

# AL ENERGY EFFICIENCY

hanley wood

LIGHTING DESIGN  
TACKLES ENERGY  
EFFICIENCY FROM  
COAST TO COAST

# Design with light.™



WindowManagement® solutions:

- SolarTrac® automated window-shading system—GreenSpec® Listed
- EcoVeil® solar shade cloth—sustainable, PVC-free, and GREENGUARD® certified
- Mecho®/5 solar-shading system with EcoVeil®—Cradle to Cradle Certified™ Silver by MBDC
- And a full range of other innovative solutions



## MechoShade Systems

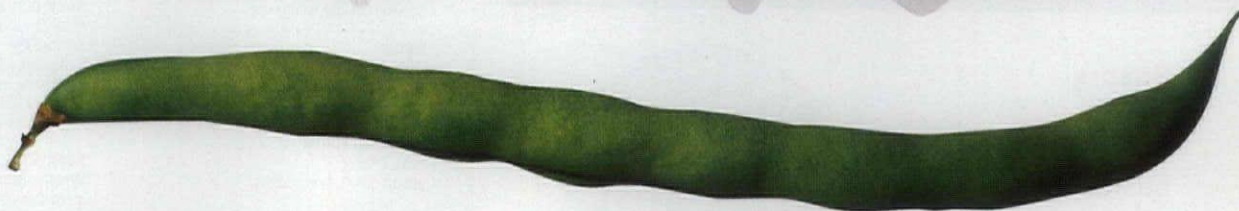
The Architect's Choice

T: +1 (800) 437-6360  
F: +1 (718) 729-2941  
archlight@mechoshade.com  
MechoShadeSystems.com

The New York Times Building, New York City  
architecture: Renzo Piano Building  
Workshop with FXFowle Architects  
architectural interiors: Gensler  
photography: Bernstein Associates  
© 2010 MechoShade Systems, Inc.  
Trademarks and registrations are the exclusive  
property of MechoShade Systems, Inc., and  
others, as noted, are the property of various  
firms. All rights are reserved for usage of the  
images, text, and content herein.



# NARO

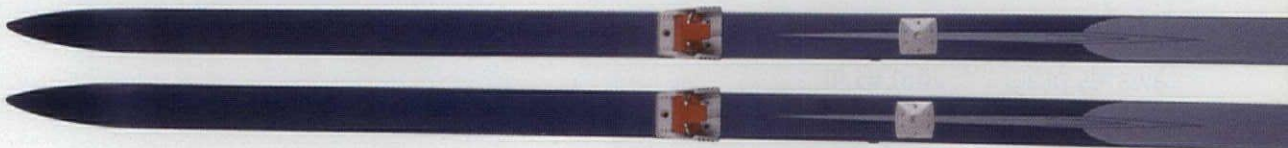


**nar•o (nắr'ō)** *adj.* small or slender in width, especially compared with length <linear fluorescent lamp, golf club, fettuccine, runway model>

don't worry. our design skills far exceed our spelling aptitude.

(1,2,3) T5/T5HO lamps  
14 feet on center spacing  
90-92% efficiency

get the skinny on naro, the new indirect suspended and wall mounted luminaire from peerless.



# P E E R L E S S<sup>®</sup>

[www.peerless-lighting.com](http://www.peerless-lighting.com)  
Circle no. 249 or <http://archlighting.com/productinfo>

An **Acuity** Brands Company

# CONGRATULATIONS

to Hanley Wood's Jesse H. Neal  
Award Winners

**BUILDER**  
**REMODELING**  
**CUSTOM HOME**  
**ARCHITECT**  
**EcoHOME**  
**PUBLIC WORKS**  
**AQUATICS INTERNATIONAL**  
**POOL & SPA NEWS**  
*residential architect*  
**MULTIFAMILY EXECUTIVE**  
**TOOLS OF THE TRADE**  
**BIG BUILDER**  
**AFFORDABLE HOUSING FINANCE**  
**REPLACEMENT CONTRACTOR**



Hanley Wood is committed to publishing quality content that serves the information needs of the construction industry professionals. Our editors have once again been honored by the most prestigious editorial awards program. **Join us in congratulating them.**

Ideas to build on™

hanley wood

# A

## ENERGY EFFICIENCY

SUMMER 2010

### EDITORIAL

**EDITORIAL DIRECTOR**  
Ned Cramer  
ncramer@hanleywood.com

**EDITOR**  
Elizabeth Donoff  
edonoff@hanleywood.com  
202.729.3647

**MANAGING EDITOR**  
Greig O'Brien  
gobrien@hanleywood.com

**ASSISTANT MANAGING EDITOR**  
Lindsey M. Roberts  
lmroberts@hanleywood.com

**EDITORIAL INTERN**  
Rebecca Ebstein

**EDITORS AT LARGE**  
James R. Benya, FAIA, FIESNA  
Howard Brandston, FAIA, FIESNA

**EDITORIAL ADVISORY BOARD**  
Gregg Ander, FAIA, FIESNA  
Francesca Bettridge, IAIA, FIESNA  
Barbara Ciani Horton, IAIA  
Mark Loeffler, IAIA, FIESNA  
Fred Oberkircher, FIESNA, EDUCATOR IAIA  
Paul Zaferiou, IAIA

**CONTRIBUTING EDITORS**  
David Raezer, Aaron Seward,  
Jay W. Schneider, Romahlo Wilson

### DESIGN

**SENIOR ART DIRECTOR**  
Aubrey Altmann  
aaltmann@hanleywood.com

**ASSOCIATE ART DIRECTOR**  
Marcy Ryan  
mryan@hanleywood.com

**ART INTERNS**  
Maggie Goldstone, Kim Lofgren

### ONLINE

**SENIOR WEB PRODUCER**  
Richard Stirba  
rstirba@hanleywood.com  
202.729.3564

### SERVICES

#### SUBSCRIPTION INQUIRIES, CHANGE OF ADDRESS, CUSTOMER SERVICE, AND BACK ISSUE ORDERS

ARCHITECTURAL LIGHTING  
P.O. BOX 3494  
NORTHBROOK, IL 60065-9831  
ALIT@OMEDA.COM  
LOCAL: 847.291.5221  
TOLL-FREE: 888.269.8410

**REPRINTS**  
Wright's Reprints  
sales@wrightsreprints.com  
877.652.5295

**DIRECTOR/INSIDE SALES**  
Janet Allen  
jallen@hanleywood.com

### PRODUCTION

#### DIRECTOR OF PRODUCTION AND PRODUCTION TECHNOLOGIES

Cathy Underwood  
cunderwood@hanleywood.com  
202.736.3317

**PRODUCTION MANAGER**  
Johanna Daproza  
jdaproza@hanleywood.com  
202.736.3372

**AD TRAFFIC MANAGER**  
Lauren Dobos  
ldobos@hanleywood.com  
202.736.3461

**PREPRESS MANAGER**  
Fred Weisskopf  
fweisskopf@hanleywood.com  
202.736.3472

**PREPRESS COORDINATOR**  
Betty Kerwin

FROM HANLEY WOOD, LLC, PUBLISHER OF ARCHITECT, AQUATICS INTERNATIONAL, BIG BUILDER, BUILDER, BUILDING PRODUCTS, CONCRETE & MASONRY CONSTRUCTION PRODUCTS, CONCRETE CONSTRUCTION, THE CONCRETE PRODUCER, CUSTOM HOME, ECO-STRUCTURE, THE JOURNAL OF LIGHT CONSTRUCTION, MASONRY CONSTRUCTION, METALMAG, MULTIFAMILY EXECUTIVE, POOL & SPA NEWS, PRO AV, PROSALES, PUBLIC WORKS, REMODELING, REPLACEMENT CONTRACTOR, RESIDENTIAL ARCHITECT, AND TOOLS OF THE TRADE MAGAZINES.

**DISCLOSURE** ARCHITECTURAL LIGHTING WILL OCCASIONALLY WRITE ABOUT COMPANIES IN WHICH ITS PARENT ORGANIZATION, HANLEY WOOD, LLC, HAS AN INVESTMENT INTEREST. WHEN IT DOES, THE MAGAZINE WILL FULLY DISCLOSE THAT RELATIONSHIP.

**PRIVACY OF MAILING LIST** SOMETIMES WE SHARE OUR SUBSCRIBER MAILING WITH REPUTABLE COMPANIES WE THINK YOU'LL FIND INTERESTING. HOWEVER, IF YOU DO NOT WISH TO BE INCLUDED, PLEASE CALL US AT 888.269.8410.

**EXECUTIVE DIRECTOR/  
COMMERCIAL DESIGN AND CONSTRUCTION**

Patrick J. Carroll  
pcarroll@hanleywood.com  
773.824.2411

**PUBLISHER, COMMERCIAL DESIGN**

Russell S. Ellis  
rellis@hanleywood.com  
202.736.3310

**ASSOCIATE PUBLISHER**

Jon Yoffie  
jyoffie@hanleywood.com  
916.941.6566

**ADVERTISING SALES**

**NORTHEAST, MIDWEST, AND INTERNATIONAL  
ADVERTISING MANAGER/LIGHTING**

Cliff Smith  
csmith@hanleywood.com  
864.642.9598

**COLORADO, MONTANA, NEW MEXICO, UTAH,  
WYOMING**

Jon Yoffie  
jyoffie@hanleywood.com  
916.941.6566

**REGIONAL SALES MANAGER/MIDWEST**

Michael Gilbert  
mgilbert@hanleywood.com  
773.824.2435

**REGIONAL SALES MANAGER/WEST**

Mark Weinstein  
mweinstein@hanleywood.com  
562.598.5650

**REGIONAL SALES MANAGER**

Adam Mowrey  
amowrey@hanleywood.com  
724.612.9319

**REGIONAL SALES MANAGER/  
UNITED KINGDOM AND EUROPE**

Stuart Smith  
stuart.smith@ssm.co.uk  
44.020.8464.5577

**PRODUCT REVIEW AND  
CLASSIFIED SALES**

Erin Liddell  
eliddell@hanleywood.com  
773.824.2445

**GROUP PUBLISHING  
SUPPORT MANAGER**

Angie Harris  
aharris@hanleywood.com  
773.824.2415

**MARKETING MANAGER**

Lauren Cardinet  
lauren@decisioncounsel.com

**HANLEY WOOD  
BUSINESS MEDIA**

**PRESIDENT/HANLEY WOOD**

Peter M. Goldstone  
202.736.3304

**PRESIDENT,  
MARKET INTELLIGENCE/E-MEDIA**

Andy Reid

**PRESIDENT/EXHIBITIONS**

Rick McConnell

**DIRECTOR OF FINANCE**

Ron Kraft

**VICE PRESIDENT/CIRCULATION AND  
DATABASE DEVELOPMENT**

Nick Cavnar

**GENERAL MANAGER/  
CUSTOM SOLUTIONS**

Jennifer Pearce

**VICE PRESIDENT/PRODUCTION**

Nick Eisener

**VICE PRESIDENT/MARKETING**

Sheila Harris

**EXECUTIVE DIRECTOR/  
E-MEDIA**

Andreas Schmidt

**GENERAL MANAGER/  
ONLINE RESIDENTIAL REMODELING AND  
COMMERCIAL CONSTRUCTION**

Kim Heneghan

**DIRECTOR/  
CONFERENCES AND EVENTS**

Stacey Chattman

**HANLEY WOOD, LLC**

**CHIEF EXECUTIVE OFFICER**

Frank Anton

**CHIEF FINANCIAL OFFICER**

Matthew Flynn

**SENIOR VICE PRESIDENT,  
CORPORATE SALES**

Paul Tourbat

**VICE PRESIDENT/FINANCE**

Brad Lough

**VICE PRESIDENT/GENERAL COUNSEL**

Mike Bender

**VICE PRESIDENT/  
CORPORATE DEVELOPMENT**

Joe Carroll

[WWW.ARCHLIGHTING.COM](http://WWW.ARCHLIGHTING.COM)

**hanley**▲**wood**

One Thomas Circle, N.W. Suite 600 Washington, DC 20005

**DIALux**

„Let there be light.“



- > **DIALux is a lighting design software** for calculation and visualisation of indoor and outdoor lighting.
- > **DIALux is an all-inclusive free software** for import from and export to all CAD programs and for photorealistic visualisation with the integrated ray tracer.

DIALux Seminars:

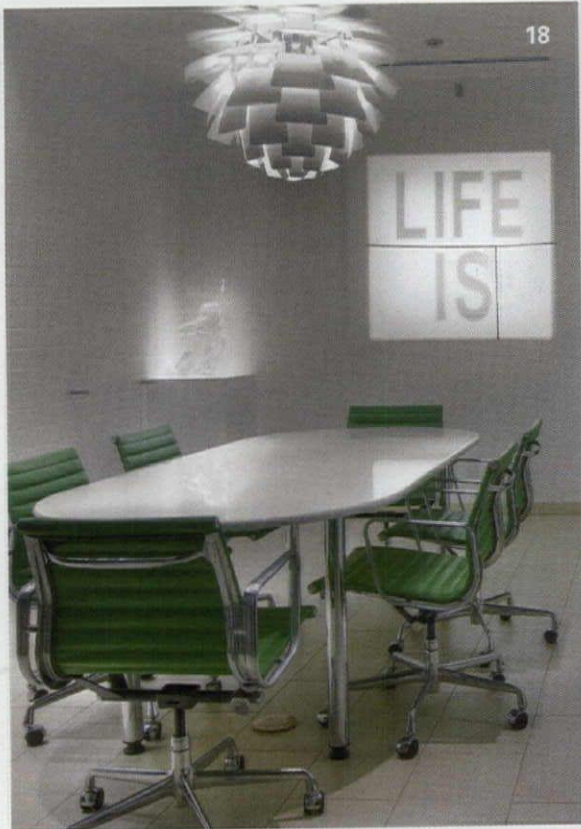
London  
Lüdenscheid  
Madrid  
Milan  
Paris



> Get your free copy at  
[www.dialux.com](http://www.dialux.com)

**DIAL**  
light. building. software.

# CONTENTS



## Departments

- 08 **comment** / Energy's "Blue" Future
- 10 **briefs** / Solar Decathlon Europe 2010
- 12 **report** / An Energy Efficient Strategy: Lighting Controls
- 26 **one-on-one** / Peter Jacobson

## Features

- 14 **office building** / Green Lighting Icon
- 18 **offices** / Leading By Example

**Cover:** A view of the open work area at Focus Lighting's new offices in New York City.

PHOTO: J.P. LIRA, COURTESY FOCUS LIGHTING

**This page:** One of the conference rooms at Lighting Design Alliance's new office in Long Beach, Calif.; Skanska's new offices, one of the first tenant fit-outs to implement green design strategies in the Empire State Building's effort to reduce its carbon footprint.

PHOTO: RMA ARCHITECTURAL PHOTOGRAPHY (LEFT); BILYANA DIMITROVA (RIGHT)

TURN LIGHTING ON ITS HEAD!

# THINK

## INSTALLATIONS

# LED BULBS



4 DecorLED™ Lamps  
Palace Theatre, Albany, NY



and, Flexible RopeLED  
Tinseltown City, Anaheim, CA



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



Stylized DecorLED Lamps  
Pavilion Theater, Poughkeepsie, NY



9mm Miniature Wedge-Based Lamps  
Hillsboro Arch, Hillsboro, OR



S6 Candelabra-Based Lamps  
Regency, Long Beach, CA

**RELAMP WITH BRIGHT, LONG-LASTING ENERGY EFFICIENT DIRECT INCANDESCENT REPLACEMENT LED BULBS AND LAMPS FROM LEDTRONICS.**

**LED**  
**TRONICS, INC.®**  
FUTURE OF LIGHT®

300.579.4875

Dtronics.com

### FEATURES

- ▶ NO HEAT - COOL TO THE TOUCH
- ▶ USE 70% TO 90% LESS POWER
- ▶ LEDS LAST UP TO 11 YEARS
- ▶ SHOCK/VIBRATION RESISTANT
- ▶ 12 VOLTS DC TO 240 VOLTS AC
- ▶ IDEAL FOR SOLAR POWER
- ▶ LED COLORS: WHITE, GREEN, BLUE, RED, YELLOW, AMBER AND TINTED FROSTED LENSES

no. 246 or <http://archlighting.com/products>

Kashiwa Court, Torrance, CA 90505 Phone (310) 534-1505 Fax (310) 534-1424 [webmaster@LEDtronics.com](mailto:webmaster@LEDtronics.com)



# Energy's "Blue" Future

**Energy efficiency** is a term that gets pretty wide use. But what does it mean? Generally speaking, the term indicates getting maximum productivity from a piece of equipment using a minimum of effort or expense. The target goals for achieving efficiency vary according to technology and industry. For lighting, efficiency has meant sources that expend the fewest number of watts over a lifetime while meeting the characteristics of the source (i.e., color temperature and light quality). In this new topical supplement—A|L Energy Efficiency—we take a look at several projects that are using integrative solutions, combining natural and electric lighting to achieve a greater overall luminous efficiency and efficacy.

But lighting is only one part of a much larger discussion about how we use energy. Despite any significant steps we might feel we have taken to reduce our consumption and live in greater harmony with our planet, disasters such as the Deepwater Horizon oil spill in the Gulf of Mexico are a sobering reminder of our complicated relationship with our need for energy.

And yet if you step back and look at our energy needs from a 30,000-foot perch, the issue is not so much about the type of energy but about what we need to produce it. Whether we are talking about using oil, coal, solar, or alternative sources, one constant is water. Without water we cannot produce our energy sources: It is the cooling element needed for steam generation; it is the force that allows hydroelectric turbines to spin; it carries geothermal energy from below the Earth's surface.

The real question is: Do we have enough water to fuel our energy habit? The answer to that is no, the world is running out of water. In the 2008 documentary *Blue Gold: World Water Wars*, based on the 2002 book *Blue Gold: The Fight to Stop the Corporate Theft of the World's Water* by Maude Barlow and Tony Clarke, filmmaker Sam Bozzo presents a harsh reality. Water is our lifeline, and the Earth's too; without its sustenance there is no life. It would be easy to blame 20th century industrialization for our dwindling water supply, and that certainly has exacerbated it, but man has a long history of consuming natural resources without replenishing them.

The bottom line is that we are not replenishing our watershed fast enough, given our rate of consumption. Data from 2008 indicates that to meet our water needs, the U.S. pumped 30 billion gallons of water a day out of the watershed. Green regions around the globe are turning into deserts as water is dammed or transported, often at great distances, to drier areas. Agriculture is another huge contributor to the depletion of aquifers, as are deforestation and increased urbanization.

Consider the Aral Sea. Located in Central Asia, it once was one of the four largest inland lakes of the world. In the 1960s, the Soviet Union diverted the rivers that fed it, in order to use the water for irrigation projects. By the early 1990s, the surface area of the Aral Sea had been reduced by half of its original size and had separated into three lakes—the Northern Aral Sea and the eastern and western basins of the once far-larger Southern

Aral Sea. By last year, the southeastern lake had disappeared and the southwestern lake was a meager strip of water.

Adding to the complexity of this discussion about water is whether it is viewed as a natural resource or as a commodity. We might think water is a free resource, but it is not. It is owned and managed by private industry. Three companies—Suez Environment, RWE/Thames Water, and Veolia Water—control most of the world's supply through their subsidiary companies, which are contracted by municipalities around the world to oversee the management of their water systems. Water is big business. It's all about the profit and delivery of water, and a whole new geopolitical map is being formed around those who have clean drinking water and those who do not. Water shortages could create global conflict, as has already happened in India, Bolivia, and Africa, and even in the U.S. in places such as Wisconsin, Michigan, and Maine.

Fully 97 percent of the Earth's water is salt water, leaving only 3 percent as freshwater. In addition, a good portion of that freshwater is polluted. The U.S. possesses one of the greatest freshwater sources on the planet—the Great Lakes. These lakes account for 95 percent of our nation's freshwater supply and 20 percent of the planet's. Yet, despite our seemingly abundant access to freshwater, a 2007 United Nations report indicates that by 2025 two-thirds of the world's population will be facing a water shortage. To make water a regularly available commodity going forward, desalination is one possibility. However, only affluent nations realistically will be able to afford the expense of building desalination plants. And while building these plants solves one problem, it creates another; they require a great deal of energy.

Despite our often brutal treatment of the planet and mismanagement of its resources, nature is incredibly resilient and can heal itself if given the chance, with a little help from us. Communities in the American Southwest and West, such as Bolinas, Calif., are adjusting their growth to stay in line with the water table, rather than building indiscriminately.

Architects are also envisioning creative solutions. Martin Felsen and Sarah Dunn, co-founders of Chicago's UrbanLab, have been working on a project they call "Growing Water." With the city's proximity to Lake Michigan, Felsen and Dunn envision a system of eco-boulevards in which the city can recycle or "grow" its own water.

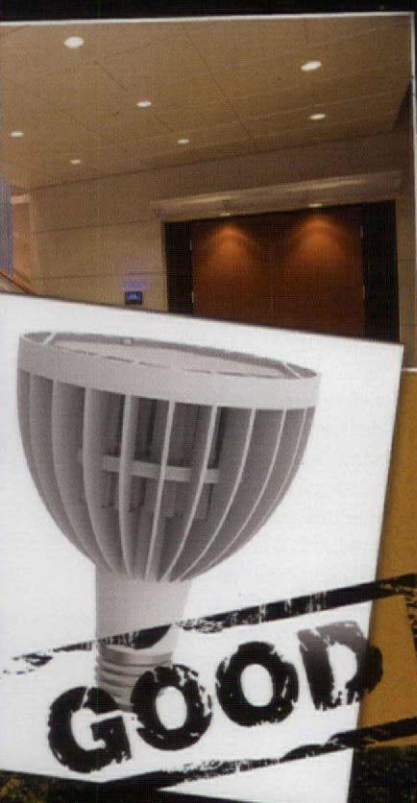
Energy. It is fair to say it is *the* debate of our time. It's no longer enough to recycle or be energy vigilant as we track how many watts we use. Going forward we need to be water guardians as well. If we don't know where our freshwater supply comes from and who is controlling that water, then how can we take control of what is at the heart of this debate?: preserving our most precious natural resources so that they remain available and unrestricted for everyone.

ELIZABETH DONOFF  
EDITOR



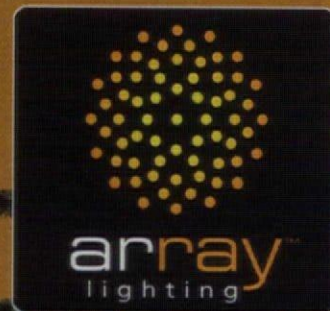
# Just

Saying ya **Green**  
dont make ya **Good.**



## SPECIFICATION GRADE LED REPLACEMENT LAMPS

- Dimmable
- 50,000 hours average rated life
- ROHS Compliant
- No Mercury / No Lead
- Made with recycled plastics
- Utilizes recycled packaging



[nexuslighting.com/alm](http://nexuslighting.com/alm)  
1.800.335.5382

Circle no. 402 or <http://archlighting.com/productinfo>

**NEXXUS** NASDAQ:  
NEXS

# Solar Decathlon

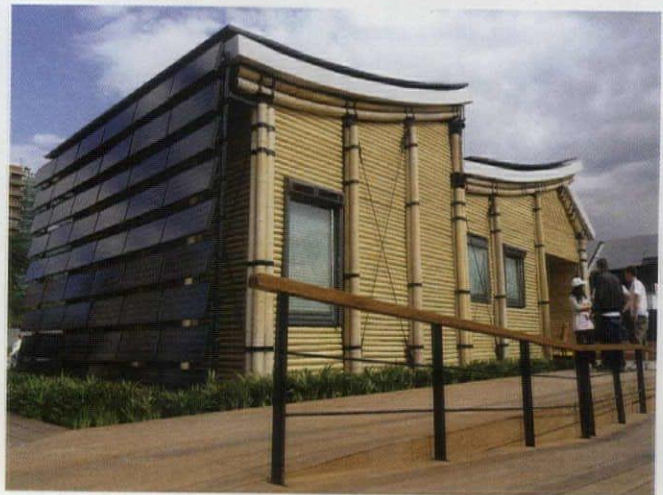
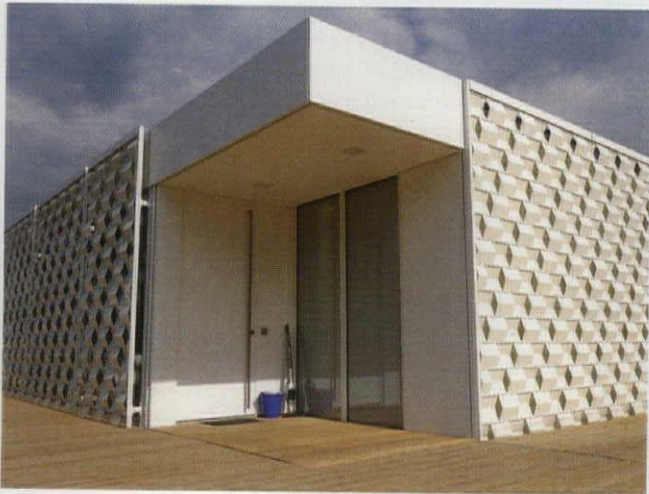
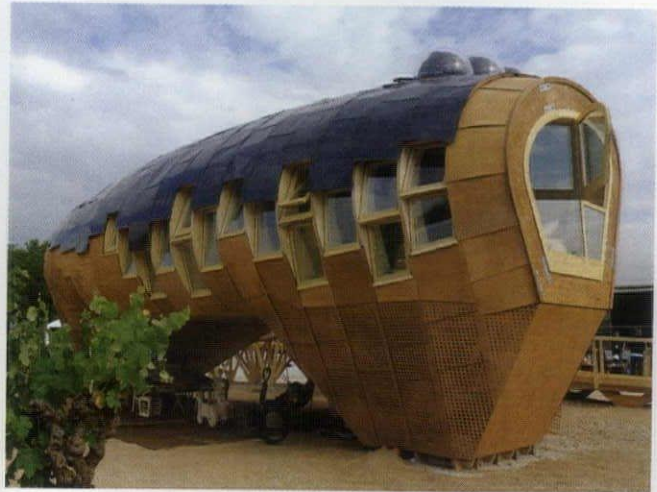
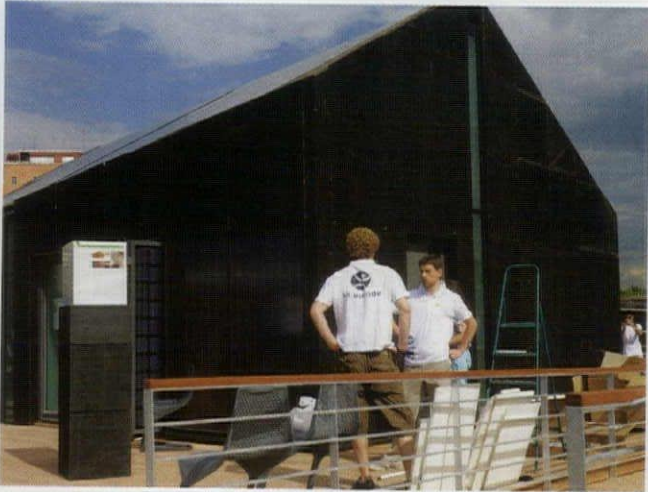


The Solar Decathlon Europe is an international collegiate solar house design and construction competition. Virginia Tech's Lumenhaus (above) received first place for its use of the eclipsis system—an innovative light filtering façade technology—and an open floor plan. Second place was awarded to the University of Applied Sciences Rosenheim's Ikaros house (facing page, bottom left), which incorporated a controlled shading system and a modular plan to allow expansion. The Stuttgart University of Applied Sciences (facing page, top left) received third place for their extreme weather conditions design approach using ventilation towers, evaporative cooling, and thermal mass in the interior. Other house designs incorporated innovative shapes and materials, such as the Instituto de Arquitectura Avanzada de Cataluña's Fablabhouse (facing page, top right) and the Tongji University Shanghai's Sunshine Inn/Bamboo House (facing page, bottom right).

**In June**, 17 teams representing nine different countries began a 10-day competition for the title of "best solar house design." Judged on 10 different categories ranging from architectural design to energy balance, the teams are awarded points based on their house's performance. This might sound familiar if you follow the U.S. Department of Energy's (DOE) Solar Decathlon. Held biennially on the National Mall in Washington, D.C., this is a competition designed to promote innovation in sustainable solar design, and to get the word out about it. The European competition took place in Madrid, as part of the European Union and Spanish government's continued commitment to promote sustainable solar design, technology, and education.

The Solar Decathlon Europe was created in 2007, and evolved out of the Universidad Politécnica de Madrid's participation that year at the U.S. Solar Decathlon. Their initial interest in holding a solar decathlon competition in Europe was supported by both the Spanish Embassy in the United States and the DOE, and led to the signing of a Memorandum of Understanding between the United States

# Europe 2010



Government and Spain's Ministry of Housing. This agreement states that the government of Spain's Ministry of Housing, with guidance from the U.S., is committed to organizing and hosting two Solar Decathlon Europe competitions to be held in Madrid, in 2010 and 2012, and for subsequent competitions to be held on years that alternate with the DOE's competition. The Solar Decathlon Europe follows the same basic structure of its American counterpart, assessing teams in 10 contest areas and three major categories: task completion, measurement, and jury scoring.

This year's first place award went to Lumenhaus by Virginia Tech. Their winning design incorporated an open, flowing floor plan and the eclipsis system, an innovative façade technology that uses two layers—a metal shutter shade and a translucent insulating panel—to block direct sunlight while filtering indirect natural light through a perforated wave pattern stamped into the metal. This system also allows views to the exterior while maintaining privacy for the house's occupants.

COURTESY SOLAR DECATHLON EUROPE

Second place was awarded to the University of Applied Sciences Rosenheim for their Ikaros house, whose design incorporated a controlled shading system, ample use of glass, and a modular system to allow for expansion and extension. The Stuttgart University of Applied Sciences received third place for their house that conceptually takes into account extreme weather conditions found in desert regions and addresses these factors in its construction. Towers for ventilation with evaporative cooling and the use of thermal mass in the interior are two ways in which its design responded to these types of climate conditions.

Europe has long been a champion of sustainable design and solar technology, as evidenced by the international participation in the U.S. Solar Decathlon and Team Germany's winning homes in 2007 and 2009. Establishing a European counterpart expands the program's reach, engaging students worldwide and furthers the discussion and use of solar technologies in our increasingly energy-demanding world. **REBECCA EBSTEIN**

# An Energy Efficient Strat

## BALANCING ENERGY SAVINGS AND PAYBACK PERIODS FOR COMMERCIAL OFFICE LIGHTING CONTROL SOLUTIONS

**Looking to improve energy efficiency?** Lighting controls are a good place to start. A Cleantech Approach (CTA) May 2010 research and analysis report, "Lighting Controls: Savings, Solutions, Payback and Vendor Profiles," concludes that lighting control solutions for commercial offices can reduce electricity consumption by 35 percent to 55 percent. However, since payback periods on the initial investment can range from three to 11 years, those involved in these decisions should choose carefully.

Effective management of lighting is fundamental to a sound energy efficiency strategy. It's a smart approach given 20 percent of commercial buildings' overall energy expenses and 38 percent of their electricity expenses go to lighting. With an eye toward reducing electricity consumption associated with lighting, CTA's findings indicate that the two most impactful technologies include lighting controls and next-generation lighting such as LEDs. Of the two, CTA recommends lighting controls as the better first step toward reducing energy consumption, given that these solutions carry lower technology risk and less up-front cost than next-generation technologies.

### LIGHTING CONTROLS

With lighting controls, businesses can easily control the behavior of their lighting assets (i.e., when lights turn on and off, or how and when lights dim) to eliminate wasted light and excess electricity consumption, while meeting employee needs for their work environment.

There are two critical factors to consider when choosing a lighting-control solution: explore the potential payback as well as each vendor's unique technological approach. CTA's research found that, often, not enough time is spent examining how quickly a given lighting-control solution will allow purchasers to recoup their initial investment. Accordingly, undertake a thoughtful examination of a building's or space's energy-use profile. Given the age of and general technology employed in today's commercial office buildings, it is likely that there are opportunities to reduce energy use with simple strategies such as daylighting, occupancy control, and scheduling. This examination will yield a general cost basis from which a payback period can be calculated.

CTA used a proprietary approach to examine the cost of lighting

ILLUSTRATION BY MARK MCGINNIS

# egy: Lighting Controls

control solutions, determine the range of potential cost-saving opportunities, and calculate the resulting payback periods associated with the adoption of lighting control technology. The findings indicate:

- **Cost of the solution:** Having reviewed solutions from 13 lighting controls vendors, lighting control solutions for commercial spaces typically cost between \$1 to \$2.50 per square foot, installed. Incentives tend to be regional (i.e., overlapping federal, state, and local tax credits; and lower insurance costs that are sometimes offered to more energy efficient assets), so CTA did not include them in their calculations.

- **Assessing the potential for electricity reduction:** After running a detailed scenario analysis, CTA concluded that control solutions have the potential to reduce electricity expenses by 35 percent to 55 percent, at least in situations where next-generation, ultrahigh-efficiency technologies have not been deployed. (CTA assumed a constant price per kilowatt hour for electricity of \$0.12.) CTA's report provides a framework that readers can use for their own situations, since customers are in the best position to deduce any cost inflation or deflation in their electricity prices, including potentially large increases from clean energy legislation.

- **Implied payback periods:** Assuming this 35-percent-to-55-percent range for electricity savings, paybacks on the initial investment in lighting control solutions generally range from 2.7 years (implying 55 percent electricity savings with a solution that costs \$1 per square foot installed) to 10.7 years (implying 35 percent electricity savings with a solution that costs \$2.50 per square foot installed).

CTA also examined five control strategies that lead to electricity savings, all of which should be considered as part of a control solution. These five leading control strategies are:

- **Lumen maintenance:** Lumen depreciation is the loss of light output as a fluorescent lamp ages. A lumen maintenance strategy addresses this problem by reducing power in response to higher initial lamp lumens, while increasing power as lamps age and phosphors degrade to maintain appropriate light levels.

- **Daylighting:** Adjust lighting levels according to the availability of natural light. The more natural light that enters an office space, the less the lighting infrastructure needs to deliver.

- **Task tuning:** Control lighting according to specific task and working environments, optimizing light output where it is needed.

- **Occupancy control:** Lights are turned off when occupancy sensors detect that there is no one in a room or area. As building occupants move, the solution dynamically responds to user-traffic patterns, providing light only when and where it is needed.

- **Scheduling:** A scheduling strategy enables lights to be turned on and off at appropriate, predetermined times and locations throughout the building during workdays, evenings, and weekends.

## FRAMEWORK FOR UNDERSTANDING VENDORS' APPROACHES

The other important consideration is to evaluate each vendor's technological approach. Certain solutions are optimized for certain environments; be sure that you select a solution that is optimized for yours.

Lighting control solutions vendors (and brands) profiled in CTA's May 2010 report included: Acuity Brands (Synergy Lighting Controls, SensorSwitch, Lighting Control & Design); Adura Technologies; Cooper Controls; Delmatic; Encelium; EnOcean; Leviton Manufacturing;

Lumenergi; Lutron; Philips (Dynalite, Lightolier Controls); Schneider Electric; Universal Lighting Technologies; and WattStopper. (But CTA does not recommend vendors nor do they endorse a particular strategy for lighting controls.)

While all of these vendors employ sophisticated, centralized, software-based approaches, they often differ on the framework through which they deliver functionality. The chief differentiators among these solutions are their respective communication method and control intelligence dispersal.

## COMMUNICATION METHOD

This refers to the connection between elements in the network (lighting fixtures, sensors, and switches) and an aggregation device, and can be wired or wireless. The aggregation device collects the data and brokers communications between the peripheral devices and the central management console, where the lighting network is monitored and control parameters are set. Wired connections require the data to be transmitted over low-voltage wiring. Wireless connections can be achieved in one of two manners: data sent wirelessly (usually using ZigBee or EnOcean protocols) to an aggregation device or data sent over the existing powerline network with no low-voltage wiring.

## CONTROL INTELLIGENCE DISPERSAL

This refers to how lighting control intelligence (parameters for how the network should operate) is dispersed and where it resides. With this, there are four options:

- **Intelligent, ballast-based strategies:** Here, vendors look to leverage the intelligence that resides in the ballast itself. (A ballast is required to control the starting and operating voltages of electrical gas discharge lights, especially fluorescents.) All strategies can control ballasts, but ballast-based strategies distribute intelligence locally, where they then execute the parameters set by the centralized software console.

- **Intelligent, node-based strategies:** In node-based strategies, vendors install a controller (or node) that sits inside each fixture next to the ballast. It is this intelligent node which is responsible for executing all control functionality according to the parameters set by the centralized software control console.

- **Intelligent, sensor-based strategies:** Here, vendors distribute lighting control intelligence directly from the central management console to intelligent sensors and switches; there is no aggregation device.

- **Control-panel-based strategies:** And with this, all of the intelligence is administered through control panels that typically reside in electrical wiring closets. These control panels are responsible for communicating with all of the devices on the periphery and executing all of the light level parameters set by the centralized software control console. **DAVID RAEZER AND ROMAHLO WILSON**

*David Raezer and Romahlo Wilson are Partners at Cleantech Approach (cleantechapproach.com), an independent research and advisory firm that identifies market-ready sustainable strategies. A complimentary copy of CTA's report, "Lighting Controls: Savings, Solutions, Payback and Vendor Profiles" containing payback analysis and vendor profiles, can be downloaded by ARCHITECTURAL LIGHTING readers at cleantechapproach.com/ArchitecturalLightingMag.*



**DETAILS • Project** Empire State Building Energy Retrofit, New York **Owner** Empire State Building Co., New York **Project Advisor** Clinton Climate Initiative, New York **Project Manager** Jones Lang LaSalle, Washington, D.C. **Energy Service Company** Johnson Controls, Milwaukee, Wisc. **Design Partner and Peer Review** Rocky Mountain Institute, Snowmass, Colo. **Operations Reviewer** Empire State Building Operations, New York **Photographer** Bilyana Dimitrova **Project Size** 2.6 million square feet **Project Cost** \$550 million

# GREEN LIGHTING ICON

LIGHTING SYSTEMS INSIDE THE EMPIRE STATE BUILDING ARE OVERHAULED AS THE MANHATTAN LANDMARK UNDERGOES A SUSTAINABLE MAKEOVER—PART OF THE SKYSCRAPER'S \$550 MILLION TOP-DOWN RENOVATION

**Lighting designer Nancy Clanton** is justifiably proud of her firm's involvement with the Empire State Building's ambitious green makeover. The \$20 million budget for sustainable projects—part of the building's major \$550 million restoration that began nearly four years ago—is designed to turn the 1931 Art Deco, 102-story icon into a modern LEED Gold skyscraper that has been nipped, tucked, and tweaked enough to achieve an annual 38 percent overall reduction in building energy use by 2013.

Clanton, founder and president of Clanton & Associates, a sustainable lighting design firm based in Boulder, Colo., and her project team tackled the Empire State Building's lighting work, which included creating guidelines for lighting strategies within leasable commercial office spaces, as well as in hallways, bathrooms, and other common areas. Amazingly, though, all the lighting work accounts for just 5 to 8 percent of the building's annual energy use reduction.

If that figure sounds surprisingly low it's because the 2.6-million-square-foot building's biggest energy drain isn't its lighting, which was updated in the early 1990s to more-efficient T8 fixtures, but its inefficient double-hung windows and outdated climate control systems. All of these are being replaced and rebuilt as part of the sustainable makeover.

However, it's impossible to talk about this massive project and single out one sustainable element—be it the lighting fixtures or the 6,500 new, custom-operable windows—because they're all intrinsically linked. "The project wasn't about line items," Clanton says. "It wasn't about switching out lights or replacing windows, it was about how changing one thing affects everything."

Changing everything and anything was part of the challenge handed down by building owner Anthony E. Malkin, president of W&H Properties, who asked the team to go for "pie-in-the-sky" during their brainstorming sessions, "There were no sacred cows," says Paul Rode, project executive with the Manhattan office of Johnson Controls, who oversaw implementation of the building's lighting strategies, alongside heating and cooling projects. Malkin wanted to show the world how an existing building—especially a landmark building—could be transformed, so he encouraged the team to think big. Malkin placed no restrictions on what could be tinkered with to boost the skyscraper's sustainability (although changes affecting the building's aesthetic had to be approved by the Landmarks Preservation Commission), so the team considered more than 60 sustainable strategies before

## Shedding Light on Skanska's New LEED Platinum Office

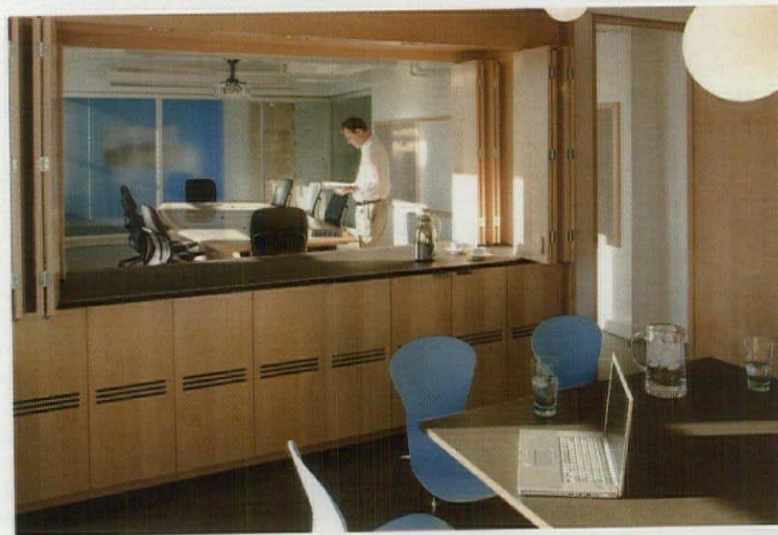
The lighting design for Skanska's office on the 32nd floor of the Empire State Building was pretty straightforward: Harness as much daylighting as possible and then augment the natural light with energy-efficient fluorescent ambient lighting and LED tasklighting. And for a bit of whimsy, throw in a few decorative lights (yes, incandescent) over the reception desk and in the kitchen of the 85-person office.

Matt Franks, a senior lighting consultant at Arup, and his team created the layered lighting plan for the 16,600-square-foot office with energy efficiency as their primary goal. Currently, the Empire State Building offers prepared lighting packages for tenants. When the Skanska project began in June 2008, those green requirements had not yet been established, so the building team—which, in addition to Arup, includes design architect Cook+Fox, architect of record Swanke Hayden Connell, engineers Cosentini Associates, and Skanska, which served as contractor for its own space—worked out its own LEED Commercial Interior Platinum program, with lighting playing a key role.

"The space isn't very deep, so there's a ton of natural light and no one is too far from a window," Franks says. In fact, 90 percent of the office receives natural light thanks to both the removal of the drop ceiling (an update that's happening throughout the high-rise as part of its sustainability renovation) and a floor plan that places glass-front offices at the core of the space and open seating at the four corners. Because the office gets so much daylight, fluorescent overhead lighting levels are low—sensors maintain levels at 25 footcandles—and individual workspaces are equipped with LED tasklighting. "Sometimes there's so much daylighting that lights are shut off completely," he says. To keep the environment comfortable, windows are outfitted with solar-control shades.

The team only encountered one small challenge during installation. Removing the drop ceilings exposed the building's structure, so the team had to work around massive concrete beams—although they didn't have to work around mechanical ductwork, as the office utilizes an underfloor air system. "Those beams made it a challenge to get lights where we needed them," Franks says. The solution involved installing more fixtures than would normally be used and spacing them about 6 feet apart, but outfitting each energy-efficient fixture with only one lamp each.

Skanska moved into its new office in January 2009, and the annual energy savings when compared to its former space on Madison Avenue are significant. Their electricity costs per rental square foot now average \$1.51 for an annual cost of \$36,760, compared to \$3.49 for an annual cost of \$85,039 at their prior location. Their energy consumption is also down significantly: 141,383 kWh compared to 326,595 kWh. **JS**



The Empire State Building is a New York City landmark and a 20th century architectural icon (right). But the 1931 Art Deco masterpiece was starting to show its age, and its owner, W&H Properties, saw the need for an update as an opportunity: The skyscraper is currently undergoing a green makeover that will reduce its overall energy use by 38 percent by 2013. Tenant guidelines aid individual companies in outfitting their spaces and keeping with the building's focus on reducing its energy footprint. Skanska (series above) was one of the first companies to move in and implement more-efficient lighting strategies. Natural light is maximized and supplemented with ambient and tasklighting.







narrowing down the field to eight sustainable focus areas, lighting included. "It took us a year in development to finally get the right combination of things," Rode says.

The building draws heavily on natural daylight, now that new windows are going in and the intrusive drop ceilings are coming out. This daylighting will be augmented by a mix of direct, ambient, and tasklighting; fixtures with lower power density for reduced energy loads; and glare-reducing LEDs on the observation level.

For leasable tenant space, Clanton and her team prepared lighting packages for prospective tenants that outline what options they will have during fit-out. "Many people put into their rental agreements that they need 'x' amount of watts per square foot," Clanton says. "But in reality they never use that much and it's a waste of energy and infrastructure." Instead, Clanton designed a layered lighting program for them that relies heavily on tasklighting, a combination of indirect and direct lighting, and lighting controls. Her firm's first strategy takes advantage of daylighting by using photo sensors to control ceiling fixtures nearest the windows.

Additional direct and indirect pendant fixtures throughout an office are on dimmers, and the fixtures can be switched off to give tenants direct control over their spaces. Individual tasklighting provides employees with most of their workday lighting, and the fixtures and other nonessential loads are on sensors that switch them off when a workspace is vacated for an extended period of time. Every single light and outlet is monitored by an energy management system integrated into the office furniture so tenants can get feedback on their lighting and plug loads. Not all tenants are submetered, but Rode says that tenants who are submetered are especially receptive to the energy-saving program.

As for the building's corridors and bathrooms: "Gone are the days of lights being on all the time," Rode says. A Johnson Controls survey of the building showed that during weekends and on weekdays after 7 p.m. the corridors and bathrooms were hardly used. This presented a huge potential savings. In fact, "Most of the energy savings from lighting comes from the hallways," Rode says. "People don't like it when the elevator doors open and the lights are just clicking on," he says, so they reached a compromise: both corridor and bathroom lighting is dimmed 5 to 10 percent with sensors bringing the lights up to full brightness when spaces are occupied.

Lighting on the building's 102nd-floor observation level was upgraded to LEDs and tungsten systems that eliminate glare on the windows. Clanton said the previous lighting setup caused so much glare that it often interfered with views of Manhattan—views many thousands of tourists pay good money to see clearly.

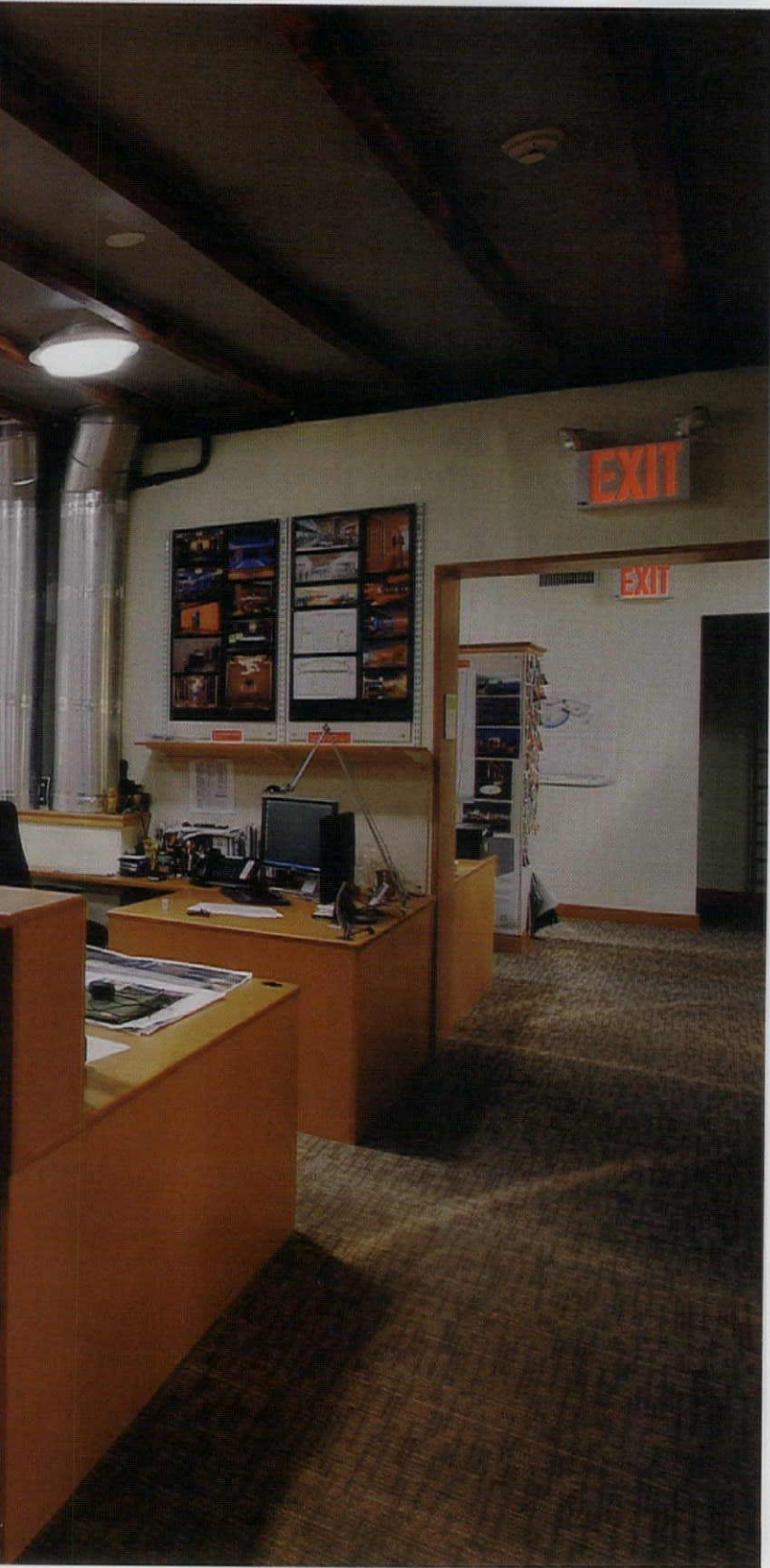
What's not being upgraded at the moment is the Empire State Building's exterior lighting—a collection of huge metal halide floodlights that seem a bit outdated but aren't huge energy drains. (Color filters need to be inserted manually when the building changes its lighting schemes.) "We developed a long-term plan for what exterior lighting they should be replacing," Clanton says. "I see them eventually going with our recommended LED system, but there's a lot of additional costs. And as for energy goals, exterior lighting was low on the priority list."

While the lighting packages have all been worked out, the project team is facing another challenge that's preventing them from breezing through the retrofit: access. "What we thought would be a massive lighting retrofit turned out to be something that we have to implement over time as tenants move out and new ones move in," Rode says. The work is invasive—especially since the new lighting and controls necessitate rewiring of the entire building—but Rode is carefully choreographing all the work. "I've gotten enough done that I'm able to sleep at night," he says. **JAY W. SCHNEIDER**

*Jay W. Schneider is a Chicago-based writer with more than 15 years covering the AEC industry for numerous publications. He has also served on the Construction Writers Association board since 2009.*

# LEADING BY EXAMPLE





## TWO LIGHTING FIRMS EXPLORE ENERGY-EFFICIENT LIGHTING STRATEGIES FOR THEIR OWN OFFICES

**Lighting designers and architects** are often so busy working on projects for their clients that they don't devote time to designing their own offices. But for two well-known lighting practices—Lighting Design Alliance (LDA) in Long Beach, Calif., and Focus Lighting in New York—designing a new office was a necessity. Each firm had worked in less-than-ideal conditions for several years and had significantly outgrown their workspaces. LDA had a series of small semi-detached buildings and Focus Lighting had a four-story townhouse on the Upper West Side. After finding real estate that was ripe for transformation—a dark, old auto warehouse for LDA and three adjacent storefronts for Focus—LDA's president Chip Israel and Focus Lighting's principal Paul Gregory knew they needed to act.

For both Israel and Gregory, the chance to build a new office was not just about square footage, but about creating a workspace that would foster communication between staff and serve as laboratory for ideas and strategies. Also, both wanted to implement energy-efficient measures, not merely because they felt it was the right thing to do, but because it was a way to practice what they preach. "I wanted the office to be a place where we could show clients, in real time, what we were communicating in the drawings," Israel says.

To that end, a range of market-available lighting is on display, from active and passive daylighting systems to solar-fed fiber-optic accent lights. "You can have the best of intentions," Gregory says. "But you never know if you are doing a good job until the electric bill arrives. That's when you really see if your lighting choices are on target." With the aid of basic energy monitoring software, both firms have been able to better understand their energy use and how that translates into kilowatt-hours and dollars. "Once you see how the lighting is translating into real-time energy use you can adjust and turn lights on and off so you eliminate the peak periods," Gregory explains.

The offices have become more than just places for people to work, they represent a communal sense of ownership. "The staff takes great pride in the space," Israel says. "Everyone is fully invested in it and wants to see it perform to its highest levels." **ELIZABETH DONOFF**

Forty-five, 14-inch-diameter tubular skylights with custom-designed socket assemblies that hold 23W 3500K CFL lamps, bring natural light into the second-floor main workspace at Focus Lighting's new office.





## FOCUS LIGHTING OFFICE

**DETAILS** • **Project** Focus Lighting Office, New York **Design Team** Focus Lighting, New York (lighting designer); Paul Bennett Architects, New York (architect); DeSimone Consulting Engineers, New York (structural engineer); Guth DeConzo Consulting Engineers, New York (mechanical engineer)  
**Photographer** J.P. Lira/Focus Lighting, New York **Project Size** 8,334 square feet  
**Construction Cost** \$800,000 (total), \$95/square foot **Lighting Cost** \$65,000 (total), \$7.80/square foot **Watts per Square Foot** 1.3



### Manufacturers / Applications

**Belfer** Two-lamp recessed wallwash fixtures, half with LEDs and half with 20W MR16 lamps • **Edge Lighting** Phi ProAim trackhead on monorail track with 20W MR16 • **Edison Price** Recessed downlights with 23W CFL PAR style lamp • **Juno Lighting Group** Undercabinet light with 20W halogen bi-pin lamps • **Lightolier** Alcyon trackheads on current-limited track with 20W MR16 lamp to accent artwork • **Lithonia Lighting** RT5 2-foot by 2-foot direct-indirect fluorescent with 3500K T5 lamps • **Louis Poulsen** Surface-mounted decorative fixture with 23W CFL lamp • **Lucifer Lighting** Recessed adjustable accent light with 20W MR16 lamp • **Solatube International** 14-inch tubular skylight with custom-designed socket assembly to hold 23W 3500K CFL lamp • **WattStopper** Occupancy sensors system

For its new office, Focus Lighting joined three separate buildings on West 116th Street, giving the lighting firm a unique storefront and street presence on a busy Harlem thoroughfare (bottom right). With ample space, the new office has room for an informal staff meeting-lunch area (top right) and a double-height mock-up area that, by all accounts, can function as a small black box theater (far left). Natural light permeates the space thanks to a system of 45 tubular skylights. Electric light sources are used to supplement the natural light in the work area, which brings the staff of 25 together in one space as opposed to the seven different areas, as when the office was divided at its former location on West 101st Street. Lighting and HVAC equipment each have their own breaker panel installed in the basement so that each load can be monitored and tracked separately via a data logger. The commercial-grade data logger is a small box measuring 5-inches-square and only cost a few hundred dollars, a small investment for the firm to track its energy use. To make sure the office design would meet the applicable energy code stipulations (90.1-2004), Focus Lighting used the COMcheck software program to make sure each space was in accordance with its interior lighting and power needs. Not only does the lighting comply, but the design is 23.9 percent better than allowable code levels.





## LIGHTING DESIGN ALLIANCE OFFICE

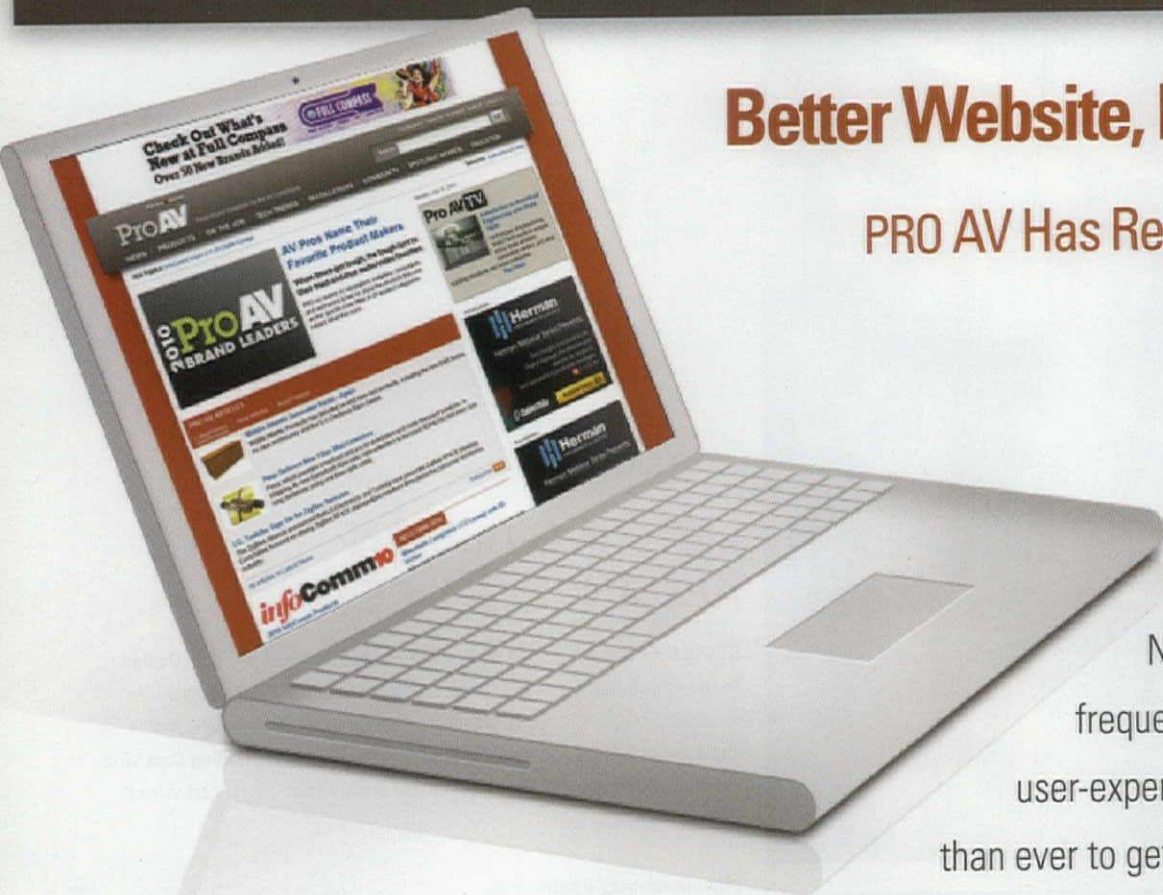
**DETAILS** • **Project** Lighting Design Alliance Office, Long Beach, Calif. **Design Team** Lighting Design Alliance Office, Long Beach, Calif. (lighting designer), Archint Associates, Long Beach, Calif. (architect) **Photographer** RMA Architectural Photography, Tustin, Calif. **Project Size** 22,000 square feet **Building Cost** \$1.8 million **Lighting Cost** \$320,000 **Watts per Square Foot** 0.8 (connected load); 0.07 (actual load)

### Manufacturers / Applications

**Architectural Area Lighting** Parking lot ceramic metal halide pole lights • **Cooper io Lighting** LED lightbar • **Edison Price** LED downlight at entry-reception area • **Exterieur Vert** PAR 20 uplight • **GE Lighting** various lamps throughout the projects including T5, metal halide, and ceramic metal halide • **Kim Lighting** Ceramic metal halide parking lot fixture head • **Lightolier** 4-foot 54W T5 linear fluorescent striplights throughout office • **Lucifer Lighting** 1W LED downlight in kitchen • **Lutron** Energy modeling software • **NeoRay** Linear fluorescents in skylights • **RSA Lighting** Pinhole accent lights for conference room video-conferencing • **Solatube International** 72 active sun-tracking skylight lenses • **Tokistar** LED tapelight under mezzanine



Lighting Design Alliance transformed what was once an auto parts warehouse into a luminous showcase for energy-efficient lighting design. Designed to meet LEED Platinum, daylight harvesting and dynamic dimming coupled with 10kW of photovoltaic panels on the roof reduce the lighting load to 0.07W per square foot. On the main façade, vertical louvers block west-facing light during the day but still allow ample natural light into the front office. Metal halide downlights illuminate the office entrance at night, while linear LED lightbars graze the textured stone surfaces (far left). The conference room (top right), is illuminated with natural light thanks to a full-height window wall. But at night the space is supplemented with a variety of electric sources—including color-changing LED cove lights, direct-indirect fluorescent pendants, MR16 downlights, and compact fluorescent wallwashers—which are all dimmed separately with multiscene presets. In the work area (bottom right), concealed linear T5HO fixtures in clerestories provide general lighting. All the fixtures dim and are connected to photo cells, occupancy sensors, and a time clock. The skylights are triple glazed for thermal heat gain and a clear north-facing window allows for full sky view. The 4-foot-by-4-foot skylights are equipped with suntracking mirrors and energy modeling software tracks energy savings.



## Better Website, Better Business

PRO AV Has Relunched Its Website  
To Give You More!

Introducing the new  
**PROAVMAGAZINE.COM!**

Now with more content, more frequent updates, and an improved user-experience - you will find it easier than ever to get the information you need to better your business.

## ALL NEW FEATURES

### More Web-First Content

More industry news and frequent updates provides the information AV pros need to succeed

### Enhanced Video

Browse through a selection of on-demand videos, webinars and product showcases

### Better Slideshow Technology

Showcasing inspiring projects through large-format slideshows and photos

### Online Education and Training

Our new education and professional training programs are vital to building and maintaining the skills that will advance your career

### Join Our Community

Comment, discuss and interact with other AV professionals on the website

### Improved Navigation

Articles are better organized by topic so you can stay up-to-date on the subjects important to your business

## The New PROAVMAGAZINE.COM

Serving your needs as the trusted industry resource with more web-first content, enhanced multimedia, community, and education designed to give you a better online experience!



# ARCHITECT

hanley wood



## BUILDING: REPUTATION

ARCHITECT's Web site is laying the infrastructure for a premier online experience for practicing architects. We assemble the site, you critique the content. Portfolio channel, jury of your peers, a searchable database—all developed to facilitate a little friendly competition. To learn more, visit [architectmagazine.com](http://architectmagazine.com).

PAGE..... ADVERTISER ..... CIRCLE NO.

5.....	DIAL.....	401
C4.....	Gotham.....	229
C3.....	Hanley Wood University.....	—
7.....	LEDtronics.....	248
C2.....	Mechoshade.....	247
9.....	Nexus.....	402
3.....	Peerless.....	249
24.....	Pro AV Magazine.....	—

Publisher is not liable for errors or omissions.

search.  
source.  
learn.  
connect.  
ebuild.

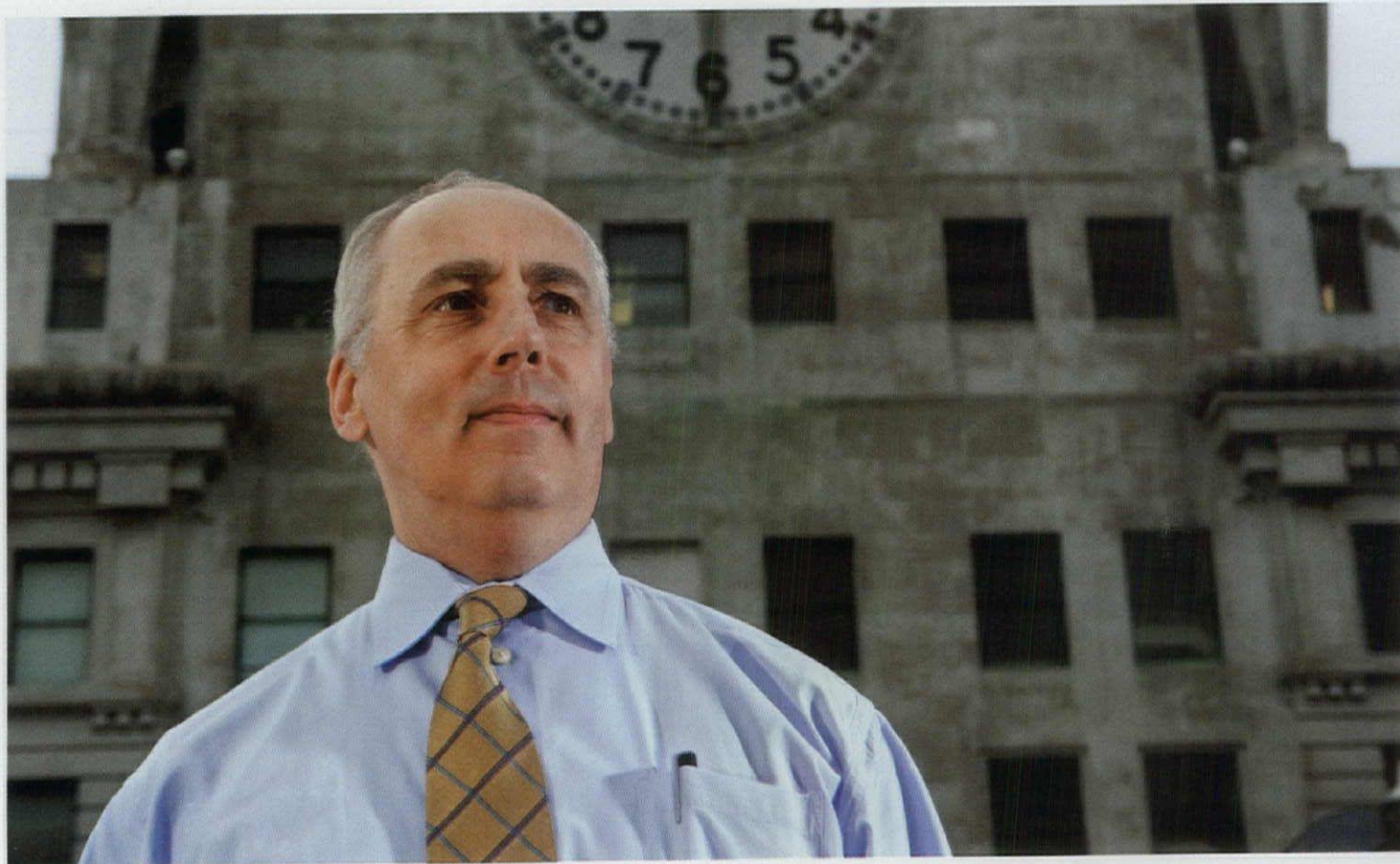
**ebuild** is the destination for construction pros searching for information about building products. **ebuild** is a source of unbiased coverage of new products, trends and news. Pros visit **ebuild** to learn how to do their jobs faster, safer and easier. **ebuild** connects pros to product manufacturers, experts and peers.

hanley wood

**ebuild**

a 360 degree view  
of product information

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



# Peter Jacobson

## PROMOTING ENERGY EFFICIENCY ON MULTIPLE APPLICATION FRONTS

**Peter Jacobson is no stranger to energy efficiency.** He began his career during the first energy crisis in the early 1970s. While working for Meyer Strong & Jones—a large engineering firm in New York City—Jacobson saw firsthand how advances in lighting technologies and good lighting applications go hand-in-hand. And, with nearly 19 years as ConEdison's lighting specialist for energy-efficient programs, he is fully versed in the role that lighting plays in forging a greener future. **ELIZABETH DONOFF**

### **What milestone energy efficiency developments have you seen during your tenure in the lighting industry?**

Tri-phosphor technology in linear lamps was a huge breakthrough. This development started the quality-of-the-visual-environment discussion.

### **Has the role of the utility company changed over time?**

No, we are still charged with providing reliable and efficient service through our electric, gas, and steam system. What has changed is the amount of energy that customers now demand.

### **What's the difference between a utility and an energy company?**

A utility company is a regulated entity that supplies generation, transmission,

and distribution of services. An energy company, or an energy services company, can purchase energy on an open market and supply the meter services to customers.

### **How do you communicate information differently when your audience is the public or a professional sector?**

ConEdison communicates through our public affairs, corporate communications, and government relations groups to give customers the complete story on energy efficiency. I most enjoy speaking to grade school levels so they can best understand how they can be allies at home and school.

### **Your thoughts on LEDs?**

We're encouraged by all the rapid development, but we must be careful. It only takes a few bad applications for a product to get a bad name.

### **What's the next great advance in energy systems?**

The ability for customers to make daily or hourly changes to their energy usage; this is what the "smart grid" system is all about. Energy efficiency should not be about compromise in lifestyle for commercial or residential environments.

# Strengthen Your Skills. Build Your Business. Advance Your Career.

**EARN FREE CONTINUING EDUCATION CREDITS TODAY!**

All courses and exams are **100% FREE** and are instantly processed. Start a course, pause it and continue from where you left off—whenever you want. You'll know immediately if you've passed and can print your certificate of completion instantly!



WHAT IS THE BIG DEAL WITH LED LIGHTING?  
HOW CAN LED LIGHTING IMPROVE  
PROJECTS I AM WORKING ON TODAY?  
**CREDITS: 1 LU HSW/SD**



INTRODUCTION TO TUBULAR  
DAYLIGHTING DEVICES  
**CREDITS: 1 LU HSW/SD**

**SAMPLE COURSES**

**HANLEY WOOD UNIVERSITY HOSTS COURSES FROM:**

- |                            |                               |                             |  |                                  |
|----------------------------|-------------------------------|-----------------------------|--|----------------------------------|
| Acuity                     | Fabral                        | LYON                        | Propane Education and Research Council | Temple-Inland                    |
| Advanced Building Products | Feeney Architectural Products | Marble Institute of America | Quality Edge Building Products         | Tivoli                           |
| American Standard          | Fypon                         | MonierLifetile              | Rheem Water Heating                    | Trespa                           |
| Andersen Windows           | greenscreen                   | MTI Whirlpools              | S-5!                                   | USG                              |
| Aquatic                    | Grohe                         | NCFI Polyurethanes          | Se'Lux                                 | VT Industries                    |
| CertainTeed                | Hardwood Council              | Nichiha USA, Inc.           | Sherwin-Williams                       | Weather Shield Windows and Doors |
| Contact Industries         | Insight Lighting              | PEERLESS                    | Solatube                               | White River Hardwoods            |
| CREE                       | James Hardie                  | Pella                       | Sub Zero                               | Woodharbor Doors & Cabinetry     |
| Delta Faucets              | Knauf                         | Plastpro Inc.               | The Tapco Group                        | WR Meadows                       |
| Eagle Windows and Doors    | Leviton                       | Poggenphol                  |  |                                  |
| Eldorado Stone             |                               | PPG Industries              |  |                                  |



ACCESS THESE COURSES AND MANY MORE AT [HANLEYWOODUNIVERSITY.COM](http://HANLEYWOODUNIVERSITY.COM)



# gotham<sup>®</sup> solid-state downlighting



THE QUALITY OF LIGHT YOU EXPECT. THE CHOICES YOU WANT.

Solid-state lighting with integrated energy management, addressing both new construction and renovation opportunities.

Multiple aperture sizes and lumen packages, satisfying a range of general task and wallwash requirements.

Superior engineering, blending luminaire efficiency with the quiet, comfortable illumination you expect from Gotham.

WWW.GOTHAMLIGHTING.COM  
An Acuity Brands Company

Discover more about our solid-state luminaires at [gothamlighting.com](http://gothamlighting.com), and keep up with our latest news by connecting with us on Facebook<sup>®</sup>.



Circle no. 229 or <http://archlighting.com/productinfo>



FLIP

# Light Matters

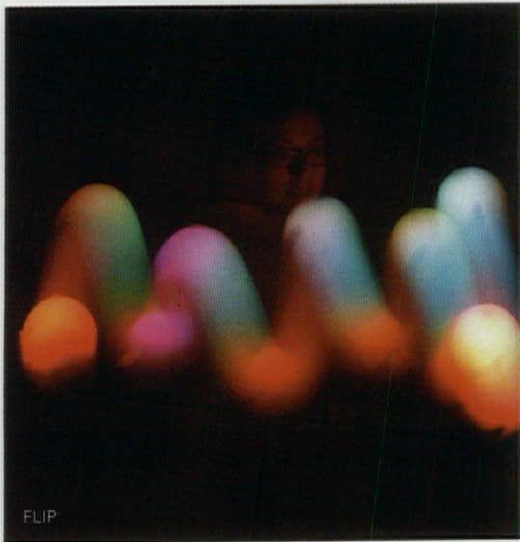
## NEW LUMINOUS MATERIALS AND TECHNOLOGIES

**One of the fundamental services** that lighting consultants provide is to optimize the interplay between light and material. While good lighting design provides the appropriate intensity, focus, coloration, and diversity of types of illumination for buildings, great lighting design also exhibits a keen awareness of the complex interactions between light and material surfaces, which elevates the experience of architecture and urban space.

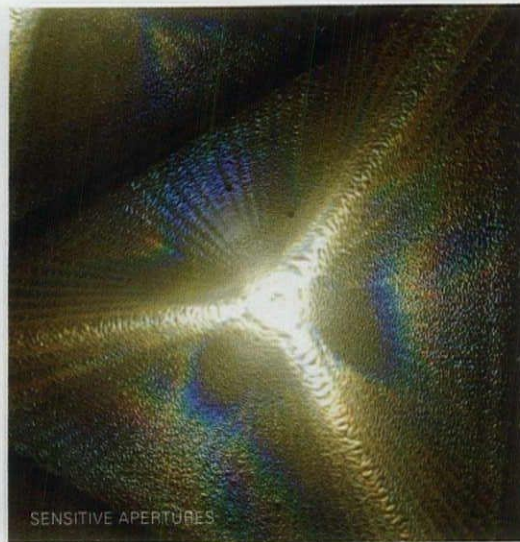
The past decade has witnessed an explosion of new materials and technologies for architectural applications, many of which offer novel and unusual properties. Concerns about environmental sustainability—in addition to laboratory-developed advances in high performance materials—have driven the recent transformation in the building products industry. The result is an increasingly complex set of choices for architects and lighting designers, with a broad set of possible lighting and material interactions. Thus, it is important that practitioners become knowledgeable about these new technologies, since many of the products promise to alter the practice as well as the experience of building design.

Although the luminous program and the material program are often developed separately by lighting designers and architects, respectively, it is worthwhile to combine the two when assessing new light and material interactions. For the purposes of this article, these interactions may be considered in terms of four basic lighting principles: *Transmit* examines recent advances in material-based illumination technologies that emit light; *propagate* assesses new materials designed to transport, bend, and modify light; *store* ponders materials designed to harness energy from light for renewable power applications; and *obstruct* considers materials designed to filter and reduce luminance—particularly in glare-sensitive contexts. **BLAINE BROWNELL**

*Blaine Brownell is an architect and former Fulbright Scholar with a research focus on emergent materials. He is a principal of the design and research practice Transstudio and teaches at the University of Minnesota School of Architecture. Brownell authored the Transmaterial series as well as the upcoming Matter In The Floating World with Princeton Architectural Press.*



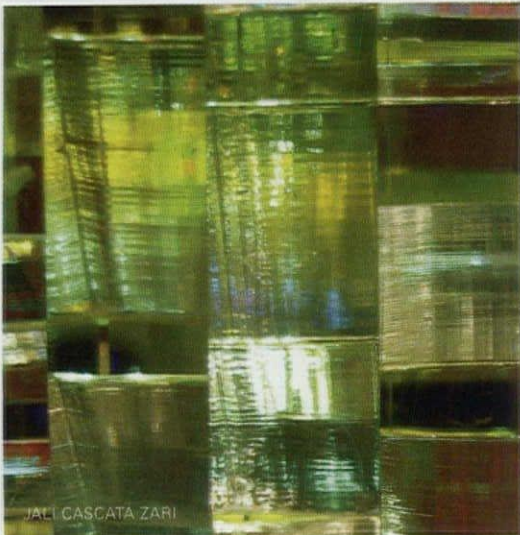
FLIP



SENSITIVE APERTURES



SITUMBER



JALI CASCATA ZARI



LUMIBLADE



SHUTTERS

**TRANSMIT**

**Lumiblade**

Organic light-emitting diodes (OLEDs), like LEDs, pass electricity through semiconductors. Unlike LEDs, their organic structure broadens their development potential. In its pursuit to make OLEDs more accessible, Philips has developed a fixture called Lumiblade. It offers diffuse, planar illumination in a compact 15-cm by 15-cm by 1.8-mm luminaire with brightness of 1,000 cd/m<sup>2</sup> and a lifetime of approximately 10,000 hours. Philips' Lumiblade Creative Lab program encourages experimentation and facilitates access to this technology. [lumiblade.com](http://lumiblade.com) CIRCLE 130

**Flip**

Flip is an interactive luminaire made of translucent silicone, a high-intensity LED, a rechargeable battery, and an equilibrium sensor. It explores the mobility of LEDs in an untethered, tactile interface that changes color when rotated, allowing the user to find any color in the visible spectrum. Multichromatic light animations can be made by spinning, rolling, or tossing the sphere. Flip will be commercially available in December. [nondesigns.com](http://nondesigns.com) CIRCLE 131

**PROPAGATE**

**Jali Cascata Zari**

Sensitile's new material is a polymethyl methacrylate structured panel constructed as a 3D matrix of light pipes with a dichroic film layer backing. The material migrates light within shade based on the principle of total internal reflection in fiber optics—causing shadows that fall on its surface to deconstruct and shape-shift. Jali Cascata Zari redirects and scatters incoming light and color, creating cascading visual effects. [sensitile.com](http://sensitile.com) CIRCLE 132

**Sensitive Apertures**

Sensitive Apertures is a reinterpretation of the window, and it is suitable for extreme climates in which thermal performance is critical. Consisting of cellular ceramic light modules, the system is a modular slip-cast ceramic building skin intended to filter small amounts of light. Based on a tetrahedral structure, the refractive glass aperture refracts sunlight and projects it within the cell's interior surface, creating an even, luminous glow. [benarimcdonald.com/ceramic.html](http://benarimcdonald.com/ceramic.html) CIRCLE 133

TOP LEFT TO RIGHT: COURTESY NONDESIGN; BEN McDONALD; SITUMBER; BOTTOM LEFT TO RIGHT: COURTESY SENSITILE; PHILIPS; MARCELO COELHO

# tersen™

Light in Relation to Architecture



## FAÇADE

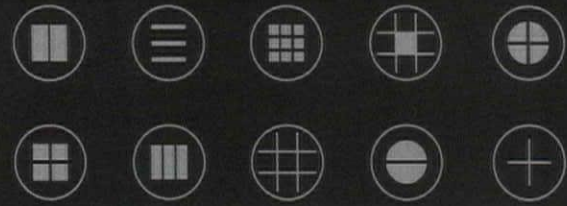
A collection of geometrically-shaped accent luminaires designed for both form and performance.

- LED
- 50 to 100MH
- 13 to 42 watt CFL
- 6 lens color options and 10 standard face plates
- IP65 rated

## FUNCTIONAL DESIGN

The FAÇADE neatly accents architectural building design with light framed in die-cast geometric shapes.

Available with custom laser-cut faceplates and lens colors, the FAÇADE is the perfect complement to modern building architecture.



We didn't have room to  
list all the  
advantages of  
**NoUVIR®**  
Fiber Optic Lighting.

So, we listed all the  
problems...

For 130 pages of reasons *to* use

**NoUVIR LIGHTING**

(including up to 70% savings  
on your energy bills),

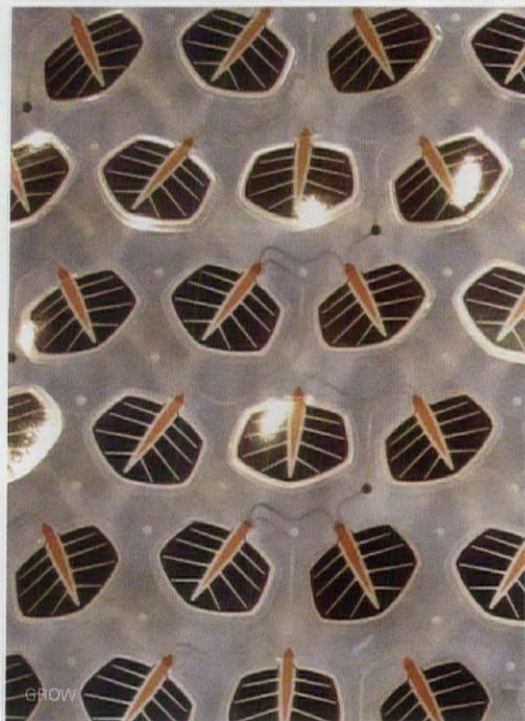
Call **302-628-9933**

Pure-white, stone-cold, fiber optic lighting  
with no UV and no IR...  
only from NoUVIR Research

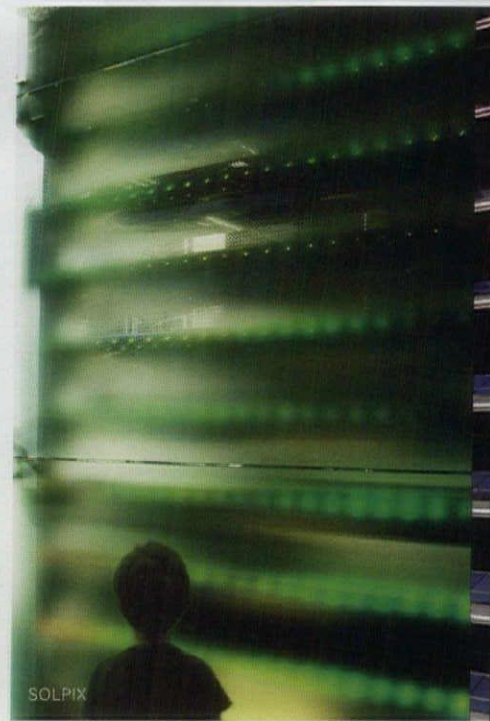
[www.nouvir.com](http://www.nouvir.com)

Circle no. 71 or  
<http://archlighting.com/productinfo>

## TECHNOLOGY



GROW



SOLPIX

### STORE

#### Grow

Brooklyn-based SMIT developed the Grow power-harnessing surface using UV-stable polyethylene and an organic photovoltaic (OPV) film called power plastic. Power plastic is a lightweight, flexible film made of multiple nanostructured layers of OPV that converts light to energy, and its sensitivity to a broader light spectrum than conventional solar cells allows it to derive power from all visible light sources. Due to the light weight and flexibility of the OPV material, Grow may be easily mounted to existing building façades in order to add low-cost renewable energy capability. [s-m-i-t.com](http://s-m-i-t.com) CIRCLE 134

#### SolPix

Based on the successful installation of a zero-energy media façade in Beijing, Simone Giostra has developed a new building envelope technology called SolPix. The system is a solar-powered and sun-shading media wall that combines photovoltaic cells, medium-resolution LED lighting, and extruded-aluminum framing to create an advanced interactive façade. SolPix is a transparent media wall that uses integral responsive software to adjust energy harnessing, solar shading, and digital content display dynamically, and its light-transmitting surface is viewable from both interior and exterior sides. [greenpix.com](http://greenpix.com) CIRCLE 135

### OBSTRUCT

#### Shutters

The MIT Media Lab has developed a textile that can be electronically controlled to provide active shading. Using a combination of wool felt, conductive fibers and shape memory alloy (SMA), the fabric changes shape to control solar glare and regulate ventilation. The active mechanics of the textile are made possible by the electronic actuation of SMA strands, which may also be used to trigger animated messages. [cmarcelo.com](http://cmarcelo.com) CIRCLE 136

#### SITumbra

University of Michigan researcher Harry Giles has developed a bio-composite-based solar control system for building envelopes. Entitled SITumbra—short for structurally integrated transparent umbra (or shade)—the passive solar device is a kind of 3D blind system that mitigates solar heat gain during summer yet allows for direct sunlight penetration during winter. The structured shading device is ideal for retrofits as well as new construction, and is comprised by recyclable and renewable materials. [situmbra.com](http://situmbra.com) CIRCLE 137



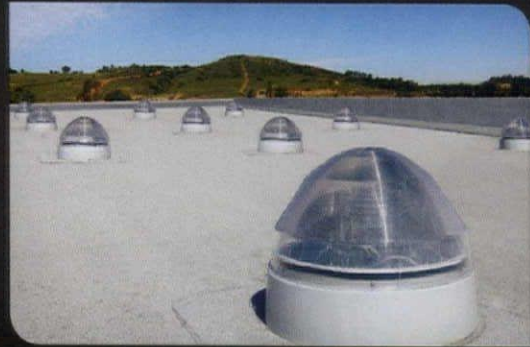
# Strengthen Your Skills. Build Your Business. Advance Your Career.

**EARN FREE CONTINUING EDUCATION CREDITS TODAY!**

All courses and exams are **100% FREE** and are instantly processed. Start a course, pause it and continue from where you left off—whenever you want. You'll know immediately if you've passed and can print your certificate of completion instantly!



WHAT IS THE BIG DEAL WITH LED LIGHTING?  
HOW CAN LED LIGHTING IMPROVE  
PROJECTS I AM WORKING ON TODAY?  
**CREDITS: 1 LU HSW/SD**



INTRODUCTION TO TUBULAR  
DAYLIGHTING DEVICES  
**CREDITS: 1 LU HSW/SD**

SAMPLE COURSES

**HANLEY WOOD UNIVERSITY HOSTS COURSES FROM:**

- |                            |                               |                             |  |                                  |
|----------------------------|-------------------------------|-----------------------------|--|----------------------------------|
| Acuity                     | Fabral                        | LYON                        | Propane Education and Research Council | Temple-Inland                    |
| Advanced Building Products | Feeney Architectural Products | Marble Institute of America | Quality Edge Building Products         | Tivoli                           |
| American Standard          | Fypon                         | MonierLifetile              | Rheem Water Heating S-5!               | Trespa                           |
| Andersen Windows           | greenscreen                   | MTI Whirlpools              | Se'Lux                                 | USG                              |
| Aquatic                    | Grohe                         | NCFI Polyurethanes          | Sherwin-Williams                       | VT Industries                    |
| CertainTeed                | Hardwood Council              | Nichiha USA, Inc.           | Solatube                               | Weather Shield Windows and Doors |
| Contact Industries         | Insight Lighting              | PEERLESS                    | Sub Zero                               | White River Hardwoods            |
| CREE                       | James Hardie                  | Pella                       | The Tapco Group                        | Woodharbor Doors & Cabinetry     |
| Delta Faucets              | Knauf                         | Plastpro Inc.               |  | WR Meadows                       |
| Eagle Windows and Doors    | Leviton                       | Poggenphol                  |  |                                  |
| Eldorado Stone             |                               | PPG Industries              |  |                                  |



ACCESS THESE COURSES AND MANY MORE AT [HANLEYWOODUNIVERSITY.COM](http://HANLEYWOODUNIVERSITY.COM)

## With Congratulations.

Columbia Lighting would like to congratulate the winners of the 2010 A|L Light & Architecture Design Awards for their outstanding contributions to the lighting industry. Your innovation, creativity, and dedication to design push our industry forward. Well done.

**Columbia**  

---

**LIGHTING**

Columbia Lighting is one of North America's premier manufacturers of commercial and industrial fluorescent lighting products.

**Columbia**  
**LIGHTING**

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

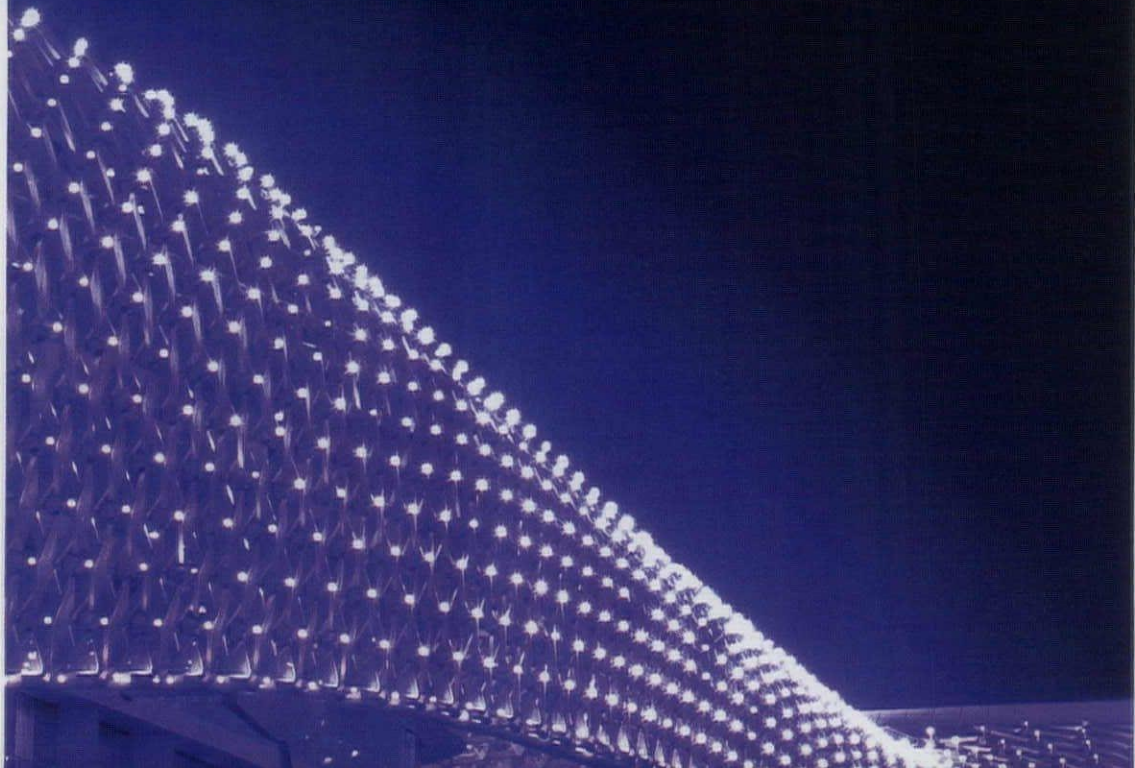
Circle no. 39 or <http://archlighting.com/productinfo>



# DESIGN AWARDS 2010

---

**Every year** the bar is raised, and every year the projects submitted to the A|L Light & Architecture Design Awards deliver. This year, our seventh, was no exception. From an international field of more than 80 projects, this year's winners exemplify the pivotal role that lighting plays in the creation of architecture. Each of these stellar examples of architectural lighting has found a way to elevate the project's programmatic requirements into an artful marriage of design and technical achievement that also addresses the user's needs and applicable code requirements. The attention to detail and comprehensive thought behind each of these works is readily apparent. No matter the scale of the project or the setting, the 10 projects on the pages that follow are inventive solutions that strike the perfect balance between creativity and practicality. These are spaces made richer by light. **ELIZABETH DONOFF**



OUTSTANDING ACHIEVEMENT

# Utah State Capitol Restoration

**RANDY BURKETT**  
LIGHTING DESIGN

**Category:** Whole Building

**Jury Comments:**

The scope of the project and the project delivery is unique. • There is an extraordinary attention to detail in creating a lighting strategy that is sensitive to the historic architectural context. • A true collaborative effort.

**Details**

**Client:** State of Utah, Salt Lake City  
**Architect for the Utah State Capitol and Executive Director of the Capitol Preservation Board (duration of project):** David Hart, FAIA  
**Consortium of Architects (assembled specifically and only for the duration of the project):** Capitol Restoration Group, Salt Lake City  
**Restoration Architect:** Schooley Caldwell Associates, Columbus, Ohio

**Lighting Designer:** Randy Burkett  
Lighting Design, St. Louis

**Electrical Engineer:** Spectrum Engineers, Salt Lake City

**Design Assist Consultant:** Rambusch Lighting, Jersey City, N.J.

**Photographers:** Dunn Communications, Salt Lake City; Capitolshots Photography, Corona, Calif.

**Project Size:** 320,000 square feet

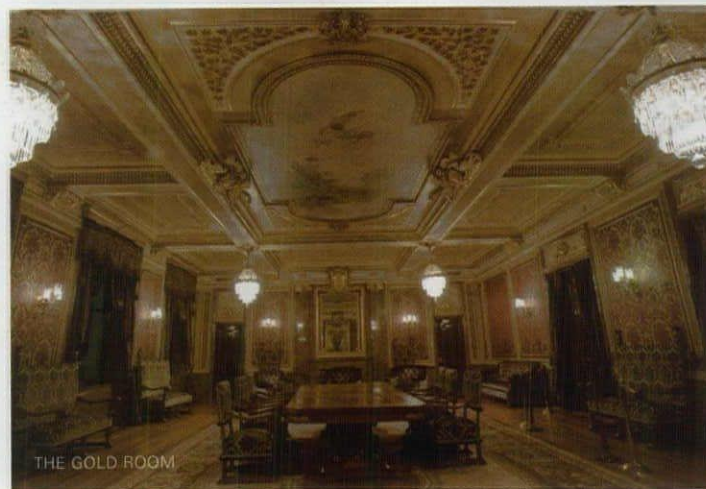
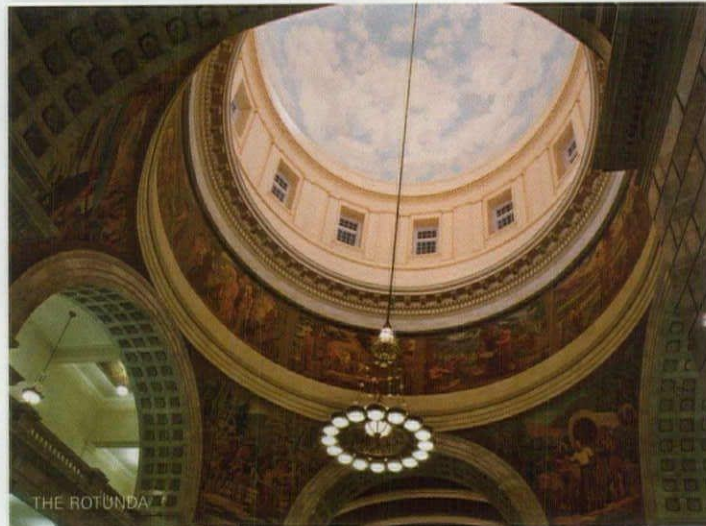
**Project Cost:** \$260 million

**Lighting Installation Cost:** \$5 million

**Watts per Square Foot:** 1.25

**Manufacturers**

Columbia Lighting, Elliptipar, Litecontrol, Rambusch Lighting, Sterner Lighting, Winona Lighting



**A true testament** to the process of collaboration, the restoration of the Utah State Capitol—exterior and interior—would not be the success that it is had it not been for the team's dedicated efforts from the project's earliest planning stages. The Beaux Arts–influenced building is home to one of the finest collections of early 20th century architectural lighting. But before the team, including lighting designer Randy Burkett, could embark on the restoration, they had to evaluate the range of historic light fittings and decide how they would both restore original luminaires and upgrade the lighting to meet 21st century standards. To that end, Burkett enlisted Edwin Rambusch of Rambusch Lighting as a design assist consultant so that the lighting restoration work and the recreation of historic fixtures could be properly assessed for scope of work and budget.

The first order of business was to illuminate the exterior. The 300-foot-tall dome is softly, but precisely, lit from the rooftop corners with 400W metal halide floodlights. Additional layers of illumination highlight the lower portion of the dome's drum and portico of Corinthian capitals on the façade.

For the interior, luminaires were recreated using archival photographs as reference and working from the extant decorative castings. The team always gave thought to both the look of the fixture as well as the quality of light emanating from it. To address the vast array of luminaires and variable conditions, eight interchangeable, multilamp reflector assemblies were designed to work with compact fluorescent, ceramic metal halide discharge, and halogen sources. More than 10 years in the making, the restoration of the Utah State Capitol celebrates light across the ages. **ELIZABETH DONOFF**





A VIEW OF THE CAPITOL BUILDING AT NIGHT

# DESIGN AWARDS 2010

OUTSTANDING ACHIEVEMENT  
AND BEST USE OF COLOR

## Hotel Encanto

LIGHTTEAM

**Category:** Whole Building

### Jury Comments

The project captures different characteristics of light. • It's a very compelling use of light and shadow, and color. • When it comes to the color, it's not just about red, blue, etc., ... It's also about the contrast of white light and how these color ranges work together to transform the architecture.

### Details

**Client:** Rafael Aragones and Sergio Kam, Acapulco, Mexico

**Architect:** Miguel Angel Aragones, Acapulco, Mexico

**Lighting Designer:** Lightteam Gustavo Avilés, Mexico City

**Photographer:** Paul Czitrom, Mexico City

**Project Size:** 29,527 square feet

**Project Cost:** \$5.4 million

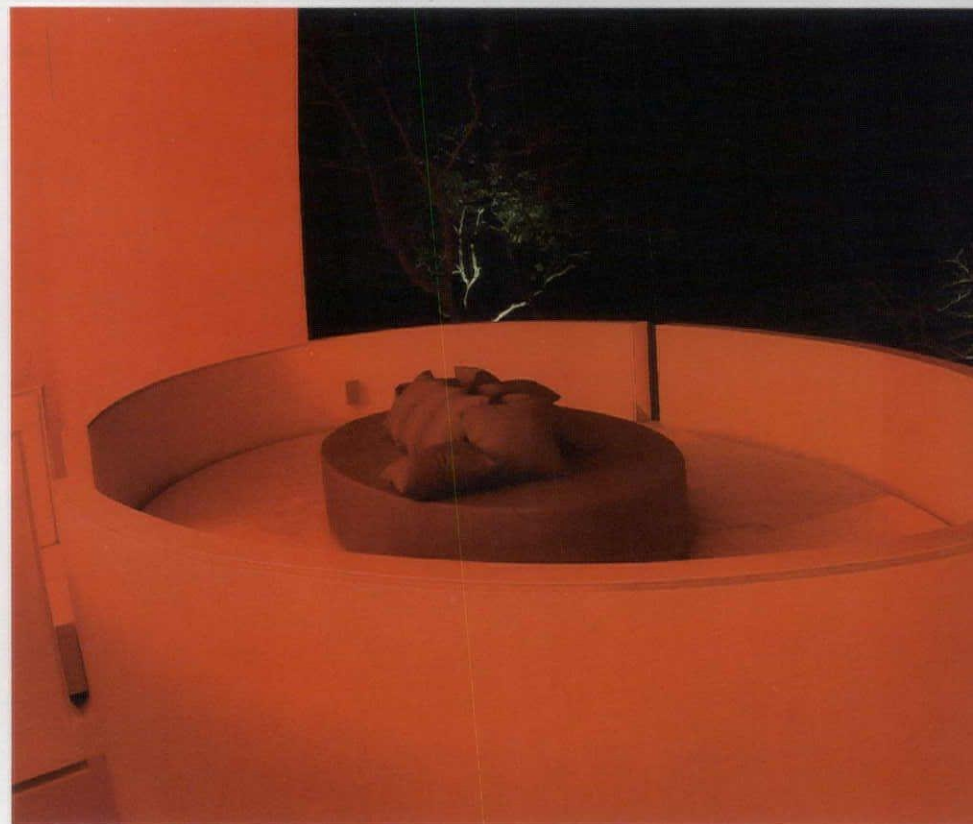
**Lighting Installation Cost:** \$272,034

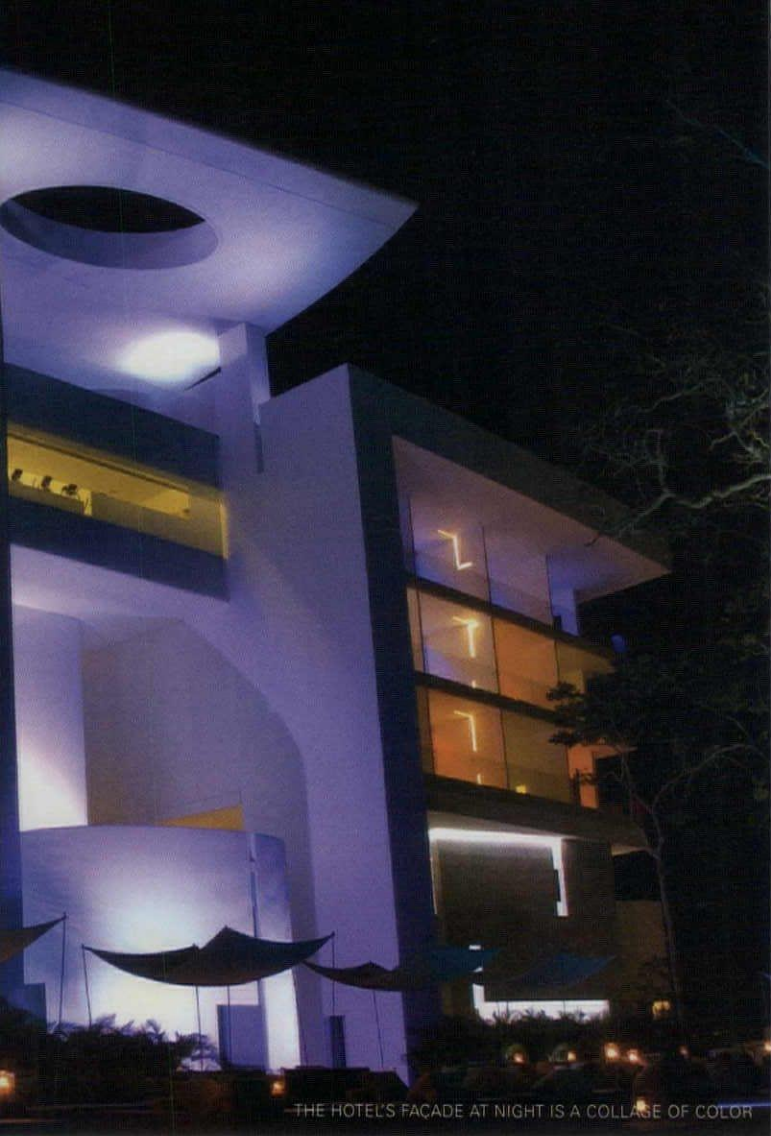
**Watts per Square Foot:**

1.36 (interior); 0.2W (exterior)

### Manufacturers

Lumi Light, Martin Professional, Tokistar Lighting

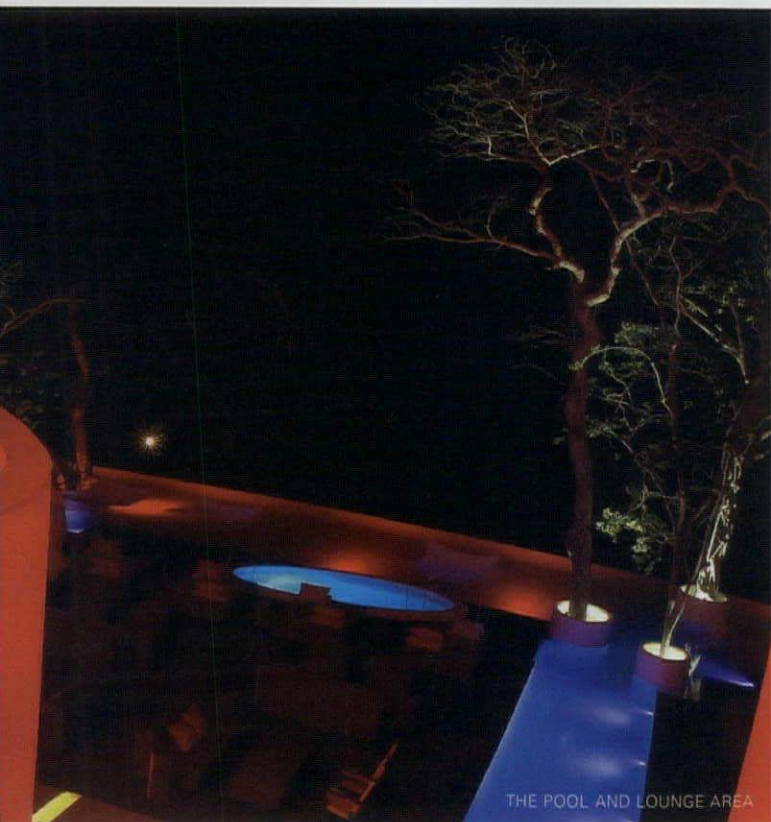




THE HOTEL'S FAÇADE AT NIGHT IS A COLLAGE OF COLOR



A HOTEL PASSAGEWAY



THE POOL AND LOUNGE AREA

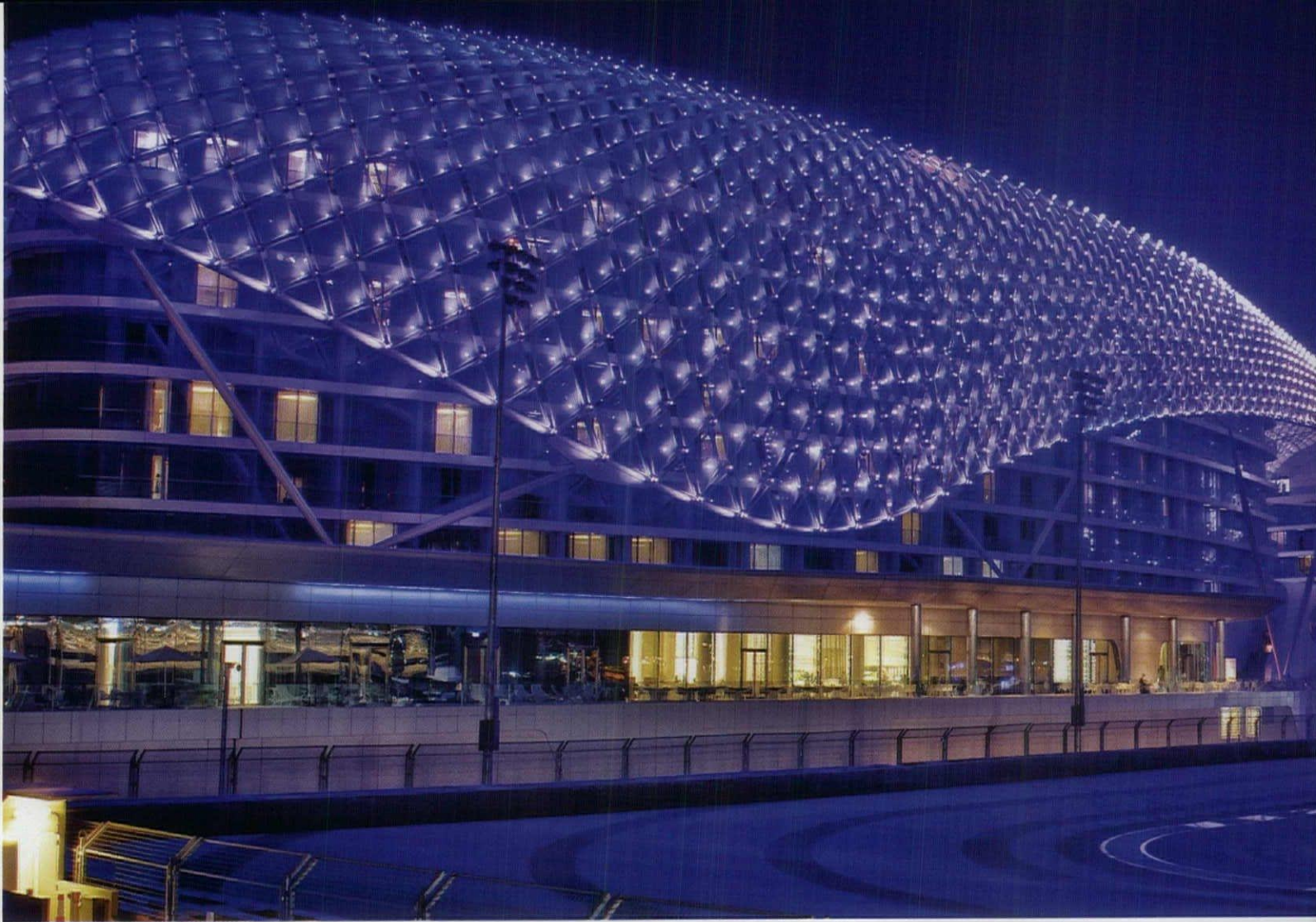
**Nestled in the hills of Las Brisas**, overlooking Acapulco Bay in Acapulco, Mexico, Hotel Encanto is an architectural wonder for the senses. The combination of the spectacular setting and the stunningly contemporary design creates a rich backdrop for light.

Designed by architect Miguel Angel Aragonés and lighting designer Gustavo Avilés—who have collaborated on numerous projects in the past, and in the process created their own language of architecture and light that introduces a sophisticated use of color—the hotel is designed to provide an utterly serene and peaceful atmosphere. Each of the 44 rooms and suites has its own terrace overlooking the bay, ensuring a sense of privacy for each guest.

Avilés studied how light moves through the building during the course of the day to create a lighting design that responds directly to the architecture. “The space is painted by geometric forms, points, and lines,” he says. “Light operates freely.” Interior and exterior spaces blend together, creating areas that are semi-enclosed but always still connected to light, air, and the views. Bold shadow patterns cast across the building’s white surfaces add another dimension to the crisp architectural lines.

At night, the hotel is transformed by light. The walls and floors of the more public areas—the poolside lounge and bar, and the restaurant—receive a bold wash of color thanks to high-intensity discharge luminaires that can illuminate large surface areas. Warm hues of red, orange, and yellow create dramatic scenes. Even the blue of the pool’s water becomes more intense when highlighted with in-grade sidelights. Softer tones of yellow, blue, violet, and lavender are used in the guestrooms and their private terraces, and the façade becomes a patchwork of color.

Day and night, the use of light at the Hotel Encanto takes on its own sense of energy, bringing texture, surface, and material together to create a sensory spatial experience. **ED**



**There is much** that sets the Yas Marina Hotel apart from your run-of-the-mill international five-star lodging, but nothing so palpably as the Formula One (F1) racetrack that bisects the luxury destination's two towers. Asymptote Architecture and Arup Lighting were charged with delivering a building that would capture the excitement of the high-octane automobiles and satisfy the rigorous daylighting requirements of Abu Dhabi, United Arab Emirates' desert environment. They responded by covering the 499-room resort with a steel gridshell structure that supports 5,000 fritted glass panels, each lit with a custom-designed, dynamic, programmable color-changing LED fixture.

The sleek, curvilinear form of the gridshell makes a fitting backdrop for the race. It also shades the towers, creating a stack effect that draws hot air away from the building. Detailed solar analyses aided in designing the complex glazing, which utilizes low-iron glass with a low-E coating and custom microfilter frit pattern.

While the glass aids the even distribution of light across the gridshell, the design of the RGBW LED fixtures was also important. Each luminaire spotlights a single panel, while the electronics are housed in a globe on the underside of the gridshell frame. The entire assembly is tied together by a central control system that sends information to, and receives information from, the LEDs. Employing video-pixel mapping technology, the designers transformed the gridshell into a media façade. The two-way control system also helps to keep the LED fixtures from overheating in the sweltering atmosphere: When one luminaire signals a heat alarm, the entire façade dims in order to stay operational.

The dynamism of the gridshell's lighting scheme carries through to the landscape. Long-life ceramic metal halide lamps and 4000K LED neon replacement fixtures accentuate the hotel's swooping forms, creating a tight, swerving entry sequence that gives guests the feeling that they're speeding down the F1 raceway. **AARON SEWARD**



A DETAIL VIEW OF THE GRIDSHELL STRUCTURE WITH INTEGRATED LIGHTING.



## DESIGN AWARDS 2010

OUTSTANDING ACHIEVEMENT

# Yas Marina Hotel

ARUP LIGHTING

**Category:** Exterior Lighting

### Jury Comments

It's an interesting integration of technology and aesthetics to solve multiple lighting requirements. • The gridshell structure is a fresh take on the idea of the media screen.

### Details

**Client:** Aldar Properties PJSC, Abu Dhabi, United Arab Emirates

**Architect:** Asymptote Architecture, Long Island City, New York

**Local Architect:** Dewan Architects & Engineers, Abu Dhabi, and Tilke & Partners, Dubai

**Lighting Designer:** Arup Lighting, New York

**Structural Engineers:** Dewan Architects & Engineers, Abu Dhabi, United Arab Emirates, and Arup, New York

**Gridshell Engineers:** Schlaich Bergermann und Partner, Stuttgart, Germany, and Waagner-Biro, Vienna

**Facade Consultant:** Front Inc., New York, and Taw & Partner, Hamburg, Germany

**Gridshell BIM Consultant:** Gehry Technologies, Los Angeles and New York

**Photographer:** Bjorn Moerman, Dubai, United Arab Emirates

**Project Size:** 850,000 square feet (overall); 183,000 square feet (gridshell)

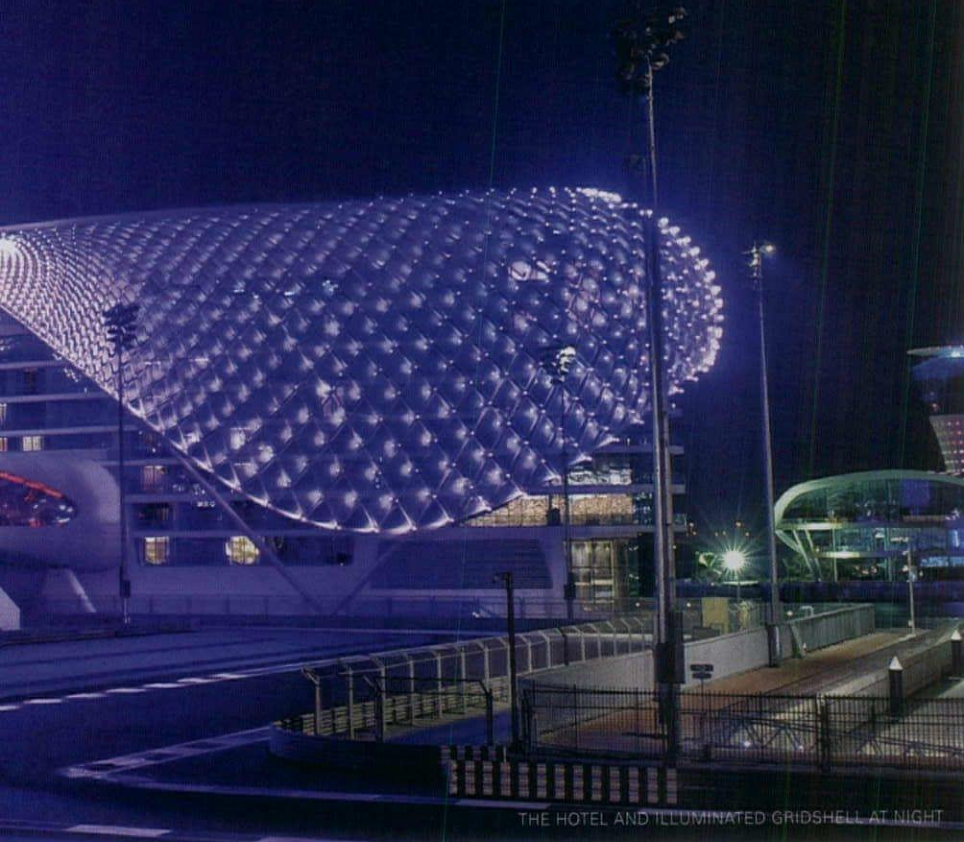
**Project Cost:** \$608 million

**Lighting Installation Cost:** Withheld

**Watts per Square Foot:** varies by gridshell panel and landscaped area

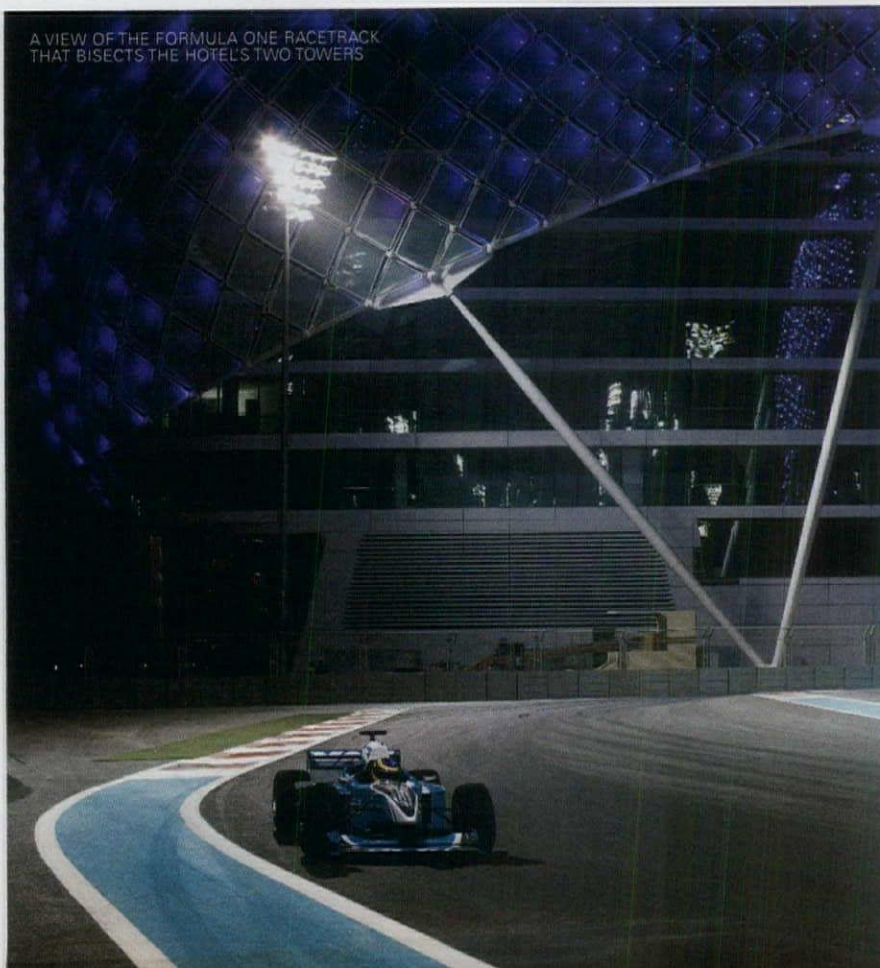
### Manufacturers

Bega, Cooper Lighting and Safety, E:cue Lighting Controls, Enfis, Kurt Versen, Philips



THE HOTEL AND ILLUMINATED GRIDSHELL AT NIGHT

A VIEW OF THE FORMULA ONE RACETRACK THAT BISECTS THE HOTEL'S TWO TOWERS





A VIEW ACROSS THE BRIDGE WITH STAIR AND ELEVATOR TOWER IN BACKGROUND



THE INTERACTIVE LIGHTING FEATURE ON THE ELEVATOR TOWERS



A DETAIL VIEW OF THE STAIR WITH ITS ILLUMINATED HANDRAIL

# DESIGN AWARDS 2010

OUTSTANDING ACHIEVEMENT

## Telekom Bridge

LICHT KUNST LICHT

Category: Exterior Lighting

### Jury Comments

An elegant and focused lighting solution. • The interactive lighting feature on the elevator towers and the scrolling lighting matrix across the bridge transform this project from something ordinary into something noteworthy.

### Details

**Client:** Deutsche Telekom, Bonn, Germany

**Architect and Engineer:** Schlaich Bergermann und Partner, Stuttgart, Germany

**Lighting Designer:** Licht Kunst Licht, Bonn, Germany

**Photographer:** Lukas Roth, Cologne, Germany

**Project Size:** 2,900 square feet

**Project Cost:** \$3.3 million

**Lighting Installation Cost:** \$807,500

**Watts per Square Foot:** 1.67

### Manufacturers

Insta Elektro, Nichia, Squadrat, Philips



**To connect** its group headquarters' office buildings, separated by one of the busiest streets in Bonn, Germany, Deutsche Telekom knew it needed to construct a bridge to facilitate pedestrian crossing. So the telecom giant looked to architecture firm Schlaich Bergermann und Partner and lighting design firm Licht Kunst Licht to design something that would be functional, but also create a piece of urban architecture.

The bridge's design responds to the site. Supported by five slim steel columns, it gently curves a span of approximately 243 feet as it crosses over four traffic lanes and two tram tracks. A suspended stair and a 36-foot-tall elevator tower anchors each end of the bridge. Linear LED profiles with a narrow beam distribution—to prevent glare from the traffic below—are integrated into the underside of all the handrails with a neutral white light. By day the light is undetectable, but at night the bridge unfolds, like an illuminated ribbon floating above the roadway.

Along the sides of the bridge is a custom string of LED video displays that play a series of light matrix patterns. The high luminous density of 7,000 cd/m<sup>2</sup> is visible throughout the day, but at night the light is dimmed to 30 percent to calibrate to the nighttime surrounds.

Continuing the artistic thread, neutral white LEDs are mounted at the top and bottom edges of the elevator towers to create a diffuse glow against the opal glass cladding. At night an interactive feature is triggered, and the light changes from white to amber as it detects a person walking by. People can change the direction of the light by altering their movement. Featuring a lighting solution that is at once practical and artistic, the Telekom Bridge is meant to be a transitional space, but its luminous qualities make it a destination point in its own right. **ED**



A VIEW OF THE BOUTIQUE'S MAIN SPACE

DESIGN  
AWARDS  
2010

OUTSTANDING ACHIEVEMENT

## Vera Wang New York Flagship Store

TILLOTSON DESIGN ASSOCIATES

Category: Interior Lighting

### Jury Comments

A thoroughly elegant lighting design. • The lighting speaks to the sophisticated nature of the clothing. • The lighting and architecture are in complete harmony and the space is transformed into something more than just a store.

### Details

**Client:** Vera Wang, New York

**Architect:** Gabellini Sheppard Associates, New York

**Lighting Designer:** Tillotson Design Associates, New York

**Structural Engineer:** Robert Silman Associates, New York

**MEP Engineer:** Edwards & Zuck Consulting Engineers, New York

**Photographer:** Paul Warchol Photography, New York

**Project Size:** 2,000 square feet

**Project Cost:** Withheld

**Lighting Installation Cost:** Withheld

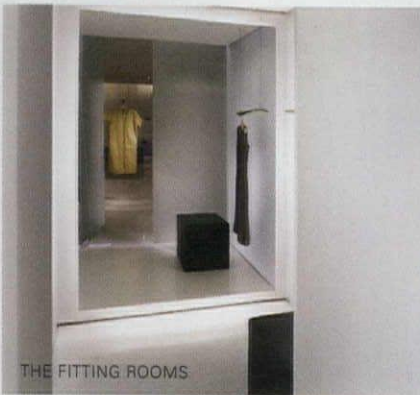
**Watts per Square Foot:** 5.3

### Manufacturers

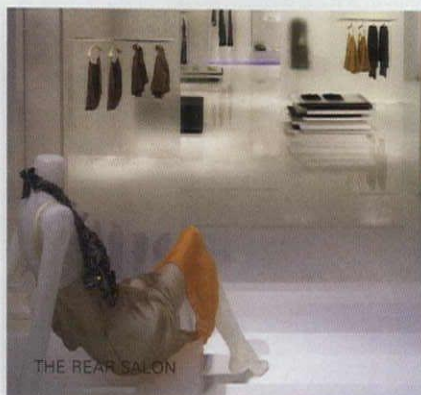
Bartco Lighting, Cooper io Lighting, Litelab, Philips Color Kinetics



REAR SALON WITH FITTING ROOMS BEYOND



THE FITTING ROOMS



THE REAR SALON

As a high-end shopping district, it's hard to beat New York's Soho neighborhood. The storefront spaces in the area's elegant 19th century warehouses, however, can often create steep challenges for those who seek to create emporiums for the well heeled. For Vera Wang's new south-of-Houston flagship store, the architects at Gabellini Sheppard Associates and lighting designers Tillotson Design Associates were faced with a narrow and deep 2,000-square-foot space with ceiling heights that go from 23 feet at the front to about 9 feet at the rear. The trick for the team was how to maintain the bright, airy atmosphere found at the street front all the way through to the windowless back of the store.

Like Wang's garments, the architecture is simple and refined, a minimalist composition of white surfaces that allow the clothes to take the lead. The surfaces also provide a canvas for Suzan Tillotson's tasteful lighting. Shoppers enter through a raised proscenium and are led down into the store by a wide flight of stairs whose treads seem to float on risers backlit by T5 fluorescent fixtures. Custom extruded ceiling slots unobtrusively house mechanical systems and two multicircuit tracks. One track supports motorized theatrical equipment for flexible pendular displays and the other a series of AR111 and MR16 spotlights. The fixtures are arranged in clusters of four, and allow aiming angles of 15 degrees or less for all merchandise configurations.

The stairs lead down to the first of two salons, each of which is demarcated by a 4-inch-deep perimeter trough. These troughs house T5 fluorescent and color-changing LED fixtures behind translucent resin, which cycle from plain white light to hues that complement the collection. "The trough profile, and the client's budget, kept changing," says Tillotson, "so we had to build the trough three times in our studio to make sure of the uniformity and brightness." Concealed fluorescent cove-lights and track-mounted MR16s light the back wall, creating a layered effect that maintains the bright, dynamic experience started at the front of the store. AS

COMMENDABLE ACHIEVEMENT

## W Fort Lauderdale, Ft. Lauderdale, Fla.

MCLA

**Category:** Whole Building

### Jury Comments

The lighting exhibits the right amount of balance between meeting the practical needs of the hotel and creating a distinctive signature lighting feature for each of the principal public spaces. • By paying attention to how the different surfaces are lit, light becomes its own texture.

### Details

**Client:** DYL Group, Miami

**Architect:** Adache Group Architects, Ft. Lauderdale, Fla.

**Lighting Designer:** MCLA, Washington, D.C.

**Interior Designer:** Clodagh, New York

**MEP Engineer:** Steven Feller, Ft. Lauderdale, Fla.

**Photographer:** Prakash Patel, Washington, D.C.

**Project Size:** 816,628 square feet

**Project Cost:** Withheld

**Lighting Installation Cost:** Withheld

**Watts per Square Foot:** 0.95

### Manufacturers

ALM, Belfer Group, Bega, B-K Lighting, Edison Price, Hydrel, Lee Filters, Philips Color Kinetics, Specialty Lighting Industries, Steng, Tokistar Lighting, USAI



THE HOTEL LOBBY



THE HOTEL'S WHISKEY BLUE BAR



THE ENTRY PORTE COCHÈRE



THE POOL STAIR

With their roughly 50 locations worldwide, the W Hotel chain has set a loose but reliable formula for hip, laid-back hospitality. However, when a Miami development group decided they wanted to bring the franchise to a stretch of oceanfront in Ft. Lauderdale, Fla., already brimming with fashionable, unbuttoned beachside resorts, Adache Group Architects and the lighting designers at Washington, D.C.-based MCLA had to up the ante in order to stand out. To compound the challenge, their desire to achieve distinction on the strip was fettered by a local ordinance that forbids flashy light displays: The adjacent beach, while an asset, is also a sea turtle nesting habitat.

"The lighting design was intended to enhance the relaxing beach environment and provide guests with a few unique, playful moments—both indoors and out," says Scott Guenther, senior designer at MCLA. Guenther and his team accented the precast frames and punched openings of the hotel entry with linear neon tubes, calling the area out from the street and minimizing light pollution. The designers also hung custom LED ring fixtures beneath the 40-foot-high porte-cochère,

humanizing the cavernous space and increasing its allure. Recessed in-grade 50W halogen fixtures serve as lane dividers, dramatizing guests' experience as they alight from their vehicles.

Inside, the lighting plan unobtrusively emphasizes the architecture while creating moments of spectacle. In the lobby, a custom-designed fixture outfitted with 1W LEDs hangs above a water feature, anchoring the low, ambient light level. Resin bands backlit with RGB color-changing LEDs emit a saturated blue light in the room. The bar has a ceiling hung with blue LED lamps mounted in undulating polished brass tubes. Amber and white MR-16s add warmth and accent to this drinking parlor.

But it is the pool, as is often the case in south Florida, that provides the setting for the most ethereal lighting performance. The stair, encased in a transparent resin shroud, descends into the water, and 50W MR16s outfitted with blue dichroic lenses create a subtle glow, invoking an oceanic majesty. It also doesn't disturb the sea turtles, who go about their own majestic business just a few yards away. **AS**

DESIGN  
AWARDS  
2010

COMMENDABLE ACHIEVEMENT

# Power & Light Utility Bridge

HELIX ARCHITECTURE + DESIGN

**Category:** Exterior Lighting

**Jury Comments**

An interesting concept. • There is a simplicity of execution in the architecture and the lighting that results in a great effect. • The design accomplishes a lot with a small budget.

**Details**

**Client:** Kansas City Power & Light, Kansas City, Mo.

**Architect:** Helix Architecture + Design, Kansas City, Mo.

**Civil and Structural Engineer:** Shafer, Kline & Warren, Lenexa, Kan.

**Electrical Engineer:** Lankford & Associates, Kansas City, Mo.

**Bridge Structural Truss Design:** Contech Construction Products, Westchester, Ohio

**Cladding Fabricator:** Zahner Co., Kansas City, Mo.

**Photographer:** Helix Architecture + Design, Kansas City, Mo.

**Project Size:** 1,590 square feet

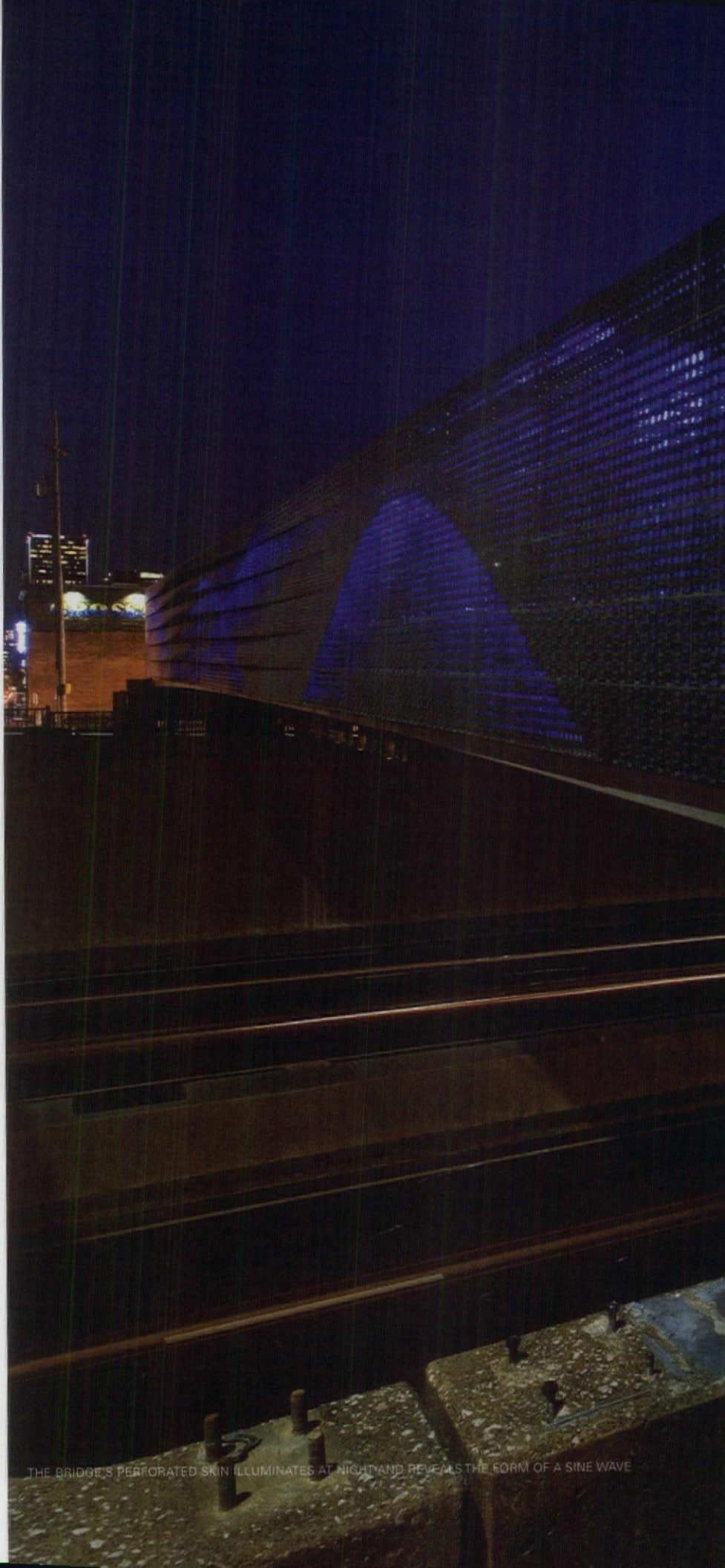
**Project Cost:** \$1 million

**Lighting Installation Cost:** \$115,000

**Watts per Square Foot:** 2.1

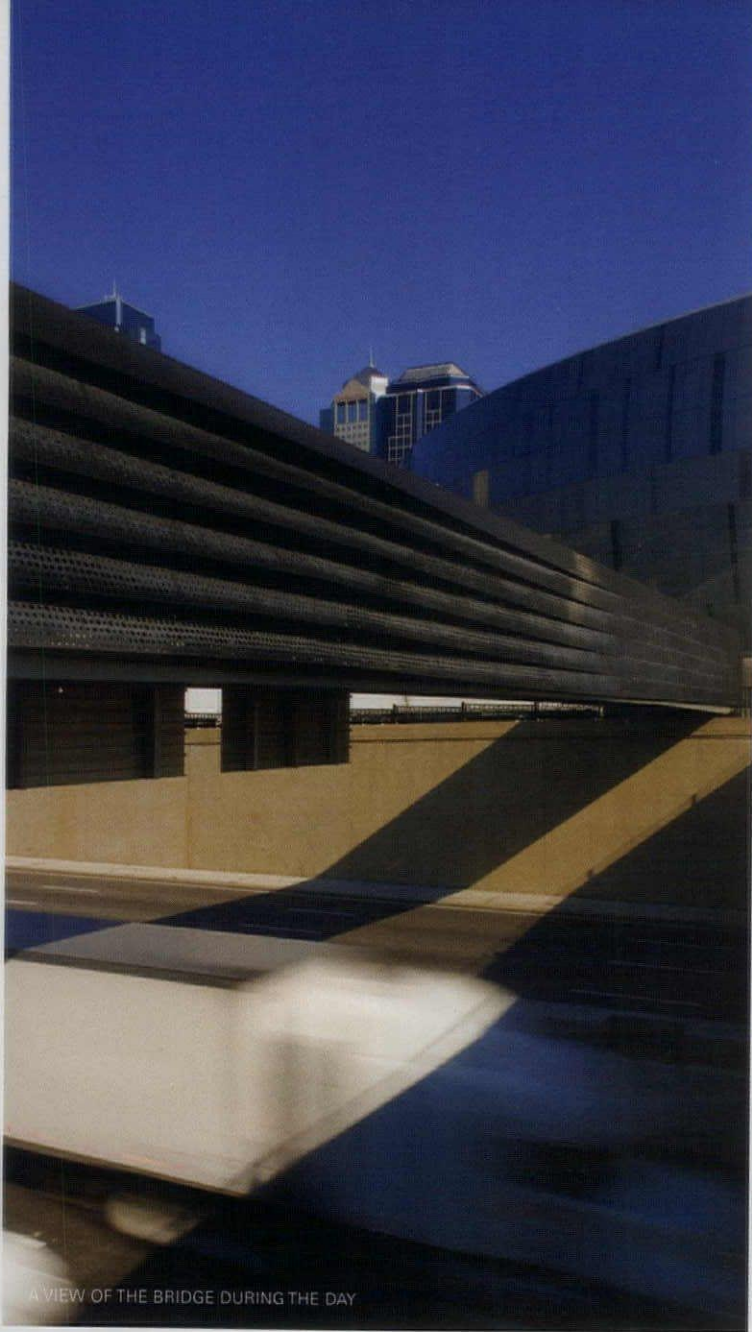
**Manufacturers**

ETC, Illumivision



THE BRIDGE'S PERFORATED SKIN ILLUMINATES AT NIGHT AND REVEALS THE FORM OF A SINE WAVE



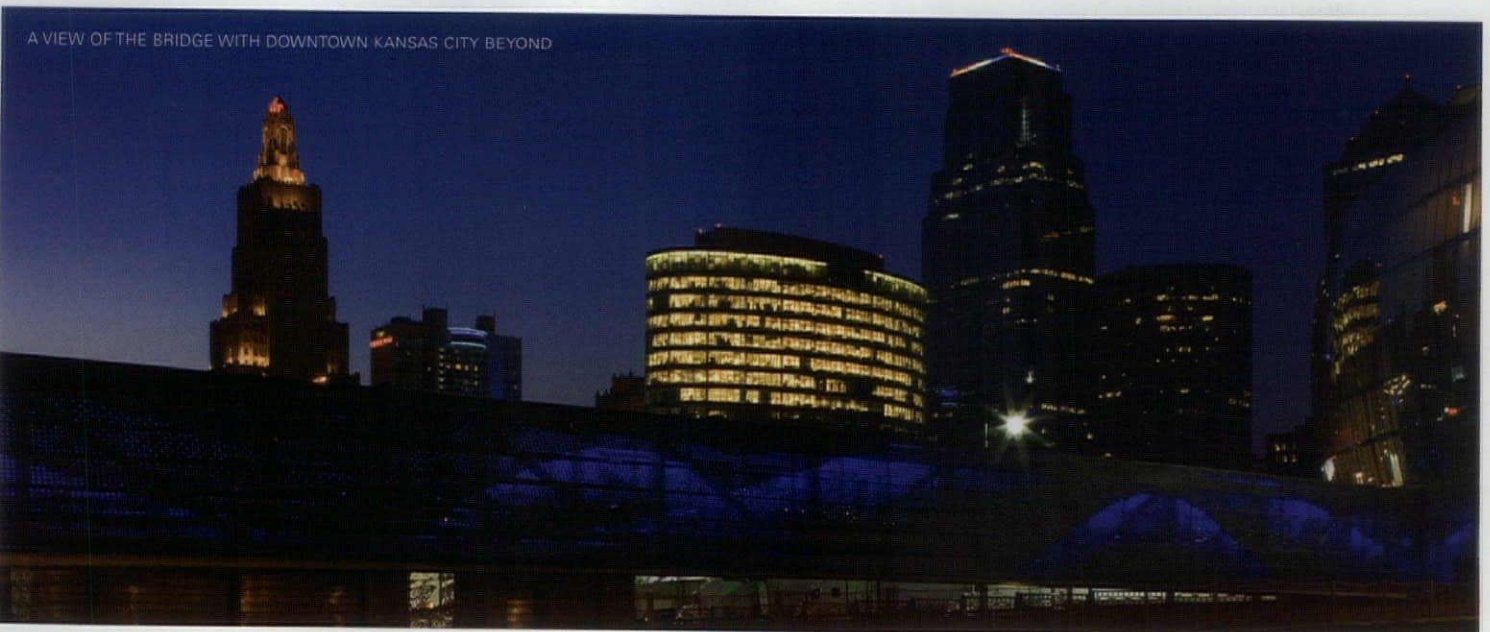


A VIEW OF THE BRIDGE DURING THE DAY

**Located in** downtown Kansas City, Mo., over a stretch of Highway 470, which divides the city's Crossroads Arts District and the Power & Light Entertainment District, the Power & Light Utility Bridge is a new take on how to integrate elements of infrastructure into a city's fabric. A bridge to transport electricity, not people, the 163-foot-long truss structure carries banks of large conduit within its zinc-clad walls.

Mindful of not creating a distraction to drivers, Helix Architecture + Design selected a matte-black finish for the exterior face of the cladding, which has a perforated pattern of holes in different diameters set into a raised, relief texture. By day it creates a subtle play of shadows, as the panels slightly bow outward. At night, the structure takes on a completely different personality; the bridge comes to life. Internally illuminated by 52 60W RGB LED wallwash luminaires (grouped in two rows of 26), the pattern of dot openings is in the form of three sine waves—inspired by the phases of electrical current—while the background relief texture calls to mind a field of electrons.

A white film on the interior face of the zinc panels helps to reflect light. The fixtures are operated by a control system, and a continuous pulse of blue saturated light flows across the bridge, south to north, indicating the direction of the power being provided by Kansas City Power & Light. "There's been a tremendous amount of development in the Crossroads Arts and Power & Light Entertainment Districts the past several years," explains Michael Heule, founding principal of Helix Architecture + Design. "This structure had to be more than just a utility bridge, it had to give something back to the community." And it does. Celebrating the energy it transmits, the functional nature of light is transformed into art. **ED**



A VIEW OF THE BRIDGE WITH DOWNTOWN KANSAS CITY BEYOND

COMMENDABLE ACHIEVEMENT

## 1100 First Street NE

GEORGE SEXTON ASSOCIATES

Category: Interior Lighting

### Jury Comments

The architecture and lighting complement one another and create a beautiful composition. • The lighting is well balanced. • The luminous quality of the freestanding light boxes are a great backdrop for the lobby's focal point artwork.

### Details

**Client:** Tishman Speyer Properties, Washington, D.C.

**Design Architect:** Krueck + Sexton, Chicago

**Executive Architect:** Gensler, Washington, D.C.

**Lighting Designer:** George Sexton Associates, Washington, D.C.

**Artist:** David Batchelor, London

**Photographer:** Anice Hoachlander, Washington, D.C.

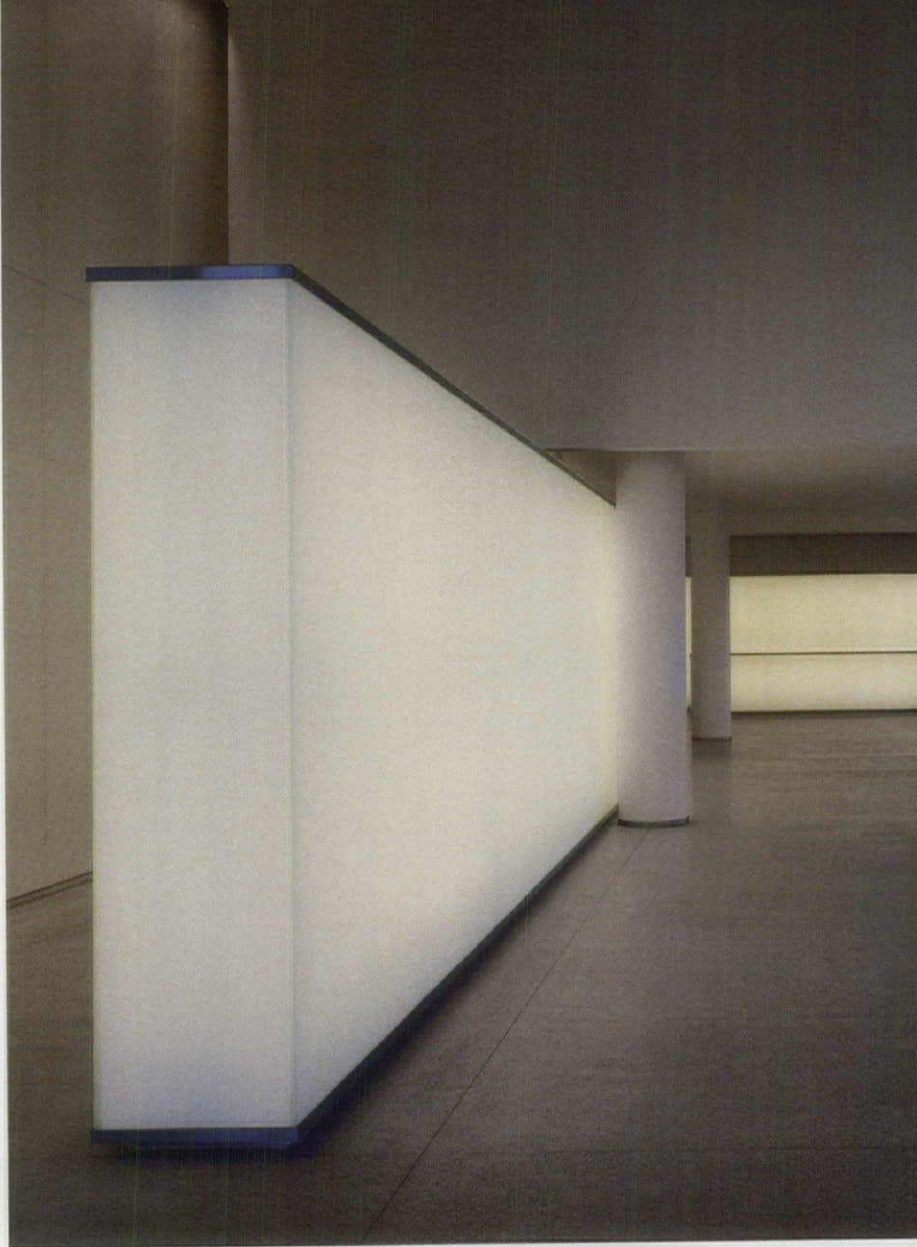
**Project Size:** 350,000 square feet (building); 4,621 square feet (lobby)

**Project Cost:** Withheld

**Lighting Installation Cost:** Withheld  
**Watts per Square Foot:** 2.3

### Manufacturers

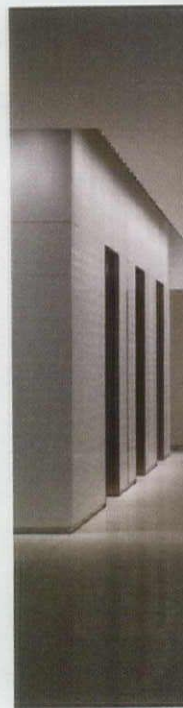
Bartco Lighting, Dreamscape Lighting, Edison Price, Elliptipar, GE Lighting, Hess, Cooper Lighting Iris, Litelab, Lutron, Cooper Lighting Portfolio, PMC Lighting, Selux, Windirect



**Office buildings** run the risk of falling into anonymity, which was a possibility for 1100 First Street NE, a modernist glass block designed by Krueck + Sexton Architects. But rather than churn out yet another generic D.C. workspace, the architects delivered an inspired and elegantly chiseled form whose simplicity and power were doubled by a luminous lobby designed by lighting firm George Sexton Associates.

The building's transparency is the key to its power. The lighting scheme begins on the sidewalk, where visitors are greeted by a series of rectangular concrete benches, gently illuminated by in-grade LED uplights. From there, passersby can peer inside at an art installation by David Batchelor—a glowing column of multicolored boxes lit from within by fluorescent lamps. This playful feature is the only touch of color in the otherwise cool interior, and provides the lobby with a focal point.

The lobby also hosts a wall of back-painted etched glass, white terrazzo flooring, and painted gypsum ceilings, all of which glow with a suffusive white light. Linear 20W metal halide cove strips graze the outer walls, while the glass wall is backlit by dimmable linear 21W T5 fluorescent lamps. Recessed adjustable fixtures in the ceiling near the curtain wall, also 20W metal halides, flush out the ambient lighting. The glass wall also features a subtle etched diamond pattern that sparkles, an effect that is echoed by the terrazzo flooring. "We incorporated light into the interior forms and on vertical surfaces to eliminate the need for a lot of recessed lighting," George Sexton explains. "This allowed a complete synchronization of form and light, and an energy-efficient solution that provides an exciting experience both day and at night." AS

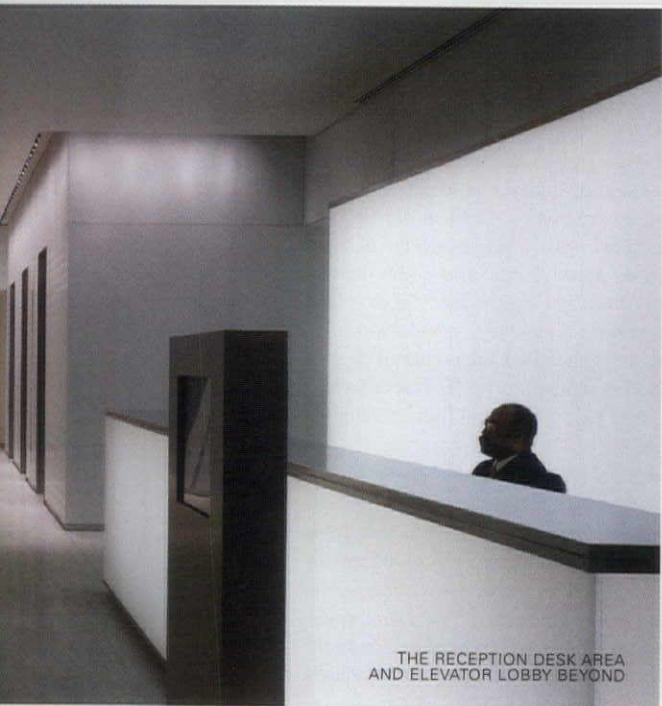




THE LOBBY INTERIOR



THE LOBBY'S REAR PASSAGEWAY



THE RECEPTION DESK AREA  
AND ELEVATOR LOBBY BEYOND



A VIEW LOOKING INTO THE LOBBY  
INTERIOR FROM THE EXTERIOR COURTYARD

COMMENDABLE ACHIEVEMENT

## Science Storms

FOCUS LIGHTING

Category: Exhibit Lighting

### Jury Comments

An exciting design. • It's a place you want to visit. • Light and a bold use of color help to define what could have been a hectic space.

### Details

**Client:** Museum of Science and Industry in Chicago

**Architect:** Evidence Design, Brooklyn, New York

**Lighting Designer:** Focus Lighting, New York

**Photographer:** J.B. Spector/Museum of Science and Industry in Chicago

**Project Size:** 26,000 square feet

**Project Cost:** Withheld

**Lighting Installation Cost:** Withheld

**Watts per Square Foot:** 3.7

### Manufacturers

Boca Flasher, ETC, Insight Lighting, K5600 Lighting, Lamar Lighting, Philips Color Kinetics, Times Square Lighting, Wildfire



A VIEW OF THE EXHIBIT AREA WITH THE TORNADO CHAMBER AND HELIOSTAT DISPLAYS

**Science Storms**, a permanent exhibition at the Museum of Science and Industry in Chicago, was the dream job for a lighting designer. The museum requested the creation of a "child fantasy world" full of installations that explore the science behind powerful forces of nature, including a 40-foot-tall tornado of swirling vapor and light.

From a lighting perspective, Focus Lighting, who worked in collaboration with Evidence Design, was challenged with creating the space's surrounding illumination—a sort of amniotic fluid of light—and highlighting each display. Focus achieved this by establishing 16-foot-tall, 7-inch-deep light cavities outfitted with high-power linear blue LEDs covered with custom-perforated metal fronts, and ceiling coves equipped with T8 fluorescent lamps with blue color gels. The blue R68 color between light sources was matched to achieve a seamless look.

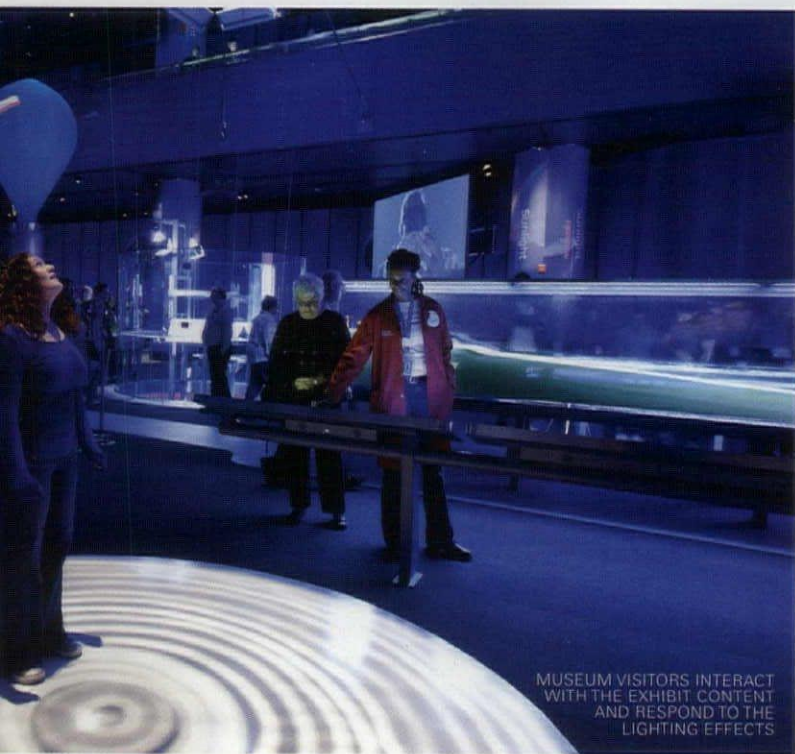
The institution also asked Focus Lighting to fashion four exhibits that examine the physics of light. "The idea of inspiring a 10-year-old child to be excited by physics experiments was a monumental challenge," explains Paul Gregory of Focus Lighting.

Focus' exhibits include "Colors from Light," a 14-foot-high backlit room that teaches visitors about wavelengths and color mixing, and "Sunlight," in which an automated 10-foot-square heliostat reflects a shaft of sunlight into the exhibition hall where visitors use prisms to recreate Sir Isaac Newton's experiment. When the sun goes down or is covered by clouds, an 800W custom metal halide lamp takes over, replicating our star's light to an undetectable degree. It's another reminder that with the right luminaire and some creative thinking, the possibilities for lighting design are almost boundless. **AS**

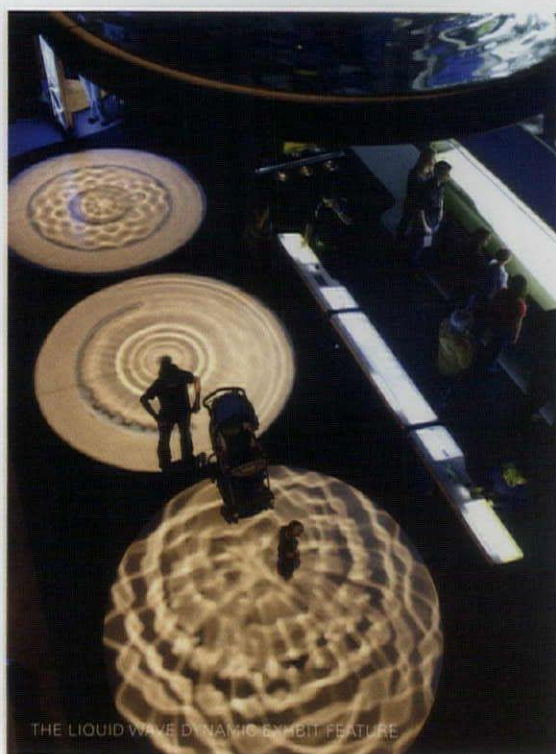




THE ENTRANCE TO THE EXHIBIT AREA



MUSEUM VISITORS INTERACT WITH THE EXHIBIT CONTENT AND RESPOND TO THE LIGHTING EFFECTS



THE LIQUID WAVE DYNAMIC EXHIBIT FEATURE



THE LIBRARY ENTRANCE AT P.S. 31

**Since 2001**, a group of more than 50 school libraries within the New York City public school system have undergone a transformation thanks to the Robin Hood Foundation's "L!brary Initiative." The program seeks to encourage reading and to reach out to children using one of the only spaces—the school library—in which all grades interact. P.S. 110, on Manhattan's Lower East Side, and P.S. 31, on Staten Island, are the latest duo in a program that has touched down in every borough.

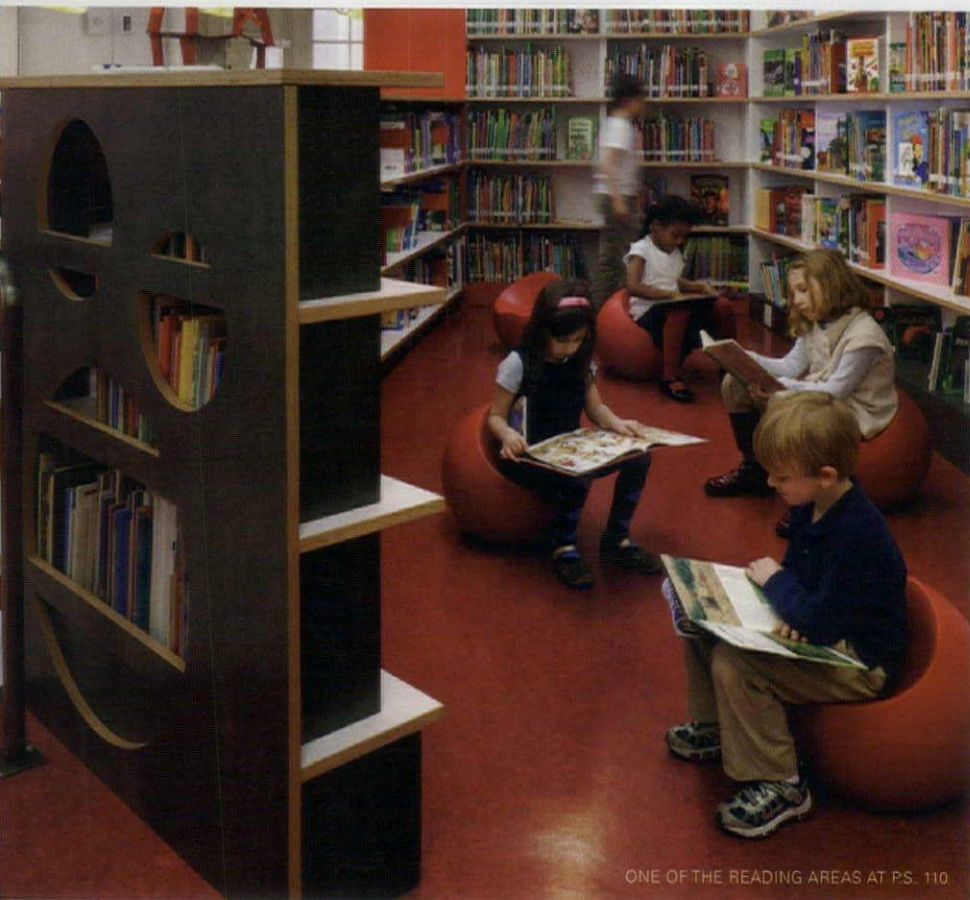
The challenge for the architects at Leroy Street Studio and lighting designer David Clinard was to develop a lighting strategy that could respond to the different site conditions (P.S. 110 has 14-foot-high ceilings, while P.S. 31's ceiling are only 9 feet 6 inches tall), and retain "a singular cost-effective approach," Clinard explains. The solution is a custom-designed dimmable T8 triple-tube linear fixture that can either

be pendant- or surface-mounted, depending on the location. In keeping with the playful architectural motifs established by the architects, Clinard designed the luminaire with a series of colorful (yellow on one side, green on the other) circular baffles which bring to mind a Slinky, but which also serve to shield the three lamps from direct view. A rotate-and-lock mechanism provides easy access for relamping.

The library initiative realizes that a school library is more than just a place to store books; it is a place for learning and social interaction that deserves both architectural and lighting design consideration. As the libraries at P.S. 110, P.S. 31, and the others in the program illustrate, creative and inventive design solutions for these spaces promote the value of good design and make a significant investment in the children's education for the long-term. **ED**



A VIEW OF THE LIBRARY AT P.S. 31



ONE OF THE READING AREAS AT P.S. 110

## DESIGN AWARDS 2010

SPECIAL CITATION  
FOR THE ARTFUL DELIVERY OF  
DESIGN TO PUBLIC SCHOOL SPACES

## P.S. 31 & P.S. 110

CLINARD DESIGN STUDIO

Category: Interior Lighting

### Jury Comments

A simple yet animated interior that accomplishes a lot with modest means. • Nice use of color. • It's refreshing to see lighting as a valued component of good design.

### Details

**Client:** Robin Hood Foundation, New York, and New York City Department of Education/School Construction Authority, New York  
**Architect:** Leroy Street Studio, New York

**Lighting Designer:** Clinard Design Studio, New York

**Structural Engineer:** Blue Sky Design, New York

**Mechanical Engineer:** Laszlo Bodak Engineers, New York

**Photographers:** Kevin Chu/KCJP, New York (P.S. 31); Peter Mauss/Esto, Mamaroneck, New York (P.S. 110)

**Project Size:** 3,000 square feet (at each location)

**Project Cost:** Withheld

**Lighting Installation Cost:** Withheld  
**Watts per Square Foot:** 1.2 (both locations)

### Manufacturers

Bartco Lighting, Forum, Philips Lightolier

## JURY MEMBERS



**JACK BAILEY, IES; partner, One Lux Studio, New York**

Bailey has over 15 years of experience designing lighting for a wide variety of project types that extends to historic preservation and adaptive reuse of landmark buildings. He is currently involved in drafting the new International Green Construction Code with the International Code Council (ICC), and chairs the lighting workgroup of the ICC's Sustainable Building Technology Committee. He is also the chair of the New York regional task force of the IALD's Energy and Sustainability Committee.

**CHARLES CAMERON, IALD, IES; Studio C Squared, New York**

After spending nearly a decade as an integral collaborator at two internationally renowned architectural lighting design firms, Cameron developed his own lighting design practice, and has most recently established Studio C Squared. He serves as an instructor at the New York School of Interior Design and is the current vice president of the New York City section of the IES.

**MITCHELL B. KOHN, FIALD, FIES; president, Mitchell B. Kohn Lighting Design, Chicago**

With more than 30 years experience, Kohn specializes in interior illumination design for corporate, commercial, institutional, and selective residential environments. He consults to corporations worldwide and is a frequent lecturer at universities and professional organizations. Kohn has served multiple terms on

the Board of Directors of the IALD and their Executive Committee, and was a founding member of the IALD Education Trust. He is also past-president of the Chicago section of the IES.

**ALICE PRUSSIN, IALD; Alice Prussin Lighting Design, Berkeley, Calif.**

Prussin has been working in the medium of light for 25 years, after beginning her career in theatrical lighting. She established her own design studio in 1998, and concentrates on civic work, with a particular focus on libraries and houses of worship. She has also taught lighting in the interior architecture professional certificate program at U.C. Berkeley Extension, and presented workshops at both Lightfair and the PLDC Global Lighting Design Conference.

**CHARLES K. THOMPSON, AIA, IALD, IES; president, Archillum Lighting Design, Austin, Texas**

An architect by training, Thompson's lighting practice embraces innovation, mentoring, and advocacy as tools for reinventing the collaborative design process. In addition to his full-time practice, which he founded in 1985, as an adjunct professor Thompson brings his professional design expertise to students of architecture and interior design at the University of Texas at Austin School of Architecture. An active member of the IALD, he was instrumental in the efforts that prevented Texas House Bill 2649 from passing and has co-authored the organization's Guidelines for Specification Integrity.



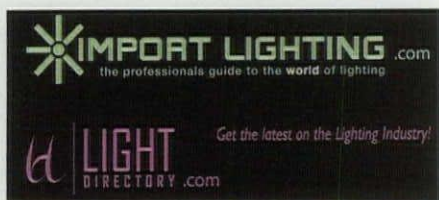
search.  
source.  
learn.  
connect.  
ebuild.

**ebuild** is the destination for construction pros searching for information about building products. **ebuild** is a source of unbiased coverage of new products, trends and news. Pros visit **ebuild** to learn how to do their jobs faster, safer and easier. **ebuild** connects pros to product manufacturers, experts and peers.

hanley wood  
**ebuild**  
a 360 degree view of  
product information

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

PAGE.....	ADVERTISER.....	CIRCLE NO.
22.....	Acuity Brands .....	32
C2.....	American Fluorescent .....	245
26.....	Apollo Design Technology .....	227
21.....	ARCAT .....	90
29.....	AYRE Architectural Lighting .....	241
18.....	Barn Light Electric .....	63
1.....	BetaLED .....	69
28.....	Cathode Lighting Systems .....	234
38.....	Columbia Lighting .....	39
15.....	Cooper Lighting .....	25
20.....	Engineered Lighting Products .....	73
37.....	Hanley Wood University .....	—
19.....	Hubbell .....	59
16.....	Hunza .....	190
17.....	Litecontrol .....	27
9.....	Lithonia Lighting .....	44
32.....	Luminis .....	212
C4.....	Lutron .....	37
27.....	Mark Architectural Lighting .....	177
36.....	NoUVIR Lighting .....	71
13.....	Philips Omega .....	250
3.....	Schneider Electric .....	198
C3.....	Schreder Lighting .....	193
25.....	SELUX .....	53
4.....	Super Bright LEDs .....	236
7.....	SYLVANIA .....	237
35.....	Tersen Lighting .....	199
5.....	The Lighting Quotient .....	96
2.....	Visa Lighting .....	235
11.....	Zumtobel .....	211



Circle no. 11  
or <http://archlighting.com/productinfo>

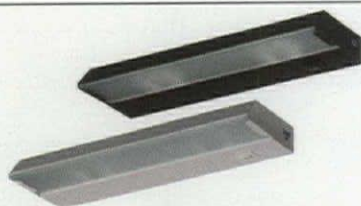
### American Fluorescent Innovates Dimming



Create lighting ambiance with the new Dayton Pendant. Soft, deco-inspired lines of the Dayton shade add warmth and beauty to restaurants, hotels, office spaces and public areas. Dimming from 100% to 20% creates perfect lighting. Available in 24" and 30" diameters.

For more information, visit [AL.AmericanFluorescent.com](http://AL.AmericanFluorescent.com)

Circle no. 14  
or <http://archlighting.com/productinfo>



### American Fluorescent Under-Cabinet Lighting

Ideal for kitchens, study areas, and displays, the LED LUL Series distributes light evenly while minimizing shadows. It has full dimming and a hi/low switch.

This under-cabinet lighting is available in two finishes and four lengths.

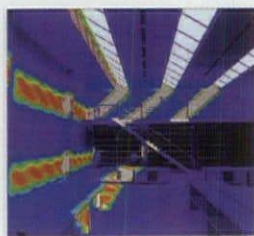
For more information, visit [AL.AmericanFluorescent.com](http://AL.AmericanFluorescent.com)

Circle no. 17  
or <http://archlighting.com/productinfo>

### FOR INFORMATION

on how to be a part of the next ARCHITECTURAL LIGHTING special advertising section, contact Erin Schneider at 773-824-2445.

hanley wood




DIALux version 4.8 has been completely adapted to the handling of absolute photometry. The North American Standard IES LM 79 gives guidelines for the handling and photometric testing of SLL luminaires (Solid State Lighting / LED Fixtures). And as always: the complete software package is absolutely free of charge.

Get your free copy at [www.dialux.com](http://www.dialux.com)

Circle no. 12  
or <http://archlighting.com/productinfo>



**Barn Light Electric:** The Machine Age Galvanized Ceiling Fan is the perfect addition to any modern, factory-inspired loft. It has a completely galvanized motor housing unit and 100% galvanized metal blades. When paired with an optional warehouse shade or cast guard unit, this one-of-a-kind Barn Light Electric exclusive fan becomes a stunning centerpiece, suitable for use indoors or out.

 1.800.407.8784  
[www.BarnLightElectric.com](http://www.BarnLightElectric.com)

Circle no. 15  
or <http://archlighting.com/productinfo>



**BULBRITE** introduces a new generation of TURBO LEDs featuring innovative heat sink technology constructed with ultra-thin thermal fins for maximum heat transfer. With an IP 65-rating and a low junction temperature of 65° C for indoor and outdoor use, this energy efficient and environmentally friendly TURBO series is available in several light-weight, diminutive sizes and styles: MR16s and PARs.

Circle no. 18  
or <http://archlighting.com/productinfo>

### High-Efficiency Flexible Cathode Light Strip (Model H-FCLS)

Cathode Lighting Systems, the leader in long-life, modular cold-cathode fixtures, introduces a high-efficiency version of the popular Flexible Cathode Light Strip. Continuous, shadow-free cove effects are achieved at greatly-reduced wattages and even longer lamp life. As always, lamps are manufactured to perfectly and elegantly follow any straight, curved or angled architectural detail. Modular fixture design, contractor-friendly "plug and play" connections, and lamps that snap in and out make specification and installation easier than ever.



Circle no. 13  
or <http://archlighting.com/productinfo>



Columbia Lighting's recessed retrofit kits are the most economical way to transform your lighting environment. RKT kits are available for existing 2' x 2' and 2' x 4' parabolic or lens troffer fixtures, which result in up to 58% energy savings without sacrificing light levels. All kits come pre-wired.

[www.columbialighting.com/products/rkt/](http://www.columbialighting.com/products/rkt/)

Circle no. 16  
or <http://archlighting.com/productinfo>

search.  
source.  
learn.  
connect.  
ebuild.

**ebuild** is the destination for construction pros searching for information about building products. **ebuild** is a source of unbiased coverage of new products, trends and news. Pros visit **ebuild** to learn how to do their jobs faster, safer and easier. **ebuild** connects pros to product manufacturers, experts and peers.

  
**ebuild**  
a 360 degree view of product information  
[ebuild.com](http://ebuild.com)

Earn **FREE**  
AIA credits  
now.

The #1 Provider of  
AIA-Accredited Courses

Interactive courses, instant certification and free online testing create a fun, dynamic learning atmosphere. Start a course, pause it and continue where you left off—whenever you want and as many times as you need.

Start earning credits today at  
[architectCES.com](http://architectCES.com)

Online Access  
Anytime—Anywhere!

**ARCHITECTCES**

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

See how easy earning  
your AIA credits can be

- FREE online courses and tests
- Immediate feedback and results
- Multimedia course format
- Start, stop and resume anytime

Questions? Contact Lisa Pierce at  
[lpierce@architectces.com](mailto:lpierce@architectces.com)

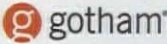
**hanley wood**  
**UNIVERSITY**  
where construction meets education & training



### Solid-state downlighting

Gotham's new family of solid-state luminaires addresses new construction and renovation opportunities and satisfies a full range of downlight and wallwash requirements.

Featuring integrated energy management, multiple lumen packages and aperture sizes, and thoughtful design, it blends luminaire efficacy with quiet, comfortable illumination.

[www.gothamlighting.com](http://www.gothamlighting.com)  An **Acuity** Brands Company

Circle no. 180  
or <http://archlighting.com/productinfo>



**LUMENCOVE™**, The LUMENCOVE™ is a highly efficient and sustainable cove lighting system. Offered in sections from 1 to 8', the LUMENCOVE™ requires only one (1) power feed for every 150' run. Using only 4.3 watts per foot, its performance matches a T5 fluorescent source. The fixture is made of two layered aluminum extrusions. The top part houses a linear LED module and the driver is enclosed in the bottom half. Two color temperatures available: 3000K and 4000K. The LUMENCOVE™ is a line voltage luminaire with the input ranging from 120V to 277V AC. It is supplied with a swivelling bracket that allows for a 0-90° tilt angle.

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

Circle no. 182  
or <http://archlighting.com/productinfo>



The Philips Omega Revelation LED downlights represent the future of downlighting. This new family of solid-state lighting products incorporates the latest in technology and has unsurpassed features. Remote phosphor technology and MesoOptics™ have been combined to offer a true advantage and deliver a system that is superior in terms of creating and delivering white light.

Circle no. 184  
or <http://archlighting.com/productinfo>

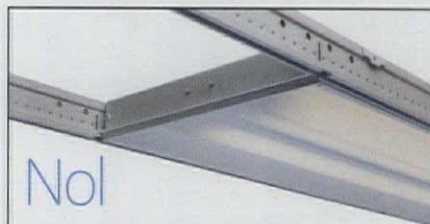


### MechoShade Systems

The automated SunDialer™ system by MechoShade Systems is a cost-sensitive technologically advanced solar-shading controller, which maximizes daylight harvesting, comfort, and views. It incrementally adjusts the shades based off the sun's position, weather conditions, and the ASHRAE theoretical clear-sky model. SunDialer™ controls up to twelve zones, has a built-in IP interface, and integrates with third party control systems.

Visit [MechoShadeSystems.com](http://MechoShadeSystems.com)

Circle no. 181  
or <http://archlighting.com/productinfo>



### No!

Designed for the lighting needs of today's spaces, No! offers easy installation, incredible accessibility and an ultra shallow design. It features a patent-pending install-from-below option and a quick-release ballast/lamp compartment. With versions as shallow as 1½ inches deep, No! can fit in virtually any plenum space.

**MARK**  
ARCHITECTURAL  
LIGHTING

An **Acuity** Brands Company

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

Circle no. 183  
or <http://archlighting.com/productinfo>



Nexus Lighting's Array PAR38 LED lamp is a fully dimmable 75-90 watt incandescent replacement that lasts 50,000 hours. The Array PAR38 is designed for high ceiling downlighting, spot lighting and numerous other applications that require high center beam candle power, high lumen output and excellent color rendering.

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

Circle no. 185  
or <http://archlighting.com/productinfo>



# Brian Stacy

## THE EVOLUTION OF A LIGHTING DESIGNER ON A WORLD STAGE

**Working in his garage as a teenager**, Brian Stacy never imagined that tinkering with light would lead him to traveling the world as an architectural lighting designer. He has been all over, professionally speaking: designing sound and lighting rigs in high school, a theater degree from DePaul University, an internship with Chicago-based Schuler Shook, exhibit and lighting design at the Field Museum, and then to Arup. At Arup he has moved from Los Angeles to London and New York helping build their lighting group into a division with more than 50 people in nine offices. And while the scope of the projects he works on may have grown, Stacy has not strayed from his roots; he continues to experiment, albeit at a professional level, with integrating architecture and light. **ELIZABETH DONOFF**

**You work with a lot of high-profile architects. How do you execute their designs and still have your expertise recognized?**  
Our best collaborators are those that are also interested in light and don't want to divorce building performance from aesthetic quality.

**Do you practice lighting design differently because you're part of a global firm known for its integrative approach?**  
The ability to tap into the resources of other design and engineering

disciplines is tremendous, especially the spontaneous conversations with colleagues when you are sorting out a design problem.

**How has your philosophy of lighting design evolved?**  
I always try and start a project without any preconceived notions. Then I let experience inform my decision-making process.

**How are new technologies shaping the future of lighting?**  
The influx of LEDs has jump-started a return to understanding a technology to the point where you can begin to manipulate it for the benefit of your project.

**Is there an aspect of practice that has taken on a new immediacy in this economy?**  
Yes, the realization that we are in a business. And these discussions are starting to appear with more frequency at lighting conferences.

**What do you see in the future for lighting design?**  
We have to accept that the power density question is one we're constantly going to struggle with. It's part of a new set of design challenges we need to be able to grab hold of.



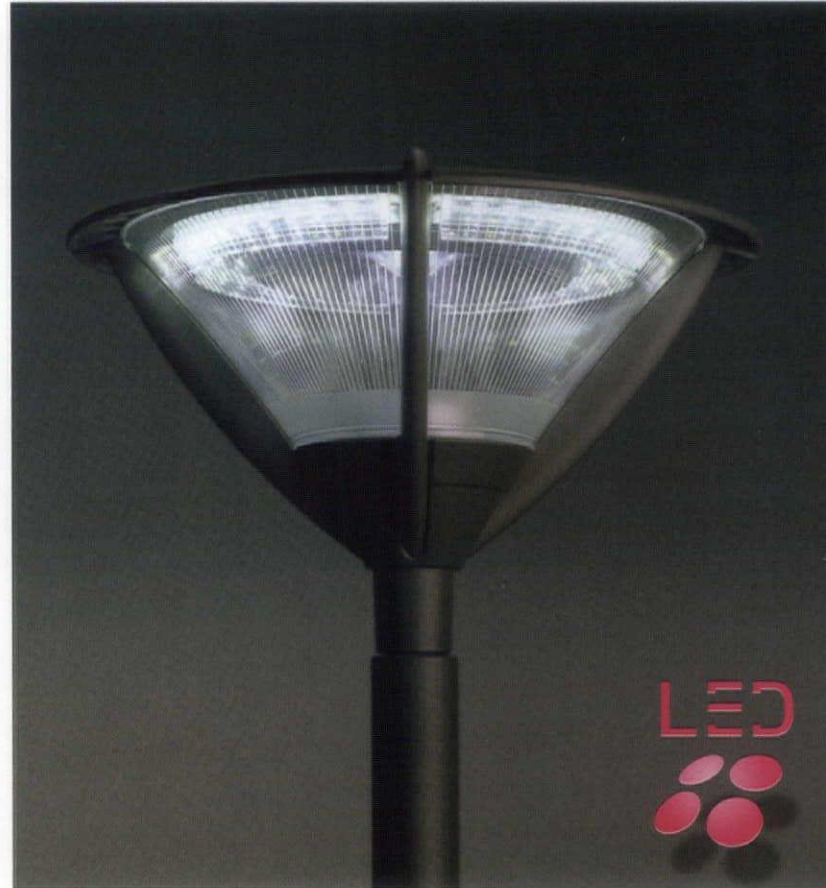
**Built & shipped** from our  
New state-of-the-art manufacturing  
plant in **Addison, Illinois**

ALURA

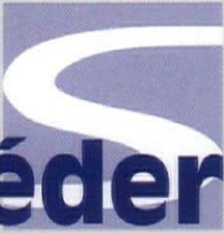
The Right



ARCHITECTURAL



Light

  
**Schröder**  
Schröder Group GIE  
The Right Light

- Innovative optic design (molded acrylic optics)
- Efficiency and visual comfort
- Type 5 distribution
- 40 x Osram Golden Dragon Plus LED, 48W
- Color Temperature : 6000K (Optional Neutral white or Warm white)
- L70 = 50.000h @ 350mA Ta 35°C

Circle no. 193 or <http://archlighting.com/productinfo>

Schröder Lighting LLC | 985 Busse Road | Elk Grove Village, IL 60007 | T. (847) 621.5100 | F. (847) 621.5121

[www.schreder.us](http://www.schreder.us)

# Lutron — save energy in the perfect light

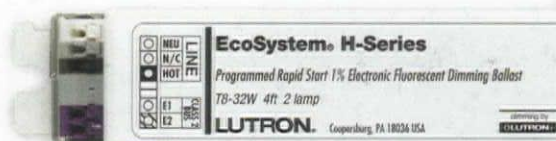
**NEW** next generation **EcoSystem**® can save **SAVE 60%** of your building's lighting energy.

Improve comfort and productivity with this easily expandable system. **EcoSystem** is a commercial lighting control system that utilizes wired or wireless communication and seamlessly integrates daylight sensors, occupancy sensors and ballasts to create the perfect light.

## NEW EcoSystem H-Series Ballast

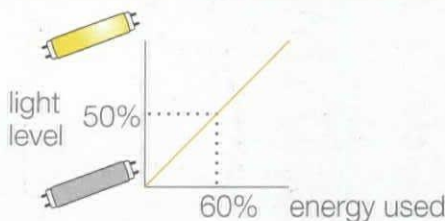
**\$79**  
List Price

- Reliable fluorescent dimming down to 1%
- Digitally addressable ballasts allow for simple lighting reconfiguration with no changes to wiring
- New low price makes EcoSystem H-Series the perfect ballast option for any space



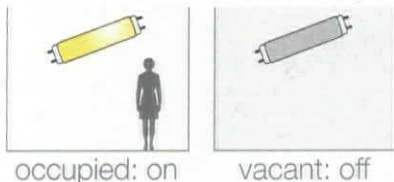
## NEW Energi Savr Node™

- EcoSystem Energi Savr Node integrates wired or wireless daylight sensors, occupancy sensors, and EcoSystem ballasts to dim fluorescent lights and save energy



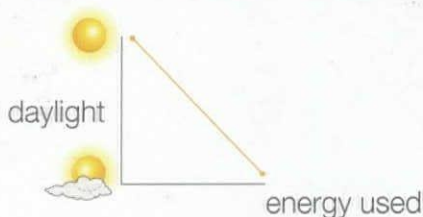
## Occupancy Sensors

- Sensors automatically turn lights off when a room is vacant
- **NEW** Radio Powr Savr™ occupancy/vacancy sensors are easy to retrofit with wireless communication and 10-year battery life
- Can provide up to 20% lighting energy savings



## Daylight Sensors

- Automatically dim or turn off overhead lights when daylight is available
- **NEW** Radio Powr Savr wireless daylight sensor is simple to retrofit with no new wiring
- Can provide up to 20% lighting energy savings



For more information about Lutron Ecosystem solutions—or to schedule an on-site lighting energy assessment—call **1.888.LUTRON1** or visit **www.lutron.com**



©2010 Lutron Electronics Co., Inc.  
Circle no. 37 or <http://archlighting.com/productinfo>

