levels throughout the club and extend lamp life. The bar top (below right) has slightly higher light levels. One man's trash is another man's treasure. This clever reuse and relamping of an eclectic array of decorative table lamps gives new meaning to the concept of recycling. ED





#### Details

Location: Los Angeles Architect: Design ARC, Los Angeles Lighting Designer: Lighting Design Alliance, Los Angeles Photographer: James Merrell/ Judith Miller, New York Project Size: 2,500 square feet Watts Per Square Foot: 1.1 (Title 24)



Admired for its technical achievement in evenly illuminating the massive surface area of a fragile textile artifact within conservation guidelines, the Star Spangled Banner exhibit sets a new standard in exhibition lighting design. The new exhibit has been designed to showcase this iconic flag, the cornerstone of the National Museum of American History's collection. Displayed in a climate-controlled case on a slightly inclined

table for easy viewing, the textile receives a uniform light level of one footcandle from a single projectorwith a 330W mercury arc lamp. Conservation requirements prevented the placement of electrical devices in the exhibit case, so the lighting team devised an "attic" space to house the luminaire equipment. The technical proficiency of this lighting solution ensures the continued preservation of this national treasure. ED

## Star Spangled Banner Exhibit

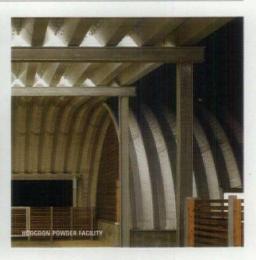
#### Details

Location: Washington, D.C. Client: National Museum of American History, Washington, D.C. Architect: SOM, Washington, D.C. Lighting Designer: George Sexton Associates, Washington, D.C. Photographer: Anice Hoachlander/ Hoachlander Davis Photography, Washington, D.C. Project Size: 2,000 square feet Watts Per Square Foot: 0.165









#### **Private House Spa**

ACDC: Pool and Spa cold cathode sources Cube Lighting: Steam room and sauna downlights

John Cullen Lighting: Shower downlights Kreon: Gym floor washers

Mike Stone Lighting: Pool uplights and emergency LED lights

Light Graphix: Pool area LED steplight Lucent Lighting: Spa trimless downlights Philips Color Kinetics: Pool ceiling colorchanging LEDs

Philips: Underwater pool LEDs Universal Fibre Optics: Jacuzzi lighting

#### Car Park One

Bega: Pole lights on upper parking level Elliptipar: Signage lighting Hydrel: In-ground exterior uplights Lithonia: Direct/indirect lighting throughout Paramount: Lighting at stairs and atrium TAC: Lighting controls

#### L2 Lounge

Birchwood: Kitchen lighting Lutron: Wall box dimmers Philips Color Kinetics: LED color-changing panels in entry and bar fronts ProLume: LED wall frames in lounges Times Square Lighting: Tracklighting USA Illumination: Ceiling downlights

#### **Cox Communications**

H.E. Williams: 3500K T5HO staggered ministrip fluorescent lamps throughout

#### **Newtown Creek Wastewater Treatment**

Hubbell: 26W compact fluorescent jelly jar fixtures at connecting bridges GE: 1500W metal halide lamps throughout

RAL: 70W metal halide work lights Venture Lighting: Digester eggs' metal halide fixtures with blue filters

#### Lumen United Reform Church and **Community Center**

Agabekov: Xenon clickstrip covelights in garden alcoves and under garden benches Concord: Bulkhead fittings in public areas Regent: Custom direct/indirect T5HO linear fluorescent fixtures in Sanctuary Reggiani: Surface-mounted compact fluorescent downlights at entry and linear fluorescent covelight in gallery corridor GE: T5HO 54W and 80W lamps throughout

#### Terminus 100

Bega: Surface-mounted 400W metal halide floodlight at top tower roof level Elliptipar: Ceiling-mounted T5 linear 39W uplight at beak chamfer Hvdrel: Surface-mounted 100W and 400W metal halide floodlights at top tower penthouse and roof level Insight: Surface-mounted 8-foot linear fluorescent uplight at top tower roof level io Lighting/Cooper: Ceiling-mounted high output 3000K LED fixture at beak chamfer LSI: PAR30 and PAR38 track fixture with integral ballast at café street canopy; PAR30, PAR38, and PAR56 track fixture for lobby art lighting

#### **Duke Integrative Medicine**

Hydrel: Exterior canopy in-grade metal halide double-lensed uplight Kurt Versen: Entry vestibule recessed compact fluorescent downlight wallwasher Legion Lighting: Skylight surface-mounted dimmable compact fluorescent strip Lighting Services Inc: Library surfacemounted PAR30 metal halide monopoint and surface-mounted monopoints with lavender glass lens

Linear Lighting: Quiet Room surfacemounted fixture with two lamps cross section and separate dimming Litecontrol: Quiet Room wall-mounted dimmable fluorescent uplight with asymmetrical reflector Lucifer Lighting: Quiet Room recessed MR16 pinhole downlight Lumascape: Quiet Room MR16 uplight Winona Lighting: Entry canopy wall-

#### Star Place

Optotec: Custom-designed LED fixture integrated in glass fin profiles

#### Beijing Noodle Co. No. 9

mounted metal halide uplight

Birchwood Lighting: Surface-mounted T5 linear fluorescent striplight Lightolier: 100W PAR38 and 50W MR16 downlights Jesco: LED low-profile tapelight and 20W

halogen bi-pin decorative pendant Juno: 50W PAR20 monopoint trackhead

#### **Hodgdon Powder Facility**

B-K Lighting: 20W T3 halogen path lights H.E. Williams: 3500K T5H0 ministrip fluorescent lamps throughout

#### Unitarian Fellowship of Lawrence

Contrast: Adjustable gimbal ring in multipurpose space H.E. Williams: T5HO strip fluorescent covelights in lobby and linear fluorescent under-counter striplights in kitchen Pure Lighting: Trimless MR16 and LED downlights in multi-purpose space

Vision 3: Ring mount Ruud Lighting: PAR38 stage tracklighting

#### Peltz Theater, Museum of Tolerance

ETC: Lighting controls

Lighting Services Inc: Surface-mounted tungsten halogen PAR38 accent light at metal scrims

Philips TIR: Color-changing LED covelight Lucifer Lighting: Adjustable tungsten halogen MR17 accent lights under balcony MP Lighting: Seat-integrated LED lights Osram Sylvania: Lamps throughout Prescolite: Tungsten halogen PAR38 downlight "house lights"

#### Avenue of the Arts

B-K Lighting: 70W PAR30 spotlights ETC: High-intensity discharge metal halide

Philips Color Kinetics: ColorGraze and ColorBlast Powercore luminaires We-ef: 150W metal halide floodlights Winona: 39W T6 wallwasher

#### Star-Spangled Banner Exhibit

Christie: LX500 digital projector with 330W mercury arc projector lamp Crestron: Digital projector control module Schneider Optics: 0.72 wide-angle converter lens for digital projector

Osram Sylvania: 20W MR16 lamps in upside down table lamp pendants RSA: Low-voltage housing, pinhole aperture, linear spread lens and round trim in upside down table lamp pendants Note: Selection of decorative table lamps-Hallmark, Oly, Robert Abbey, and Shine-by interior designer.

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b: Cradle to Cradle - third party certification of sustainable product design and manufacturing practices

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f: Spatial envelope tectural ceiling an wall surfaces for comfortable, pleasant vironments ased ctories that g: Made in USA - USexceed strict enviro

tain noun, sus-tain sobiloi-ty noun Related forms:

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#### sueture

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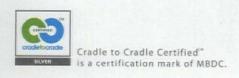
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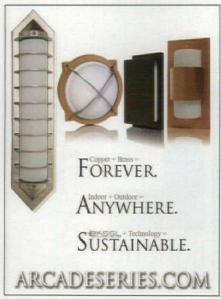
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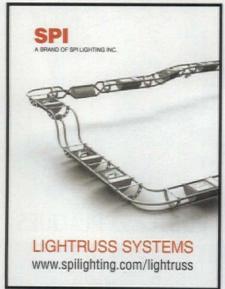


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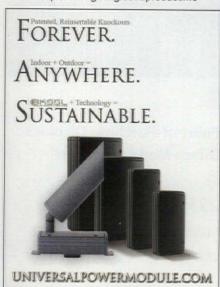
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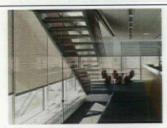


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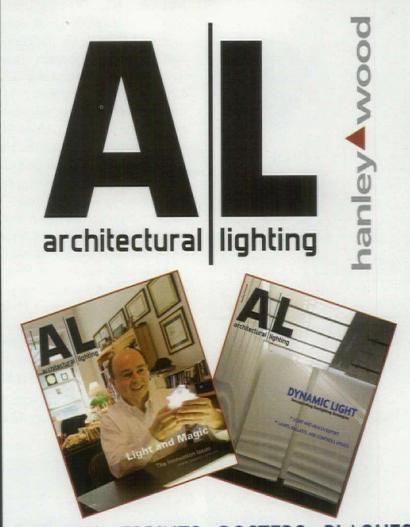
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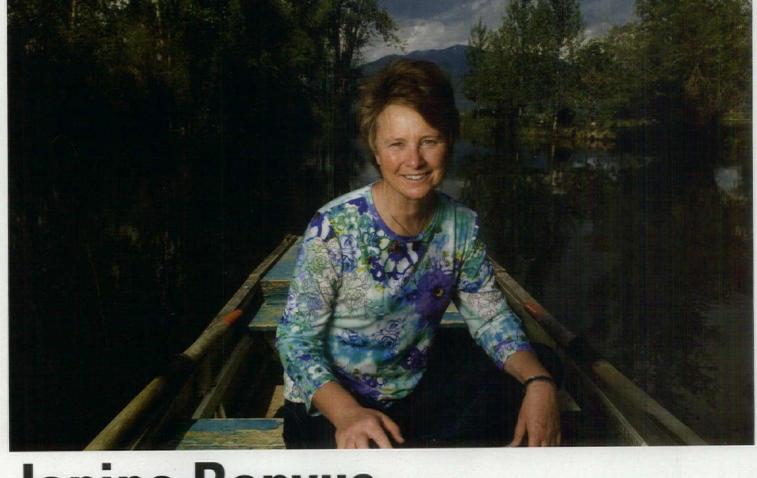
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## Janine Benyus

#### CHAMPIONING NATURE AS THE SOURCE FOR SUSTAINABLE DESIGN SOLUTIONS

Biologist, innovator, explorer. All of the above describe Janine Benyus, a scientist working to create a more sustainable future. Her 1997 book, Biomimicry: Innovation Inspired by Nature, discusses how the natural world provides answers to the challenges we face with our built environment. Co-founder with Dayna Baumeister of 10-year-old innovation consultancy the Biomimicry Guild, Benyus works with leading companies to re-imagine the design process using tools and processes found in nature. In 2005, Benyus broadened the Guild's reach by forming a nonprofit educational component—the Biomimicry Institute—a global community of educators and scientists in both academic and nonacademic settings. Recognizing the ecosystem's ability to teach us, Benyus unites science with business and design, and brings us a step closer to sustainable solutions. ELIZABETH DONOFF

#### What excites you about science and nature?

Individual organisms and their physical, chemical, and behavioral adaptations, knit together into an ecosystem that creates the conditions conducive to life on Earth.

#### What was your goal in establishing the Biomimicry Guild?

To become a resource for innovators and to give them the biological information they need to inspire sustainable designs. We want it to

become second nature to companies to hire a biologist and bring them to the design table. We have been successful beyond our wildest expectations working with mainstream companies such as GE, Boeing, General Mills, Herman Miller, and Nike.

#### And the Biomimicry Institute?

We also realized there was a need for educating people about how to look to nature. Now we are training people from K through 12 all the way to the university level, and we have biomimetic design labs at design and engineering schools around the country.

#### How did AskNature (asknature.org) come about?

It's a giant inspiration gadget and a web community where biologists and designers get together and co-create. The website organizes biological information by function.

#### Do you think we can repair and rebuild our natural world?

Yes. We've seen the unintended consequences born of the industrial revolution—the illusionary premise that the Earth was endlessly resilient. Now the question is: How can we pull our own weight ecologically, asking people and buildings to perform as well or better than the ecosystems around us. It's our responsibility to future generations.



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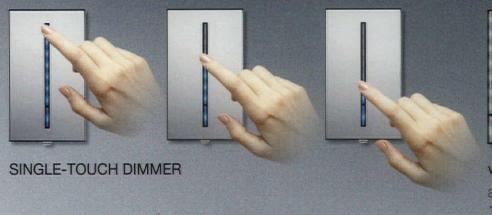
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